Delta coal	Doc Owner: **Environment and Community Coordinator** Doc No:

MANNERING COLLIERY

Annual Review 2019

1 January 2019 – 31 December 2019

Author:	Katie Weekes – EMM Consulting
Authorised by:	Chris Armit Environment and Community Coordinator
Date:	Original: 31 March 2020 Revised: 24 April 2020

Mannering Colliery – Annual Review (AEMR) 2019

Table 1 – Annual Review Title Block

Name of operation	Mannering Colliery
Name of operator	Great Southern Energy Pty Ltd trading as Delta Coal Pty Ltd
Project Approval #	PA06_311 Mod 4
Name of Project Approval holder	Great Southern Energy Pty Ltd
Titles/Mining Leases #	Consolidated Coal Lease No. 719 Consolidated Coal Lease No. 721
Name of holder of mining leases	Great Southern Energy Pty Ltd
Water License #	WAL40461/20AL217059
MOP Commencement Date	1st October 2018
MOP Completion Date	31st December 2020
Annual Review start date	**1 January 2019**
Annual Review end date	**31 December 2019**

I, Chris Armit, certify that this audit report is a true and accurate record of the compliance status of Mannering Colliery for the period 1 January to 31 December 2019 and that I am authorised to make this statement on behalf of Great Southern Energy Pty Ltd (trading as Delta Coal Pty Ltd).

Note.

a) 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.

b) 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).

Reporting Officer	Name: **Chris Armit** Title: **Environment & Community Coordinator** Date: **24/04/2020** Signature: 

Executive Summary

During 2019 Mannering Colliery did not mine any coal during the reporting period.

During the reporting period, 792,950 tonnes of coal was handled through Mannering Colliery from Chain Valley Colliery (CVC) and transported to Vales Point Power Station (VPPS) via the overland conveyor.

There were no development consent modifications to Mannering's Project Approval (PA06_0311) during the reporting period.

A summary of the key environmental performance indicators and statement of compliance for the 2019 reporting period is provided in **Table 1**.

Table 1: Key Performance Indicators for the reporting period

Indicator	Value
Full time employees (at 31 December 2019)	23
ROM coal produced from site (tonnes)	0
Total product coal transferred to VPPS from site (tonnes)	792,950
General waste produced (tonnes)	86
Total waste recycled (tonnes)	22
Waste recycling % achieved	20.46%
Potable water consumed (ML)	68.6
Total water discharged from the operation (ML)	309.7
Total number of community complaints received	48
Total number of environmental incidents for the period	3
Number of Community Consultative Committee (CCC) meetings undertaken	4
Total greenhouse gas emissions (CO_2 equivalent tonnes) Quarter 2 2019 only (Delta Coal contribution to end of 2018/2019 financial year)	26,306

1 Statement of Compliance

Summary of Non-compliances (2019 Reporting Period):

There were six reportable environmental incidents during the reporting period, and relate to water quality, noise and sampling. These are summarised in **Table 2** and **Table 3**. This does not include the non-compliances identified in the 2016-2019 Independent Environmental Audit (**Appendix 7).**

Table 2: Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	
Project Approval No. 06_0311	No
CVC and MC MOP 2018-2020	Yes
EPL191	No
CCL719	Yes
CCL721	Yes
Water Licence WAL40461/20AL217059	Yes

Table 3: Non-compliances for 2019 at Mannering Colliery

Relevant Approval	Condition No.	Condition Description (summary)	Compliance Status	Comment	Where addressed in Annual Review
EPL 191	L2.4	TSS concentration	Non- Compliant	Exceedance 02/04/19	Section 11, Table 23
PA 06_0311	Schedule 3 Table 1	Noise Exceedance	Non- Compliant	Exceedance 11/06/19	Section 11, Table 23
PA 06_0311	Schedule 3 Table 1	Noise Exceedance	Non- Compliant	Exceedance 13/08/19	Section 11, Table 23
EPL 191	L2.4	TSS concentration	Non- Compliant	Exceedance 18/09/19	Section 11, Table 23
EPL 191	L2.4	pH limit	Non- Compliant	Exceedance 04/11/19	Section 11, Table 23
EPL 191	M2.1	Water sample	Non- Compliant	Water sample missed for December 2019	Section 11, Table 23

Compliance status key for Table 3

Risk Level	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-compliance	Non-Compliant	Non-compliance which does not result in any risk of environmental harm

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2 Introduction

2.1 Background

Mannering Colliery (MC) is an underground coal mine located on the southern side of Lake Macquarie approximately 60 km south of Newcastle and 80 km north of Sydney. The pit-top is located 3 km south of the township of Mannering Park at the southern extent of Lake Macquarie, as shown on **Figure 1**.

Development of the mine (known as Wyee Mine) began in 1960 in conjunction with the construction of Vales Point Power Station (VPPS) and was operated by Powercoal Pty Ltd. Production commenced in 1961 with extensive mining (first workings and secondary extraction) having taken place in both the Great Northern and Fassifern Seams. Coal operations temporarily ceased on 30 June 2002 when the operation was placed on care and maintenance.

Centennial Coal acquired control of Powercoal on 7 August 2002 and the Colliery remained on care and maintenance. Wyee Mine was renamed Mannering Colliery and production was recommenced in December 2005, mining the Fassifern Seam to gain access to greater than 5 million tonnes of recoverable reserves beneath Lake Macquarie and surrounding lands. Mannering was once again placed on care and maintenance in November 2012. In 2013 the owners of Mannering and Chain Valley Colliery (CVC) entered into an agreement with Centennial which enabled LakeCoal to operate Mannering until 2022. LakeCoal became the operator of Mannering effective 17 October 2013. The underground link road between CVC and Mannering was completed in October 2017.

LakeCoal was placed into Voluntary Administration on 3 October 2018. The receivers continued operation of the mines in the period 3 October 2018 to 1 April 2019. As of 1 April 2019, Great Southern Energy Pty Ltd (trading as Delta Coal) own and operate the two underground coal mines, CVC and MC. Mining is currently undertaken at CVC, with the coal being transported underground to MC where the coal is crushed and screened and sent directly to VPPS.

MC was granted PA 06_0311 on 12 March 2008 which has since had four modifications, the most recent being an administrative modification approved on 18 August 2016 (MOD 4). The Mannering was originally granted approval for the continued production of up to 1.1 million tonnes per annum (Mtpa) of run of mine (ROM) coal. With the approval of MOD 3, the mining operations are permitted to occur until 30 June 2022 and additionally coal transportation of up to 1.3 Mtpa is permitted to allow for the transfer of coal from the CVC. All coal from MC is transported via a drift conveyor system to the surface and dedicated overland conveyor to VPPS for domestic energy generation.

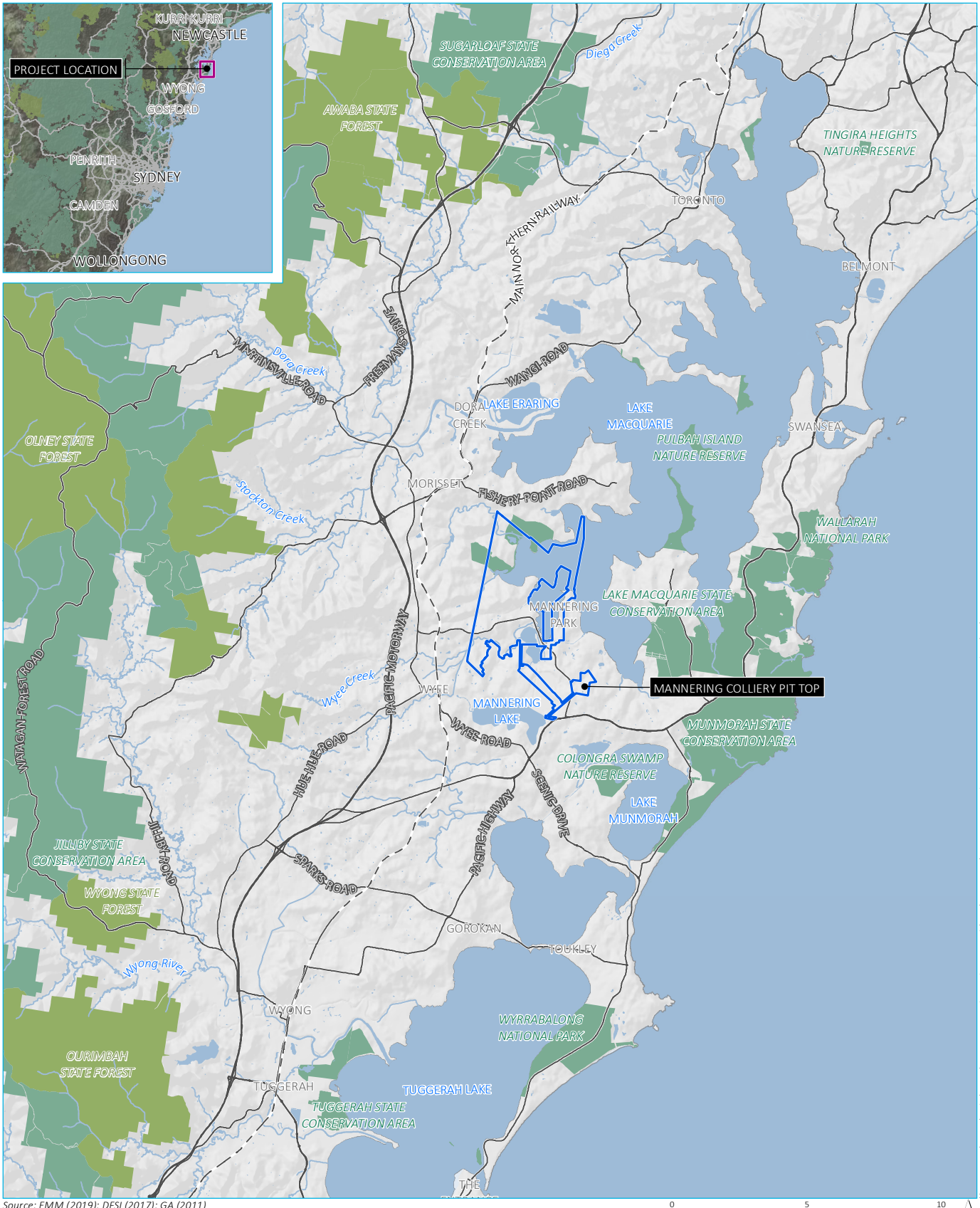
Delta Coal is currently seeking approval for a modification (MOD 5) to MP 06_0311 to allow for an increase in the rate of ROM coal handled at MC and transported to VPPS via overland conveyor from 1.3 Mtpa up to the approved extraction limit at CVC of 2.1 Mtpa, an extension to the approved end date for mining operations to 31 December 2027 and allow for the use of alternate bord and pillar mine designs.

Delta Coal is also currently undertaking the mine closure/rehabilitation process for the Moonee Colliery and the Catherine Hill Bay Coal Preparation Plant. The rehabilitation process for Wallarah Colliery has been completed and the lease in that area relinquished.

2.2 Mine Contacts

The Mannering Colliery contacts as at the end of the reporting period were:

Mine Manager:	Dave McLean
Telephone:	02 43580 800
Email:	dmclean@deltacoal.com.au
Environment and Community Coordinator:	Chris Armit
Telephone:	02 4358 0883
Email:	carmit@deltacoal.com.au



Source: EMM (2019); DFSI (2017); GA (2011)

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GDA 1994 MGA Zone 56

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KEY

- Mannering Colliery project approval boundary
- Rail line
- Main road
- Watercourse/drainage line
- Waterbody
- NPWS reserve
- State forest

Regional context

Mannering Colliery
Figure 1

EMM
creating opportunities

3 Approvals

3.1 Project Approval 06_0311

Mannering was granted PA 06_0311 on 12 March 2008 which has since had four modifications, the most recent being an administrative modification approved on 18 August 2016 (MOD 4) and is reproduced in **Appendix 1**. Mannering was originally granted approval for the continued production of up to 1.1 million tonnes per annum (Mtpa) of run of mine (ROM) coal. With the approval of MOD 3, the mining operations are permitted to occur until 30 June 2022 and additionally coal transportation of up to 1.3 Mtpa is permitted to allow for the transfer of coal from the CVC. All coal from Mannering is transported via a drift conveyor system to the surface and dedicated overland conveyor to VPPS for domestic energy generation.

Delta Coal is currently seeking approval for a modification (MOD 5) to MP 06_0311 to allow for an increase in the rate of ROM coal handled at Mannering and transported to VPPS via overland conveyor from 1.3 Mtpa up to the approved extraction limit at CVC of 2.1 Mtpa, an extension to the approved end date for mining operations to 31 December 2027 and allow for the use of alternate bord and pillar mine designs.

Condition 3 within Schedule 5 of the approval requires the submission of an Annual Review to the satisfaction of the Secretary. **Table 4** identifies the requirements of this condition and where each item has been addressed in this report.

Table 4: Annual Review Requirements

Condition Requirement	Section Addressed
3. By the end of March each year, or other timing as may be agreed by the Secretary, the Proponent must submit a report to the Department reviewing the environmental performance of the project to the satisfaction of the Secretary. This review must:	This report
a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current financial year;	1, 2, 3, 5, 6, 7 & 8
b) include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the: • the relevant statutory requirements, limits or performance measures/criteria; • requirements of any plan or program required under this approval; • the monitoring results of previous years; and • the relevant predictions in the documents listed in condition 2 of Schedule 2;	2, 3, 4, 5, 6, 7 & 10
c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance;	5, 6, 7, 8 & 10
d) identify any trends in the monitoring data over the life of the project;	5, 6 & 7
e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and	5, 6 & 7
f) describe what measures will be implemented over the current financial year to improve the environmental performance of the project.	11

3.2 Leases

The surface areas occupied by Mannering Colliery lie within the Central Coast Council local government area (LGA), however, the leases which comprise the Mannering Colliery holding straddle both the Central Coast and Lake Macquarie LGAs.

Significant changes occurred to the Colliery holding during the 2014 reporting period, which resulted in all active areas of the holding being transferred to the Chain Valley Colliery holding. The Chain Valley Colliery holding is shown on the Mine Locality Plan (**Appendix 2**) however the applicable mining tenements which are contained within the Mannering Project Approval boundary, and include the surface areas of the Mannering pit top are listed in **Table 5.**

Table 5: Mining tenements

Mining Tenement	Holder	Grant date / Renewal date	Lease expiry date	Applicability
CCL 719 (Sublease B)	Centennial Mannering	3 July 1989	22 December 2020	Sub-lease from Centennial Mannering for Mannering Colliery (subject to application to transfer to Delta Coal).
CCL 721	Centennial Mannering	28 June 1989	29 July 2026	Incorporates part of the approved mining area, Part sublease to Delta Coal, incorporated into Chain Valley Colliery holding. Includes Mannering surface facilities.

It is noted that while the CVC holding boundary now incorporates a significant portion of what was the Mannering Colliery holding, Annual Reviews for the two Collieries remain separate and relate specifically to the activities occurring within the relevant approval instrument boundaries.

All Mannering Colliery surface operational areas are owned by Sunset Power International and are operated/occupied under a commercial agreement.

3.3 Licences

Environment Protection Licence (EPL) No. 191 issued by the Environment Protection Authority under the *Protection of the Environment Operations Act,1997* covers the Collieries activities and premises.

A copy of EPL 191 is posted on the Colliery website, https://www.deltacoal.com.au/environment/mannering-colliery or via the NSW EPA website, http://www.environment.nsw.gov.au/licensing/ and is also provided in **Appendix 3**.

Monitoring results obtained in accordance with the licence conditions are made available on the Colliery website (updated monthly), under the environmental reporting page: https://www.deltacoal.com.au/environment/mannering-colliery/mannering-colliery-environmental-reports/mannering-colliery-environmental-reporting

Delta Coal also holds water licence 40461 issued under the *Water Act 1912* and permits the extraction of 450 ML per annum.

3.4 Mine Geology

The most recent mining operations at Mannering Colliery have been located within the Fassifern Seam, which is part of the Boolaroo Formation within the Newcastle Coal Measures (see **Figure 2.1.1**). Overlying the Fassifern Seam are the Great Northern, Wallarah and Vales Point Seams (and their associated

conglomerates and tuffs), which are part of the Moon Island Beach Formation within the Newcastle Coal Measures. The Wallarah and Fassifern Seamshave been mined at Myuna Colliery to the north-east, while the Wallarah, Fassifern and Great Northern seams have been mined at CVC to the east.

The coal resource within the Fassifern and Great Northern seams has a low sulphur content, which makes it a preferable supply for power generation. Within the Colliery holding, the Fassifern Seam lies at around 150 to 205 metres deep and mining is based on a three metre section of coal (approximate) beneath the B ply, which comprises approximately 1.0 to 1.2 metres of inferior coal left on the roof (Seedsman, 2011). The depth of cover to the Great Northern Seam is between approximately 140 and155 metres and the typical seam thickness is 2.5 metres (Seedsman, 2011).

Previous workings within both of these seams are extensive. These workings, in conjunction with various geophysical surveys in the area, provide a solid base of data regarding regional and local structural features. The area within the Colliery holding is dissected by a number of north-west striking faults and dyke zones at a regional spacing of up to two kilometres, with drilling and surface magnetometer surveys confirming the locality of these structural features (Hanson Bailey, 2007).

The stratigraphic sequence beneath the mine plan is comprised of three distinct units:

1. the upper Permian Newcastle Coal Measures, a sandstone/coal sequence with lesser siltstone;
2. the overlying Clifton Sub-group, which is the basal unit of the Triassic Narrabeen Group; and
3. quaternary to recent alluvial sediments.

The Great Northern Seam is separated from the Fassifern Seam within the Newcastle Coal Measure by approximately 25 to 30 metres. The strata directly below the Fassifern Seam are high strength sandstone formations, interbedded with thinner strata of other units such as shale, mudstone and coal (Hansen Bailey 2007). This interval between the Fassifern Seam and the Great Northern Seam is generally made up of two strata characterised in the lower section by the Awaba Tuff, which is the stone roof of the Fassifern Seam, and a conglomerate/coarse-grained sandstone unit in the upper section (Hansen Bailey, 2007). The roof of the Great Northern Seam is Teralba Conglomerate (Seedsman, 2011).

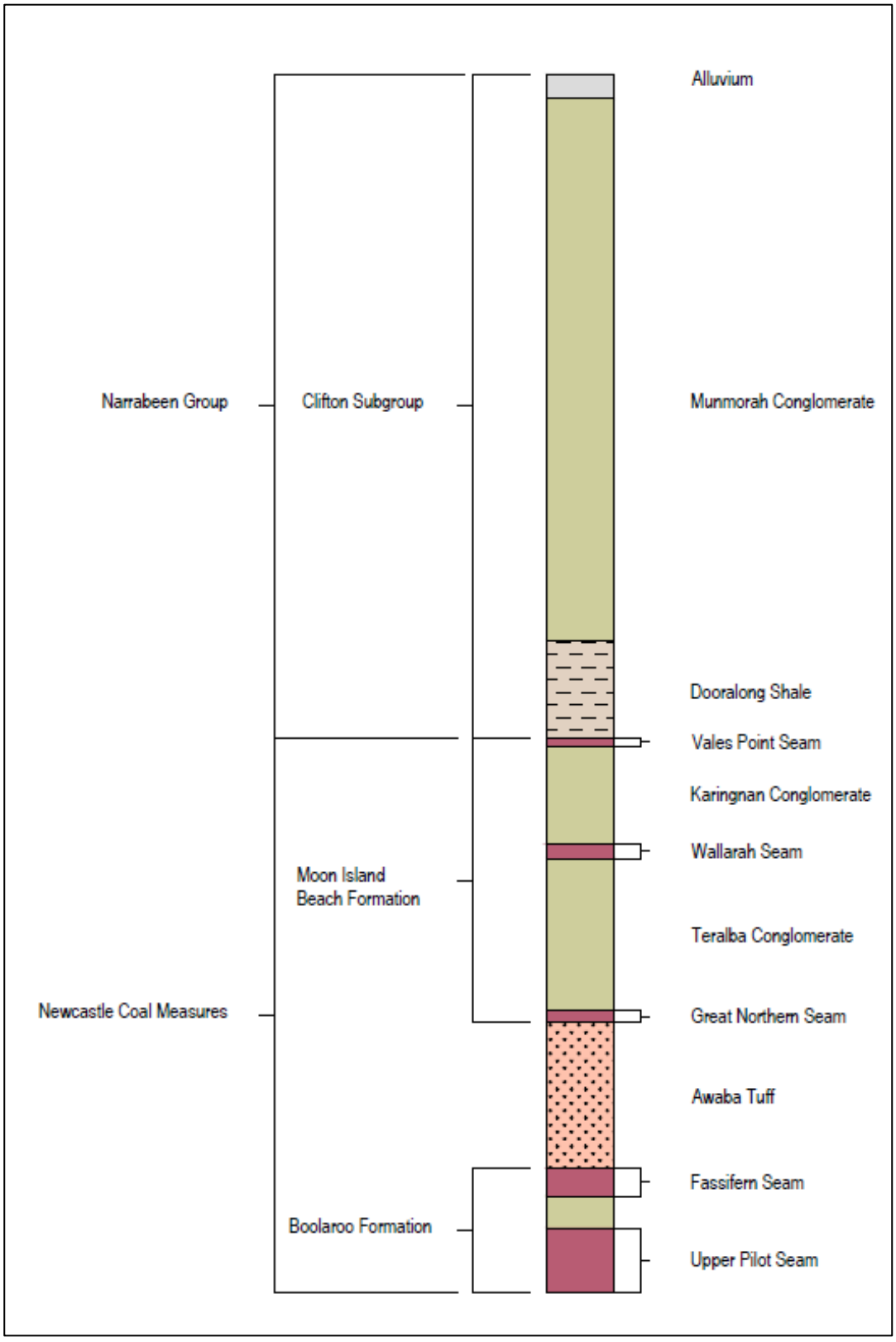


Figure 2: Typical Stratigraphy at Mannering Colliery

4 Operations

4.1 Exploration

There was no exploration undertaken at Mannering Colliery during the reporting period.

4.2 Land Preparation

There was no land preparation undertaken during the reporting period, as a result the surface disturbance footprint remains unchanged.

4.3 Construction/Demolition

There were no construction or demolition works undertaken during the reporting period. General maintenance of existing infrastructure was however undertaken.

4.4 Mining

There were no mining activities undertaken at Mannering during the reporting period.

Existing workings in the Great Northern Seam are shown on the Great Northern Seam Workings Plan and existing workings within the Fassifern Seam are shown on Fassifern Seam Workings Plan (**Appendix 2).**

Figure 3 and **Figure 4** shows annual ROM production and coal handled Mannering Colliery between 2012 and 2019. A production summary is provided in **Table 6.**

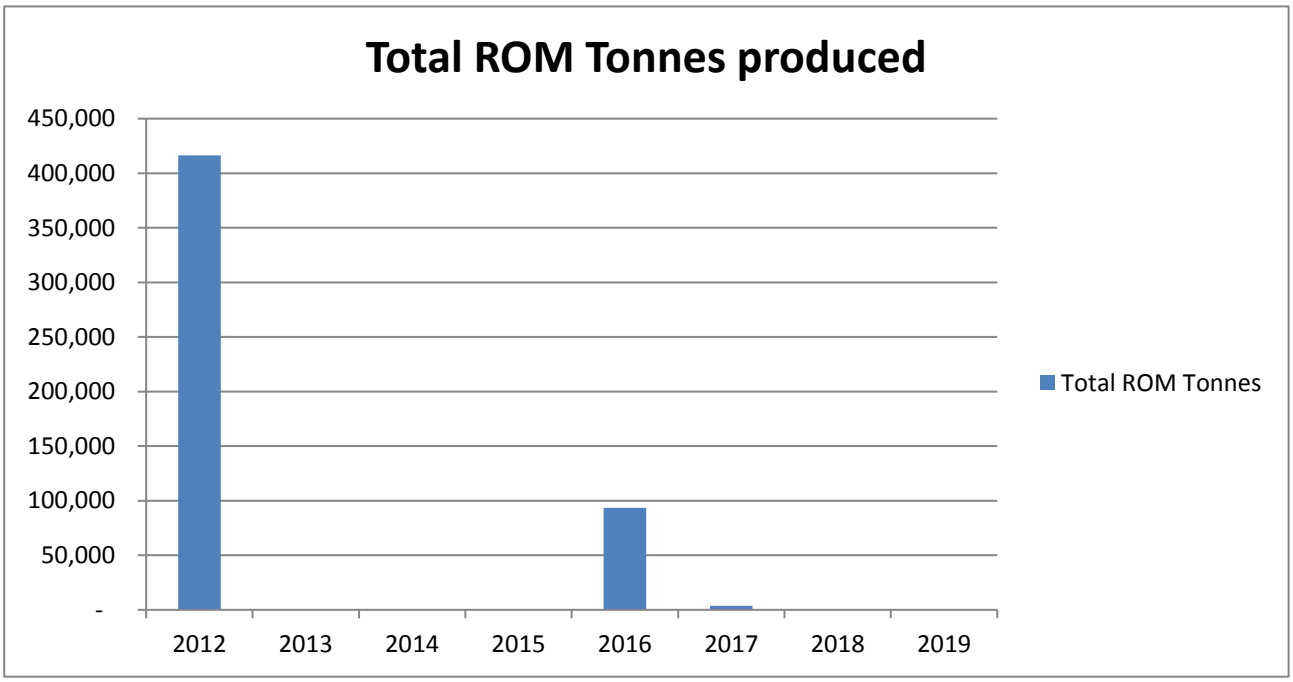


Figure 3: Annual ROM Production Levels

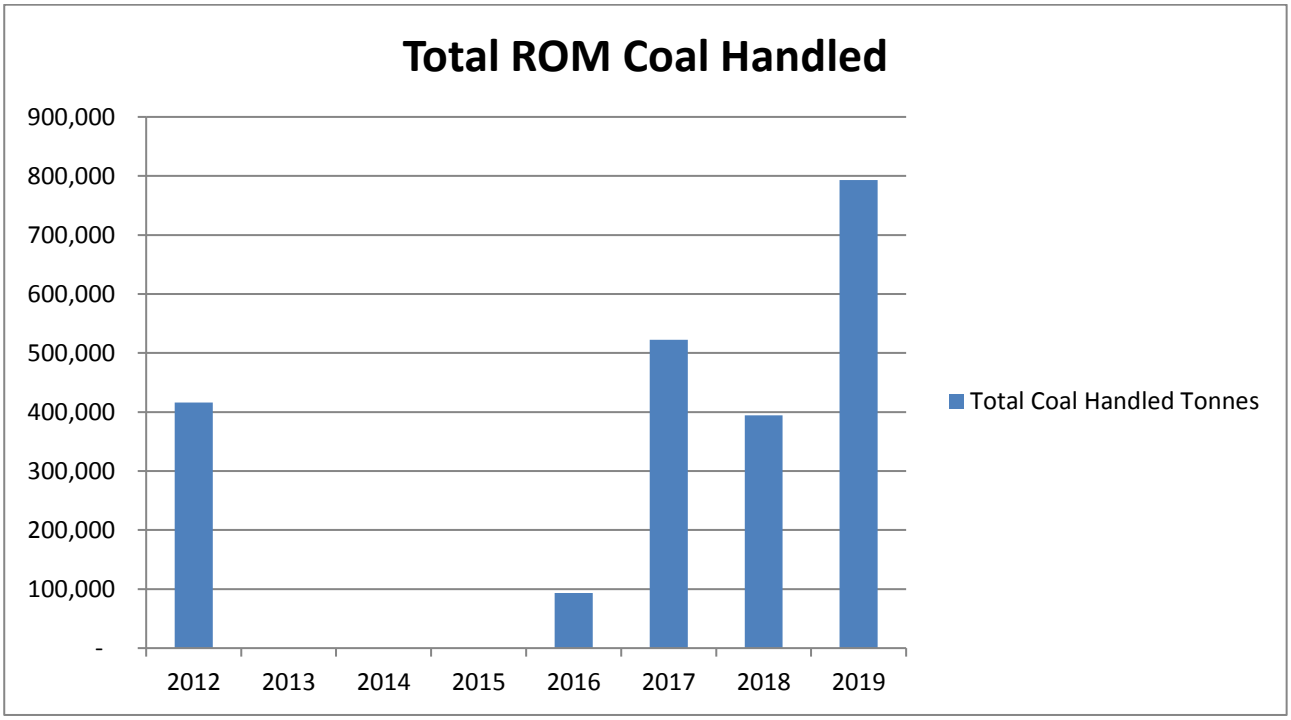


Figure 4: Annual Product Coal Handled

Table 6: Production Summary

Material	Approved Limit (Mt)	Previous Reporting Period (Actual)	This Reporting Period (Actual)	Next Reporting Period
Waste Rock / Overburden	N/A	N/A	N/A	N/A
ROM Coal	1.1 Mt	0.4 Mt	0.8 Mt	1.4 Mt
Saleable Product (Same as ROM)	1.1 Mt	0.4 Mt	0.8 Mt	1.4 Mt
Coarse Reject	N/A	0.001	0.001	0.001
Fine Reject	N/A	N/A	N/A	N/A

All coal produced was dispatched to VPPS via conveyor from Mannering Colliery. During the reporting period a total of 792,950 tonnes was dispatched to VPPS (domestic market).

The same agreement also underpins the underground connection, which currently consists of two development headings (one belt road and one travel road) enables coal from CVC to be transported via Mannering Colliery to VPPS.

4.5 Mineral Processing

ROM coal is sized and transported directly to VPPS via a dedicated existing overland conveyor system. Oversized material which exits the rotary breaker is a mixture of timber, concrete, rock, coal, plastic, steel was stockpiled. This material is either loaded into bins for removal by the total waste contractor, sorted into waste streams and recycled or returned to underground.

4.6 Waste Management

Delta Coal continued to implement a total waste management system for the site during the reporting period. The main waste streams currently provided for include:

- general waste;
- scrap metal;
- comingled recycling;
- waste oil;
- pallets/timber recycling;
- oily rags;
- oil filters;
- oil drums;
- waste batteries; and
- confidential documents.

Management systems are in place at Mannering Colliery for the various non-production waste streams generated by the operation in accordance with the requirements of MP06_0311 and EPL 191. In summary:

General Waste and Recyclables

All general wastes and routine maintenance consumables are collected on a regular basis by an appropriately licensed contractor for off-site disposal within a waste facility approved to accept such waste. Recyclable material is also collected by a licensed contractor for recycling at an appropriate facility.

Collections of general waste and recyclables are coordinated by the waste management contractors, who also undertake weekly waste inspections at the site.

There was an increase in waste generated at the site during the reporting period which was attributable to the increase in production.

Waste Oil and Grease

The generation of waste oils and grease is currently limited to the routine maintenance of plant and equipment. Waste oils and greases stored at the purpose built service bay area along with parts and packaging (for example, cartridges, filters and waste oil drums), are collected by a licensed waste contractor on an as needs basis for recycling and/or off-site disposal.

Oily water is contained within drive-in-sumps and treated by oil-water separators located on the mine surface. Licensed contractors regularly service and maintain the separators and remove all waste hydrocarbons from the site for recycling.

Sewage

Sewage generated by on-site staff amenities is pumped directly from Mannering Colliery to Mannering Park Waste Water Treatment Works via a dedicated pipeline under a Trade Waste Agreement with Wyong Shire Council.

The total waste management system also involves weekly site inspections by the waste management contractor to facilitate effective waste management and continual improvement along with monthly reporting, with some of the data from key waste streams presented on **Figure 5**.

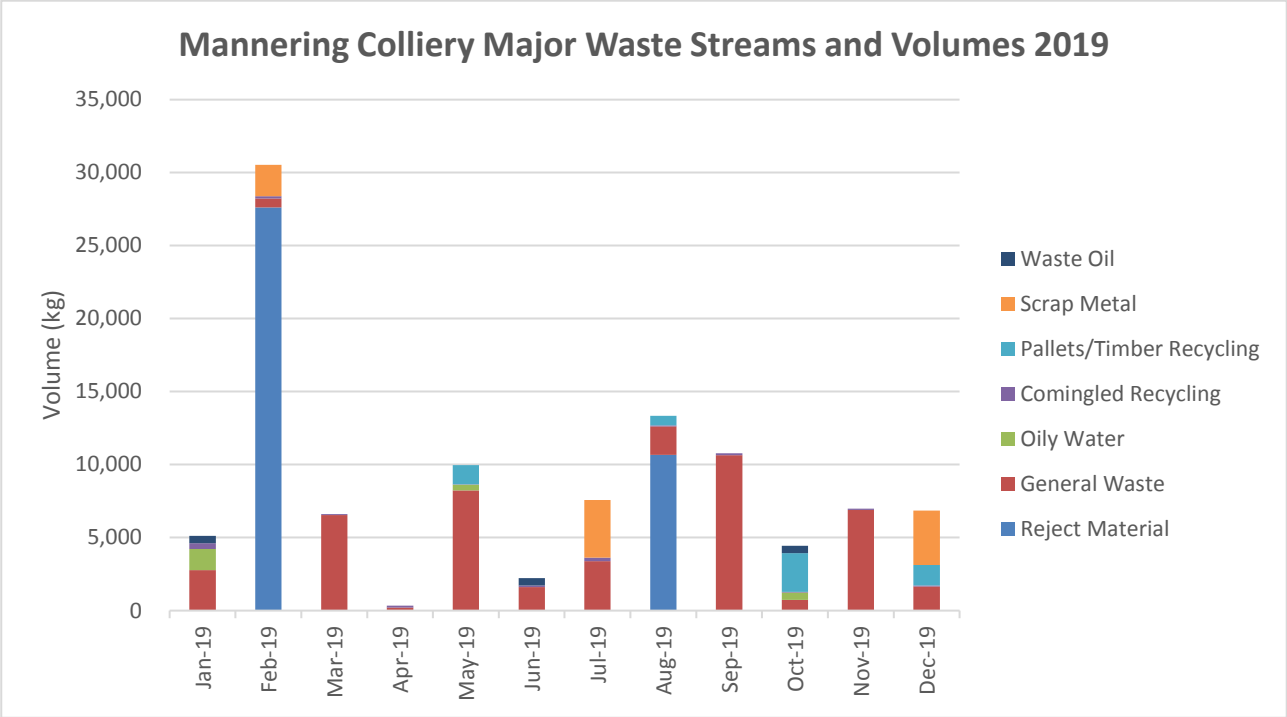


Figure 5: Major Waste Streams and Volumes for Mannering Colliery

4.7 Stockpiles

When operating, delivery of coal to VPPS occurs via dedicated overland conveyor directly to the power station. Stockpiling of coal only occurs when VPPS is unable to accept coal deliveries from the mine. The stockpile has a nominal capacity of approximately 25,000 tonnes.

There were no changes to the coal stockpile area during the reporting period.

4.8 Hazardous Materials Management

A hazardous chemicals and dangerous goods register is maintained onsite to assist in management of risks to health and the environment. This register utilises an online chemicals database 'ChemAlert' which provides for ease of access to detailed information pertaining to hazardous chemicals and dangerous goods used onsite via a web portal.

There have been no significant changes made to the management of hazardous materials during the reporting period.

A hazardous materials survey has been commissioned and will be conducted in Quarter 1 2020.

4.9 Other Infrastructure Management

No significant changes have been made to other infrastructure during the reporting period.

5 Actions Required from Previous Annual Review

5.1 Actions required from previous Annual Review Inspection

Delta Coal received formal acknowledgement from DPIE on 27 May 2019 that the site's 2018 Annual Review generally satisfied the project approval requirements. As identified in **Table 7**, there were some items required from DPIE's review (15 April 2019).

A site and field inspection was undertaken at Mannering and the downstream monitoring point by Joel Curran (DPIE - Compliance Officer) following the submission of the Mannering Colliery IEA.

Table 7: Actions required from last Annual Review

Item	Issue / Observation	Action	Status
1	Report layout and content	Please ensure the AR is written consistent with the Department's Annual Review Guideline (October 2015). With specific attention given to 'Content Requirements for an Annual Review' and the location, numbering and titles of subsequent sections	This document
2	Title Block	Please ensure the 'true and accurate record' statement is filled out	See **Page 2**
3	Approvals and Licences	Ensure Water License 20BL173107 is included in the Title Block and the compliance status of Water Licence 20BL173107 is included in the Statement of Compliance	This licence is held by Delta Coal and has been converted to a Water Access Licence (WAL)
4	Section 1.1.1, Table 1.1	Update to reflect the current wording of the approval as per Mod 4	See **Section 3.1, Table 4**
5	Section 1.3 'Actions Required from Previous Annual Review Inspection'	a) Please ensure this section is located as per the Department's Annual Review Guideline (October 2015)	See **Section 5**
		b) Table 1.3 – The 'Action' associated with Item 2, 'Annual Review 2018 – Noise predictions' is not an accurate reflection of what was requested in email from DPE on 27/11/18 'please ensure that the environmental performance of the Project is assessed against the predictions from the Environmental Assessments and trend analysis from monitoring data for the life of the Project is provided'	Addressed in revised 2018 Annual Review
		c) Table 1.3 – Item 3 is addressed in Section 2.8.1, Table 2.3, however, please clarify whether 'reporting period' means the AR reporting period or 'water year' (1 July to 30 June) as per the Department's Annual Review Guideline (October 2015)	See **Section 7.1**

Item	Issue / Observation	Action	Status
		d) Table 1.3 – Item 4, following the 2017 AR review, the Department requested an action plan for the Response to Audit Recommendations (RAR) from the 2016 Independent Environmental Audit to be included in the 2018 AR	Addressed in revised 2018 Annual Review for 2016 RAR See **Section 10** and **Appendix 10** for 2019 RAR
6	Section 2.8 Water	a) Please ensure this section is located as per the Department's Annual Review Guideline (October 2015)	See **Section 7**
		b) Please provide a comparison of water results to the relevant EA/EIS predictions and provide long term trend analysis	See **Section 7**
7	Section 3.1 Air Quality	a) Please ensure this section is located as per the Department's Annual Review Guideline (October 2015)	See **Section 6.1**
		b) Please provide a comparison of Depositional Dust to the relevant EA/EIS predictions	See **Section 6.1**
8	Section 3.10 Noise	a) Please ensure this section is located as per the Department's Annual Review Guideline (October 2015)	See **Section 6.9**
		b) Please correct the following sentence as per the bold type '…results of the attended monitoring at these locations are presented in Appendix 14, Table 14.2 to Table 14.25	Addressed in revised 2018 Annual Review
		c) Please provide a comparison of noise to the relevant EA/EIS predictions	See **Section 6.9**

5.2 Actions required from 2019 Annual Review

As detailed in **Table 8**, there were some items requiring updating from DPIE's review letter dated 3 April 2020 which is reproduced in **Appendix 11**.

Table 8: Actions requiring updating in 2019 Annual Review

Item	Section	Action	Status
1	Executive Summary	Table 3 is not complete (last column)	Updated Table 3
2	Section 6.9	Figure 11, shows the incorrect attended monitoring location for RA2, as per the latest approved Noise Management Plan submitted to the Department on 1 November 2019 and approved by the Department on 13 November 2019	Updated Figure 11
3	Section 6.9	The sentence 'During the evening period at RA1, site noise contributions of LAeq,15 minute 41 dB and LA1,1 minute of 39 dB.' should be corrected to read 'During the night period at RA1, site noise contributions of LAeq,15 minute 41 dB and LA1,1 minute of 39 dB.';	Updated wording in Section 6.9

Item	Section	Action	Status
4	Section 10	Table 22 should provide an updated Response to (all) Auditor Recommendations (RAR) from the 2019 Independent Environmental Audit (IEA), not only those actions relating to the Annual Review.	See Appendix 10 for IEA Action Plan

5.3 Delta Coal Environmental Management System

Environmental management at Mannering is structured through the environmental management system based on the company's Environmental Policy. The site risk assessment of environmental aspects at Mannering forms the basis of environmental impact mitigation and control and will be reviewed throughout the life of the Colliery.

The Environmental Management Strategy provides the overview of the environmental management system, which has been expanded throughout the reporting period to incorporate the documents as listed below in **Table 9**.

Table 9: Primary Elements of the Environmental Management System

Document Title	Reviewed	Status
Delta Coal Environment Policy	1 May 2019	Current
Environmental Management Strategy	November 2019	Incorporated into combined Delta Coal EMP. Review in consultation phase
Environmental Monitoring Program	N/A	Incorporated into combined Delta Coal EMP. Review in consultation phase
Water Management Plan	December 2019	Review in consultation phase
Air Quality Management Plan	November 2019	Approved by DPIE
Noise Management Plan (incorporating Noise Monitoring Program)	November 2019	Approved by DPIE
Aboriginal Cultural Heritage Management Plan	November 2019	Approved by DPIE
Non-indigenous Heritage Management Plan	November 2019	Approved by DPIE
Land (including Bushfire) Management Plan	December 2019	Review in consultation phase
Rehabilitation Management Plan	December 2019	MOP 2018-2020
Pollution Incident Response Management Plan	May 2019	Final
Complaints Register	December 2019	Updated monthly on www.deltacoal.com.au

6 Environmental Performance

Delta Coal is committed to operating Mannering Colliery in an environmentally responsible manner through the application of the workplace Environmental Management System (EMS). This commitment is confirmed in the company's *Environment Policy*.

A Broad Brush Risk Assessment for Mannering Colliery was undertaken during the reporting period in accordance with AS/NZS ISO 31000 and MDG1010, to identify hazards and assess the environmental and community related risk associated with the planned operation of Mannering Colliery.

The risk assessment included:

- surface and groundwater;
- ecology;
- heritage;
- visual amenity;
- noise;
- air quality and greenhouse gas;
- traffic;
- hydrocarbon storage;
- deliveries;
- waste;
- asbestos;
- data records and reporting; and
- social aspects.

All aspects with potential environmental impacts, following the implementation of controls, were considered low to moderate and manageable risk.

Below is a summary analysis of environmental monitoring data. As stated in the *Post Approval Requirements for State Significant Mining Developments, October 2015,* the summary includes:

- comparison of data in relation to the predictions made in the Environmental Impact Statement;
- identification of trends in the data; and
- identification of any management implications.

6.1 Air Pollution

The Mannering Colliery: Continuation of Mining Environmental Assessment by Hansen Bailey (March 2007), states the following summary of relevant predictions and trends associated with air quality, specifically depositional dust at Mannering Colliery:

- *The estimated total emissions from the mine and operation of the overland conveyor from Mannering to Vales Point Power Station will remain small, at less than 2 g/s. This level of emission will not affect the PM_{10}, TSP or deposition levels significantly at the closest residential location.*
- *The 24-hour PM_{10} concentrations will exceed the 50 $\mu g/m^3$ assessment criterion during periods when bushfires are contributing high concentrations of smoke to the air, or remote dust storms transport significant quantities of particulate matter into the Lake Macquarie air shed.*

- *Since the mine's ventilation system is already part of the existing operations and the effect of the emissions from the ventilation system will be captured in the historical monitoring data, the only new emissions (i.e TSP) will be 733 kg/y or 0.023 g/s, which is even less than the 1.5 g/s due to all sources.*
- *In the 2015 modification, the TSP figures presented in the 2007 assessment were contemporised and incorporated revised assumptions for the operation. The emission rate as a result of the modification, though increasing marginally, is still below the previously identified 2 g/s. As a consequence, it was concluded that this will not result in any noticeable change in the concentrations of particulate matter at sensitive receivers.*

In accordance with Conditions 16, Schedule 3 of PA 06_0311, it must be ensured that all reasonable and feasible avoidance and mitigation measures are employed so that particulate emissions generated by the Mannering do not cause exceedances of the criteria listed in **Table 10** at any residence on privately owned land.

Table 10: Long term Impacts Assessment Criteria for Depositional Dust

Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited Dust	Annual	2 g/m^2/month	4 g/m^2/month

This table predicts that the total dust emissions from Mannering will remain minor, at less than 2 grams per second. The AR depositional dust results reflect in accordance with this trend, remaining a consistently minor result for the reporting period.

Table 11 is reproduced from the EA (*Hanson Bailey 2007)* and reflects the air quality goals specifically related to TSP and PM10 levels.

Table 11: Environmental Assessment – Air Quality Goals for TSP and PM10

Pollutant	Goal	Averaging Period	Agency
Total suspended particulate matter (TSP)	90 µg/m^3	Annual mean	National Health and Medical Research Council (NSW DEC, 2005)
Particulate matter <10 µg/m^3 (PM10)	50 µg/m^3	24-hour maximum	NSW DEC (2005) assessment criteria
	30 µg/m^3	Annual mean	NSW DEC (2005) long term reporting goal

In order to determine the effectiveness of the Mannering dust control measures, a network of dust depositional monitoring gauges has been established for surface operations and coal stockpile dust emissions. Depositional gauges are located within the Mannering perimeter, a total of 5 depositional gauges are utilised. Dust deposition gauge locations are shown on **Figure 6**.

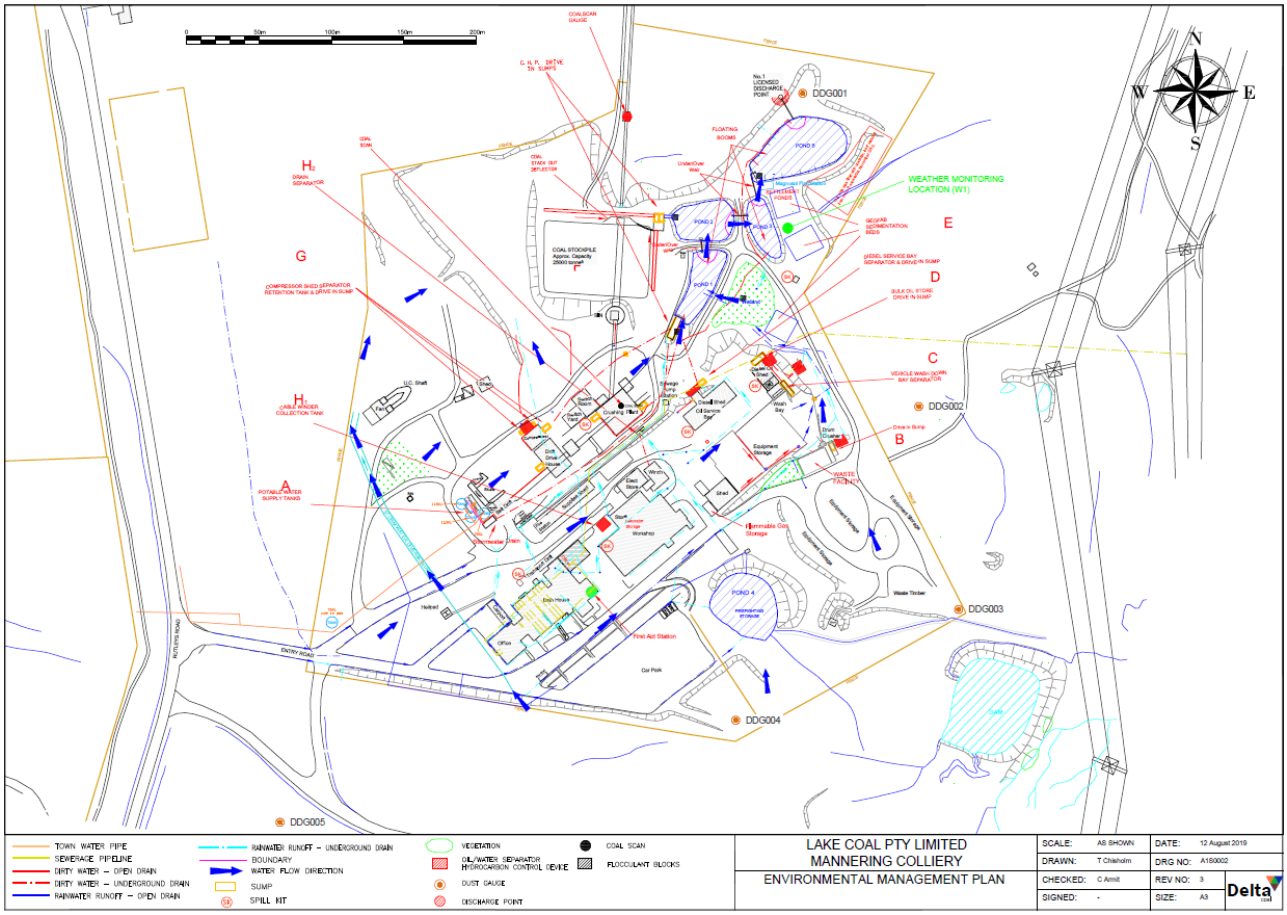


Figure 6: Dust Monitoring Points

Table 12 describes the location of dust monitoring points as outlined in EPL 191 Condition 2, P1.1.

Table 12: Depositional dust monitoring points

Site ID no.	EPA ID no.	GPS Coordinates	Location
DDG001	3	Easting 364319 Northing 6328448	North-west of final dam
DDG002	4	Easting 364399 Northing 6328232	North of hardstand area
DDG003	5	Easting 364427 Northing 6328092	North-east of hardstand area
DDG004	6	Easting 364273 Northing 6328016	East of car park
DDG005	7	Easting 363959 Northing 6327946	South of main site entry

During the reporting period monitoring in accordance with the approved Air Quality Management Plan and EPL 191 licence conditions continued. Depositional dust monitoring results are shown in **Table 13** and **Figure 7**. The rolling annual averages for 2019 and longer term annual average results (from 2006 - 2019) are presented on **Figure 8** and **Figure 9** respectively.

With respect to the ensuing table and figures, any contaminated results would be shown in **Table 13**. However, these results would not be included within the annual averages and present as zero values in the monthly graphical results in **Figure 8**. No contamination was noted by the environmental monitoring consultant engaged to complete the sampling and supported by corresponding field and/or laboratory notes.

Five complaints relating to dust or air pollution were received in the reporting period. One was in relation to dust from the power station, one in relation to use of the water cart and the remaining three were more general concerns regarding health and dust on cars and window sills.

Table 13: Depositional dust results for 2019

Sampling point	DG1 (EPA ID # 3)	DG2 (EPA ID # 4)	DG3 (EPA ID # 5)	DG4 (EPA ID # 6)	DG5 (EPA ID # 7)
Month	Insoluble Solids	Insoluble Solids	Insoluble Solids	Insoluble Solids	Insoluble Solids
Jan-19	1.9	2.3	2.1	2.9	3.4
Feb-19	0.8	0.7	0.9	1.1	0.8
Mar-19	1.8	1.3	1.7	1.6	1.4
Apr-19	0.7	0.7	0.8	1.6	0.7
May-19	0.2	0.7	0.3	0.3	0.3
Jun-19	0.7	1.1	0.7	0.6	0.8
Jul-19	0.6	0.4	0.3	0.6	0.4
Aug-19	0.5	2.0	0.7	0.4	0.5
Sep-19	1.1	1.1	1.0	0.3	0.8
Oct-19	1.6	1.0	0.6	0.8	2.0
Nov-19	1.7	2.1	2.1	1.9	1.8
Dec-19	3.8	2.9	2.3	1.9	1.4
Minimum	0.2	0.4	0.3	0.3	0.3
Maximum	3.8	2.9	2.3	2.9	3.4
Annual Average	1.3	1.4	1.1	1.2	1.2

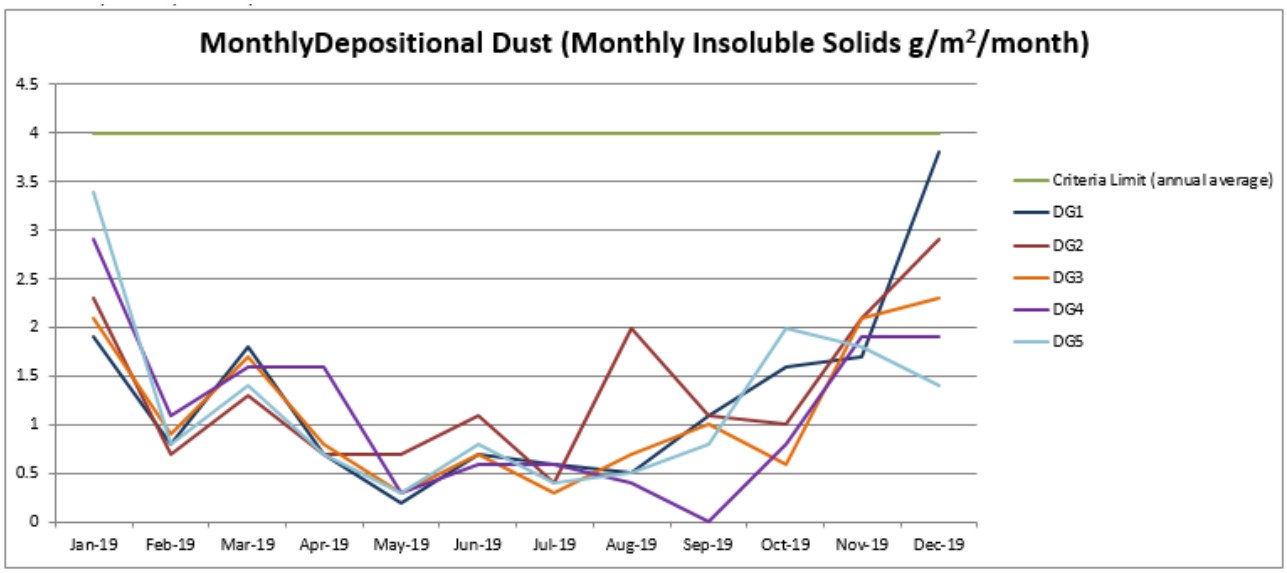


Figure 7: Monthly Depositional Dust Results 2019

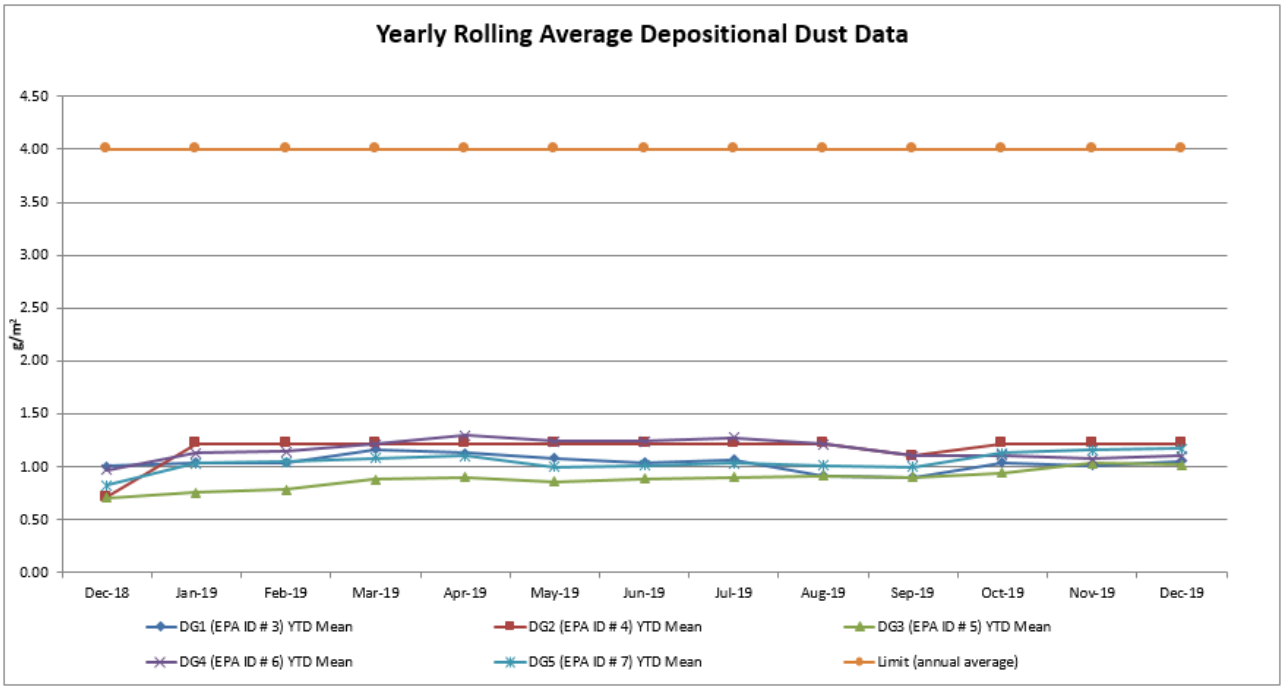


Figure 8: Rolling Annual Average Dust Depositional Results 2019

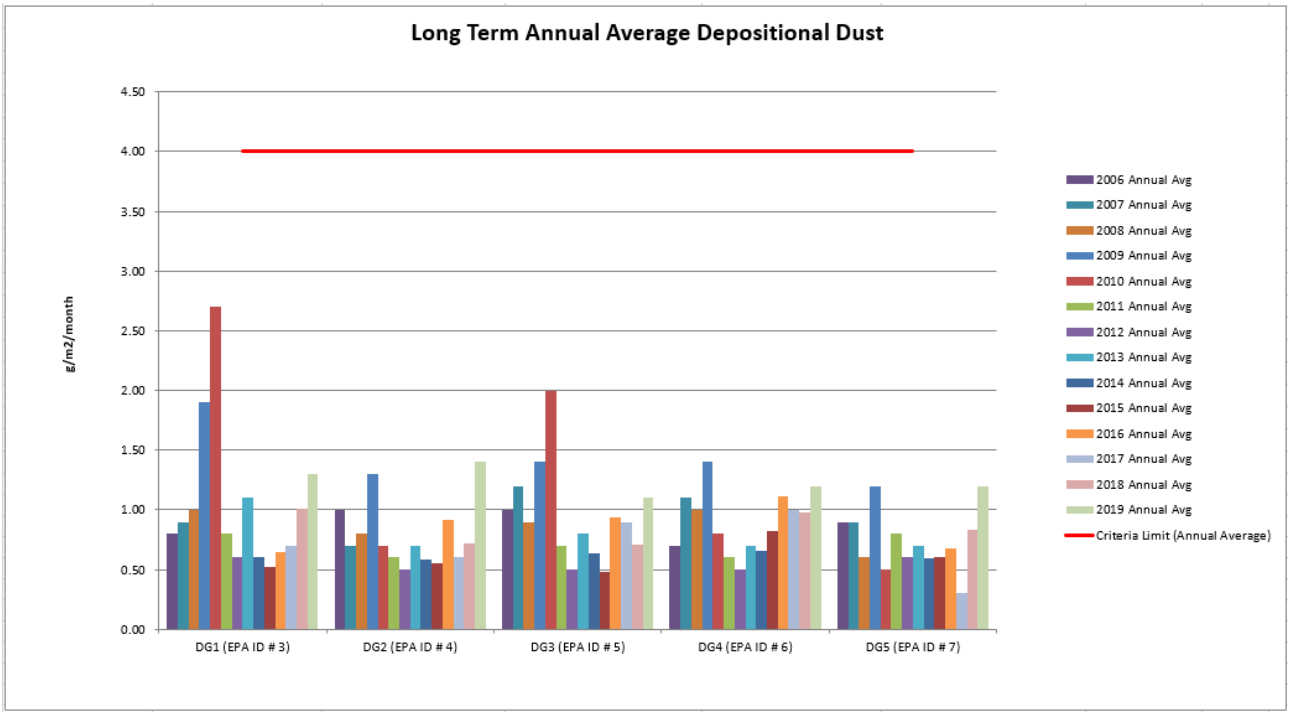


Figure 9: Long term Annual Average Depositional Dust Results (2006 - 2019)

Air quality monitoring results in the 2019 reporting period show that air monitoring criteria has been met and the recorded levels do not exceed the prescribed maximum increase in deposited dust levels of 2 g/m2/month or maximum level of 4 mg/m2/month, with all average annual results below 1.4 g/m2/month.

A comparison of annual average results from 2019 compared with prior years is provided in **Figure 9**. While results are higher than results for previous years due to extensive regional bushfires and dust storms, they are still well below the levels detailed in **Table 10**.

In comparison to the predicted trends and EA data, the AR reporting period for air quality is consistent and does not reflect any exceedances within the reporting period. In terms of greenhouse gas emissions, according to the EA (2007), Mannering Colliery has no material effect on national or global greenhouse gas emissions from the project.

The air quality monitoring program, in accordance with the approved management plan, was ongoing at the end of the reporting period.

6.2 Erosion and Sedimentation

Mining operations and significant rainfall events have the potential to cause erosion and/or generate sediment and impact on the surrounding catchment areas. These were unchanged during the reporting period and consist of:

- the exposed areas of the laydown areas, workshop and internal access tracks
- coal stockpiles and coal handling equipment areas; and
- vehicle and equipment movements.

The site includes a series of 8 silt traps. These are inspected weekly for functionality and maintenance purposes. Identified actions are provided to the relevant site personnel by the site Environment and Community Coordinator or his delegate for completion as required.

Water not managed by the clean water diversion structures enters the sediment ponds or enters the underground drainage system which feeds into Pond 1.

The water draining from the hardstand catchment area reports to the sediment basin, Pond 1. Pond 1 will if required overflow into Pond 2, which then flows into Pond 3 and then Pond B prior to being discharged from site via LDP001. Total suspended solids are monitored at this point of the final dam prior to release (refer to **Section 6** for results).

Runoff from the coal handling and stockpile area is contained by a sedimentation-based sump system that helps capture the coal fines prior to entering sediment Pond 1 below the stockpile. Runoff from this area can contain a significant amount of coal fines due to the nature of the activities. This Pond along with Ponds 2 and 3 also function as primary settling ponds before discharging into Pond B.

Improvements to the existing flocculent system at Mannering Colliery were completed in June 2015 following a field trial to determine the most effective flocculent product (based on site water quality conditions). The system implemented during the 2015 reporting period consists of solid flocculent blocks, situated at four locations leading into, or within, the sediment pond system. The flocculent blocks are situated at the following four locations:

- pipeline entry of hardstand area catchment into Pond 1;
- concrete drainage channel from the coal stockpile catchment into Pond 2 (Photo 1);
- outlet of the subsurface drainage system leading into Pond 1; and
- at the outlet of the concrete pipe transferring water into the final dam (Pond B).



Photo 1. Flocculent block located adjacent the coal stockpile area.

The intent of the revised flocculent system is to enable sediment laden water flows during rainfall events to dose the surface water running into the sediment ponds by dispersing small amounts of flocculent as the runoff flow passes across the solid (hydrophilic) flocculent blocks into the sediment dams immediately downstream. The system therefore only operates when sufficient rainfall has fallen to generate surface runoff, and continues to function while ever surface runoff into the sediment dam system continues. As a result the system is largely automated, when it rains it works, and simply requires the inspection and replacement of flocculent blocks as they are consumed. Inspections and maintenance of the flocculent system is completed weekly by environmental management personnel.

Both volumetric flow and water quality results from the licenced discharge point continue to be reported on a monthly basis on the Delta Coal website.

6.3 Surface Water Pollution

Monitoring of surface water discharged from LDP001 is undertaken by an external contracting company with sampling occurring monthly and weekly during discharges. **Section 7** contains an overview of the monitoring results and discusses water quality, including the total oil and grease monitoring which occurs weekly during discharges.

6.4 Groundwater Pollution

Water in underground workings is generated from ground water which is released from the strata into mine workings along with process water. The collected water is pumped through an extensive goaf system that allows filtration and settlement. The water is then pumped from the mine into the surface settlement pond systems prior to discharge via EPA licensed discharge point 1 (LDP001).

No evidence of groundwater pollution and no known groundwater pollution have been identified at Mannering during the reporting period.

6.5 Contaminated Polluted Land

Mannering has a number of primary diesel and oil storages, which are bunded. There were no significant spills during the reporting period or reports of polluted land.

A Phase One Environmental Site Assessment (ESA) has been completed which identified areas of potential contamination. Phase 2 investigations and assessment are likely to be carried out over these areas during the decommissioning stage at end of mine life. Potential areas of concern are the land surrounding the diesel storage and the surface workshop. The development of a Remedial Action Plan following the Phase 2 assessment would occur, if required, based on the results from the site assessment.

The NSW EPA requested a PFAS sampling report in 2018 and this sampling and subsequent report was provided.

6.5.1 Threatened Flora

In accordance with the EA (2007), Mannering's environmental footprint, specifically the surface facilities will remain unchanged and any mining activities undertaken at any point will have no noticeable surface implications. There will be no impact on existing flora or fauna within the Environmental Assessment Boundary. As such, no known impacts to threatened flora during the reporting period as a result of the Colliery's operations.

6.6 Threatened Fauna

No clearing works were undertaken during the reporting period and as a result potential to impact to threatened fauna or other native fauna was minimised.

As discussed in **Section 3.6** there were no significant changes to the existing infrastructure. The "site footprint" remained unchanged during the reporting year, that is, no clearing works were undertaken that would have impacted threatened fauna species.

6.7 Weed Management

Identification, treatment and ongoing monitoring are the key steps in managing weeds that surround the surface infrastructure area.

During the reporting period Delta Coal engaged Total Earth Care to undertake a significant weed control campaign across its operational areas during October 2019. The main weeds targeted at Mannering Colliery included Lantana, Radiata Pine, Bitou Bush, Crofton Weed, Castor Oil, thistle, Pampas Grass. Clearance of low-lying grasses and weeds in the vicinity of infrastructure areas was also undertaken. These treated areas are shown in **Figure 10**.

In addition to the weed maintenance works, a weed survey was undertaken in November 2019 by Total Earth Care. The objectives of the survey were to:

- describe the existing flora and fauna within the subject site based on current survey effort and database searches of the subject site and surveys of the wider study area;
- provide ground-truthed weed density maps, highlighting priority weeds under the NSW *Biosecurity Act 2015*;
- report any threats to Endangered Ecological Communities; and
- provide a program for ongoing weed management and/or eradication. This program is further is described in the Weed Action Plan (report dated January 2020) which is provided in **Appendix 4**.

Delta Coal will be continuing the weed control program in the 2020 reporting period.



Source: Total Earth Care (2019)

Figure 10: Mannering Colliery North and West Zones Weed Eradication, October 2019

6.8 Blasting

There was no surface blasting undertaken during the reporting period. Where required minor blasting was undertaken underground as part of the development of the link road project.

As also outlined in the EA (Hanson Bailey 2007), no blasting is required to be undertaken on the surface as part of the operation of the Project (i.e. no ventilation shafts are required to be constructed). As such no impacts to surface features will result from blasting activities associated with Mannering Colliery.

6.9 Operational Noise

The noise management plan for Mannering Colliery was revised during this reporting period. As part of this process, the noise monitoring frequency was increased from quarterly to monthly, which commenced in November 2019.

Noise monitoring locations are shown on **Figure 11**, and criteria are detailed in **Table 14.**

Table 14: Noise Monitoring Locations and Criteria for Mannering Colliery

Location	Coordinates	Day $L_{Aeq(15\ min)}$	Evening $L_{Aeq(15\ min)}$	Night $L_{Aeq(15\ min)}$	Night $L_{A1(1\ min)}$
RA1	364646E 6327221N	40	40	40	49
RA2	365164E 6328332N	45	45	43	47
RA3	365069E 6328953N	39	39	39	49

There were 36 community complaints received relating to noise during the reporting period. Further details on complaints are provided in **Section 9.1** and **Appendix 8**.

Noises monitoring results are collated in **Appendix 5**.

Noise emissions from Mannering Colliery are currently managed in accordance with the approved Noise Monitoring Program, which has included quarterly (Quarter 1, 2 and 3 2019) and monthly (November and December 2019) noise monitoring.

Operator attended surveys were undertaken at three monitoring locations (RA1, RA2 and RA3 figure 6.10). The noise predictions provided for the EA (*Hanson Bailey, 2007)* were used to set the noise limits which are detailed in PA 06_0311 and EPL 191.

In summary, within the AR reporting period, noise from Mannering was generally found to be inaudible at the three noise monitoring locations, during all periods. The exception to this was on 11 June 2019 as described below.

During the night period at RA1, site noise contributions of $L_{Aeq,15\ minute}$ 41 dB and $L_{A1,1\ minute}$ of 39 dB. Alarms and a general hum was noted.

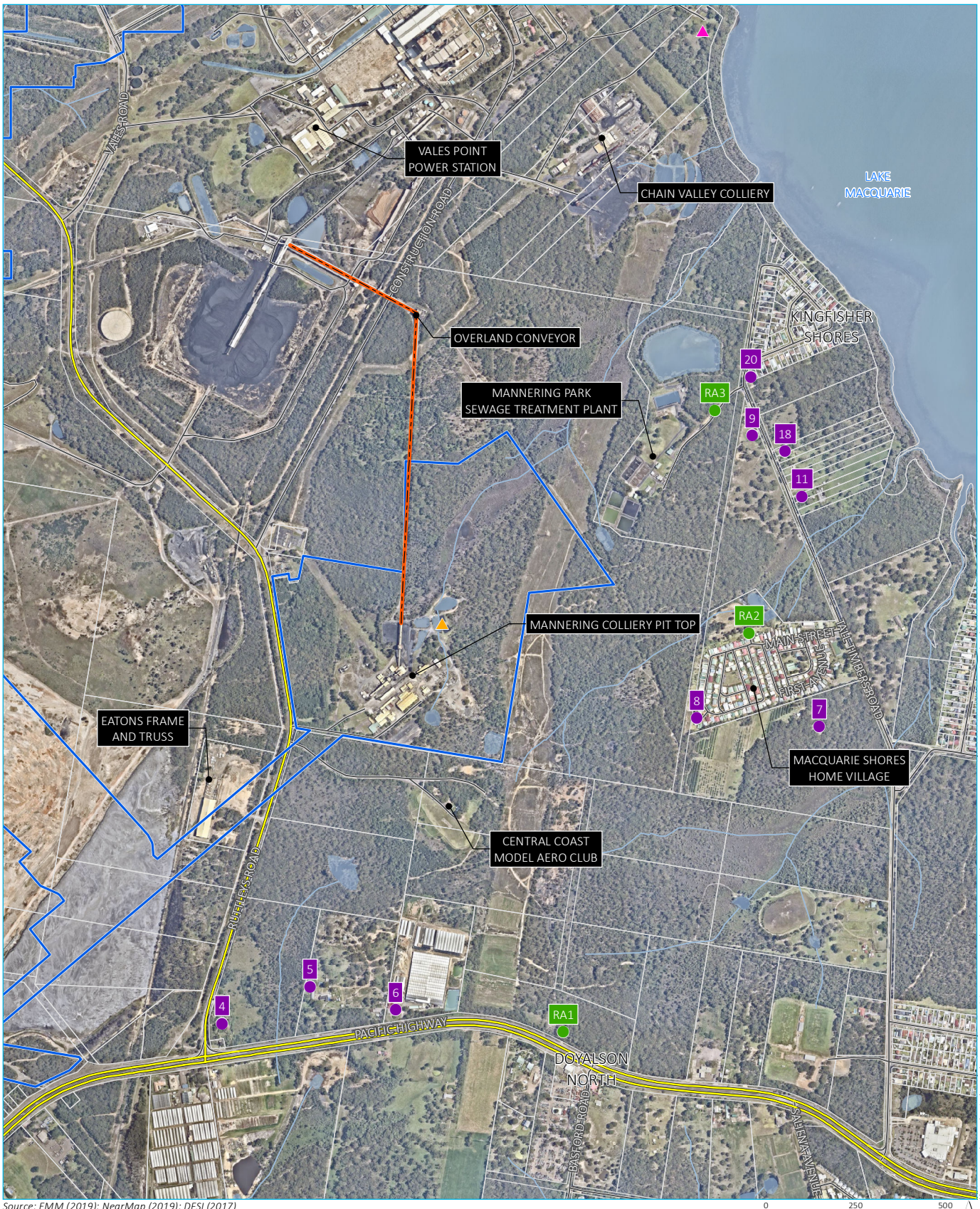
During the night period at RA2, site noise contributions of $L_{Aeq,15\ minute}$ 38 dB, $L_{A1,1\ minute}$ 39 dB. Conveyor noise was noted.

During the night period at RA3, site noise contributions of $L_{Aeq,15\ minute}$ less than 39 dB, $L_{A1,1\ minute}$ 56 dB. This was a 7 dB exceedance of the relevant limit. The acoustics technician noted that there was an alarm noise clearly audible. An emergency test was undertaken at the same time by underground technician. The review concluded that the alarm sound occurred around the time the exceedance was recorded. Based on the outcomes of the site inspection/audit undertaken it was identified that testing of the alarms were not required to be conducted at this time of the night.

Based on the EA (Hanson Bailey, 2007), these results indicate Mannering is expected to affect 69 dwellings up to 3 dBA, 50 dwellings up to 5 dBA and 33 dwellings up to 6 dBA, above the intrusive criteria. As stated in the EA (Section 7), Mannering only affects approximately 33 relocatable dwellings within Macquarie Shores Home Village by up to 1 dBA above the night time amenity criterion, with operational noise to all other relocatable dwellings, within criteria.

Noise monitoring results based on monitoring during the AR reporting period and the EA, generally reflect that Mannering Colliery is not the dominant source of environmental noise within the vicinity. Vales Point Power Station is audible to receivers to the north and the Pacific Highway is also audible from the south. This exceedance was an unusual event, and with Mannering noted as inaudible during the remaining noise monitoring in 2019.

In accordance with the Hanson Bailey (2007) report within the EA, and based on environmental assessment and historical noise levels it is considered that Mannering Colliery is operating within acceptable noise emissions.



Source: EMM (2019); NearMap (2019); DFSI (2017)

0 250 500 m

GDA 1994 MGA Zone 56

N

KEY

- Mannering Colliery project approval boundary
- Alignment of overland conveyor to VPPS
- Main road
- Local road
- Watercourse/drainage line
- Waterbody
- Cadastral boundary
- Assessment location
- Attended monitoring location
- Continuous monitoring location
- Meteorological station

Noise monitoring and assessment locations

Mannering Colliery
Noise monitoring program
Figure 2

EMM
creating opportunities

6.10 Noise Mitigation Projects

Noise monitoring at the site is usually undertaken on a quarterly basis in accordance with the requirements of the site major project approval (MP 06_0311) and the site's Noise Monitoring Program (NMP).

DPIE-Compliance have initiated Delta Coal to conduct a Noise Compliance Report with a noise monitoring methodology targeting the night-time period between midnight and 6am whilst the Mannering Coal Plant is running. This report was provided to DPIE on 27 September 2019 and is reproduced in **Appendix 6**.

In order for the noise monitoring period to capture appropriate operational conditions, the coal processing plant operator was instructed to operate the plant during the midnight and 6am period on this night.

On 15 August 2019 Delta Coal was advised by the independent noise monitoring consultant that levels of $L_{Aeq,15\ minute}$ of 41 dB and L_{Amax} of 51 dB had been measured at receiver RA2 (Macquarie Shores Home Village) as part of the night-time noise monitoring undertaken on 13 August 2019.

During the night-time monitoring the acoustics technician noted that the rotary breaker was clearly audible and the most dominant site-specific noise source evident during the monitoring period.

Results indicate that the conservative noise limit of $L_{Aeq,15\ minute}$ 39 dB was exceeded by 2 dB however the limit for Macquarie Shores Village of $L_{Aeq,15\ minute}$ 43 dB was not exceeded. Further, the $L_{A1,1\ minute}$ noise limit was exceeded by 4 dB on one occasion and 1 dB on one occasion.

A review of the site's operations and investigation with operational personnel to assist with determining the noise sources occurring at the time. The review concluded that the likely cause of the elevated noise was due to a significant mechanical failure of the bearings within the rotary breaker chain tensioner. This coincided with the chain related noises that the noise consultant observed during this noise monitoring event.

The rotary breaker chain tensioner was disassembled, removed from site and re-engineered. This replacement process took two shifts to complete so further noise compliance monitoring was postponed until the coal plant was up and running. Subsequent monitoring resulted in compliance with relevant limits at this location.

Activities undertaken during 2019 included an audit and monitoring of audible alarms on site.

Activities proposed for 2020 include major noise mitigation project where the surface rotary breaker will be decommissioned and the belt system realigned. As part of this project, a breaker will be installed underground.

Also proposed for 2020 is the installation of a real time noise monitoring system at Short Street, Macquarie Shores Home Village.

6.11 Visual, Stray Light

Mannering Colliery undertook an external lighting audit during the 2019 reporting period following a recommendation from the independent environmental audit. The lighting audit concluded that all lighting at Mannering Colliery complies with the Australian Standard 4282 – Control of Obtrusive Lighting Effects of outdoor lighting.

In accordance with the standard no lights are directed offsite or installed to shine above the horizontal. In addition the nearest residents to the site are approximately 800 m from the site. No lighting or visual amenity complaints were received during the reporting period and no additional lighting was installed during the report period.

A visual and stray light survey was submitted to DPIE in December 2019.

6.12 Heritage

As there have been changes to the operational areas on site during the reporting period and there are no identified Aboriginal sites within the pit top areas, there has been no potential for activities at Mannering Colliery to negatively impact on Aboriginal sites during the reporting period.

The Aboriginal Cultural Heritage Management Plan (ACHMP) was updated and approved in November 2019 and was completed in consultation with Aboriginal stakeholders and relevant government agencies.

The Non-Indigenous Cultural Heritage Management Plan (NICHMP) was updated and approved in November 2019. It identifies that there are no items of cultural significance within the pit top area. However, according to the environmental assessment within the EA (Hanson Bailey 2007), the following items have been identified of heritage significance within the Project Approval area:

- Morisset Hospital Precinct (listed under the NSW *Heritage Act* and Lake Macquarie City Council LEP); and
- Eaton's Bulk Store (listed under the Wyong Shire Council LEP).

There were no activities undertaken on site that had the potential for impact to either of these heritage features.

6.13 Spontaneous Combustion

Current stockpiling of coal is minimal, therefore reducing the risk of spontaneous combustion occurring within the pit top area.

Underground controls to mitigate risk of spontaneous combustion include:

- The mine has no known recorded spontaneous combustion events in its 50+ year history.
- Spontaneous combustion is considered at the mine design phase.
- The mine has developed Trigger Action Response Plans to identify and manage any deviation from normal operating conditions with respect to indicators of spontaneous combustion.
- The mine monitors gases using a multipoint tube bundle gas analysis system.
- The mine conducts regular underground inspections by Mining Officials.

The risk potential for spontaneous combustion associated with the coal stockpiles is assessed to be low. This determination was based on the following:

- the coal on the stockpile is assumed to be Fassifern Seam coal, since this is the only coal mined at the colliery since the early 1980's. The Fassifern Seam has a medium intrinsic spontaneous combustion reactivity based on R70 self-heating rate testing from the neighbouring Chain Valley Mine (around 3km distance - UniQuest Project No: 00293 Report – August 2012, attached);
- the stockpiles have been insitu for at least 3 years with no known reports or signs of spontaneous combustion;
- the stockpile is and will continue to be regularly inspected; and
- temperature probing of the stockpile undertaken during the reporting period indicated a maximum temperature of less than 25 degrees C. The stockpiled coal has very high moisture content since most stockpiles are water saturated under the surface. These two factors, when combined, significantly reduce the likelihood of the coal self-heating to the point of thermal runaway.

There were no instances of spontaneous combustion during the reporting period.

6.14 Bushfire

The pit top area contains vegetation which is considered to be bushfire prone land (Category 1) as shown on **Figure 12**. **Figure 13** shows the approved APZ area.

As required by the Land Management Plan for Mannering, regular inspections were undertaken to ensure bushfire risk is managed appropriately. Delta Coal has, and will continue to, implement appropriate controls to assist in the management of bushfires that threaten the Operation.

Although the end of 2019 was a particularly bad period for bushfires in NSW, there were no instances of bushfire in the immediate vicinity of the site.

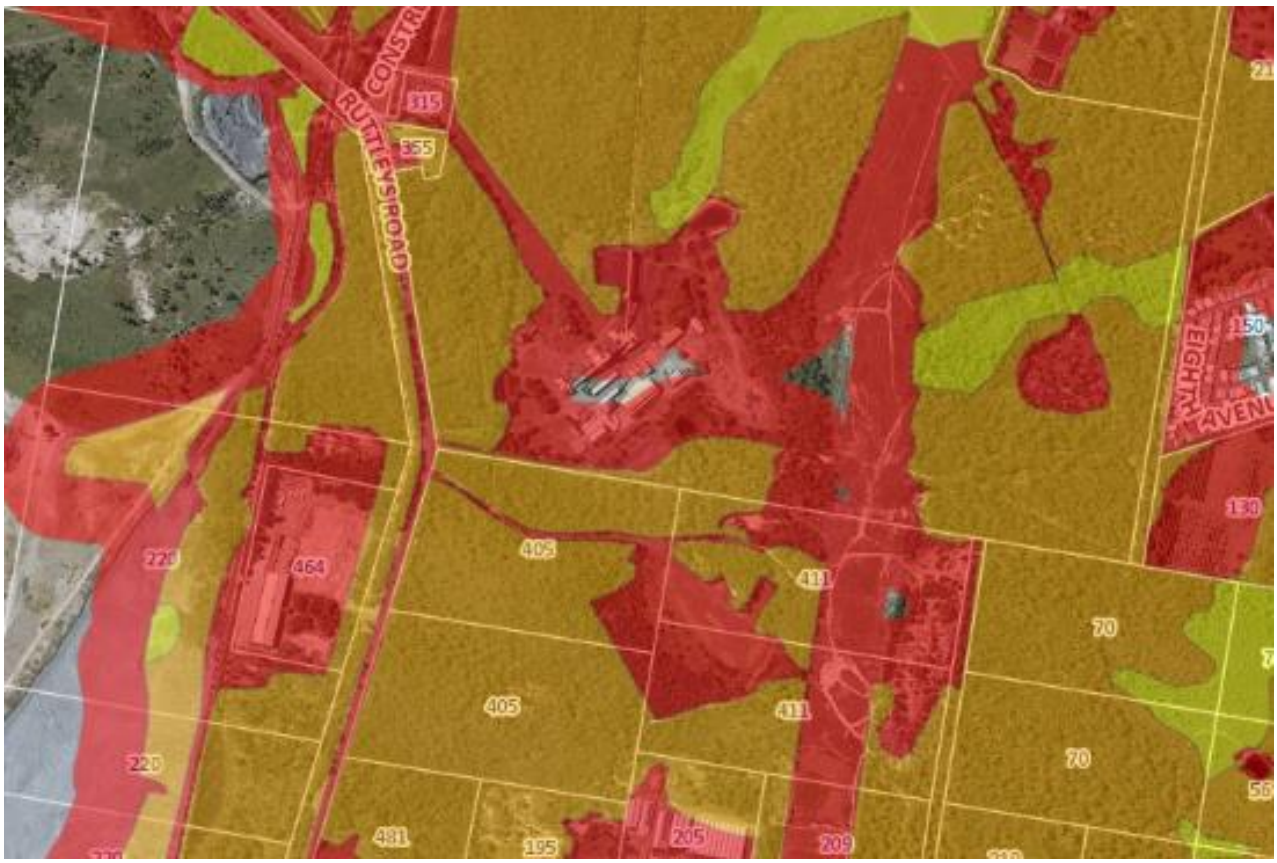


Figure 12: Bushfire Prone Land Map for Mannering Colliery and Surrounds (Source: Wyong Council, 2015)

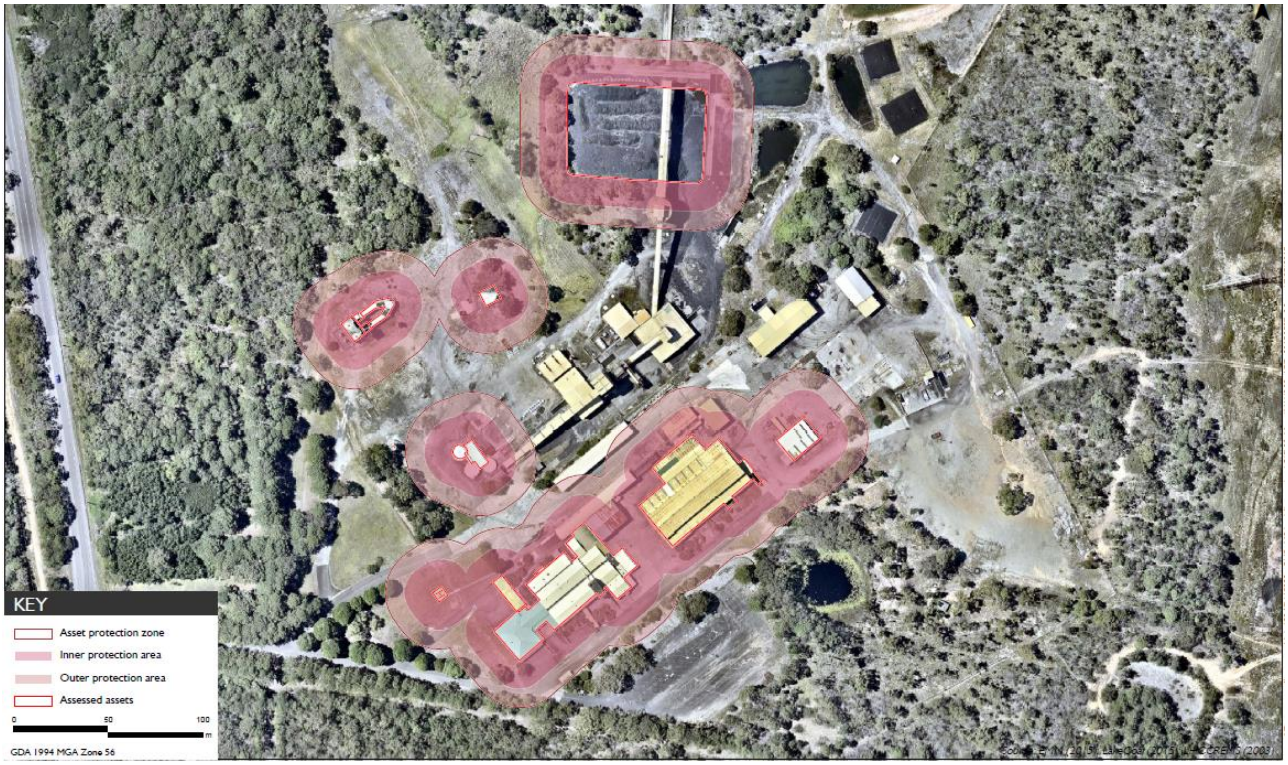


Figure 13: Approved APZ's for Mannering Colliery

6.15 Mine Subsidence

Previous subsidence calculations by Centennial Coal using Bord and Pillar mining methods on the approved project lease area give a subsidence figure of <20 mm of cumulative subsidence on the surface.

As a result of the commencement of mining operations associated with the Link Road Project (LRP) Delta Coal implemented a subsidence monitoring program during the reporting period (**Figure 14**). Monitoring points were installed around the VPPS switchyard in early 2016 prior to the commencement of the Link Road Project. Due to the sensitive nature of the infrastructure being undermined, subsidence monitoring was undertaken weekly within a 250 m radius of the mining activity, with monthly surveys carried out on the remaining survey marks.

The subsidence monitoring frequency was reduced after completion of mining, with the frequency of monitoring to be dropped back to an annual survey. A survey was carried out of the monitoring points on 18 April 2019, with the results shown in **Figure 15**. No discernible subsidence impact from the Linkage Road Project workings was observed in 2019.

Furthermore, outlined in the EA (2007), the predicted subsidence for the any mining operations at Mannering is less than 20 mm, with tilts typically less than 1mm/m and strains less than 0.3 mm/m. These predictions for any subsidence that may occur are within the impact limits at this site and no effect is likely to occur.

For further information on mine subsidence, see the attached CVC and Mannering 2019 Annual Subsidence Report in **Appendix 7**.

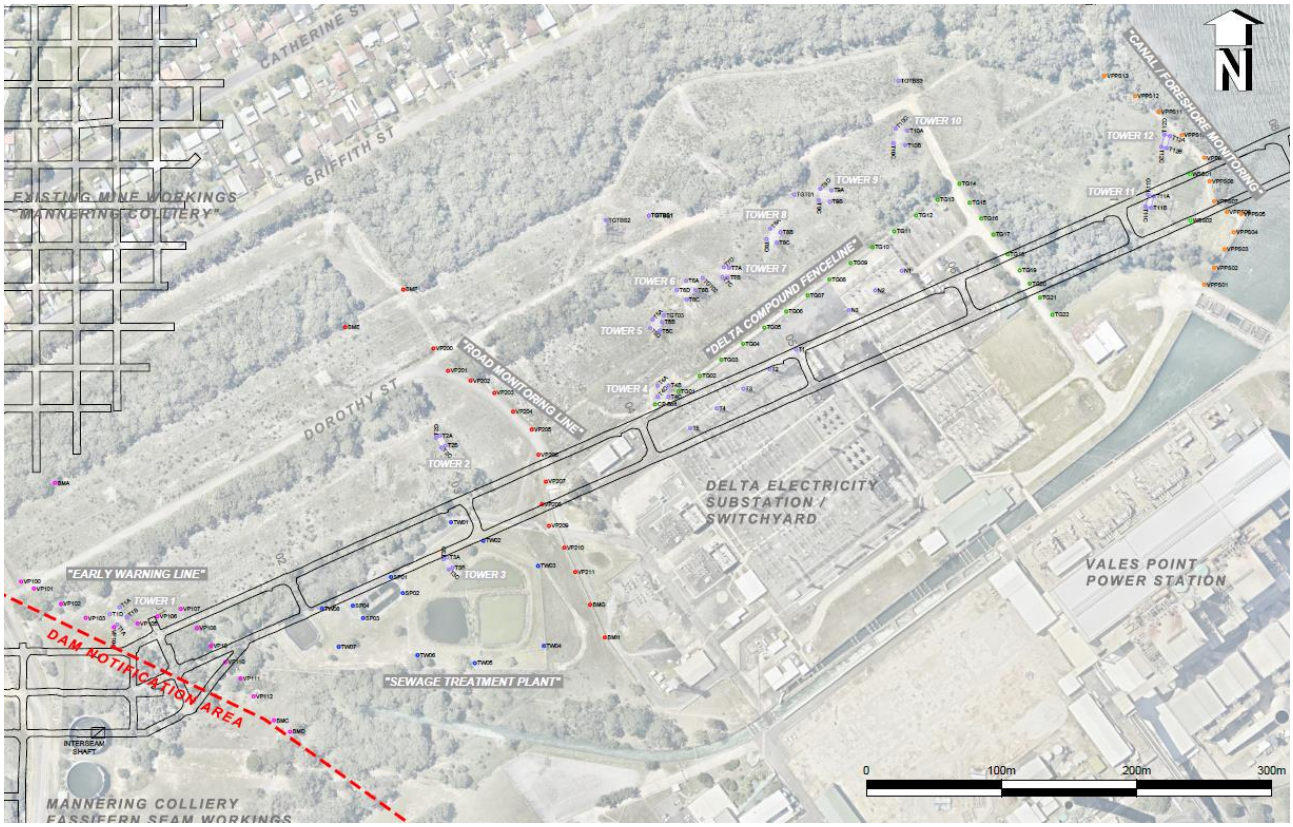


Figure 14: Vales Point Power Station Monitoring Locations

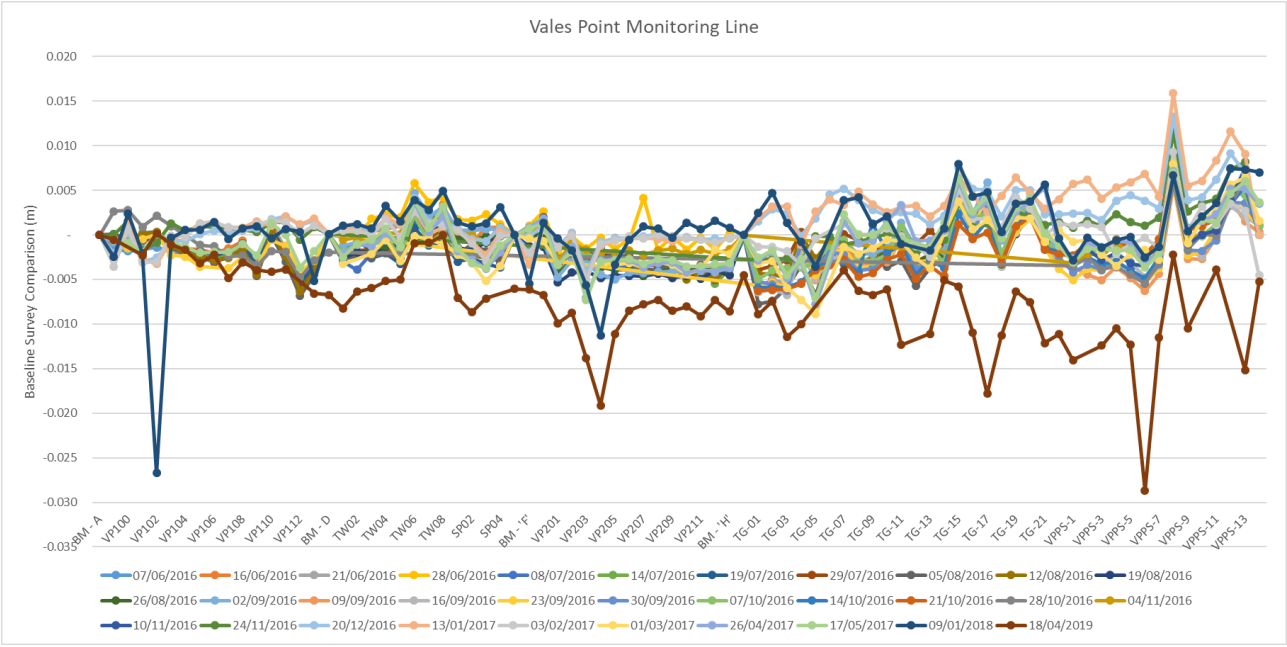


Figure 15: Vales Point Monitoring Line Subsidence Results

6.16 Hydrocarbon Contamination

All hydrocarbon materials are stored within a dedicated bunded store building, with emergency spill stations located adjacent to the area. Spill stations are checked weekly to ensure they remain adequately stocked and serviced as required by an external contractor.

Training for spill response is provided within the site induction program, which is a prerequisite before undertaking work at Mannering Colliery. The Colliery also has a Pollution Incident Response Management Plan in place (through its Existing Emergency and Duty Card system) to respond to pollution incidents. The Pollution Incident Response Management Plan was tested during the reporting period.

There were no incidents of hydrocarbon contamination, or any significant spills which occurred during the reporting period.

6.17 Methane Drainage

Methane levels in the Fassifern seam are a relatively low level content such that no pre or post methane drainage is required to maintain safe levels underground. All methane liberated in the mine enters the main ventilation air and is ventilated via the main fans.

The Mannering Colliery main fans continued to run during the reporting period, albeit at a lower flow than would usually be the case if production was occurring.

Monthly ventilation surveys, which document methane concentrations and mine ventilation flow also continued throughout the reporting period.

Methane emissions, and other greenhouse gas emissions, from the Colliery are reported annually to the Clean Energy Regulator in accordance with the *National Greenhouse and Energy Reporting Act 2007* (NGER Act). The emissions from the most recent reporting under the NGER Act are presented in **Table 15**. Note that the data from **Table 15** is presented through to the end of the 2019 financial year format as per NGER Act reporting requirements.

Table 15: Greenhouse Gas Emissions 1 April 2019 to 30 June 2019 Reporting Period

Mannering GHG Emissions	
Total (Scope 1 and 2)	26,306

6.18 Public Safety

Public safety is primarily a concern around the surface facilities at Mannering Colliery. There is one sealed access road into the area which has chain mesh and barbed wire security fencing and a set of lockable gates. The gates can be closed should the need arise to stop access to the site. These gates may be closed and locked at times of when there is no expected traffic, such as during the night time period but would otherwise remain open for deliveries, employee and authorised visitor access.

A security firm is engaged to undertake scheduled site security checks and remote alarm monitoring and reporting. The security checks are random, but generally undertaken at times of higher unauthorised access risk such as nights, public holidays and weekends.

Public access will be monitored and managed during operation of the mine through the standard incident reporting process which would include reporting of unauthorised access.

A visitor login system onsite ensures that authorised visiting members of the public are assigned a site contact and that upon login the site contact is notified immediately by email of the visitors' presence onsite.

During the reporting period there were no public safety incidents of injury to the public as a result of Delta Coal's operations.

During 2019 a security presence and patrols were maintained while Mannering Colliery was operating.

6.19 Other Issues and Risks

There were no other environmental issues or risks encountered during the reporting period.

6.20 Summary of Environmental Performance

In summary, environmental performance during the reporting period for Mannering is detailed in **Table 16**.

Table 16: Environmental Performance

Aspect	Approved criteria/ EIS prediction	Performance during the reporting period	Trend/ key management implications	Implemented/ proposed management actions
Noise	Section 7.5 Acoustics *(EA, Hanson Bailey 2007)*	2 exceedances during the reporting period.	Main trend 2019: Noise monitoring results based on monitoring during the AR reporting period and the EA, generally reflect that Mannering Colliery is not the dominant source of environmental noise within the vicinity. Vales Point Power Station is audible to receivers to the north and the Pacific Highway is also audible from the south. The exception to this was during specific events as described in **Section 10**. Hanson Bailey (2007) report within the EA, based on environmental assessment and historical noise levels that Mannering Colliery is operating within acceptable noise emissions	During the reporting period, there were two exceedances (see **Section 10**). Following the exceedance Delta Coal notified the DPIE - Compliance and the EPA. Actions taken are detailed further in **Section 10**. The noise management plan will continued to be implemented to avoid any future exceedances.
Blasting	N/A	N/A	N/A	N/A

Air Quality	Section 7.7 Air Quality *(EA, Hanson Bailey 2007)*	In accordance with approved criteria and EIS predictions	Main trend (depositional dust results 2019): Based on modelling in the EA, total dust emissions from Mannering are expected to be minor, at less than 2 grams/m^2/month. The depositional dust results for 2019 reflect this, remaining generally minor at most locations for the reporting period.	The air quality monitoring program, in accordance with the approved management plan, was ongoing at the end of the reporting period. Results are detailed in **Section 6.1**. Management of air quality will continued to be monitored in an effective manner.
Biodiversity	Section 7.12 Flora & Fauna *(EA, Hanson Bailey 2007)*	In accordance with approved criteria and EIS predictions/surveys. No predicted impact of biodiversity items was identified.	N/A	N/A
Heritage	Section 7.13 and 7.14 *(EA, Hanson Bailey 2007)*	In accordance with approved criteria and EIS predictions/surveys. No impact of aboriginal or non-aboriginal heritage items was identified.	N/A	N/A

7 Water Management

7.1 Licenced Mine Dewatering

Delta Coal holds a groundwater bore license WAL40461 under the *Water Act, 1912*, which permits the industrial dewatering of groundwater up to volume of 450 megalitres (ML) per year. The following details groundwater extraction volumes during the reporting period.

During the 2019 reporting period, approximately 716 kL of mine water was extracted per day from within the mine workings, before being pumped to the Mannering surface facilities, where it is discharged into sediment dams prior to being discharged into Lake Macquarie under the NSW Environment Protection Authority (EPA) Environment Protection Licence (EPL) No.191 as detailed in **Section 7.2**.

Delta Coal operated well within the groundwater extraction limits prescribed by WAL40461, utilising well under the licensed extraction volume. Groundwater extraction data is summarised in **Table 17** and **Figure** 16.

Table 17: Mannering Colliery Water Take - 2019 Reporting Period

Water Access Licence	Water sharing plan, source and management zone (as applicable)	Entitlement	Passive Take / inflows	Active pumping	TOTAL
WAL40461	Sydney Basin-North Coast Groundwater Source	450 ML	N/A	217 ML	217 ML

Figure 16 presents the daily dewatering volume from Mannering Colliery during the 2019 reporting period.

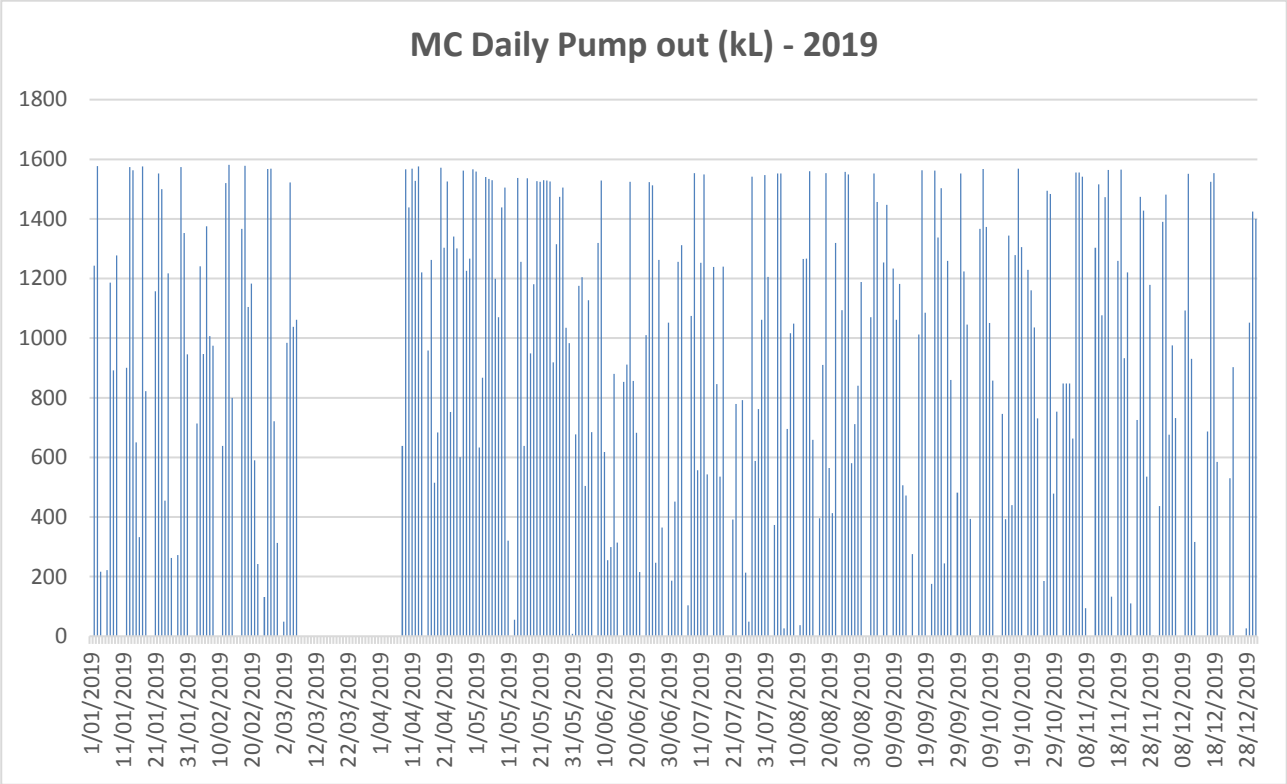


Figure 16: Daily groundwater extraction volumes (2019 reporting period)

7.2 Licenced discharge under EPL 191

Delta Coal holds EPL 191, which licences the discharge of up to 4,000 kL per day from the site.

A real time solar powered volumetric discharge monitoring system was installed in November 2016. This unit has real time telemetry and is linked to a website repository where discharge information can be viewed wirelessly.

During the 2019 reporting period the daily average discharges were 849 kL with a maximum of 3,458 kL and a minimum of 0 kL. The daily average during active pumping was 1061 kL. The total volume discharged over the reporting period was 310 ML.

Figure 17 presents the daily discharge data during the reporting period, daily discharge volumes are also reported in the monthly reports on the Delta Coal website. During March and April the main underground pump to the surface was not working hence the absence of groundwater extraction during this period.

The *Mannering Colliery: Continuation of Mining Environmental Assessment* by Hansen Bailey (March 2007), states the following summary of relevant predictions and trends associated with water management at Mannering Colliery;

- The critical issue for the water management system will be its ability to continue to control and discharge excess water which may be generated during mining. The water balance for the Project has been assessed for the maximum coal production of 1.1 Mtpa which will correspond to the maximum surplus water inflow;
- The mine water surplus predicted to occur is approximately 660 ML/annum, in a year of high rainfall which corresponds to an average daily discharge volume of approximately 1.7 ML.
- Mannering's EPL 191 licenses discharge up to 4 ML per day and will be required to be maintained due to the variability of daily discharge volumes from site.
- The estimated maximum inflow from the Fassifern Seam will increase from the current 0.76 ML/day to about 1.03 ML/day. The total volume of water inflow from both the Great Northern and Fassifern

Seams will increase from the current 1.14 ML/day to 1.41 ML/day which equates to approximately 515 ML/annum.

- Mannering's EPL 191 permits a discharge of 4 ML/day and based on the above analysis it is concluded that the Project will not result in this licensed discharge volume being exceeded, under normal climatic conditions.

Based on these predictions (**Table 18**) and trend analysis data, Mannering Colliery has been operating within the licenses levels and conditions.

Table 18: Predicted Water Generation (Environmental Assessment, Hansen Bailey, 2007)

Water supply sources	Annual water volume (ML)		
	Dry year (10th percentile rainfall)	Average year (Average rainfall)	Wet year (90th percentile rainfall)
Surface water run-off	55	80	105
Process mine water	40	40	40
Groundwater inflow	515	515	515
Total surplus	610	635	660

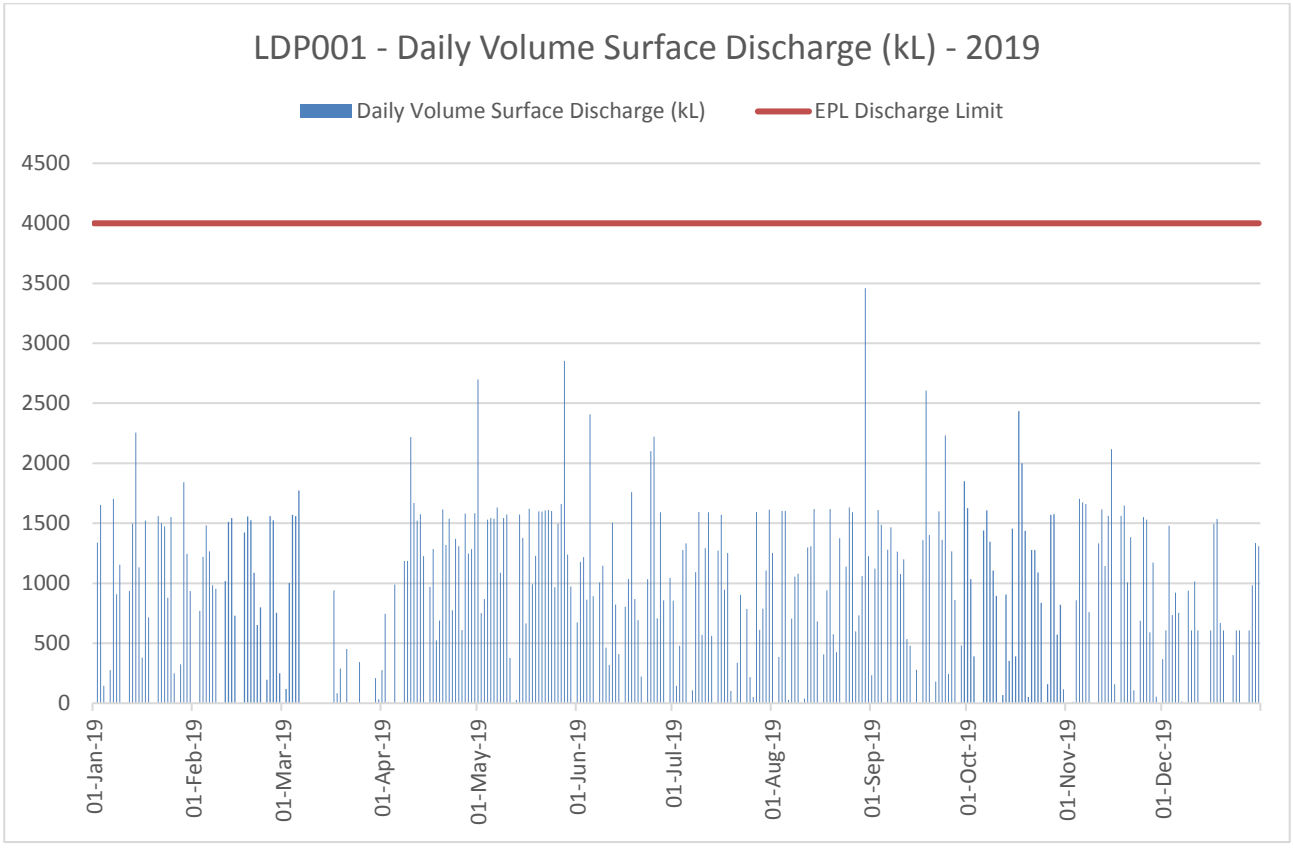


Figure 17: Surface Discharge Volumes - 2019

As evident in **Figure 17**, there were no exceedances of the site's discharge limits during the reporting period.

Extensive mining has occurred over time at Mannering Colliery. For about 60 years, mining operations have occurred, which has led to current depressurisation of both seams with the potentiometric surface declining to the base of the seams, where coal has been extracted. According to the EA (*Hanson Bailey, 2007)*, current on-going mining in the area suggests that at a regional level the piezometric surface/groundwater level will remain depressed into the future.

7.3 Water Quality

In accordance with EPL191, water quality monitoring was conducted at a weekly interval. Water quality criteria as per condition L2.4 of EPL 191 are detailed in **Table 19**.

Table 19: Water quality limits from EPL 191

Pollutant	Concentration limit
pH	pH range 6.5 to 8.5
Total suspended solids (TSS)	50 mg/L
Oil & grease	10 mg/L

Weekly water quality monitoring results for pH, total suspended solids (TSS) and oil and grease along with associated limits at the licenced discharge point 1 (LDP001) are shown in **Figure 18**, **Figure 19** and **Figure 20**.

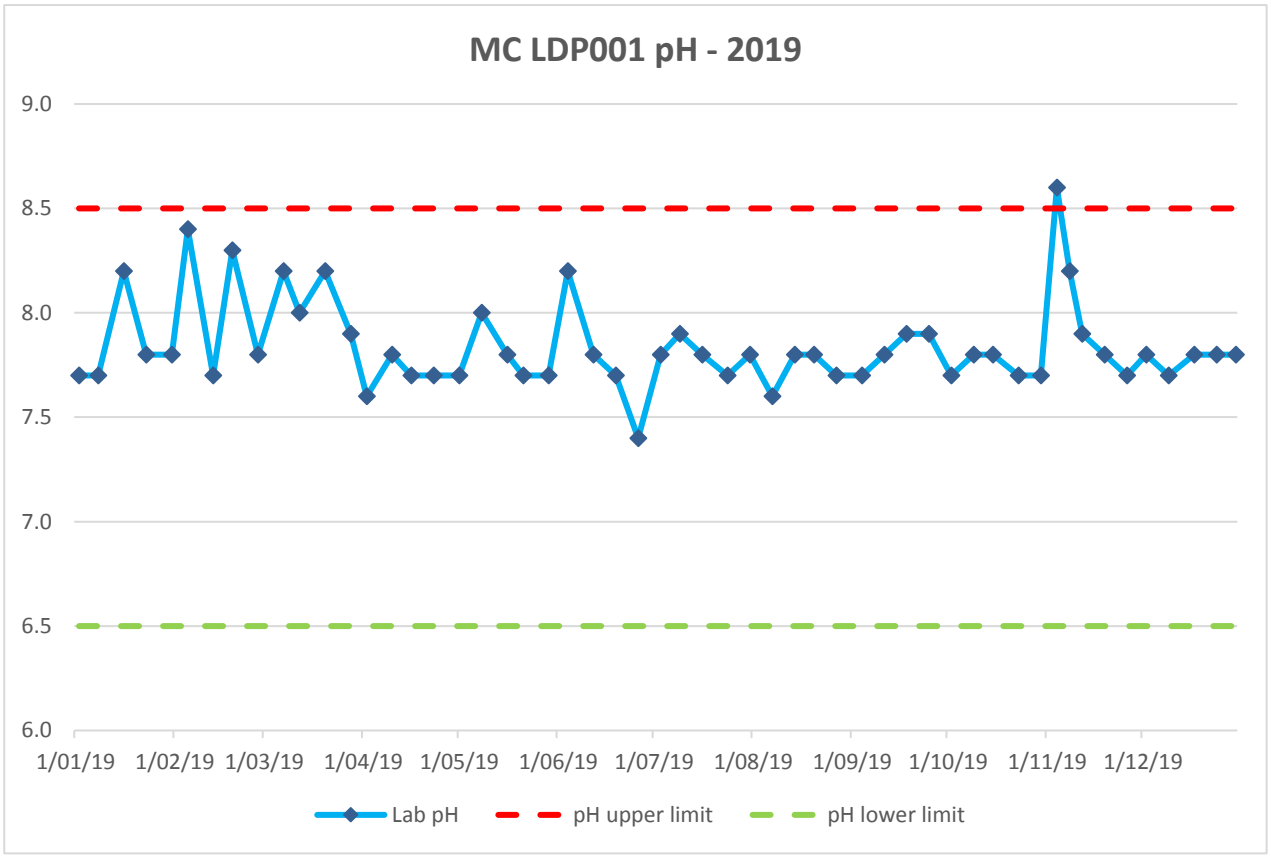


Figure 18: pH monitoring results at LDP001

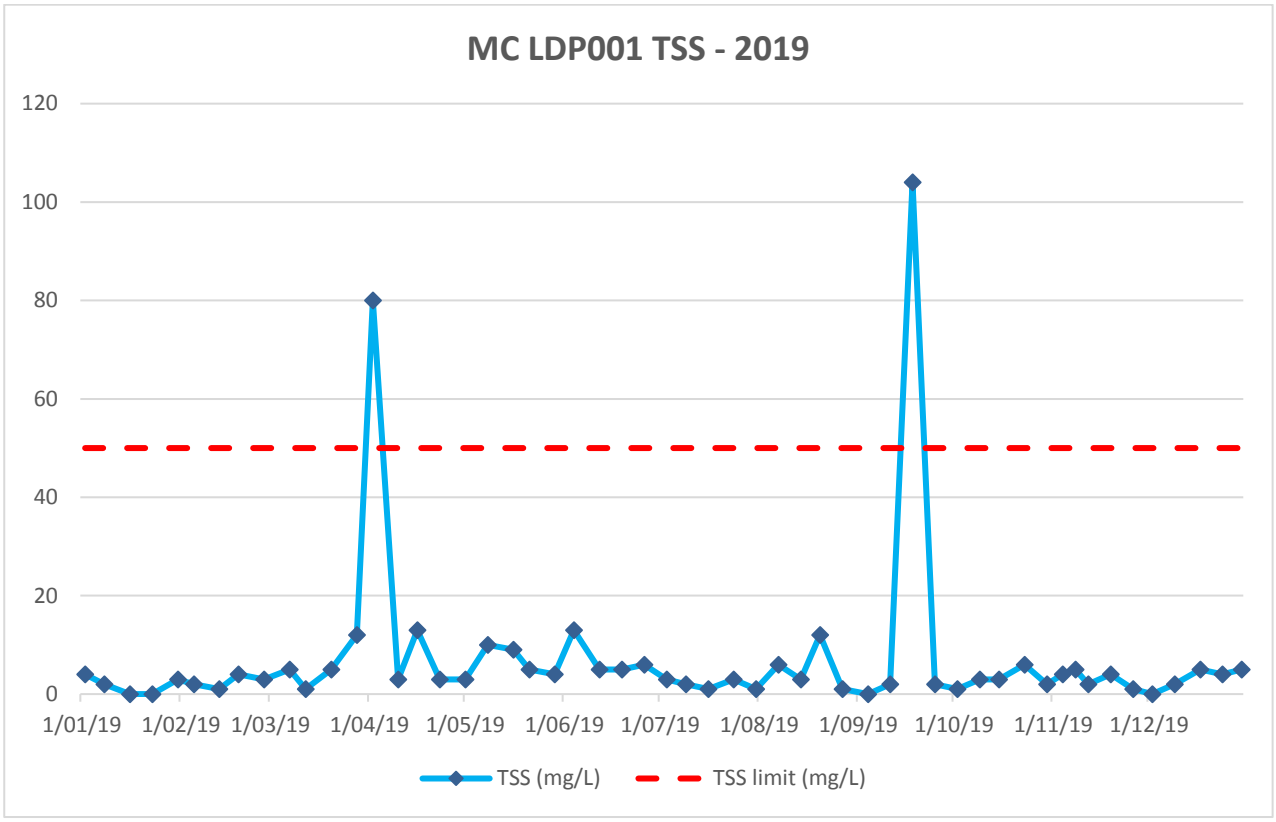


Figure 19: Total suspended solids monitoring results at LDP001

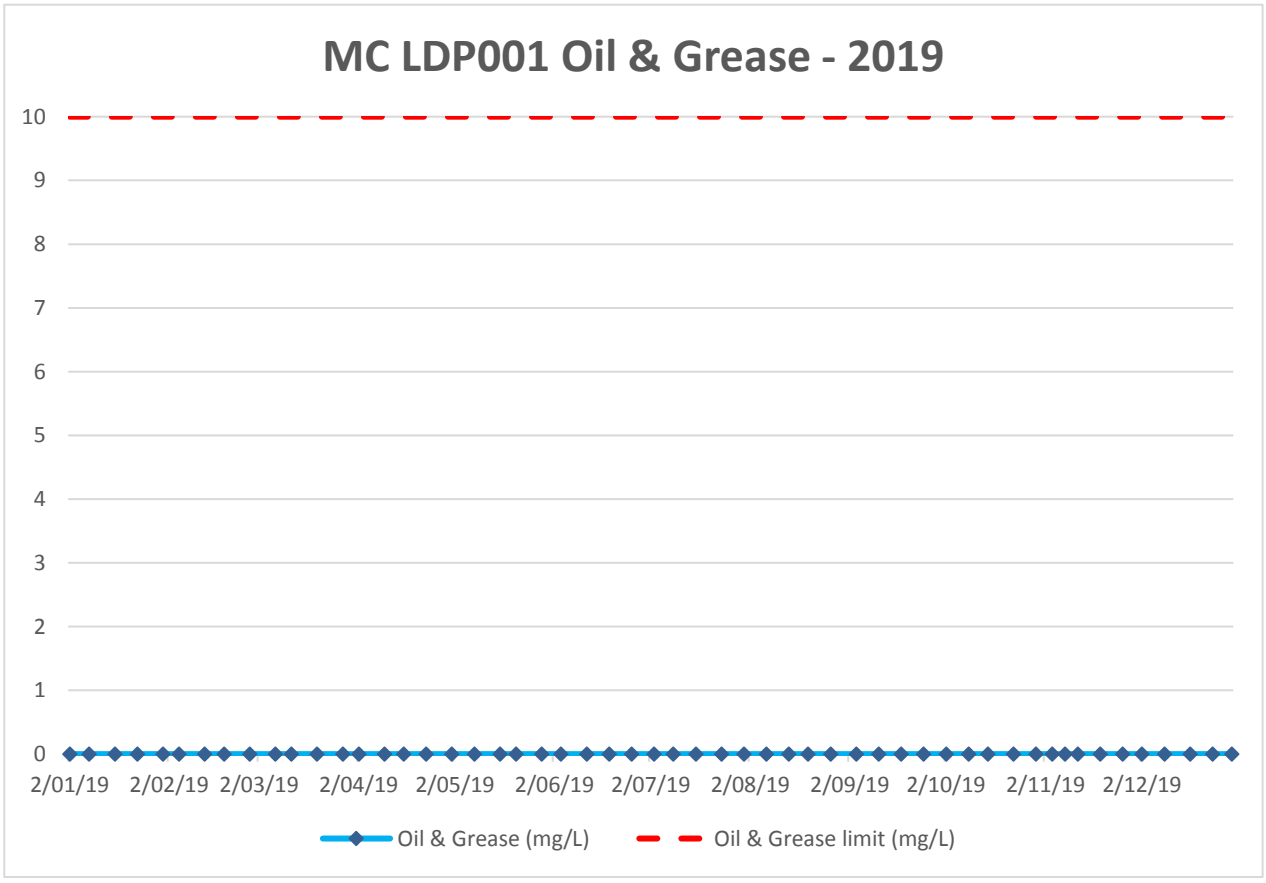


Figure 20: Oil and grease monitoring results at LDP001

Note that all oil and grease results less than the laboratory reporting limit of <5 mg/L is recorded as a zero result in **Figure 20**. There were no oil and grease results above the trigger value recorded during the reporting period.

During the reporting period there were no exceedances of the water quality criteria at the licenced discharge point for oil and grease. However, as detailed in **Figure 18** and **Figure 19** there were three exceedances of water quality criteria during the reporting period, being for pH and TSS. Details on additional measures taken to manage total suspended solids levels are detailed in **Section 6**.

The EA by Hanson Bailey 2007, does not detail any exact monitoring data to compare, however it outlines that random sampling of surface water quality was undertaken in November 2006 at LDP001 and relevant sites in Lake Macquarie. The EC level in Lake Macquarie recorded at the time indicated that it is more saline than the mine water discharged upstream at LDP001, with a recording of 24,900 uS/cm at the discharge point in comparison to 39,000 uS/cm at Lake Macquarie.

From this result, it is predicted that water from Mannering is of higher quality, has lower salinity levels than downstream waters and generally has no predicted significant adverse impacts on either downstream or natural environments. In accordance with the EPL 191, Mannering will continue to discharge off-site regularly and monitor results.

7.4 Long Term Water Quality

To assess any long term trends in both water quality and quantity, six years of data is presented for the Downstream and LDP001 monitoring locations for pH (**Figure 21** and **Figure 22**), total suspended solids (**Figure 23** and **Figure 24**) and oil & grease (**Figure 25** and **Figure 26**).

From the below figures it is evident that despite one TSS result over 50 mg/L and one elevated result for pH at LDP001, there are no significant trends or changes in the water quality parameters. The source of the one elevated result for oil and grease at the downstream monitoring location is not known.

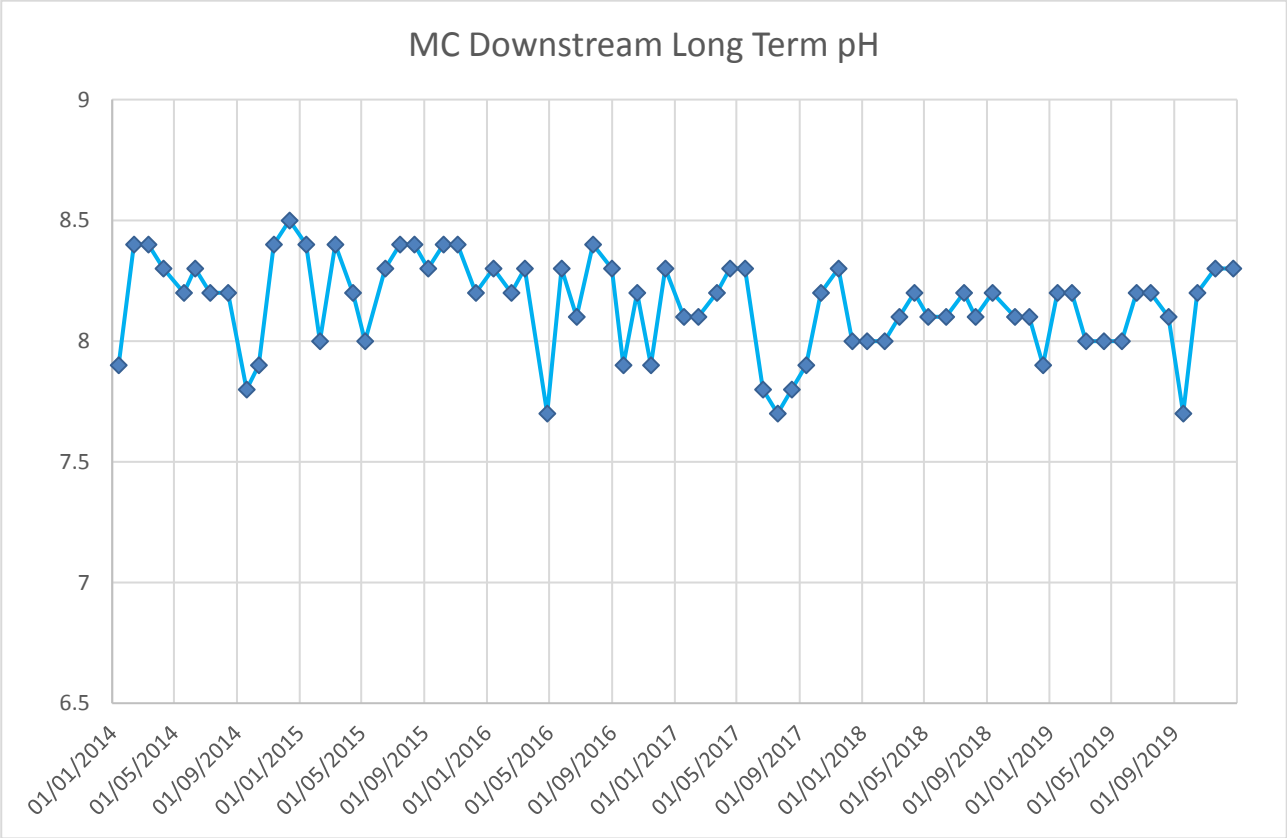


Figure 21: Mannering Downstream Long Term pH

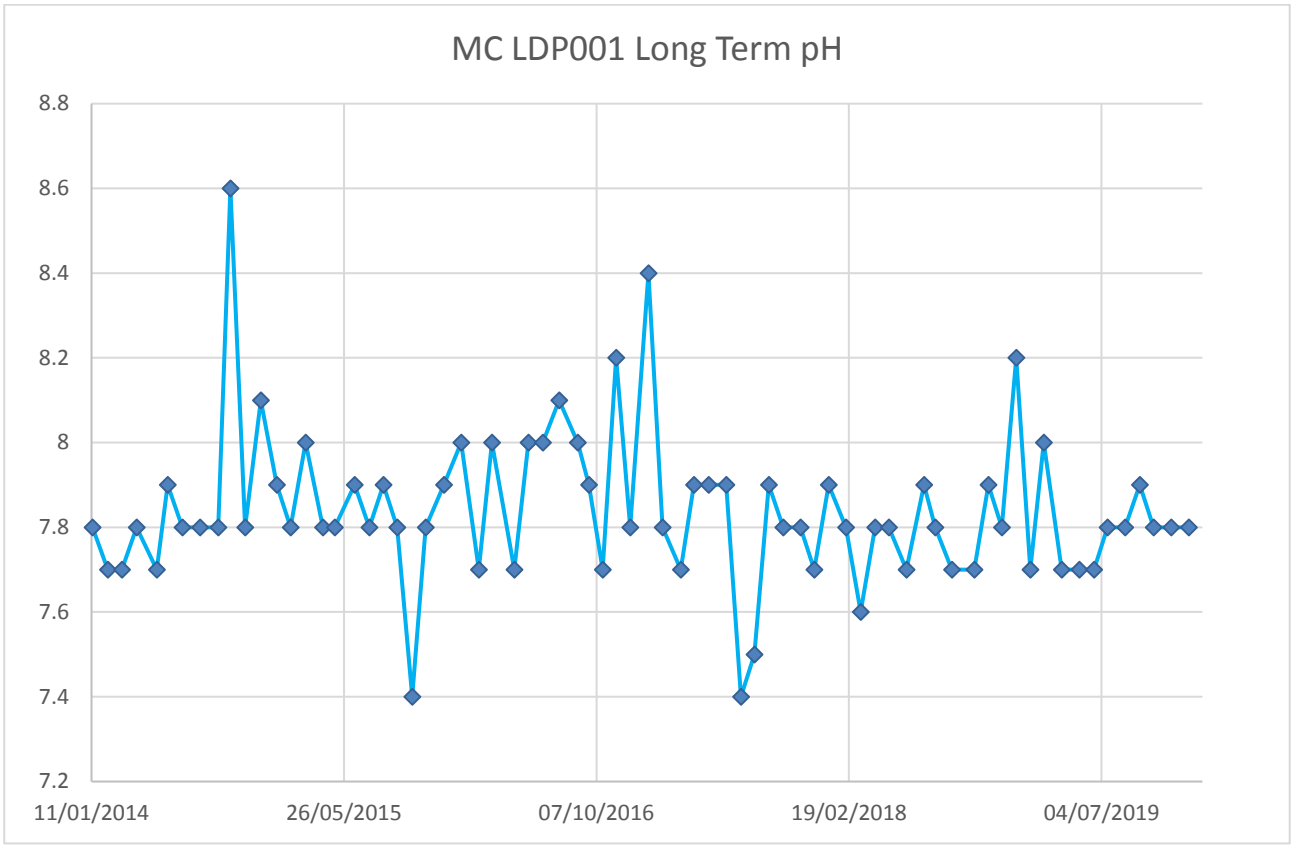


Figure 22: Mannering LDP001 Long Term pH

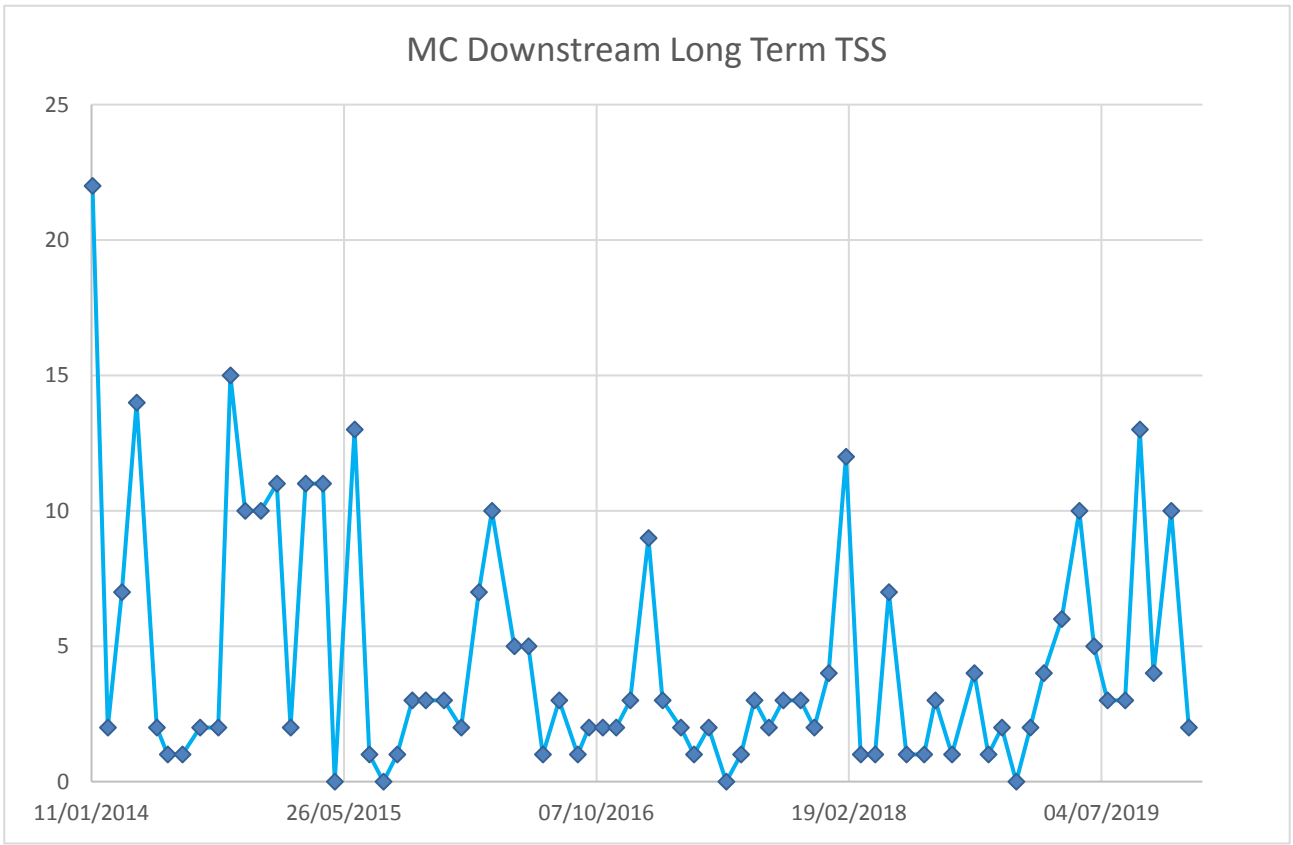


Figure 23: Mannering Downstream Long Term TSS

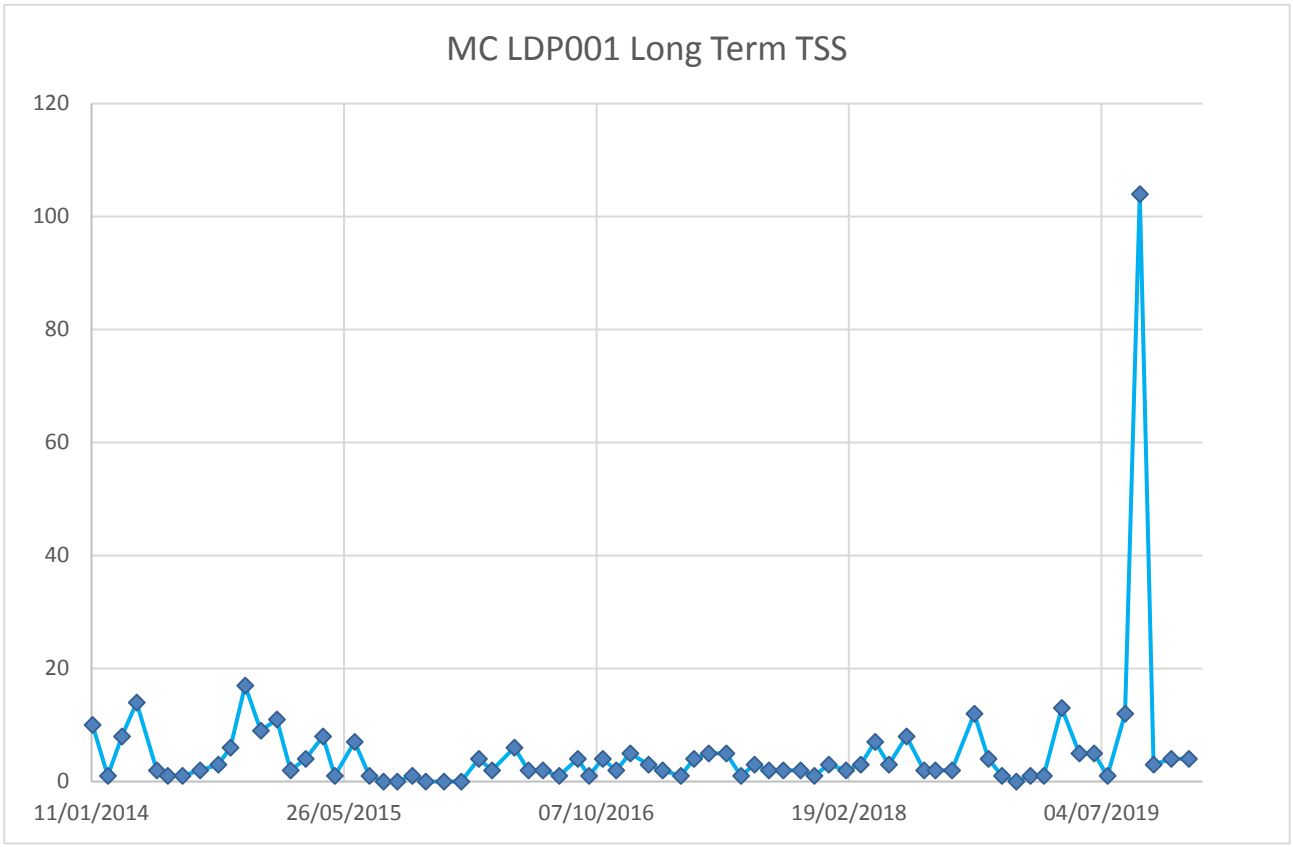


Figure 24: Mannering LDP001 Long Term TSS

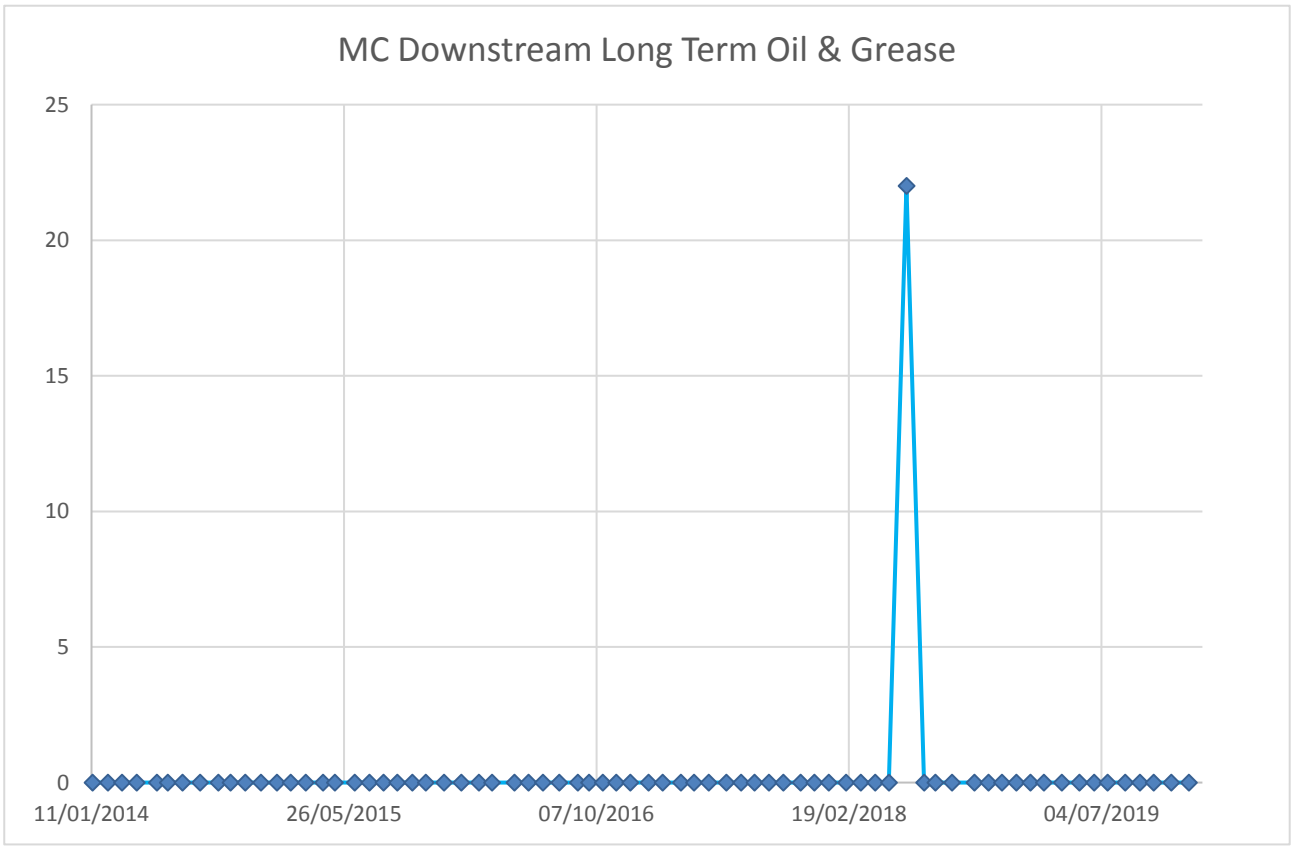


Figure 25: Mannering Downstream Long Term Oil & Grease

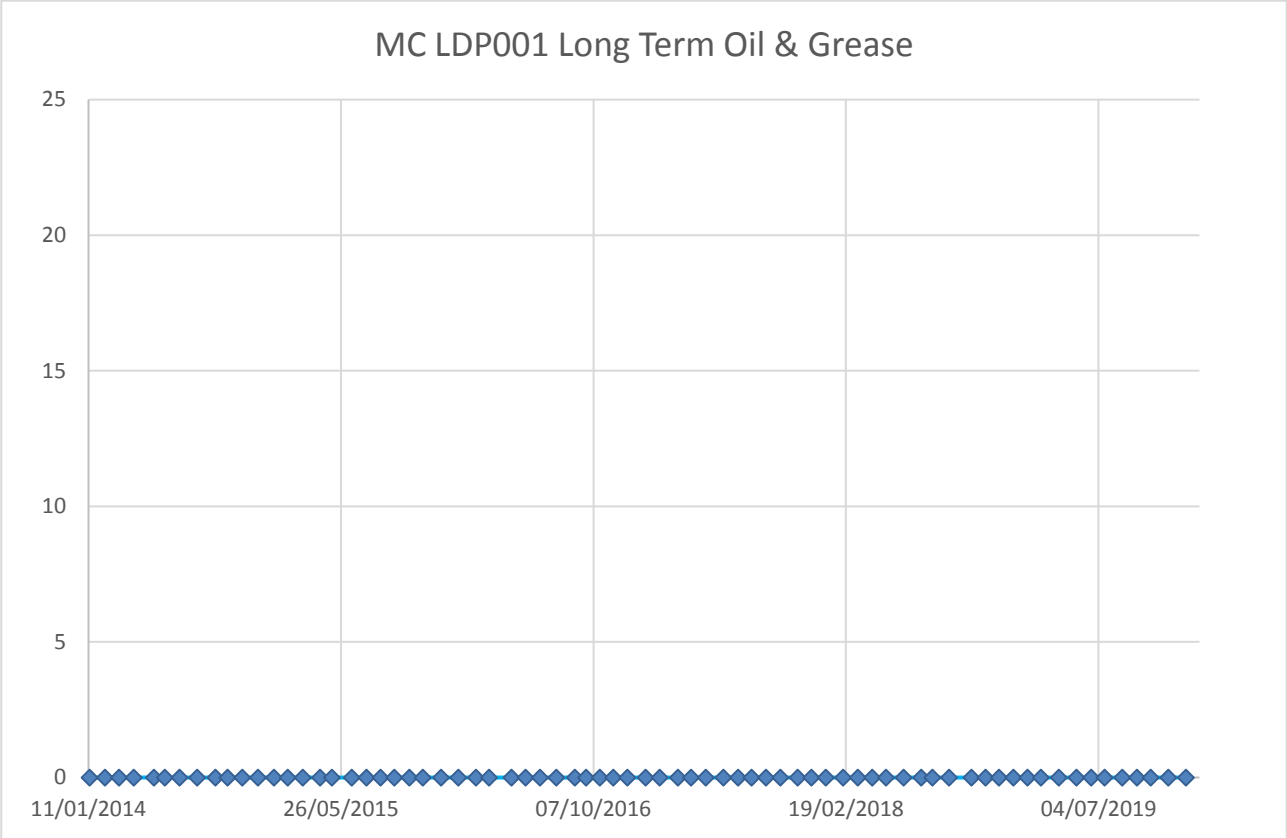


Figure 26: Mannering LDP001 Long Term Oil & Grease

7.5 Stream monitoring

As detailed in the Water Management Plan (WMP) for Mannering, monitoring of the channel stability and potential erosion and scour impact to the unnamed creek downstream of LDP1 is required. The monitoring inspections involve undertaking a visual assessment and photographs of the creek on a 6-monthly basis to identify any potential instabilities that may form as a result of operations. The results of the visual inspection of watercourse stability are recorded on a pro-forma field inspection sheet.

Monitoring has been undertaken at four locations along the unnamed creek since 2014. There has been no noticeable degradation of stream and riparian health during the reporting period.

The triggers and responses provided in Table17 of the WMP, are referenced in order to determine the appropriate actions in response to any instabilities identified as a part of the monitoring program.

7.6 Potable Water Use

Potable water use during the reporting period was 68.6 ML, which was a decrease on the previous reporting period of 92.8 ML. There was more coal handled during the reporting period. Potable water use from 2012 to 2019 at Mannering is detailed in **Figure 27**.

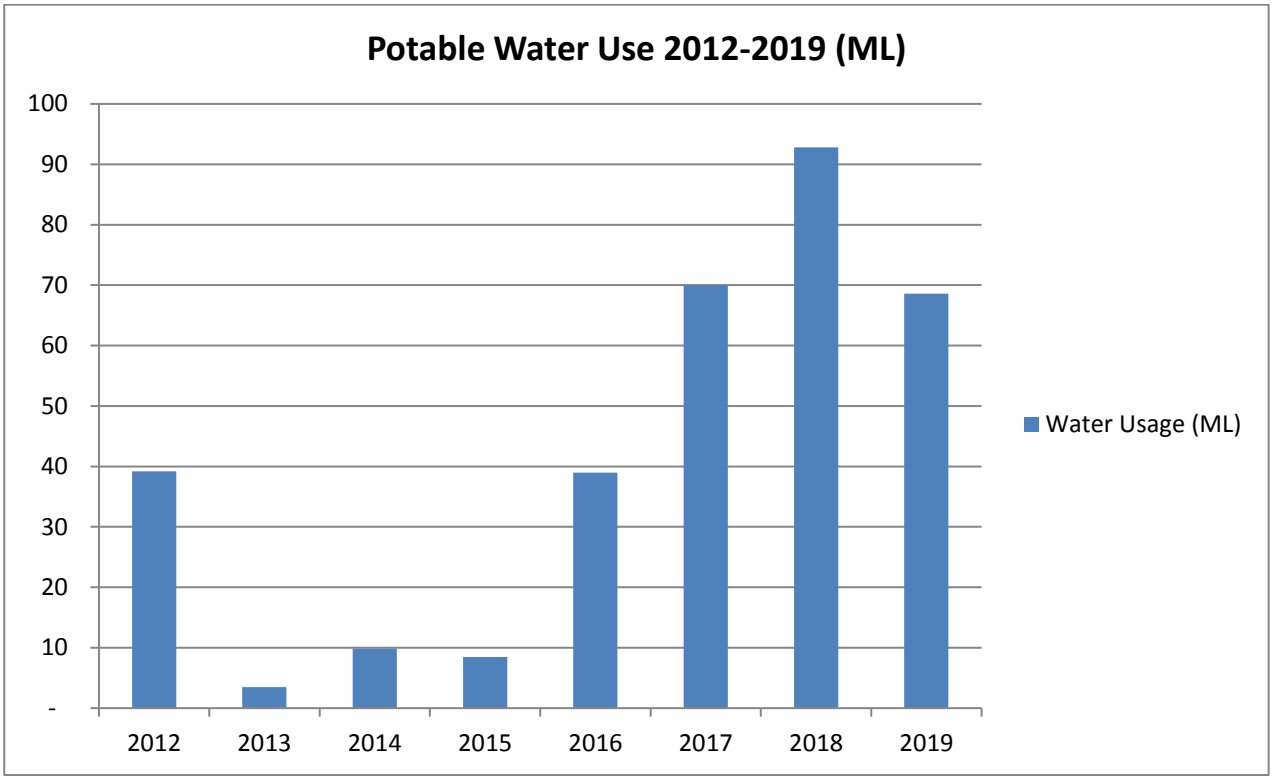


Figure 27: Potable Water Use

7.7 Surface Water Management

The site surface water management system comprises both clean and dirty water catchments. A number of water management diversions direct clean water around the site to avoid increased hydraulic load on the sedimentation dams that treat the site dirty water prior to discharge.

Clean water from areas unaffected by the operational activities and water that runs onto the site area due to the contours of the surrounding land, i.e. primarily areas to the south and east, are diverted through clean water management structures (such as diversion drains and culverts under roads), enabling the water to ultimately report to Pond 1. The clean water flow paths are shown on **Figure 28**.

The dirty water management system comprises a number of both surface and subsurface management structures to control the flow of water and ultimately direct the dirty water into the site sediment dams. **Figure** 28 shows the dirty water flow paths.

The sediment dam system comprises a total of four main dams, labelled Pond 1, Pond 2, Pond 3 and Pond B, as shown on **Figure 28**. References to “Pond” and “Dam” are used interchangeably and refer to the same water management structures.

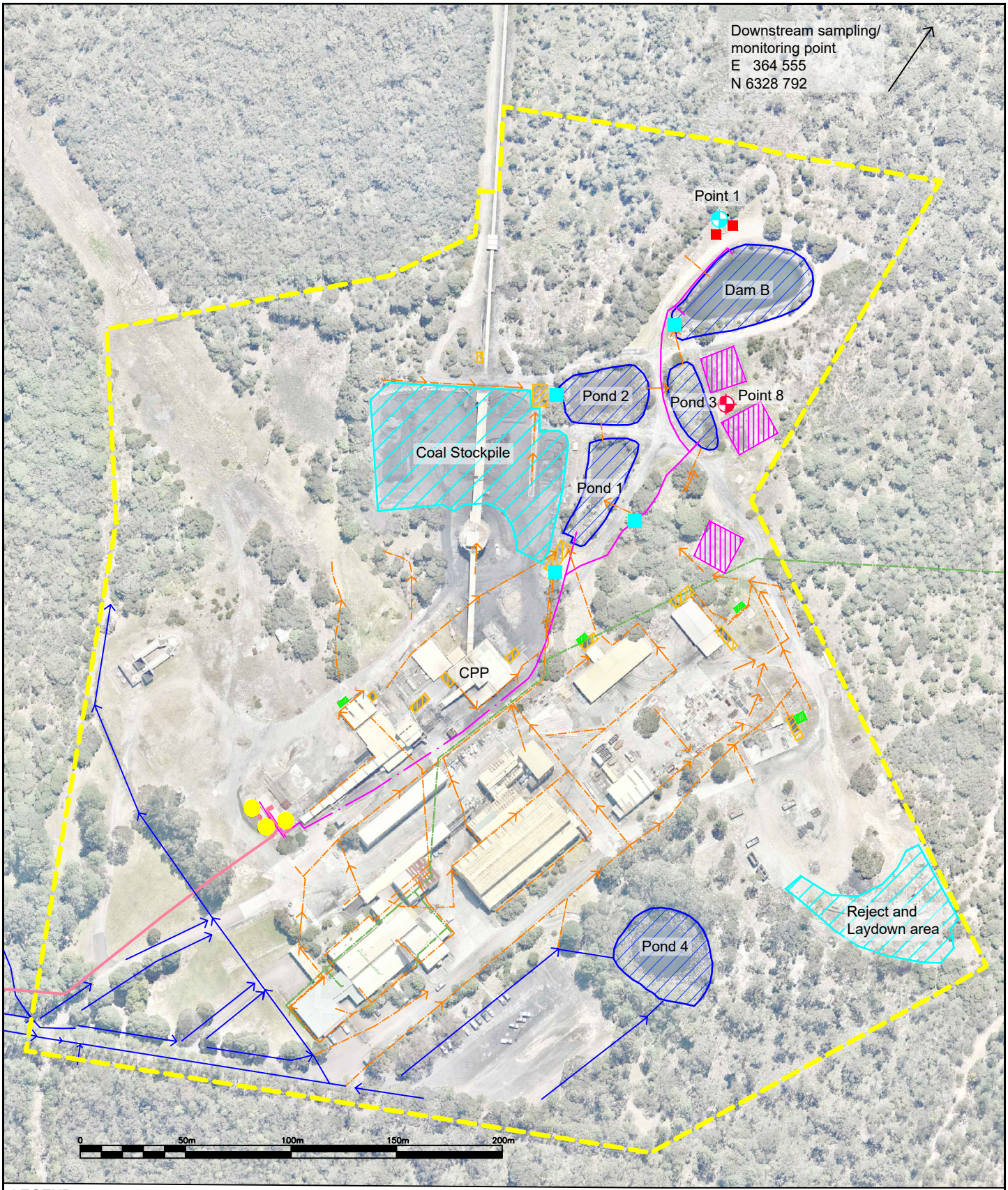
As shown on **Figure 28**, water from the dirty water catchments enters into Pond 1 or Pond 2, when both these dams are full water overflows into Pond 3. Once Pond 3 reaches capacity it subsequently over flows into Pond B. Finally, when Pond B reaches capacity it overflows out LDP001.

A series of interconnecting pipes and valves also allows Pond 2 to be drained into Pond 3, Pond 3 to be drained into Pond B and Pond B to be discharged via LDP001. These valves are generally kept shut to maximise storage capacity of the dams, but are opened after rainfall events, once water quality is suitable for discharge, to minimise water the volume of water stored and again increase storage capacity of the dams for the next rainfall event.

