



WOLGAN VALLEY RESORT

INCREASED HELICOPTER TRIPS ENVIRONMENTAL PERFORMANCE AUDIT

for
EMIRATES ONE&ONLY
January 2020

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January 2020

for:

EMIRATES ONE&ONLY
2600 Wolgan Road
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LIMITATIONS OF REPORT

In preparing this audit report, Hansen Bailey has assessed all activities appropriate and necessary to evaluate the environmental status of the site and operations on it. Hansen Bailey has addressed all technical matters which might reasonably be considered to be relevant to such an assessment conducted to standards which apply in NSW. Based on observations of the site, interviews with appropriate staff and a review of available documentation, it is Hansen Bailey's opinion that the potential critical environmental issues associated with the site and operations are those discussed in this report. However, Hansen Bailey can only advise based on the information available to them and therefore cannot dismiss absolutely the possibility that parts of the site, or adjacent properties, may give rise to additional issues.

The conclusions presented in this report are professional opinions based solely upon Hansen Bailey's visual observations of the site and the immediate site vicinity, and upon Hansen Bailey's interpretations of the documentation reviewed, interviews and conversations with personnel knowledgeable about the site and other available information, as referenced in this report. These conclusions are intended exclusively for the purposes stated herein, at the site listed, and for the project indicated.

Opinions presented in this report apply to the site's conditions and features as they existed at the time of Hansen Bailey's site visit on 24 October 2019, and those reasonably foreseeable. They necessarily cannot apply to conditions and features which Hansen Bailey is unaware of and has not had the opportunity to evaluate.

This report does not, and does not purport to, give legal advice on the actual or potential environmental liabilities of any individual or organisation, or to draw conclusions as to whether any particular circumstances constitute a breach of relevant legislation.

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1 INTRODUCTION

1.1 BACKGROUND

Hansen Bailey has been commissioned by Emirates One&Only (One&Only) on to conduct an Independent Environmental Performance Audit (IEA) for an increase in helicopter trips against the development approvals held for the Wolgan Valley Resort (Resort).

The Resort operates under two project approvals: Concept Plan Approval (CPA) 05_0079 approved in 2006, and PA 06_0310 approved in 2007.

Schedule 2 Condition 18H of PA 06_0310 specifies the requirement to complete an IEA related to proposed increased helicopter trips only. This audit does not fulfil the IEA required under Condition 21.

The auditing period that this report applies to is from 15 September 2018 to 24 October 2019 (the audit period). This audit was completed by Hansen Bailey Exemplar Global International Certified Auditor, Dianne Munro (DM) (No: 107622). A site visit was conducted on 24 October 2019.

The audit consisted of a desktop review of documentation, interviews with key Resort staff and a field inspection of the site. The audit was conducted generally consistent with '*ISO 14010 - Guidelines and General Principles for Environmental Auditing*', and '*ISO 14011 - Procedures for Environmental Auditing*' and the '*Independent Audit post-approval requirements June 2018*' (Audit Guidelines) (DPE, 2018).

The IEA consisted of a detailed desktop review of key documentation and contributions from Brendan Millet (BM) – One&Only Special Projects Manager.

Relevant Opening and Closing Meetings were held at site with BM in attendance. The indicative Audit Itinerary is presented in **Appendix A**. **Appendix B** includes a completed Department of Planning Industry and the Environment (DPIE) certification form.

Appendix C includes a full list of all conditions of PA 06_0310 and Statement of Commitments (SOC) and indicates which have been assessed as part of this IEA.

Mark Bridges from Bridges Acoustics conducted the required noise monitoring from 9 October 2019 to 23 October 2019 with a complete report included at **Appendix D**. **Appendix E** presents relevant plates from the site inspection.

1.2 REPORT STRUCTURE

Section 1 provides an introduction, requirement for the IEA and provides a guide to the structure of this report;

Section 2 provides a description of the Resort as relevant to the IEA;

Section 3 outlines the requirements for the IEA and where each has been addressed;

Section 4 describes operational environmental performance during the IEA period based on a review of documentation and key observations made during the audit site visit;

Section 4 of this report lists the non-compliances identified during the audit; and

Section 6 provides a list of recommendations made from this audit.

2 SITE DESCRIPTION

The Resort is located on 2,600 hectares of private and leased land on Wolgan Road in the Wolgan Valley approximately 190 km north-west of Sydney.

The Resort extends from Newnes in the north-east to the Wolgan Gap in the south-west. The Gardens of Stone National Park is located to the north and south, and the Wollemi National Park to the east (within the Greater Blue Mountains World Heritage Area).

The residential community to Wolgan Valley is located to the north of the Resort in the north-western side of Donkey Mountain approximately 4 km from the main operational area.

The construction of the Resort commenced in 2008 and opened to the public in October 2009. The Resort is a luxury tourism resort which provides high end villa accommodation, onsite restaurant, spa treatments, conference facilities and recreational activities. Approximately 100 staff are employed at the Resort.

Guests travel by road which is around 3 hours from Sydney airport via Wolgan Road; or by helicopter which takes at least 50 minutes from Sydney airport (BM pers comms).

One&Only has two approved modifications to CPA 05_0079 and PA 06_0310:

- MOD 1 was lodged 20 November 2006 to both modify the CPA as well as seeking approval of the modified CPA. MOD1 allowed for an off-site electricity line including fibre optic cable to service the site and a modified resort layout to consolidate facilities onto the eastern bank of Carnes Creek including relocating the helipad, addition of stables and a gatehouse as well as other minor changes. MOD 1 was approved by DPIE on 13 April 2007; and
- MOD 2 was lodged 4 October 2017 to relocate the existing helicopter landing pad, increase the number of weekly helicopter trips from four to 18 per week (and up to 36 per week during peak holiday periods and tourism events), and construct and operate six beehives. MOD 2 was approved by DPIE 11 May 2018.

Figure 1 shows the helicopter flight path and relocated helipad location as per PA 06_0310.

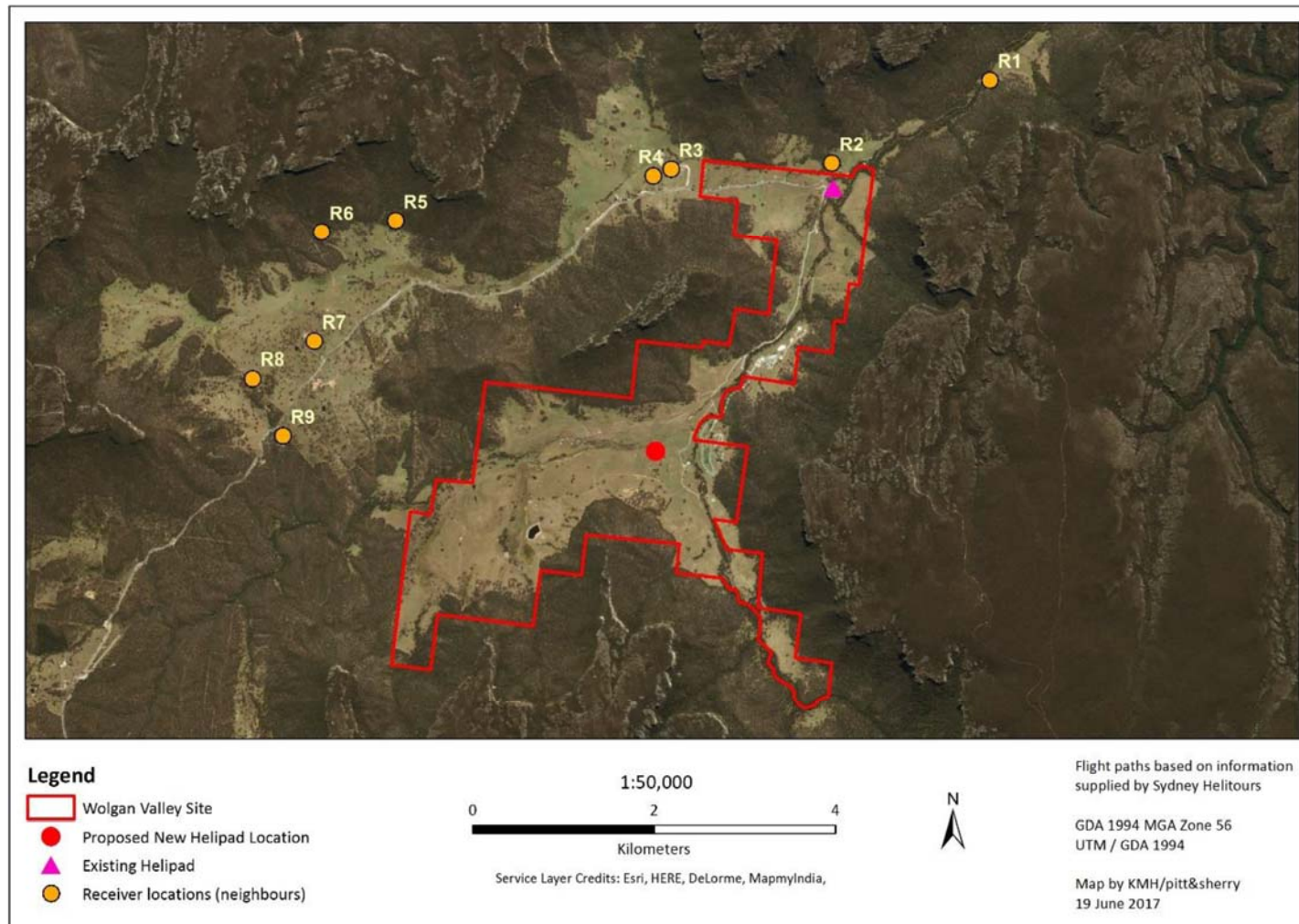


Figure 1
Approved Relocated Helipad and Receivers

3 AUDIT REQUIREMENTS

3.1 PROJECT APPROVAL

This IEA has been prepared pursuant to Schedule 2 Condition 18H of PA 06_0310 (as modified). Each requirement under this condition is listed in **Table 1**, along with where each is addressed in this audit report.

Table 1
PA 06_0610 IEA Requirements

Description	Section
Within 3 months of the first annual anniversary of the approved increase in helicopter trips, unless the Secretary directs otherwise, the Proponent must commission and pay the full cost of an audit of the actual environmental performance associated with the increased helicopter trips. The audit must:	This Report
(a) be conducted by a suitably qualified, experienced, and independent person;	1.1
(b) include consultation with the relevant agencies and address any feedback from the local community;	3.3
(c) assess the environmental performance increased helicopter trips;	4
(d) include the results of a noise monitoring program which demonstrates noise levels are as predicted in the Environmental Assessment;	Section 4.1 Appendix D
(e) review the adequacy of the register and procedures required under the approval; and	5 and 6
(f) if necessary, recommend measures or actions to improve the environmental performance associated with helicopter trips to and from the site and/or any strategy/plan/program required under this approval.	6
The Proponent must provide within 3 months of the completion of the audit, a report detailing its findings for the approval of the Secretary.	Proponent

3.2 AUDIT GUIDELINES

This audit report has been prepared in accordance with the Audit Guidelines (DPE, 2018). **Table 2** lists key requirements from the Audit Guidelines and indicates where each is addressed in this report.

Table 2
Audit Guidelines Requirements

Section	Description	Section
3.1.	Independent Audits must only be undertaken by a suitably qualified, experienced and independent auditor. Conditions of consent may require Independent Audits to be undertaken by an auditor and one or more technical specialists.	Appendix B
3.2	The auditor must consult with the Department, and other agencies and stakeholders, including the Community Consultative Committee (if one is required for the project), to obtain their input into the scope of the audit.	Section 3.3

Section	Description	Section
	Comments received during such consultation must be recorded and reported in the Independent Audit Report. Specific environmental issues raised during consultation must be investigated and findings of the investigation must be reported in the Independent Audit Report.	
3.3	An independent audit must include: <ol style="list-style-type: none"> 1. an assessment of compliance with: <ol style="list-style-type: none"> a. conditions of consent applicable to the phase of the development that is being audited; b. all post approval documents prepared to satisfy the conditions of consent, including an assessment of the implementation of Environmental Management Plans and Sub-plans; c. all environmental licences and approvals applicable to the development excluding environmental protection licences issued under the <i>Protection of the Environment Operations Act 1997</i>; 	Section 4 and 5 Appendix C
3.3	<ol style="list-style-type: none"> 2. an assessment of the environmental performance of the development, including but not necessarily limited to, an assessment of: <ol style="list-style-type: none"> a. actual impacts compared to predicted impacts documented in the environmental impact assessment; b. the physical extent of the development in comparison with the approved boundary, and any potential off-site impacts; c. incidents, non-compliances and complaints that occurred or were made during the audit period; d. the performance of the development having regard to agency policy and any particular environmental issues identified through consultation carried out when developing the scope of the audit; e. feedback received from the Department, and other agencies and stakeholders, including the community or Community Consultative Committee, on the environmental performance of the project during the audit period; 	Section 3.3, Section 4 and Appendix C
3.3	3. the status of implementation of previous Independent Audit findings, recommendations and actions (if any);	N/A
3.3	4. a high-level review of the project's environmental management systems (if any), including assessment of any third party certification of them, the type, nature and scope of the systems having regard to the nature and scale of the development, and the implementation of the systems. It is not expected that an Independent Audit comprises a management system audit, however any key deficiencies identified in the system should be discussed;	N/A
3.3	5. a high-level assessment of whether Environmental Management Plans and Sub-plans are adequate; and	Section 4.2
3.3	6. any other matters considered relevant by the auditor or the Department taking into account relevant regulatory requirements and legislation and knowledge of the development's past performance.	Section 4.2

Section	Description	Section
3.4	Audits must commence with an opening meeting and conclude with a closing meeting. The meetings must be attended by a representative of the proponent at manager level or above, the auditor and technical specialists (if any).	Appendix A
3.5	Independent Audits must include interviews with key personnel involved in project delivery, including those with responsibility for environmental management, to assist with verifying the compliance status of the development.	Appendix C
3.6	Independent Audits must include a physical site inspection. The site inspection must cover all development areas and environmental aspects that form part of the scope of the audit.	Appendix E

3.3 REGULATORY CONSULTATION

During the preparation for this audit, input was sought from DPIE and regulatory agencies to confirm any areas of compliance or environmental management that should be a particular focus.

The following regulators were approached directly by Hansen Bailey as requested by DPIE:

- Department of Planning, Industry and Environment (DPIE);
- Greater Blue Mountains World Heritage Area (GBMWA) Advisory Committee or National Parks of EES (NPWS).

Where specific issues were raised during consultation, these are listed in **Table 3**, along with a section on where each has been addressed.

Table 3
Regulatory Requirements and Where Addressed

Ref	Requirement	Section
DPIE Compliance Division		
1.	The impact of aircraft upon the wilderness area	4 and Appendix C
2.	Noise impacts	
3.	Frequency of flights	
4.	A register of the airports where helicopters are flying from and to	
5.	Flight paths	
6.	The complaints register and how complaints have been managed	
NPWS		
7.	Please note the attached letter from the GBMWA Advisory Committee responding to the application to modify helicopter flights. In particular the "need to avoid disturbance of a bat roosting site on the escarpment above the resort, the Committee reiterates the EPBC Act approval condition (June 2007) that the action may only allow helicopters to operate in the area of the resort or the GBMWA, from half an hour after sunrise to half an hour prior to sunset."#	4 and Appendix C

4 ENVIRONMENTAL PERFORMANCE

This section discusses the key compliance and environmental performance issues identified during the audit site inspection in relation to the increased helicopter trips.

4.1 HELICOPTER NOISE MONITORING

4.1.1 Introduction

Bridges Acoustics was engaged to undertake the noise monitoring assessment (NA) as required under Condition 18h(d) to confirm if noise levels are as predicted in the Environmental Assessment. A detailed report is provided in **Appendix D** with a summary below.

4.1.2 Criteria

PA 06_0310 does not include specific noise limits applied to helicopter movements to and from the resort. Condition 18Hd requires a comparison between measured helicopter noise levels and the noise levels predicted in the Environmental Assessment. Section 5.1.1 of the Environmental Assessment (EA) presents the adopted noise criteria, reproduced below:

- Take-off and Landing: LAeq, 24hr 40 dBA
LAmax 45 dBA (10.00 pm to 7.00 am)
- Overflight: LAeq, 24hr 45 dBA

Table 7 in section 5.1.2 of the Environmental Assessment indicates predicted noise levels of < 30 LAeq, 24hr and < 40 LAmax from the relocated helipad to all receivers.

4.1.3 Methodology

Bridges Acoustics conducted a noise survey at four representative locations during the period 9 October to 23 October 2019. A total of nine rural residences, in three groups (M1 to M3), were identified in the EA within a radius of approximately 5 km from the relocated helipad. An additional monitor was placed at the relocated helipad (M4).

A total of 14 helicopter trips (28 movements) occurred during this time, according to records kept by the helicopter operator and provided by the resort by email on 25 October 2019. The batteries in monitors M2 and M4 failed before the last helicopter trip, therefore noise data for 13 trips (26 movements) are presented in the NA.

4.1.4 Discussion

Given the significant levels of ambient noise at monitoring locations M1 to M3, helicopter noise levels could not be measured directly. Measured noise levels were not noticeably influenced by helicopter noise at any time.

The following upper limits for helicopter noise level were derived from data in Table 1 at each monitoring location.

- Monitoring location M1: An average maximum of 40 LA_{max} including ambient noise, which indicates a helicopter noise level less than 40 LA_{max}; and
- Monitoring locations M2 and M3: An average maximum of 33 LA_{max} including ambient noise, which indicates a helicopter noise level less than 33 LA_{max}.

Considering helicopter noise levels are expected to be similar at M1 and M3, the data confirm M1 was subject to a higher level of ambient noise from insects and other sources compared to the other locations. This presumption is supported by the EA, which stated helicopter noise from flights to and from the relocated helipad was inaudible or barely audible at noise monitoring locations close to M1 and M3 during the 2017 noise survey. Average helicopter noise levels have been calculated based on an average maximum noise level of 33 LA_{max} to all receptor locations.

The calculated noise levels in **Table 4** indicate average helicopter noise levels from helicopter movements to and from the relocated helipad would remain below the estimated noise levels and noise criteria in the EA.