Water underground is derived from two sources: excess process water which is generated from mining operations and ground water which is released from the strata into underground mine workings. The collected water is pumped through an extensive goaf system that allows filtration and settlement.

The mine water discharge line consists of the main pump, flow meter, turbidity meter, valves and outlets. The mine water can be directed to pond 1, 3, B or LDP001. Under normal operation the mine water will be directed to LDP 1 to maintain capacity in the sediment dams for rainfall events.

Management of the 4 interconnected ponds is undertaken via weekly inspections and management as required following rainfall events. The intent of this active management is to maintain dams at their lowest possible levels whilst adhering to water quality criteria at the discharge point (LDP001).



LEGEND

- Sedimentation Basins
- Dam Desilt laydown
- Stockpile Area
- Silt Traps/Sumps
- Clean water diversion drains
- Dirty water flow drains
- Sewer Pipeline
- Potable Water Supply Pipeline
- Underground Pumpout Pipeline
- Water Flow meter
- Potable Water Tanks
- Floc block baskets
- EPA License Discharge Point
- EPA Weather Monitoring Point
- EPL Premises boundary
- Oily water separator

DELTA COAL MANNERING COLLIERY	SCALE: AS SHOWN	DATE: 29 November 2019	
	DRAWN: R Tubridy	DRG NO: A1S0037	
FIGURE 2 - SURFACE WATER MANAGEMENT STRUCTURES	CHECKED: C Armit	REV NO: 1	Delta coal
	SIGNED: -	SIZE: A4	

8 Rehabilitation

8.1 Buildings

Mannering Colliery surface infrastructure comprises:

- mine entry / exit for personnel and materials (1:3.5 Decline) including a winch house;
- coal conveyor drift;
- limited coal-handling facilities for breaking, crushing, sizing and storing product;
- coal stockpile and reclaiming system;
- overland conveyor systems;
- administration and bathroom facilities;
- workshop facilities;
- pollution control apparatus and structures;
- enclosed and bulk open material and equipment stores facilities;
- mine ventilation;
- air compressors; and
- internal roads and car parking facilities.

The total area of effect of the Mannering surface infrastructure is approximately 13.2 hectares.

8.2 Rehabilitation of Disturbed Land

There was no significant rehabilitation works on disturbed lands during the reporting period (**Table 20** and **Table 21**), which relates to the fixed nature of the surface infrastructure and that upon recommencement of mining activities all existing infrastructure and lay down areas will again be required for use.

Table 20: Summary of rehabilitation at Mannering Colliery

	This period (2018)	Next period (2019)
A. Total mine footprint (managed by Delta Coal)	Approximately 13.2	Approximately 13.2
B Total active disturbance	13.2	13.2
C. Land being prepared for rehabilitation	Nil	Nil
D Land under active rehabilitation	Nil	Nil
E Completed rehabilitation	Nil	Nil

Table 21: Maintenance activities on rehabilitated land at Mannering Colliery

	Area Treated (Ha)		
Nature of Treatment	**This period (2019)**	**Next period (2020)**	**Comment/Control Strategies/Treatment Detail**
Additional erosion control works (drains re-contouring, rock protection**)**	0	0	No additional works required.
Re-covering (further topsoil, subsoil sealing etc.)	0	0	N/A
Soil treatment (fertiliser, lime, gypsum etc.)	0	0	N/A
Treatment/management (grazing, cropping, slashing etc.)	0	0	N/A
Re-seeding/replanting (species density, season etc.)	0	0	N/A
Adversely affected by weeds (type and treatment)	13.2	13.2	An extensive weed control program was undertaken during the reporting period. Follow up works are planned for the next reporting period.
Feral animal control (additional fencing, trapping, baiting etc.)	0	13.2	No feral animal control undertaken during the reporting period. There is none currently planned to be undertaken in the next reporting period.

8.3 Rehabilitation Trials and Research

No rehabilitation trials or research was undertaken during the reporting period.

8.4 Further Development of the Final Rehabilitation Plan

Further development of the rehabilitation and closure criteria occurred during the development of a new MOP, consistent with the September 2013 MOP guidelines, which was approved by the Department on 26 September 2018. These criteria will be refined over time as the MOP is varied or updated. A rehabilitation monitoring program was submitted to DRE in Quarter 2 2019 and baseline monitoring conducted during Quarter 3 2019.

A summary of the activities (and their current status) that were proposed to be undertaken during the 2019 reporting period is provided in **Table 22.**

Table 22: Rehabilitation objectives proposed for 2019

Activity Proposed	Status Update	31 December 2019 Update, percentage complete
Completion and implementation of the Noise Mitigation Options Assessment/Recommendations required under PA 06_0311	Noise mitigation monitoring and reporting.	100% Submitted
Trial of chemical dust suppressant around unsealed access roads to reduce	To be commissioned and completed in 2019.	100%

Activity Proposed	Status Update	31 December 2019 Update, percentage complete
windblown dust		
Implementation of the 2019 Weed Action Plan	To be commissioned and completed in 2019.	100%
Development of the site rehabilitation monitoring program and baseline monitoring.	Consultant engaged to conduct in Q2 2019.	100%
A modification to the development consent will be submitted to allow for an increase in the amount of coal handled at Mannering Colliery and transferred via existing infrastructure to Vales Point Power Station. The modification also includes a minor change in mining method (namely the description of bord and pillar mining).	The environmental assessment (EA) and supporting air quality and noise mitigation assessments are being finalised for submission to DPE in Q2, 2019.	100% Submitted 31 May 2019, awaiting approval
Independent Environmental Audit	Completed.	100%
Transfer of Environmental Licences (EPL, Water and Radiation) and Titles	Completed in Q1/Q2 2019 due to change in ownership.	100%
Housekeeping Activities	Ongoing in 2019	100%

8.5 Other Infrastructure

There was no other rehabilitation works completed during the reporting period.

9 Community

9.1 Community Complaints

There were 47 community complaints received during the reporting period which were primarily related to noise, vibration and dust. A copy of the complaints register is provided on the Delta Coal website and is reproduced in **Appendix 8**.

The results of the Noise Compliance Report are detailed in **Section 6.9** and the report reproduced in **Appendix 6**. In addition, a community session was held in November 2019 at Macquarie Shores Village to provide information relating to noise investigations and a forum for questions.

The annual total complaints and complaints by subject type trends for 2019 are detailed in **Figure 29** and **Figure 30**.

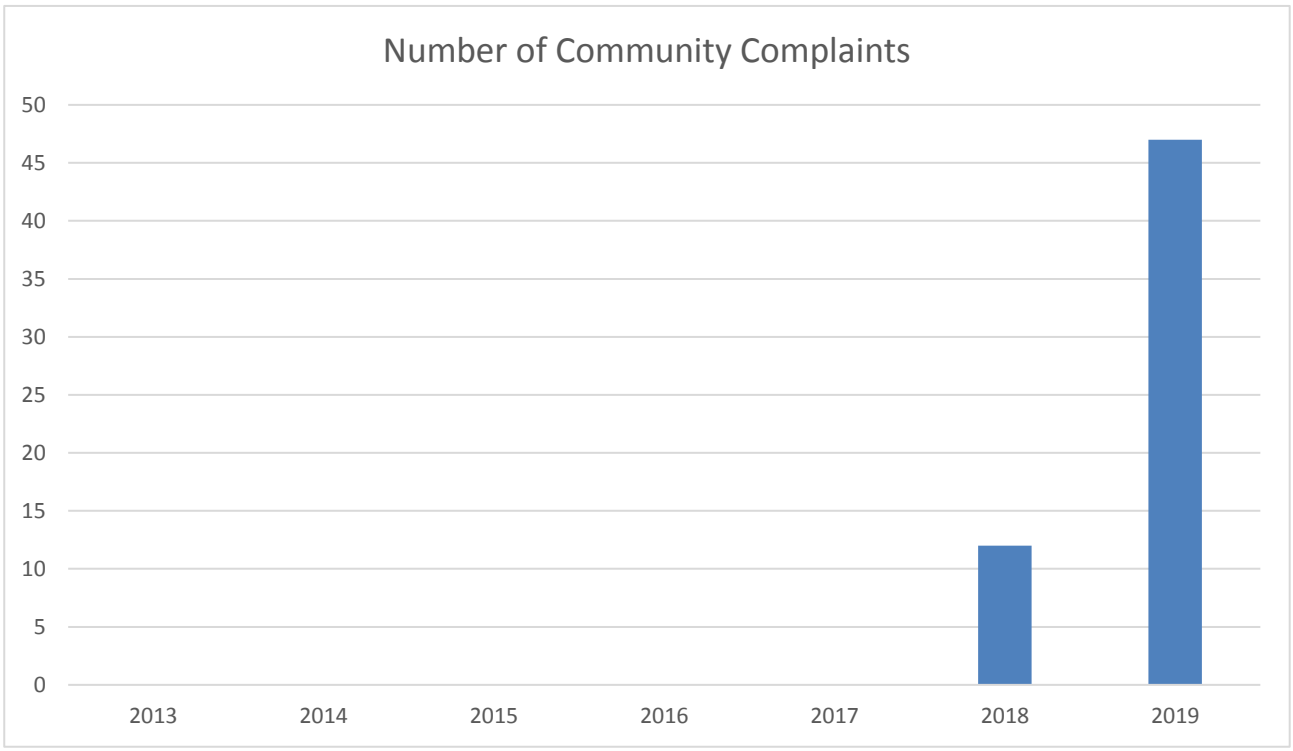


Figure 29: Total Community Complaints by Year

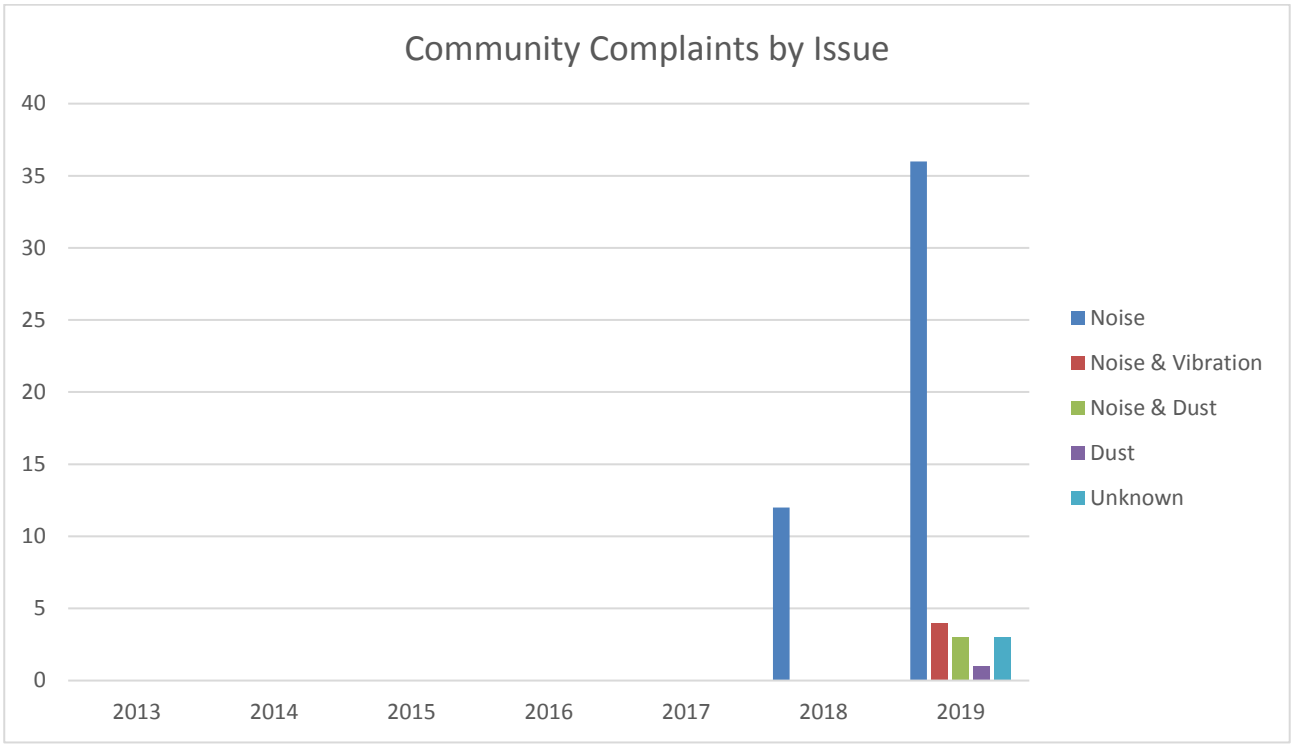


Figure 30: Total Community Complaints by Issue

9.2 Community Liaison

The CVC/Mannering Community Consultative Committee (CCC) continued to operate in accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Project, June 2007 (NSW Department of Planning)* during the reporting period.

There were four CCC meetings held during the reporting period, being on 13 February 2019, 15 May 2019, 14 August 2019 and 13 November 2019. Minutes for each of the committee meetings are available on the Delta Coal website https://www.deltacoal.com.au/community/community-consultative-committee

In addition, the Delta Coal website was updated on a monthly basis with monitoring data, management plans, reports, audits and complaint details among other items.

The community hotline number (**1800 115 277**) also remained in place during the reporting period and is displayed prominently and permanently on the website.

9.3 Community Support / Engagement

Delta Coal is committed to supporting and engaging with the local communities which surround its operations. While Delta Coal provides a monetary offsets associated with its Voluntary Planning Agreement under its operating approvals, they also supports the local community through a variety of additional avenues. This support is provided through in kind support, cash donations, staff time, and charitable donations.

10 Independent Audit

An independent environmental audit (IEA) was undertaken by SLR in 2019. The updated Response to Audit Recommendations was submitted to DPIE on 28 June 2019 and accepted on 23 July 2019. An update was provided to DPIE on 31 December 2019. The IEA is provided in **Appendix 9**.

Outcomes are summarised below.

10.1 Key Audit Outcomes

Actions immediately relating to the Annual Review have been included in **Table 23**.

Table 23: Key Audit Outcomes

Item	Issue/Observation	Action	Status
1	Surface Water	REC13: Include results of the visual assessment of the unnamed creek in Annual Reviews. Include a reference again previous results.	See **Section 7.5**
2	Surface Water	REC 15: Include analysis results from monitoring undertaken at the "Downstream" monitoring location in Annual Reviews.	See **Section 7.4** and Delta Coal website monthly reports
3	Environmental Performance	REC 29: Ensure Annual Reviews are submitted to DPE by 31 March.	This document
4	Environmental Performance	REC 30: Future Annual Reviews should clearly state noise and water quality performance criteria, and provide monitoring results against these.	See **Section 6.9** and **Appendix 5** for noise monitoring criteria and results See **Section 7** for water monitoring criteria and results
5	Environmental Performance	REC 31: Include in future Annual Reviews: - Requirements of plans/programs required under PA 06_0311 for noise and water quality; - The monitoring results of previous years, for noise and water; - The relevant predictions in environmental assessments for air quality noise and water; - Trends in the monitoring data for air quality, noise and water, over the life of the project; and - Discrepancies between the predicted impacts in the EAs for air quality, noise and water, and actual impacts of the project.	See **Section 5.9** and **Appendix 5** for noise monitoring criteria and results See **Section 7** for water monitoring criteria and results See **Section 6.1** for air quality monitoring results
6	Environmental Performance	REC 32: The Annual Reviews are set out differently to the DPE Annual Review Guidelines (2015). Ensure table of contents matches the guidelines	See Table of Contents. These are in general accordance with the DPE Annual Review Guidelines
7	Environmental	REC 33: IEA Actions Plans should be included in every Annual	See **Appendix 10**

Item	Issue/Observation	Action	Status
	Performance	Review going forward.	
8	Revision of strategies, plans and programs	REC 34: Include statement in future Annual Reviews stating that Management Plans have been reviewed and state which management plans will or will not be updated within 3 months.	See **Section 4.2**
	CCL721		
9	Condition 5	REC 48: Report against compliance with the MOP in future Annual Reviews.	See **Executive Summary** and **Section 11**
	CCL719		
10	Condition 3	REC 51: Prepare Annual Rehabilitation Reports.	See **Section 8**. Annual Rehabilitation report is only required when significant rehabilitation is completed.
11	Condition 3	REC 52: Include in Annual Reviews any non-compliance with the MOP, during the reporting period.	See **Executive Summary** and **Section 11**
	Additional recommendations		
12	Subsidence	REC 61: A separate subsidence impact assessment report should be prepared annually and appended to the Annual Review. This report should be prepared or peer reviewed by a subsidence specialist. This should assess subsidence performance measures from the Project Approval.	See **Appendix 6**

10.2 Action Plan

The IEA Action Plan has been provided in **Appendix 10**.

10.3 Future Audit

The next Independent Environmental Compliance Audit is scheduled for Quarter 2 2022. An updated table of compliance with the 2019 Independent Environmental Audit will be completed as part of that audit.

11 Incidents and non-compliances during the reporting period

All non-compliances and exceedances, and reportable incidents relating to the site's licences and approvals are summarised below in **Table 24.**

Table 24: Summary of reportable incidents/non-compliances for 2019

Date	Description of Non-compliance	Approval/Condition/Clause	Actions taken to address Non-compliance
02/04/2019	TSS concentration - LDP01 Discharge point	L2.4 EPL 191	This event was reported to DPIE and EPA. A water grab sample was taken and analysed on a weekly basis during discharge for LDP1 in accordance with EPL 191. On 2 April an exceedance of the 50 milligrams per litre (mg/L) Total Suspended Solids (TSS) limit occurred. The sample result was 80 mg/L. This exceedance occurred during a significant rainfall event. Due to the rainfall runoff, above and beyond the design capacity of the site storage dams, this excess water was unable to be stored within the dams, and resulted in the discharge of waters with an elevated TSS level on the 2 April 2019. Following the reduction in discharge via the spillway pipe, better access and weather conditions allowed water management works. A water/flocculent mixture was sprayed over Pond 1, Pond 2 and LDP1 dam on 3rd April to reduce the TSS levels. A water sample was taken on the 5th April and tested for TSS, pH and EC and the TSS came back as 10 mg/L. Delta Coal will continue to maintain the dams at Mannering Colliery at low levels during dry periods to ensure maximum available storage during rainfall events and continue to undertake the other erosion and sediment control actions.
11/06/2019	Noise exceedance	Schedule 3 Table 1, PA 06_0311	This event was reported to DPIE and EPA. On 12 June 2019 Delta Coal was advised by its independent noise monitoring consultant that they had recorded a 7dB exceedance of the site's LA1(1min) noise criteria at receiver RA3 (Kingfisher Shores) during the scheduled night-time noise monitoring undertaken on 11 June 2019 for Mannering Colliery. The acoustics technician noted that there was an alarm noise clearly audible. A review of the site's operations and investigation with operational personnel at Mannering was undertaken on the 12th June 2019 to assist with determining the alarm noise sources occurring at the time. An emergency test was undertaken at the same time by underground technician. The review concluded that the alarm sound occurred around the time the exceedance was recorded.

Date	Description of Non-compliance	Approval/Condition/Clause	Actions taken to address Non-compliance
			Based on the outcomes of the site inspection/audit undertaken it was identified that testing of the alarms were not required to be conducted at this time of the night. The technician was counselled on appropriate neighbourly work behaviours and the work order system which automatically generates this emergency testing has been updated. The Work Order has been updated to clearly prohibit testing occurring during night time hours. A toolbox talk has been provided to the workforce around the night-time noise and community expectations. A review of alarm triggers and requirements at Mannering was undertaken. Alarms were reduced and noise monitoring of all alarms at Mannering was conducted to determine acceptable levels.
13/08/2019	Noise exceedance	Schedule 3 Table 1, PA 06_0311	This event was reported to DPIE and EPA. Noise monitoring at the site is usually undertaken on a quarterly basis in accordance with the requirements of the site major project approval (MP 06_0311) and the site's Noise Monitoring Program (NMP). However, DPIE-Compliance have initiated Delta Coal to conduct a Noise Compliance Report with a noise monitoring methodology targeting the night-time period between midnight and 6am whilst the Mannering Coal Plant is running. In order for the noise monitoring period to capture appropriate operational conditions, the coal processing plant operator was instructed to operate the plant during the midnight and 6am period on this night. On 15 August 2019 Delta Coal was advised by the independent noise monitoring consultant that levels of LAeq,15 minute of 41 dB and LAmax of 51 dB had been measured at receiver RA2 (Macquarie Shores Home Village) as part of the night-time noise monitoring undertaken on 13 August 2019. During the night-time monitoring the acoustics technician noted that the rotary breaker was clearly audible and the most dominant site-specific noise source evident during the monitoring period. Results indicate that the conservative noise limit of LAeq,15 minute 39 dB was exceeded by 2 dB however the limit for Macquarie Shores Village of LAeq,15 minute 43 dB was not exceeded. Further, the LA1,1min noise limit was exceeded by 4 dB on one occasion and 1 dB on one occasion. A review of the site's operations and investigation with operational personnel at Mannering Colliery was undertaken on 15 August 2019 to assist with determining the noise sources occurring at the time. The review concluded that the likely cause of the

Date	Description of Non-compliance	Approval/Condition/Clause	Actions taken to address Non-compliance
			elevated noise was due to a significant mechanical failure of the bearings within the rotary breaker chain tensioner. This coincided with the chain related noises that the noise consultant observed during this noise monitoring event. The rotary breaker chain tensioner was disassembled, removed from site and re-engineered. This replacement process took two shifts to complete so further noise compliance monitoring was postponed until the coal plant was up and running. Subsequent monitoring resulted in compliance with relevant limits at this location.
18/09/2019	TSS concentration - LDP01 Discharge point	L2.4 EPL 191	This event was reported to DPIE and EPA. On 18 September 2019 an exceedance of the 50 milligrams per litre (mg/L) Total Suspended Solids (TSS) limit occurred. The sample result was 104 mg/L. This exceedance occurred during a significant rainfall event. Due to the rainfall runoff, above and beyond the design capacity of the site storage dams, this excess water was unable to be stored within the dams, and resulted in the discharge of waters with an elevated TSS level on 18 September 2019. Following the reduction in discharge via the spillway pipe, better access and weather conditions allowed water management works. A water/flocculent mixture was sprayed over Pond 1, Pond 2 and LDP1 dam on 19 September 2019 to reduce the TSS levels. Follow up water sampling was not possible following receipt of sampling results on 20 September as there was only minor discharge from Point 1. Additional flocculent was applied to the sediment dams at Mannering Colliery on 21 September 2019. Delta Coal will continue to maintain the dams at Mannering Colliery at low levels during dry periods to ensure maximum available storage during rainfall events and continue to undertake the other erosion and sediment control actions.
04/11/2019	pH limit - LDP01 Discharge point	L2.4 EPL 191	This event was reported to DPIE and EPA. On 4 November 2019 an exceedance of the 8.5 pH limit was reported. The sample was taken on 4 November 2019 with a result of 8.6. The last recorded exceedance of pH at this site was in 2016, also with a value of 8.6. This sample was recorded as being taken from the outlet pipe during low flow. The range of pH for 2019 at the weekly during discharge points has been between 7.4 to 8.4, with an average of 7.8 until this reading of 8.6. As a follow up to the 4 November 2019 results another weekly during discharge sample was taken on the 8 November 2019 and the resulting pH was 8.2.

Date	Description of Non-compliance	Approval/Condition/Clause	Actions taken to address Non-compliance
			There have been no major changes to the surface water system, nor introduction of new chemicals or visual presence of hydrocarbons or other chemicals in the system and no associated high rainfall events.
December 2019	Water sample missed	M2.1 EPL 191	This occurrence was reported to DPIE and EPA. In December 2019 the total metals sample analysis on the monthly during discharge at LDP1 at Mannering Colliery was not undertaken. The dissolved metals were tested and analysed but the total analysis for metals was not. Mannering achieved 11 samples out of 12 during 2019 which, according to the NSW EPA Load Calculation Protocol, we would use the mean result via Action B. This action is 'replace missing data with the mean of data obtained over the previous 12 months + 20%. Following this occurrence, checks have been put in place to ensure that all monitoring and analysis has been completed prior to the end of each month.

A summary of official cautions or warning letters are detailed in **Table 25**.

Table 25: Summary of official cautions or warning letters in 2019

Date	Description of caution/warning letter	Approval/Condition/Clause	Actions taken to address caution/warning letter
September to November 2019	Real time noise monitoring	Schedule 3 – Condition 3 PA 06_0311	A show cause letter was received from DPIE on 27 September 2019 in relation to the removal of the real time noise monitor labelled RA4 in the Mannering Colliery Noise Management Plan. The real time noise monitor was removed in January 2019. Since that time: • GSE took over ownership in April 2019, • there are no residents at the mine cottages, with a proposal to demolish the cottages in 2020 (location of RA4), • the Mannering NMP had been reviewed and approved • consultants were engaged to determine a more appropriate location for the noise monitor, • a Noise Compliance Report was prepared for Mannering Colliery in accordance with Appendix 4B, Condition 4 of the PA, • a real time monitoring was reinstalled at location RA4 on 9 October 2019. DPIE correspondence on 1 November 2019 indicated that there had been a breach of Condition 3 by GSE failing to implement the approved noise monitoring program. A warning letter was issued and no formal action was taken.

12 Activities to be completed in the next reporting period

12.1 Activities update from 2019 Reporting Period

A summary of the activities that were proposed to be undertaken during the 2019 reporting period and current status is provided in **Table 26.**

Table 26: Update on activities to be undertaken in the 2019 reporting period

Activity Proposed	Status Update	31 December 2019 Update, percentage complete
Completion and implementation of the Noise Mitigation Options Assessment/Recommendations required under PA 06_0311	Noise mitigation monitoring and reporting.	100%
Trial of chemical dust suppressant around unsealed access roads to reduce windblown dust	To be commissioned and completed in 2019.	100%
Implementation of the 2019 Weed Action Plan	To be commissioned and completed in 2019.	100%
Development of the site rehabilitation monitoring program and baseline monitoring.	Consultant engaged to conduct in Q2 2019.	100%
A modification to the development consent will be submitted to allow for an increase in the amount of coal handled at Mannering Colliery and transferred via existing infrastructure to Vales Point Power Station. The modification also includes a minor change in mining method (namely the description of bord and pillar mining)	The environmental assessment (EA) and supporting air quality and noise mitigation assessments are being finalised for submission to DPE in Q2, 2019.	90% Submitted 31 May 2019, awaiting determination.
Independent Environmental Audit	To be commissioned and completed.	100%
Transfer of Environmental Licences (EPL, Water and Radiation) and Titles	To be completed in Q1/Q2 2019 due receivership and change in ownership.	100%
Housekeeping Activities	Ongoing in 2019	100%

12.2 Activities Proposed for 2020 Reporting Period

A summary of the activities that are proposed to be undertaken during 2020 are detailed in **Table 27**.

Table 27: Activities to be undertaken in 2020

Activity Proposed
Major Noise Mitigation Project - Surface Rotary breaker decommissioning and realignment of belt system. Breaker installation underground
Desilting/dewatering of surface sedimentation dams
Installation of Real time noise monitoring at Short Street, Macquarie Shores Home Village
Housekeeping – removal of old infrastructure

13 References

Documents used in the preparation of this report are detailed in **Table 28**.

Table 28: References

Reference	Title
Legislation and Regulations	Environment Protection Licence (EPL) 191 *Mining Act 1992* *National Greenhouse and Energy Reporting Act 2007* Project Approval PA-03_611 (as modified) *Protection of the Environment Operations Act, 1997*
External documents	Hanson Bailey 2007, Centennial Coal Company Limited: Mannering Colliery Continuation of Mining: Environmental Assessment, March 2007. Total Earth Care Pty Ltd (January 2020) Weed Action Plan Chain Valley Colliery, Mannering Colliery and Summerland Point Ventilation Shaft

14 Acronyms / Definitions

AEMR Annual Environmental Management Report, now known as the Annual Review

Annual Review The annual environmental report compiled for Mannering, the Annual Review also fulfills the requirement for an Annual Environmental Report or an Annual Environmental Management Report generally required by mining leases.

CCC Community Consultative Committee

CVC Chain Valley Colliery

DP&E Department of Planning & Environment (former)

DPIE Department of Planning, Industry and Environment

EA Environmental Assessment

EMS Environmental Management System

EPA NSW Environment Protection Authority

EP&A Act *Environmental Planning and Assessment Act 1979*

EPL Environmental Protection License

kL Kilolitre

LDP1 Licenced Discharge Point 1 (per EPL 191)

Mannering Mannering Colliery

NGER National Greenhouse and Energy Reporting

NSW New South Wales

OEH NSW Office of Environment and Heritage (former)

PA 06_0311 Project approval MP 06_0311, as modified, issued under Section 75J of the Environmental *Planning and Assessment Act 1979* for the Mannering Colliery Extension of Mine Project

POEO Act *Protection of the Environment Operations Act 1997*

ROM Run of mine

t - CO_2-e Tonnes of carbon dioxide equivalent

The website The website of Delta Coal - Mannering Colliery, which is www.deltacoal.com.au

VPPS Vales Point Power Station

15 Appendices

Appendix 1: Project Approval

Project Approval

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

I approve the project application referred to in Schedule 1, subject to the conditions in Schedules 2 to 5.

These conditions are required to:
- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

Project Approval signed by Frank Sartor on 12 March 2008

Frank Sartor MP
Minister for Planning

Sydney 2008

SCHEDULE 1

Application No:	06_0311
Proponent:	Centennial Coal Company Limited
Approval Authority:	Minister for Planning
Land:	See Appendix 1
Project:	Mannering Colliery – Continuation of Mining Project

Red text represents Modification 1 of October 2012 (06_0311 MOD 1)
Blue text represents Modification 2 of November 2014 (06_0311 MOD 2)
Green text represents Modification 3 of December 2015 (06_0311 MOD 3)
Orange text represents Modification 4 of August 2016 (06_0311 MOD 4)

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DEFINITIONS

Annual review	The review required by Condition 3 of Schedule 5
Affected councils	Central Coast Council and Lake Macquarie City Council
APZs	The asset protection zones shown in Figure 4 in Appendix 2
Built features	Includes any building or work erected or constructed on land, and includes dwellings and infrastructure such as any formed road, street, path, walk, or driveway; and any pipeline, water, sewer, telephone, gas or other service main
BCA	Building Code of Australia
CCC	Community Consultative Committee
Conditions of this approval	Conditions contained in Schedules 2 to 5 inclusive
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning & Environment
DPI Water	Department of Primary Industries-Water
DRE	Division of Resources and Energy of the Department of Industry
EA	Environmental Assessment titled *Mannering Colliery Environmental Assessment*, dated March 2007, including the response to submissions, dated 27 July 2007
EA (Mod 1)	Environmental Assessment titled *Mannering Colliery – Extension of Mine Project Section 75W Modification to Project Approval 06_0311*, as modified by the associated response to submissions dated 4 September 2012
EA (Mod 2)	Environmental Assessment titled *'Mannering Colliery – Modification 2, Environmental Assessment, Section 75W Modification to MP 06_0311'* dated April 2014, as modified by the associated response to submissions dated 15 September 2014
EA (Mod 3)	Environmental Assessment titled *'Mannering Colliery – Modification 3 Environmental Assessment, Section 75W Modification to MP 06_0311'* dated June 2015, including the associated Response to Submissions dated September 2015
EA (Mod 4)	Environmental Assessment titled *'Administrative modification to MP06_0311 – Environmental Assessment'* dated 25 July 2016
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPL	Environment Protection Licence issued under the *Protection of the Environment Operations Act 1997*
Evening	The period from 6pm to 10pm
Feasible	Feasible relates to engineering considerations and what is practical to build
First workings	Extraction of coal by bord and pillar workings and the like
Incident	A set of circumstances that: • causes or threatens to cause material harm to the environment; and/or • breaches or exceeds the limits or performance measures/criteria in this approval
Land	As defined in the EP&A Act, except for where the term is used in the noise and air quality conditions in Schedules 3 and 4 of this approval where it is defined to mean the whole of a lot, or contiguous lots, owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
Mining operations	Includes all extraction, processing, handling, storage and transportation of coal carried out on the site
Minister	Minister for Planning, or delegate
Minor	Not very large, important or serious
Negligible	Small and unimportant, such as to be not worth considering
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
OEH	Office of Environment and Heritage
Privately-owned land	Land that is not owned by a public agency, Vales Point Power Station or a mining company (or its subsidiary)
Proponent	Centennial Coal Company Limited or any other person or company (including LakeCoal Pty Limited) who rely on this approval to carry out the project that is subject to this approval

Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
ROM	Run-of-mine
RMS	Roads and Maritime Services
Second workings	Extraction of coal by pillar extraction methods
Secretary	Secretary of the Department, or nominee
Site	Land referred to in Appendix 1
SMP	Subsidence Management Plan
Statement of Commitments	The Statement of Commitments in Appendix 3
Subsidence	Subsidence of the land surface caused by underground coal mining

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent must implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of the project.

Terms of Approval

2. The Proponent must carry out the project generally in accordance with the:
   (a) EA;
   (b) EA (Mod 1);
   (c) EA (Mod 2);
   (d) EA (Mod 3);
   (e) EA (Mod 4); and
   (f) Project Layout Plans.

   Note:
   - *The Project Layout Plans are shown in Appendix 2.*

2A. The Proponent must carry out the development in accordance with the
   (a) Statement of Commitments; and
   (b) conditions of this approval.

3. If there is any inconsistency between the documents in condition 2, the most recent document shall prevail to the extent of the inconsistency. The conditions of this approval shall prevail over the documents in conditions 2 and 2A(a) to the extent of any inconsistency.

4. The Proponent must comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
   (a) any reports, plans, programs or correspondence that are submitted in accordance with the conditions of this approval; and
   (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.

Limits on Approval

5. Mining operations may take place until 30 June 2022.

   Note: Under this approval, the Proponent is required to rehabilitate the site to the satisfaction of the Secretary and DRE. Consequently this approval will continue to apply in all other respects other than the right to conduct mining operations until the site has been rehabilitated to a satisfactory standard.

6. The Proponent must not extract more than 1.1 million tonnes of ROM coal a year from the site.

6A. The Proponent must not transport more than 1.3 million tonnes of ROM coal a year from the site.

7. The Proponent must ensure all coal produced and/or received on the site is transported by overland conveyor to Vales Point Power Station.

Updating and Staging Strategies, Plans or Programs

8. The Proponent must regularly review the strategies, plans and programs required under this approval and ensure that these documents are updated to incorporate measures to improve the environmental performance of the development and reflect current best practice in the mining industry. To facilitate these updates, the Proponent may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Proponent may also submit any strategy, plan or program required by this approval on a staged basis.

   With the agreement of the Secretary, the Proponent may prepare a revision or stage of any strategy, plan or program required under this approval without undertaking consultation with all parties nominated under the applicable condition in this approval.

Notes:

- *While any strategy, plan or program may be submitted on a staged basis, the Proponent must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times.*
- *If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*

Structural Adequacy

9. The Proponent must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

Notes:

- *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.*

Demolition

10. The Proponent must ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

Operation of Plant and Equipment

11. The Proponent must ensure that all plant and equipment used on site is:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient manner.

Community Enhancement Program

12. The Proponent must pay the affected councils $0.02 for each tonne of ROM coal produced by the project for the purpose of improving water quality in the Lake Macquarie catchment. This payment must be:
    (a) shared equally by the affected councils;
    (b) made by the end of March 2009, and at yearly intervals thereafter;
    (c) calculated on the ROM coal produced in the previous calendar year; and
    (d) subject to indexation by the Implicit Price Deflator, as published by the Australian Bureau of Statistics.

SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS

NOISE

Noise Impact Criteria

1. The Proponent must ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately owned land.

Table 1: Noise limits dB(A)

Day $L_{Aeq(15\ min)}$	***Evening*** $L_{Aeq(15\ min)}$	***Night***		***Location*** (as listed in Appendix 4)
		$L_{Aeq(15\ min)}$	$L_{A1(1\ min)}$	
49	49	35	49	4 – di Rocco
47	47	35	49	5 – Keighran
44	44	35	49	6 – Swan
43	43	43	50	7 – Druitt
46	46	46	50	8 – May
45	45	45	52	9 – Jeans
40	40	40	52	11 – Jeans
43	43	43	52	18 – Jeans
44	44	44	52	20 – Knight and all other Chain Valley Bay residences

Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.

Noise generated by the project is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4A sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

This condition only has effect prior to recommencement of underground coal extraction at Mannering Colliery. At all other times, conditions 1 to 4 of Appendix 4B have effect in its place.

Noise Mitigation

2. The Proponent must prepare a report on potential noise mitigation measures for noisy equipment and activities undertaken on the site to the satisfaction of the Secretary. This report must be:
   (a) prepared by a suitably qualified acoustic expert;
   (b) submitted to the Secretary by the end of September 2008; and
   (c) accompanied by an action plan for the implementation of any reasonable and feasible recommendations of the report.

Noise Monitoring

3. The Proponent must prepare a Noise Monitoring Program for the project to the satisfaction of the Secretary. This program must:
   (a) be submitted to the Secretary by the end of September 2008;
   (a1) be revised in consultation with the EPA and be submitted to the Secretary by the end of April 2016; and
   (b) include the use of continuous and attended noise monitoring measures to monitor the performance of the project.

The Proponent must implement the approved Noise Monitoring Program as approved from time to time by the Secretary.

SUBSIDENCE

4. The Proponent must limit its coal extraction methods on the site to first workings only, and must not undertake second workings.

5. Deleted.

SOIL AND WATER

Discharge

6. The Proponent must only discharge water from the site as expressly provided for by its EPL.

7. The Proponent must investigate, assess and report on the ecological interactions of minewater discharged from the site with the aquatic ecology of the unnamed creek and wetlands (and associated vegetation) between the minewater discharge point/s and Lake Macquarie. This report must:
   (a) be prepared in consultation with EPA by suitably qualified expert/s whose appointment/s have been approved by the Secretary;
   (b) be submitted to the Secretary by the end of March 2009; and
   (c) assess the probable alterations in the local ecology attributable to previous and proposed minewater discharges and any future cessation of minewater discharge flows.

Water Management Plan

8. The Proponent must prepare a Water Management Plan for the project to the satisfaction of the Secretary. This plan must:
   (a) be prepared in consultation with DPI Water by suitably qualified expert/s whose appointment/s have been approved by the Secretary;
   (b) be submitted the Secretary by the end of March 2009; and
   (c) include a:
      - Site Water Balance;
      - Erosion and Sediment Control Plan;
      - Surface Water Monitoring Plan; and
      - Groundwater Monitoring Program.

   The Proponent must implement the approved management plan as approved from time to time by the Secretary.

Site Water Balance

9. The Site Water Balance must:
   (a) include details of:
      - sources and security of water supply;
      - water use on site;
      - water management on site; and
   (b) investigate, assess and report on measures to minimise water use by the project, particularly potable water from the Wyong Shire town water supply.

Erosion and Sediment Control

10. The Erosion and Sediment Control Plan must:
   (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction* (Landcom 2004, or its latest version);
   (b) identify activities that could cause soil erosion and generate sediment;
   (c) describe measures to minimise soil erosion and the potential for transport of sediment from the site;
   (d) describe the location, function, and capacity of erosion and sediment control structures; and
   (e) describe what measures would be implemented to monitor and maintain the structures over time.

Surface Water Monitoring Program

11. The Surface Water Monitoring Plan must include:
   (a) detailed baseline data on surface water flows and quality in creeks and other waterbodies that could be affected by the project;
   (b) surface water impact assessment criteria;
   (c) a program to monitor the impact of the project on surface water flows and quality; and
   (d) procedures for reporting the results of this monitoring.

Groundwater Monitoring Program

12. The Groundwater Monitoring Program must include:
    (a) detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality;
    (b) groundwater impact assessment criteria;
    (c) a program to monitor the impact of the project on groundwater levels, yield and quality; and
    (d) procedures for reporting the results of this monitoring.

REHABILITATION

13. The Proponent must rehabilitate the site to the satisfaction of the Secretary and DRE. Rehabilitation must be substantially consistent with the Rehabilitation Objectives described in the EA, the Statement of Commitments and the following objectives in Table 2 below.

Table 2: Rehabilitation Objectives

Feature	***Objective***
Mine site (as a whole of the disturbed land and water)	Safe, stable and non-polluting, fit for the purpose of the intended post-mining land use(s).
Rehabilitation materials	• Materials (including topsoils, substrates and seeds of the disturbed area) are recovered, appropriately managed and used effectively as resources in the rehabilitation.
Surface Infrastructure	To be decommissioned and removed, unless the DRE agrees otherwise.
Portals and ventilation shafts	To be decommissioned and made safe and stable.
Other land affected by the development	Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of: • local native plant species (unless the DRE agrees otherwise); and • a landform consistent with the surrounding environment.
Built features damaged by mining operations	Repair to pre-mining condition or equivalent unless: • the owner agrees otherwise; or • the damage is fully restored, repaired or compensated under the *Mine Subsidence Compensation Act 1961.*
Community	Ensure public safety.

13A. The Proponent must carry out all surface disturbing activities in a manner that, as far as practicable, minimises potential for dust emissions and must carry out rehabilitation of disturbed areas progressively, as soon as reasonably practicable, to the satisfaction of the Secretary and DRE.

Land Management Plan

14. The Proponent must prepare a detailed Land Management Plan for the site to the satisfaction of the Secretary and DRE. This plan must:
    (a) be submitted to the Secretary by the end of September 2008;
    (b) be prepared by suitably qualified expert/s whose appointment/s have been endorsed by the Secretary;
    (c) be prepared in consultation with DRE, OEH and affected councils; and
    (d) include measures to:
        • minimise visual impacts;
        • control weeds, feral pests and access; and
        • manage bushfires; and
    (e) provide details of who is responsible for monitoring, reviewing and implementing the plan.

    Prior to the end of April 2016, the Proponent must revise the Land Management Plan to incorporate the measures required to implement its commitments described in new row 2 of the Terrestrial Ecology section of its Statement of Commitments, and submit it to the Secretary for approval.

    The Proponent must implement the approved management plan as approved from time to time by the Secretary.

14A. The Proponent must implement its preferred option of the three options set out in new row 2 of the Terrestrial Ecology section of its Statement of Commitments by 1 December 2016, following consultation with OEH and to the satisfaction of the Secretary.

Rehabilitation Plan

15. The Proponent must prepare a Rehabilitation Plan for the site to the satisfaction of the DRE. This plan must:
    (a) be submitted within 3 months of approval of Mod 2 for approval by DRE prior to carrying out any disturbing activities of the development, unless otherwise agreed by the Secretary;
    (b) be prepared in accordance with DRE guidelines and in consultation with the Department, OEH, EPA, DPI Water, affected councils and the mine's CCC;
    (c) incorporate and be consistent with the rehabilitation objectives in the EA, Statement of Commitments and Table 2 above;
    (d) integrate and build on, to the maximum extent practicable, the other management plans required under this approval; and
    (e) address all aspects of mine closure and rehabilitation, including post-mining land use domains, rehabilitation objectives, completion criteria and rehabilitation monitoring and management.

    The Proponent must implement the approved management plan as approved from time to time by the Secretary.

    Note: The approved Mining Operations Plan (which will become the REMP once the Mining Act Amendments have commenced) required as a condition of the Mining Lease(s) issued in relation to this project, will satisfy the requirements of this condition for a Rehabilitation Plan.

AIR QUALITY

Impact Assessment Criteria

16. The Proponent must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria listed in Table 3 at any residence on privately-owned land.

    Table 3: Long term impact assessment criteria for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m^2/month	4 g/m^2/month

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Monitoring

17. The Proponent must prepare an Air Quality Monitoring Program for the project to the satisfaction of the Secretary. This program must:
    (a) be submitted to the Secretary by the end of September 2008; and
    (b) use dust deposition gauges to monitor the performance of the project.

    The Proponent must implement the approved monitoring program as approved from time to time by the Secretary.

HERITAGE

Heritage Management Plan

18. The Proponent must prepare a Heritage Management Plan for the project to the satisfaction of the Secretary. This Plan must:
    (a) be prepared in consultation with any relevant Aboriginal stakeholders;
    (b) be submitted, prior to 31 March 2013, for approval to the Secretary;
    (c) include consideration of the Aboriginal and non-Aboriginal cultural context and significance of the site;
    (d) detail the responsibilities of all stakeholders; and

(e) include programs/procedures and management measures for:

- dealing with previously unidentified Aboriginal objects (excluding human remains), including any need to halt works in the vicinity, assessment of significance, determination of appropriate mitigation measures (by a qualified archaeologist in consultation with Aboriginal stakeholders), re-commencement of works, notifying OEH, and registering the new site(s) in the OEH AHIMS register;
- dealing with any human remains which may be discovered, including halting of works in the vicinity; notifying NSW Police, OEH, the Department and Aboriginal stakeholders; and not re-commencing any works in the vicinity unless authorised;
- heritage induction for construction personnel (including procedures for keeping records of inductions);
- ongoing Aboriginal consultation and involvement (including procedures for keeping records of this);
- appropriate identification, management, conservation and protection of both Aboriginal and non-Aboriginal heritage items identified on the site; and
- dealing with previously unidentified non-Aboriginal heritage items which may be discovered during the project.

The Proponent must implement the approved management plan as approved from time to time by the Secretary.

VISUAL

19. The Proponent must:
    (a) ensure no outdoor lights shine above the horizontal;
    (b) ensure that all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*;
    (c) take all practicable measures to mitigate off-site lighting impacts from the project; and
    (d) minimise the visual impacts of the project,
    to the satisfaction of the Secretary.

TRANSPORT

Monitoring of Coal Transport

20. The Proponent must keep records of the amount of coal transported from the site each year, and include these records in the Annual Review.

Ruttleys Road Intersection

21. The Proponent must:
    (a) complete a road safety audit of the intersection of Ruttleys Road and Mannering Colliery Access Road by the end of March 2009;
    (b) provide copies of this audit to RMS, Central Coast Council and the Secretary within one month of its completion; and
    (c) within 3 months of approval of Mod 2, install additional sections of guardrail (safety barrier) on the eastern side of Ruttleys Road between the Mannering Colliery access road and existing sections of guardrail further to the north;
    (d) be responsible for the maintenance and upkeep of the pavement of the Ruttleys Road/Mannering Colliery access road intersection whilst the site is used for mining purposes or until the intersection is upgraded to a Type CHR intersection treatment; and
    (e) prior to the number of workers (direct employees and contractors) at Mannering Colliery exceeding 70, the Proponent must upgrade the Ruttleys Road/Mannering Colliery access road intersection to a Type CHR treatment in accordance with Construction Certificate SCC/69/2011 issued by Central Coast Council, or later updated versions of this Construction Certificate;
    to the satisfaction of the Secretary.

GREENHOUSE AND ENERGY EFFICIENCY

22. The Proponent must prepare a Greenhouse and Energy Efficiency Plan for the project to the satisfaction of the Secretary. This plan must:
    (a) be prepared in consultation with EPA and generally in accordance with the *Guidelines for Energy Savings Action Plans* (DEUS 2005, or its latest version);

(b) be submitted to the Secretary for approval by the end of September 2008;
(c) include a program to monitor greenhouse gas emissions and energy use generated by the project;
(d) include a framework for investigating and implementing measures to reduce greenhouse gas emissions and energy use at the site; and
(e) describe how the performance of these measures would be monitored over time.

The Proponent must implement the approved management plan as approved from time to time by the Secretary.

WASTE

23. The Proponent must:
(a) monitor the amount of waste generated by the project;
(b) investigate ways to minimise waste generated by the project;
(c) implement reasonable and feasible measures to minimise waste generated by the project; and
(d) report on waste management and minimisation in the Annual Review,
to the satisfaction of the Secretary.

SCHEDULE 4
ADDITIONAL PROCEDURES

INDEPENDENT REVIEW

1. If a landowner considers the project to be exceeding the impact assessment criteria in schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the project on his/her land.

   If the Secretary is satisfied that an independent review is warranted, the Proponent must within 2 months of the Secretary's decision:
   (a) consult with the landowner to determine his/her concerns;
   (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to conduct monitoring on the land, to:
   - determine whether the project is complying with the relevant impact assessment criteria in schedule 3; and
   - identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and
   - give the Secretary and landowner a copy of the independent review.

2. If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Secretary.

3. If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent must:
   (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria; and
   (b) conduct further monitoring to determine whether these measures ensure compliance.

   If the additional monitoring referred to above subsequently determines that the project is complying with the relevant criteria in schedule 3, or the Proponent and landowner enter into a negotiated agreement to allow these exceedances, then the Proponent may discontinue the independent review with the approval of the Secretary.

4. If the independent review determines that the relevant criteria in schedule 3 are being exceeded, but that more than one project is responsible for this non-compliance, then the Proponent must, together with the relevant project/s:
   (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the relevant criteria are complied with; and
   (b) conduct further monitoring to determine whether these measures ensure compliance; or
   (c) secure a written agreement with the landowner and other relevant projects to allow exceedances of the criteria in schedule 3,
   to the satisfaction of the Secretary.

   If the additional monitoring referred to above subsequently determines that the projects are complying with the relevant criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Secretary.

5. If the landowner disputes the results of the independent review, either the Proponent or the landowner may refer the matter to the Secretary for resolution.

   If the matter cannot be resolved within 21 days, the Secretary shall refer the matter to an Independent Dispute Resolution Process.

SCHEDULE 5
ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

1. The Proponent must revise an Environmental Management Strategy for the project. This strategy must:
   (a) be submitted for approval to the Secretary prior to 30 June 2013;
   (b) provide the strategic framework for the environmental management of the project;
   (c) identify the statutory approvals that apply to the project;
   (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;
   (e) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the course of the project;
      - respond to any non-compliance; and
      - respond to emergencies; and
   (f) include:
      - copies of any strategies, plans and programs approved under the conditions of this approval; and
      - a clear plan depicting all the monitoring required to be carried out under the conditions of this approval.

   The Proponent must implement the approved management strategy as approved from time to time by the Secretary.

Management Plan Requirements

2. The Proponent must ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
   (a) detailed baseline data;
   (b) a description of:
      - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
      - any relevant limits or performance measures/criteria;
      - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;
   (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
   (d) a program to monitor and report on the:
      - impacts and environmental performance of the project;
      - effectiveness of any management measures (see (c) above);
   (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;
   (f) a protocol for managing and reporting any:
      - incidents;
      - complaints;
      - non-compliances with statutory requirements; and
      - exceedances of the impact assessment criteria and/or performance criteria; and
   (g) a protocol for periodic review of the plan.

   Note: The Secretary may waive some of these requirements if they are unnecessary for particular management plans.

Annual Review

3. By the end of March each year, or other timing as may be agreed by the Secretary, the Proponent must submit a report to the Department reviewing the environmental performance of the project to the satisfaction of the Secretary. This review must:

(a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current financial year;
(b) include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the:
- the relevant statutory requirements, limits or performance measures/criteria;
- requirements of any plan or program required under this approval;
- the monitoring results of previous years; and
- the relevant predictions in the documents listed in condition 2 of Schedule 2;

(c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance;
(d) identify any trends in the monitoring data over the life of the project;
(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
(f) describe what measures will be implemented over the current financial year to improve the environmental performance of the project.

Revision of Strategies, Plans and Programs

4. Within 3 months of:
(a) the submission of an annual review under Condition 3 above;
(b) the submission of an incident report under Condition 6 below;
(c) the submission of an audit under Condition 8 below; or
(d) any modification to the conditions of this approval (unless the conditions require otherwise),
the Proponent must review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.

Community Consultative Committee

5. The Proponent must continue to operate a Community Consultative Committee (CCC) for the project in accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version), and to the satisfaction of the Secretary.

Notes:
- *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval; and*
- *In accordance with the guideline, the Committee should be comprised of an independent chair and appropriate representation from the Proponent, Councils and the local community.*

REPORTING

Incident Reporting

6. The Proponent must notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incidents associated with the project, the Proponent must notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent must provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

Regular Reporting

7. The Proponent must provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.

INDEPENDENT ENVIRONMENTAL AUDIT

8. By the end of March 2013 and every three years thereafter, unless the Secretary directs otherwise, the Proponent must commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:

(a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
(b) include consultation with the relevant agencies;
(c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals);
(d) review the adequacy of any approved strategy/plan/program required under this approval: and, if necessary;
(e) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, strategy/plan/program required under the abovementioned approvals; and
(f) be conducted and reported to the satisfaction of the Secretary.

Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the Secretary.

9. Within 12 weeks of commissioning this audit, or as otherwise agreed by the Secretary, the Proponent must submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

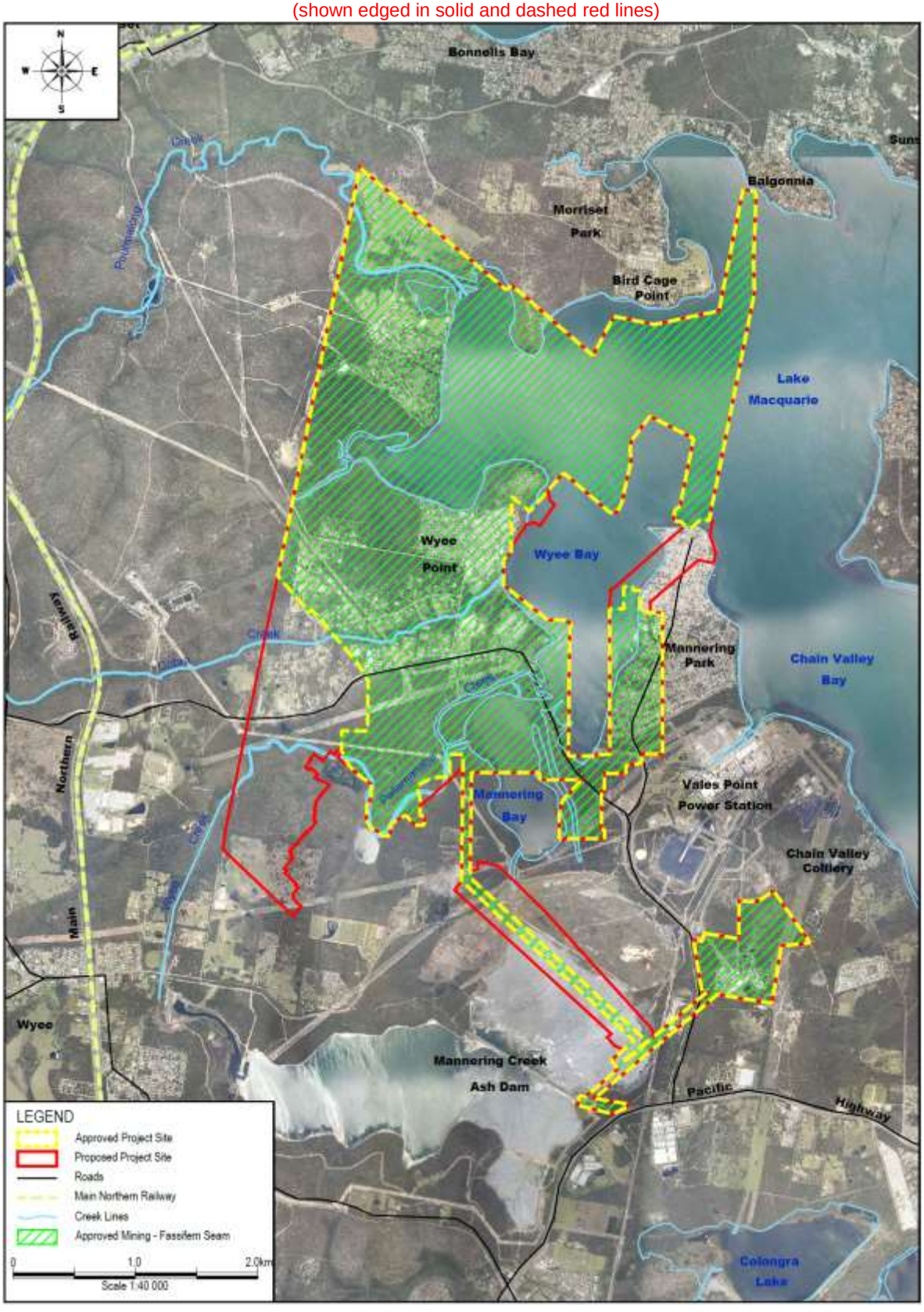
ACCESS TO INFORMATION

10. The Proponent must:
(a) make copies of the following publicly available on its website:
- the documents referred to in condition 2 of Schedule 2;
- all relevant statutory approvals for the project;
- all approved strategies, plans and programs required under the conditions of this approval;
- a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any approved plans or programs required under the conditions of this or any other approval;
- a complaints register, which is to be updated on a monthly basis;
- minutes of CCC meetings;
- the annual reviews required under this approval;
- any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit; and
- any other matter required by the Secretary; and

(b) keep this information up-to-date,
to the satisfaction of the Secretary.

APPENDIX 1: PROJECT LAND

Mannering Colliery – Land to which the Project Approval applies
(shown edged in solid and dashed red lines)



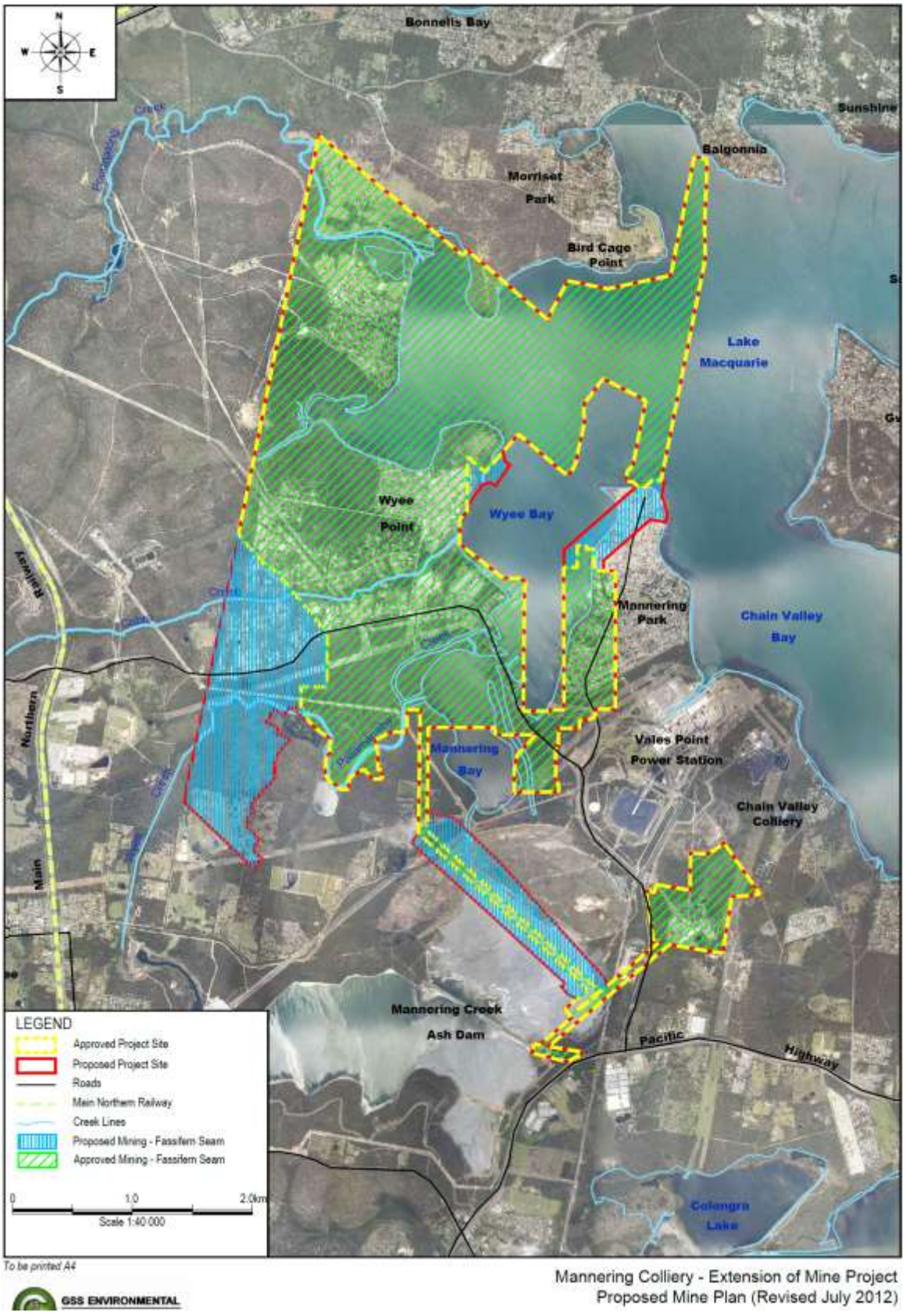
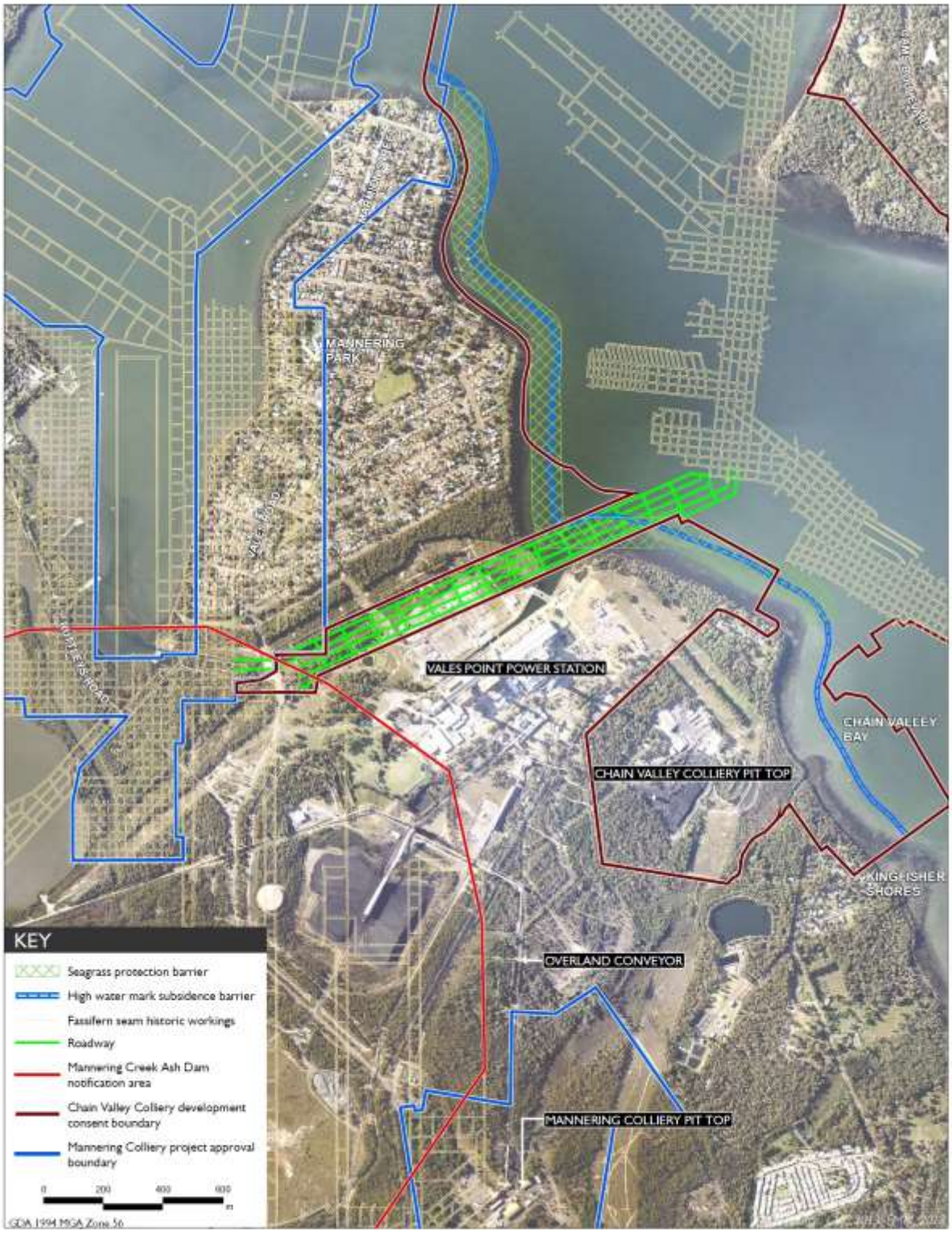


***Figure 1**: Revised Mine Plan for Fassifern Seam*



EMM

Figure 2: *Location of the underground linkage to Chain Valley Colliery*

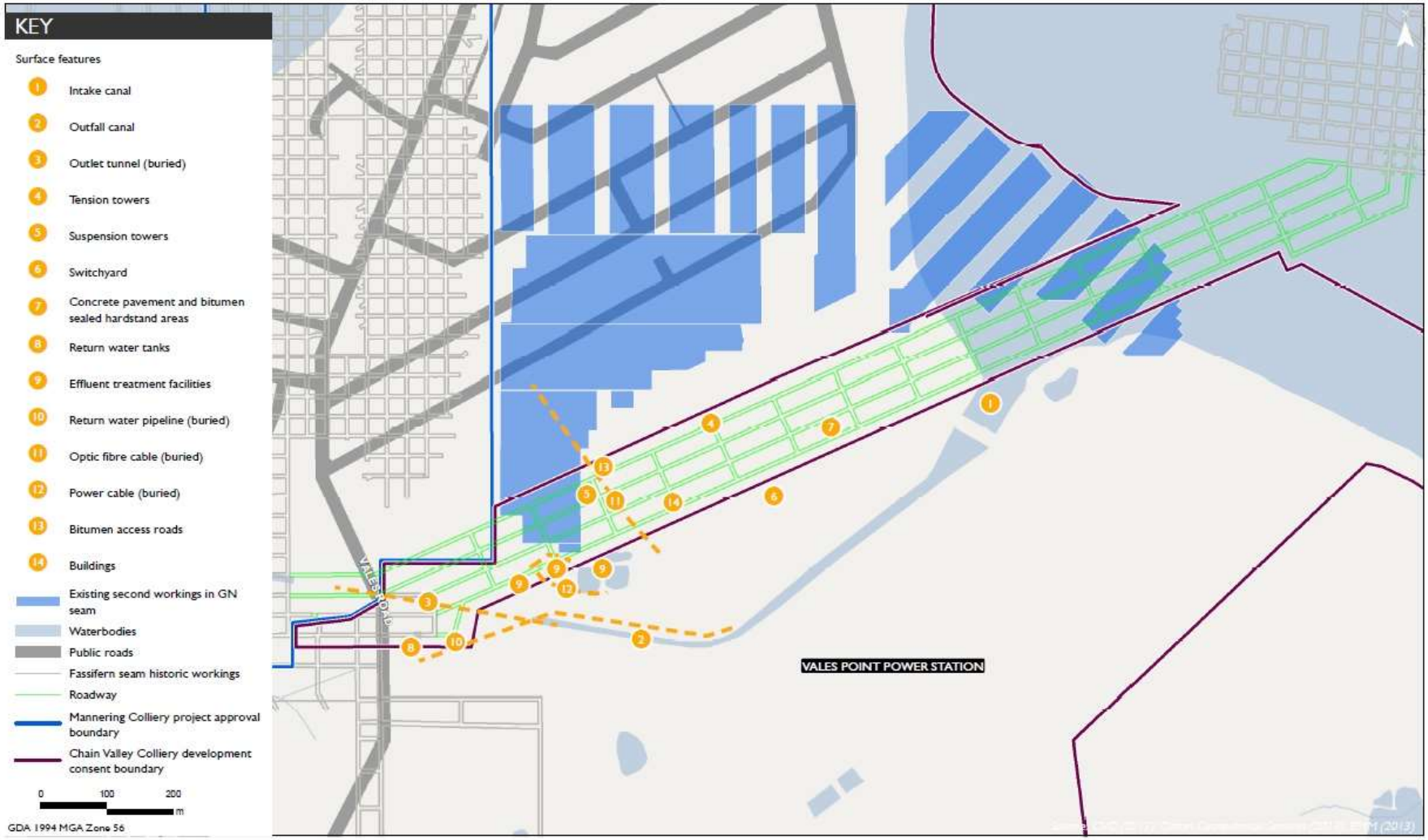


Figure 3: *Location of the underground link and surface infrastructure*



Figure 4. *Location of asset protection zones*

APPENDIX 3: STATEMENT OF COMMITMENTS

Revised Statement of Commitments (December 2015)

Revised Statement of Commitments

Subsidence
Mining to be limited to the approved bord-and-pillar method where coal recovery is limited to first workings only.
Monitoring of the existing subsidence monitoring marks will continue and additional subsidence monitoring marks will be installed above the proposed mining areas to measure the subsidence and verify that subsidence is within the predicted levels.
If it is identified that subsidence levels are greater than the predicted maximum of 20 millimetres, the DTIRIS Minerals Division will be consulted to determine appropriate management and mitigation actions.
Water Management
LakeCoal will undertake a review of the existing site water management system in consultation with the EPA.
The water level within the sediment pond system will be monitored and kept at a relatively low operating level, such that the ponds can provide a detention function in a significant rainfall event.
A visual assessment of the unnamed creek will be undertaken every 6 months to monitor stability and erosion.
Where practicable, underground water levels will be recorded to monitor changes in the level of water stored in underground depressions and to verify that the rate of extraction is sufficient.
The extraction of underground water from the mine workings will be undertaken in accordance with the Bore License (20BL172016) issued under the Water Act 1912.
To enable on-going assessment of the quality of water discharged, the existing monitoring program will be maintained for the life of the Project with the following enhancements: • An assessment of the surrounding catchments summarising land uses and other background information to characterise an appropriate water quality; and • Annual monitoring of heavy metals at the monitoring location identified as 'Downstream'.
Terrestrial Ecology
The following measures to manage the impacts of vegetation clearing/disturbance associated with the APZ requirements will be ongoing: • weed management; • large trees will be retained as a priority where possible; • felled trees will be relocated adjacent to the APZs to create additional fauna habitat; • any injured fauna will be taken to the nearest veterinary hospital for treatment before release; and • an ecologist will complete a pre-disturbance survey to determine important components of the Swamp Oak Floodplain Forest EEC for retention in the APZs.

LakeCoal will investigate the following options for biodiversity offsets: • provide $10,000 of funding, which is equivalent to the biodiversity being lost (ie 5 credits x $2,000 per credit) to existing environmental programs at the site which benefits the Swamp Oak Floodplain Forest EEC; or • consult with OEH to identify a suitable conservation program and provide $10,000 of funding; or • purchase and retire 5 credits on the Biobanking register. These options will be considered by the proponent in consultation with OEH and will reflect OEH's 'Approved BioBanking Assessment Methodology 2014'. The option that achieves the greatest benefit to the biodiversity impacted by the proposed modification will be selected.
If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to terrestrial ecology.
Aquatic Ecology
If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to aquatic ecology.
Aboriginal Heritage
Activities will continue to be managed in accordance with the Colliery's Aboriginal Cultural Heritage Management plan (ACHMP). Given the Colliery's current ACHMP is integrated with other Centennial sites, a separate ACHMP will be developed.
If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to cultural heritage in consultation with OEH.
All relevant Centennial Mannering staff and contractors will be made aware of their statutory obligations for Aboriginal cultural heritage under the NP&W Act as part of the existing mine induction process.
An Aboriginal Cultural Heritage Management Plan (ACHMP) will be developed and implemented for the identified Aboriginal heritage items within the Project Site in consultation with the relevant Aboriginal stakeholders. If additional sites are identified they will be assessed for cultural significance and be incorporated into the ACHMP.
In the unlikely event that skeletal remains are identified, the NSW Police Coroner will be contacted to determine if the material is of Aboriginal origin. If determined to be Aboriginal, contact will be made with the OEH, a suitably qualified archaeologist and representatives of the relevant Aboriginal stakeholder groups to determine an action plan for the management of the skeletal remains and formulate management recommendations if required.
European Heritage
If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to non-indigenous heritage.
All relevant Centennial Mannering staff and contractors will be made aware of their statutory obligations for European cultural heritage under the Heritage Act 1977 as part of the existing mine induction process.
If, during the course of development works, significant non-indigenous cultural heritage material is uncovered within the Project Site, the Heritage Branch of OEH will be notified and any required monitoring or management strategies instigated.

Air Quality
A review of dust management strategies and mitigation measures will be undertaken against the best practice dust mitigation measures identified in the NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining (Katestone Environmental Pty Ltd 2011), which was prepared for OEH. The review will identify any additional dust management practices that are reasonable and feasible for implementation at Mannering Colliery and will be undertaken generally in accordance with any requirements of a pollution reduction program that may be imposed by the OEH on the Manning Colliery EPL in the future.
Traffic
Centennial Mannering will upgrade the Rutleys Road - Mannering Colliery Access Road intersection to improve safety and operational efficiency.
Socio-Economic
Centennial Mannering is committed to on-going community consultation and will continue to engage the community for the purposes of providing information relating to on-going operations and the Extension of Mine Project.
Rehabilitation
Rehabilitation will be undertaken in accordance with the Colliery's mining operations plan, which will be updated to include any changes as a result of the proposed modification.
The Mining Operations Plan will be amended to reflect the proposed modification and will include integrated rehabilitation and environmental management.
Monitoring
The Environmental Monitoring Program will be reviewed and updated, as required, to incorporate the commitments made in the Environmental Assessment and any additional consent conditions.

APPENDIX 4: NOISE ASSESSMENT LOCATIONS

Private Property Surrounding Mannering
(Location of ID numbers are shown on following figure)

ID	Owner	ID	Owner	ID	Owner
1	Energy Australia	**27**	H Gleeson	**53**	H & J Beukers
2	Alcevski Investments	**28**	C Stead & M Garner	**54**	A Taylor-Stewart
3	Eaton & Sons Pty Ltd	**29**	A O'Keefe	**55**	G Kettles
4	O & J di Rocco	**30**	P Groen	**56**	R & E Brokenshire
5	A & M Keighran	**31**	M Parkin	**57**	B & S Fowler
6	Swan HydroPonics Pty Ltd	**32**	I Maclaren	**58**	B Sneddon
7	R Druitt	**33**	P Kranz	**59**	J & P Hanson
8	D & M May	**34**	T & V Wilding	**60**	L Crook & L Kelly
9	L F Jeans	**35**	G Williams	**61**	P & G Becker
10	L & J Jeans	**36**	P & C Byrnes	**62**	B Clover & R Alaban
11	L & J Jeans	**37**	G Holmes	**63**	T & O Becker
12	L & J Jeans	**38**	R & B Croucher	**64**	R Harris & D Kingsford
13	L & J Jeans	**39**	R & C Calvert	**65**	N Singleton
14	L & J Jeans	**40**	T & D Stolz	**66**	M Smith
15	L & J Jeans	**41**	A & S Whitbread	**67**	D & B Johnston
16	L & J Jeans	**42**	B Kelly	**68**	R & B Amos
17	L & J Jeans	**43**	L Preston	**69**	H & C Strand
18	L & J Jeans	**44**	G Bain	**70**	PhystonPty Ltd
19	L & J Jeans	**45**	C Clarke	**71**	R Howland
20	E & K Knight	**46**	W Carpenter	**72**	R & D Shannon
21	Jonita Homes Pty Ltd	**47**	S Mackay	**73**	P & B Williams
22	W & D Buchmasser	**48**	R Allen	**74**	P Batten
23	P McKee	**49**	S Jopp	**75**	G & A Dyer
24	J Farrell	**50**	P & M Davie	**76**	S Harrison & N Robertson
25	P Kretchmer & E Castle	**51**	D Olsen		
26	A Mearns	**52**	D Poulson & K Toope		

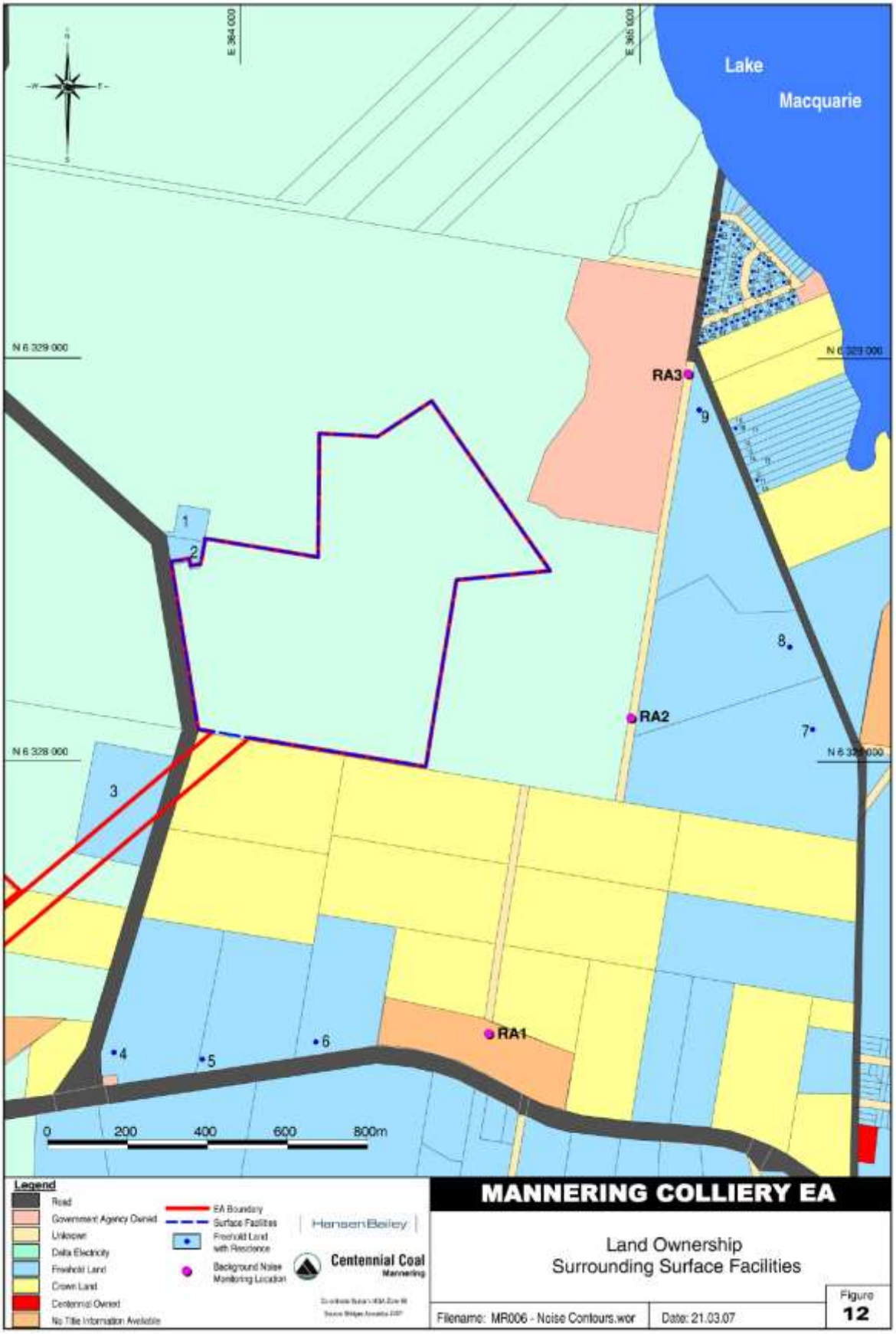


Figure 3: Land Ownership (noise assessment locations)

APPENDIX 4A: NOISE COMPLIANCE ASSESSMENT

Applicable Meteorological Conditions

1. The noise criteria in Tables 1 and 2 in Appendix 4B are to apply under all meteorological conditions except the following:
   (a) wind speeds greater than 3m/s at 10 metres above ground level;
   (b) stability category F temperature inversion conditions and wind speeds greater than 2 m/s at 10 m above ground level; or
   (c) stability category G temperature inversion conditions.

Determination of Meteorological Conditions

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions must be that recorded by the meteorological station located on the site.

Compliance Monitoring

3. Attended monitoring is to be used to evaluate compliance with the relevant conditions of this approval.

4. This monitoring must be carried out at least once a month (at least two weeks apart) for the first 12 months following recommencement of underground coal extraction, and then quarterly thereafter, unless the Secretary directs otherwise.

   Note: The Secretary may direct that the frequency of attended monitoring increase or decrease at any time during the life of the project.

5. Unless the Secretary agrees otherwise, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the *NSW Industrial Noise Policy* (as amended from time to time), in particular the requirements relating to:
   (a) monitoring locations for the collection of representative noise data;
   (b) meteorological conditions during which collection of noise data is not appropriate;
   (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
   (d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration.

APPENDIX 4B: ALTERNATE NOISE CONDITIONS

1. From the recommencement of underground coal extraction at Mannering Colliery until 18 months thereafter, the Proponent must ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately-owned land.

Table 1: Noise limits dB(A)

Day	Evening	Night		Location
$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{A1(1\ min)}$	
40	40	40	49	4 – di Rocco
43	43	41	49	5 – Keighran
42	42	41	49	6 – Swan
39	39	39	47	7 – Druitt
46	46	46	47	8 – May
41	41	41	51	9 – Jeans
39	39	39	49	11 – Jeans
39	39	39	51	18 – Jeans
40	40	40	51	20 – Knight and all other Chain Valley Bay residences

Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.

Noise generated by the project is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4A sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

2. Following the expiry of the 18 month period referred to in condition 1 above, the Proponent must ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 2 at any residence on privately-owned land.

Table 2: Noise limits dB(A)

Day	Evening	Night		Location
$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{A1(1\ min)}$	
40	40	40	49	4 – di Rocco
41	41	41	49	5 – Keighran
41	41	41	49	6 – Swan
39	39	39	47	7 – Druitt
45	45	43	47	8 – May
41	41	41	51	9 – Jeans
39	39	39	49	11 – Jeans
39	39	39	51	18 – Jeans
40	40	40	51	20 – Knight and all other Chain Valley Bay residences

Note: The location of the land referred to in Table 2 is shown on the figure in Appendix 4.

Noise generated by the project is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4A sets out

the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

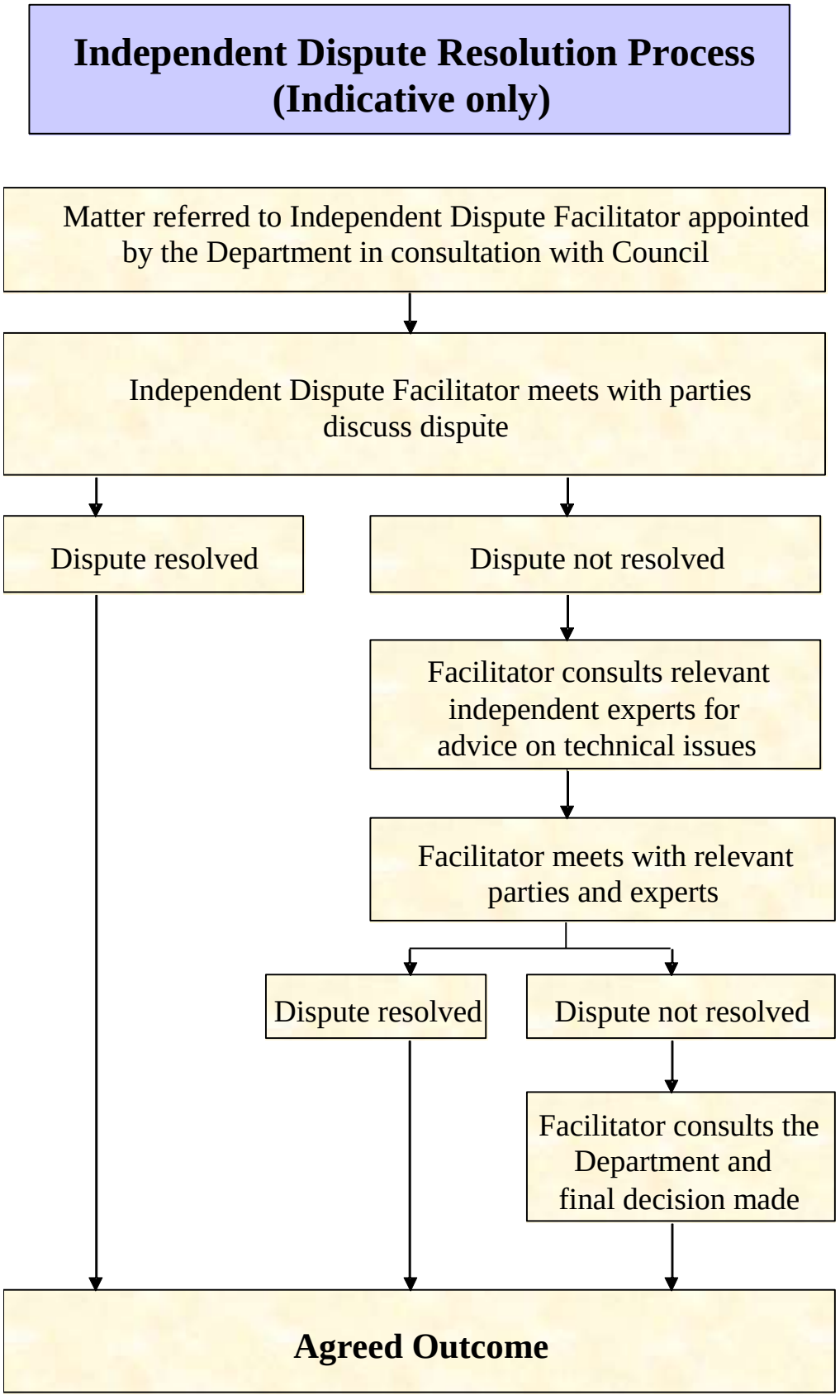
3. The Proponent must prepare a report on all noise mitigation measures required to achieve the noise limits in Table 2 to the satisfaction of the Secretary. This report must:
   (a) be prepared by a suitably qualified and experienced acoustic consultant whose appointment has been approved by the Secretary;
   (b) be prepared in consultation with EPA, and submitted to the Department for approval within 6 months after recommencement of underground coal extraction; and
   (c) include an action plan for the implementation of any reasonable and feasible recommendations of the report.

   The Proponent must implement the noise mitigation measures prior to the expiry of the 18 month period referred to in condition 1 above.

4. The Proponent must prepare a Noise Compliance Report for the project to the satisfaction of the Secretary. The report must:
   (a) be prepared by a suitably qualified acoustic consultant, whose appointment has been approved by the Secretary;
   (b) be prepared in consultation with EPA, and be submitted for approval within 6 months of the expiry of the 18 month period referred to in condition 1 above; and
   (c) investigate and evaluate the effectiveness of the noise mitigation measures required under condition 3 and compliance with the noise limits in Table 2.

APPENDIX 5:

INDEPENDENT DISPUTE RESOLUTION



Appendix 2: Plans

MORISSET

MORISSET PARK

SUMMERLAND POINT

MANNERING PARK

VALES POINT POWER STATION

MANNERING COLLIERY SURFACE FACILITIES

LAKE MUNMORAH

BLUE HAVEN

MUNMORAH POWER STATION

SAN REMO

N

W E

S

0 500 1000 2000 4000

METRES

Fassifern Seam - Existing Workings
Great Northern Seam - Existing Workings
Colliery Holding Boundary (Fassifern Seam)
Colliery Holding Boundary (Great Northern Seam)

LAKE COAL PTY LIMITED
MANNERING MINE

MINE LOCALITY PLAN
ANNUAL REVIEW - 2019

SCALE:	1:40 000	DATE:	31 March 2020
DRAWN:	T Chisholm	DRG NO:	A1S0005_1
CHECKED:	-	REV NO:	2019
SIGNED:	-	SIZE:	A3

Delta coal

360 000
361 000
362 000
363 000
364 000
365 000

6 333 000
6 332 000
6 331 000
6 330 000
6 329 000
6 328 000
6 327 000
6 326 000

CHAIN VALLEY COLLIERY

MANNERING MINE WORKINGS

NEWVALE COLLIERY (ABANDONED)

MANNERING CREEK ASH DAM

COLONGRA CREEK ASH DAM

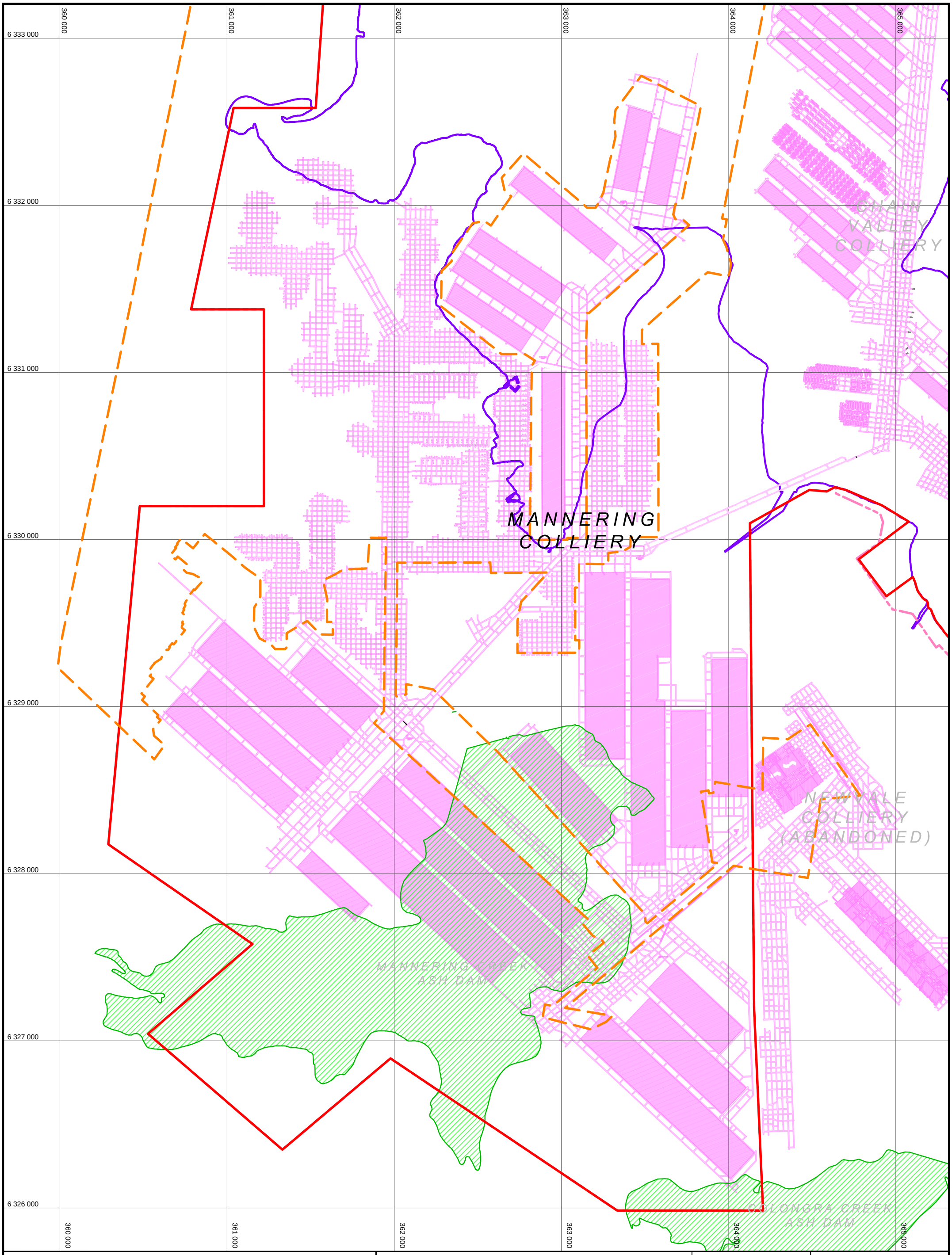
- Great Northern Seam - Existing Workings
- Lake Macquarie
- Colliery Holding Boundary
- MP 06_311 Approval Boundary
- Ash Dam(s)

LAKE COAL PTY LIMITED
MANNERING MINE

GREAT NORTHERN SEAM WORKINGS
ANNUAL REVIEW - 2019

SCALE:	1:20 000	DATE:	31 March 2020
DRAWN:	T Chisholm	DRG NO:	A1S0005_2
CHECKED:	-	REV NO:	2019
SIGNED:	-	SIZE:	A3

Delta coal



Fassifern Seam - Existing Workings
Lake Macquarie
Colliery Holding Boundary
MP 06_311 Approval Boundary
Ash Dam(s)

LAKE COAL PTY LIMITED
MANNERING COLLIERY

FASSIFERN SEAM WORKINGS
ANNUAL REVIEW - 2019

SCALE:	1:20 000	DATE:	31 March 2020
DRAWN:	T Chisholm	DRG NO:	A1S0005_3
CHECKED:	-	REV NO:	2019
SIGNED:	-	SIZE:	A3

Delta coal

N
W E
S

Oil / Water Separator
Wash down sump
Oxy - acetalene storage compounds
Cable shed
Workshop and Store
Hazardous Substances & Dangerous Goods
Fire Station
Hard Stand Storage
Aerated Water Treatment System
Down cast Shaft
Mine Dewatering Lines
Main Office
Training Centre
Compressors
Operations Office
132000 litre Water Tanks
Bathhouse
Septic Tanks
Haulage Room
ROM Bin
Switch Room
Cable Belt Switch room
80000 litre Water Tank
Sub Station
Tube Bundle Monitoring
Cable belt Drive
Switchroom
250 tonne bin
Entry Gate to Colliery
Weighbridge
Final Products Bin
Coal Stockpile Area
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
Sediment Dams
Buried Discharge Pipeline
Licenced Discharge Point No. 1
E: 364 998
N: 6329 479
Tidal Creek

VENTILATION FAN SITE

Switch room
Ventilation Fans
Old switch room
Services Borehole

PIT TOP FACILITIES
CHAIN VALLEY COLLIERY

0 50 100 200
METRES

DELTA COAL CHAIN VALLEY COLLIERY	SCALE: 1:2000	DATE: 24 Jan 2020	
	DRAWN: T Chisholm	DRG NO: C4P0180_3	
ANNUAL REVIEW - CY2019 Plan 3 - Surface Facilities	CHECKED: C Armit	REV NO: 2019	Delta coal
		SIZE: A3	

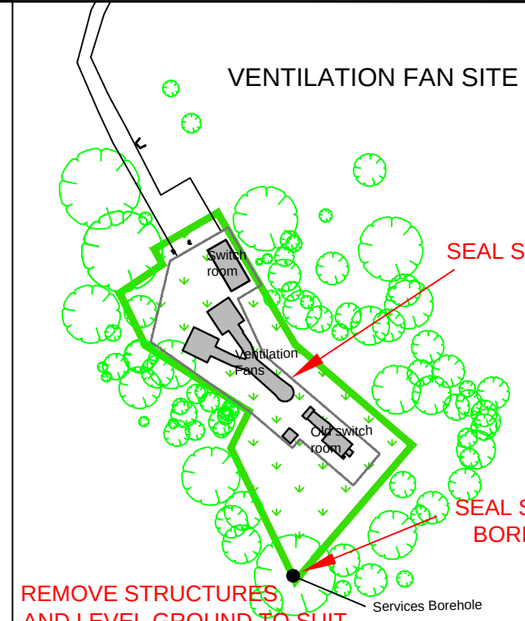
N
W
E
S

Oil / Water Separator
Wash down sump
Oxy - acetalene storage compounds
Cable shed
Workshop and Store
Hazardous Substances & Dangerous Goods
Fire Station
Hard Stand Storage
Aerated Water Treatment System
Mine Dewatering Lines
Compressors
Main Office
Training Centre
Operations Office
Bathhouse
Septic Tanks
132000 litre Water Tanks
80000 litre Water Tank
Haulage Room
Switch Room
Tube Bundle Monitoring
Sub Station
Cable Belt Switch room
ROM Bin
Cable belt Drive
Switchroom
250 tonne bin
Entry Gate to Colliery
Weighbridge
Final Products Bin
Coal Stockpile Area
SEAL SHAFT
SEAL DRIETS
Down cast Shaft
CUT & FILL TO MATCH SURROUNDING RL's
REMOVE STRUCTURES AND LEVEL GROUND TO SUIT
Sediment Dams
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
Tidal Creek

PIT TOP FACILITIES
CHAIN VALLEY COLLIERY

0 50 100 200
METRES

VENTILATION FAN SITE



Rehabilitation - Bushland
Rehabilitation -Grassland
Rehabilitation - Surface Water Flow
Rehabilitation - Proposed Dams

DELTA COAL
CHAIN VALLEY COLLIERY

ANNUAL REVIEW CY2019
Plan 4 - Proposed Rehabilitation

SCALE:	1:2000	DATE:	24 Jan 2020
DRAWN:	T Chisholm	DRG NO:	C4P0180_4
CHECKED:	C Armit	REV NO:	2020
		SIZE:	A3

Delta coal

Appendix 3: Environment Protection Licence 191

Environment Protection Licence

Licence - 191

Licence Details	
Number:	191
Anniversary Date:	01-January

Licensee

GREAT SOUTHERN ENERGY PTY LTD

PO BOX 7115

MANNERING PARK NSW 2259

Premises

MANNERING COLLIERY

RUTLEYS ROAD

DOYALSON NSW 2262

Scheduled Activity

Coal works

Mining for coal

Fee Based Activity	Scale
Coal works	0-2000000 T annual handing capacity
Mining for coal	> 500000-2000000 T annual production capacity

Region

North - Hunter

Ground Floor, NSW Govt Offices, 117 Bull Street
NEWCASTLE WEST NSW 2302

Phone: (02) 4908 6800

Fax: (02) 4908 6810

PO Box 488G

NEWCASTLE NSW 2300

Environment Protection Licence

Licence - 191

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Transfer of licence ---- 5

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Environment Protection Licence

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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

Licence - 191

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

GREAT SOUTHERN ENERGY PTY LTD
PO BOX 7115
MANNERING PARK NSW 2259

subject to the conditions which follow.

Environment Protection Licence

Licence - 191

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Coal works	Coal works	0 - 2000000 T annual handing capacity
Mining for coal	Mining for coal	> 500000 - 2000000 T annual production capacity

A1.2 The licensee must not:
(a) Produce by mining activities more than 1.1 million tonnes of coal within any 12 month period.
(b) Undertake coal works handling more than 1.3 million tonnes within any 12 month period, where ROM coal handled on the premises may be made up of coal produced by mining activities from both the Mannering premises as defined in this licence or Chain Valley premises as defined in Environment Protection Licence number 1770.

Note: These limits on the scale of the fee based activities are based on project Approval 06_0311 granted under the *Environmental Planning and Assessment Act 1979* which limits extraction to 1.1 million tonnes of run of mine (ROM) coal per year and its modifications, the most recent of which is dated 27 November 2014.

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
MANNERING COLLIERY
RUTLEYS ROAD
DOYALSON
NSW 2262

Environment Protection Licence

Licence - 191

SURFACE PREMISES DESCRIBED BY PLAN OF PREMISES TITLED "MANNERING COLLIERY EPL PREMISES PLAN FIGURE 2 SURFACE EXTENTS, COMPLIANCE AND MONITORING LOCATIONS" DATED 24 JANUARY 2014 DOC15/31114 AND MINING FOR COAL IN THE FASSIFERN AND GREAT NORTHERN COAL SEAMS DESCRIBED BY THE PLAN OF THE PREMISES TITLED "MANNERING COLLIERY EPL PREMISES PLAN FIGURE 1 PROJECT EXTENTS" DATED 24 JANUARY 2014 DOC15/31114. THIS PLAN IS HELD ON FILE LIC08/38-03 DUE TO SIZE OF PLAN.

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
3	Dust monitoring		Dust deposition gauge identifed as point 3 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 24 January 2014 DOC15/31114. Held on LIC08/38-03 due to size of plan.
4	Dust monitoring		Dust deposition gauge identifed as point 4 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 24 January 2014 DOC15/31114. Held on LIC08/38-03 due to size of plan.

5	Dust monitoring	Dust deposition gauge identifed as point 5 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 24 January 2014 DOC15/31114. Held on LIC08/38-03 due to size of plan.
6	Dust monitoring	Dust deposition gauge identifed as point 6 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 24 January 2014 DOC15/31114. Held on LIC08/38-03 due to size of plan.
7	Dust monitoring	Dust deposition gauge identifed as point 3 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 24 January 2014 DOC15/31114. Held on LIC08/38-03 due to size of plan.

P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Discharge from Final Treatment Pond (surface and groundwater) identifed as point 1 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 24 January 2014 DOC15/31114. Held on LIC08/38-03

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

Environment Protection Licence

L2.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

L2.4 Water and/or Land Concentration Limits

POINT 1

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre				10
pH	pH				6.5-8.5
Total suspended solids	milligrams per litre				50

L3 Volume and mass limits

L3.1 For each discharge point or utilisation area specified below (by a point number), the volume/mass of:
a) liquids discharged to water; or;
b) solids or liquids applied to the area;
must not exceed the volume/mass limit specified for that discharge point or area.

Point	Unit of Measure	Volume/Mass Limit
1	kilolitres per day	4000

L3.2 Exceedance of the volume limit for Point 1 is permitted only if the discharge from Point 1 occurs solely as a result of rainfall at the premises exceeding 10mm during the 24 hours immediately prior to the commencement of discharge

L4 Waste

L4.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	Waste	Any other waste received on the premises for storage, treatment, processing, sorting or disposal and which receipt is not a scheduled activity under Schedule 1 of the POEO Act, as in force from time to time.		
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2014	As specified in each particular resource recovery exemption	N/A

L4.2 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

L4.3 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environment protection licence.

L5 Noise limits

Note: Noise limits are not specified as a condition of this licence. Noise limits are prescribed with the conditions of Project Approval 06_0311 granted under the *Environmental Planning and Assessment Act 1979.* Under the *Environmental Planning and Assessment Act 1979* the Department of Planning is the appropriate authority in respect of the administration and regulation of the Project Approval.

4 Operating Conditions

Environment Protection Licence

Licence - 191

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O3.2 Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.

O3.3 All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.

O3.4 Trucks transporting coal from the premises must be covered immediately after loading to prevent wind blown emissions and spillage. The covering must be maintained until immediately before unloading the trucks.

O3.5 The tailgates of all haulage trucks leaving the premises must be securely fixed prior to loading or immediately after unloading to prevent loss of materials.

O3.6 Coal stockpiles must be maintained in a condition that will minimise the generation and emission of dust on the premises.

O4 Emergency response

O4.1 The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.

O5 Other operating conditions

O5.1 All above-ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.

O5.2 The licensee must ensure that activities are conducted in an environmentally satisfactory manner. So as to minimise and prevent the pollution of air and water the licensee must:
(a) Ensure that vehicles or containers prior to leaving the premises are clean and sealed in a manner that will not cause materials or wastes used in conducting the activities at the premises to be tracked, thrown from, blown, fall, or cast from any vehicle or container onto a public road.
(b) The licensee must have in place and implement procedures to ensure that vehicles and containers exiting the premises are in a condition to ensure that materials are not tracked, thrown, blown, fall or cast onto a public road.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

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POINT 3,4,5,6,7

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Monthly	AM-19

M2.3 Water and/ or Land Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Aluminium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Aluminium (total)	micrograms per litre	Monthly during discharge	Grab sample
Antimony	micrograms per litre	Monthly during discharge	Grab sample
Arsenic (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Arsenic (total)	micrograms per litre	Monthly during discharge	Grab sample
Barium	micrograms per litre	Monthly during discharge	Grab sample
Beryllium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Beryllium (total)	micrograms per litre	Monthly during discharge	Grab sample
Boron	micrograms per litre	Monthly during discharge	Grab sample
Cadmium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Cadmium (total)	micrograms per litre	Monthly during discharge	Grab sample
Calcium	micrograms per litre	Monthly during discharge	Grab sample
Chromium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Chromium (total)	micrograms per litre	Monthly during discharge	Grab sample
Cobalt (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Cobalt (total)	micrograms per litre	Monthly during discharge	Grab sample
Conductivity	microsiemens per centimetre	Weekly during any discharge	Grab sample
Copper (dissolved)	micrograms per litre	Monthly during discharge	Grab sample

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Copper (total)	micrograms per litre	Monthly during discharge	Grab sample
Iron	micrograms per litre	Monthly during discharge	Grab sample
Lead (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Lead (total)	micrograms per litre	Monthly during discharge	Grab sample
Lithium	micrograms per litre	Monthly during discharge	Grab sample
Magnesium	micrograms per litre	Monthly during discharge	Grab sample
Manganese (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Mercury (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Mercury (total)	micrograms per litre	Monthly during discharge	Grab sample
Molybdenum (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Molybdenum (total)	micrograms per litre	Monthly during discharge	Grab sample
Nickel (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Nickel (total)	micrograms per litre	Monthly during discharge	Grab sample
Nitrogen (ammonia)	micrograms per litre	Monthly during discharge	Grab sample
Oil and Grease	milligrams per litre	Weekly during any discharge	Grab sample
pH	pH	Weekly during any discharge	Grab sample
Phosphorus	micrograms per litre	Monthly during discharge	Grab sample
Potassium	micrograms per litre	Monthly during discharge	Grab sample
Selenium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Selenium (total)	micrograms per litre	Monthly during discharge	Grab sample
Silica	micrograms per litre	Monthly during discharge	Grab sample
Silver (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Silver (total)	micrograms per litre	Monthly during discharge	Grab sample
Sulfur	micrograms per litre	Monthly during discharge	Grab sample
Tin	micrograms per litre	Monthly during discharge	Grab sample
Titanium	micrograms per litre	Monthly during discharge	Grab sample

Total suspended solids	milligrams per litre	Weekly during any discharge	Grab sample
Vanadium (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Vanadium (total)	micrograms per litre	Monthly during discharge	Grab sample
Zinc (dissolved)	micrograms per litre	Monthly during discharge	Grab sample
Zinc (total)	micrograms per litre	Monthly during discharge	Grab sample

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Weather monitoring

M4.1 For each monitoring point specified in the table below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns. **Point W1**

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Rainfall	mm	Continuous	24 hour	AM-4
Wind direction	degrees	Continuous	1 hour	AM-2 and AM-4

M4.2 For the purpose of condition M4.1, Point W1 refers to a meteorological station established on the premises.

M4.3 The licensee may use the meteorological station established at Eraring Power Station provided the licensee has authority from Eraring Energy to access data from the Eraring Power Station at all times. However, if this station is not available at any time then condition M4.2 applies.

M4.4 The licensee must fully comply with condition M4 by 30 April 2011.

M5 Recording of pollution complaints

M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M5.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

M6.4 The licensee must nominate a representative of the company that is available all all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including a telephone number, must be current at all times.
Note: This condition does not apply until two (2) weeks after the date of issue of this licence.

M7 Requirement to monitor volume or mass

M7.1 For each discharge point or utilisation area specified below, the licensee must monitor:
a) the volume of liquids discharged to water or applied to the area;
b) the mass of solids applied to the area;
c) the mass of pollutants emitted to the air;
at the frequency and using the method and units of measure, specified below.

POINT 1

Frequency	Unit of Measure	Sampling Method
Continuous during discharge	kilolitres per day	In line instrumentation

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and

ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee

is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

Receival of ROM Coal

R4.1 The licensee must notify the Manager Hunter Region hunter.region@epa.nsw.gov.au within 24 hours of the receival of ROM Coal at the Coal Handling and Preparation Plant that the plant has been re-commissioned.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Other general conditions

G2.1 **Completed Programs**

Program	Description	Completed Date

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PRP 1 - Assessment of Potential Impacts of Metals	The licensee must conduct an assessment of metals detected in wastewater discharges from the mine in accordance with the ANZECC water quality guidelines.. To obtain a greater understanding of the type and concentration of metals discharged in mine water and entering the receiving waters. To limit the concentration of metals discharged in mine water within ANZECC guidelines.(@)	26-June-2013
Coal Mine Particulate Matter Control Best Practice	Requires licensee to conduct a site specific Best Management Practice (BMP) determination to identify wyas to reduce particle emissions.	19-September-2012
Coal Handling and Preparation Plant Commissioning Water Quality Monitoring Study	CHPP commissioning water quality monitoring study	12-October-2016

Environment Protection Licence

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Ms Debbie Maddison

Environment Protection Authority

(By Delegation)

Date of this edition: 06-April-2000

Environment Protection Licence

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End Notes

1	Licence varied by notice V/M upgrade, issued on 10-Jul-2000, which came into effect on 10-Jul-2000.
2	Licence varied by notice 1005801, issued on 13-Aug-2001, which came into effect on 07-Sep-2001.
3	Licence varied by Change of contact details, issued on 16-Apr-2002, which came into effect on 16-Apr-2002.
4	Licence transferred through application 141582, approved on 21-Nov-2002, which came into effect on 07-Aug-2002.
5	Licence varied by notice 1024680, issued on 04-Feb-2003, which came into effect on 06-Feb-2003.
6	Licence varied by notice 1043601, issued on 14-Jan-2005, which came into effect on 08-Feb-2005.
7	Licence varied by notice 1055208, issued on 01-Mar-2006, which came into effect on 26-Mar-2006.
8	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
9	Licence varied by notice 1105215, issued on 23-Feb-2011, which came into effect on 23-Feb-2011.
10	Licence varied by notice 1502466 issued on 21-Dec-2011
11	Licence transferred through application 1517779 approved on 29-Oct-2013 , which came into effect on 17-Oct-2013
12	Licence varied by notice 1527523 issued on 13-May-2015
13	Licence varied by notice 1551540 issued on 12-May-2017
14	Licence transferred through application 1578020 approved on 01-Apr-2019 , which came into effect on 01-Apr-2019

Appendix 4: Weed Action Plan

total earth care



Weed Action Plan

Chain Valley Colliery, Mannering Colliery and Summerland Point Ventilation Shaft

Total Earth Care Pty Ltd

January 20

total earth care

Weed Action Plan

Chain Valley Colliery, Mannering Colliery and Summerland Point Ventilation Shaft

January 20

Quality Control	© Total Earth Care Pty Ltd 2019		
Revision/Version No.	Final	**Date of revision**	17 January 2020
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Approved by	G Barron, W Thurston		
Prepared for:	Delta Coal		
TEC Job No.	C11483		

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1 INTRODUCTION

1.1 Background

Total Earth Care (TEC) has been commissioned by Delta Coal to prepare this update for the Weed Action Plan for the three (3) Delta Coal sites: Chain Valley Colliery, Mannering Colliery and Summerland Point Ventilation Shaft. The site is within the Central Coast LGA (formerly Wyong LGA).

A Weed Action Plan was developed for Lake Coal in 2016 to guide weed management of the aforementioned sites in a consolidated report. The sites are now managed by Delta Coal and an updated Weed Action Plan is required to assess the current weed densities on the site and provide relevant management actions that will assist in the development of updated Biodiversity Management Plans for each site. The Weed Action Plan will guide on ground weed management and assist in tracking the progress of since the previous Weed Action Plan developed in 2016.

1.2 Subject Sites and Study Area

The “Study Area” has been defined as each of the three (3) sites: Chain Valley Colliery, Mannering Colliery and Summerland Point Ventilation Shaft. Management Zones have previously been defined for these sites. Please see the Maps 1 to 3 below which indicate the boundaries of the Project Area and the existing management zones.

All three (3) sites fall within the Local Land Services Greater Sydney Region, bordering on the Hunter Region.

1.3 Goals and Objectives

The objectives of this management program are to:

- Describe the existing flora and fauna within the subject site based on current survey effort and database searches of the subject site and surveys of the wider study area.
- Provide ground-truthed weed density maps, highlighting priority weeds under the *NSW Biosecurity Act 2015.*
- Report any threats to Endangered Ecological Communities.
- Provide a program for ongoing weed management and/or eradication.

Title: Chain Valley Colliery: Subject Site & Survey Effort

Map No: 1

Site: Chain Valley Colliery

Client: Delta Coal

Date: November 2019

Project No: 11483

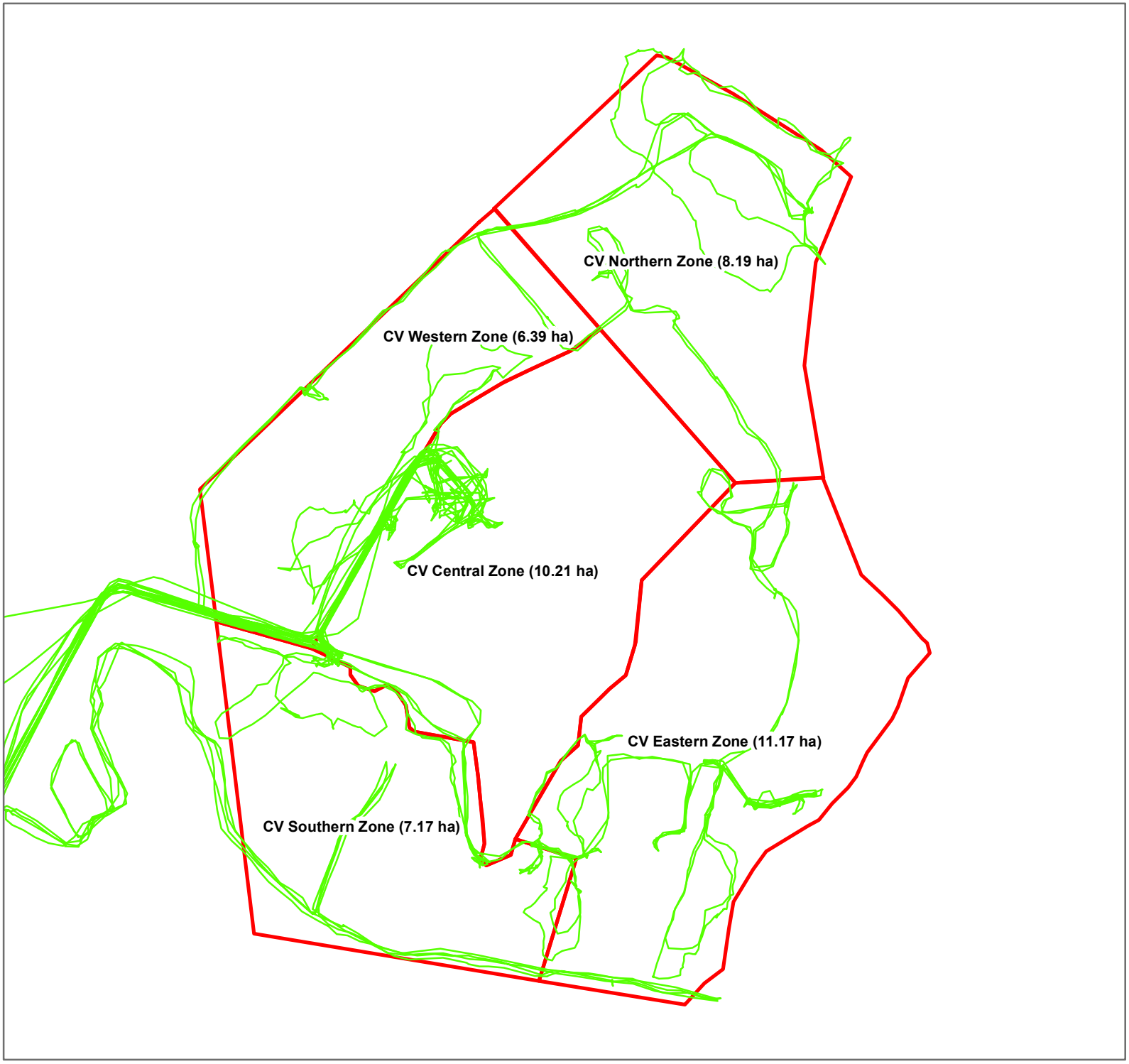
Author: G Barron

Legend

- Management Zones
- Road
- Creek
- Survey Effort

EEC under BC Act 2016

- Swamp Oak Floodplain Forest
- Swamp Sclerophyll Forest on Coastal Floodplains EEC



0 50 100 200 Meters

N

Data Source:
Total Earth Care
Nearmap
Wyong ELA 2016 v2

Copyright Total Earth Care Pty Ltd,
Tel: 02 9913 1432 Fax: 02 9913

Title: Mannering Colliery: Subject Site & Survey Effort

Map No: 2
Site: Mannering Colliery
Client: Delta Coal
Date: November 2019
Project No: 11483
Author: G Barron

Legend

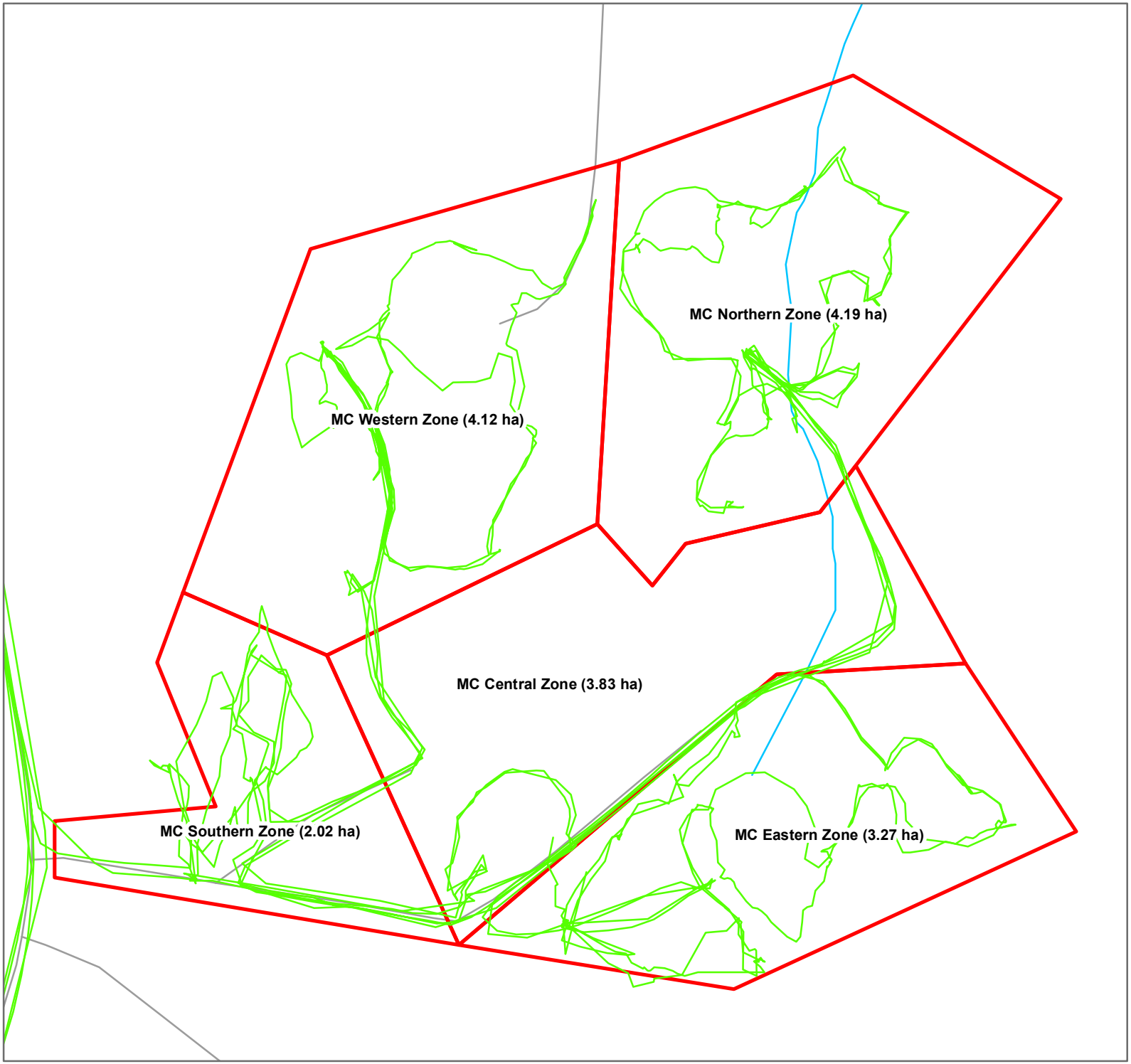
- Management Zones
- Road
- Creek
- Survey Effort

0 25 50 100 Meters

N

Data Source:
Total Earth Care
Nearmap

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Title: **Summerland Point Ventilation Shaft: Subject Site, EECs & Survey Effort**

Map No: 3

Site: Summerland Point Ventilation Shaft

Client: Delta Coal

Date: November 2019

Project No: 11483

Author: G Barron

Legend

- Summerland Point
- Road
- Creek
- Survey Effort

EEC under BC Act 2016

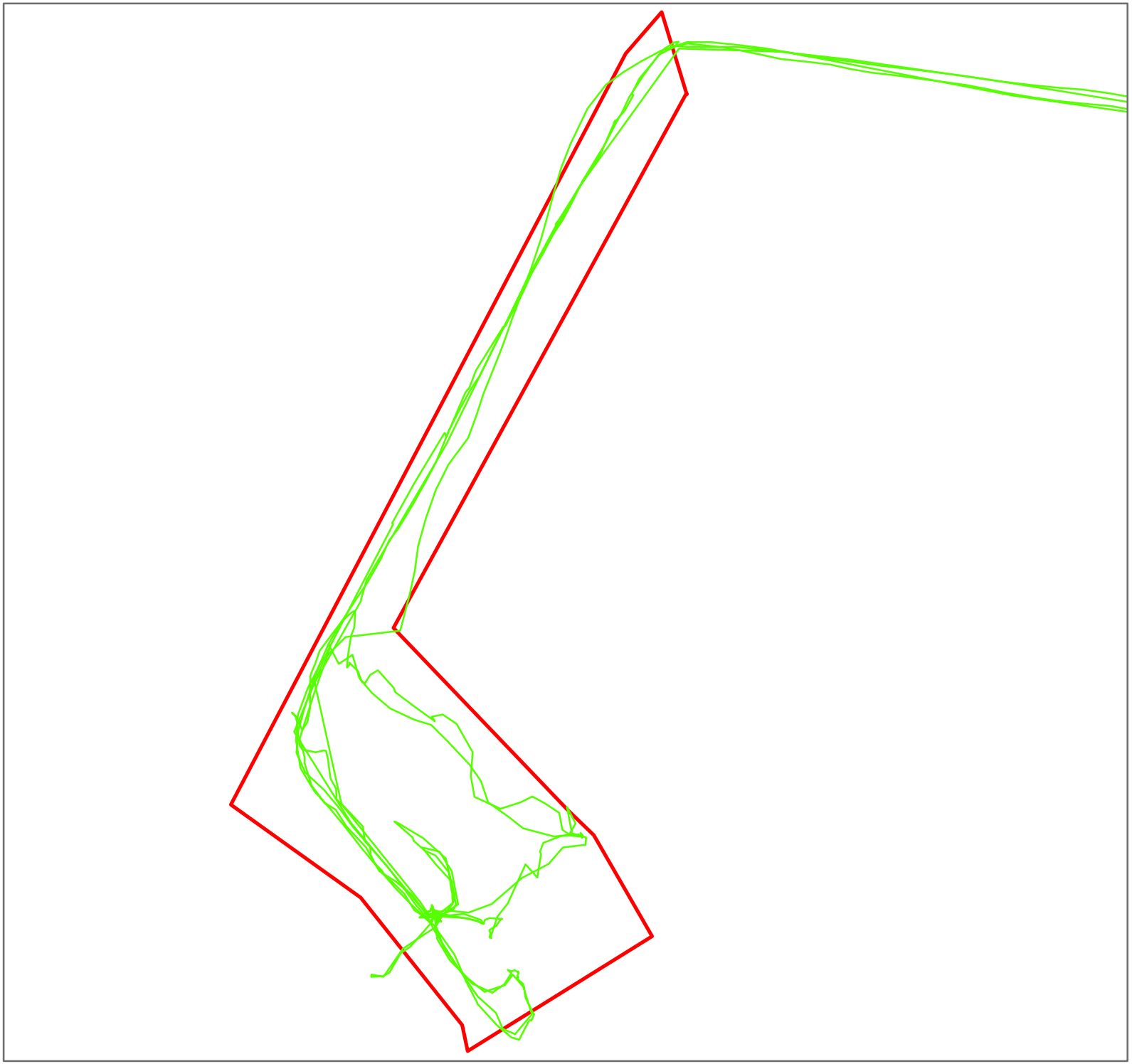
- Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion
- Swamp Sclerophyll Forest on Coastal Floodplains EEC

0 25 50 100 Meters

N

Data Source:
Total Earth Care
SIX Maps
Wyong ELA 2016 v2

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1.4 Relevant Legislation and Strategies

This Weed Action Plan will be written in accordance with:

1 Commonwealth laws including:
   a. *Environment Protection and Biodiversity Conservation Act 1999*
2 NSW laws including:
   a. *Biodiversity Conservation Act 2016*
   b. *Biosecurity Act 2015*
3 Local laws LGA:
   a. *Wyong Local Environment Plan 2013*
   b. *Wyong Development Control Plan 2013*
4 Weed Strategies
   a. *Australian Weeds Strategy 2017-2027*
   b. *Greater Sydney Regional Strategic Management Plan*

1.4.1 NSW Biosecurity Act 2015 – Weeds

The NSW *Biosecurity Act 2015*, repealed the NSW *Noxious Weeds Act 1993* on the 1st of July 2017.

The purpose of the NSW *Biosecurity Act 2015* is to provide framework for risk-based prevention, elimination and minimisation of biosecurity risks. These include pests, diseases, contaminants, non-indigenous animals, bees, weeds and other biosecurity matter. One of the main objectives of the Biosecurity Act 2015 is to promote biosecurity issues as a shared responsibility between government, industry, and communities, i.e. private and public land managers have the same obligations under the Act. Local Council is the control authority who enforces this Act. A State Weeds Committee has been established, as well as eleven (11) Regional Weeds Committees who will provide guidance and facilitate community and stake holder input into weed management.

Under the *Biosecurity Act 2015*, the definition of a weed is a plant that is a pest, and the definition of a pest is a plant or animal (other than a human) that has an adverse effect on, or is suspected of having an adverse effect on, the environment, the economy or the community.

Schedule 1 describes the special provisions relating to weeds. Under this Schedule, land occupiers have a duty to:

- control weeds on roads which bound their occupied land;
- control aquatic weeds along a watercourse, river, or inland water which bound their occupied land; and
- control weeds on land extended from their occupied land if that land is an irrigation area forming any part of a public road, public reserve or public channel, or watercourse, river or inland water.

Regional Strategic Weed Management Plans have been developed which describe the land occupier's expectations for managing weeds and form the basis for an enforceable general biosecurity duty. The three (3) Delta Coal sites fall within the Greater Sydney Local Land Services area, therefore the *Greater Sydney Regional Strategic Management Plan* applies to these sites.

1.4.2 Australian Weeds Strategy – Weeds of National Significance (WoNS)

Australian Weeds Strategy provides a national framework for addressing weed issues. It lists thirty-two (32) weed species or genera that are required to be managed under state legislation. These are Weeds of National Significance (WoNS). Five (5) of these have been identified on site and are listed in Section 3 of this management plan.

1.4.3 NSW Biodiversity Conservation Act 2016

The NSW *Biodiversity Conservation Act 2016* (BC Act), with associated regulations and maps, repealed the *Threatened Species Conservation Act 1995* on the 25th of August 2017. The BC Act is now the key piece of legislation protecting threatened species, populations and ecological communities within NSW.

There are a number of Endangered Ecological Communities (EEC) mapped on the Delta Coal sites (ELA 2016). These include;

- *Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions;*
- *Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*; and

- *Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion.*

Refer to Maps 1, 2 and 3 for mapped EECs. The Mannering Colliery does not contain any EECs.

One aim of the BC Act is to eliminate or manage certain Key Threatening Processes (KTPs) that threaten the survival or evolutionary development of threatened species, populations and ecological communities.

KTPs listed by the BC Act are identified as having significant impacts on the conservation of native flora and fauna. There are currently thirty-seven (37) KTPs listed under the BC Act including:

i. Invasion and establishment of exotic vines and scramblers.
ii. Invasion, establishment and spread of *Lantana camara*.
iii. Invasion of native plant communities by *Chrysanthemoides monilifera* (Bitou Bush and Boneseed).
iv. Invasion of native plant communities by exotic perennial grasses.
v. Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants.

2 METHODS

2.1 Desktop Research

A preliminary desktop study was conducted to assess the previously mapped weed locations (Kleinfelder 2016) and existing plant community types using the Wyong ELA 2016 PCT (ELA, 2016) mapping.

2.2 Site Survey

A site survey was conducted over two (2) days on the 15th and 16th October 2019. Weather conditions were clear with maximum temperatures of approximately 25˚C on the 15th and 24˚C on the 16th. See Maps 1, 2 and 3 for survey effort.

A general weed survey was conducted using random meanders. Edges of bushland, creek lines, disturbed areas and any other areas likely to contain weeds were targeted as were areas where weeds were previously identified in the 2016 Weed Action Plan.

- The identification of native and exotic plant species according to *Field Guide to the Native Plants of Sydney* (Robinson, 2003), Flora of NSW, Volumes 1-4 (Harden 1992, 1993, 2000, 2002), *Weeds of the south-east: an identification guide for Australia* (Richardson et al, 2006) and PlantNET (2019), with reference to recent taxonomic changes;

Any “weed infestations” found during survey were recorded using a hand held GPS. Weed infestations are defined as:

- Areas where weeds make up >80% percentage foliage cover.
- Weeds of national significance
- Priority weeds and other weeds of regional concern as listed in the Greater Sydney Regional Strategic Weed Management Plan

Any WoNS and/or any priority weeds for the Greater Sydney Region which were identified on site, are listed in Appendix A which includes their biosecurity status under the *Biosecurity Act 2015*.

2.3 Weed Density Mapping

Weed density maps were developed for each zone. All weeds present were considered when determining the weed densities for each area.

GPS locations were mapped to provide clear locations for WoNS, significant weed infestation and Priority Weeds.

2.4 Priorities

The priorities of targeted weed work detailed in Section 4 - Management Zones, were determined by the species listing and the landholder’s obligations under the *Biosecurity Act 2015* and the Greater Sydney Regional Strategic Weed Management Plan. Species listed as WoNS are considered a high priority. Other weeds that were deemed to have the potential to significantly impact biodiversity were also included as Priority Weeds.

Priority areas were determined by the resilience and condition of existing bushland and the location of weed infestations. Infestation or small outbreaks of weeds in high quality, undisturbed or resilient bushland are considered a high priority to conserve the existing biodiversity values and to prevent further spread which could become more costly to address in the future. Infestations along property boundaries, creek lines and waterways are considered high priority as weeds are more susceptible to spread onto neighbouring properties downstream or across boundary edges.

2.5 Limitations

The diurnal field survey was conducted over two (2) days during October 2019. Random meanders were conducted across the site and targeted searches for weeds along creek line, bushland edges and disturbed areas where weeds are likely to occur. Some areas were not searched due to access issues and time constraints. The central zones mainly consist of infrastructure and planted species and were not surveyed for this report.

When reviewing maps please note that the hand-held GPS equipment used is only accurate to 3 metres.

3 RESULTS

The weed survey identified thirty-six (36) weed species under the *Biosecurity Act 2015.* These are listed in Appendix A along with the land holder's obligations under the Act. Of these, five (5) are WoNS. These are:

- Asparagus Fern (*Asparagus aethiopicus*)
- Bitou Bush (*Chrysanthemoides monilifera subsp rotundata*)
- Lantana (*Lantana camara*)
- Blackberry (*Rubus fruticosus* aggregate)
- Fireweed (*Senecio madagascariensis*)

Bitou Bush, Lantana and Fireweed are also listed as State Priority Weeds. Six (6) weeds are listed as Priority Weeds under the Greater Sydney Regional Strategic Weed Management Plan. These include Giant Reed (*Arundo donax*), Pampas Grass (*Cortaderia jubata*) and the above mentioned WoNS.

Weeds are mostly contained to disturbed areas, bushland edges, tracks and riparian areas across all three (3) sites. There are some small outbreaks within large resilient bushland areas which have been prioritised within this Plan. Many of these have been treated as part of primary bush regeneration efforts and require follow up treatment of new shoots.

Two (2) areas with two (2) to three (3) individual orchids of the genus Microtis were identified. One (1) area is located in the easement of the eastern zone of Chain Valley Colliery and another along the disturbed edges of the eastern zone at Mannering Colliery. These have been mapped in Map 7 and Map 11.

The current condition, locations of weed infestation and weed densities have been discussed in detail within Section 4 - Management Zones.

4 MANAGEMENT ZONES

TEC have based the management zones on those created for the 2016 Weed Action Plan (Kleinfelder, 2016). The boundaries have been adjusted slightly to follow existing structural boundaries such as roads, tracks, clearings, easements and fences to allow for clearer delineation of management zones during on ground works.

The Central Zone of both the Chain Valley Colliery and Mannering Park Colliery are entirely disturbed and contain the site infrastructure. The zones are mostly void of native vegetation except for remnant canopy trees and planted native and ornamental species, as such these zones were not included in the weed survey.

4.1 Chain Valley Colliery

The Chain Valley Colliery site is made up of the following EECs:

- *Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions;* and
- *Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*

See Map 1 for EEC locations.

Chain Valley Colliery contains high quality resilient bushland in most zones. Managing weed outbreaks in these areas is a high priority to prevent degradation and further encroachment on bushland areas. Most weed outbreaks occur in the disturbed areas including cleared easements, easement edges, along tracks, creek lines and dam edges. These outbreaks are small and in their early stages of growth and therefore should be targeted before they progress any further. Bush regeneration efforts targeting Lantana and Pampas Grass (*Cortaderia selloana*) are evident throughout the site but now require follow up treatment. The following maps and tables provide further details on each management zone including priority weeds and management issues.



Figure 1. Eastern Zone of Chain Valley Colliery along creek line.



Figure 2. Treated Lantana and Blackberry in Northern Zone of Chain Valley Colliery near cottages.



Figure 3. Fishbone Fern and Crofton Weed in Western Zone Area B of Chain Valley Colliery along drainage area.

4.1.1 Chain Valley Colliery – Northern Zone

Table 1. Chain Valley Colliery – Northern Zone Area Descriptions

Description	This zone is approximately 8.2 ha and includes cleared powerline easements and modified areas surrounding the cottages and bushland. **Area A – <5% weed cover** The most resilient area of the zone with low weed densities. Some weed encroachments on the edges of the bushland. A small area of treated Lantana and Blackberry is located to the south-east of this zone. **Area B – 5-25% weed cover** Highest weed densities are found along the edge of the bushland and species present include Blackberry, Asparagus Fern, Fishbone Fern (*Nephrolepis cordifolia*), *Monstera deliciosa* and *Senna pendula var. glabrata.* **Area C – 25-50% weed cover** Dense area of Blackberry, Lantana, Ochna serrulata, Wild Tobacco (*Solanum mauritianum)* and herbaceous weeds. Evidence of Blackberry and Pampas Grass being treated. Appears to have been the focus area of Bush Regeneration efforts. **Area D – 5-25% weed cover** Mostly ornamental exotic plant species in front of houses. **Area E – 5-25% weed cover** Dense patch of *Monstera deliciosa*. **Area F – 5-25% weed cover** Patch of Camphor Laurel (*Cinnamomum camphora*) and Coral trees (*Erythrina x sykesii*) including several saplings. **Area G – 5-25% weed cover** Bushland strip between powerline easements containing scattered small outbreaks of weeds including *Senna pendula var. glabrata* and Lantana. **Area H – 5-25% weed cover** Powerline easement with scattered Fireweed and Purple Top (*Verbena bonariensis*).
Priority Weeds	Lantana, Blackberry, Pampas Grass and Asparagus Fern
Priority Areas	Area A and B has the most resilience and is connected to larger tracts of bushland. Weeds should be controlled to prevent further spread.
Key Management Issues	• Follow up treatment of Lantana, Blackberry, *Senna pendula var. glabrata* in Areas A and C. • Primary treatment of Asparagus Fern particularly along edges in Area B. • Primary treatment of *Senna pendula var. glabrata* and *Monstera deliciosa,* and untreated areas of Lantana and Pampas Grass.
Notes	Access to this zone via dirt road from near CVC site entry. Key required. Caution to be taken driving around cottages due to rubbish and debris hidden by long grass.

Title: Chain Valley Northern Zone Weed Density

Map No: 4

Site: Chain Valley Colliery

Client: Delta Coal

Date: November 2019

Project No: 11483

Author: G Barron

Road

Management Zones

Weed Density

< 5%

5 - 25%

25 - 50%

Key Points

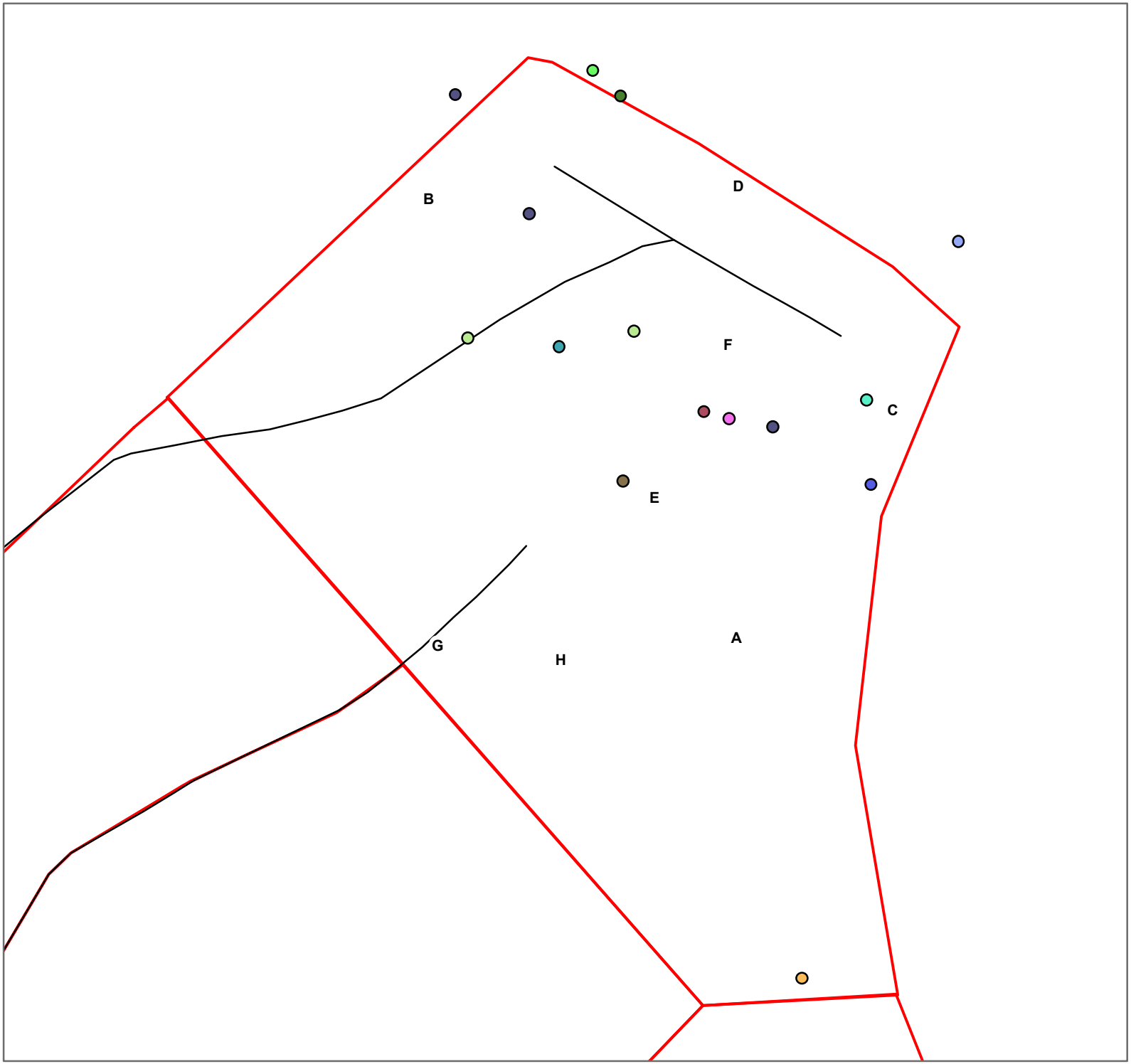
- Blackberry
- Blackberry & Lantana camara - treated
- Blackberry, Lantana camara & Pampas Grass - treated
- Blackberry, Lantana camara, Senna pendula var. glabrata & Wild Tobacco
- Camphor Laurel
- Coral Tree
- Coral Tree - treated
- Coral Tree, Lantana camara & Senna pendula var. glabrata
- Coral Tree, Ochna serrulata & Senna pendula var. glabrata
- Lantana camara
- Lantana camara & Senna pendula var. glabrata
- Lantana camara - treated

0 20 40 80 Meters

N

Data Source:
Total Earth Care
Nearmap

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4.1.2 Chain Valley Colliery – Western Zone

Table 2. Chain Valley Colliery – Western Zone Area Descriptions

Description	This zone is approximate 6.4 ha of highly resilient bushland with predominantly low weed densities. Evidence throughout of bush regeneration efforts. **Area A – <5% weed cover** Highly resilient bushland with a very low weed density. Scattered outbreaks of Blackberry and Lantana on the side of the road that runs along the north-west boundary. All identified scattered Lantana thickets in the south-east part of the area have been treated. Some juvenile Lantana coming up in these treated areas. **Area B – 5-25% weed cover** Damp drainage areas in some places have encourage weed growth. Lantana, Crofton Weed, Asparagus Fern, Fishbone Fern and herbaceous weed species scattered throughout this zones (see Figure 3). All identified Lantana patches have been treated. Some juvenile Lantana coming up in these treated areas. Pampas Grass and some Fishbone Fern has been treated but requiring follow up treatment.
Priority Weeds	Lantana, Blackberry, Pampas Grass, Asparagus Fern and Crofton Weed.
Priority Areas	Both Area A and B. The surrounding bushland is highly resilient and further weed outbreaks should be prevented.
Key Management Issues	• Follow up treatment of Lantana and Pampas Grass. • Primary treatment of Crofton Weed and Fishbone Fern. • Hand weeding and spraying. • Priority zone. Edges and tracks should be monitored regularly.
Notes	Access to the track along the north-west boundary of this zone via dirt road from near CVC site entry. Key required.

Title: Chain Valley Western Zone Weed Density

Map No: 5

Site: Chain Valley Colliery

Client: Delta Coal

Date: November 2019

Project No: 11483

Author: G Barron

Road

Management Zones

Weed Density

< 5%

5 - 25%

25 - 50%

Key Points

- Asparagus Fern
- Blackberry & Fireweed
- Crofton Weed
- Crofton Weed & Lantana camara
- Lantana camara
- Lantana camara - treated
- Pampas Grass & Lantana camara - treated and Asparagus Fern & Crofton Weed
- Senna pendula var. glabrata

0 20 40 80 Meters

N

Data Source:
Total Earth Care
Nearmap

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Tel: 02 9913 1432 Fax: 02 9913

A

B

4.1.3 Chain Valley Colliery – Southern Zone

Table 3. Chain Valley Colliery – Southern Zone Area Descriptions

Description	This zone is approximate 7.2 ha of highly resilient and mostly undisturbed bushland with predominantly low weed densities. **Area A – 5-25% weed cover** Scattered small outbreaks of *Senna pendula var. glabrata*, Blackberry, Bitou Bush, Ochna and Lantana, Lantana has been treated but some small shoots are coming up. Most weeds are along the track edge to the north and the eastern boundary of the bush and powerline easement. **Area B – <5% weed cover** Highly resilient bushland. Some *Pinus radiata* saplings coming up adjacent to the track that runs along the southern part of the area. **Area C – 5-25% weed cover** Powerline easement containing scattered *Pinus radiata* saplings, herbaceous weeds and Oleander. **Area D – <5% weed cover** Resilient bushland with scattered *Pinus radiata* saplings along easement edge. **Area E – 5-25% weed cover** Mostly managed lawn along driveway. Scattered *Pinus radiata* saplings, African Lovegrass (*Eragrostis curvula*) and Oleander (*Nerium oleander*) on bushland edges. **Area F – 25-50% weed cover** Disturbed bushland edges with scattered small outbreaks of Bitou Bush, Lantana, Pampas Grass, Banana Trees and African Love Grass. Most Pampas Grass in this area has been treated.
Priority Weeds	Lantana, Pampas Grass, Bitou Bush and *Pinus radiata* saplings
Priority Areas	Area B is highly resilient and has very few weed outbreaks. All other areas of this management zone should be managed to prevent further spread of weeds into Area B.
Key Management Issues	• Follow up treatment of Pampas Grass • Follow up and primary treatment of Lantana. Small shoots can be hand pulled. • Primary treatment of Bitou Bush. Most can be hand pulled. • Primary treatment of *Pinus radiata* saplings particularly along the track in Area B. This is a highly resilient area and invasion of Pines in this area should be prevented. • High priority zone. Monitor tracks for any weed out breaks.
Notes	Access to the track within this zone is via a locked gate or through powerline easement.

Title: Chain Valley Southern Zone Weed Density

Map No: 6

Site: Chain Valley Colliery

Client: Delta Coal

Date: November 2019

Project No: 11483

Author: G Barron

Road

Management Zones

Weed Density

< 5%

5 - 25%

25 - 50%

Key points

- African Lovegrass & Pampas Grass
- African Lovegrass & Pinus radiata
- Asparagus Fern & Lantana camara
- Asparagus Fern, Senna pendula var. glabrata & Bitou Bush
- Bitou Bush
- Bitou Bush & Lantana camara
- Bitou Bush & Senna pendula var. glabrata
- Bitou Bush - removed
- Lantana camara
- Lantana camara & Senna pendula var. glabrata
- Lantana camara (treated), African Lovegrass & Bitou Bush
- Lantana camara - treated
- Ochna serrulata
- Ochna serrulata & Senna pendula var. glabrata
- Pamas Grass (treated) & Lantana camara
- Pampas Grass (treated)
- Pinus radiata
- Senna pendula var. glabrata
- Senna pendula var. glabrata - removed

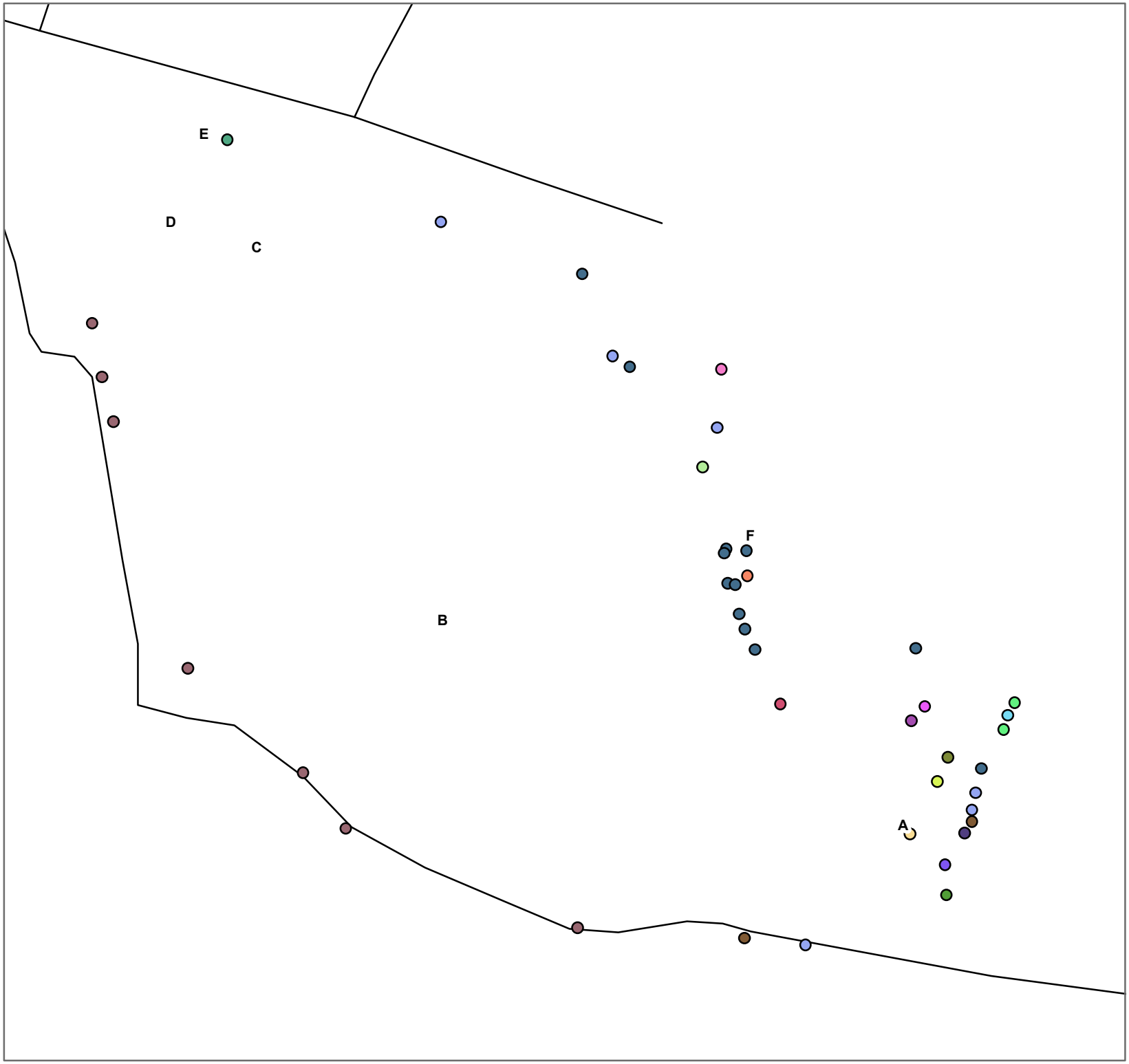
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Data Source:
Total Earth Care
Nearmap

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4.1.4 Chain Valley Colliery – Eastern Zone

Table 4. Chain Valley Colliery – Eastern Zone Area Descriptions

Description	This zone is approximate 11.17 ha of bushland cleared powerline easements and sediment ponds. These ponds consistently discharge across the bushland in Area H and into the lake.to the north-east. **Area A – <5% weed cover** Small occurrences of Caster Oil and Lantana on dam walls. Scattered occurrences of *Senna pendula var. glabrata* and Narrow-leafed Cotton Bush (*Gomphocarpus fruticosus*) in the easements to the north. **Area B – 5-25% weed cover** Small amounts of scattered Whiskey Grass (*Andropogon virginicus*), Pampas Grass and Bitou Bush on easement edges and damp areas. **Area C – <5% weed cover** Small amounts of scattered Whiskey Grass, Pampas Grass, Bitou Bush and other herbaceous weeds on easement edges. **Area D – 5-25% weed cover** Encroachments of weeds from the track to the south of the area and the easement edges. Scattered small outbreaks of Asparagus Fern, *Senna pendula var. glabrata*, Lantana, African Love Grass, Blackberry Nightshade and Bitou Bush. A small Lantana thicket has been treated. **Area E – 5-25% weed cover** Dense areas of Pampas Grass in this area and across property boundary. Scattered occurrences of Crofton Weed, Lantana and Bitou Bush. **Area F – 5-25% weed cover** Cleared powerline easement containing scattered Whiskey Grass, Cotton Bush, Fireweed and herbaceous weeds. Small lantana thicket and Pampas Grass under powerline pylon. **Area G – 25-50% weed cover** Dense stand of Wild Tobacco. Asparagus Fern starting to come up. Scattered small occurrences of Bitou Bush, Lantana, Ginger Lily, Ochna, Inkweed, Crofton and *Senna pendula var. glabrata*. Large stands of Lantana have been treated. Coral trees, Fishbone Fern, *Monstera deliciosa*, *Senna pendula var. glabrata* and Ginger Lily along creek line in southern corner. **Area H – <5% weed cover** Parts of this area have been recently burnt and are coming up with early successional native species such as *Dodonaea triquetra.* Track edges south-east of the dam have scattered small occurrences of Bitou Bush, Asparagus Fern, Lantana, Crofton Weed and Fireweed. Some sporadic occurrences of Lantana, Bitou Bush and *Senna pendula var. glabrata* along the edges of the easement in the north of this area.
Priority Weeds	Lantana, Asparagus Fern, Bitou Bush, Pampas Grass and *Senna pendula var. glabrata*.
Priority Areas	Area G along creek line should be targeted to prevent weed propagules travelling downstream. Area H is mostly resilient bushland that has been mapped as two EECs (see Map 1).

Key Management Issues	• Prioritise treating weeds in the southern half of this zone. • Follow up treatment of Lantana. Small shoots can be hand pulled. • Primary treatment of Bitou Bush, Asparagus Fern, *Senna pendula var. glabrata* and Pampas Grass along track and easement edges.
Notes	Vehicle access via the tracks near the sediment ponds and via the track through the south-west corner of the zone.

Title: Chain Valley Eastern Zone Weed Density

Map No: 7

Site: Chain Valley Colliery

Client: Delta Coal

Date: November 2019

Project No: 11483

Author: G Barron

Road

Creek

Management Zones

Weed Density

< 5%

5 - 25%

25 - 50%

Key Points

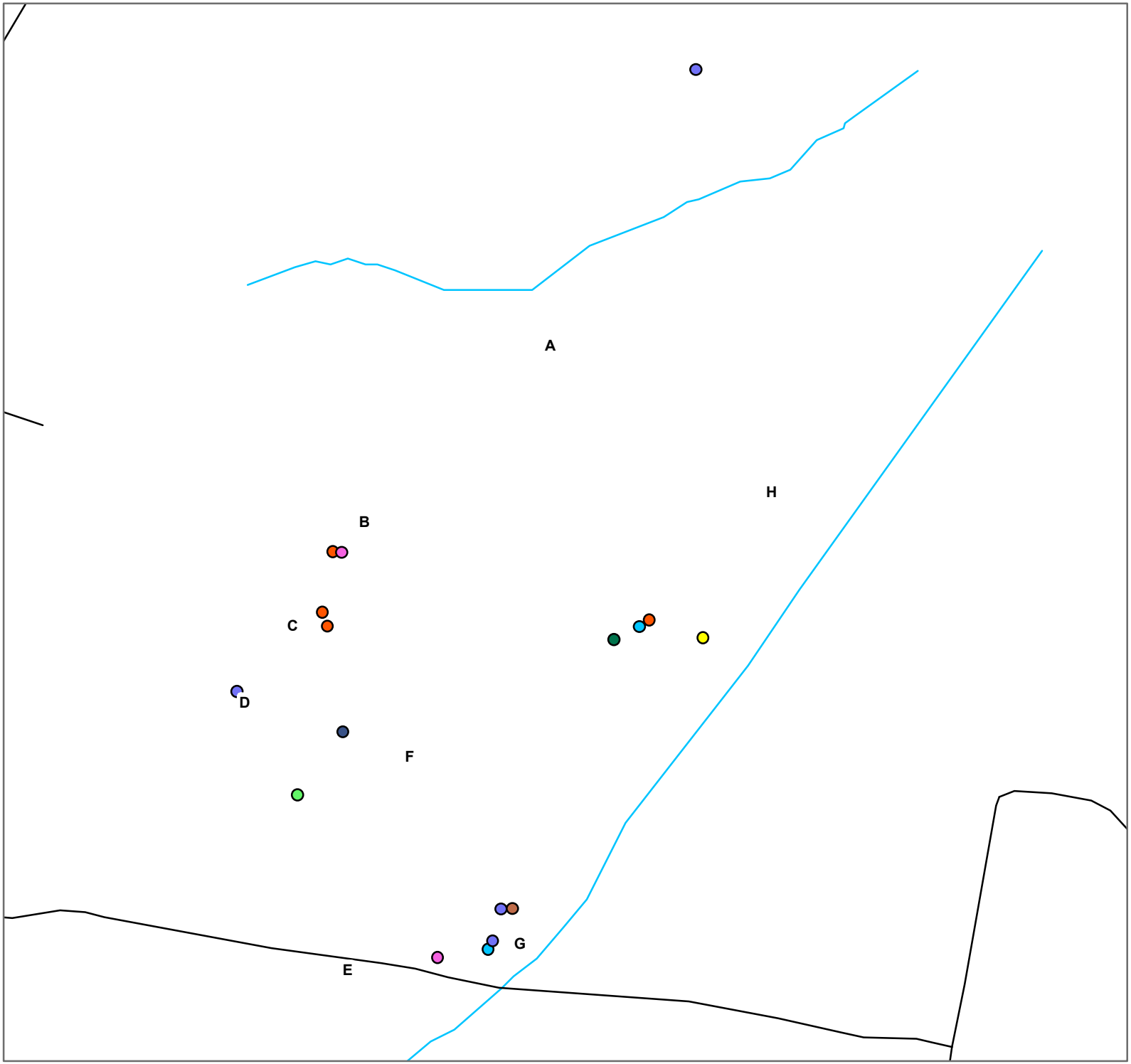
- Asparagus Fern
- Asparagus Fern, Crofton Weed, Lantana Camara, Ochna serrulata, Senna pendula var. glabrata & Wild Tobacco
- Bitou Bush
- Bitou Bush & Lantana camara
- Bitou Bush & Senna pendula var. glabrata
- Fireweed, Crofton Weed & Asparagus Fern
- Orchid - Microtis sp.
- Pampas Grass
- Pampas Grass, Lantana camara & Fireweed

0 25 50 100 Meters

N

Data Source:
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4.2 Mannering Colliery

Mannering Colliery has more disturbed areas and fewer large tracts of undisturbed bushland then the Chain Valley Colliery. However, the site is surrounded by bushland and therefore it is imperative that weeds are prevented from spreading into neighbouring resilient areas. Most outbreaks are small and should be targeted before they progress any further. Bush regeneration efforts targeting Lantana and Pampas Grass are evident throughout the site but now require follow up treatment. This site does not contain any EECs.

The following maps and tables provide further details on each management zone including priority weeds, priority areas and management issues.



Figure 4. Resilient bushland in Eastern Zone Area D of Mannering Colliery.



Figure 5. Bamboo and Crofton Weed in Western Zone Area F of Mannering Colliery.



Figure 6. Crofton Weed and *Juncus acutus* in wetland area of Northern Zone Area B of Mannering Colliery.

4.2.1 Mannering Colliery – Northern Zone

Table 5. Mannering Colliery – Northern Zone Area Descriptions

Description	This zone is approximate 4.24 ha and consists of four (4) dams, access tracks and some patches of disturbed bushland. Water is discharged from the ponds across Area A, B and G. **Area A – 5-25% weed cover** *Pinus radiata* saplings, Whiskey Grass and Fireweed along track edges. Treated *Acacia saligna.* Dense stands of *Juncus acutus* in low lying areas. **Area B – 50-75% weed cover** Dense area of weeds including Lantana, Bitou Bush, Crofton Weed, Pampas Grass, Senna and *Juncus acutus.* Lantana and some Pampas Grass has been treated. **Area C – 25-50% weed cover** High density of herbaceous weeds. *Acacia saligna* present, most of which has been treated. *Juncus acutus* present. Pampas Grass present most of which has been treated. Whiskey Grass along track edges. **Area D – 25-50% weed cover** High density of herbaceous weeds across disturbed area. **Area E – 5-25% weed cover** Hydrocotyl is scattered along the dam edges and Typha within the dam. **Area F – 5-25% weed cover** Typha within the dam. **Area G – 5-25% weed cover** The edges of Area G contains *Pinus radiata* saplings. Within the low lying damp wetland areas Large stands of Lantana and Pampas Grass have been treated. **Area H – <5% weed cover** Limited access due to fencing. Scattered Crofton Weed, Lantana, Bitou Bush, Camphor Laurel trees and mature and sapling *Pinus radiata.* A Resource Regulator identified Coolatai Grass (*Hyparrhenia hirta*) present on the western wall of the largest dam. EMM consultants confirmed the species ID. **Area I – <5% weed cover** Mostly disturbed and cleared areas. Herbaceous weeds, Whiskey Grass and Fireweed along track edges. **Area J – 50-75% weed cover** Dense and scattered stands of Bitou Bush, Lantana, Crofton and Senna. Lantana has been treated but new young shoots are coming up. Large and sapling *Pinus radiata* present. Scattered herbaceous weeds including *Bidens pilosa*, Fleabane (*Conyza sp.*) and Purple Top.
Priority Weeds	Lantana, Bitou Bush, Pampas Grass, Crofton Weed, Fireweed, Senna, *Pinus radiata, Juncus acutus, Coolatai Grass* and Senna
Priority Areas	Area J to follow up from primary weed treatment in this area. Area B to follow up primary treatment of Lantana and Pampas Grass and prevent propagules form spreading downstream.

Key Management Issues	• Follow up treatment of Lantana. Young, small shoots can be hand pulled. • Follow up treatment for Pampas Grass and Crofton Weed using cut/paint, hand removal and spraying. • Primary treatment of *Juncus acutus* • Hand pull Fireweed opportunistically. • Prioritise areas A, E, G and J.
Notes	Easy vehicle access to most areas. No obvious access to Area H due to fence.

Title: Mannering Colliery
Northern Zone Weed Density

Map No: 8
Site: Mannering Colliery
Client: Delta Coal
Date: November 2019
Project No: 11483
Author: G Barron

Management Zones
Road
Creek

Weed Density
< 5%
5 - 25%
25 - 50%
50 - 75%

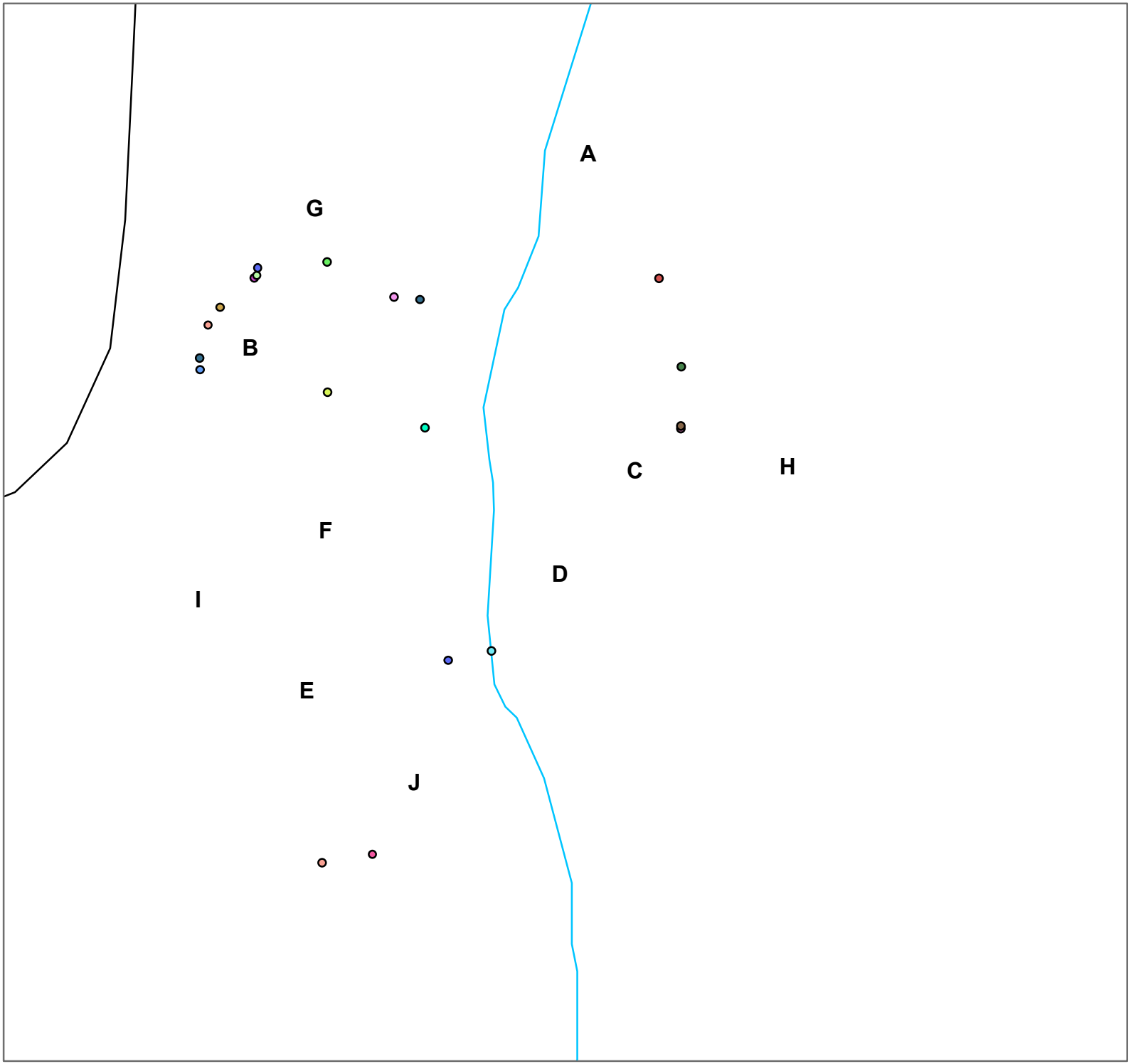
Key Points
- Acacia saligna
- Acacia saligna (treated) & Juncus acutus
- Acacia saligna, Bitou Bush & Crofton Weed,
- Bitou Bush
- Bitou Bush & Crofton Weed
- Bitou Bush & Lantana camara
- Bitou Bush - removed
- Coolatai Grass
- Crofton Weed & Senna pendula var. glabrata
- Crofton Weed, Juncus acutus & Pampas Grass (treated)
- Fireweed
- Juncus acutus
- Lantana camara
- Lantana camara - treated
- Pampas Grass - treated
- Pinus radiata
- Senna pendula var. glabrata

0 15 30 60 Meters

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4.2.2 Mannering Colliery – Western Zone

Table 6. Mannering Colliery – Western Zone Area Descriptions

Description	This zone is approximately 4.12 ha including cleared powerline easements, a dam, and disturbed patches of remnant bushland some of which connect to greater bushland extents. **Area A – 5-25% weed cover** Scattered herbaceous weeds and exotic grasses. Small scattered patches of Asparagus Fern. **Area B – 5-25% weed cover** Powerline easements mostly consisting of exotic grasses, some Lantana patches, *Senna pendula var. glabrata* and Fireweed, particularly closer to the dam edges. **Area C – 5-25% weed cover** Small scattered outbreaks of Crofton Weed, Pampas Grass, Bitou Bush, Whiskey Grass and African Love Grass throughout this area. **Area D – 25-50% weed cover** Scattered outbreaks of Lantana, Crofton Weed, Bitou Bush, Whiskey Grass and herbaceous weeds. Lantana thickets have been treated. New shoots are coming requiring treatment. **Area E – <5% weed cover** Isolated patch of vegetation containing a small thicket of Lantana. **Area F – 25-50% weed cover** Lantana, Crofton Weed, Bitou Bush, and a large outbreak of Bamboo are dominating this area. **Area G – 5-25% weed cover** A fence divides this area from the rest of the western zone. A large area of Lantana is located in the northern part of this area.
Priority Weeds	Asparagus Fern, Lantana, Senna, Crofton Weed, Bitou Bush and Bamboo.
Priority Areas	Areas C, F and G are a priority within this zone due to their proximity to remnant bushland and potential for WoNS and Priority Weeds under the Biosecurity Act to spread.
Key Management Issues	• Follow up and primary treatment of Lantana. • Primary treatment of Bamboo, Crofton Weed, Asparagus Fern. • Opportunistic hand pulling of Fireweed.
Notes	Easy vehicle access to most areas. Area G is separated from the rest of the zone by a fence so vehicle access is limited. On foot access is possible by following the fence from the main driveway entrance to the south.

Title: Mannering Colliery
Western Zone Weed Density

Map No: 9
Site: Mannering Colliery
Client: Delta Coal
Date: November 2019
Project No: 11483
Author: G Barron

Management Zones
Road
Creek

Weed Density
< 5%
5 - 25%
25 - 50%
50 - 75%

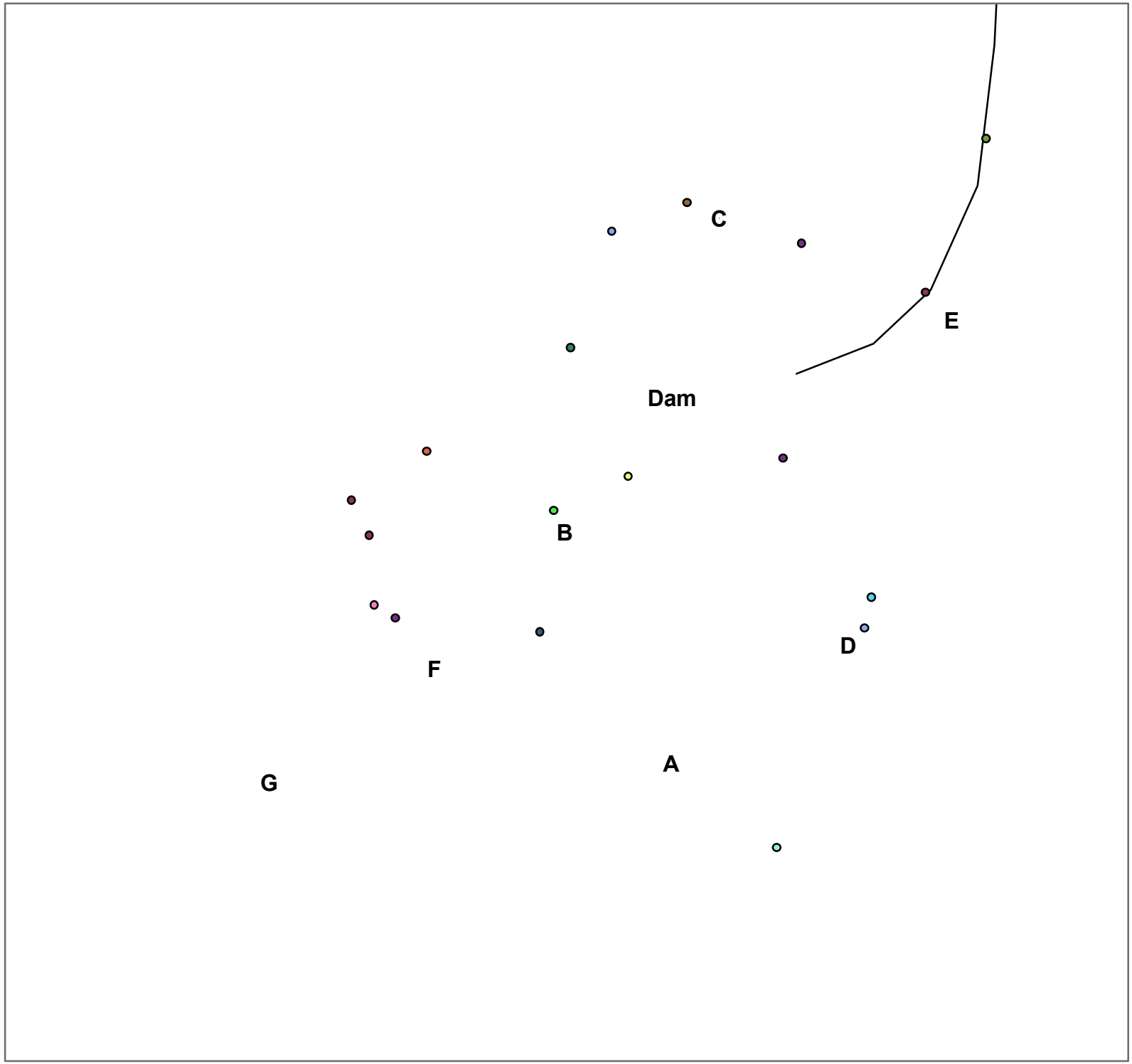
Key Points
- African Lovegrass & Bitou Bush
- Asparagus Fern
- Bamboo
- Bamboo, Lantana camara & Pampas Grass
- Bitou Bush
- Bitou Bush & Lantana camara
- Crofton Weed
- Crofton Weed & Pampas Grass
- Crofton Weed, Fireweed, Lantana camara & Senna pendula var. glabrata
- Crofton Weed, Lantana camara & Senna pendula var. glabrata
- Lantana camara
- Lantana camara - treated
- Pinus radiata
- Senna pendula var. glabrata

0 12.5 25 50 Meters

N

Data Source:
Total Earth Care
Nearmap

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4.2.3 Mannering Colliery – Southern Zone

Table 7. Mannering Colliery – Southern Zone Area Descriptions

Description	This zone is approximately 2.02 ha. It is mostly dominated by mature *Pinus radiata* and Bamboo. This zone is a low priority due to the lack of remnant bushland and the extent of the pine forest. **Area A – 50-75% weed cover** Mature and sapling *Pinus radiata* lining the driveways. **Area B – 25-50% weed cover** High densities of mature *Pinus radiata* and Bamboo on western side of fence. Other exotic ornamental species including Oleander and Agave. Camphor Laurel trees on western side of fence. Whiskey Grass and Fireweed across managed lawn. Low priority area as dominated by *Pinus radiata.* **Area C – 5-25% weed cover** Mostly herbaceous weeds and exotic grasses.
Priority Weeds	Bamboo, Fireweed, Camphor Laurel trees.
Priority Areas	All areas within this zone are low priority. Other zones of the Mannering Colliery are to be prioritised over this one.
Key Management Issues	• Primary treatment of Fireweed and *Pinus radiata* saplings in Area C
Notes	Fence divides Area B. Western side of Area B can be accessed from southern end near driveway.

Title: Mannering Colliery
Southern Zone Weed Density

Map No: 10
Site: Mannering Colliery
Client: Delta Coal
Date: November 2019
Project No: 11483
Author: G Barron

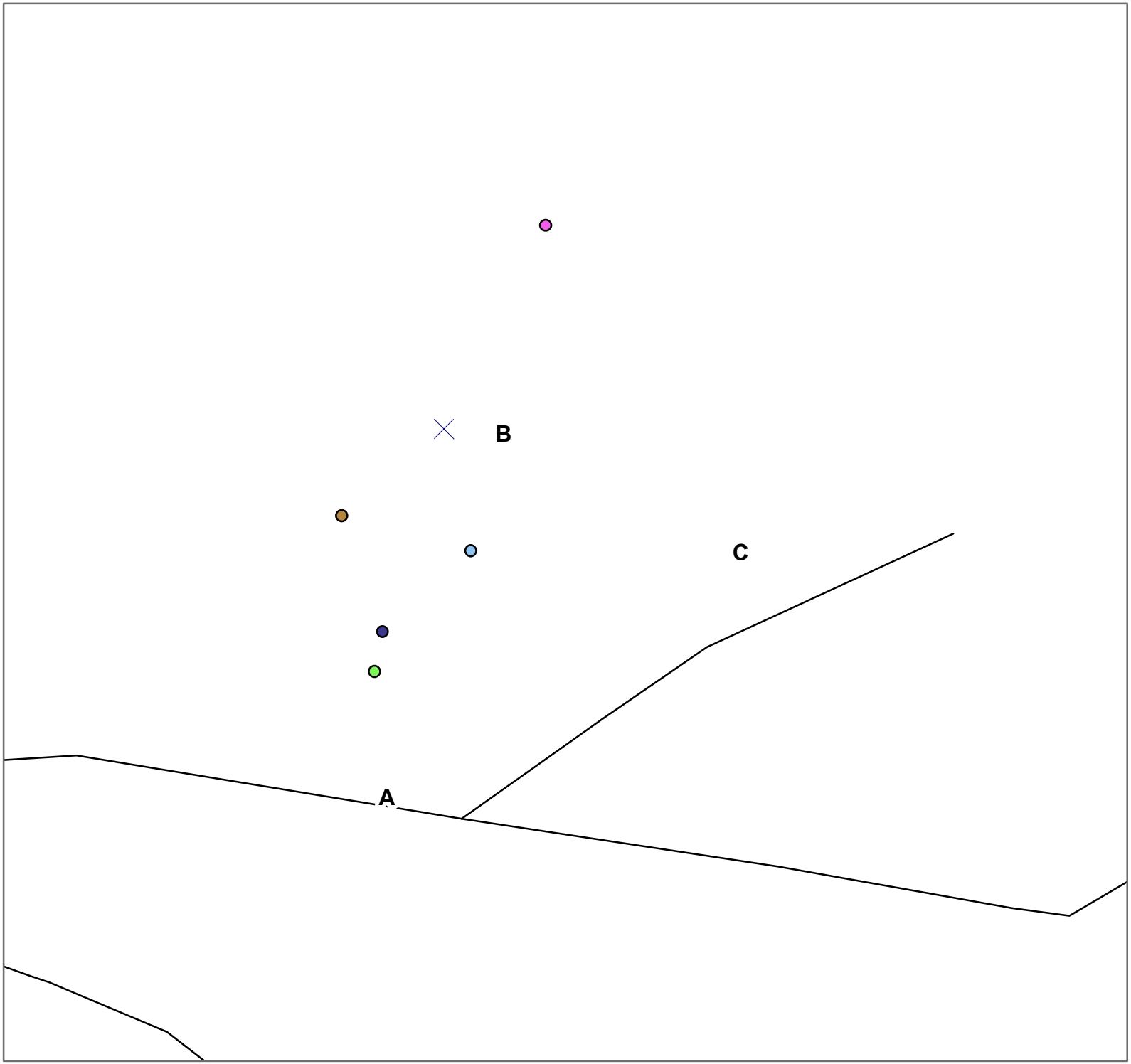
Management Zones
Road
Creek

Weed Density

< 5%
5 - 25%
25 - 50%
50 - 75%

Key points

African Lovegrass
Bamboo
Bamboo & Coral Tree
Fireweed
Senna pendula var. glabrata



0 10 20 40 Meters

N

Data Source:
Total Earth Care
Nearmap

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4.2.4 Mannering Colliery – Eastern Zone

Table 8. Mannering Colliery – Eastern Zone Area Descriptions

Description	This zone is approximately 3.29 ha. This zone contains a carpark, cleared stockpile areas and dam, all bordered by bushland. The bushland is contiguous with adjacent bushland beyond the property boundary to the south. Weeds are generally confined to the bushland edges and disturbed areas. **Area A – 5-25% weed cover** Mostly planted ornamental exotics and some natives. Herbaceous weeds, exotic grasses and Fireweed across lawn. **Area B – 25-50% weed cover** Scattered herbaceous weeds, exotic and weedy grasses around edges of disturbed area. **Area C – 5-25% weed cover** Small area of weed encroachment including Crofton Weed. Evidence of treated Pampas Grass. Small outbreaks of Crofton Weed and Lantana present. **Area D – <5% weed cover** Mostly weed free bushland with some *Pinus radiata* saplings and African Lovegrass in the south-west corner of the area. **Area E – 25-50% weed cover** Dominated by mature and sapling *Pinus radiata.*
Priority Weeds	Crofton Weed, Lantana, Pampas Grass, *Pinus radiata* and Fireweed.
Priority Areas	Area C and D. These areas are highly resilient and connected to bushland to the south.
Key Management Issues	• Follow up treatment of Pampas Grass. • Primary treatment of Lantana and Crofton Weed.
Notes	Site easily accessible.

Title: Mannering Colliery
Eastern Zone Weed Density

Map No: 11
Site: Mannering Colliery
Client: Delta Coal
Date: November 2019
Project No: 11483
Author: G Barron

Management Zones
Road
Creek

Weed Density
< 5%
5 - 25%
25 - 50%
50 - 75%

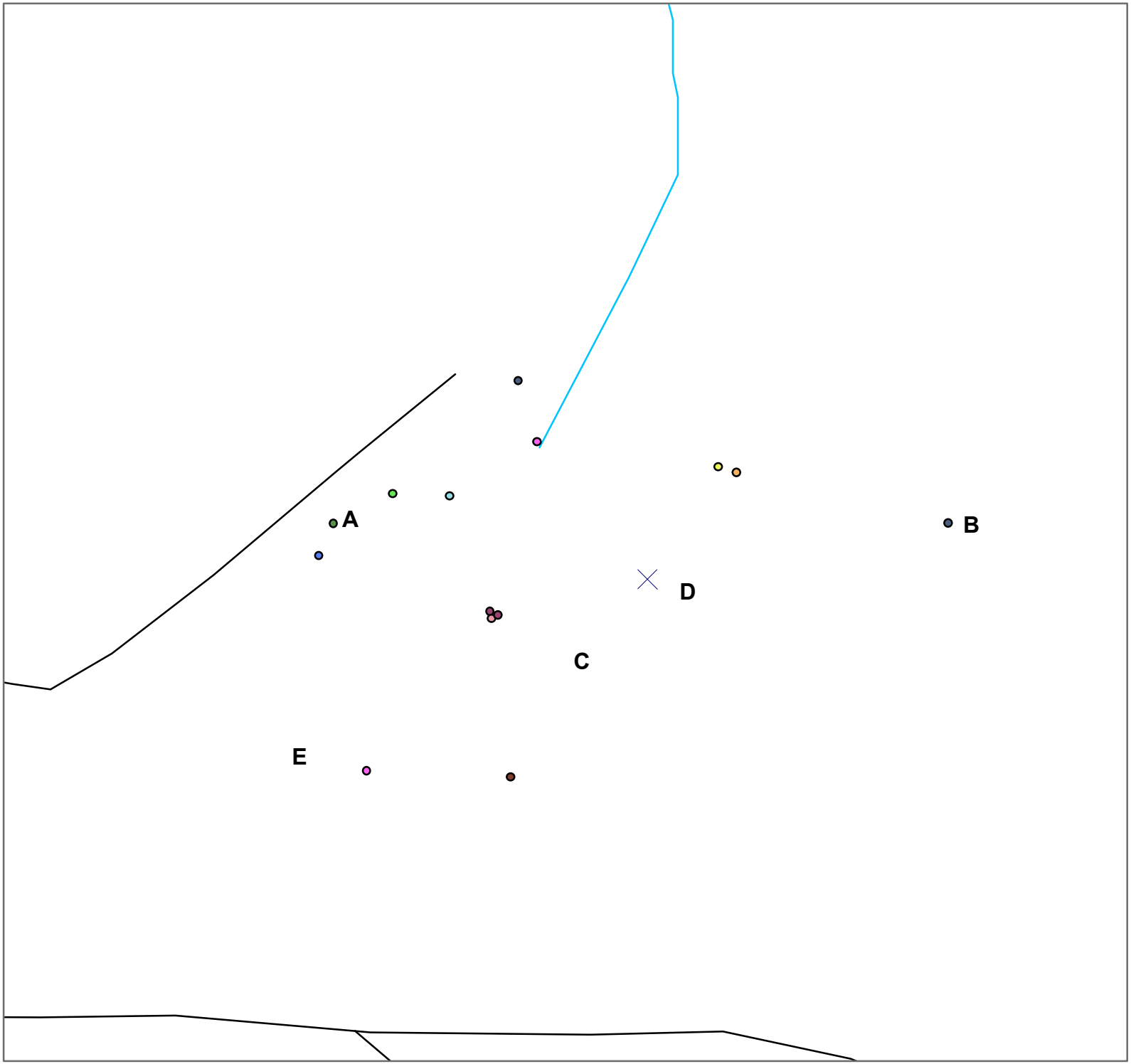
Key Points
- Acacia saligna
- African Lovegrass
- African Lovegrass & Senna pendula var. glabrata
- Bitou Bush
- Crofton Weed
- Fireweed
- Lantana camara
- Orchid - Microtis sp.
- Pampas Grass
- Pinus radiata
- Senna pendula var. glabrata

0 15 30 60 Meters

N

Data Source:
Total Earth Care
Nearmap

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Tel: 02 9913 1432 Fax: 02 9913



4.3 Summerland Point Ventilation Shaft

The Summerland Point Ventilation Shaft site is made up of the following EECs:

- *Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions;* and
- *Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregions.*

See Map 3 for EEC locations.

The site contains an unsealed road that provides access to a cleared area where the ventilation shaft infrastructure sits. The areas surrounding the ventilation shaft have been cleared and contain most of the weed species identified on the site. The site is surrounded by highly resilient bushland. Areas along the unsealed road have also been subject to some weed invasion.



Figure 7. Giant Reed within bushland at the Summerland Ventilation Shaft site. .



Figure 8. Unsealed road and easement within the Summerland Ventilation Shaft site.



Figure 9. Vegetation adjacent to road on the Summerland Ventilation Shaft site.

Table 9. Summerland Point Ventilation Shaft – Area Descriptions

Description	This zone is approximately 3.73 ha. This zone contains an unsealed road, a cleared area for the ventilation shaft infrastructure and remnant adjacent bushland. Weeds are generally confined to the bushland edges and disturbed areas. **Area A – 5-25% weed cover** Mostly bushland and road edges effected by weeds. Lantana thickets have been treated but required follow up treatment. Scattered small shoots of Lantana and Bitou Bush andherbaceous weeds.
Priority Weeds	Lantana, Giant Reed, Bitou Bush
Priority areas	Entire site – small weeds outbreaks on edges of highly resilient bushland must be targeted to prevent further spread.
Key Management Issues	• Follow up treatment of Lantana and Bitou Bush. Small shoots can be hand pulled. • Primary treatment of a small area of Giant Reed. • Monitor bushland edges and road edges for new outbreaks.
Notes	Easy vehicle access. Key required. Red-bellied black snake observed on site.

Title: Summerland Point Ventilation Shaft Weed Density

Map No: 12

Site: Summerland Point Ventilation Shaft

Client: Delta Coal

Date: November 2019

Project No: 11483
Author: G Barron

Summerland Point

Road

Creek

Weed Density

5 - 25%

Key Points

- Arundo donax & Lantana camara
- Bitou Bush
- Bitou Bush - removed
- Crofton Weed
- Fireweed
- Lantana camara
- Lantana camara & Senna pendula var. glabrata
- Lantana camara (treated) & Senna pendula var. glabrata
- Lantana camara - treated
- Senna pendula var. glabrata

0 25 50 100 Meters

N

Data Source:
Total Earth Care
SIX Maps

Copyright Total Earth Care Pty Ltd,
Tel: 02 9913 1432 Fax: 02 9913

[redacted]

5 WEED MANAGEMENT

Species specific recommended weeding techniques including recommended herbicides and ratios are included Appendix B.

Weed recruitment and outbreaks are often triggered by disturbance or clearing. Weed management is a form of disturbance that can trigger additional recruitment of weeds as areas are cleared. Therefore secondary treatment is essential to successful weeding and bush regeneration methods.

All weeding management actions on these sites must be carried out by trained bush regenerators. Bush Regeneration contractors must comply with the *Pesticides Act 1999 and the Pesticides Regulation 2017.*

7 MONITORING GUIDELINES

Monitoring is required to assess the outcomes of the weed management work and help determine if management strategies should be amended. Monitoring should be completed every six (6) months by a qualified ecologist or bush regeneration supervisor using the following methods:

- Assessment of weed control works, native regeneration and revegetation success via permanent repeatable photographic monitoring points; and
- Mapping of weed density per zone to assess the progress of the work. The mapping included in this report can assist in the development of baseline data.

Monitoring reports must include:

- Details of the work carried out including weed management techniques and herbicide used;
- Photo monitoring points – baseline and follow up photos; and
- Recommendations for corrective measures and/or specific vegetation management required.

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Appendix A. Weed Species listed as a Biosecurity Risk

Table 10. Categories of Management under the Greater Sydney Regional Strategic Weed Management Plan 2017-2022 under the NSW Biosecurity Act 2015

Category	Management Action
Prevention (Prevent)	To prevent the weed species arriving and establishing in the Region.
Eradication (Eliminate)	To permanently remove the species and its propagules from the Region, OR to destroy infestations to reduce the extent of the weed in the region with the aim of local eradication.
Containment (Minimise)	To prevent the ongoing spread of the species in all or part of the Region.
Asset Protection (Manage)	To prevent the spread of weeds to key sites/ assets of high economic, environmental and social value, or to reduce their impact on these sites if spread.
GBD (General Biosecurity Duty)	All plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable."
RRM (Regional Recommended Measure)	Specific details for each species included in table.
PoD (Prohibition on Dealings)	Must not be imported into the State or sold.
B Zone (Biosecurity Zone)	Specific details for each species included in table.
PM (Prohibited Matter)	A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries.

Table 11. Weeds under the Biosecurity Act recorded within the subject site listed as State or Regional Priority Weeds in the Greater Sydney Regional Strategic Weed Management Plan 2017-2022

Common Name	Botanical Name	WONS	State Priority Weed-Mgmt. Actions	Regional Priority Weeds-Mgmt. Actions	Other Regional Weeds-Asset/value at risk	Duties for Priority Weeds of Greater Sydney
Golden Wreath Wattle	*Acacia saligna*				Environment	
Crofton Weed	*Ageratina adenophora*				Environment, Agriculture	
Scarlet Pimpernel	*Anagallis arvensis*					
Whisky Grass	*Andropogon virginicus*				Environment	
Giant Reed	*Arundo donax*			Asset Protection		RRM; Land managers should mitigate the risk of new weeds being introduced to their land. The plant should not be bought, sold, grown, carried or released into the environment.
Asparagus Fern	*Asparagus aethiopicus*	Yes				PoD
Cobblers Pegs	*Bidens pilosa*					
Buffalo Grass	*Bouteloua dactyloides*					
Bitou Bush	*Chrysanthemoides monilifera subsp rotundata*	Yes	Containment			PoD, B Zone; The Bitou Bush Biosecurity Zone is established for all land within the State except land within 10 kilometres of the mean high water mark of the Pacific Ocean between Cape Byron in the north and Point Perpendicular in the south.
Camphor Laurel	*Cinnamomum camphora*				Environment, Agriculture, Human health	

Common Name	Botanical Name	WONS	State Priority Weed-Mgmt. Actions	Regional Priority Weeds-Mgmt. Actions	Other Regional Weeds-Asset/value at risk	Duties for Priority Weeds of Greater Sydney
Spear Thistle	*Cirsium vulgare*					
Fleabane	*Conyza bonariensis*					
Pampas Grass	*Cortaderia jubata*			Asset Protection		RRM: Land managers mitigate the risk of the plant being introduced to their land. Land managers prevent spread from their land where feasible. Land managers reduce the impact on priority assets. The plant should not be bought, sold, grown, carried or released into the environment. This Regional Recommended Measure applies to Cortaderia jubata (pink pampas grass)
Panic Veldgrass	*Ehrharta erecta*					
African Lovegrass	*Eragrostis curvula*				Environment	
Coral Tree, Common Coral Tree	*Erythrina x sykesii*				Environment	
Fennel	*Foeniculum vulgare*					
Narrow-Leaf Cotton Bush / Swan Plant	*Gomphocarpus fruticosus*					
Ginger Lily	*Hedychium gardnerianum*				Environment	
Pennywort	*Hydrocotyle bonariensis*					
Coolatai Grass	*Hyparrhenia hirta*				Environment, Agriculture	
Spiny Rush, Spike Rush, Sharp Rush	*Juncus acutus*				Environment	

Common Name	Botanical Name	WONS	State Priority Weed-Mgmt. Actions	Regional Priority Weeds-Mgmt. Actions	Other Regional Weeds-Asset/value at risk	Duties for Priority Weeds of Greater Sydney
Lantana	*Lantana camara*	Yes	Asset Protection			PoD
Fishbone Fern	*Nephrolepis cordifolia*				Environment	
Ochna	*Ochna serrulata*				Environment	
Bamboo, Black Bamboo, Rhizomatous Bamboo,	*Phyllostachys nigra*				Environment	
Inkweed	*Phytolacca octandra*					
Radiata Pine, Pine Wildings	*Pinus radiata*				Environment	
Plantain	*Plantago lanceolata*					
Castor Oil Plant	*Ricinus communis*					
Blackberry	*Rubus fruticosus aggregate*	Yes				PoD; All species in the Rubus fruiticosus species aggregate have this requirement, except for the varietals Black Satin, Chehalem, Chester Thornless, Dirksen Thornless, Loch Ness, Murrindindi, Silvan, Smooth Stem, and Thornfree
Fireweed	*Senecio madagascariensis*	Yes	Asset Protection			PoD
Senna / Cassia	*Senna pendula*				Environment	
Paddy's Lucerne	*Sida rhombifolia*					
Tobacco Bush/ Wild Tobacco	*Solanum mauritianum*				Environment, Agriculture	

Common Name	Botanical Name	WONS	State Priority Weed-Mgmt. Actions	Regional Priority Weeds-Mgmt. Actions	Other Regional Weeds-Asset/value at risk	Duties for Priority Weeds of Greater Sydney
Blackberry Night Shade	*Solanum nigrum*					
Purpletop	*Verbena bonarensis*					

Appendix B. Species Specific Weeding Techniques

Common Name	Botanical Name	Weeding Technique	Recommended Timing for Treatment	Herbicide Application	Herbicide Group	Ratio
Golden Wreath Wattle	*Acacia saligna*	Chainsaw and paint with neat Glyphosate.	All year round	Glyphosate 360g/L	M	Neat
Crofton Weed	*Ageratina adenophora*	Hand removal, brush cut and foliar sprayed with Glyphosate	All year round	Glyphosate 360g/L	M	1/100
Scarlet Pimpernel	*Anagallis arvensis*	Hand removal, spot spraying with Glyphosate.	All year round	Glyphosate 360g/L	M	1/100
Whisky Grass	*Andropogon virginicus*	Remove seed and crown out with knife or spot spray	Prior to flowering in March to May	Glyphosate 360g/L	M	1/100
Giant Reed	*Arundo donax*	Cut and paint with neat Glyphosate.	All year round	Glyphosate 360g/L	M	Neat
Asparagus Fern	*Asparagus aethiopicus*	Small single specimens to be crowned or Sprayed with Glyphosate/metsulfuron methyl	All year round	Glyphosate 360g/L & Metsulfuron-Methyl 600 g/kg	M & B	1/100 & 1g/10L
Cobblers Pegs	*Bidens pilosa*	Foliar spraying using Glyphosate, hand pulled and brush cut	All year round	Glyphosate 360g/L	M	1/100
Buffalo Grass	*Bouteloua dactyloides*	Hand removal, brush cut and foliar sprayed with Glyphosate	All year round	Glyphosate 360g/L	M	1/100
Bitou Bush	*Chrysanthemoides monilifera subsp rotundata*	Small single specimens hand pulled or larger shrubs cut and painted with neat Glyphosate	All year round	Glyphosate 360g/L	M	Neat
Camphor Laurel	*Cinnamomum camphora*	Scrape and paint or drill and fill with neat Glyphosate	All year round	Glyphosate 360g/L	M	Neat
Spear Thistle	*Cirsium vulgare*	Foliar spraying with Glyphosate, hand pulled and brush cut	All year round	Glyphosate 360g/L	M	1/100
Fleabane	*Conyza bonariensis*	Foliar spraying with Glyphosate, hand pulled and brush cut	All year round	Glyphosate 360g/L	M	1/100
Pampas Grass	*Cortaderia jubata*	Foliar spraying or cut/paint with Glyphosate or hand removed.	Prior to flowering in March to May	Glyphosate 360g/L	M	1/100 & Neat
Panic Veldgrass	*Ehrharta erecta*	Foliar spraying with Glyphosate	All year round	Glyphosate 360g/L	M	1/100

Common Name	Botanical Name	Weeding Technique	Recommended Timing for Treatment	Herbicide Application	Herbicide Group	Ratio
African Lovegrass	*Eragrostis curvula*	Hand pulled or brush cut and foliar sprayed with Glyphosate	All year round	Glyphosate 360g/L	M	1/100
Coral Tree, Common Coral Tree	*Erythrina x sykesii*	<80mm cut & painted; >80mm will be drilled/frilled with neat Glyphosate	All year round	Glyphosate 360g/L	M	Neat
Fennel	*Foeniculum vulgare*	Foliar spraying with Glyphosate, hand pulled and brush cut	All year round	Glyphosate 360g/L	M	1/100
Narrow-Leaf Cotton Bush / Swan Plant	*Gomphocarpus fruticosus*	Foliar spraying with Glyphosate, hand pulled and brush cut	All year round	Glyphosate 360g/L	M	1/100 & Neat
Ginger Lily	*Hedychium gardnerianum*	Physical removal. Large stands cut and painted with Glyphosate/Metsulfuron-Methyl.	All year round	Glyphosate 360g/L & Metsulfuron-Methyl 600 g/kg	M & B	Neat
Pennywort	*Hydrocotyle bonariensis*	Hand pulled or spot sprayed with Dicamba	All year round			
Coolatai Grass	*Hyparrhenia hirta*	Hand pulled or brush cut and foliar sprayed with Glyphosate. Up to three applications of Glyphosate in the same growing season will be required.	All year round	Glyphosate 360g/L	M	200ml/10l
Spiny Rush, Spike Rush, Sharp Rush	*Juncus acutus*	Juvenile single specimens to be dug out. Large infestations foliar spraying with Glyphosate.	All year round	Glyphosate 360g/L	M	1/100
Lantana	*Lantana camara*	Cut and paint, sprayed or splattered with Glyphosate. Hand pull small shoots.	All year round	Glyphosate 360g/L	M	Neat
Fishbone Fern	*Nephrolepis cordifolia*	Hand removal. Brush cut then sprayed with Glyphosate.	All year round	Glyphosate 360g/L	M	1/100
Ochna	*Ochna serrulata*	Double side scrape and paint all stems to 75% coverage.	All year round	Glyphosate 360g/L	M	Neat
Bamboo, Black Bamboo, Rhizomatous Bamboo,	*Phyllostachys nigra*	Chainsaw/cut close to base. Allow new shoots to return. Cut and paint new shoots with neat Glyphosate.	All year round	Glyphosate 360g/L	M	Neat
Inkweed	*Phytolacca octandra*	Foliar spraying with Glyphosate, hand pulled and brush cut	All year round	Glyphosate 360g/L	M	1/100
Radiata Pine, Pine Wildings	*Pinus radiata*	<80mm cut & painted; >80mm will be drilled/frilled with neat Glyphosate	All year round	Glyphosate 360g/L	M	Neat

Common Name	Botanical Name	Weeding Technique	Recommended Timing for Treatment	Herbicide Application	Herbicide Group	Ratio
Plantain	*Plantago lanceolata*	Foliar spraying with Glyphosate	All year round	Glyphosate 360g/L	M	1/100
Castor Oil Plant	*Ricinus communis*	Hand pulled and cut & painted with neat Glyphosate	All year round	Glyphosate 360g/L	M	Neat
Blackberry	*Rubus fruticosus aggregate*	Brush cut, crowned and scraped & painted with neat Glyphosate	Between flowering and fruiting from November to January	Glyphosate 360g/L	M	Neat
Fireweed	*Senecio madagascariensis*	Foliar spraying with Glyphosate, hand pulled and brush cut	All year round	Glyphosate 360g/L	M	1/100
Senna / Cassia	*Senna pendula*	Small individuals hand removed, larger plants cut and painted with neat Glyphosate	All year round	Glyphosate 360g/L	M	Neat
Paddy's Lucerne	*Sida rhombifolia*	Foliar spraying with Glyphosate, hand pulled and brush cut	All year round	Glyphosate 360g/L	M	1/100
Tobacco Bush/ Wild Tobacco	*Solanum mauritianum*	Cut & paint with Glyphosate	All year round	Glyphosate 360g/L	M	Neat
Blackberry Night Shade	*Solanum nigrum*	Foliar spraying with Glyphosate, hand pulled and brush cut	All year round	Glyphosate 360g/L	M	1/100
Purpletop	*Verbena bonarensis*	Foliar spraying with Glyphosate, hand pulled and brush cut	All year round	Glyphosate 360g/L	M	1/100

Appendix 5: Noise Monitoring Results

Table 1 Mannering Colliery attended noise monitoring results – RA1

Location	Date	Start time	Total noise levels, dB							Site contributions, dB			Noise limits, dB		Meteorological conditions[3] limits apply (Y/N)	Exceedance, dB	Comments
			L_{Amin}	L_{A90}	L_{Aeq}	L_{A10}	L_{A1}	L_{Amax}	L_{Ceq}	LFN mod. factor[1]	L_{Aeq}	L_{Amax}[2]	L_{Aeq}	L_{Amax}[2]			
RA1	26/3	15:58 (Day)	47	56	67	71	74	81	74	Nil	IA	IA	42	N/A	1.7 m/s @ 158 A class stability Y	Nil	**Site noise inaudible.** Road traffic noise consistent. Bird noise and wind in trees/grass occasional.
RA1	26/3	18:58 (Eve.)	45	51	65	69	73	77	71	Nil	IA	IA	42	N/A	2.1 m/s @ 166 A class stability Y	Nil	**Site noise inaudible.** Road traffic noise consistent. Bird noise and wind in trees/grass frequent.
RA1	26/3	23:36 (Night)	35	39	60	63	74	78	63	Nil	IA	IA	41	49	1.4 m/s @ 164 F class stability Y	Nil	**Site noise inaudible.** Insects and nearby fan noise consistent. Road traffic noise frequent. Wind in trees occasional.
RA1	11/6	15:36 (Day)	47	58	65	70	68	75	71	Nil	IA	N/A	42	N/A	3.0 m/s @186 B class stability Y	Nil	**Site noise inaudible.** Road traffic noise consistent. Bird noise frequent.
RA1	11/6	19:34 (Eve.)	45	52	64	72	69	78	69	Nil	IA	N/A	42	N/A	0.3 m/s @318 F class stability Y	Nil	**Site noise inaudible.** Road traffic noise and insects consistent.
RA1	11/6	23:35 (Night)	39	40	56	66	61	72	64	Nil	41 (39+2)	39	41	49	0.3 m/s @168 F class stability Y	Nil	**MC hum consistently audible with alarms audible on occasion.** Insects and Road traffic noise consistent.
RA1	11/9	15:18 (Day)	43	54	65	69	72	82	73	Nil	IA	N/A	42	N/A	3.1 m/s @ 75° B class stability N	N/A	**Site noise inaudible.** Road traffic noise consistent. Bird noise occasional.
RA1	11/9	18:22 (Eve.)	48	54	65	69	72	75	72	Nil	IA	N/A	42	N/A	0.2 m/s @ 59° B class stability Y	Nil	**Site noise inaudible.** Road traffic noise consistent. Insects occasional.

Table 1 Mannering Colliery attended noise monitoring results – RA1

Location	Date	Start time	Total noise levels, dB							Site contributions, dB			Noise limits, dB		Meteorological conditions[3] limits apply (Y/N)	Exceedance, dB	Comments
			L_{Amin}	L_{A90}	L_{Aeq}	L_{A10}	L_{A1}	L_{Amax}	L_{Ceq}	LFN mod. factor[1]	L_{Aeq}	L_{Amax}[2]	L_{Aeq}	L_{Amax}[2]			
RA1	11/9	22:22 (Night)	36	39	59	64	69	73	66	Nil	IA	IA	41	49	0.7 m/s @ 10° F class stability Y	Nil	**Site noise inaudible.** VPPS noise and insects consistent. Road traffic noise frequent.
RA1	25/11	20:40 (Eve.)	43	49	61	65	70	76	67	Nil	IA	N/A	42	N/A	3.1 m/s @ 2° D class stability N	N/A	**Site noise inaudible.** Insects, Road traffic noise and VPPS noise consistent.
RA1	26/11	00:41 (Night)	33	34	55	58	67	78	60	Nil	IA	IA	41	49	0.5 m/s @ 174° E class stability Y	Nil	**Site noise inaudible.** Insects, frogs, VPPS noise and nearby fan consistent. Road traffic noise occasional.
RA1	17/12	21:07 (Eve.)	47	50	66	71	75	83	70	Nil	IA	N/A	40	N/A	0.4 m/s @ 91° F class stability Y	Nil	**Site noise inaudible.** Insects consistently audible. Traffic passbys frequently audible. Bird noise occasionally audible.
RA1	17/12	23:00 (Night)	37	40	42	43	49	58	63	Nil	IA	IA	40	49	0.7 m/s @ 91° F class stability Y	Nil	**Site noise inaudible.** Insects consistently audible. Traffic passbys frequently audible.

Notes:
1. Modifying factor correction for low frequency noise in accordance with Fact sheet C of the NPfI.
2. For assessment purposes the L_{Amax} and the $L_{A1,1\ minute}$ are interchangeable.
3. Meteorological data were taken as an average over 15 minutes from Mannering Colliery's weather station.
4. IA = inaudible.
5. N/A = not applicable.

Table 2 Mannering Colliery attended noise monitoring results – RA2

Location	Date	Start time	Total noise levels, dB							Site contributions, dB			Noise limits, dB		Meteorological conditions[3] limits apply (Y/N)	Exceedance, dB	Comments
			L_{Amin}	L_{A90}	L_{Aeq}	L_{A10}	L_{A1}	L_{Amax}	L_{Ceq}	LFN mod. factor[1]	L_{Aeq}	L_{Amax}[2]	L_{Aeq}	L_{Amax}[2]			
RA2	26/3	15:45 (Day)	36	38	44	45	55	63	60	Nil	IA	IA	39	N/A	3.6 m/s @ 161 B class stability N	N/A	**Site noise inaudible.** Insects and bird noise consistent. Wind in trees, distant traffic and resident noise frequent. Aircraft noise and dogs barking occasional.
RA2	26/3	18:53 (Eve.)	35	37	40	42	45	62	58	Nil	IA	IA	39	N/A	2.2 m/s @ 152 B class stability Y	Nil	**Site noise inaudible.** Insects and bird noise consistent. Wind in trees, resident noise, distant and local traffic frequent. Aircraft noise occasional.
RA2	26/3	23:18 (Night)	34	37	39	41	42	49	50	Nil	IA	IA	39	47	2.1 m/s @ 161 F class stability N	N/A	**Site noise inaudible.** Insects, bird noise and idling noise from NE (unrelated to MC) consistent. Distant traffic noise frequent.
RA2	11/6	15:19 (Day)	34	37	44	56	46	67	55	Nil	IA	N/A	39	N/A	1.9 m/s @147 A class stability Y	N/A	**Site noise inaudible.** Insects and bird noise consistent and dominant. Wind in trees, ducks nearby and residents occasionally audible. Distant traffic frequently audible.
RA2	11/6	18:45 (Eve.)	36	38	40	46	41	50	61	Nil	IA	N/A	39	N/A	0.3 m/s @194 D class stability Y	Nil	**Site noise inaudible.** Insects noise consistent. Distant and local traffic frequent. Aircraft noise occasional. Vales Point Power Station hum consistently audible.
RA2	11/6	22:59 (Night)	39	41	43	45	44	48	63	Nil	38	39	39	47	0.3 m/s @193 F class stability Y	N/A	**MC conveyor noise audible throughout measurement.** Bird noise and distant traffic audible on one occasion. Vales Point Power Station hum consistently audible. CVC horn noise occasionally audible.

RA2	11/9	15:05 (Day)	32	34	42	43	51	67	57	Nil	IA	N/A	39	N/A	3.4 m/s @ 75° A class stability N	N/A	**Site noise inaudible.** VPPS noise and bird noise consistent. Wind in trees frequent. Resident noise, local and distant traffic occasional.
RA2	11/9	18:54 (Eve.)	37	38	40	42	44	47	61	Nil	IA	N/A	39	N/A	0.3 m/s @ 65° B class stability Y	Nil	**Site noise inaudible.** VPPS noise, insects, frogs and bird noise consistent. Bird noise occasional.
RA2	11/9	23:14 (Night)	35	38	42	44	48	52	64	Nil	IA	IA	39	47	1.3 m/s @ 3° E class stability Y	Nil	**Site noise inaudible.** VPPS noise and insects, consistent. Wind in trees frequent. Resident noise, distant dogs barking, aircraft noise, local and distant traffic occasional.
RA2	25/11	20:48 (Eve.)	38	40	42	45	47	57	61	Nil	IA	N/A	39	N/A	3.0 m/s @ 9° D class stability Y	Nil	**Site noise inaudible.** VPPS noise and insects consistent. Distant road traffic noise occasional.
RA2	26/11	00:28 (Night)	32	34	37	38	42	62	58	Nil	IA	IA	39	47	0.6 m/s @ 133° F class stability Y	Nil	**Site noise inaudible.** VPPS noise and insects consistent. Distant road traffic noise and nearby animals occasional.
RA2	17/12	21:50 (Eve.)	31	33	35	36	40	50	57	Nil	IA	N/A	39	N/A	0.4 m/s @ 94° F class stability Y	Nil	**Site noise inaudible.** Insects and VPPS noise consistently audible. Distant traffic and dogs barking occasionally audible. Neighbouring mine briefly audible.
RA2	17/12	22:10 (Night)	38	40	41	42	46	49	64	Nil	IA	IA	39	47	0.3 m/s @ 112° F class stability Y	Nil	**Site noise inaudible.** Insects and VPPS noise consistently audible. Distant traffic, resident noise and dogs barking occasionally audible.

Notes: 1. Modifying factor correction for low frequency noise in accordance with Fact sheet C of the NPfI (refer to Section **Error! Reference source not found.**).
2. For assessment purposes the L_{Amax} and the $L_{A1,1\ minute}$ are interchangeable.
3. Meteorological data were taken as an average over 15 minutes from Mannering Colliery's weather station (Refer to Section 5.1).
4. IA = inaudible.
5. N/A = not applicable.

Table 3 Mannering Colliery attended noise monitoring results – RA3

Location	Date	Start time	Total noise levels, dB							Site contributions, dB			Noise limits, dB		Meteorological conditions[3] limits apply (Y/N)	Exceedance, dB	Comments
			L_{Amin}	L_{A90}	L_{Aeq}	L_{A10}	L_{A1}	L_{Amax}	L_{Ceq}	LFN mod. factor[1]	L_{Aeq}	L_{Amax}[2]	L_{Aeq}	L_{Amax}[2]			
RA3	26/3	17:37 (Day)	37	39	46	46	59	66	58	Nil	IA	IA	39	N/A	3.0 m/s @ 162 A class stability Y	Nil	**Site noise inaudible.** Wastewater treatment works (WTW) pump noise consistent. Resident noise and bird noise frequent. Wind in trees, distant traffic, VPPS noise and aircraft noise occasional.
RA3	26/3	19:54 (Eve.)	34	36	43	43	54	63	59	Nil	IA	IA	39	N/A	2.3 m/s @ 172 B class stability Y	Nil	**Site noise inaudible.** Insects noise consistent. Local traffic noise frequent. Vales Point Power Station (VPPS) noise and distant dogs barking occasional.
RA3	26/3	23:57 (Night)	32	35	38	40	47	58	56	Nil	IA	IA	39	49	1.3 m/s @ 160 F class stability Y	Nil	**Site noise inaudible.** WTW noise, VPPS and insect noises consistent. Wind in trees, distant dogs barking, bird noise and distant traffic noise occasional.
RA3	11/6	15:39 (Day)	33	36	50	62	53	71	63	Nil	IA	N/A	39	N/A	2.1 m/s @188 B class stability Y	Nil	**Site noise inaudible.** Insects and bird noise consistent. Local traffic on Tall Timbers Rd frequent. Wind in foliage occasionally audible. Car passby on two occasions. Vales Point Power Station hum consistently audible.
RA3	11/6	19:06 (Eve.)	39	41	43	50	44	57	65	Nil	IA	N/A	39	N/A	0.3 m/s @225 F class stability Y	Nil	**Site noise inaudible.** Local traffic noise frequent. Aircraft noise occasional. Vales Point Power Station hum consistently audible. WTW noise consistently audible.

Table 3 Mannering Colliery attended noise monitoring results – RA3

Location	Date	Start time	Total noise levels, dB							Site contributions, dB			Noise limits, dB		Meteorological conditions[3] limits apply (Y/N)	Exceedance, dB	Comments
			L_{Amin}	L_{A90}	L_{Aeq}	L_{A10}	L_{A1}	L_{Amax}	L_{Ceq}	LFN mod. factor[1]	L_{Aeq}	L_{Amax}[2]	L_{Aeq}	L_{Amax}[2]			
RA3	11/6	23:23 (Night)	44	46	47	53	49	56	67	Nil	≤39	56	39	49	0.5 m/s @175 F class stability Y	Nil/7	**MC conveyor noise barely audible throughout measurement, with alarms audible on occasion.** Vales Point Power Station hum consistently audible and dominant.
RA3	11/9	15:26 (Day)	35	37	48	46	57	74	60	Nil	IA	N/A	39	N/A	2.7 m/s @ 89° A class stability Y	Nil	**Site noise inaudible.** VPPS noise and bird noise consistent. Wind in trees frequent. Local traffic noise, distant dogs barking and bird noise occasional.
RA3	11/9	18:42 (Eve.)	38	39	46	47	58	67	65	Nil	IA	N/A	39	N/A	0.2 m/s @ 125° B class stability Y	Nil	**Site noise inaudible.** VPPS noise, WTW noise and insects consistent. Local traffic noise and bird noise occasional.
RA3	11/9	22:43 (Night)	41	43	47	47	57	63	66	Nil	IA	IA	39	49	0.5 m/s @ 16° E class stability Y	Nil	**Site noise inaudible.** VPPS noise, WTW noise and insects consistent. Local traffic noise, wind in trees and bird noise occasional.
RA3	25/11	21:01 (Eve.)	42	44	46	48	53	65	63	Nil	IA	N/A	39	N/A	3.5 m/s @ 14° D class stability N	N/A	**Site noise inaudible.** VPPS noise and insects consistent. Wind in trees frequent. Road traffic noise occasional.
RA3	26/11	01:20 (Night)	39	42	46	49	52	61	62	Nil	IA	IA	39	49	0.4 m/s @ 6° F class stability Y	Nil	**Site noise inaudible.** Insects, frogs and VPPS noise consistent. Bird noise frequent.
RA3	17/12	21:28 (Eve.)	47	50	66	71	75	83	70	Nil	IA	N/A	39	N/A	0.3 m/s @ 154° F class stability Y	Nil	**Site noise inaudible.** Insects, frogs and VPPS noise consistently audible. Distant traffic occasionally audible. Neighbouring mine briefly audible.

Table 3 Mannering Colliery attended noise monitoring results – RA3

Location	Date	Start time	Total noise levels, dB							Site contributions, dB			Noise limits, dB		Meteorological conditions[3] limits apply (Y/N)	Exceedance, dB	Comments
			L_{Amin}	L_{A90}	L_{Aeq}	L_{A10}	L_{A1}	L_{Amax}	L_{Ceq}	LFN mod. factor[1]	L_{Aeq}	L_{Amax}[2]	L_{Aeq}	L_{Amax}[2]			
RA3	17/12	22:30 (Night)	37	40	42	43	49	58	63	Nil	IA	IA	39	49	0.2 m/s @ 175° E class stability Y	Nil	**Site noise inaudible.** Insects, frogs, water treatment plant noise and VPPS noise consistently audible. Distant traffic and bird noise occasionally audible. Neighbouring mine briefly audible.

Notes:
1. Modifying factor correction for low frequency noise in accordance with Fact sheet C of the NPfI.
2. For assessment purposes the L_{Amax} and the $L_{A1,1\ minute}$ are interchangeable.
3. Meteorological data were taken as an average over 15 minutes from Mannering Colliery's weather station.
4. IA = inaudible.
5. N/A = not applicable.

Appendix 6: Noise Compliance Report

Mannering Colliery

Noise Compliance Report

Prepared for Delta Coal
September 2019

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Mannering Colliery

Noise Compliance Report

Report Number

H180389 NCR_RP1

Client

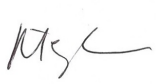
Delta Coal

Date

26 September 2019

Version

Final

Prepared by	Approved by
	
Katie Teyhan Associate 26 September 2019	**Najah Ishac** Director 26 September 2019

This report has been prepared in accordance with the brief provided by the client and has relied upon the information collected at the time and under the conditions specified in the report. All findings, conclusions or recommendations contained in the report are based on the aforementioned circumstances. The report is for the use of the client and no responsibility will be taken for its use by other parties. The client may, at its discretion, use the report to inform regulators and the public.

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1 Introduction

EMM Consulting Pty Limited (EMM) was engaged to prepare this Noise Compliance Report (NCR) for Mannering Colliery on behalf of Great Southern Energy Pty Ltd (trading as DeltaCoal).

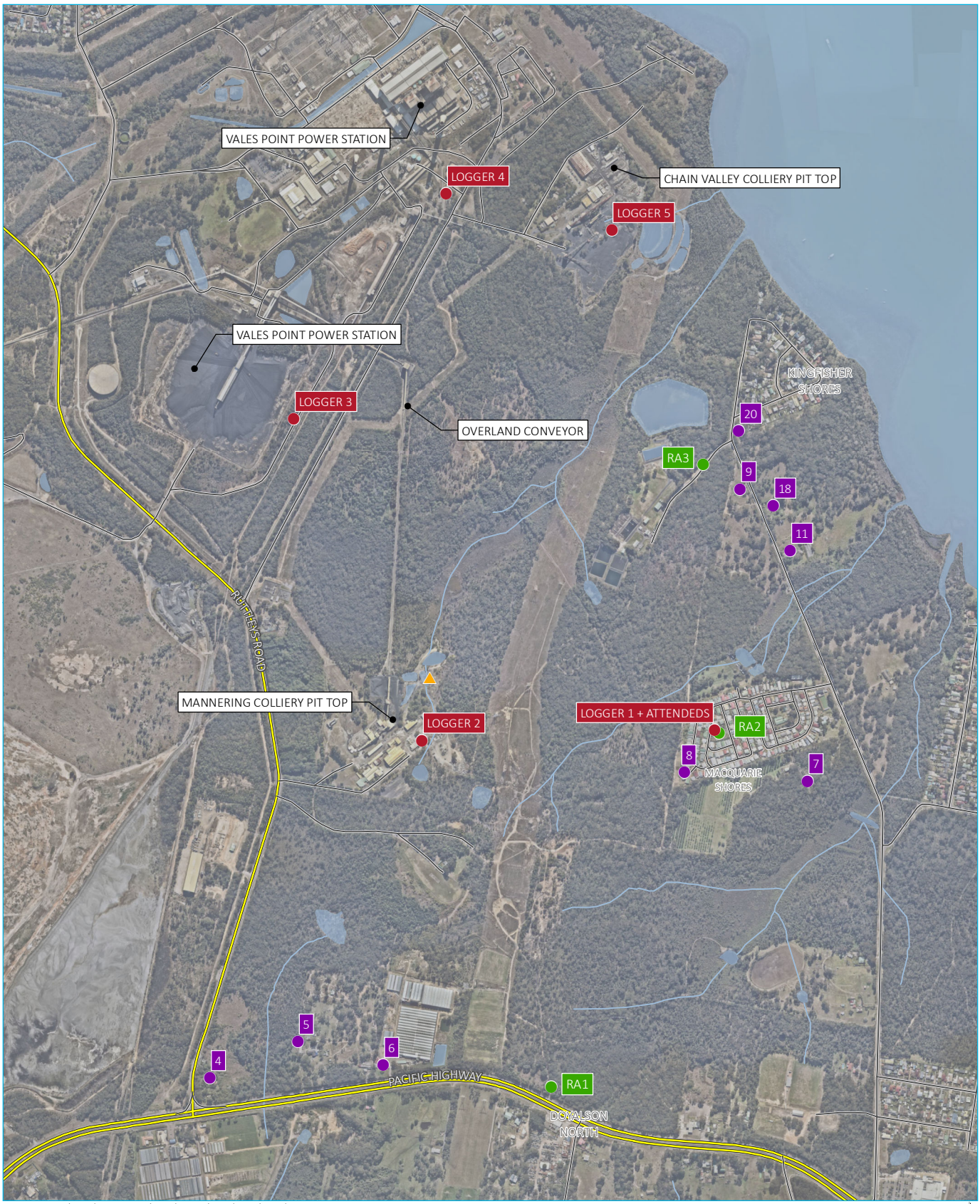
The purpose of this report was to address requirements of Condition 4 of Appendix 4B of Mannering Colliery's Project Approval (PA) 06_0311.

This report presents the results and findings of the study.

The following material was referenced as part of this assessment:

- Department of Planning and Environment (DPE), Project Approval MP06_0311, as modified on 18 August 2016 (current as of commencement of the monitoring program);
- Environment Protection Authority (EPA), Environment Protection License (EPL) 191, as varied on 1 April 2019 (current as of commencement of the monitoring program);
- Mannering Colliery Noise Monitoring Program (NMP), approved by DPE in April 2016;
- NSW EPA, Industrial Noise Policy (INP), 2000;
- NSW EPA, Industrial Noise Policy Application notes, 2017; and
- NSW EPA, Noise Policy for Industry (NPfI), 2017.

A glossary of acoustic terms relevant to this report is provided in Appendix A. Points of interest relevant to this study are shown in Figure 1.1.



Source: EMM (2019); Nearmap (2019); DFSI (2017); GA (2011)

0 250 500 m

GDA 1994 MGA Zone 56

N

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KEY

- Main road
- Local road
- Watercourse/drainage line
- Waterbody
- Unattended noise monitoring location
- Current assessment locations
- Current monitoring locations
- Meteorological station

Noise monitoring locations

Delta Coal
Chain Valley Colliery noise monitoring
Figure 1.1

EMM
creating opportunities

2 NCR Requirements

2.1 Conditions of approval

Condition 4 of Appendix 4B of PA 06_0311 contains a requirement for the proponent (Delta Coal) to prepare the NCR and is reproduced as follows:

> 4. The Proponent must prepare a Noise Compliance Report for the project to the satisfaction of the Secretary. The report must:
>
> (a) be prepared by a suitably qualified acoustic consultant, whose appointment has been approved by the Secretary;
> (b) be prepared in consultation with EPA, and be submitted for approval within 6 months of the expiry of the 18 month period referred to in Condition 1 above; and
> (c) investigate and evaluate the effectiveness of the noise mitigation measures required under condition 3 and compliance with the noise limits in Table 2.

2.2 Additional DPE requirements

Communication from the DPE (refer *Mannering Colliery PA 06_0311 2018 Noise Complaints Investigation* dated 30 May 2019) requested the following regarding the Noise Compliance Report, in addition to the requirements of Condition 4 of Appendix 4B of PA 06_0311:

- Attended noise monitoring (to determine the contribution of MC and VPPS to total recorded noise levels) be carried out as the basis of the report; and
- The scope and timing of the report, along with the intensiveness of attended monitoring be considered in terms of the possibility of an Independent Review (Schedule 4, Condition 1) request from any one of the registered complainants.

After review of our proposed methodology the DPE clarified that the monitoring for the NCR be undertaken in accordance with the requirements of the Industrial Noise Policy (EPA 2000) and the Noise Policy for Industry (EPA 2017) where applicable.

The Secretary has also noted the following (refer letter *Mannering Colliery PA 06_0311 Noise Compliance Report* dated 20 June 2019):

> 1. Attended monitoring is proposed to occur between 10pm and 7am;
>
> a) The Department has reviewed the complaints log from the recently released JACOBS Macquarie Shores Home Village, Doyalson North Noise Assessment Report, and have noted that the vast majority of complaints occur between 12am and 6am, and feel that attended monitoring should be focussed in this time period (more on this in 3a);
>
> 2. Attended monitoring is proposed to only occur at RA2 (Macquarie Shores Village);
>
> a) The Department notes that Mannering Colliery Noise Monitoring Program (NMP) stipulates three (3) compliance attended noise monitoring sites. RA1, RA2 and RA3;
>
> b) The Department has reviewed the past three years of Annual Reviews and notes the following;
>
> i) 2016 – 1 x noise exceedance at RA2 and zero community complaints;

ii) 2017 – 0 x noise exceedances and 1 x non-noise complaint;

iii) 2018 – 1 x noise exceedance at RA2 and 12 x noise complaints.

c) The Department expects attended monitoring to be undertaken at all compliance monitoring points as shown in the approved NMP with a focus on RA2 as the site of recent noise complaints (more on this in 3.);

3. The amount of attended monitoring is not considered sufficient (up to 6 x 15-minute samples only at RA2);

a) The Department proposes a minimum of six (6) monitoring instances;

b) Monitoring at RA1 and RA3 should consist of 2 x 15-minute measurements (each) on a minimum of six (6) occasions;

c) Monitoring at RA2 should consist of 3 x 15-minute measurements on a minimum of six (6) occasions;

d) All monitoring should be completed prior to 30 August 2019;

e) Monitoring results should be valid with respect to meteorological conditions;

i) Additional monitoring should be conducted if the overall amount of valid results falls below 75%;

ii) Additional monitoring should also be conducted if the amount of receptor (RA1, RA2, RA3) specific valid results falls below 75%;

f) The above would then provide a minimum of 9 valid measurements for RA1 and RA3 (equivalent to ~2 years worth of noise monitoring at current quarterly intervals), and a minimum of 15 valid measurements for RA2 (equivalent to ~4 years worth of noise monitoring at current quarterly intervals);

g) With reference to 1a), as the critical noise period is between 12am an 6am (6 x 1-hour periods) and a minimum of 6 monitoring instances is required, each noise monitoring instance at each site, should be targeted to capture each of the 1 hour periods between 12am and 6am similar to the below Table 1;

h) Monitoring results should be valid with respect to Mannering Colliery's operational status;
-Should operational logs show Mannering Colliery was not fully operational during monitoring, additional monitoring should be conducted;

i) Monitoring should be conducted independent of Mannering Colliery. It is envisaged that Mannering Colliery would be aware of the two (2) week unattended monitoring, but not the specific days within that period where attended monitoring is being conducted; and

j) Mannering Colliery should provide operational logs for two weeks prior, during, and two weeks after the monitoring period as evidence of operational status.

Table 1 Example noise monitoring program

Monitoring period	*Monitoring night*					
	1	*2*	*3*	*4*	*5*	*6*
12am – 1am	*RA1*				*RA3*	*RA2*

1am – 2am	*RA2*	*RA1*				*RA3*
2am – 3am	*RA3*	*RA2*	*RA1*			
3am – 4am		*RA3*	*RA2*	*RA1*		
4am – 5am			*RA3*	*RA2*	*RA1*	
5am – 6am				*RA3*	*RA2*	*RA1*

2.3 Endorsement

As per communication received from the DPE (provided in Appendix B), the Secretary has endorsed the following EMM personnel to undertake the relevant noise monitoring and prepare the NCR:

- Lucas Adamson;
- Katie Teyhan;
- Katie Weekes; and
- Teanuanua Villierme.

3 Noise criteria

3.1 Operational and sleep disturbance noise limits

Mannering Colliery noise limits are provided in Table 1, Condition 1 of Appendix 4B of the PA. EPL 191 references the PA with respect to noise limits. Extracts of the relevant sections of the PA and EPL pertaining to noise are provided in Appendix C and Appendix D of this report, respectively. The approved NMP adopts three attended noise monitoring locations that are representative of residences outlined in the PA. The noise monitoring locations and relevant criteria are summarised in Table 3.1.

Table 3.1 Noise impact assessment criteria

Representative monitoring location	Assessment location	Day $L_{Aeq,15\ minute}$, dB	Evening $L_{Aeq,15\ minute}$, dB	Night	
				$L_{Aeq,15\ minute}$, dB	$L_{A1,1\ minute}$, dB
RA1	4 – di Rocco	40	40	40	49
	5 – Keighran	41	41	41	49
	6 – Swan	41	41	41	49
RA2	7 – Druitt	39	39	39	47
	8 – May	45	45	43	47
RA3	9 – Jeans	41	41	41	51
	11 – Jeans	39	39	39	49
	18 – Jeans	39	39	39	51
	20 – Knight and all other Chain Valley Bay residences	40	40	40	51

The PA specifies the following meteorological conditions under which noise limits do not apply:

- wind speeds greater than 3 m/s at 10 metres above ground level;
- stability category F temperature inversion and with wind speeds greater than 2 m/s at 10 metres above ground level; or
- stability category G temperature inversion conditions.

For this assessment, the recorded L_{Amax} has been used as a conservative estimate of the $L_{A1,1\ minute}$. The INP application notes state that the EPA accepts sleep disturbance analysis based on either the $L_{A1,1\ minute}$ or L_{Amax} metrics (EPA 2013), with L_{Amax} resulting in a more conservative assessment.

The PA states that modification factor corrections in the application notes to the INP (2017) shall be applied to the measured mine noise levels where applicable. The application notes to the INP state that Fact Sheet C of the NPfI (EPA 2017) now applies regarding the application of modifying factors.

3.2 Corrections for annoying noise characteristics

Appendix 4A Condition 5 of the PA states that noise generated by Mannering Colliery is to be measured in accordance with the relevant requirements of the INP. The INP application notes state that Section 4 of the INP has been withdrawn and the modifying factor adjustments outlined in Fact Sheet C of the NPfI are to be used when assessing the characteristics of a noise source.

3.2.1 Low frequency noise

Fact sheet C of the NPfI (EPA 2017) provides guidelines for applying modifying factor corrections to account for low frequency noise emissions. The NPfI specifies that a difference of 15 dB or more between site 'C-weighted' and site 'A-weighted' noise emission levels identifies the potential for an unbalanced spectrum and potential increased annoyance.

Where a difference of 15 dB or more between site 'C-weighted' and site 'A-weighted' noise emission levels is identified, the one-third octave noise levels recorded should be compared to the values in Table C2 of the NPfI (EPA 2017), which has been reproduced in Table 3.2 below.

Table 3.2 One-third octave low-frequency noise thresholds

	One-third octave $L_{Zeq,15\ minute}$ threshold level												
Frequency (Hz)	**10**	**12.5**	**16**	**20**	**25**	**31.5**	**40**	**50**	**63**	**80**	**100**	**125**	**160**
dB (Z)	92	89	86	77	69	61	54	50	50	48	48	46	44

The following modifying factor correction is to be applied where the site 'C-weighted' and site 'A-weighted' noise emission level is 15 dB or more and:

- where any of the one-third octave noise levels in Table 3.2 are exceeded by up to and including 5 dB and cannot be mitigated, a 2 dB positive adjustment to measured/predicted A-weighted levels applies for the evening/night period; or
- where any of the one-third octave noise levels in Table 3.2 are exceeded by more than 5 dB and cannot be mitigated, a 5 dB positive adjustment to measured/predicted A-weighted levels applies for the evening/night period.

Hence, where possible throughout each survey the operator has estimated the difference between site 'C-weighted' and site 'A-weighted' noise emission levels by matching audible sounds with the response of the analyser (L_{Ceq}-L_{Aeq}). Where this was deemed to be 15 dB or greater, the measured one-third octave frequencies have been compared to the values in Table 3.2 to identify the relevant modifying factor correction (if applicable). This method has been applied to this assessment as presented in Section 5.

It is of note that the NPfI (EPA 2017) states that low-frequency noise corrections only apply under the standard or noise-enhancing (i.e. applicable) meteorological conditions.

3.2.2 Other characteristics

The NPfI also provides guidelines for applying modifying factor corrections to account for other annoying characteristics such as tonality (i.e. noise containing a prominent frequency) and intermittent noise. These have been considered where necessary as part of this assessment.

4 Methodology

4.1 Operator-attended noise monitoring

4.1.1 Overview

Operator-attended noise monitoring is the primary method accepted by regulators for determining compliance with relevant noise limits.

In planning operator-attended noise surveys, consideration was given to weather conditions under which noise monitoring data would be valid and where noise limits would apply. Consideration was also given to the operational status of Mannering Colliery. Operator-attended noise monitoring was undertaken independent of Mannering Colliery personnel (i.e. they were not aware of the specific days or times that EMM was undertaking operator-attended noise monitoring), as requested by DPIE.

In accordance with the methodology described by the DPIE, consideration was also given to the timing of surveys at each monitoring location with the aim to capture each hour during the times of most disturbance i.e. between 12 midnight and 6am.

Surveys of 15-minute duration were undertaken at each relevant location over a period of approximately one month from 25 July 2019 until the minimum number of valid surveys (15), as requested by the Secretary, were completed at location RA2. A total of eight valid surveys were obtained at locations RA1 and RA3. Hence, the minimum number of surveys as requested by the Secretary (9) was not quite achieved at locations RA1 and RA3 however, given that Mannering Colliery was generally not audible at these locations, the DPIE allowed a reduction in the number of surveys required at RA1 and RA3.

4.1.2 Monitoring locations and noise limits

To quantify noise emissions from Mannering Colliery, operator-attended noise surveys were completed at three representative locations as per the approved NMP and consistent with DPIE instruction.

Noise monitoring locations required as per the NMP and their coordinates are listed in Table 4.1 and are shown in Figure 1.1. The noise limits applied at each monitoring location are also provided in Table 4.1.

Table 4.1 Attended noise monitoring locations

Monitoring location	Description	Night-time noise limits		MGA56	
		$L_{Aeq,15min}$	$L_{A1,1min}$	Easting	Northing
RA1	Pacific Highway, Doyalson	40	49	364646	6327221
RA2	North-eastern corner of the carpark on Seventh Avenue, Macquarie Shores Village	43	47	365101	6328215
RA3	Tall Timbers Road (northern end), Kingfisher Shores	39	49	365069	6328953

Regarding the applicable noise limits, a conservative approach has been taken for RA1 and RA3 with the minimum night-time noise limit applicable to any of the representative residences adopted. This is considered appropriate given the relative proximity of the representative monitoring locations to each of the assessment locations.

The monitoring location RA2, which is considered representative of assessment locations 7 and 8, is much nearer to assessment location 8. Hence, the night-time noise limits for assessment location 8 have been adopted at monitoring location RA2. This approach is supported by the results of previous noise modelling (refer to *Mannering Colliery- Modification 3 Noise Impact Assessment* prepared by EMM dated 7 May 2015). Under noise-enhancing weather conditions noise emissions from Mannering Colliery are predicted to be 7 dB higher at assessment location 8 compared to those predicted at assessment location 7. Hence, since the difference in night-time noise limits for locations 8 and 7 as per PA 06_0311 is only 4 dB, if compliance is determined at location 8 then compliance will also be achieved at location 7. Results of noise modelling have also indicated negligible difference between predicted MC noise levels at assessment location 8 and those at monitoring location RA2 as presented in Figure 1.1. Based on the preceding, it is considered appropriate to adopt the night-time noise limits specified for assessment location 8 at monitoring location RA2.

4.1.3 Instrumentation

Brüel & Kjær 2250 and 2270 Type 1 sound analysers (s/n 2759405 and 3027603, respectively) were used to conduct 15-minute attended measurements and record 1/3 octave frequency and statistical noise indices. The sound analysers were calibrated before and on completion of each survey using a Brüel & Kjær Type 4230 calibrator (s/n 1276091). Instrumentation calibration certificates are provided in Appendix E.

Where possible throughout each survey, the operator has quantified the contribution of site noise and other significant noise sources. This was done by matching audible sounds with the response of the analyser (where applicable) and/or via post-analysis of data.

4.1.4 Weather conditions

Meteorological data for the monitoring period was sourced from Mannering Colliery's meteorological station to determine the applicability of noise limits in accordance with the PA.

For the purpose of this assessment and as required by the PA, EPL and NMP, stability categories were determined for each 15-min attended monitoring period. This was completed using the sigma-theta (ST) method as per Appendix E of the INP (EPA 2000). The ST data for the monitoring period was obtained from Mannering Colliery meteorological station located to the north of the site (refer Figure 1.1).

Table E1 of the INP (EPA 2000) is reproduced in Table 3.2 and presents the stability categories and associated ranges in temperature lapse rates.

Table 4.2 Stability categories and temperature lapse rates

Stability category	Temperature lapse rate (ΔT) (°C/100 m)
A	$\Delta T < -1.9$
B	$-1.9 \leq \Delta T < -1.7$
C	$-1.7 \leq \Delta T < -1.5$
D	$-1.5 \leq \Delta T < -0.5$
E	$-0.5 \leq \Delta T < 1.5$
F	$1.5 \leq \Delta T < 4.0$
G	$\Delta T \geq 4.0$

Source: INP (EPA 2000).

4.2 Unattended noise monitoring

To compliment the operator-attended noise surveys, five unattended environmental noise loggers were deployed at locations in the subject area (refer Figure 1.1). The purpose of the unattended noise monitoring program was primarily to determine any correlation between operations at MC or other major sources of industrial noise in the area and noise levels measured at Macquarie Shores. The unattended noise loggers were not used for the purpose of determining compliance with relevant noise limits.

Unattended noise loggers were in place from 25 July to 1 September 2019 and were programmed to record statistical noise level indices continuously in 5-minute intervals. Calibration of each noise logger was checked prior to and following unattended noise monitoring. The equipment carried appropriate and current NATA calibration certificates (refer Appendix E). The wind speed and the rainfall data recorded at the MC weather station were used to exclude noise data during periods of any rainfall and/or wind speeds in excess of 5 m/s (approximately 9 knots) in accordance with methodology provided in the Industrial Noise Policy (INP) (EPA, 2000).

Details of unattended noise monitoring locations and equipment used are summarised in Table 4.3.

Table 4.3 Details of unattended noise monitoring equipment and locations

Reference	Location		Equipment details	Description
	Easting	Northing		
L1	365101	6328215	Rion NL-42 s/n 521657	Located in the park opposite the complainant's residence within Macquarie Shores village.
L2	364286	6328185	Rion NL-42 s/n 873126	Located on site at Mannering Colliery
L3	363929	6329081	Rion NL-42 s/n 1173756	Located adjacent to eastern side of Vales Point Power Station coal stockpile
L4	364353	6329708	ARL EL316 s/n 16-207-005	Outside "Ash-gate" entrance to Vales Point Power Station
L5	364815	6329606	ARL Ngara s/n 878113	On site at Chain Valley Colliery

4.3 MC operations and times of disturbance

Operational logs were provided to EMM by Delta Coal detailing when the coal processing plant was operating at MC. A resident of Macquarie Shores village also provided details of times he was disturbed by industrial noise. This data was analysed in conjunction with the data obtained from the unattended noise loggers.

5 Results

5.1 Compliance noise monitoring

5.1.1 Overview

The site was visited by one of the approved EMM personnel on eight occasions for the purpose of undertaking operator-attended noise surveys at each of the three monitoring locations.

A summary of results of the operator-attended noise monitoring program is provided in Appendix F. This summary provides the following data:

- Location, date and time of each survey;
- Total recorded noise parameters during each 15-minute survey including L_{Amin}, L_{A90}, L_{Aeq}, L_{A1}, L_{Amax} and L_{Ceq};
- Total recorded 1/3 octave noise levels for centre frequencies of 10Hz to 160Hz, inclusive, as well as a comparison to the threshold levels provided in the NPfI (measured levels above the relevant threshold levels are highlighted grey);
- Mannering Coal's contribution to overall noise levels and relevant noise limits in accordance with the PA 06_0311;
- Meteorological conditions recorded at the Mannering Colliery weather station during each survey and an indication of whether noise limits apply during those conditions;
- Determination of whether Mannering Colliery operational noise emissions complied with the relevant noise limits;
- Mannering Colliery operational status; and
- Qualitative comments describing the main noise sources observed during each survey.

As can be seen from the results summary there is no clear correlation between the level of low frequency noise measured at each location and the operational status of MC. For example, there are some occasions when elevated levels of LFN are present when MC is not audible or operational and other occasions when MC is operational and measured LFN levels are below the threshold levels. This indicates influences from other sources (natural or otherwise). Further, based on recorded data and observations made during the surveys when MC was audible, noise emissions from MC did not increase total levels of LFN noise and no tonal noise was observed. Hence, modifying factors were not applicable to the measured MC noise emissions.

5.1.2 Discussion of results at RA1

MC was inaudible during all noise surveys at the Pacific Highway noise monitoring location RA1. The main contributors to total noise levels at this location were traffic on the Highway and constant hum from VPPS with some contribution from natural sources such as frogs, insects and birds.

Typically, when a particular source is not audible above local ambient noise levels, the likely contribution of that source is generally at least 10 dB below the measured background (L_{A90}) level. The background level measured at RA1 when MC was operational was between 36 dB and 42 dB. Hence, MC L_{Aeq} noise contributions were below the relevant limit of $L_{Aeq,15min}$ 40 dB at RA1.

5.1.3 Discussion of results at RA2

A total of 15 surveys each of 15-minute duration were undertaken at RA2 at times when MC was operational and noise limits were applicable based on prevailing weather conditions. Noise from MC was not audible during two of these surveys. Of the 13 occasions when noise from MC was audible at RA2 the main source was determined to be the rotary breaker. Other sources contributing to ambient noise levels at RA2 include the VPPS, road traffic, birds, frogs and insects. The contribution from VPPS was generally constant during each individual survey and indicative of the operational nature of the VPPS. During the 24 individual 15-minute surveys at RA2 the contribution from VPPS varied between approximately $L_{Aeq,15min}$ 32 and 41 dB depending on prevailing weather conditions at the time of the survey.

Measured MC noise emissions were below the relevant $L_{Aeq,15min}$ noise limit of 43 dB on all occasions. Maximum noise events from MC were measured above the relevant noise limit of $L_{A1,1min}$ 47 dB during two 15-minute surveys conducted on 13 August 2019. An investigation identified that the cause of the elevated maximum noise levels was a significant mechanical failure of the bearings within the rotary breaker chain tensioner. The rotary breaker chain tensioner was disassembled, removed from site and re-engineered. Results of noise monitoring undertaken after the relevant equipment was repaired and re-installed indicated compliance with the relevant noise limits.

5.1.4 Discussion of results at RA3

MC was inaudible during six of the eight valid surveys at the Kingfisher Shores monitoring location. Given this, and the measured background level of between 43 dB and 45 dB during these surveys, MC L_{Aeq} noise contributions were below the relevant limit of $L_{Aeq,15min}$ 39 dB at RA3. On the two occasions when MC was audible, the measured MC contribution was below the relevant $L_{Aeq,15min}$ and $L_{A1,1min}$ noise limits. VPPS was determined to be the main contributor to overall ambient noise levels at this location with some contribution from the nearby water treatment plant and, to a lesser extent, traffic on Tall Timbers Road, frogs, insects and birds.

5.2 Unattended noise logging

As previously stated, the unattended noise loggers were deployed in addition to the compliance noise monitoring for the purpose of identifying any correlation between noise levels measured at Macquarie Shores and those measured near to the main industrial sites in the area.

Results from the unattended noise loggers together with weather data, operational status of MC plant and times of disturbance identified by Macquarie Shores resident are presented in Appendix G.

In addition, unattended noise data recorded at Macquarie Shores Village was analysed, in accordance with the requirements of the NPfI, to determine background and ambient noise levels in the absence of noise from MC. This was done in response to queries from the DPIE regarding the appropriateness of current noise limits at Macquarie Shores. Measured ambient and background noise levels were used to establish noise criteria in accordance with current noise policy (i.e. the NPfI (EPA, 2017)) and compared to the current noise limits as per PA MP 06_0311.

Results for each unattended noise monitoring location are discussed in the following sections.

5.2.1 L1 - Macquarie Shores

Graphs presented in Appendix G.1 show the measured noise levels at Macquarie Shores. Noting that some days are not presented due to times when the battery of the unit needed to be recharged. Notwithstanding, 28 full days of noise data are presented here together with MC operational status and times of disturbance recorded by the Macquarie Shores resident.

The following observations are made with regard to the data presented in Appendix G.1:

- Although some periods of disturbance align with times when MC plant was operational (on 50 occasions), there is no strong correlation between MC operational times and times of disturbance. For example, there are 61 times when the resident recorded disturbance and MC was not operational (e.g. between 8pm and 8.30pm on 26 July 2019, 2am on 28 July 2019, 1am and 2am on 29 July 2019, 3.30am-4.30am on 30 July 2019 and many more). This indicates that there is possibly another source of noise in the area that is causing disturbance.

- There is no strong correlation between elevated noise levels at Macquarie Shores and MC operations. For example, MC was operational from approximately 3.00 pm on 3 August 2019 and, even though recorded noise levels at Macquarie Shores were steadily increasing from 3.00 pm they did not decrease when MC ceased operations at approximately 11.30 pm. Noise levels remained in the order of 40-50 dB until around 2.00 am. This is also demonstrated on 5, 7, 19, 20, 23 and 24 August.

A summary of measured ambient noise levels is provided in Table 5.1. Based on operational data provided by Delta Coal, periods when Mannering Colliery plant was operational were excluded from the data analysis.

Table 5.1 Summary of measured, existing background and ambient noise (exc. Site)

Monitoring location	Period[1]	RBL[2], dB	Measured $L_{Aeq, period}$ noise level[3], dB
Macquarie Shores Village	Day	36	52
	Evening	38	46
	Night	37	48

Notes: 1. Day: 7 am to 6 pm Monday to Saturday; 8 am to 6 pm Sundays and public holidays; Evening: 6 pm to 10 pm; Night: 10 pm to 7 am.

2. The RBL is an INP term and is used represent the background noise level.

3. The energy averaged noise level over the measurement period and representative of general ambient noise.

5.2.2 L2 – Mannering Colliery

Graphs presented in Appendix G.2 show the measured noise levels at MC compared to those measured at Macquarie Shores. Noting that some days are not presented due to times when the battery of the unit needed to be recharged, 37 full days of noise data are presented for MC together with MC operational status and times of disturbance recorded by the Macquarie Shores resident.

These graphs confirm the operational data provided by Delta Coal; there is strong correlation between elevated noise levels recorded at MC and the operational data supplied. As per the noise data presented for the Macquarie Shores logger, there is no correlation between MC operations and elevated levels measured at Macquarie Shores or times of disturbance.

5.2.3 L3 – VPPS Stockpile

Graphs presented in Appendix G.3 show the measured noise levels near the VPPS stockpile compared to those measured at Macquarie Shores. Due to a failure of the logger at this location, very limited data (7 days) was obtained from this noise logger and it coincided with the time when the battery was being replaced on the logger at Macquarie Shores. Hence, it was not possible to draw any useful conclusions or make any correlations with other data based on the data recorded at this location.

5.2.4 L4 – VPPS Ash Gate entrance

Graphs presented in Appendix G.4 show the measured noise levels at the Ash Gate entrance to VPPS compared to those measured at Macquarie Shores. Noting that some days are not presented due to times when the battery of the unit stopped working, 19 full days of noise data are presented for the VPPS location together with MC operational status and times of disturbance recorded by the Macquarie Shores resident.

Data from the noise logger at this location indicates that ambient noise levels are relatively consistent and generally between 55 dB and 60 dB. This is consistent with observations made by operators of the nature of noise from VPPS.

5.2.5 L5 – Chain Valley Colliery

Graphs presented in Appendix G.5 show the measured noise levels at the Chain Valley Colliery compared to those measured at Macquarie Shores. Noting that some days are not presented due to times when the battery of the unit stopped working, 12 full days of noise data are presented for the CVC location together with MC operational status and times of disturbance recorded by the Macquarie Shores resident.

Data from the noise logger at this location indicates that ambient noise levels are relatively low and consistent; generally between 45 dB and 55 dB. This is consistent with observations by operators and data provided by Delta Coal. Mining activities at CVC are generally limited to forklift operation and underground personnel vehicles coming to the surface; neither of which is a significant source of noise.

6 Conclusion

EMM has undertaken a detailed noise monitoring program in preparing the Noise Compliance Report (NCR) for Mannering Colliery. The purpose of this report was to address requirements of Condition 4 of Appendix 4B of Mannering Colliery's Project Approval (PA) 06_0311.

The methodology utilised for the purpose of the NCR was developed in consultation with the DPIE. The minimum requirements in terms of number and timing of noise compliance surveys were achieved.

Results of the operator-attended noise monitoring program determined that noise emissions from MC generally comply with the relevant noise limits at the nearest residential areas to the MC. The exception to this was for two 15-minute, operator-attended noise surveys conducted at Macquarie Shores Village (RA2) on 13 August when a mechanical failure on site generated elevated noise emission levels from the rotary-breaker. The equipment was subsequently repaired, and results of operator-attended noise surveys undertaken after the equipment was reinstalled indicated compliance with the relevant noise limits.

Appendix A

Glossary of acoustic terms

Several technical terms are discussed in this report. These are explained in Table A.1.

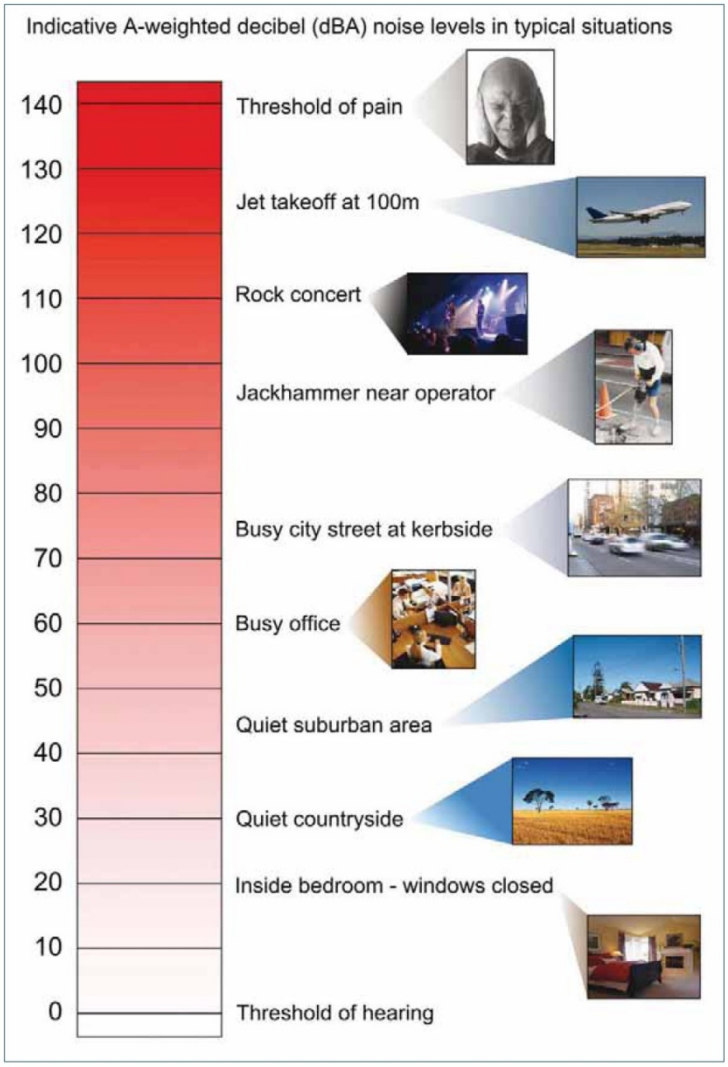
Table A.1 Glossary of acoustic terms

Term	Description
dB	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
L_{A1}	The 'A-weighted' noise level which is exceeded 1% of the time.
$L_{A1,1\ minute}$	The 'A-weighted' noise level exceeded for 1% of the specified time period of 1 minute.
L_{A10}	The 'A-weighted' noise level which is exceeded 10% of the time. It is approximately equivalent to the average of maximum noise level.
L_{A90}	Commonly referred to as the background noise level. The 'A-weighted' noise level exceeded 90% of the time.
L_{Aeq}	The energy average noise from a source. This is the equivalent continuous 'A-weighted' sound pressure level over a given period. The $L_{Aeq,15\ minute}$ descriptor refers to an L_{Aeq} noise level measured over a 15-minute period.
L_{Amin}	The minimum 'A-weighted' noise level received during a measuring interval.
L_{Amax}	The maximum root mean squared 'A-weighted' sound pressure level (or maximum noise level) received during a measuring interval.
L_{Ceq}	The equivalent continuous 'C-weighted' sound pressure level over a given period. The $L_{Ceq,15\ minute}$ descriptor refers to an L_{Ceq} noise level measured over a 15 minute period. C-weighting can be used to measure low frequency noise.
Day period	Monday – Saturday: 7 am to 6 pm, on Sundays and Public Holidays: 8 am to 6 pm.
Evening period	Monday – Saturday: 6 pm to 10 pm, on Sundays and Public Holidays: 6 pm to 10 pm.
Night period	Monday – Saturday: 10 pm to 7 am, on Sundays and Public Holidays: 10 pm to 8 am.
Temperature inversion	A meteorological condition where the atmospheric temperature increases with altitude.

It is useful to have an appreciation of decibels (dB), the unit of noise measurement. Table A.2 gives an indication as to what an average person perceives about changes in noise levels. Examples of common noise levels are provided in Figure A.1.

Table A.2 Perceived change in noise

Change in sound pressure level (dB)	Perceived change in noise in surrounding environment
up to 2	not perceptible
3	just perceptible
5	noticeable difference
10	twice (or half) as loud
15	large change
20	four times (or quarter) as loud



Source: Road Noise Policy (Department of Environment, Climate Change and Water 2011)

Figure A.1 Common noise levels

Appendix B

Endorsement of consultants

Chris Armit
Environment and Community Coordinator
Mannering Colliery
Lake Coal Pty Ltd
PO Box 7115
Mannering Park NSW 2259

Contact: Joel Curran
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Our Ref: PA 06_0311 (as modified) #16846

Mannering Colliery PA 06_0311
Noise Compliance Report

Dear Mr Armit,

Reference is made to correspondence from Mannering Colliery dated 5 & 14 June 2019 seeking endorsement of EMM Consulting to prepare the upcoming Noise Compliance Report (the Report) required by Appendix 4B, Condition 4 of Project Approval 06_0311 as modified (the Approval).

The Secretary has considered Mannering Colliery's request and approves Katie Teyhan and Lucas Adamson to conduct the monitoring and prepare the Report.

Attended and unattended noise monitoring for the Report is to be undertaken in accordance with the methodology requirements of the Industrial Noise Policy (EPA 2000) and the Noise Policy for Industry (EPA 2017) where applicable.

Further, the Secretary requests that in undertaking all monitoring associated with the Report, the following is implemented (or variations justified):

1. Attended monitoring is proposed to occur between 10pm and 7am;
    a) The Department has reviewed the complaints log from the recently released JACOBS Macquarie Shores Home Village, Doyalson North Noise Assessment Report, and have noted that the vast majority of complaints occur between 12am and 6am, and feel that attended monitoring should be focussed in this time period (more on this in 3a);
2. Attended monitoring is proposed to only occur at RA2 (Macquarie Shores Village);
    a) The Department notes that Mannering Colliery Noise Monitoring Program (NMP) stipulates three (3) compliance attended noise monitoring sites. RA1, RA2 and RA3;
    b) The Department has reviewed the past three years of Annual Reviews and notes the following;
        - 2016 – 1 x noise exceedance at RA2 and zero community complaints;
        - 2017 – 0 x noise exceedances and 1 x non-noise complaint;
        - 2018 – 1 x noise exceedance at RA2 and 12 x noise complaints
    c) The Department expects attended monitoring to be undertaken at all compliance monitoring points as shown in the approved NMP with a focus on RA2 as the site of recent noise complaints (more on this in 3.);
3. The amount of attended monitoring is not considered sufficient (up to 6 x 15-minute samples only at RA2);
    a) The Department proposes a minimum of six (6) monitoring instances;
    b) Monitoring at RA1 and RA3 should consist of 2 x 15-minute measurements (each) on a minimum of six (6) occasions;
    c) Monitoring at RA2 should consist of 3 x 15-minute measurements on a minimum of six (6) occasions;

d) All monitoring should be completed prior to **30 August 2019**;
e) Monitoring results should be valid with respect to meteorological conditions;
   - Additional monitoring should be conducted if the overall amount of valid results falls below 75%;
   - Additional monitoring should also be conducted if the amount of receptor (RA1, RA2, RA3) specific valid results falls below 75%;
f) The above would then provide a minimum of 9 valid measurements for RA1 and RA3 (equivalent to ~2 years worth of noise monitoring at current quarterly intervals), and a minimum of 15 valid measurements for RA2 (equivalent to ~4 years worth of noise monitoring at current quarterly intervals);
g) With reference to 1a), as the critical noise period is between 12am an 6am (6 x 1-hour periods) and a minimum of 6 monitoring instances is required, each noise monitoring instance at each site, should be targeted to capture each of the 1 hour periods between 12am and 6am similar to the below Table 1;
h) Monitoring results should be valid with respect to Mannering Colliery's operational status;
   - Should operational logs show Mannering Colliery was not fully operational during monitoring, additional monitoring should be conducted;
i) Monitoring should be conducted independent of Mannering Colliery. It is envisaged that Mannering Colliery would be aware of the two (2) week unattended monitoring, but not the specific days within that period where attended monitoring is being conducted; and
j) Mannering Colliery should provide operational logs for two weeks prior, during, and two weeks after the monitoring period as evidence of operational status.

Table 1 Example noise monitoring program

Monitoring Period		Monitoring Night					
		1	2	3	4	5	6
12am	1am	RA1				RA3	RA2
1am	2am	RA2	RA1				RA3
2am	3am	RA3	RA2	RA1			
3am	4am		RA3	RA2	RA1		
4am	5am			RA3	RA2	RA1	
5am	6am				RA3	RA2	RA1

Please submit the Report to compliance@planning.nsw.gov.au by **30 September 2019**, or as otherwise agreed by the Secretary.

Should you need to discuss the above, please contact Joel Curran as per the details provided above.

Yours sincerely

20/06/19

Leah Cook
Team Leader - Compliance
As Nominee of the Secretary

Chris Armit
Environment and Community Coordinator
Mannering Colliery
Lake Coal Pty Ltd
PO Box 7115
Mannering Park NSW 2259

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Our Ref: PA 06_0311 (as modified) #16846

Mannering Colliery PA 06_0311
Noise Compliance Report

Dear Mr Armit,

Reference is made to the following correspondence:

- from Mannering Colliery dated 5 & 14 June 2019 seeking endorsement of EMM Consulting to prepare the upcoming Noise Compliance Report (the Report) required by Appendix 4B, Condition 4 of Project Approval 06_0311 as modified (the Approval);
- from the Department of Planning, Industry and Environment (the Department) dated 20 June 2019, endorsing Katie Teyhan and Lucas Adamson from EMM Consulting to conduct the monitoring and prepare the Noise Compliance Report; and
- from Mannering Colliery dated 5 July 2019, seeking endorsement of Katie Weekes and Teanuanua Villierme from EMM Consulting to assist in monitoring and preparation of the Noise Compliance Report.

The Secretary has considered Mannering Colliery's request and approves Katie Weekes and Teanuanua Villierme to assist in monitoring and preparation of the Noise Compliance Report.

All methodology and reporting requirements remain as per the Department's 20 June 2019 correspondence.

Should you need to discuss the above, please contact Joel Curran as per the details provided above.

Yours sincerely

10/7/19

Leah Cook
Team Leader - Compliance
As Nominee of the Secretary

Appendix C

Project approval extract

SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS

NOISE

Noise Impact Criteria

1. The Proponent must ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately owned land.

Table 1: Noise limits dB(A)

Day $L_{Aeq(15\ min)}$	***Evening*** $L_{Aeq(15\ min)}$	***Night***		***Location*** (as listed in Appendix 4)
		$L_{Aeq(15\ min)}$	$L_{A1(1\ min)}$	
49	49	35	49	4 – di Rocco
47	47	35	49	5 – Keighran
44	44	35	49	6 – Swan
43	43	43	50	7 – Druitt
46	46	46	50	8 – May
45	45	45	52	9 – Jeans
40	40	40	52	11 – Jeans
43	43	43	52	18 – Jeans
44	44	44	52	20 – Knight and all other Chain Valley Bay residences

Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.

Noise generated by the project is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4A sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

This condition only has effect prior to recommencement of underground coal extraction at Mannering Colliery. At all other times, conditions 1 to 4 of Appendix 4B have effect in its place.

Noise Mitigation

2. The Proponent must prepare a report on potential noise mitigation measures for noisy equipment and activities undertaken on the site to the satisfaction of the Secretary. This report must be:
   (a) prepared by a suitably qualified acoustic expert;
   (b) submitted to the Secretary by the end of September 2008; and
   (c) accompanied by an action plan for the implementation of any reasonable and feasible recommendations of the report.

Noise Monitoring

3. The Proponent must prepare a Noise Monitoring Program for the project to the satisfaction of the Secretary. This program must:
   (a) be submitted to the Secretary by the end of September 2008;
   (a1) be revised in consultation with the EPA and be submitted to the Secretary by the end of April 2016; and
   (b) include the use of continuous and attended noise monitoring measures to monitor the performance of the project.

The Proponent must implement the approved Noise Monitoring Program as approved from time to time by the Secretary.

SUBSIDENCE

4. The Proponent must limit its coal extraction methods on the site to first workings only, and must not undertake second workings.

APPENDIX 4A: NOISE COMPLIANCE ASSESSMENT

Applicable Meteorological Conditions

1. The noise criteria in Tables 1 and 2 in Appendix 4B are to apply under all meteorological conditions except the following:
   (a) wind speeds greater than 3m/s at 10 metres above ground level;
   (b) stability category F temperature inversion conditions and wind speeds greater than 2 m/s at 10 m above ground level; or
   (c) stability category G temperature inversion conditions.

Determination of Meteorological Conditions

2. Except for wind speed at microphone height, the data to be used for determining meteorological conditions must be that recorded by the meteorological station located on the site.

Compliance Monitoring

3. Attended monitoring is to be used to evaluate compliance with the relevant conditions of this approval.

4. This monitoring must be carried out at least once a month (at least two weeks apart) for the first 12 months following recommencement of underground coal extraction, and then quarterly thereafter, unless the Secretary directs otherwise.

   Note: The Secretary may direct that the frequency of attended monitoring increase or decrease at any time during the life of the project.

5. Unless the Secretary agrees otherwise, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the *NSW Industrial Noise Policy* (as amended from time to time), in particular the requirements relating to:
   (a) monitoring locations for the collection of representative noise data;
   (b) meteorological conditions during which collection of noise data is not appropriate;
   (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
   (d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration.

APPENDIX 4B: ALTERNATE NOISE CONDITIONS

1. From the recommencement of underground coal extraction at Mannering Colliery until 18 months thereafter, the Proponent must ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately-owned land.

Table 1: Noise limits dB(A)

Day	Evening	Night		Location
$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{A1(1\ min)}$	
40	40	40	49	4 – di Rocco
43	43	41	49	5 – Keighran
42	42	41	49	6 – Swan
39	39	39	47	7 – Druitt
46	46	46	47	8 – May
41	41	41	51	9 – Jeans
39	39	39	49	11 – Jeans
39	39	39	51	18 – Jeans
40	40	40	51	20 – Knight and all other Chain Valley Bay residences

Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.

Noise generated by the project is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4A sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

2. Following the expiry of the 18 month period referred to in condition 1 above, the Proponent must ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 2 at any residence on privately-owned land.

Table 2: Noise limits dB(A)

Day	Evening	Night		Location
$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{Aeq(15\ min)}$	$L_{A1(1\ min)}$	
40	40	40	49	4 – di Rocco
41	41	41	49	5 – Keighran
41	41	41	49	6 – Swan
39	39	39	47	7 – Druitt
45	45	43	47	8 – May
41	41	41	51	9 – Jeans
39	39	39	49	11 – Jeans
39	39	39	51	18 – Jeans
40	40	40	51	20 – Knight and all other Chain Valley Bay residences

Note: The location of the land referred to in Table 2 is shown on the figure in Appendix 4.

Noise generated by the project is to be measured in accordance with the relevant requirements of the *NSW Industrial Noise Policy* (as may be updated from time-to-time). Appendix 4A sets out

the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.

3. The Proponent must prepare a report on all noise mitigation measures required to achieve the noise limits in Table 2 to the satisfaction of the Secretary. This report must:
   (a) be prepared by a suitably qualified and experienced acoustic consultant whose appointment has been approved by the Secretary;
   (b) be prepared in consultation with EPA, and submitted to the Department for approval within 6 months after recommencement of underground coal extraction; and
   (c) include an action plan for the implementation of any reasonable and feasible recommendations of the report.

   The Proponent must implement the noise mitigation measures prior to the expiry of the 18 month period referred to in condition 1 above.

4. The Proponent must prepare a Noise Compliance Report for the project to the satisfaction of the Secretary. The report must:
   (a) be prepared by a suitably qualified acoustic consultant, whose appointment has been approved by the Secretary;
   (b) be prepared in consultation with EPA, and be submitted for approval within 6 months of the expiry of the 18 month period referred to in condition 1 above; and
   (c) investigate and evaluate the effectiveness of the noise mitigation measures required under condition 3 and compliance with the noise limits in Table 2.

Appendix D

EPL extract

Code	Waste	Description	Activity	Other Limits
NA	Waste	Any other waste received on the premises for storage, treatment, processing, sorting or disposal and which receipt is not a scheduled activity under Schedule 1 of the POEO Act, as in force from time to time.		
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2014	As specified in each particular resource recovery exemption	N/A

L4.2 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

L4.3 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environment protection licence.

L5 Noise limits

Note: Noise limits are not specified as a condition of this licence. Noise limits are prescribed with the conditions of Project Approval 06_0311 granted under the *Environmental Planning and Assessment Act 1979.* Under the *Environmental Planning and Assessment Act 1979* the Department of Planning is the appropriate authority in respect of the administration and regulation of the Project Approval.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

Appendix E

Noise equipment calibration certificates

Acoustic Research Labs Pty Ltd
Level 7 Building 2 423 Pennant Hills Rd
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Ph: +61 2 9484 0800 A.B.N. 65 160 399 119
www.acousticresearch.com.au

Sound Level Meter
AS 1259.1:1990 - AS 1259.2:1990
Calibration Certificate

Calibration Number C17666_Reissued

Client Details EMM Consulting
Ground Floor, Suite 1, 20 Chandos Street
St Leonards NSW 2065

Equipment Tested/ Model Number : ARL EI-316
Instrument Serial Number : 16-207-005
Microphone Serial Number : 28435
Pre-amplifier Serial Number : 312576

Atmospheric Conditions
Ambient Temperature : 23.4°C
Relative Humidity : 43.9%
Barometric Pressure : 98.93kPa

Calibration Technician : Vicky Jaiswal
Secondary Check: Sandra Minto
Calibration Date : 14 Dec 2017
Report Issue Date : 3 Oct 2018

Approved Signatory : Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
10.2.2: Absolute sensitivity	*Pass*	10.3.4: Inherent system noise level	*Pass*
10.2.3: Frequency weighting	*Pass*	10.4.2: Time weighting characteristic F and S	*Pass*
10.3.2: Overload indications	*Pass*	10.4.3: Time weighting characteristic I	*Pass*
10.3.3: Accuracy of level range control	*Pass*	10.4.5: R.M.S performance	*Pass*
8.9: Detector-indicator linearity	*Pass*	9.3.2: Time averaging	*Pass*
8.10: Differential level linearity	*Pass*	9.3.5: Overload indication	*Pass*

Least Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	*±0.15dB*	*Temperature*	*±0.2°C*
12.5kHz	*±0.21dB*	*Relative Humidity*	*±2.4%*
16kHz	*±0.29dB*	*Barometric Pressure*	*±0.015Pa*
Electrical Tests			
31.5 Hz to 20 kHz	*±0.12dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

The sound level meter under test has been shown to conform to the type 1 requirements for periodic testing as described in AS 1259.1:1990 and AS 1259.2:1990 for the tests stated above.

NATA
WORLD RECOGNISED ACCREDITATION

This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards.

NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

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Sound Level Meter
IEC 61672-3.2013
Calibration Certificate

Calibration Number C19234

Client Details EMM Consulting
Ground Floor Suite 01 20 Chandos Street
St Leonards NSW 2065

Equipment Tested/ Model Number : ARL Ngara
Instrument Serial Number : 878113
Microphone Serial Number : 322081
Pre-amplifier Serial Number : 28145

Pre-Test Atmospheric Conditions
Ambient Temperature : 24.8°C
Relative Humidity : 45.9%
Barometric Pressure : 101.47kPa

Post-Test Atmospheric Conditions
Ambient Temperature : 24.5°C
Relative Humidity : 44.3%
Barometric Pressure : 101.45kPa

Calibration Technician : Lucky Jaiswal
Calibration Date : 24 Apr 2019
Secondary Check: Eloise Burrows
Report Issue Date : 29 Apr 2019
Approved Signatory : Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	*Pass*	17: Level linearity incl. the level range control	*N/A*
13: Electrical Sig. tests of frequency weightings	*Pass*	18: Toneburst response	*Pass*
14: Frequency and time weightings at 1 kHz	*Pass*	19: C Weighted Peak Sound Level	*N/A*
15: Long Term Stability	*Pass*	20: Overload Indication	*Pass*
16: Level linearity on the reference level range	*Pass*	21: High Level Stability	*Pass*

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	*±0.15dB*	*Temperature*	*±0.2°C*
12.5kHz	*±0.2dB*	*Relative Humidity*	*±2.4%*
16kHz	*±0.29dB*	*Barometric Pressure*	*±0.015kPa*
Electrical Tests			
31.5 Hz to 20 kHz	*±0.11dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
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The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

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www.acousticresearch.com.au

Sound Level Meter
IEC 61672-3.2013
Calibration Certificate

Calibration Number C18147

Client Details	Acoustic Research Labs Pty Ltd Level 7, Bld 2, 423 Pennant Hills Road Pennant Hills NSW 2120
Equipment Tested/ Model Number :	Rion NL-42EX
Instrument Serial Number :	01173756
Microphone Serial Number :	172323
Pre-amplifier Serial Number :	74168

Pre-Test Atmospheric Conditions		**Post-Test Atmospheric Conditions**	
Ambient Temperature :	22.5°C	**Ambient Temperature :**	22.9°C
Relative Humidity :	59%	**Relative Humidity :**	57.6%
Barometric Pressure :	99.85kPa	**Barometric Pressure :**	99.85kPa

Calibration Technician : Vicky Jaiswal
Secondary Check: Riley Cooper
Calibration Date : 13 Mar 2018
Report Issue Date : 14 Mar 2018

Approved Signatory : Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	*Pass*	17: Level linearity incl. the level range control	*Pass*
13: Electrical Sig. tests of frequency weightings	*Pass*	18: Toneburst response	*Pass*
14: Frequency and time weightings at 1 kHz	*Pass*	19: C Weighted Peak Sound Level	*Pass*
15: Long Term Stability	*Pass*	20: Overload Indication	*Pass*
16: Level linearity on the reference level range	*Pass*	21: High Level Stability	*Pass*

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	*±0.16dB*	*Temperature*	*±0.05°C*
12.5kHz	*±0.21dB*	*Relative Humidity*	*±0.46%*
16kHz	*±0.29dB*	*Barometric Pressure*	*±0.017kPa*
Electrical Tests			
31.5 Hz to 20 kHz	*±0.12dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

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Sound Level Meter
IEC 61672-3.2013
Calibration Certificate

Calibration Number C18300

Client Details	Acoustic Research Labs Pty Ltd Level 4, Building 2, 423 Pennant Hills Road Pennant Hills, NSW 2120
Equipment Tested/ Model Number :	Rion NL-42EX
Instrument Serial Number :	00521657
Microphone Serial Number :	140634
Pre-amplifier Serial Number :	11698

Pre-Test Atmospheric Conditions		**Post-Test Atmospheric Conditions**	
Ambient Temperature :	21.5°C	**Ambient Temperature :**	22.1°C
Relative Humidity :	46.3%	**Relative Humidity :**	45.5%
Barometric Pressure :	100.76kPa	**Barometric Pressure :**	100.78kPa

Calibration Technician : Lucky Jaiswal
Secondary Check: Lewis Boorman
Calibration Date : 3 Jul 2018
Report Issue Date : 3 Jul 2018

Approved Signatory : Juan Aguero

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	*Pass*	17: Level linearity incl. the level range control	*Pass*
13: Electrical Sig. tests of frequency weightings	*Pass*	18: Toneburst response	*Pass*
14: Frequency and time weightings at 1 kHz	*Pass*	19: C Weighted Peak Sound Level	*Pass*
15: Long Term Stability	*Pass*	20: Overload Indication	*Pass*
16: Level linearity on the reference level range	*Pass*	21: High Level Stability	*Pass*

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	*±0.15dB*	*Temperature*	*±0.3°C*
12.5kHz	*±0.21dB*	*Relative Humidity*	*±2.5%*
16kHz	*±0.29dB*	*Barometric Pressure*	*±0.017kPa*
Electrical Tests			
31.5 Hz to 20 kHz	*±0.12dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

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Sound Level Meter
IEC 61672-3.2013
Calibration Certificate

Calibration Number C18375

Client Details	Acoustic Research Labs Pty Ltd Lvl 7, Bld 2, 423 Pennant Hills Road Pennant Hills, NSW 2120
Equipment Tested/ Model Number :	Rion NL-42EX
Instrument Serial Number :	00873126
Microphone Serial Number :	172453
Pre-amplifier Serial Number :	73502

Pre-Test Atmospheric Conditions		**Post-Test Atmospheric Conditions**	
Ambient Temperature :	21.8°C	**Ambient Temperature :**	22°C
Relative Humidity :	45.4%	**Relative Humidity :**	45%
Barometric Pressure :	100.04kPa	**Barometric Pressure :**	99.89kPa

Calibration Technician :	Lucky Jaiswal	**Secondary Check:**	Lewis Boorman
Calibration Date :	29 Jun 2018	**Report Issue Date :**	29 Jun 2018

Approved Signatory : Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	*Pass*	17: Level linearity incl. the level range control	*Pass*
13: Electrical Sig. tests of frequency weightings	*Pass*	18: Toneburst response	*Pass*
14: Frequency and time weightings at 1 kHz	*Pass*	19: C Weighted Peak Sound Level	*Pass*
15: Long Term Stability	*Pass*	20: Overload Indication	*Pass*
16: Level linearity on the reference level range	*Pass*	21: High Level Stability	*Pass*

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Least Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	*±0.15dB*	*Temperature*	*±0.3°C*
12.5kHz	*±0.21dB*	*Relative Humidity*	*±2.5%*
16kHz	*±0.29dB*	*Barometric Pressure*	*±0.017kPa*
Electrical Tests			
31.5 Hz to 20 kHz	*±0.12dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

Appendix F

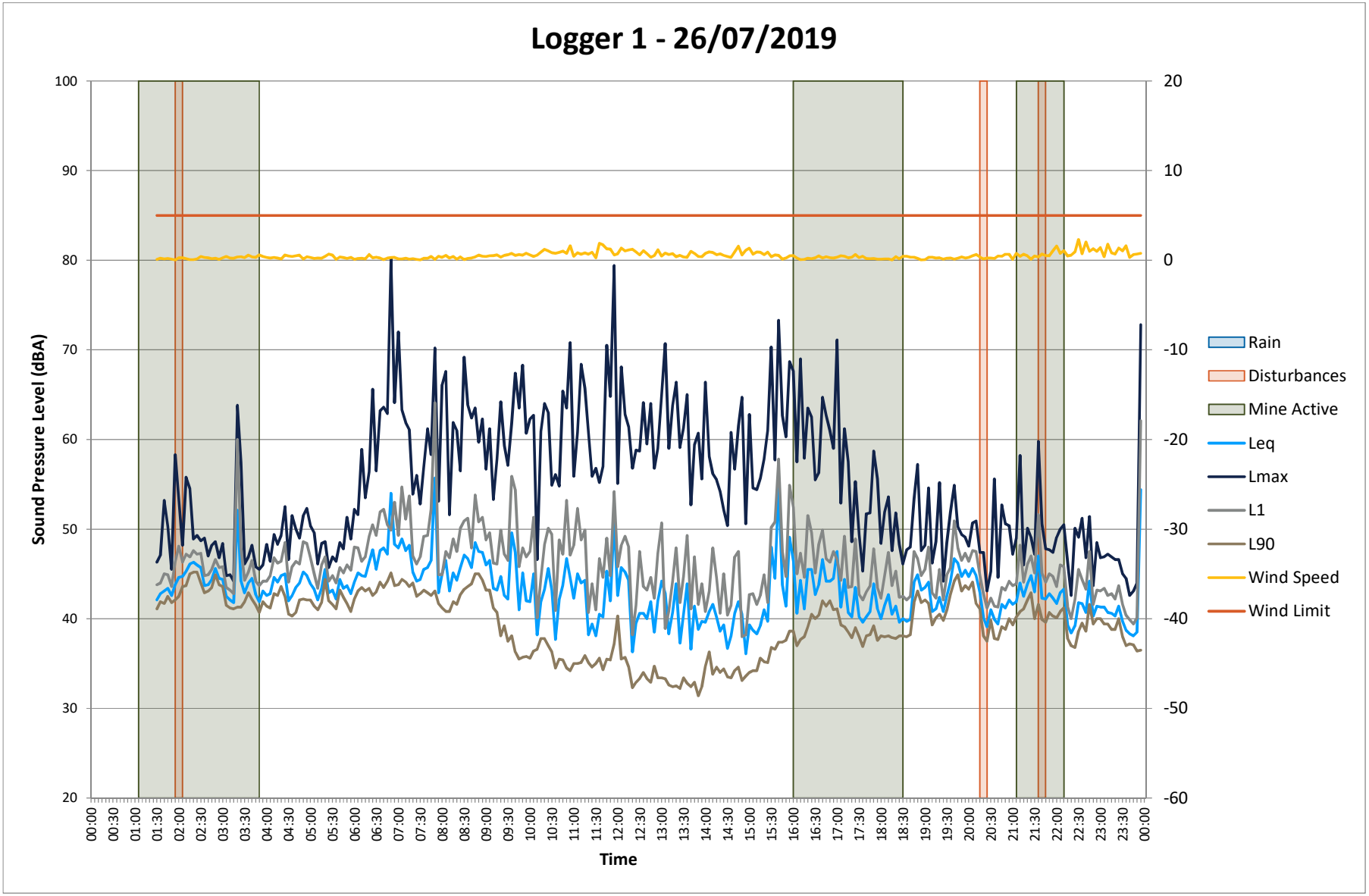
Attended noise monitoring summary

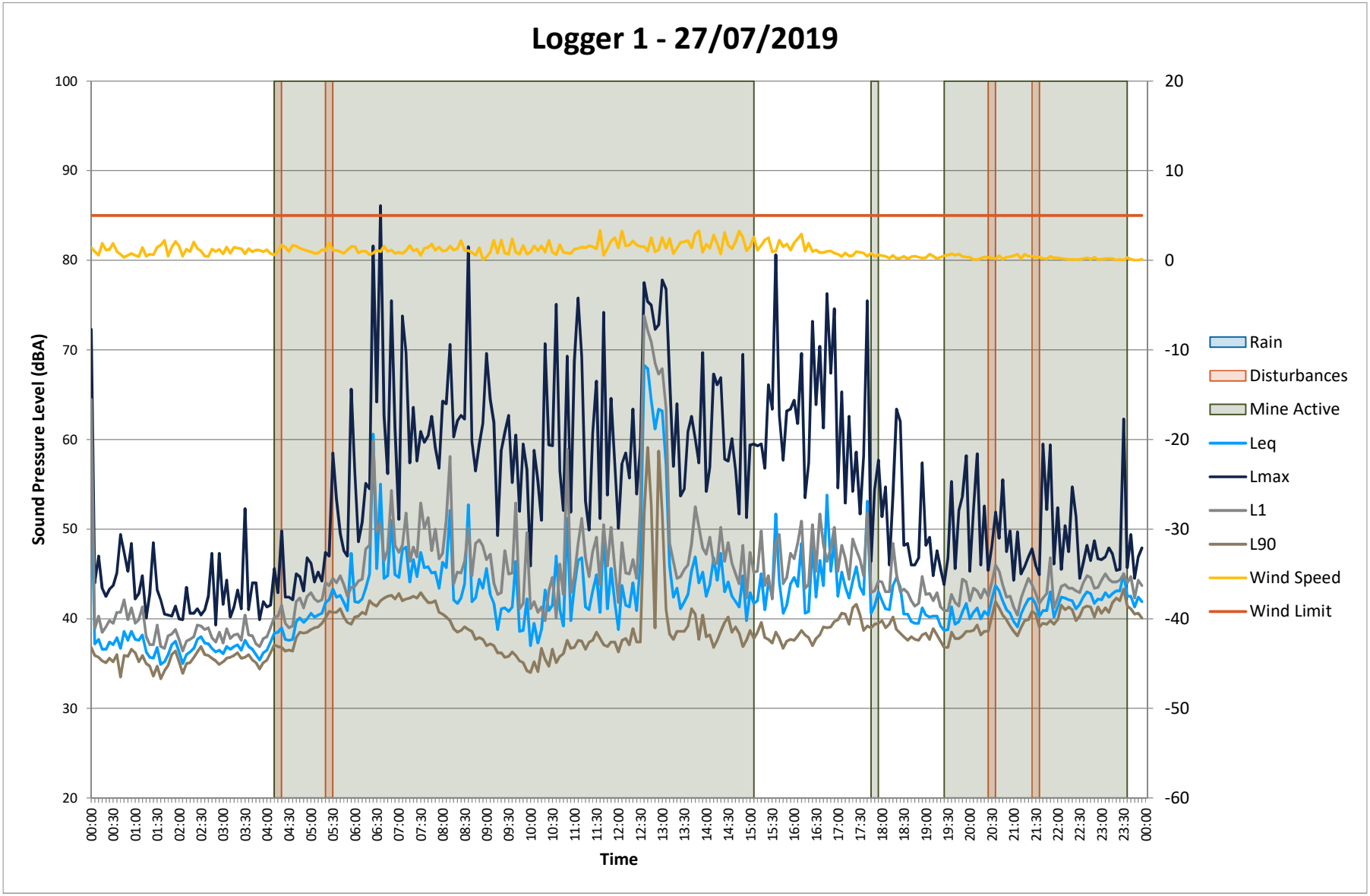
RA1	Pacific Highway																																		
RA2	Macquarie Shores Village																																		
RA3	Kingfisher Shores																																		
																LFN - $L_{Zeq,15min}$ threshold levels																					
										92	*89*	*86*	*77*	*69*	*61*	*54*	*50*	*50*	*48*	*48*	*46*	*44*														
																TOTAL measured LFN																					
																								Mannering Coal						**Criteria**		**Mets**					
Location	**Date**	**Time**	**LAmin**	**LA90**	**LAeq**	**LA10**	**LA1**	**LAmax**	**LCeq**	**10Hz**	**12.5Hz**	**16Hz**	**20Hz**	**25Hz**	**31.5Hz**	**40Hz**	**50Hz**	**63Hz**	**80Hz**	**100Hz**	**125Hz**	**160Hz**	**Site LAeq**	**Mod Factor**	**Adj site LAeq**	**LAmax**	**LAeq**	**LAmax**	**WS (m/s)**	**WD (°)**	**SC**	**Limits apply**	**Comply?**	**MC Operational**	**Comments**		
RA1	25/07/2019	2:00 AM	34	35	52	53	65	71	59	51.0	57.0	57.8	52.7	50.2	54.1	47.6	47.0	51.1	51.3	45.0	44.0	41.9	IA	Nil	IA	IA	40	49	<1.2	253-270	D-F	Y	Y	No	Nearby fan, insects and frogs, traffic on Pacific Hwy, VPPS, birds		
RA1	25/07/2019	2:15 AM	34	36	55	57	68	74	62	53.4	61.2	60.9	54.6	53.5	54.7	51.0	50.3	51.6	52.5	49.5	47.5	46.1	IA	Nil	IA	IA	40	49	<0.8	256-40	D-F	Y	Y	No	Nearby fan, insects and frogs, traffic on Pacific Hwy, VPPS, birds		
RA1	26/07/2019	3:15 AM	38	40	54	58	63	67	65	56.8	59.4	61.3	59.5	61.3	59.7	51.2	55.6	55.1	51.3	54.2	48.1	45.1	IA	Nil	IA	IA	40	49	<0.6	224-240	D - F	Y	Y	Yes	Traffic on Pacific Hwy, VPPS constant hum and dozer occasionally audible, vehicle at Service station, birds, frogs, helicoptor. MC not audible.		
RA1	26/07/2019	3:30 AM	39	42	57	60	68	76	68	56.8	60.6	62.0	58.6	59.0	56.0	53.4	56.0	62.3	62.4	56.2	57.4	57.3	IA	Nil	IA	IA	40	49	<0.7	227-242	D - E	Y	Y	Yes	Traffic on Pacific Hwy, VPPS constant hum and dozer occasionally audible, vehicle at Service station, birds, frogs. MC not audible.		
RA1	3/08/2019	1:14 AM	39	42	56	60	67	72	64	54.3	57.8	61.1	56.7	57.2	55.6	51.5	56.4	54.2	58.1	53.8	48.7	49.9	IA	Nil	IA	IA	40	49	<0.8	232-249	F	Y	Y	No	VPPS constant, traffic, distant frogs/insects		
RA1	3/08/2019	1:30 AM	40	42	54	58	65	70	64	54.2	57.4	61.0	58.3	56.4	57.3	51.5	54.1	52.5	57.0	53.8	51.6	49.2	IA	Nil	IA	IA	40	49	<0.6	191-240	D-F	Y	Y	No	VPPS constant, traffic, distant frogs/insects, dozer noise from VPPS just audible		
RA1	7/08/2019	4:40 AM	47	55	65	68	73	77	69	57.6	64.3	64.1	58.0	55.7	54.9	53.4	57.3	59.7	57.7	60.0	58.0	54.2	IA	Nil	IA	IA	40	49	<0.3	66-252	F	Y	Y	No	Traffic on Pacific Highway, insects, frogs and nearby fan consistently audible.		
RA1	7/08/2019	4:55 AM	46	52	64	68	73	78	70	61.7	65.0	64.1	59.1	57.2	56.8	57.4	58.3	61.5	62.0	57.5	58.0	55.7	IA	Nil	IA	IA	40	49	<0.4	191-245	E-F	Y	Y	No	Traffic on Pacific Highway, insects, frogs and nearby fan consistently audible.		
RA1	8/08/2019	4:10 AM	38	42	56	60	65	68	65	54.3	60.2	62.8	55.5	55.1	53.5	51.2	54.9	54.8	53.3	55.0	57.4	50.2	IA	Nil	IA	IA	40	49	<1	8-14	D - E	Y	Y	No	Traffic on Pacific Hwy, frogs and birds, VPPS constant hum, bangs and traffic at service station.		
RA1	8/08/2019	4:25 AM	41	48	58	61	66	71	66	54.6	63.7	64.4	58.7	57.1	57.2	55.9	56.9	56.4	56.8	54.6	53.3	50.8	IA	Nil	IA	IA	40	49	<1	346-10	D - E	Y	Y	No	Traffic on Pacific Hwy, frogs and birds, VPPS constant hum, bangs and traffic at service station.		
RA1	13/08/2019	2:02 AM	35	36	49	52	61	66	60	60.4	60.3	60.2	56.1	52.0	51.3	50.1	49.2	47.3	48.7	49.8	44.2	42.8	IA	Nil	IA	IA	40	49	<1.3	239-253	D - F	Y	Y	Yes	Traffic on Pacific Hwy, VPPS constant hum, frogs and insects. MC not discernible		
RA1	13/08/2019	2:18 AM	34	36	48	50	60	66	60	56.6	59.4	59.7	54.7	51.4	51.8	49.4	50.1	50.4	48.6	49.7	45.1	41.6	IA	Nil	IA	IA	40	49	<1.3	239-253	D - F	Y	Y	Yes	Traffic on Pacific Hwy, VPPS constant hum, slight breeze in trees, frogs and insects. MC not discernible		
RA1	26/08/2019	2:30 AM	33	35	55	59	67	73	59	42.7	43.0	44.1	44.4	44.7	46.1	45.7	46.8	49.7	49.8	46.5	46.4	45.3	IA	Nil	IA	IA	40	49	<1.3	187-197	E-F	Y	Y	No	Insects and nearby fan consistently audible. Traffic on Pacific Highway frequently audible. Nearby animals occasionally audible.		
RA1	26/08/2019	2:45 AM	32	35	58	62	69	75	61	44.0	45.0	45.6	44.5	45.4	46.9	45.9	47.6	51.0	51.5	49.7	51.9	50.3	IA	Nil	IA	IA	40	49	<0.9	196-208	F	Y	Y	No	Insects and nearby fan consistently audible. Traffic on Pacific Highway frequently audible. Nearby animals occasionally audible.		
RA1	27/08/2019	12:37 AM	38	41	60	61	72	83	71	55.9	52.8	53.7	52.3	52.7	53.4	53.0	53.8	53.1	65.3	67.5	52.2	60.3	IA	Nil	IA	IA	40	49	<2.0	234-255	E-F	Y	Y	Yes	Insects, nearby fan and nearby business activity consistently audible. Traffic on the Pacific Highway frequently audible. Wind in trees occasionally audible.		
RA1	27/08/2019	12:53 AM	34	36	53	53	67	76	58	56.1	51.3	52.9	51.7	49.9	51.2	48.8	49.4	47.7	45.1	46.2	43.8	42.7	IA	Nil	IA	IA	40	49	<3.1	235-243	D-E	Y	Y	Yes	Insects, nearby fan and nearby business activity consistently audible. Traffic on the Pacific Highway frequently audible.		
RA1	27/08/2019	1:08 AM	35	37	55	55	69	75	60	56.3	51.4	53.6	51.7	49.6	50.1	48.4	51.2	49.9	47.5	50.5	49.9	45.1	IA	Nil	IA	IA	40	49	<2.8	233-239	E-F	Y	Y	Yes	Insects, frogs and nearby fan consistently audible. Traffic on the Pacific Highway frequently audible. Nearby business activity, wind in trees and bird noise occasionally audible.		
RA1	27/08/2019	1:23 AM	35	37	55	58	68	73	60	55.8	50.8	52.2	51.3	48.6	49.6	49.0	52.2	51.7	50.9	49.2	48.6	44.2	IA	Nil	IA	IA	40	49	<2.4	231-238	D-F	Y	Y	Yes	Insects, frogs and nearby fan consistently audible. Traffic on the Pacific Highway frequently audible. Wind in trees and bird noise occasionally audible.		
RA2	25/07/2019	12:15 AM	35	37	39	41	43	62	57	53.0	56.2	61.9	56.6	53.9	49.2	41.3	42.8	42.0	43.1	41.9	39.8	37.1	n/a	Nil	n/a	n/a	43	47	<1.7	228-232	E - F	Y	Y	No	VPPS, frogs and insects, traffic on Ruttley's Rd, wind in trees		
RA2	25/07/2019	12:30 AM	35	36	39	40	42	69	58	53.1	57.1	62.2	57.2	53.8	49.0	41.1	42.8	41.5	43.1	41.8	39.7	36.5	n/a	Nil	n/a	n/a	43	47	<2.9	230-237	D-F	Y	Y	No	VPPS, frogs and insects, traffic on Ruttley's Rd, wind in trees		
RA2	25/07/2019	12:45 AM	34	36	38	39	42	48	58	53.3	57.2	62.3	57.4	53.9	49.4	40.8	42.5	41.5	42.5	41.8	39.6	36.3	n/a	Nil	n/a	n/a	43	47	<2.5	236-238	D-E	Y	Y	No	VPPS, frogs and insects, traffic on Ruttley's Rd, wind in trees		
RA2	26/07/2019	1:25 AM	38	39	40	41	42	46	61	59.3	62.4	64.1	60.3	56.3	52.7	47.9	48.6	45.9	47.9	48.6	42.9	37.9	<30	Nil	<30	<35	43	47	<0.5	184-224	E - F	Y	Y	Yes	VPPS, birds, MC barely audible as distant 'rattle', reverse beeper just audible from MC, distant traffic		
RA2	26/07/2019	1:42 AM	39	40	41	42	43	46	62	59.5	64.0	64.8	60.1	56.5	52.8	46.6	49.7	46.9	48.8	49.4	43.9	38.7	<38	Nil	<38	<46	43	47	<0.5	188-220	D - F	Y	Y	Yes	MC - alarm, 'screech' and constant breaker noise, VPPS constant hum,		
RA2	26/07/2019	1:59 AM	39	41	43	45	48	52	62	59.6	64.2	64.4	60.0	57.1	53.6	49.6	53.4	47.8	49.9	51.3	44.5	39.1	<37	Nil	<37	45	43	47	<0.5	140-246	D - F	Y	Y	Yes	Helicopter overhead, MC - clangs and constant hum, VPPS constant hum		
RA2	3/08/2019	2:43 AM	36	38	40	41	42	56	61	57.4	63.0	66.0	57.6	51.3	50.7	49.7	43.9	44.2	46.4	47.7	45.8	39.9	IA	Nil	IA	IA	43	47	<0.7	211-218	E-F	Y	Y	No	VPPS constant, frogs/insects, distant traffic, VPPS dozer just audible		
RA2	3/08/2019	3:00 AM	36	39	41	42	43	54	61	57.5	63.2	66.1	56.0	51.5	53.4	49.8	45.1	45.4	47.6	49.4	47.3	40.9	IA	Nil	IA	IA	43	47	<0.7	193-206	E-F	Y	Y	No	VPPS constant, frogs/insects, distant traffic, VPPS dozer just audible		
RA2	3/08/2019	3:15 AM	36	38	39	40	41	61	61	57.9	63.7	65.8	55.6	53.0	53.7	49.4	44.0	44.4	46.2	47.6	44.8	38.6	IA	Nil	IA	IA	43	47	<0.7	179-197	E-F	Y	Y	No	VPPS constant, frogs/insects, distant traffic, VPPS dozer just audible		
RA2	7/08/2019	3:10 AM	40	42	43	44	45	66	62	59.1	63.2	66.4	59.7	55.2	53.1	48.8	50.1	48.4	47.8	50.8	43.4	39.5	n/a	Nil	n/a	n/a	43	47	<0.6	154-166	E	Y	Y	No	VPPS hum, frogs and insects consistent. Distant traffic on Pacific Highway & Ruttleys Road and bird noise occasional.		
RA2	7/08/2019	3:25 AM	38	40	42	43	45	53	62	59.3	64.5	66.8	59.5	54.8	51.9	51.4	52.2	48.1	48.0	49.1	43.1	39.0	n/a	Nil	n/a	n/a	43	47	<0.4	129-147	E-F	Y	Y	No	VPPS hum, frogs and insects consistent. Distant traffic on Pacific Highway & Ruttleys Road and bird noise occasional.		
RA2	7/08/2019	3:40 AM	38	40	42	44	45	66	63	59.4	64.5	67.1	59.8	54.7	51.9	52.5	52.2	47.9	47.0	48.6	42.4	38.8	n/a	Nil	n/a	n/a	43	47	<0.3	129-162	E-F	Y	Y	No	VPPS hum, frogs and insects consistent. Distant traffic on Pacific Highway & Ruttleys Road and bird noise occasional.		
RA2	8/08/2019	4:55 AM	39	41	44	46	48	51	62	59.6	63.3	63.8	59.1	55.6	54.5	52.3	53.0	48.7	51.0	51.1	47.5	39.9	<35	Nil	<35	<35	43	47	<1	353-7	E - F	Y	Y	Yes	Mannering alarm just audible, VPPS constant hum, traffic on Tall Timbers Rd, car leaving village, reverse beeper from VPPS, birds		
RA2	8/08/2019	5:10 AM	41	43	46	48	50	53	63	59.3	61.9	63.6	60.7	56.5	54.9	52.1	55.5	49.8	52.2	53.1	50.8	42.4	IA	Nil	IA	IA	43	47	<1	341-343	D - E	Y	Y	Yes	VPPS - constant hum and alarm, wind in trees, traffic on Tall Timbers Rd. MC not audible.		
RA2	8/08/2019	5:25 AM	41	43	45	47	50	65	63	58.4	60.4	65.0	61.6	56.3	55.8	53.4	57.0	49.5	51.5	51.9	48.3	41.2	IA	Nil	IA	IA	43	47	<1	343-350	D	Y	Y	Yes	Birds, VPPS - constant hum, dozer just audible, distant traffic, wind in trees. MC not audible.		
RA2	13/08/2019	12:18 AM	38	40	42	44	46	56	60	61.3	61.1	62.8	59.4	56.1	53.8	47.3	48.6	48.1	46.8	46.0	43.6	38.2	41	Nil	41	48	43	47	<1.6	242-253	E	Y	N	Yes	MC - breaker almost constant with some bangs/clangs and "whining" noise, VPPS hum, birds and bats, siren from VPPS		
RA2	13/08/2019	12:34 AM	38	41	42	44	48	53	60	61.3	61.3	61.9	59.0	55.7	53.2	48.2	48.8	47.8	47.7	46.9	44.3	39.6	40	Nil	40	51	43	47	<1.6	242-254	E	Y	N	Yes	MC breaker, VPPS hum, distant traffic, birds, breeze in trees, 'rumble' from VPPS, aeroplane		
RA2	13/08/2019	12:50 AM	39	41	42	44	45	59	60	61.4	61.3	61.4	57.9	54.2	52.9	47.6	48.6	47.9	48.2	46.4	44.9	39.0	39	Nil	39	47	43	47	<1.6	242-255	E	Y	Y	Yes	MC breaker, VPPS hum, distant traffic		
RA2	26/08/2019	4:00 AM	31	32	35	36	38	63	55	55.3	53.1	56.5	54.8	52.0	52.0	41.3	38.1	34.2	35.0	36.5	36.9	33.3	30	Nil	30	39	43	47	<3.0	219-238	D-F	Y	Y	Yes	MC CHPP + Breaker consistently audible, with bangs on occasion. VPPS hum and distant traffic on Pacific Highway consistently audible. Bird noise occasionally audible.		
RA2	26/08/2019	4:15 AM	33	35	37	38	41	46	56	56.4	53.3	56.4	56.1	52.5	52.0	41.6	38.7	35.6	36.3	39.8	40.8	34.7	30	Nil	30	42	43	47	<1.6	207-224	F	Y	Y	Yes	MC CHPP + Breaker consistently audible, with bangs on occasion. VPPS hum and distant traffic on Pacific Highway consistently audible. Distant traffic on Ruttleys Road occasionally audible.		
RA2	26/08/2019	4:30 AM	34	36	37	38	41	48	55	55.8	53.0	54.1	55.6	52.7	52.5	42.7	39.2	37.9	39.7	39.8	40.0	36.9	31	Nil	31	37	43	47	<1.8	224-242	F	Y	Y	Yes	MC CHPP + Breaker consistently audible, with bangs on occasion. Inescts, VPPS hum and distant traffic on Pacific Highway consistently audible. Distant traffic on Ruttleys Road and bird noise occasionally audible.		
RA2	27/08/2019	2:00 AM	31	33	35	36	39	62	56	56.3	54.3	57.1	55.0	52.4	54.0	42.8	39.4	34.6	34.7	35.5	36.2	33.5	32	Nil	32	42	43	47	<2.4	225-226	F	Y	Y	Yes	MC CHPP + Breaker consistently audible, with bangs on occasion. VPPS hum, insects and frogs consistently audible. Distant traffic on Pacific Highway and wind in trees occasionally audible.		
RA2	27/08/2019	2:15 AM	31	33	35	37	41	49	56	56.3	53.8	57.1	55.0	52.5	53.7	42.3	38.5	33.9	34.4	35.2	36.4	33.4	32	Nil	32	43	43	47	<1.9	222-244	E-F	Y	Y	Yes	MC CHPP + Breaker consistently audible, with bangs on occasion. VPPS hum, insects and frogs consistently audible. Distant traffic on Pacific Highway, bird noise and wind in trees occasionally audible.		
RA2	27/08/2019	2:31 AM	31	33	35	36	39	50	56	56.1	54.0	57.8	54.8	52.8	53.3	41.9	38.3	34.1	35.6	36.8	37.3	34.8	32	Nil	32	43	43	47	<2.0	239-241	E-F	Y	Y	Yes	MC CHPP + Breaker consistently audible, with bangs on occasion. VPPS hum, insects and frogs consistently audible. Distant traffic on Pacific Highway frequently audible. Bird noise occasionally audible.		