Table 4
Upper Limiting Maximum and Average Noise Levels

Parameter or Calculation	M1 to M3	EA Prediction	EA Criteria
Average LA _{max}	33	40	45
14 trips in 2 weeks during noise survey, LA _{eq} , 24hr	7	< 30	40
Possible future 28 trips per week, LA _{eq} , 24hr	13	< 30	40
Theoretical worst case, 28 trips/day, LA _{eq} , 24hr	22	< 30	40

4.1.5 Conclusion

Bridges concludes that the noise survey and analysis described in this report indicates upper limiting helicopter noise levels are within the predicted noise levels and noise criteria in the EA.

It is Bridges Acoustics view that assuming approval for up to 28 helicopter trips per week is sought and granted, future noise levels due to helicopter trips to and from the relocated helipad are predicted to meet relevant criteria and remain below the estimated noise levels in the EA. This conclusion applies if the 28 trips are evenly distributed over all 7 days of the week or, as a theoretical worst case, concentrated in one 24-hour period.

4.2 ENVIRONMENTAL PERFORMANCE

Section 5 and 6 below provide a detailed discussion on performance, non-compliances and provide relevant recommendations.

5 NON-COMPLIANCES AGAINST PA 06_0310

This section provides a discussion on the identified non-compliances and status against PA 06_0310 reviewed at the time of the IEA.

Appendix C provides a tabulated list of conditions assessed during the IEA, with comments noted on the compliance status against each.

No non-compliances against PA 06_0310 were identified as part of this IEA.

6 AUDIT RECOMMENDATIONS

Table 5 includes a consolidated list of recommendations in relation to opportunities for review and improvement identified during this IEA.

Table 5
IEA Recommendations

Ref	Recommendation Description
PA 06_0310 Condition 6A	<p>Recommend that the Wolgan Flights spreadsheet be updated to include:</p> <ul style="list-style-type: none"> • cumulative totals for Monday to Sunday and daily, • indicate holiday and tourism periods; and • official sunrise and sunset times for proposed trips where within 2 hours. It should be updated to stipulate actual times where flights are within 1 hour of sunrise and sunset for Emirates One&Only's regular review (see discussion in Appendix C). • Where flight paths to/from the resort may vary from time to time due weather conditions or air traffic control directions, this should be noted.
PA 06_0310 Condition 6A	<p>Neither the 2018 nor 2019 Gatehouse movements spreadsheets correlate with the Wolgan Flights Spreadsheet. Although One&Only advised that the greater of the flights is taken as the official record, recommend consideration given to alternate personnel or method to ensure this cross-check has better accuracy (or consider if required).</p>
PA 06_0310 Condition 6A	<p>DPIE notified the proponent via email on 21/8/19 that "the Proponent must ensure that the project does not generate' (an exceedance in the conditioned helicopter trips), as such it could be considered that a flight from Sydney Airport to Katoomba Airport for the purposes of transporting a guest who will then be transported by road vehicle to the Emirates site would be a flight generated by the project." BM noted that he has previously been provided alternate advice verbally from DPIE.</p> <p>The "Project" is defined in Schedule 2 of the development consent as "Construction and use of a tourist resort and associated infrastructure". The impact assessment considered helicopter flights directly related to the Project's helipad to determine impacts in the immediate vicinity which then lead to the numerical restrictions placed on the Project by the determining authority. Transport movement associated with other airports and traffic movements on public roads has been assessed under separate approvals for those projects and the auditor suggests that as such, any movements associated with other approved facilitates should not be included in the total movements in Condition 6A (i.e. totals should be restricted to only those</p>

Ref	Recommendation Description
	movements directly related to the assessed and defined Project). It is recommended that confirmation is sought from DPIE in consideration of the discussion above.
PA 06_0310 Condition 6A	Viewed various emails (30/5/19) and discussions with BM which confirmed that condition (c) is highly restrictive on the Resort's operations. A review of the 'Assessment Report (DPIE, 2018) at Section 7.1 describes the DPIE recommendation for 5 trips per day, it does not appear to include any discussion on the origin or assessment of the restriction. It is recommended that consideration be given to a lodgement of a modification to development consent under Section 4.55 of the EPA Act supported by relevant consultation, justification and a comprehensive noise assessment to seek approval for increased flights on any one day (with an increased number on public holidays) (subject to legal confirmation and Company imperatives).###
PA 06_0310 Condition 18C	Recommend review of FNA for 2018 version (see discussion in Appendix C) and provide to operators as required.
PA 06_0310 Condition 18G	Update HOMP at next review: <ul style="list-style-type: none"> • Page 36-38 should be removed as it describes a northern departure which is no longer permitted. • Amend Section IE4 to include sunrise and sunset at this section. • Section 3.7 amend to correct source for sunrise/sunset times source which is not AirServices NAIPS Bathurst Airport as stated. • Add how to complain to DPIE or the resort as per section 3.13.1.5. • Update section on Wolgan Flights spreadsheet contents to include comments at Condition 6A.
PA 06_0310 Condition 23	Recommend at next company-required modification, correct numbering issue in this condition.
Appendix 12	Recommend at next company-required modification SOC's be reconsidered and simplified to ensure no duplication or potential contradiction with condition of development consent.

* * *

for

HANSEN BAILEY



Dianne Munro
 Principal Environmental Scientist

APPENDIX A
Audit Itinerary

**One&Only Wolgan Valley
Independent Environmental Audit – Helicopter Operations**

ITINERARY

Thursday, 24 October 2019 at 8 am

INVITEES

Brendan Millett
Dianne Munro (DM)

One&Only Wolgan Valley
Hansen Bailey (HB)

Special Projects Manager
Lead Auditor

Time	Description	Location	Attendees
8:00 – 8:15	Opening Meeting <ul style="list-style-type: none"> • Introductions • Purpose of Audit (DM) • Confidentiality Arrangements (DM) • Audit Process and Timing (DM) 	Boardroom	DM, BM
8:15 – 8:45	Overview of One&Only Helicopter Operations (BM) <ul style="list-style-type: none"> • Overview of operations during the audit period • Overview of the HOMP 	TBC	DM, BM
8:45 – 11:30	Project Approval <ul style="list-style-type: none"> • PA 06_0310 <i>conditions</i> (as modified) review • Project Approval Supporting Documents (MOD2 EA) • HOMP Key commitments 	TBC	DM, BM
11:30 – 12:00	Field Inspection	Various	DM, BM
12:00 – 12:30	Review noise monitoring results (if available)	TBC	DM, BM
12:30 – 12:45	Close Out Meeting <ul style="list-style-type: none"> • Overview of findings (DM) • Confirm outstanding items or documents • Confirm Audit Completion Process • General Discussion 	TBC	DM, BM

APPENDIX B
DPIE Audit Certification Form

Independent Environmental Audit Submission Form	
Project	
Consent No.:	PA 06_0310
Description of Project:	Wolgan Valley Resort
Project Address:	2600 Wolgan Road, Wolgan Valley NSW 2790
Proponent:	Emirates One&Only
Proponent Address:	2600 Wolgan Road, Wolgan Valley NSW 2790
Independent Audit	
Title of Audit:	Increased Helicopter Trips Environmental Performance Audit
Certificate	<p>I certify that I have prepared the contents of the attached independent audit and to the best of my knowledge:</p> <ul style="list-style-type: none"> • It is in accordance with relevant approval condition(s) • I have acted professionally, accurately and in an unbiased manner in conducting the audit • I am not related to any owner or operator of the project as a spouse, partner, parent, child, sibling, employer, employee, business partner, in sharing a common employer, or in a contractual arrangement outside the audit • I do not have any pecuniary interest in the project, including where there is a reasonable likelihood or expectation of appreciable financial gain or loss to me or to a person to whom I am related • Neither I nor my employer have provided consultancy services for the project that were subject to this audit • 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 project, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so.
Signature:	
Name:	Dianne Munro
Address:	6/127-129 John Street, Singleton NSW 2330
Email Address:	dmunro@hansenbailey.com.au
Auditor Certification (Body, No. Grade):	Auditor for Environmental Management, EMS and Compliance Audits. Exemplar Global No. 107622
Date:	13 December 2019

APPENDIX C
Project Approval Compliance Table

Table A
Project Approval Conditions – Schedule 2
Red type represents 10 October 2007 (MOD1) Green type represents 11 May 2019 (MOD2)

C	Condition	Applicable	Status	Comments
1	The Proponent shall must implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or decommissioning of the project.	Y	Compliant	No harm to the environment identified during this audit (see comments in this table). The IEA period includes from the increase in helicopter trips commencement (1 September 2018) until the date of the site visit (24 October 2019) (i.e. >12 months).
2	Subject to the changes in condition 3, the Proponent shall must carry out the project generally in accordance with the: (a) EA; (b) architectural drawings A100-104, A201-205, A210, A211, A300, A301, A310, A401, A402, A410, A411, A500, A510, A550, A560, A601, A610, A651, A660, A700, A710, A800, A810, A811, A900, A905, A910, A911, A915 and A916 (see Appendix 3); (c) feral proof fence details LSK 05544-117 – LSK 05544-120 (see Appendix 4); (d) dam location C18 (see Appendix 5); (e) civil road Network drawings C00-C12, C18-C22, C50-C52, C54, C56-C58, C70-C72, C80 and C81 (see Appendix 6); (f) external lighting plan 18438-SYD-E-04 and 18438-SYD-E-05 (see Appendix 7); (g) infrastructure plans, including Water Strategy Network, Stormwater Network, Waste Water Management System, Pool Water Treatment Services P001-P011, Hydraulic Infrastructure HI001, HI100-105, HI200-208, Fire Sprinkler Services F100-103, Hydraulic Services H001, H100-113, H115-117, H500 and H200-209 (see Appendix 8); (h) conceptual layout of the energy supply network plan 18438-SYD-E-02, E-03, E-07, E-08, E-10, E-11, E-12, E-13, E-16, E-17, E-22, E-25, E-26, E-29 and E-30 (see Appendix 9); (i) electrical reticulation plans H316 E1-E9 (Appendix 10); (j) landscape management plan for the development precinct , including LSK 05544-100, 101, 125, 05544-LV01, LV11, L02 and L03 (see EA); (k) conservation management plan (see EA); (l) statement of commitments (see Appendix 12); and (m) conditions of this approval. (l) Statement of commitment (see Appendix 12); (m) Modification Application 06_0310 MOD1 and supporting letter titled <i>Emirates Luxury Resort – Wolgan Valley, with updated architectural drawings A102M, A700G, and A710Gm dated 13.09.2007; and</i> (n) conditions of this approval. (n) Modification request 06_0310 MOD2, as detailed in supporting documentation titled <i>One&Only Wolgan Valley Modification of Concept Plan and Project Application (Helicopter trips and other changes)</i> , prepared by pitt&sherry, dated 14 September 2017, as modified by the <i>Response to Submissions Report –</i>	a) N b) N c) N d) N e) N f) N g) N h) N i) N j) N k) N l) N m) N n) Y	Compliant	n) MOD2 sought to relocate the existing helipad, increase the number of weekly helicopter trips from 4 to 18 per week, and up to 36 per week during peak holiday periods and tourism events; and construct and operate six beehives. This IEA assesses only the increase in the number of helicopter trips as required in Condition 18H from MOD2. It is assumed that all other aspects of approvals and licences will be assessed as part of the IEA required at Condition 21. Relevant sections of the supporting EA considered in this audit are summarised below: <ul style="list-style-type: none"> • Project description at Section 3.1; • Holiday and tourism periods as defined in Table 2; • Helicopter take offs and landings would occur from generally S direction over Carne Creek and Blue Mountains; as per Figure 5. No excavation, vegetation clearing, modification to existing access track, additional access tracks proposed. • Movements as per page 15; • Noise commitments including noise limits as per page 22; • EIS summary as per Table 13; • Notification commitments form Table 14. Existing pad used by various emergency services over audit period (BM pers comms), no project flights occurred from this location. No complaints received. No marketing or survey trips done in audit period, therefore no notifications to neighbours required (BM pers comms). DPIE Assessment Report MOD2 key issues: <ul style="list-style-type: none"> • Flight path from new helipad takes off and lands in a north-south direction over 3 km from residences, with the route to Sydney continuing in a SE direction over the GBMWhA (DPIE Assessment Report p7); • p5 Section 6.1 relevant public consultation issues: <ul style="list-style-type: none"> ○ Impacts to Greater Blue Mountains World Heritage Areas (GBMWhA);

C	Condition	Applicable	Status	Comments
	<p><i>Emirates One&Only Wolgan Valley Modification of Concept Plan and Project Application (Helicopter trips and other changes), prepared by pitt&sherry, dated 15 December 2017.</i></p>			<ul style="list-style-type: none"> ▪ Monitor impacts from increased trips and amend operations to avoid impacts; ▪ Avoid disturbance of bat roosting habitats on escarpment above the Resort by ensuring movements do not occur until half an hour after sunrise or after half an hour prior to sunset; ▪ Mitigation to prevent movements from causing adverse noise impact on the area's aesthetic values; ▪ Requirements for Fly neighbourly Agreement (FNA) for Blue Mountains National Park. <p>○ EPA required EPL due to helicopter related activities where:</p> <ul style="list-style-type: none"> ▪ More than 30 flight movements per week; and ▪ Where conducted within 1 km of a non-associated dwelling. There are none within 1 km. <p>A search of the EPL register on 22/10/19 did not indicate any EPL for the Project. As both a and b are not satisfied, no EPL is required.</p> <p>○ Public submissions were concerned with increased flights, impacts to GBMWHA and Wolgan Valley, new flight path impacts on GBMWHA, compliance with EPBC2006/2567.</p> <p>○ Existing Agreements for FNA for Blue Mountains National Park; and EBPC Approval should be continued.</p> <p>○ Helicopter guests using their own helicopter would go through the proponents contracted company (p14).</p> <p>○ DPIE requires the proponent to undertake an IEA prior to providing approval of any further increase in trips. A 12-month period would provide an opportunity to refine management measures surrounding the helicopter trips and facilitate potential planning approval for further increased in the future. Subject to no complaints and a positive IEA (including noise monitoring results) the Proponent would be able to seek approval from DPIE to increase the maximum number of trips from 20 to 28 during the identified holiday and tourism high peak periods (p15).</p>
3	<p>Prior to the commencement of construction, the Proponent shall must do the following to the satisfaction of the Director-General Secretary:</p> <p>(a) review and revise the proposed design of the feral proof fence, in consultation with the DEC;</p>	N	N/A	To be audited as part of IEA required under condition 21.

C	Condition	Applicable	Status	Comments								
	(b) provide suitable public access between Wolgan Road and the Gardens of Stone National Park (including Donkey Mountain) in consultation with the DEC; (c) revise the proposed design of the wastewater storage to ensure that no uncontrolled discharges occur; (d) provide the detailed plans for any new water storages on site, including wastewater storages; and (e) submit the final version of the infrastructure plan and conservation management plan.											
4	If there is any inconsistency between the above, the most recent plan/document shall must prevail to the extent of the inconsistency. However, the conditions of this approval shall must prevail to the extent of any inconsistency.	Y	Compliant	No inconsistencies identified as part of the IEA (BM pers comms).								
5	The Proponent shall must comply with any reasonable requirement/s of the Director General Secretary arising from the Department's assessment of: (a) any reports, plans or correspondence that are submitted by the Proponent in accordance with this approval; and (b) the implementation of any actions or measures contained in those reports, plans or correspondence submitted by the Proponent.	Y	Compliant	None made in the audit period in relation to the scope of the IEA (BM pers comms).								
6	The Proponent shall ensure that the project does not generate more than 4 helicopter trips a week (ie 8 helicopter movements).	N/A	N/A	To be audited as part of IEA required under condition 21.								
6A	<p>The Proponent must ensure the project does not generate more than 4 helicopter trips a week when using the helipad located adjacent to Wolgan Road on the west side of the Wolgan River.</p> <p>Following the relocation of the helipad to the central operational area of the Resort as shown in Appendix 13 of this Project Approval, the Proponent must ensure that the project does not generate more than:</p> <p>(a) a maximum of 14 helicopter trips per week (Monday to Sunday) excluding the periods defined in Condition 6A(b); (b) a maximum of 20 helicopter trips per week during the peak holiday and tourism periods defined as:</p> <table border="1"> <thead> <tr> <th>Event(s)</th> <th>Peak holiday and tourism period</th> </tr> </thead> <tbody> <tr> <td>NSW School Holidays*[^]</td> <td>Summer school holidays (6 weeks) Autumn school holidays (2 weeks) Winter school holidays (2 weeks) Spring school holidays (2 weeks)</td> </tr> <tr> <td>Easter long weekend</td> <td>A day either side of Good Friday and Easter Monday (if outside the school holiday period)</td> </tr> <tr> <td></td> <td>1 week in February and 1 week in October</td> </tr> </tbody> </table> <p><i>For the purpose of this condition: * NSW School Holiday Period as set by NSW Department of Education and Communities; ^ A week is Monday to Sunday; and # Bathurst car race weeks will be defined as Wednesday prior to the commencement of the event until Tuesday after the completion of the event.</i></p>	Event(s)	Peak holiday and tourism period	NSW School Holidays* [^]	Summer school holidays (6 weeks) Autumn school holidays (2 weeks) Winter school holidays (2 weeks) Spring school holidays (2 weeks)	Easter long weekend	A day either side of Good Friday and Easter Monday (if outside the school holiday period)		1 week in February and 1 week in October	Y	Compliant	<p>Existing helipad movements not Applicable as part of this IEA.</p> <p>The relocated helicopter pad was utilised from 15 September 2018. For the IEA period, viewed spreadsheet 'Wolgan Flights' (Wolgan Flights Spreadsheet) which lists flight details summarised as follows:</p> <p>(a) Maximum of 13 trips per week (for weeks ending 17/2/19 and 24/3/19) to end October 2019. (b) Maximum of 18 helicopter trips per week (Monday to Sunday) (for week ending 24/12/18 – 30/12/18).</p> <p>Recommend that the Wolgan Flights spreadsheet be updated to include: cumulative totals for Monday to Sunday and daily, indicate holiday and tourism periods; and official sunrise and sunset times for proposed trips where within 2 hours.</p> <p>Viewed cross-reference spreadsheet '8. 2018 - Gatehouse Movements with Summary' which lists helicopter movements by month: Jan In 15, Jan out 22, Feb in 12, Feb out 8, Mar in 24, Mar out 18, April in 35, April out 35, May in 9, May out 8, Jun in 25, Jun out 35, Jul in 10, Jul out 15, Aug – Dec 0 in or out.</p> <p>Gatehouse records are taken for the purposes of carbon reporting are manually recorded by personnel which has other responsibilities (BM pers comms). A reconciliation is undertaken</p>
Event(s)	Peak holiday and tourism period											
NSW School Holidays* [^]	Summer school holidays (6 weeks) Autumn school holidays (2 weeks) Winter school holidays (2 weeks) Spring school holidays (2 weeks)											
Easter long weekend	A day either side of Good Friday and Easter Monday (if outside the school holiday period)											
	1 week in February and 1 week in October											