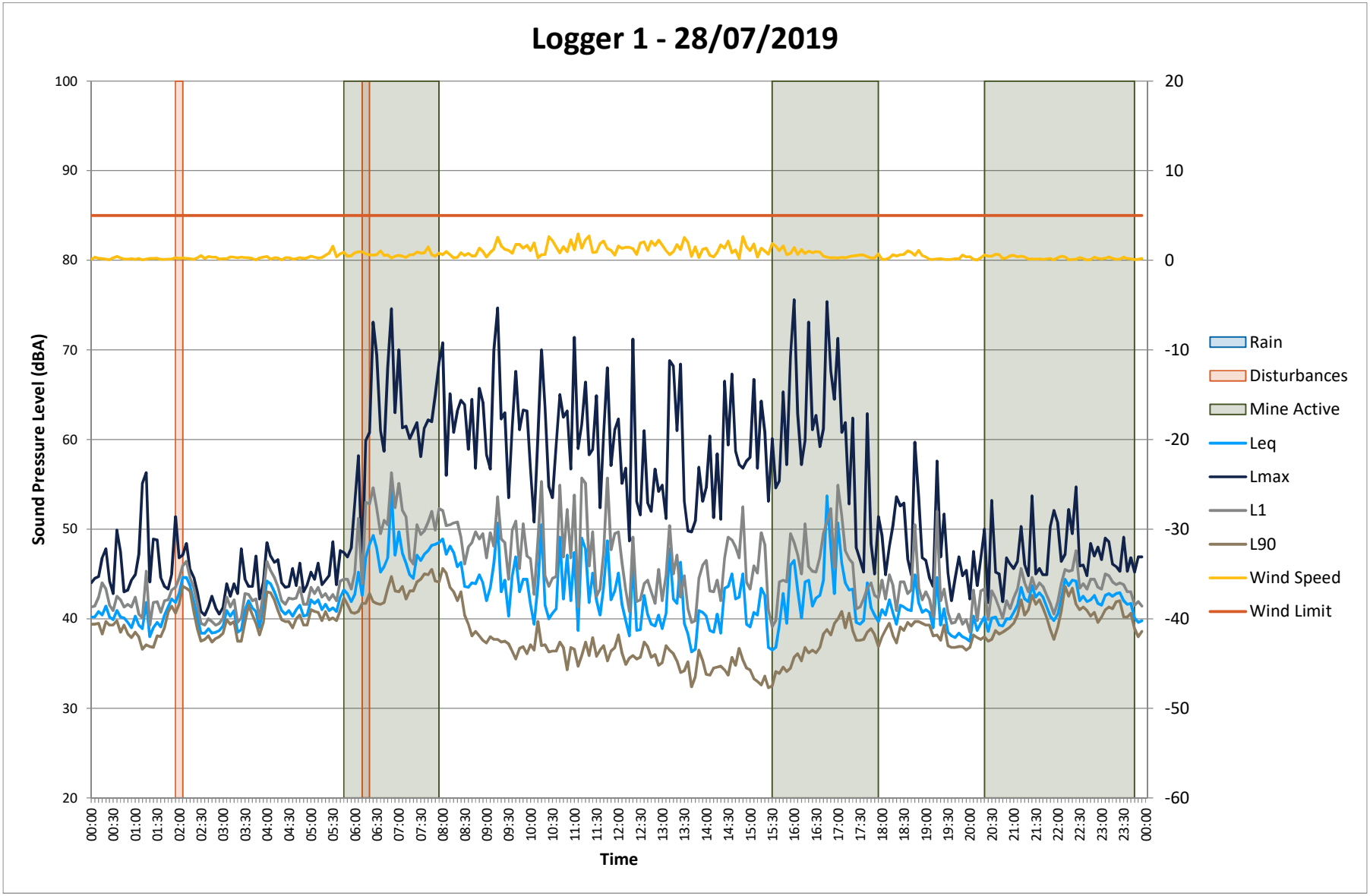
										TOTAL measured LFN												Mannering Coal				Criteria		Mets			Limits			
Location	Date	Time	LAmin	LA90	LAeq	LA10	LA1	LAmax	LCeq	10Hz	12.5Hz	16Hz	20Hz	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	Site LAeq	Mod Factor	Adj site LAeq	LAmax	LAeq	LAmax	WS (m/s)	WD (°)	SC	apply	Comply?	MC Operational	Comments
RA3	25/07/2019	1:07 AM	42	43	44	45	47	54	65	56.9	62.7	66.2	64.8	62.8	59.1	52.5	53.4	48.6	47.1	44.2	43.7	39.5	IA	Nil	IA	IA	39	49	<0.8	226-241	F	Y	Y	No	VPPS, insects and frogs, WTP pump noise, birds, distant traffic
RA3	25/07/2019	1:23 AM	42	44	45	46	48	60	65	57.4	63.6	66.4	65.4	62.5	59.5	52.0	54.4	49.7	47.9	45.7	44.4	39.5	IA	Nil	IA	IA	39	49	<1.4	236-252	D-E	Y	Y	No	VPPS, insects and frogs, WTP pump noise, birds, distant traffic
RA3	26/07/2019	2:30 AM	42	43	45	46	47	49	67	63.5	71.6	68.9	64.5	61.7	59.1	58.8	58.2	51.4	50.6	49.3	45.9	40.3	IA	Nil	IA	IA	39	49	<0.5	160-177	D - F	Y	Y	Yes	VPPS constant hum and occasional reverse alarms and bang from stockpile, constant noise from WTP, birds. MC not discernible
RA3	26/07/2019	2:45 AM	42	43	44	45	46	49	67	63.1	69.8	68.8	64.9	63.3	57.2	56.4	58.8	52.3	48.7	48.1	45.3	40.3	IA	Nil	IA	IA	39	49	<0.5	185-200	E - F	Y	Y	Yes	VPPS constant hum and occasional reverse alarms, frogs, constant noise from WTP, birds. MC not discernible
RA3	3/08/2019	1:58 AM	40	42	44	45	46	51	67	59.5	67.5	68.9	66.0	63.8	62.2	61.3	55.1	50.4	48.2	48.5	47.2	39.0	IA	Nil	IA	IA	39	49	<0.9	176-199	D-E	Y	Y	No	VPPS constant, distant frogs/insects, animal and bird noise
RA3	3/08/2019	2:14 AM	40	43	46	49	51	59	68	59.5	67.5	68.9	66.0	63.8	62.2	61.3	55.1	50.4	48.2	48.5	47.2	39.0	IA	Nil	IA	IA	39	49	<0.7	200-224	F	Y	Y	No	VPPS constant, distant frogs/insects, traffic on Tall Timbers Rd, animal and bird noise
RA3	7/08/2019	4:00 AM	42	44	45	46	48	68	68	62.0	69.1	68.1	64.4	65.0	62.8	58.2	59.3	52.2	48.8	47.9	47.0	39.5	IA	Nil	IA	IA	39	49	<0.2	80-122	F	Y	Y	No	VPPS hum, insects, frogs and WTP pump noise consistently audible. Distant traffic and nearby animals occasionally audible.
RA3	7/08/2019	4:15 AM	42	44	46	47	51	58	67	62.4	70.4	69.1	63.1	62.9	61.9	59.5	53.1	51.6	49.2	47.6	44.8	39.3	IA	Nil	IA	IA	39	49	<0.4	161-201	F	Y	Y	No	VPPS hum, insects, frogs and WTP pump noise consistently audible. Distant traffic and nearby animals occasionally audible.
RA3	8/08/2019	5:55 AM	42	45	49	49	54	73	65	60.1	64.6	64.9	63.8	59.8	60.0	57.2	55.9	51.3	51.5	49.6	47.2	43.3	IA	Nil	IA	IA	39	49	<1	309-325	D - E	Y	Y	Yes	Birds, traffic on Tall Timbers Rd, VPPS, wind in trees, cars on access road.
RA3	8/08/2019	6:10 AM	43	45	49	50	56	70	65	60.2	63.9	64.4	63.2	59.5	58.5	56.1	57.6	52.7	51.6	50.3	47.4	43.7	IA	Nil	IA	IA	39	49	<1	319-333	E	Y	Y	Yes	Birds, traffic on Tall Timbers Rd, VPPS, wind in trees, cars on access road.
RA3	13/08/2019	1:17 AM	43	45	46	47	48	51	67	63.9	68.4	68.5	66.0	61.3	63.4	59.6	56.1	52.0	51.3	50.9	45.2	41.1	IA	Nil	IA	IA	39	49	<1.3	241-264	D - E	Y	Y	Yes	VPPS constant hum, pump from WTP, frogs and birds occasionally, siren from VPPS, dozer from VPPS, MC not discernible
RA3	13/08/2019	1:32 AM	43	45	45	46	47	62	67	63.7	70.7	70.5	64.9	60.0	60.1	61.3	55.4	51.2	50.8	50.8	45.4	40.7	IA	Nil	IA	IA	39	49	<1.3	241-264	D - E	Y	Y	Yes	VPPS constant hum, pump from WTP, frogs and birds occasionally, bang from VPPS, MC not discernible
RA3	26/08/2019	3:07 AM	30	33	36	37	43	58	57	51.1	53.2	55.5	55.7	55.2	53.6	48.6	46.3	42.0	40.4	39.2	38.3	32.8	IA	Nil	IA	IA	39	49	<1.3	200-228	E-F	Y	Y	No	Insects and VPPS hum consistently audible. WWTP pump noise frequently audible. Nearby animals, bird noise and distant traffic occasionally audible.
RA3	26/08/2019	3:22 AM	34	36	38	40	45	51	59	52.2	55.7	57.9	58.4	57.7	56.2	50.3	46.1	42.4	42.7	41.4	38.9	34.5	IA	Nil	IA	IA	39	49	<2.5	233-235	D-F	Y	Y	No	Insects, WWTP pump noise and VPPS hum consistently audible. Distant traffic frequently audible. Nearby animals and bird noise occasionally audible.
RA3	27/08/2019	12:00 AM	40	41	43	44	46	66	62	58.1	57.9	60.4	61.4	60.6	59.0	51.7	50.9	46.5	48.9	46.8	44.2	41.6	37	Nil	37	45	39	49	<1.4	221-229	F	Y	Y	Yes	MC CHPP & Breaker consistently audible, with bangs from site on occasion. VPPS hum, insects, frogs and WWTP pump noise consistently audible. Wind in trees frequently audible. Distant traffic and bird noise occasionally audible.
RA3	27/08/2019	12:15 AM	40	41	43	44	46	55	62	57.8	58.2	60.6	60.6	59.8	57.8	51.0	50.8	47.7	47.6	45.8	45.2	41.2	36	Nil	36	42	39	49	<1.7	222-246	E-F	Y	Y	Yes	MC CHPP & Breaker consistently audible, with bangs from site on occasion. VPPS hum, insects, frogs and WWTP pump noise consistently audible. Wind in trees, distant traffic and bird noise occasionally audible.

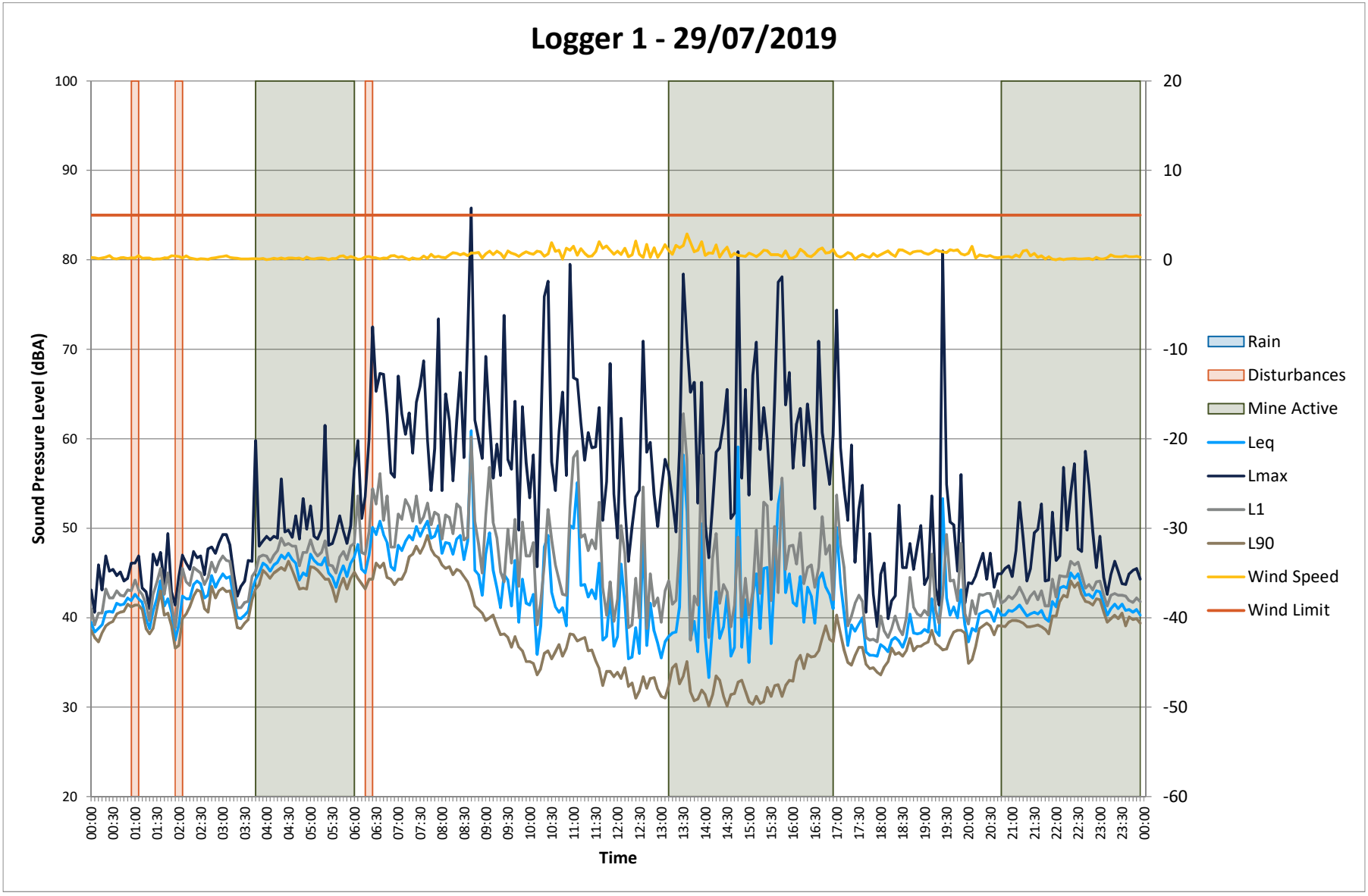
Appendix G

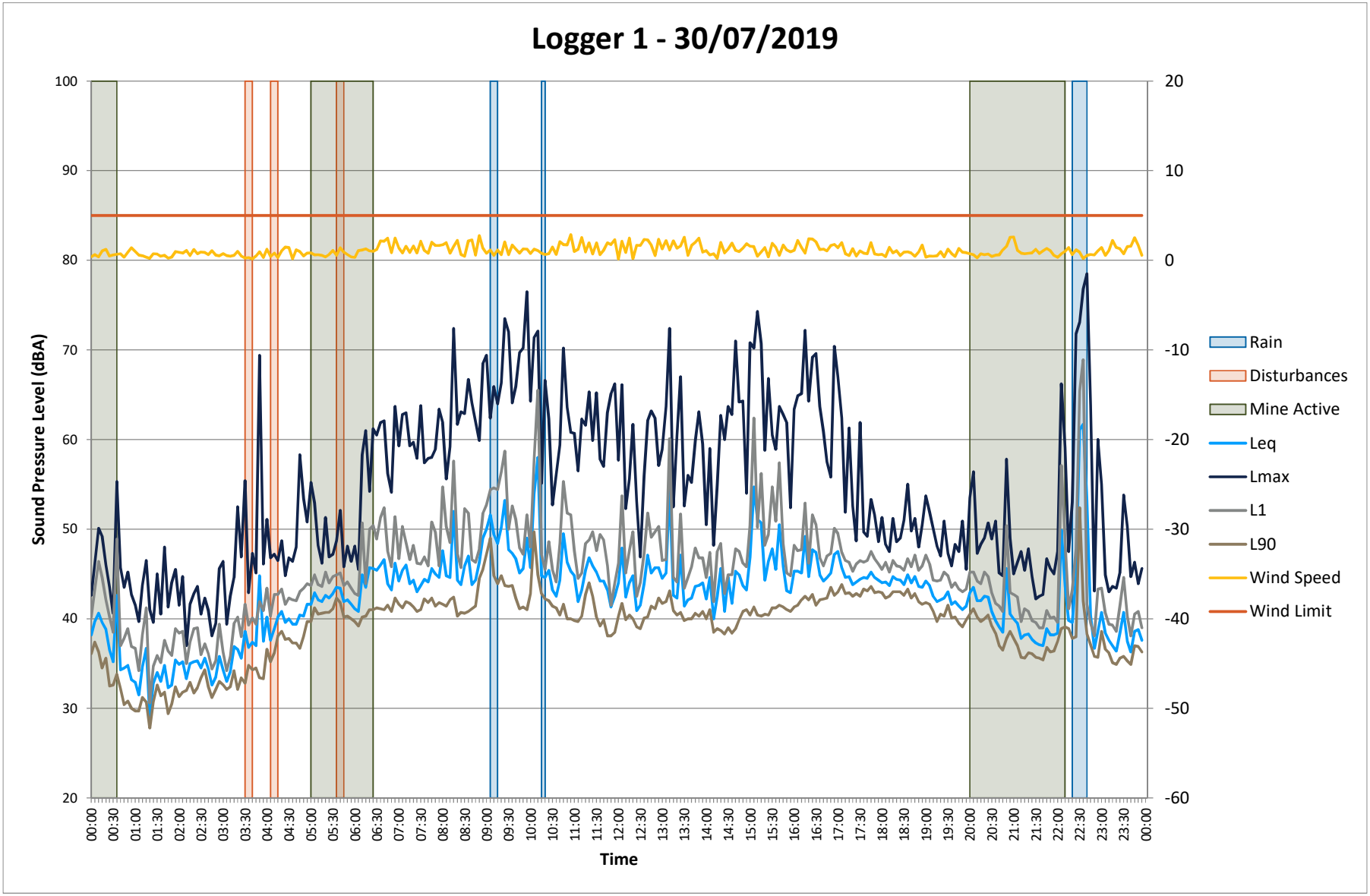
Unattended noise monitoring results

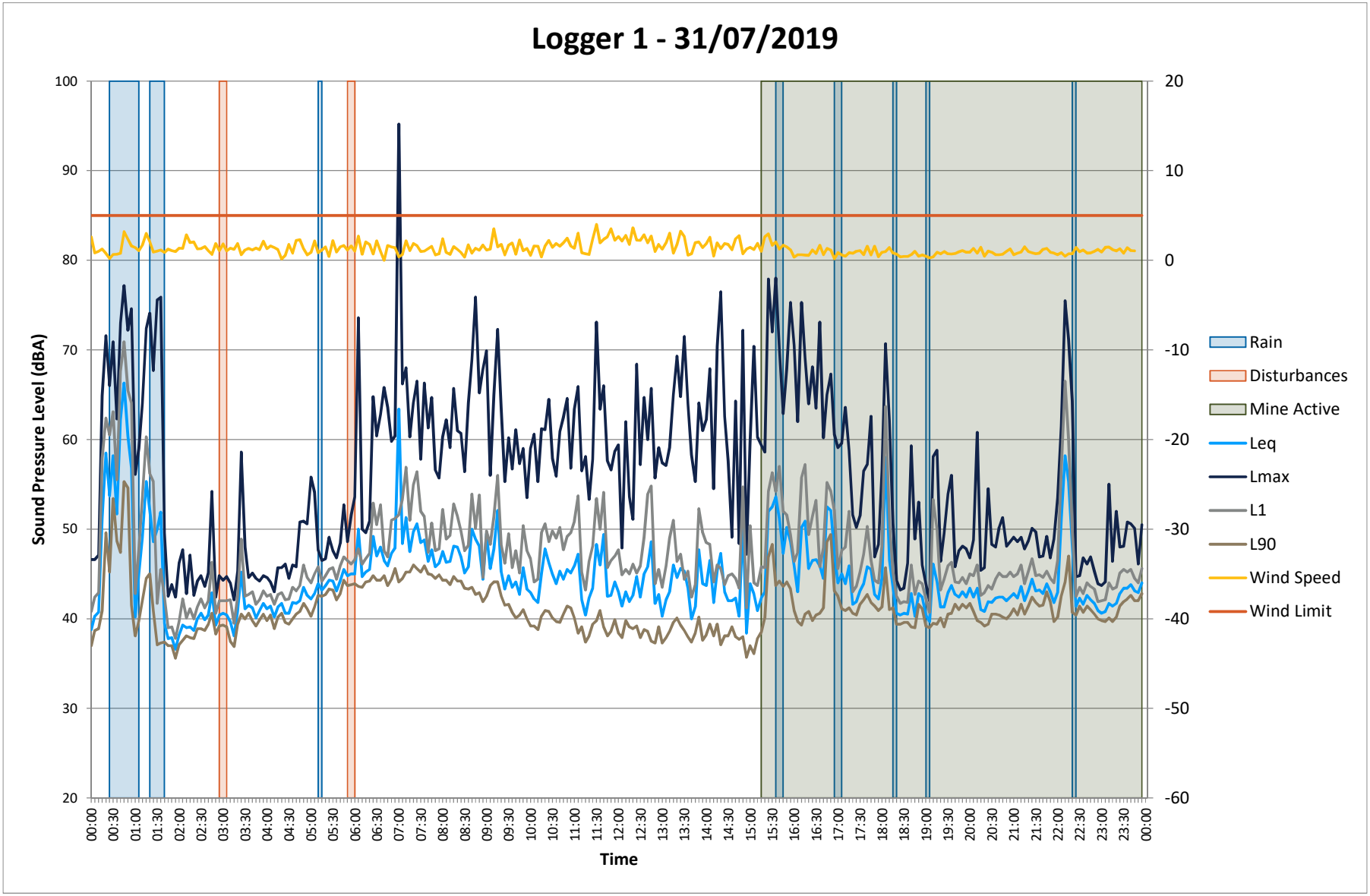

Logger 1 - 26/07/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
-30
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

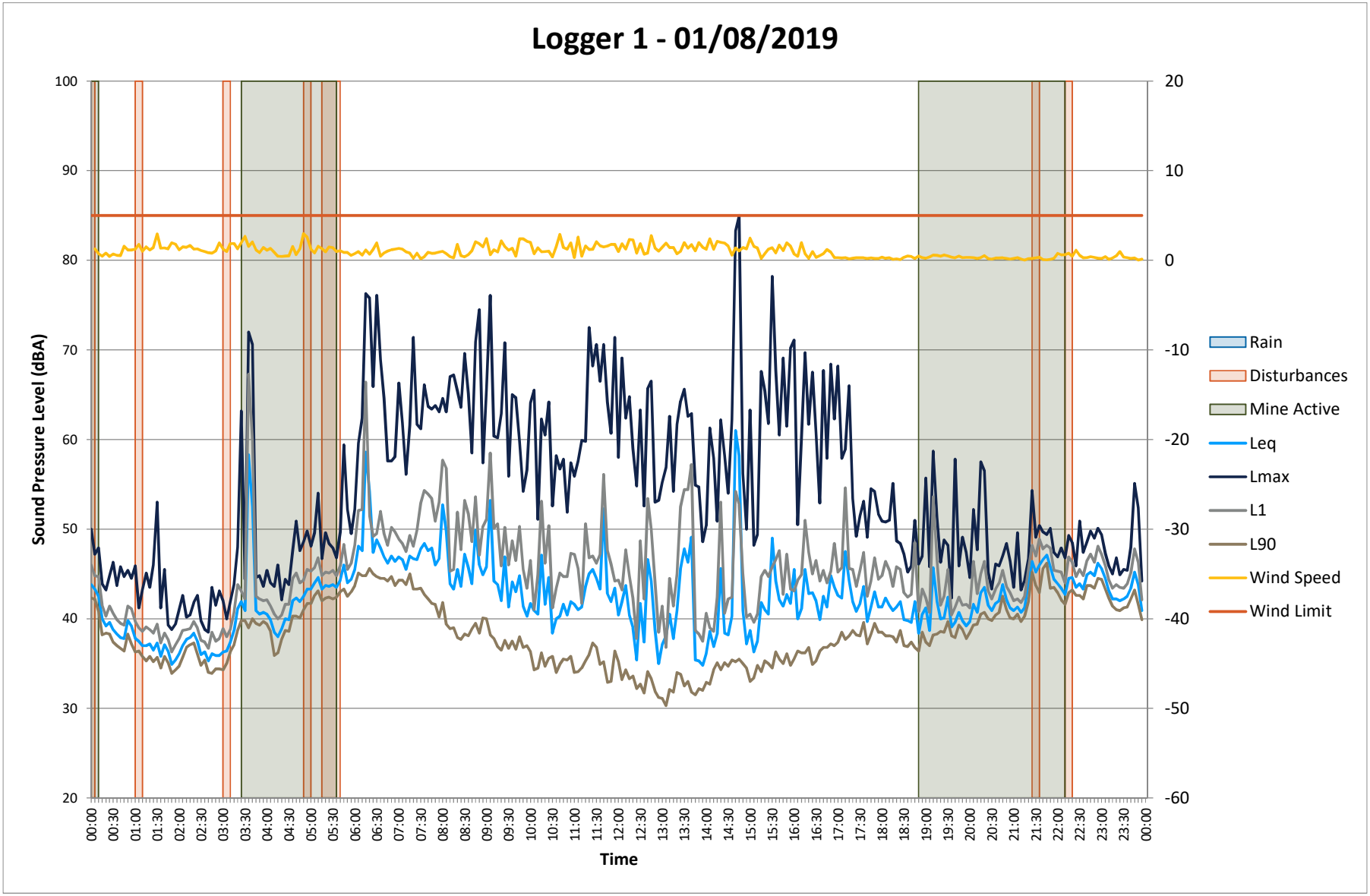

Logger 1 - 27/07/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
-30
-40
-50
-60
00:00
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21:30
22:00
22:30
23:00
23:30
00:00
Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

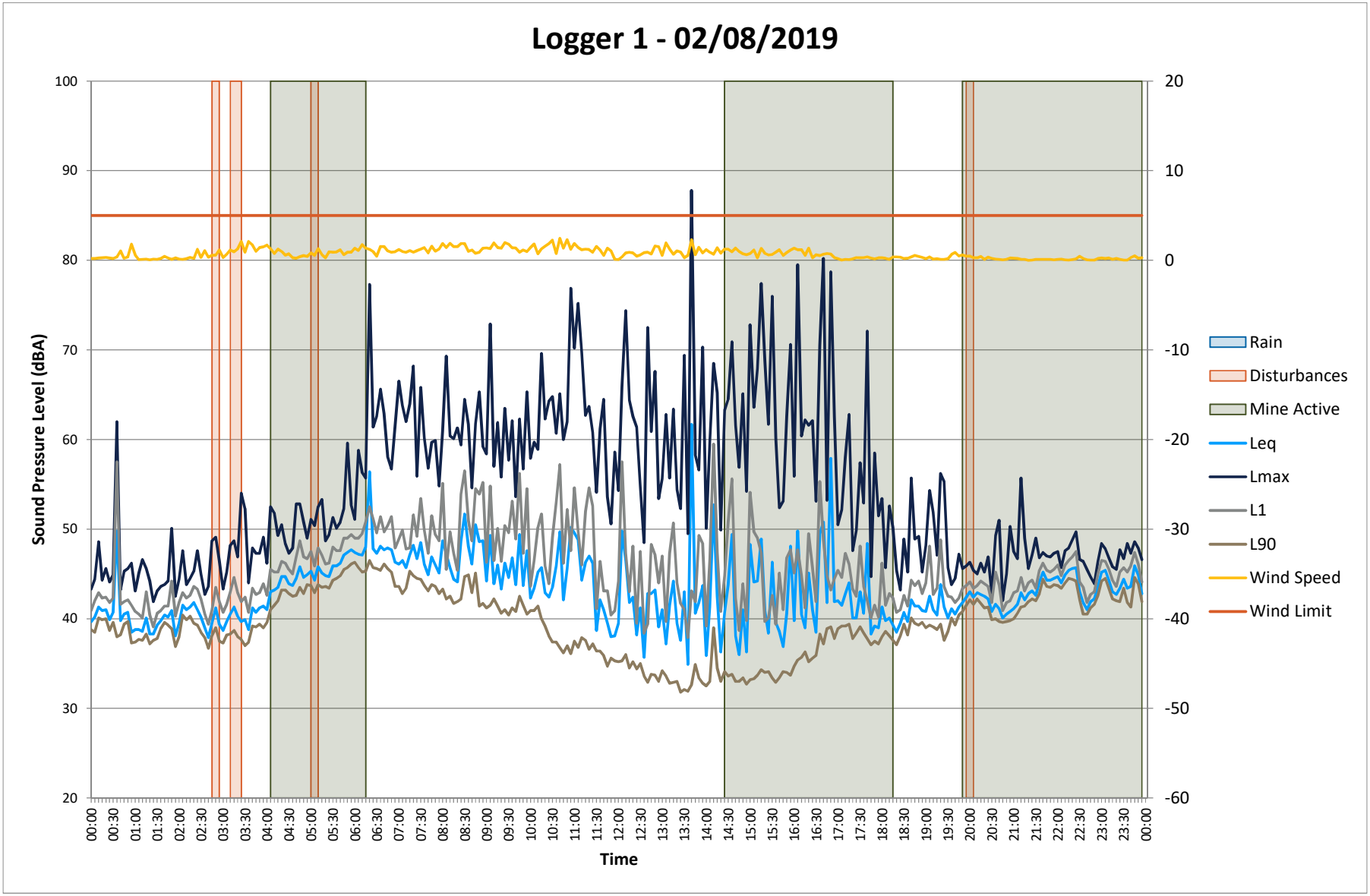

Logger 1 - 28/07/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
-30
-40
-50
-60
00:00
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22:00
22:30
23:00
23:30
00:00
Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

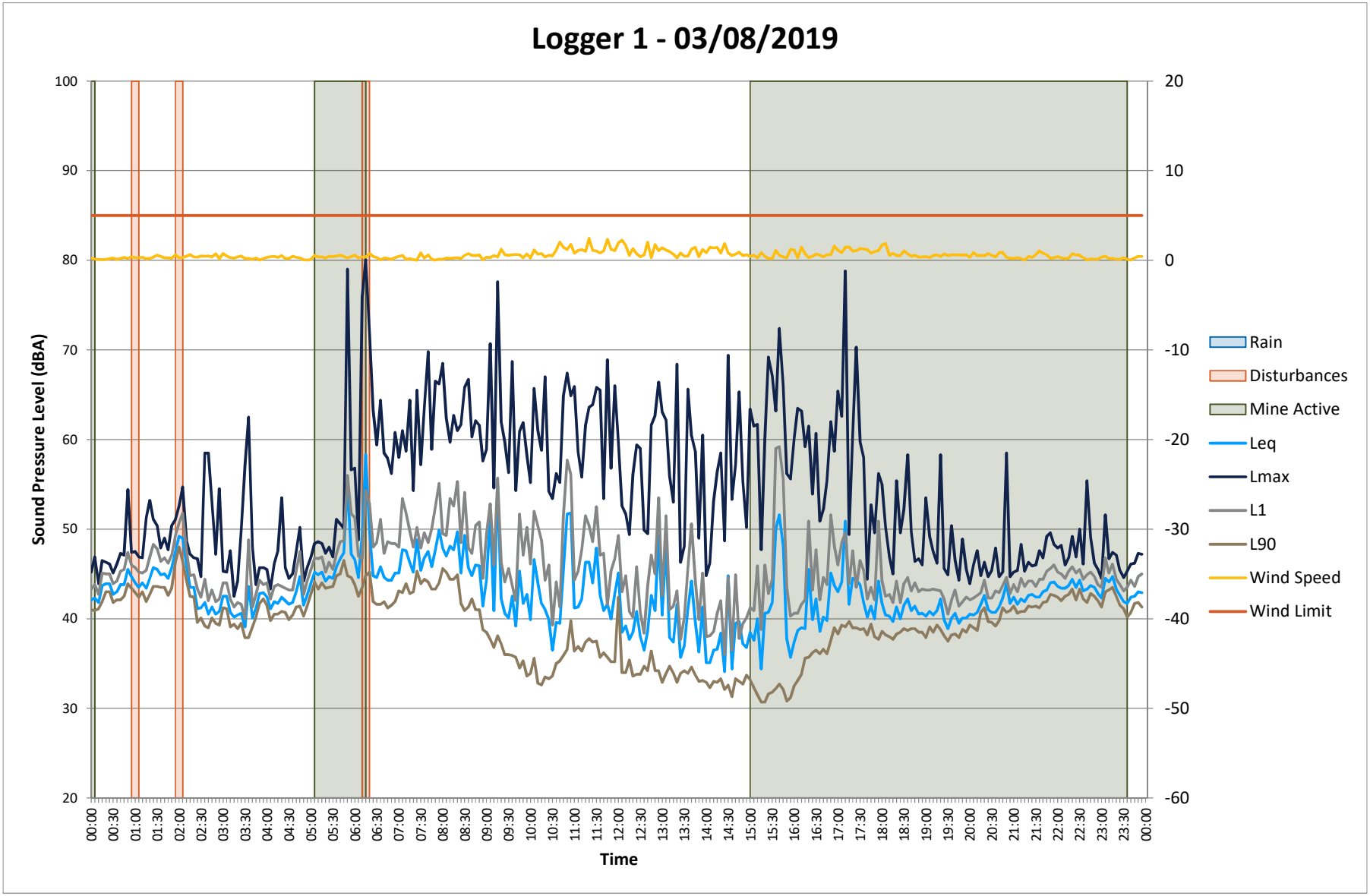

Logger 1 - 29/07/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
-30
-40
-50
-60
00:00
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01:00
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22:00
22:30
23:00
23:30
00:00
Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

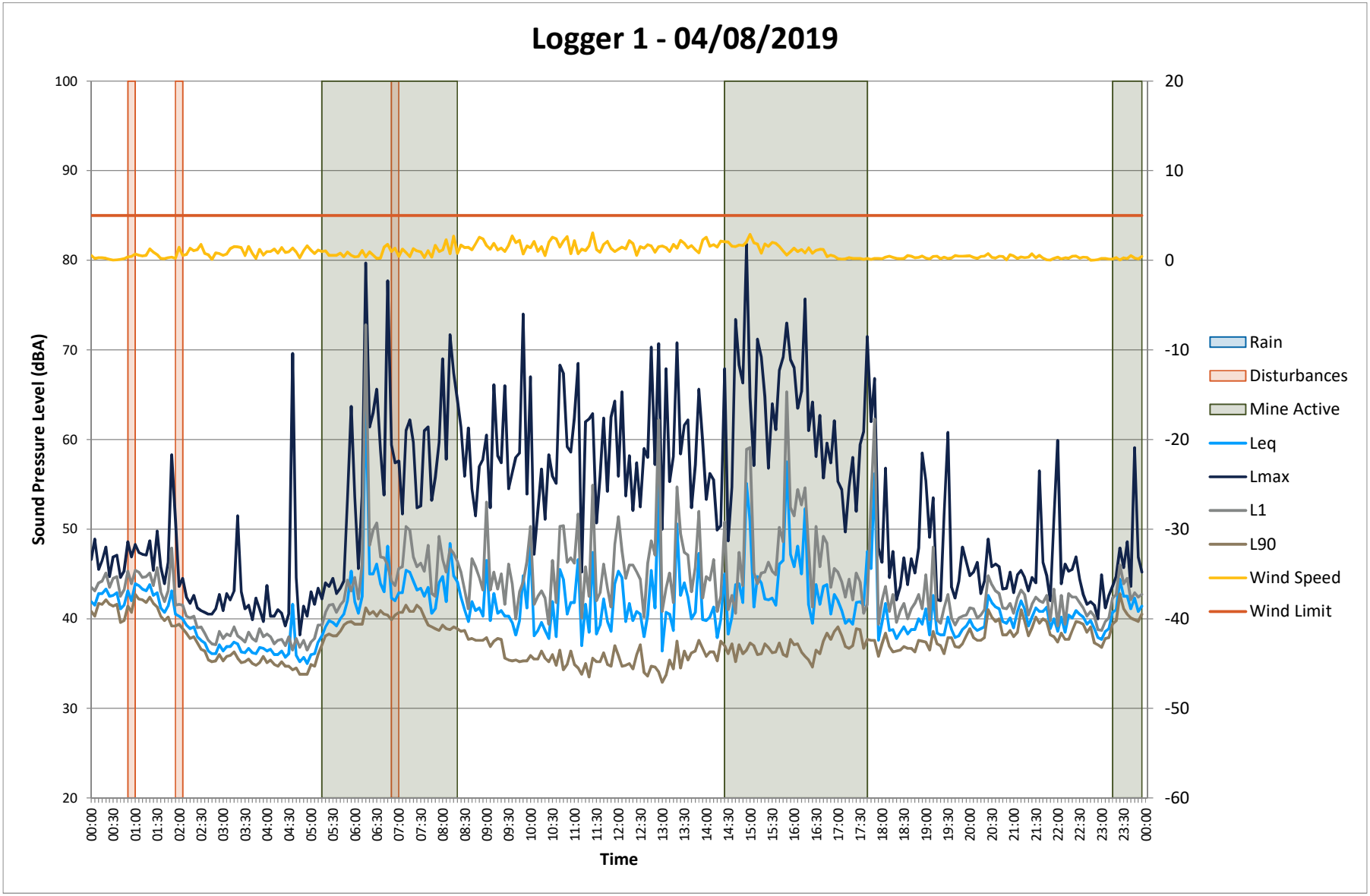

Logger 1 - 30/07/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
-30
-40
-50
-60
00:00
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23:30
00:00
Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

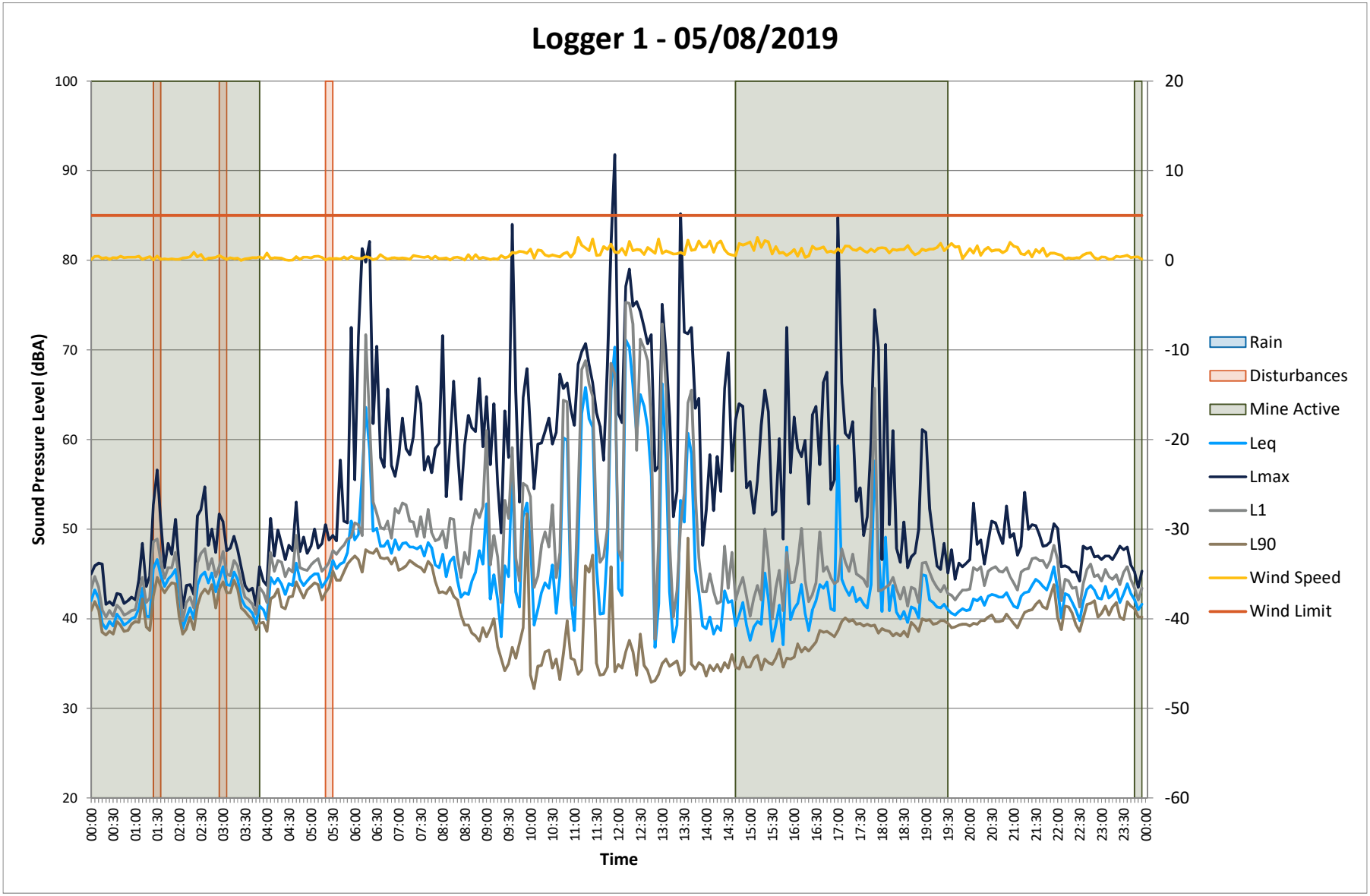

Logger 1 - 31/07/2019
Sound Pressure Level (dBA)
Time
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
-30
-40
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21:30
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22:30
23:00
23:30
00:00
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

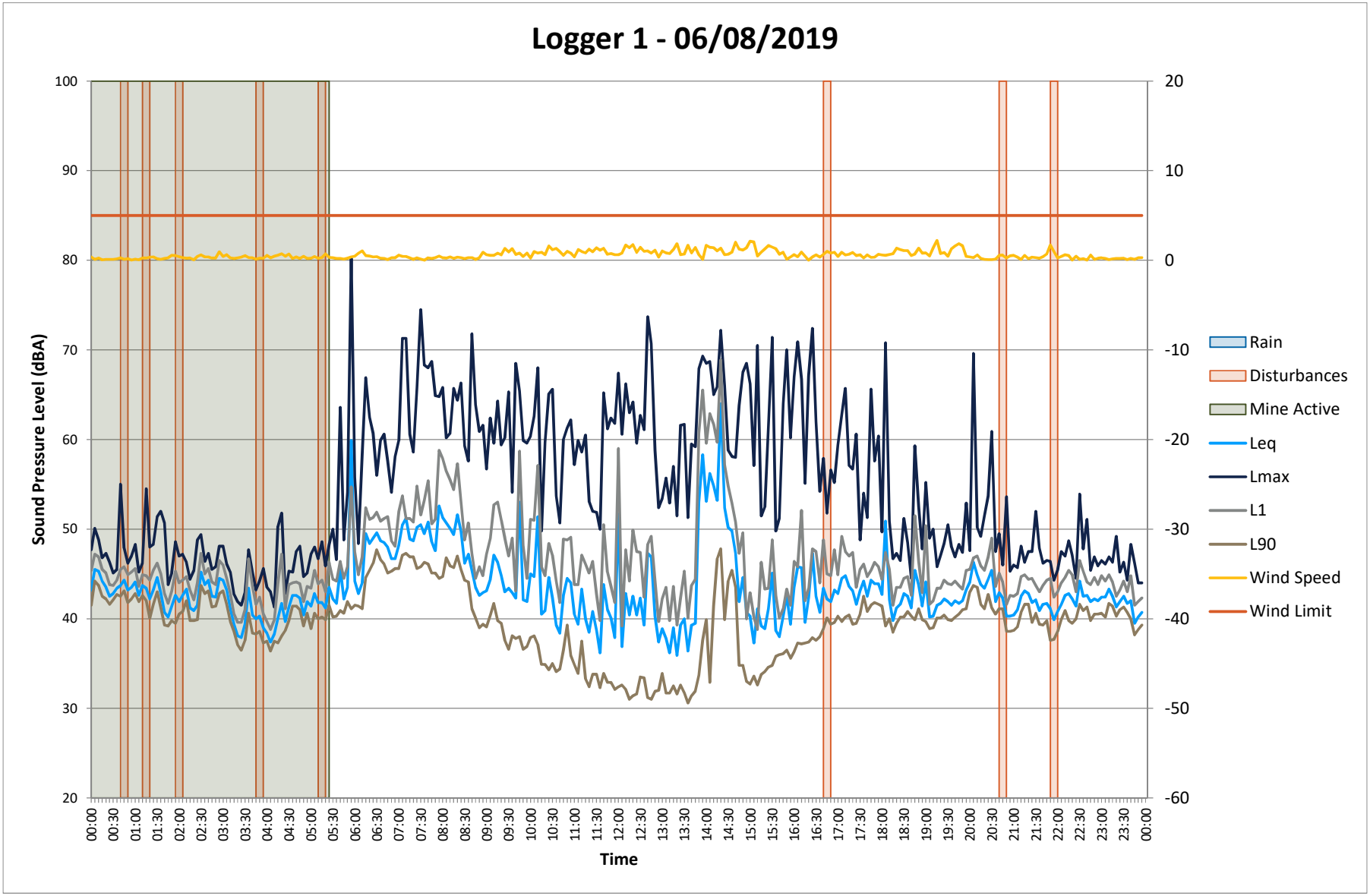

Logger 1 - 01/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
10
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-10
-20
-30
-40
-50
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22:00
22:30
23:00
23:30
00:00
Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

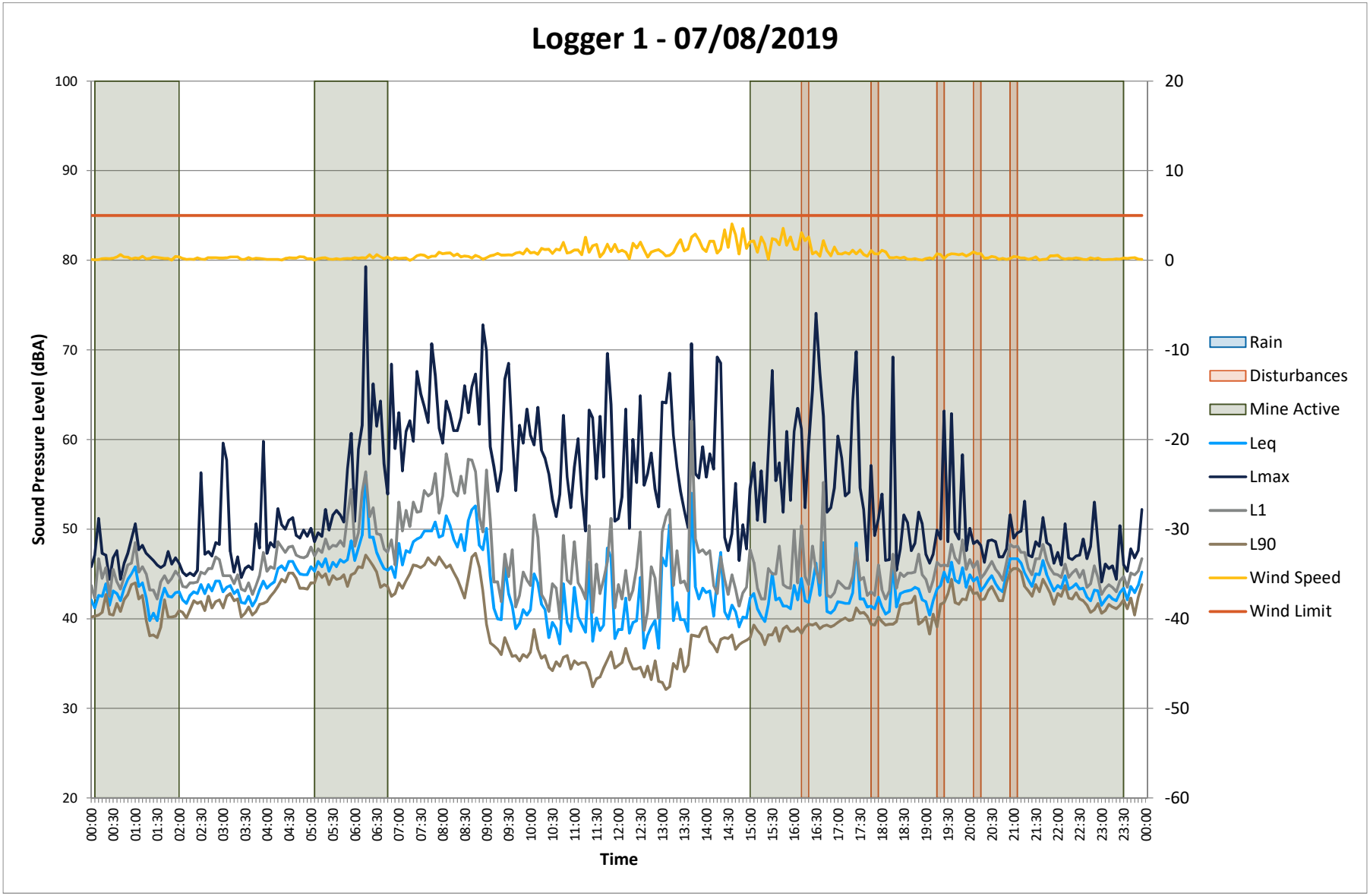

Logger 1 - 02/08/2019
Sound Pressure Level (dBA)
Time
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
-30
-40
-50
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21:30
22:00
22:30
23:00
23:30
00:00
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

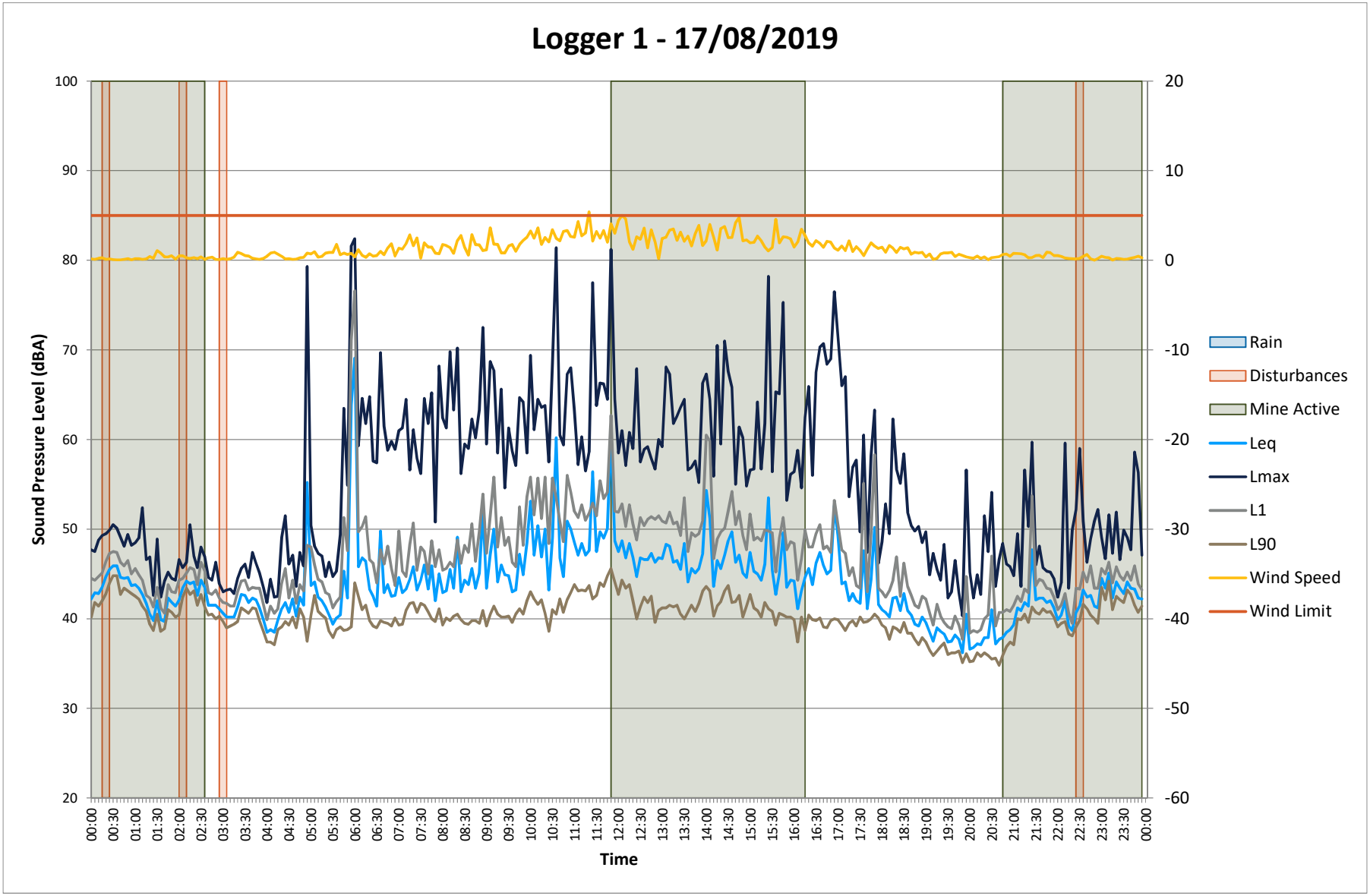

Logger 1 - 03/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
-30
-40
-50
-60
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22:00
22:30
23:00
23:30
00:00
Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

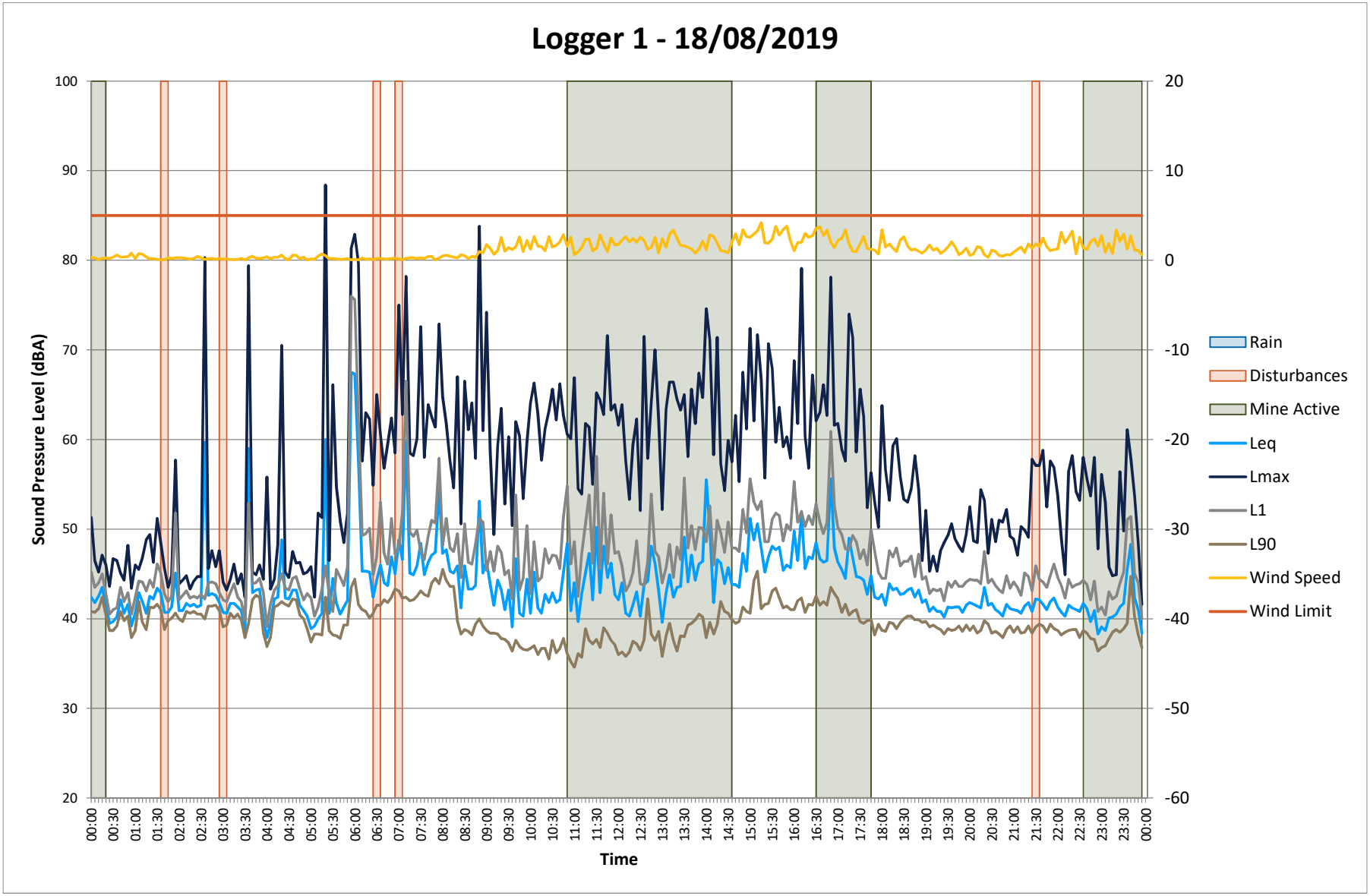

Logger 1 - 04/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
-30
-40
-50
-60
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23:30
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

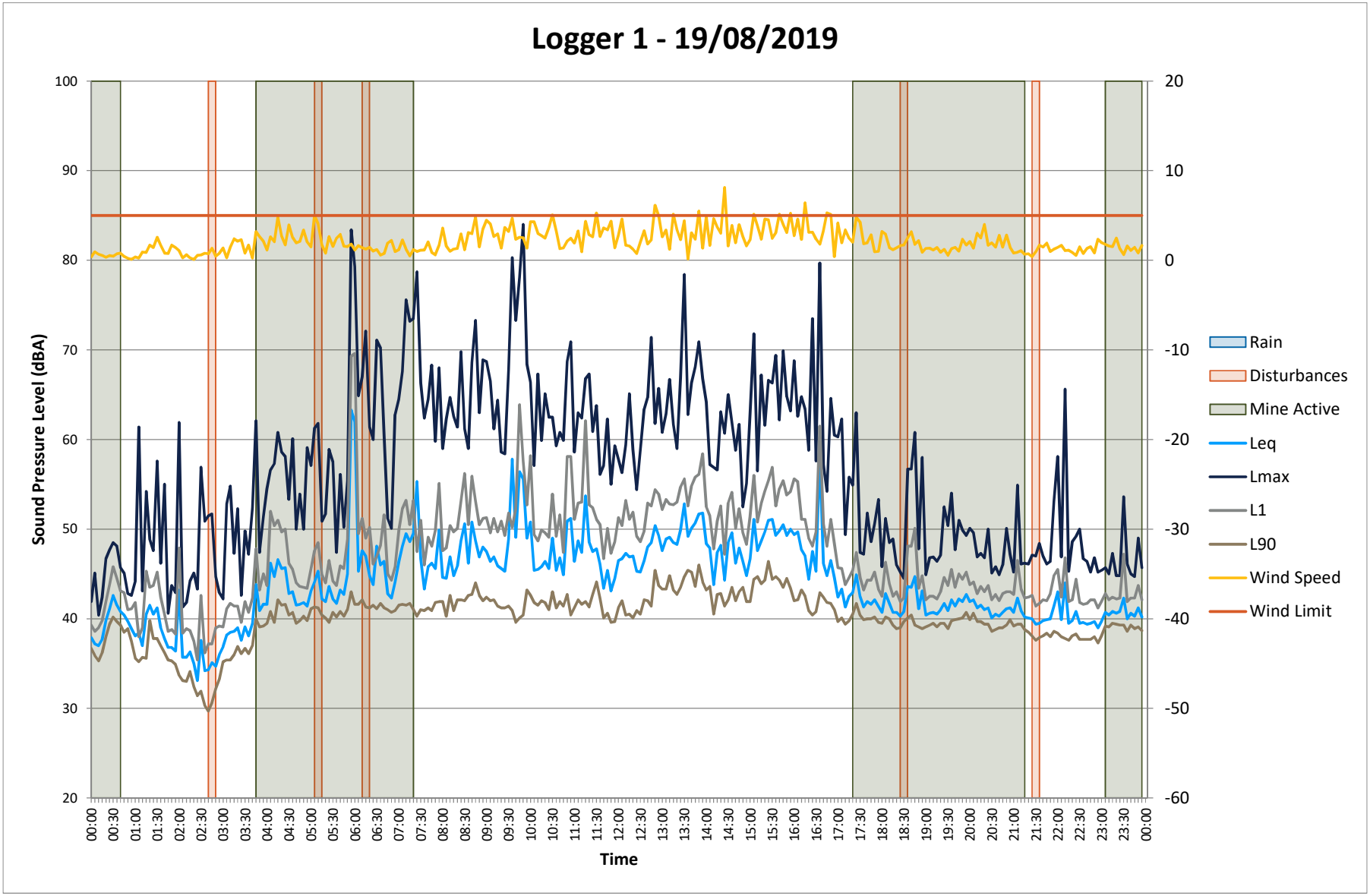

Logger 1 - 05/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
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20
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-10
-20
-30
-40
-50
-60
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

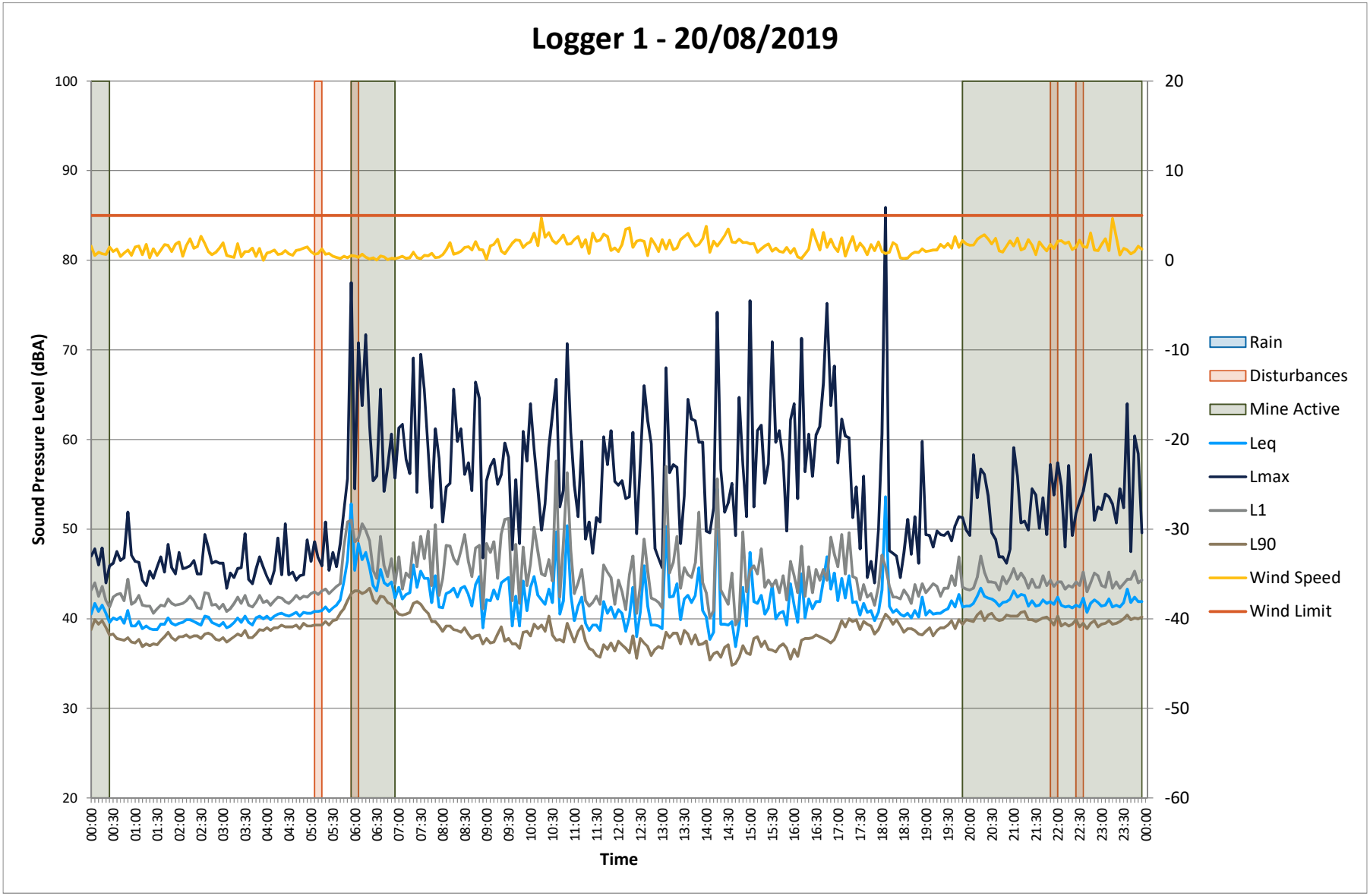

Logger 1 - 06/08/2019
Sound Pressure Level (dBA)
100
90
80
70
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-10
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-30
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23:30
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

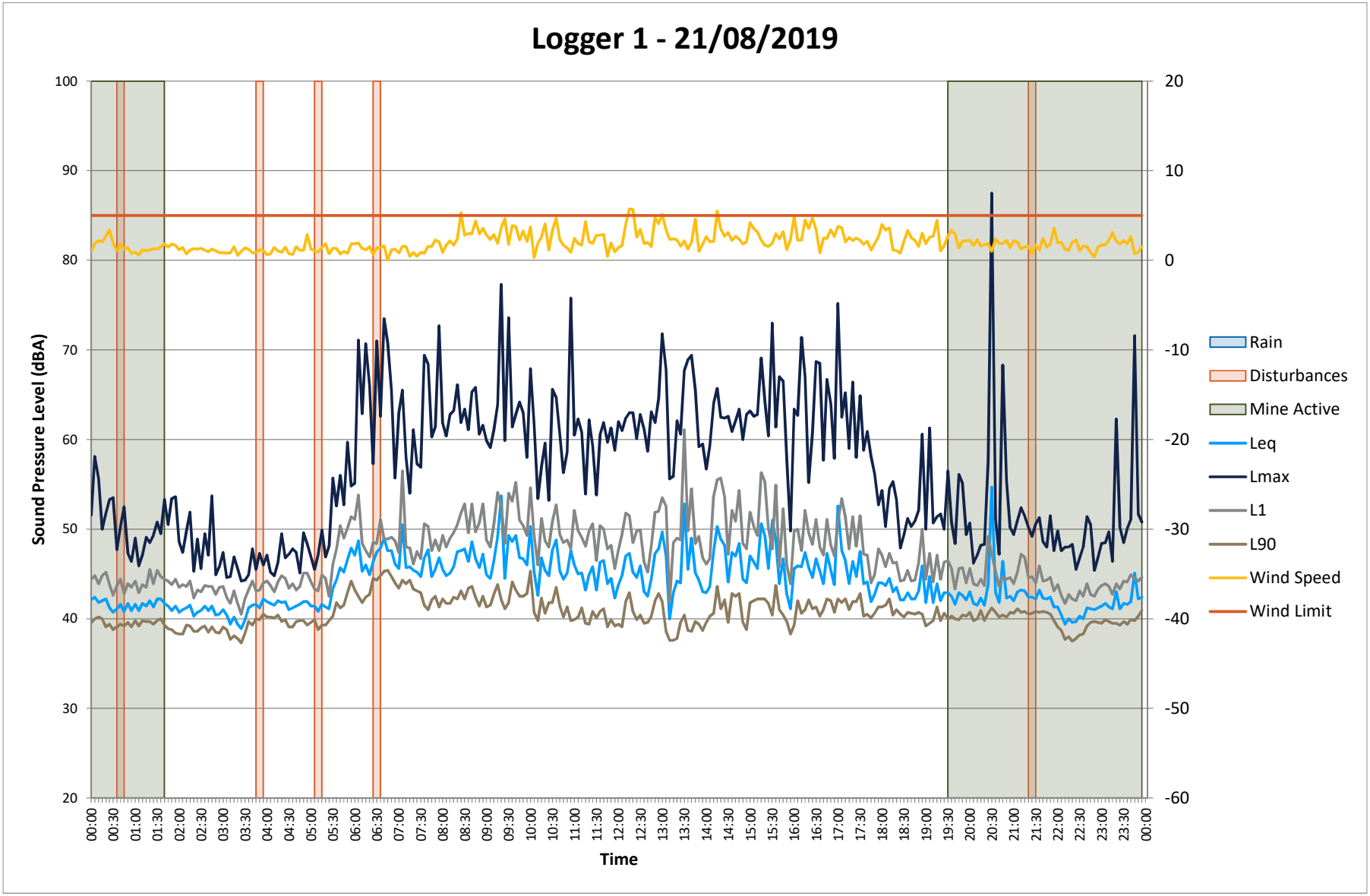

Logger 1 - 07/08/2019
Sound Pressure Level (dBA)
Time
100
90
80
70
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21:30
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23:00
23:30
00:00
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

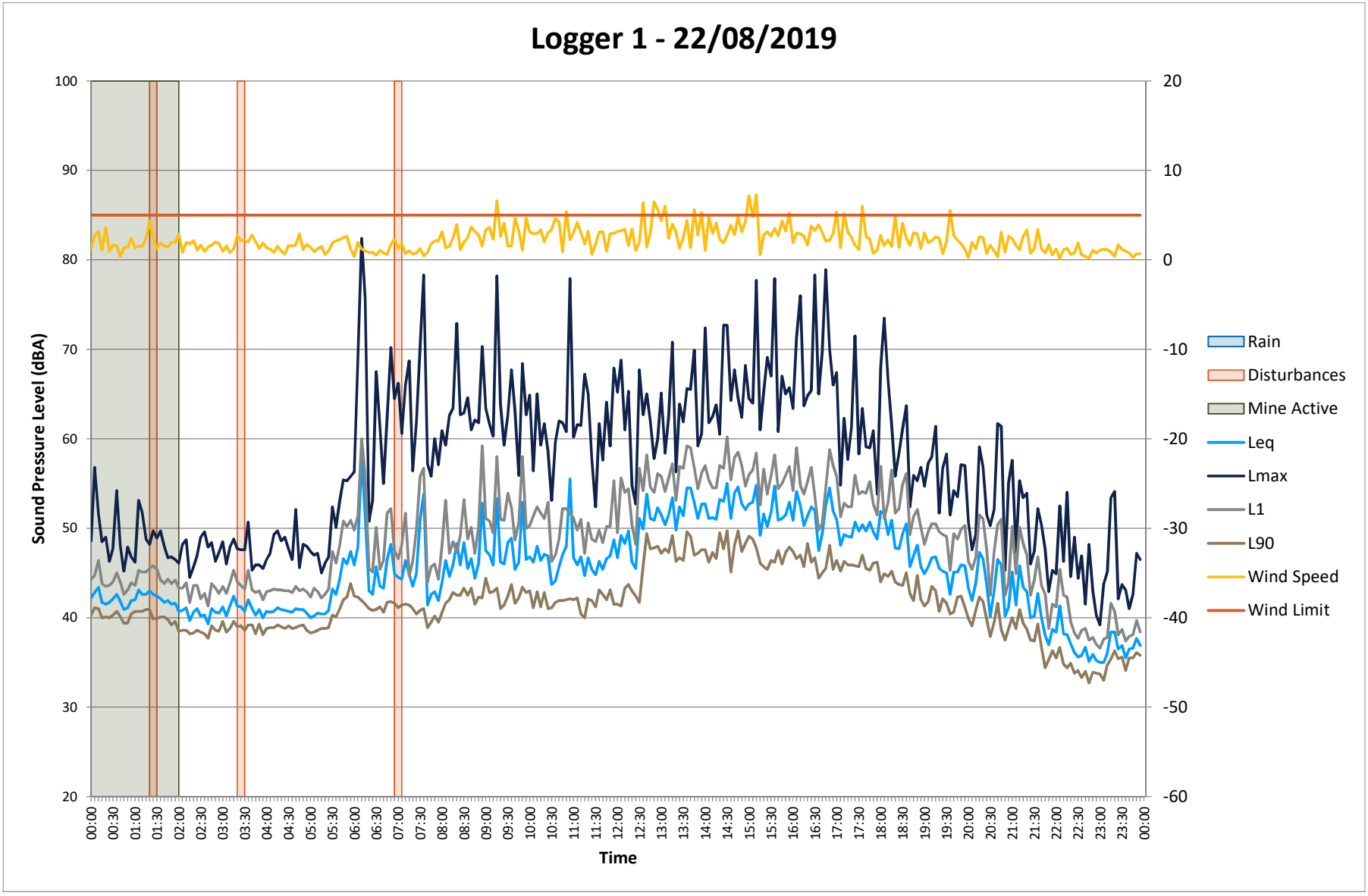

Logger 1 - 17/08/2019
Sound Pressure Level (dBA)
100
90
80
70
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40
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20
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-10
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-30
-40
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23:30
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

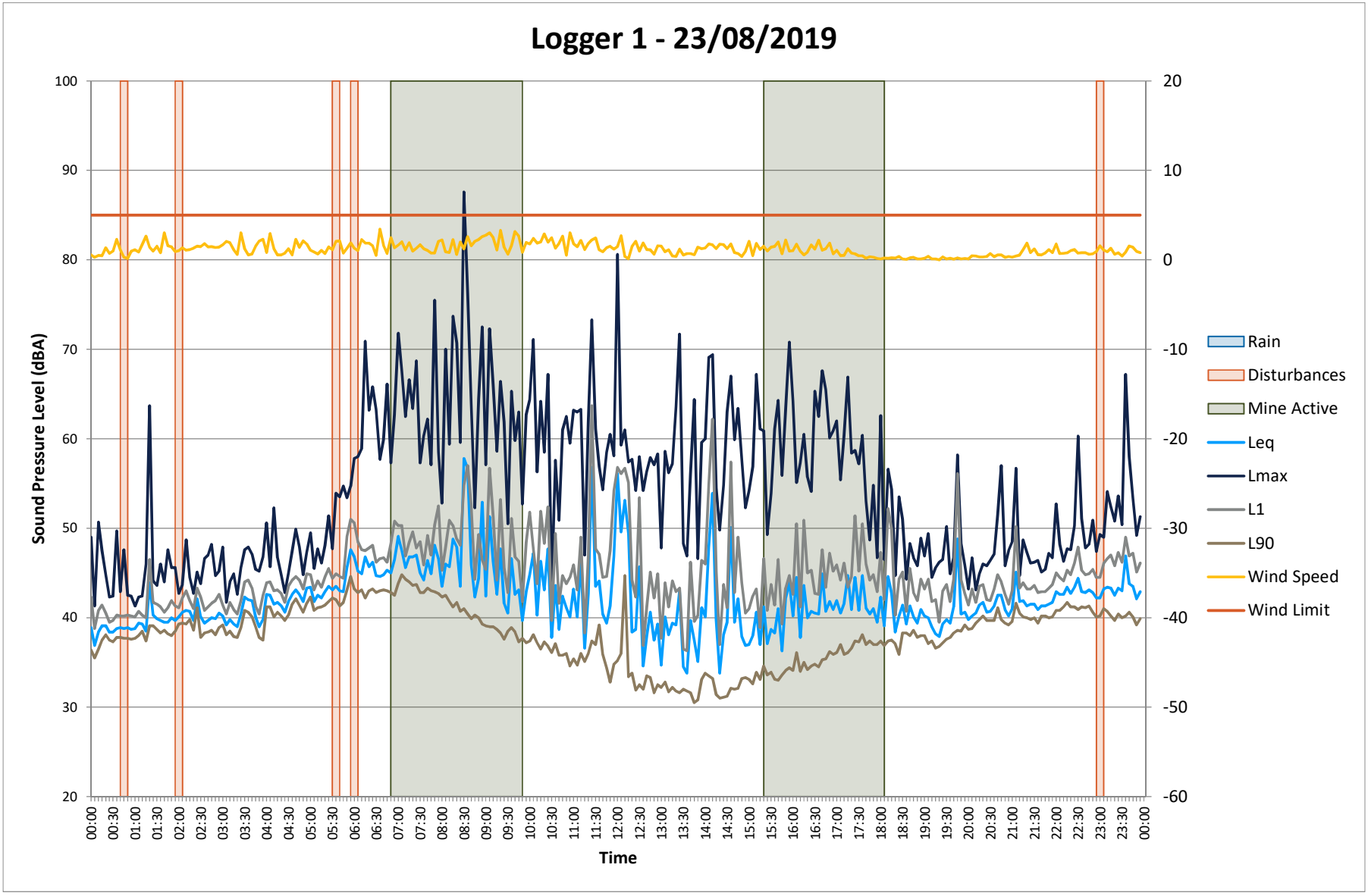

Logger 1 - 18/08/2019
Sound Pressure Level (dBA)
100
90
80
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00:00
Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

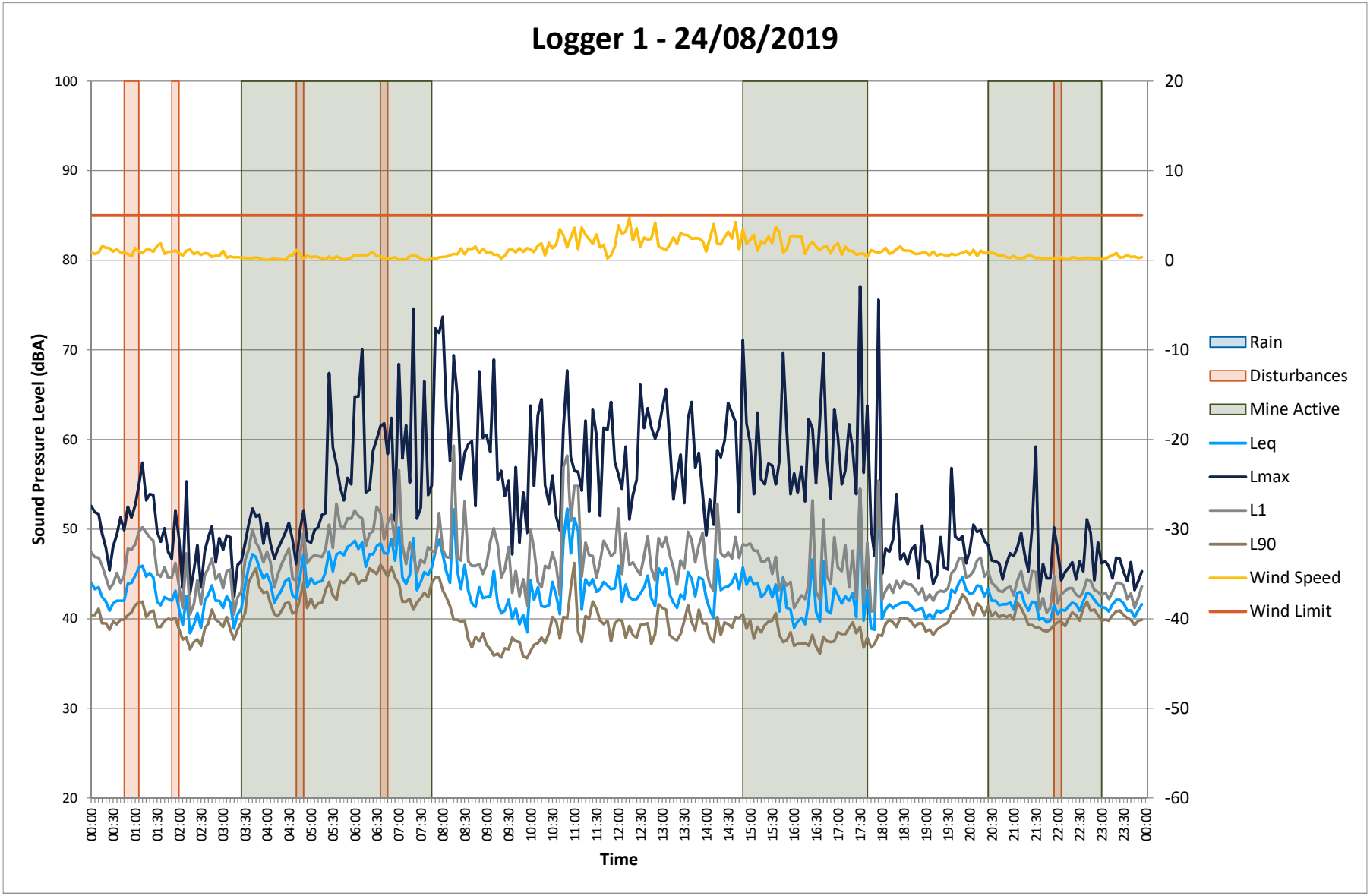

Logger 1 - 19/08/2019
Sound Pressure Level (dBA)
Time
100
90
80
70
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00:00
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

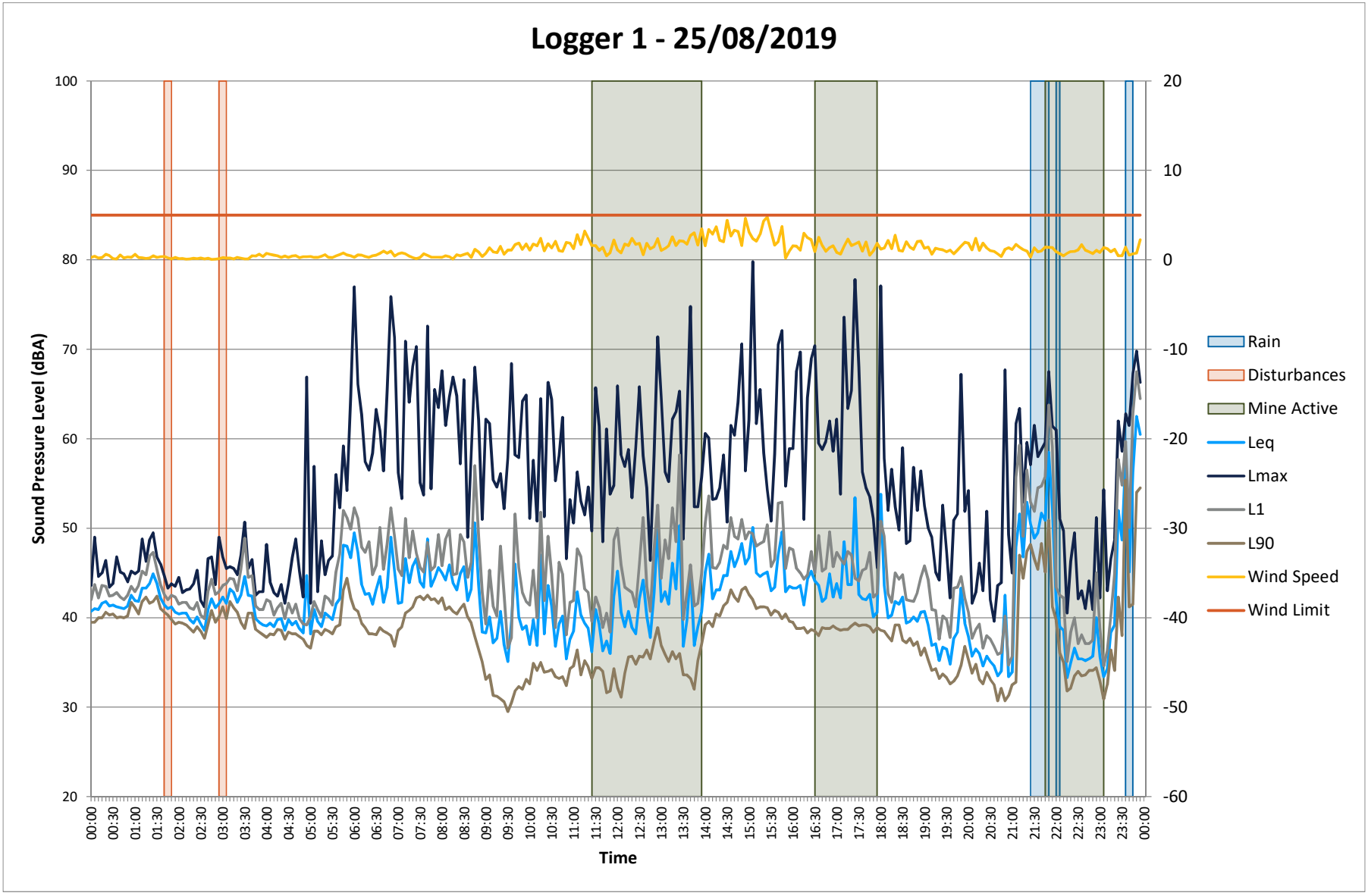

Logger 1 - 20/08/2019
Sound Pressure Level (dBA)
100
90
80
70
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-10
-20
-30
-40
-50
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19:30
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23:00
23:30
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

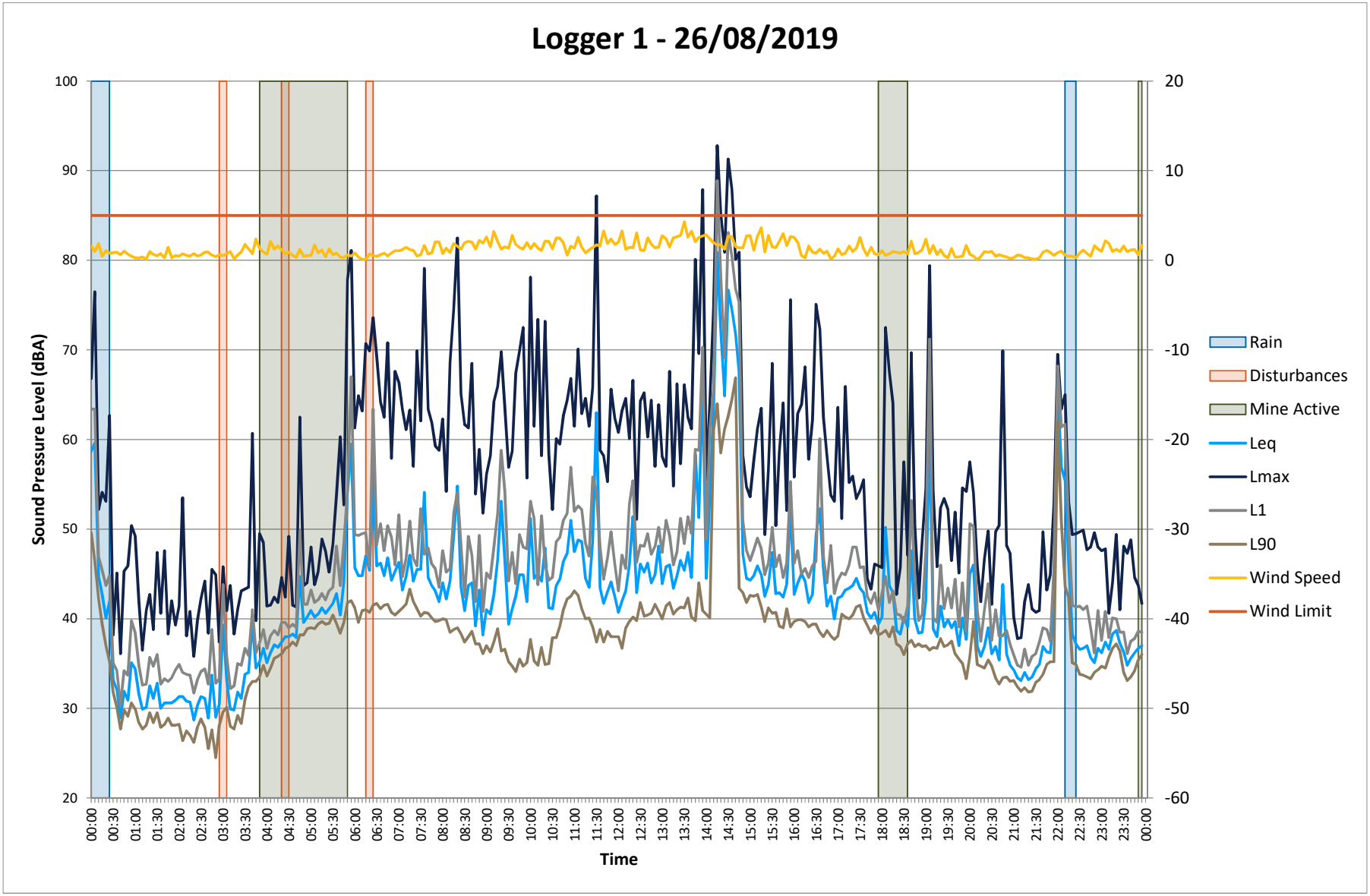

Logger 1 - 21/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
-30
-40
-50
-60
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23:30
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

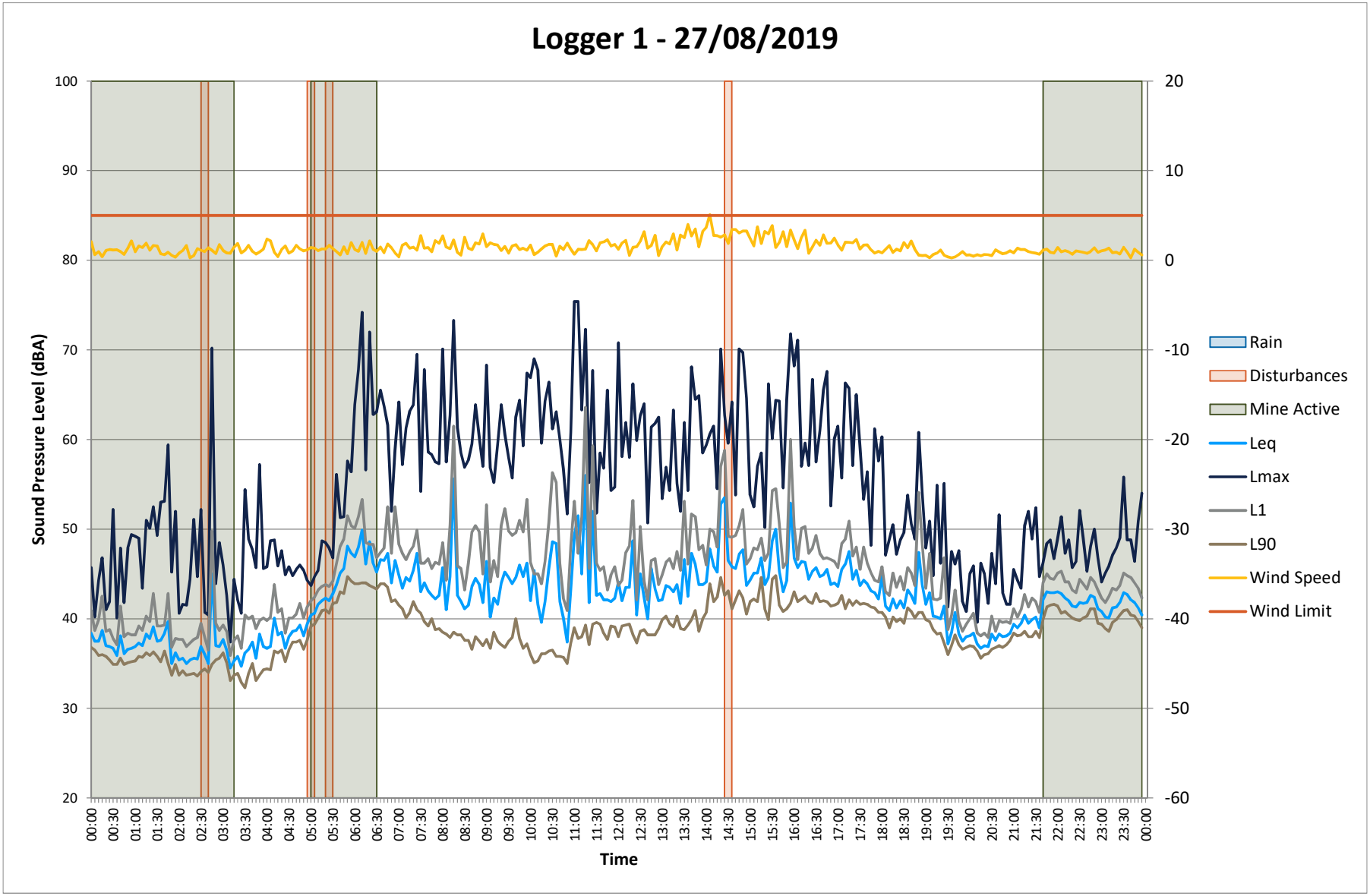

Logger 1 - 22/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
-30
-40
-50
-60
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23:30
00:00
Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

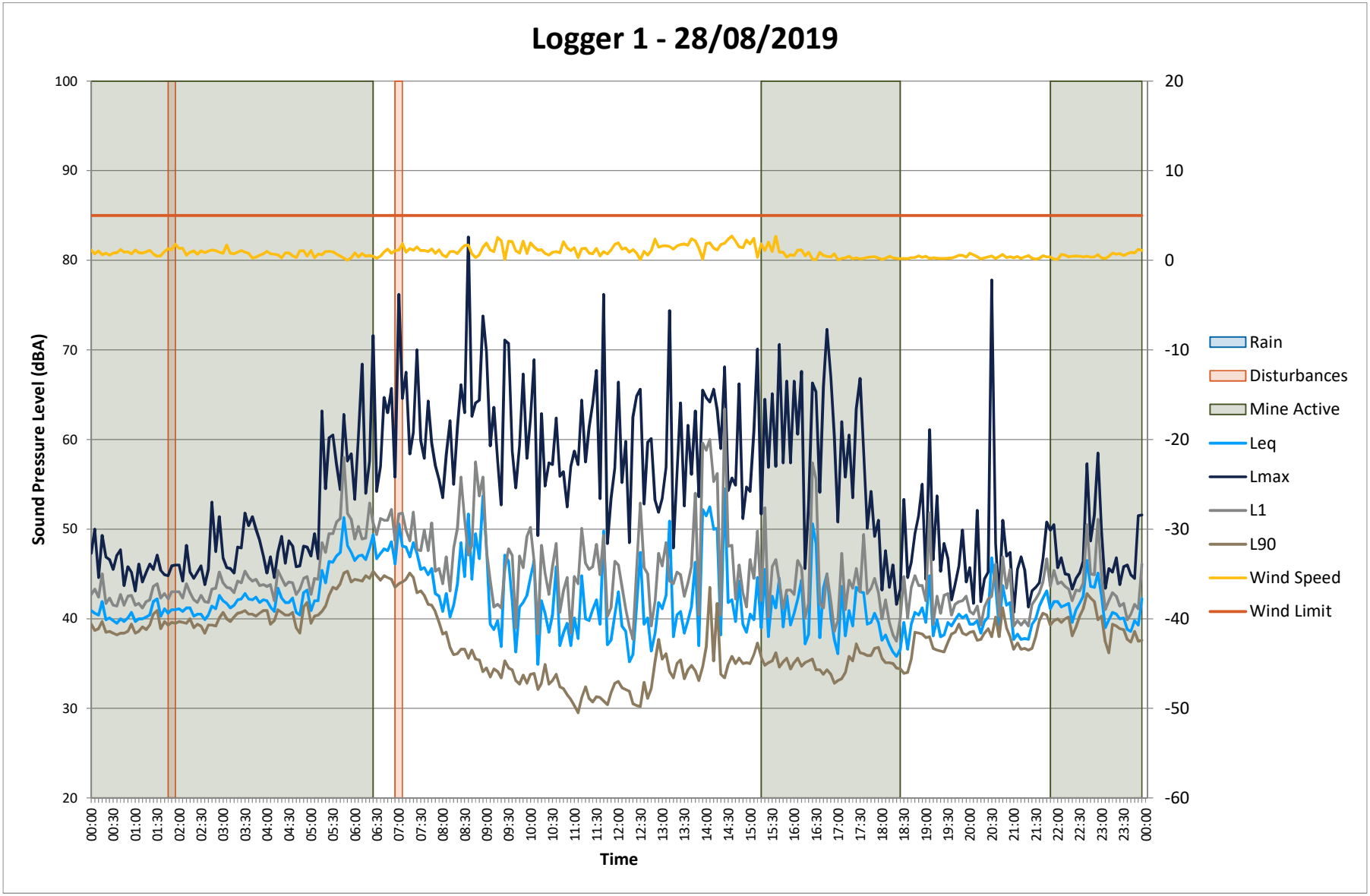

Logger 1 - 23/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
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20
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-20
-30
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

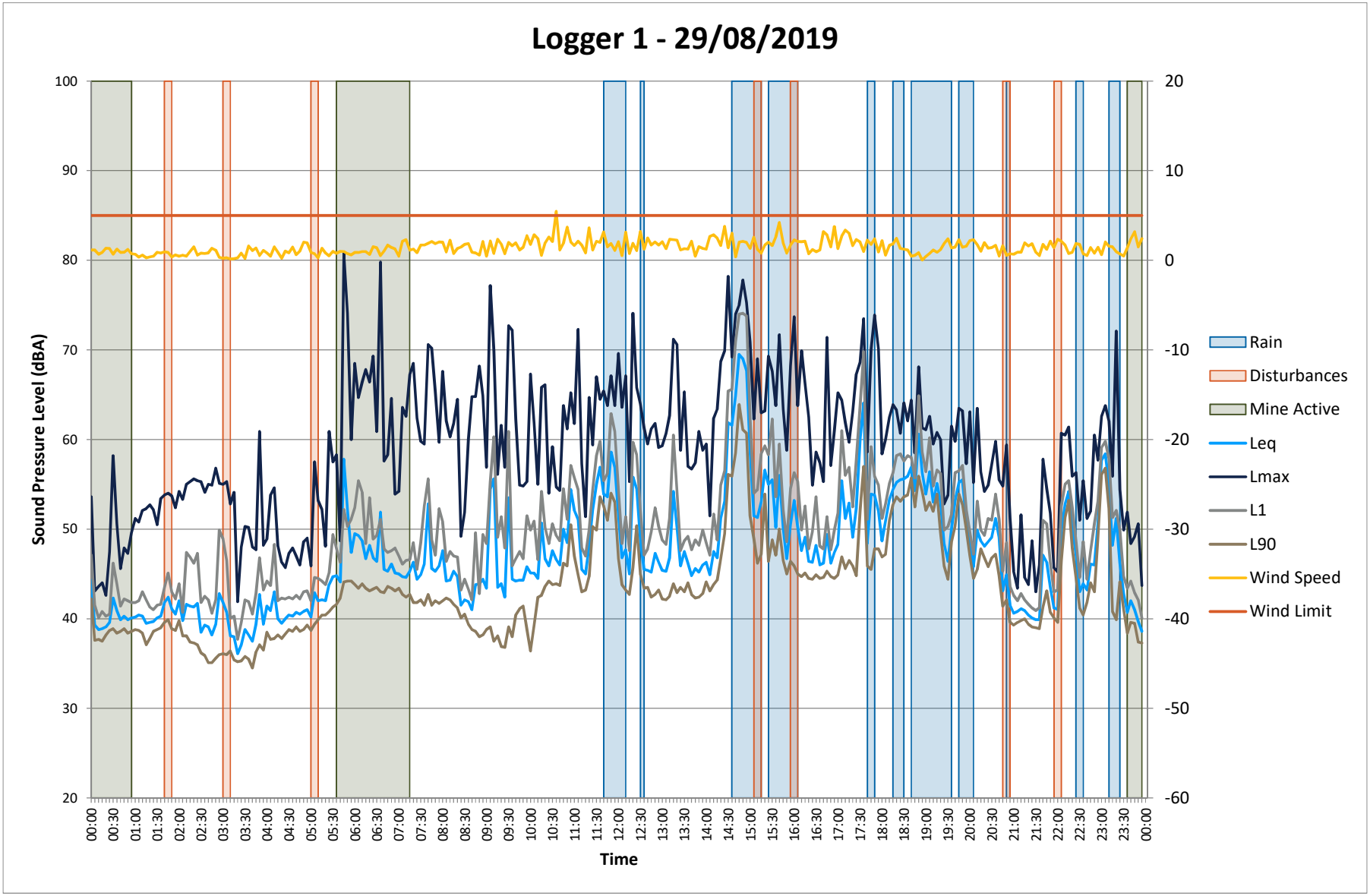

Logger 1 - 24/08/2019
Sound Pressure Level (dBA)
100
90
80
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

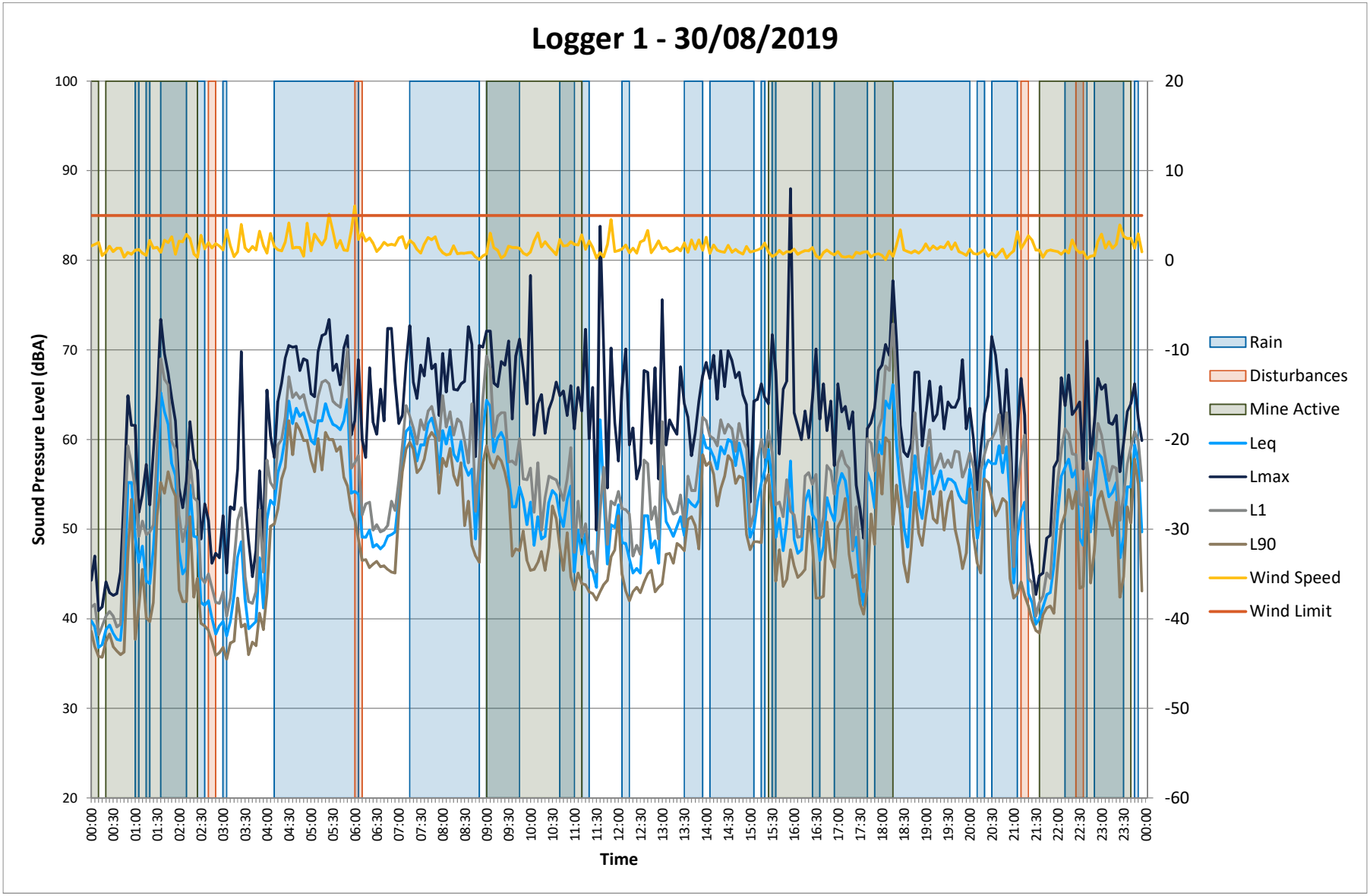

Logger 1 - 25/08/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

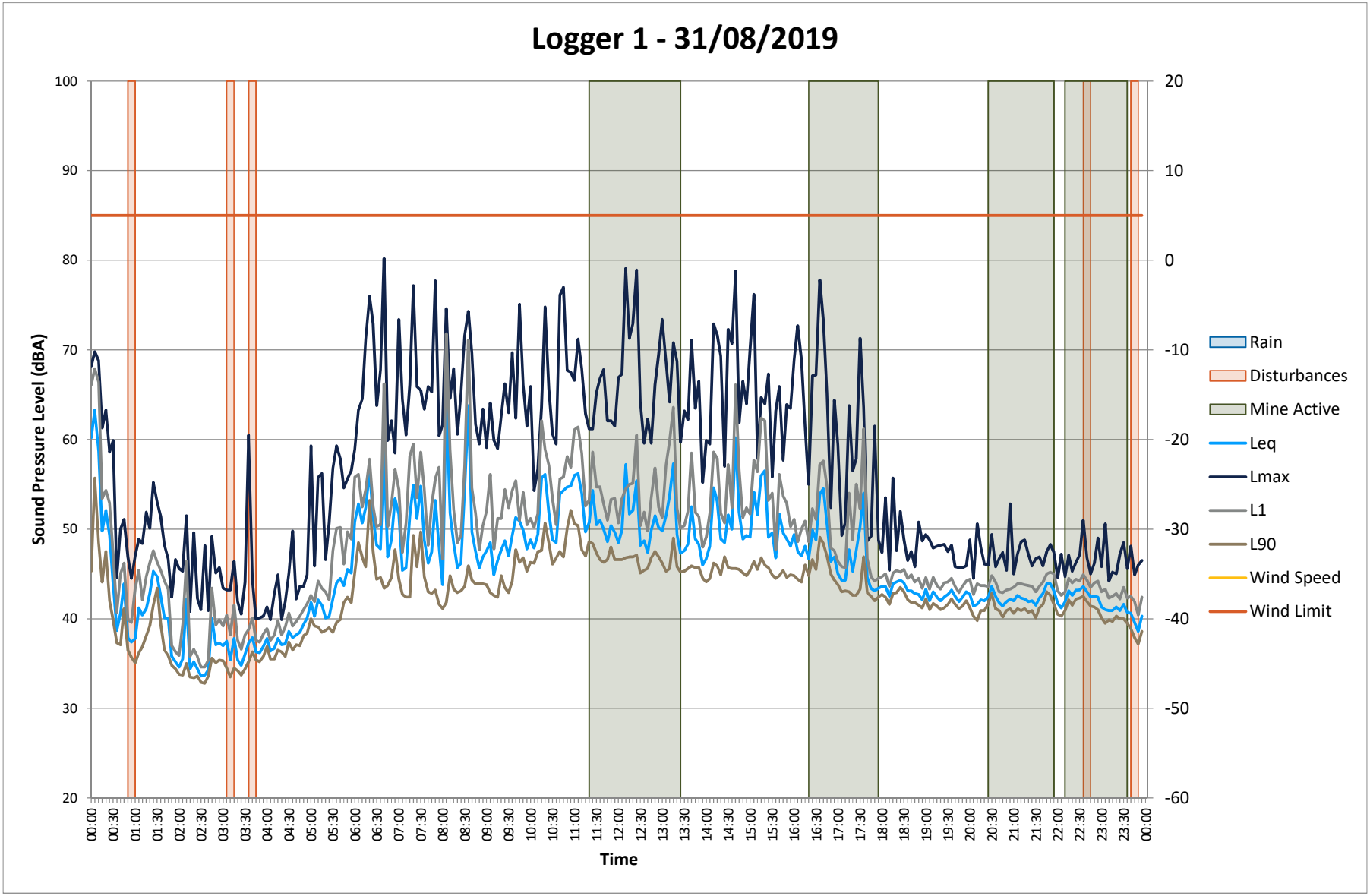

Logger 1 - 26/08/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

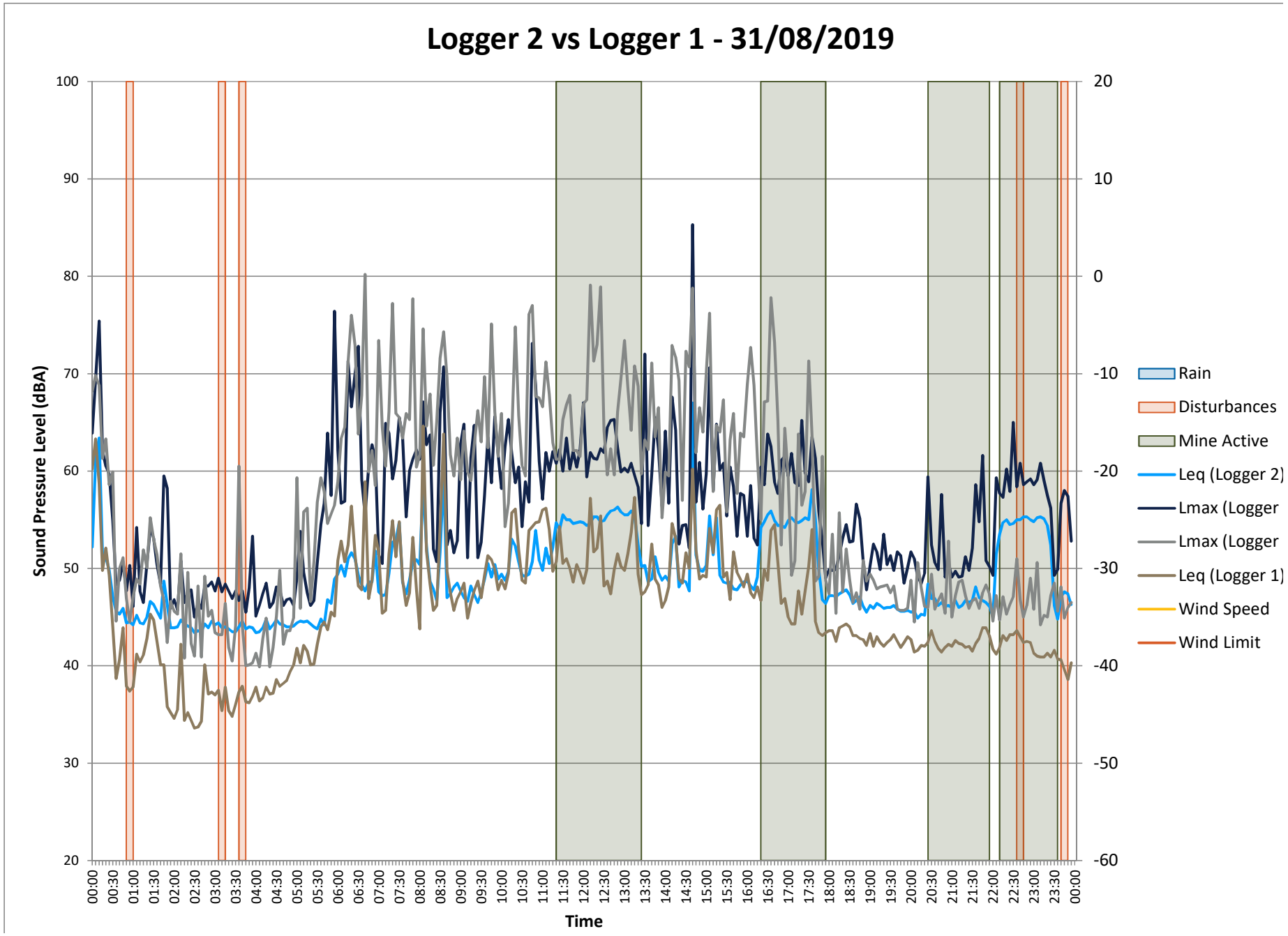

Logger 1 - 27/08/2019
Sound Pressure Level (dBA)
Time
100
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Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

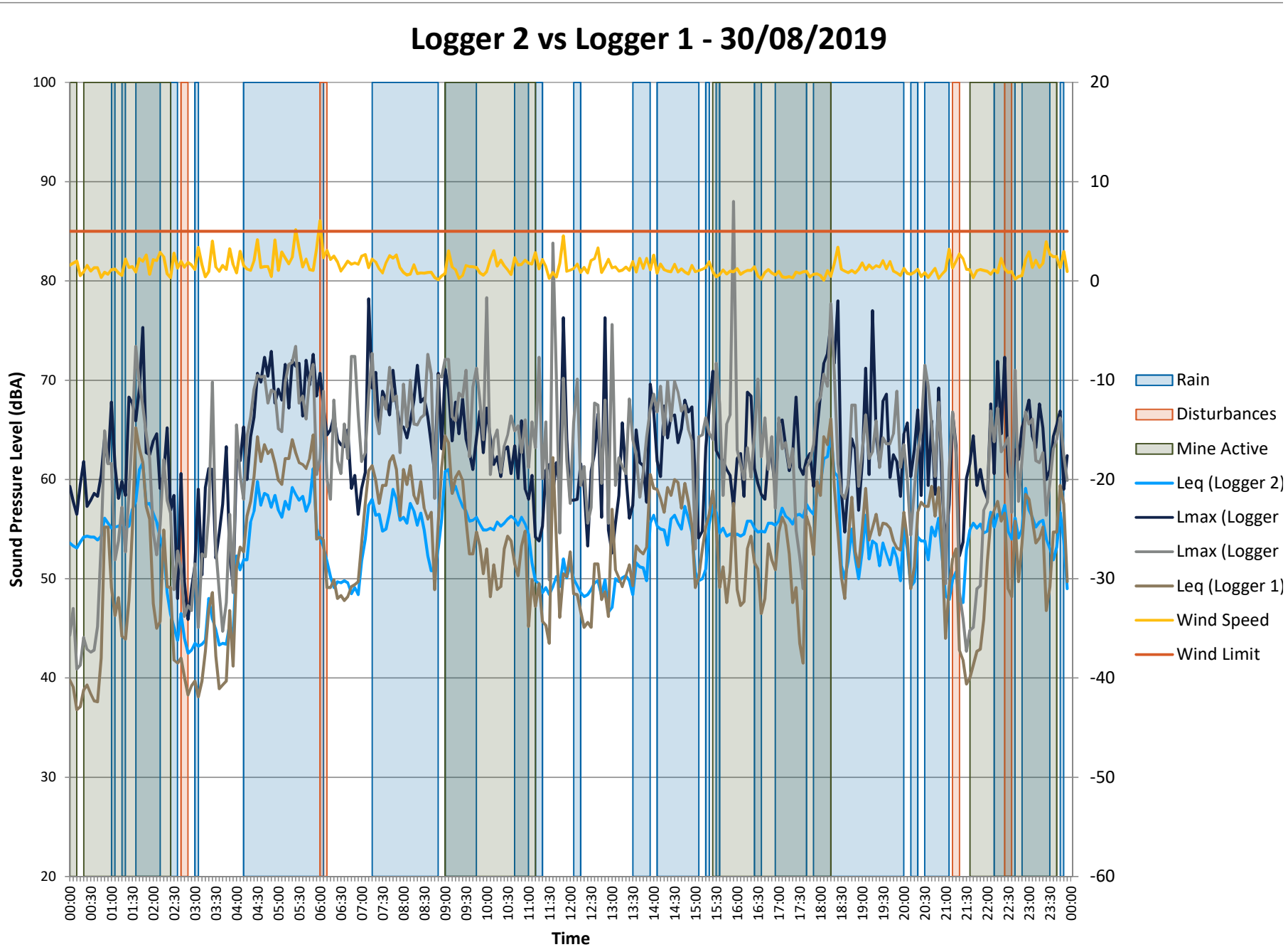

Logger 1 - 28/08/2019
Sound Pressure Level (dBA)
100
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

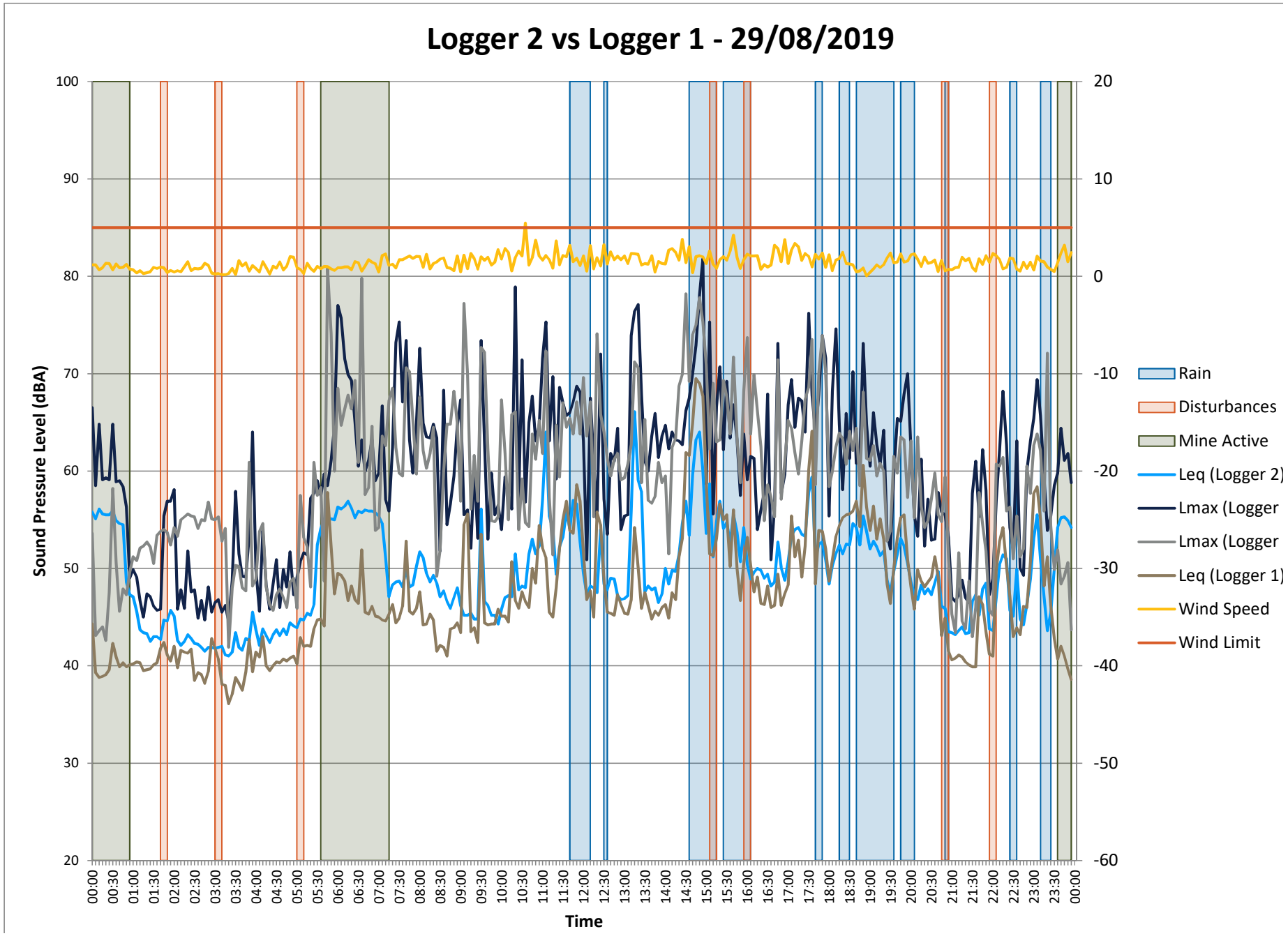

Logger 1 - 29/08/2019
Sound Pressure Level (dBA)
100
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

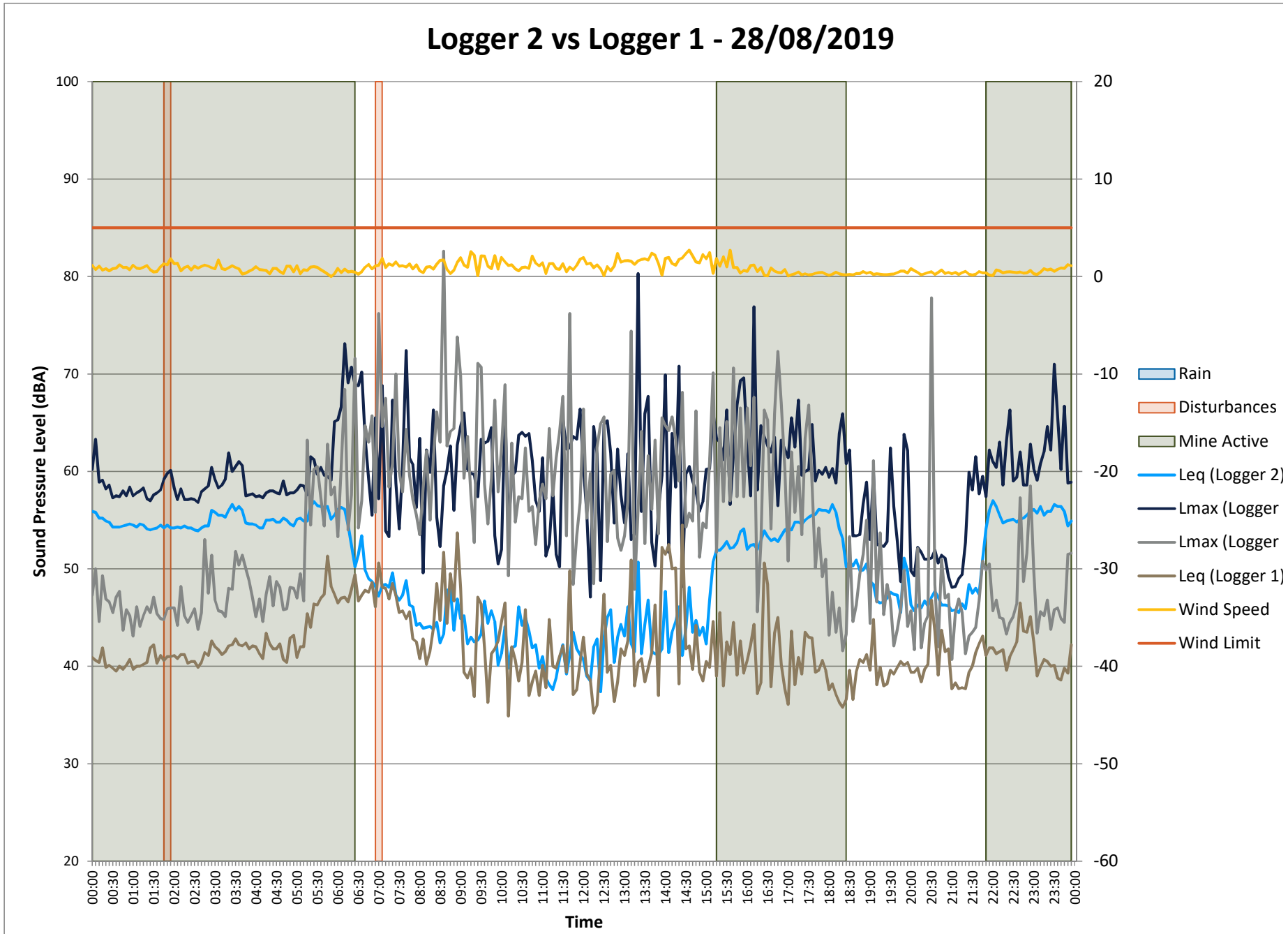

Logger 1 - 30/08/2019
Sound Pressure Level (dBA)
100
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-20
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

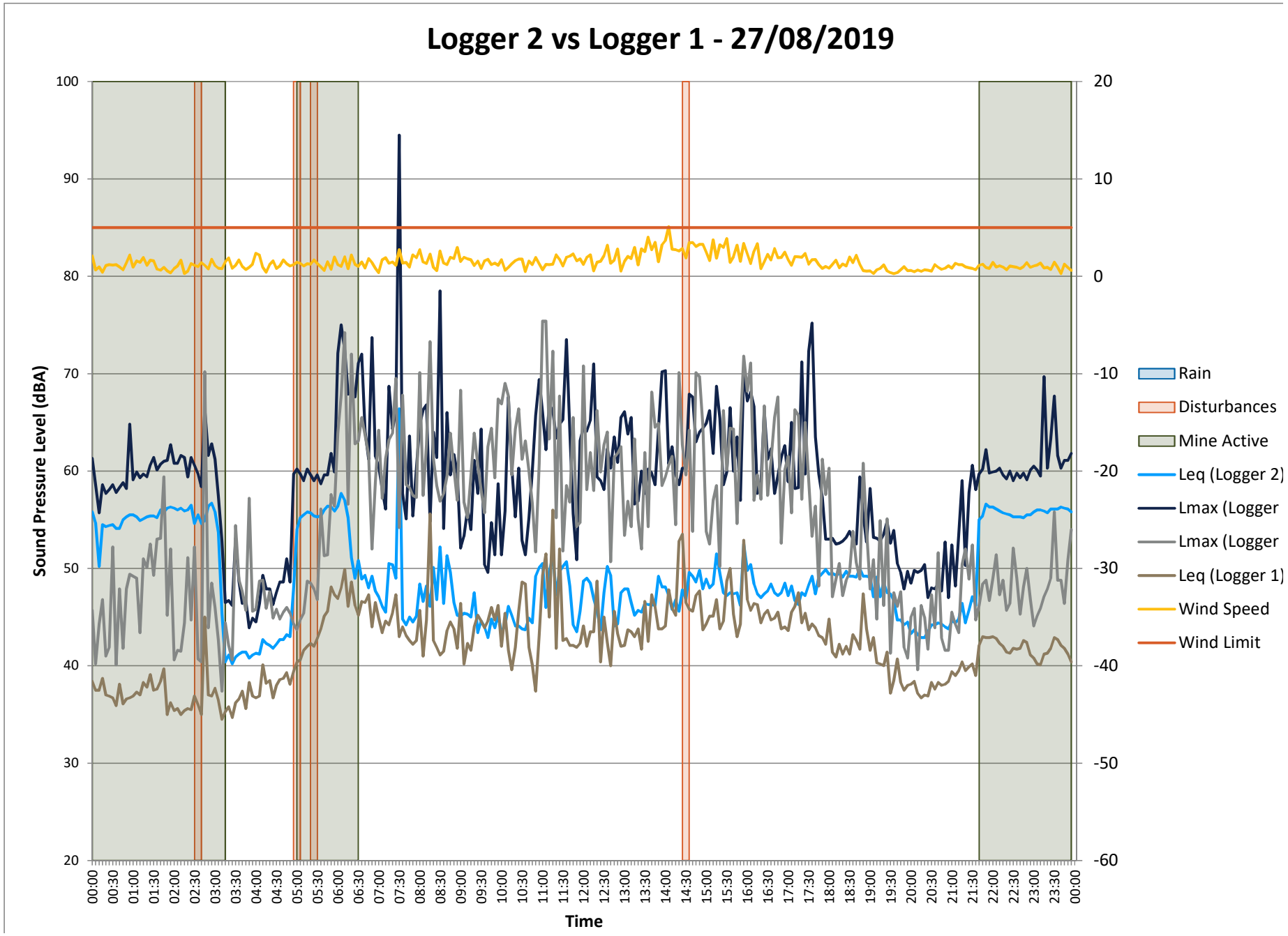

Logger 1 - 31/08/2019
Sound Pressure Level (dBA)
100
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-20
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Time
Rain
Disturbances
Mine Active
Leq
Lmax
L1
L90
Wind Speed
Wind Limit

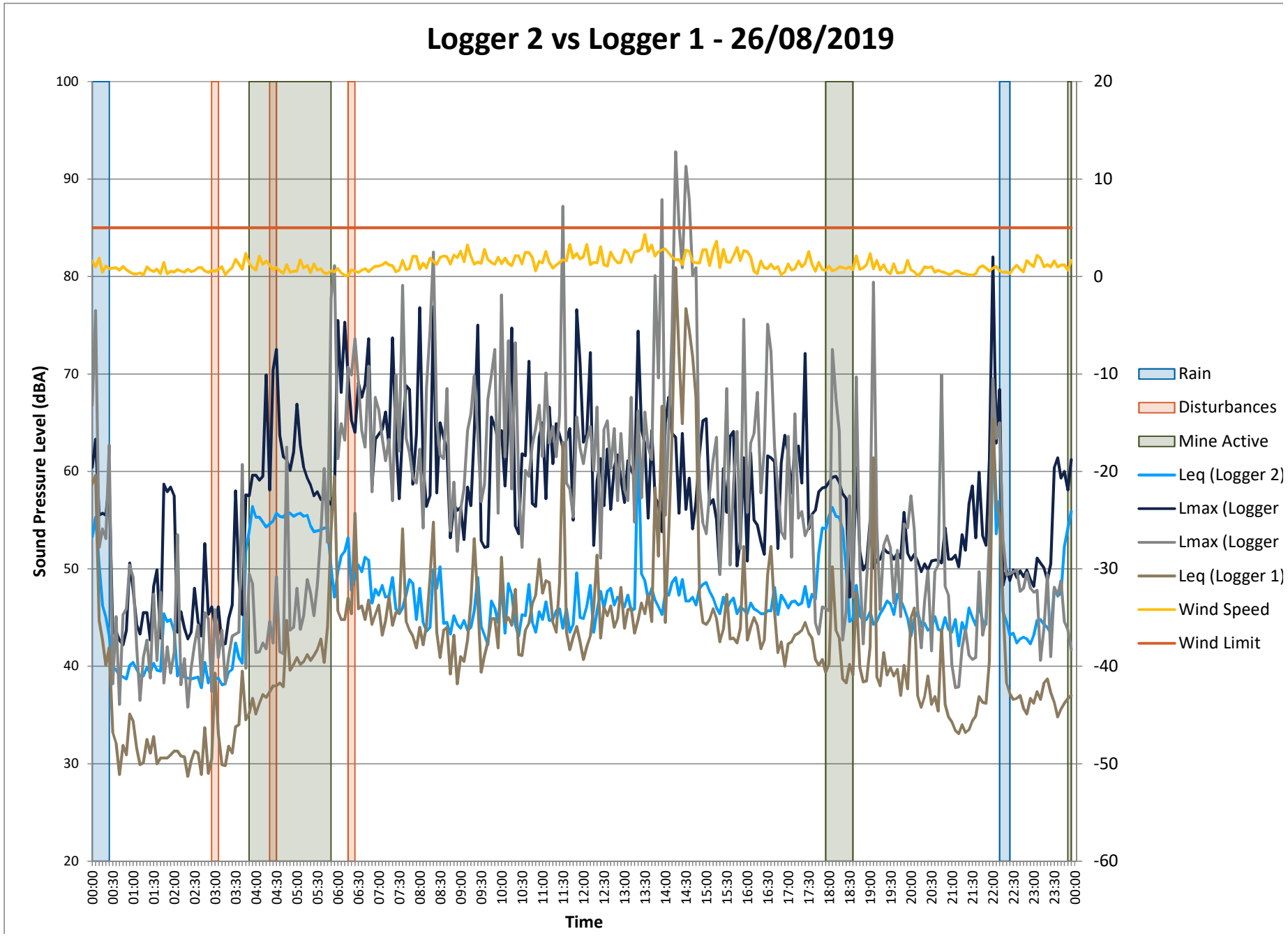

Logger 2 vs Logger 1 - 31/08/2019
Sound Pressure Level (dBA)
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Time
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Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger
Lmax (Logger
Leq (Logger 1)
Wind Speed
Wind Limit

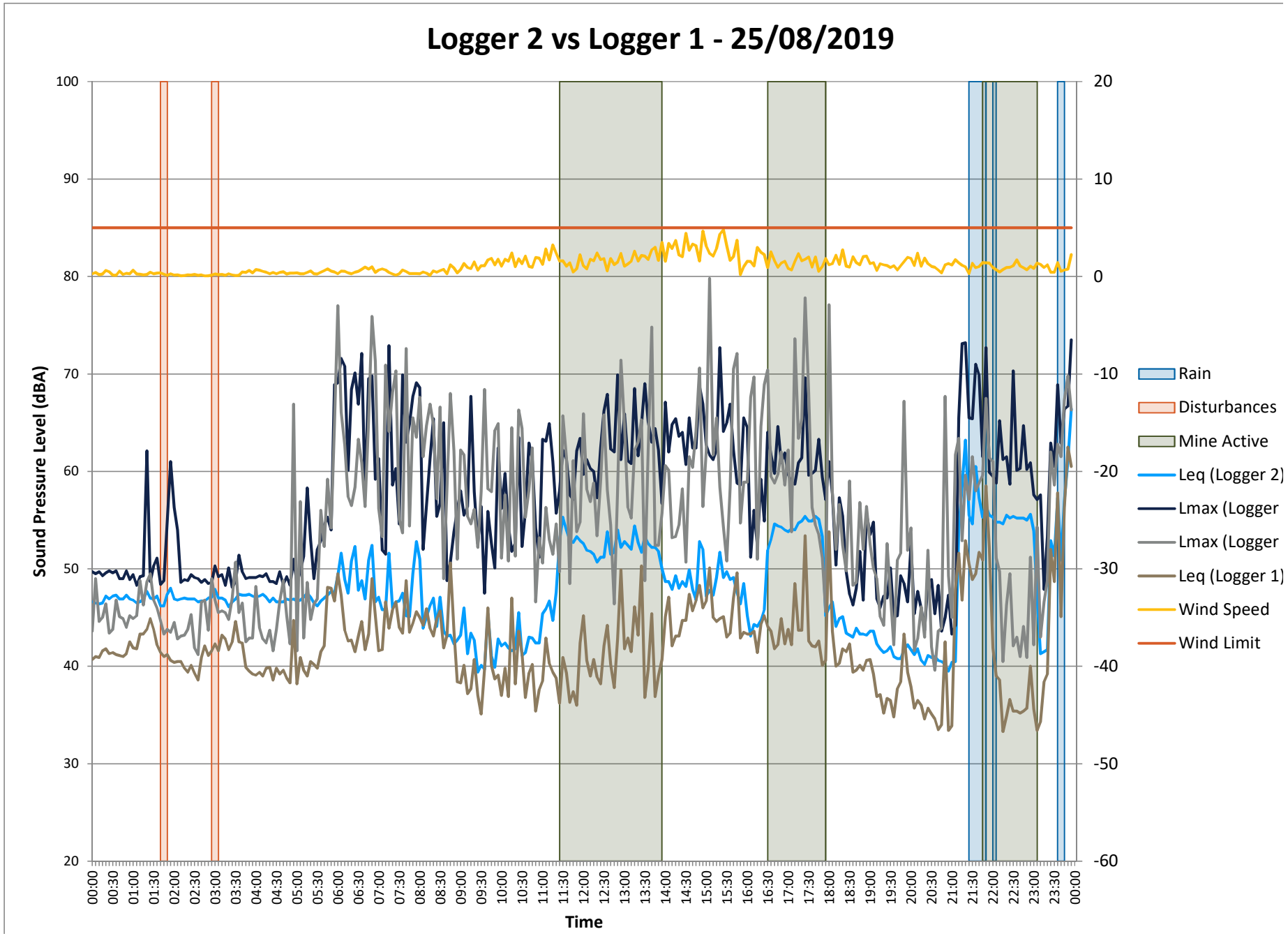

Logger 2 vs Logger 1 - 30/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger
Lmax (Logger
Leq (Logger 1)
Wind Speed
Wind Limit

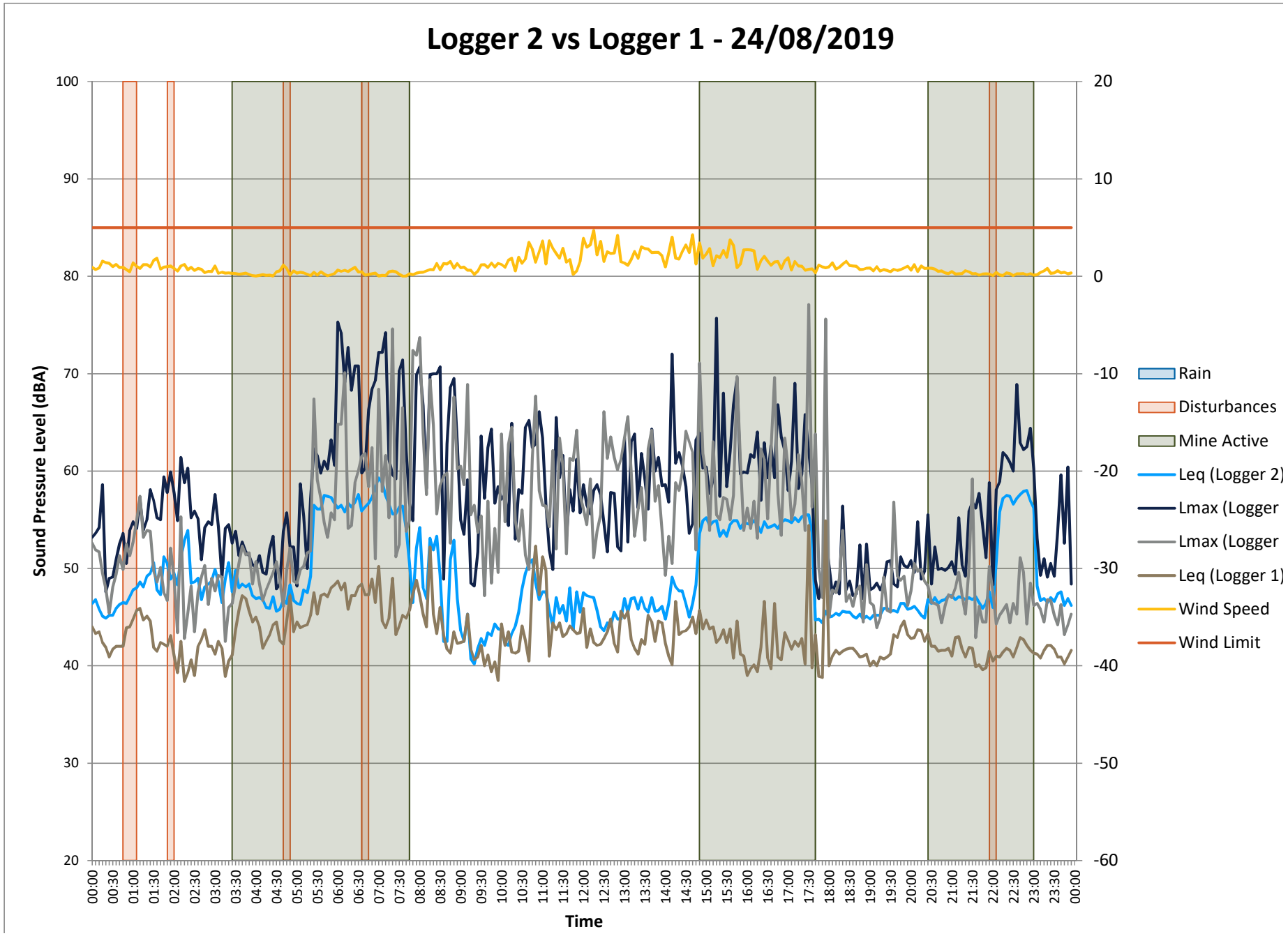

Logger 2 vs Logger 1 - 29/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger
Lmax (Logger
Leq (Logger 1)
Wind Speed
Wind Limit

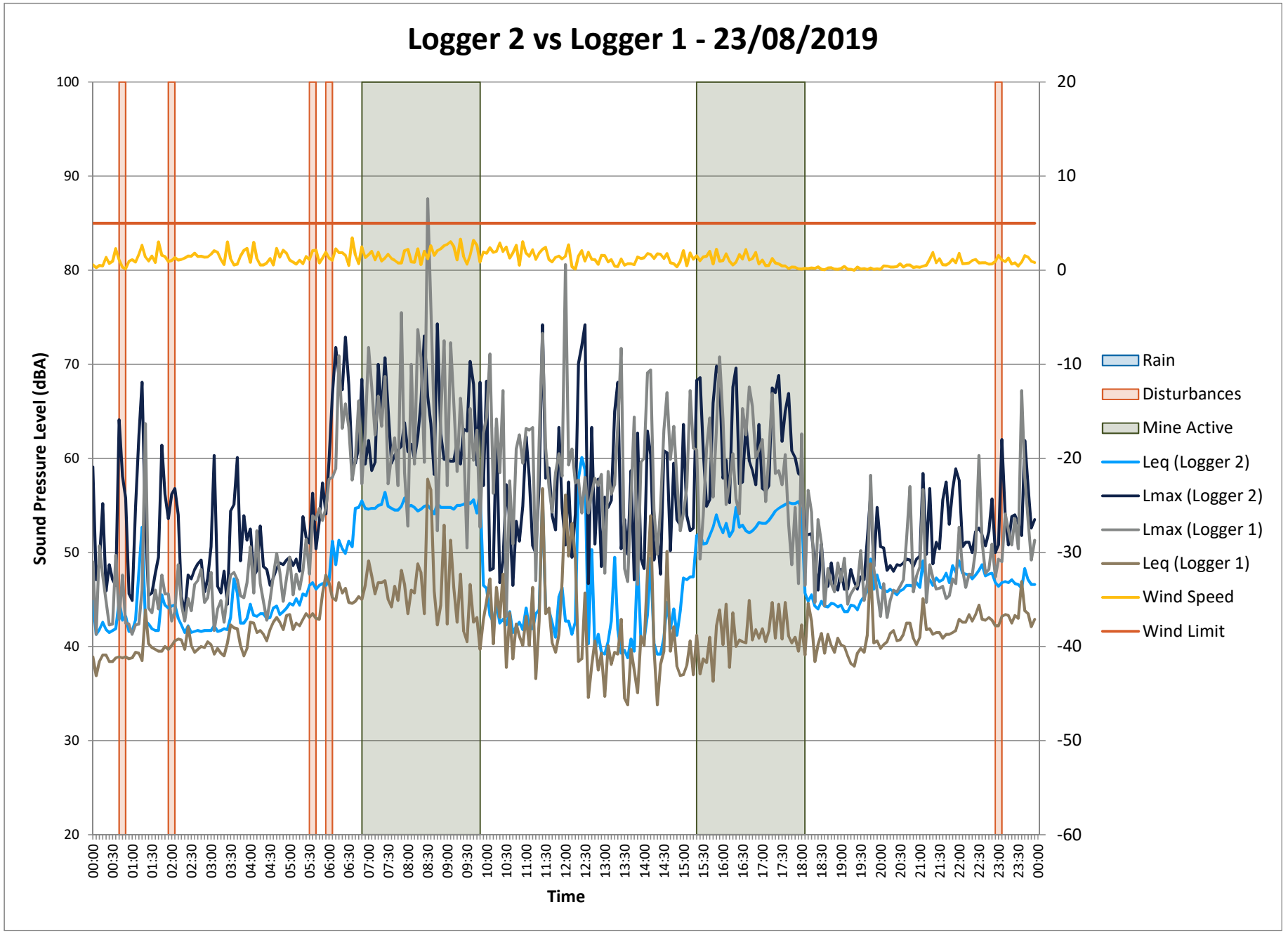

Logger 2 vs Logger 1 - 28/08/2019
Sound Pressure Level (dBA)
Time
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Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger
Lmax (Logger
Leq (Logger 1)
Wind Speed
Wind Limit

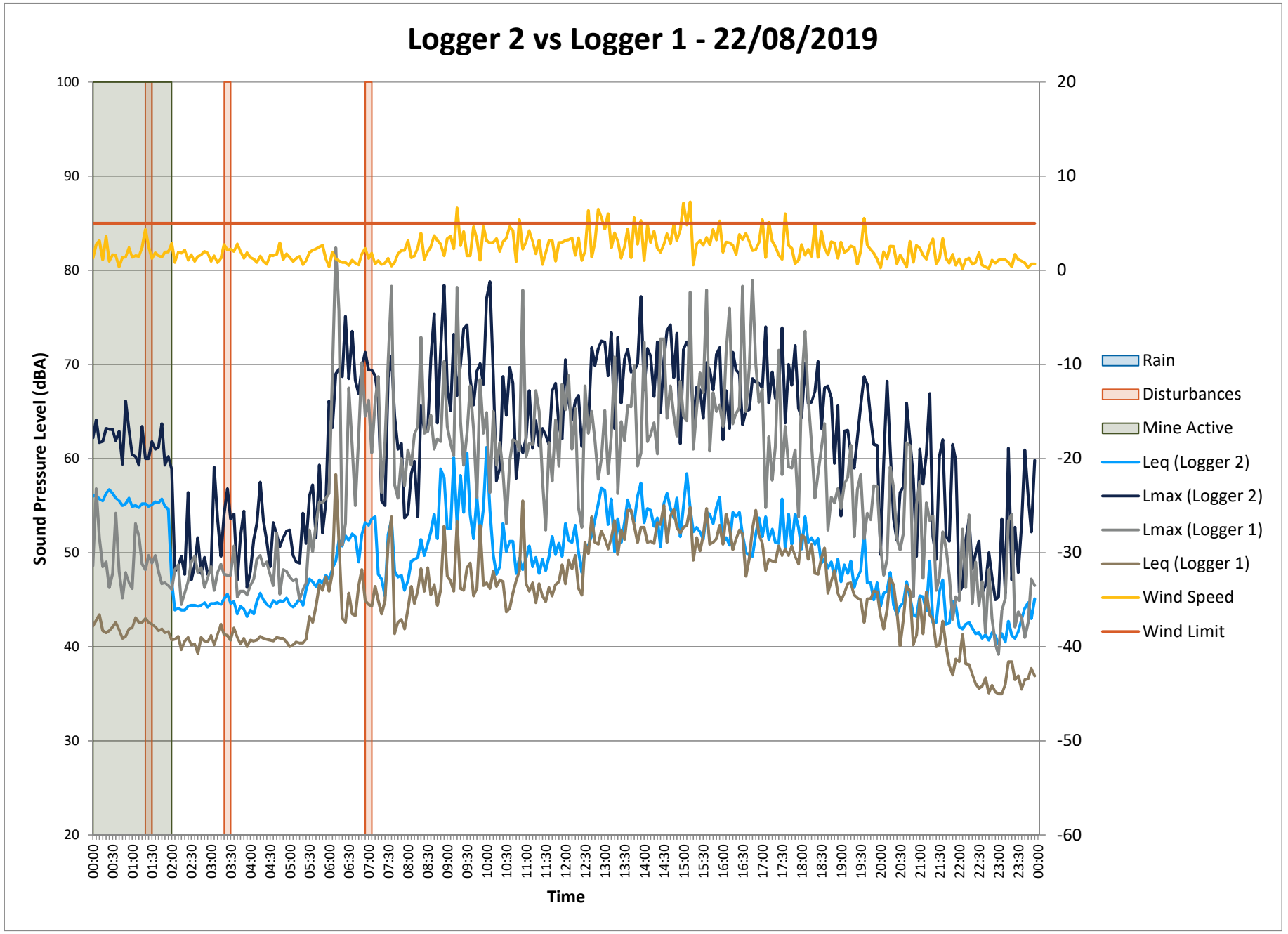

Logger 2 vs Logger 1 - 27/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger
Lmax (Logger
Leq (Logger 1)
Wind Speed
Wind Limit

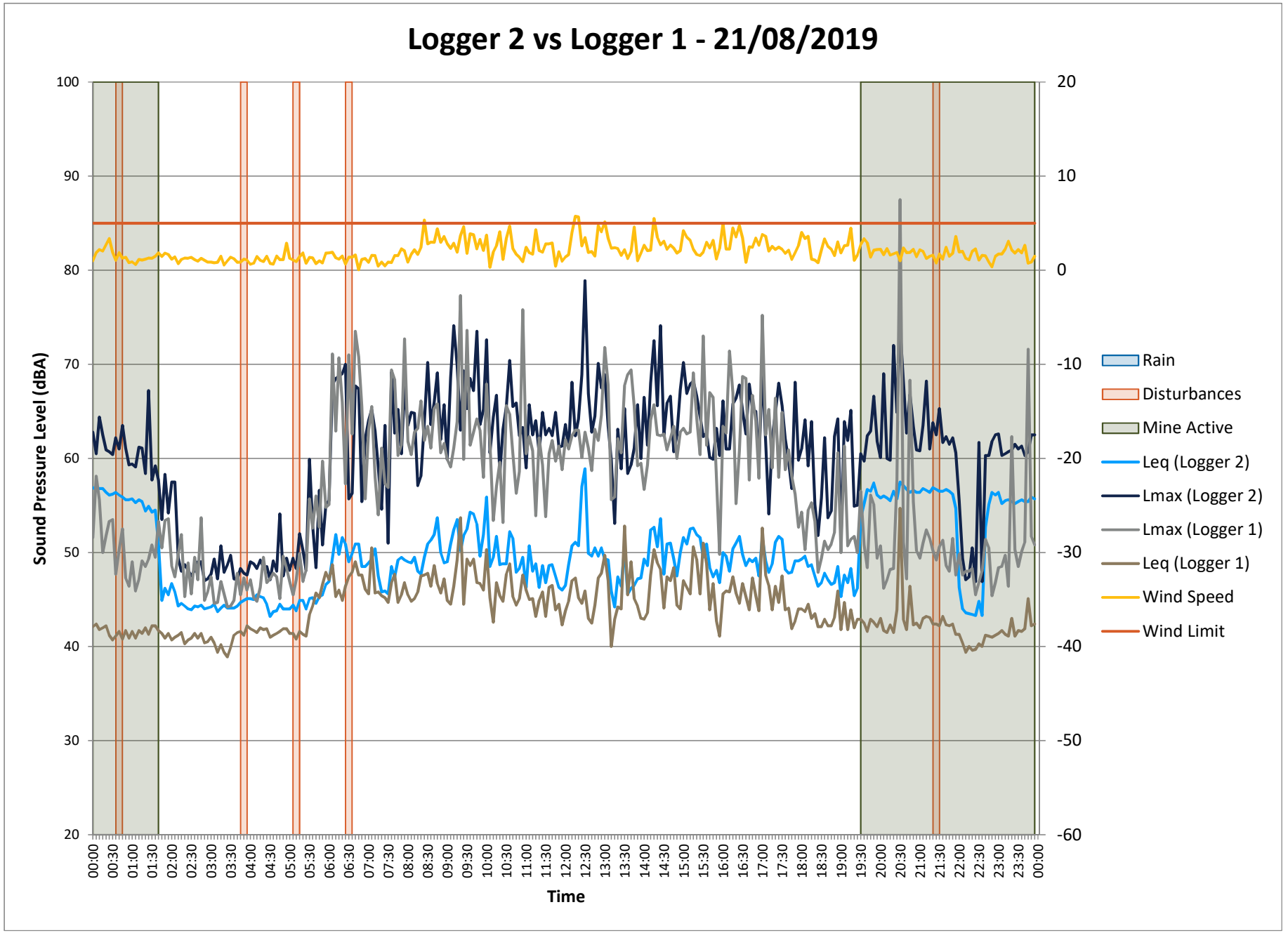

Logger 2 vs Logger 1 - 26/08/2019
Sound Pressure Level (dBA)
Time
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
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Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger
Lmax (Logger
Leq (Logger 1)
Wind Speed
Wind Limit

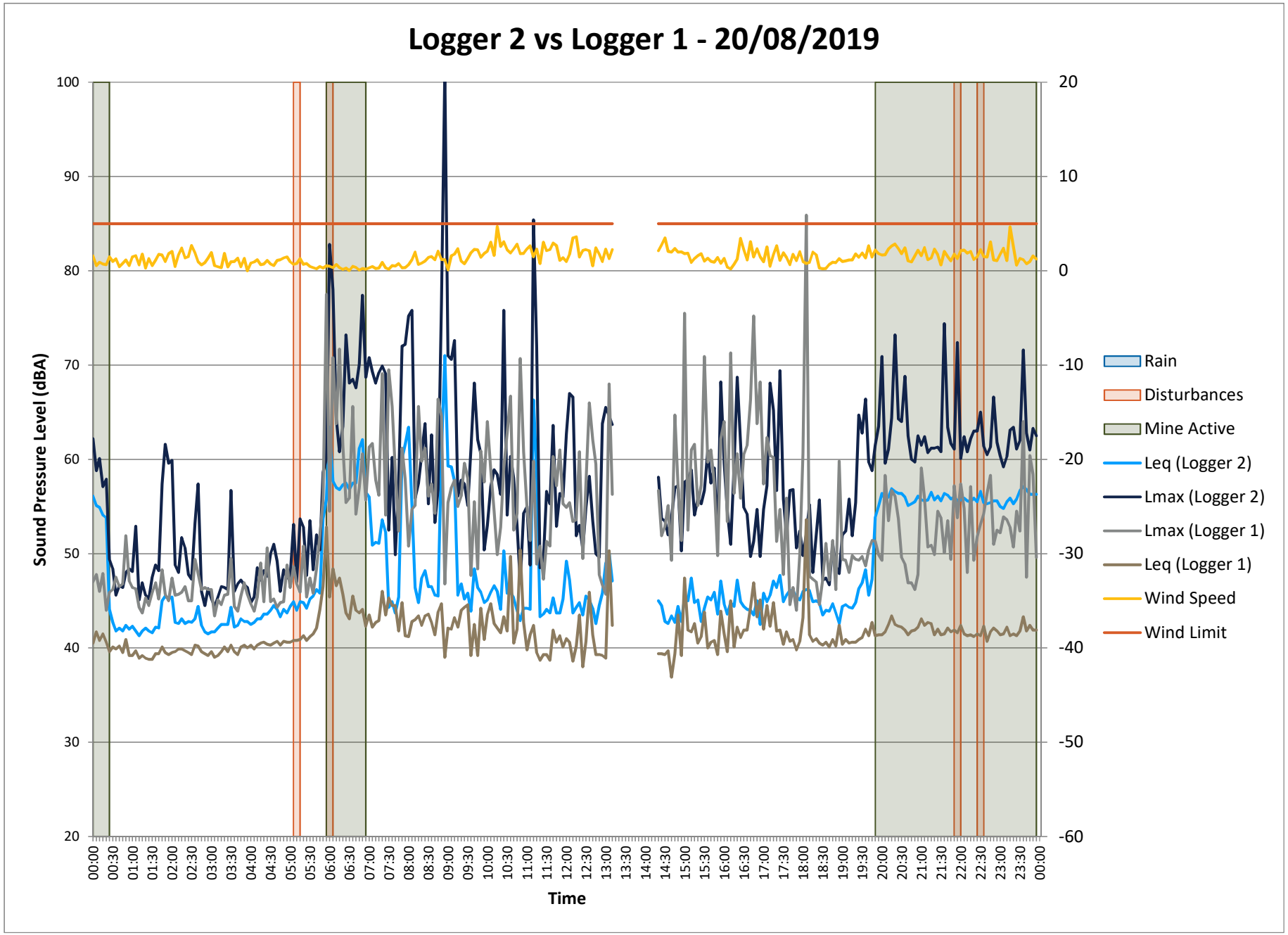

Logger 2 vs Logger 1 - 25/08/2019
Sound Pressure Level (dBA)
Time
100
90
80
70
60
50
40
30
20
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0
-10
-20
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Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger
Lmax (Logger
Leq (Logger 1)
Wind Speed
Wind Limit

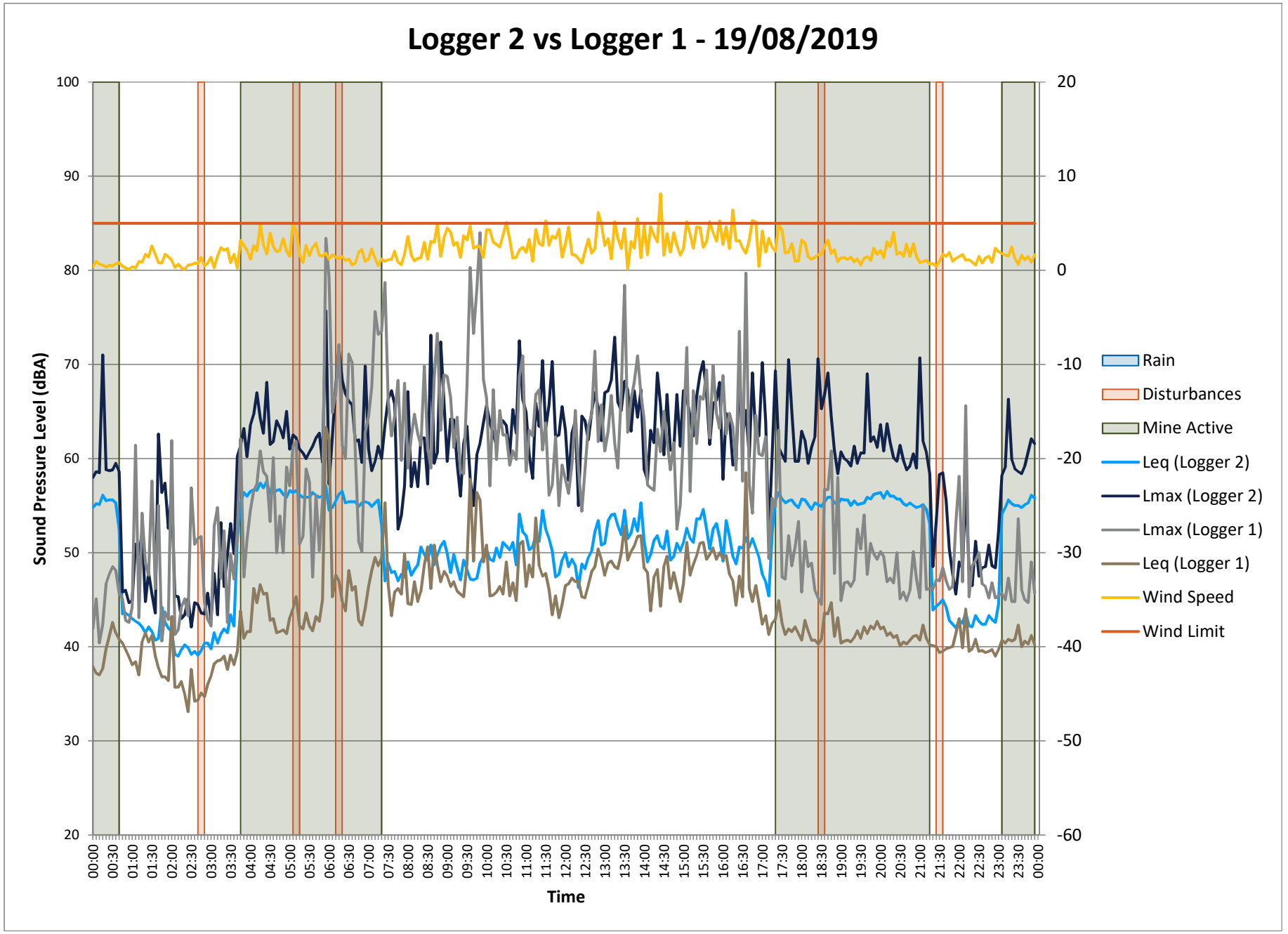

Logger 2 vs Logger 1 - 24/08/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger
Lmax (Logger
Leq (Logger 1)
Wind Speed
Wind Limit