C	Condition	Applicable	Status	Comments
	<p>(c) a maximum of 5 helicopter trips in any given day, excluding Public Holidays where helicopter trips will be restricted to 2 trips per day.</p>			<p>regularly with the 'worst-case' helimovements utilised (usually Wolgan Flights spreadsheet) (BM pers comms). Neither the 2018 nor 2019 Gatehouse movements spreadsheets correlate with the Wolgan Flights Spreadsheet. Recommend consideration given to alternate personnel or method to ensure this cross-check has greater accuracy (or consider if required). Email 23/10/19 which shows note in calendar "must be airborne from WVR at 6.35 pm latest sunset is 7.09 pm. "If a slight is going to be close to sunset (never an issue for sunrise as we cannot leave Sydney before 6 am due to curfew) I always make the note".</p> <p>(c) Maximum of 5 helicopter trips in 1 day occurred (in week ending 30/9/18).</p> <p>On public holidays, the maximum no of trips was 2 on each of 1/10/18, 25/12/18, 26/12/18, 1/1/19, 28/1/19, 19/4/19, 20/4/19, 22/4/19 and 10/6/19.</p> <p>DPIE notified the proponent via email on 21/8/19 that "the Proponent must ensure that the project does not generate' (an exceedance in the conditioned helicopter trips), as such it could be considered that a flight from Sydney Airport to Katoomba Airport for the purposes of transporting a guest who will then be transported by road vehicle to the Emirates site would be a flight generated by the project." BM noted that he has previously been provided alternate advice verbally from DPIE.</p> <p>The "Project" is defined in Schedule 2 of the development consent as "Construction and use of a tourist resort and associated infrastructure". The impact assessment considered helicopter flights directly related to the Project's helipad to determine impacts in the immediate vicinity which then lead to the numerical restrictions placed on the Project by the determining authority. Transport movement associated with other airports and traffic movements on public roads has been assessed under separate approvals for those projects and the auditor suggests that as such, any movements associated with other approved facilitates should not be included in the total movements in Condition 6A (i.e. totals should be restricted to only those movements directly related to the assessed and defined Project). It is recommended that confirmation is sought from DPIE in consideration of the discussion above.</p>

C	Condition	Applicable	Status	Comments
				Viewed various emails (30/5/19) and discussions with BM which confirmed that condition (c) is highly restrictive on the Resort's operations. A review of the 'Assessment Report (DPIE, 2018) at Section 7.1 describes the DPIE recommendation for 5 trips per day, it does not appear to include any discussion on the origin or assessment of the restriction. As such, it is recommended that consideration be given to a lodgement of a modification to development consent under Section 4.55 of the EPA Act supported by relevant consultation, justification and a comprehensive noise assessment to seek approval for increased flights on any one day (with an increased number on public holidays).
6B	The Proponent may apply to the Secretary for approval to increase the maximum helicopter trips per week during the peak holiday and tourism periods as defined in Condition 6A9B) up to a maximum 28 helicopter trips per week. Such approval may only be sought: (a) after at least 12 months of undertaking helicopter trips in accordance with that approved under 06_0310 MOD2; (b) demonstrated demand for the increase is provided; (c) An environmental performance audit of the increased helicopter trips has been carried out in accordance with Condition 18H; and (d) a report detailing the findings of the audit is provided to the Secretary.	Y	Not Triggered	Application may be made following this audit in accordance with this condition, at the discretion of the proponent.
7	The Proponent shall 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.	N	N/A	To be audited as part of IEA required under condition 21.
8	The Proponent shall must : (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.	N	N/A	To be audited as part of IEA required under condition 21.
9	The Proponent shall must ensure that all plant and equipment used at the site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	N	N/A	To be audited as part of IEA required under condition 21.
10	With the approval of the Director-General Secretary , the Proponent may prepare and submit any management plan or monitoring program required under this approval on a progressive basis.	N	N/A	To be audited as part of IEA required under condition 21.
11	Prior to the commencement of operations, the Proponent shall must submit work as executed plans to the Department for all the development associated with the project. These plans must be prepared by a suitably qualified and experienced expert, and include plans showing the work as executed plans laid over the	N	N/A	To be audited as part of IEA required under condition 21.

C	Condition	Applicable	Status	Comments
	approved plans to demonstrate that the development has been carried out in accordance with the approved plans.			
12	During the project, the Proponent shall must landscape the site in general accordance with the landscape concept plan (see Appendix 11), and conserve and maintain this landscaping to the satisfaction of the Director-General Secretary.	N	N/A	To be audited as part of IEA required under condition 21.
13	<p>The Proponent shall must prepare and implement a Landscape Management Plan for the project to the satisfaction of the Director-General Secretary. This plan must include the detailed landscape management plans for each of the 5 precincts in the approved concept plan, and:</p> <p>(a) be prepared by a suitably qualified and experienced expert whose appointment has been endorsed by the Director-General Secretary;</p> <p>(b) be prepared in consultation with DEC, DNR, and Council;</p> <p>(c) be submitted to the Director-General Secretary for approval prior to the commencement of construction; and</p> <p>(c) include a:</p> <ul style="list-style-type: none"> • an outline of the landscaping objectives for each precinct; • a description of the short, medium and long term measures that would be implemented to landscape each precinct; • detailed completion criteria for the landscaping of each precinct; • a detailed description of the measures that would be implemented over the next 5 years to landscape the site, including the procedures to be implemented for: <ul style="list-style-type: none"> o revegetating the site; o managing the impacts on fauna; o rehabilitating the creeks on site; o landscaping the site to minimise the visual impacts of the development on Wolgan Road and the adjoining national parks; o conserving and reusing topsoil; o collecting and propagating seed for rehabilitation and revegetation works; o controlling weeds and feral pests; controlling access; o bushfire management; o managing any potential conflicts between the landscape plan and Aboriginal cultural heritage; • a detailed description of how the performance of the landscaping plan would be monitored over time; and • a detailed description of who would be responsible for monitoring, reviewing and implementing the plan. 	N	N/A	To be audited as part of IEA required under condition 21.
13 A	Prior to use of the new helipad approved as part of 06_0310 MOD2, the Proponent must update the approved Landscape Management Plan to include changes associated with 06_0310 MOD 2 to the satisfaction of the Secretary.	N	N/A	To be audited as part of IEA required under condition 21.

C	Condition	Applicable	Status	Comments
14	Prior to the commencement of construction, the Proponent shall must obtain the necessary approvals for the project required under the <i>Water Act 1912</i> , and provide a copy of these approvals to the Director-General Secretary.	N	N/A	To be audited as part of IEA required under condition 21.
15	The Proponent shall must comply with section 120 of the <i>Protection of the Environment Operations Act 1997</i> , which prohibits the pollution of waters.	N	N/A	To be audited as part of IEA required under condition 21.
16	The Proponent shall must ensure that the any water storages on site have a minimum base and wall permeability of 1x10 ⁻⁹ metres per second, or are artificially lined with an impermeable high density polyethylene liner.	N	N/A	To be audited as part of IEA required under condition 21.
17	The Proponent shall must manage and monitor the irrigation systems in accordance with the report titled <i>Site Based Management Plan On-site Wastewater Treatment</i> prepared by Sustainable Solutions International and Steve Paul & Partners Pty Ltd and dated January 2007.	N	N/A	To be audited as part of IEA required under condition 21.
18	The Proponent shall must not destroy or relocate any Aboriginal object on site without the written approval of the Director-General Secretary.	N	N/A	To be audited as part of IEA required under condition 21.
18 A	HELICOPTER MANAGEMENT The Proponent must ensure that the location of the helipad is managed and maintained in accordance with the Civil Aviation Safety Authority Guidelines.	Y	Compliant	Mex maintenance system includes list of instructions for CASA Guidelines to inspect helipad, mowed, extinguishers in place. Viewed maintenance examples 1/7/19 to 29/10/19 describing mowing and checks completed.
18 B	The Proponent must ensure the helipad located adjacent to Wolgan Road on the west side of Wolgan River, is not used for helicopter trips once the helipad has been relocated to the operational area of the Resort. The only exception for use of this helipad is during emergency situations.	Y	Compliant	The existing helipad has not been used since 1 September 2018 except by emergency personnel (BM pers comms). See Plate 1.
18 C	The Proponent must ensure that all contracted helicopter operators abide by the Fly Neighbourly Advice as detailed in the En Route Supplement Australia (Gen-SP-Special Procedures, Section 12 FN 2 Blue Mountains National Park) when flying over the Greater Blue Mountains World Heritage Area.	Y	Compliant	Viewed Fly Neighbourly Advice (FNA) document dated 8/3/2012. Internet search revealed version dated 8/11/2018. Key commitments from FNA relevant to environmental matters in relation to the Blue Mountains National Park only (Section 13) were reviewed and include: <ul style="list-style-type: none"> • Pilots undertaking sightseeing flights should obtain details of the areas to be avoided and the preferred scenic routes in the Katoomba area from the Park Manager (provides contact details). • Except when operating on preferred scenic routes, pilots are requested to maintain a minimum altitude of 2000 ft above the surface of the park (the surface being defined as the highest point of terrain, and any object on it, within an radius of 600 m of a point vertically below the aircraft), unless operation at this altitude would jeopardise the safe conduct of the flight. • This altitude recognises the special terrain/weather conditions and the overlying airspace arrangement of this area. HOMP refers to FNA and Section 18C as addressed in Section 3.4 and Appendix D Section 1A2. Section 3.4 states that "resort

C	Condition	Applicable	Status	Comments
				must ensure that it has compliance with the FNA entered into agreement that it has with third parties ..." and "If the resort operator receives feedback that the FNA has been breached ... corrective actions to ensure further breaches do not occur ... breaches ... recorded in the log. Refer Appendix B". Not received any feedback on breaches in audit period (BM pers comms). The Contract between Sydney Helitours and the Project has a contract that clearly states that the FNA must be adhered to. Sydney Helitours (Ross Smith Avenue Mascot only contracted company in IEA period (BM pers comms). All flights from the Project go across the GBMWA as per HOMP Figure 3. All flights in the audit period were between Sydney and the Resort only (BM pers comms) as per the Wolgan Flights Spreadsheet. Recommend review of FNA for 2018 version and other comments above and provide to operators as required.
18 D	The Proponent must ensure no helicopter joy-flights to the surrounding National Park areas are undertaken from the Site.	Y	Compliant	No joy flights have been undertaken in the IEA period (BM pers comms).
18 E	Notwithstanding Condition 6A, any requests for increased helicopter trips for unscheduled tourism events or major events, must be submitted in writing to the Secretary for consideration at least 2 months prior to the vent. The written request must provide a justified reason, requested number of helicopter trips and procedures that will be put in place to manage helicopter operations during the duration of the event. The requested number of helicopter trips must not exceed the approved helicopter trips under Condition 6A(c).	Y	Compliant	One request was made in period on 3/10/18 for event on 3/2/19 (within 2 months). Viewed email from DPIE dated 4/10/18 for a proposed event on 3/2/19 which declined the request as "the proposed trips would exceed the maximum 5 daily helicopter trips in a given day, as specified in Condition 6A(c). The assessment of MP 06_0310 MOD 2, only assessed the flight path of helicopters to and from the resort across the National Park and World Heritage Area. It is understood the proposed request will involve transporting guests from the resort to Bathurst". See also discussion at condition x.
18F	Helicopter trips/movements to and from the site must occur: (a) only during daylight hours; and (b) where over the Greater Blue Mountains World Heritage Area, at least half an hour after sunrise and half an hour prior to sunset.	Y	Compliant	Daylight hours is not defined in PA 06_0310. For this IEA "Daylight hours" has been defined as that time after sunrise and before sunset as shown for 'Bathurst' in the Sunrise/Sunset" at this website as utilised by Helitours https://www.timeanddate.com/sun/australia/bathurst The above was compared to the data in the Wolgan Flights Spreadsheet and summarised as follows: a) All flights occurred during daylight hours; and b) No flights occurred outside half an hour after sunrise (earliest landings at 7 am on various dates with closest sunrise at 5.42 on 29/9/18). One flight occurred less than half an hour prior to sunset (landing at 19.30 pm on 14/2/19 where the sunset was at 19.55 pm) (note this was 25 minutes).

C	Condition	Applicable	Status	Comments
				<p>Viewed subsequent email response dated 27/11/19 from Sydney Helitours which confirmed "1st flight – flight shutdown time at Wolgan was 18.48pm and flight start up time at Wolgan was 19.00pm 2nd flight – flight did not proceed as the domestic flight the guests were on was delayed, we could not conduct the flight within time limits, guests stayed the night and proceeded via helicopter the next morning". A subsequent email dated 28/11/19 from Sydney Helitours stated "The times on the spreadsheet are our scheduled departure times and actual departure times will vary depending on guest's arrival to our lounge, weather conditions or air traffic control factors. If the helicopter is able to depart earlier than scheduled we do". "All actual flight times are recorded via our flight logs, which will show start-up and shutdown times of the helicopter. These are available for referencing anytime on our airline booking system known as Takeflite". It is recommended that where flights are proposed to take off or land at the Resort within 1 hr of sunrise or sunset, exact times are recorded in the spreadsheet so that compliance with this condition can be easily confirmed.</p>
18 G	<p>The Proponent must prepare a detailed Operational Helicopter Management Procedure for the project, to the satisfaction of the Secretary. The procedure must describe:</p> <ul style="list-style-type: none"> (a) statutory and other obligations that apply to the project; (b) processes for working with the relevant agencies to implement and monitor the Fly Neighbouring Advice; (c) how helicopter trips/movements will be recorded; (d) the flight paths; (e) details relating to a dedicated register for dealing with helicopter complaints; (f) processes for receiving, handling, responding and recording complaints; and (g) the processes for keeping the local community informed about the operational practices including requested helicopter trips for unscheduled tourism events or major events and the environmental performance of the project. 	Y	Compliant	<p>Viewed HOMP dated 23 August 2018. Viewed letter from C Ritchie at DPIE dated 17/9/18 approving HOMP. The following sections of the HOMP address:</p> <ul style="list-style-type: none"> a) Section 1.5 describes PA 06_0610 (as modified) and Section 2 lists relevant conditions of compliance from PA 06_0610. b) Section 3.4 and Appendix B and D. BM confirmed that breaches of the FNA have not occurred in the audit period and as such, no Corrective Actions Log (3.4.2) actions or additional training/procedure changes or as directed by Agencies was required. c) Section 3.9. Viewed Wolgan Flights Spreadsheet which is an electronic booking system as per section 3.9.1. Data is required to be cross checked as per section 3.9.3. See discussion where it is confirmed as done but inaccurately at Condition 6A. d) Section 3.10 and Appendix D part C Flight Paths. Viewed email from Sydney Helitours dated 28/11/19 which states "Flight paths to/from the resort may vary from time to time due weather conditions or air traffic control directions. All flights paths are planned to travel via the prescribed routes as per the HOMP". Recommend this detail is added to the Wolgan Flights Spreadsheet with reasoning, where

C	Condition	Applicable	Status	Comments
				<p>deviations occur. Only Sections of Appendix D relevant to environmental management were considered as part of this IEA.</p> <ul style="list-style-type: none"> • Appendix D requires departures 35 minutes of sunset to reduce ecology impacts at page 32 – See Condition 6A. Additional flight outside this time in Wolgan Flights Spreadsheet on 6/3/19 where flight landed at 1900 hours and sun set at 1932 (i.e. 3 minutes outside of this timeframe). See additional comments at 18F which clarifies actual times. • Page 36-38 should be removed as it describes a northern departure which is no longer permitted. • Amend Section IE4 to include sunrise and sunset at this section. <p>e) Section 3.11 and Appendix A. No complaints register provided as no complaints received in audit period (BM pers comms).</p> <p>f) Viewed Newsletter August 2019 distributed via email (BM confirmed) which states " The helipad next to Wolgan Road continues to be maintained for the use of emergency services only. We continue to monitor our flight paths to ensure the impact on the local residents and the environment are in keeping with our permitted levels and Fly Neighbourly Advice for the Greater Blue Mountains region. There are currently no unscheduled special event applications pending. If you do have any comments regarding our helicopter operations, please contact the resort directly or the Department of Planning and Environment. We welcome your feedback. " Viewed email dated 21/11/29 with distribution list for newsletter and annual Christmas gathering with near neighbours.</p> <p>HOMP:</p> <ul style="list-style-type: none"> • Section 3.1.1 requires all colleagues to undertake Induction. Viewed example 'Welcome to Wolgan Attendance Sheets' dated 21-22/10/19 for eight new staff members confirming Induction was undertaken. Viewed Induction titled 'Departmental Presentation Special Project.ppt'. • Section 3.2 requires monthly maintenance of helipad and monthly inspections and kept in Mex Database (see Condition 18A).

C	Condition	Applicable	Status	Comments
				<ul style="list-style-type: none"> • No irregularities were reported by helicopter operators as required under section 3.2.2 (BM pers comms). • Section 3.3 helipad requires bi-weekly inspections (BM confirmed done). Two examples viewed in condition 18A) for Aug-Oct 2019. • Section 3.7 requires trips only during daylight hours and when over GBMWA 1/2 hour before sunset and 1/2 hr after sunrise (with the times taken from AirServices NAIPS Bathurst Airport). Data is taken from alternative source, recommend that HOMP at next update clarify source used. • Section 3.13.1 states that quarterly newsletters to be published. BM confirmed newsletters started in 02019. Viewed March and August first ones. BM confirmed emailed to local residences that have requested it. • Section 3.13.1.3 requires all neighbours in 2018 and 2019 to be written to inviting subscription to electronic newsletter. No evidence provided to confirm although BM confirmed all neighbours are invited for Christmas drinks via email to view sites. • Recommend adding how to complain to DPIE or the resort as per section 3.13.1.5. • Section 3.14 any private guest helicopter requests? If so, did they follow section 3.14.2. <p>Viewed notification email to staff and Sydney Helitours from BM dated 18/09/18 stating " now legally allowed to operate the new helipad and new helicopter trip numbers, effective yesterday ... All of the conditions regarding the ongoing operations of helicopters at the resort are contained in the Helicopter Operations Management plan (HOMP), attached. A hard copy should be kept by Groups, Front Office and Sales to ensure that we at all time comply with our regulatory obligations ... Please ensure that the relevant people in your teams are aware and understand the obligations contained in the HOMP. "</p> <p>Viewed email to staff and Sydney Helitours from BM dated Wed 2/10/2019 providing HOMP and reminder re: obligations.</p>
18 H	<p>Within 3 months of the first annual anniversary of the approved increase in helicopter trips, unless the Secretary directs otherwise, the Proponent must commission and pay the full cost of an audit of the actual environmental performance associated with the increased helicopter trips. The audit must:</p> <p>(a) be conducted by a suitably qualified, experienced and independent person;</p>	Y	Compliant	<p>a) DM Auditor certification Exemplar Global 10622 registered auditor. Viewed email from J Rowe at DPIE dated 12/8/19 confirming auditor does not require DPIE approval.</p> <p>b) See consultation in Main Volume of this IEA.</p> <p>c) This IEA Report.</p>

C	Condition	Applicable	Status	Comments
	<p>(b) include consultation with the relevant agencies and address any feedback from the local community;</p> <p>(c) assess the environmental performance of the increased helicopter trips;</p> <p>(d) include the results of a noise monitoring program which demonstrates noise levels are as predicted in the Environmental Assessment;</p> <p>(e) review the adequacy of the register and procedures required under the approval; and</p> <p>(f) if necessary, recommend measures or actions to improve the environmental performance associated with helicopter trips to and from the site and/or any strategy/plan/program required under this approval.</p> <p>The Proponent must provide within 3 months of the completion of the audit, a report detailing its finding for the approval of the Secretary.</p>			<p>d) See Main Volume of this IEA and Appendix C.</p> <p>e) See Main Volume of this IEA.</p> <p>f) See Main Volume of this IEA.</p> <p>Not triggered. Proponent to undertake following completion of this audit.</p>
18I	<p>BEE HIVE MANAGEMENT</p> <p>The Proponent must ensure construction and operation of the bee hives is carried out in accordance with the <i>Apiaries Act 1985</i> and the Australian Honey Bee Industry Biosecurity Code of Practice.</p>	N	N/A	To be audited as part of IEA required under condition 21.
18J	<p>The Proponent must have a registered bee keeping licence in accordance with the <i>Biosecurity Act 2015</i> for the on-site beekeeping activities.</p>	N	N/A	To be audited as part of IEA required under condition 21.
19	<p>The Proponent shall must prepare and implement a Construction Management Plan for the project to the satisfaction of the Director General Secretary. This plan must:</p> <p>(a) be submitted to the Director General Secretary for approval prior to the commencement of construction; and</p> <p>(b) include a:</p> <ul style="list-style-type: none"> • construction traffic management plan that has been prepared in consultation with Council and the local community in the Wolgan Valley, and includes a driver code of conduct for construction vehicles associated with the proposed works, and describes the measures that would be implemented to: <ul style="list-style-type: none"> o minimise the traffic impacts of the proposed development, and o ensure that Wolgan Road remains safe for all traffic during the construction period; • soil and water management plan that has been prepared in accordance with the relevant requirements of Landcom's <i>Managing Urban Stormwater: Soils and Construction</i>, and describes the measures that would be implemented to minimise the erosion and the discharge of sediments from the disturbed area during construction; • Aboriginal heritage management plan that has been prepared in consultation with the DEC and relevant Aboriginal community groups, and describes the measures that would be implemented to: <ul style="list-style-type: none"> o protect Aboriginal objects/sites outside the disturbance area; o salvage and/or conserve any Aboriginal objects in the disturbance area; 	N	N/A	To be audited as part of IEA required under condition 21.

C	Condition	Applicable	Status	Comments
	<ul style="list-style-type: none"> o respond to the discovery of any new Aboriginal objects or skeletal remains during construction; o involve Aboriginal community groups in the conservation and management of Aboriginal cultural heritage on the site; • flora and fauna management plan, that describes the measures that would be implemented to: <ul style="list-style-type: none"> o protect the areas adjoining the disturbance areas; o undertake pre-clearance surveys; and • community consultation plan, which includes a complaint handling protocol. 			
20	<p>The Proponent shall must prepare and implement an Environmental Management Plan for the project to the satisfaction of the Director-General Secretary. This plan must:</p> <p>(a) be prepared in consultation with the DEC, DNR, Council and the local Wolgan Valley community;</p> <p>(b) be submitted to the Director-General Secretary for approval prior to the commencement of operations;</p> <p>(c) provide the strategic context for environmental management of the project;</p> <p>(d) identify the statutory and other obligations that apply to the project;</p> <p>(e) describe in general how the environmental performance of the project would be monitored and managed throughout the life of the project;</p> <p>(f) describe the procedures that would be implemented to:</p> <ul style="list-style-type: none"> • keep the local community and relevant agencies informed about the construction, 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; <p>(g) include a:</p> <ul style="list-style-type: none"> • a transport management plan; • an emergency management plan, including a bushfire management plan; • waste management plan; and • the other plans required under this approval or included in the statement of commitments that are relevant to the ongoing operation of the project. 	N	N/A	To be audited as part of IEA required under condition 21.
21	<p>Within 3 years of the commencement of construction, and every 5 years thereafter, unless the Director-General Secretary directs otherwise, the Proponent shall must commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:</p> <p>(a) be conducted by a suitably qualified, experienced, and independent person whose appointment has been approved by the Director-General Secretary;</p> <p>(b) include consultation with the relevant agencies;</p> <p>(c) assess the environmental performance of the project, and its effects on the surrounding environment, and in particular the implementation of the Landscape Management Plan;</p>	N	N/A	To be audited as part of IEA required under condition 21.

C	Condition	Applicable	Status	Comments
	(d) review the adequacy of any strategy/plan/program required under this approval; and, if necessary, (e) recommend measures or actions to improve the environmental performance of the project, and/or any strategy/plan/program required under this approval.			
22	Within 6 months of completing the audit, the Proponent shall must review, and if necessary, revise the various management plans and monitoring programs for the project to the satisfaction of the Director General Secretary .	N	N/A	To be audited as part of IEA required under condition 21.
23	Revision of Strategies, Plans and Programs Within three months of: (a) the submission of any Annual Review; (b) the submission of any incident report; (a) the submission of any Independent Environmental Audit; (b) the approval of any modification of the conditions of this project approval; or (c) the issue of any direction of the Secretary. the strategies, plans and programs required under this approval must be reviewed, and the Department must be notified in writing that a review is being carried out. If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this approval must be revised, to the satisfaction of the Secretary. Where revisions are required, the revised document must be submitted to the Secretary for approval within six weeks of the review. <i>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and to incorporate any recommended measures to improve the environmental performance of the development.</i>	N	N/A	To be audited as part of IEA required under condition 21. Recommend at next modification, correct numbering issue in this condition.
24	Dedication of Land Prior to 31 December 2018, or as otherwise determined by the Secretary, the Proponent must provide evidence of a signed agreement for the dedication by the Proponent to OEH of the 114 hectares of high conservation land as shown in Appendix 1. The agreement must also include reference to the land subject to the lease that will also be transferred by OEH to the Proponent. Such an agreement must set out operative and administrative provisions required to manage and transfer all lands as well as the timing for when parcels will be dedicated to OEH. <i>Note: The Department may be consulted throughout the development of the agreement, however is not party to this agreement or its implementation.</i>	N	N/A	To be audited as part of IEA required under condition 21.
	APPENDIX 1: AREA OF NATIONAL PARK LAND TO BE LEASED	N	N/A	To be audited as part of IEA required under condition 21.
	APPENDIX 2: LOCATION OF ELECTRICITY TRANSMISSION LINE	N	N/A	To be audited as part of IEA required under condition 21.
	APPENDIX 3: ARCHITECTURAL DRAWINGS	N	N/A	To be audited as part of IEA required under condition 21.
	APPENDIX 4: FERAL PROOF FENCE	N	N/A	To be audited as part of IEA required under condition 21.
	APPENDIX 5: LOCATION OF STORAGE DAM	N	N/A	To be audited as part of IEA required under condition 21.
	APPENDIX 6: CIVIL ROAD NETWORK DRAWINGS	N	N/A	To be audited as part of IEA required under condition 21.
	APPENDIX 7: EXTERNAL LIGHTING PLAN	N	N/A	To be audited as part of IEA required under condition 21.

C	Condition	Applicable	Status	Comments
	APPENDIX 8: INFRASTRUCTURE PLAN	N	N/A	To be audited as part of IEA required under condition 21.
	APPENDIX 9: ENERGY SUPPLY NETWORK PLANS	N	N/A	To be audited as part of IEA required under condition 21.
	APPENDIX 10: ELECTRICAL RETICULATION PLANS	N	N/A	To be audited as part of IEA required under condition 21.
	APPENDIX 11: LANDSCAPE MANAGEMENT PLAN	N	N/A	To be audited as part of IEA required under condition 21.
	APPENDIX 12: STATEMENT OF COMMITMENTS 12. Replace the statement of commitments in Appendix 12 with the statement of commitments in Attachment A of this modifying instrument.	Y	Compliant	See Table B. Recommend at next modification SOC's be reconsidered and simplified to ensure no duplication or contradiction with condition of development consent.
	APPENDIX 13: 13. Insert new Appendix 13 after Appendix 12 and include Figure in Attachment B of this modifying instrument.	N	N/A	To be audited as part of IEA required under condition 21.

Table B
Project Approval Statement of Commitments
 Green type represents 11 May 2019 (MOD2)