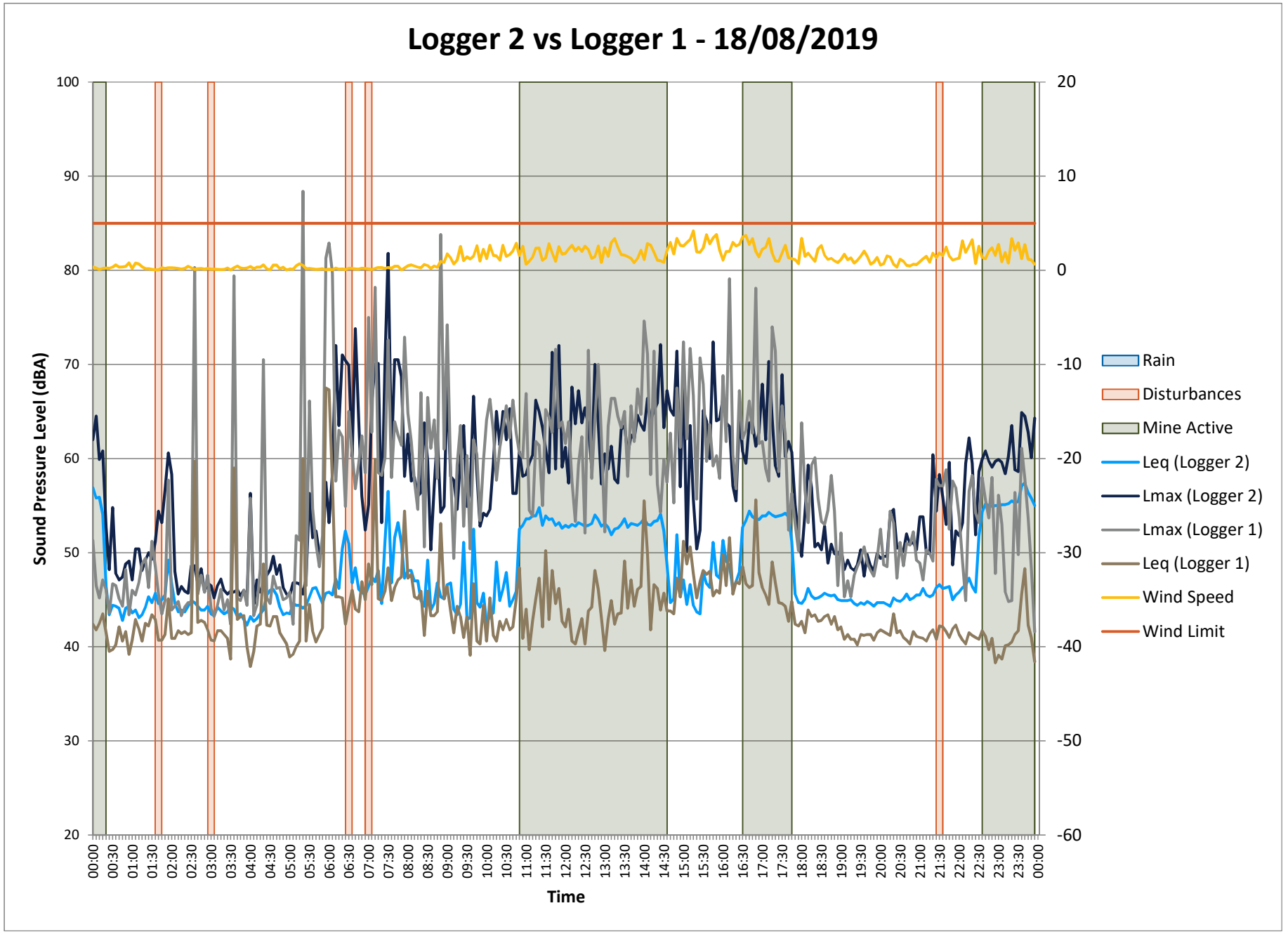

Logger 2 vs Logger 1 - 23/08/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

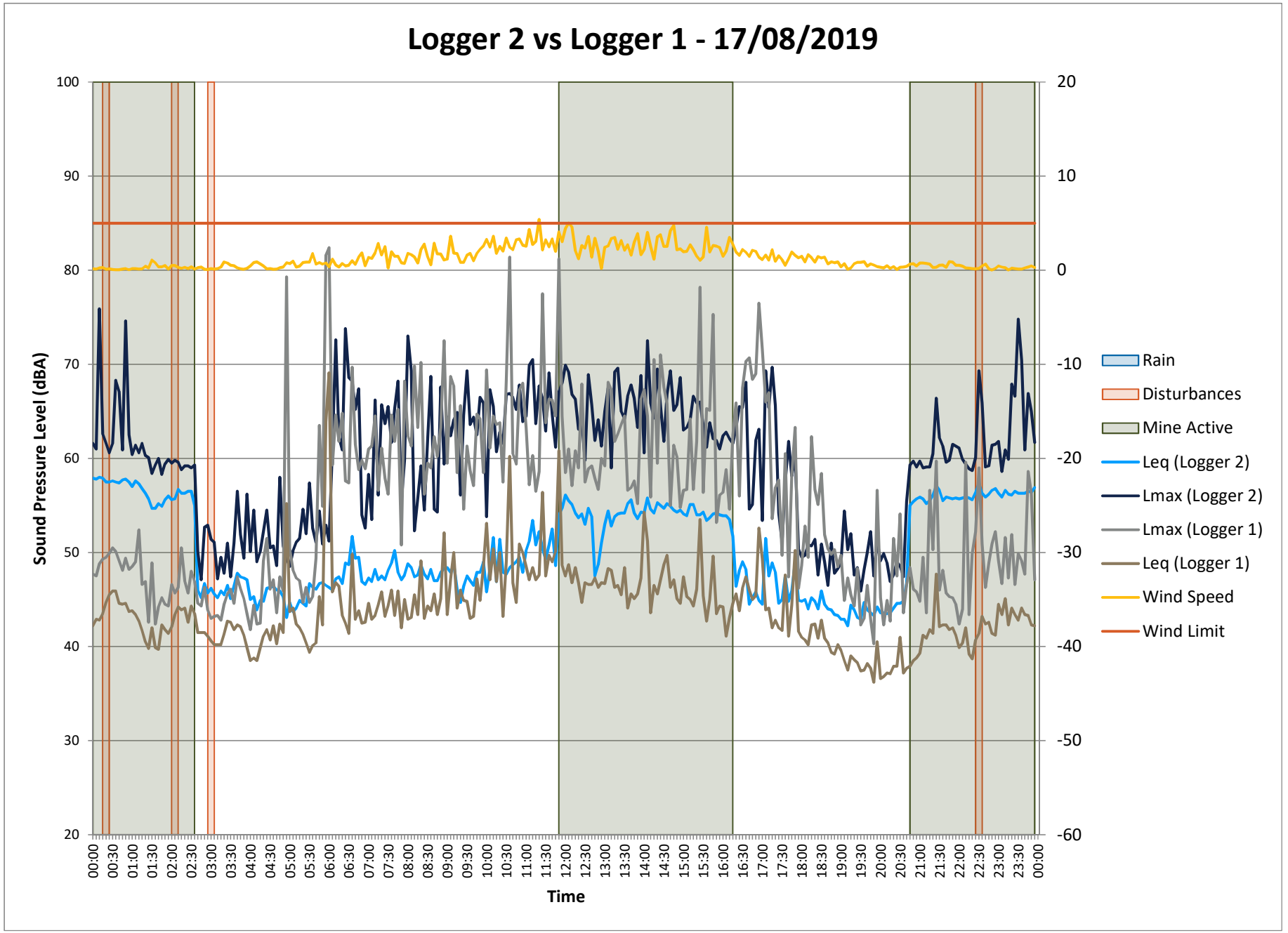

Logger 2 vs Logger 1 - 22/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

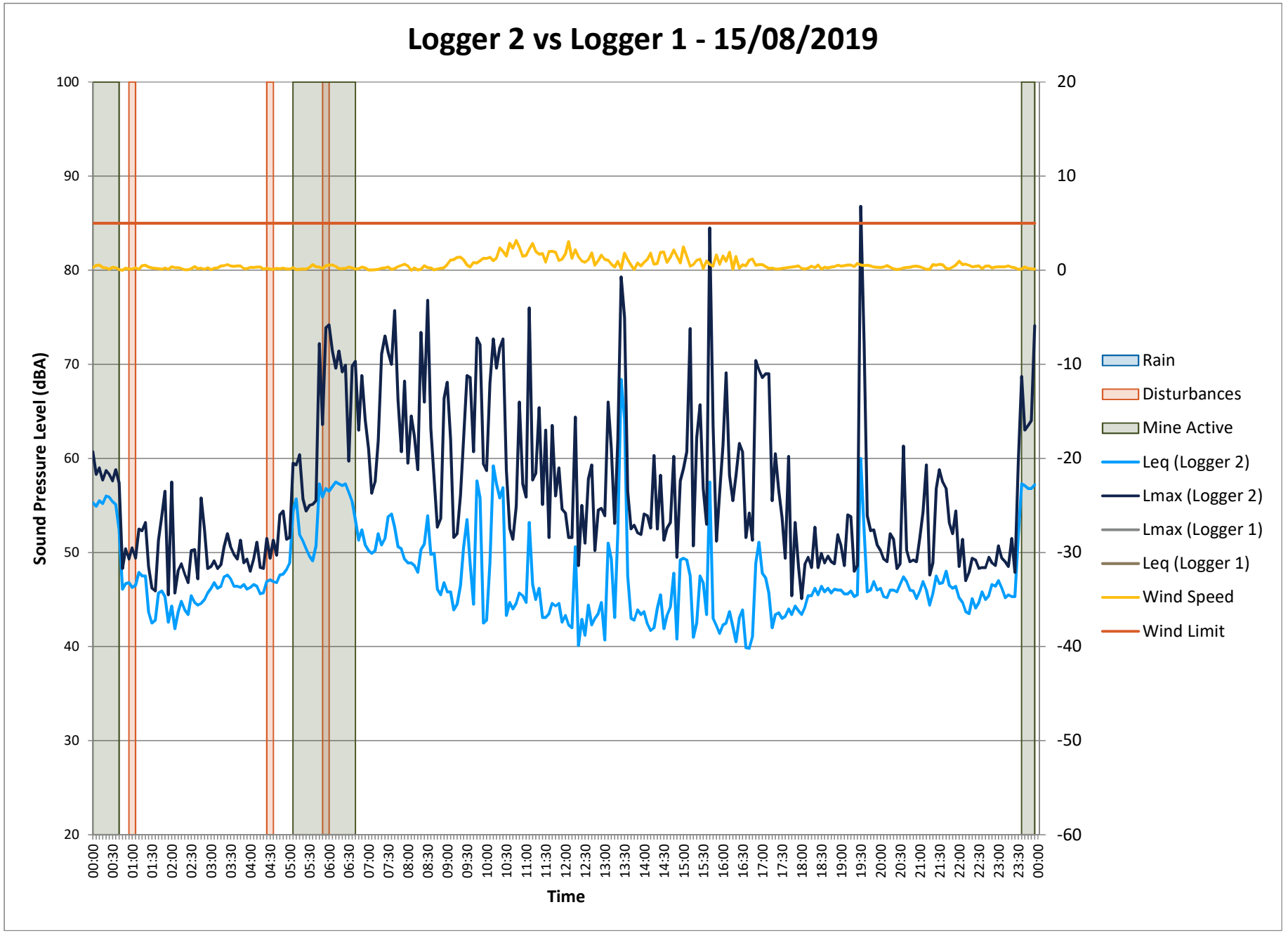

Logger 2 vs Logger 1 - 21/08/2019
Sound Pressure Level (dBA)
100
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

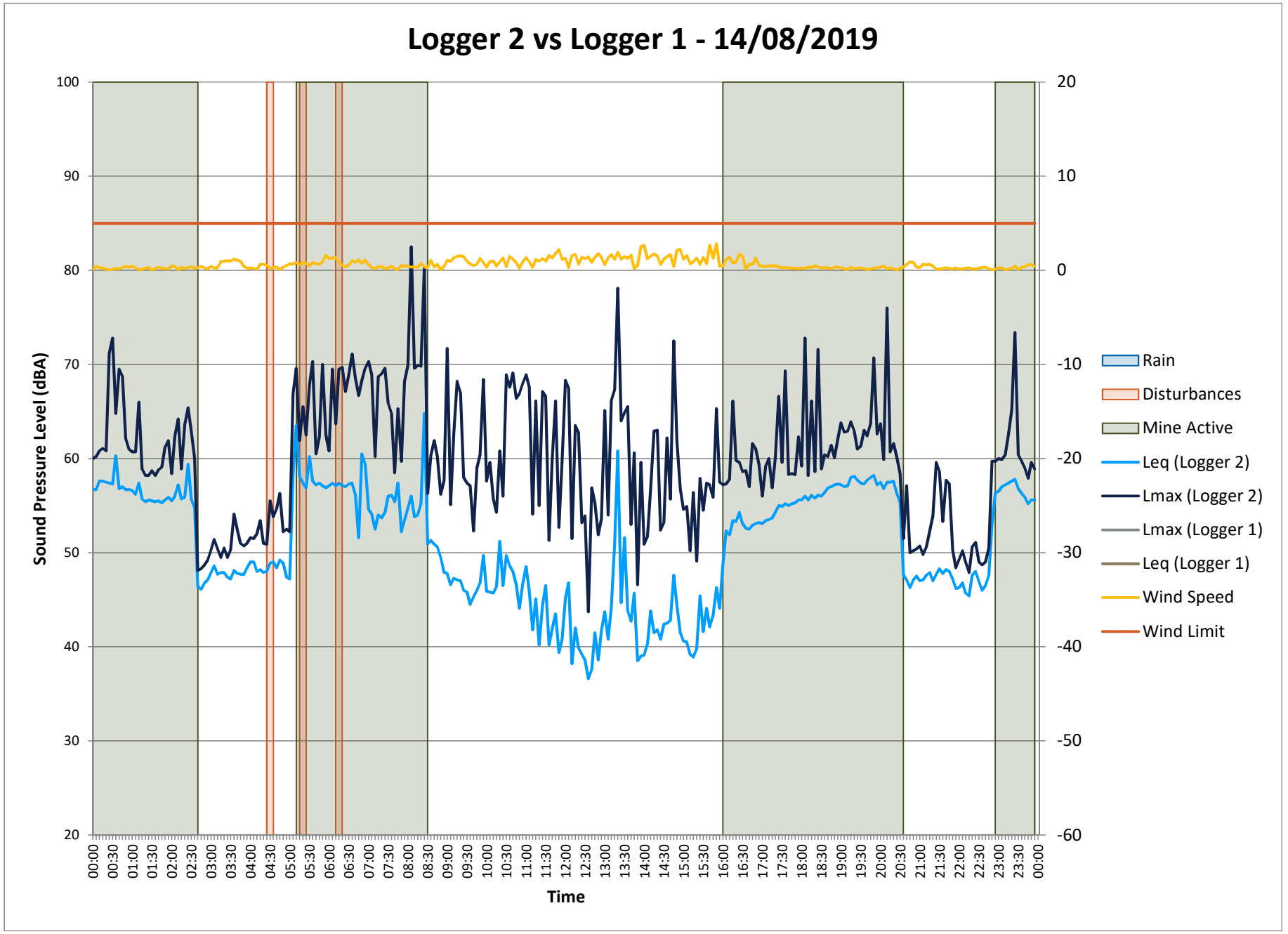

Logger 2 vs Logger 1 - 20/08/2019
Sound Pressure Level (dBA)
100
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

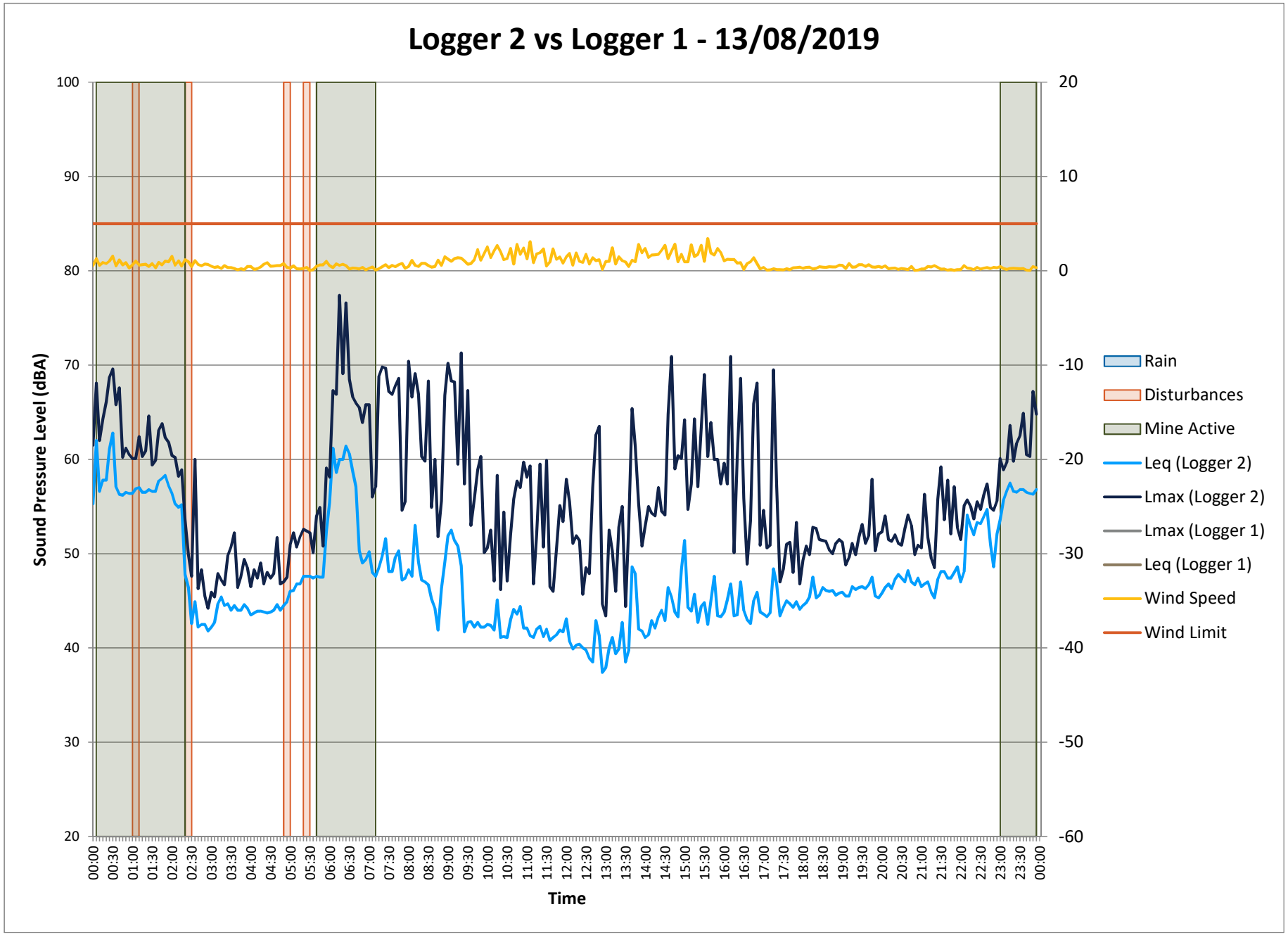

Logger 2 vs Logger 1 - 19/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

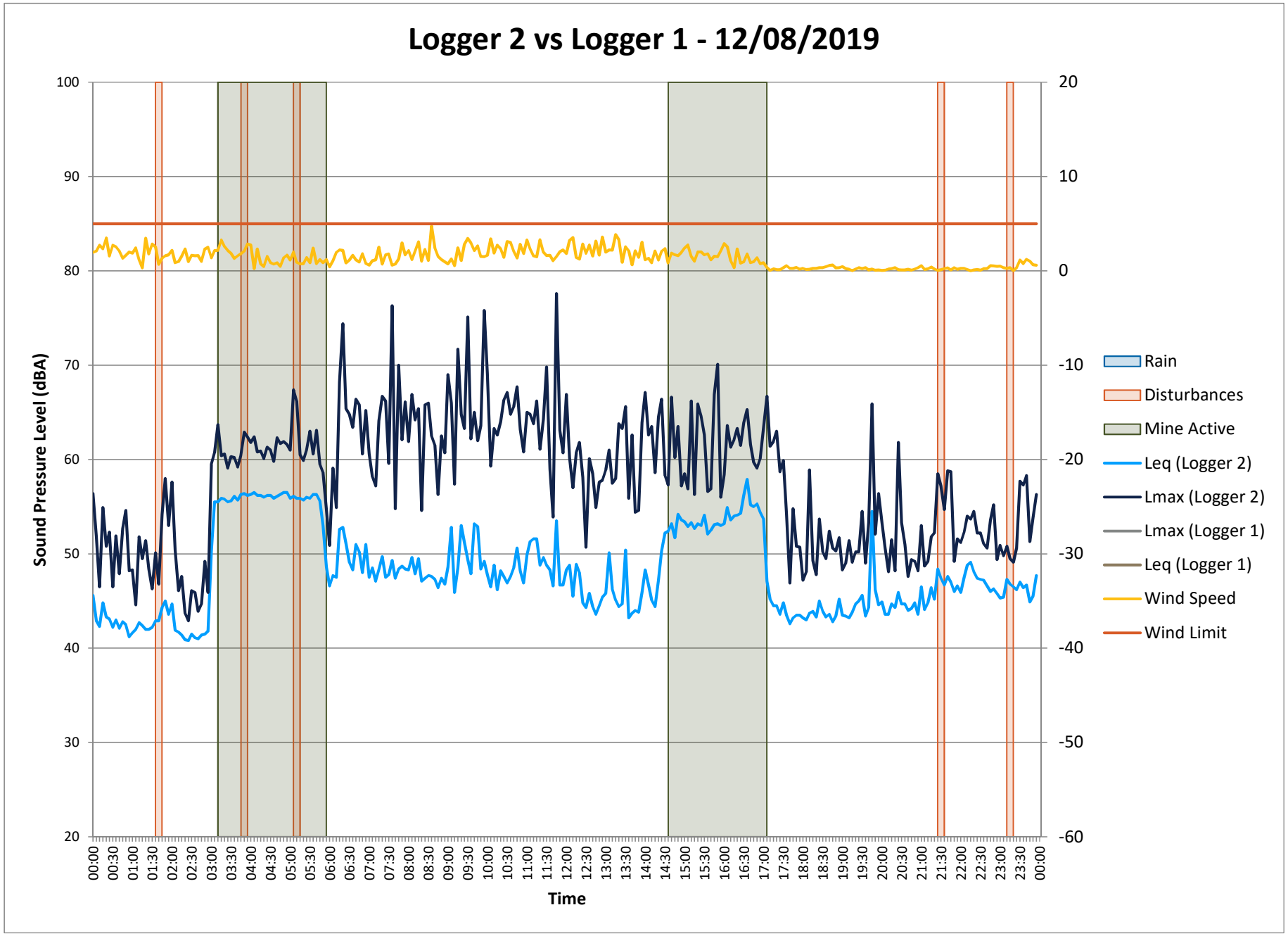

Logger 2 vs Logger 1 - 18/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

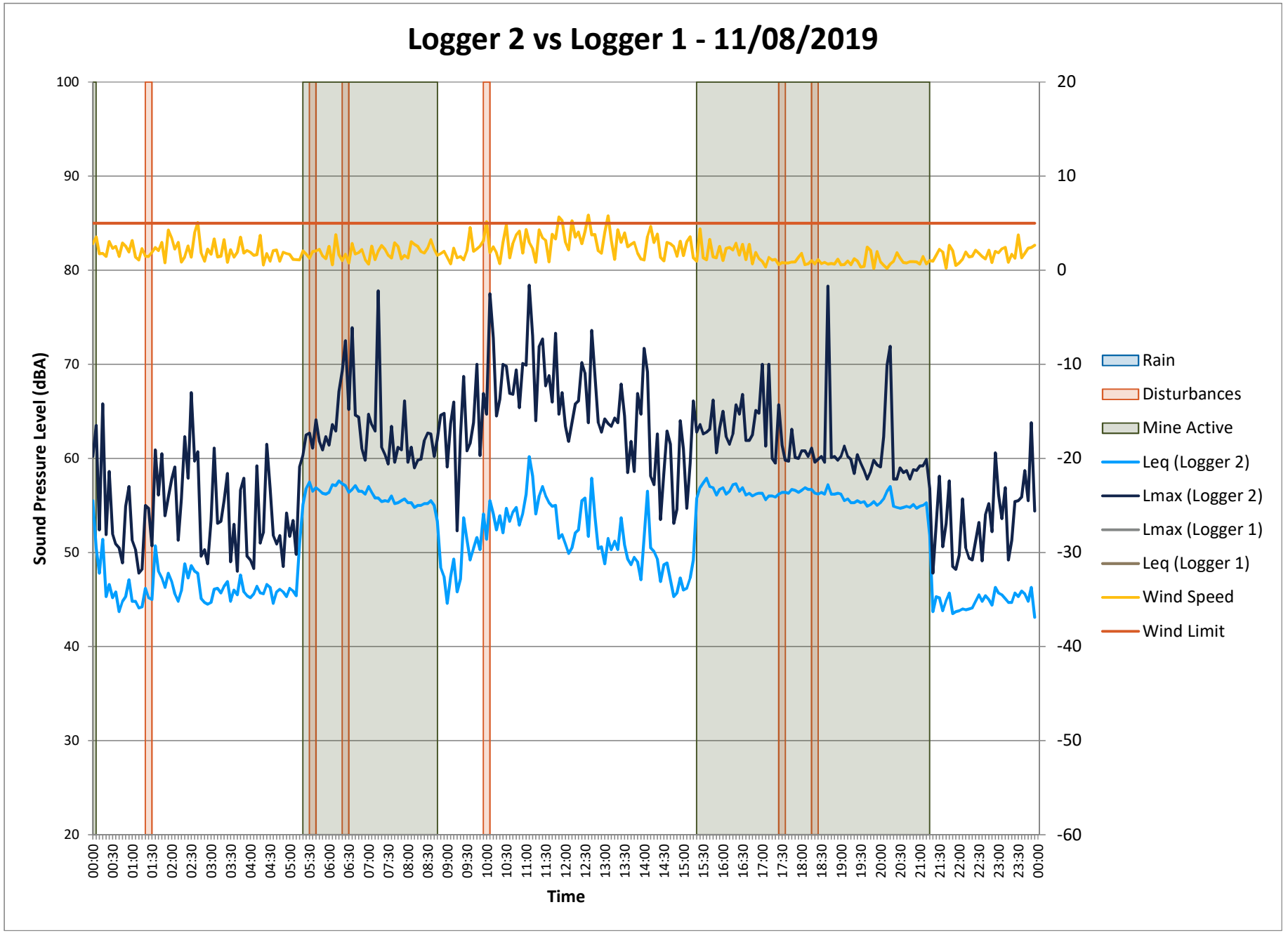

Logger 2 vs Logger 1 - 17/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

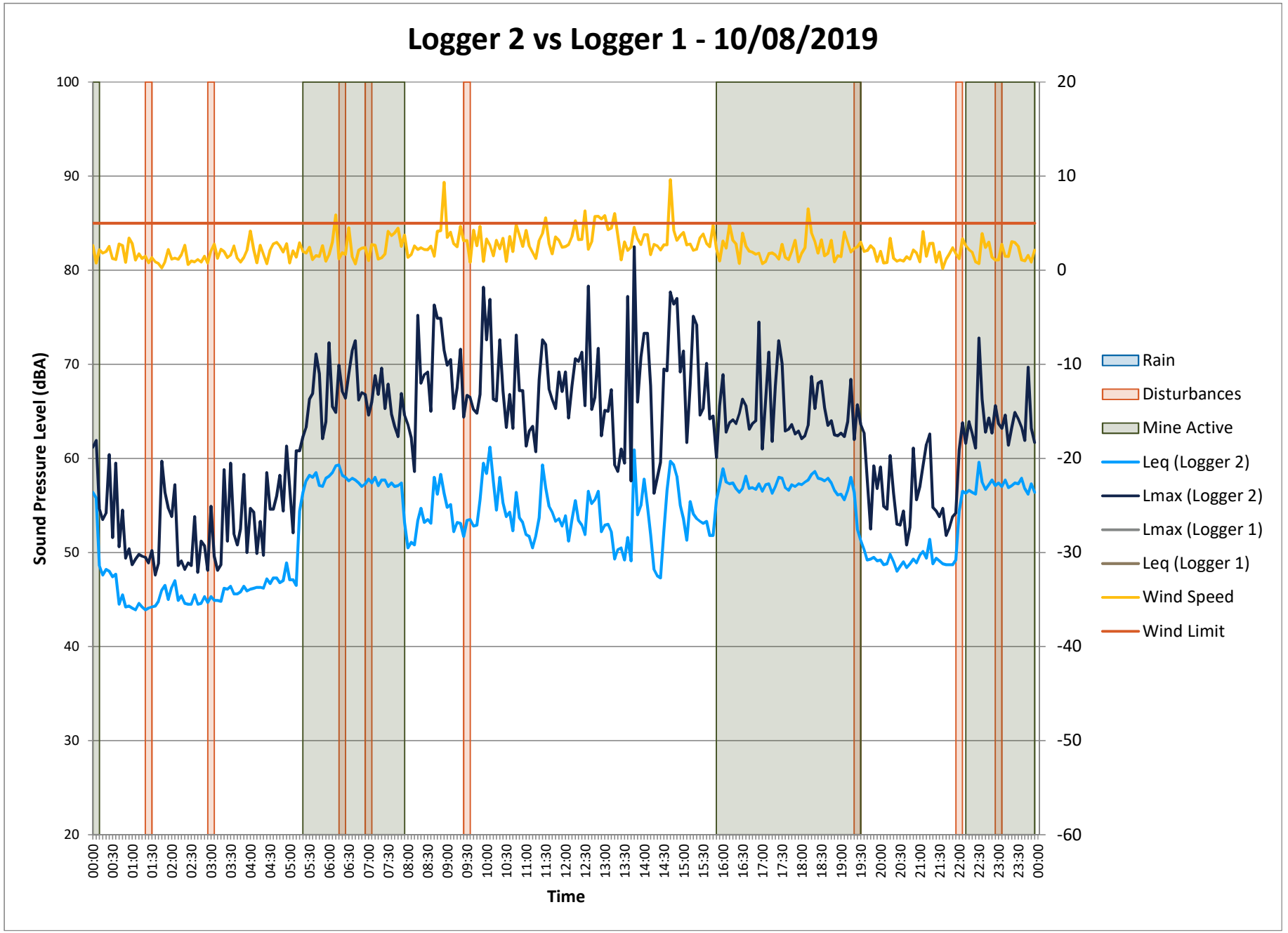

Logger 2 vs Logger 1 - 15/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

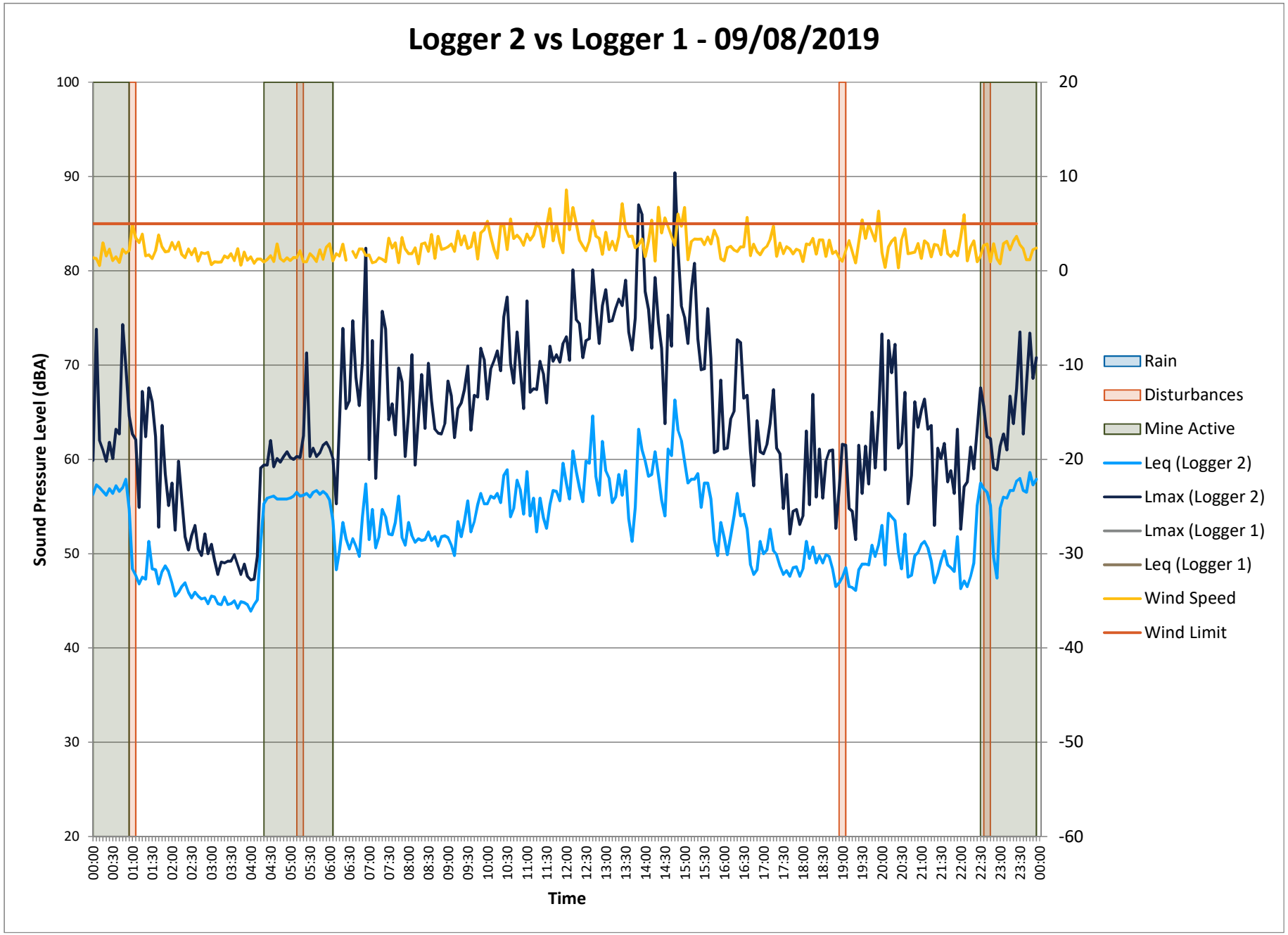

Logger 2 vs Logger 1 - 14/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

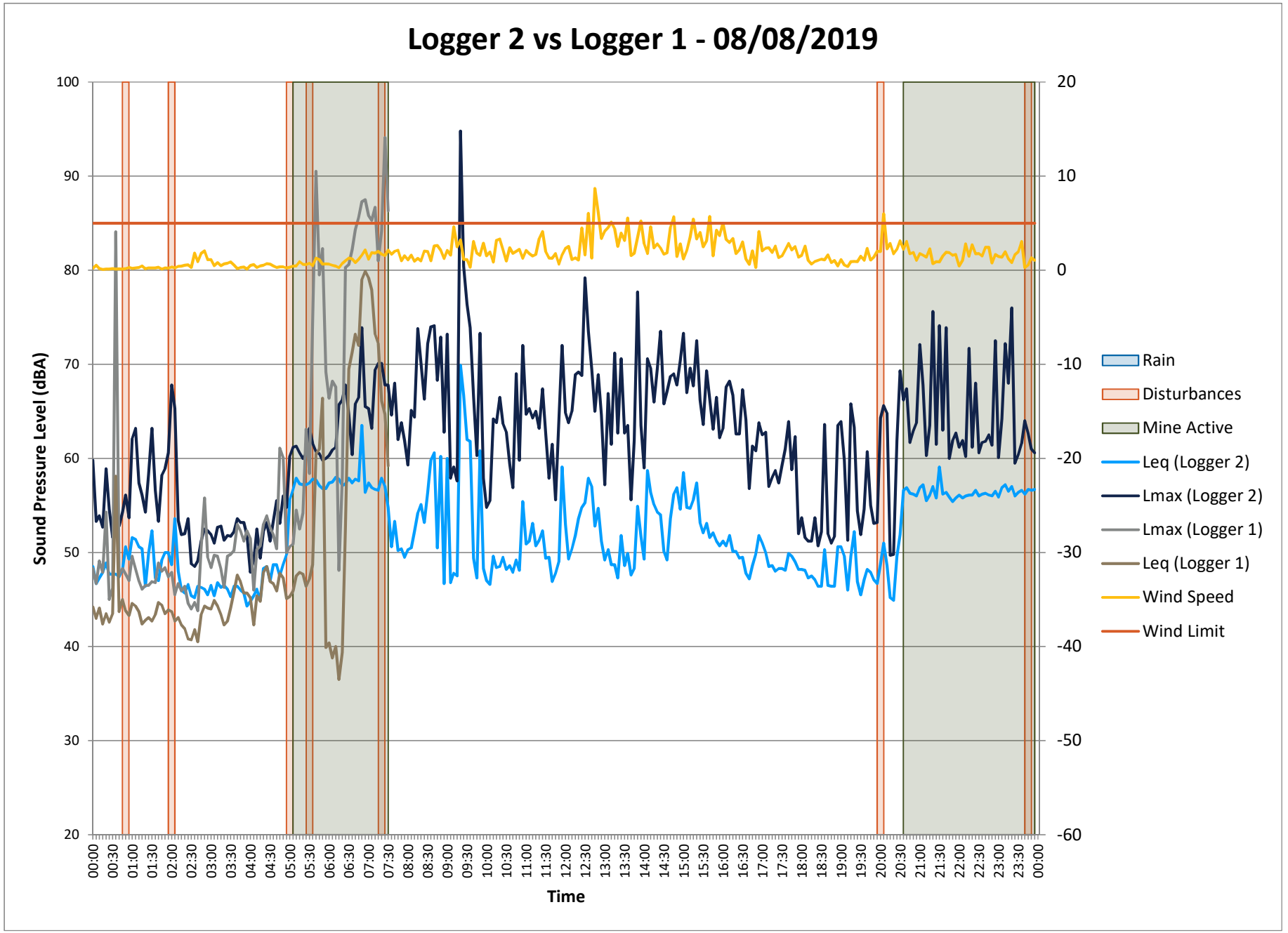

Logger 2 vs Logger 1 - 13/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

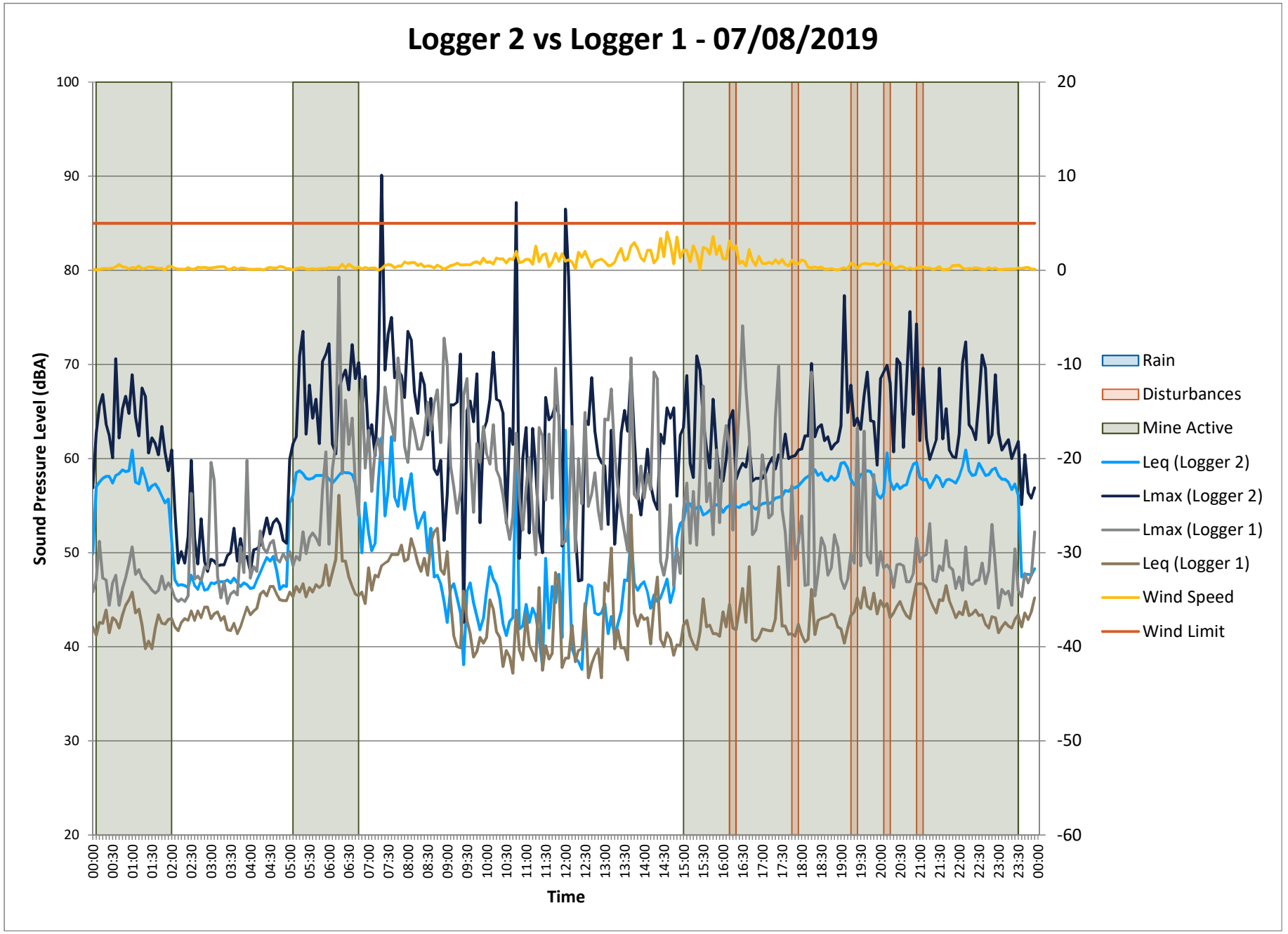

Logger 2 vs Logger 1 - 12/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

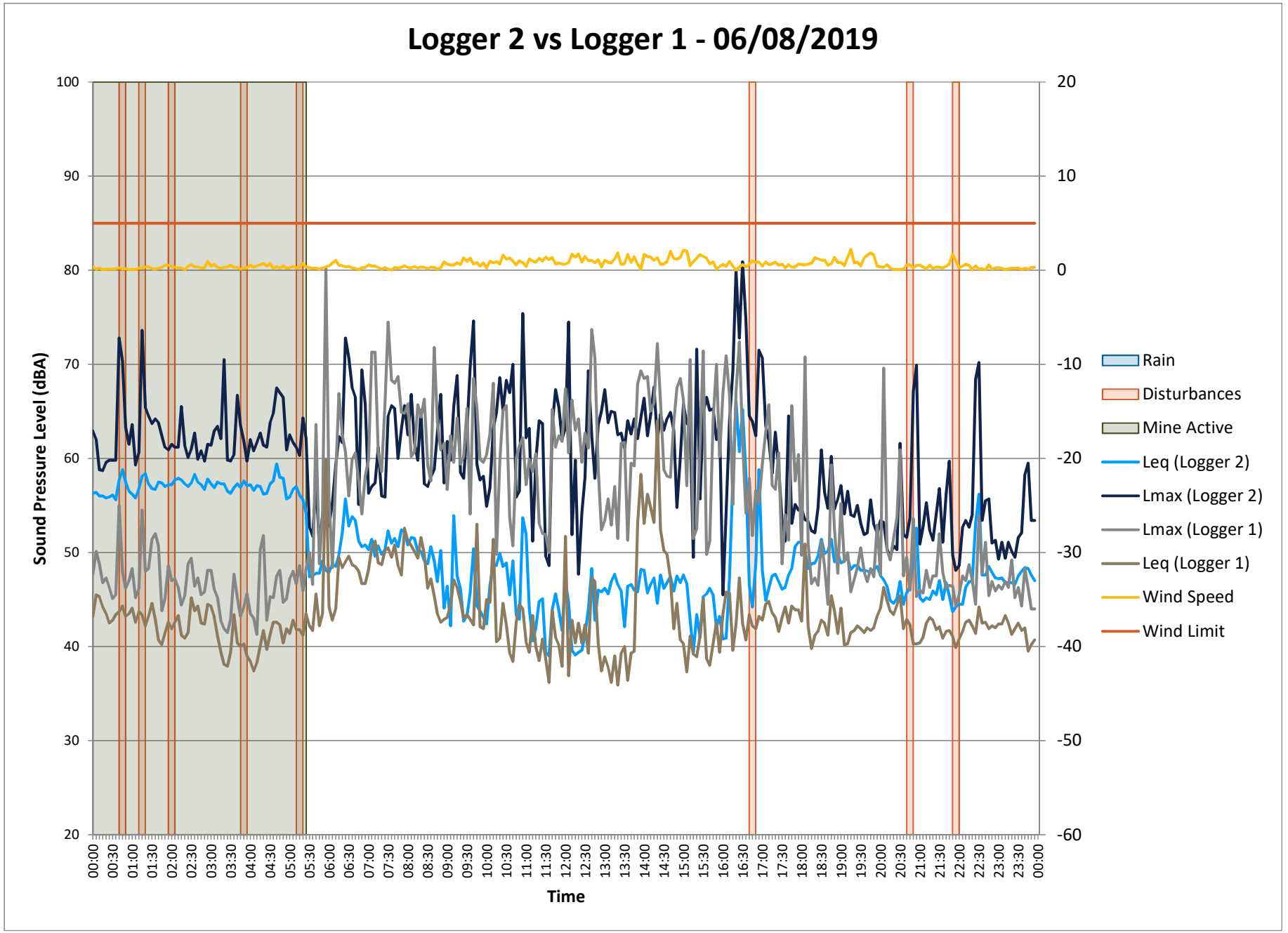

Logger 2 vs Logger 1 - 11/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

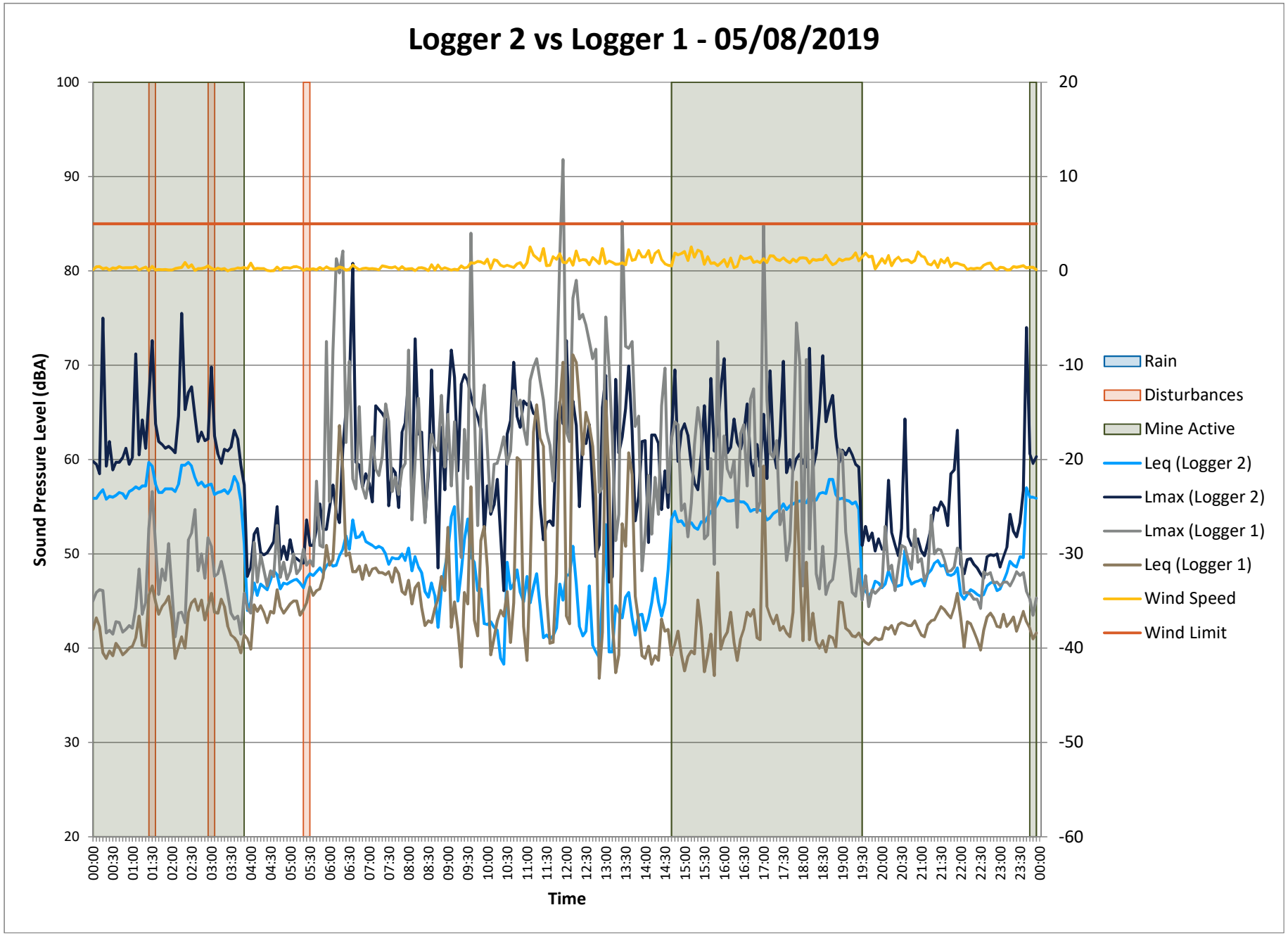

Logger 2 vs Logger 1 - 10/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

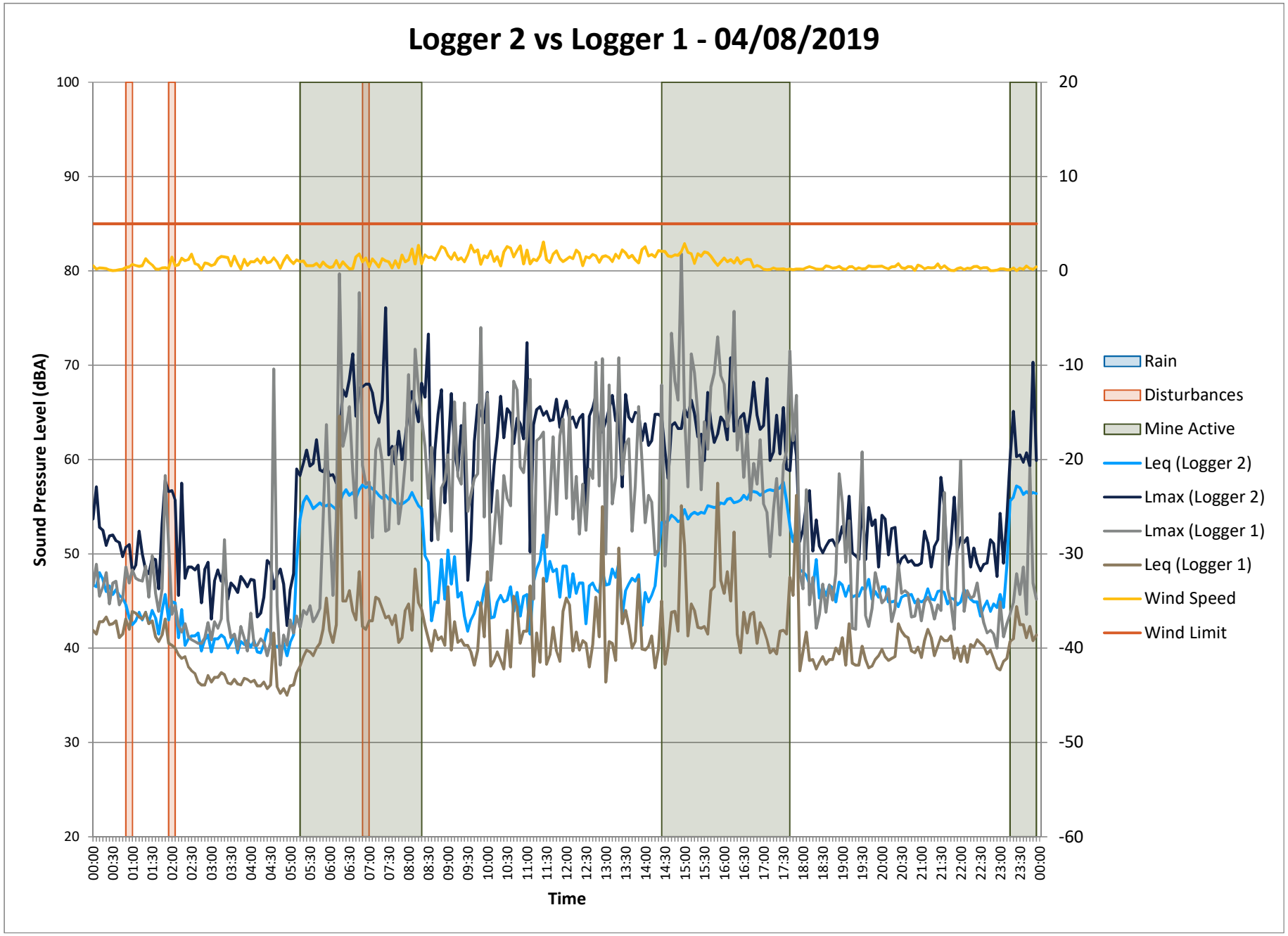

Logger 2 vs Logger 1 - 09/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
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20
20
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-10
-20
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-40
-50
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

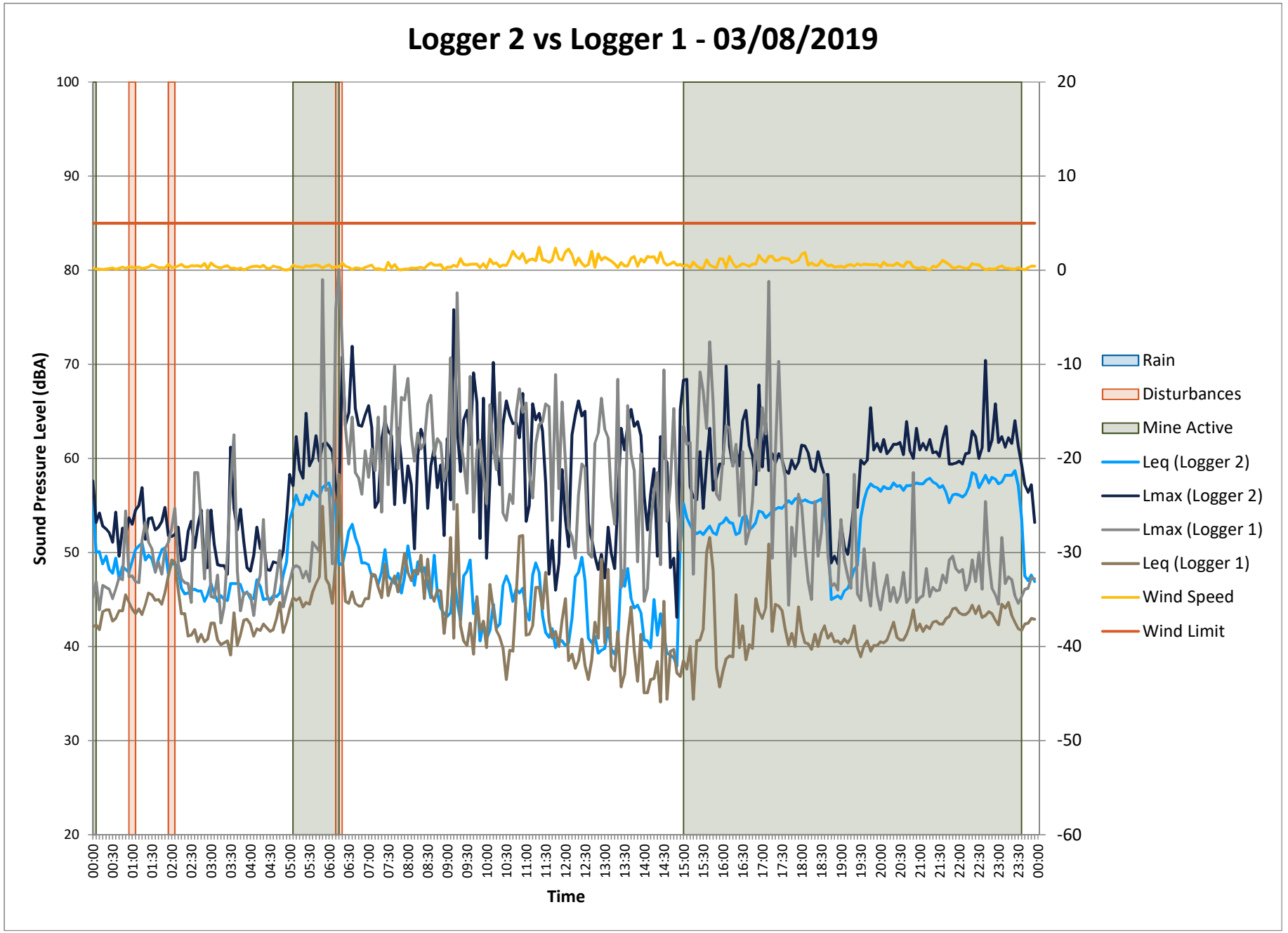

Logger 2 vs Logger 1 - 08/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
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-10
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

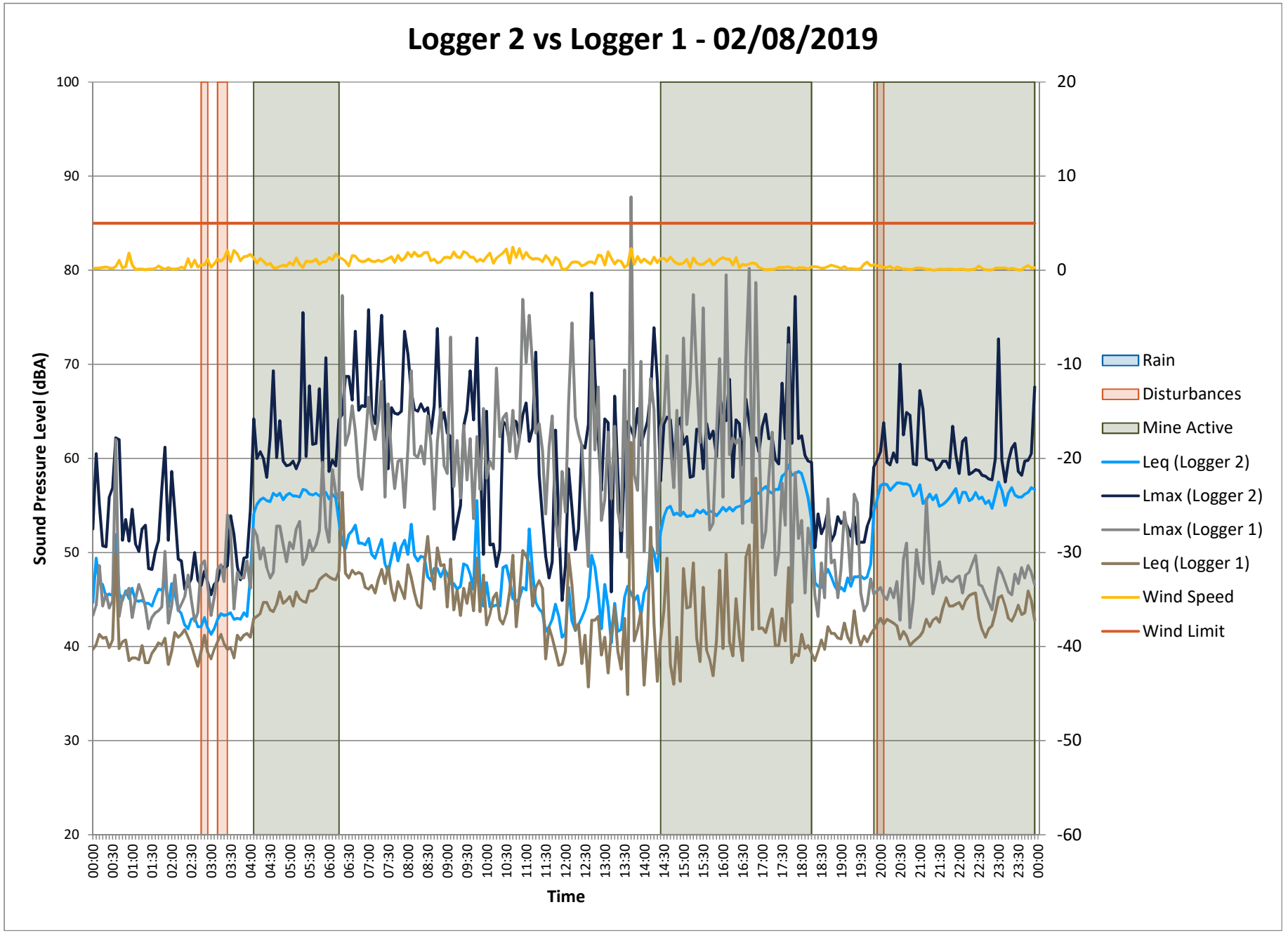

Logger 2 vs Logger 1 - 07/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

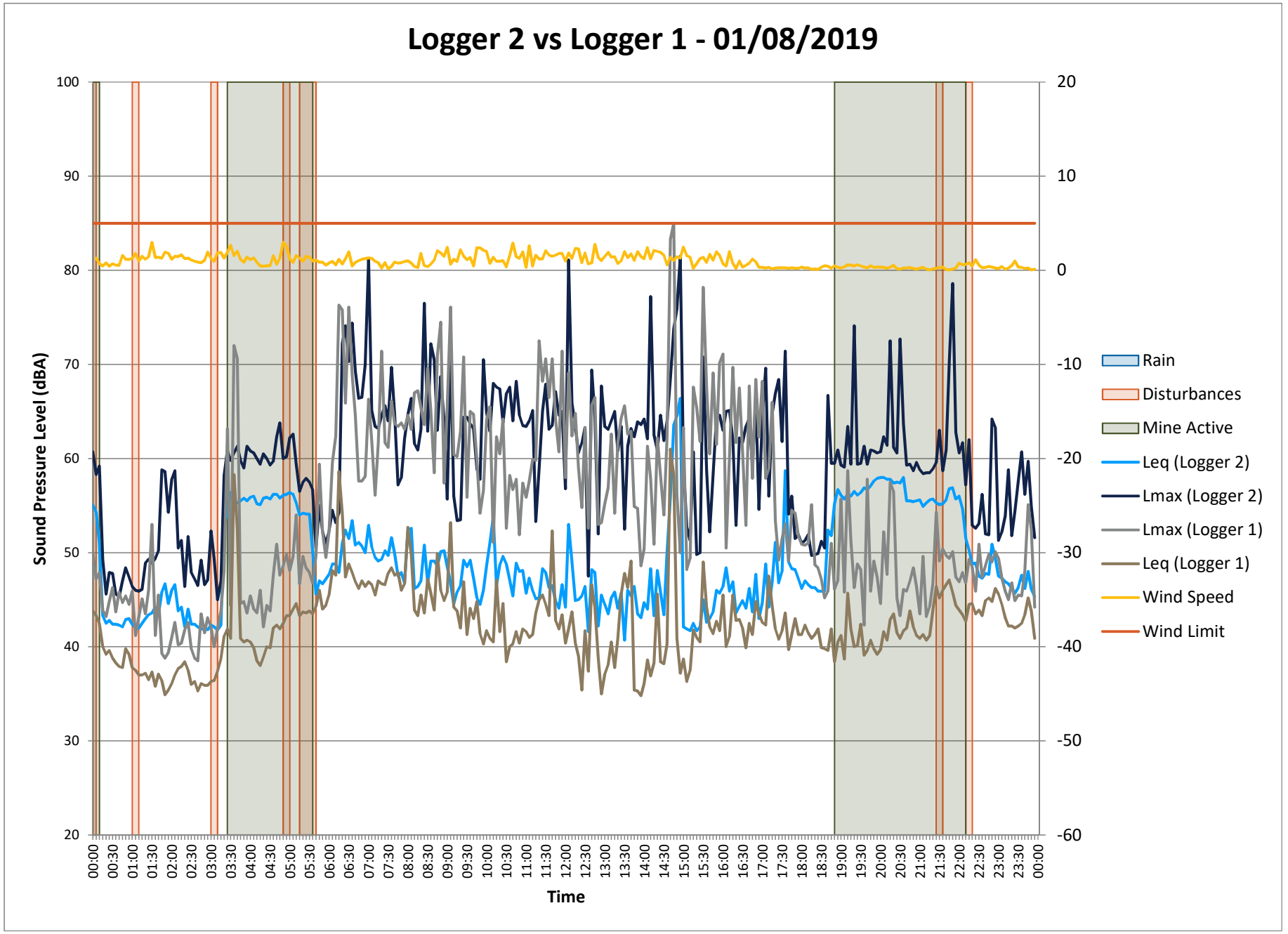

Logger 2 vs Logger 1 - 06/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

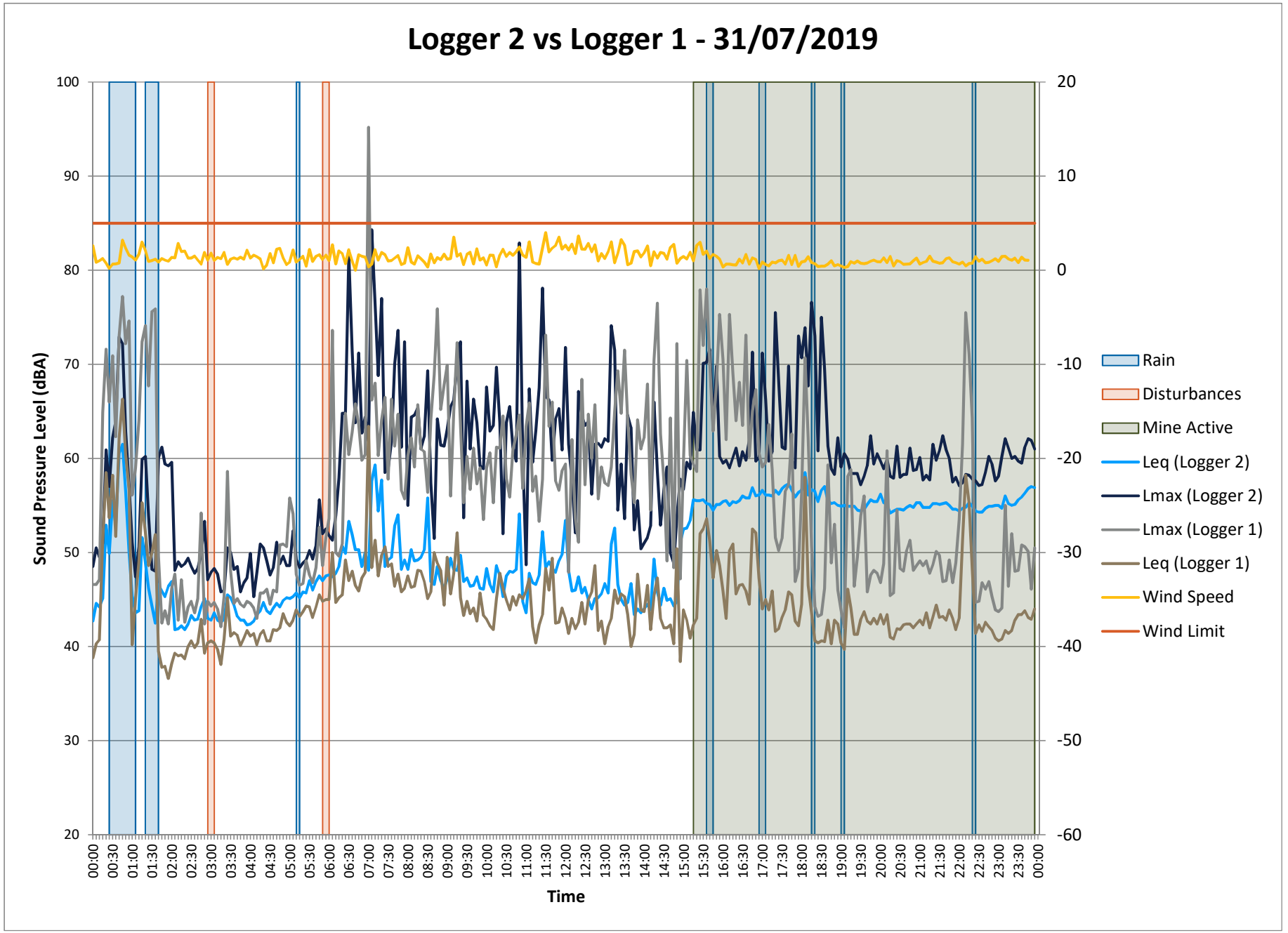

Logger 2 vs Logger 1 - 05/08/2019
Sound Pressure Level (dBA)
100
90
80
70
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50
40
30
20
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

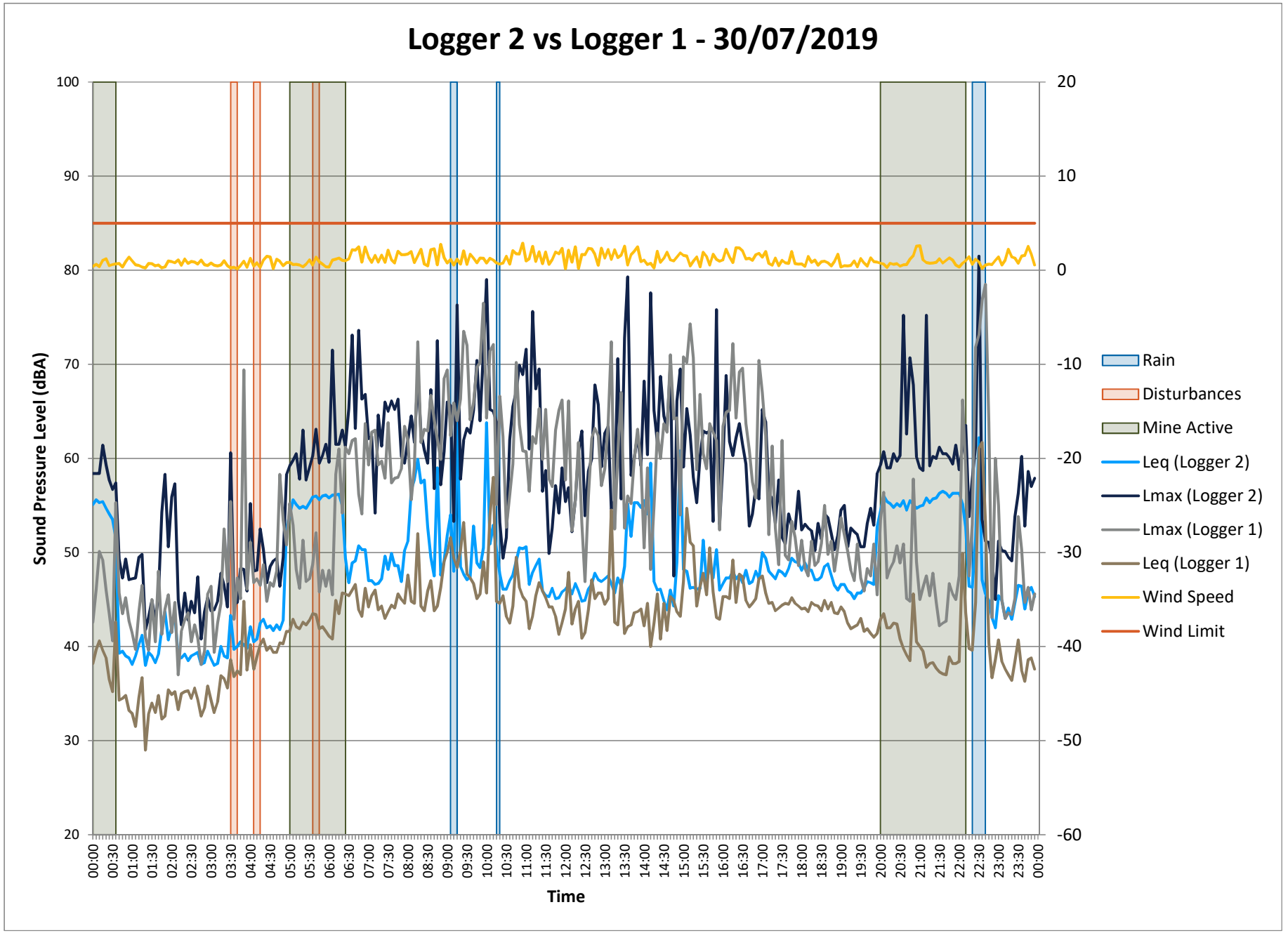

Logger 2 vs Logger 1 - 04/08/2019
Sound Pressure Level (dBA)
100
90
80
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

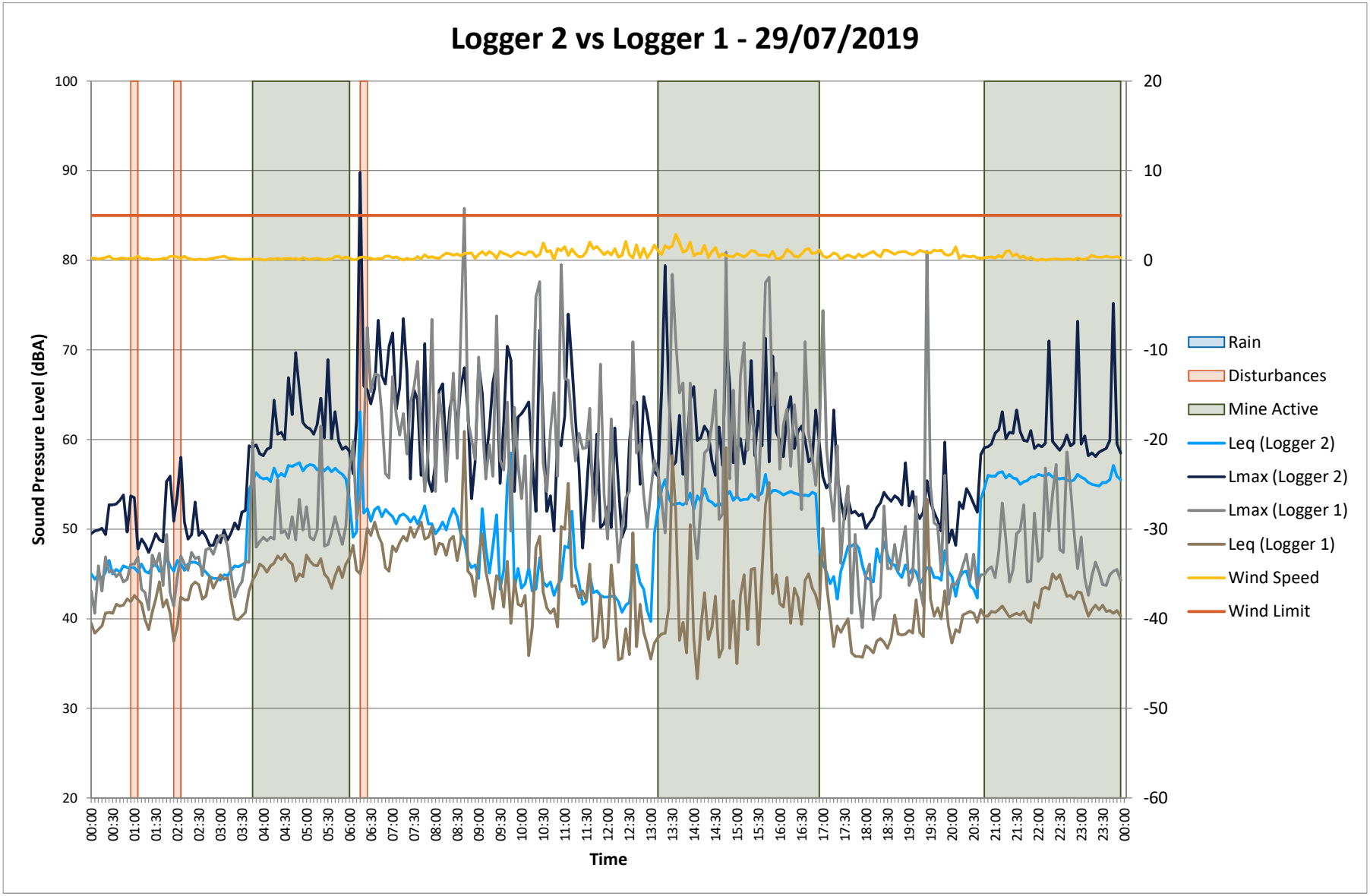

Logger 2 vs Logger 1 - 03/08/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

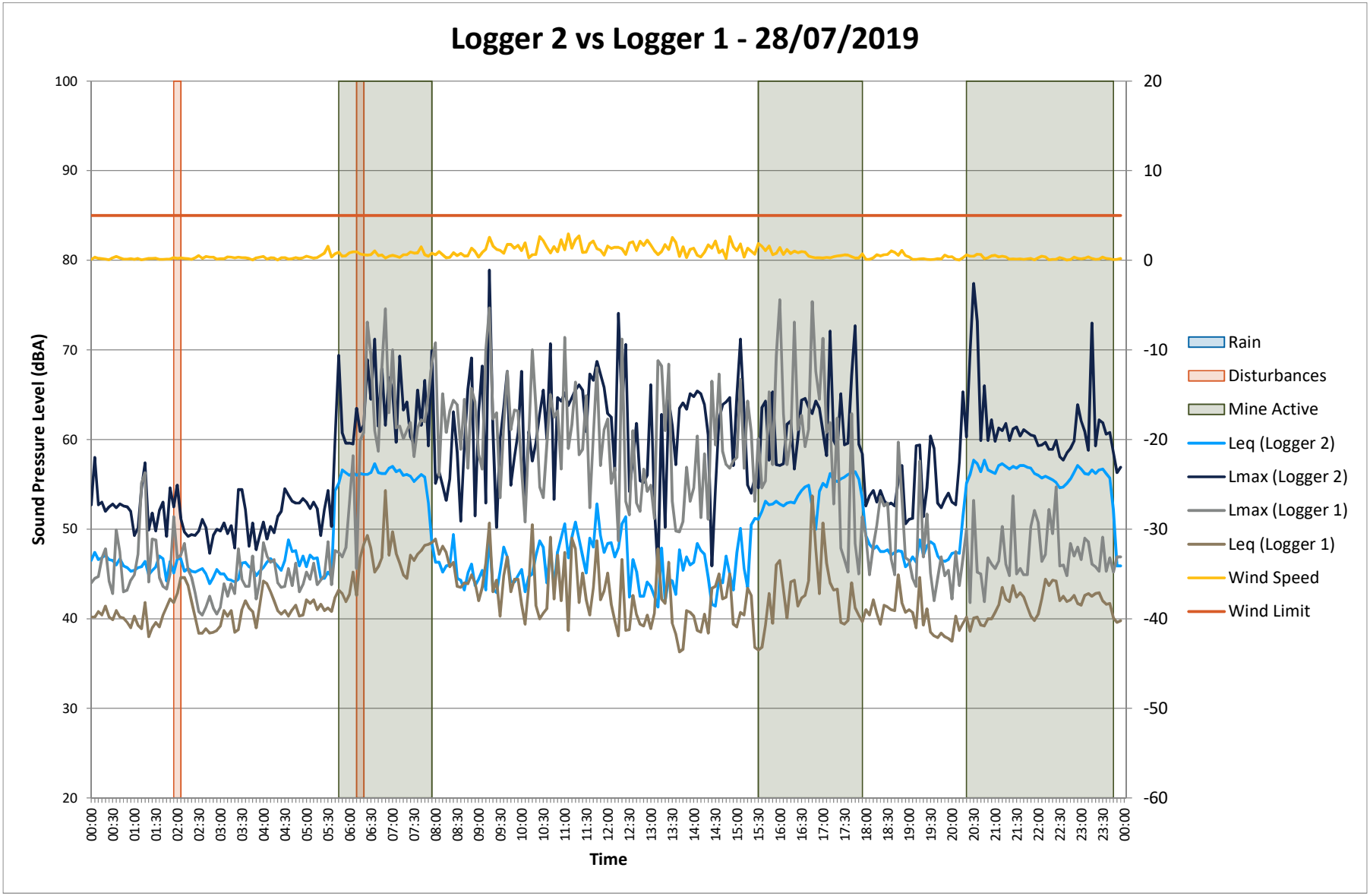

Logger 2 vs Logger 1 - 02/08/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

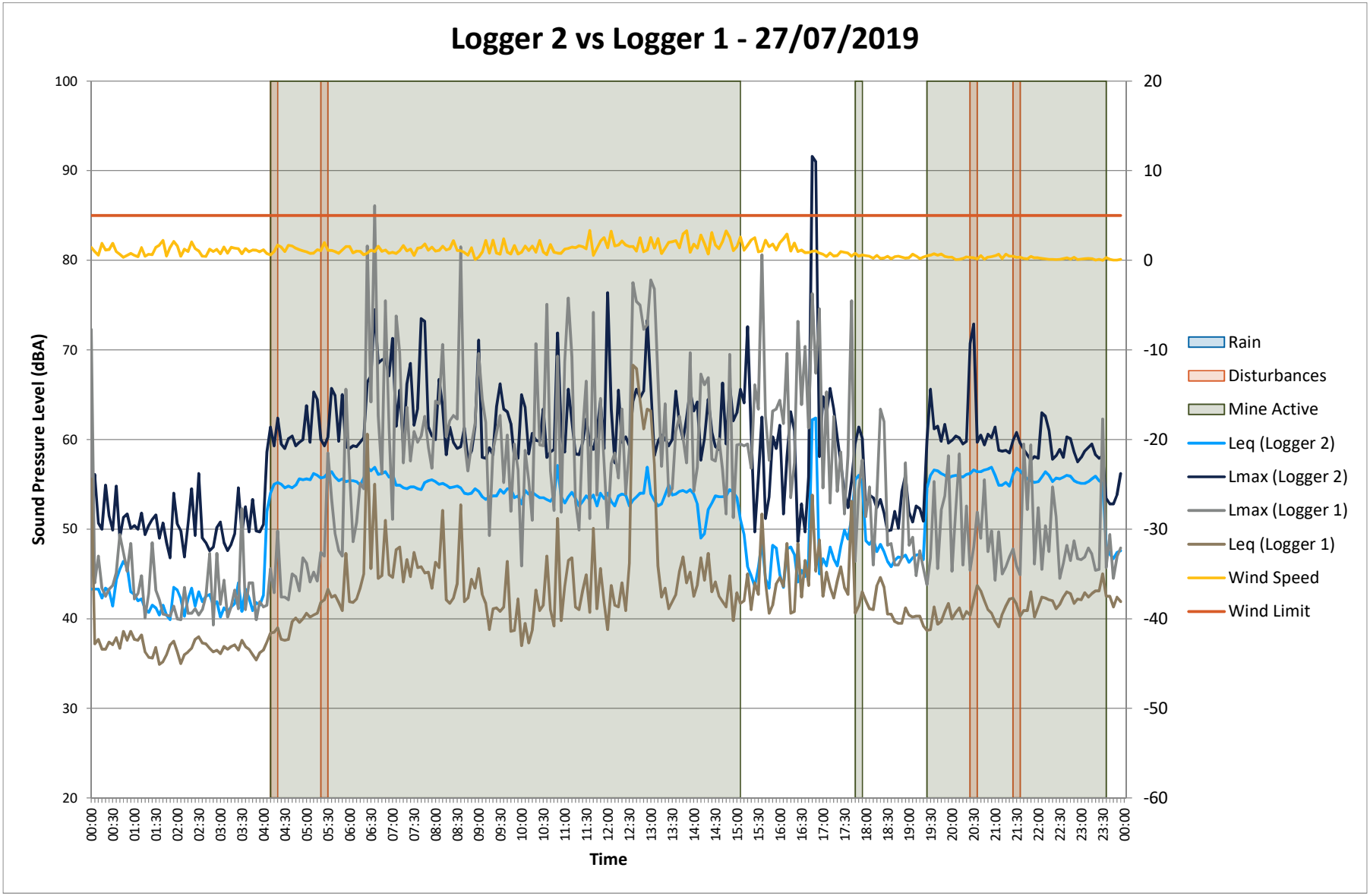

Logger 2 vs Logger 1 - 01/08/2019
Sound Pressure Level (dBA)
100
90
80
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40
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00:00
Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

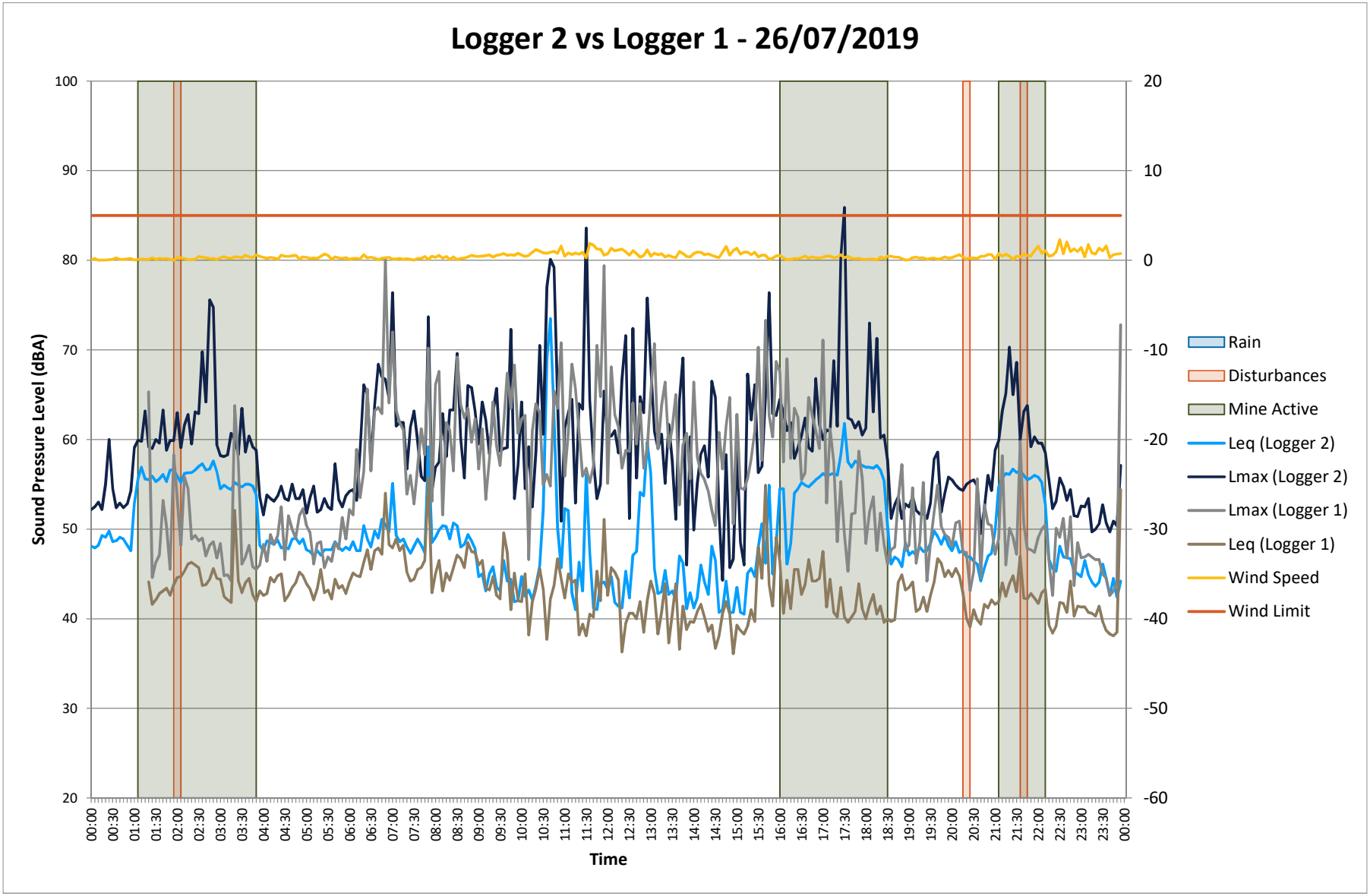

Logger 2 vs Logger 1 - 31/07/2019
Sound Pressure Level (dBA)
100
90
80
70
60
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40
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20
20
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-10
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

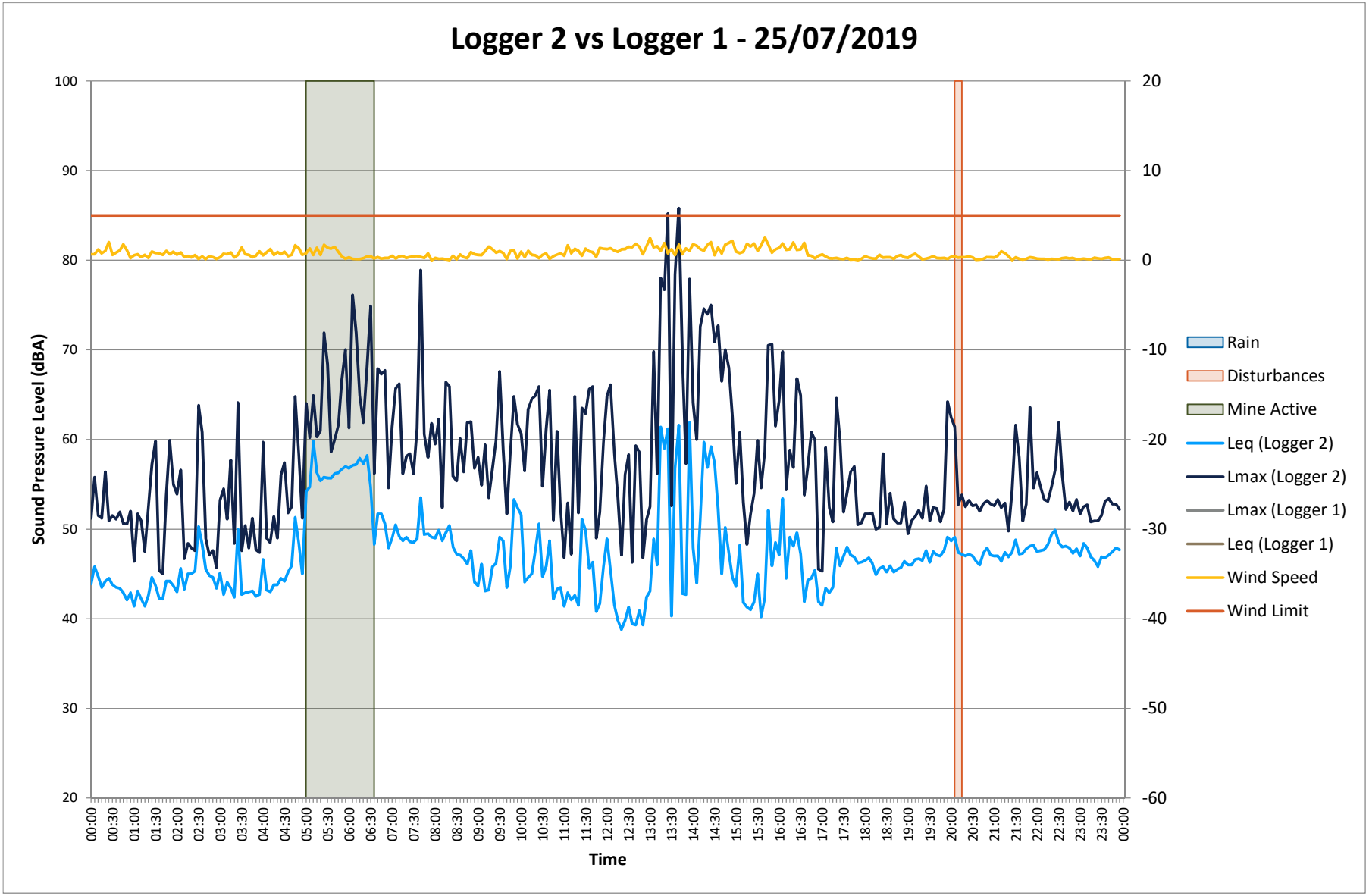

Logger 2 vs Logger 1 - 30/07/2019
Sound Pressure Level (dBA)
100
90
80
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

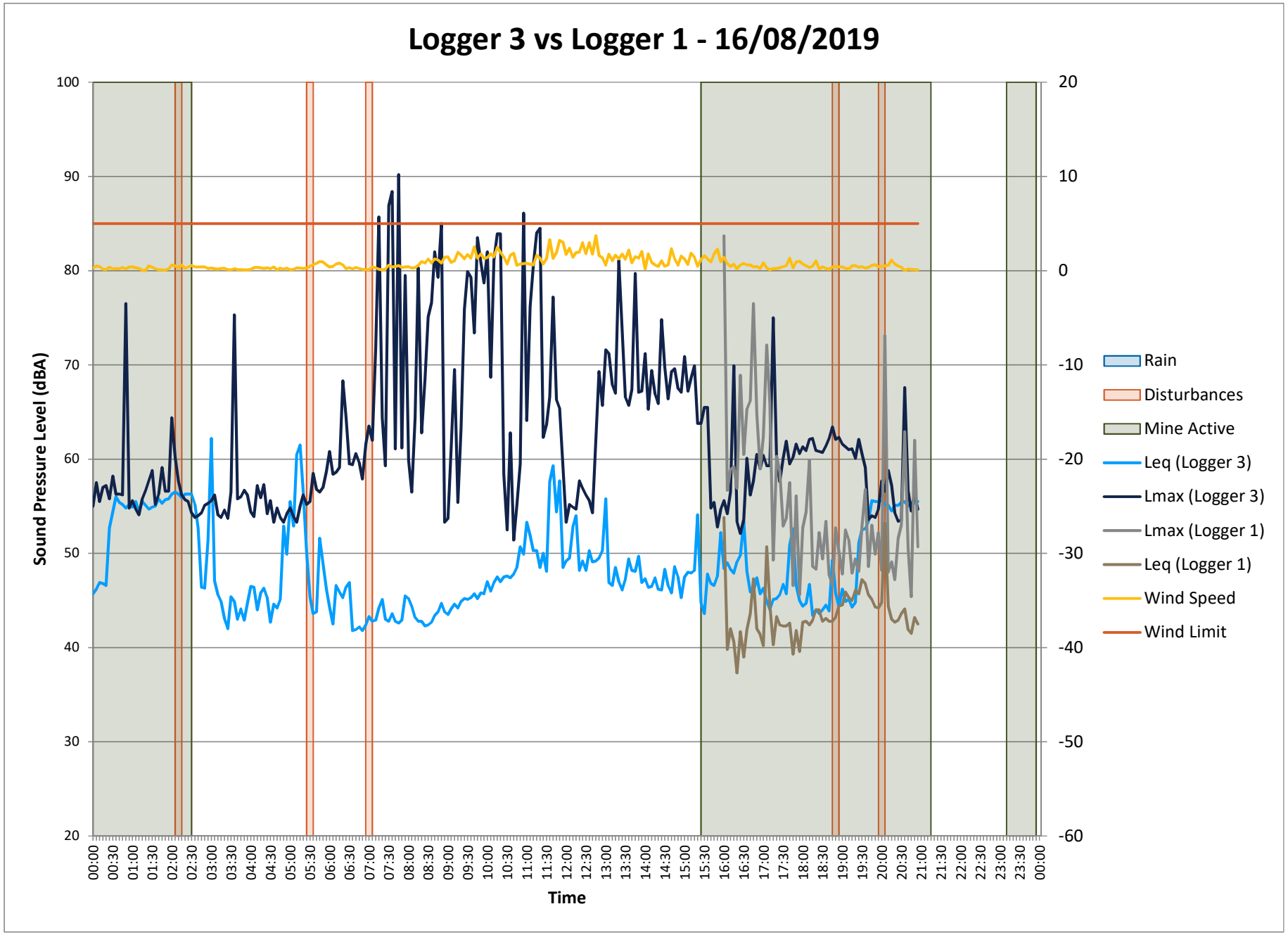

Logger 2 vs Logger 1 - 29/07/2019
Sound Pressure Level (dBA)
Time
100
90
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Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

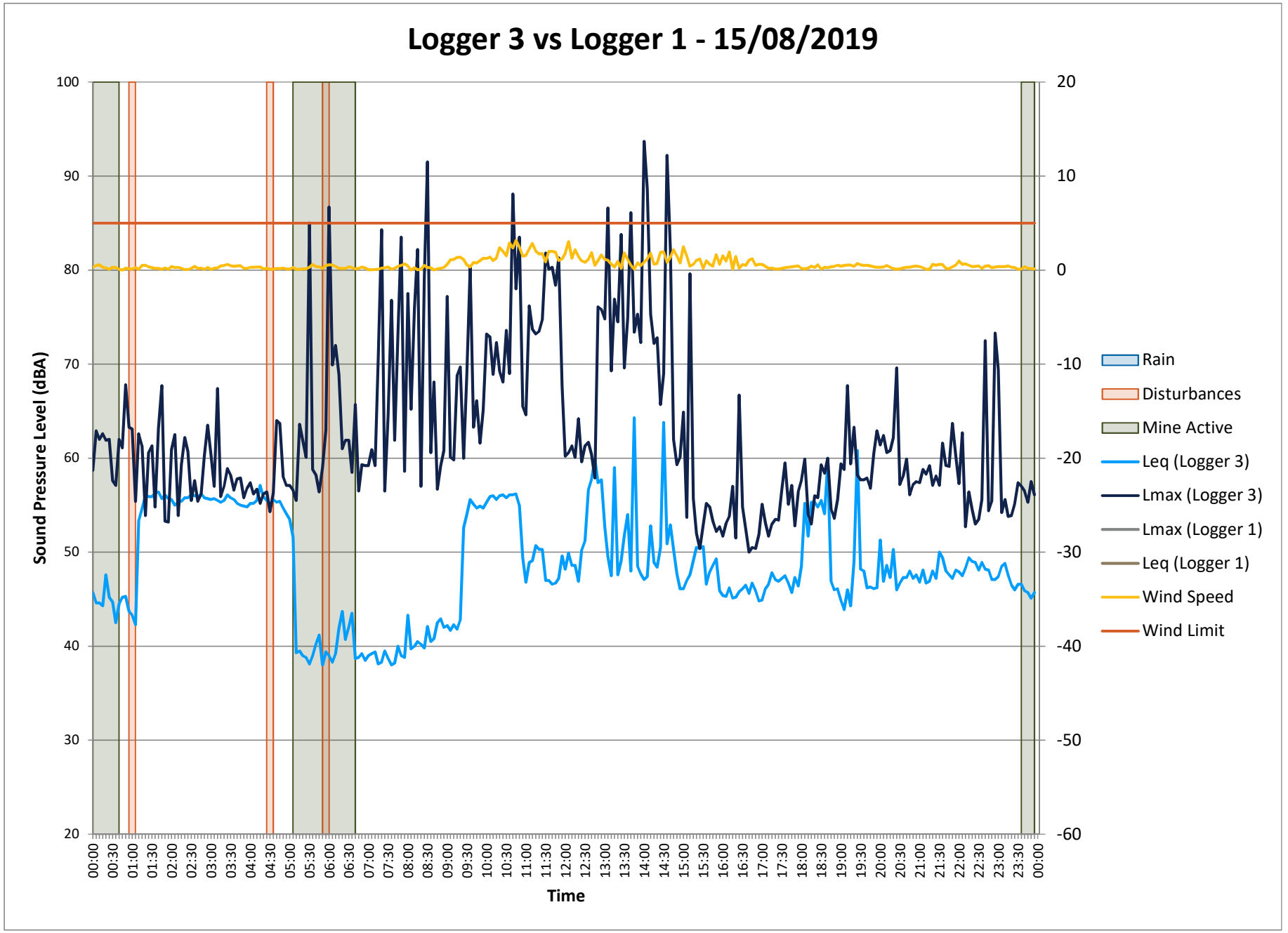

Logger 2 vs Logger 1 - 28/07/2019
Sound Pressure Level (dBA)
Time
100
90
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Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

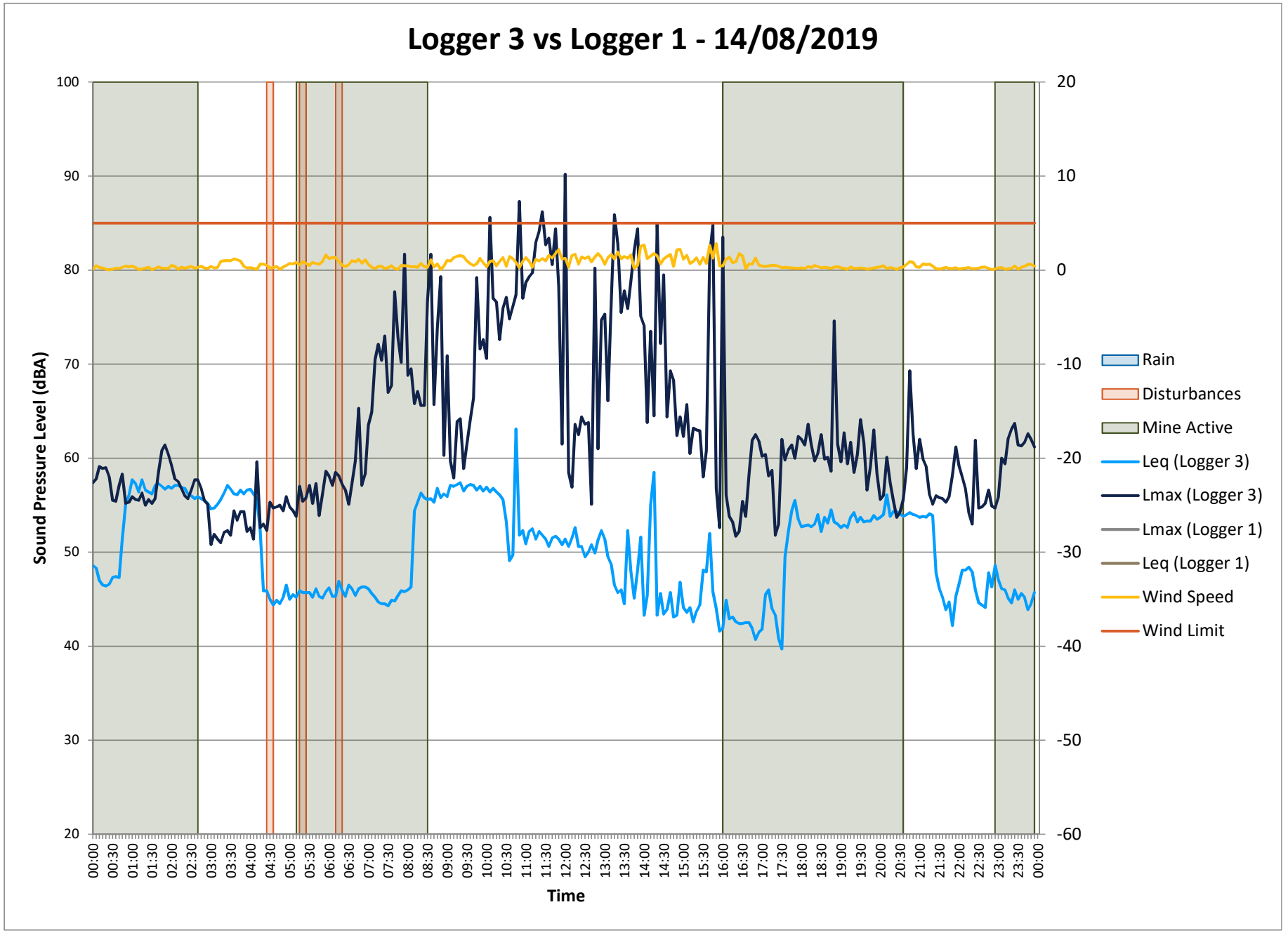

Logger 2 vs Logger 1 - 27/07/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

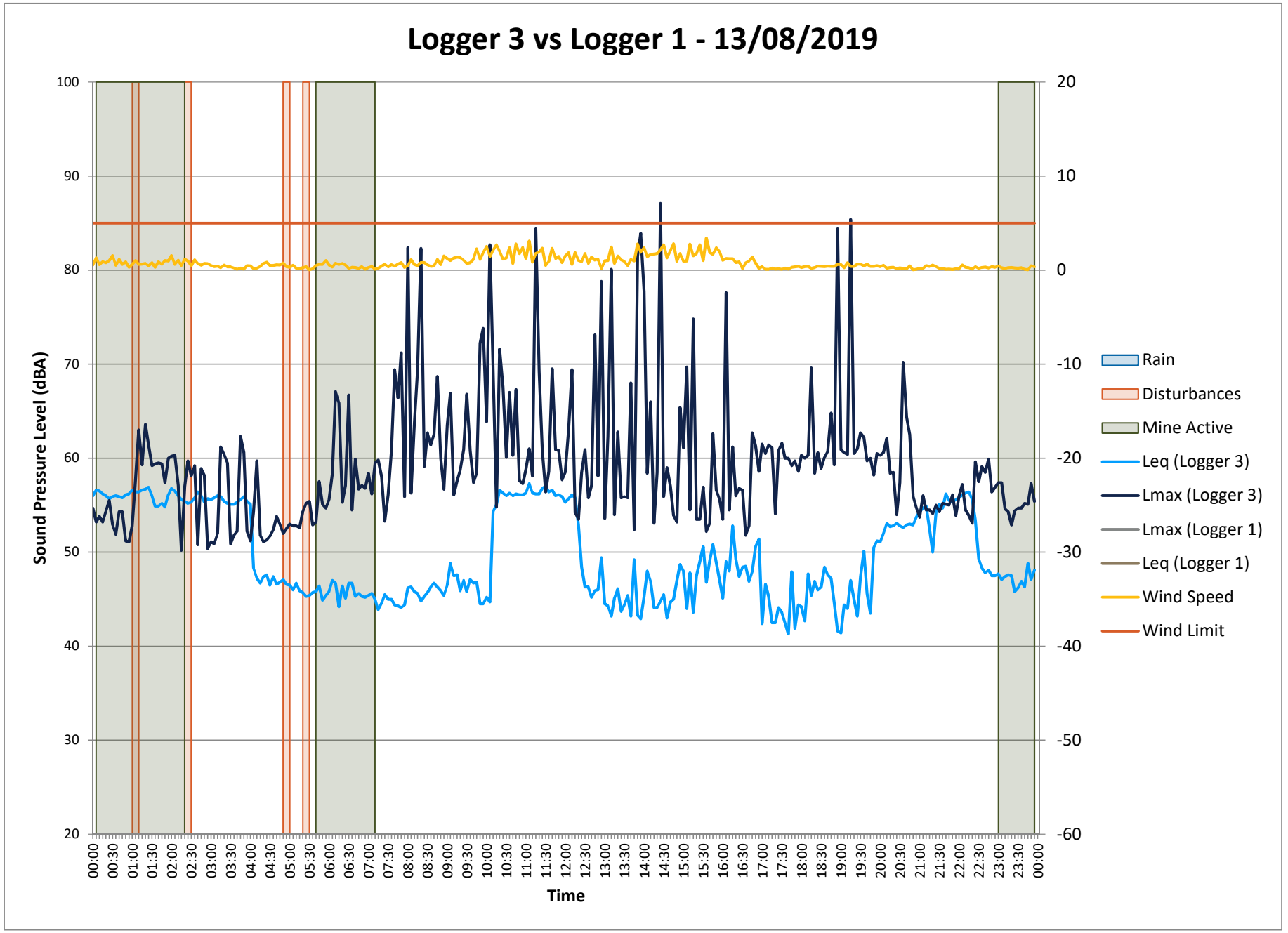

Logger 2 vs Logger 1 - 26/07/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

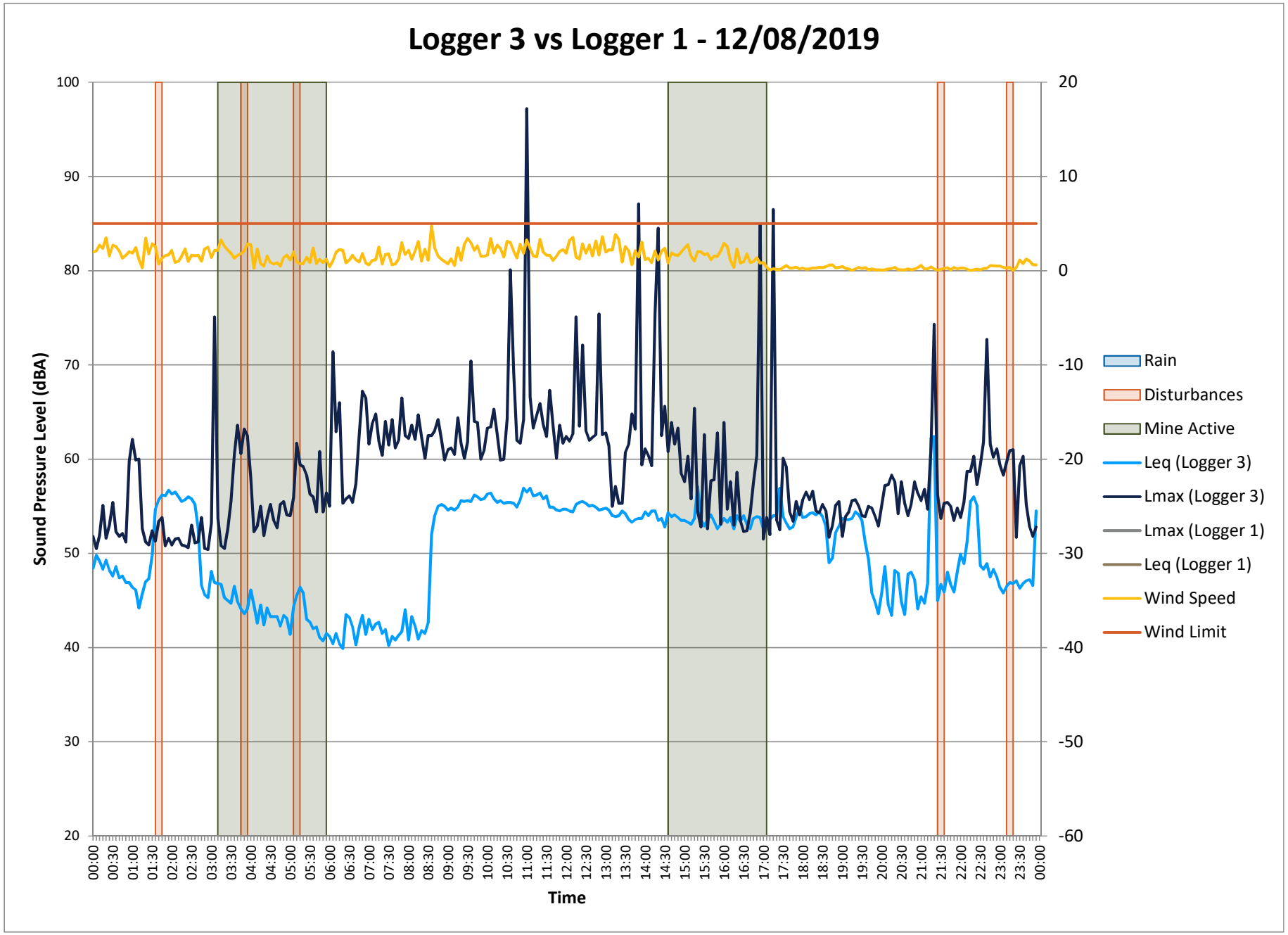

Logger 2 vs Logger 1 - 25/07/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
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Time
Rain
Disturbances
Mine Active
Leq (Logger 2)
Lmax (Logger 2)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

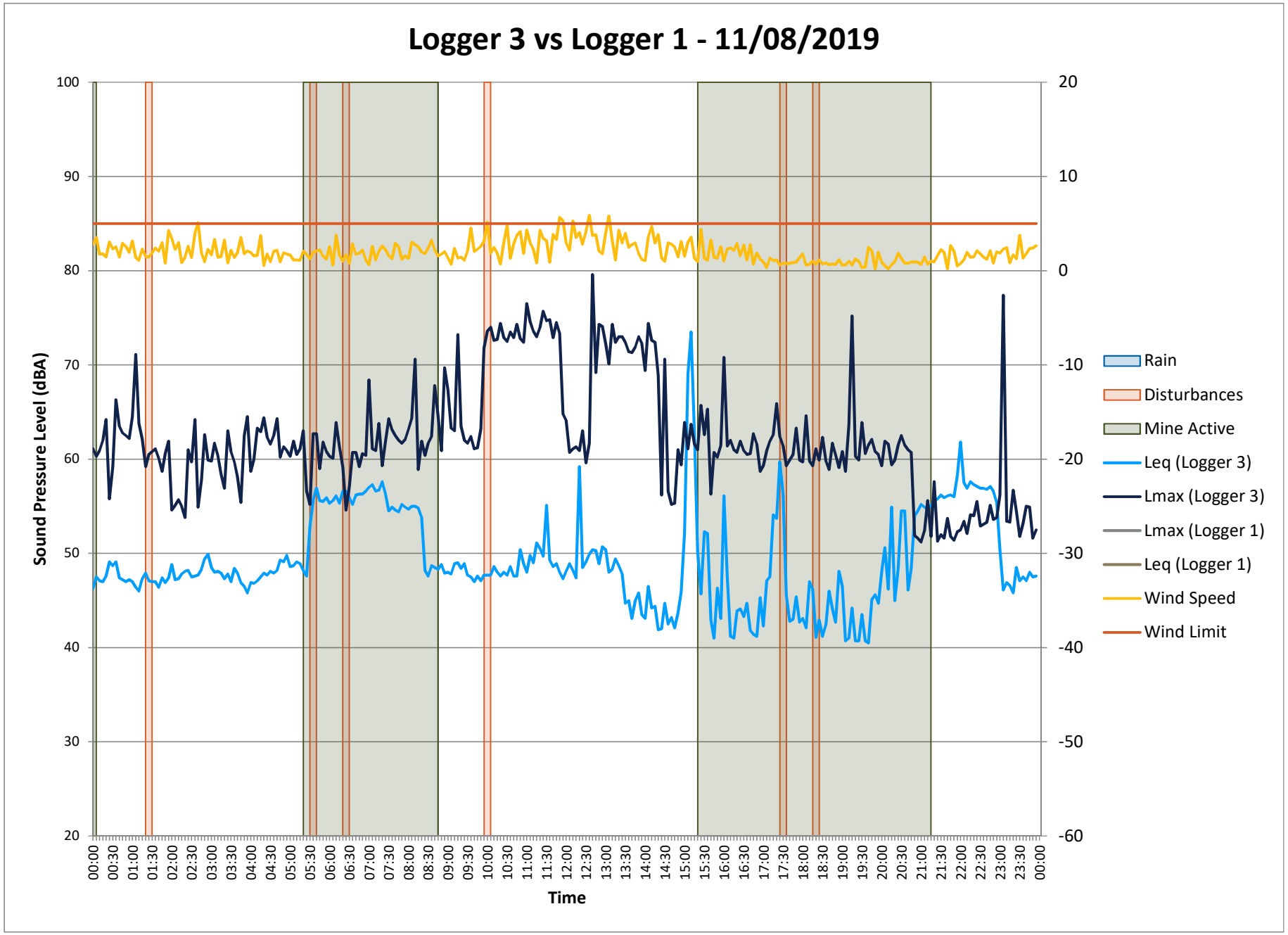

Logger 3 vs Logger 1 - 16/08/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 3)
Lmax (Logger 3)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

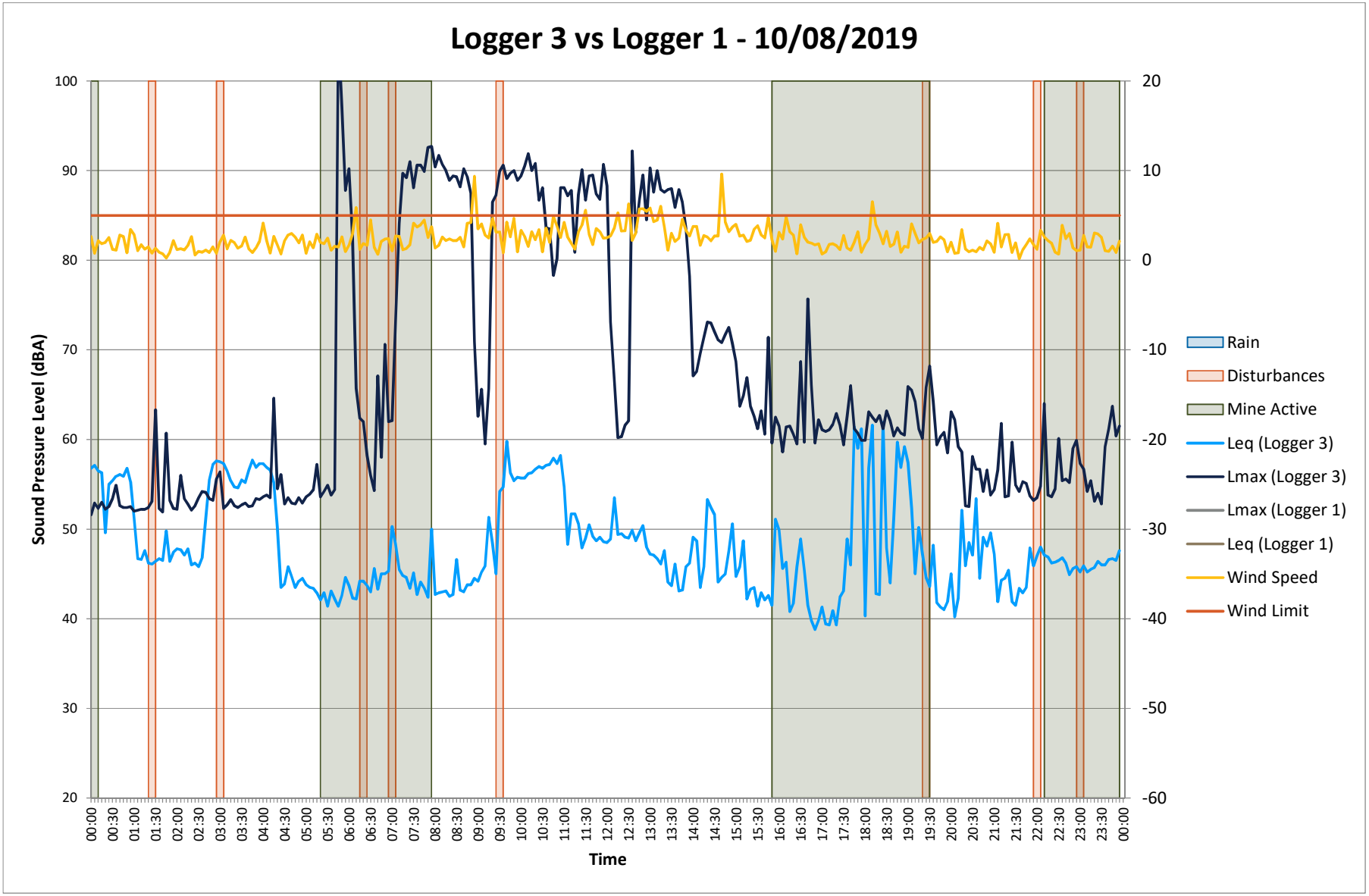

Logger 3 vs Logger 1 - 15/08/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 3)
Lmax (Logger 3)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

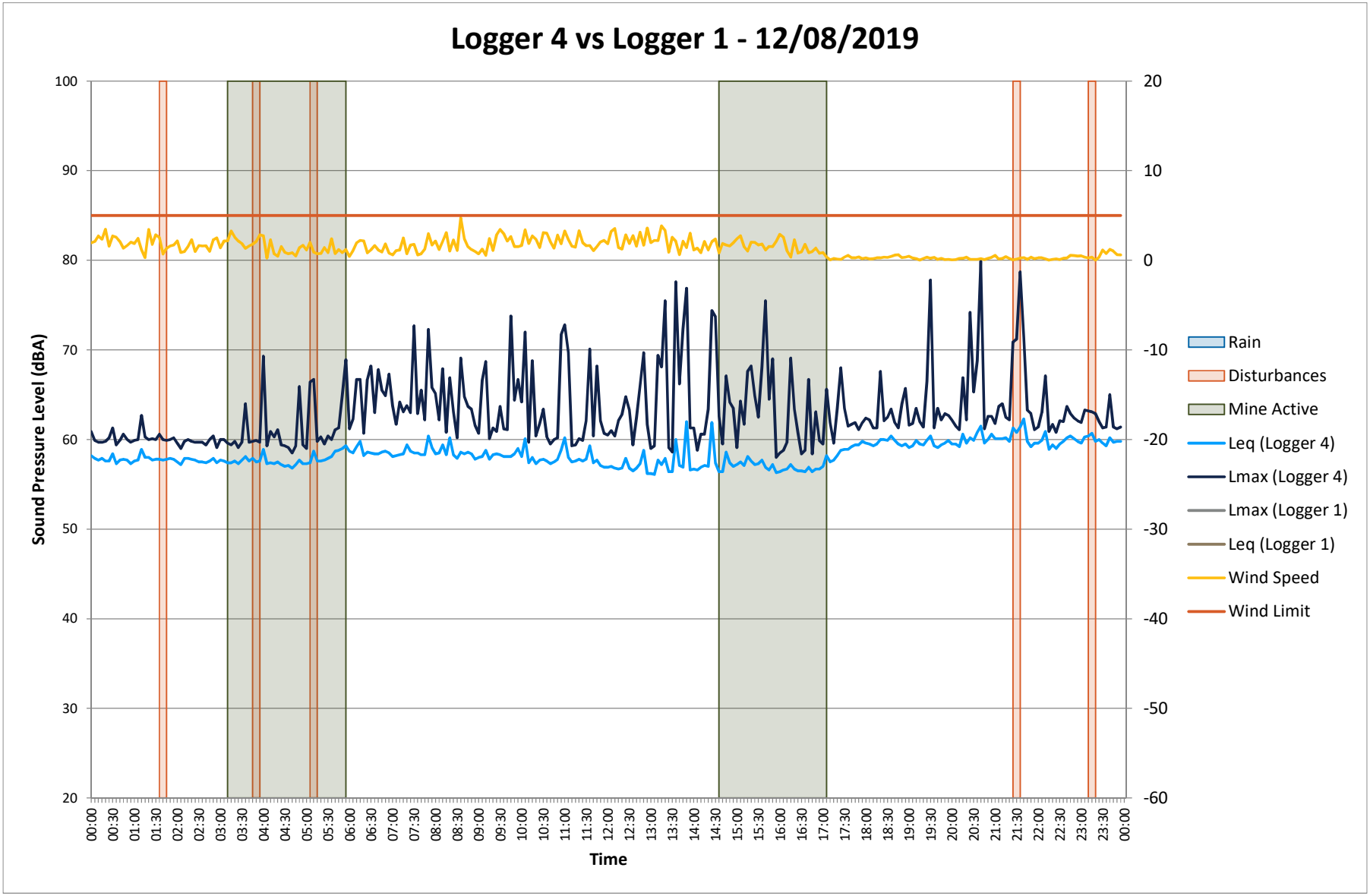

Logger 3 vs Logger 1 - 14/08/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 3)
Lmax (Logger 3)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

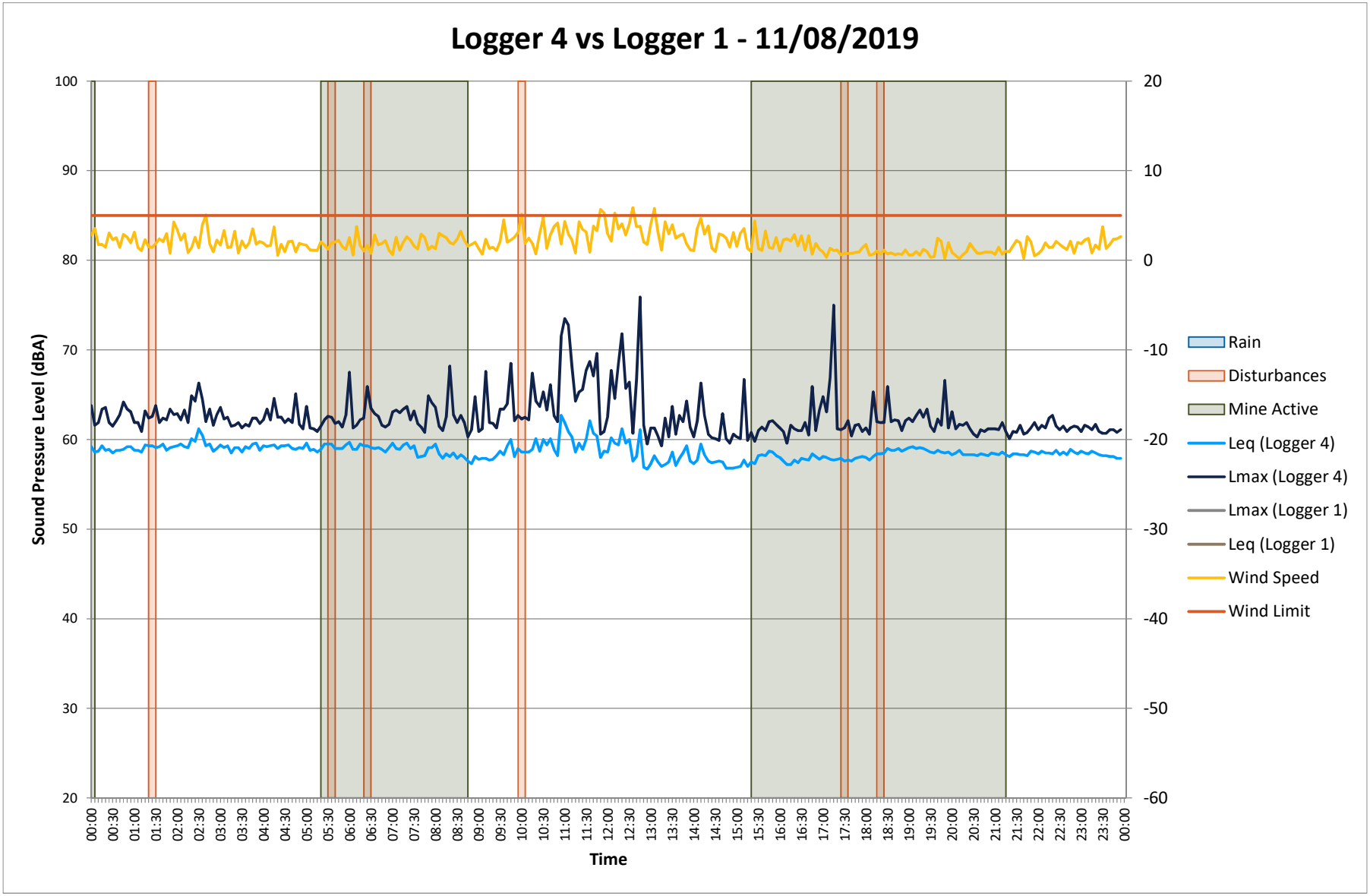

Logger 3 vs Logger 1 - 13/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 3)
Lmax (Logger 3)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

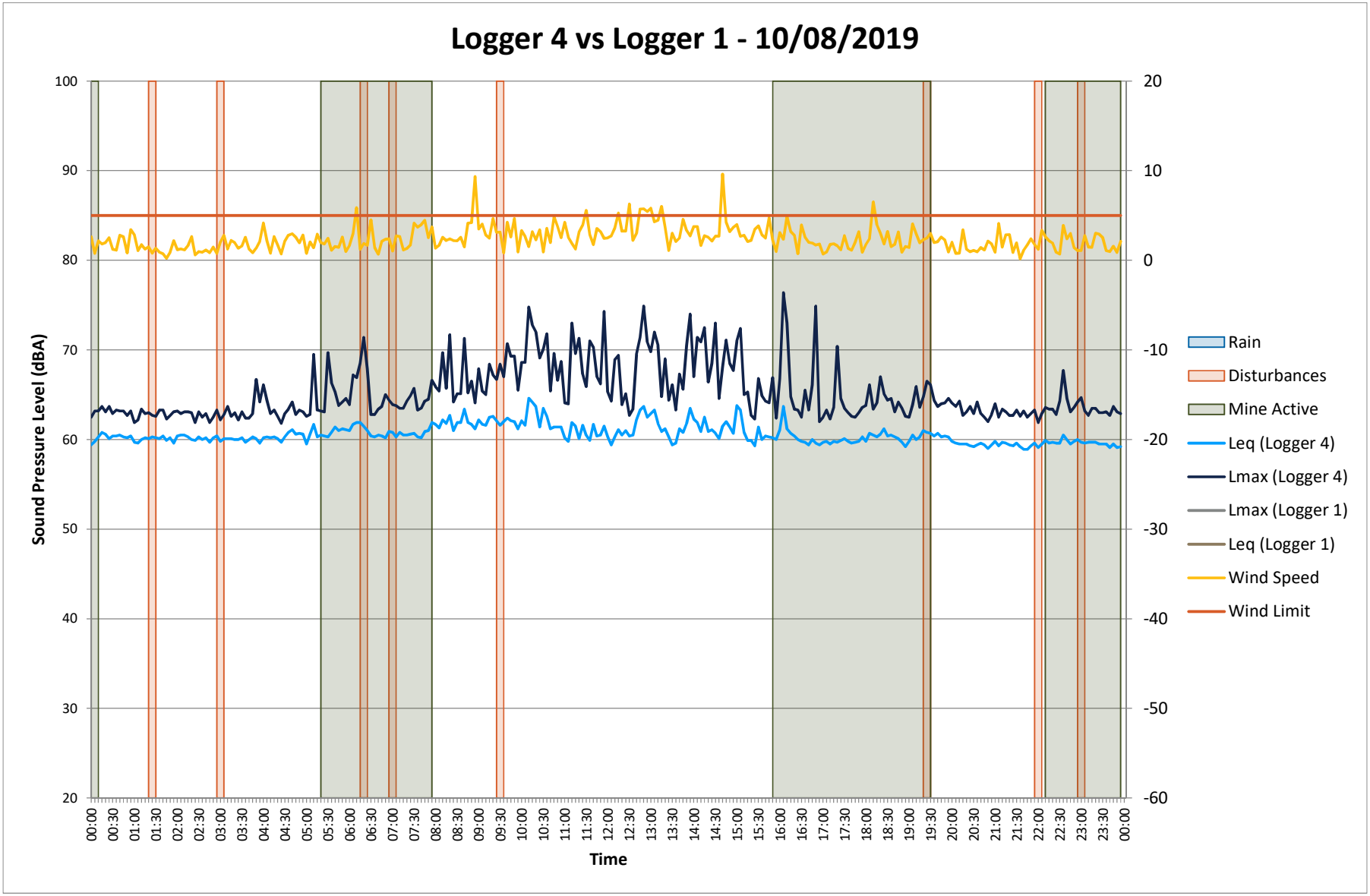

Logger 3 vs Logger 1 - 12/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 3)
Lmax (Logger 3)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

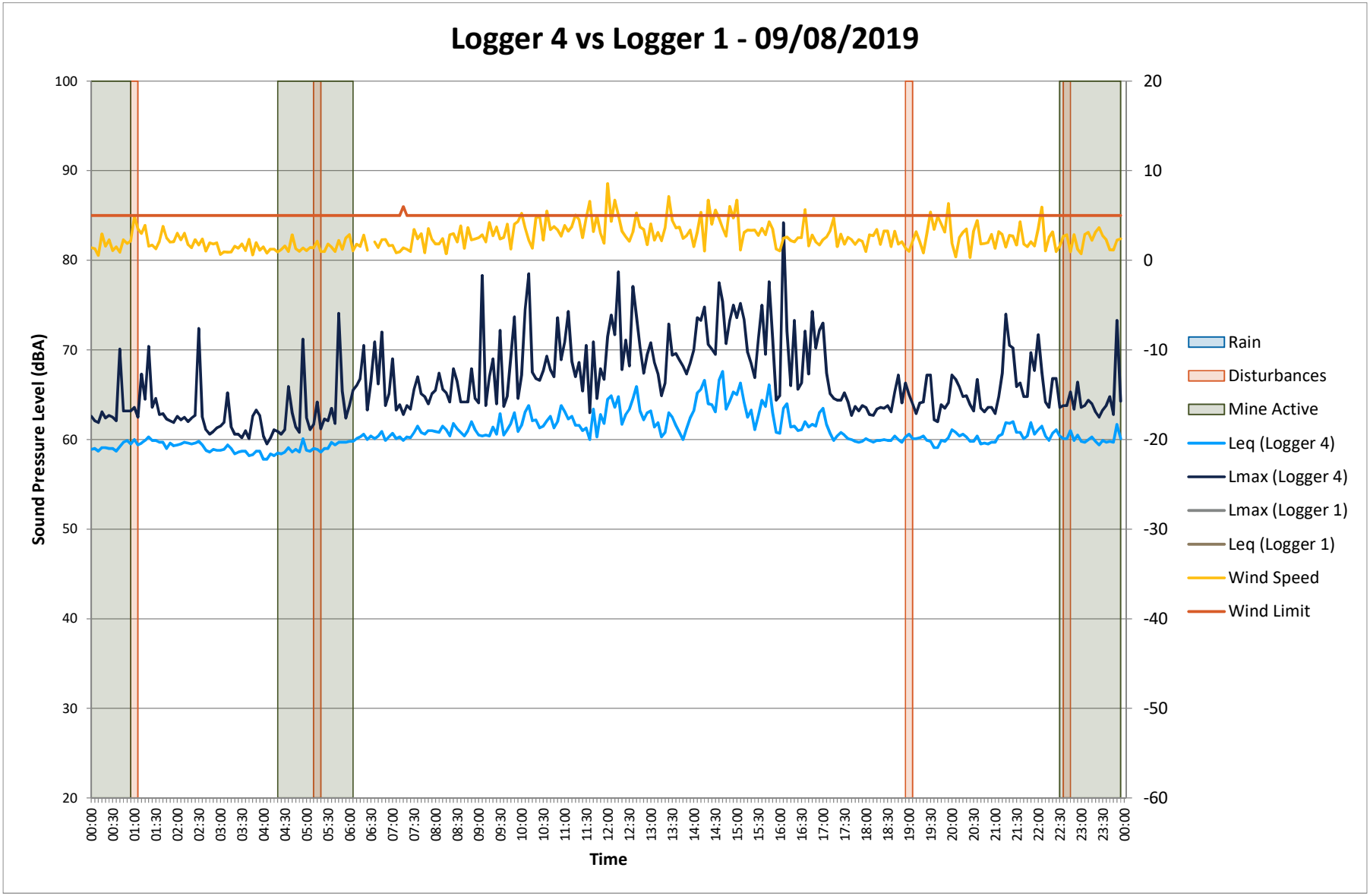

Logger 3 vs Logger 1 - 11/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 3)
Lmax (Logger 3)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

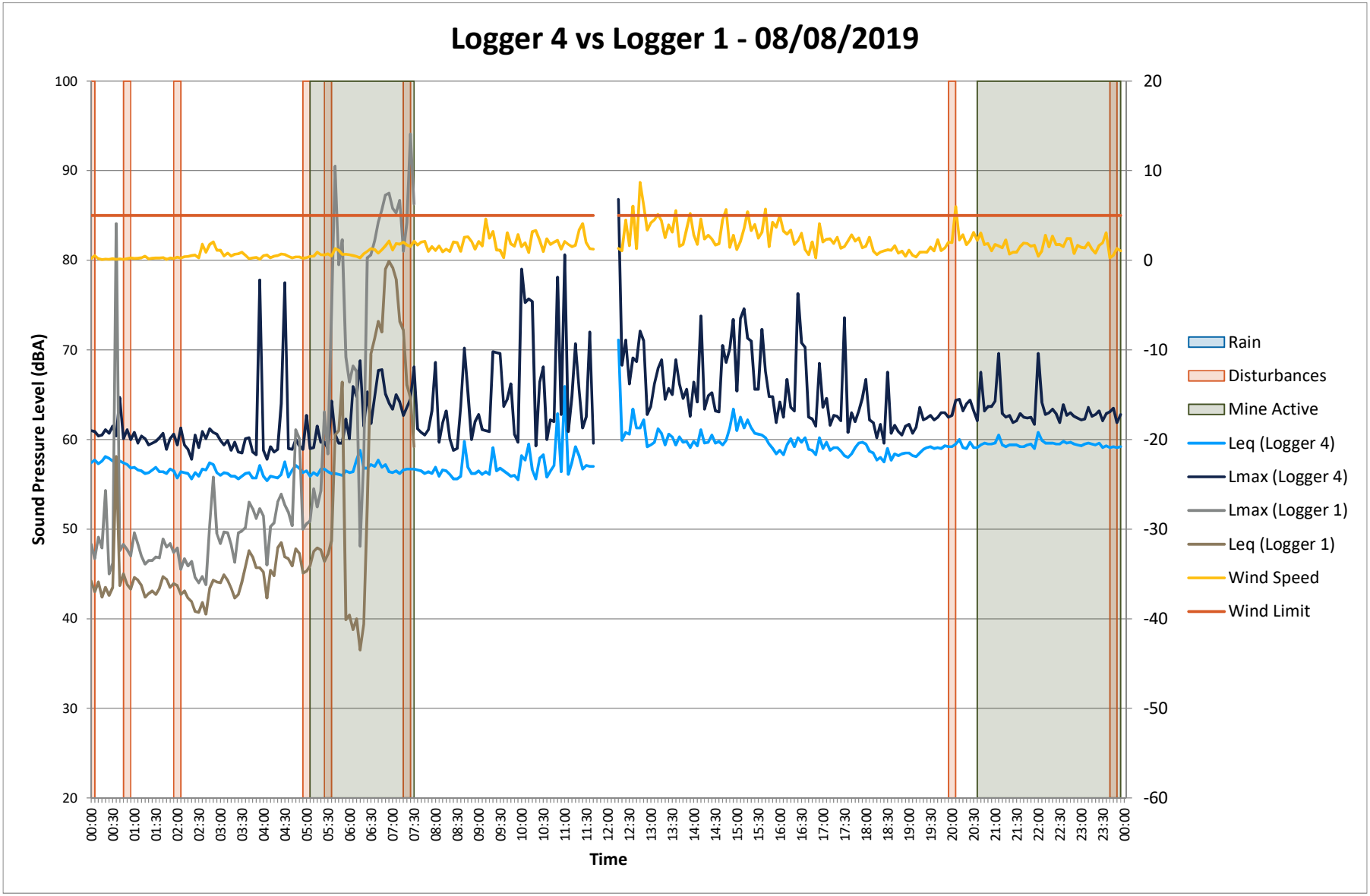

Logger 3 vs Logger 1 - 10/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 3)
Lmax (Logger 3)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

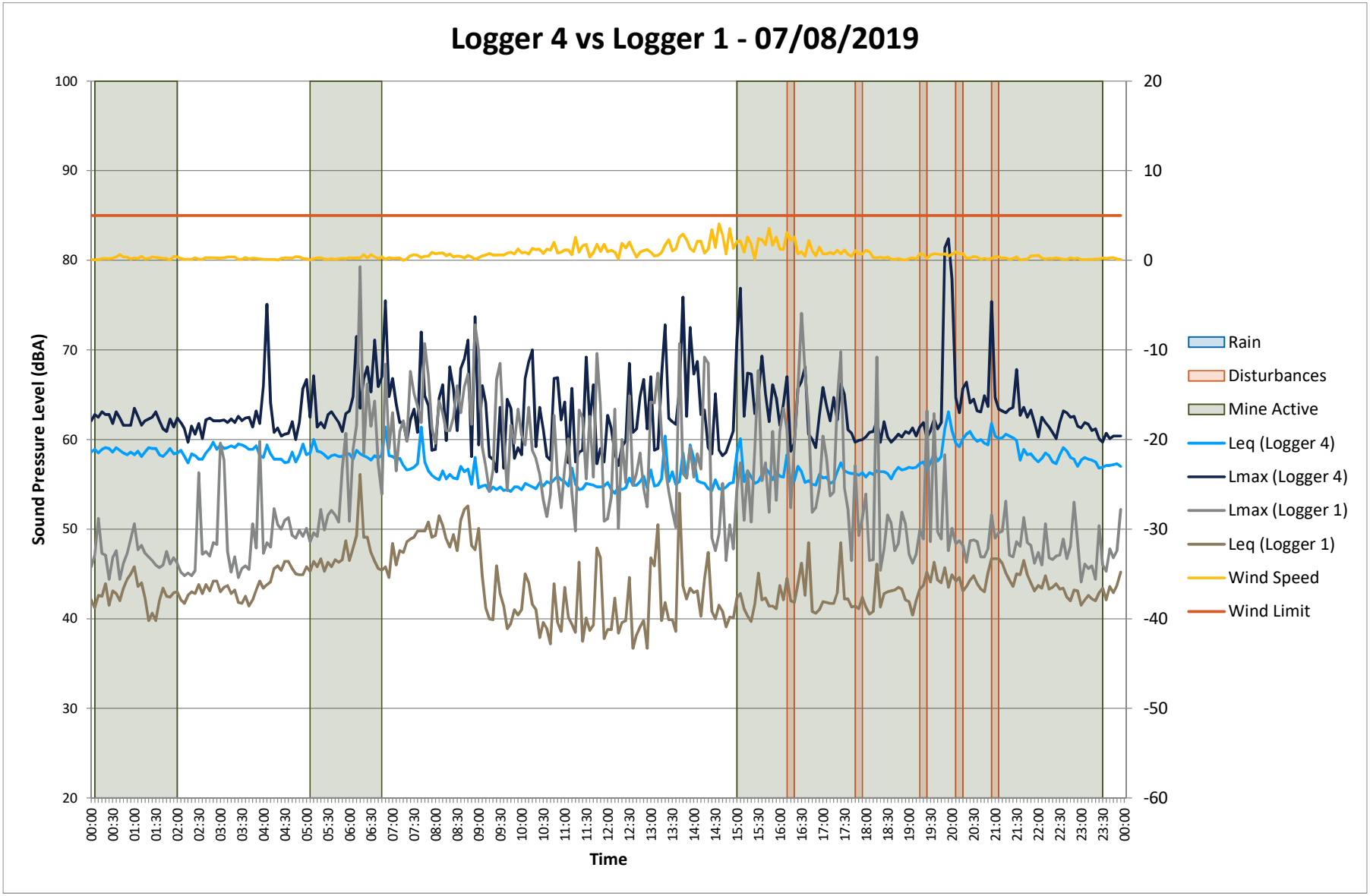

Logger 4 vs Logger 1 - 12/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

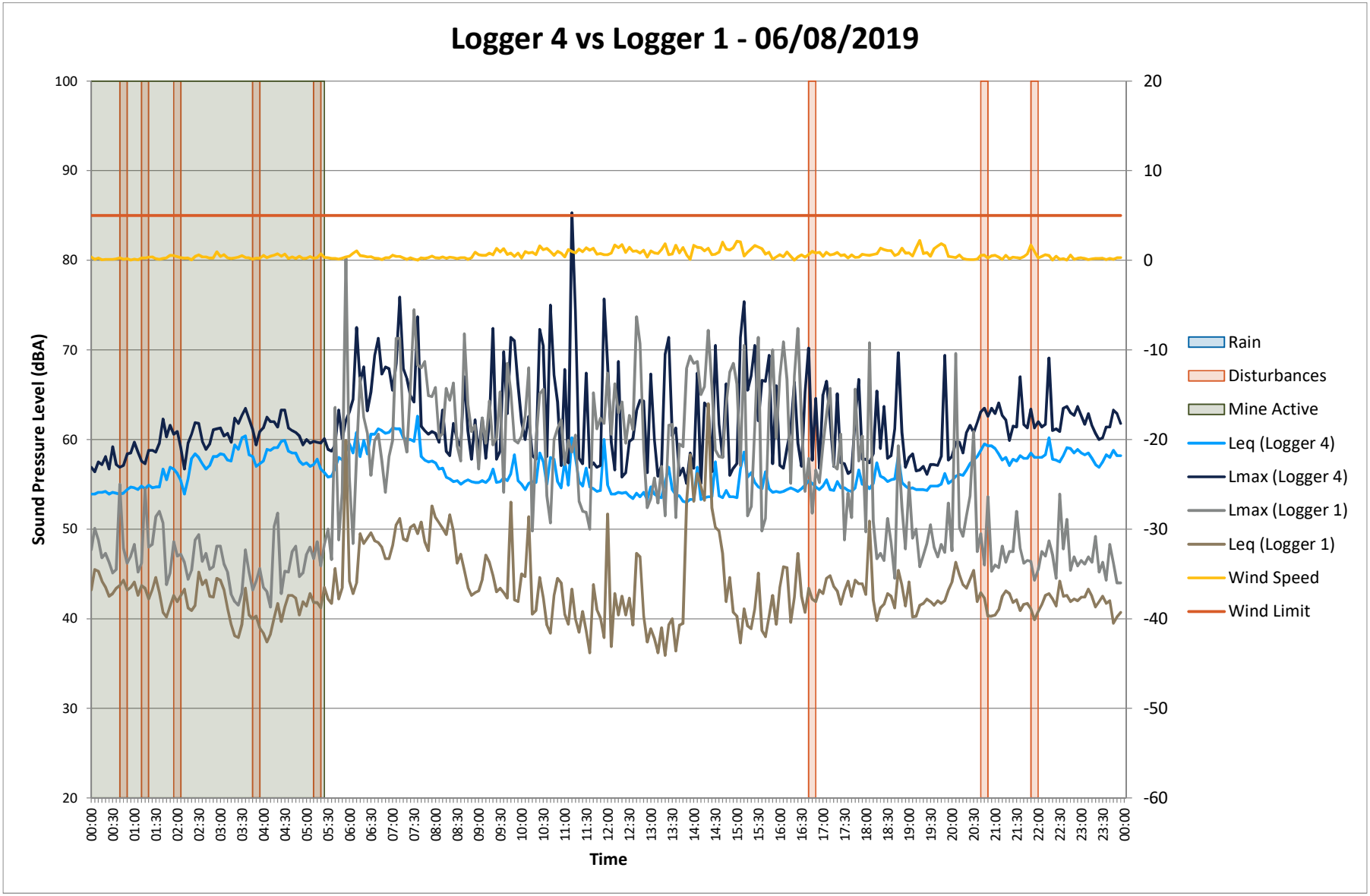

Logger 4 vs Logger 1 - 11/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

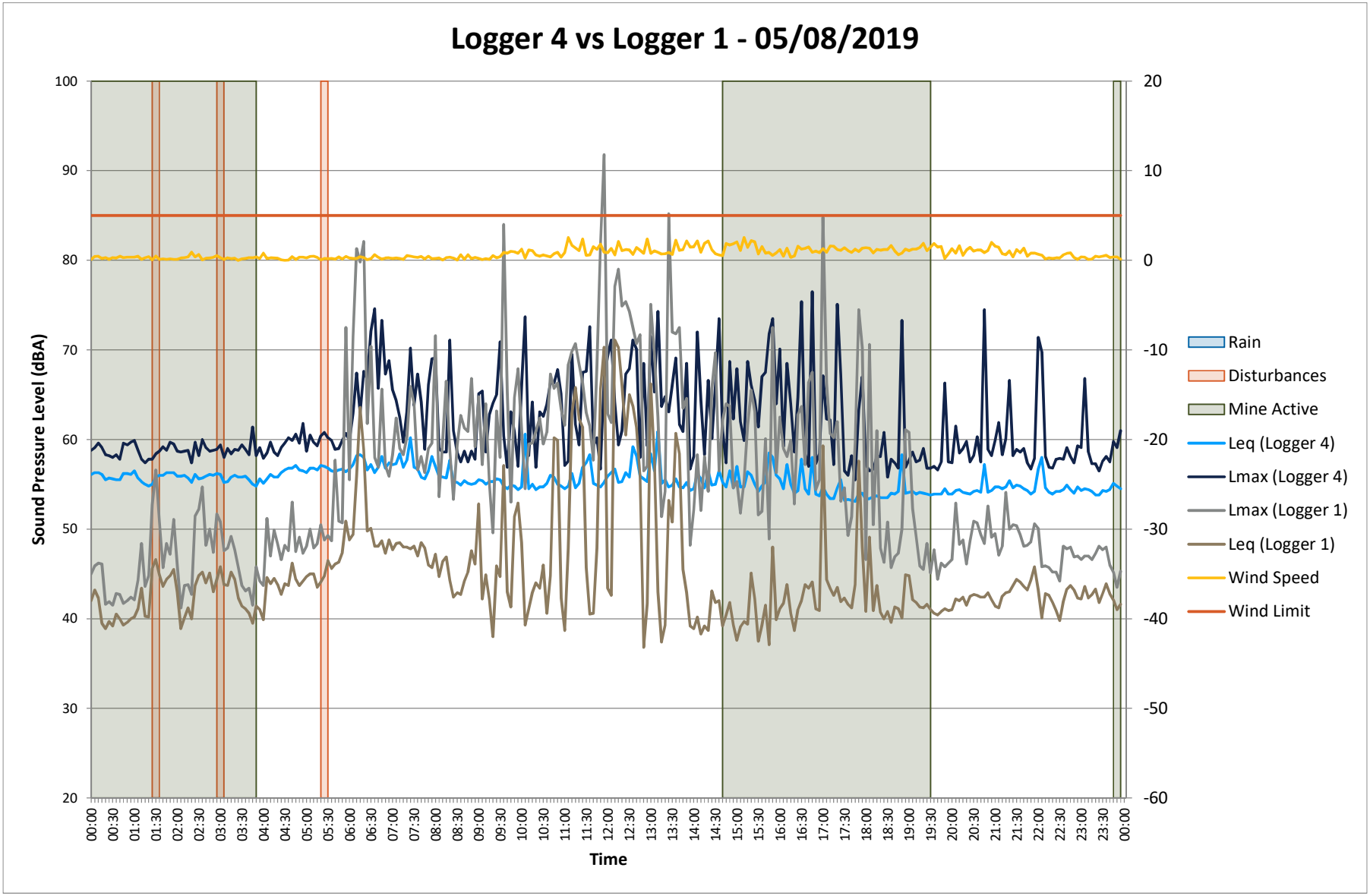

Logger 4 vs Logger 1 - 10/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

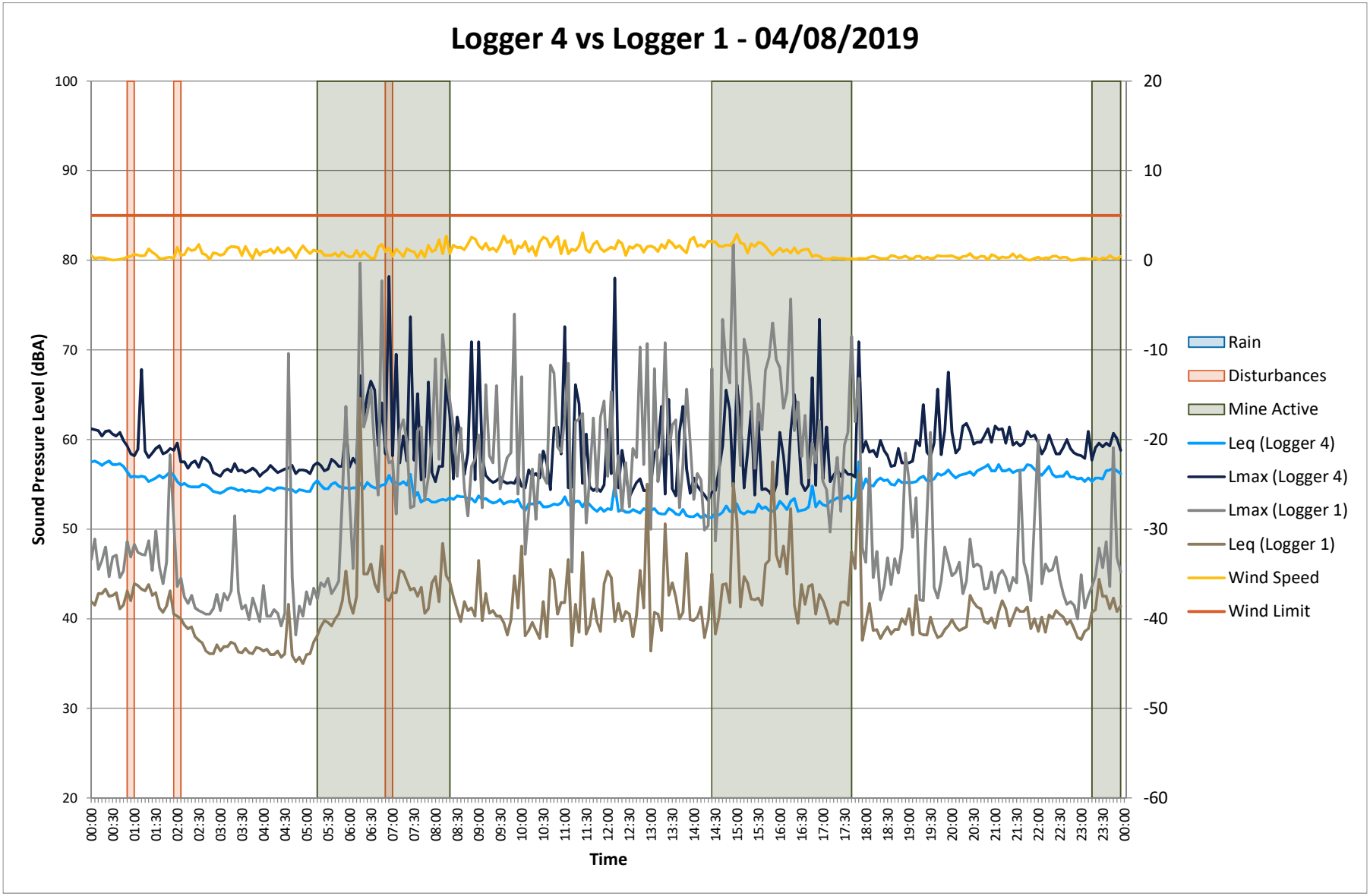

Logger 4 vs Logger 1 - 09/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

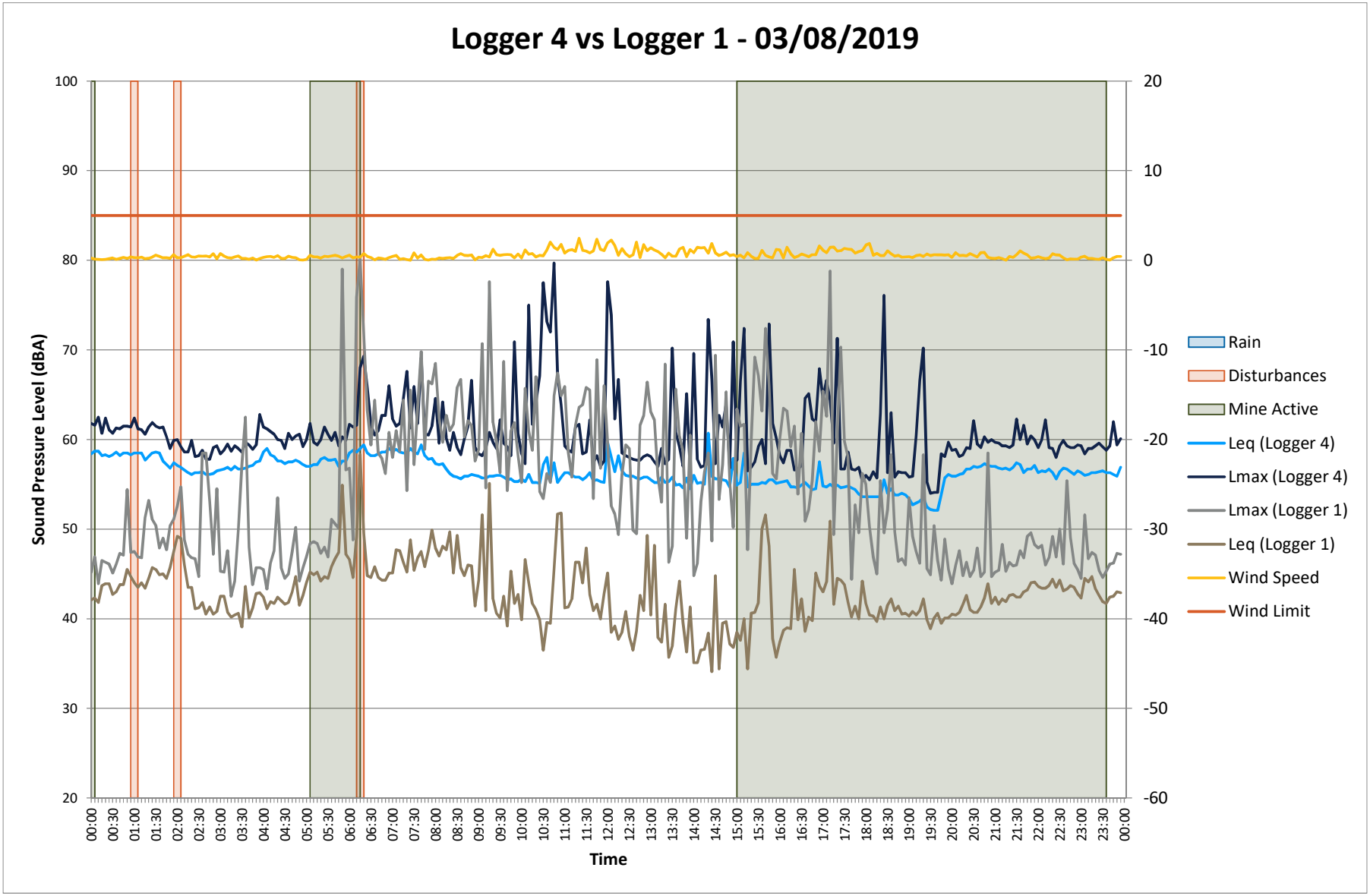

Logger 4 vs Logger 1 - 08/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

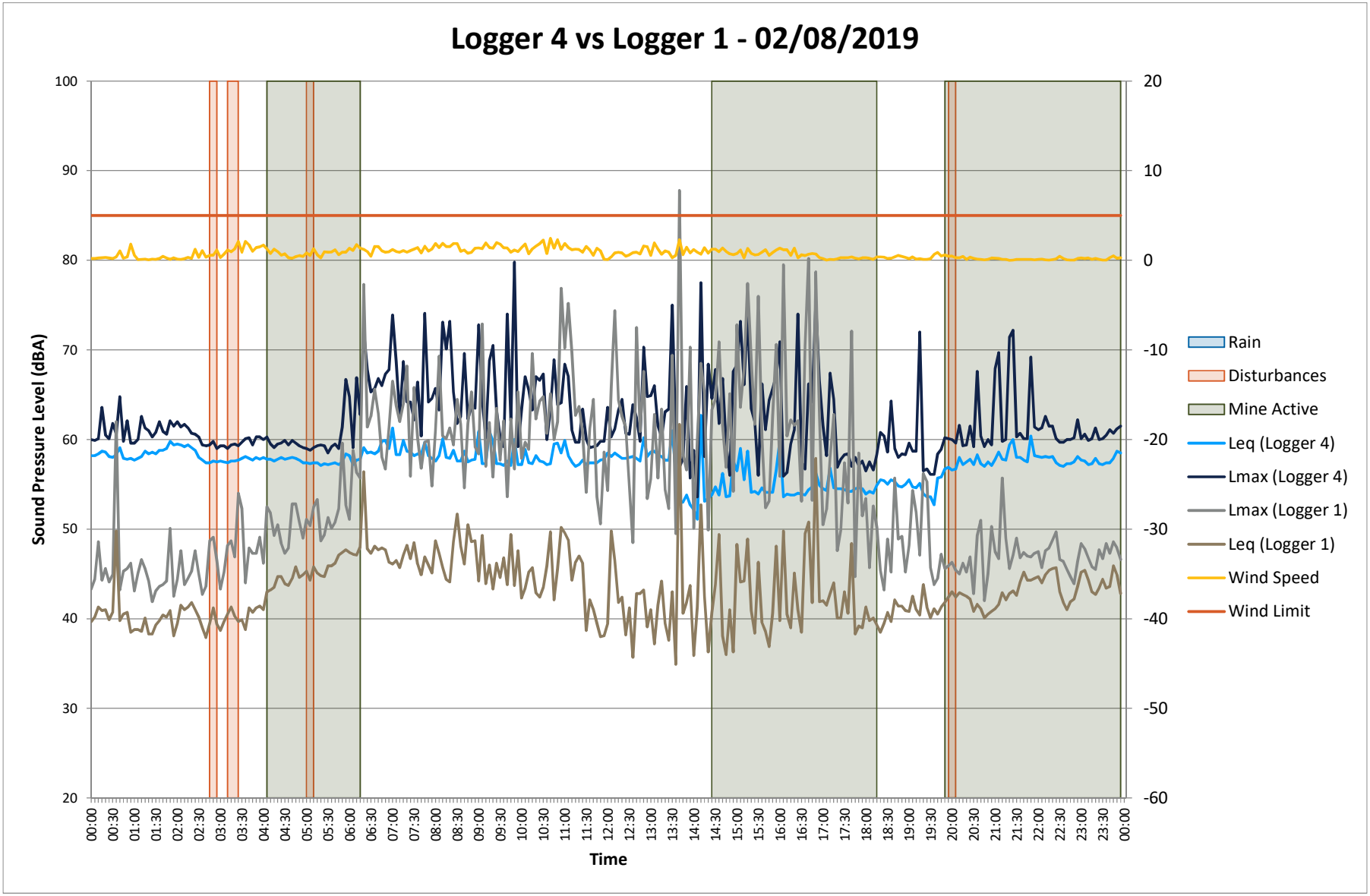

Logger 4 vs Logger 1 - 07/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

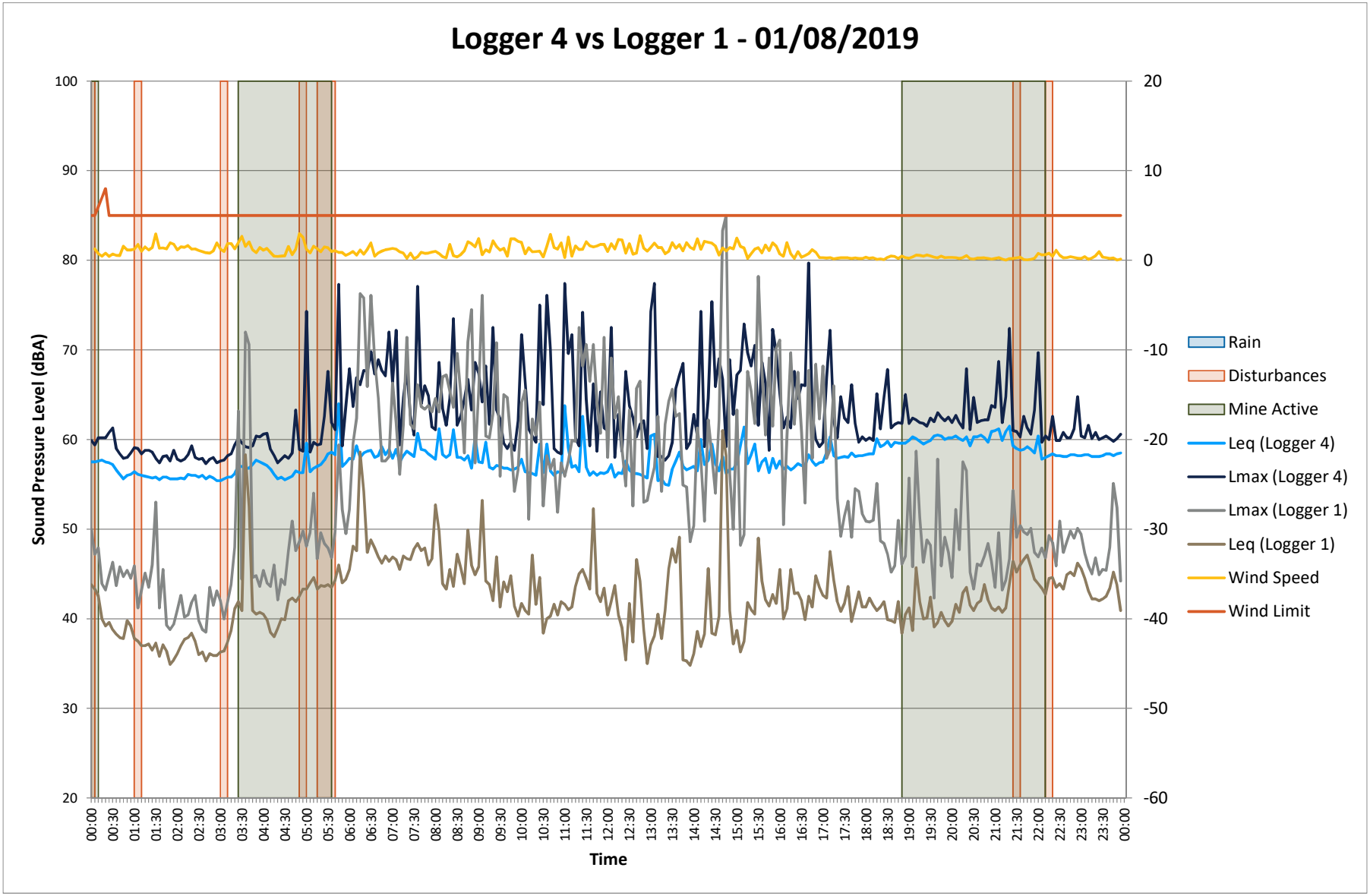

Logger 4 vs Logger 1 - 06/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

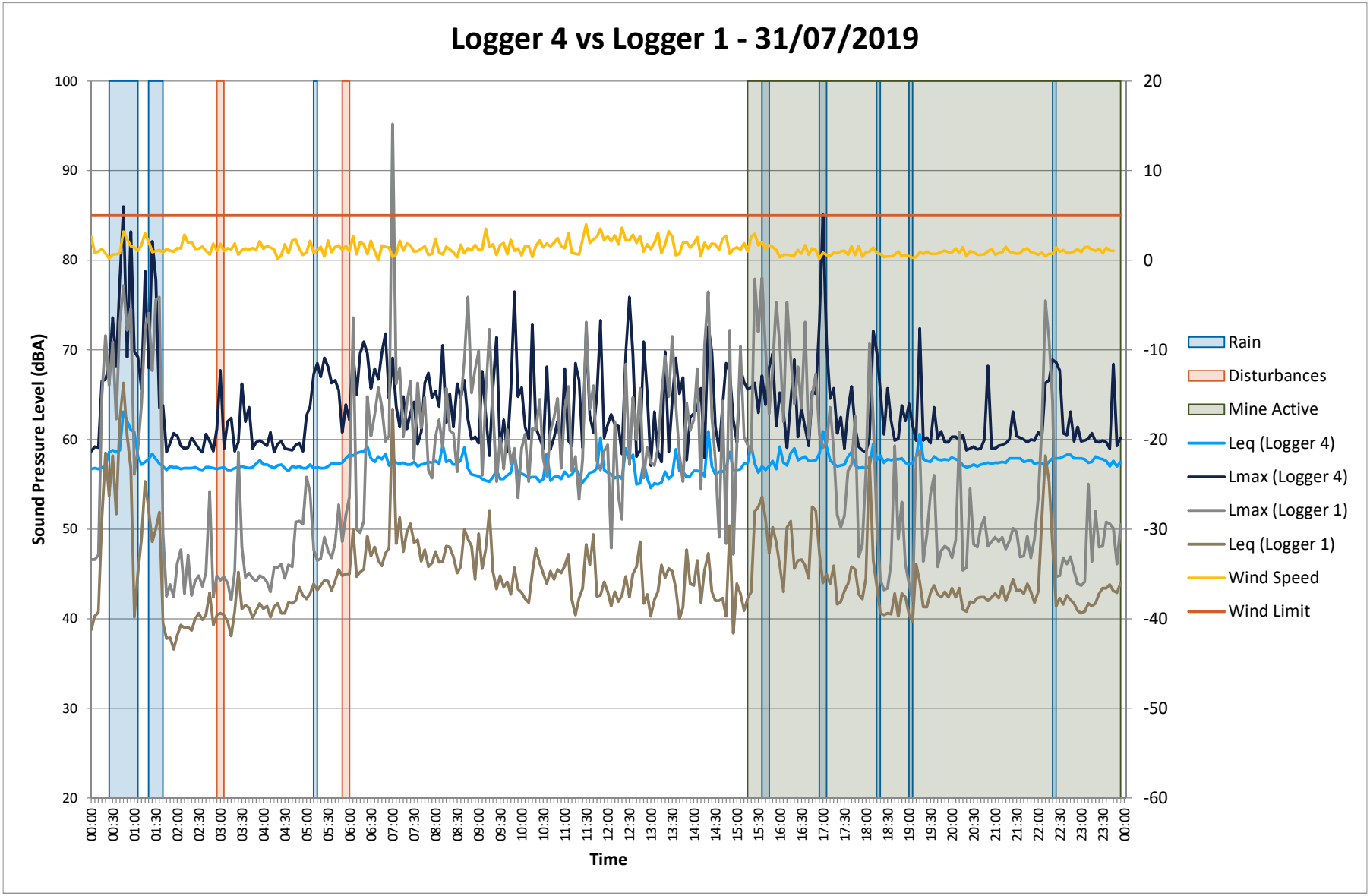

Logger 4 vs Logger 1 - 05/08/2019
Sound Pressure Level (dBA)
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

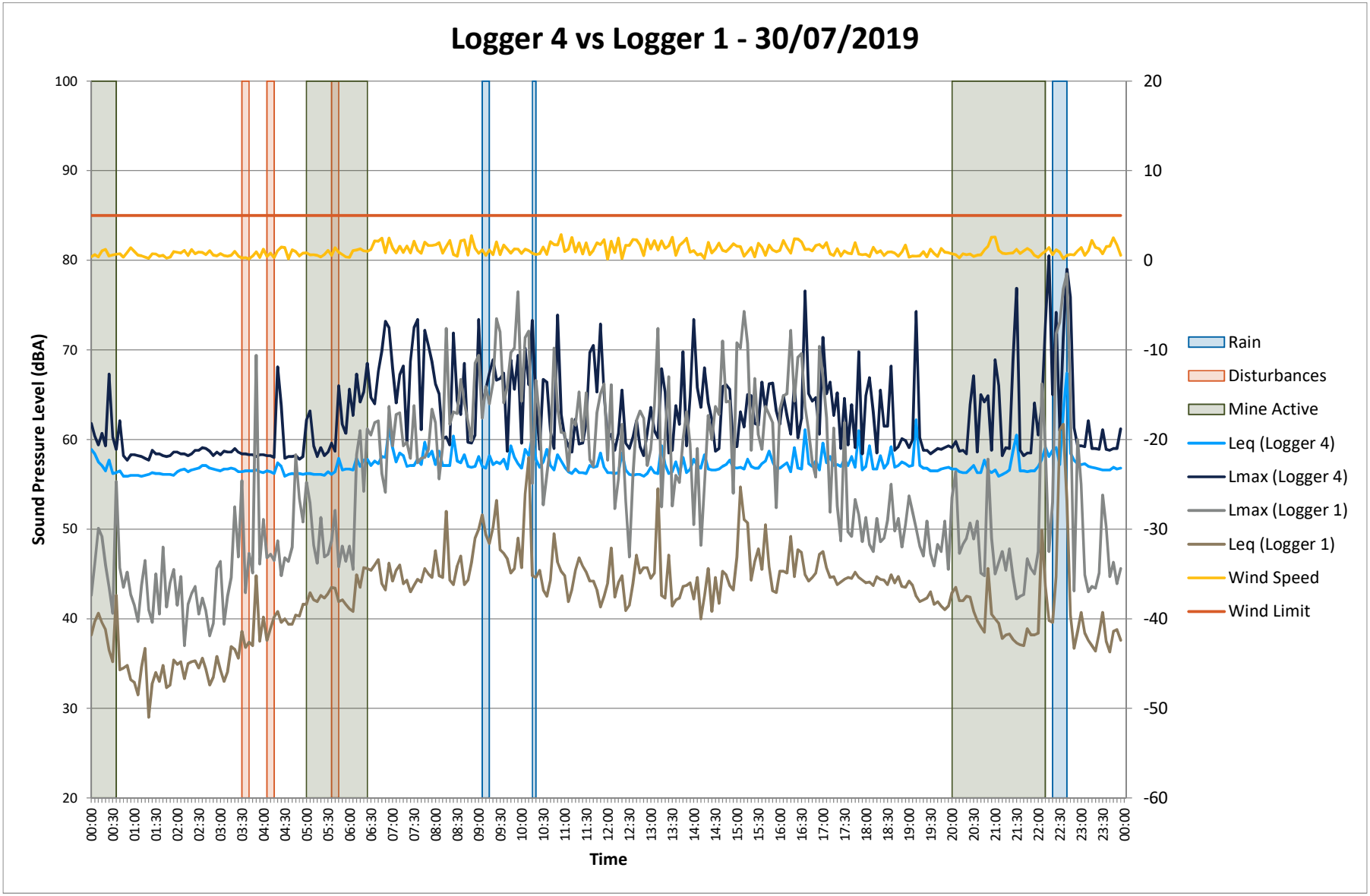

Logger 4 vs Logger 1 - 04/08/2019
Sound Pressure Level (dBA)
Time
100
90
80
70
60
50
40
30
20
20
10
0
-10
-20
-30
-40
-50
-60
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Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

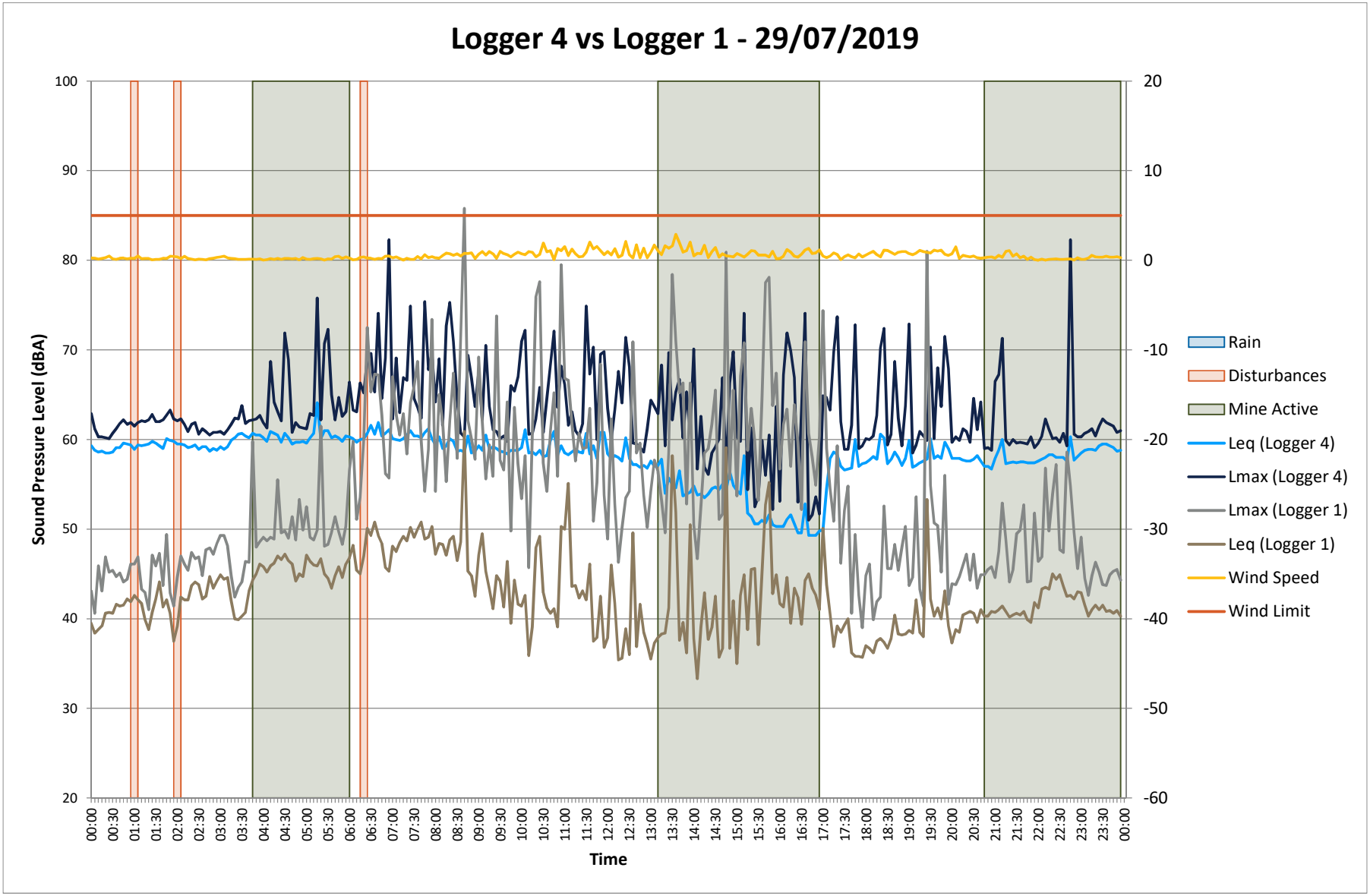

Logger 4 vs Logger 1 - 03/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
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-10
-20
-30
-40
-50
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

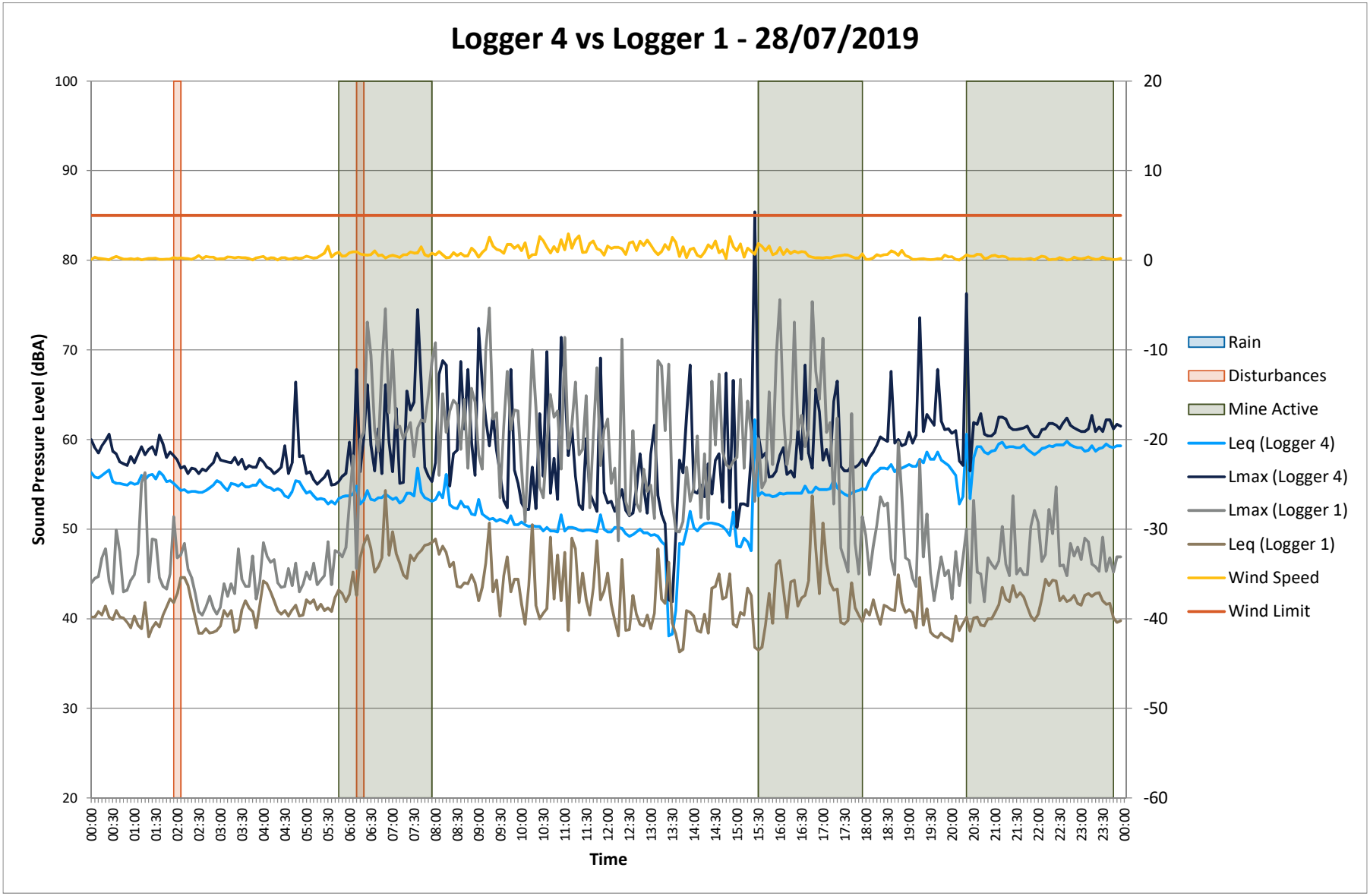

Logger 4 vs Logger 1 - 02/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
10
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

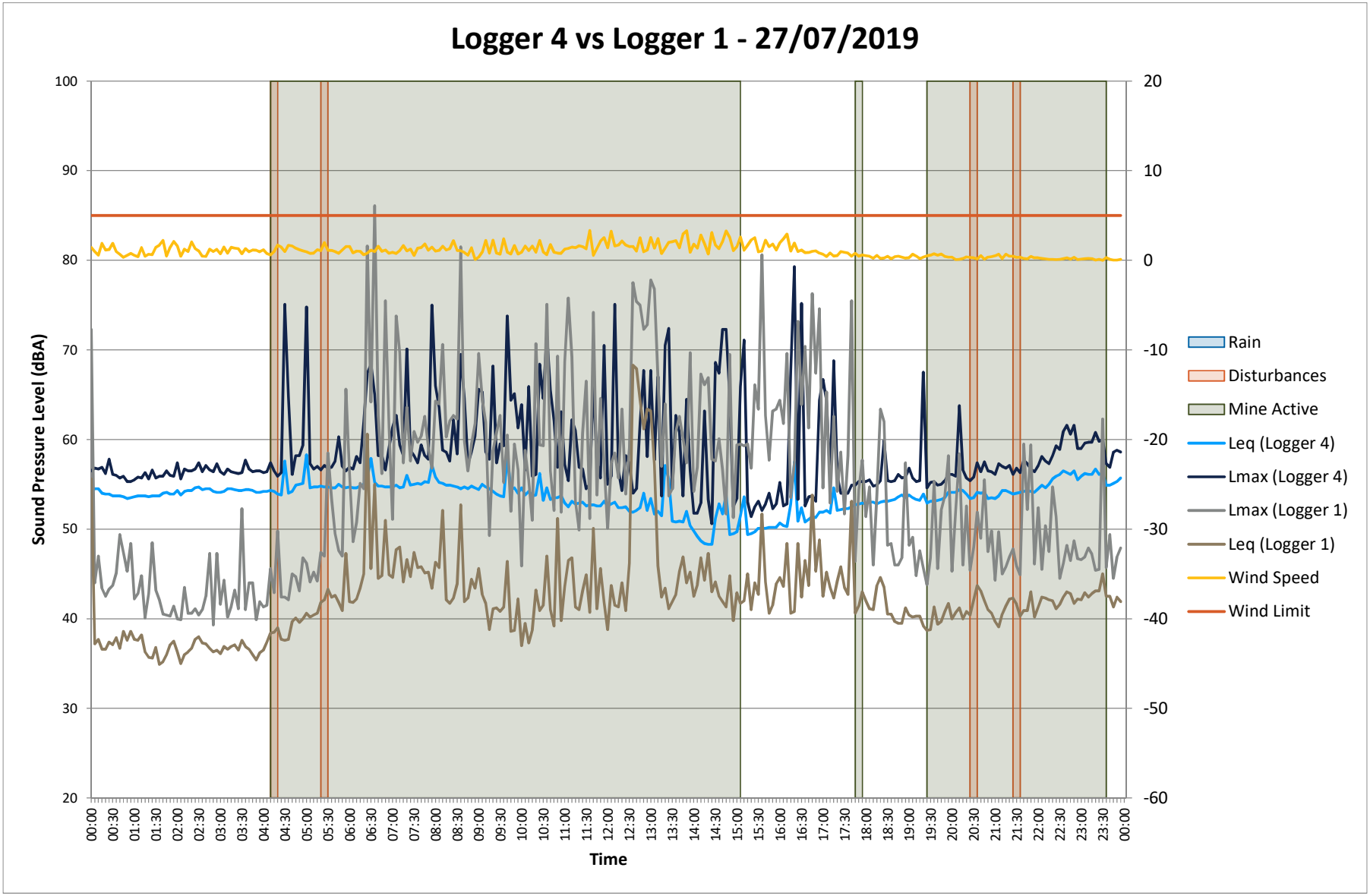

Logger 4 vs Logger 1 - 01/08/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
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00:00
Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

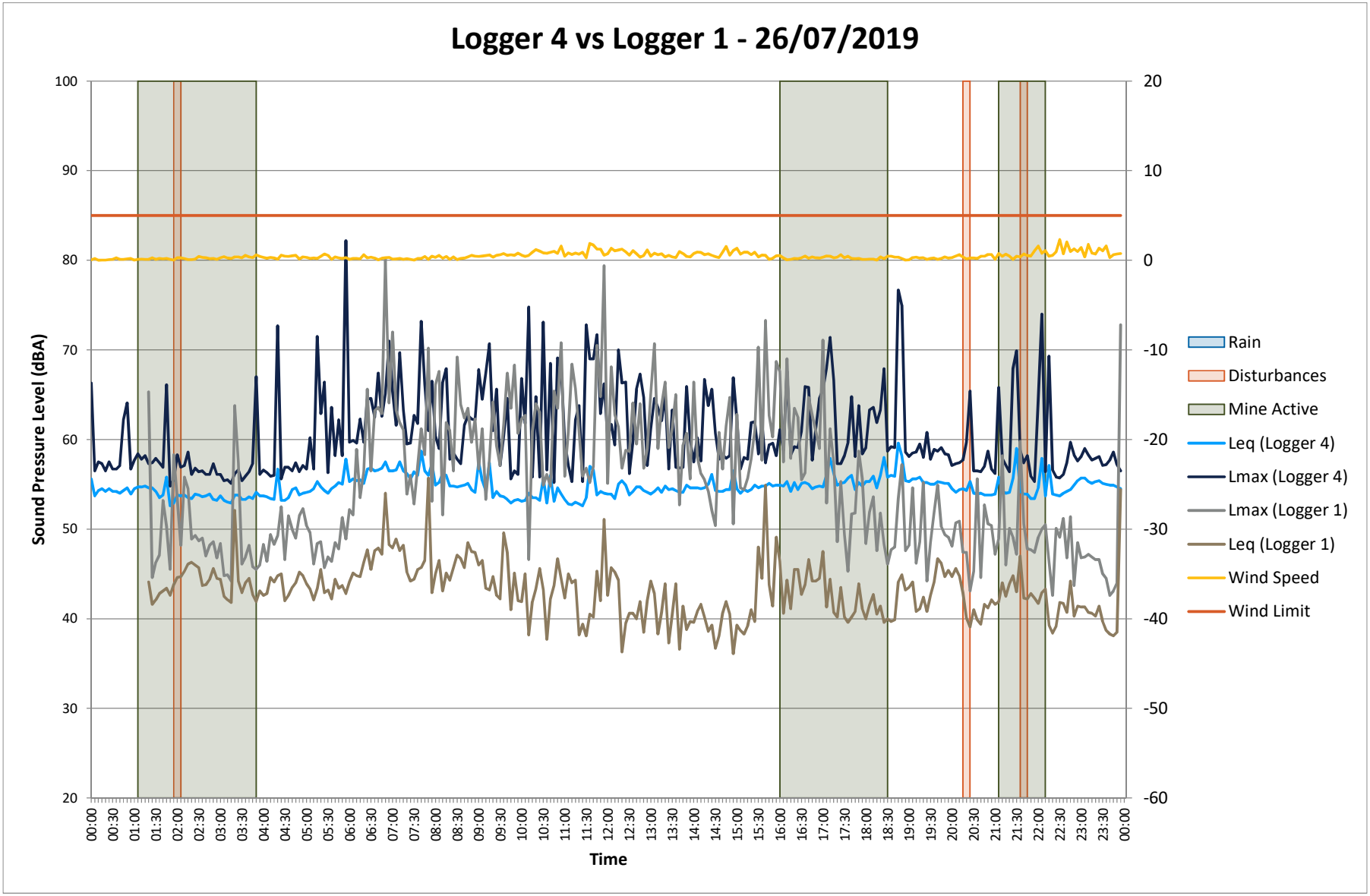

Logger 4 vs Logger 1 - 31/07/2019
Sound Pressure Level (dBA)
100
90
80
70
60
50
40
30
20
20
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-10
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00:00
Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

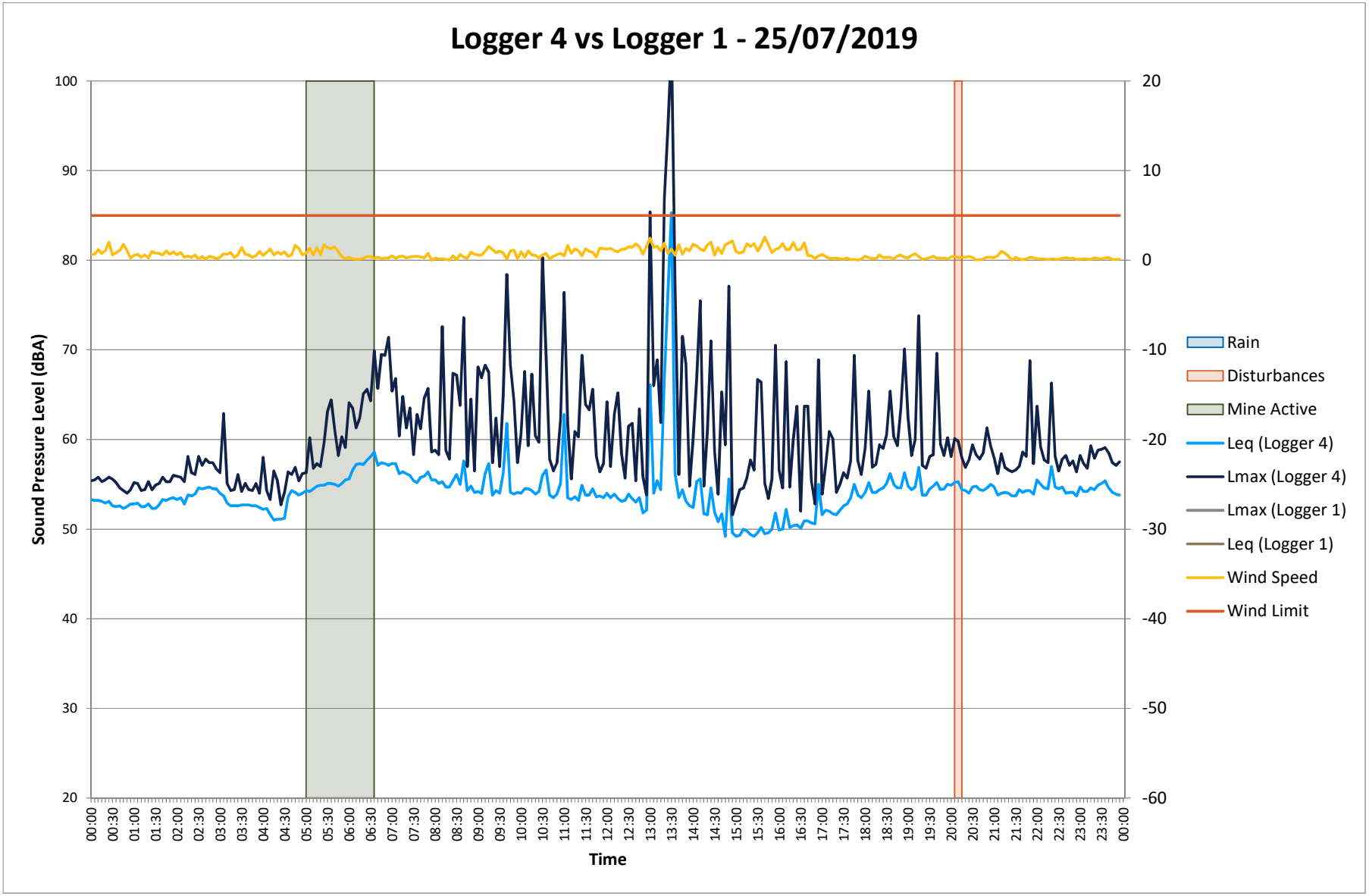

Logger 4 vs Logger 1 - 30/07/2019
Sound Pressure Level (dBA)
100
90
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70
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40
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00:00
Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

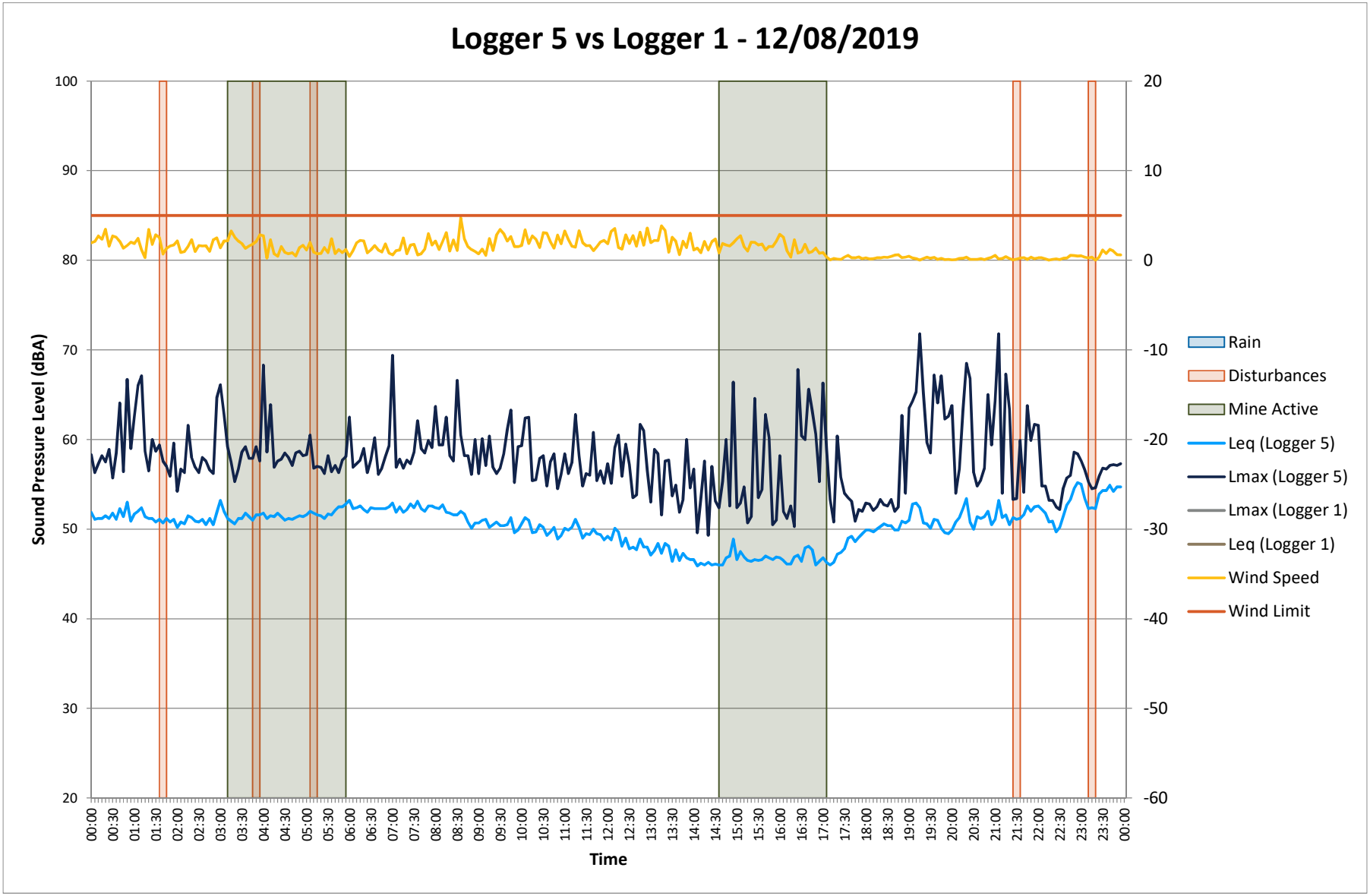

Logger 4 vs Logger 1 - 29/07/2019
Sound Pressure Level (dBA)
Time
100
90
80
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23:30
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Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

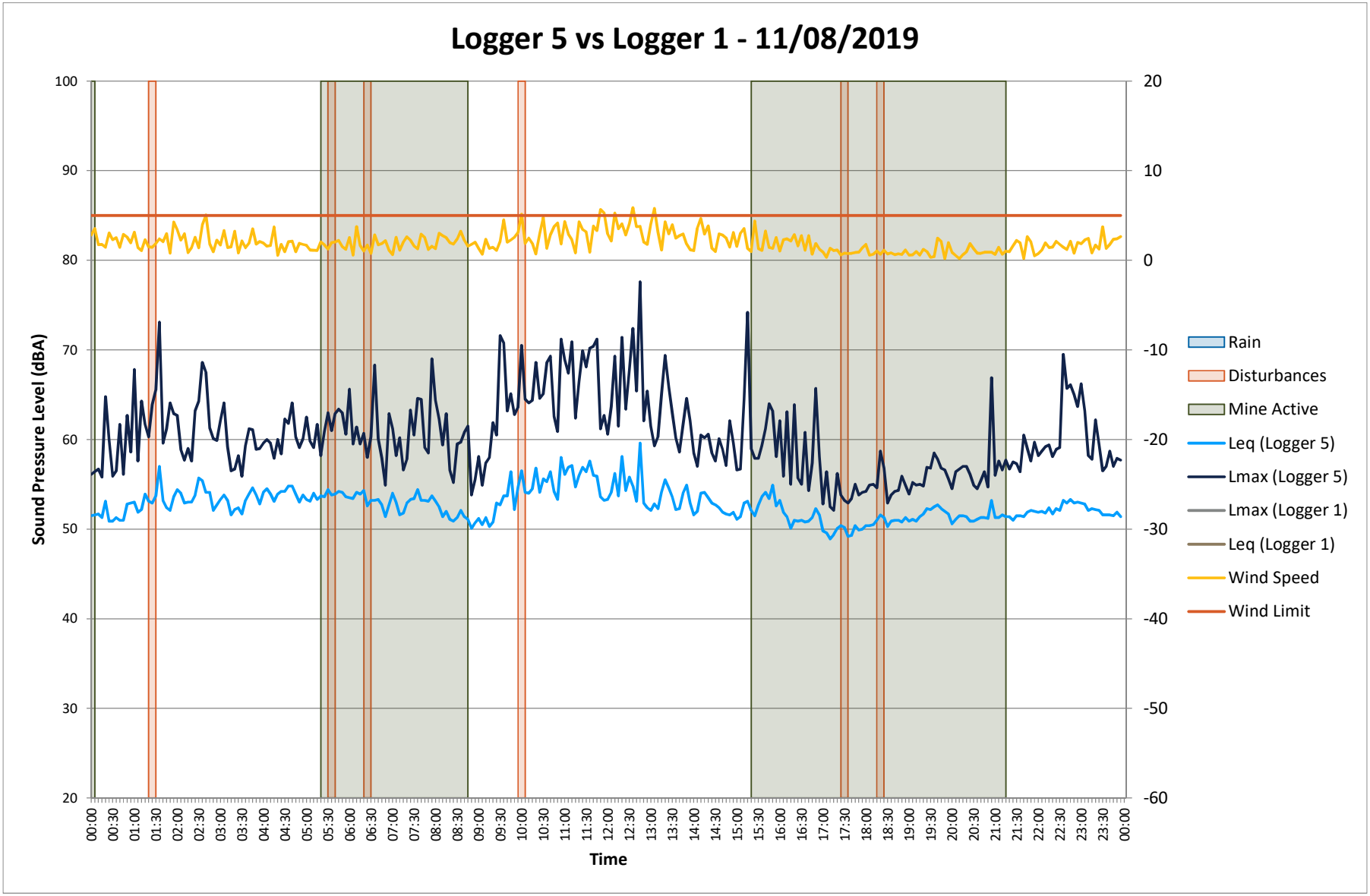

Logger 4 vs Logger 1 - 28/07/2019
Sound Pressure Level (dBA)
Time
100
90
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Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

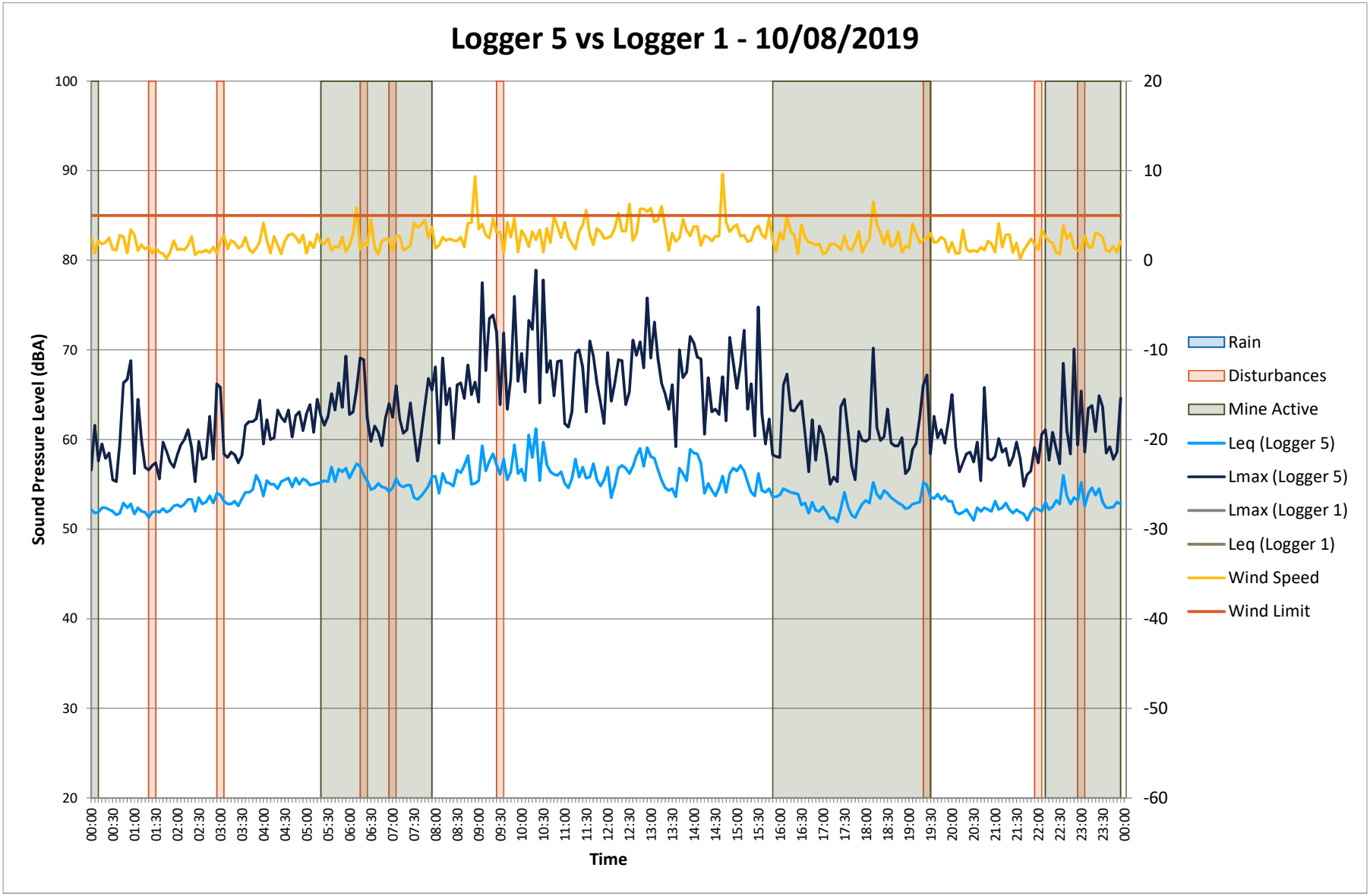

Logger 4 vs Logger 1 - 27/07/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

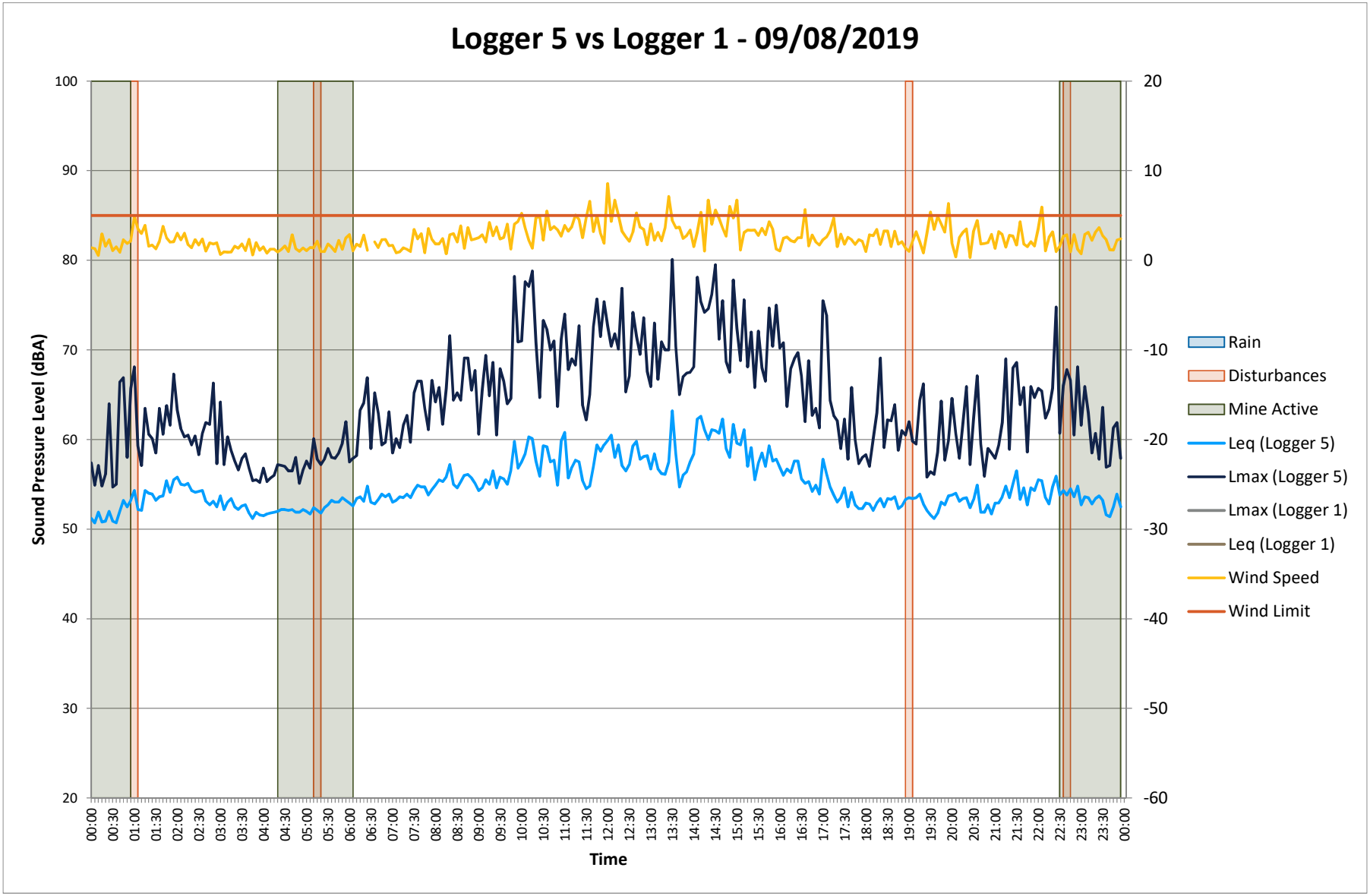

Logger 4 vs Logger 1 - 26/07/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

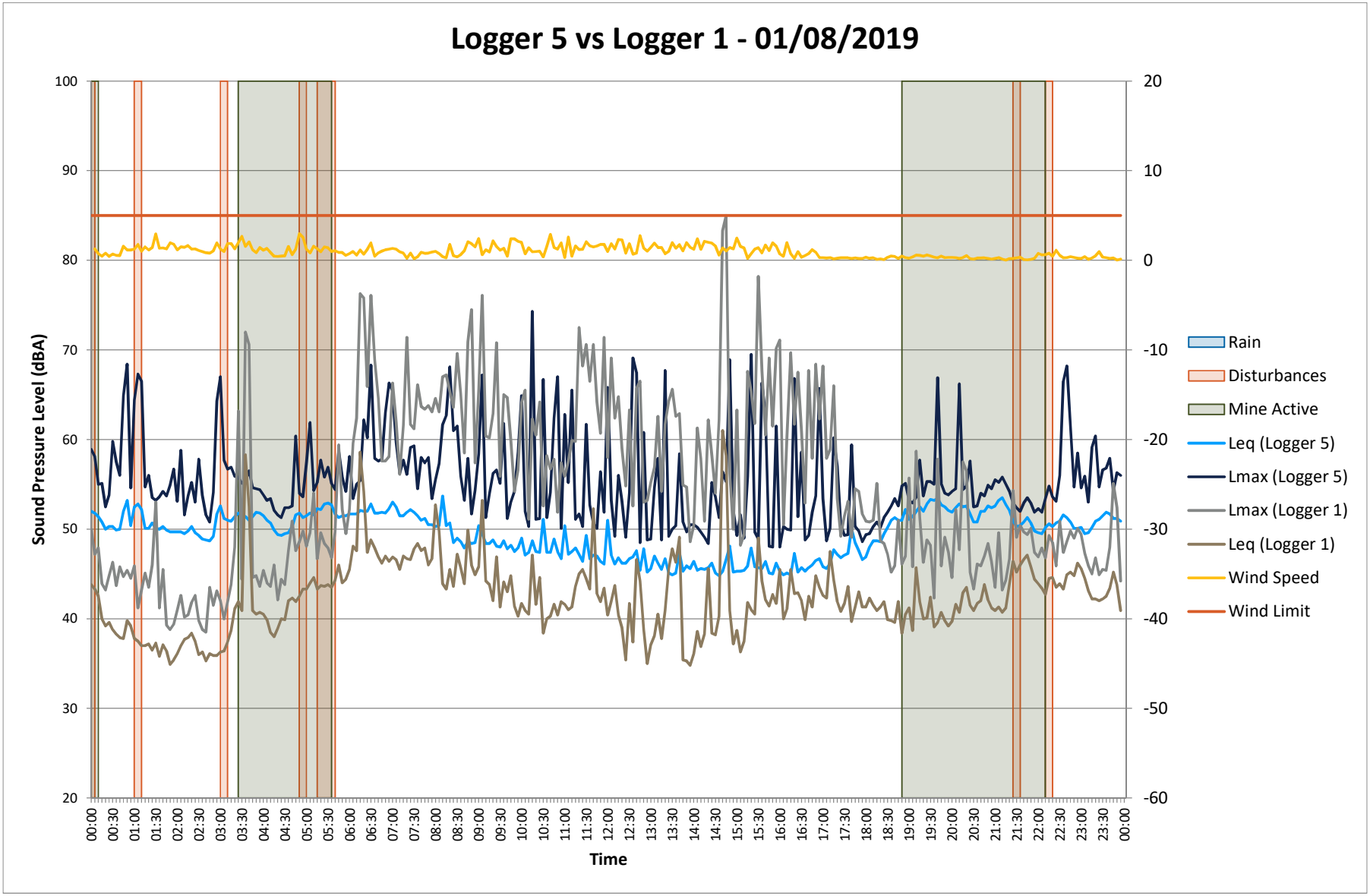

Logger 4 vs Logger 1 - 25/07/2019
Sound Pressure Level (dBA)
100
90
80
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20
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23:30
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Time
Rain
Disturbances
Mine Active
Leq (Logger 4)
Lmax (Logger 4)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

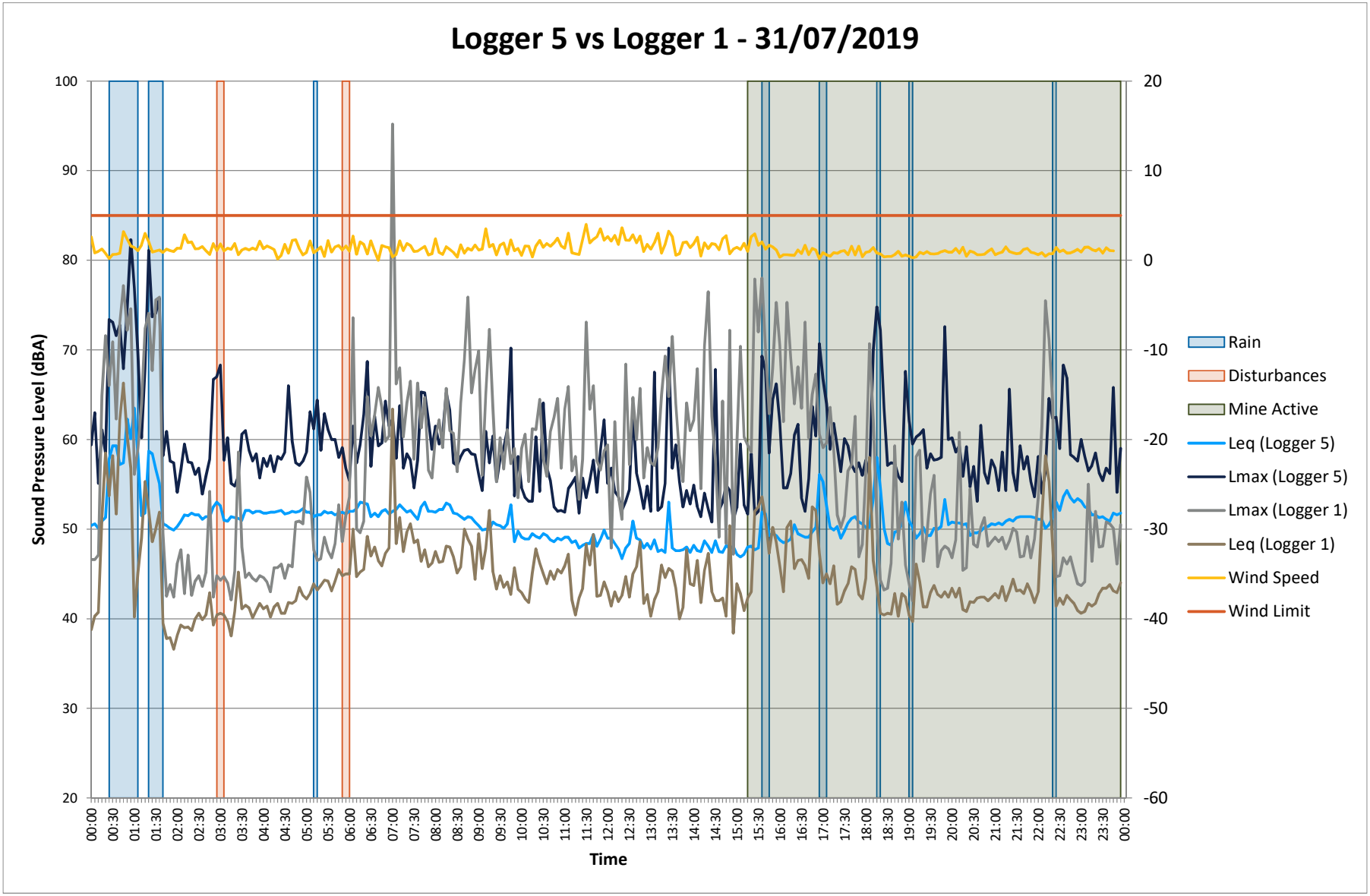

Logger 5 vs Logger 1 - 12/08/2019
Sound Pressure Level (dBA)
100
90
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30
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20
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-10
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22:30
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23:30
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Time
Rain
Disturbances
Mine Active
Leq (Logger 5)
Lmax (Logger 5)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

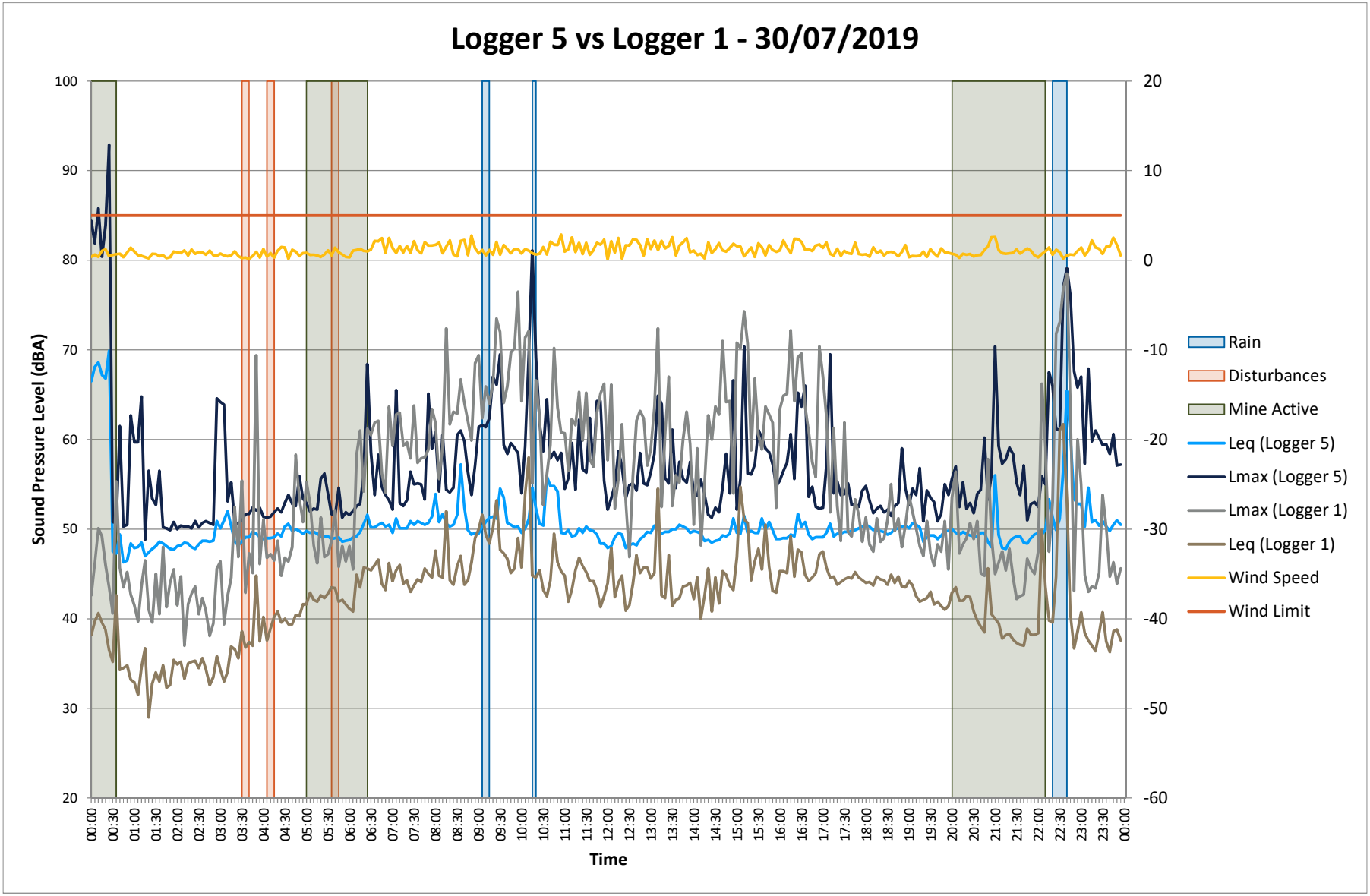

Logger 5 vs Logger 1 - 11/08/2019
Sound Pressure Level (dBA)
100
90
80
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Time
Rain
Disturbances
Mine Active
Leq (Logger 5)
Lmax (Logger 5)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

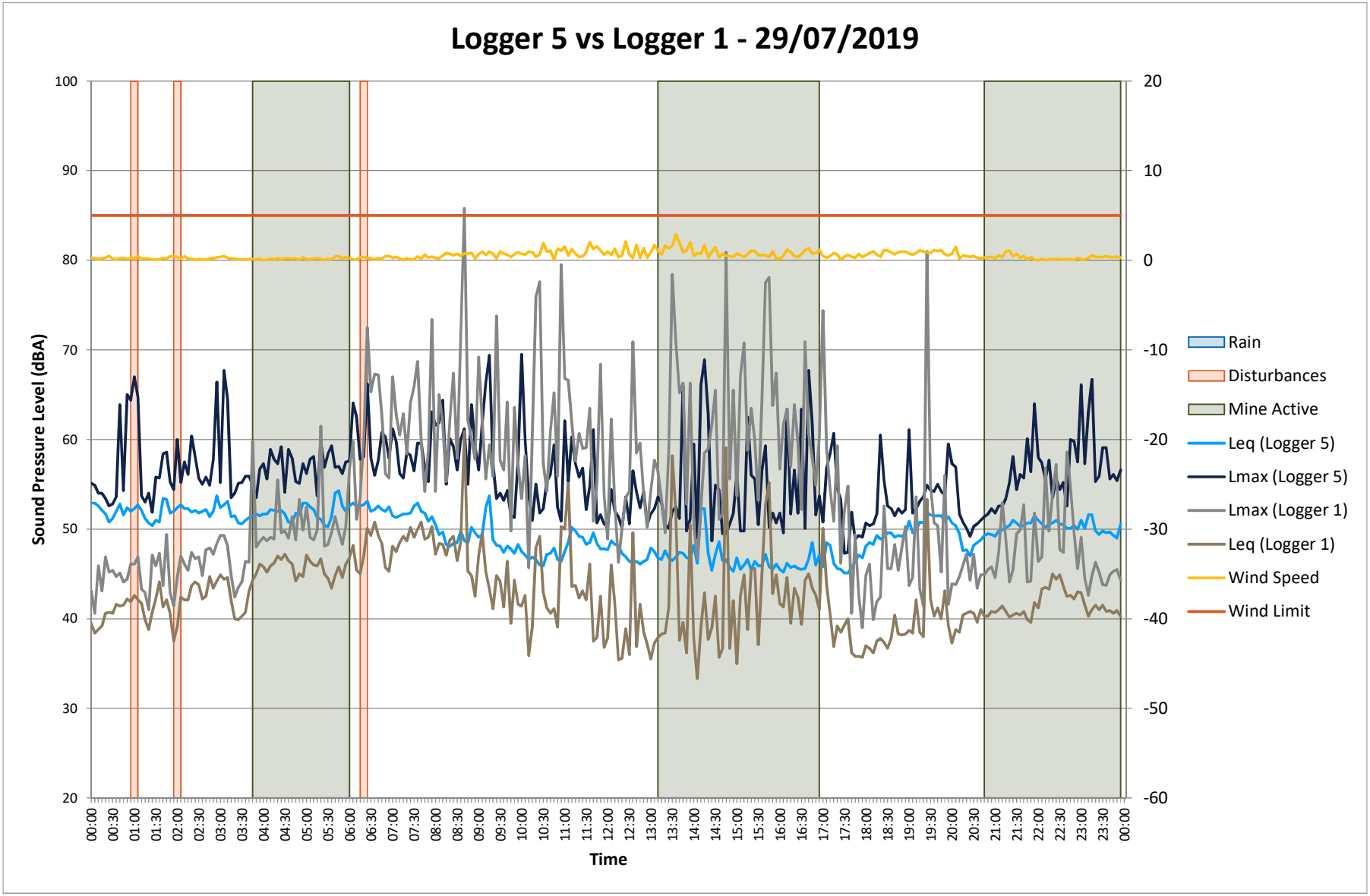

Logger 5 vs Logger 1 - 10/08/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 5)
Lmax (Logger 5)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

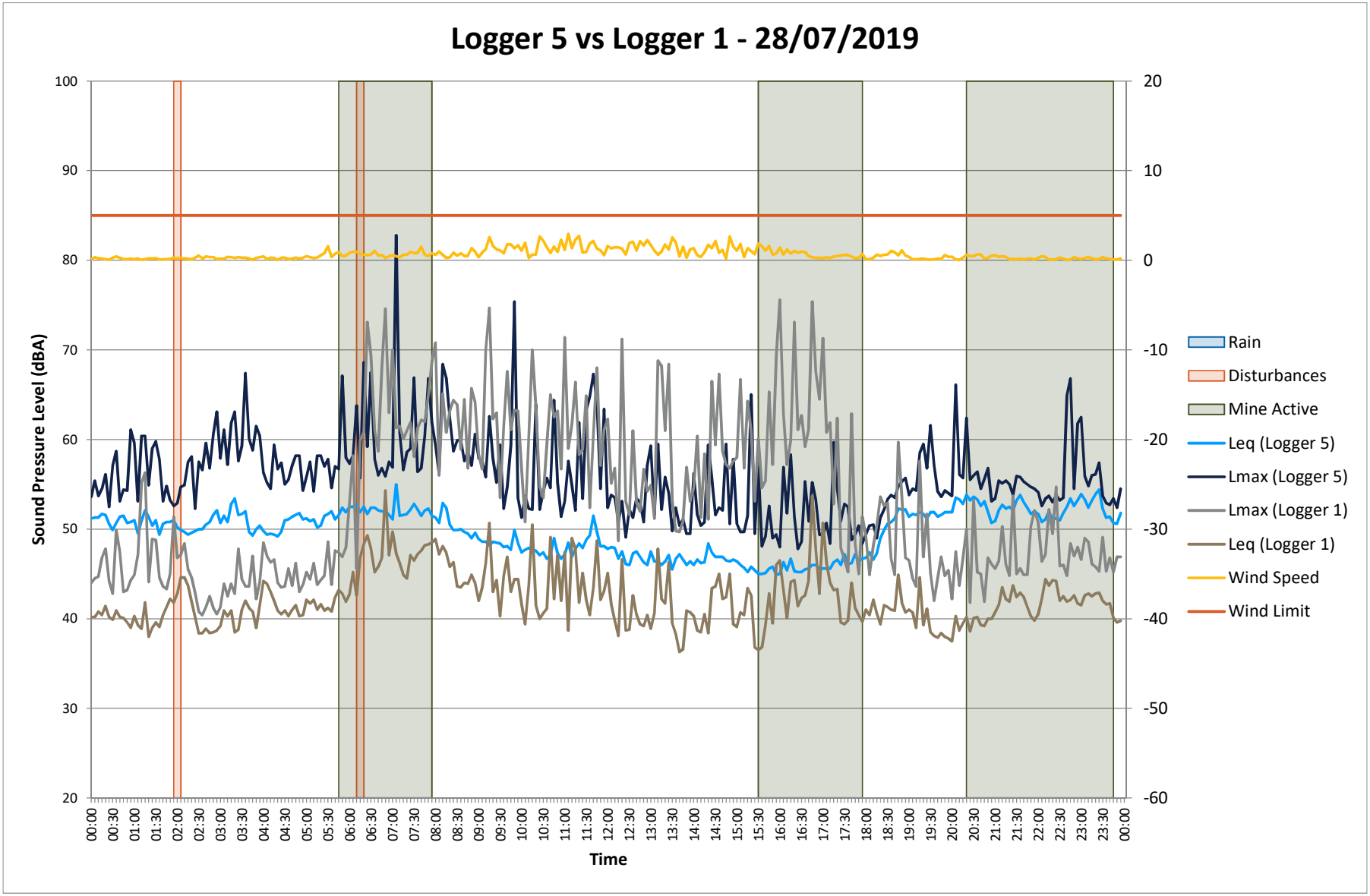

Logger 5 vs Logger 1 - 09/08/2019
Sound Pressure Level (dBA)
100
90
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Time
Rain
Disturbances
Mine Active
Leq (Logger 5)
Lmax (Logger 5)
Lmax (Logger 1)
Leq (Logger 1)
Wind Speed
Wind Limit

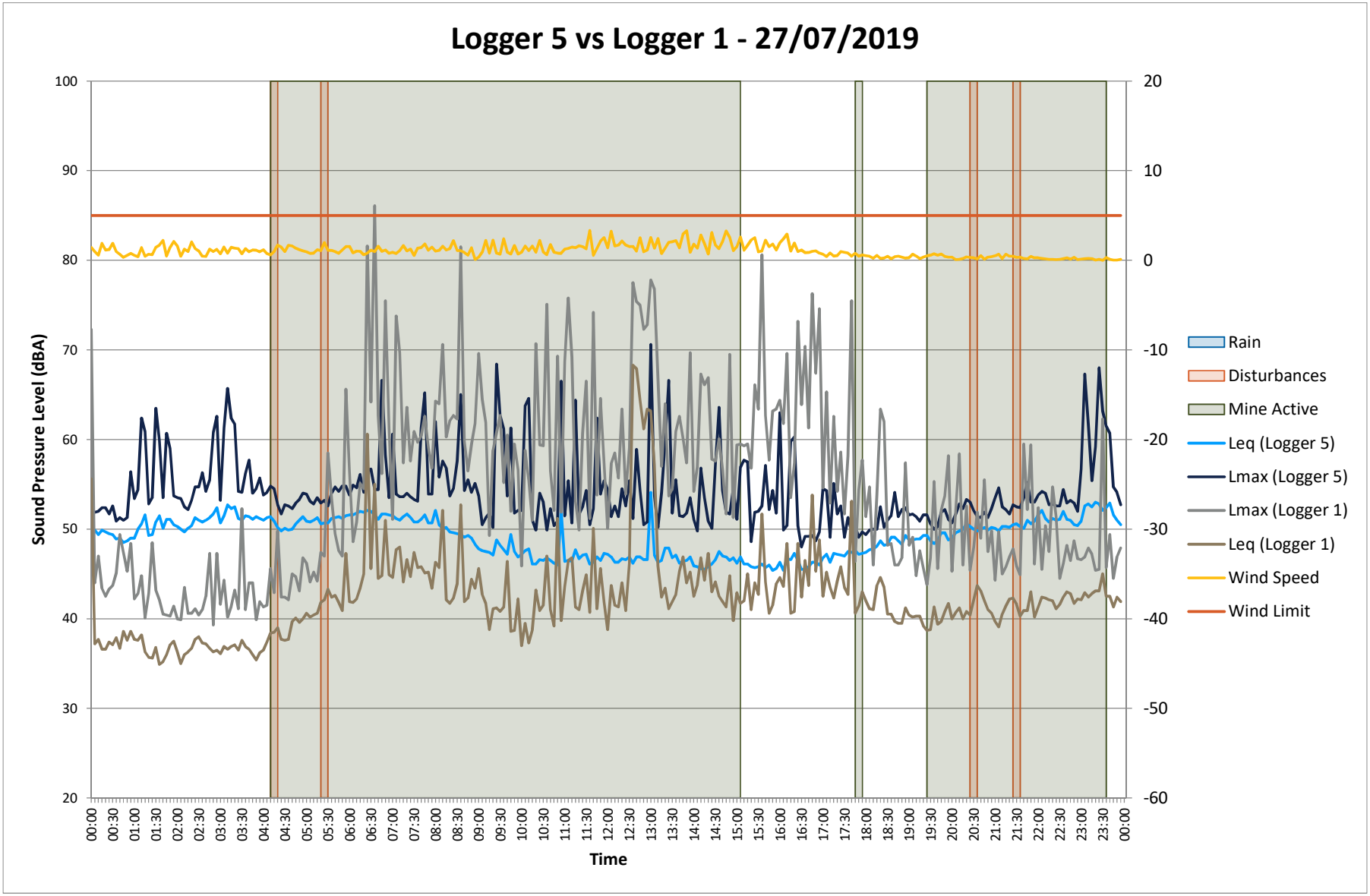

Logger 5 vs Logger 1 - 01/08/2019
Sound Pressure Level (dBA)
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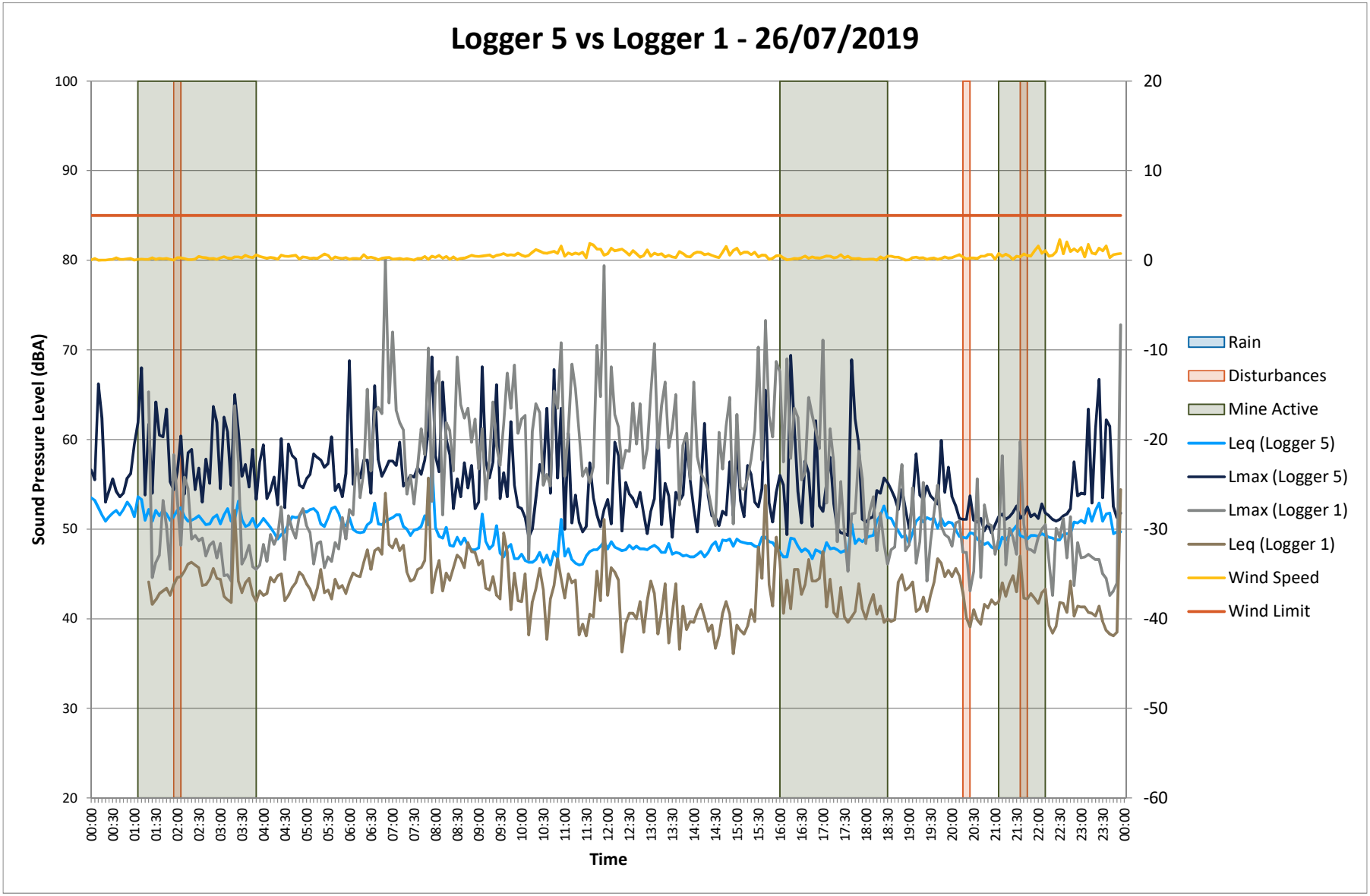

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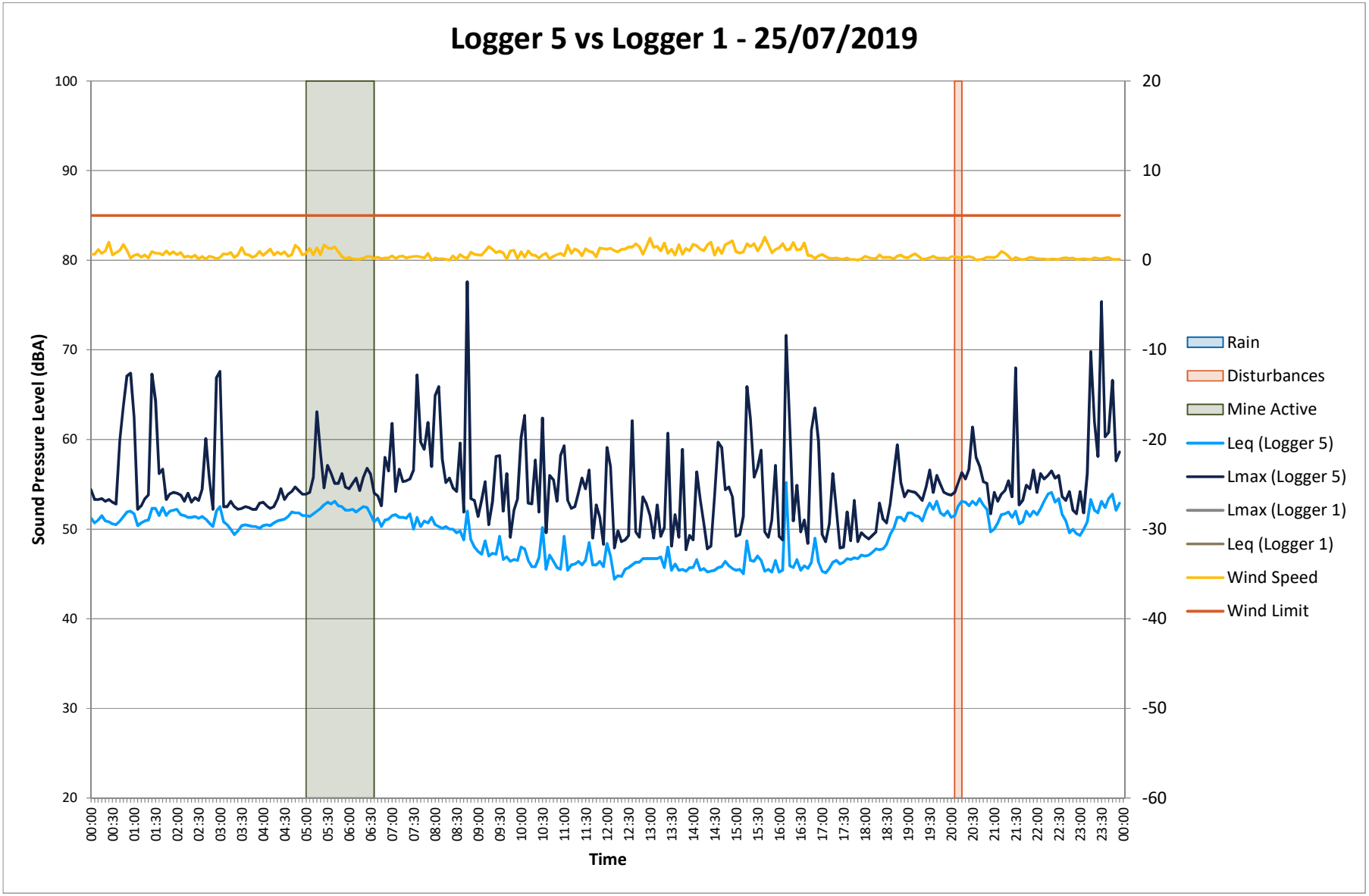

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Appendix 7: Annual Subsidence Report

Chain Valley Colliery and Mannering Colliery

2019 Annual Subsidence Report

Report Prepared for Great Southern Energy Pty Ltd (trading as Delta Coal)
February 2020

Prepared

on 27 March 2020

by Chris Armit *MEng BSci DipCLM*

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1 Introduction

1.1 Overview

Chain Valley Colliery (CVC) and Mannering Colliery (MC) are underground coal mines on the southern side of Lake Macquarie, approximately 60 kilometres (km) south of Newcastle and 80 km north of Sydney (Figure 1). An underground linkage within the Fassifern Seam is approved between CVC and MC, which enables coal extracted at CVC to be transferred to, and handled at, MC.

Great Southern Energy Pty Ltd (trading as Delta Coal (DC)) took over as owner and operator of CVC and as the operator of MC on 1 April 2019. Prior to the purchase by Great Southern Energy Pty Ltd, CVC was owned and operated by LakeCoal Pty Ltd (LakeCoal). LakeCoal also operated MC under an agreement with the owners of the mine; Centennial Mannering Pty Limited, a wholly owned subsidiary of Centennial Coal Company Limited (Centennial).

CVC operates under Development Consent SSD-5465, as modified, which was originally granted on 23 December 2013 by the then Minister for Planning and Infrastructure under Part 4, Division 4.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act), which relates to State significant development (SSD). The consent permits underground miniwall mining in the Fassifern Seam at a maximum rate of 2.1 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal, with all secondary extraction confined to areas under the Lake Macquarie water body.

MC was granted project approval (MP06_0311) under Part 3A of the EP&A Act on 12 March 2008 and, as modified, permits the extraction of up to 1.1 Mtpa of ROM coal until 30 June 2022. It also permits the handling of up to 1.3 Mtpa ROM coal with that coal transported via a dedicated overland conveyor to Delta Electricity's Vales Point Power Station (VPPS) for domestic energy generation.

This Annual Subsidence report (ASR) has been prepared to satisfy the relevant conditions of SSD-5465 and MP06_0311 and provides an overview of subsidence performance for CVC and MC in 2019.

1.2 Purpose

The purpose of this ASR is to provide an overview of subsidence performance for CVC and MC. Subsidence at CVC and MC is documented, regulated, controlled and measured consistent with the relevant conditions of SSD-5465 and MP06_0311. In addition, this ASR:

- provides data to assist with the management of the risks associated with subsidence at CVC and MC;
- compares observed subsidence against predictions in CVC's and MC's environmental assessment and approval documentation and
- summarises the results of subsidence monitoring activities performed in 2019

1.3 Scope

This ASR relates specifically to underground mining undertaken at CVC and MC in the period 1 January 2019 to 31 December 2019. Within this period, no mining was undertaken at MC. First workings and secondary extraction were undertaken at CVC and included:

- first workings:
  - Tailgate S2;
  - Maingate S2;
  - Maingate S3; and
  - part of the North-East Mains;
- secondary extraction:
  - Miniwall N1; and
  - Miniwall S2

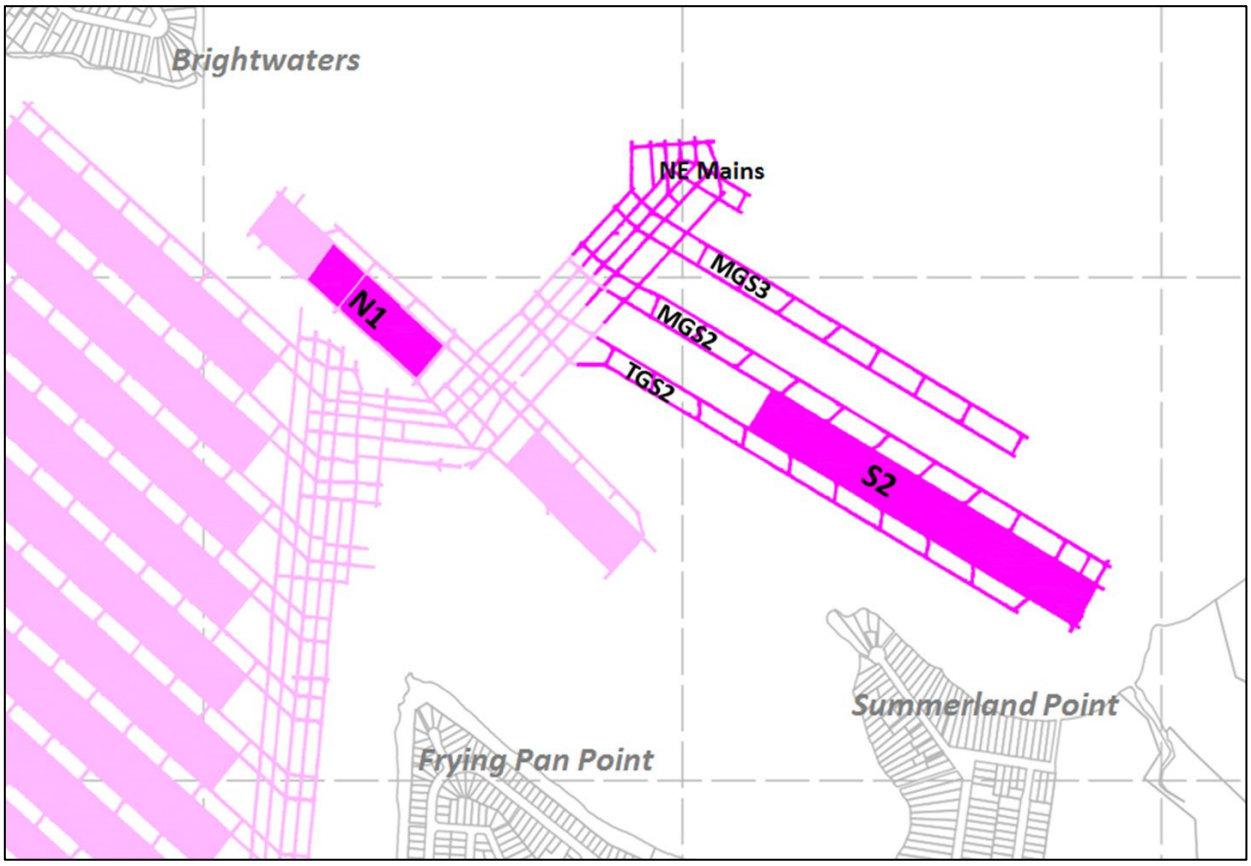


Figure 1 – Chain Valley Colliery 2019 Mining Area

1.4 Approval and legislative requirements

1.4.1 Chain Valley Colliery

In accordance with Schedule 2, Condition 2 and 2A of SSD-5465 (as modified), in addition to carrying out the works in accordance with the conditions of SSD-5465, DC carries out works generally in accordance with the Environmental Impact Statement (EIS); Statement of Environmental Effects (SEE) (Mod 1); SEE (Mod 2); project layout plans and Statement of Commitments. An Ecological and Archaeological assessment was conducted in August and a Conservation Risk Assessment Approval from National Parks and Wildlife Service (NPWS) Miniwall S4 was granted in October 2019 to allow access and foreshore subsidence monitoring activities for Miniwall S4. These monitoring points will be installed prior to Miniwall S4 extraction commencing.

1.4.2 Mannering Colliery

In accordance with Schedule 2, Condition 2 and 2A of MP06_0311 (as modified), in addition to carrying out the works in accordance with the conditions of MP06_0311, DC carries out works generally in accordance with the Environmental Assessment (EA); EA (Mod 1); EA (Mod 2); EA (Mod 3); EA (Mod 4); project layout plans and Statement of Commitments.

1.5 Stakeholder engagement

DC has consulted with the local community via the CVC and MC Community Consultative Committee (CCC) on subsidence results through 2019. This report will be provided to the CCC and applicable regulators and added to the Delta Coal website.

1.6 Supporting documentation

This ASR has included a review of relevant sections of the following documentation:

- Laxton, J, Laxton, E & Laxton, March 2019, *Lake Macquarie Benthos Survey Report No. 16*. Report prepared by J.H. & E.S. Laxton – Environmental Consultants P/L for Lake Coal.
- Laxton, J & Laxton, E 2019, *Seagrass Survey of Chain Valley Bay, Summerland Point, Bardens Bay and Crangan Bay, Lake Macquarie, NSW (Results for 2008 to 2019)*. Report prepared by J.H. & E.S. Laxton – Environmental Consultants P/L for Delta Coal.
- September 2019, *Lake Macquarie Benthos Survey Report No. 17*. Report prepared by J.H. & E.S. Laxton – Environmental Consultants P/L for Delta Coal.
- June 2019, *Pelican Rock Navigational Marker Pre-mining inspection*, Delta Coal
- Jan 2019 Daly Smith *Bathymetric Survey*
- July 2019 Daly Smith *Survey of Pelican Rock navigational marker*
- July 2019 Daly Smith *Bathymetric Survey*
- Daly Smith *Foreshore Surveys*
- Feb, May, August, November Delta Coal *Quarterly Combined CCC Chain Valley Colliery and Mannering Colliery Community Consultative Committee Meeting minutes and presentations*
- *Conservation Risk Assessment Approval for Miniwall S4 monitoring*

2 Monitoring and Comparison

2.1 Chain Valley Colliery Monitoring Overview

CVC has a *Subsidence Monitoring Program* and the purpose of this program is to:

- define the subsidence monitoring scope;
- outline subsidence predictions;
- outline the methodology to be used to monitor subsidence impacts
- identify subsidence monitoring locations;
- identify reporting requirements;
- analyse the relationship between predicted and resulting subsidence effects; and
- identify the requirements for incident or exceedances reporting.

Subsidence monitoring at MC is restricted to an annual survey to assess potential subsidence impacts associated with the link road project. Annual surveys assess potential impacts at a number of monitoring locations within proximity of VPPS including:

- early warning line one;
- early warning line two;
- TransGrid fence line;
- VPPS foreshore line and
- sewage treatment plant.

2.2 Chain Valley Colliery

2.2.1 Scope of subsidence monitoring

i Shoreline (high water mark)

The shoreline of Lake Macquarie is protected under Mining Lease Conditions requiring Ministerial Approval to carry out mining operations within the High Water Mark Subsidence Barrier (HWMSB). The HWMSB is defined in the seam by a line defined by an angle of draw of 35° drawn lakeward from the high water level of Lake Macquarie, and on the land side, a line drawn from the 2.44 m contour at 35° towards the land.

In accordance with Condition 1, Schedule 4 of SSD-5465, vertical subsidence within the HWMSB is limited to a maximum of 20 mm.

A key objective of the mine design at CVC is to minimise vertical subsidence within the HWMSB and prevent additional subsidence above the high water mark.

To ensure effectiveness of the mine design, monitoring of the shoreline is carried out at fixed reference marks surveyed at regular intervals.

ii Seagrass

Seagrass distribution within estuaries is naturally influenced by light penetration, depth, salinity, nutrient status, bed stability, wave energy, estuary type, and the evolutionary stage of the estuary.

Condition 2, Schedule 4 of SSD-5465 specifies negligible environmental impacts on the species of seagrass found within the current area of mining operations as a condition of approval. Surveys of the seagrass extents are undertaken in order to monitor impacts on the seagrass population.

Delta Coal's *Seagrass Management Plan* (Delta Coal 2019) outlines the methodology used to determine changes to composition and quantity of seagrass populations in Lake Macquarie as a result of mining activities at CVC.

Subsidence monitoring of the lakebed is undertaken via bathymetric survey over CVC's current mining area in order to validate subsidence predictions.

iii Benthic communities

Lake Macquarie is inhabited by a diverse number of marine organisms.

Condition 2, Schedule 4 of SSD-5465 specifies minor environmental consequences on benthic communities, including minor changes to species composition and/or distribution as a condition of approval. Regular surveys of the lake bed are undertaken in order to monitor variations in the composition and density of benthos due to mining, environmental and/or other seasonal factors.

Delta Coal's *Benthic Communities Management Plan* (Delta Coal 2019) outlines the methodology used to determine changes to species diversity and abundance.

Subsidence monitoring of the lakebed is undertaken via bathymetric survey over CVC's current mining area in order to validate subsidence predictions and to determine approximate levels of subsidence on specific benthic sample locations.

2.2.2 Methods of subsidence monitoring

i Overview

Subsidence monitoring at CVC includes a combination of bathymetric surveys and foreshore level monitoring. Results can be used to validate model outcomes; enable early detection of subsidence trending to increased impact levels over that predicted; and allow early application of containment, adaptive and contingency measures to prevent impacts outside approved (particularly increased impacts to the foreshore).

ii Bathymetric surveys

Previous mine operators, LakeCoal, commissioned Astute Surveying in 2012 to undertake a bathymetric survey over the areas of current and proposed workings at CVC. The primary purpose of this survey was to obtain accurate baseline data for future subsidence assessments and to enable comparison with the data provided by NSW Office of Environment and Heritage (OEH) in 2010.

The multi-beam echo sounder used during bathymetric surveys for CVC captures data at approximately ±0.1 m resolution. The survey vessel captures a swathe of data (down to sub-metre resolution), which is used to produce a 10 m x 10 m grid. In addition, the dynamic nature of lake bed sediment movement and change has and will affect the depth of the lake bed over time. As a result, the collected data is not considered as accurate as land-based surveys and should be viewed in consideration of these constraints.

Since 2012, bathymetric surveys have been completed on at least an annual basis with ongoing surveys providing accurate details of the lake depth within CVC's mining areas. Future surveys can also utilise the data that has been collected to monitor subsidence levels as a result of future mining activities.

A comparative analysis of the survey results highlights some elevation changes which are unrelated to mining, generally; however, these appear to be minor movements, perhaps related to movement of sediment as a result of wave action in Lake Macquarie. The surveys have shown that subsidence can be monitored with a useful level of accuracy.

From 2013 to 2018 these surveys were carried out on an annual basis over the mining area and the results compared to the original survey. During the 2017 survey it was identified that the site had exceeded vertical subsidence predictions over the MW7-12 mining area by approximately 430mm. LakeCoal notified the relevant authorities of the exceedance and submitted an incident report on 11 November 2017. As a result of the exceedance LakeCoal committed to increasing the frequency of the surveys to 6 monthly.

In 2019, bathymetric surveys were completed at six monthly intervals in January 2019 and July 2019.

Secondary Extraction Panel	Maximum Approved Subsidence (mm)	Maximum Subsidence Prediction (mm)	Maximum Subsidence (mm) Measurement
Miniwall S1	780	380	<200
Miniwall N1	780	440	<200
Miniwall S2	780	300	Survey due post extraction in Q2 2020

Table 1 – Chain Valley Colliery Extraction

Monitoring will continue in accordance with the approved *Miniwall S2/S3 Extraction Plan* during the 2020 reporting period.

As all of Chain Valley Colliery's secondary extraction is located beneath the lakebed bathymetric surveys are used to determine the levels of subsidence that are seen across its mining areas. A bathymetric survey of Domains 1 and 2 commissioned by LakeCoal in March 2012 was compared to a bathymetric survey of Lake Macquarie undertaken by OEH in 2010, to determine the subsidence which had occurred during this period.

2.2.3 Bathymetric Scanning Results - 2019

Figure -Figure shows the 2019 scan results over Miniwalls 7-12 and N1, S1 comparative to the initial bathymetric surveys. Approximately 1200mm of subsidence has developed over the Miniwall 7-12 domain (above predictions of 780mm), but no further subsidence have been detected since the 2017 surveys.

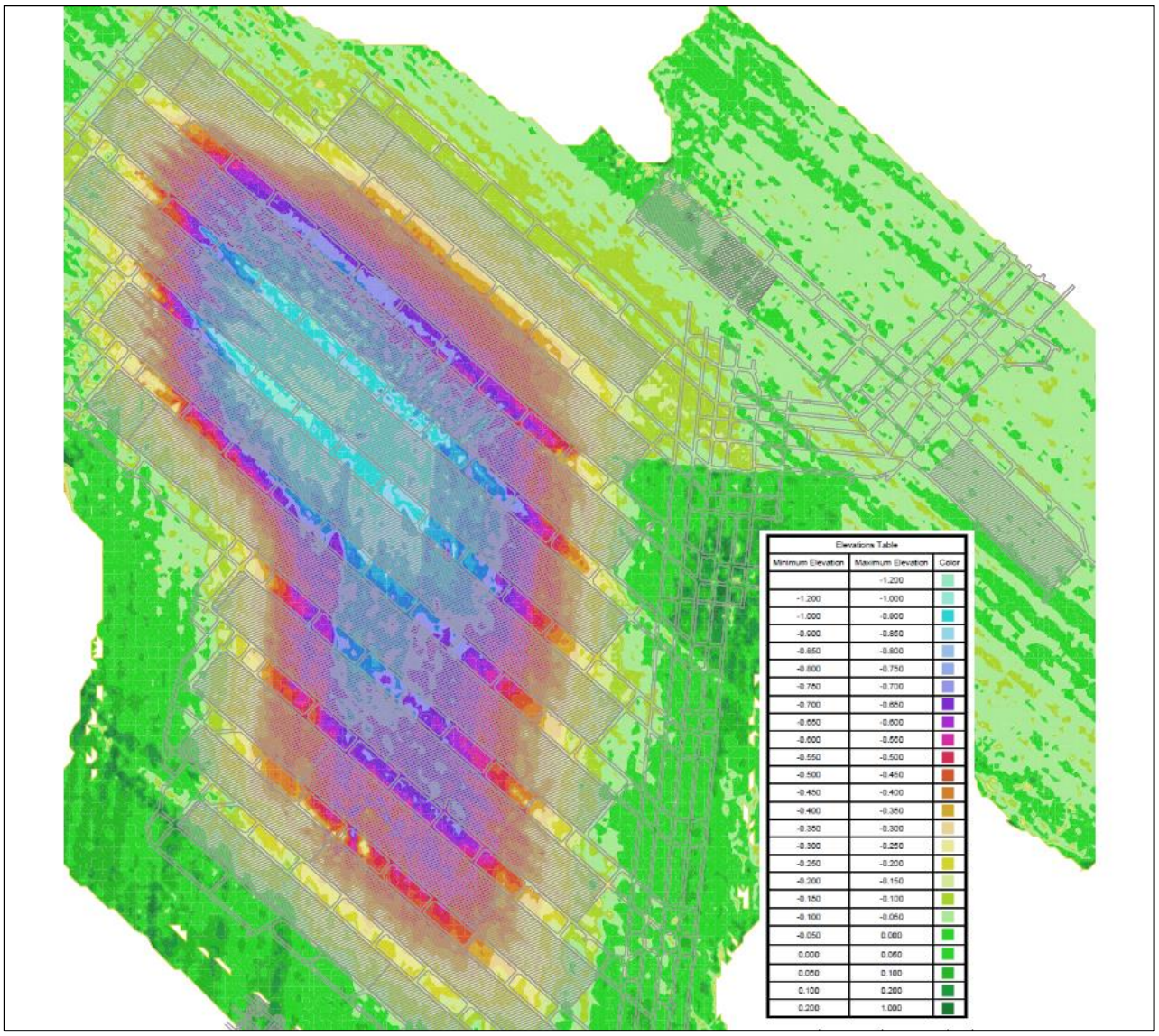


Figure 2 – Miniwalls 7-12, N1 and S1 (Jan-19 Survey)

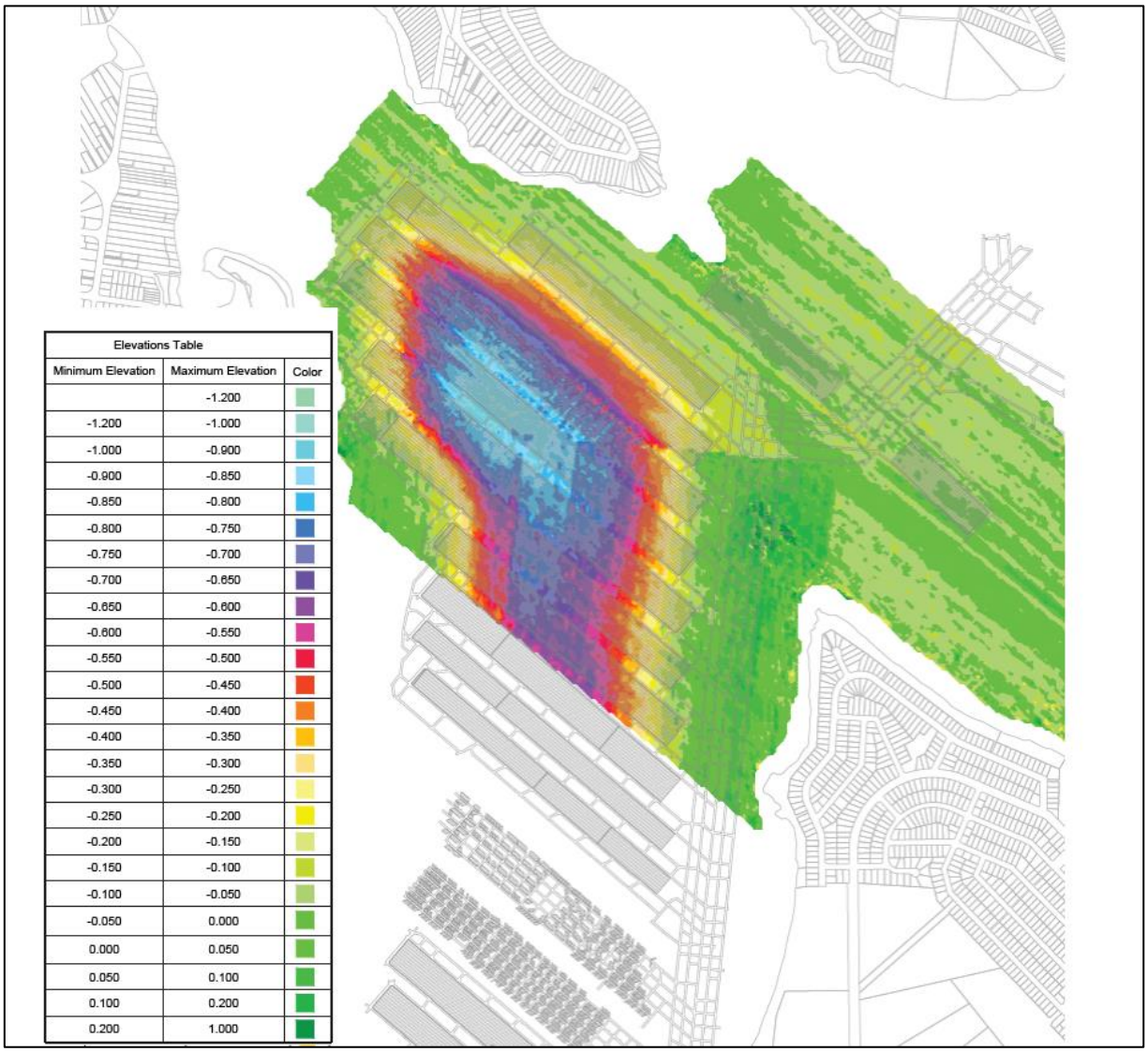


Figure 3 – Miniwalls 7-12, S1 and N1 (July-19)

Bathymetric surveys over the Chain Valley Bay mining area (Figure) have indicated subsidence of up to 400mm directly over the extracted area. An increased angle of draw of surface subsidence has been detected, but no impacts to the shoreline were observed. Minimal subsidence movement was detected from the previous survey in the area (January 2018).

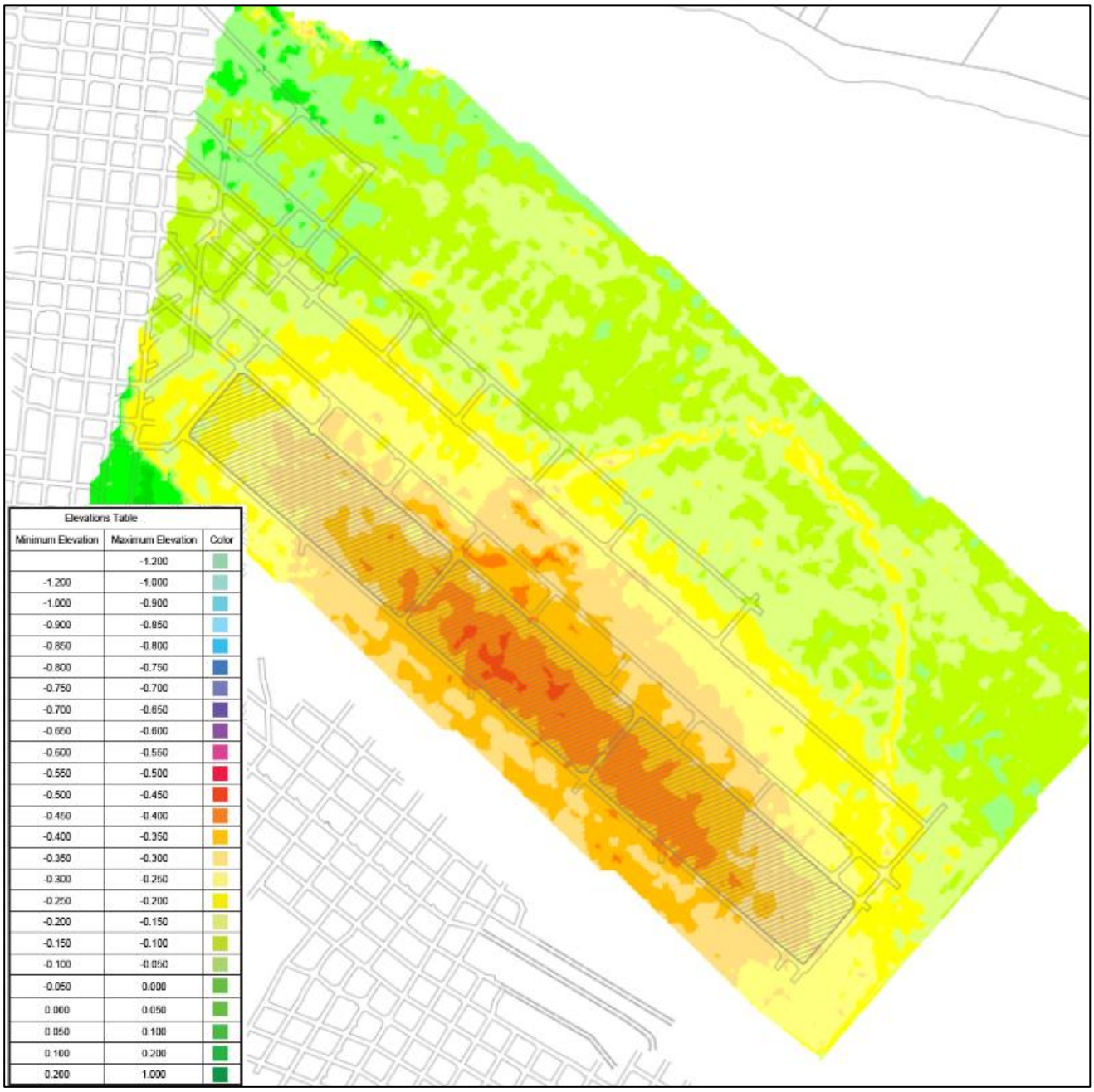
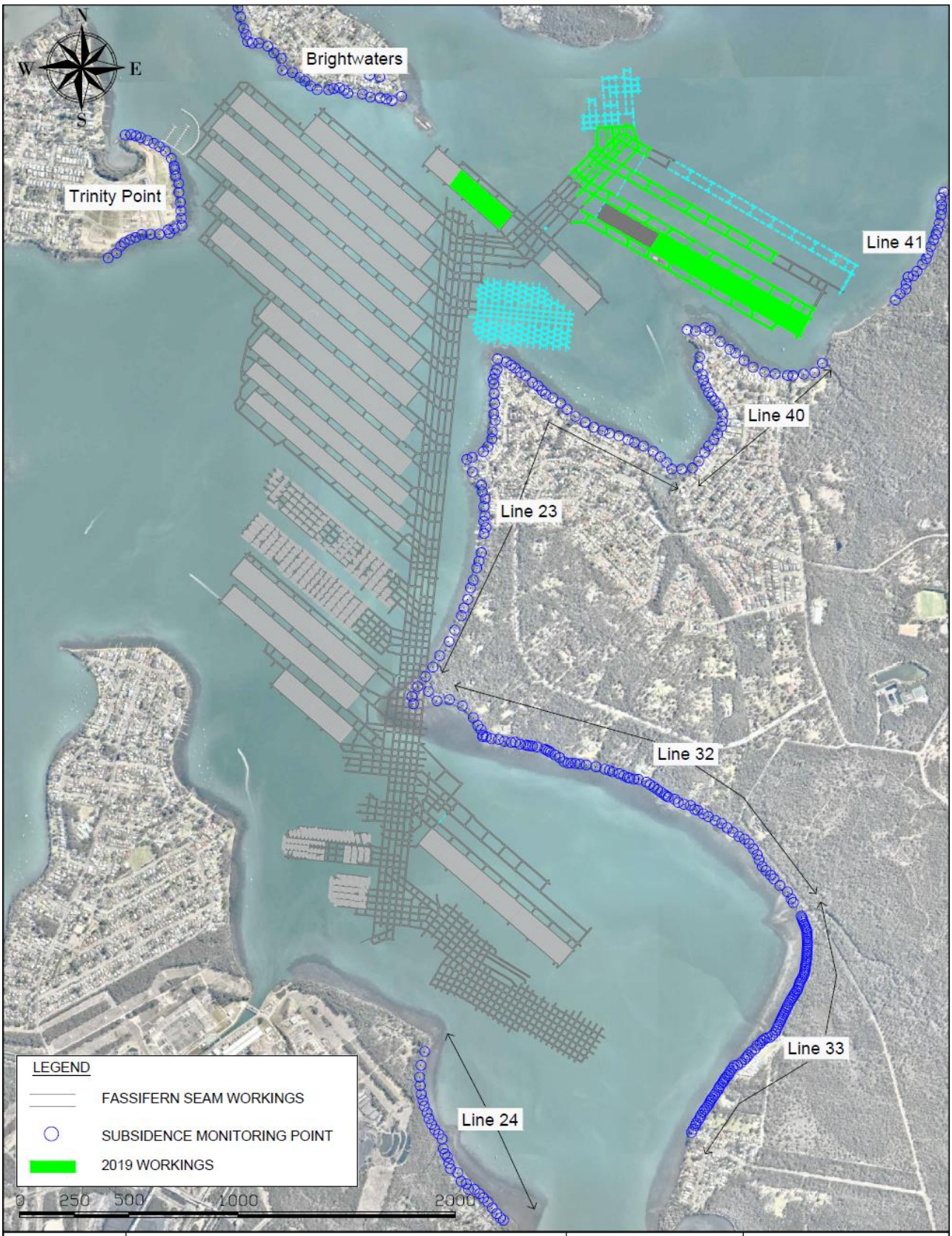


Figure 4 – Chain Valley Bay Miniwall CVB1 (July-19)

i Foreshore monitoring

Delta Coal completes subsidence monitoring around Trinity Point, Brightwaters, Frying Pan Bay, Summerland Point, Chain Valley Bay (**Figure 11**). Monitoring points occur along the foreshore at approximately 20 m – 30 m intervals. The results are uploaded to DPIE DRE's online subsidence web portal within 14 days of survey. In addition, observations are made where required to report on visual impacts or changes to public safety risk. A *Subsidence Inspection Proforma* is completed with each survey. The proforma includes visual inspection of steep slopes, boulder or tree instability, ponding and other potential effects of mine subsidence.



LAKE COAL PTY LIMITED CHAIN VALLEY COLLIERY	SCALE: AS SHOWN	DATE: 24 March 2020	
	DRAWN: T Chisholm	DRG NO: C1S0126	
FASSIFERN SEAM WORKINGS SUBSIDENCE MONITORING POINTS	CHECKED:	REV NO: 2019	Delta coal
	REVISION: 1	SIZE: A4	

Figure 5 – Foreshore subsidence monitoring lines

2.2.4 Trinity Point

Figure Figure shows the subsidence monitoring results for the reporting period at Trinity Point. Monitoring points were installed in the area in 2014 for shoreline monitoring during extraction of Miniwalls 7-12 panels. A number of marks have been disturbed / destroyed due to development / construction works along the foreshore in the area, however nil movement attributable to subsidence has been detected.

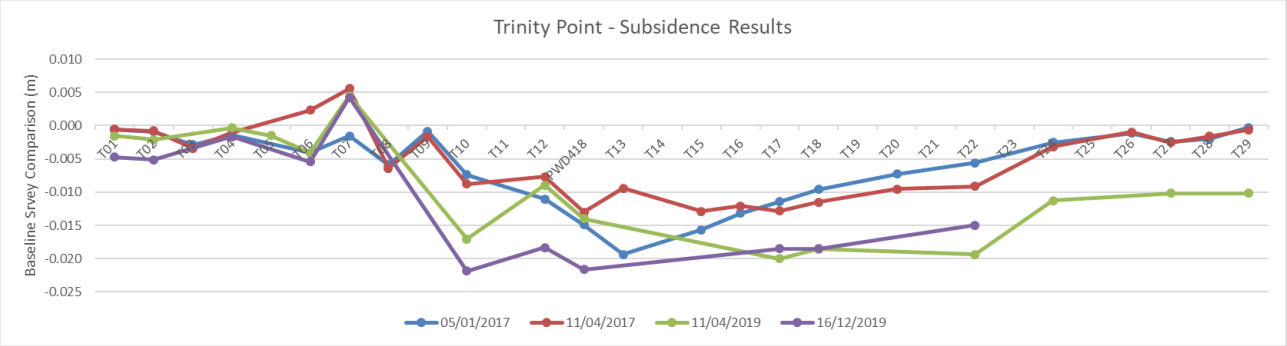


Figure 6 - Trinity Point Subsidence Results

2.2.5 Brightwaters

Monitoring points were installed along the Brightwaters peninsula in June 2016 to monitor the effects of Miniwall 11 and 12 extraction. Results for the reporting period are shown in **Figure** . Nil subsidence movement has been detected along the monitoring line.

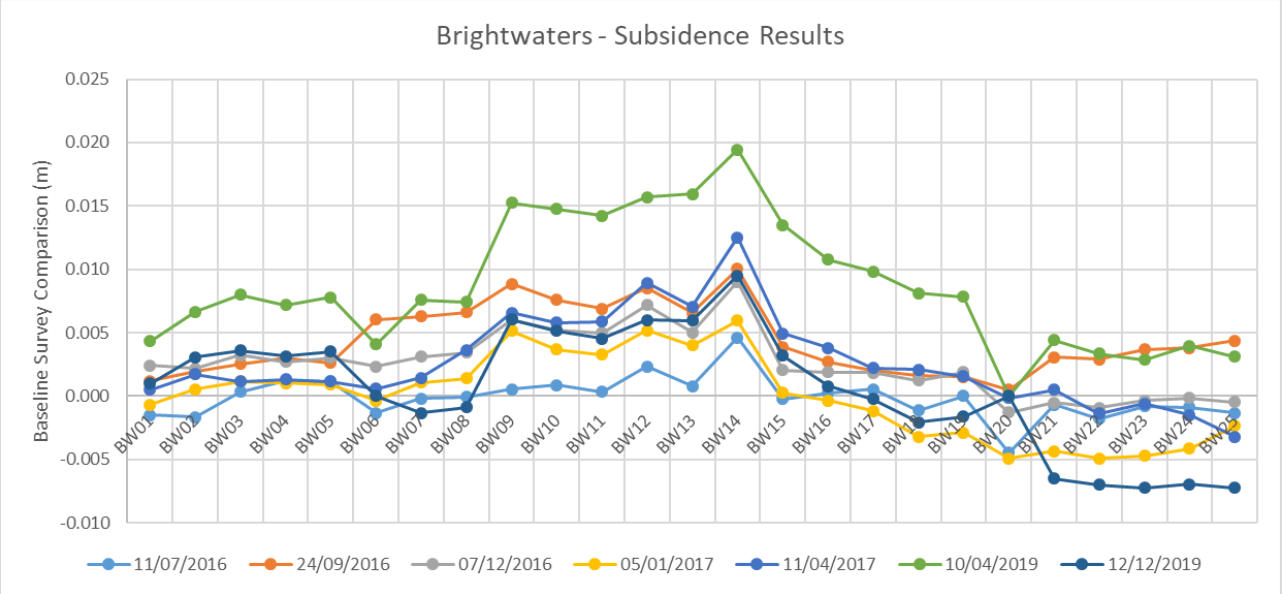


Figure 7 - Brightwaters Subsidence Results

2.2.6 Summerland Point

The foreshore along Summerland Point has been monitored since 1994, after secondary extraction was undertaken in the Wallarah beneath the south-western point (corresponding to mark S63 – 74). A maximum of 145mm of subsidence was measured (Point S71) since 1994.

It is noted this point, along with points #63-75 have all experienced more than negligible amounts of subsidence (20mm) since June 2008. Since 2008, when Fassifern first workings were completed, subsidence has ranged between 20-40mm, primarily due to the impact of multi-seam extraction in the Wallarah and Great Northern Seams. Ongoing subsidence movement appears to have slowed in recent years, with approximately 10mm of movement (Point S71) during the 2018 and 2019 reporting periods.

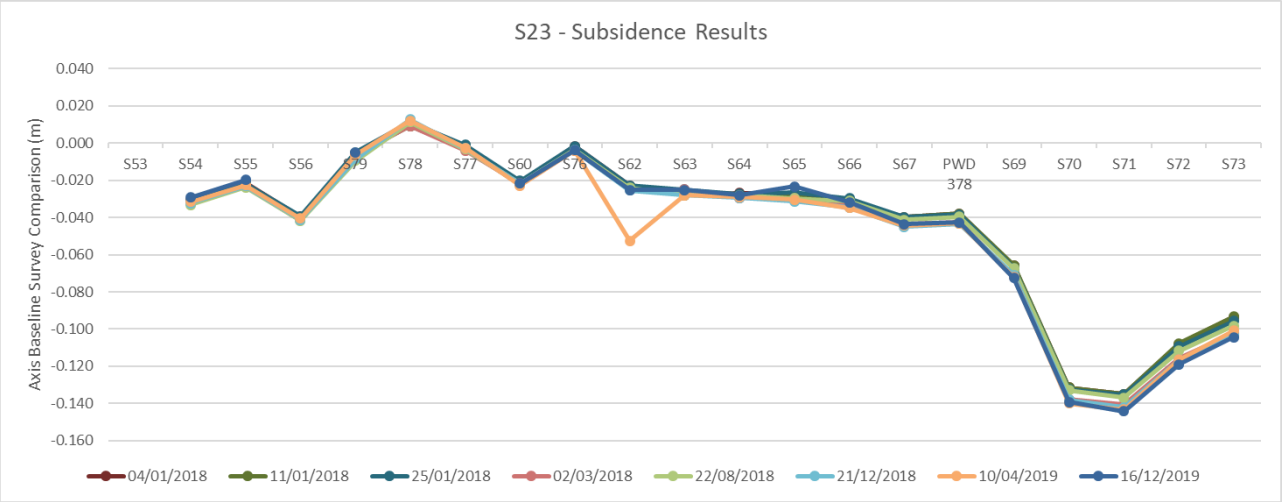


Figure 8 - Line 23 Subsidence Results

This subsidence is however linked to residual effects from both first and second workings in the Wallarah and Great Northern Seams above the Fassifern seam workings *(Ditton Geotechnical Services, 2013 - CHV-002/2)*, due the presence of soft claystone floor beneath the Great Northern seam. The measured subsidence movement over time was assessed alongside the theoretical subsidence movement and indicates actual subsidence in line with expectations for Wallarah and Great Northern seam secondary pillar extraction.

The Wallarah and Great Northern Seam workings were assessed as long-term stable (*Seedsman Geotechnics, 2008 – CV11*) prior to mining in the Fassifern Seam being undertaken beneath the seams in the High Water Mark Subsidence Barrier (HWMSB). It is considered, then, that the subsidence effects along the foreshore are not a result of the 2008 Fassifern first workings or current miniwall extraction – rather due to the continuing consolidation of moisture-sensitive claystones in the Great Northern seam floor, and would occurred irrespective of the development of the Fassifern Seam roadways.

2.2.7 Chain Valley Bay– Lines 33, 32 and 24

Monitoring Points on the foreshore of Chain Valley Bay have historically been monitored during periods of extraction in the Great Northern and Wallarah Seams in the vicinity of the shoreline. Due to the commencement of Fassifern Seam extraction in Chain Valley Bay (CVB), a Multi-Seam Mining Feasibility Investigation (MSMFI) report *(Ditton Geotechnical Services, CHV-002-7)* was commissioned by Lakecoal to assess the impact of the Fassifern seam mine workings on the previously mined Great Northern and Wallarah seam workings and potential resultant impact on the foreshore in Chain Valley Bay.

Surveys of the existing monitoring points (many of which had experienced 40-60mm of subsidence) were resumed during the reporting period, and where required additional monitoring locations were installed. Similarly to the Summerland Point monitoring, many of the historically monitored subsidence marks have experienced greater than negligible subsidence (20mm), however no additional subsidence movement was detected during the miniwall extraction in CVB. **Figure** , **Figure** and **Figure** show the subsidence monitoring results for the reporting period. A specific point (989A) measured approximately 40mm of movement during the report period; as the adjacent monitoring points are stable this is assumed to be related to damage / movement of the specific monitoring point rather than mine-subsidence related.

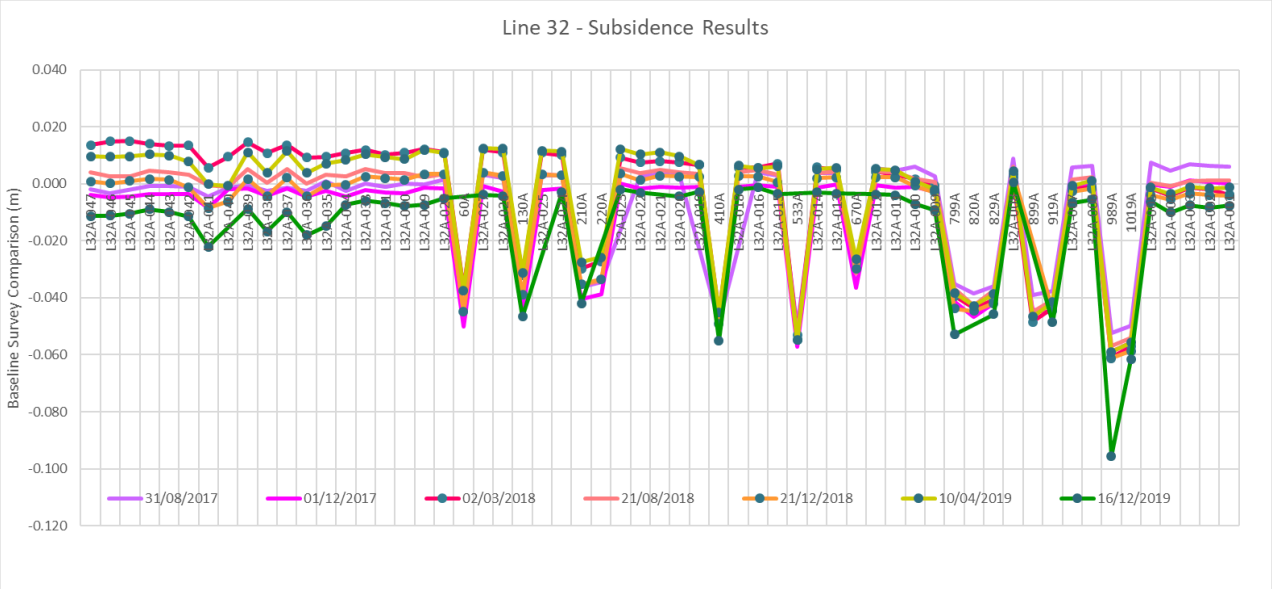


Figure 9 - Line 32 Subsidence Results

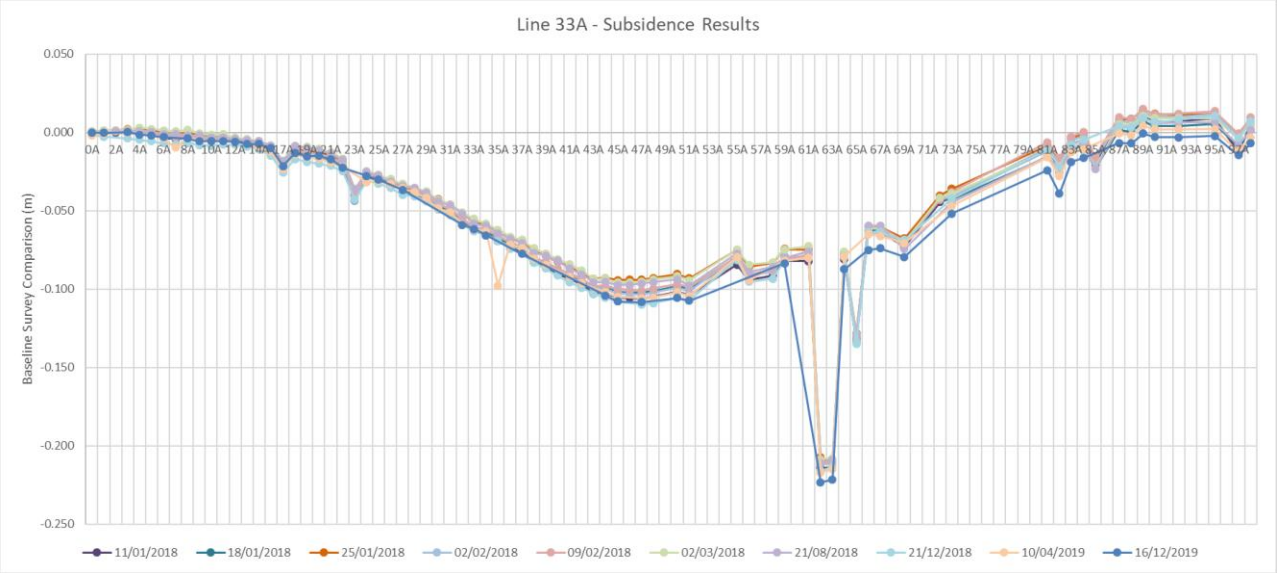


Figure 10 - Line 33A Subsidence Results

As the area where Line 33A monitoring marks are located is along a public reserve where regular slashing / brushcutting activities are carried out, a number of monitoring points have been disturbed / moved over time. Where this type of movement occurs, the new RL point is adopted and monitoring continues.

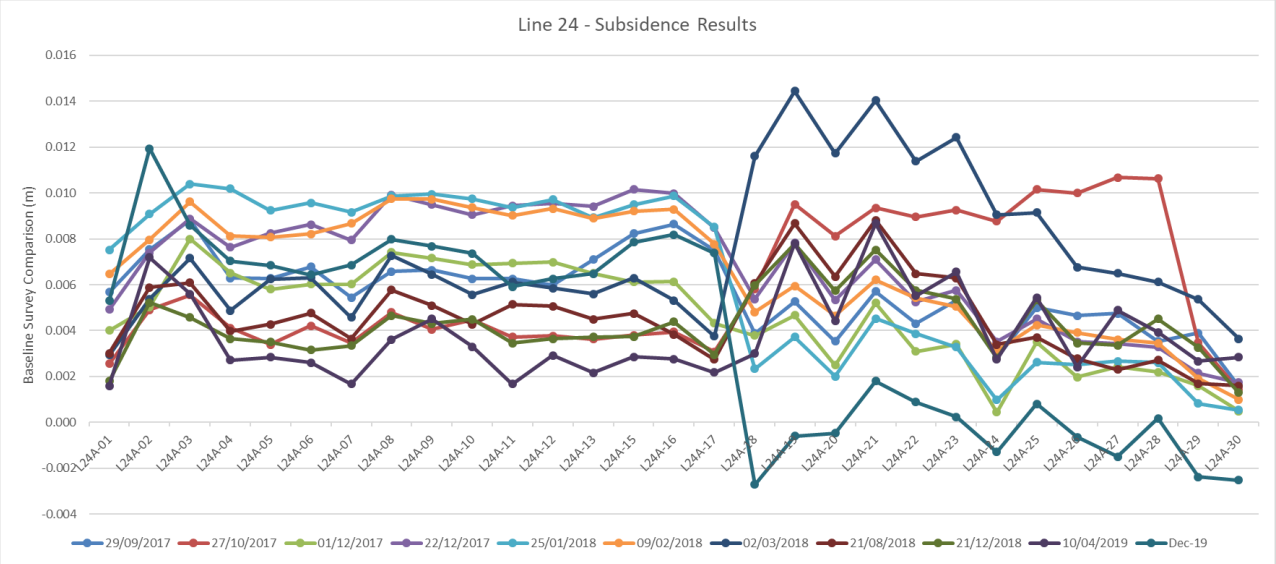


Figure 11 - Line 24 Subsidence Results

2.2.8 Summerland Point – Line 40

Monitoring points along Line 40 were established in 2018 to monitor the shoreline adjacent to Miniwall S1. This line was extended in 2019 as part of the subsidence monitoring program for Miniwalls S2 and S3. Minor ground movement along the line is limited to ±5mm and appears seasonal. **Figure** shows the reporting period subsidence results for Line 40.

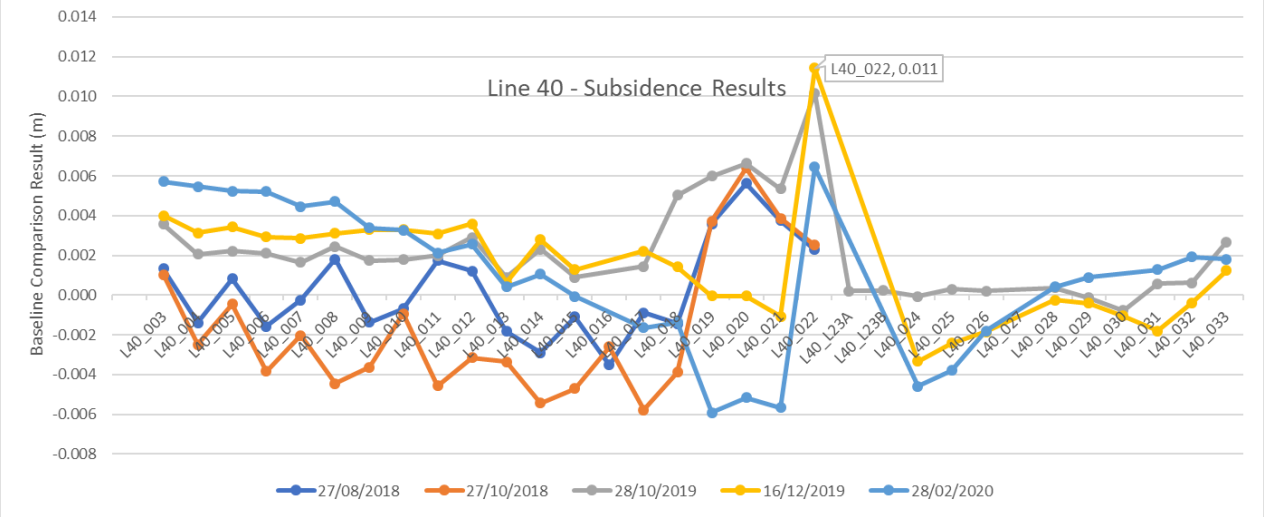


Figure 12 - Line 40 Subsidence Results

i Pelican Rock Navigation Marker

As described in CVC's *Subsidence Monitoring Program*, Pelican Rock Navigation Marker is expected to be impacted by approximately 130 mm of subsidence from mining within miniwall panels S2, S3 and S4.

NSW Roads and Maritime Services (RMS) has indicated a functional impact on the marker is likely to occur at 500 mm of subsidence and 5° or 87 mm/m of tilt.

The pre-mining recorded data at Pelican Rock Navigation Marker was 1.14 mm Australian Height Datum and the navigational pole was vertical.

2.2.9 Timing of subsidence monitoring

Timing of subsidence monitoring at CVC is defined in approved extraction plans and is summarised in Table 5.1.

Table 2 Frequency of subsidence monitoring

Type of monitoring	Pre-extraction requirements	During extraction requirements	Post extraction requirements
Bathymetric surveys	Single baseline survey prior to extraction	End of panel (of relevance to S2, S3 and S4)	Annual for three years unless TARP triggered
Foreshore monitoring	Baseline survey prior to commencement of extraction	Monthly intervals	Annual for three years unless TARP triggered
Pelican Rock Navigation Marker	Baseline RL and tilt measurements	End of panel (of relevance to S2, S3 and S4)	Visual inspection and confirmation from RMS of nil impacts

2.3 Mannering Colliery Monitoring Overview

2.3.1 Methods of subsidence monitoring

i Overview

Subsidence monitoring at MC includes level monitoring. Results can be used to validate model outcomes; enable early detection of subsidence trending to increased impact levels over that predicted; and allow early application of containment, adaptive and contingency measures to prevent impacts outside approved (particularly increased impacts to the foreshore).

As acknowledged in MC's *Annual Review 2018* (LakeCoal 2019), at the commencement of mining operations associated with the link road project between CVC and MC, previous mine operators, LakeCoal, implemented a subsidence monitoring program. Due to the sensitive nature of the infrastructure being undermined (ie VPPS), subsidence monitoring was undertaken on a weekly basis within a 250 m radius of the mining activity. At the completion of mining, the frequency of subsidence monitoring at MC was reduced to an annual survey.

2.4 Mannering Colliery

There was no mining undertaken at Mannering Colliery during 2019. Mining is approved in the Mannering Colliery Project approval (MP06_0311MP) but is not currently approved in the combined CVC and MC 2018-2020 Mining Operations Plan. There were no subsidence prediction reports prepared for Mannering Colliery in 2019.

3 Impacts to built features from 2019 mining activities

3.1 Chain Valley Colliery

No built features have been identified as requiring direct management within the lake area impacted by 2019 mining activities at CVC.

All mining activities at CVC during 2019 occurred beneath Lake Macquarie and as such had no direct impact on surface facilities or infrastructure.

Navigation markers (including Frying Pan Bay and Pelican Rock) were monitored in 2019 via the Subsidence Management TARP.

Pelican Rock Navigation Marker was inspected on 19 May 2019 prior to first workings mining beneath this feature. A survey for RL and tilt was conducted on 10 July 2019 by Daly Smith Surveyors. Miniwall mining did not pass by this feature in 2019. A post mining survey is scheduled to take place in Quarter 2020 post S2 extraction completion.

3.2 Mannering Colliery

As noted previously, at the commencement of mining operations associated with the Link Road Project, a subsidence monitoring program was implemented with monitoring points installed around VPPS (Figure 13).

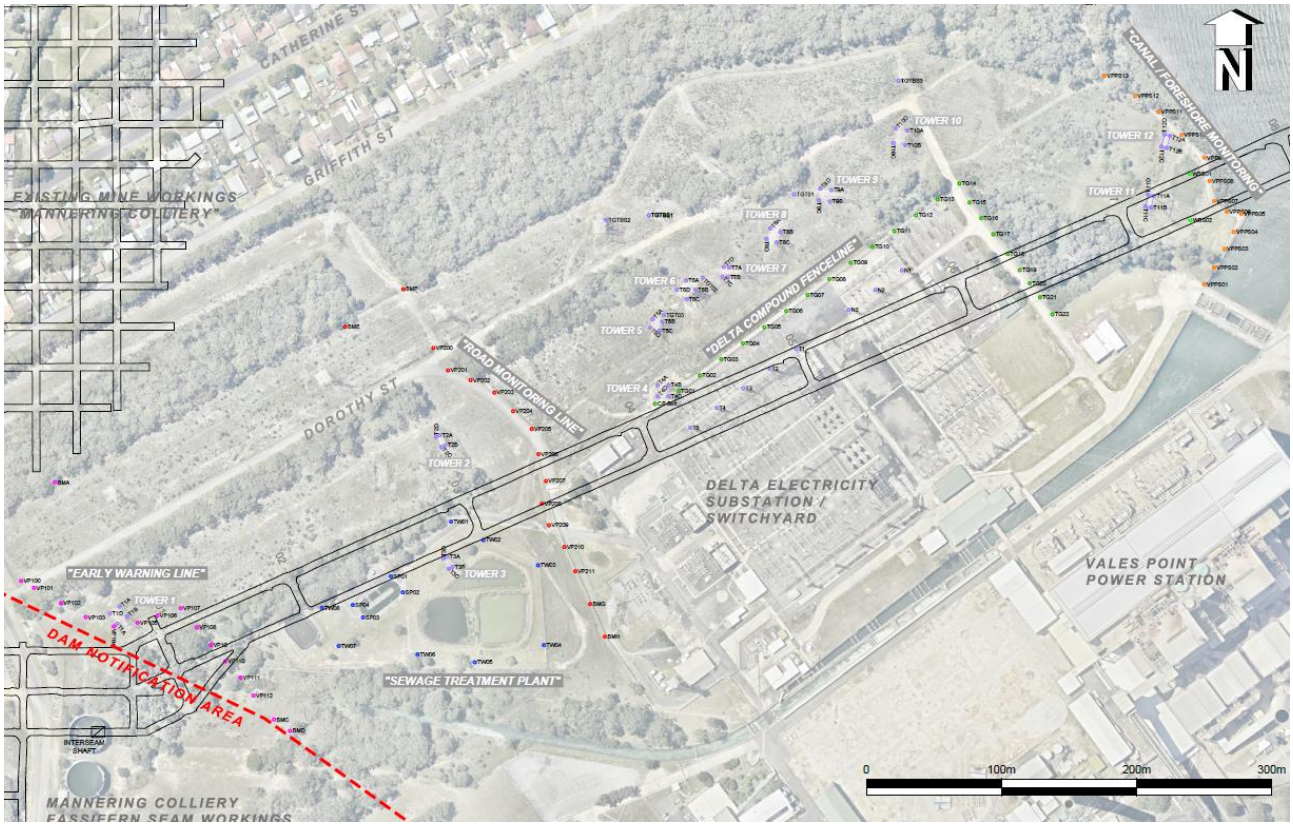


Figure 13 - Vales Point Power Station Monitoring Locations

At the completion of the link road project, subsidence monitoring frequency was reduced with the frequency of monitoring dropped back to an annual survey. A survey was carried out of the monitoring points on 18 April 2019, with the results shown in Figure 14.

No discernible subsidence impact from the Linkage Road Project workings was observed in 2019.

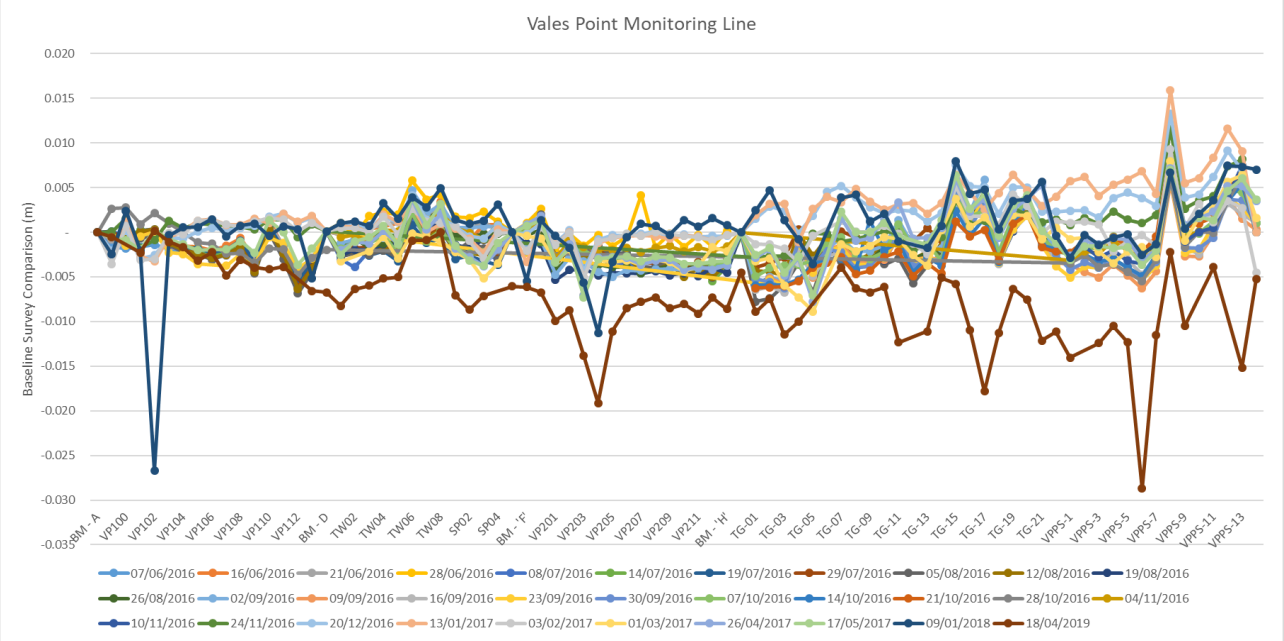


Figure 14 - Vales Point Monitoring Line Subsidence Results

4 Impacts to natural features

4.1 Chain Valley Colliery

Subsidence impact performance measures to natural and heritage features are detailed in SSD5465-Mod 2 Table 8 as below.

Table 8: Subsidence Impact Performance Measures – Natural and Heritage Features

Biodiversity	
Threatened species or endangered populations	Negligible environmental consequences
Seagrass beds	Negligible environmental consequences including: • *negligible* change in the size and distribution of seagrass beds; • *negligible* change in the functioning of seagrass beds; and • *negligible* change to the composition or distribution of seagrass species within seagrass beds.
Benthic communities	Minor environmental consequences, including minor changes to species composition and/or distribution.

4.1.1 Seagrass bed monitoring

Annual seagrass bed monitoring was undertaken in 2019 as per the approved seagrass management plan. The Seagrass bed report is stored on www.deltacoal.com.au. The below table is taken from the report and displays compliance to the subsidence impact performance measures table for 2019.

Condition from SSD5465 - Mod 2	Compliance Status and Comments
Schedule 4 Environmental Conditions – underground mining Performance Measures - Natural Environment Biodiversity - Benthic Communities Subsidence Impact Performance Measure - Negligible environmental consequences including: negligible change in the size and distribution of seagrass beds; negligible change in the functioning of seagrass beds; and negligible change to the composition or distribution of seagrass species within seagrass beds.	Compliant – See sections 7, 8 and11 - Conclusions
Measurements undertaken by generally accepted methods	Compliant – See section 3 Methods
Measurements Methods fully described	Compliant – See sections 3 Methods
Statement of Commitments - Marine Ecology – continue annual seagrass surveys/monitoring	Compliant – See historical seagrass surveys/monitoring

Table 3 Seagrass monitoring compliance

4.1.2 Benthic Communities monitoring

Benthic monitoring was undertaken in March 2019 and September 2019. The Benthic Communities report is stored on www.deltacoal.com.au. The below table is taken from the September 2019 report and displays compliance to the subsidence impact performance measures table for 2019.