Action	Commitment	Applicable	Status	Comments
	Prior to the commencement of building work, the proponent will obtain separate approval for the design of all proposed buildings, landscape and drainage works, roads and structures. In addition, the proponent commits to prepare and implement the following management plans in association with the project.	N	N/A	To be audited as part of IEA required under condition 21.
Contamination Remediation Plan	This plan will fully investigate and document contamination within the Areas of Environmental Concern (AEC) associated with previous agricultural use of the site identified in the Geotechnical Investigation report prepared by Douglas Partners and submitted with the Concept Plan.	N	N/A	To be audited as part of IEA required under condition 21.
	<i>Objective</i> - To ensure that all land contamination resulting from previous agricultural use of the site is remediated in accordance with standard EPA requirements.	N	N/A	To be audited as part of IEA required under condition 21.
	The plan will be prepared, implemented and audited in accordance with: <ul style="list-style-type: none"> • State Environmental Planning Policy 55 – Remediation of Land • Managing Land Contamination: Planning Guidelines (prepared by Planning NSW and EPA). 	N	N/A	To be audited as part of IEA required under condition 21.
Archaeological Investigation	This plan will: <ul style="list-style-type: none"> • Continue consultation with the Aboriginal community. • Reconcile the current building siting plan with the location of identified Aboriginal objects and the findings of the predictive model, in consultation with the project architect. The aim is to minimise the impact of the building sitting plan on identified or potential Aboriginal objects. • Test excavation of locations where the current building siting plan conflicts with identified or potential archaeological deposit, where it is not practical to alter the building sitting plan. • Once the extent, integrity, spatial distribution and nature of the subsurface archaeology is identified (through test excavation and survey) the following management strategies will be implemented. <ul style="list-style-type: none"> ○ Conserve – sites of high scientific and cultural significance will be conserved by avoiding the placement of building works over these features and ensuring their ongoing protection. ○ Salvage – sites of moderate to good scientific or cultural significance will be conserved where possible. If preservation of sites is not possible due to design inflexibility, the sites will be salvaged to ensure that a proper record is obtained. ○ Destroy – sites of low scientific or cultural significance will not be retained in inconsistent with the revised building sitting plan. • Comprehensive reporting regarding the archaeological work undertaken in accordance with existing guidelines, including interpretation models and conservation and management plans. 	N	N/A	To be audited as part of IEA required under condition 21.
	<i>Objectives</i> - Comprehensive consultation with the Aboriginal community in determining the property's archaeological significance. - Full investigation of the Aboriginal archaeological potential and cultural value of the site. - Wherever practicable, to retain Aboriginal archaeological objects in situ. - To ensure that the detailed sitting and design of all proposed buildings and words minimise the disturbance of Aboriginal archaeological objects.	N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment	Applicable	Status	Comments
	<ul style="list-style-type: none"> - To ensure that any Aboriginal archaeological relics that are proposed to be disturbed, destroyed or removed are appropriately documented and/or transferred to the custody of their traditional owners. - To incorporate a plan for the interpretation of Aboriginal values for the site within the proposed resort. - To generate and implement a conservation and management plan for Aboriginal objects. 			
	The plan will be prepared in accordance with: <ul style="list-style-type: none"> • NPWS Guidelines • DEH Guidelines • Wollemi National Park Plan of Management • Consultation with local aboriginal communities 	N	N/A	To be audited as part of IEA required under condition 21.
	The Proponent recognises that the siting and layout of individual roads, buildings and structures indicated on the Building Siting Plan at page 30 of the Concept Plan may need to be refined or altered following full archaeological investigations.	N	N/A	To be audited as part of IEA required under condition 21.
Conservation Management Plan – Non-Aboriginal Heritage	The Conservation Management Plan (CMP) will fully document the history and heritage significance of the site and identify all significant structures, vegetation and relics thereon. It will categorise and rank the relative significance of all identified elements, identify the impact of the project on that significance and provide strategies for the ongoing management of each element, and the heritage significance of the site generally.	N	N/A	To be audited as part of IEA required under condition 21.
	The proponent recognises that the siting and layout of individual roads, buildings and structures indicated on the Building Siting Plan at page 30 of the Concept Plan may need to be refined or altered too reflect the final CMP. The proponent also acknowledges the use of 'Wallerawang' by James Walker from 1824, and the site's use as 'Wolgan Outstation' from the 1830s onward, and the grant of 1839.	N	N/A	To be audited as part of IEA required under condition 21.
	Objectives <ul style="list-style-type: none"> - To fully research and document the history of the site - To identify and document the heritage values of the site - To conserve elements of heritage significance, including, but not limited to the wattle and daub hut, the slab house and significant associated outbuildings, the slab house landscape curtilage, a - Remnant of the pastoral landscape in the vicinity of the slab house/valley floor, significant fencing, significant views and any archaeological relics identified on the site. - To interpret the cultural heritage of the site within the resort. - To identify and implement strategies for the ongoing management of the heritage values of the site in conjunction with the operation of the resort. 	N	N/A	To be audited as part of IEA required under condition 21.
	This plan will: <ul style="list-style-type: none"> • Reconcile the current building siting plan with a predictive archaeological model, in consultation with the project architect. • Include detailed physical archaeological surveys of the footprint of all works proposed in the revised building siting plan. • Include Management Strategies to determine when identified relics or places will be: <ul style="list-style-type: none"> ○ CONSERVED – by avoiding the placement of building works over these features and ensuring their ongoing protection. ○ SALVAGED – relics will be salvaged and preserved if preservation of sites is not feasible 	N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment	Applicable	Status	Comments
	<ul style="list-style-type: none"> ○ or warranted. ○ DESTROYED – if relics or sites are of low scientific or cultural significance. • Include strategies for the ongoing management and interpretation of the archaeological values of the site. 			
	The CMP will be prepared in accordance with Department of Environment and Conservation and NSW Heritage Office guidelines including the NSW Heritage Manual.	N	N/A	To be audited as part of IEA required under condition 21.
Ecological Management	<p>The following Environmental Management Plans (EMPs) will be prepared for separate approval and implementation as integral components of the project:</p> <ul style="list-style-type: none"> • Ecological Rehabilitation and Management Plan, including management strategies for the creek lines, vegetation and native fauna and their habitats, including specific considerations for threatened fauna species; • Weed Management Plan; and • Feral Fauna Management Plan; 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Other EMPs that will be implemented to mitigate potential impacts upon the natural environment include:</p> <ul style="list-style-type: none"> • Bushfire Hazard/Control Management Plan. • Erosion and Sedimentation Control Plan; and • Wastewater Management Plan; • Solid Waste Management Plan; and • Hydrological Management Plan. 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Ecological Rehabilitation Management Plan (ERMP) An Ecological Rehabilitation Management Plan (ERMP) will be prepared to address revegetation within the Nature Conservation Precinct, watercourse stabilisation and revegetation within the Riparian Corridor Precinct, vegetation management within the Pasture/Parkland Precinct and the management of native fauna and specific habitat features and resources for relevant species.</p>	N	N/A	To be audited as part of IEA required under condition 21.
	<p>The ERMP will be prepared with consideration of:</p> <ul style="list-style-type: none"> • NSW Fishers (1999) Policy and Guidelines – Aquatic Habitat Management and Fish Conservation • NSW Fisheries – Fish Passage Requirements for Waterway Crossings (Fairfull & Witheridge, 2003) • Plans of Management for the Gardens of Stone National Park and the Greater Blue Mountains World Heritage Area • DIPNR guidelines regarding: <ul style="list-style-type: none"> ○ Watercourse and Riparian Area Planning, Assessment and Design (V4 Draft) ○ Watercourse & Riparian Zone Rehabilitation Requirements ○ How to prepare a Vegetation Management Plan ○ Design and Construction of Paths and Cycleways along Watercourses and Riparian Areas (V2) ○ How to Collect Native Plant Seed Responsibly (V1) • management actions contained in Final and Draft Recovery Plans for threatened fauna species prepared under the TSC ACT (E.G. Yellow-bellied Glider; Large Forest Owls); and • any relevant management guidelines for native wildlife prepared by DEC. 	N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment	Applicable	Status	Comments
	<p>Revegetation The ERMP will provide details of specific measures and protocols for the protection and rehabilitation of retained native vegetation within the Nature Conservation Precinct, including:</p> <ul style="list-style-type: none"> • Weed removal and control protocols; • Details of appropriate plant species and planting densities to be utilised and the extent of vegetation types to be created; • Measures to reduce potential impacts of grazing herbivores (native and exotic) on regenerating vegetation; and • A monitoring program with performance criteria and measures for restitution of damage or supplementary plantings, if necessary. 	N	N/A	To be audited as part of IEA required under condition 21.
	Rehabilitation and revegetation of gully erosion that exists on some lower slopes, and most especially along the mid-southern boundary of the site, will be particularly addressed.	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Rehabilitation of Creek lines and Riparian and Aquatic Habitats The main watercourses within the study area are both currently experiencing substantial erosion as a result of cattle grazing, clearing of vegetation and flooding events. In particular, sections of the banks of the Wolgan River, at the northern end of the valley have undermined banks and trees with exposed root systems. Proposed management of the creek lines within the Riparian Corridor Precinct includes terracing within Carnes Creek to stabilise the creek banks and re-establishment of riparian vegetation to a minimum width of 40 metres from the top of the bank on either side of watercourses to provide habitat resources and wildlife corridors through the site. Measures will be implemented to ensure that woody debris removed or disturbed during creek stabilisation activities is replaced to maintain habitat for aquatic fauna. Only low impact, passive recreational access will be permitted in these areas to limit disturbance to ecological communities and native fauna.</p>	N	N/A	To be audited as part of IEA required under condition 21.
	Farm dams, which are currently degraded by cattle access and resulting grazing and trampling, are to be retained and rehabilitated under the Landscape Strategy. Rehabilitation will include the removal of stock and the planting of wetland vegetation and will aim to provide supplementary habitat for waterbirds and other aquatic and terrestrial fauna on the study site.	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Vegetation Management (Pasture/Parkland Precinct) Vegetation management within the Pasture Precinct will involve the maintenance of the existing rural pasture landscape supplemented through planting of clumps of native trees, including known food trees, to provide additional habitat for native fauna known to utilise habitat in this area. The pasture landscape will be maintained for native fauna species that currently utilise these areas, including the threatened Diamond Firetail and macropods but will require careful active management to sustain reduced fuel loads following the removal of grazing livestock.</p>	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Management Measures for Native Fauna The ERMP will identify native fauna species and habitat values of significance on the site and provide management strategies to be implemented to protect and enhance these values as appropriate.</p>	N	N/A	To be audited as part of IEA required under condition 21.
	Management will focus on reducing and controlling existing and novel impacts and threatening processes on site and in particular improving some aspects of threatened species habitat. Management strategies will be prepared in accordance with prescribed management actions contained in relevant Final and Draft Recovery Plans for threatened fauna species prepared under the TSC Act (e.g. Yellow-bellied Glider; Large Forest Owls) and management guidelines for native wildlife prepared by DEC.	N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment	Applicable	Status	Comments
	<p>Native fauna species of particular relevance for consideration in this regard include the following species known to utilise habitats within the proposed Riparian and Access Corridors and Development Precincts:</p> <ul style="list-style-type: none"> • Common Wombat • Brown Treecreeper • Speckled Warbler • Diamond Firetail • Eastern Bentwing-bat 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Also of relevance are those threatened species known to occur in areas of adjoining habitat, including the:</p> <ul style="list-style-type: none"> • Glossy Black-cockatoo • Gang-gang Cockatoo • Yellow-bellied Glider • Powerful and Sooty Owls 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>The ERMP will include consideration of the following fauna management issues and strategies:</p> <ul style="list-style-type: none"> • Planting of food trees for native species known to occur on site and on surrounding lands. Food trees of relevance for threatened species in particular will be identified to supplement existing foraging resources for these species; • selection of known hollow-forming trees (e.g. Boxes) for replanting to provide an ongoing nesting/roosting resource for hollow-dependent native fauna; • measures to protect native fauna and their habitats, in particular to reduce potential impacts on the Common Wombat, in riparian areas along Carnes Creek during proposed creek stabilisation and revegetation works and during resort operations; • careful consideration of the potential adverse impacts of removing grazing on threatened species habitats (i.e. grazing, provided timing and levels are appropriate, can actually promote a desirable understorey for ground feeding species such as the Brown Treecreeper species) and appropriate management measures (e.g. periodic burns of appropriate intensity) to maintain suitable habitat for this species (and other ground-feeding birds) in the absence of grazing; • careful consideration of appropriate fuel management/hazard reduction burning (including frequency, intensity and patterns) within the identified site Precincts to minimise potential negative impacts on native fauna, relevant habitat features and overall biodiversity of the ecological communities; • placement of logs and trunks of native trees removed for construction purposes in existing and regenerating vegetated areas to improve existing modified habitats. In particular, trees containing hollows or abundant decorticating bark should be used for this purpose. Such features would provide supplementary foraging substrates for ground-feeding threatened birds (such as the Brown Treecreeper) and potential den sites for the Spotted-tailed Quoll and its prey; • consideration of the location and types of fences erected within and around the site and the need to maintain habitat connectivity for native fauna; • the potential provision of nest boxes and bat roost boxes to supplement habitat for hollow-dependent species on the study site; 	N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment	Applicable	Status	Comments
	<ul style="list-style-type: none"> • measures for the removal or control of feral animals and weeds with reference to the proposed Feral Animal and Weed Plans of Management; • the implementation of monitoring programs to determine the success or otherwise of management strategies, including surveys to ascertain: <ul style="list-style-type: none"> ○ the persistence or otherwise of fauna habitat features of relevance for native species on site; ○ the persistence or otherwise of native fauna species and specific threatened species in suitable habitats on site; ○ the reintroduction of additional fauna species on site; ○ the use and success of fauna nest boxes if provided; ○ the persistence or otherwise of feral animals and weeds; and ○ the success of revegetation and rehabilitation activities. 			
	<p>Weed Management Plan The species listed as noxious in the Lithgow LGA under the Noxious Weeds Act (see table below) will be managed in accordance with the measures prescribed under the Act.</p>	N	N/A	To be audited as part of IEA required under condition 21.
	<p>A Weed Management Plan will be prepared to assist in the removal and/or control of weed species on the site and to reduce the potential for their spread into adjoining habitats within the GBMWHA. Protocols will be implemented to prevent the spread of weeds within the study area as a result of activities associated with the construction phase of the development.</p>	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Weed management will involve:</p> <ul style="list-style-type: none"> • the destruction of weed material removed from construction areas; • minimising areas disturbed during construction; • washing down vehicles and equipment between construction areas in particular following clearing activities in weed infested areas; • the use of shredded native plant material removed from the site as a mulch and ground cover on disturbed soil surfaces to reduce the potential for weed establishment; and • seeding of exposed soil stockpiles with a nursery crop to reduce the potential for weed infestation. 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>The weed management plan will also include strategies and protocols for the:</p> <ul style="list-style-type: none"> • removal and control of weeds in proposed vegetation rehabilitation areas; and • review of non-endemic species to be used in replanting in landscaped areas to ensure they are not invasive. 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>The Weed Management Plan will also incorporate a monitoring program that includes performance criteria and measures for the identification and remediation of problem areas, if necessary.</p>	N	N/A	To be audited as part of IEA required under condition 21.
	<p>The weed Management Plan will be prepared in consultation with NSW Agriculture, and with DEC and landowners of other neighbouring properties, to ensure a collaborative approach that is likely to result in more effective long-term reductions in local and regional weed populations.</p>	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Weed class and prescribed management action (N5W NW Act) for noxious weed species recorded in the study area.</p>	N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment			Applicable	Status	Comments
	Common Name	Scientific Name	Weed Class & Prescribed Management Action	N	N/A	To be audited as part of IEA required under condition 21.
Serrated Tussock	Nassella trichotoma	W3: Must be prevented from spreading and its numbers and distribution reduced.				
African Love Grass	Eragrostis curvula	W3: Must be prevented from spreading and its numbers and distribution reduced.				
Blackberry	Rubus fruticosus	W3: Must be prevented from spreading and its numbers and distribution reduced.				
Nodding Thistle	Carduus nutans	W3: Must be prevented from spreading and its numbers and distribution reduced.				
Scotch Thistle	Onopordum sp.	W3: Must be prevented from spreading and its numbers and distribution reduced.				
Sweet Briar	Rosa rubiginosa	W3: Must be prevented from spreading and its numbers and distribution reduced.				
Wild Radish	Raphanus raphanistrum	W3: Must be prevented from spreading and its numbers and distribution reduced.				
Willow	Salix fragilis	W4g: Must not be sold, propagated or knowingly distributed.				
Willow	Salix babylonica	W4g: Must not be sold, propagated or knowingly distributed				
	<p>The Weed Management Plan will be prepared in accordance with:</p> <ul style="list-style-type: none"> • the NSW Noxious Weeds Act and prescriptions for management of relevant species on site; • weed management guidelines prepared by NSW Agriculture; • DEC regional Pest management Strategies; • existing weed management plans for adjoining National Parks; • management guidelines for weed species attributed Key Threatening Process status under the TSC Act (e.g. exotic perennial grasses); • weed management guidelines for specific species listed in Recovery Plans for threatened species prepared under the TSC Act; and • regulations and controls for pesticide use pursuant to the NSW Pesticides Act 1999. 			N	N/A	To be audited as part of IEA required under condition 21.
	<p>Feral Fauna Management Plan</p> <p>A Feral Animal Species Management Plan is to be prepared for the control and management of feral animals that currently occur on site to reduce current adverse impacts on the site and the potential for adverse impacts on the values of the adjoining GBMWA. Specific issues that will be addresses include:</p> <ul style="list-style-type: none"> • grazing by introduced herbivores (such as rabbits and goats) and resultant effects on the structure and composition of plant communities; • the spread of weeds (such as Sweet Briar and Blackberry) via the droppings of introduced 			N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment	Applicable	Status	Comments
	<ul style="list-style-type: none"> species, such as Foxes; habitat degradation through the digging and burrowing of rabbits and wild pigs; and adverse impacts on the native fauna assemblage, including in particular smaller terrestrial fauna and nesting/roosting arboreal and ground-nesting species, as a result of predation by wild dogs, foxes and feral cats, and through competition for prey species. 			
	As is the case with weeds, proposed management measures are unlikely to be particularly effective unless conducted over the long term and in collaboration with surrounding landholders. As such, preparation of the Feral Animal Management Plan will be undertaken in consultation with NSW Agriculture and the Rural Lands Protection Board, and with DEC and landowners of other neighbouring properties, to ensure a collaborative approach that is likely to result in more effective long-term reductions in local and regional feral animal populations.	N	N/A	To be audited as part of IEA required under condition 21.
	The Feral Animal Management Plan will be prepared in accordance with: <ul style="list-style-type: none"> feral animal management policy and guidelines prepared by NSW Agriculture, the NSW Pest Animal Council and the National Feral Animal Control Programme; control guidelines for pest species (e.g. rabbit, feral pigs, wild dogs) declared under the Rural Lands Protection Act 1998, issued by the Rural Lands Protection Board; management guidelines outlined in Threat Abatement Plans for feral animal species attributed Key Threatening Process Status under the TSC Act and the EPBC Act (e.g. the Red Fox); management guidelines for specific feral animal species listed in Final or Draft Recovery Plans (prepared under the TSC Act) for threatened fauna species of relevance to the site; DEC regional Pest Management Strategies and feral animal management plans for adjoining National Parks; and regulations and controls for pesticide use pursuant to the NSW Pesticides Act 1999. 	N	N/A	To be audited as part of IEA required under condition 21.
	Precinct Specific Mitigation Measures Specific mitigation measures to be implemented within each Precinct are outlined below.	N	N/A	To be audited as part of IEA required under condition 21.
	Precinct 1 - Development Precinct Measures to be implemented include: <ul style="list-style-type: none"> fencing of vegetation which is to be retained in close proximity to development areas, prior to clearing or construction activities, to avoid damage from uncontrolled or accidental access; care to avoid mechanical damage to retained trees, and to protect against the compaction of soil or stockpiling around trees; instruction of contractors regarding limits of vegetation clearing; and the parking of vehicles and machinery and the location of stockpile sites in existing cleared areas and not within 50m of a waterway. 	N	N/A	To be audited as part of IEA required under condition 21.
	Significant habitat trees (e.g. mature nectar-producing species and large hollow-bearing specimens) will be retained and incorporated into the development design where possible. Such trees will be marked and protected from disturbance. Hollow-bearing trees within the proposed development footprint or in immediately adjacent areas that are to be removed during construction activities will be flagged for identification and carefully felled during clearing activities to minimise the potential for injury to fauna that may be occupying the tree and to preserve the tree intact. Portions of hollow-bearing trees removed from the construction area will be retained and either placed in adjacent bushland as hollow logs, or tied into large trees in adjacent woodland to provide shelter and nest sites for arboreal mammals, reptiles and birds. Large logs and woody debris will also be removed from the proposed	N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment	Applicable	Status	Comments
	disturbance areas during clearing and placed in adjacent retained vegetation to maintain resources for native fauna.			
	<p>Landscaping works within the Development Precincts will involve:</p> <ul style="list-style-type: none"> • use of locally sourced native plant species representative of the existing vegetation types within the study area in landscaped areas and for rehabilitation of disturbed retained vegetation; • selection of known food trees to provide supplementary foraging habitat for threatened fauna species known to occur in the study area and locality, including Allocasuarina spp. for the Glossy Black-Cockatoo and a variety of Eucalypts of relevance for the Koala and in particular winter-flowering species for nectar-feeding birds, possums and gliders; • the collection of native seeds within the study area (or immediate vicinity) by a qualified bush regenerator prior to clearing for use in landscaping and the revegetation of disturbed areas; • use of collected seeds in direct seeding or propagation of tube stock for planting; • the use of shredded native plant material removed from construction areas as a mulch and groundcover on disturbed areas. This approach will reduce sediment discharge, limit weed invasion, and retain seed stock for the regeneration of local native species; and • topsoil from vegetated areas within development areas should be removed and stockpiled for application to proposed landscaped areas, thus retaining the natural seed bank from the site and assisting in the regeneration of local plant species; 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Plant Species Utilised in Landscaping and Rehabilitation) will include:</p> <ul style="list-style-type: none"> • use of naturally occurring species of local provenance to maintain the genetic integrity of the existing vegetation; • careful selection of ornamental species for landscaped areas to prevent hybridisation with existing native species (in particular Banksias and Grevilleas) on surrounding lands. Only species (rather than cultivars) or sterile hybrids should be used; • avoidance of potentially invasive plant species in landscaping and revegetation areas; and • measures to minimise alterations to existing moisture regimes and nutrient levels to avoid modification to ecological processes. 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Precinct 2 - Riparian Corridor Precinct Wolgan River and Carnes Creek will be rehabilitated involving creek stabilisation measures to control erosion and the re-establishment of riparian vegetation to a minimum of 50m on either side of each creek bank to provide supplementary habitat and to create linked wildlife corridors through the site. Only low impact, passive recreational access will be permitted in the riparian corridor to reduce potential adverse impacts on native fauna and their habitats.</p>	N	N/A	To be audited as part of IEA required under condition 21.
	The ERMP will contain specific protocols to reduce the likelihood of adverse impacts on aquatic fauna and their habitats within the creek lines during stabilisation works, including protocols for the retention of woody debris within channel beds, control of sediment, and protection of existing riparian vegetation and fauna habitats etc.	N	N/A	To be audited as part of IEA required under condition 21.
	Disturbed areas surrounding bridge construction sites will be revegetated to ensure bank stabilisation, enhance connectivity and wildlife corridors and provide supplementary habitat for native fauna.	N	N/A	To be audited as part of IEA required under condition 21.
	The Bushfire Management Plan will incorporate strategies and protocols for the careful management of fuel loads within revegetated riparian corridors to reduce fire hazard but also to avoid negative impacts on biodiversity and the natural ecosystem.	N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment	Applicable	Status	Comments
	Precinct 3 - Access Corridor Precinct The clearing of native vegetation within the Access Corridor Precinct for the construction of the proposed access and service roads will be limited by the careful alignment of the roads through existing cleared areas as far as possible. The establishment of a landscaped median between the roads where they run parallel and close to one another will provide supplementary habitat for native fauna and may assist in facilitating fauna road crossings for gliding arboreal mammals.	N	N/A	To be audited as part of IEA required under condition 21.
	Fuel management activities within APZs will not involve the wholesale removal of vegetation and the level of fuel management activities required, involving selective removal of some canopy trees and the maintenance of understorey vegetation, will be determined so as not to substantially alter these areas. The APZs will continue to provide resources for native fauna in particular those threatened bird species that are known to utilise the ecotone areas between the open grassland and vegetated lower slopes.			To be audited as part of IEA required under condition 21.
	Specific mitigation measures will be implemented to ensure that adjoining retained vegetation will be protected from indirect impacts associated with the road's construction and operational phases (e.g., physical damage, sediment runoff, weed infestations).	N	N/A	To be audited as part of IEA required under condition 21.
	The potential for fauna road mortality will be reduced through the enforcement of speed limits and the erection of fauna crossing warning signs at appropriate locations. Such speed management features will be implemented in particular where vegetation extends up to the road verges.	N	N/A	To be audited as part of IEA required under condition 21.
	Precinct 4 - Managed Pasture Precinct The pasture landscape with its existing remnant scattered trees will be supplemented with clumps of new tree plantings throughout the Precinct. Only locally sourced native plant species representative of the existing vegetation types on the site will be used and plant species will be specifically selected to provide supplementary foraging habitat for threatened fauna, including in particular winter-flowering species for nectar-feeding birds.	N	N/A	To be audited as part of IEA required under condition 21.
	The Bushfire Management Plan will incorporate strategies and protocols for the careful management of fuel loads within this Precinct to reduce fire hazard following the removal of grazing but also to avoid negative impacts on biodiversity and the natural ecosystem.	N	N/A	To be audited as part of IEA required under condition 21.
	Precinct 5 - Nature Conservation Precinct The Bushfire Management Plan will incorporate strategies for ecologically sustainable strategic fuel management, including carefully planned hazard reduction burning of the Nature Conservation Precinct to reduce the potential risks of high intensity and frequency fire on the existing ecology and to reduce the potential threat of fire escaping onto adjoining lands. The appropriate timing and intensity of periodic burns will be determined and implemented to maintain suitable open grassy woodland/grassland ecotones for threatened ground-feeding species (such as the Brown Treecreeper) following the removal of grazing. Fire access trails will be aligned along existing tracks or through cleared areas (as far as possible) to minimise the requirement for clearing of native vegetation.	N	N/A	To be audited as part of IEA required under condition 21.
	Only low impact, passive recreational/wildlife education access will be permitted in the Nature Conservation Precinct to reduce potential adverse impacts on native fauna and their habitats.	N	N/A	To be audited as part of IEA required under condition 21.
	Key features of the proposed Landscape Strategy will include: <ul style="list-style-type: none"> • the proposed rehabilitation and revegetation of some currently highly modified foothill areas to restore natural ecological processes and provide supplementary habitat for native fauna; • the maintenance and rehabilitation of wetland habitats along the Wolgan River, involving the removal of grazing and weed control, and their connection with riparian/wildlife corridors through the site; and 	N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment	Applicable	Status	Comments
	<ul style="list-style-type: none"> the preparation and implementation of specific environmental management plans for the management of native fauna and their habitats, including in particular threatened species known to occur on site, for the control of introduced flora and fauna, and the management of Bushfire. 			
	<p>Additional Investigations The following investigations will be undertaken to enable a more detailed assessment of potential impacts on native fauna at specific sites and to determine appropriate impact mitigation and environmental management measures to reduce the potential for adverse impacts on these species and specific habitats and resources of relevance:</p> <ul style="list-style-type: none"> Dedicated field investigations to gain a better understanding of the Common Wombat population on site (abundance and distribution) and its use of specific areas of the site. Of particular interest will be the Carnes Creek Riparian Corridor, Access Corridor and Development Precincts where creek stabilisation and rehabilitation activities and proposed infrastructure and operations have the potential to impact on known burrows and foraging habitat for this species. Consultation with recognised Common Wombat experts and DEC wildlife management officers should also be undertaken so that best practice impact mitigation and environmental management measures can be implemented to reduce the potential for adverse impacts on this species and to encourage its continued presence in the area. Follow-up surveys targeting threatened species known to occur on site to estimate likely population sizes, distribution and habitat use on the site and immediately adjoining lands. Data collected will supplement existing data and be used to assist in the preparation of specific management strategies for these species and their habitats and to provide more comprehensive baseline data for potential future monitoring programs. Where appropriate, additional surveys will be undertaken during warmer months to determine the presence or otherwise of threatened species that would have been difficult to detect (even if present on site) given the timing of the surveys in August. For example, the Blue Mountains Water Skink is best detected during warm sunny conditions from September to March and adults of the Giant Dragonfly only emerge from larval burrows from October to November. However, it should be noted, that the sedge land habitats on site are considered to provide only marginal habitat for these species. Given the proposed retention of such habitats within the Nature Conservation Precinct these species are unlikely to be adversely affected by the proposed development even if they do occur. 	N	N/A	To be audited as part of IEA required under condition 21.
Soil and Water Management Plan	<p>A detailed Soil and Water Management Plan will be developed prior to the commencement of construction activities to control sediment and pollutant discharge from construction areas into adjoining vegetation and creek lines. Measures for the ongoing control and treatment of run-off from development areas to minimise adverse habitat impacts of discharges containing sediment, chemical pollutants and weed propagules will include:</p> <ul style="list-style-type: none"> the collection and direction of stormwater run-off from potentially contaminated sites to sedimentation ponds. In particular, run-off should be directed away from retained native vegetation; the stabilisation of exposed soil surfaces (e.g. through sterile grass seeding, erosion control meshing, or mulching using vegetative material removed from the study area); the use of erosion and sediment control measures to collect sediment and to reduce flow velocities; and 	N	N/A	To be audited as part of IEA required under condition 21.