The results from the September 2019 benthic communities monitoring results show compliance to the Schedule 4 Environmental Conditions – underground mining of SSD5465 - Modification 2 in the Performance Measures table with respect to the Subsidence Impact Performance Measure for Benthic communities which displays nil to minor environmental consequences due to underground mining.

Condition from SSD5465 - Mod 2	Compliance Status and Comments
Schedule 4 Environmental Conditions – underground mining Performance Measures - Natural Environment Biodiversity - Benthic Communities Subsidence Impact Performance Measure - Minor environmental consequences, including minor changes composition and/or distribution	Compliant – See section 16 - Conclusions
Measurements undertaken by generally accepted methods	Compliant – See sections 4 and 5
Measurements Methods fully described	Compliant – See sections 4 and 5

Table 4 Benthic Communities monitoring compliance

5 Adaptive Management – Trigger Action Response Plan (TARP) implementation and Remediation

Adaptive management includes monitoring subsidence impacts and subsidence effects and, based on the results, modifying the mining plan as mining proceeds to ensure that the effects, impacts and/or associated environmental consequences remain within predicted and designated ranges and in compliance with the conditions of this consent

Triggers and performance indicators (including measured subsidence and inspections for environmental impact) are provided across a number of different management plans at CVC and include specific information regarding:

- subsidence monitoring requirements (including baseline monitoring);
- remediation;
- adaptive management techniques; and
- contingency plans.

A summary of these is provided in CVC's Subsidence Management TARP which aims to consolidate all subsidence management requirements into a central location, triggering a response or set of responses commensurate with the nature of the measurement or the impact that has been identified.

CVC's Subsidence Management TARP was not triggered in 2019.

There was no subsidence related remediation activities undertaken during 2019 as a result of mining activities at CVC.

5.1 Mannering Colliery

There is no subsidence management TARP at MC.

There was no subsidence related remediation activities undertaken during 2019 as associated with Mannering Colliery.

References

Development Consent SSD5465

Project Approval MP06_0311

Delta Coal CVC Subsidence Management TARP

Delta Coal CVC Subsidence Monitoring Program

Lake Coal N1 / S1 Extraction Plan

Delta Coal S2/S3 Extraction Plan

Lake Coal Mining Operations Plan 2018 to 2020

Appendix 8: Community Complaints Register

Date	Nature of Complaint/Incident	Complaint/Incident Details	Action Taken
26/01/2019	Complaint - Noise	Text message noise complaint. Asked if the mine was doing anything different. Explained noise was very loud from 3am and again at 8.15am.	No abnormal activities occuring. Production constant all night. Noted that the loader has started working at 8.30am. Complainant explained that the noise was noticable from the loader as engine noise but it was a lot quieter than previously.
30/01/2019	Complaint - Noise	Text message noise complaint. Explained that he could hear loud engine noises at 7.45am. He suspects it to be the loader.	CPP operator spoke with complainant and worked with the resident to turn various pieces of plant on and off to determine the source of the noise. LakeCoal's E&C Coordinator contacted the complainant at 10.30am on 12/2/19 to further understand the nature of the complaint and provide an update on the investigation findings.
12/02/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Complainant advised of loud buzzing noises starting at 12.10am to the morning	Follow up meeting with complainant by LakeCoal. Investigated the complaint further in consultation with the resident.
13/02/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Complainant advised of woken by loader noise at 2:30am.	Followed up with email. No loader operations at that time of morning.
18/02/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Complainant advised of baffling buzzing and stamping noises at 4:30am.	Followed up with email. Normal operations, no loader operations at that time of morning.
21/02/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Complainant advised of baffling buzzing and stamping noises at 5:40am.	Followed up with email. Normal operations, no loader operations at that time of morning.

Date	Nature of Complaint/Incident	Complaint/Incident Details	Action Taken
22/02/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Complainant advised of clanging noise from Mannering and the power station. Saw a light from the Colliery.	Followed up with email. Normal operations.
26/02/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Complainant advised of buzzing, clanging noise from Mannering and Power station from 2am till 6:40am. Also saw a light at the Colliery.	Followed up with email. No coal plant or loader running at that time in the morning.
27/02/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Complainant advised of being woken at 5:15am.	Followed up with email. No coal plant or loader running at that time in the morning.
28/02/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Complainant advised of sleep disturbance still prevailing at 4:00am.	Followed up with email. No coal plant or loader running at that time in the morning. Visited complainant for face to face meeting.
09/03/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Rretirement Village. Woken by loader machinery noises at 5:02am	No loader running at that time in the morning.
11/03/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Woken by loader machinery noises at 5:00am.	No loader running at that time in the morning.

Date	Nature of Complaint/Incident	Complaint/Incident Details	Action Taken
12/03/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Sleep disturbance at 11:40 pm. Loader and clang noise.	No loader running at that time during the night.
17/03/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Sleep disturbance at 1:05 am. Banging and clanging noises.	Real-time, unattended noise logger installed by Delta Electricity to detect noises and report to Dept. of Planning - Compliance.
18/03/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Sleep disturbance at 10:48 pm. Banging and clanging noises.	Real-time, unattended noise logger installed by Delta Electricity to detect noises and report to Dept. of Planning - Compliance.
02/04/2019	Incident - TSS Exceedance	TSS exceedance at Point 1 occuring 2 April 2019	The EPA was notified immediately after receiving lab results confirming that a TSS exceedance had occurred on the 2nd April. Notification was made via the EPA environment line on the 5th April.
21/03/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village regarding noise impacts on local community.	Following process with Dept. of Planning Compliance. Site inspection undertaken and noise logger installed. Noise mitigation works report and attended monitoring report sent to the Dept. of Planning - Compliance.
25/04/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Sleep disturbance 11:26 PM.	Following investigation process with Dept. of Planning - Compliance.
26/04/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Sleep disturbance 11:26 PM.	Following investigation process with Dept. of Planning - Compliance.

Date	Nature of Complaint/Incident	Complaint/Incident Details	Action Taken
12/06/2019	Complaint - Noise	Complaint received from residents in Macquarie Shores Retirement Villiage. Sleep disturbance between 12 and 7 AM. Residents requested to be provided with ear plugs.	Following investigation process with Dept. of Planning - Compliance. Ear plugs were provided to residents.
20/06/2019	Complaint - Noise	Complaint receieved from residents in Macquarie Shores Retirement Villiage. Sleep disturbance 12 am and 7 am.	Technical Services alerted Mannering Colliery Production Supervisors and Control Room of current coal processing times and requested to minimise running Mannering Colliery outside of night time hours where possible.
04/07/2019	Complaint - Noise and Dust	Group complaint listing receieved from the manager of Macquarie Shores Retirement Village. Complainants were individually contacted to understand their concerns/major issues.	Residents were followed up with a phone call and main concerns were recorded. Residents were advised of the noise compliance monitoring and reporting process and noise mitigation works conducted and proposed. Manager was later contacted to let him know of the outcome of phone calls.
04/07/2019	Complaint - Noise and Dust	Resident was contacted - the main concern was the noise impacts paticuarly at 10pm. Can hear loud alarms, rumbling noises. Also reported having black dust on cars and windows.	Residents were followed up with a phone call and main concerns were recorded. Residents were advised of the noise compliance monitoring and reporting process and noise mitigation works conducted and proposed.
04/07/2019	Complaint - Noise and Dust	Resident was contacted - Complainant mentioned that they were not personally affected but the complaint is regarding the power station which sometimes sounds like a jet plane going over and reports of dust in the air from the ash dam.	Residents were followed up with a phone call and main concerns were recorded. Residents were advised of the noise compliance monitoring and reporting process and noise mitigation works conducted and proposed.
04/07/2019	Complaint - Noise	Resident was contacted - Complainants main concern was the increase in noise during night time in the last 3-6months.	Residents were followed up with a phone call and main concerns were recorded. Residents were advised of the noise compliance monitoring and reporting process and noise mitigation works conducted and proposed.

Date	Nature of Complaint/Incident	Complaint/Incident Details	Action Taken
04/07/2019	Comlaint - Noise and Dust	Resident was contacted - Complainants main concern was dust impacts on the community in particular the air quality to childrens health. Also reported sleep disturbance cause by loud noises.	Residents were followed up with a phone call and main concerns were recorded. Residents were advised of the monitoring of the Noise Compliance monitoring and reporting process and noise mitigation works conducted and proposed.
04/07/2019	Complaint - Noise and Vibration	Resident was contacted - Complainants main concern was the loud noises and vibrating/shaking at night. Has been woken up by house shaking and vibrating.	Residents were followed up with a phone call and main concerns were recorded. Residents were advised of the monitoring of the Noise Compliance monitoring and reporting process and noise mitigation works conducted and proposed.
04/07/2019	Complaint - Unknown	Unknown	Complainant could not be contacted via telephone, message left.
04/07/2019	Complaint - Unknown	Unknown	Complainant could not be contacted via telephone, message left.
04/07/2019	Complaint - Unknown	Unknown	Complainant could not be contacted via telephone message left.
15/07/2019	Complaint - Noise	Sleep disturbance noises are still prevailing and have been bad particularly between midnight and 7 am in the morning and during the weekend.	Following investigation process with Dept. of Planning - Compliance. Resident was advised of the noise monitoring and reporting process and noise mitigation works conducted and proposed.
18/07/2019	Complaint - Noise	Complaint receieved from residents in Macquarie Shores Retirement Village. Unbearable banging, clanging and thumping caused sleep disturbance between 12 am and 7 am.	Site inspection was conducted immediately after receiving complaint to check operations at Mannering Colliery. The coal processing plant or loader were not running at the time of complaint or at all during that day. A site inspection was also carried out at Macquarie Shores Retirement Villiage, where no audible noise could be heard from either Mannering Colliery or Vales Point Power station. Complainant's residence was visited but complainant did not respond.
19/07/2019	Complaint - Noise and Vibration	Complaint received from resident in Macquarie Shores Retirement Village, regarding noise and vibrations and also reported via the EPA Officer.	Informed the EPA on current DPIE Noise Compliance Report process, to help the EPA to inform the redacted name of the complainant.

Date	Nature of Complaint/Incident	Complaint/Incident Details	Action Taken
22/07/2019	Complaint - Noise and Vibration	Complaint received from resident in Macquarie Shores Retirement Village. Noise vibrating through windows during 10 pm 19/7/2019 till Monday 22/7/2019. Loud clanging, buzzing, machinery, roaring from turbines etc, heard 24/7.	Visual amenity assessment survey conducted at 3:30am on morning of complaint. No audible noise heard emanating from Mannering Colliery at this time.
11/08/2019	Complaint - Noise	Complaint received from resident Macquarie Shores Retirement Village. Loud clanging, thumbing, stumping, tapping, engine and coal turbine roaring and buzzing have becom worse and unbearable.	Resident was advised of the noise monitoring and reporting process and noise mitigation works conducted and proposed. Complainant was also advised that an unattended noise logger has been installed with results reported to Dept. of Planning on completion of study.
13/08/2019	Complaint - Noise and Vibration	Complaint received from resident in Macquarie Shores Retirement Village. Loud vibrating sounds including thumbing, stumping and machinery noises betwwen 1am - 4:55am. Bubblings noises were heard at 5:23am.	Resident was advised of the noise monitoring and reporting process and noise mitigation works conducted and proposed. Complainant was also advised that an unattended noise logger has been installed with results reported to Dept. of Planning on completion of study.
26/08/2019	Complaint - Dust	Complaint received via EPA representative. Dust issue at Delta Coal Mannering Colliery in relation to EPL 191. Complainant said that water trucks are not being used in recent month and the dust is increasingly affecting residents nearby.	Investigation was undertaken and email response to the allegation provided to the NSW EPA officer. The response outlined the current dust reduction measures that are in place including: a street sweeper for sealed roads, dust suppression spray used in the coal handling plant, coal conveyors are covered, use of sprinklers when needed in the car park of CVC to minimise airborne dust. The EPA officer was also informed of further upcoming dust reductions measures, including an application of dust suppressant chemical for site unsealed roads which is organised for the following week and also the use of a contracted water cart while a replacement cart is being source by Delta Coal. Ongoing monthly depositional dust gauge monitoring results are in compliance with the limits.

Date	Nature of Complaint/Incident	Complaint/Incident Details	Action Taken
05/09/2019	Complaint - Noise	Complaint recieved from resident in Macquarie Shores Retirement Village. Noise noted between night time and 7am from 4/09/19 and 5/09/19.	Resident previously advised of the noise monitoring and reporting process and noise mitigation works conducted and proposed. Delta Coal representative spoke to complainant on 6/09/19 to further understand nature of complaint. Further investigations were being undertaken. Checked Mannering Colliery operations and no CHP or loader operation between 11.30pm 3/9/19 and 6.30am 5/9/19. Ongoing communication.
09/09/2019	Complaint - Noise	Complaint recieved from resident in Macquarie Shores Retirement Village. Noise noted: Saturday 7/9/2019 5.33 am, Sunday 8/9/2019 10.24 pm and 9/9/2019 between 1.00 am and 7 am particularly 4.33 am the noises had been exceptionally loud. Vibrating thumbing noises, conveyor belt noises and roaring engine. On Sunday a siren was noted.	Resident previously advised of the noise monitoring and reporting process and noise mitigation works, ongoing communication.
11/09/2019	Complaint - Noise	Noises (banging, thumping, conveyor belt and loud roaring loader engine) were exceptionally loud from 4.25 am 11/9/2019.	Resident previously advised of the noise monitoring and reporting process and noise mitigation works, ongoing communication.
18/09/2019	Incident - TSS Exceedance	TSS exceedance at Point 1 occuring 18 September 2019 during a significant rainfall event.	The EPA was notified immediately after receiving lab results on 20 September confirming that a TSS exceedance had occurred on 18 September. A self reporting notification was made to EPA and DPIE Compliance via phone and email on 20 September with an incident report submitted on 23 September.
26/09/2019	Complaint - Noise	Complaint received via email from resident in Macquarie Shores Retirement Village. Noise noted between 12am and 7am, and in particular from 6am.	Resident was advised that the MC coal handling plant did not operate from 5:25pm on 25 September until 6:50am on 26 September 2019. Surface operations at MC during the nominated period were limited to a single person on the surface undertaking cleaning activities (hosing down and shovelling). A start-up alarm would have sounded at 6:50am on 26 September to warn personnel of the start-up of the plant as part of the commencement of operations.

Date	Nature of Complaint/Incident	Complaint/Incident Details	Action Taken
07/10/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Noise noted between 12am and 6am on 7/10/19. Intermittent low pitch thumbing, buzzing and low pitch bass clanging noises could be heard.	Email sent to complainant acknowledging receipt of email. Operations to be reviewed.
09/10/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village in relation to sleep disturbance. Noise noted at 4.20am on 9/10/19. Clang, thumbing, buzzing and stumping vibrating noises could be heard.	Email sent to complainant on 11/10/19 acknowledging receipt of email. Complainant advised that the CHPP was operating continuously during the complaint period, and no irregularities were noted. In addition, the loader is not operated at night. Further discussions to take place during upcoming community meeting.
21/10/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Noise noted between from 4am on 19/10/19 and 20/10/19 and from 6.20am on 21/10/19.	Email sent to complainant on 23/10/19 acknowledging receipt of email. Complainant advised that the CHPP was operating continuously during the complaint period, and no irregularities were noted at this time or during regular maintenance. Further discussions to take place during upcoming community meeting.
28/10/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Noise noted between 3am and 4am on 28/10/19.	Email sent to complainant on 29/10/19 acknowledging receipt of email. Complainant was advised that the CHPP was operating during the complaint period, but no abnormal sounds were noted during an inspection undertaken by DC staff on 29/10/19. Data from continuous noise monitor to be reviewed. Further feedback to be provided if additional information comes to light. Further discussions to take place during upcoming community meeting.
04/11/2019	Incident - pH Exceedance	Exceedance of pH was recorded at LDP01 point.	The water quaity was tested again for pH on 08/11/2019 and results were within the pH limit.

Date	Nature of Complaint/Incident	Complaint/Incident Details	Action Taken
19/11/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Banging noises noted intermittently from 11.30pm on 18/11/19 to 2.30am 19/11/19.	Email sent to complainant on 26/11/19 acknowledging receipt of emails. Complainant was advised that the monitoring data during this period was reviewed, operations were continuous during this period and the loader operator at Mannering Colliery was not in operation at Mannering Colliery during this time period. The complainant was also advised that the DPIE had accepted Delta Coals Noise Management Plan.
04/12/2019	Complaint - Noise	Complaint received from resident in Macqurarie Shores Retirement Village. Loud noises (knocking and clanging) between 11:30pm 3/12 until the morning 4/12. Complainant also requested an update on the 24hr unattended noise logger.	Email sent to complainant on 11/12/19 acknowledging receipt of emails. Complainant was advised that the monitoring data during this period was reviewed, Mannering CHP was operational, with no loader activities during this period. The Complainaint was also advised that feedback from EMM was sought and provided noise monitoring results from the week prior which stated "site noise was inaudiable at all locations during the evening and night measurments". The complainat was advised that deltacoal are working to acheive the continuous noise monitoring at macquarie shores, in line with the commitments addressed in the most recent Noise Management plan for Mannering Colliery.
16/12/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Loud noises (humming, buzzing. Clanging) were heard between Sunday 15/12 to Monday 16/12. The noises between 12am and 7am on 16/12 were the worst.	Follow up phone call received from complainant on 16/12/19. Complainants observations and concerns were discussed.

Date	Nature of Complaint/Incident	Complaint/Incident Details	Action Taken
30/12/2019	Complaint - Noise	Complaint received from resident in Macquarie Shores Retirement Village. Dumping and clanging noise from midnight and particularly 1.25 am Sunday 29/12/2019. Between midnight and 7am in the morning is of primary concern.	Email sent to complainant on 6/1/2020 acknowledging receipt of email. Complainant was advised that production ceased prior to 7am on the 24th December, with CHP operations ceasing by 1pm 24th December. No production or CHP operations have occurred since this point. Activities have been limited to maintenance works during daylight hours only.

Appendix 9: Mannering Colliery Independent Environmental Audit

INDEPENDENT ENVIRONMENTAL AUDIT 2019

Mannering Colliery

Prepared for:

Delta Coal
PO Box 7115
Mannering Park NSW 2259



SLR

SLR Ref: 630.12751-R01
Version No: -v0.1
May 2019

PREPARED BY

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Delta Coal (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
630.12751-R01-v0.1	27 May 2019	Chris Jones	Chris Jones	Chris Jones
630.12751-R01-v0.1	21 May 2019	Tracey Ball	Chris Jones	Chris Jones

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1 Introduction

1.1 Background

Mannering Colliery is an underground coal mine located on the southern side of Lake Macquarie approximately 60 kilometres (km) south of Newcastle. Development of Mannering Colliery began in 1960 in conjunction with the construction of Vales Point Power Station and at that time was named Wyee State Coal Mine.

Production commenced in 1961 with extensive mining (first workings and secondary extraction) in both the Great Northern and Fassifern Seams. While some resources remain within the Great Northern Seam, mining has not been undertaken in this seam since 1999, with all recent mining occurring in the Fassifern Seam.

On 30 June 2002 mining operations ceased and the mine was placed on care and maintenance, at that time the mine was operated by Powercoal Pty Ltd (Powercoal). On 7 August 2002, Centennial Coal acquired the Colliery from Powercoal. The mine was reopened and renamed Mannering Colliery, with production recommencing in January 2005, mining the Fassifern Seam. Due to unfavourable conditions the mine was again placed on care and maintenance, ceasing production on 27 November 2012.

LakeCoal Pty Ltd (LakeCoal), the operator of the adjacent Chain Valley Colliery, became the operator of Mannering Colliery as a result of a mining cooperation agreement that was reached between the owners of Chain Valley Colliery and Mannering Colliery. As a result, LakeCoal became the operator of Mannering Colliery effective from 17 October 2013.

In December 2015, a business decision was made by LakeCoal to progress the “underground link road project” between Mannering Colliery and Chain Valley Colliery. During the reporting period, Mannering Colliery commenced underground mining operations as part of the underground link road project approved under Project Approval (PA 06_0311) Modification (Mod) 2. In February 2017, difficult mining conditions were encountered underground during the link road drivage and an operational decision was made to cease underground mining from Mannering Colliery of the link road. As a result, the remainder of the link road drivage was undertaken from Chain Valley Colliery. Mannering Colliery did not produce any coal from its underground mining operations and handled a total of 394,213 tonnes of coal. All coal produced was transported to the adjacent Vales Point Power Station by overland conveyor.
LakeCoal went into receivership on 3 October 2018, however has maintained coal conveyance and processing operations. Delta Coal are now the current owners and operators of the site. The transfer occurred on the 31 March 2019 with Great Southern Energy (trading as Delta Coal) being the owner and operator of Mannering Colliery and Chain Valley Colliery.

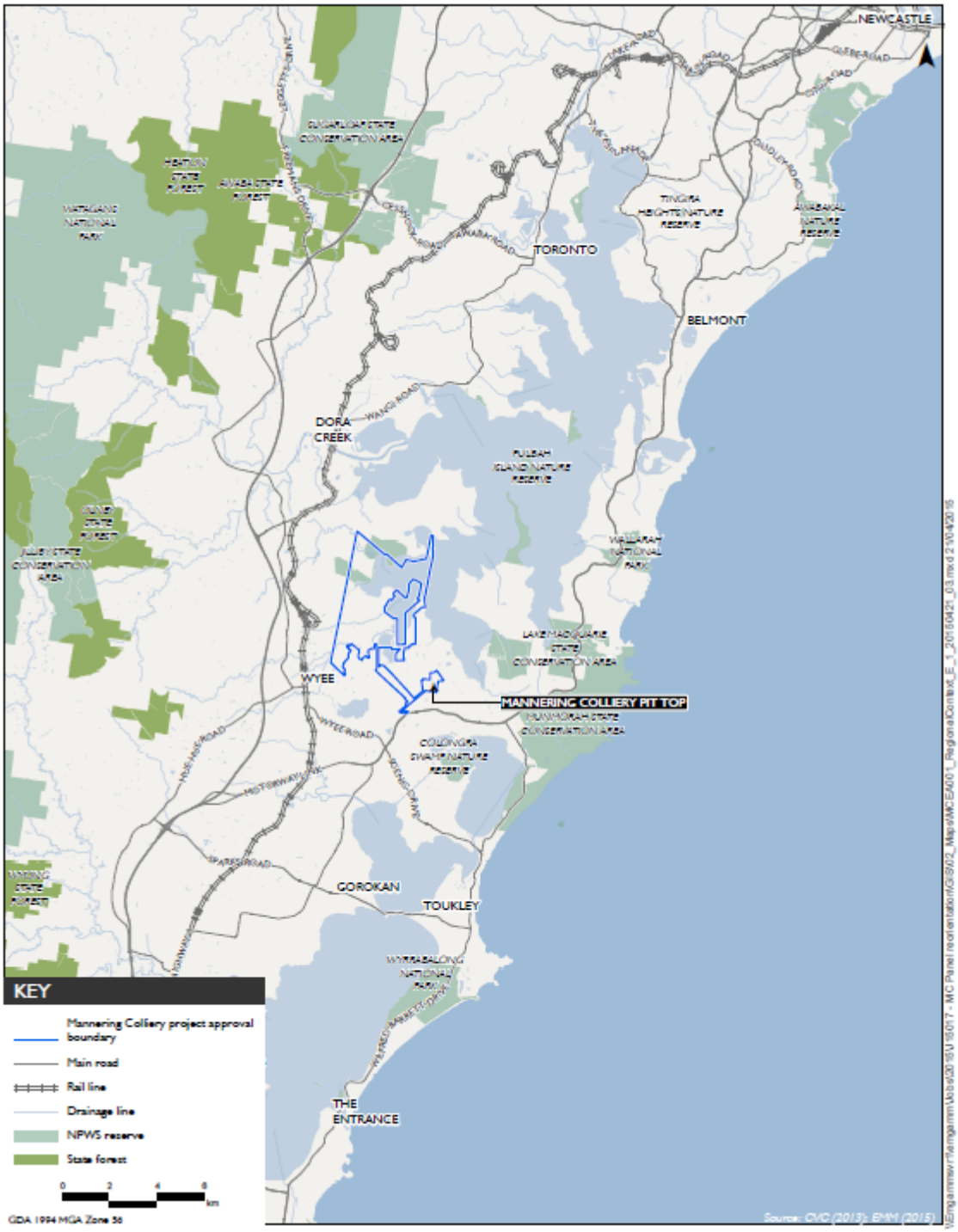


Figure 1 Mannering Colliery Location

1.2 Audit Scope

This Independent Environmental Audit (Audit) covers the period from 1 January 2016 (day after previous 2015 Independent Environmental Audit) to the end of the auditing onsite (10 April 2019).

The scope of the Audit is outlined in Schedule 5, Condition 8 and 9 of PA 06_0311 (as modified), and includes:

8. By the end of March 2013 and every three years thereafter, unless the Secretary directs otherwise, the Proponent must commission and pay the full cost of an Independent Environmental Audit of the project.

a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;

b) include consultation with the relevant agencies;

c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals);

d) review the adequacy of any approved strategy/plan/program required under this approval: and, if necessary;

e) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, strategy/plan/program required under the abovementioned approvals; and

f) be conducted and reported to the satisfaction of the Secretary.

Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the Secretary.

9. Within 12 weeks of commissioning this audit, or as otherwise agreed by the Secretary, the Proponent must submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.

The Audit has assessed the key approvals and documentation outlined in **Section 4**, including:

- PA 06_0311 and Statement of Commitments;
- Environment Protection Licence (EPL) 191; and
- Consolidated Coal Leases (CCL) 719 and 721.

1.3 Key Site Contacts

Contact details for key Delta Coal contact for this audit is outlined below:
Chris Armit
Environmental and Community Coordinator
Phone: 02 4358 0800

1.4 Audit Methodology

The Audit was undertaken onsite by Chris Jones (Lead Auditor), Tracey Ball (Assistant Auditor), Martin Davenport (Mine Site Noise Specialist) of SLR.

SLR was assisted by subsidence specialist Ken Mills of SCT during the Audit.

The SLR Audit team are independent of Mannering Colliery as defined under Section 3.3 of the Department of Planning and Environment's (DPE) *Independent Environmental Audit Guidelines* (October 2015).

Information was provided by Mannering Colliery prior to, during and following the Audit. SLR also sourced a large amount of information from the Mannering Colliery website.

The methodology for the Audit consisted of the following key steps:

- Introductory and close out meetings;
- Reviewing key documents provided by Mannering Colliery prior to the Audit;
- Consultation with relevant government agencies as per the Audit requirements prior to the site component;
- Preparation of draft Audit Tables provided to Mannering Colliery prior to the site Audit;
- Site component of the Audit, including inspections and discussions with key Mannering Colliery operational personnel;
- Review of additional relevant documentation obtained while onsite during the inspection or provided by Mannering Colliery operations after the site inspection; and
- Client review and comment on the draft Audit report.

The site component was completed on the following days:

- 2 and 3 April 2019 – including opening meeting, inspection, determination of compliance;
- 10 April 2019 – at site determining compliance;
- 17 May 2019 – Meeting at SLR offices to obtain further evidence to determine compliance.

Photographs taken during the site inspections are included in **Appendix A**. A large amount of evidence was viewed and collected as part of the Audit, including monitoring records, reports, and correspondence. While this key evidence has been referenced in **Section 2**, it has not been attached to this Audit report.

The Audit has been completed as per the *Independent Environmental Audit Guidelines* (DPE October 2015).

The Audit team assessed the approvals and documentation outlined in **Section 4**.

1.4.1 Introductory and Closeout Meetings

Introductory and close out meetings were held for the Audit. At the opening meeting introductions were made by each of the meeting attendees and Mannering Colliery personnel provided background details regarding the site to SLR. During the close-out meeting a general discussion about compliance and areas for improvement was undertaken. **Table 1** lists those present at these meetings.

Table 1 Meeting Attendees

Name	Role	Comment
Chris Armit	Delta Coal Environment and Community Co-ordinator	Present at opening meeting. Main contact for the audit.
Chris Jones	SLR Lead Auditor	Present at opening and closing meeting
Tracey Ball	SLR Assistant Auditor	Present at opening and closing meeting
Martin Davenport	SLR Noise Specialist	Present at opening meeting
Ken Mills	SCT Subsidence Specialist	Present at opening meeting

1.5 Consultation Requirements

Table 2 outlines the stakeholder consultation completed for Mannering Colliery, undertaken in accordance with the Audit Guidelines.

Table 2 Stakeholder Consultation for the Audit

Regulatory Authority	Contact Details	Comment
DPE	Joel Curran Compliance Officer Northern Region NSW Department of Planning and Environment PO Box 1226 | NEWCASTLE NSW 2300 P 02 4904 2702 M 0412 323 331 E joel.curran@planning.nsw.gov.au	Email sent to DPE contact from SLR on 20 March 2019. A response was provided by the DPE on 25 March 2019 *The Department sees noise and general monitoring and reporting obligations as key issues for Chain Valley and Mannering Collieries at this time.*
Environment Protection Authority (EPA)	Matthew Corradin A/Unit Head Hunter North NSW Environment Protection Authority – North Branch Landline (02) 4908 6830 – Mobile Telephone 0428 663 146	Email sent to EPA contact from SLR on 20 March 2019. No response provided to SLR.

Regulatory Authority	Contact Details	Comment
Department of Planning and Environment – Resources Regulator (DPE-RR)	Catherine Lewis Senior Inspector Environment Resources Regulator 516 High Street Maitland NSW 2320 T 02 4063 6619 E Catherine.lewis@planning.nsw.gov.au Lands Ministerial Unit NSW Department of Industry - Crown Lands Level 4, 437 Hunter Street, NEWCASTLE NSW 2300 E: lands.ministerials@industry.nsw.gov.au	Email sent to DPE-RR contact from SLR on 20 March 2019. No response provided to SLR from the RR, however a response was provided from Crown Lands. *The only feedback from Crown Lands, is that SLR should consider to what extent Crown Land is involved in either project, and if so whether Access Agreements (where required) are in place in accordance with the Mining Act 1992.* Crown Land is within the previous underground mining areas.
Department of Industry – Water (DOI Water)	Mitchell Isaacs | Manager Strategic Stakeholder Liaison Department of Primary Industries | NSW Office of Water Level 11, 10 Valentine Ave Parramatta NSW 2124 | PO Box 3720 Parramatta NSW 2124 T: 02 8838 7529 | M: 0403 103 823 | E: mitchell.isaacs@dpi.nsw.gov.au	Email sent to DoI Water contact from SLR on 20 March 2019. No response provided to SLR.
Lake Macquarie City Council (LMCC)	Emma Graham (LMCC) egraham@lakemac.nsw.gov.au	Email sent to LMCC contact from SLR on 20 March 2019. No response provided to SLR.
CCC Chairperson	Margaret MacDonald-Hill 0448 414 888 mmacdonald-hill@bigpond.com	Email sent to contact from SLR on 20 March 2019. The CCC Chairperson sent an email to the CCC requesting any comments. A response was provided by the CCC chairperson based on 25 March. *I have reviewed the file for the audit period and other than the long delay with the implementation of the Voluntary Planning Agreement and Community Advisory Panel (condition for Chain Valley) with the former Wyong Council (now Central Coast Council) caused by the Council itself and now satisfactorily resolved, there are no specific issues. The committee met quarterly for the entire audit period.* One of the members of the CCC stated in an email to the CCC Chairperson on 25 March 2019: *There have been a series of noise complaints from a fellow resident of mine. But only one person – no one else seems to hear what he hears. The colliery have taken a great deal of remedial actions.*

Regulatory Authority	Contact Details	Comment
Central Coast Council	Julie Vaughan Central Coast Council - Julie.Vaughan@centralcoast.nsw.gov.au	Email sent to contact from SLR on 20 March 2019. No response provided to SLR.

2 Documents Reviewed and Referenced

Key documentation reviewed as part of the Audit includes:

- Previous IEA;
- PA 06_0311;
- EPL 191;
- CCL 719 and 721;
- Annual Reviews – 2016, 2017 and 2018;
- Monitoring results for meteorological, noise, air, water and blasting;
- Rehabilitation Monitoring Reports;
- Environmental Management Plans – as per approval conditions;
- Mining Operations Plans
- Annual Returns – across the Audit period;
- Complaints log;
- Lighting Audit;
- Voluntary Planning Agreements - Payments
- Evidence of maintenance and calibration;
- CCC Meeting Minutes – across the Audit period; and
- Key consultation with government – including consultation and approval letters.

3 Assessment of Compliance

The terms used in the Audit to describe the level of compliance of the site with the relevant approval documentation are outlined in **Table 3** and **Table 4**. These are requirements of the DPE's *Independent Environmental Audit Guidelines* (October 2015).

Table 3 Compliance Assessment Criteria

Assessment	Criteria
Compliant	Where the Auditor has collected sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the Audit.
Not Verified	Where the Auditor has not been able to collect sufficient verifiable evidence to demonstrate that the intent and all elements of the requirement of the regulatory approval have been complied with within the scope of the Audit. In the absence of sufficient verification, the Auditor may in some instances be able to verify by other means (visual inspection, personal communication, etc.) that a requirement has been met. In such a situation, the requirement should still be assessed as not verified. However, the Auditor could note in the report that they have no reasons to believe that the operation is non-compliant with that requirement.
Non-Complaint	Where the Auditor has collected sufficient verifiable evidence to demonstrate that the intent of one or more specific elements of the regulatory approval have not been complied with within the scope of the Audit.
Administrative Non-Compliance	A technical non-compliance with a regulatory approval that would not impact on performance and that is considered minor in nature (e.g. report submitted but not on the due date, failed monitor or late monitoring session). This would not apply to performance-related aspects (e.g. exceedance of a noise limit) or where a requirement had not been met at all (e.g. noise management plan not prepared and submitted for approval).
Not triggered	A regulatory approval requirement has an activation or timing trigger that had not been met at the time of the Audit inspection; therefore, a determination of compliance could not be made.
Observation	Observations are recorded where the Audit identified issues of concern which do not strictly relate to the scope of the Audit or assessment of compliance. Further observations are considered to be indicators of potential non-compliances or areas where performance may be improved.
Note	A statement or fact, where no assessment of compliance is required.

Table 4 Risk Levels for Non-Compliances

Risk Level	Colour Code	Description
High		Non-compliance with potential for significant environmental con- sequences, regardless of the likelihood of occurrence.
Medium		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-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 - Compliance		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).

4 Approvals and Documentation Assessed

Audit findings and recommendations relating to key approvals are outlined in **Section 6** and **7** of this report.

4.1 Previous Audit Recommendations

The previous IEA was completed by Hansen Bailey, with the site IEA completed in May 2016 and the final Audit Report dated 22 July 2016.

The previous IEA covered the period of 10 April 2013 to 30 April 2016. Appendix 4 of the 2016 Annual Review provides an update on the 2016 IEA, with several recommendations committing to a 30 June 2017 completion date. There is no update on IEA actions within the 2017 AEMR, therefore it is not possible to fully determine compliance against the previous actions. IEA Actions Plans should be included in every Annual Review going forward.

The requirement to review Environmental Management Plans has not been completed with this referenced numerous times in the IEA Acton Plan (Appendix 4 of 2016 Annual Review). There was also a commitment to improve reporting of incidents/non – compliances during the future, with some non – compliances identified as part of this 2019 IEA.

4.2 Project Approval PA 06_0311

The conditions relating to PA 06_0311 were assessed as part of this Audit. The consolidated Project Approval was first granted on 12 March 2008. PA 06_0311 has been modified four times including:

- Mod 1 – approved 25 October 2012;
- Mod 2 – approved 27 November 2014;
- Mod 3 – approved 16 December 2015;
- Mod 4 – approved 18 August 2016; and
- Mod 5 – pending approval.

The site had a moderate level of compliance against Project Approval conditions.

4.2.1 Project Approval PA 06_0311 Statement of Commitments

There is a Statement of Commitments relating to PA 06_0311 which contains numerous commitments relating to environmental management, monitoring and reporting. The site had a moderate level of compliance against the Statement of Commitments.

4.3 Environment Protection Licence 191

SLR assessed compliance against the EPL 191 which has an anniversary date of 1 January. Conditions relate to limit conditions, operating conditions, monitoring and reporting. The site had a moderate level of compliance against the EPL.

4.4 Management Plans and Programs

The following management plans were assessed as part of the Audit. All the management plans reviewed are required according to PA 06_0311 consent conditions. The management plans for site are out of date, with there being several non – compliances identified for not fully implementing the management plans. Several of the management plans are from 2011 and are in a Centennial Coal template.

Specific recommendations relating to management plans are outlined in **Section 6** and **Section 7**. A list of the management plans reviewed during the IEA are outlined in **Table 5**. All these management plans are out of date, and require updating.

Table 5 Management Plans

Management Plan	Requirement	Comment
Noise Monitoring Program	PA 06_0311 Schedule 3, Condition 3	The management plan on the CVC website is dated 26 April 2016.
Water Management Plan	PA 06_0311 Schedule 3, Condition 8	The management plan on the CVC website is dated January 2013 (no specific date recorded).
Erosion and Sediment Control Plan	PA 06_0311 Schedule 3, Condition 10	Captured in the Water Management Plan dated January 2013.
Surface Water Monitoring Program	PA 06_0311 Schedule 3, Condition 11	Captured in the Water Management Plan dated January 2013.
Groundwater Monitoring Program	PA 06_0311 Schedule 3, Condition 12	Captured in the Water Management Plan dated January 2013.
Land Management Plan	PA 06_0311 Schedule 3, Condition 14	The management plan on the CVC website is dated 15 January 2016.
Rehabilitation Plan	PA 06_0311 Schedule 3, Condition 15	The management plan on the CVC website is dated 13 March 2015.
Air Quality Management Plan	PA 06_0311 Schedule 3, Condition 17	The management plan on the CVC website is dated 21 December 2012.
Non-Indigenous Cultural Heritage Management Plan	PA 06_0311 Schedule 3, Condition 18	The management plan on the CVC website is dated February 2013.
Aboriginal Cultural Heritage Management Plan	PA 06_0311 Schedule 3, Condition 18	The management plan on the CVC website is dated 13 November 2012.
Greenhouse Gas and Energy Efficiency Plan	PA 06_0311 Schedule 3, Condition 22	The management plan on the CVC website is dated September 2008.
Energy Savings Actions Plan		The management plan on the CVC website is dated September 2008.
Environmental Management Strategy	PA 06_0311 Schedule 5, Condition 1	The management plan on the CVC website is dated 26 June 2013.
Environmental Monitoring Program	PA 06_0311 Schedule 5, Condition 2	The management plan on the CVC website is dated 8 November 11.
Pollution Incident Response Management Plan	EPL 191	The management plan on the CVC website is dated 21 September 2018.

Management Plan	Requirement	Comment
Pollution Reduction Program	EPL 191	The report on the CVC website is dated 19 September 2012.
Particulate Matter Control Best Practice Assessment	EPL 191	The report on the CVC website is dated 19 September 2012.

4.5 Mining Leases

As part of this Audit, SLR assessed the two consolidated coal leases which is applicable to the Project Approval Area including CCL 719 and 721. This lease includes conditions relating to mining, rehabilitation, MOPs and group security deposits.

4.6 Water Licences

Mannering Colliery has one current Groundwater Extraction Licence – Bore Licence 20BL172016. This licence is a production bore and has an annual limit of 985ML. There was also a licence for Bore Licence 20BL111869 which operated during the 2015 and 2016 Annual Review periods and had an entitlement limit of 402ML.

The Water Licence for Bore Licence 20BL171958 has a condition stating:

The volume of groundwater extracted from the works authorized by this licence shall not exceed 985 megalitres in any 12 month period commencing 1st July.

Based on the information in the 2016, 2017 and 2018 Annual Reviews the site was well below the extraction licence limits during the Audit period.

4.7 Complaints

Complaints were recorded within the 2016, 2017 and 2018 Annual Reviews, with 2019 complaints provided by Site. Complaints have increased over the Audit period, including:

- Zero complaints received in the 2016 calendar year;
- One complaint received in 2017 relating to coal over the stockpile drain;
- 12 complaints received in 2018 relating to noise; and
- 16 complaints received from 1 January 2019 till the end of the audit period, relating to noise.

It is expected that the number of complaints will remain low whilst the site is not operational and only undertaking rehabilitation activities.

4.8 Incidents and Non-Compliances

There were three incidents and non-compliances during the Audit period based on the information provided to SLR. These are summarised below.

4.8.1 2016 Noise Exceedance

The 2016 Annual review states:

"*There was one exceedance of the noise monitoring criteria at Mannering Colliery during 2016. On 12 August 2016, LakeCoal was advised by its independent noise monitoring consultant (Global Acoustics) that they had recorded a 3dB exceedance of the site's $L_{Aeq\ (15\ Minute)}$ noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the evening monitoring on 11 August 2016. During the monitoring Global Acoustics could not attribute the noise emissions to a particular source on the site and described the noise as a general continuum in their notification."*

Section 7 of the 2016 discusses the actions taken following the exceedance:

"In accordance with the sites Noise Monitoring Program the following actions were also undertaken by LakeCoal as a result of noise exceedance:

- *Follow up noise monitoring was undertaken at RA2 approximately 4 hours later at 10:23pm. The results from the night time monitoring undertaken at RA2 indicated that there was no sustained exceedance of the noise levels from the operation and that the results were within the noise criteria limits as specified within PA 06_0311.*
- *A review of the sites operational management system and consultation with operational personnel at Mannering Colliery was undertaken on the 12th and 15th of August 2016 to assist with determining the potential noise sources occurring at the time. The review concluded that the following activities were occurring around the time the exceedance was recorded:*
  - *coal transfer (conveyors), crushing and transport to Vales Point Power Station (VPPS) via the Mannering coal clearance system.*
  - *general pit top activities*

Following the investigation by LakeCoal in consultation with Global Acoustics, LakeCoal was unable to definitively identify a specific noise source that had contributed to the elevated result at RA2 during the evening period on 11 August 2016."

No further actions required with regard to the non-compliance.

4.8.2 2017 Coal Stockpile Incident

As reported in **Section 4.7**, excess coal was stockpiled to accommodate for an issue with the coal conveyor. As a result, coal was pushed over the pollution control drain contaminating the waterway. Section 4.1 of the Annual Review discussed the issue.

The EPA attended site on the 13th November in response the complaint. At the time of the inspection it was observed that there was no coal over the stockpile drains and that they were free of obstructions.

Following discussions with the EPA LakeCoal agreed to report the community contact to the EPA hotline as a consolidated complaint on the EPL191 Annual Return and provide a report on the complaint. It was acknowledged that the complaint was most likely driven by industrial action being undertake on site at the time and was unlikely to have been from the local community. No further action was required as the coal was removed following the identification of the incident.

The incident report prepared by Mannering Colliery states that the following actions were implemented to prevent reoccurrence of the incident:

- Train relevant employees and management in the Stockpile Management Plan responsibilities and environmental controls;
- Investigate options to install or redesign existing eastern drain to gain additional stockpile capacity; and
- Improve operational control on the stockpile to ensure the incident does not happen again in the future.

4.8.3 2018 Noise Exceedance

Exceedance of night noise criteria (LAeq 15 Min) at RA2 on 29 August 2018.

The 2018 Annual Reviews states *'on 29 August 2018, there was an exceedance recorded at 1dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the scheduled night monitoring.*

During the night time monitoring the Global Acoustics technician noted that the Mannering Colliery rotary breaker continuum was clearly audible and the most dominant site specific noise source evident during the monitoring period.

Following the notification of the exceedance LakeCoal notified the NSW Department of Planning Environment (Compliance Division) and the Environmental Protection Authority of the exceedance via email on 29 August 2018. The following actions were also undertaken by LakeCoal as a result of noise exceedance:

The review concluded that the following activities were occurring around the time the exceedance was recorded:

- *full coal production and processing (conveyors, rotary breaker and screening plant operations) through the Mannering coal handling and processing infrastructure*
- *general pit top activities*

Follow up attended noise monitoring was undertaken at receiver RA2 on 30 August 2018. The results from the night time monitoring undertaken at RA2 confirmed elevated noise levels attributable to the site with a site specific LAeq15 min value of 42dB recorded.

In consultation with an acoustic specialist LakeCoal undertook an inspection/audit of Mannering's coal clearance infrastructure on the 29th and 30th August 2018 and noise mitigation works have been undertaken and will be reported in Q2 2019.

5 Environmental Management – Specialist Assessments

5.1 Noise

5.1.1 SLR Findings – Noise

Noise management has become an increasingly significant management aspect at Mannering with noise complaints increasing throughout the IEA period. There were also some issues with noise non – compliances during the audit period. This increase in noise complaints was associated with the handling of coal from the Chain Valley Coal operations.

According to 2016 Annual Review, on 12 August 2016 LakeCoal was advised by its independent noise monitoring consultant (Global Acoustics) that they had recorded a 3dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the evening monitoring on 11 August 2016 for Mannering Colliery.

According to 2016 Annual Review, on 29 August 2018, there was an exceedance recorded at 1dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the scheduled night monitoring.

According to the Noise Mitigation Study that was prepared by EMM Consulting, dated March 2019:

- Noise mitigation works implemented by the previous operators in 2018 have decreased site noise emission levels at all neighbouring noise-sensitive receivers.
- Current and proposed MC noise emissions are predicted to comply with the relevant long-term noise criteria outlined in MP 06_0311 at all assessment locations under worst case meteorological conditions.
- -LAmax noise level events at the site are also predicted to remain below the relevant sleep disturbance criteria.

Noise complaints increased during the audit period, with 0 noise complaints in 2016 and 2017, but 10 complaints in 2018, and 10 complaints from January 2019 to March 2019.

SLR has provided some recommendations in **Section 6** regarding noise monitoring and management.

5.2 Subsidence

Subsidence management and performance was reviewing as part of this audit. The 2018 Annual Review provides an update on mining and subsidence during the Audit period.

In December 2015, a business decision was made by LakeCoal to progress the "underground link road project" between Mannering Colliery and Chain Valley Colliery. During the reporting period Mannering Colliery continued underground mining operations as part of the underground link road project approved under PA 06_0311 Mod 2. In February 2017 difficult mining conditions were encountered underground during the link road drivage and an operational decision was made to cease underground mining from the Mannering Colliery of the link road. As a result the remainder of the link road drivage was undertaken from Chain Valley Colliery. Mannering Colliery did not produce any coal from its underground mining operations and handled a total of 394,213 tonnes of coal. All coal produced was transported to the adjacent Vales Point Power Station by overland conveyor.

As a result of the commencement of mining operations associated with the Link Road Project (LRP) LakeCoal implemented a subsidence monitoring program during the reporting period. Monitoring points were installed around the Vales Point Power Station (VPPS) switchyard in early 2016 prior to the commencement of the Link Road Project.

The Annual Review stated that No discernible subsidence impact from the LRP workings was observed during the IEA period. There was no evidence provided to SLR of subsidence impacts from Mannering during the IEA period. SLR noted that there is little detail on subsidence reporting in Annual Reviews and a recommendation has been made in **Section 7** in relation to improving subsidence reporting.

6 Audit Findings – Summary of Non-Compliances

Table 6 outlines the summary of non-compliances relating to the statutory conditions of Mannering Colliery and the proposed recommendation.

Table 6 Summary of Non-Compliances

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
PA 06_0311 (as modified)				
Schedule 2 Condition 8	"The Proponent must regularly review the strategies, plans and programs required under this approval and ensure that these documents are updated to incorporate measures to improve the environmental performance of the development and reflect current best practice in the mining industry. To facilitate these updates, the Proponent may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Proponent may also submit any strategy, plan or program required by this approval on a staged basis. With the agreement of the Secretary, the Proponent may prepare a revision or stage of any strategy, plan or program required under this approval without undertaking consultation with all parties nominated under the applicable condition in this approval. Notes: • While any strategy, plan or program may be submitted on a staged basis, the Proponent must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times. • If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.	Administrative Non-Compliance	The Proponent has not regularly reviewed the strategies, plans and programs required under this approval (i.e. Environmental Monitoring Program labelled Centennial Coal and dated November 2011, Energy Savings Action Plan labelled Centennial Mannering and dated 2011). Management Plans are out of date.	REC 1: Develop and implement a plan to update Mannering's Strategies, Plans and Programs.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 2 Condition 11	"The Proponent must ensure that all plant and equipment used on site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Non-Compliant (Low Risk)	(a) Downer maintenance records for radiation equipment dated 31 March 2017. * Electrical inspection records for ash analysers from 2016 to 2017. * Maintenance records: ""Mannering Front End Loaders work order history as at 2.5.19"" (b) During site inspection plant and equipment appeared to be operated in a proper and efficient manner. * Non-compliant: Complaint register dated 2018 indicated a number of complaints related to noise from the loader at the prep plant.	REC 2: Ensure that all plant and equipment used on site is operated in a proper and efficient manner.
Schedule 2 Condition 12	The Proponent must pay the affected councils $0.02 for each tonne of ROM coal produced by the project for the purpose of improving water quality in the Lake Macquarie catchment. This payment must be: (a) shared equally by the affected councils; (b) made by the end of March 2009, and at yearly intervals thereafter; (c) calculated on the ROM coal produced in the previous calendar year; and (d) subject to indexation by the Implicit Price Deflator, as published by the Australian Bureau of Statistics.	Administrative Non-Compliance	* Email from Council dated 2 April 2019 confirming VPA Payment for the 2018 period. * Admin Non-compliant: Receipt From Central Coast Council for VPA payment, dated 5 October 2016. Payment of Voluntary Planning Agreement (VPA) not made by the end of March 2016.	REC 3: Ensure VPA payments are made prior to the due date.

<table>
<tr><th>Schedule and Condition Number</th><th>Condition</th><th>Compliance Status</th><th>Evidence</th><th>Recommendations</th></tr>
<tr>
<td>Schedule 3 Condition 1</td>
<td>1. The Proponent must ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately owned land.

Table 1: Noise limits dB(A)
<table>
<tr><th>Day $L_{Aeq(15\ min)}$</th><th>Evening $L_{Aeq(15\ min)}$</th><th colspan="2">Night</th><th>Location (as listed in Appendix 4)</th></tr>
<tr><td></td><td></td><td>$L_{Aeq(15\ min)}$</td><td>$L_{A1(1\ min)}$</td><td></td></tr>
<tr><td>49</td><td>49</td><td>35</td><td>49</td><td>4 – di Rocco</td></tr>
<tr><td>47</td><td>47</td><td>35</td><td>49</td><td>5 – Keighran</td></tr>
<tr><td>44</td><td>44</td><td>35</td><td>49</td><td>6 – Swan</td></tr>
<tr><td>43</td><td>43</td><td>43</td><td>50</td><td>7 – Druitt</td></tr>
<tr><td>46</td><td>46</td><td>46</td><td>50</td><td>8 – May</td></tr>
<tr><td>45</td><td>45</td><td>45</td><td>52</td><td>9 – Jeans</td></tr>
<tr><td>40</td><td>40</td><td>40</td><td>52</td><td>11 – Jeans</td></tr>
<tr><td>43</td><td>43</td><td>43</td><td>52</td><td>18 – Jeans</td></tr>
<tr><td>44</td><td>44</td><td>44</td><td>52</td><td>20 – Knight and all other Chain Valley Bay residences</td></tr>
</table>

Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.</td>
<td>Non-Compliant (Low Risk)</td>
<td>Non-compliant: According to 2016 Annual Review, on 12 August 2016 LakeCoal was advised by its independent noise monitoring consultant (Global Acoustics) that they had recorded a 3dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the evening monitoring on 11 August 2016 for Mannering Colliery.
* According to 2016 Annual Review, on 29 August 2018, there was an exceedance recorded at 1dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the scheduled night monitoring.
* According to the Noise Mitigation Study dated March 2019:
-Noise mitigation works implemented by the previous operators in 2018 have decreased site noise emission levels at all neighbouring noise-sensitive receivers.
-Current and proposed MC noise emissions are predicted to comply with the relevant long-term noise criteria outlined in MP 06_0311 at all assessment locations under worst case meteorological conditions.
-LAmax noise level events at the site are also predicted to remain below the relevant sleep disturbance criteria.

* Noise complaints increased during the audit period, with 0 noise complaints in 2016 and 2017, but 10 complaints in 2018, and 10 complaints from January 2019 to March 2019.</td>
<td>REC 4: Continue to undertake noise monitoring.
REC 5: Undertake follow-up actions if noise exceedances occur.
REC 6: Continue to manage noise complaints.
REC 7: Provide DPE with EMM Noise Mitigation Study dated March 2019.</td>
</tr>
</table>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 3 Condition 3	The Proponent must prepare a Noise Monitoring Program for the project to the satisfaction of the Secretary. This program must: (a) be submitted to the Secretary by the end of September 2008; (a1) be revised in consultation with the EPA and be submitted to the Secretary by the end of April 2016; and (b) include the use of continuous and attended noise monitoring measures to monitor the performance of the project. The Proponent must implement the approved Noise Monitoring Program as approved from time to time by the Secretary.	Non-Compliant (Low Risk)	Preparation: * Updated (April 2016) NMP approved by DPE on 20 October 2008 according to LakeCoal email dated 4 March 2016 (a) NMP Section 1.2 * Updated (April 2016) Noise Monitoring Program (NMP) submitted to DPE on 29 April 2016 (b) NMP Section 5.1 & 5.2 Implementation: * Noise monitoring results included in the 2016, 2017 and 2018 Annual Reviews * Non-compliant: Only attended noise monitoring has been undertaken, according to the 2016, 2017 and 2018 Annual Reviews.	REC 8: Continuous noise monitoring should be undertaken in accordance with Mannering Colliery's Noise Management Plan.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 3 Condition 8	The Proponent must prepare a Water Management Plan for the project to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with DPI Water by suitably qualified expert/s whose appointment/s have been approved by the Secretary; (b) be submitted the Secretary by the end of March 2009; and (c) include a: • Site Water Balance; • Erosion and Sediment Control Plan; • Surface Water Monitoring Plan; and • Groundwater Monitoring Program. The Proponent must implement the approved management plan as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: (a) Prepared in consultation with DPI Water - Section 4.1. * Document prepared by suitably qualified expert - Section 4.1. (b) Water Management Plan (WMP) approved by DPE on 9 March 2010. (c) Site Water Balance - Section 6.5. • Erosion and Sediment Control Plan - Section 7.0. • Surface Water Monitoring Plan - Section 8.1. • Groundwater Monitoring Program - Section 9.1. Observation: The Water Management Plan has not been updated since January 2013. Observation: Figure 1 does not clearly show clean and dirty water management at the site. Implementation: * During site inspection clean and water management system appeared to be effective in keeping clean water and dirty water separate. * Groundwater and surface water monitoring program undertaken during the audit period per Annual Reviews. * Section 11 of the Management Plan commits to reviewing the plan every three years. This has not been completed, therefore Admin Non - Compliance.	REC 9: The WMP needs to be updated. REC 10: Replace Figure 1 in the WMP with clear figures showing clean and dirty water management (i.e. replace with Figures 2.10 & Figure 2.11 from the 2018 Annual Review).

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 3 Condition 9	The Site Water Balance must: (a) include details of: • sources and security of water supply; • water use on site; • water management on site; and (b) investigate, assess and report on measures to minimise water use by the project, particularly potable water from the Wyong Shire town water supply.	Administrative Non-Compliance	Preparation: a) Sources of water supply - WMP Section 6.5. • Water use on site - WMP Section 6.1. • Water management on site - WMP Section 6.0. Admin Non-compliant: The water balance is outdated and does not reflect the current status of the site. Section 6.5 of the WMP references a Water Balance Assessment from December 2011. (b) Investigate, assess and report on measures to minimise water use by the project, particularly potable water from the Wyong Shire town water supply - Section 6.1 Implementation: * Water management system sited during site inspection.	REC 11: The Water Balance in the WMP needs to be reviewed as it's out of date.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 3 Condition 11	The Surface Water Monitoring Plan must include: (a) detailed baseline data on surface water flows and quality in creeks and other waterbodies that could be affected by the project; (b) surface water impact assessment criteria; (c) a program to monitor the impact of the project on surface water flows and quality; and (d) procedures for reporting the results of this monitoring.	Non-Compliant (Low Risk)	Preparation: (a) WMP Section 8.2. (b) WMP Section 8.1.1. (c) WMP Section 8.2. (d) WMP Section 8.3. Implementation: * Surface water monitoring program undertaken during the audit period per the 2016, 2017 and 2018 Annual Reviews. * LDP 001 sited during the field inspection. Non-compliant: Visual assessment of the unnamed creek (described in Section 8.2.1 of the WMP) is not undertaken every 6 months to monitor stability and erosion.	REC 12: Undertake visual assessment of the unnamed creek every 6 months, to monitor stability and erosion. A TARP should be developed in the next review of the WMP which outlines quantitative and qualitative triggers for the creek and erosion. REC 13: Include results of the visual assessment of the unnamed creek in Annual Reviews. Include a reference again previous results. REC 14: Ensure monitoring undertaken at the "Downstream" monitoring location is undertaken every 12 months. REC 15: Include analysis results from monitoring undertaken at the "Downstream" monitoring location in Annual Reviews.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 3 Condition 17	The Proponent must prepare an Air Quality Monitoring Program for the project to the satisfaction of the Secretary. This program must: (a) be submitted to the Secretary by the end of September 2008; and (b) use dust deposition gauges to monitor the performance of the project. The Proponent must implement the approved monitoring program as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: * Air Quality Monitoring Program included as Section 3 of the AQMP, dated December 2012. This is too long between reviews. It was not updated following the 2013 or 2016 audits. Admin Non - Compliance. * AQMP approved by DPE on 20 October 2008, according to LakeCoal email dated 4 March 2016. * List of dust deposition gauges included in Section 3 of the AQMP. Implementation: * Monitoring results from deposition gauges reported in the 2016, 2017 and 2018 Annual Reviews.	*Nil recommendation*

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 3 Condition 18	The Proponent must prepare a Heritage Management Plan for the project to the satisfaction of the Secretary. This Plan must: (a) be prepared in consultation with any relevant Aboriginal stakeholders; (b) be submitted, prior to 31 March 2013, for approval to the Secretary; (c) include consideration of the Aboriginal and non-Aboriginal cultural context and significance of the site; (d) detail the responsibilities of all stakeholders; and (e) include programs/procedures and management measures for: • dealing with previously unidentified Aboriginal objects (excluding human remains), including any need to halt works in the vicinity, assessment of significance, determination of appropriate mitigation measures (by a qualified archaeologist in consultation with Aboriginal stakeholders), re-commencement of works, notifying OEH, and registering the new site(s) in the OEH AHIMS register; • dealing with any human remains which may be discovered, including halting of works in the vicinity; notifying NSW Police, OEH, the Department and Aboriginal stakeholders; and not re-commencing any works in the vicinity unless authorised; • heritage induction for construction personnel (including procedures for keeping records of inductions); • ongoing Aboriginal consultation and involvement (including procedures for keeping records of this); • appropriate identification, management, conservation and protection of both Aboriginal and non-Aboriginal heritage items identified on the site; and • dealing with previously unidentified non-Aboriginal heritage items which may be discovered during the project. The Proponent must implement the approved management plan as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: * Approval letter from DPE dated 26/11/2012 for Aboriginal Cultural Heritage Management Plan (ACHMP) (dated November 2012). It was not updated following the 2013 or 2016 audits. Admin Non - Compliance. * Approval letter from DPE dated 10 September 2013 for Non-Indigenous Heritage Management Plan (dated February 2013). (a) ACHMP - Section 6.0. (b) N/A - Outside of the audit period. (c) ACHMP - Attachment 3. Non-Indigenous Heritage Management Plan - Section 4. (d) ACHMP - Section 16. Non-Indigenous Heritage Management Plan - Section 3. (e) ACHMP - Section 6, 7, 13 and 17.2. Non-Indigenous Heritage Management Plan - Section 3, 6.1 & 6.2. * Observation: ACHMP was last updated November 2012 and is labelled Centennial and contains areas which are not relevant to the Mannering site. * Observation: Non-Indigenous Heritage Management Plan was last updated February 2013 is labelled Centennial. Implementation: * ACHMP & Non-Indigenous Heritage Management Plan appear to have been implemented during the audit period, with no complaints or incidents related to heritage recorded in the 2016, 2017 and 2018 Annual Reviews and Complaints Log.	REC 16: Update the ACHMP to make it reflective of the Mannering site only. REC 17: Update the Non-Indigenous Heritage Management Plan

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 3 Condition 22	The Proponent must prepare a Greenhouse and Energy Efficiency Plan for the project to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with EPA and generally in accordance with the Guidelines for Energy Savings Action Plans (DEUS 2005, or its latest version); (b) be submitted to the Secretary for approval by the end of September 2008; (c) include a program to monitor greenhouse gas emissions and energy use generated by the project; (d) include a framework for investigating and implementing measures to reduce greenhouse gas emissions and energy use at the site; and (e) describe how the performance of these measures would be monitored over time. The Proponent must implement the approved management plan as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: (a) N/A - Prepared outside of audit period (b) Energy Savings Action Plan (ESAP) was approved by DPE on 20 October 2008 according to LakeCoal email dated 4 March 2016 (c) ESAP - Page 17, 22 (d) ESAP - Page 4 (e) ESAP - Page 4 Admin Non-Compliant: The methodology to monitor greenhouse gas emissions generated by the project is not clearly stated in the ESAP. * The ESAP has not been reviewed since 2008 and is labelled Centennial Mannering Implementation: *According to site communications, energy savings due to minor operations completed during the audit period *Greenhouse gas emissions reported in 2016, 2017 and 2018 Annual Reviews.	REC 18: Assess the relevance of the Energy Savings Action Plan (ESAP) and whether it requires updating or incorporation into the sites Air Quality Management Plan (AQMP).

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 5 Condition 1	The Proponent must revise an Environmental Management Strategy for the project. This strategy must: (a) be submitted for approval to the Secretary prior to 30 June 2013; (b) provide the strategic framework for the environmental management of the project; (c) identify the statutory approvals that apply to the project; (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project; (e) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the project; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the project; • respond to any non-compliance; and • respond to emergencies; and (f) include: • copies of any strategies, plans and programs approved under the conditions of this approval; and • a clear plan depicting all the monitoring required to be carried out under the conditions of this approval. The Proponent must implement the approved management strategy as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: * Approval letter from DPE dated 10 September 2013 for the Environmental Management Strategy (EMS). It was not updated following the 2013 or 2016 audits. Admin Non - Compliance. (a) EMS submission letter dated 26 June 2013 (b) EMS - Section 1.0 (c) EMS - Section 4.0 (d) EMS - Section 5.0 (e) EMS - Section 8.1, 8.2, 8.3, 8.6 and 8.7 (f) EMS - Section 9.0, 12.0 and copies of management plans maintained on the Mannering Colliery website Admin Non-compliant: Table 9 and 10 list the incorrect monitoring frequency for conductivity, TSS, pH and Oil & Grease Observation: The EMS was last reviewed in September 2013 and is labelled Centennial Mannering Implementation: * Results from environmental monitoring (dust, noise, surface water and groundwater) reported in 2016, 2017 and 2018 Annual Reviews. * Management plans reviewed and assessed as part of this audit. * Complaints/Incidents Register for Mannering maintained. * 2 April 2019 non-compliance (TSS exceedance) reported to EPA.	REC 19: Review the Environmental Management Strategy (EMS). REC 20: Include in the reviewed EMS the incorrect monitoring frequency for conductivity, TSS, pH and Oil & Grease

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 5 Condition 2	The Proponent must ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data; (b) a description of: • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (d) a program to monitor and report on the: • impacts and environmental performance of the project; • effectiveness of any management measures (see (c) above); (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; (f) a protocol for managing and reporting any: • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and (g) a protocol for periodic review of the plan. Note: The Secretary may waive some of these requirements if they are unnecessary for particular management plans.	Administrative Non-Compliance	(a) WMP: Section 8.2, LMP: Section 6.1, ACHMP: Attachment 3, Non-Indigenous CHMP: Section 4.0 & 5.0 (b) WMP: Section 4.0 & 8.0, LMP: Section 2, ACHMP: Attachment 3, Non-Indigenous CHMP: Section 1.2 (c) WMP: Section 8.0 & 9.0, LMP: Section 4.4 & 6.2, ACHMP: Attachment 3, Non-Indigenous CHMP: Section 6.0 (d) WMP: Section 8.0, 9.3 & 9.4, Non-Indigenous CHMP: Section 7.1 Admin Non-compliant: The LMP & ACHMP does not include reporting mechanisms (i.e. Annual Review) (e) LMP: Section 9.1, ACHMP: Section 13.0, Non-Indigenous CHMP: Section 6.2 Admin Non-compliant: The WMP does not include a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible (f) LMP: Section 9.1 & 7.1, ACHMP: Section 13.0 & 18.0, Non-Indigenous CHMP: Section Admin Non-compliant: The WMP does not include a protocol for managing and reporting any incidents, complaints, non-compliances with statutory requirements and exceedances of the impact assessment criteria and/or performance criteria. Admin Non-compliant: The ACHMP does not include a complaints handling procedure (g) a protocol for periodic review of the plan. WMP: Section 11 Admin Non-compliant: The ACHMP does not include a protocol for periodic review of the plan. Observation: The management plans condition has not been included in regulatory requirements section of the WMP, LMP, ACHMP and Non-Indigenous CHMP.	REC 21: All management plans require updating due to the length of time since the previous reviews. REC 22: Ensure there is a cross referencing table covering this condition in management plans. REC 23: Additional detail including Trigger, Action, Response Tables (contingency plan) should be developed in the next round of management plan updates. REC 24: Include in the LMP and ACHMP reporting mechanisms (i.e. Annual Review). REC 25: Include in the WMP a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible. REC 26: Include in the WMP a protocol for managing and reporting any incidents, complaints, non-compliances with statutory requirements; and exceedances of the impact assessment criteria and/or performance criteria. REC 27: Include a complaints handling procedure in the include ACHMP. REC 28: Include a protocol for periodic review of the ACHMP. REC 29: Ensure all management plans required under PA 06_0311 detail and consider the management condition.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 5 Condition 3	By the end of March each year, or other timing as may be agreed by the Secretary, the Proponent must submit a report to the Department reviewing the environmental performance of the project to the satisfaction of the Secretary. This review must: (a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current financial year; (b) include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the: • the relevant statutory requirements, limits or performance measures/criteria; • requirements of any plan or program required under this approval; • the monitoring results of previous years; and • the relevant predictions in the documents listed in condition 2 of Schedule 2; (c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance; (d) identify any trends in the monitoring data over the life of the project; (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and (f) describe what measures will be implemented over the current financial year to improve the environmental performance of the project.	Administrative Non-Compliance	Preparation: * Approval letter from DPE for 2016 Annual Review, dated 6 July 2017. * Approval letter from DPE for 2017 Annual Review, dated 20 March 2018. Admin Non-compliant: 2016 Annual Review not submitted by March 31 2017. Submission email from LakeCoal to DPE dated 30 April 2017. * Letter from LakeCoal to DPE dated 29 March 2019 stating Annual Review uploaded on the Mannering Colliery website. * Email from LakeCoal to DPE dated 30 March stating Annual Review uploaded on the Mannering Colliery website. (a) Section 2, 5 & 8 - 2016, 2017, 2018 Annual Reviews (b) Section 3 & 4 - 2016, 2017, 2018 Annual Reviews Admin Non-compliant: The Annual Reviews do not provide: * Clearly state the performance criteria for noise and water quality; * Requirements of plans/programs required under this approval for noise and water quality; * The monitoring results of previous years, for noise and water; and * The relevant predictions in environmental assessments for air quality, noise and water. (c) Executive summary, Section 3 & 7 - 2016, 2017, 2018 Annual Reviews (d) Non-compliant: Trends in the monitoring data (for air quality, noise and water) over the life of the project are not included in the 2016, 2017 and 2018 Annual Reviews. (e) Non-compliant: Discrepancies between the predicted impacts in the EAs (for air quality, noise and water) and actual impacts of the project are not included in the 2016, 2017 and 2018 Annual Reviews. (f) Section 2, 3 & 6 - 2016, 2017 and 2018 Annual Reviews. Admin Non-compliant: The Annual Reviews have not been prepared to cover the current Annual Review Guidelines. See: https://www.planning.nsw.gov.au/Policy-and-Legislation/Mining-and-Resources/~/media/3AA21D35168042FE813DD0FB92E00E58.ashx	REC 29: Ensure Annual Reviews are submitted to DPE by 31 March. REC 30: Future Annual Reviews should clearly state noise and water quality performance criteria, and provide monitoring results against these. REC 31: Include in future Annual Reviews: - Requirements of plans/programs required under PA 06_0311 for noise and water quality; - The monitoring results of previous years, for noise and water; - The relevant predictions in environmental assessments for air quality, noise and water; - Trends in the monitoring data for air quality, noise and water, over the life of the project; and - Discrepancies between the predicted impacts in the EAs for air quality, noise and water, and actual impacts of the project. REC 32: The Annual Reviews are set out differently to the DPE Annual Review Guidelines (2015). Ensure table of contents matches the guidelines. REC 33: IEA Actions Plans should be included in every Annual Review going forward.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 5 Condition 4	Within 3 months of: (a) the submission of an annual review under Condition 3 above; (b) the submission of an incident report under Condition 6 below; (c) the submission of an audit under Condition 8 below; or (d) any modification to the conditions of this approval (unless the conditions require otherwise), the Proponent must review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary. Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.	Administrative Non-Compliance	Admin Non-compliant: Management plans have not been updated: (a) Within 3 months of the submission of the 2016 and 2017 Annual Reviews; (b) Since the submission of an incident (incidents described in the 2016 and 2017 Annual Reviews); (c) Since the submission of the 2016 IEA by Hansen Bailey; and (d) Since the modification to PA 06_0311 (Mod 4), from August 2016. These management plans include the WMP dated January 2013, LMP dated April 2016, ACHMP dated November 2012 and Non-Indigenous CHMP dated February 2013.	REC 1 REC 34: Include statement in future Annual Reviews stating that Management Plans have been reviewed and state which management plans will or will not be updated within 3 months.
Schedule 5 Condition 6	The Proponent must notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incidents associated with the project, the Proponent must notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent must provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	Administrative Non-Compliance	Admin Non-compliant: Noise exceedance on 11 August 2016 reported to DPE on 12 August 2016, according to 2016 Annual Review. Detailed incident report could not be provided by LakeCoal, therefore not able to determine when or if an incident report was submitted. * Noise exceedance on 29 August 2018 reported to DPE on same day (email to DPE Compliance Mailbox from LakeCoal dated 29 August 2018). Detailed LakeCoal incident report provided to DPE on 7 September 2018. Compliant as LakeCoal was granted an extension to provide the detailed report, via email from EPA dated 5 September 2016. * Email from LakeCoal to DPE, dated 11 April 2019, reporting TSS exceedance at Point 1 on 2 April 2019. Detailed LakeCoal incident report attached to email. Observation: Complaints/incidents register indicates no incidents during the audit period.	REC 35: Ensure all incidents are reported within the required timeframe. REC 36: Ensure the complaints/incidents register includes all incidents.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 5 Condition 9	Within 12 weeks of commissioning this audit, or as otherwise agreed by the Secretary, the Proponent must submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.	Administrative Non-Compliance	* Correspondence indicating when the Hansen Bailey IEA report was submitted to DPE could not be provided by LakeCoal. Correspondence indicating requesting/granting extension could not be provided. * According to DPE letter dated 28 January 2016 IEA audit was due to be completed on 30 March 2016. * Hansen Bailey IEA report dated July 2016. * Mannering Coal IEA – Response to Audit Recommendations dated 2 September 2016. * Response to Audit Recommendations to accompany submission of IEA Report. * Admin Non-compliant: Hansen Bailey IEA report not submitted within required timeframe. No submission letter provided to SLR. For the 2019 IEA, SLR were endorsed by the DPE on 28 February 2019. SLR were officially commissioned by LakeCoal -Pty Ltd Administrators Appointed on 5 March 2019, when a purchase order was granted. Therefore 12 weeks from this date is 28 May 2019 for submission.	REC 37: Ensure future IEA reports are submitted within the required timeframe.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Schedule 5 Condition 10	The Proponent must: (a) make copies of the following publicly available on its website: • the documents referred to in condition 2 of Schedule 2; • all relevant statutory approvals for the project; • all approved strategies, plans and programs required under the conditions of this approval; • a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any approved plans or programs required under the conditions of this or any other approval; • a complaints register, which is to be updated on a monthly basis; • minutes of CCC meetings; • the annual reviews required under this approval; • any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit; and • any other matter required by the Secretary; and (b) keep this information up-to-date, to the satisfaction of the Secretary.	Administrative Non-Compliance	Admin Non-compliant: The following documents are not included on the project (LakeCoal) website: * The documents referred to in condition 2 of Schedule 2 (EAs for the original project and Mod 1 - Mod 4); * Up-to-date Complaints Register. The Register only includes complaints up to February 2019; * CCC minutes for 2017, 2018 and 2019; * 2016 Audit Action Plan; * Noise monitoring data not included in the Monthly Website Report; and * 2018 - 2020 MOP. New Delta Coal website checked on 13 May 2018 and the following documents are not included on the website: * The documents referred to in condition 2 of Schedule 2 (EAs for the original project and Mod 1 - Mod 4); * Complaints Register (link not working); * Noise monitoring data not included in the Monthly Website Report; and * EMS and Management Plans (only PIRMP up on website).	REC 38: Include the following documentation on the project website: * The documents referred to in condition 2 of Schedule 2 (EAs for the original project and Mod 1 - Mod 4); * Up-to-date Complaints Register. The Register only includes complaints up to February 2019; * CCC minutes for 2017, 2018 and 2019; * 2016 Audit Action Plan; * Noise monitoring data not included in the Monthly Website Report; and * 2018 - 2020 MOP.

<table>
<tr><th>Schedule and Condition Number</th><th>Condition</th><th>Compliance Status</th><th>Evidence</th><th>Recommendations</th></tr>
<tr>
<td>APPENDIX 4B: ALTERNATE NOISE CONDITIONS

1</td>
<td>Table 1: Noise limits dB(A)
<table>
<tr><th colspan="2">Day</th><th>Evening</th><th colspan="2">Night</th><th>Location</th></tr>
<tr><th>$L_{Aeq(15\ min)}$</th><th></th><th>$L_{Aeq(15\ min)}$</th><th>$L_{Aeq(15\ min)}$</th><th>$L_{A1(1\ min)}$</th><th></th></tr>
<tr><td>40</td><td>40</td><td>40</td><td>49</td><td>4 – di Rocco</td></tr>
<tr><td>43</td><td>43</td><td>41</td><td>49</td><td>5 – Keighran</td></tr>
<tr><td>42</td><td>42</td><td>41</td><td>49</td><td>6 – Swan</td></tr>
<tr><td>39</td><td>39</td><td>39</td><td>47</td><td>7 – Druitt</td></tr>
<tr><td>46</td><td>46</td><td>46</td><td>47</td><td>8 – May</td></tr>
<tr><td>41</td><td>41</td><td>41</td><td>51</td><td>9 – Jeans</td></tr>
<tr><td>39</td><td>39</td><td>39</td><td>49</td><td>11 – Jeans</td></tr>
<tr><td>39</td><td>39</td><td>39</td><td>51</td><td>18 – Jeans</td></tr>
<tr><td>40</td><td>40</td><td>40</td><td>51</td><td>20 – Knight and all other Chain Valley Bay residences</td></tr>
</table>
Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.</td>
<td>Non-Compliant (Low Risk)</td>
<td>* Recommencement of underground coal extraction at Mannering Colliery until 18 months thereafter is; April 2016 till October 2017.
* Non-compliant: According to 2016 Annual Review, on 12 August 2016 LakeCoal was advised by its independent noise monitoring consultant (Global Acoustics)
that they had recorded a 3dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the evening monitoring on 11 August 2016 for Mannering Colliery.

* Noise complaints increased during the audit period, with 0 noise complaints in 2016 and 2017, but 10 complaints in 2018, and 10 complaints from January 2019 to March 2019.</td>
<td>REC 4
REC 5
REC 6
REC 39: Prepare a report to determine what further actions can be undertaken to reduce noise exceedances and noise complaints.</td>
</tr>
<tr>
<td>APPENDIX 4B: ALTERNATE NOISE CONDITIONS
2</td>
<td>Table 2: Noise limits dB(A)
<table>
<tr><th colspan="2">Day</th><th>Evening</th><th colspan="2">Night</th><th>Location</th></tr>
<tr><th>$L_{Aeq(15\ min)}$</th><th></th><th>$L_{Aeq(15\ min)}$</th><th>$L_{Aeq(15\ min)}$</th><th>$L_{A1(1\ min)}$</th><th></th></tr>
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<tr><td>40</td><td>40</td><td>40</td><td>51</td><td>20 – Knight and all other Chain Valley Bay residences</td></tr>
</table>
Note: The location of the land referred to in Table 2 is shown on the figure in Appendix 4.</td>
<td>Non-Compliant (Low Risk)</td>
<td>Non-compliant: According to 2016 Annual Review, on 29 August 2018, there was an exceedance recorded at 1dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the scheduled night monitoring.

* Noise complaints increased during the audit period, with 0 noise complaints in 2016 and 2017, but 10 complaints in 2018, and 10 complaints from January 2019 to March 2019.</td>
<td>REC 4
REC 5
REC 6
REC 39</td>
</tr>
</table>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
APPENDIX 4B: ALTERNATE NOISE CONDITIONS 3	The Proponent must prepare a report on all noise mitigation measures required to achieve the noise limits in Table 2 to the satisfaction of the Secretary. This report must: (a) be prepared by a suitably qualified and experienced acoustic consultant whose appointment has been approved by the Secretary; (b) be prepared in consultation with EPA, and submitted to the Department for approval within 6 months after recommencement of underground coal extraction; and (c) include an action plan for the implementation of any reasonable and feasible recommendations of the report. The Proponent must implement the noise mitigation measures prior to the expiry of the 18 month period referred to in condition 1 above.	Non-Compliant (Low Risk)	'* The Preliminary Noise Mitigation Options Report for the Mannering Colliery - Continuation of Mining Project dated 31 May 2017, prepared by Atkins Acoustics and Associates Pty Ltd could not be provided to SLR from Lake Coal * DPE approval letter dated 9 June 2017, for the Preliminary Noise Mitigation Options Report. Admin non-compliant: Acoustic consultant was not endorsed by DPE Non-compliant: Noise mitigation measures required to be undertaken by October 2017. According to site communications these mitigation measures were undertaken from 2017 to February 2019.	*Nil recommendation*
APPENDIX 4B: ALTERNATE NOISE CONDITIONS 4	The Proponent must prepare a Noise Compliance Report for the project to the satisfaction of the Secretary. The report must: (a) be prepared by a suitably qualified acoustic consultant, whose appointment has been approved by the Secretary; (b) be prepared in consultation with EPA, and be submitted for approval within 6 months of the expiry of the 18 month period referred to in condition 1 above; and (c) investigate and evaluate the effectiveness of the noise mitigation measures required under condition 3 and compliance with the noise limits in Table 2.	Non-Compliant (Low Risk)	(a) Non-compliant: Letter of endorsement for EMM to undertake the 2019 Noise Mitigation Study could not be found by LakeCoal. (b) Non-compliant: The Noise Mitigation Study was not prepared in consultation with EPA and was not submitted for approval by March 2018. (c) According to the EMM Noise Mitigation Study dated March 2019: -Noise mitigation works implemented by the previous operators in 2018 have decreased site noise emission levels at all neighbouring noise-sensitive receivers. -Current and proposed MC noise emissions are predicted to comply with the relevant long-term noise criteria outlined in MP 06_0311 at all assessment locations under worst case meteorological conditions. -LAmax noise level events at the site are also predicted to remain below the relevant sleep disturbance criteria.	*Nil recommendation*
PA 06_0311 Statement of Commitments (Mod 4)				

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Water Management	LakeCoal will undertake a review of the existing site water management system in consultation with the EPA. The water level within the sediment pond system will be monitored and kept at a relatively low operating level, such that the ponds can provide a detention function in a significant rainfall event. A visual assessment of the unnamed creek will be undertaken every 6 months to monitor stability and erosion. Where practicable, underground water levels will be recorded to monitor changes in the level of water stored in underground depressions and to verify that the rate of extraction is sufficient. The extraction of underground water from the mine workings will be undertaken in accordance with the Bore License (20BL172016) issued under the Water Act 1912. To enable on-going assessment of the quality of water discharged, the existing monitoring program will be maintained for the life of the Project with the following enhancements: • An assessment of the surrounding catchments summarising land uses and other background information to characterise an appropriate water quality; and • Annual monitoring of heavy metals at the monitoring location identified as 'Downstream'.	Non-Compliant (Low Risk)	* During site inspection noted that the sediment pond system has freeboard. Non-compliant: Visual assessment of the unnamed creek is not undertaken every 6 months to monitor stability and erosion. This requirement is included in the WMP. *2016, 2017 & 2018 Annual Reviews describe: -Groundwater extraction from bore 20BL172016. -Monitoring of groundwater extraction. -Section 8.2 of the WMP provides background information of the water quality of the unnamed creek. Non-compliant: Annual monitoring (i.e. monitoring every 12 months) of heavy metals not undertaken at the monitoring location identified as "Downstream". -ALS analytical results dated 18 April 2017, 22 November 2018, 12 March 2019, and include analysis results for heavy metals for monitoring location "Downstream". Observation: Monitoring results for the "Downstream" monitoring location is not included in Annual Reviews.	REC 12 REC 13 REC 14 REC 40: Ensure monitoring undertaken at the "Downstream" monitoring location is undertaken every 12 months.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
Aboriginal Heritage	Activities will continue to be managed in accordance with the Colliery's Aboriginal Cultural Heritage Management plan (ACHMP). Given the Colliery's current ACHMP is integrated with other Centennial sites, a separate ACHMP will be developed. If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to cultural heritage in consultation with OEH. All relevant Centennial Mannering staff and contractors will be made aware of their statutory obligations for Aboriginal cultural heritage under the NP&W Act as part of the existing mine induction process. An Aboriginal Cultural Heritage Management Plan (ACHMP) will be developed and implemented for the identified Aboriginal heritage items within the Project Site in consultation with the relevant Aboriginal stakeholders. If additional sites are identified they will be assessed for cultural significance and be incorporated into the ACHMP. In the unlikely event that skeletal remains are identified, the NSW Police Coroner will be contacted to determine if the material is of Aboriginal origin. If determined to be Aboriginal, contact will be made with the OEH, a suitably qualified archaeologist and representatives of the relevant Aboriginal stakeholder groups to determine an action plan for the management of the skeletal remains and formulate management recommendations if required.	Administrative Non-Compliance	Admin non-compliant: A separate ACHMP has not been developed. It still covers other Centennial sites. * Mine-induced subsidence levels do not exceed 20 millimetres * "Lake Coal Surface Generic Surface Induction" and "Environmental Awareness Training" Assessment includes Aboriginal heritage aspects * Aboriginal Cultural Heritage Management Plan (ACHMP) developed for the identified Aboriginal heritage items within the Project Site. * ACHMP prepared in consultation with the relevant Aboriginal stakeholders (refer to Section 2.0).	*Nil recommendation*
European Heritage	If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to non-indigenous heritage. All relevant Centennial Mannering staff and contractors will be made aware of their statutory obligations for European cultural heritage under the Heritage Act 1977 as part of the existing mine induction process. If, during the course of development works, significant non-indigenous cultural heritage material is uncovered within the Project Site, the Heritage Branch of OEH will be notified and any required monitoring or management strategies instigated.	Administrative Non-Compliance	* Mine-induced subsidence levels do not exceed 20 millimetres * Admin Non-compliant: "Lake Coal Surface Generic Surface Induction" and "Environmental Awareness Training" Assessment does not include European heritage aspects.	REC 41: Include European heritage aspects in the "Lake Coal Surface Generic Surface Induction" and "Environmental Awareness Training" Assessment

<table>
<tr><th>Schedule and Condition Number</th><th>Condition</th><th>Compliance Status</th><th>Evidence</th><th>Recommendations</th></tr>
<tr><td>Monitoring</td><td>The Environmental Monitoring Program will be reviewed and updated, as required, to incorporate the commitments made in the Environmental Assessment and any additional consent conditions.</td><td>Administrative Non-Compliance</td><td>The Environmental Monitoring Program has not been reviewed and updated since November 2011, and does not to incorporate the commitments made in the Environmental Assessments (EAs) for Mod 1, Mod 2, Mod 3 & Mod 4, and any additional consent conditions (for these modifications).</td><td>REC 42: Update the Environmental Monitoring Program to incorporate any commitments made in the Environmental Assessments (EAs) for Mod 1, Mod 2, Mod 3 & Mod 4, and any additional consent conditions (for these modifications).</td></tr>
<tr><td colspan="5">EPL 191</td></tr>
<tr><td>L1.1</td><td>Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.</td><td>Non-Compliant (Low Risk)</td><td>Exceedance of TSS on 2 April 2019. Exceedance constitutes a 'pollution' of waterways based on the POEO Act.</td><td>REC 43: Continue to undertake mitigation measures to comply with section 120 of the Protection of the Environment Operations Act 1997.</td></tr>
<tr><td>L2.4</td><td>POINT 1<table><tr><th>Pollutant</th><th>Units of Measure</th><th>50 percentile concentration limit</th><th>90 percentile concentration limit</th><th>3DGM concentration limit</th><th>100 percentile concentration limit</th></tr><tr><td>Oil and Grease</td><td>milligrams per litre</td><td></td><td></td><td></td><td>10</td></tr><tr><td>pH</td><td>pH</td><td></td><td></td><td></td><td>6.5-8.5</td></tr><tr><td>Total suspended solids</td><td>milligrams per litre</td><td></td><td></td><td></td><td>50</td></tr></table></td><td>Non-Compliant (Low Risk)</td><td>Exceedance of TSS on 2 April 2019. Dam flocculated and re-tested, with TSS reading of 10mg/L.</td><td>REC 44: Continue to undertake water quality monitoring. If a water quality exceedance is detected undertake measures to improve water quality.</td></tr>
</table>

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
L5	Note: Noise limits are not specified as a condition of this licence. Noise limits are prescribed with the conditions of Project Approval 06_0311 granted under the Environmental Planning and Assessment Act 1979. Under the Environmental Planning and Assessment Act 1979 the Department of Planning is the appropriate authority in respect of the administration and regulation of the Project Approval.	Non-Compliant (Low Risk)	Non-compliant: According to 2016 Annual Review, on 12 August 2016 LakeCoal was advised by its independent noise monitoring consultant (Global Acoustics) that they had recorded a 3dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the evening monitoring on 11 August 2016 for Mannering Colliery. * According to 2016 Annual Review, On 29 August 2018, there was an exceedance recorded at 1dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the scheduled night monitoring. * According to the Noise Mitigation Study dated March 2019: -Noise mitigation works implemented by the previous operators in 2018 have decreased site noise emission levels at all neighbouring noise-sensitive receivers. -Current and proposed MC noise emissions are predicted to comply with the relevant long-term noise criteria outlined in MP 06_0311 at all assessment locations under worst case meteorological conditions. * LAmax noise level events at the site are also predicted to remain below the relevant sleep disturbance criteria.	REC 4 REC 5
M5.2	The record must include details of the following: a) the date and time of the complaint; b) the method by which the complaint was made; c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the licensee, the reasons why no action was taken.	Administrative Non-Compliance	*Admin Non-compliant: The Complaints Register does not include the time of the complaint and the personal details of the complainant. * Not all complaints registered included the method by which the complaint was made.	REC 45: Include in the Complaints Register: -Time of the complaint; -Personal details of the complainant; and -Method by which the complaint was made.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
M6.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	Administrative Non-Compliance	*Telephone line for complaints advertised on the LakeCoal and Delta Coal websites. * However no evidence of notifying to the community that the complaints line exists.	REC 46: With the new ownership an advertisement should be placed in the paper providing a link to the Delta Coal website and outlining the complaint management details.
M6.4	The licensee must nominate a representative of the company that is available all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including a telephone number, must be current at all times. Note: This condition does not apply until two (2) weeks after the date of issue of this licence.	Administrative Non-Compliance	* Designated representatives of the company included in the Pollution Incident Response Plan (PIRMP), dated September 2018. * Admin Non-compliant: The designated representatives of the company, included in the PIRMP, are not current.	REC 47: Update the details of designated representatives of the company in the PIRMP.
CCL 721				
5	a) report against compliance with the MOP; b) report on progress in respect of rehabilitation completion criteria; c) report on the extent of compliance with regulatory requirements; and d) have regard to any relevant guidelines adopted by the Director-General;	Administrative Non-Compliance	a) Admin Non-compliant: The 2016, 2017 & 2018 Annual Reviews do not report against compliance with the MOP. b) N/A - Rehabilitation has not commenced at the site; c) 2016, 2017 & 2018 Annual Reviews - Executive Summary & Section 3 d) Admin Non-compliant: 2016, 2017 and 2018 Annual Reviews not prepared in accordance with the DPE Annual Review guidelines	REC 31 REC 48: Report against compliance with the MOP in future Annual Reviews. *Prepare future Annual Reviews in accordance with the DPE Annual Review guidelines.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
6	Additional environmental reports may be required on specific surface disturbing operations or environmental incidents from time to time as directed in writing by the Director-General and must be lodged as instructed.	Administrative Non-Compliance	Admin Non-compliant: Noise exceedance on 11 August 2016 reported to DPE on 12 August 2016, according to 2016 Annual Review. Detailed incident report could not be provided by LakeCoal, therefore not able to determine when or if an incident report was submitted. * Noise exceedance on 29 August 2018 reported to DPE on same day (email to DPE Compliance Mailbox from LakeCoal dated 29 August 2018). Detailed LakeCoal incident report provided to DPE on 7 September 2018. Compliant as LakeCoal was granted an extension to provide the detailed report, via email from EPA dated 5 September 2016. * TSS exceedance at Point 1 on 2 April 2019 reported to DPE on 11 April 2019 via email and formal letter * Admin Non-compliant: According to site communications the RR required additional environmental reports on specific surface disturbing operations. Reports could not be provided to SLR from LakeCoal. Observation: Compliant/incident register indicates no incidents from June 2016 to April 2019.	REC 34 REC 35 REC 49: Ensure all additional environmental reports on specific surface disturbing operations are provided to the RR as required.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
18	Operations must be carried out in a manner that does not cause or aggravate air pollution, water pollution (including sedimentation) or soil contamination or erosion, unless otherwise authorised by a relevant approval, and in accordance with an accepted Mining Operations Plan. For the purpose of this condition, water shall be taken to include any watercourse, waterbody or groundwaters. The lease holder must observe and perform any instructions given by the Director-General in this regard.	Non-Compliant (Low Risk)	* Management plans prepared and implemented for the site. Management plans include management controls to minimise any harm to the environment that may result from the operation of the site * During the site inspection noted management controls being implemented at the site: -No visible dust; -Water cart used on site to reduce dust; -Majority of the pit top is concreted; -Covered conveyor; -Bunded chemicals (Photo 7); -Rubbish disposed of in labelled waste bins; -Oily water separator; -Noise mitigation measures implemented at site (Photo 8). *Water quality, dust and monitoring undertaken at the site. Non-compliant: During audit period non-compliances with noise and water quality criteria.	REC 50: Ensure all practicable measures are undertaken to reduce noise and water quality exceedances (refer to specific recommendations relating to noise and water quality).
CCL 719				

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
3	(a) The lease holder must comply with an approved Mining Operations Plan (MOP) in carrying out any significant surface disturbing activities, including mining operations, mining purposes and prospecting. The lease holder must apply to the Minister for approval of a MOP. An approved MOP must be in place prior to commencing any significant surface disturbing activities, including mining operations, mining purposes and prospecting. (b) The MOP must identify the post mining land use and set out a detailed rehabilitation strategy which: (i) identifies areas that will be disturbed; (ii) details the staging of specific mining operations, mining purposes and prospecting; (iii) identifies how the mine will be managed and rehabilitated to achieve the post mining land use; (iv) identifies how mining operations, mining purposes and prospecting will be carried out in order to prevent and or minimise harm to the environment; and (v) reflects the conditions of approval under: • the Environmental Planning and Assessment Act 1979; • the Protection of the Environment Operations Act 1997; and • any other approvals relevant to the development including the conditions of this mining lease. (c) The MOP must be prepared in accordance with the ESG3: Mining Operations Plan (MOP) Guidelines September 2013 published on the Department's website at www.resources.nsw.gov.au/environment (d) The lease holder may apply to the Minister to amend an approved MOP at any time. (e) It is not a breach of this condition if: (i) the operations which, but for this condition 3(e) would be a breach of condition 3(a), were necessary to comply with a lawful order or direction given under the Environmental Planning and Assessment Act 1979, the Protection of the Environment Operations Act 1997, the Mine Health and Safety Act 2004 I Coal Mine Health and Safety Act 2002 and Mine Health and Safety Regulation 2007 I Coal Mine Health and Safety Regulation 2006 or the Work Health and Safety Act 2011; and (ii) the Minister had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out. (f) The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must: (i) provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP; (ii) be submitted annually on the grant anniversary date (or at such other times as agreed by the Minister); and (iii) be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at www.resources.nsw.gov.au/envrionment. Note: The Rehabilitation Report replaces the Annual Environmental Management Report.	Non-Compliant (Low Risk)	(a) Site inspection indicates MOP is being implemented. * Approval letter from Resources Regulator (RR) (formerly DRE) dated 27 March 2015, for 2015-2018 MOP * Approval letter from RR dated 26 September 2018 for 2018-2020 MO (b) The MOP must: i) MOP plans; ii) MOP plans (3 series); iii) Mine Closure Plan to be prepared at least two years prior to the cessation of mining activities; iv) Section 3; v) Section 4.1; vi) have regard to any relevant guidelines adopted by the Director-General. (c) 2018-2020 MOP has been prepared generally in accordance with DRE (now Resources Regulator) ESG3: MOP Guidelines, dated September 2013. (d) N/A-MOP not amended during MOP period. (e) Non-compliant: Details could not be provided by LakeCoal about non-compliances with the MOP. (f) Admin Non-compliant: Annual Rehabilitation Reports have not been prepared by LakeCoal. Rehabilitation not undertaken at the site but no correspondence provided by LakeCoal stating that Annual Rehabilitation Reports are not required or that these are covered by other reports. Observation: The 2016, 2017 and 2018 Annual Reviews do not provide details of non-compliances with the MOP.	REC 51: Prepare Annual Rehabilitation Reports. REC 52: Include in Annual Reviews any non-compliances with the MOP, during the reporting period.

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
5	(a) The lease holder must notify the Department of all: (i) breaches of the conditions of this mining lease or breaches of the Act causing or threatening material harm to the environment; and (ii) breaches of environmental protection legislation causing or threatening material harm to the environment (as defined in the Protection of the Environment Operations Act 1997), arising in connection with significant surface disturbing activities, including mining operations, mining purposes and prospecting operations, under this mining lease. The notification must be given immediately after the lease holder becomes aware of the breach. Note. Refer to www.resources.nsw.qov.au/environmenf for notification contact details. (b) The lease holder must submit an Environmental Incident Report to the Department within seven (7) days of all breaches referred to in condition 5(a)(i) and (ii). The Environmental Incident Report must include: (i) the details of the mining lease; (ii) contact details for the lease holder; (iii) a map identifying the location of the incident and where material harm to the environment has or is likely to occur; (iv) a description of the nature of the incident or breach, likely causes and consequences; (v) a timetable showing actions taken or planned to address the incident and to prevent future incidents or breaches referred to in 5(a). (vi) a summary of all previous incidents or breaches which have occurred in the previous 12 months relating to significant surface disturbing activities, including mining operations, mining purposes and prospecting operations under this mining lease. Note. The lease holder should have regard to any relevant Director General's guidelines in the preparation of an Environmental Incident Report. Refer to www.resources.nsw.qov.au/environmentfor further details. (c) In addition to the requirements set out in conditions 5(a) and (b), the lease holder must immediately advise the Department of any notification made under section 148 of the Protection of the Environment Operations Act 1997 arising in connection with significant surface disturbing activities including mining operations, mining purposes and prospecting operations, under this mining lease.	Administrative Non-Compliance	* Email from LakeCoal to DPE (RR integrated into DPE), dated 11 April 2019, reporting TSS exceedance at Point 1 on 2 April 2019. Detailed LakeCoal incident report attached to email. Admin Non-compliant: Noise exceedance on 11 August 2016 reported to DPE on 12 August 2016, according to 2016 Annual Review. Detailed incident report could not be provided by LakeCoal, therefore not able to determine when or if an incident report was submitted. * Noise exceedance on 29 August 2018 reported to DPE on same day (email to DPE Compliance Mailbox from LakeCoal dated 29 August 2018). Detailed LakeCoal incident report provided to DPE on 7 September 2018. Compliant as LakeCoal was granted an extension to provide the detailed report, via email from EPA dated 5 September 2016. * There were no incidents of hydrocarbon contamination, or significant spills reported in the 2016, 2017 and 2018 Annual Reviews Observation: Complaints/incident register indicates no incidents from June 2016 to April 2019.	REC 35

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations
8	The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations of all or any kind under the mining lease, including obligations of all or any kind under the mining lease that may arise in the future. The amount of the security deposit to be provided as a group security has been assessed by the Minister at $3,879,000. The leases covered by the group security include: Consolidated Coal Lease Nos 719 & 721 (Act 1973)	Non-Compliant (Low Risk)	* "Rehabilitation Cost Calculation Tool Mannering (2015)" indicates $3,879,000 security for 2015-2018 MOP * Non-compliant: "Chain Valley Colliery (Mannering Surface Areas) Underground RCE Report" (Mannering RCE) indicates $3,226,730 security for 2018-2020 MOP. Approval letter from RR for updated security could not be provided to SLR by LakeCoal.	REC 53: Ensure an adequate security deposit is provided as a group security REC 54: Ensure group security has been approved by RR

7 Additional Recommended Actions

Additional recommendations relating to compliant conditions are outlined within **Table 7**.

Table 7 Additional Recommendations

Aspect	Recommendation
Management Systems	REC 55: It provided difficult for Delta Coal to provide requested information in a timely manner. SLR recommends a review of the management system to ensure information is correctly filed and readily available.
Audit Preparations	REC 56: Little information was provided to SLR prior to the audit which resulted in numerous additional information requests. Additional time is required by Delta Coal to prepare for the next IEA. An internal audit is recommended prior to the next IEA to ensure information and evidence is available to the Independent Environmental Auditor.
Water Management	REC 57: Include in Section 9.4 of the Water Management Plan reporting of ground water results in Annual Reviews.
Bushfire and Land Management Plan	REC 58: Attach the Bushfire Management Plan to the Land Management Plan
Air Quality Management	REC 59: * Update the AQMP * Include in the updated AQMP a plan showing dust monitoring locations and the location of the weather station.
Waste Management	REC 60: * Finish sorting out the piles of reject and rubbish at the pit top area. * Undertake contaminated sites/waste material assessment at the waste stockpile area. * SLR recommends none of the waste from the stockpile material is removed from site for waste disposal until an assessment on the waste is undertaken. * Install signage at the landfarm material at the pit top.
Subsidence	REC 61: A separate subsidence impact assessment report should be prepared annually and appended to the Annual Review. This report should be prepared or peer reviewed by a subsidence specialist. This should assess subsidence performance measures from the Project Approval.
Pollution Incident Response Management Plan	REC 62: * Update the PIRMP to include: - Current site contacts; - Email details for government contacts; and - Figures that clearly show the location of hazardous substances and where pollution response equipment is stored.

Aspect	Recommendation
2019 Annual Return	REC 63: * LakeCoal prepare an Annual Return for the period commencing on the first day of the reporting period (1 January 2019) and ending on the date the application for the transfer of the licence to the new licensee is granted (1 April 2019). * Delta Coal prepare an Annual Return for the period commencing on the date the application for the transfer of EPL191 is granted (1 April 2019) and ending on the last day of the reporting period (31 December 2019).

8 Conclusion

A total of 200 conditions were assessed across the PA 06_0311, PA 06_0311 Statement of Commitments (Mod 4), EPL 191 and CCL 721. The Audit performance is summarised in **Table 8**.

Table 8 Summary of Audit Performance

Approval	Number of Conditions	Administrative Non-Compliances	Low Risk Non-Compliances
PA 06_0311 (as modified)	62	14	8
PA 06_0311 Statement of Commitments (Mod 4)	11	3	1
EPL 191	75	3	3
CCL 719	18	1	2
CCL 721	34	2	1
Total	**200**	**23**	**15**

In summary:

- There were 23 Administrative Non-Compliances;
- There were 15 Low Risk Non-Compliances; and
- There are a total of 63 recommendations across **Section 6** and **7**.

The majority of non - compliances and recommendations related to administrative issues, including not fully implementing the Project Approval and management plans. The field inspection did not identify any major issues that required immediate attention. The situation at the time of IEA did make the task of auditing more difficult than expected for SLR. This included the change in management from LakeCoal to Delta Coal and the previous Environment and Community Co-ordinator leaving LakeCoal prior to the commencement of the audit. Little information was provided to SLR prior to the audit which resulted in numerous additional information requests following the site component. Additional time is required by Delta Coal to prepare for the next IEA.

The major issue going forward for Mannering will be the management of noise. It has been noted that complaints have increased and the site has been liaising with DPE regarding noise management.

APPENDIX A

Photographs



Photo 1 Coal Reject and Mixed Rubbish from the Underground



Photo 2 Material to be removed from sumps



Photo 3 Some Areas of Lantana onsite



Photo 4 Dams are stable with banks well vegetated



Photo 5 Licenced Discharge Point



Photo 6 Oily Rags contained in general waste bin



Photo 7 Chemicals stored within bunds



Photo 8 Areas of noise mitigation at the plant

APPENDIX B

Compliance Spreadsheet

Project Approval 06_0311

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
SCHEDULE 2 - ADMINISTRATIVE CONDITIONS				
Obligation to Minimise Harm to the Environment	The Proponent must implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of the project.	Compliant	Despite there being non compliances during the audit period. No evidence of any non compliance constituting material harm to the environment as per the PEOE Act definition.	
1				
Terms of Approval				
2	Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	Compliant	The project has been undertaken generally in accordance with Environmental Assessments (AS') and the Project Layout Plans.	
2A	The Proponent must carry out the development in accordance with the: (a) Statement of Commitments; and (b) conditions of this approval.	Compliant	The development has been carried out generally in accordance with the Statement of Commitments and conditions of this approval, except where noted below and within the Statement of Commitments Audit Spreadsheet.	
3	If there is any inconsistency between the documents in condition 2, the most recent document shall prevail to the extent of the inconsistency. The conditions of this approval shall prevail over the documents in conditions 2 and 2A(a) to the extent of any inconsistency.	Note		
4	The Proponent must comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of: (a) any reports, plans, programs or correspondence that are submitted in accordance with the conditions of this approval; and (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.	Compliant	(a) Actions related to DPE review of 2015 Annual Review included in 2016 Annual Review. Actions related to DPE review of 2017 Annual Review included in 2018 Annual Review. * Letter from DPE dated 29 August 2016 requested Mannering Colliery to provide DPE correspondence regarding the approval of the management plans or to include the management plans as part of the program of review. In response, LakeCoal provided a schedule in an email dated 4 March 2016 listing the date management plans were approved by DPE. (b) Email from DPE dated 27 March 2019 details issues raised from a compliance inspection undertaken in 26 March 2019. In an email response dated 29 March 2019, LakeCoal provides an action plan to address these issues.	
Limits on Approval				
5	Mining operations may take place until 30 June 2022. Note: Under this approval, the Proponent is required to rehabilitate the site to the satisfaction of the Secretary and DRE. Consequently this approval will continue to apply in all other respects other than the right to conduct mining operations until the site has been rehabilitated to a satisfactory standard.	Compliant	Mining operations undertaken during the audit period	
6	The Proponent must not extract more than 1.1 million tonnes of ROM coal a year from the site.	Compliant	2016, 2017 & 2018 Annual Reviews confirm that no more than 1.1 million tonnes per annum of ROM coal was extracted from the site	
6A	The Proponent must not transport more than 1.3 million tonnes of ROM coal a year from the site.	Compliant	2016, 2017 & 2018 Annual Reviews confirm that no more than 1.3 million tonnes per annum of ROM coal was transported from the site	
7	The Proponent must ensure all coal produced and/or received on the site is transported by overland conveyor to Vales Point Power Station.	Compliant	The Environmental Monitoring Program has not been reviewed and updated since November 2011, and does not to incorporate the commitments made in the Environmental Assessments (EAs) for Mod 1, Mod 2, Mod 3 & Mod 4, and any additional consent conditions (for these modifications).	
Updating and Staging Strategies, Plans and Programs				
8	The Proponent must regularly review the strategies, plans and programs required under this approval and ensure that these documents are updated to incorporate measures to improve the environmental performance of the development and reflect current best practice in the mining industry. To facilitate these updates, the Proponent may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Proponent may also submit any strategy, plan or program required by this approval on a staged basis. With the agreement of the Secretary, the Proponent may prepare a revision or stage of any strategy, plan or program required under this approval without undertaking consultation with all parties nominated under the applicable condition in this approval. Notes: • While any strategy, plan or program may be submitted on a staged basis, the Proponent must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times. • If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.	Administrative Non-Compliance	The Proponent has not regularly reviewed the strategies, plans and programs required under this approval (i.e. Environmental Monitoring Program labelled Centennial Coal and dated November 2011, Energy Savings Action Plan labelled Centennial Mannering and dated 2011). Management Plans are out of date.	Develop and implement a plan to update Mannering's Strategies, Plans and Programs.
Structural Adequacy				

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
9	The Proponent must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA. Notes: • Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works. • Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.	Not Triggered	* Based on site communications with Environment and Community Co-ordinator no new buildings and structures, nor alterations or additions to existing buildings and structures during the reporting period. * According to the 2016 Annual Review only underground construction works were undertaken. * No construction works undertaken during 2017 & 2018, according to 2017 & 2018 Annual Reviews.	
Demolition				
10	The Proponent must ensure that all demolition work is carried out in accordance with Australian Standard AS 2601-2001: The Demolition of Structures, or its latest version.	Not Triggered	* Based on site communications with the Environment and Community Co-ordinator no demolition undertaken during the IEA period. * No demolition undertaken according to 2016, 2017 & 2018 Annual Review.	
Operation of Plant and Equipment				
11	The Proponent must ensure that all plant and equipment used on site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Non-Compliant (Low Risk)	(a) Downer maintenance records for radiation equipment dated 31 March 2017. * Electrical inspection records for ash analysers from 2016 to 2017. * Maintenance records: "Mannering Front End Loaders work order history as at 2.5.19" (b) During site inspection plant and equipment appeared to be operated in a proper and efficient manner. * Non-compliant: Complaint register dated 2018 indicated a number of complaints related to noise from the loader at the prep plant.	Ensure that all plant and equipment used on site is operated in a proper and efficient manner.
Community Enhancement Program				
12	The Proponent must pay the affected councils $0.02 for each tonne of ROM coal produced by the project for the purpose of improving water quality in the Lake Macquarie catchment. This payment must be: (a) shared equally by the affected councils; (b) made by the end of March 2009, and at yearly intervals thereafter; (c) calculated on the ROM coal produced in the previous calendar year; and (d) subject to indexation by the Implicit Price Deflator, as published by the Australian Bureau of Statistics.	Administrative Non-Compliance	* Email from Council dated 2 April 2019 confirming VPA Payment for the 2018 period. * Admin Non-compliant: Receipt From Central Coast Council for VPA payment, dated 5 October 2016. Payment of Voluntary Planning Agreement (VPA) not made by the end of March 2016.	Ensure VPA payments are made prior to the due date.

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
SCHEDULE 3 - SPECIFIC ENVIRONMENTAL CONDITIONS				
Noise				
Noise Impact Criteria				
1	1. The Proponent must ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately owned land.	Note		
	Table 1: Noise limits dB(A) **Day** $L_{Aeq(15\ min)}$ / **Evening** $L_{Aeq(15\ min)}$ / **Night** $L_{Aeq(15\ min)}$ / **Night** $L_{A1(1\ min)}$ / **Location** (as listed in Appendix 4) 49 / 49 / 35 / 49 / 4 – di Rocco 47 / 47 / 35 / 49 / 5 – Keighran 44 / 44 / 35 / 49 / 6 – Swan 43 / 43 / 43 / 50 / 7 – Druitt 46 / 46 / 46 / 50 / 8 – May 45 / 45 / 45 / 52 / 9 – Jeans 40 / 40 / 40 / 52 / 11 – Jeans 43 / 43 / 43 / 52 / 18 – Jeans 44 / 44 / 44 / 52 / 20 – Knight and all other Chain Valley Bay residences Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.	Non-Compliant (Low Risk)	Non-compliant: According to 2016 Annual Review, on 12 August 2016 LakeCoal was advised by its independent noise monitoring consultant (Global Acoustics) that they had recorded a 3dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the evening monitoring on 11 August 2016 for Mannering Colliery. * According to 2016 Annual Review, on 29 August 2018, there was an exceedance recorded at 1dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the scheduled night monitoring. * According to the Noise Mitigation Study dated March 2019: -Noise mitigation works implemented by the previous operators in 2018 have decreased site noise emission levels at all neighbouring noise-sensitive receivers. -Current and proposed MC noise emissions are predicted to comply with the relevant long-term noise criteria outlined in MP 06_0311 at all assessment locations under worst case meteorological conditions. -LAmax noise level events at the site are also predicted to remain below the relevant sleep disturbance criteria. * Noise complaints increased during the audit period, with 0 noise complaints in 2016 and 2017, but 10 complaints in 2018, and 10 complaints from January 2019 to March 2019.	* Continue to undertake noise monitoring. * Undertake follow-up actions if noise exceedances occur. * Continue to manage noise complaints. * Provide DPE with EMM Noise Mitigation Study dated March 2019.
	Subsidence Control Zone	Note		
Noise Mitigation				
2	The Proponent must prepare a report on potential noise mitigation measures for noisy equipment and activities undertaken on the site to the satisfaction of the Secretary. This report must be: (a) prepared by a suitably qualified acoustic expert; (b) submitted to the Secretary by the end of September 2008; and (c) accompanied by an action plan for the implementation of any reasonable and feasible recommendations of the report.	Compliant	Preparation: * Updated (April 2016) Noise Monitoring Program (NMP) submitted to DPE on 29 April 2016 * Updated (April 2016) NMP approved by DPE on 20 October 2008 according to LakeCoal email dated 4 March 2016 * Original NMP was submitted on the 9/9/08 and approved on the 20/10/08 * The NMP was prepared by Carbon Based Environmental * Mitigation measures included in Section 4.2 of the NMP. Implementation: * During the site inspection noise sighted noise mitigation measures, undertaken during 2017 & 2018, at the preparation plant. These included the installation of a rubber hood, rubber skirting and a deflection board. A smaller loader is also now used at the coal stockpile area. * Noise Mitigation Study, dated March 2019, prepared by EMM. Noise mitigation measures included the Study, dated March 2019, indicate mitigation measures effective in reducing operational noise * 0 noise complaints in 2016 and 2017. 12 noise complaints during 2018. 18 complaints during 2019.	
Noise Monitoring				
3	The Proponent must prepare a Noise Monitoring Program for the project to the satisfaction of the Secretary. This program must: (a) be submitted to the Secretary by the end of September 2008; (a1) be revised in consultation with the EPA and be submitted to the Secretary by the end of April 2016; and (b) include the use of continuous and attended noise monitoring measures to monitor the performance of the project. The Proponent must implement the approved Noise Monitoring Program as approved from time to time by the Secretary.	Non-Compliant (Low Risk)	Preparation: * Updated (April 2016) NMP approved by DPE on 20 October 2008 according to LakeCoal email dated 4 March 2016 (a) NMP Section 1.2 * Updated (April 2016) Noise Monitoring Program (NMP) submitted to DPE on 29 April 2016 (b) NMP Section 5.1 & 5.2 Implementation: * Noise monitoring results included in the 2016, 2017 and 2018 Annual Reviews * Non-compliant: Only attended noise monitoring has been undertaken, according to the 2016, 2017 and 2018 Annual Reviews.	* Continuous noise monitoring should be undertaken in accordance with Mannering Colliery's Noise Management Plan.
SUBSIDENCE				
4	The Proponent must limit its coal extraction methods on the site to first workings only, and must not undertake second workings.	Compliant	* According to site communications with Environment and Community Co-ordinator only first workings have only been undertaken. * According to 2016 & 2017 Annual Reviews coal was extracted via first workings only.	
SOIL AND WATER				
Discharge				
6	The Proponent must only discharge water from the site as expressly provided for by its EPL.	Compliant	* During site inspection sited LDP01. * According to 2016, 2017 & 2018 Annual Reviews discharge during the reporting period was in accordance with EPL191. * January, February & March 2019 Monthly Website Reports and "Mannering UG Discharge" spreadsheet indicate discharge was in accordance with EPL 191. * LDP1 - Discharge Volumes Master" spreadsheet indicates volume of water discharged from 1 to 10 April 2019 was within the limit	

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
7	The Proponent must investigate, assess and report on the ecological interactions of minewater discharged from the site with the aquatic ecology of the unnamed creek and wetlands (and associated vegetation) between the minewater discharge point/s and Lake Macquarie. This report must: (a) be prepared in consultation with EPA by suitably qualified expert/s whose appointment/s have been approved by the Secretary; (b) be submitted to the Secretary by the end of March 2009; and (c) assess the probable alterations in the local ecology attributable to previous and proposed minewater discharges and any future cessation of minewater discharge flows.	Not Triggered	Not within audit period.	
Water Management Plan				
8	The Proponent must prepare a Water Management Plan for the project to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with DPI Water by suitably qualified expert/s whose appointment/s have been approved by the Secretary; (b) be submitted the Secretary by the end of March 2009; and (c) include a: • Site Water Balance; • Erosion and Sediment Control Plan; • Surface Water Monitoring Plan; and • Groundwater Monitoring Program. The Proponent must implement the approved management plan as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: (a) Prepared in consultation with DPI Water - Section 4.1. * Document prepared by suitably qualified expert - Section 4.1. (b) Water Management Plan (WMP) approved by DPE on 9 March 2010. (c) Site Water Balance - Section 6.5. • Erosion and Sediment Control Plan - Section 7.0. • Surface Water Monitoring Plan - Section 8.1. • Groundwater Monitoring Program - Section 9.1. Observation: The Water Management Plan has not been updated since January 2013. Observation: Figure 1 does not clearly show clean and dirty water management at the site. Implementation: * During site inspection clean and water management system appeared to be effective in keeping clean water and dirty water separate. * Groundwater and surface water monitoring program undertaken during the audit period per Annual Reviews. * Section 11 of the Management Plan commits to reviewing the plan every three years. This has not been completed, therefore Admin Non - Compliance.	* The WMP needs to be updated. * Replace Figure 1 in the WMP with clear figures showing clean and dirty water management (i.e. replace with Figures 2.10 & Figure 2.11 from the 2018 Annual Review).
Site Water Balance				
9	The Site Water Balance must: (a) include details of: • sources and security of water supply; • water use on site; • water management on site; and (b) investigate, assess and report on measures to minimise water use by the project, particularly potable water from the Wyong Shire town water supply.	Administrative Non-Compliance	Preparation: a) Sources of water supply - WMP Section 6.5. • Water use on site - WMP Section 6.1. • Water management on site - WMP Section 6.0. Admin Non-compliant: The water balance is outdated and does not reflect the current status of the site. Section 6.5 of the WMP references a Water Balance Assessment from December 2011. (b) Investigate, assess and report on measures to minimise water use by the project, particularly potable water from the Wyong Shire town water supply - Section 6.1 Implementation: * Water management system sited during site inspection.	The Water Balance in the WMP needs to be reviewed as its out of date.
Erosion and Sediment Control				
10	The Erosion and Sediment Control Plan must: (a) be consistent with the requirements of Managing Urban Stormwater: Soils and Construction (Landcom 2004, or its latest version); (b) identify activities that could cause soil erosion and generate sediment; (c) describe measures to minimise soil erosion and the potential for transport of sediment from the site; (d) describe the location, function, and capacity of erosion and sediment control structures; and (e) describe what measures would be implemented to monitor and maintain the structures over time.	Compliant	Preparation: (a) WMP Section 7.2. (b) WMP Section 7.2. (c) WMP Section 7.2. (d) WMP Section 7.1 and Figure 1. * Observation: Figure 1 is not clear. The figure needs to be replaced by a figure that clearly shows erosion and sediment control structures. (e) WMP Section 7.1 Implementation: * Erosion and sediment controls sighted during the field inspection. Minimal issues sighted. * Sumps need to be cleaned out of coal. Evidence of one sump almost overflowing (refer to PHOTO 2)	
Surface Water Monitoring Program				
11	The Surface Water Monitoring Plan must include: (a) detailed baseline data on surface water flows and quality in creeks and other waterbodies that could be affected by the project; (b) surface water impact assessment criteria; (c) a program to monitor the impact of the project on surface water flows and quality; and (d) procedures for reporting the results of this monitoring.	Non-Compliant (Low Risk)	Preparation: (a) WMP Section 8.2. (b) WMP Section 8.1.1. (c) WMP Section 8.2. (d) WMP Section 8.3. Implementation: * Surface water monitoring program undertaken during the audit period per the 2016, 2017 and 2018 Annual Reviews. * LDP 001 sited during the field inspection. Non-compliant: Visual assessment of the unnamed creek (described in Section 8.2.1 of the WMP) is not undertaken every 6 months to monitor stability and erosion.	*Undertake visual assessment of the unnamed creek every 6 months, to monitor stability and erosion. A TARP should be developed in the next review of the WMP which outlines quantitative and qualitative triggers for the creek and erosion. *Include results of the visual assessment of the unnamed creek in Annual Reviews. Include a reference again previous results. * Ensure monitoring undertaken at the "Downstream" monitoring location is undertaken every 12 months. * Include analysis results from monitoring undertaken at the "Downstream" monitoring location in Annual Reviews.
Groundwater Monitoring Program				

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
12	The Groundwater Monitoring Program must include: (a) detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality; (b) groundwater impact assessment criteria; (c) a program to monitor the impact of the project on groundwater levels, yield and quality; and (d) procedures for reporting the results of this monitoring.	Compliant	Preparation: (a) WMP Section 9.1. (b) WMP Section 9.3.2. (c) WMP Section 9.3. (d) WMP Section 9.4. Observation: Section 9.4 of the WMP does not include reporting via Annual Reviews. Implementation: * Groundwater extraction results included in the 2016, 2017 and 2018 Annual Reviews.	* Include in Section 9.4 of the Water Management Plan reporting of ground water results in Annual Reviews.
REHABILITATION				
13	The Proponent must rehabilitate the site to the satisfaction of the Secretary and DRE. Rehabilitation must be substantially consistent with the Rehabilitation Objectives described in the EA, the Statement of Commitments and the following objectives in Table 2 below.	Not Triggered	Rehabilitation has not been undertaken at the site based on discussions with the Environment and Community Co-ordinator.	
	Table 2: Rehabilitation Objectives **Feature** / **Objective** Mine site (as a whole of the disturbed land and water) — Safe, stable and non-polluting, fit for the purpose of the intended post-mining land use(s). Rehabilitation materials — • Materials (including topsoils, substrates and seeds of the disturbed area) are recovered, appropriately managed and used effectively as resources in the rehabilitation. Surface Infrastructure — To be decommissioned and removed, unless the DRE agrees otherwise. Portals and ventilation shafts — To be decommissioned and made safe and stable. Other land affected by the development — Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of: • local native plant species (unless the DRE agrees otherwise); and • a landform consistent with the surrounding environment. Built features damaged by mining operations — Repair to pre-mining condition or equivalent unless: • the owner agrees otherwise; or • the damage is fully restored, repaired or compensated under the *Mine Subsidence Compensation Act 1961*. Community — Ensure public safety.	Not Triggered	Rehabilitation has not been undertaken at the site based on discussions with the Environment and Community Co-ordinator.	
13A	The Proponent must carry out all surface disturbing activities in a manner that, as far as practicable, minimises potential for dust emissions and must carry out rehabilitation of disturbed areas progressively, as soon as reasonably practicable, to the satisfaction of the Secretary and DRE.	Compliant	* Rehabilitation has not been undertaken based on discussions with the Environment and Community Co-ordinator. * During site inspection noted: - Water cart used on site to reduce dust; and - Majority of the pit top is concreted.	
Land Management Plan				
14	The Proponent must prepare a detailed Land Management Plan for the site to the satisfaction of the Secretary and DRE. This plan must: (a) be submitted to the Secretary by the end of September 2008; (b) be prepared by suitably qualified expert/s whose appointment/s have been endorsed by the Secretary; (c) be prepared in consultation with DRE, OEH and affected councils; and (d) include measures to: • minimise visual impacts; • control weeds, feral pests and access; and • manage bushfires; and (e) provide details of who is responsible for monitoring, reviewing and implementing the plan. Prior to the end of April 2016, the Proponent must revise the Land Management Plan to incorporate the measures required to implement its commitments described in new row 2 of the Terrestrial Ecology section of its Statement of Commitments, and submit it to the Secretary for approval. The Proponent must implement the approved management plan as approved from time to time by the Secretary.	Compliant	Preparation: (a) Approval letter from DPE dated 27 May 2016 for the Land Management Plan (LMP). (b) LMP Section 1.2. (c) LMP Section 1.2. (d) LMP Section 3.1 and 3.2, 4, 5 and 6. * The Bushfire Management Plan is not attached to the LMP. (e) LMP Section 8. Implementation: * Visual screen sighted during the field inspection * External lighting audit undertaken in 2016, as discussed in 2016 Annual Review * Weed management undertaken at site, per 2016, 2017 and 2018 Annual Reviews	* Attach the Bushfire Management Plan to the Land Management Plan
14A	The Proponent must implement its preferred option of the three options set out in new row 2 of the Terrestrial Ecology section of its Statement of Commitments by 1 December 2016, following consultation with OEH and to the satisfaction of the Secretary.	Compliant	Letter dated 1 December 2016 regarding LakeCoal preferred option (Option 2)	
Rehabilitation Plan				

<table>
<tr><th>Condition Number</th><th>Condition</th><th>Compliance Status</th><th>Evidence</th><th>Recommended Action</th></tr>
<tr><td>15</td><td>The Proponent must prepare a Rehabilitation Plan for the site to the satisfaction of the DRE. This plan must:
(a) be submitted within 3 months of approval of Mod 2 for approval by DRE prior to carrying out any disturbing activities of the development, unless otherwise agreed by the Secretary;
(b) be prepared in accordance with DRE guidelines and in consultation with the Department, OEH, EPA, DPI Water, affected councils and the mine's CCC;
(c) incorporate and be consistent with the rehabilitation objectives in the EA, Statement of Commitments and Table 2 above;
(d) integrate and build on, to the maximum extent practicable, the other management plans required under this approval; and
(e) address all aspects of mine closure and rehabilitation, including post-mining land use domains, rehabilitation objectives, completion criteria and rehabilitation monitoring and management.

The Proponent must implement the approved management plan as approved from time to time by the Secretary.

Note: The approved Mining Operations Plan (which will become the REMP once the Mining Act Amendments have commenced) required as a condition of the Mining Lease(s) issued in relation to this project, will satisfy the requirements of this condition for a Rehabilitation Plan.</td><td>Compliant</td><td><u>Preparation:</u>
(a) 2015-2018 MOP, dated 1 April 2015, approved by DPE on 27 March 2015 according to LakeCoal email dated 4 March 2016.
* Approval letter from Resources Regulator dated 26 September 2018 for 2018-2020 MOP.
* Rehabilitation Plan covered by sites Mining Operations Plans (MOPs).
(b) 2018-2020 MOP has been prepared generally in accordance with DRE (now Resources Regulator) ESG3: MOP Guidelines, dated September 2013.
Prepared in consultation with the Department, OEH, EPA, DPI Water, affected councils and the mine's CCC - Refer to Section 1.4.3 of 2018-2020 MOP.
(c) Section 4.1 of 2018-2020 MOP.
(d) Section 3.2 of 2018-2020 MOP.
(e) Section 1.4.4, 4, 5.2, 6 and 8 of 2018-2020 MOP.

<u>Implementation:</u>
* Domains sighted during site inspection and appear to be in accordance with the domains depicted on the MOP Plans in the 2018-2020 MOP.
* During site inspection determined all areas associated with Mannering Colliery are operational. No rehabilitation has been undertaken. This is in accordance with the 2018-2020 MOP.</td><td></td></tr>
<tr><td colspan="5">AIR QUALITY</td></tr>
<tr><td colspan="5">Impact Assessment Criteria</td></tr>
<tr><td>16</td><td>The Proponent must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria listed in Table 3 at any residence on privately-owned land.</td><td>Compliant</td><td><u>Preparation:</u>
* Air Quality Management Plan (AQMP), dated December 2012, prepared.
* AQMP approved by DPE on 20 October 2008, according to LakeCoal email dated 4 March 2016
* Dust control measures included in Section 4 of the AQMP
* <u>Observation:</u> The AQMP hasn't been reviewed since December 2012, however this condition doesnt refer to the management plan (therefore compliant). It was not updated following the 2013 or 2016 audits.
* <u>Observation</u>: The AQMP doesn't include a plan with the dust monitoring locations and the location of the weather station.

<u>Implementation:</u>
* No dust visible dust during the field inspection.
* Water cart seen during the site inspection.
* The majority of the pit top is either concreted or grassed.</td><td>* Update the AQMP
* Include in the updated AQMP a plan showing dust monitoring locations and the location of the weather station.</td></tr>
<tr><td></td><td>Table 3: Long term impact assessment criteria for deposited dust
<table><tr><th>Pollutant</th><th>Averaging period</th><th>Maximum increase in deposited dust level</th><th>Maximum total deposited dust level</th></tr><tr><td>Deposited dust</td><td>Annual</td><td>2 g/m^2/month</td><td>4 g/m^2/month</td></tr></table>
Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.</td><td>Compliant</td><td>* According to 2016, 2017 and 2018 Annual reviews no air quality exceedances occurred.
* According to the "MANN Monitoring Master Spreadsheet" air quality monitoring data no exceedances of criteria up to and including April 2019
* According to the "MANN Monitoring Master Spreadsheet" air quality monitoring data has been continuous up to and including April 2019</td><td></td></tr>
<tr><td colspan="5">Monitoring</td></tr>
<tr><td>17</td><td>The Proponent must prepare an Air Quality Monitoring Program for the project to the satisfaction of the Secretary. This program must:
(a) be submitted to the Secretary by the end of September 2008; and
(b) use dust deposition gauges to monitor the performance of the project.

The Proponent must implement the approved monitoring program as approved from time to time by the Secretary.</td><td>Administrative Non-Compliance</td><td><u>Preparation:</u>
* Air Quality Monitoring Program included as Section 3 of the AQMP, dated December 2012. This is too long between reviews. It was not updated following the 2013 or 2016 audits.
<u>Admin Non - Compliance</u>.
* AQMP approved by DPE on 20 October 2008, according to LakeCoal email dated 4 March 2016.
* List of dust deposition gauges included in Section 3 of the AQMP.

<u>Implementation:</u>
* Monitoring results from deposition gauges reported in the 2016, 2017 and 2018 Annual Reviews.</td><td></td></tr>
<tr><td colspan="5">Heritage</td></tr>
<tr><td colspan="5">Heritage Management Plan</td></tr>
</table>

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
18	The Proponent must prepare a Heritage Management Plan for the project to the satisfaction of the Secretary. This Plan must: (a) be prepared in consultation with any relevant Aboriginal stakeholders; (b) be submitted, prior to 31 March 2013, for approval to the Secretary; (c) include consideration of the Aboriginal and non-Aboriginal cultural context and significance of the site; (d) detail the responsibilities of all stakeholders; and (e) include programs/procedures and management measures for: • dealing with previously unidentified Aboriginal objects (excluding human remains), including any need to halt works in the vicinity, assessment of significance, determination of appropriate mitigation measures (by a qualified archaeologist in consultation with Aboriginal stakeholders), re-commencement of works, notifying OEH, and registering the new site(s) in the OEH AHIMS register; • dealing with any human remains which may be discovered, including halting of works in the vicinity; notifying NSW Police, OEH, the Department and Aboriginal stakeholders; and not re-commencing any works in the vicinity unless authorised; • heritage induction for construction personnel (including procedures for keeping records of inductions); • ongoing Aboriginal consultation and involvement (including procedures for keeping records of this); • appropriate identification, management, conservation and protection of both Aboriginal and non-Aboriginal heritage items identified on the site; and • dealing with previously unidentified non-Aboriginal heritage items which may be discovered during the project. The Proponent must implement the approved management plan as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: * Approval letter from DPE dated 26/11/2012 for Aboriginal Cultural Heritage Management Plan (ACHMP) (dated November 2012). It was not updated following the 2013 or 2016 audits. Admin Non - Compliance. * Approval letter from DPE dated 10 September 2013 for Non-Indigenous Heritage Management Plan (dated February 2013). (a) ACHMP - Section 6.0. (b) N/A - Outside of the audit period. (c) ACHMP - Attachment 3. Non-Indigenous Heritage Management Plan - Section 4. (d) ACHMP - Section 16. Non-Indigenous Heritage Management Plan - Section 3. (e) ACHMP - Section 6, 7, 13 and 17.2. Non-Indigenous Heritage Management Plan - Section 3, 6.1 & 6.2. * Observation: ACHMP was last updated November 2012 and is labelled Centennial and contains areas which are not relevant to the Mannering site. * Observation: Non-Indigenous Heritage Management Plan was last updated February 2013 is labelled Centennial. Implementation: * ACHMP & Non-Indigenous Heritage Management Plan appear to have been implemented during the audit period, with no complaints or incidents related to heritage recorded in the 2016, 2017 and 2018 Annual Reviews and Complaints Log.	* Update the ACHMP to make it reflective of the Mannering site only. * Update the Non-Indigenous Heritage Management Plan
VISUAL				
19	The Proponent must: (a) ensure no outdoor lights shine above the horizontal; (b) ensure that all external lighting associated with the project complies with Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting; (c) take all practicable measures to mitigate off-site lighting impacts from the project; and (d) minimise the visual impacts of the project, to the satisfaction of the Secretary.	Compliant	* Lighting audit undertaken in December 2016 by Light Studio 21 . * The lighting audit concluded that all lighting at Mannering Colliery complies with the Australian Standard 4282 – Control of Obtrusive Lighting Effects of outdoor lighting. * No lighting complaints received during the reporting period.	
TRANSPORT				
Monitoring of Coal Transport				
20	The Proponent must keep records of the amount of coal transported from the site each year, and include these records in the Annual Review.	Compliant	* 2016, 2017 and 2018 Annual Reviews state the amount of coal transported from the site each year. * 2016 - 93,972 tonnes * 2017 - 522,132 tonnes * 2018 - 394,213 tonnes	
Ruttleys Road Intersection				
21	The Proponent must: (a) complete a road safety audit of the intersection of Ruttleys Road and Mannering Colliery Access Road by the end of March 2009; (b) provide copies of this audit to RMS, Central Coast Council and the Secretary within one month of its completion; and (c) within 3 months of approval of Mod 2, install additional sections of guardrail (safety barrier) on the eastern side of Ruttleys Road between the Mannering Colliery access road and existing sections of guardrail further to the north; (d) be responsible for the maintenance and upkeep of the pavement of the Ruttleys Road/Mannering Colliery access road intersection whilst the site is used for mining purposes or until the intersection is upgraded to a Type CHR intersection treatment; and (e) prior to the number of workers (direct employees and contractors) at Mannering Colliery exceeding 70, the Proponent must upgrade the Ruttleys Road/Mannering Colliery access road intersection to a Type CHR treatment in accordance with Construction Certificate SCC/69/2011 issued by Central Coast Council, or later updated versions of this Construction Certificate; to the satisfaction of the Secretary.	Compliant	(a)(b)(c) Not triggered - outside of audit period (d) Email regarding Annual Road Maintenance Agreement Costs for the 2016 Period, dated 23 January 2017 * Road Maintenance Agreement dated 1 July 2013. e) Not triggered-not more than 70 workers during audit period	
GREENHOUSE AND ENERGY EFFICIENCY				
22	The Proponent must prepare a Greenhouse and Energy Efficiency Plan for the project to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with EPA and generally in accordance with the Guidelines for Energy Savings Action Plans (DEUS 2005, or its latest version); (b) be submitted to the Secretary for approval by the end of September 2008; (c) include a program to monitor greenhouse gas emissions and energy use generated by the project; (d) include a framework for investigating and implementing measures to reduce greenhouse gas emissions and energy use at the site; and (e) describe how the performance of these measures would be monitored over time. The Proponent must implement the approved management plan as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: (a) N/A - Prepared outside of audit period (b) Energy Savings Action Plan (ESAP) was approved by DPE on 20 October 2008 according to LakeCoal email dated 4 March 2016 (c) ESAP - Page 17, 22 (d) ESAP - Page 4 (e) ESAP - Page 4 Admin Non-Compliant: The methodology to monitor greenhouse gas emissions generated by the project is not clearly stated in the ESAP. * The ESAP has not been reviewed since 2008 and is labelled Centennial Mannering Implementation: *According to site communications, energy savings due to minor operations completed during the audit period *Greenhouse gas emissions reported in 2016, 2017 and 2018 Annual Reviews.	Assess the relevance of the Energy Savings Action Plan (ESAP) and whether it requires updating or incorporation into the sites Air Quality Management Plan (AQMP).

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
WASTE				
23	The Proponent must: (a) monitor the amount of waste generated by the project; (b) investigate ways to minimise waste generated by the project; (c) implement reasonable and feasible measures to minimise waste generated by the project; and (d) report on waste management and minimisation in the Annual Review, to the satisfaction of the Secretary.	Compliant	(a) The amount of waste generated by the project is reported in the 2016, 2017 and 2018 Annual Reviews (b)(c) As sited during the inspection, Waste material generated by the project and brought to the surface is currently being sorted. Bins for scrap material and recycle bins for co-mingled waste sited during the field inspection. (d) Waste management and minimisation is reported in the 2016, 2017 and 2018 Annual Reviews. 2016 & 2017 Annual Reviews approved by DPE. Observation: Waste storage area contains a number of stockpiles of rubbish being sorted for recycling/disposal.	* Finish sorting out the piles of reject and rubbish at the pit top area. * Undertake contaminated sites/waste material assessment at the waste stockpile area. * SLR recommends none of the waste from the stockpile material is removed from site for waste disposal until an assessment on the waste is undertaken. * Install signage at the landfarm material at the pit top.
SCHEDULE 4 - ADDITIONAL PROCEDURES				
INDEPENDENT REVIEW				
1	If a landowner considers the project to be exceeding the impact assessment criteria in schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the project on his/her land. If the Secretary is satisfied that an independent review is warranted, the Proponent must within 2 months of the Secretary's decision: (a) consult with the landowner to determine his/her concerns; (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to conduct monitoring on the land, to: • determine whether the project is complying with the relevant impact assessment criteria in schedule 3; and • identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and • give the Secretary and landowner a copy of the independent review.	Not Triggered	Landowner has not requested an Independent Review to be undertaken by DPE but DPE is undertaking their own	
2	If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Secretary.	Not Triggered	As above	
3	If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent must: (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria; and (b) conduct further monitoring to determine whether these measures ensure compliance. If the additional monitoring referred to above subsequently determines that the project is complying with the relevant criteria in schedule 3, or the Proponent and landowner enter into a negotiated agreement to allow these exceedances, then the Proponent may discontinue the independent review with the approval of the Secretary.	Not Triggered	As above	
4	If the independent review determines that the relevant criteria in schedule 3 are being exceeded, but that more than one project is responsible for this non-compliance, then the Proponent must, together with the relevant project/s: (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the relevant criteria are complied with; and (b) conduct further monitoring to determine whether these measures ensure compliance; or (c) secure a written agreement with the landowner and other relevant projects to allow exceedances of the criteria in schedule 3, to the satisfaction of the Secretary. If the additional monitoring referred to above subsequently determines that the projects are complying with the relevant criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Secretary.	Not Triggered	As above	
5	If the landowner disputes the results of the independent review, either the Proponent or the landowner may refer the matter to the Secretary for resolution. If the matter cannot be resolved within 21 days, the Secretary shall refer the matter to an Independent Dispute Resolution Process.	Not Triggered	As above	
SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING				
ENVIRONMENTAL MANAGEMENT				
Environmental Management Strategy				

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
1	The Proponent must revise an Environmental Management Strategy for the project. This strategy must: (a) be submitted for approval to the Secretary prior to 30 June 2013; (b) provide the strategic framework for the environmental management of the project; (c) identify the statutory approvals that apply to the project; (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project; (e) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the project; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the project; • respond to any non-compliance; and • respond to emergencies; and (f) include: • copies of any strategies, plans and programs approved under the conditions of this approval; and • a clear plan depicting all the monitoring required to be carried out under the conditions of this approval. The Proponent must implement the approved management strategy as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: * Approval letter from DPE dated 10 September 2013 for the Environmental Management Strategy (EMS). It was not updated following the 2013 or 2016 audits. Admin Non - Compliance. (a) EMS submission letter dated 26 June 2013 (b) EMS - Section 1.0 (c) EMS - Section 4.0 (d) EMS - Section 5.0 (e) EMS - Section 8.1, 8.2, 8.3, 8.6 and 8.7 (f) EMS - Section 9.0, 12.0 and copies of management plans maintained on the Mannering Colliery website Admin Non-compliant: Table 9 and 10 list the incorrect monitoring frequency for conductivity, TSS, pH and Oil & Grease Observation: The EMS was last reviewed in September 2013 and is labelled Centennial Mannering Implementation: * Results from environmental monitoring (dust, noise, surface water and groundwater) reported in 2016, 2017 and 2018 Annual Reviews. * Management plans reviewed and assessed as part of this audit. * Complaints/Incidents Register for Mannering maintained. * 2 April 2019 non-compliance (TSS exceedance) reported to EPA.	*Review the Environmental Management Strategy (EMS). *Include in the reviewed EMS the incorrect monitoring frequency for conductivity, TSS, pH and Oil & Grease
Management Plan Requirements				
2	The Proponent must ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data; (b) a description of: • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (d) a program to monitor and report on the: • impacts and environmental performance of the project; • effectiveness of any management measures (see (c) above); (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; (f) a protocol for managing and reporting any: • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and (g) a protocol for periodic review of the plan. Note: The Secretary may waive some of these requirements if they are unnecessary for particular management plans.	Administrative Non-Compliance	(a) WMP: Section 8.2, LMP: Section 6.1, ACHMP: Attachment 3, Non-Indigenous CHMP: Section 4.0 & 5.0 (b) WMP: Section 4.0 & 8.0, LMP: Section 2, ACHMP: Attachment 3, Non-Indigenous CHMP: Section 1.2 (c) WMP: Section 8.0 & 9.0, LMP: Section 4.4 & 6.2, ACHMP: Attachment 3, Non-Indigenous CHMP: Section 6.0 (d) WMP: Section 8.0, 9.3 & 9.4, Non-Indigenous CHMP: Section 7.1 Admin Non-compliant: The LMP & ACHMP does not include reporting mechanisms (i.e. Annual Review) (e) LMP: Section 9.1, ACHMP: Section 13.0, Non-Indigenous CHMP: Section 6.2 Admin Non-compliant: The WMP does not include a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible (f) LMP: Section 9.1 & 7.1, ACHMP: Section 13.0 & 18.0, Non-Indigenous CHMP: Section Admin Non-compliant: The WMP does not include a protocol for managing and reporting any incidents, complaints, non-compliances with statutory requirements and exceedances of the impact assessment criteria and/or performance criteria. Admin Non-compliant: The ACHMP does not include a complaints handling procedure (g) a protocol for periodic review of the plan. WMP: Section 11 Admin Non-compliant: The ACHMP does not include a protocol for periodic review of the plan. Observation: The management plans condition has not been included in regulatory requirements section of the WMP, LMP, ACHMP and Non-Indigenous CHMP	* All management plans require updating due to the length of time since the previous reviews. * Ensure there is a cross referencing table covering this condition in management plans. * Additional detail including Trigger, Action, Response Tables (contingency plan) should be developed in the next round of management plan updates. * Include in the LMP and ACHMP reporting mechanisms (i.e. Annual Review) * Include in the WMP a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible * Include in the WMP a protocol for managing and reporting any incidents, complaints, non-compliances with statutory requirements; and exceedances of the impact assessment criteria and/or performance criteria * Include a complaints handling procedure in the include ACHMP * Include a protocol for periodic review of the ACHMP * Ensure all management plans required under PA 06_0311 detail and consider the management condition.
Annual Review				

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
3	By the end of March each year, or other timing as may be agreed by the Secretary, the Proponent must submit a report to the Department reviewing the environmental performance of the project to the satisfaction of the Secretary. This review must: (a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current financial year; (b) include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the: • the relevant statutory requirements, limits or performance measures/criteria; • requirements of any plan or program required under this approval; • the monitoring results of previous years; and • the relevant predictions in the documents listed in condition 2 of Schedule 2; (c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance; (d) identify any trends in the monitoring data over the life of the project; (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and (f) describe what measures will be implemented over the current financial year to improve the environmental performance of the project.	Administrative Non-Compliance	Preparation: * Approval letter from DPE for 2016 Annual Review, dated 6 July 2017. * Approval letter from DPE for 2017 Annual Review, dated 20 March 2018. Admin Non-compliant: 2016 Annual Review not submitted by March 31 2017. Submission email from LakeCoal to DPE dated 30 April 2017. * Letter from LakeCoal to DPE dated 29 March 2019 stating Annual Review uploaded on the Mannering Colliery website. * Email from LakeCoal to DPE dated 30 March stating Annual Review uploaded on the Mannering Colliery website. (a) Section 2, 5 & 8 - 2016, 2017, 2018 Annual Reviews (b) Section 3 & 4 - 2016, 2017, 2018 Annual Reviews Admin Non-compliant: The Annual Reviews do not provide: * Clearly state the performance criteria for noise and water quality; * Requirements of plans/programs required under this approval for noise and water quality; * The monitoring results of previous years, for noise and water; and * The relevant predictions in environmental assessments for air quality, noise and water. (c) Executive summary, Section 3 & 7 - 2016, 2017, 2018 Annual Reviews (d) Non-compliant: Trends in the monitoring data (for air quality, noise and water) over the life of the project are not included in the 2016, 2017 and 2018 Annual Reviews. (e) Non-compliant: Discrepancies between the predicted impacts in the EAs (for air quality, noise and water) and actual impacts of the project are not included in the 2016, 2017 and 2018 Annual Reviews. (f) Section 2, 3 & 6 - 2016, 2017 and 2018 Annual Reviews. Admin Non-compliant: The Annual Reviews have not been prepared to cover the current Annual Review Guidelines. See link: https://www.planning.nsw.gov.au/Policy-and-Legislation/Mining-and-Resources/~/media/3AA21D35168042FE813DD0FB92E00E58.ashx	* Ensure Annual Reviews are submitted to DPE by 31 March. * Future Annual Reviews should clearly state noise and water quality performance criteria, and provide monitoring results against these. * Include in future Annual Reviews: - Requirements of plans/programs required under PA 06_0311 for noise and water quality; - The monitoring results of previous years, for noise and water; - The relevant predictions in environmental assessments for air quality, noise and water; - Trends in the monitoring data for air quality, noise and water, over the life of the project; and - Discrepancies between the predicted impacts in the EAs for air quality, noise and water, and actual impacts of the project. * The Annual Reviews are set out differently to the DPE Annual Review Guidelines (2015). Ensure table of contents matches the guidelines. * IEA Actions Plans should be included in every Annual Review going forward.
Revision of Strategies, Plans and Programs				
4	Within 3 months of: (a) the submission of an annual review under Condition 3 above; (b) the submission of an incident report under Condition 6 below; (c) the submission of an audit under Condition 8 below; or (d) any modification to the conditions of this approval (unless the conditions require otherwise), the Proponent must review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary. Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.	Administrative Non-Compliance	Admin Non-compliant: Management plans have not been updated: (a) Within 3 months of the submission of the 2016 and 2017 Annual Reviews; (b) Since the submission of an incident (incidents described in the 2016 and 2017 Annual Reviews); (c) Since the submission of the 2016 IEA by Hansen Bailey; and (d) Since the modification to PA 06_0311 (Mod 4), from August 2016. These management plans include the WMP dated January 2013, LMP dated April 2016, ACHMP dated November 2012 and Non-Indigenous CHMP dated February 2013.	* Include statement in future Annual Reviews stating that Management Plans have been reviewed and state which management plans will or will not be updated within 3 months. * Develop and implement a plan to update Mannering's Strategies, Plans and Programs
Community Consultative Committee				
5	The Proponent must continue to operate a Community Consultative Committee (CCC) for the project in accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007, or its latest version), and to the satisfaction of the Secretary. Notes: • The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval; and • In accordance with the guideline, the Committee should be comprised of an independent chair and appropriate representation from the Proponent, Councils and the local community.	Compliant	* CCC described in 2016, 2017 and 2019 Annual Reviews: Comprised of an independent chair and appropriate representation from the Proponent, Councils and the local community. * Quarterly CCC meeting minutes from 2016, 2017 and 2018. * CCC is combined for Mannering Colliery and Chain Valley Colliery.	
REPORTING				
Incident Reporting				
6	The Proponent must notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incidents associated with the project, the Proponent must notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent must provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	Administrative Non-Compliance	Admin Non-compliant: Noise exceedance on 11 August 2016 reported to DPE on 12 August 2016, according to 2016 Annual Review. Detailed incident report could not be provided by LakeCoal, therefore not able to determine when or if an incident report was submitted. * Noise exceedance on 29 August 2018 reported to DPE on same day (email to DPE Compliance Mailbox from LakeCoal dated 29 August 2018). Detailed LakeCoal incident report provided to DPE on 7 September 2018. Compliant as LakeCoal was granted an extension to provide the detailed report, via email from EPA dated 5 September 2016. * Email from LakeCoal to DPE, dated 11 April 2019, reporting TSS exceedance at Point 1 on 2 April 2019. Detailed LakeCoal incident report attached to email. Observation: Complaints/incidents register indicates no incidents during the audit period.	* Ensure all incidents are reported within the required timeframe. * Ensure the complaints/incidents register includes all incidents.
Operation of Plant and Equipment				
7	The Proponent must provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.	Compliant	As of 22 April 2019: * Annual Reviews posted on Mannering Colliery website. * Monthly Environmental Report posted on Mannering website.	
INDEPENDENT ENVIRONMENTAL AUDIT				

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
8	By the end of March 2013 and every three years thereafter, unless the Secretary directs otherwise, the Proponent must commission and pay the full cost of an Independent Environmental Audit of the project. This audit must: (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary; (b) include consultation with the relevant agencies; (c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals); (d) review the adequacy of any approved strategy/plan/program required under this approval: and, if necessary; (e) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, strategy/plan/program required under the abovementioned approvals; and (f) be conducted and reported to the satisfaction of the Secretary. Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the Secretary.	Compliant	* Last independent environmental audit (IEA) undertaken in 2016 by Hansen Bailey * Hansen Bailey IEA Report dated 26 July 2016 (a) DPE letter dated 28 January 2016 endorsing audit team (Hansen Bailey). (b) Hansen Bailey IEA Report - Section 1.5.3 & Table 4. (c) Hansen Bailey IEA Report - Section 3 & 4 & Appendix E (Table B). (d) Hansen Bailey IEA Report - Section 4 & Appendix E. (e) Hansen Bailey IEA Report - Section 6. (f) DPE approval letter to LakeCoal dated 9 January 2017.	
9	Within 12 weeks of commissioning this audit, or as otherwise agreed by the Secretary, the Proponent must submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.	Administrative Non-Compliance	* Correspondence indicating when the Hansen Bailey IEA report was submitted to DPE could not be provided by LakeCoal. Correspondence indicating requesting/granting extension could not be provided. * According to DPE letter dated 28 January 2016 IEA audit was due to be completed on 30 March 2016. * Hansen Bailey IEA report dated July 2016. * Mannering Coal IEA – Response to Audit Recommendations dated 2 September 2016. * Response to Audit Recommendations to accompany submission of IEA Report. * Admin Non-compliant: Hansen Bailey IEA report not submitted within required timeframe.No submission letter provided to SLR. For the 2019 IEA, SLR were endorsed by the DPE on 28 February 2019. SLR were officially commissioned by LakeCoal -Pty Ltd Administrators Appointed on 5 March 2019, when a purchase order was granted. Therefore 12 weeks from this date is 28 May 2019 for submission.	*Ensure future IEA reports are submitted within the required timeframe.
ACCESS TO INFORMATION				
10	The Proponent must: (a) make copies of the following publicly available on its website: • the documents referred to in condition 2 of Schedule 2; • all relevant statutory approvals for the project; • all approved strategies, plans and programs required under the conditions of this approval; • a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any approved plans or programs required under the conditions of this or any other approval; • a complaints register, which is to be updated on a monthly basis; • minutes of CCC meetings; • the annual reviews required under this approval; • any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit; and • any other matter required by the Secretary; and (b) keep this information up-to-date, to the satisfaction of the Secretary.	Administrative Non-Compliance	Admin Non-compliant: The following documents are not included on the project (LakeCoal) website: * The documents referred to in condition 2 of Schedule 2 (EAs for the original project and Mod 1 - Mod 4); * Up-to-date Complaints Register. The Register only includes complaints up to February 2019; * CCC minutes for 2017, 2018 and 2019; * 2016 Audit Action Plan; * Noise monitoring data not included in the Monthly Website Report; and * 2018 - 2020 MOP. New Delta Coal website checked on 13 May 2018 and the following documents are not included on the website: * The documents referred to in condition 2 of Schedule 2 (EAs for the original project and Mod 1 - Mod 4); * Complaints Register (link not working); * Noise monitoring data not included in the Monthly Website Report; and * EMS and Management Plans (only PIRMP up on website).	Include the following documentation on the project website: * The documents referred to in condition 2 of Schedule 2 (EAs for the original project and Mod 1 - Mod 4); * Up-to-date Complaints Register. The Register only includes complaints up to February 2019; * CCC minutes for 2017, 2018 and 2019; * 2016 Audit Action Plan; * Noise monitoring data not included in the Monthly Website Report; and * 2018 - 2020 MOP.
APPENDIX 4A: NOISE COMPLIANCE ASSESSMENT				
Applicable Meteorological Conditions				
1	The noise criteria in Tables 1 and 2 in Appendix 4B are to apply under all meteorological conditions except the following: (a) wind speeds greater than 3m/s at 10 metres above ground level; (b) stability category F temperature inversion conditions and wind speeds greater than 2 m/s at 10 m above ground level; or (c) stability category G temperature inversion conditions.	Note		
Determination of Meteorological Conditions				
2	Except for wind speed at microphone height, the data to be used for determining meteorological conditions must be that recorded by the meteorological station located on the site.	Compliant	Meteorological station located on the site.	
Compliance Monitoring				
3	Attended monitoring is to be used to evaluate compliance with the relevant conditions of this approval.	Compliant	Attended monitoring included in 2016, 2017 and 2018 Annual Reviews	
4	This monitoring must be carried out at least once a month (at least two weeks apart) for the first 12 months following recommencement of underground coal extraction, and then quarterly thereafter, unless the Secretary directs otherwise. Note: The Secretary may direct that the frequency of attended monitoring increase or decrease at any time during the life of the project.	Compliant	* According to 2016 Annual Review monthly noise monitoring commenced after the recommencement of mining operations. May 2016 to December 2016 noise monitoring results included in the Annual Review. Operations recommenced in May 2016, according to the 2016 Annual Review and confirmed by site communications. * Monitoring results included in 2017 & 2018 Annual Review.Based on the recommencement of operations (May 2016) monitoring should have been completed monthly until May 2017. Monthly monitoring completed in 2016 and 2017. * "Mannering Colliery Quarterly Attended Noise Monitoring Quarter 1 - 2019" report	

<table>
<tr><th>Condition Number</th><th>Condition</th><th>Compliance Status</th><th>Evidence</th><th>Recommended Action</th></tr>
<tr><td>5</td><td>Unless the Secretary agrees otherwise, this monitoring is to be carried out in accordance with the relevant requirements for reviewing performance set out in the NSW Industrial Noise Policy (as amended from time to time), in particular the requirements relating to:
(a) monitoring locations for the collection of representative noise data;
(b) meteorological conditions during which collection of noise data is not appropriate;
(c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and
(d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration</td><td>Compliant</td><td>Mannering Colliery Quarterly Attended Noise Monitoring Quarter 1 - 2019" report, "Mannering Colliery Environmental Noise Monitoring, April 2018" report and "Mannering Colliery Environmental Noise Monitoring, February 2017" report reference NSW Industrial Noise Policy, for noise assessment methodology.</td><td></td></tr>
<tr><td colspan="5">APPENDIX 4B: ALTERNATE NOISE CONDITIONS</td></tr>
<tr><td>1</td><td>From the recommencement of underground coal extraction at Mannering Colliery until 18 months thereafter, the Proponent must ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately-owned land.</td><td>Note</td><td></td><td></td></tr>
<tr><td></td><td>Table 1: Noise limits dB(A)
<table><tr><th>Day
$L_{Aeq(15\ min)}$</th><th>Evening
$L_{Aeq(15\ min)}$</th><th colspan="2">Night</th><th>Location</th></tr><tr><td></td><td></td><td>$L_{Aeq(15\ min)}$</td><td>$L_{A1(1\ min)}$</td><td></td></tr><tr><td>40</td><td>40</td><td>40</td><td>49</td><td>4 – di Rocco</td></tr><tr><td>43</td><td>43</td><td>41</td><td>49</td><td>5 – Keighran</td></tr><tr><td>42</td><td>42</td><td>41</td><td>49</td><td>6 – Swan</td></tr><tr><td>39</td><td>39</td><td>39</td><td>47</td><td>7 – Druitt</td></tr><tr><td>46</td><td>46</td><td>46</td><td>47</td><td>8 – May</td></tr><tr><td>41</td><td>41</td><td>41</td><td>51</td><td>9 – Jeans</td></tr><tr><td>39</td><td>39</td><td>39</td><td>49</td><td>11 – Jeans</td></tr><tr><td>39</td><td>39</td><td>39</td><td>51</td><td>18 – Jeans</td></tr><tr><td>40</td><td>40</td><td>40</td><td>51</td><td>20 – Knight and all other Chain Valley Bay residences</td></tr></table>Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.</td><td>Non-Compliant (Low Risk)</td><td>* Recommencement of underground coal extraction at Mannering Colliery until 18 months thereafter is; April 2016 till October 2017.
* Non-compliant: According to 2016 Annual Review, on 12 August 2016 LakeCoal was advised by its independent noise monitoring consultant (Global Acoustics)
that they had recorded a 3dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the evening monitoring on 11 August 2016 for Mannering Colliery.