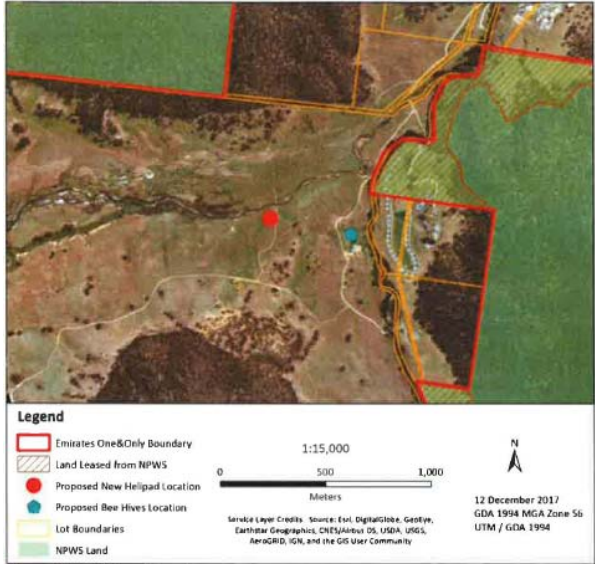
Action	Commitment	Applicable	Status	Comments
	<ul style="list-style-type: none"> regular monitoring and maintenance of all erosion and sediment control structures throughout the construction and operational phases of the development to ensure their effective function. 			
Bush Fire Hazard Management	<p>This plan will involve a range of measures to protect life, property and vegetation on the site and within the adjoining GBMWA from Bushfire. It will detail the conceptual bushfire management strategies outlined in the Bushfire Management Report (Australian Bushfire Protection Planning) submitted with the Concept Plan. It will include protocols and strategies to ensure unplanned fires on the site are contained and suppressed as quickly as possible, including:</p> <ul style="list-style-type: none"> management of bushfire fuels within each of the identified Precincts in accordance with ecological best practice; establishment of perimeter fire breaks and fire access trails; provision of firefighting resources on site, including a fully equipped Fire Station, helicopter support facilities and a specific water supply for firefighting operations; and the appropriate training of staff and establishment of an emergency management protocol in close consultation with local emergency services. 	N	N/A	To be audited as part of IEA required under condition 21.
	<p><i>Objectives</i></p> <ul style="list-style-type: none"> <i>To minimise bushfire hazard to human life, flora and fauna and property, both on and off the site.</i> <i>To implement a range of site planning principles and management practices, and to install a range a bushfire fighting devices to optimise the safety of the resort, its staff and its guests.</i> 		N/A	To be audited as part of IEA required under condition 21.
	<p>The Bush Fire Hazard Management Plan will be prepared in accordance with:</p> <ul style="list-style-type: none"> Planning for Bushfire Protection, Rural Fire Service, 2001. Wollemi National Park Plan of Management. 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>The plan will include a program of regular fuel load and APZ inspections at key times for fuel load accumulation, fuel load reduction and peak bushfire threat. In particular, it will consider:</p> <ul style="list-style-type: none"> strategies for the maintenance of fuel loads in open grassland/pasture areas (e.g. within the Managed Pasture Precinct and Nature Conservation Precinct) following the proposed removal of grazing. In addition to increased grass biomass, tree species will quickly establish where trees and shrubs are currently sparse. These naturally revegetating areas will eventually have increased fuel loads, with increased fire hazard ratings; careful management of fuel loads within revegetated riparian corridors to reduce fire hazard but also avoid negative impacts on biodiversity and the natural ecosystem; appropriate timing and intensity of periodic burns to maintain suitable open grassy woodland/grassland ecotones for threatened ground-feeding species (such as the Brown Treecreeper) following the removal of grazing; and ecologically sustainable strategic fuel management, including carefully planned hazard reduction burning, of the Nature Conservation Precinct to reduce the potential risks of high intensity and frequency fire on the flora and fauna asset and to reduce the potential threat of escape of fire onto adjoining lands (ABPP, 2005). 	N	N/A	To be audited as part of IEA required under condition 21.
Emergency Response Plan (Flooding and Bushfire)	<p>This plan will detail plans of training and emergency response measures to protect human safety in the event of flood, bushfire or other natural emergencies.</p>	N	N/A	To be audited as part of IEA required under condition 21.


Action	Commitment	Applicable	Status	Comments
	<p><i>Objective</i></p> <ul style="list-style-type: none"> - <i>To minimise threats to human safety during natural emergencies, particularly bushfire and flood events.</i> 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>The Emergency Response Plan will be prepared in accordance with:</p> <ul style="list-style-type: none"> • Bushfire Management Report accompanying the Concept Plan prepared by Australian Bushfire Protection Planning. • Planning for Bushfire Protection 2001 Floodplain Management Manual: The Management of Flood Liable Land (January 2001, NSW Govt). 	N	N/A	To be audited as part of IEA required under condition 21.
Water Management Plan	The plan will detail measures to be implemented to minimise the effect of water sourcing, use and disposal upon natural systems.	N	N/A	To be audited as part of IEA required under condition 21.
	<p><i>Objectives</i></p> <ul style="list-style-type: none"> - <i>To minimise impacts on the existing water cycle, in terms of both surface and ground water quality and flow rates/levels.</i> - <i>To minimise water consumption and disposal.</i> - <i>To optimise the use of rainwater harvested within the resort for potable water supply.</i> - <i>To optimise the re-use of treated effluent within the resort for grey water supply.</i> - <i>To minimise the use of electricity and chemicals in the treatment of effluent.</i> - <i>To ensure that any disposal of effluent is within the long term cumulative carrying capacity of the receiving environment (both water courses and soils) in terms of water volume and contaminants, including nutrients.</i> - <i>To ensure that a reliable supply of water is available to the site, for both ongoing resort use and occasional rapid refilling of the stored on-site firefighting supply.</i> - <i>To minimise the erosion and transport of sediment into waterways.</i> - <i>To minimise the release of pollutants (e.g. stored fuel, litter, untreated sewage etc.) into natural systems.</i> 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>The Water Management Plan will be prepared in accordance with:</p> <ul style="list-style-type: none"> • NSQMS Use of Reclaimed Water Guidelines (2000) • NSW Health Interim Guidance for Greywater and Sewage Recycling in Multi unit Dwellings and Commercial Premises (2004) • NSW EPA Guidelines for Land Irrigation of Effluent (2004) • EIS Guideline on Irrigation of Sewage Effluent and EIS Guideline on Sewerage Systems (Department of Urban Affairs and Planning, September 1996) • AS 6400 (2005) -Water Efficient Products - Rating and Labelling • NSW Health (2004), Australian Rainfall and Runoff • Commonwealth Government Enhealth Guideline (2004) • Assessment, Classification and Management of Liquid and Non-liquid Waste (DEC) • Lithgow Council stormwater guidelines 	N	N/A	To be audited as part of IEA required under condition 21.
	The plan will document baseline conditions and involve ongoing regular monitoring and management of impacts in relation to stream and ground water flows and water quality. The plan will also address the ongoing management and monitoring of specific water issues, such as the harvesting of rainwater, management of overland flows, ongoing potable and non-potable demand/supply management,	N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment	Applicable	Status	Comments
	wastewater treatment, effluent quality/quantity/disposal, and soil/water quality in the effluent irrigation area and both upstream and downstream of the resort and (and irrigation area).			
Energy and Water Conservation Plan	This plan will detail design measures, devices and practices implemented to minimise demand for water and energy consumption.	N	N/A	To be audited as part of IEA required under condition 21.
	<p><i>Objectives</i></p> <ul style="list-style-type: none"> - <i>To minimise water consumption.</i> - <i>To minimize energy consumption, during construction, materials selection and ongoing operation.</i> - <i>To minimise the production of 'greenhouse ' gas emissions</i> 	N	N/A	To be audited as part of IEA required under condition 21.
Construction Management Plan	A plan of construction measures and practices implemented to minimise potential construction impacts such as erosion and sediment transfer, construction traffic, noise generation, damage to heritage and landscape features and worker safety.	N	N/A	To be audited as part of IEA required under condition 21.
	<p><i>Objectives</i></p> <ul style="list-style-type: none"> - <i>To minimise erosion, and the transport of sediments into waterways.</i> - <i>To minimise traffic and noise impacts of construction vehicles.</i> - <i>To minimise noise generation.</i> - <i>To minimise the generation of dust and other air pollutants.</i> - <i>To ensure that a safe environment is provided for all/ construction workers.</i> - <i>To minimise construction impacts upon surrounding residents and the natural environment.</i> - <i>To minimise impacts of construction works upon heritage buildings and works, significant trees and cultural plantings and archaeological sites and relics.</i> 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>The plan will be prepared with reference to:</p> <ul style="list-style-type: none"> • Managing Urban Stormwater: Soils and Construction 2004 • Environmental Criteria for Road Traffic Noise (EPA, 1999) RTA's Guide to Traffic Generating Developments Workcover Guidelines • All guidelines to the Occupational Health and Safety Act, 2000. • The Archaeological Investigation and Conservation Management Plan detailed in this Statement of Commitments. 	N	N/A	To be audited as part of IEA required under condition 21.
	The plan will include a formal process for receiving, actioning and recording complaints and other input from the owners/users of surrounding properties.	N	N/A	To be audited as part of IEA required under condition 21.
Wolgan Road Upgrade Plan	The proponent will make an equitable contribution towards upgrade works on Wolgan Road in relation to damage caused by construction traffic and increased maintenance work attributable to additional traffic generated by the development. The proponent will make an equitable contribution to the implementation of measures to address the existing safety deficiencies of the road.	N	N/A	To be audited as part of IEA required under condition 21.
	<p><i>Objectives</i></p> <ul style="list-style-type: none"> - <i>To mitigate existing safety hazards.</i> - <i>To retain the rustic, rural character.</i> - <i>To ensure that additional traffic generated by the development does not degrade the physical condition of the road.</i> 	N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment	Applicable	Status	Comments
	Road safety improvements will be designed in accordance with: <ul style="list-style-type: none"> • AUSTROADS Road Safety Audit • RTA's Policy for Signposting of Resorts and Tourist Facilities. • Wollemi National Park Plan of Management. 	N	N/A	To be audited as part of IEA required under condition 21.
Access to Donkey Mountain and Gardens of the Stone National Park	The Feral Fauna Management Plan and Landscape Management Plan include the provision of a feral proof fence to be included as a conservation measure. The feral proof fence will be predominately located along Wolgan Road to the north of Donkey Mountain. The final location of the feral proof fence will be determined prior to construction in consultation with National Parks and Wildlife Service (DEC). The proponent will provide access to Donkey Mountain and the Gardens of Stone National Park at two points along the feral proof fence (where currently these two points have legal public access off Wolgan Road). Access to Donkey Mountain and the Gardens of Stone National Park will be via gated entry at these points with managed access, to be controlled by the National Parks and Wildlife Service (NPWS). The location and type of gated entry will be formalised with the National Parks and Wildlife Service (NPWS) prior to construction.	N	N/A	To be audited as part of IEA required under condition 21.
Fly Neighbourly Agreement	In regards to helicopter operations, the proponent will agree to implement a 'Fly Neighbourly Agreement' (FNA) prior to operation of the resort. The FNA will be prepared in accordance with relevant Air Services Australia and Civil Aviation Safety Authority (CASA) guidelines and policies, specifically "Fly neighbourly agreements guidelines for their preparation and use", published by Air Services Australia.	Y	-	See Condition 18C.
	Additionally, the FNA will be prepared in consultation with relevant authorities, which include but are not necessarily limited to: <ul style="list-style-type: none"> • Civil Aviation Safety Authority (CASA); • Airspace and Environment Regulatory Unit (located within Air Services Australia) and regulated by CASA; and • Lithgow City Council. 	Y	-	See condition 18.
	The FNA will be structured to include, but not be limited to: <ul style="list-style-type: none"> • The discussion on the intent and term of the agreement; The parties to the agreement; • A map of the area where the agreement will apply; • Hours of operation; and • Flight height limits. 	Y	-	See condition 18 HOMP.
	The resort will only contract with helicopter operators that adhere to the Fly Neighbourly Advice published by Airservices Australia in the En Route Supplement Australia (ERSA) Special Procedures provisions for the Blue Mountains National Park to the greatest extent possible within the limits of changing weather influences and flight safety.	Y	-	See condition 18.
	Helicopters will continue to operate in the area of the resort or Greater Blue Mountains World Heritage Area only from half an hour after sunrise to half an hour prior to sunset per the expired EPBC Approval dated 1 June 2007 (EPBC 2006/2567).	Y	-	See condition 18.
Operational Management Plan	A plan that details the operational management of the resort.	Y	-	See condition 18.
	<i>Objectives</i> <ul style="list-style-type: none"> - To optimise benefits to the local economy and community - To minimise adverse impacts upon the local community, economy and natural environment. 	Y	-	See condition 18.