* Noise complaints increased during the audit period, with 0 noise complaints in 2016 and 2017, but 10 complaints in 2018, and 10 complaints from January 2019 to March 2019.</td><td>* Continue to undertake noise monitoring.
* Undertake follow-up actions if noise exceedances occur.
* Continue to manage noise complaints.
* Prepare a report to determine what further actions can be undertaken to reduce noise exceedances and noise complaints.</td></tr>
<tr><td></td><td>Noise generated by the project is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy (as may be updated from time-to-time). Appendix 4A sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.</td><td>Note</td><td></td><td></td></tr>
<tr><td>2</td><td>Following the expiry of the 18 month period referred to in condition 1 above, the Proponent must ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 2 at any residence on privately-owned land.</td><td>Note</td><td></td><td></td></tr>
<tr><td></td><td>Table 2: Noise limits dB(A)
<table><tr><th>Day
$L_{Aeq(15\ min)}$</th><th>Evening
$L_{Aeq(15\ min)}$</th><th colspan="2">Night</th><th>Location</th></tr><tr><td></td><td></td><td>$L_{Aeq(15\ min)}$</td><td>$L_{A1(1\ min)}$</td><td></td></tr><tr><td>40</td><td>40</td><td>40</td><td>49</td><td>4 – di Rocco</td></tr><tr><td>41</td><td>41</td><td>41</td><td>49</td><td>5 – Keighran</td></tr><tr><td>41</td><td>41</td><td>41</td><td>49</td><td>6 – Swan</td></tr><tr><td>39</td><td>39</td><td>39</td><td>47</td><td>7 – Druitt</td></tr><tr><td>45</td><td>45</td><td>43</td><td>47</td><td>8 – May</td></tr><tr><td>41</td><td>41</td><td>41</td><td>51</td><td>9 – Jeans</td></tr><tr><td>39</td><td>39</td><td>39</td><td>49</td><td>11 – Jeans</td></tr><tr><td>39</td><td>39</td><td>39</td><td>51</td><td>18 – Jeans</td></tr><tr><td>40</td><td>40</td><td>40</td><td>51</td><td>20 – Knight and all other Chain Valley Bay residences</td></tr></table>Note: The location of the land referred to in Table 2 is shown on the figure in Appendix 4.</td><td>Non-Compliant (Low Risk)</td><td>Non-compliant: According to 2016 Annual Review, on 29 August 2018, there was an exceedance recorded at 1dB exceedance of the site's LAeq15 Minute
noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the scheduled night monitoring.

* Noise complaints increased during the audit period, with 0 noise complaints in 2016 and 2017, but 10 complaints in 2018, and 10 complaints from January 2019 to March 2019.</td><td>* Continue to undertake noise monitoring.
* Undertake follow-up actions if noise exceedances occur.
* Continue to manage noise complaints.
* Prepare a report to determine what further actions can be undertaken to reduce noise exceedances and noise complaints.</td></tr>
<tr><td></td><td>Noise generated by the project is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy (as may be updated from time-to-time). Appendix 4A sets out

the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

However, these criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.</td><td>Note</td><td></td><td></td></tr>
</table>

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
3	The Proponent must prepare a report on all noise mitigation measures required to achieve the noise limits in Table 2 to the satisfaction of the Secretary. This report must: (a) be prepared by a suitably qualified and experienced acoustic consultant whose appointment has been approved by the Secretary; (b) be prepared in consultation with EPA, and submitted to the Department for approval within 6 months after recommencement of underground coal extraction; and (c) include an action plan for the implementation of any reasonable and feasible recommendations of the report. The Proponent must implement the noise mitigation measures prior to the expiry of the 18 month period referred to in condition 1 above.	Non-Compliant (Low Risk)	* The Preliminary Noise Mitigation Options Report for the Mannering Colliery - Continuation of Mining Project dated 31 May 2017, prepared by Atkins Acoustics and Associates Pty Ltd could not be provided to SLR from Lake Coal * DPE approval letter dated 9 June 2017, for the Preliminary Noise Mitigation Options Report. Admin non-compliant: Acoustic consultant was not endorsed by DPE Non-compliant: Noise mitigation measures required to be undertaken by October 2017. According to site communications these mitigation measures were undertaken from 2017 to February 2019.	
4	The Proponent must prepare a Noise Compliance Report for the project to the satisfaction of the Secretary. The report must: (a) be prepared by a suitably qualified acoustic consultant, whose appointment has been approved by the Secretary; (b) be prepared in consultation with EPA, and be submitted for approval within 6 months of the expiry of the 18 month period referred to in condition 1 above; and (c) investigate and evaluate the effectiveness of the noise mitigation measures required under condition 3 and compliance with the noise limits in Table 2.	Non-Compliant (Low Risk)	(a) Non-compliant: Letter of endorsement for EMM to undertake the 2019 Noise Mitigation Study could not be found by LakeCoal. (b) Non-compliant: The Noise Mitigation Study was not prepared in consultation with EPA and was not submitted for approval by March 2018. (c) According to the EMM Noise Mitigation Study dated March 2019: -Noise mitigation works implemented by the previous operators in 2018 have decreased site noise emission levels at all neighbouring noise-sensitive receivers. -Current and proposed MC noise emissions are predicted to comply with the relevant long-term noise criteria outlined in MP 06_0311 at all assessment locations under worst case meteorological conditions. -LAmax noise level events at the site are also predicted to remain below the relevant sleep disturbance criteria.	

Statement of Commitments and Noise Compliance Conditions

Condition Aspect	Condition	Compliance Status	Evidence	Recommended Action
Appendix 3 - Statement of Commitments				
Revised Statement of Commitments (December 2015) - Revised Statement of Commitments				
Subsidence	Mining to be limited to the approved bord-and-pillar method where coal recovery is limited to first workings only. Monitoring of the existing subsidence monitoring marks will continue and additional subsidence monitoring marks will be installed above the proposed mining areas to measure the subsidence and verify that subsidence is within the predicted levels. If it is identified that subsidence levels are greater than the predicted maximum of 20 millimetres, the DTIRIS Minerals Division will be consulted to determine appropriate management and mitigation actions.	Compliant	* 2016 & 2017 Annual Reviews confirm bord-and-pillar method was used for coal recovery. * 2016 & 2017 Annual Reviews confirm additional subsidence monitoring marks were installed above the proposed mining areas. * 2016 & 2017 Annual Reviews state "No discernible subsidence impact from the LRP workings was observed during the reporting period." and subsidence monitoring results for Mannering Colliery included in the reports. Based on a review of monitoring results provided in Annual Review all results appear below the 20mm trigger. Observation: The 2016 & 2017 Annual Reviews do not indicate where the subsidence monitoring data originated from and who undertook the subsidence monitoring.	A separate subsidence impact assessment report should be prepared annually and appended to the Annual Review. This report should be prepared or peer reviewed by a subsidence specialist. This should assess subsidence performance measures from the Project Approval
Water Management	LakeCoal will undertake a review of the existing site water management system in consultation with the EPA. The water level within the sediment pond system will be monitored and kept at a relatively low operating level, such that the ponds can provide a detention function in a significant rainfall event. A visual assessment of the unnamed creek will be undertaken every 6 months to monitor stability and erosion. Where practicable, underground water levels will be recorded to monitor changes in the level of water stored in underground depressions and to verify that the rate of extraction is sufficient. The extraction of underground water from the mine workings will be undertaken in accordance with the Bore License (20BL172016) issued under the Water Act 1912. To enable on-going assessment of the quality of water discharged, the existing monitoring program will be maintained for the life of the Project with the following enhancements: • An assessment of the surrounding catchments summarising land uses and other background information to characterise an appropriate water quality; and • Annual monitoring of heavy metals at the monitoring location identified as 'Downstream'.	Non-Compliant (Low Risk)	* During site inspection noted that the sediment pond system has freeboard. Non-compliant: Visual assessment of the unnamed creek is not undertaken every 6 months to monitor stability and erosion. This requirement is included in the WMP. *2016, 2017 & 2018 Annual Reviews describe: -Groundwater extraction from bore 20BL172016. -Monitoring of groundwater extraction. -Section 8.2 of the WMP provides background information of the water quality of the unnamed creek. Non-compliant: Annual monitoring (i.e. monitoring every 12 months) of heavy metals not undertaken at the monitoring location identified as "Downstream". -ALS analytical results dated 18 April 2017, 22 November 2018, 12 March 2019, and include analysis results for heavy metals for monitoring location "Downstream". Observation: Monitoring results for the "Downstream" monitoring location is not included in Annual Reviews.	*Undertake visual assessment of the unnamed creek every 6 months, to monitor stability and erosion. A TARP should be developed in the next review of the WMP which outlines quantitative and qualitative triggers for the creek and erosion. *Include results of the visual assessment of the unnamed creek in Annual Reviews. Include a reference again previous results. * Ensure monitoring undertaken at the "Downstream" monitoring location is undertaken every 12 months. * Include analysis results from monitoring undertaken at the "Downstream" monitoring location in Annual Reviews.
Terrestrial Ecology	Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	Compliant	* Weed management described in 2016, 2017 & 2018 Annual Reviews. * During site inspection noted: -Weed management is being undertaken at the site; and -Large trees are retained at the site. * No disturbance at site during the audit period, according to 2016, 2017 & 2018 Annual Reviews. * Letter dated 1 December 2016 regarding LakeCoal preferred option (Option 2) * According to 2016, 2017 & 2018 Annual Reviews no discernible subsidence impact from the Link Road Project (LRP) workings was observed during the audit period.	
Aquatic Ecology	If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to aquatic ecology.	Compliant	According to 2016, 2017 & 2018 Annual Reviews no discernible subsidence impact from the Link Road Project (LRP) workings was observed during the audit period.	

Condition Aspect	Condition	Compliance Status	Evidence	Recommended Action
Aboriginal Heritage	Activities will continue to be managed in accordance with the Colliery's Aboriginal Cultural Heritage Management plan (ACHMP). Given the Colliery's current ACHMP is integrated with other Centennial sites, a separate ACHMP will be developed. If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to cultural heritage in consultation with OEH. All relevant Centennial Mannering staff and contractors will be made aware of their statutory obligations for Aboriginal cultural heritage under the NP&W Act as part of the existing mine induction process. An Aboriginal Cultural Heritage Management Plan (ACHMP) will be developed and implemented for the identified Aboriginal heritage items within the Project Site in consultation with the relevant Aboriginal stakeholders. If additional sites are identified they will be assessed for cultural significance and be incorporated into the ACHMP. In the unlikely event that skeletal remains are identified, the NSW Police Coroner will be contacted to determine if the material is of Aboriginal origin. If determined to be Aboriginal, contact will be made with the OEH, a suitably qualified archaeologist and representatives of the relevant Aboriginal stakeholder groups to determine an action plan for the management of the skeletal remains and formulate management recommendations if required.	Administrative Non-Compliance	Admin non-compliant: A separate ACHMP has not been developed. It still covers other Centennial sites. * Mine-induced subsidence levels do not exceed 20 millimetres * "Lake Coal Surface Generic Surface Induction" and "Environmental Awareness Training" Assessment includes Aboriginal heritage aspects * Aboriginal Cultural Heritage Management Plan (ACHMP) developed for the identified Aboriginal heritage items within the Project Site. * ACHMP prepared in consultation with the relevant Aboriginal stakeholders (refer to Section 2.0).	
European Heritage	The Proponent must comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of: (a) any reports, plans, programs or correspondence that are submitted in accordance with the conditions of this approval; and (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.	Administrative Non-Compliance	* Mine-induced subsidence levels do not exceed 20 millimetres * Admin Non-compliant: "Lake Coal Surface Generic Surface Induction" and "Environmental Awareness Training" Assessment does not include European heritage aspects.	Include European heritage aspects in the "Lake Coal Surface Generic Surface Induction" and "Environmental Awareness Training" Assessment
Air Quality	A review of dust management strategies and mitigation measures will be undertaken against the best practice dust mitigation measures identified in the NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining (Katestone Environmental Pty Ltd 2011), which was prepared for OEH. The review will identify any additional dust management practices that are reasonable and feasible for implementation at Mannering Colliery and will be undertaken generally in accordance with any requirements of a pollution reduction program that may be imposed by the OEH on the Manning Colliery EPL in the future.	Compliant	Outside of the audit period. This document would need to have been prepared for the previous mining lease renewal. The CCL 719 was renewed by the RR in a letter dated 2 October 2015.	
Traffic	Centennial Mannering will upgrade the Rutleys Road - Mannering Colliery Access Road intersection to improve safety and operational efficiency.	Not Triggered	According to site communications and the 2016, 2017 & 2018 Annual Reviews an upgrade to the Rutleys Road - Mannering Colliery Access Road intersection was not undertaken during the audit period.	
Socio-Economic	Centennial Mannering is committed to on-going community consultation and will continue to engage the community for the purposes of providing information relating to on-going operations and the Extension of Mine Project.	Compliant	* CCC described in 2016, 2017 and 2019 Annual Reviews. * Quarterly CCC meeting minutes from 2016, 2017 and 2018 * CCC is combined for Mannering Colliery and Chain Valley Colliery	
Rehabilitation	Rehabilitation will be undertaken in accordance with the Colliery's mining operations plan, which will be updated to include any changes as a result of the proposed modification. The Mining Operations Plan will be amended to reflect the proposed modification and will include integrated rehabilitation and environmental management.	Compliant	* Rehabilitation has not been undertaken at the site * The 2018 - 2020 Mining Operations Plan (MOP) reflects Mod 4 and includes integrated rehabilitation and environmental management.	
Monitoring	The Environmental Monitoring Program will be reviewed and updated, as required, to incorporate the commitments made in the Environmental Assessment and any additional consent conditions.	Administrative Non-Compliance	The Environmental Monitoring Program has not been reviewed and updated since November 2011, and does not to incorporate the commitments made in the Environmental Assessments (EAs) for Mod 1, Mod 2, Mod 3 & Mod 4, and any additional consent conditions (for these modifications).	* Update the Environmental Monitoring Program to incorporate any commitments made in the Environmental Assessments (EAs) for Mod 1, Mod 2, Mod 3 & Mod 4, and any additional consent conditions (for these modifications).

Environment Protection Licence

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
1 Administrative Conditions				
A1	What the licence authorises and regulates	Note		
A1.1	This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation. Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.	Note		
	Scheduled Activity / **Fee Based Activity** / **Scale** Coal works / Coal works / 0 - 2000000 T annual handing capacity Mining for coal / Mining for coal / > 500000 - 2000000 T annual production capacity Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	Compliant	* 2016 Annual Review - 93,972 tonnes coal mined & handled. * 2017 Annual Review - 3,699 tonne coal mined & 522,132 tonne coal handled. * 2018 Annual Review - 0 tonne coal mined & 394,213 tonne coal handled.	
A1.2	The licensee must not: (a) Produce by mining activities more than 1.1 million tonnes of coal within any 12 month period. (b) Undertake coal works handling more than 1.3 million tonnes within any 12 month period, where ROM coal handled on the premises may be made up of coal produced by mining activities from both the Mannering premises as defined in this licence or Chain Valley premises as defined in Environment Protection Licence number 1770. Note: These limits on the scale of the fee based activities are based on project Approval 06_0311 granted under the Environmental Planning and Assessment Act 1979 which limits extraction to 1.1 million tonnes of run of mine (ROM) coal per year and its modifications, the most recent of which is dated 27 November 2014.	Compliant	* 2016 Annual Review - 93,972 tonnes coal mined & handled. * 2017 Annual Review - 3,699 tonne coal mined & 522,132 tonne coal handled. * 2018 Annual Review - 0 tonne coal mined & 394,213 tonne coal handled.	
A2	Premises or plant to which this licence applies	Note		
A2.1	The Proponent must comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of: (a) any reports, plans, programs or correspondence that are submitted in accordance with the conditions of this approval; and (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.	Note		
	Premises Details MANNERING COLLIERY RUTLEYS ROAD DOYALSON NSW 2262 SURFACE PREMISES DESCRIBED BY PLAN OF PREMISES TITLED "MANNERING COLLIERY EPL PREMISES PLAN FIGURE 2 SURFACE EXTENTS, COMPLIANCE AND MONITORING LOCATIONS" DATED 24 JANUARY 2014 DOC15/31114 AND MINING FOR COAL IN THE FASSIFERN AND GREAT NORTHERN COAL SEAMS DESCRIBED BY THE PLAN OF THE PREMISES TITLED "MANNERING COLLIERY EPL PREMISES PLAN FIGURE 1 PROJECT EXTENTS" DATED 24 JANUARY 2014 DOC15/31114. THIS PLAN IS HELD ON FILE LIC08/38-03 DUE TO SIZE OF PLAN.	Compliant	Outside of the audit period. This document would need to have been prepared for the previous mining lease renewal. The CCL 719 was renewed by the RR in a letter dated 2 October 2015.	
A3	Information supplied to the EPA	Note		
A3.1	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.	Note		

<table>
<tr><th>Condition Number</th><th>Condition</th><th>Compliance Status</th><th>Evidence</th><th>Recommended Action</th></tr>
<tr><td colspan="5">2 Discharges to Air and Water and Applications to Land</td></tr>
<tr><td>P1</td><td>Location of monitoring/discharge points and areas</td><td>Note</td><td></td><td></td></tr>
<tr><td>P1.1</td><td>The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.</td><td>Note</td><td></td><td></td></tr>
<tr><td></td><td>Air<table><tr><th>EPA identification no.</th><th>Type of Monitoring Point</th><th>Type of Discharge Point</th><th>Location Description</th></tr><tr><td>3</td><td>Dust monitoring</td><td></td><td>Dust deposition gauge identified as point 3 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 24 January 2014 DOC15/31114. Held on LIC08/38-03 due to size of plan.</td></tr><tr><td>4</td><td>Dust monitoring</td><td></td><td>Dust deposition gauge identified as point 4 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 24 January 2014 DOC15/31114. Held on LIC08/38-03 due to size of plan.</td></tr><tr><td>5</td><td>Dust monitoring</td><td></td><td>Dust deposition gauge identified as point 5 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 24 January 2014 DOC15/31114. Held on LIC08/38-03 due to size of plan.</td></tr><tr><td>6</td><td>Dust monitoring</td><td></td><td>Dust deposition gauge identified as point 6 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 24 January 2014 DOC15/31114. Held on LIC08/38-03 due to size of plan.</td></tr><tr><td>7</td><td>Dust monitoring</td><td></td><td>Dust deposition gauge identified as point 3 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 24 January 2014 DOC15/31114. Held on LIC08/38-03 due to size of plan.</td></tr></table></td><td>Compliant</td><td>* Dust monitoring locations described in the 2016, 2017 & 2018 Annual Reviews.
* EPL Premises Plan shows location of dust deposition gauges 3 - 7.</td><td></td></tr>
<tr><td>P1.2</td><td>The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.</td><td>Note</td><td></td><td></td></tr>
<tr><td>P1.3</td><td>The Proponent must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

Notes:
• Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.
• Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.</td><td>Note</td><td></td><td></td></tr>
<tr><td></td><td>Water and land<table><tr><th>EPA Identification no.</th><th>Type of Monitoring Point</th><th>Type of Discharge Point</th><th>Location Description</th></tr><tr><td>1</td><td>Discharge to waters
Discharge quality monitoring</td><td>Discharge to waters
Discharge quality monitoring</td><td>Discharge from Final Treatment Pond (surface and groundwater) identified as point 1 on plan titled "Mannering Colliery EPL Premises Plan - Figure 2 Surface Extents, Compliance and Monitoring Locations" dated 24 January 2014 DOC15/31114. Held on LIC08/38-03</td></tr></table></td><td>Compliant</td><td>Sighted EPA Point 1 during the site inspection.</td><td></td></tr>
<tr><td colspan="5">3 Limit Conditions</td></tr>
<tr><td>L1</td><td>Pollution of waters</td><td>Note</td><td></td><td></td></tr>
<tr><td>L1.1</td><td>Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.</td><td>Non-Compliant (Low Risk)</td><td>Exceedance of TSS on 2 April 2019. Exceedance constitutes a 'pollution' of waterways based on the POEO Act.</td><td>* Continue to undertake mitigation measures to comply with section 120 of the Protection of the Environment Operations Act 1997.</td></tr>
<tr><td>L2</td><td>Concentration limits</td><td>Note</td><td></td><td></td></tr>
<tr><td>L2.1</td><td>For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.</td><td>Note</td><td></td><td></td></tr>
<tr><td>3 - SPECIFIC ENVIRONMENTAL C</td><td>Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.</td><td>Note</td><td></td><td></td></tr>
<tr><td>L2.3</td><td>To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.</td><td>Note</td><td></td><td></td></tr>
<tr><td>L2.4</td><td>Water and/or Land Concentration Limits</td><td>Note</td><td></td><td></td></tr>
</table>

<table>
<tr><th>Condition Number</th><th>Condition</th><th>Compliance Status</th><th>Evidence</th><th>Recommended Action</th></tr>
<tr><td></td><td>POINT 1<table><tr><th>Pollutant</th><th>Units of Measure</th><th>50 percentile concentration limit</th><th>90 percentile concentration limit</th><th>3DGM concentration limit</th><th>100 percentile concentration limit</th></tr><tr><td>Oil and Grease</td><td>milligrams per litre</td><td></td><td></td><td></td><td>10</td></tr><tr><td>pH</td><td>pH</td><td></td><td></td><td></td><td>6.5-8.5</td></tr><tr><td>Total suspended solids</td><td>milligrams per litre</td><td></td><td></td><td></td><td>50</td></tr></table></td><td>Non-Compliant (Low Risk)</td><td>Exceedance of TSS on 2 April 2019. Dam flocculated and re-tested, with TSS reading of 10mg/L.</td><td>Continue to undertake water quality monitoring. If a water quality exceedance is detected undertake measures to improve water quality.</td></tr>
<tr><td>L3</td><td>Volume and mass limits</td><td>Note</td><td></td><td></td></tr>
<tr><td>L3.1</td><td>Subsidence Control Zone</td><td>Note</td><td></td><td></td></tr>
<tr><td></td><td><table><tr><th>Point</th><th>Unit of Measure</th><th>Volume/Mass Limit</th></tr><tr><td>1</td><td>kilolitres per day</td><td>4000</td></tr></table></td><td>Compliant</td><td>* 2016, 2017 & 2018 Annual Reviews indicate total yearly discharge of surface water within the discharge limit.
* 6 January 2016 discharge over limit but was a result of rainfall at the premises exceeding 10mm during the 24 hours immediately prior to the commencement of discharge
* January, February & March 2019 Monthly Website Reports and "Mannering UG Discharge" spreadsheet indicate discharge was in accordance with EPL 191.
* LDP1 - Discharge Volumes Master" spreadsheet indicates volume of water discharged from 1 to 10 April 2019 was within the limit</td><td></td></tr>
<tr><td>L3.2</td><td>Exceedance of the volume limit for Point 1 is permitted only if the discharge from Point 1 occurs solely as a result of rainfall at the premises exceeding 10mm during the 24 hours immediately prior to the commencement of discharge</td><td>Note</td><td></td><td></td></tr>
<tr><td>L4</td><td>Waste</td><td>Note</td><td></td><td></td></tr>
<tr><td>L4.1</td><td>The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.</td><td>Not Triggered</td><td>Waste not received at the site from outside sources</td><td></td></tr>
<tr><td></td><td><table><tr><th>Code</th><th>Waste</th><th>Description</th><th>Activity</th><th>Other Limits</th></tr><tr><td>NA</td><td>Waste</td><td>Any other waste received on the premises for storage, treatment, processing, sorting or disposal and which receipt is not a scheduled activity under Schedule 1 of the POEO Act, as in force from time to time.</td><td></td><td></td></tr><tr><td>NA</td><td>General or Specific exempted waste</td><td>Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2014</td><td>As specified in each particular resource recovery exemption</td><td>N/A</td></tr></table></td><td>Not Triggered</td><td>Waste not received at the site from outside sources</td><td></td></tr>
<tr><td>L4.2</td><td>The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.</td><td>Not Triggered</td><td>* Waste not received at the site from outside sources
* During the site inspection noted that waste is not being disposed of at the site
* 2016, 2017 and 2018 Annual Reviews indicate that waste is collected disposed of by a licenced contractor.</td><td></td></tr>
<tr><td>L4.3</td><td>This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environment protection licence.</td><td>Not Triggered</td><td>The storage of waste at the site does not require an environment protection licence (EPL).</td><td></td></tr>
<tr><td>L5</td><td>Noise limits</td><td>Note</td><td></td><td></td></tr>
<tr><td></td><td>Note: Noise limits are not specified as a condition of this licence. Noise limits are prescribed with the conditions of Project Approval 06_0311 granted under the Environmental Planning and Assessment Act 1979. Under the Environmental Planning and Assessment Act 1979 the Department of Planning is the appropriate authority in respect of the administration and regulation of the Project Approval.</td><td>Non-Compliant (Low Risk)</td><td><u>Non-compliant</u>: According to 2016 Annual Review, on 12 August 2016 LakeCoal was advised by its independent noise monitoring consultant (Global Acoustics)
that they had recorded a 3dB exceedance of the site’s LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the evening monitoring on 11 August 2016 for Mannering Colliery.
* According to 2016 Annual Review, On 29 August 2018, there was an exceedance recorded at 1dB exceedance of the site’s LAeq15 Minute
noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the scheduled night monitoring.
* According to the Noise Mitigation Study dated March 2019:
-Noise mitigation works implemented by the previous operators in 2018 have decreased site noise emission levels at all neighbouring noise-sensitive receivers.
-Current and proposed MC noise emissions are predicted to comply with the relevant long-term noise criteria outlined in MP 06_0311 at all assessment locations under worst case meteorological conditions.
* LAmax noise level events at the site are also predicted to remain below the relevant sleep disturbance criteria.</td><td>* Continue to undertake noise monitoring and follow-up actions if noise exceedances occur.</td></tr>
</table>

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
4 Operating Conditions				
O1	Activities must be carried out in a competent manner	Note		
O1.1	Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	Compliant	(a)During site inspection noted: -Minimal coal stored at site; -No visible dust; -Hazardous materials and other substances like oil bunded; -Piles of rubbish/materials stored at the surface, ready for sorting; -Rubbish and recycling bins located around the pit top area; Observation: Landfarm material at the pit top is not sign posted. * 2016, 2017 and 2018 Annual Reviews indicate that waste is collected disposed of by a licenced contractor.	* Finish sorting out the piles of rubbish at the pit top area. * Undertake contaminated sites/waste material assessment at the waste stockpile area. * SLR recommends none of the waste from the stockpile material is removed from site for waste disposal until an assessment on the waste is undertaken. * Install signage at the landfarm material at the pit top.
O2	Maintenance of plant and equipment	Note		
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.	Compliant	(a) Downer maintenance records for radiation equipment dated 31 March 2017 * Electrical inspection records for ash analysers from 2016 to 2017. * Maintenance records: "Mannering Front End Loaders work order history as at 2.5.19" (b) During site inspection plant and equipment appeared to be operated in a proper and efficient manner.	
O3	Dust	Note		
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	Compliant	* During the site inspection noted: -No visible dust; -Water cart used on site to reduce dust (PHOTO XXX); and -Majority of the pit top is concreted or grassed (PHOTO XXX). * According to 2016, 2017 and 2018 Annual reviews no air quality exceedances occurred * According to the "MANN Monitoring Master Spreadsheet" air quality monitoring data no exceedances of criteria up to and including April 2019	
O3.2	Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	Compliant	* During the site inspection noted: -No visible dust; -Water cart used on site to reduce dust; and -Minimal coal stored at the pit top. * According to 2016, 2017 and 2018 Annual reviews no air quality exceedances occurred * According to the "MANN Monitoring Master Spreadsheet" air quality monitoring data no exceedances of criteria up to and including April 2019	
O3.3	All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust.	Compliant	* During the site inspection noted: -No visible dust; -Speed limit; -Water cart used on site to reduce dust; and -Majority of the pit top (including roadways) is concreted. * According to 2016, 2017 and 2018 Annual reviews no air quality exceedances occurred * According to the "MANN Monitoring Master Spreadsheet" air quality monitoring data no exceedances of criteria up to and including April 2019	
O3.4	Trucks transporting coal from the premises must be covered immediately after loading to prevent wind blown emissions and spillage. The covering must be maintained until immediately before unloading the trucks.	Not Triggered	According to 2016, 2017 and 2018 Annual Reviews coal is transported via overland conveyor. Trucks are not used to transport coal.	
O3.5	The tailgates of all haulage trucks leaving the premises must be securely fixed prior to loading or immediately after unloading to prevent loss of materials.	Not Triggered	According to 2016, 2017 and 2018 Annual Reviews coal is transported via overland conveyor. Trucks are not used to transport coal.	
O3.6	Coal stockpiles must be maintained in a condition that will minimise the generation and emission of dust on the premises.	Compliant	* During the site inspection noted: -No coal stockpiled at the pit top; -Covered conveyor; and -No visible dust. *According to the Air Quality Management Plan (AQMP) dated December 2012, the conveyor has water sprays to reduce dust potential. *According to site communications: -The coal is quite wet; -A water cart is used to water the loader wheeling areas; -And a canon can be used to spray down the stockpile area.	
O4	Emergency response	Note		

<table>
<tr><th>Condition Number</th><th>Condition</th><th>Compliance Status</th><th>Evidence</th><th>Recommended Action</th></tr>
<tr><td>O4.1</td><td>The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that may occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.</td><td>Compliant</td><td>* Pollution Incident Attendant Duty Card, dated February 2018
* According to site communications, PIRMP was included in the Emergency Control Plan and then removed from it late 2018
* Pollution Incident Response Management Plan (PIRMP) dated September 2018
* PIRMP is kept on-site
* Observation: The PIRMP is labelled LakeCoal, has persons listed in it who are no longer at site, does not have email details for government contacts, and figures do not clearly show the location of hazardous substances and where pollution response equipment is stored.</td><td>* Update the PIRMP to include:
- Current site contacts;
- Email details for government contacts; and
- Figures that clearly show the location of hazardous substances and where pollution response equipment is stored.</td></tr>
<tr><td>O5</td><td>Other operating conditions</td><td>Note</td><td></td><td></td></tr>
<tr><td>O5.1</td><td>All above-ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.</td><td>Compliant</td><td>During site inspection noted above-ground tanks were bunded.</td><td></td></tr>
<tr><td>O5.2</td><td>The licensee must ensure that activities are conducted in an environmentally satisfactory manner. So as to minimise and prevent the pollution of air and water the licensee must:
(a) Ensure that vehicles or containers prior to leaving the premises are clean and sealed in a manner that will not cause materials or wastes used in conducting the activities at the premises to be tracked, thrown from, blown, fall, or cast from any vehicle or container onto a public road.
(b) The licensee must have in place and implement procedures to ensure that vehicles and containers exiting the premises are in a condition to ensure that materials are not tracked, thrown, blown, fall or cast onto a public road.</td><td>Compliant</td><td>*During the site inspection noted that vehicles at the site appeared to be clean.
* According to 2016, 2017 and 2018 Annual Reviews waste is removed from the site by a licenced contractor.
* Controls included in the Water Management Plan (WMP), dated January 2013 and AQMP, dated December 2012.</td><td></td></tr>
<tr><td colspan="5">5 Monitoring and Recording Conditions</td></tr>
<tr><td>M1</td><td>Monitoring records</td><td>Note</td><td></td><td></td></tr>
<tr><td>M1.1</td><td>The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.</td><td>Compliant</td><td>Monitoring required to be conducted by this licence is recorded and retained as set out in this condition (as detailed below)</td><td></td></tr>
<tr><td>M1.2</td><td>All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.</td><td>Compliant</td><td>a) Monthly website reports;
b) Monthly website reports going back to 2013 available from Mannering Colliery website; and
c) PIRMP was produced to L. Richards during EPA site inspection.</td><td></td></tr>
<tr><td>M1.3</td><td>The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.</td><td>Compliant</td><td>Monthly website reports have:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.</td><td></td></tr>
<tr><td>M2</td><td>Requirement to monitor concentration of pollutants discharged</td><td>Note</td><td></td><td></td></tr>
<tr><td>M2.1</td><td>For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:</td><td>Compliant</td><td>2016, 2017 & 2018 Annual Returns.</td><td></td></tr>
<tr><td>M2.2</td><td>Air Monitoring Requirements</td><td>Note</td><td></td><td></td></tr>
<tr><td></td><td>POINT 3,4,5,6,7
<table><tr><th>Pollutant</th><th>Units of measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>Particulates - Deposited Matter</td><td>grams per square metre per month</td><td>Monthly</td><td>AM-19</td></tr></table></td><td>Compliant</td><td>2016, 2017 & 2018 Annual Returns and Annual Reviews. Monitoring frequency appears to meet this condition.</td><td></td></tr>
<tr><td>M2.3</td><td>Water and/ or Land Monitoring Requirements</td><td>Note</td><td></td><td></td></tr>
</table>

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	POINT 1 **Pollutant / Units of measure / Frequency / Sampling Method** Aluminium (dissolved) — micrograms per litre — Monthly during discharge — Grab sample Aluminium (total) — micrograms per litre — Monthly during discharge — Grab sample Antimony — micrograms per litre — Monthly during discharge — Grab sample Arsenic (dissolved) — micrograms per litre — Monthly during discharge — Grab sample Arsenic (total) — micrograms per litre — Monthly during discharge — Grab sample Barium — micrograms per litre — Monthly during discharge — Grab sample Beryllium (dissolved) — micrograms per litre — Monthly during discharge — Grab sample Beryllium (total) — micrograms per litre — Monthly during discharge — Grab sample Boron — micrograms per litre — Monthly during discharge — Grab sample Cadmium (dissolved) — micrograms per litre — Monthly during discharge — Grab sample Cadmium (total) — micrograms per litre — Monthly during discharge — Grab sample Calcium — micrograms per litre — Monthly during discharge — Grab sample Chromium (dissolved) — micrograms per litre — Monthly during discharge — Grab sample Chromium (total) — micrograms per litre — Monthly during discharge — Grab sample Cobalt (dissolved) — micrograms per litre — Monthly during discharge — Grab sample Cobalt (total) — micrograms per litre — Monthly during discharge — Grab sample Conductivity — microsiemens per centimetre — Weekly during any discharge — Grab sample Copper (dissolved) — micrograms per litre — Monthly during discharge — Grab sample Copper (total) — micrograms per litre — Monthly during discharge — Grab sample Iron — micrograms per litre — Monthly during discharge — Grab sample Lead (dissolved) — micrograms per litre — Monthly during discharge — Grab sample Lead (total) — micrograms per litre — Monthly during discharge — Grab sample Lithium — micrograms per litre — Monthly during discharge — Grab sample Magnesium — micrograms per litre — Monthly during discharge — Grab sample Manganese (dissolved) — micrograms per litre — Monthly during discharge — Grab sample Mercury (dissolved) — micrograms per litre — Monthly during discharge — Grab sample	Compliant	Compliant based on 2016, 2017 & 2018 Annual Returns.	
M3	Testing methods - concentration limits	Note		
M3.1	Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with: a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place. Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".	Compliant	Section 3.0 of the AQMP provides the methodology for dust monitoring. The AQMP states that "*samples are taken from the depositional gauges every 28 days as per Approved Methods for the Sampling and Analysis of Air Pollutants in NSW*".	
M3.2	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.	Compliant	Section 8.1.1 of the WMP provides the methodology for water quality monitoring. The WMP states that *"water quality is monitored at LPD001 in compliance with the Environment Protection Licence 191."*	
M4	Weather monitoring	Note		
M4.1	For each monitoring point specified in the table below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns. Point W1	Note		
	Parameter / Units of Measure / Frequency / Averaging Period / Sampling Method Rainfall — mm — Continuous — 24 hour — AM-4 Wind direction — degrees — Continuous — 1 hour — AM-2 and AM-4	Compliant	Wind direction is recorded by the on site weather station. Bearing provided in raw data downloads every fifteen minutes.	
M4.2	For the purpose of condition M4.1, Point W1 refers to a meteorological station established on the premises	Note		
M4.3	The licensee may use the meteorological station established at Eraring Power Station provided the licensee has authority from Eraring Energy to access data from the Eraring Power Station at all times. However, if this station is not available at any time then	Not Triggered	Data from the meteorological station established at Eraring Power Station was not used during the audit period.	
M4.4	The licensee must fully comply with condition M4 by 30 April 2011.	Compliant	Weather station established at the site.	
M5	Recording of pollution complaints	Note		
M5.1		Compliant	Complaints Register, dated April 2019.	

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
M5.2	The record must include details of the following: a) the date and time of the complaint; b) the method by which the complaint was made; c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the licensee, the reasons why no action was taken.	Administrative Non-Compliance	*Admin Non-compliant: The Complaints Register does not include the time of the complaint and the personal details of the complainant. * Not all complaints registered included the method by which the complaint was made.	*Include in the Complaints Register: -Time of the complaint; -Personal details of the complainant; and -Method by which the complaint was made.
M5.3	The record of a complaint must be kept for at least 4 years after the complaint was made.	Compliant	Complaints Registers going back to 2013 posted on the Mannering Colliery website.	
M5.4	The record must be produced to any authorised officer of the EPA who asks to see them.	Compliant	Email from LakeCoal dated 7 March 2019 regarding noise complaint	
M6	Telephone complaints line	Note		
M6.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.	Compliant	Telephone line for complaints advertised on the Mannering Colliery website	
M6.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	Administrative Non-Compliance	*Telephone line for complaints advertised on the LakeCoal and Delta Coal websites. * However no evidence of notifying to the community that the complaints line exists.	With the new ownership an advertisement should be placed in the paper providing a link to the Delta Coal website and outlining the complaint management details.
M6.3	The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.	Note		
M6.4	The licensee must nominate a representative of the company that is available all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including a telephone number, must be current at all times. Note: This condition does not apply until two (2) weeks after the date of issue of this licence.	Administrative Non-Compliance	* Designated representatives of the company included in the Pollution Incident Response Plan (PIRMP), dated September 2018. * Admin Non-compliant: The designated representatives of the company, included in the PIRMP, are not current.	*Update the details of designated representatives of the company in the PIRMP.
M7	Requirement to monitor volume or mass	Note		
M7.1	For each discharge point or utilisation area specified below, the licensee must monitor: a) the volume of liquids discharged to water or applied to the area; b) the mass of solids applied to the area; c) the mass of pollutants emitted to the air; at the frequency and using the method and units of measure, specified below	Compliant	a) 2016, 2017 & 2018 Annual Returns b) N/A c) N/A	
	POINT 1 **Frequency** / **Unit of Measure** / **Sampling Method** Continuous during discharge / kilolitres per day / In line instrumentation	Note		
6 Reporting Conditions				
R1	Annual return documents	Note		
R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: 1. a Statement of Compliance, 2. a Monitoring and Complaints Summary, 3. a Statement of Compliance - Licence Conditions, 4. a Statement of Compliance - Load based Fee, 5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan, 6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and 7. a Statement of Compliance - Environmental Management Systems and Practices. At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	Compliant	2016, 2017 & 2018 Annual Returns.	
R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below. Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.	Compliant	2016, 2017 & 2018 Annual Returns.	
R1.3	Where this licence is transferred from the licensee to a new licensee: a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period. Note: An application to transfer a licence must be made in the approved form for this purpose.	Compliant	* Letter from EPA dated 1 April 2019 confirms the EPL was transferred from LakeCoal to Great Southern Energy (trading as Delta Coal). * LakeCoal have not prepared an Annual Return for the period commencing on the first day of the reporting period (1 January 2019) and ending on the date the application for the transfer of the licence to the new licensee is granted (1 April 2019). Note, the Annual Return is due within 60 days of the anniversary date.	* LakeCoal prepare an Annual Return for the period commencing on the first day of the reporting period (1 January 2019) and ending on the date the application for the transfer of the licence to the new licensee is granted (1 April 2019). * Delta Coal prepare an Annual Return for the period commencing on the date the application for the transfer of EPL191 is granted (1 April 2019) and ending on the last day of the reporting period (31 December 2019).

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.	Not Triggered	The licence has neither been surrendered by the licensee or revoked by the EPA.	
R1.5	The Annual Return for the reporting period must be supplied to the EPA via eConnect EPA or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').	Compliant	* 2016 Annual Return submitted to EPA on 28 February 2017 via email. * 2017 Annual Return submitted to EPA on 28 February 2018 via email. * 2018 Annual Return submitted to EPA on 28 February 2019 via email.	
R1.6	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.	Compliant	2015, 2016, 2017 & 2018 Annual Returns.	
R1.7	Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by: a) the licence holder; or b) by a person approved in writing by the EPA to sign on behalf of the licence holder.	Compliant	Signed 2016, 2017 and 2018 Annual Returns.	
R2	Notification of environmental harm	Note		
	Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.	Not Triggered	A PIRMP has been prepared for the site. Latest dated 21 Sept 2018. Evidence of testing PIRMP. Although there were some incidents, it does not appear any incident required the PIRMP to be enacted. PIRMP is currently being updated. No material harm identified.	
R2.1	Notifications must be made by telephoning the Environment Line service on 131 555.	Not Triggered	Based on discussions with the Environment and Community Co-ordinator this condition has not been triggered.	
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	Not Triggered	Based on discussions with the Environment and Community Co-ordinator this condition has not been triggered.	
R3	Written report	Note		
R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.	Compliant	EPA requested written report (R3) to address the complaints received by the EPA in November 2017. EPA requested report be supplied by end of March 2018. LakeCoal sent R3 via email on 30 March 2018.	
R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.	Compliant	LakeCoal sent R3 via email on 30 March 2018, within the specified time.	
R3.3	The request may require a report which includes any or all of the following information: a) the cause, time and duration of the event; b) the type, volume and concentration of every pollutant discharged as a result of the event; c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and g) any other relevant matters.	Compliant	Written report (R3) supplied to EPA.	

<table>
<tr><th>Condition Number</th><th>Condition</th><th>Compliance Status</th><th>Evidence</th><th>Recommended Action</th></tr>
<tr><td>R3.4</td><td>The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.</td><td>Not Triggered</td><td>No further details required</td><td></td></tr>
<tr><td>R4</td><td>Other reporting conditions</td><td>Note</td><td></td><td></td></tr>
<tr><td></td><td>Receival of ROM Coal</td><td>Note</td><td></td><td></td></tr>
<tr><td>R4.1</td><td>The licensee must notify the Manager Hunter Region hunter.region@epa.nsw.gov.au within 24 hours of the receival of ROM Coal at the Coal Handling and Preparation Plant that the plant has been re-commissioned.</td><td>Compliant</td><td>Email dated 13 May 2016 regarding notification of ROM coal receival.</td><td></td></tr>
<tr><td colspan="5">7 General Conditions</td></tr>
<tr><td>G1</td><td>Copy of licence kept at the premises or plant</td><td>Compliant</td><td>Electronic copy of the EPL kept on the site.</td><td></td></tr>
<tr><td>G1.1</td><td>A copy of this licence must be kept at the premises to which the licence applies.</td><td>Compliant</td><td>Electronic copy of the EPL kept on the site.</td><td></td></tr>
<tr><td>G1.2</td><td>The licence must be produced to any authorised officer of the EPA who asks to see it.</td><td>Compliant</td><td>According to site communications an EPA Officer has not requested to see the EPL.</td><td></td></tr>
<tr><td>G1.3</td><td>The licence must be available for inspection by any employee or agent of the licensee working at the premises.</td><td>Compliant</td><td>Electronic copy of the EPL available for inspection by any employee or agent.</td><td></td></tr>
<tr><td>G2</td><td>Other general conditions</td><td>Note</td><td></td><td></td></tr>
<tr><td>G2.1</td><td>Completed Programs</td><td>Note</td><td></td><td></td></tr>
<tr><td></td><td>
<table>
<tr><th>Program</th><th>Description</th><th>Completed Date</th></tr>
<tr><td>PRP 1 - Assessment of Potential Impacts of Metals</td><td>The licensee must conduct an assessment of metals detected in wastewater discharges from the mine in accordance with the ANZECC water quality guidelines.. To obtain a greater understanding of the type and concentration of metals discharged in mine water and entering the receiving waters. To limit the concentration of metals discharged in mine water within ANZECC guidelines.(@)</td><td>26-June-2013</td></tr>
<tr><td>Coal Mine Particulate Matter Control Best Practice</td><td>Requires licensee to conduct a site specific Best Management Practice (BMP) determination to identify ways to reduce particle emissions.</td><td>19-September-2012</td></tr>
<tr><td>Coal Handling and Preparation Plant Commissioning Water Quality Monitoring Study</td><td>CHPP commissioning water quality monitoring study</td><td>12-October-2016</td></tr>
</table>
</td><td>Compliant</td><td>Coal Handling and Preparation Plant Commissioning Water Quality Monitoring Study undertaken, per 2016 Annual Review</td><td></td></tr>
</table>

Consolidated Coal Lease 721

Renewed: December 2008

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
Mning Lease Conditions 2008				
1	**Notice to Landholders**			
	Within a period of three months from the date of grant/renewal of this lease or within such further time as the Minister may allow, the lease holder must serve on each landholder of the land a notice in writing indicating that this lease has been granted/renewed and whether the lease includes the surface. An adequate plan and description of the lease area must accompany the notice. If there are ten or more landholders affected, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this lease has been granted/renewed; state whether the lease includes the surface and must contain an adequate plan and description of the lease area.	Not Triggered	Renewal outside of audit period	
2	**Environmental Harm**			
	Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	Compliant	Based on information provided there is no evidence of material harm.	
3	**Mining Operations Plan**			
	(a) Mining operations must not be carried out otherwise than in accordance with: a Mining Operations Plan (MOP) which has been approved by the Director-General of the Department of Primary Industries. (b) The MOP must: i) identify areas that will be disturbed by mining operations; ii) detail the staging of specific mining operations; iii) identify how the mine will be managed to allow mine closure; iv) identify how mining operations will be carried out on site in order to prevent and or minimise harm to the environment; v) reflect the conditions of approval under: the Environmental Planning and Assessment Act 1979 the Protection of the Environment Operations Act 1997 and any other approvals relevant to the development including the conditions of this lease; and vi) have regard to any relevant guidelines adopted by the Director-General. (c) The titleholder may apply to the Director-General to amend an approved MOP at any time. (d) It is not a breach of this condition if: i) the operations constituting the breach were necessary to comply with a lawful order or direction given under the Mining Act 1992, the Environmental Planning and Assessment Act 1979, Protection of the Environment Operations Act 1997 or the Occupational Health and Safety Act 2000; and ii) the Director-General had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out. (e) A MOP ceases to have affect 7 years after date of approval or other such period as identified by the Director-General. An approved amendment to the MOP under condition 5 does not constitute an approval for the purpose of this paragraph unless otherwise identified by the Director-General.	Compliant	Preparation: (a) Approval letter from Resources Regulator (RR) (formerly DRE) dated 27 March 2015, for 2015-2018 MOP * Approval letter from RR dated 26 September 2018 for 2018-2020 MOP (b) i) MOP plans; ii) MOP plans (3 series); iii) Mine Closure Plan to be prepared at least two years prior to the cessation of mining activities; iv) Section 3; v) Section 4.1; (vi) 2018-2020 MOP has been prepared generally in accordance with DRE (now Resources Regulator) ESG3: MOP Guidelines, dated September 2013. (c) N/A-No amended MOP during the audit period. (d) N/A-According to 2016, 2017 & 2018 Annual Reviews, no such breach during the audit period. (e) N/A Implementation: * Domains sighted during site inspection and appear to be in accordance with the domains depicted on the MOP Plans in the 2018-2020 MOP. * During site inspection determined all areas associated with Mannering Colliery are operational. No rehabilitation has been undertaken. This is in accordance with the 2018-2020 MOP.	
4	The Proponent must comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of: (a) any reports, plans, programs or correspondence that are submitted in accordance with the conditions of this approval; and (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.			
	The lease holder must lodge Environmental Management Reports (EMR) with the Director- General annually or at dates otherwise directed by the Director-General.	Compliant	Outside of the audit period. This document would need to have been prepared for the previous mining lease renewal. The CCL 719 was renewed by the RR in a letter dated 2 October 2015.	
5	**The EMR must:**			
	a) report against compliance with the MOP; b) report on progress in respect of rehabilitation completion criteria; c) report on the extent of compliance with regulatory requirements; and d) have regard to any relevant guidelines adopted by the Director-General;	Administrative Non-Compliance	a) Admin Non-compliant: The 2016, 2017 & 2018 Annual Reviews do not report against compliance with the MOP. b) N/A - Rehabilitation has not commenced at the site; c) 2016, 2017 & 2018 Annual Reviews - Executive Summary & Section 3 d) Admin Non-compliant: 2016, 2017 and 2018 Annual Reviews not prepared in accordance with the DPE Annual Review guidelines	*Report against compliance with the MOP in future Annual Reviews. *The Annual Reviews are set out differently to the DPE Annual Review Guidelines (2015). Ensure table of contents matches the guidelines.

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
6	Additional environmental reports may be required on specific surface disturbing operations or environmental incidents from time to time as directed in writing by the Director-General and must be lodged as instructed.	Administrative Non-Compliance	Admin Non-compliant: Noise exceedance on 11 August 2016 reported to DPE on 12 August 2016, according to 2016 Annual Review. Detailed incident report could not be provided by LakeCoal, therefore not able to determine when or if an incident report was submitted. * Noise exceedance on 29 August 2018 reported to DPE on same day (email to DPE Compliance Mailbox from LakeCoal dated 29 August 2018). Detailed LakeCoal incident report provided to DPE on 7 September 2018. Compliant as LakeCoal was granted an extension to provide the detailed report, via email from EPA dated 5 September 2016. * TSS exceedance at Point 1 on 2 April 2019 reported to DPE on 11 April 2019 via email and formal letter * Admin Non-compliant: According to site communications the RR required additional environmental reports on specific surface disturbing operations. Reports could not be provided to SLR from LakeCoal. Observation: Compliant/incident register indicates no incidents from June 2016 to April 2019.	* Ensure all incidents are reported within the required timeframe. * Ensure all additional environmental reports on specific surface disturbing operations are provided to the RR as required. * Ensure the complaints/incident register includes all incidents.
7	**Rehabilitation**			
	Disturbed land must be rehabilitated to a sustainable/agreed end land use to the satisfaction of the Director-General.	Not Triggered	Rehabilitation has not been undertaken at the site.	
8	**Subsidence Management**			
	(a) The lease holder shall prepare a Subsidence Management Plan prior to commencing any underground mining operations which will potentially lead to subsidence of the land surface. (b) Underground mining operations which will potentially lead to subsidence include secondary extraction panels such as longwalls or miniwalls, associated first workings (gateroads, installation roads and associated main headings, etc), and pillar extractions, and are otherwise defined by the Applications for Subsidence Management Approvals guidelines (EDG17) (c) The lease holder must not commence or undertake underground mining operations that will potentially lead _to subsidence other than in accordance with a Subsidence Management Plan approved by the Director-General, an approval under the Mine Health & Safety Act 2004, or the document New Subsidence Management Plan Approval Process - Transitional Provisions (EDP09). (d) Subsidence Management Plans are to be prepared in accordance with the Guideline for Applications for Subsidence Management Approvals. (e) Subsidence Management Plans as approved shall form part of the Mining Operations Plan required under Condition 3 and will be_ subject to the Annual Environmental Management Report process as set out under Condition 4. The SMP is also subject to the requirements for subsidence monitoring and reporting set out in the document New Approval Process for Management of Coal Mining Subsidence - Policy.	Not Triggered	* Subsidence Management Plan prepared outside of the audit period. * First workings only, therefore Subsidence Management Plan not applicable to these workings.	
9	The Proponent must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA. Notes: • Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works. • Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.			
	The lease holder must: (a) ensure that at least 142 competent people are efficiently employed on the lease area on each week day except Sunday or any week day that is a public holiday, OR (b) expend on operations carried out in the course of prospecting or mining the lease area, an amount of not less than $2,485,000 per annum whilst the lease is in force. The Minister may at any time or times, by instrument in writing served on the lease holder, increase or decrease the expenditure required or the number of people to be employed.	Compliant	a) 2016 Annual Review - 66 employees. 2017 Annual Review - 23 employees. 2018 Annual Review - 23 employees. b) According to site communications over $2,485,000 was spent at site (based on FTE's & wages bills). Commercially sensitive information, therefore further evidence couldn't be provided.	
10	**Control of Operations**			
	(a) If an Environmental Officer of the Department believes that the lease holder is not complying with any provision of the Act or any condition of this lease relating to the working of the lease, he may direct the lease holder to:- (i) cease working the lease; or (ii) cease that part of the operation not complying with the Act or conditions; until in the opinion of the Environmental Officer the situation is rectified. (b) The lease holder must comply with any direction given. The Director-General may confirm, vary or revoke any such direction. (c) A direction referred to in this condition may be served on the Mine Manager.	Not Triggered	According to site communications no such directions provided by the RR officers.	
11	**Reports**			

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	The lease holder must provide an exploration report, within a period of twenty-eight days after each anniversary of the date this lease has effect or at such other date as the Director-General may stipulate, of each year. The report must be to the satisfaction of the Director-General and contain the following: (a) Full particulars, including results, interpretation and conclusions, of all exploration conducted during the twelve months period; (b) Details of expenditure incurred in conducting that exploration; (c) A summary of all geological findings acquired through mining or development evaluation activities; (d) Particulars of exploration proposed to be conducted in the next twelve months period; (e) All plans, maps, sections and other data necessary to satisfactorily interpret the report.	Not Triggered	Based on discussions with the Environment and Community Co-ordinator there has been no exploration during the audit period.	
12	**Licence to Use Reports**			
SCHEDULE 3 - SPECIFIC ENVIRONMENTAL CONDITIONS	(a) The lease holder grants to the Minister, by way of a non-exclusive licence, the right in copyright to publish, print, adapt and reproduce all exploration reports lodged in any form and for the full duration of copyright (b) The non-exclusive licence will operate as a consent for the purposes of section 365 of the Mining Act 1992.	Not Triggered	Based on discussions with the Environment and Community Co-ordinator there has been no exploration during the audit period.	
13	**Confidentiality**			
	(a) All exploration reports submitted in accordance with the conditions of this lease will be kept confidential while the lease is in force, except in cases where: (i) the lease holder has agreed that specified reports may be made non-confidential. (ii) reports deal with exploration conducted exclusively on areas that have ceased to be part of the lease. (b) Confidentiality will be continued beyond the termination of a lease where an application for a flow-on title was lodged during the currency of the lease. The confidentiality will last until that flow-on title or any subsequent flow-on title, has terminated. (c) The Director-General may extend the period of confidentiality.	Not Triggered	Based on discussions with the Environment and Community Co-ordinator there has been no exploration during the audit period.	
14	**Terms of the non-exclusive licence**			
	The terms of the non-exclusive copyright licence granted under condition 12 are: (a) the Minister may sub-licence others to publish, print, adapt and reproduce but not on-licence reports. (b) the Minister and any sub-licensee will acknowledge the lease holder's and any identifiable consultant's ownership of copyright in any reproduction of the reports, including storage of reports onto.an electronic database. (c) the lease holder does not warrant ownership of all copyright works in any report and, the lease holder will use best endeavours to identify those parts of the report for which the lease holder owns the copyright. (d) there is no royalty payable by the Minister for the licence. (e) if the lease holder has reasonable grounds to believe that the Minister has exercised his rights under the non-exclusive copyright licence in a manner which adversely affects the operations of the lease holder, that licence is revocable on the giving of a period of not less than three months notice.	Not Triggered	Based on discussions with the Environment and Community Co-ordinator there has been no exploration during the audit period.	
15	**Subsidence Control Zone**			
	(a) Ground Vibration The lease holder must ensure that the ground vibration peak particle velocity generated by any blasting within the lease area does not exceed 10 mm/second and does not exceed 5 mm/second in more than 5% of the total number of blasts over a period of 12 months at any dwelling or occupied premises as the case may be, unless determined otherwise by the Department of Environment and Climate Change. (b) Blast Overpressure The lease holder must ensure that the blast overpressure noise level generated by any blasting within the lease area does not exceed 120 dB (linear) and does not exceed 115 dB (linear) in more than 5% of the total number of blasts over a period of 12 months, at any dwelling or occupied premises, as the case may be, unless determined otherwise by the Department of Environment and Climate Change.	Not Triggered	* According to 2016, 2017 and 2018 Annual Reviews no blasting undertaken at the surface of the operation. * Noise Management Plan (NMP) does not include requirement for ground vibration or blast overpressure monitoring.	
16	**Safety**			
	Operations must be carried out in a manner that ensures the safety of persons or stock in the vicinity of the operations. All drill holes shafts and excavations must be appropriately protected, to the satisfaction of the Director-General, to ensure that access to them by persons and stock is restricted. Abandoned shafts and excavations opened up or used by the lease holder must be filled in or otherwise rendered safe to a standard acceptable to the Director-General.	Not Triggered	This is not a safety audit.	
17	**Exploratory Drilling**			

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	(a) At least twenty eight days prior to commencement of drilling operations the lease holder must notify the relevant Department of Water and Energy Regional Hydrologist of the intention to drill exploratory drill holes together with information on the location of the proposed holes. (b) If the lease holder drills exploratory drill holes he must satisfy the Director-General that:- (i) all cored holes are accurately surveyed and permanently marked in accordance with Departmental guidelines so that their location can be easily established; (ii) all holes cored or otherwise are sealed to prevent the collapse of the surrounding surface; (iii) all drill holes are permanently sealed with cement plugs to prevent surface discharge of groundwaters; (iv) if any drill hole meets natural or noxious gases it is plugged or sealed to prevent their escape; (v) if any drill hole meets an artesian or sub-artesian flow it is effectively sealed to prevent contamination of aquifers. (vi) once any drill hole ceases to be used the hole must be sealed in accordance with Departmental guidelines. Alternatively, the hole must be sealed as instructed by the Director-General. (vii) once any drill hole ceases to be used the land and its _immediate vicinity is left in a clean, tidy and stable condition.	Not Triggered	Based on site communications and 2016, 2017 & 2018 Annual Reviews no exploration drilling in this lease area.	
18	**Prevention of Soil Erosion and Pollution**			
	Operations must be carried out in a manner that does not cause or aggravate air pollution, water pollution (including sedimentation) or soil contamination or erosion, unless otherwise authorised by a relevant approval, and in accordance with an accepted Mining Operations Plan. For the purpose of this condition, water shall be taken to include any watercourse, waterbody or groundwaters. The lease holder must observe and perform any instructions given by the Director-General in this regard.	Non-Compliant (Low Risk)	* Management plans prepared and implemented for the site. Management plans include management controls to minimise any harm to the environment that may result from the operation of the site * During the site inspection noted management controls being implemented at the site: -No visible dust; -Water cart used on site to reduce dust; -Majority of the pit top is concreted; -Covered conveyor; -Bunded chemicals (Photo 7); -Rubbish disposed of in labelled waste bins; -Oily water separator; -Noise mitigation measures implemented at site (Photo 8). *Water quality, dust and monitoring undertaken at the site. <u>Non-compliant</u>: During audit period non-compliances with noise and water quality criteria.	Ensure all practicable measures are undertaken to reduce noise and water quality exceedances (refer to specific recommendations relating to noise and water quality).
19	**Transmission lines, Communication lines and Pipelines**			
	Operations must not interfere with or impair the stability or efficiency of any transmission line, communication line, pipeline or any other utility on the lease area without the prior written approval of the Director-General and subject to any conditions he may stipulate.	Not Triggered	*During the site inspection, LakeCoal did not appear to be interfering with or impairing the stability or efficiency of any transmission line, communication line, pipeline or any other utility on the lease area *According to site communications and the 2016, 2017 & 2018 Annual Reviews no transmission lines, communication lines, pipelines or any other utilities were interfered with or impaired during the audit period.	
20	**Fences, Gates**			
	(a) Activities on the lease must not interfere with or damage fences without the prior written approval of the owner thereof or the Minister and subject to any conditions the Minister may stipulate. (b) Gates within the lease area	Not Triggered	*During the site inspection, LakeCoal did not appear to be interfering or damaging any fences or gates *According to site communications and the 2016, 2017 & 2018 Annual Reviews the operations did not interfere or damage any fences or gates during the audit period	
21	**Roads and Tracks**			
	(a) Operations must not affect any road unless in accordance with an accepted Mining Operations Plan or with the prior written approval of the Director-General and subject to any conditions he may stipulate. (b) The lease holder must pay to the designated authority in control of the road (generally the local council or the Roads and Traffic Authority) the cost incurred in fixing any damage to roads caused by operations carried out under the lease, less any amount paid or payable from the Mine Subsidence Compensation Fund.	Not Triggered	(a) During site inspection, LakeCoal did not appear to be affecting any roads. Coal is delivered to Vales Point Power Station via a conveyor, according to 2016, 2017 & 2018 Annual Reviews. (b) VPA paid to the Central Coast Council	
22	**Trees and Timber**			
	(a) The lease holder must not fell trees, strip bark or cut timber on the lease without the consent of the landholder who is entitled to the use of the timber, or if such a landholder refuses consent or attaches unreasonable conditions to the consent, without the approval of a warden. (b) The lease holder must not cut, destroy, ringbark or remove any timber or other vegetative cover on the lease area except such as directly obstructs or prevents the carrying on of operations. Any clearing not authorised under the Mining Act 1992 must comply with the provisions of the Native Vegetation Act 2003. (c) The lease holder must obtain all necessary approvals or licences before using timber from any Crown land within the lease area.	Not Triggered	*No clearing undertaken at the site during the audit period, according to the 2016, 2017 & 2018 Annual Reviews. *During site inspection noted no recent clearing.	
25	**Resource Recovery**			

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	(a) Notwithstanding any description of mining methods and their sequence or of proposed resource recovery contained within the Mining Operations Plan, if at any time the Director-General is of the opinion that minerals which the lease entitles the lease holder to mine and which are economically recoverable at the time are not being recovered from the lease area, or that any such minerals which are being recovered are not being recovered to the extent which should be economically possible or which for environmental reasons are necessary to be recovered, he may give notice in writing to the lease holder requiring the holder to recover such minerals. (b) The notice shall specify the minerals to be recovered and the extent to which they are to be recovered, or the objectives in regard to resource recovery, but shall not specify the processes the lease holder shall use to achieve the specified recovery. (c) The lease holder must, when requested by the Director-General, provide such information as the Director-General may specify about the recovery of the mineral resources of the lease area. (d) The Director-General shall issue no such notice unless the matter has firstly been thoroughly discussed with and a report to the Director-General has incorporated the views of the lease holder. (e) The lease holder may object to the requirements of any notice issued under this condition and on receipt of such an objection the Minister shall refer it to a Warden for inquiry and report under Section 334 of the Mining Act, 1992. (f) After considering the Warden's report the Minister shall decide whether to withdraw, modify or maintain the requirements specified in the original notice and shall give the lease holder written notice of the decision. The lease holder must comply with the requirements of this notice.	Compliant	* During audit period coal operations related to the underground linkage project * Underground linkage project to optimise recovery	
26	**Indemnity**			
	The lease holder must indemnify and keep indemnified the Crown from and against all actions, suits, claims and demands of whatsoever nature and all costs, charges and expenses which may be brought against the lease holder or which the lease holder may incur in respect of any accident or injury to any person or property which may arise out of the construction, maintenance or working of any workings now existing or to be made by the lease holder within the lease area or in connection with any of the operations notwithstanding that all other conditions of this lease shall in all respects have been observed by the lease holder or that any such accident or injury shall arise from any act or thing which the lease holder may be licensed or compelled to do.	Note		
28	**Security**			
	(a) The single security in the sum of $1,905,000 must be given and maintained with the Minister by the lease holder for the purpose of ensuring the fulfilment by the lease holder of obligations under CCL 719 and CCL 721. If the lease holder fails to fulfil any one or more of the obligations under this lease, then the security held may be applied at the discretion of the Minister towards the cost of fulfilling such obligations. For the purpose of this clause the lease holder shall be deemed to have failed to fulfil the obligations of the lease if the lease holder fails to comply with any condition or provision hereof, any provision of the Act or regulations made thereunder or any condition or direction imposed or given pursuant to a condition or provision hereof or of any provision of the Act or regulations made thereunder. (b) The lease holder must provide the security required by sub-clause (a) in one of the following forms: (i) cash, (ii) a security certificate in a form approved by the Minister and issued by an authorised deposit-taking institution	Compliant	* "Rehabilitation Cost Calculation Tool Mannering (2015)" indicates $3,879,000 security for 2015-2018 MOP * "Chain Valley Colliery (Mannering Surface Areas) Underground RCE Report" (Mannering RCE) indicates $3,226,730 security for 2018-2020 MOP	
29	**Prescribed Dam**			

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	(a) Notwithstanding any Mining Operations Plan, the lease holder must not mine within any part of the lease area which is within the notification area of the Mannering Creek Ash Dam, Colongra Creek Ash Dam and Vales Point Ash Dam without the prior written approval of the Minister and subject lo any conditions he may stipulate. (b) Where the lease holder desires to mine within the notification area he must: (i) at least twelve (12) months before mining is to commence or such lesser time as the Minister may permit, notify the Minister of the desire to do so. A plan of the mining system to be implemented must accompany the notice; and (ii) provide such information as the Minister may direct. (c) The Minister must not, except in the circumstances set out in sub-paragraph (ii), grant approval unless sub-paragraph (i) of this paragraph has been complied with. This sub-paragraph is complied with if: (i) the Dams Safety Committee as constituted by Section 7 of the Dams Safety Act 1978 and the owner of the dam have been notified in writing of the desire to mine referred to in paragraph (b). {ii) the notifications referred lo in clause (a) are accompanied by a description or plan of the area to be mined. (iii) the Director-General has complied with any reasonable request made by the Dams Safety Committee or the owner of the dam for further information in connection with the mining proposal. (iv) the Dams Safety Committee has made its recommendations concerning the mining proposal or has informed the Minister in writing that it does not propose to make any such recommendations; and (v) where the Dams Safety Committee has made recommendations the approval is in terms that are: - in accordance with those recommendations; or - where the Minister does not accept those recommendations or any of them - in accordance with a determination under sub-paragraph (ii) of this paragraph. (vi) Where the Minister does not accept the recommendations of the Dams Safety Committee or where the Dams Safety Committee has failed to make any recommendations and has not informed the Minister in writing that it does not propose to make any recommendations, the approval shall be in terms that are, in relation to matters dealing with the safety of the dam: as determined by agreement between the Minister and the Minister administering the Dams Safety Act 1978; or - in the event of failure to reach such agreement - as determined by the Premier. (d) The Minister, on notice from the Dams Safety Committee, may at any time or times: (i) cancel any approval given where a notice pursuant to Section 18 of the Dams Safety Act 1978 is given. (ii) suspend for a period of time, alter, omit from or add to any approval given or conditions imposed.	Not Triggered	*During the audit period the Mannering Creek Ash Dam, Colongra Creek Ash Dam and Vales Point Ash Dam were not under mined.	
30	**Suspension of Mining Operations**			
	The holder of a consolidated mining lease may not suspend mining operations in the mining area other than in accordance with the consent of the Minister.	Compliant	*2016 & 2017 Annual Reviews describe mining activity related to the underground linkage. *Approved 2018 MOP states "Mining activities within the Mannering approval boundary will be limited to those required to operate the underground linkage and supporting tunnel network to allow coal conveyance, travel and ventilation to the Mannering pit top."	
31	**Cooperation Agreement**			
	The licence holder must make every reasonable attempt, and be able to demonstrate their attempts, to enter into a cooperation agreement with the holder(s) of any overlapping petroleum title(s). The cooperation agreement should address but not be limited to issues such as: *access arrangements *operational interaction procedures dispute resolution *information exchange well location *timing of drilling *potential resource extraction conflicts and rehabilitation issues.	Not Triggered	According to site communications, there are no petroleum titles that overlap CCL 721.	
Special Conditions				
32	**Barriers**			
	The lease holder, unless with the consent of the Minister and subject to such conditions as the Minister may impose, shall not conduct mining operations on those parts of the subject area within the highwater level subsidence control zone defined: (a) on the surface by the highwater level of Lake Macquarie and Pallamanaba Creek and a point 2.44 metres in elevation above that highwater level; (b) in the seam by a line defined by an angle of draw of 35° drawn landwards from the line drawn vertically beneath a point 2.44 metres in elevation above the highwater level of Lake Macquarie and Pallamanaba Creek; (c) in the seam by a line defined by an angle of draw of 35°drawn lakewards from the line drawn vertically beneath the highwater level of Lake Macquarie.	Compliant	(a) N/A-Mining operations not undertaken in this area. (b) N/A-Mining operations not undertaken in this area. (c) According to site communications mining operations were undertaken in the seam by a line defined by an angle of draw of 35°drawn lakewards from the line drawn vertically beneath the highwater level of Lake Macquarie (in the underground linkage). Approval was sought and granted by DPE to undertake the underground linkage (PA 06_0311 Mod 2).	
33	Any approval or consent given by the Minister including any approval or consent given pursuant to any condition or term contained in a lease consolidated into this lease to the effect that the lease holder may conduct mining operations on those parts of the subject area within the highwater level subsidence control zone as defined in Condition 32 shall be deemed to be a consent given for the purposes of the said Condition 32, subject to the same conditions of that approval or consent Provided however that this clause shall also apply to any barrier 60.35 metres wide within the said zone.	Note		
34	The lease holder shall not work or cause to be worked any seam of coal within the subject area without leaving, if the Minister by order given in writing to the lease holder so directs, a barrier of such width or a protective pillar or pillars of such size or sizes as is specified in the order, against any surface improvements or any feature whether natural or artificial.	Compliant	First workings only	
35	Unless with the consent of the Minister first had and obtained, and subject to such conditions as he may impose, the lease holder shall not conduct mining operations on those parts of the subject area: (a) beneath the main buildings of the Munmorah and Vales Point Power Stations constructed on the excepted surface of the subject area; (b) within the marginal zone which is the area contained by an angle of draw of 35°. measured outwards from the external walls of the main buildings of the Munmorah and Vales Point Power Station to the floor of the seam.	Not Triggered	LakeCoal did not undermine the main buildings of Munmorah and Vales Point Power Stations during the audit period	

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
36	Any approval or consent given by the Minister, including any approval or consent given pursuant to any condition. or term contained in a lease consolidated into this lease, to the effect that the lease holder may conduct mining operations on those parts of the subject area within the barrier defined in Condition 35 shall be deemed to be a consent given for the purposes of the said Condition 35, subject to the same conditions of that approval or consent.	Not Triggered	LakeCoal did not undermine the main buildings of the Munmorah and Vales Point Power Stations during the audit period	
37	The lease holder shall be limited to the following purposes and conditions within the specified areas described on Plan No. 06180 marked Plan 'B'. Condition 12 noted on Plan 'B' is replaced by Condition 37.	Not Triggered	LakeCoal did not undermine these areas during the audit period	

Consolidated Coal Lease 719

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
Mining Lease Conditions 2013				
1	**Notice to Landholders**			
	(a) Within a period of three months from the date of renewal of this mining lease, the lease holder must serve on each landholder a notice in writing indicating that this mining lease has been renewed and whether the lease includes the surface. A plan identifying each landholder and individual land parcel subject to the lease area, and a description of the lease area must accompany the notice. (b) If there are ten or more landholders, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this mining lease has been renewed; state whether the lease includes the surface and must contain a plan and description of the lease area. If a notice is made under condition 1(b), compliance with condition 1(a) is not required.	Not Triggered	Renewal outside of audit period	
2	**Rehabilitation**			
	Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	Not Triggered	Rehabilitation has not been undertaken at the site.	
3	**Mining Operations Plan and Annual Rehabilitation Report**			
	(a) The lease holder must comply with an approved Mining Operations Plan (MOP) in carrying out any significant surface disturbing activities, including mining operations, mining purposes and prospecting. The lease holder must apply to the Minister for approval of a MOP. An approved MOP must be in place prior to commencing any significant surface disturbing activities, including mining operations, mining purposes and prospecting. (b) The MOP must identify the post mining land use and set out a detailed rehabilitation strategy which: (i) identifies areas that will be disturbed; (ii) details the staging of specific mining operations, mining purposes and prospecting; (iii) identifies how the mine will be managed and rehabilitated to achieve the post mining land use; (iv) identifies how mining operations, mining purposes and prospecting will be carried out in order to prevent and or minimise harm to the environment; and (v) reflects the conditions of approval under: • the Environmental Planning and Assessment Act 1979; • the Protection of the Environment Operations Act 1997; and • any other approvals relevant to the development including the conditions of this mining lease. (c) The MOP must be prepared in accordance with the ESG3: Mining Operations Plan (MOP) Guidelines September 2013 published on the Department's website at www.resources.nsw.gov.au/environment (d) The lease holder may apply to the Minister to amend an approved MOP at any time. (e) It is not a breach of this condition if: (i) the operations which, but for this condition 3(e) would be a breach of condition 3(a), were necessary to comply with a lawful order or direction given under the Environmental Planning and Assessment Act 1979, the Protection of the Environment Operations Act 1997, the Mine Health and Safety Act 2004 l Coal Mine Health and Safety Act 2002 and Mine Health and Safety Regulation 2007 l Coal Mine Health and Safety Regulation 2006 or the Work Health and Safety Act 2011; and (ii) the Minister had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out. (f) The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must: (i) provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP; (ii) be submitted annually on the grant anniversary date (or at such other times as agreed by the Minister); and (iii) be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at www.resources.nsw.gov.au/envrionment. Note: The Rehabilitation Report replaces the Annual Environmental Management Report.	Non-Compliant (Low Risk)	(a) Site inspection indicates MOP is being implemented. * Approval letter from Resources Regulator (RR) (formerly DRE) dated 27 March 2015, for 2015-2018 MOP * Approval letter from RR dated 26 September 2018 for 2018-2020 MO (b) The MOP must: i) MOP plans; ii) MOP plans (3 series); iii) Mine Closure Plan to be prepared at least two years prior to the cessation of mining activities; iv) Section 3; v) Section 4.1; vi) have regard to any relevant guidelines adopted by the Director-General. (c) 2018-2020 MOP has been prepared generally in accordance with DRE (now Resources Regulator) ESG3: MOP Guidelines, dated September 2013. (d) N/A-MOP not amended during MOP period. (e) Non-compliant: Details could not be provided by LakeCoal about non-compliances with the MOP. (f) Admin Non-compliant: Annual Rehabilitation Reports have not been prepared by LakeCoal. Rehabilitation not undertaken at the site but no correspondence provided by LakeCoal stating that Annual Rehabilitation Reports are not required or that these are covered by other reports. Observation: The 2016, 2017 and 2018 Annual Reviews do not provide details of non-compliances with the MOP.	
4	The Proponent must comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of: (a) any reports, plans, programs or correspondence that are submitted in accordance with the conditions of this approval; and (b) the implementation of any actions or measures contained in these reports, plans, programs or correspondence.			

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	(a) The lease holder must submit a Compliance Report to the satisfaction of the Minister. The report must be prepared in accordance with any relevant guidelines or requirements published by the Minister for compliance reporting. (b) The Compliance Report must include: (i) the extent to which the conditions of this mining lease or any provisions of the Act or the regulations applicable to activities under this mining lease, have or have not been complied with; (ii) particulars of any non-compliance with any such conditions or provisions, (iii) the reasons for any such non-compliance; (iv) any action taken, or to be taken, to prevent any recurrence, or to mitigate the effects, of that non-compliance. (c) The Compliance Report must be lodged with the Department annually on the grant anniversary date for the life of this mining lease. (d) In addition to annual lodgement under condition 4(c) above, a Compliance Report: (i) must accompany any application to renew this mining lease under the Act; (ii) must accompany any application to transfer this mining lease under the Act; and (iii) must accompany any application to cancel, or to partially cancel, this mining lease under the Act. (e) Despite the submission of any Compliance Report under (c) or (d) above, the titleholder must lodge a Compliance Report with the Department at any date or dates otherwise required by the Minister. (f) A Compliance Report must be submitted one month prior to the expiry of this mining lease, where the licence holder is not seeking to renew or cancel this mining lease.	Not Triggered	Outside of the audit period. This document would need to have been prepared for the previous mining lease renewal. The CCL 719 was renewed by the RR in a letter dated 2 October 2015.	
5	**Environmental Incident Report**			
	(a) The lease holder must notify the Department of all: (i) breaches of the conditions of this mining lease or breaches of the Act causing or threatening material harm to the environment; and (ii) breaches of environmental protection legislation causing or threatening material harm to the environment (as defined in the Protection of the Environment Operations Act 1997), arising in connection with significant surface disturbing activities, including mining operations, mining purposes and prospecting operations, under this mining lease. The notification must be given immediately after the lease holder becomes aware of the breach. Note. Refer to www.resources.nsw.qov.au/environmenf for notification contact details. (b) The lease holder must submit an Environmental Incident Report to the Department within seven (7) days of all breaches referred to in condition 5(a)(i) and (ii). The Environmental Incident Report must include: (i) the details of the mining lease; (ii) contact details for the lease holder; (iii) a map identifying the location of the incident and where material harm to the environment has or is likely to occur; (iv) a description of the nature of the incident or breach, likely causes and consequences; (v) a timetable showing actions taken or planned to address the incident and to prevent future incidents or breaches referred to in 5(a). (vi) a summary of all previous incidents or breaches which have occurred in the previous 12 months relating to significant surface disturbing activities, including mining operations, mining purposes and prospecting operations under this mining lease. Note. The lease holder should have regard to any relevant Director General's guidelines in the preparation of an Environmental Incident Report. Refer to www.resources.nsw.qov.au/environmentfor further details. (c) In addition to the requirements set out in conditions 5(a) and (b), the lease holder must immediately advise the Department of any notification made under section 148 of the Protection of the Environment Operations Act 1997 arising in connection with significant surface disturbing activities including mining operations, mining purposes and prospecting operations, under this mining lease.	Administrative Non-Compliance	* Email from LakeCoal to DPE (RR integrated into DPE), dated 11 April 2019, reporting TSS exceedance at Point 1 on 2 April 2019. Detailed LakeCoal incident report attached to email. Admin Non-compliant: Noise exceedance on 11 August 2016 reported to DPE on 12 August 2016, according to 2016 Annual Review. Detailed incident report could not be provided by LakeCoal, therefore not able to determine when or if an incident report was submitted. * Noise exceedance on 29 August 2018 reported to DPE on same day (email to DPE Compliance Mailbox from LakeCoal dated 29 August 2018). Detailed LakeCoal incident report provided to DPE on 7 September 2018. Compliant as LakeCoal was granted an extension to provide the detailed report, via email from EPA dated 5 September 2016. * There were no incidents of hydrocarbon contamination, or significant spills reported in the 2016, 2017 and 2018 Annual Reviews Observation: Complaints/incident register indicates no incidents from June 2016 to April 2019.	* Ensure the compliant/incident register includes all incidents.
6	**Extraction Plan**			

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	(a) In this condition: (i) approved Extraction Plan means a plan, being: A. an extraction plan or subsidence management plan approved in accordance with the conditions of a relevant development consent and provided to the Secretary; or B. a subsidence management plan relating to the mining operations subject to this lease: I. submitted to the Secretary on or before 31 December 2014; and II. approved by the Secretary. (ii) relevant development consent means a development consent or project approval issued under the Environmental Planning & Assessment Act 1979 relating to the mining operations subject to this lease. (b) The lease holder must not undertake any underground mining operations that may cause subsidence except in accordance with an approved Extraction Plan. (c) The lease holder must ensure that the approved Extraction Plan provides for the effective management of risks associated with any subsidence resulting from mining operations carried out under this lease. (d) The lease holder must notify the Secretary within 48 hours of any: (i) incident caused by subsidence which has a potential to expose any person to health and safety risks; (ii) significant deviation from the predicted nature, magnitude , distribution, timing and duration of subsidence effects, and of the potential impacts and consequences of those deviations on built features and the health and safety of any person; or (iii) significant failure or malfunction of a monitoring device or risk control measure set out in the approved Extraction Plan addressing: A. built features; B. public safety; or c. subsidence monitoring.	Compliant	* Extraction Plan prepared outside of the audit period. * First workings only, therefore Extraction Plan not applicable to these operations - ie. The Linkage Project. * According to the Incidents/Complaints register no subsidence related incidents during the audit period. * 2016 & 2017 Annual Reviews state "No discernible subsidence impact from the LRP workings was observed during the reporting period." and subsidence monitoring results for Mannering Colliery included in the reports. Observation: The 2016 & 2017 Annual Reviews do not indicate where the subsidence monitoring data originated from and who undertook the subsidence monitoring.	A separate subsidence impact assessment report should be prepared annually and appended to the Annual Review. This report should be prepared or peer reviewed by a subsidence specialist. This should assess subsidence performance measures from the Project Approval
7	**Resource Recovery**			
	The lease holder must optimise recovery of the minerals that are the subject of this mining lease to the extent economically feasible.	Compliant	* During audit period coal operations related to the underground linkage project * Underground linkage project to optimise recovery	
8	**Group Security**			
	The Proponent must ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA. Notes: • Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works. • Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.	Non-Compliant (Low Risk)	* "Rehabilitation Cost Calculation Tool Mannering (2015)" indicates $3,879,000 security for 2015-2018 MOP * Non-compliant: "Chain Valley Colliery (Mannering Surface Areas) Underground RCE Report" (Mannering RCE) indicates $3,226,730 security for 2018-2020 MOP. Approval letter from RR for updated security could not be provided to SLR by LakeCoal.	
9	**Cooperation Agreement**			
	The lease holder must make every reasonable attempt, and be able to demonstrate its attempts, to enter into a cooperation agreement with the holder(s) of any overlapping title(s). The cooperation agreement should address but not be limited to issues such as: • access arrangements • operational interaction procedures • dispute resolution • information exchange • well location • timing of drilling • potential resource extraction conflicts; and • rehabilitation issues.	Not Triggered	According to site communications CCL 719 does not overlap with any other titles	
	Exploration Reporting			
	Note: Exploration Reports (Geological and Geophysical) The lease holder must lodge reports to the satisfaction of the Minister in accordance with section 163C of the Mining Act 1992 and in accordance with clause 57 of the Mining Regulation 2010. Reports must be prepared in accordance with Exploration Reporting: A guide for reporting on exploration and prospecting in New South Wales (Department of Trade and Investment; Regional Infrastructure and Services 2010).	Not Triggered	Based on site communications and 2016, 2017 & 2018 Annual Reviews no exploration during the audit period.	
	SPECIAL CONDITIONS Note: The standard conditions apply to all mining leases. The Division of Resources & Energy (DRE) reserves the right to impose special conditions, based on individual circumstances, where appropriate.	Note		
10	**Prescribed Dam**			

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
SCHEDULE 3 - SPECIFIC ENVIRONMENTAL CONDITIONS	(a) Notwithstanding any Mining Operations Plan, the lease holder must not mine within any part of the lease area which is within the notification area of the Colongra Creek Ash Dam without the prior written approval of the Minister and subject to any conditions stipulated. (b) Where the lease holder desires to mine within the notification area he or she must: (i) at least twelve (12) months before mining is to commence or such lesser time as the Minister may permit, notify the Minister of the desire to do so. A plan of the mining system to be implemented must accompany the notice; and (ii) provide such information as the Minister may direct. (c) The Minister must not, except in the circumstances set out in sub-paragraph (ii), grant approval unless sub-paragraph (i) of this paragraph has been complied with. This sub-paragraph is complied with if: (i) the Dams Safety Committee as constituted by Section 7 of the Dams Safety Act 1978 and the owner of the dam have been notified in writing of the desire to mine referred to in paragraph (b). (ii) the notifications referred to in clause (a) are accompanied by a description or plan of the area to be mined. (iii) the Director-General has complied with any reasonable request made by the Dams Safety Committee or the owner of the dam for further information in connection with the mining proposal. (iv) the Dams Safety Committee has made its recommendations concerning the mining proposal or has informed the Minister in writing that it does not propose to make any such recommendations; and (v) where the Dams Safety Committee has made recommendations the approval is in terms that are: in accordance with those recommendations; or where the Minister does not accept those recommendations or any of them - in accordance with a determination under sub-paragraph (ii) of this paragraph. (vi) Where the Minister does not accept the recommendations of the Dams Safety Committee or where the Dams Safety Committee has failed to make any recommendations and has not informed the Minister in writing that it does not propose to make any recommendations, the approval shall be in terms that are, in relation to matters dealing with the safety of the dam: as determined by agreement between the Minister and the Minister administering the Dams Safety Act 1978; or in the event of failure to reach such agreement - as determined by the Premier. (d) The Minister, on notice from the Dams Safety Committee, may at any time or times: (i) cancel any approval given where a notice pursuant to Section 18 of the Dams Safety Act 1978 is given. (ii) suspend for a period of time, alter, omit from or add to any approval given or conditions imposed.	Not Triggered	Mannering not mine within the Colongra Creek Ash Da	
11	**Petroleum**			
	Any proposed activity from time to time in regard to methane drainage and capture should be advised to the Department's Mine Safety Operations and Environmental Sustainability Units for consideration. Such activities may be subject to conditions relative to each site specific case.	Not Triggered	According to site communications during the linkage project methane was not captured and/or drained. 2016 and 2017 Annual Reviews confirm this.	
12	**Barriers**			
	The lease holder shall not work or cause to be worked any seam of coal within the subject area without leaving, if the Minister by order given in writing to the lease holder so directs, a barrier of such width or a protective pillar or pillars of such size or sizes as is specified in the order, against any surface improvements or any feature whether natural or artificial.	Compliant	First workings only completed during the audit period.	
13	**Subsidence Control Zone**			
	a) The lease holder, unless with the consent of the Minister and subject to such conditions as the Minister may impose, shall not conduct mining operations on those parts of the subject area within the highwater level subsidence control zone defined: i) on the surface by the highwater level of Lake Macquarie, Lake Munmorah, Karigan Creek and the South Pacific Ocean and a point 2.44 metres in elevation above that highwater level; ii) in the seam by a line defined by an angle of draw of 35° drawn landwards from the line drawn vertically beneath a point 2.44 metres in elevation above the highwater level of Lake Macquarie, Lake Munmorah, Karigan Creek and the South Pacific Ocean; iii) in the seam by a line defined by an angle of draw of 35° drawn lakewards from the line drawn vertically beneath the highwater level of Lake Macquarie and Lake Munmorah and seawards from a line drawn vertically beneath the highwater level of the South Pacific Ocean. b). Any approval or consent given by the Minister including any approval or consent given pursuant to any condition or term contained in a lease consolidated into this lease to the effect that the lease holder may conduct mining operations on those parts of the subject area within the highwater level subsidence control zone as defined in Condition 13 shall be deemed to be a consent given for the purposes of the said Condition 13, subject to the same conditions of that approval or consent. Provided however that this clause shall also apply to any barrier 60.35 metres wide within the said zone.	Compliant	(a) N/A-Mining operations not undertaken in this area (b) According to site communications mining operations were undertaken in the seam by a line defined by an angle of draw of 35°drawn lakewards from the line drawn vertically beneath the highwater level of Lake Macquarie (in the underground linkage). Approval was sought and granted by DPE to undertake the underground linkage (PA 06_0311 Mod 2).	
14	**Power Station**			
	a) The lease holder, unless with the consent of the Minister and subject to such conditions as the Minister may impose, shall not conduct mining operations on those parts of the subject area: i) beneath the main buildings of the Vales Point Power Station constructed on the excepted surface of the subject area; ii) within the marginal zone which is the area contained by an angle of draw of 35° measured outwards from the external walls of such buildings to the floor of the seam. b) Any approval or consent given by the Minister including any approval or consent given pursuant to any condition or term contained in a lease consolidated into this lease to the effect that the lease holder may conduct mining operations on those parts of the subject area within the barrier defined in Condition 15 shall be deemed to be a consent given for the purposes of the said Condition 15 subject to the same conditions of that approval or consent.	Not Triggered	Did not undermine the main buildings of Vales Point Power Stations during the audit period.	
15	**Details of Lands and Purposes**			
	The leases holder shall be limited to the following purposes and conditions within the specified areas described on the plan annexed hereto and marked "B" insofar as such areas relate to the surface and land below the surface to the depth/s specified on the plan.	Note		

Condition Number	Condition	Compliance Status	Evidence	Recommended Action
	<table><tr><th>COLUMN 1- AREAS</th><th>COLUMN 2- PURPOSES</th><th>COLUMN 3- CONDITIONS</th></tr><tr><td>Lands shown by red colour</td><td>Constructing, maintaining or using in connection with mining any of the following, namely bin, borehole, bridge, building, coal preparation plant, conveyor systems, dam, drain, drift, machinery, magazine, railway, reservoir, road, shaft, shaft appurtenances, telephone line, tramway, tunnel. The erection, maintenance and use of standards, posts, wires and appliances for the transmission of electricity. The dumping or depositing of coal, minerals, mine residues or tailings. The storing of fuel, machinery, tools, timber or equipment in connection with mining. Erecting dwellings for the use of persons employed on or about a mine or land subject to a lease for mining purposes. Laying, maintaining and using a pipeline or cable in connection with mining. The generation of electricity.</td><td>NIL</td></tr><tr><td>Lands shown by blue colour</td><td>Constructing, maintaining or using in connection with mining any of the following, namely borehole, building, dam, drain, machinery, road, shaft, shaft appurtenances and telephone line. The erection, maintenance and use of standards, posts, wires and appliances for the transmission of electricity. The storing of fuel, machinery, tools or equipment in connection with mining. Laying, maintaining and using a pipeline or cable in connection with mining. The generation of electricity.</td><td>NIL</td></tr><tr><td>Lands shown by green colour</td><td>Constructing, maintaining or using in connection with mining any of the following, namely bridge, building, dam, drain, machinery, road and telephone line. The erection, maintenance and use of standards, posts, wires and appliances for the transmission of electricity. Laying, maintaining and using a pipeline or cable in connection with mining.</td><td>NIL</td></tr></table>	Not Triggered	Not condition requirements	

APPENDIX C

Audit Certification Form

Development Name	Mannering Colliery
Development Consent No.	PA 06_0311
Description of Development	Underground Coal Mine
Development Address	Off Ruttleys Road, Doyalson North NSW 2262
Operator	Delta Coal
Operator Address	Off Ruttleys Road, Doyalson North NSW 2262
Title of Audit	Mannering Colliery 2019 Independent Environmental Audit

I certify that I have undertaken the independent Audit and prepared the contents of the attached independent Audit report and to the best of my knowledge:

The Audit has been undertaken in accordance with relevant approval condition(s) and in accordance with the Auditing standard AS/NZS ISO 19011:2014 and Post Approval Guidelines – Independent Audits

The findings of the Audit are reported truthfully, accurately and completely;

I have exercised due diligence and professional judgement in conducting the Audit;

I have acted professionally, in an unbiased manner and did not allow undue influence to limit or over-ride objectivity in conducting the Audit;

I am not related to any owner or operator of the development as an employer, business partner, employee, sharing a common employer, having a contractual arrangement outside the Audit, spouse, partner, sibling, parent, or child;

I do not have any pecuniary interest in the Audited development, including where there is a reasonable likelihood or expectation of financial gain or loss to me or to a person to whom I am closely related (i.e. immediate family);

Neither I nor my employer have provided consultancy services for the Audited development that were subject to this Audit except as otherwise declared to the lead regulator prior to the Audit; and

I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from fair payment) from any owner or operator of the development, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so.

Note.

The Independent Audit 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).

Signature	
Name of Lead / Principal Auditor	Chris Jones
Address	10 Kings Road, New Lambton NSW 2305, Australia
Email Address	cjones@slrconsulting.com
Auditor Certification (if relevant)	Principal Environmental Auditor
Date:	27 May 2019

APPENDIX D

Endorsement of SLR

NSW GOVERNMENT | Planning & Environment

Chris Armit
Environment and Community
Lake Coal
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MANNERING PARK NSW 2259

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Chain Valley Colliery and Mannering Colliery
2019 Independent Environmental Audit Scope and Team Endorsement

Dear Mr Armit,

Thank you for providing a copy of SLR's Independent Environmental Audit (IEA) proposal for Chain Valley and Mannering Collieries, for endorsement of the team in accordance with SSD 5465, as modified and PA 06_0311, as modified.

The Department has reviewed the information provided and endorses the scope of the IEA and proposed audit team with the following personnel:

- Chris Jones – Lead Auditor
- Tracey Ball – Senior Assistant Auditor
- Martin Davenport - Noise specialist

The Department has also requested that the audit team includes an independent subsidence specialist (endorsement pending) and their audit findings should be incorporated into the SLR report.

The Department expects that the audit will be conducted in accordance with the Independent Audit Guideline, October 2015. A copy of this guideline is available at: http://www.planning.nsw.gov.au/~/media/Files/DPE/Guidelines/independent-audit-guideline-2015-10-23.ashx\

Please ensure that your audit team consults with relevant agencies to ascertain any aspects that the agencies wish the audit to address. Evidence of agency consultation and clear referencing to audit findings in relation to any agency request is to be provided in the audit report.

Please note that the Chain Valley approval has a tighter timeframe for delivery of the audit report and response to audit recommendations (RAR) (6weeks for the date of inspection, unless otherwise agreed). Please ensure that the RAR includes responses to all non-compliances and auditor recommendations with clear timeframes (dd-mm-yyyy) for implementation of the proposed corrective action.

Please contact me if you require any further clarification.

Yours sincerely,

28/2/19.

Leah Cook
Team Leader - Compliance
As Nominee of the Secretary

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Appendix 10: Independent Environmental Audit Action Plan

INDEPENDENT ENVIRONMENTAL AUDIT ACTION PLAN 2019

Mannering Colliery

Non-compliance summary and recommendations Prepared by :

SLR Consulting

Confirmation and Due date Prepared by :

Delta Coal

December 2019

Version No: -v0.1
May 2019

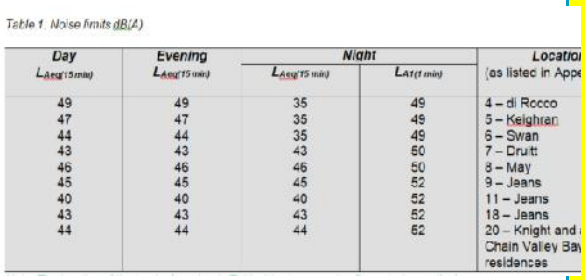
Action Table from Mannering Colliery IEA Audit Findings – Summary of Non-Compliances

Table 1 outlines the summary of non-compliances relating to the statutory conditions of Mannering Colliery, proposed recommendation, Delta confirmation and due date.

Table 1 Summary of Non-Compliances

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
PA 06_0311 (as modified)							
Schedule 2 Condition 8	"The Proponent must regularly review the strategies, plans and programs required under this approval and ensure that these documents are updated to incorporate measures to improve the environmental performance of the development and reflect current best practice in the mining industry. To facilitate these updates, the Proponent may at any time submit revised strategies, plans or programs for the approval of the Secretary. With the agreement of the Secretary, the Proponent may also submit any strategy, plan or program required by this approval on a staged basis. With the agreement of the Secretary, the Proponent may prepare a revision or stage of any strategy, plan or program required under this approval without undertaking consultation with all parties nominated under the applicable condition in this approval. Notes: • While any strategy, plan or program may be submitted on a staged basis, the Proponent must ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times. • If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.	Administrative Non-Compliance	The Proponent has not regularly reviewed the strategies, plans and programs required under this approval (i.e. Environmental Monitoring Program labelled Centennial Coal and dated November 2011, Energy Savings Action Plan labelled Centennial Mannering and dated 2011). Management Plans are out of date.	REC 1: Develop and implement a plan to update Mannering's Strategies, Plans and Programs.	REC 1: Agree 31/8/19	CA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 2 Condition 11	"The Proponent must ensure that all plant and equipment used on site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Non-Compliant (Low Risk)	(a) Downer maintenance records for radiation equipment dated 31 March 2017. * Electrical inspection records for ash analysers from 2016 to 2017. * Maintenance records: ""Mannering Front End Loaders work order history as at 2.5.19"" (b) During site inspection plant and equipment appeared to be operated in a proper and efficient manner. * Non-compliant: Complaint register dated 2018 indicated a number of complaints related to noise from the loader at the prep plant.	REC 2: Ensure that all plant and equipment used on site is operated in a proper and efficient manner.	REC 2: Disagree	N/A	N/A
Schedule 2 Condition 12	The Proponent must pay the affected councils $0.02 for each tonne of ROM coal produced by the project for the purpose of improving water quality in the Lake Macquarie catchment. This payment must be: (a) shared equally by the affected councils; (b) made by the end of March 2009, and at yearly intervals thereafter; (c) calculated on the ROM coal produced in the previous calendar year; and (d) subject to indexation by the Implicit Price Deflator, as published by the Australian Bureau of Statistics.	Administrative Non-Compliance	* Email from Council dated 2 April 2019 confirming VPA Payment for the 2018 period. * Admin Non-compliant: Receipt From Central Coast Council for VPA payment, dated 5 October 2016. Payment of Voluntary Planning Agreement (VPA) not made by the end of March 2016.	REC 3: Ensure VPA payments are made prior to the due date.	REC 3: Agree 31/3/20	CA – Add to Lawlex or Work Order system - TBA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 3 Condition 1	1. The Proponent must ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 1 at any residence on privately owned land.  Table 1 Noise limits dB(A) Day $L_{Aeq(15\,min)}$ / Evening $L_{Aeq(15\,min)}$ / Night $L_{Aeq(15\,min)}$ / Night $L_{A1(1\,min)}$ / Location (as listed in App) 49 / 49 / 35 / 49 / 4 – di Rocco 47 / 47 / 35 / 49 / 5 – Keighran 44 / 44 / 35 / 49 / 6 – Swan 43 / 43 / 43 / 50 / 7 – Druitt 46 / 46 / 46 / 50 / 8 – May 45 / 45 / 45 / 52 / 9 – Jeans 40 / 40 / 40 / 52 / 11 – Jeans 43 / 43 / 43 / 52 / 18 – Jeans 44 / 44 / 44 / 52 / 20 – Knight and Chain Valley Bay residences Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4.	Non-Compliant (Low Risk)	Non-compliant: According to 2016 Annual Review, on 12 August 2016 LakeCoal was advised by its independent noise monitoring consultant (Global Acoustics) that they had recorded a 3dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the evening monitoring on 11 August 2016 for Mannering Colliery. * According to 2016 Annual Review, on 29 August 2018, there was an exceedance recorded at 1dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the scheduled night monitoring. * According to the Noise Mitigation Study dated March 2019: -Noise mitigation works implemented by the previous operators in 2018 have decreased site noise emission levels at all neighbouring noise-sensitive receivers. -Current and proposed MC noise emissions are predicted to comply with the relevant long-term noise criteria outlined in MP 06_0311 at all assessment locations under worst case meteorological conditions.	REC 4: Continue to undertake noise monitoring. REC 5: Undertake follow-up actions if noise exceedances occur. REC 6: Continue to manage noise complaints. REC 7: Provide DPE with EMM Noise Mitigation Study dated March 2019.	REC 4: Agree REC 5: Agree REC 6: Agree REC 7: Agree, Completed 01/04/2019	CA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 3 Condition 3	The Proponent must prepare a Noise Monitoring Program for the project to the satisfaction of the Secretary. This program must: (a) be submitted to the Secretary by the end of September 2008; (a1) be revised in consultation with the EPA and be submitted to the Secretary by the end of April 2016; and (b) include the use of continuous and attended noise monitoring measures to monitor the performance of the project. The Proponent must implement the approved Noise Monitoring Program as approved from time to time by the Secretary.	Non-Compliant (Low Risk)	Preparation: * Updated (April 2016) NMP approved by DPE on 20 October 2008 according to LakeCoal email dated 4 March 2016 (a) NMP Section 1.2 * Updated (April 2016) Noise Monitoring Program (NMP) submitted to DPE on 29 April 2016 (b) NMP Section 5.1 & 5.2 Implementation: * Noise monitoring results included in the 2016, 2017 and 2018 Annual Reviews * Non-compliant: Only attended noise monitoring has been undertaken, according to the 2016, 2017 and 2018 Annual Reviews.	REC 8: Continuous noise monitoring should be undertaken in accordance with Mannering Colliery's Noise Management Plan.	REC 8 Agree: Find Correspondence with DPE on removal of Mine Cottages continuous noise monitoring equipment and reinstall if necessary. 31/08/19	CA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 3 Condition 8	The Proponent must prepare a Water Management Plan for the project to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with DPI Water by suitably qualified expert/s whose appointment/s have been approved by the Secretary; (b) be submitted the Secretary by the end of March 2009; and (c) include a: • Site Water Balance; • Erosion and Sediment Control Plan; • Surface Water Monitoring Plan; and • Groundwater Monitoring Program. The Proponent must implement the approved management plan as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: (a) Prepared in consultation with DPI Water - Section 4.1. * Document prepared by suitably qualified expert - Section 4.1. (b) Water Management Plan (WMP) approved by DPE on 9 March 2010. (c) Site Water Balance - Section 6.5. • Erosion and Sediment Control Plan - Section 7.0. • Surface Water Monitoring Plan - Section 8.1. • Groundwater Monitoring Program - Section 9.1. Observation: The Water Management Plan has not been updated since January 2013. Observation: Figure 1 does not clearly show clean and dirty water management at the site. Implementation: * During site inspection clean and water management system appeared to be effective in keeping clean water and dirty water separate. * Groundwater and surface water monitoring program undertaken during the audit period per Annual Reviews. * Section 11 of the Management Plan commits to reviewing the plan every three years. This has not been completed, therefore Admin Non - Compliance.	REC 9: The WMP needs to be updated. REC 10: Replace Figure 1 in the WMP with clear figures showing clean and dirty water management (i.e. replace with Figures 2.10 & Figure 2.11 from the 2018 Annual Review).	REC 9: Agree: 31/10/19 REC10: Agree: 31/10/19	CA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 3 Condition 9	The Site Water Balance must: (a) include details of: • sources and security of water supply; • water use on site; • water management on site; and (b) investigate, assess and report on measures to minimise water use by the project, particularly potable water from the Wyong Shire town water supply.	Administrative Non-Compliance	Preparation: a) Sources of water supply - WMP Section 6.5. • Water use on site - WMP Section 6.1. • Water management on site - WMP Section 6.0. Admin Non-compliant: The water balance is outdated and does not reflect the current status of the site. Section 6.5 of the WMP references a Water Balance Assessment from December 2011. (b) Investigate, assess and report on measures to minimise water use by the project, particularly potable water from the Wyong Shire town water supply - Section 6.1 Implementation: * Water management system sited during site inspection.	REC 11: The Water Balance in the WMP needs to be reviewed as it's out of date.	REC11 Agree: 31/10/19	CA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 3 Condition 11	The Surface Water Monitoring Plan must include: (a) detailed baseline data on surface water flows and quality in creeks and other waterbodies that could be affected by the project; (b) surface water impact assessment criteria; (c) a program to monitor the impact of the project on surface water flows and quality; and (d) procedures for reporting the results of this monitoring.	Non-Compliant (Low Risk)	Preparation: (a) WMP Section 8.2. (b) WMP Section 8.1.1. (c) WMP Section 8.2. (d) WMP Section 8.3. Implementation: * Surface water monitoring program undertaken during the audit period per the 2016, 2017 and 2018 Annual Reviews. * LDP 001 sited during the field inspection. Non-compliant: Visual assessment of the unnamed creek (described in Section 8.2.1 of the WMP) is not undertaken every 6 months to monitor stability and erosion.	REC 12: Undertake visual assessment of the unnamed creek every 6 months, to monitor stability and erosion. A TARP should be developed in the next review of the WMP which outlines quantitative and qualitative triggers for the creek and erosion. REC 13: Include results of the visual assessment of the unnamed creek in Annual Reviews. Include a reference again previous results. REC 14: Ensure monitoring undertaken at the "Downstream" monitoring location is undertaken every 12 months. REC 15: Include analysis results from monitoring undertaken at the "Downstream" monitoring location in Annual Reviews.	REC 12: Agree 31/08/19 REC 13: Agree 31/3/20 REC14: Agree 31/08/19 REC15: Agree 31/3/20	CA	REC 12: 100% REC 13: Agree 31/3/20 REC14: 100% REC15: Agree 31/3/20

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 3 Condition 17	The Proponent must prepare an Air Quality Monitoring Program for the project to the satisfaction of the Secretary. This program must: (a) be submitted to the Secretary by the end of September 2008; and (b) use dust deposition gauges to monitor the performance of the project. The Proponent must implement the approved monitoring program as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: * Air Quality Monitoring Program included as Section 3 of the AQMP, dated December 2012. This is too long between reviews. It was not updated following the 2013 or 2016 audits. Admin Non - Compliance. * AQMP approved by DPE on 20 October 2008, according to LakeCoal email dated 4 March 2016. * List of dust deposition gauges included in Section 3 of the AQMP. Implementation: * Monitoring results from deposition gauges reported in the 2016, 2017 and 2018 Annual Reviews.	*Nil recommendation*	*Action:* Update Air Quality Management Plan 31/8/19	CA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 3 Condition 18	The Proponent must prepare a Heritage Management Plan for the project to the satisfaction of the Secretary. This Plan must: (a) be prepared in consultation with any relevant Aboriginal stakeholders; (b) be submitted, prior to 31 March 2013, for approval to the Secretary; (c) include consideration of the Aboriginal and non-Aboriginal cultural context and significance of the site; (d) detail the responsibilities of all stakeholders; and (e) include programs/procedures and management measures for: • dealing with previously unidentified Aboriginal objects (excluding human remains), including any need to halt works in the vicinity, assessment of significance, determination of appropriate mitigation measures (by a qualified archaeologist in consultation with Aboriginal stakeholders), re-commencement of works, notifying OEH, and registering the new site(s) in the OEH AHIMS register; • dealing with any human remains which may be discovered, including halting of works in the vicinity; notifying NSW Police, OEH, the Department and Aboriginal stakeholders; and not re-commencing any works in the vicinity unless authorised; • heritage induction for construction personnel (including procedures for keeping records of inductions); • ongoing Aboriginal consultation and involvement (including procedures for keeping records of this); • appropriate identification, management, conservation and protection of both Aboriginal and non-Aboriginal heritage items identified on the site; and • dealing with previously unidentified non-Aboriginal heritage items which may be discovered during the project. The Proponent must implement the approved management plan as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: * Approval letter from DPE dated 26/11/2012 for Aboriginal Cultural Heritage Management Plan (ACHMP) (dated November 2012). It was not updated following the 2013 or 2016 audits. Admin Non - Compliance. * Approval letter from DPE dated 10 September 2013 for Non-Indigenous Heritage Management Plan (dated February 2013). (a) ACHMP - Section 6.0. (b) N/A - Outside of the audit period. (c) ACHMP - Attachment 3. Non-Indigenous Heritage Management Plan - Section 4. (d) ACHMP - Section 16. Non-Indigenous Heritage Management Plan - Section 3. (e) ACHMP - Section 6, 7, 13 and 17.2. Non-Indigenous Heritage Management Plan - Section 3, 6.1 & 6.2. * Observation: ACHMP was last updated November 2012 and is labelled Centennial and contains areas which are not relevant to the Mannering site. * Observation: Non-Indigenous Heritage Management Plan was last updated February 2013 is labelled Centennial. Implementation:	REC 16: Update the ACHMP to make it reflective of the Mannering site only. REC 17: Update the Non-Indigenous Heritage Management Plan	REC16: Agree 31/08/19 REC17: Agree 31/08/19	CA	REC16: 100% REC17: 100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 3 Condition 22	The Proponent must prepare a Greenhouse and Energy Efficiency Plan for the project to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with EPA and generally in accordance with the Guidelines for Energy Savings Action Plans (DEUS 2005, or its latest version); (b) be submitted to the Secretary for approval by the end of September 2008; (c) include a program to monitor greenhouse gas emissions and energy use generated by the project; (d) include a framework for investigating and implementing measures to reduce greenhouse gas emissions and energy use at the site; and (e) describe how the performance of these measures would be monitored over time. The Proponent must implement the approved management plan as approved from time to time by the Secretary.	Administrative Non-Compliance	<u>Preparation:</u> (a) N/A - Prepared outside of audit period (b) Energy Savings Action Plan (ESAP) was approved by DPE on 20 October 2008 according to LakeCoal email dated 4 March 2016 (c) ESAP - Page 17, 22 (d) ESAP - Page 4 (e) ESAP - Page 4 <u>Admin Non-Compliant</u>: The methodology to monitor greenhouse gas emissions generated by the project is not clearly stated in the ESAP. * The ESAP has not been reviewed since 2008 and is labelled Centennial Mannering <u>Implementation</u>: *According to site communications, energy savings due to minor operations completed during the audit period *Greenhouse gas emissions reported in 2016, 2017 and 2018 Annual Reviews.	REC 18: Assess the relevance of the Energy Savings Action Plan (ESAP) and whether it requires updating or incorporation into the sites Air Quality Management Plan (AQMP).	REC18: Agree 31/08/19	CA	REC18: 100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 5 Condition 1	The Proponent must revise an Environmental Management Strategy for the project. This strategy must: (a) be submitted for approval to the Secretary prior to 30 June 2013; (b) provide the strategic framework for the environmental management of the project; (c) identify the statutory approvals that apply to the project; (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project; (e) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the project; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the project; • respond to any non-compliance; and • respond to emergencies; and (f) include: • copies of any strategies, plans and programs approved under the conditions of this approval; and • a clear plan depicting all the monitoring required to be carried out under the conditions of this approval. The Proponent must implement the approved management strategy as approved from time to time by the Secretary.	Administrative Non-Compliance	Preparation: * Approval letter from DPE dated 10 September 2013 for the Environmental Management Strategy (EMS). It was not updated following the 2013 or 2016 audits. Admin Non - Compliance. (a) EMS submission letter dated 26 June 2013 (b) EMS - Section 1.0 (c) EMS - Section 4.0 (d) EMS - Section 5.0 (e) EMS - Section 8.1, 8.2, 8.3, 8.6 and 8.7 (f) EMS - Section 9.0, 12.0 and copies of management plans maintained on the Mannering Colliery website Admin Non-compliant: Table 9 and 10 list the incorrect monitoring frequency for conductivity, TSS, pH and Oil & Grease Observation: The EMS was last reviewed in September 2013 and is labelled Centennial Mannering Implementation: * Results from environmental monitoring (dust, noise, surface water and groundwater) reported in 2016, 2017 and 2018 Annual Reviews. * Management plans reviewed and assessed as part of this audit. * Complaints/Incidents	REC 19: Review the Environmental Management Strategy (EMS). REC 20: Include in the reviewed EMS the incorrect monitoring frequency for conductivity, TSS, pH and Oil & Grease	REC19: Agree 31/08/19 REC20: Agree 31/08/19	CA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 5 Condition 2	The Proponent must ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data; (b) a description of: • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (d) a program to monitor and report on the: • impacts and environmental performance of the project; • effectiveness of any management measures (see (c) above); (e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; (f) a protocol for managing and reporting any: • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and (g) a protocol for periodic review of the plan. Note: The Secretary may waive some of these requirements if they are unnecessary for particular management plans.	Administrative Non-Compliance	(a) WMP: Section 8.2, LMP: Section 6.1, ACHMP: Attachment 3, Non-Indigenous CHMP: Section 4.0 & 5.0 (b) WMP: Section 4.0 & 8.0, LMP: Section 2, ACHMP: Attachment 3, Non-Indigenous CHMP: Section 1.2 (c) WMP: Section 8.0 & 9.0, LMP: Section 4.4 & 6.2, ACHMP: Attachment 3, Non-Indigenous CHMP: Section 6.0 (d) WMP: Section 8.0, 9.3 & 9.4, Non-Indigenous CHMP: Section 7.1 Admin Non-compliant: The LMP & ACHMP does not include reporting mechanisms (i.e. Annual Review) (e) LMP: Section 9.1, ACHMP: Section 13.0, Non-Indigenous CHMP: Section 6.2 Admin Non-compliant: The WMP does not include a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible (f) LMP: Section 9.1 & 7.1, ACHMP: Section 13.0 & 18.0, Non-Indigenous CHMP: Section Admin Non-compliant: The WMP does not include a protocol for managing and reporting any incidents, complaints, non-	REC 21: All management plans require updating due to the length of time since the previous reviews. REC 22: Ensure there is a cross referencing table covering this condition in management plans. REC 23: Additional detail including Trigger, Action, Response Tables (contingency plan) should be developed in the next round of management plan updates. REC 24: Include in the LMP and ACHMP reporting mechanisms (i.e. Annual Review). REC 25: Include in the WMP a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible. REC 26: Include in the WMP a protocol for managing and reporting any incidents, complaints, non-compliances with statutory requirements; and exceedances of the impact assessment criteria and/or performance criteria. REC 27: Include a complaints handling procedure in the include ACHMP. REC 28: Include a protocol for periodic review of the ACHMP. REC 29: Ensure all management plans required under PA 06_0311 detail and consider the management condition.	REC21: Agree 31/08/19 REC22: Agree 31/08/19 REC23:Agree 31/08/19 REC24: Agree 31/08/19 REC25: Agree 31/08/19 REC26: Agree 31/08/19 REC27:Agree 31/08/19	CA	REC21: 100% REC22: 100% REC23:100% REC24: 100% REC25: 100% REC26: 100% REC27:100% REC28:100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 5 Condition 3	By the end of March each year, or other timing as may be agreed by the Secretary, the Proponent must submit a report to the Department reviewing the environmental performance of the project to the satisfaction of the Secretary. This review must: (a) describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current financial year; (b) include a comprehensive review of the monitoring results and complaints records of the project over the past calendar year, which includes a comparison of these results against the: • the relevant statutory requirements, limits or performance measures/criteria; • requirements of any plan or program required under this approval; • the monitoring results of previous years; and • the relevant predictions in the documents listed in condition 2 of Schedule 2; (c) identify any non-compliance over the past year, and describe what actions were (or are being) taken to ensure compliance; (d) identify any trends in the monitoring data over the life of the project; (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and (f) describe what measures will be implemented over the current financial year to improve the environmental performance of the project.	Administrative Non-Compliance	Preparation: * Approval letter from DPE for 2016 Annual Review, dated 6 July 2017. * Approval letter from DPE for 2017 Annual Review, dated 20 March 2018. Admin Non-compliant: 2016 Annual Review not submitted by March 31 2017. Submission email from LakeCoal to DPE dated 30 April 2017. * Letter from LakeCoal to DPE dated 29 March 2019 stating Annual Review uploaded on the Mannering Colliery website. * Email from LakeCoal to DPE dated 30 March stating Annual Review uploaded on the Mannering Colliery website. (a) Section 2, 5 & 8 - 2016, 2017, 2018 Annual Reviews (b) Section 3 & 4 - 2016, 2017, 2018 Annual Reviews Admin Non-compliant: The Annual Reviews do not provide: * Clearly state the performance criteria for noise and water quality; * Requirements of plans/programs required under this approval for noise and water quality; * The monitoring results of previous years, for noise and water; and * The relevant predictions in environmental assessments for air	REC 29: Ensure Annual Reviews are submitted to DPE by 31 March. REC 30: Future Annual Reviews should clearly state noise and water quality performance criteria, and provide monitoring results against these. REC 31: Include in future Annual Reviews: - Requirements of plans/programs required under PA 06_0311 for noise and water quality; - The monitoring results of previous years, for noise and water; - The relevant predictions in environmental assessments for air quality, noise and water; - Trends in the monitoring data for air quality, noise and water, over the life of the project; and - Discrepancies between the predicted impacts in the EAs for air quality, noise and water, and actual impacts of the project. REC 32: The Annual Reviews are set out differently to the DPE Annual Review Guidelines (2015). Ensure table of contents matches the guidelines. REC 33: IEA Actions Plans should be included in every Annual Review going forward.	REC29: Agree 31/03/20 REC30: Agree 31/03/20 REC31:Agree31/03/20 REC32:Agree 31/03/20 REC33:Agree 31/03/20	CA	REC29: REC30: REC31: REC32: REC33:

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 5 Condition 4	Within 3 months of: (a) the submission of an annual review under Condition 3 above; (b) the submission of an incident report under Condition 6 below; (c) the submission of an audit under Condition 8 below; or (d) any modification to the conditions of this approval (unless the conditions require otherwise), the Proponent must review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary. Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.	Administrative Non-Compliance	Admin Non-compliant: Management plans have not been updated: (a) Within 3 months of the submission of the 2016 and 2017 Annual Reviews; (b) Since the submission of an incident (incidents described in the 2016 and 2017 Annual Reviews); (c) Since the submission of the 2016 IEA by Hansen Bailey; and (d) Since the modification to PA 06_0311 (Mod 4), from August 2016. These management plans include the WMP dated January 2013, LMP dated April 2016, ACHMP dated November 2012 and Non-Indigenous CHMP dated February 2013.	REC 34: Include statement in future Annual Reviews stating that Management Plans have been reviewed and state which management plans will or will not be updated within 3 months.	REC34: Agree 31/03/20	CA	0%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 5 Condition 6	The Proponent must notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incidents associated with the project, the Proponent must notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent must provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	Administrative Non-Compliance	Admin Non-compliant: Noise exceedance on 11 August 2016 reported to DPE on 12 August 2016, according to 2016 Annual Review. Detailed incident report could not be provided by LakeCoal, therefore not able to determine when or if an incident report was submitted. * Noise exceedance on 29 August 2018 reported to DPE on same day (email to DPE Compliance Mailbox from LakeCoal dated 29 August 2018). Detailed LakeCoal incident report provided to DPE on 7 September 2018. Compliant as LakeCoal was granted an extension to provide the detailed report, via email from EPA dated 5 September 2016. * Email from LakeCoal to DPE, dated 11 April 2019, reporting TSS exceedance at Point 1 on 2 April 2019. Detailed LakeCoal incident report attached to email. Observation: Complaints/incidents register indicates no incidents during the audit period.	REC 35: Ensure all incidents are reported within the required timeframe. REC 36: Ensure the complaints/incidents register includes all incidents.	REC 35 Agree REC 36: Agree,	CA	REC 36: 100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 5 Condition 9	Within 12 weeks of commissioning this audit, or as otherwise agreed by the Secretary, the Proponent must submit a copy of the audit report to the Secretary, together with its response to any recommendations contained in the audit report.	Administrative Non-Compliance	* Correspondence indicating when the Hansen Bailey IEA report was submitted to DPE could not be provided by LakeCoal. Correspondence indicating requesting/granting extension could not be provided. * According to DPE letter dated 28 January 2016 IEA audit was due to be completed on 30 March 2016. * Hansen Bailey IEA report dated July 2016. * Mannering Coal IEA – Response to Audit Recommendations dated 2 September 2016. * Response to Audit Recommendations to accompany submission of IEA Report. * Admin Non-compliant: Hansen Bailey IEA report not submitted within required timeframe. No submission letter provided to SLR. For the 2019 IEA, SLR were endorsed by the DPE on 28 February 2019. SLR were officially commissioned by LakeCoal -Pty Ltd Administrators Appointed on 5 March 2019, when a purchase order was granted. Therefore 12 weeks from this date is 28 May 2019 for submission.	REC 37: Ensure future IEA reports are submitted within the required timeframe.	REC 37: Agree	CA – Add to Work Order/Lawlex	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Schedule 5 Condition 10	The Proponent must: (a) make copies of the following publicly available on its website: • the documents referred to in condition 2 of Schedule 2; • all relevant statutory approvals for the project; • all approved strategies, plans and programs required under the conditions of this approval; • a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any approved plans or programs required under the conditions of this or any other approval; • a complaints register, which is to be updated on a monthly basis; • minutes of CCC meetings; • the annual reviews required under this approval; • any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit; and • any other matter required by the Secretary; and (b) keep this information up-to-date, to the satisfaction of the Secretary.	Administrative Non-Compliance	Admin Non-compliant: The following documents are not included on the project (LakeCoal) website: * The documents referred to in condition 2 of Schedule 2 (EAs for the original project and Mod 1 - Mod 4); * Up-to-date Complaints Register. The Register only includes complaints up to February 2019; * CCC minutes for 2017, 2018 and 2019; * 2016 Audit Action Plan; * Noise monitoring data not included in the Monthly Website Report; and * 2018 - 2020 MOP. New Delta Coal website checked on 13 May 2018 and the following documents are not included on the website: * The documents referred to in condition 2 of Schedule 2 (EAs for the original project and Mod 1 - Mod 4); * Complaints Register (link not working); * Noise monitoring data not included in the Monthly Website Report; and * EMS and Management Plans (only PIRMP up on website).	REC 38: Include the following documentation on the project website: * The documents referred to in condition 2 of Schedule 2 (EAs for the original project and Mod 1 - Mod 4); * Up-to-date Complaints Register. The Register only includes complaints up to February 2019; * CCC minutes for 2017, 2018 and 2019; * 2016 Audit Action Plan; * Noise monitoring data not included in the Monthly Website Report; and * 2018 - 2020 MOP.	REC38: Agree 31/08/19	JB / CA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
APPENDIX 4B: ALTERNATE NOISE CONDITIONS 1	Table 1: Noise limits dB(A) Day $L_{Aeq(15\ min)}$ / Evening $L_{Aeq(15\ min)}$ / Night $L_{Aeq(15\ min)}$ / Night $L_{A1(1\ min)}$ / Location 40 / 40 / 40 / 49 / 4 – di Rocc 43 / 43 / 41 / 49 / 5 – Keighra 42 / 42 / 41 / 49 / 6 – Swan 39 / 39 / 39 / 47 / 7 – Druitt 46 / 46 / 46 / 47 / 8 – May 41 / 41 / 41 / 51 / 9 – Jeans 39 / 39 / 39 / 49 / 11 – Jeans 39 / 39 / 39 / 51 / 18 – Jeans 40 / 40 / 40 / 51 / 20 – Knight other Chain Bay resider Note: The location of the land referred to in Table 1 is shown on the figure in Appendix 4	Non-Compliant (Low Risk)	* Recommencement of underground coal extraction at Mannering Colliery until 18 months thereafter is; April 2016 till October 2017. * Non-compliant: According to 2016 Annual Review, on 12 August 2016 LakeCoal was advised by its independent noise monitoring consultant (Global Acoustics) that they had recorded a 3dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the evening monitoring on 11 August 2016 for Mannering Colliery. * Noise complaints increased during the audit period, with 0 noise complaints in 2016 and 2017, but 10 complaints in 2018, and 10 complaints from January 2019 to March 2019.	REC 39: Prepare a report to determine what further actions can be undertaken to reduce noise exceedances and noise complaints.	REC39: Report submitted to DPE-Compliance 1/4/2019	CA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
APPENDIX 4B: ALTERNATE NOISE CONDITIONS 2	Table 2: Noise limits dB(A) Day $L_{Aeq(15\ min)}$ / Evening $L_{Aeq(15\ min)}$ / Night $L_{Aeq(15\ min)}$ / Night $L_{A1(1\ min)}$ / Location 40 / 40 / 40 / 49 / 4 – ci Rocco 41 / 41 / 41 / 49 / 5 – Keighran 41 / 41 / 41 / 49 / 6 – Swan 39 / 39 / 39 / 47 / 7 – Druitt 45 / 45 / 43 / 47 / 8 – May 41 / 41 / 41 / 51 / 9 – Jeans 39 / 39 / 39 / 49 / 11 – Jeans 39 / 39 / 39 / 51 / 18 – Jeans 40 / 40 / 40 / 51 / 20 – Knight a other Chain V Bay residenc Note: The location of the land referred to in Table 2 is shown on the figure in Appendix 4.	Non-Compliant (Low Risk)	Non-compliant: According to 2016 Annual Review, on 29 August 2018, there was an exceedance recorded at 1dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the scheduled night monitoring. * Noise complaints increased during the audit period, with 0 noise complaints in 2016 and 2017, but 10 complaints in 2018, and 10 complaints from January 2019 to March 2019.				

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
APPENDIX 4B: ALTERNATE NOISE CONDITIONS 3	The Proponent must prepare a report on all noise mitigation measures required to achieve the noise limits in Table 2 to the satisfaction of the Secretary. This report must: (a) be prepared by a suitably qualified and experienced acoustic consultant whose appointment has been approved by the Secretary; (b) be prepared in consultation with EPA, and submitted to the Department for approval within 6 months after recommencement of underground coal extraction; and (c) include an action plan for the implementation of any reasonable and feasible recommendations of the report. The Proponent must implement the noise mitigation measures prior to the expiry of the 18 month period referred to in condition 1 above.	Non-Compliant (Low Risk)	'* The Preliminary Noise Mitigation Options Report for the Mannering Colliery - Continuation of Mining Project dated 31 May 2017, prepared by Atkins Acoustics and Associates Pty Ltd could not be provided to SLR from Lake Coal * DPE approval letter dated 9 June 2017, for the Preliminary Noise Mitigation Options Report. Admin non-compliant: Acoustic consultant was not endorsed by DPE Non-compliant: Noise mitigation measures required to be undertaken by October 2017. According to site communications these mitigation measures were undertaken from 2017 to February 2019.	*Nil recommendation*			

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
APPENDIX 4B: ALTERNATE NOISE CONDITIONS 4	The Proponent must prepare a Noise Compliance Report for the project to the satisfaction of the Secretary. The report must: (a) be prepared by a suitably qualified acoustic consultant, whose appointment has been approved by the Secretary; (b) be prepared in consultation with EPA, and be submitted for approval within 6 months of the expiry of the 18 month period referred to in condition 1 above; and (c) investigate and evaluate the effectiveness of the noise mitigation measures required under condition 3 and compliance with the noise limits in Table 2.	Non-Compliant (Low Risk)	(a) Non-compliant: Letter of endorsement for EMM to undertake the 2019 Noise Mitigation Study could not be found by LakeCoal. (b) Non-compliant: The Noise Mitigation Study was not prepared in consultation with EPA and was not submitted for approval by March 2018. (c) According to the EMM Noise Mitigation Study dated March 2019: -Noise mitigation works implemented by the previous operators in 2018 have decreased site noise emission levels at all neighbouring noise-sensitive receivers. -Current and proposed MC noise emissions are predicted to comply with the relevant long-term noise criteria outlined in MP 06_0311 at all assessment locations under worst case meteorological conditions. -LAmax noise level events at the site are also predicted to remain below the relevant sleep disturbance criteria.	*Nil recommendation*			
PA 06_0311 Statement of Commitments (Mod 4)							

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Water Management	LakeCoal will undertake a review of the existing site water management system in consultation with the EPA. The water level within the sediment pond system will be monitored and kept at a relatively low operating level, such that the ponds can provide a detention function in a significant rainfall event. A visual assessment of the unnamed creek will be undertaken every 6 months to monitor stability and erosion. Where practicable, underground water levels will be recorded to monitor changes in the level of water stored in underground depressions and to verify that the rate of extraction is sufficient. The extraction of underground water from the mine workings will be undertaken in accordance with the Bore License (20BL172016) issued under the Water Act 1912. To enable on-going assessment of the quality of water discharged, the existing monitoring program will be maintained for the life of the Project with the following enhancements: • An assessment of the surrounding catchments summarising land uses and other background information to characterise an appropriate water quality; and • Annual monitoring of heavy metals at the monitoring location identified as 'Downstream'.	Non-Compliant (Low Risk)	* During site inspection noted that the sediment pond system has freeboard. Non-compliant: Visual assessment of the unnamed creek is not undertaken every 6 months to monitor stability and erosion. This requirement is included in the WMP. *2016, 2017 & 2018 Annual Reviews describe: -Groundwater extraction from bore 20BL172016. -Monitoring of groundwater extraction. -Section 8.2 of the WMP provides background information of the water quality of the unnamed creek. Non-compliant: Annual monitoring (i.e. monitoring every 12 months) of heavy metals not undertaken at the monitoring location identified as "Downstream". -ALS analytical results dated 18 April 2017, 22 November 2018, 12 March 2019, and include analysis results for heavy metals for monitoring location "Downstream". Observation: Monitoring results for the "Downstream" monitoring location is not included in Annual Reviews.	REC 40: Visual assessment of the unnamed creek is not undertaken every 6 months to monitor stability and erosion. This requirement is included in the WMP.	REC40: Agree 31/08/19	CA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Aboriginal Heritage	Activities will continue to be managed in accordance with the Colliery's Aboriginal Cultural Heritage Management plan (ACHMP). Given the Colliery's current ACHMP is integrated with other Centennial sites, a separate ACHMP will be developed. If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to cultural heritage in consultation with OEH. All relevant Centennial Mannering staff and contractors will be made aware of their statutory obligations for Aboriginal cultural heritage under the NP&W Act as part of the existing mine induction process. An Aboriginal Cultural Heritage Management Plan (ACHMP) will be developed and implemented for the identified Aboriginal heritage items within the Project Site in consultation with the relevant Aboriginal stakeholders. If additional sites are identified they will be assessed for cultural significance and be incorporated into the ACHMP. In the unlikely event that skeletal remains are identified, the NSW Police Coroner will be contacted to determine if the material is of Aboriginal origin. If determined to be Aboriginal, contact will be made with the OEH, a suitably qualified archaeologist and representatives of the relevant Aboriginal stakeholder groups to determine an action plan for the management of the skeletal remains and formulate management recommendations if required.	Administrative Non-Compliance	Admin non-compliant: A separate ACHMP has not been developed. It still covers other Centennial sites. * Mine-induced subsidence levels do not exceed 20 millimetres * "Lake Coal Surface Generic Surface Induction" and "Environmental Awareness Training" Assessment includes Aboriginal heritage aspects * Aboriginal Cultural Heritage Management Plan (ACHMP) developed for the identified Aboriginal heritage items within the Project Site. * ACHMP prepared in consultation with the relevant Aboriginal stakeholders (refer to Section 2.0).	*Nil recommendation*	See REC 1: 31/08/19		
European Heritage	If monitoring indicates that mine-induced subsidence levels exceed 20 millimetres, a review will be undertaken to identify any potential impacts to non-indigenous heritage. All relevant Centennial Mannering staff and contractors will be made aware of their statutory obligations for European cultural heritage under the Heritage Act 1977 as part of the existing mine induction process. If, during the course of development works, significant non-indigenous cultural heritage material is uncovered within the Project Site, the Heritage Branch of OEH will be notified and any required monitoring or management strategies instigated.	Administrative Non-Compliance	* Mine-induced subsidence levels do not exceed 20 millimetres * Admin Non-compliant: "Lake Coal Surface Generic Surface Induction" and "Environmental Awareness Training" Assessment does not include European heritage aspects.	REC 41: Include European heritage aspects in the "Lake Coal Surface Generic Surface Induction" and "Environmental Awareness Training" Assessment	REC41: Agree, 31/08/19	CA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
Monitoring	The Environmental Monitoring Program will be reviewed and updated, as required, to incorporate the commitments made in the Environmental Assessment and any additional consent conditions.	Administrative Non-Compliance	The Environmental Monitoring Program has not been reviewed and updated since November 2011, and does not to incorporate the commitments made in the Environmental Assessments (EAs) for Mod 1, Mod 2, Mod 3 & Mod 4, and any additional consent conditions (for these modifications).	REC 42: Update the Environmental Monitoring Program to incorporate any commitments made in the Environmental Assessments (EAs) for Mod 1, Mod 2, Mod 3 & Mod 4, and any additional consent conditions (for these modifications).	REC 42: Agree 31/08/19	CA	100%
EPL 191							
L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.	Non-Compliant (Low Risk)	Exceedance of TSS on 2 April 2019. Exceedance constitutes a 'pollution' of waterways based on the POEO Act.	REC 43: Continue to undertake mitigation measures to comply with section 120 of the Protection of the Environment Operations Act 1997.	REC 43: Agree	CA	100%
L2.4	POINT 1 Pollutant / Units of Measure / 50 percentile concentration limit / 90 percentile concentration limit / 3DGM concentration limit / 100 per concen limit Oil and Grease / milligrams per litre / / / / 10 pH / pH / / / / 6.5-8.5 Total suspended solids / milligrams per litre / / / / 50	Non-Compliant (Low Risk)	Exceedance of TSS on 2 April 2019. Dam flocculated and re-tested, with TSS reading of 10mg/L.	REC 44: Continue to undertake water quality monitoring. If a water quality exceedance is detected undertake measures to improve water quality.	REC 44: Agree	CA	100%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
L5	Note: Noise limits are not specified as a condition of this licence. Noise limits are prescribed with the conditions of Project Approval 06_0311 granted under the Environmental Planning and Assessment Act 1979. Under the Environmental Planning and Assessment Act 1979 the Department of Planning is the appropriate authority in respect of the administration and regulation of the Project Approval.	Non-Compliant (Low Risk)	Non-compliant: According to 2016 Annual Review, on 12 August 2016 LakeCoal was advised by its independent noise monitoring consultant (Global Acoustics) that they had recorded a 3dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the evening monitoring on 11 August 2016 for Mannering Colliery. * According to 2016 Annual Review, On 29 August 2018, there was an exceedance recorded at 1dB exceedance of the site's LAeq15 Minute noise criteria at receiver RA2 (Macquarie Shores Retirement Village) during the scheduled night monitoring. * According to the Noise Mitigation Study dated March 2019: -Noise mitigation works implemented by the previous operators in 2018 have decreased site noise emission levels at all neighbouring noise-sensitive receivers. -Current and proposed MC noise emissions are predicted to comply with the relevant long-term noise criteria outlined in MP 06_0311 at all assessment locations under worst case meteorological conditions.				

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
M5.2	The record must include details of the following: a) the date and time of the complaint; b) the method by which the complaint was made; c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the licensee, the reasons why no action was taken.	Administrative Non-Compliance	*Admin Non-compliant: The Complaints Register does not include the time of the complaint and the personal details of the complainant. * Not all complaints registered included the method by which the complaint was made.	REC 45: Include in the Complaints Register: -Time of the complaint; -Personal details of the complainant; and -Method by which the complaint was made.	REC 44: Agree 31/08/19	CA	100%
M6.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	Administrative Non-Compliance	*Telephone line for complaints advertised on the LakeCoal and Delta Coal websites. * However no evidence of notifying to the community that the complaints line exists.	REC 46: With the new ownership an advertisement should be placed in the paper providing a link to the Delta Coal website and outlining the complaint management details.	REC46: Agree 31/08/19	CA	100%
M6.4	The licensee must nominate a representative of the company that is available all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including a telephone number, must be current at all times. Note: This condition does not apply until two (2) weeks after the date of issue of this licence.	Administrative Non-Compliance	* Designated representatives of the company included in the Pollution Incident Response Plan (PIRMP), dated September 2018. * Admin Non-compliant: The designated representatives of the company, included in the PIRMP, are not current.	REC 47: Update the details of designated representatives of the company in the PIRMP.	REC47: Agree 31/08/19	CA	100%
CCL 721							

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
5	a) report against compliance with the MOP; b) report on progress in respect of rehabilitation completion criteria; c) report on the extent of compliance with regulatory requirements; and d) have regard to any relevant guidelines adopted by the Director-General;	Administrative Non-Compliance	a) Admin Non-compliant: The 2016, 2017 & 2018 Annual Reviews do not report against compliance with the MOP. b) N/A - Rehabilitation has not commenced at the site; c) 2016, 2017 & 2018 Annual Reviews - Executive Summary & Section 3 d) Admin Non-compliant: 2016, 2017 and 2018 Annual Reviews not prepared in accordance with the DPE Annual Review guidelines	REC 48: Report against compliance with the MOP in future Annual Reviews. *Prepare future Annual Reviews in accordance with the DPE Annual Review guidelines.	REC 48: Agree 31/3/20	CA	0%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
6	Additional environmental reports may be required on specific surface disturbing operations or environmental incidents from time to time as directed in writing by the Director-General and must be lodged as instructed.	Administrative Non-Compliance	Admin Non-compliant: Noise exceedance on 11 August 2016 reported to DPE on 12 August 2016, according to 2016 Annual Review. Detailed incident report could not be provided by LakeCoal, therefore not able to determine when or if an incident report was submitted. * Noise exceedance on 29 August 2018 reported to DPE on same day (email to DPE Compliance Mailbox from LakeCoal dated 29 August 2018). Detailed LakeCoal incident report provided to DPE on 7 September 2018. Compliant as LakeCoal was granted an extension to provide the detailed report, via email from EPA dated 5 September 2016. * TSS exceedance at Point 1 on 2 April 2019 reported to DPE on 11 April 2019 via email and formal letter * Admin Non-compliant: According to site communications the RR required additional environmental reports on specific surface disturbing operations. Reports could not be provided to SLR from LakeCoal. Observation: Compliant/incident register indicates no incidents from June 2016 to April 2019.	REC 49: Ensure all additional environmental reports on specific surface disturbing operations are provided to the RR as required.	REC 49: Agree		

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
18	Operations must be carried out in a manner that does not cause or aggravate air pollution, water pollution (including sedimentation) or soil contamination or erosion, unless otherwise authorised by a relevant approval, and in accordance with an accepted Mining Operations Plan. For the purpose of this condition, water shall be taken to include any watercourse, waterbody or groundwaters. The lease holder must observe and perform any instructions given by the Director-General in this regard.	Non-Compliant (Low Risk)	* Management plans prepared and implemented for the site. Management plans include management controls to minimise any harm to the environment that may result from the operation of the site * During the site inspection noted management controls being implemented at the site: -No visible dust; -Water cart used on site to reduce dust; -Majority of the pit top is concreted; -Covered conveyor; -Bunded chemicals (Photo 7); -Rubbish disposed of in labelled waste bins; -Oily water separator; -Noise mitigation measures implemented at site (Photo 8). *Water quality, dust and monitoring undertaken at the site. Non-compliant: During audit period non-compliances with noise and water quality criteria.	REC 50: Ensure all practicable measures are undertaken to reduce noise and water quality exceedances (refer to specific recommendations relating to noise and water quality).	REC 50:Agree		

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
CCL 719							

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
3	(a) The lease holder must comply with an approved Mining Operations Plan (MOP) in carrying out any significant surface disturbing activities, including mining operations, mining purposes and prospecting. The lease holder must apply to the Minister for approval of a MOP. An approved MOP must be in place prior to commencing any significant surface disturbing activities, including mining operations, mining purposes and prospecting. (b) The MOP must identify the post mining land use and set out a detailed rehabilitation strategy which: (i) identifies areas that will be disturbed; (ii) details the staging of specific mining operations, mining purposes and prospecting; (iii) identifies how the mine will be managed and rehabilitated to achieve the post mining land use; (iv) identifies how mining operations, mining purposes and prospecting will be carried out in order to prevent and or minimise harm to the environment; and (v) reflects the conditions of approval under: • the Environmental Planning and Assessment Act 1979; • the Protection of the Environment Operations Act 1997; and • any other approvals relevant to the development including the conditions of this mining lease. (c) The MOP must be prepared in accordance with the ESG3: Mining Operations Plan (MOP) Guidelines September 2013 published on the Department's website at www.resources.nsw.gov.au/environment (d) The lease holder may apply to the Minister to amend an approved MOP at any time. (e) It is not a breach of this condition if: (i) the operations which, but for this condition 3(e) would be a breach of condition 3(a), were necessary to comply with a lawful order or direction given under the Environmental Planning and Assessment Act 1979, the Protection of the Environment Operations Act 1997, the Mine Health and Safety Act 2004 I Coal Mine Health and Safety Act 2002 and Mine Health and Safety Regulation 2007 I Coal Mine Health and Safety Regulation 2006 or the Work Health and Safety Act 2011; and (ii) the Minister had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out. (f) The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must: (i) provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP; (ii) be submitted annually on the grant anniversary date (or at such other times as agreed by the Minister); and (iii) be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at www.resources.nsw.gov.au/envrionment. Note: The Rehabilitation Report replaces the Annual Environmental Management Report.	Non-Compliant (Low Risk)	(a) Site inspection indicates MOP is being implemented. * Approval letter from Resources Regulator (RR) (formerly DRE) dated 27 March 2015, for 2015-2018 MOP * Approval letter from RR dated 26 September 2018 for 2018-2020 MO (b) The MOP must: i) MOP plans; ii) MOP plans (3 series); iii) Mine Closure Plan to be prepared at least two years prior to the cessation of mining activities; iv) Section 3; v) Section 4.1; vi) have regard to any relevant guidelines adopted by the Director-General. (c) 2018-2020 MOP has been prepared generally in accordance with DRE (now Resources Regulator) ESG3: MOP Guidelines, dated September 2013. (d) N/A-MOP not amended during MOP period. (e) Non-compliant: Details could not be provided by LakeCoal about non-compliances with the MOP. (f) Admin Non-compliant: Annual Rehabilitation Reports have not been prepared by LakeCoal. Rehabilitation not undertaken at the site	REC 51: Prepare Annual Rehabilitation Reports. REC 52: Include in Annual Reviews any non-compliances with the MOP, during the reporting period.	REC 51: Agree 31/03/20 REC 52: Agree 31/03/20	CA	0%

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
5	(a) The lease holder must notify the Department of all: (i) breaches of the conditions of this mining lease or breaches of the Act causing or threatening material harm to the environment; and (ii) breaches of environmental protection legislation causing or threatening material harm to the environment (as defined in the Protection of the Environment Operations Act 1997), arising in connection with significant surface disturbing activities, including mining operations, mining purposes and prospecting operations, under this mining lease. The notification must be given immediately after the lease holder becomes aware of the breach. Note. Refer to www.resources.nsw.qov.au/environmenf for notification contact details. (b) The lease holder must submit an Environmental Incident Report to the Department within seven (7) days of all breaches referred to in condition 5(a)(i) and (ii). The Environmental Incident Report must include: (i) the details of the mining lease; (ii) contact details for the lease holder; (iii) a map identifying the location of the incident and where material harm to the environment has or is likely to occur; (iv) a description of the nature of the incident or breach, likely causes and consequences; (v) a timetable showing actions taken or planned to address the incident and to prevent future incidents or breaches referred to in 5(a). (vi) a summary of all previous incidents or breaches which have occurred in the previous 12 months relating to significant surface disturbing activities, including mining operations, mining purposes and prospecting operations under this mining lease. Note. The lease holder should have regard to any relevant Director General's guidelines in the preparation of an Environmental Incident Report. Refer to www.resources.nsw.qov.au/environmentfor further details. (c) In addition to the requirements set out in conditions 5(a) and (b), the lease holder must immediately advise the Department of any notification made under section 148 of the Protection of the Environment Operations Act 1997 arising in connection with significant surface disturbing activities including mining operations, mining purposes and prospecting operations, under this mining lease.	Administrative Non-Compliance	* Email from LakeCoal to DPE (RR integrated into DPE), dated 11 April 2019, reporting TSS exceedance at Point 1 on 2 April 2019. Detailed LakeCoal incident report attached to email. Admin Non-compliant: Noise exceedance on 11 August 2016 reported to DPE on 12 August 2016, according to 2016 Annual Review. Detailed incident report could not be provided by LakeCoal, therefore not able to determine when or if an incident report was submitted. * Noise exceedance on 29 August 2018 reported to DPE on same day (email to DPE Compliance Mailbox from LakeCoal dated 29 August 2018). Detailed LakeCoal incident report provided to DPE on 7 September 2018. Compliant as LakeCoal was granted an extension to provide the detailed report, via email from EPA dated 5 September 2016. * There were no incidents of hydrocarbon contamination, or significant spills reported in the 2016, 2017 and 2018 Annual Reviews Observation: Complaints/incident register indicates no incidents from June 2016 to April 2019.				

Schedule and Condition Number	Condition	Compliance Status	Evidence	Recommendations	Delta Coal Confirmation Due date	Delta Coal Internal resource / External Resource	% Complete
8	The lease holder is required to provide and maintain a security deposit to secure funding for the fulfilment of obligations of all or any kind under the mining lease, including obligations of all or any kind under the mining lease that may arise in the future. The amount of the security deposit to be provided as a group security has been assessed by the Minister at $3,879,000. The leases covered by the group security include: Consolidated Coal Lease Nos 719 & 721 (Act 1973)	Non-Compliant (Low Risk)	* "Rehabilitation Cost Calculation Tool Mannering (2015)" indicates $3,879,000 security for 2015-2018 MOP * Non-compliant: "Chain Valley Colliery (Mannering Surface Areas) Underground RCE Report" (Mannering RCE) indicates $3,226,730 security for 2018-2020 MOP. Approval letter from RR for updated security could not be provided to SLR by LakeCoal.	REC 53: Ensure an adequate security deposit is provided as a group security REC 54: Ensure group security has been approved by RR	REC 53: Agree, Centennial provided the additional security deposit for Mannering in October last year and that once the Mannering title is transferred to Delta Coal an parent company guarantee will be provided. REC 54: Agree	CA / JF	100%

Additional recommendations relating to compliant conditions are outlined within **Table 7**.

Table 2 Additional Recommendations

Aspect	Recommendation	Delta Coal Confirmation and Due Date
Management Systems	REC 55: It provided difficult for Delta Coal to provide requested information in a timely manner. SLR recommends a review of the management system to ensure information is correctly filed and readily available.	REC 55: Agree: 31/08/19 – CA – 100%
Audit Preparations	REC 56: Little information was provided to SLR prior to the audit which resulted in numerous additional information requests. Additional time is required by Delta Coal to prepare for the next IEA. An internal audit is recommended prior to the next IEA to ensure information and evidence is available to the Independent Environmental Auditor.	REC56: Disagree first sentence: Most of documents requested in original RFI prior to site audit were provided and publicly available information present on the website. Further requests resulted as Auditors got into auditing, some time delays encountered from both parties.

Aspect	Recommendation	Delta Coal Confirmation and Due Date
Water Management	REC 57: Include in Section 9.4 of the Water Management Plan reporting of ground water results in Annual Reviews.	REC 57: Agree: 31/08/19, CA - 100% 2018 AR updated
Bushfire and Land Management Plan	REC 58: Attach the Bushfire Management Plan to the Land Management Plan	REC 58: Agree: 31/08/19, CA – 100%
Air Quality Management	REC 59: * Update the AQMP * Include in the updated AQMP a plan showing dust monitoring locations and the location of the weather station.	REC 59: Agree: 31/08/19, CA – 100%
Waste Management	REC 60: * Finish sorting out the piles of reject and rubbish at the pit top area. * Undertake contaminated sites/waste material assessment at the waste stockpile area. * SLR recommends none of the waste from the stockpile material is removed from site for waste disposal until an assessment on the waste is undertaken. * Install signage at the landfarm material at the pit top.	REC 60: - Agree, is an ongoing reject area - Agree, 31/07/19, Remondis CA – 100% - Agree, 28/05/19, Remondis notified not to take material until assessment completed. CA-100% - Agree 31/08/19, CA – 100% Bins now have signs
Subsidence	REC 61: A separate subsidence impact assessment report should be prepared annually and appended to the Annual Review. This report should be prepared or peer reviewed by a subsidence specialist. This should assess subsidence performance measures from the Project Approval.	REC61: Agree 31/03/20, CA, 0%
Pollution Incident Response Management Plan	REC 62: * Update the PIRMP to include: - Current site contacts; - Email details for government contacts; and - Figures that clearly show the location of hazardous substances and where pollution response equipment is stored.	REC 62: Agree 31/8/19, JB, 100%

Aspect	Recommendation	Delta Coal Confirmation and Due Date
2019 Annual Return	REC 63: * LakeCoal prepare an Annual Return for the period commencing on the first day of the reporting period (1 January 2019) and ending on the date the application for the transfer of the licence to the new licensee is granted (1 April 2019). * Delta Coal prepare an Annual Return for the period commencing on the date the application for the transfer of EPL191 is granted (1 April 2019) and ending on the last day of the reporting period (31 December 2019).	REC 63a: Agree, 28/02/20. CA, 100% REC63b: Agree, 28/02/20 CA, 0%

Appendix 11: DPIE Letter – 2019 Annual Review

Planning, Industry & Environment

Mr Chris Armit
Environment and Community Coordinator

Delta Coal
Mannering Colliery, Off Ruttleys Road
Mannering Park, NSW, 2259

03/04/2020

Dear Mr Armit

Mannering Colliery – Continuation of Mining Project (PA 06_0031)
Annual Review 2019 - Request for Additional Information

I refer to the Annual Review 2019 submitted to the Department as required under the conditions of PA 06_0031 for the Mannering Colliery – Continuation of Mining Project. After careful consideration, the Department is requesting that you provide additional information.

You are requested to submit a revised document that addresses the following:

- Section 1 – Table 3 is not complete (last column);
- Section 6.9 – Figure 11, shows the incorrect attended monitoring location for RA2, as per the latest approved Noise Management Plan submitted to the Department on 1 November 2019 and approved by the Department on 13 November 2019;
- Section 6.9 – The sentence '*During the evening period at RA1, site noise contributions of $L_{Aeq,15\ minute}$ 41 dB and $L_{A1,1\ minute}$ of 39 dB.*' should be corrected to read '*During the **night** period at RA1, site noise contributions of $L_{Aeq,15\ minute}$ 41 dB and $L_{A1,1\ minute}$ of 39 dB.*'; and
- Section 10 – Table 22 should provide an updated Response to (all) Auditor Recommendations (RAR) from the 2019 Independent Environmental Audit (IEA), not only those actions relating to the Annual Review.

You are requested to provide the information, or notification that the information will not be provided, to the Department by **24 April 2020**. If you are unable to provide the requested information within this timeframe, you are required to provide, and commit to, a timeframe detailing the provision of this information.

If you have any questions, please contact Joel Curran, Senior Compliance Officer, who can be contacted on (02) 4904 2702.

Yours sincerely

Heidi Watters
Team Leader Northern
Compliance