Action	Commitment	Applicable	Status	Comments								
	<p>Vehicular Access and deliveries/servicing</p> <p>Objectives</p> <ul style="list-style-type: none"> - To minimise vehicle trips into Wolgan Valley. - To limit the type and size of vehicles accessing the site - To minimise road kill of native fauna. - To ensure that drivers accessing the site are trained and familiar with the road conditions and habits of local fauna. 	N	N/A	To be audited as part of IEA required under condition 21.								
	<p>Off-site supply depot and guest reception</p> <p>An off-site facility outside Wolgan Valley (probably within Lithgow) will be established. All goods delivery vehicles and guests will be required to deliver/check in to this facility. No guests or goods delivery vehicles will be permitted to drive into the resort. Guests and goods will be transferred to the resort by trained resort staff.</p>	N	N/A	To be audited as part of IEA required under condition 21.								
	<p>Objectives</p> <ul style="list-style-type: none"> - To provide a facility where various deliveries of goods bound for the site can be stored and consolidated into a reduced number of coordinated trips. - To provide a facility for guests driving to the resort to leave their vehicle, prior to being transferred to the site by trained resort staff. 	N	N/A	To be audited as part of IEA required under condition 21.								
	<p>Helicopter movements</p> <ul style="list-style-type: none"> • Emirates One&Only Wolgan Valley will ensure that the project does not generate more than: <ul style="list-style-type: none"> o a maximum of 14 helicopter trips per week (Monday to Sunday) excluding the periods defined in Table 1; o a maximum of 28 helicopter trips per week during the peak holiday and tourism periods defined in Table 1; o a maximum of 5 helicopter trips in any given day, excluding Public Holidays where helicopter trips will be restricted to 2 trips per day. 	Y	N/A	To be audited as part of IEA required under condition 21.								
	<p><i>Table 1 Holiday Periods</i></p> <table border="1"> <thead> <tr> <th>Event(s)</th> <th>Peak holiday and tourism period</th> </tr> </thead> <tbody> <tr> <td>NSW School Holidays **</td> <td>Summer school holidays (6 weeks) Autumn school holidays (2 weeks) Winter school holidays (2 weeks) Spring school holidays (2 weeks)</td> </tr> <tr> <td>Easter long weekend**</td> <td>A day either side of Good Friday and Easter Monday (if outside the school holiday period)</td> </tr> <tr> <td>Bathurst car races - February (GT3 races) and October (V8 races)**</td> <td>1 week in February and 1 week in October</td> </tr> </tbody> </table> <p>Note: * NSW School Holiday Period as set by NSW Department of Education and Communities; ^ A week is Monday to Sunday; and # Bathurst car race weeks will be defined as Wednesday prior to the commencement of the event until Tuesday after the completion of the event.</p>	Event(s)	Peak holiday and tourism period	NSW School Holidays **	Summer school holidays (6 weeks) Autumn school holidays (2 weeks) Winter school holidays (2 weeks) Spring school holidays (2 weeks)	Easter long weekend**	A day either side of Good Friday and Easter Monday (if outside the school holiday period)	Bathurst car races - February (GT3 races) and October (V8 races)**	1 week in February and 1 week in October	Y	N/A	To be audited as part of IEA required under condition 21.
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Easter long weekend**	A day either side of Good Friday and Easter Monday (if outside the school holiday period)											
Bathurst car races - February (GT3 races) and October (V8 races)**	1 week in February and 1 week in October											
	<ul style="list-style-type: none"> • Accurate records of helicopter trips to and from Emirates One&Only Wolgan Valley will be maintained via helicopter landing and take-off counts from the helipad, and by working closely with any contracted helicopter operator to ensure accurate records are kept. • No joy flights are to be undertaken from the resort in the Wolgan Valley and surrounding National Parks. • A new helipad will be established and located farther away from local residences and closer to the primary resort buildings as provided in Figure 1. The existing helicopter landing pad located adjacent to Wolgan Valley Road near the access road into the resort will be retained for emergency purposes only. 	Y	-	<ul style="list-style-type: none"> • See condition 18. • HOMP section 3.5.1 and Appendix D states no joy flights over National park areas. 								

Action	Commitment	Applicable	Status	Comments
	<ul style="list-style-type: none"> Helicopter flight paths to and from the new helipad location will be as shown in Figure 2. For any helicopter trips engaged by the resort for uses other than customer access, such as marketing and survey, where flight paths are outside of those in Figure 2, local property owners will be notified a minimum of one week in advance unless for emergency purposes. These trips will be no more than 5 trips (10 movements) per year and count toward the approved weekly trip limits. The new helipad location and flight paths will be established and operated in accordance with the appraisal against the Civil Aviation Safety Authority's Guidelines for the establishment and operation of onshore Helicopter Landing Sites. No public use of the helipad will be allowed, except for emergency purposes. 			
	 <p><i>Figure 1 New Helipad Location</i></p>	Y	Compliant	Locations viewed during site visit are generally in accordance with Figure 1 and 2 (see Plates). Flight path generally as per Figure 2, see discussion on approved deviations in Condition 18.

Action	Commitment	Applicable	Status	Comments
	 <p>Figure 2 Helicopter Flight Paths To/From New Helipad Location</p>	Y	-	See Condition 18.
	<p>Objective</p> <ul style="list-style-type: none"> - To minimise noise impacts upon guests, surrounding residents and the Greater Blue Mountains World Heritage Area 	Y	-	See condition 18.
	<p>Employee numbers, rostering and accommodation Objectives</p> <ul style="list-style-type: none"> - To create opportunities for the employment of local residents. - To minimise staff trips to and from the site. 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Staff Induction Objectives</p> <ul style="list-style-type: none"> - To ensure all staff appreciate and are sensitive to the very special natural and cultural values and sensitivities of Wolgan Valley, and the sustainability initiatives of the resort. - To ensure all staff understand, and sufficient staff are suitably qualified to implement the range of management plans adopted for the resort, particularly the emergency response plans. - To ensure that all staff driving in and out of Wolgan Valley are familiar with the road, its safety hazards and the habits of local wildlife. - To include personnel on staff with experience and intimate understanding of the local ecology and aboriginal and non-aboriginal history of Wolgan Valley 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Local Sourcing of Materials, Produce and Services Objective</p> <ul style="list-style-type: none"> - To preferentially source produce and services from within the locality and the Lithgow region 	N	N/A	To be audited as part of IEA required under condition 21.
	<p>Waste Management Objectives</p> <ul style="list-style-type: none"> - To minimise the generation of waste. - To minimise wastes entering the natural environment. - To optimise the on-site recycling or reuse of wastes. 	N	N/A	To be audited as part of IEA required under condition 21.

Action	Commitment	Applicable	Status	Comments
	<ul style="list-style-type: none"> - To ensure that all solid waste leaving the site is separated by recyclability. - To optimise the on-site composting and disposal of green waste. 			
	Waste Management strategies will be prepared in accordance with: <ul style="list-style-type: none"> • Regional Waste Boards in NSWs Waste Planning Guide for Development Applications - Planning for Less Waste • EPA Environmental Guidelines - Composting and Related Facilities (2003). Wollemi National Park Plan of Management 	N	N/A	To be audited as part of IEA required under condition 21.
	Bee Hive Management Objective To appropriately maintain onsite beehive for the production of honey for the resort	N	N/A	To be audited as part of IEA required under condition 21.
	Up to six bee hives will house Apis mellifera (European honeybee). In accordance with the NSW Biosecurity Act 2015, the resort's bee hives will be managed to prevent the robbing of the managed hive by feral bees. This means ensuring the hives are maintained strong and able to defend themselves from feral bees through appropriate management practices including cleaning up honey or beehive material and preventing exposure of bee hive material to robbing by feral bees. The following will be undertaken: <ul style="list-style-type: none"> • The resort will follow the Biosecurity Manual for Beekeepers guidelines that contain best practices for caring for and managing hives to reduce the risk of exotic and established pests affecting honey bees. This includes apiary monitoring and surveillance for pests. Regular monitoring is a fundamental part of honey bee management practices and gives the best chance of spotting exotic or established pests soon after they arrive. • The resort will also register as a bee keeper with the NSW Department of Primary Industries (DPI) and maintain compliance with the Apiaries Act 1885. • Bee hives will be excluded from any NSW National Park lands leased by Emirates. 	N	N/A	To be audited as part of IEA required under condition 21.

APPENDIX D
Noise Monitoring Report



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E-mail: bridgesacoustics@bigpond.com

EMIRATES ONE&ONLY WOLGAN VALLEY RESORT

ENVIRONMENTAL AUDIT – HELICOPTER NOISE SURVEY

REPORT J0130-147-R1

4 NOVEMBER 2019

Prepared for:
Hansen Bailey Pty Ltd
P.O. Box 473
SINGLETON NSW 2330

Prepared by:
Mark Bridges BE Mech (Hons) MAAS
Principal Consultant

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INTRODUCTION

Emirates One&Only Wolgan Valley Resort (the resort) currently operates under Project Approval (PA) 06_0310 granted on 13 April 2007 and last modified on 11 May 2018. The May 2018 Modification 2 to PA 06_0310 included increased limits on the number of helicopter trips to and from the resort and required an audit of helicopter noise levels after 12 months of operation under the modified PA.

The Modification Application was accompanied by *One&Only Wolgan Valley – Modification of Concept Plan and Project Application (Helicopter trips and other changes)* (KMH Environmental, August 2017) (the Environmental Assessment) and *Emirates One&Only Wolgan Valley – Modification of Concept Plan and Project Approval (Helicopter trips and other changes) – Response to Submissions Report* (KMH Environmental, December 2017) (RTS).

Hansen Bailey has been commissioned by the resort to complete the audit, as required by Schedule 2 Condition 18H of PA 06_0310 which is reproduced below:

18H. Within 3 months of the first annual anniversary of the approved increase in helicopter trips, unless the Secretary directs otherwise, the Proponent must commission and pay the full costs of an audit of the actual environmental performance associated with the increased helicopter trips. The audit must:

- a) Be conducted by a suitably qualified, experienced and independent person;*
- b) Include consultation with the relevant agencies and address and feedback from the local community;*
- c) Assess the environmental performance of the increased helicopter trips;*
- d) Include the results of a noise monitoring program which demonstrates noise levels are as predicted in the Environmental Assessment;*
- e) Review the adequacy of the register and procedures required under the approval; and*
- f) If necessary, recommend measures or actions to improve the environmental performance associated with helicopter trips to and from the site and/or any strategy/plan/program required under this approval.*

The Proponent must provide within 3 months of the completion of the audit, a report detailing its findings for the approval of the Secretary.

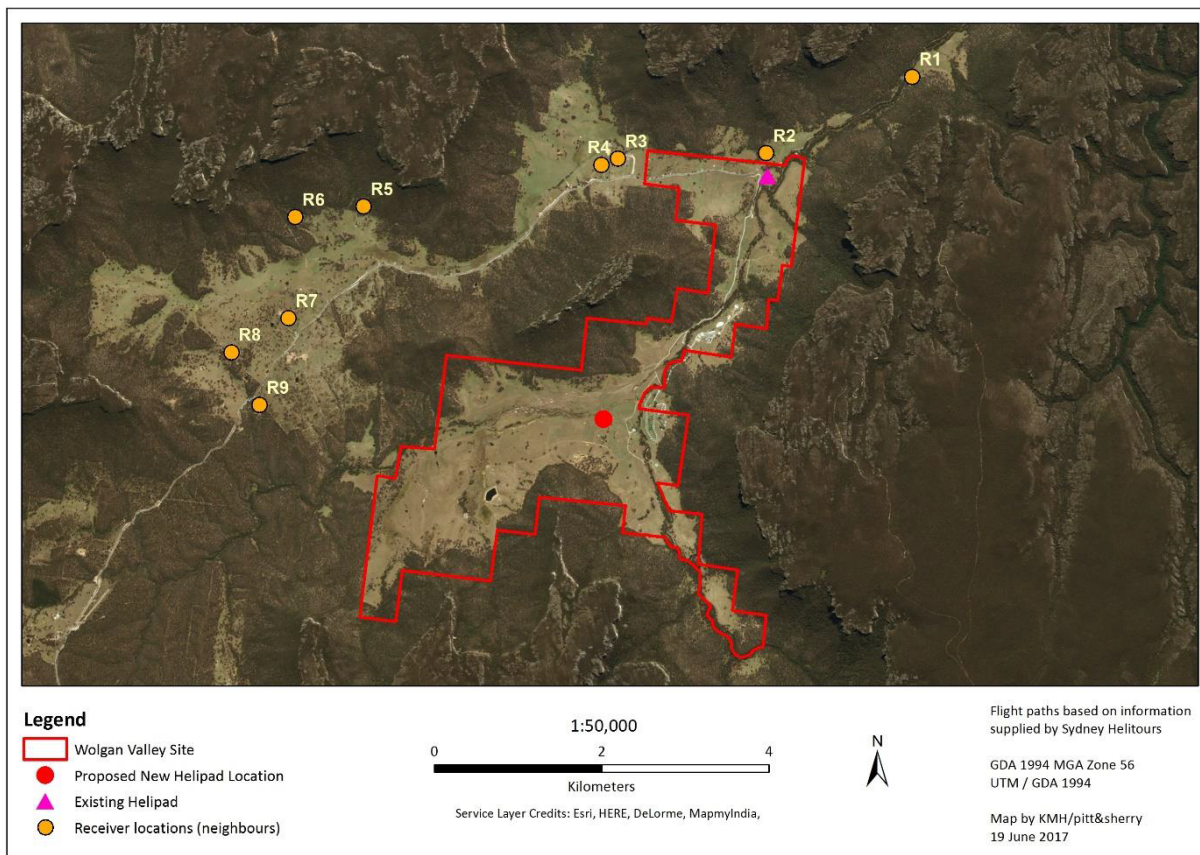
Bridges Acoustics has been engaged by Hansen Bailey to complete the noise survey required by Condition 18Hd, including preparation of this report to accompany the full audit report. Results and conclusions presented in this report are based on a noise survey carried out during the period 9 October to 23 October 2019.

1.1 Receptors

The resort is located within the Wolgan Valley approximately 35 km north of Lithgow and approximately 190 km north-west of Sydney Airport. The resort is accessed by car via Wolgan Road or by helicopter from Sydney Airport.

A total of nine rural residences, in 3 groups, were identified in the Environmental Assessment within a radius of approximately 5 km from the relocated helipad. The location of each residence is shown in Figure 1, reproduced from Figure 3 in the Environmental Assessment.

Figure 1: Receptor Locations (from Figure 3 in the Environmental Assessment)



Receptors are identified in this report using the identification numbers shown in Figure 1.

2 NOISE CRITERIA

2.1 PA 06_0310

PA 06_0310 does not include specific noise limits applied to helicopter movements to and from the resort. Instead, conditions limiting the number of helicopter trips have been included in PA 06_0310. The following conditions are relevant to this audit and noise survey:

SCHEDULE 2: ADMINISTRATIVE CONDITIONS.

6. *The proponent must ensure the project does not generate more than 4 helicopter trips a week when using the helipad located adjacent to Wolgan Road on the west side of the Wolgan River.*
- 6A. *Following relocation of the helipad to the central operational area of the Resort as shown in Appendix 13 of this Project approval, the Proponent must ensure that the project does not generate more than:*
 - (a) *A maximum of 14 helicopter trips per week (Monday to Sunday) excluding the periods defined in Condition 6A(b);*

- (b) *A maximum of 20 helicopter trips per week during the peak holiday and tourism periods defined as:*

Event(s)	Peak holiday and tourism period
<i>NSW School Holidays *^</i>	<i>Summer school holiday (6 weeks) Autumn school holiday (2 weeks) Winter school holiday (2 weeks) Spring school holiday (2 weeks)</i>
<i>Easter long weekend</i>	<i>A day either side of Good Friday and Easter Monday (if outside the school holiday period)</i>
<i>Bathurst car races – February (GT3 races) and October (V8 races) #</i>	<i>1 week in February and 1 week in October</i>

For the purposes of this condition:

- * NSW School Holiday Period as set by NSW Department of Education and Communities;*
- ^ A week is Monday to Sunday; and*
- # Bathurst car race weeks will be defined as Wednesday prior to the commencement of the event until Tuesday after the completion of the event.*

- (c) *a maximum of 5 helicopter trips in any given day, excluding Public Holidays where helicopter trips will be restricted to 2 trips per day*

6B. *The Proponent may apply to the Secretary for approval to increase the maximum helicopter trips per week during the peak holiday and tourism periods as defined in Condition 6A(b) up to a maximum 28 trips per week. Such approval may only be sought:*

- (a) after at least 12 months of undertaking helicopter trips in accordance with that approved under 06_0310 Mod 2;*
- (b) demonstrated demand for the increase is provided;*
- (c) an environmental performance audit of the increased helicopter trips has been carried out in accordance with Condition 18H; and*
- (d) a report detailing the findings of the audit is provided to the Secretary.*

Condition 18Hd requires a comparison between measured helicopter noise levels and the noise levels predicted in the Environmental Assessment. Section 5.1.1 of the Environmental Assessment presents the adopted noise criteria, reproduced below:

Based on parameters discussed in detail in the noise assessment, the following noise limits for residential receivers were nominated:

- Take-off and Landing: LAeq,24hr 40 dBA
LAmax 45 dBA (10.00 pm to 7.00 am)*
- Overflight: LAeq,24hr 45 dBA*

Section 5.1.2 of the Environmental Assessment presents the measured noise levels for helicopter movements to and from the relocated helipad. An extract from Section 5.1.2 is reproduced below:

During the measurements for the proposed helipad location, only the unattended noise logger location near the helipad picked up helicopter noise. The Wolgan Road noise logger did not measure any helicopter noise. At each of the other two attended locations helicopter noise was barely audible only once, but not measurable. The maximum noise level from the helicopter was observed to be below 35 dBA on both occasions.

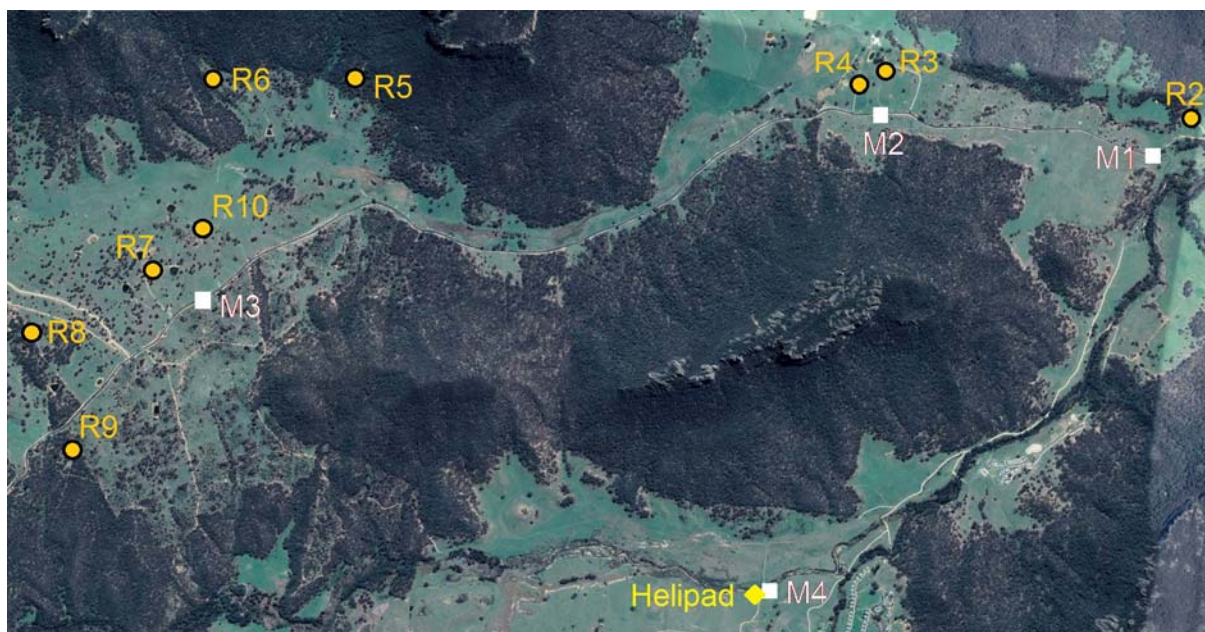
Table 7 in section 5.1.2 of the Environmental Assessment indicates predicted noise levels of < 30 LAeq,24hr and < 40 LAm_{ax} from the relocated helipad to all receivers.

Condition 18Hd requires the audit to confirm helicopter noise levels are as predicted in the Environmental Assessment, which requires noise levels to remain below 30 LAeq,24hr and 40 LAm_{ax}. Alternatively, helicopter noise may be considered acceptable if it meets the noise criteria adopted in the Environmental Assessment, which are 40 LAeq,24hr and 45 LAm_{ax}.

3 NOISE SURVEY

Determining representative helicopter noise levels requires noise measurement data for a number of helicopter trips, requiring a noise survey over multiple days. The survey therefore required unattended noise monitors to be installed at locations representing potentially affected receptors. An additional noise monitor was installed close to the relocated helipad to ensure the exact time of each landing and take-off could be determined. The locations of receptors labelled R1 to R10, and each noise monitor labelled M1 to M4, are shown in Figure 2.

Figure 2: Receptor and Noise Monitoring Locations



R10 in Figure 2 indicates an additional receptor north east of R7 that was not identified in the Environmental Assessment.

Noise monitors M1 to M3 were installed close to Wolgan Road and, in the case of M1, close to the resort's access road, to ensure noise from passing road vehicles could be reliably identified and separated from helicopter noise. Monitor M4 was located approximately 70 m north-east of the

relocated helipad to minimise exposure to the high wind speeds at ground level caused by helicopters taking off and landing.

Each noise monitor consisted of a Svan 955 or Svan 977 Class 1 sound level meter in a weatherproof case, with a 12.7 mm microphone and windshield attached via an extension cable. Each monitor was programmed to measure and store one second LAeq noise levels for the entire monitoring period. Prior to the noise survey, the time clocks in all noise monitors were synchronised to an accuracy of better than one second to ensure periods of helicopter noise identified by M4 could be correlated with measured noise levels at M1 to M3. Each noise monitor was calibrated before and after the noise survey using an 01dB Cal-01 acoustic calibrator producing 94 dB at 1 kHz, with each reading well within the limits for Class 1 instruments.

The noise monitors were installed on Wednesday 9 October and retrieved on Wednesday 23 October 2019. A total of 14 helicopter trips (28 movements) occurred during this time, according to records kept by the helicopter operator and provided by the resort by email on 25 October 2019. The batteries in monitors M2 and M4 failed before the last helicopter trip, therefore noise data for 13 trips (26 movements) are presented in this report.

Appendix A contains calibration certificates for the noise monitors and acoustic calibrator, and photographs of receptor monitors M1 to M3.

4 MEASURED NOISE LEVELS

Noise levels at each receptor monitor M1 to M3 varied substantially from time to time depending on the level of noise from passing traffic, birds, insects, wind and domestic animals such as cattle in adjacent fields. Measured noise levels indicate the total noise level from helicopter movements combined with ambient noise from other sources, therefore do not necessarily reflect the noise level produced by the helicopter alone.

Accurate noise measurement results require helicopter noise levels to be higher than ambient noise levels at the time of each helicopter movement. The relatively high levels of ambient noise at noise monitoring locations M1 to M3 prevented accurate helicopter noise measurements for many of the movements that occurred during the noise survey. As ambient noise masked helicopter noise for all movements, only an upper limiting noise level from the helicopter movement can be determined.

Measured noise levels that may have been influenced to some extent by the helicopter movement are highlighted in Table 2 with green shading, although actual helicopter noise levels in the absence of other sources are likely to be substantially lower than the reported levels. Other movements that occurred during a period of unusually high ambient noise levels are unlikely to have influenced the measured levels and are not shaded. No noise level is reported where the helicopter movement directly coincided with a car passby at a noise monitoring location.

Table 1: Upper Limiting Noise Levels During Helicopter Movements, dBA.

Date, Model	Movement	Reported Time ¹ / Measured Time ²	M4 ³	M1	M2	M3
15/10 EC130	Arrive	13:15 / 13:16:20	84	< 35	< 45	< 32
	Depart	13:35 / 13:35:20	89	< 40	< 33	< 50
15/10 R66	Arrive	17:41 / 17:40:30	86	< 40	< 50	< 40
	Depart	17:56 / 17:57:10	75	< 42	< 35	< 50
18/10 R66	Arrive	11:00 / 10:59:00	80	< 45	< 35	< 30
	Depart	11:13 / 11:14:40	83	< 47	< 27	< 36

Date, Model	Movement	Reported Time ¹ / Measured Time ²	M4 ³	M1	M2	M3
18/10 EC130	Arrive	12:55 / 12:53:50	89	< 44	< 33	< 35
	Depart	13:35 / 13:35:30	79	< 44	< 29	< 45
18/10 R66	Arrive	13:26 / 13:26:10	77	< 43	< 40	< 45
	Depart	13:30 / 13:32:00	78	< 44	< 28	< 44
18/10 EC130	Arrive	16:50 / 16:47:10	85	< 45	< 33	< 54
	Depart	16:55 / 16:58:30	85	< 45	< 38	< 52
18/10 R66	Arrive	17:39 / 17:37:00	88	< 50	< 35	< 45
	Depart	17:53 / 17:54:00	77	< 51	< 30	< 48
19/10 EC130	Arrive	12:15 / 12:10:30	86	< 39	< 43	< 45
	Depart	12:20 / 12:26:10	87	car	< 39	< 35
20/10 EC130	Arrive	08:55 / 08:52:30	84	< 48	< 28	< 40
	Depart	09:10 / 09:12:00	90	< 56	car	< 33
20/10 EC130	Arrive	11:00 / 10:57:00	85	< 40	< 33	car
	Depart	11:10 / 11:11:50	82	< 42	< 32	< 28
20/10 R66	Arrive	11:17 / 11:16:00	86	< 41	< 29	< 25
	Depart	11:36 / 11:38:10	84	< 39	< 30	< 34
20/10 EC135	Arrive	15:10 / 15:08:30	103	< 49	< 30	< 37
	Depart	15:20 / 15:24:30	86	< 49	< 40	< 31
21/10 R66	Arrive	12:25 / 12:24:20	79	< 38	< 28	< 33
	Depart	12:41 / 12:43:00	85	< 43	< 32	< 32
22/10 EC130 ⁴	Arrive	10:40 /	-	-	-	-
	Depart	11:15 /	-	-	-	-
Average Maximum			90	40	33	32
Median Maximum			85	39	32	32

Green shading – upper limiting noise level may have been influenced by the helicopter movement that occurred at that time. The actual helicopter noise level may have been within 5 dBA below the listed upper limit.

1. Time reported by the pilot for engine shutdown or startup.
2. Assumed time of maximum receptor noise level from a helicopter hovering at a significant elevation above the relocated helipad, approximately 30 seconds before arrival and 30 seconds after departure.
3. The noise level reported for M4 is the maximum level measured as the helicopter arrives or departs.
4. Noise data were not collected at M2 and M4 for the helicopter trip on 22/10 due to low noise monitor batteries.

5 DISCUSSION AND CALCULATIONS

5.1 Maximum Noise Levels

Given the significant levels of ambient noise at monitoring locations M1 to M3, helicopter noise levels could not be measured directly. Measured noise levels were not noticeably influenced by helicopter noise at any time. Noise levels at monitoring locations excluding M4 are primarily affected by distance and topographical shielding, which are similar at M1 and M3 and quite different to M2 as shown below:

- Monitoring location M1 is approximately 3.4 km from the relocated helipad with only minor topographical shielding from the slightly elevated ground between the two locations;
- Monitoring location M2 is approximately 2.9 km from the relocated helipad with significant topographic shielding between the two locations; and
- Monitoring location M3 is approximately 3.7 km from the relocated helipad with only minor topographical shielding from the slightly elevated ground between the two locations;

Helicopter noise levels are therefore expected to be similar at M1 and M3 and lower at M2.

The following upper limits for helicopter noise level were derived from data in Table 1 at each monitoring location.

- Monitoring location M1: An average maximum of 40 LA_{max} including ambient noise, which indicates a helicopter noise level less than 40 LA_{max}; and
- Monitoring locations M2 and M3: An average maximum of 33 LA_{max} including ambient noise, which indicates a helicopter noise level less than 33 LA_{max}.

Considering helicopter noise levels are expected to be similar at M1 and M3, the data confirm M1 was subject to a higher level of ambient noise from insects and other sources compared to the other locations. This presumption is supported by the Environmental Assessment, which stated helicopter noise from flights to and from the relocated helipad was inaudible or barely audible at noise monitoring locations close to M1 and M3 during the 2017 noise survey. Average helicopter noise levels have been calculated based on an average maximum noise level of 33 LA_{max} to all receptor locations.

5.2 Average Noise Levels

Upper limiting average and maximum helicopter noise levels can be determined from the results presented above at each noise monitoring location. Average noise levels over a 24 hour period, or LA_{eq,24hr} levels, have been conservatively determined by the following equation:

$$\text{Average LA}_{\text{max}} + 10 \times \log_{10} (\text{Movements} \times \text{Seconds/Movement} / \text{Seconds/Period}) = \text{LA}_{\text{eq,24hr}}$$

This equation assumes the helicopter produces the maximum noise level continuously for an entire 120 seconds per movement, which is more conservative than assuming a noise profile that increases to the maximum then decreases.

Average noise levels during the noise survey period can be calculated for each noise monitoring location based on 14 trips (28 movements) over two weeks:

$$33 \text{ LA}_{\text{max}} + 10 \times \log_{10} (28 \times 120 / 1,209,600) = 7 \text{ LA}_{\text{eq,24hr}}$$

where 1,209,600 is the number of seconds in the two week noise survey period.

PA 06_0310 Condition 6B states the Proponent may apply to the Secretary for approval for up to 28 helicopter trips per week during the peak holiday and tourism periods. This condition does not suggest a daily maximum number of trips that may be approved in the future. Table 2 presents a summary of noise survey results and calculations including:

- Average LA_{max} noise levels discussed above;
- Average noise levels over the 14 day noise survey period;
- Average noise levels assuming approval for 28 trips per week is sought and granted;
- Theoretical worst case noise levels assuming 28 trips per week all occur in one 24 hour period; and

- Predicted noise levels and noise criteria taken from the Environmental Assessment.

Table 2: Upper Limiting Maximum and Average Noise Levels

Parameter or Calculation	M1 to M3	EA Prediction	EA Criteria
Average LA _{max}	33	40	45
14 trips in 2 weeks during noise survey, LA _{eq,24hr}	7	< 30	40
Possible future 28 trips per week, LA _{eq,24hr}	13	< 30	40
Theoretical worst case, 28 trips/day, LA _{eq,24hr}	22	< 30	40

The calculated noise levels in Table 2 indicate average helicopter noise levels from helicopter movements to and from the relocated helipad would remain below the estimated noise levels and noise criteria in the Environmental Assessment.

6 CONCLUSION

The noise survey and analysis described in this report indicates upper limiting helicopter noise levels are within the predicted noise levels and noise criteria in the Environmental Assessment.

Assuming approval for up to 28 helicopter trips per week is sought and granted, future noise levels due to helicopter trips to and from the relocated helipad are predicted to meet relevant criteria and remain below the estimated noise levels in the Environmental Assessment as shown in Table 2. This conclusion applies if the 28 trips are evenly distributed over all 7 days of the week or, as a theoretical worst case, concentrated in one 24 hour period.

APPENDIX A – NOISE MONITOR AND LOCATION DETAILS

CERTIFICATE OF CALIBRATION

CERTIFICATE No.: **SLM 22874**

Equipment Description: Sound Level Meter

Manufacturer: Svantek

Model No: Svan-955 **Serial No:** 23643

Microphone Type: 7052E **Serial No:** 47913

Preamplifier Type: SV12L **Serial No:** 25501

Comments: All tests passed for class 1.
(See over for details)

Owner: Bridges Acoustics
78 Woodglen Close
Paterson, NSW 2421

Ambient Pressure: 1017 hPa \pm 1.5 hPa

Temperature: 22 °C \pm 2° C **Relative Humidity:** 51 % \pm 5%

Date of Calibration: 07/06/2018 **Issue Date:** 07/06/2018

Acu-Vib Test Procedure: AVP10 (SLM)

CHECKED BY: *[Signature]*

AUTHORISED SIGNATURE: *[Signature]*

Bruce Meldrum

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CERTIFICATE OF CALIBRATION

CERTIFICATE NO.: **SLM 23832 & FILT 4948**

Equipment Description: Sound Level Meter

Manufacturer: Svantek
Model No: Svan-977 **Serial No:** 36198
Microphone Type: 7052E **Serial No:** 57327
Preamplifier Type: SV12L **Serial No:** 41518
Filter Type: 1/1 Octave **Serial No:** 36198

Comments: All tests passed for class 1.
(See over for details)

Owner: Bridges Acoustics
78 Woodglen Close
Paterson, NSW 2421

Ambient Pressure: 985 hPa ± 1.5 hPa

Temperature: 23 °C $\pm 2^\circ$ C **Relative Humidity:** 40% $\pm 5\%$

Date of Calibration: 25/11/2018 **Issue Date:** 26/11/2018

Acu-Vib Test Procedure: AVP10 (SLM) & AVP06 (Filters)

CHECKED BY: *[Signature]*

AUTHORISED SIGNATURE: *[Signature]*
Jack Kieft

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CERTIFICATE OF CALIBRATION

CERTIFICATE No.: **SLM 22873**

Equipment Description: Sound Level Meter

Manufacturer: Svantek
Model No: Svan-955 **Serial No:** 23644
Microphone Type: 7052E **Serial No:** 47912
Preamplifier Type: SV12L **Serial No:** 25502

Comments: All tests passed for class 1.
(See over for details)

Owner: Bridges Acoustics
78 Woodglen Close
Paterson, NSW 2421

Ambient Pressure: 1016 hPa ± 1.5 hPa

Temperature: 24 °C $\pm 2^\circ$ C **Relative Humidity:** 48 % $\pm 5\%$

Date of Calibration: 07/06/2018 **Issue Date:** 07/06/2018

Acu-Vib Test Procedure: AVP10 (SLM)

CHECKED BY: *[Signature]* **AUTHORISED SIGNATURE:** *[Signature]*
Bruce Meldrum

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AVCERT10b Rev. 1.3 15.05.18

CERTIFICATE OF CALIBRATION

CERTIFICATE NO.: **SLM 23833 & FILT 4949**

Equipment Description: Sound Level Meter

Manufacturer: Svantek
Model No: Svan-977 **Serial No:** 36414
Microphone Type: 7052E **Serial No:** 56728
Preamplifier Type: SV12L **Serial No:** 41566
Filter Type: 1/1 Octave **Serial No:** 36414

Comments: All tests passed for class 1.
(See over for details)

Owner: Bridges Acoustics
78 Woodglen Close
Paterson, NSW 2421

Ambient Pressure: 984 hPa ± 1.5 hPa
Temperature: 22 °C ± 2 °C **Relative Humidity:** 41% ± 5 %
Date of Calibration: 25/11/2018 **Issue Date:** 26/11/2018
Acu-Vib Test Procedure: AVP10 (SLM) & AVP06 (Filters)

CHECKED BY: *[Signature]* **AUTHORISED SIGNATURE:** *[Signature]*
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Acoustic and Vibration
Measurements

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AVCERT10 Rev. 1.3 15.05.18

CERTIFICATE OF CALIBRATION

CERTIFICATE NO: 24967

EQUIPMENT TESTED: Sound Level Calibrator

Manufacturer: O1dB Class: 1
Type No: CAL01 Serial No: 000853
Owner: Bridges Acoustics

78 Woodglen Close
Paterson, NSW 2421

Tests Performed: According to AS/IEC 60942 and procedure AVPO2

Parameter	Pre-Adj	Adj Y/N	Output: (db re 20 µPa)	Frequency: (Hz)	THD&N (%)
Level 1:	NA	N	113.98	1000.07	0.56
Level 2:	NA	N	94.15	1000.05	1.78
Level 3:	NA	N	74.41	1000.04	5.62
Uncertainty:			±0.11 dB	±0.05 Hz	±0.2 %

Uncertainty (at 95% c.l.) k=2

TEST CONDITIONS:

Ambient Pressure: 1006 hPa ± 1.5 hPa Relative Humidity: 48% ± 5%
Temperature: 23 °C ± 2° C
Date of Calibration: 18/06/2019 Issue Date: 18/06/2019

CHECKED BY: *IKB* AUTHORISED SIGNATURE: *Jack Kite*

Accredited for compliance with ISO/IEC 17025 - Calibration
The results of the tests, calibration and/or measurements included in this document are traceable to Australian/national standards.
The uncertainties quoted are calculated in accordance with the methods of the ISO Guide to the Uncertainty of Measurement and quoted at a coverage factor of 2 with a confidence interval of approximately 95%.



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Looking north-east from M1 towards R2



Looking south from M1 towards the resort



Looking south-west from M1 towards the resort entrance.



Looking east from M2



Looking north from M2 towards R3



Looking west from M2



Looking south from M2 towards the resort



Looking north-east from M3



Looking north-west from M3 towards R7



Looking south-west from M3

APPENDIX B – DETAILED NOISE LEVEL CHARTS

Charts on the following pages show measured noise levels at all four noise monitors for each helicopter movement to or from the resort’s helipad. Each chart covers a 30 minute period. In cases where two or more movements occurred consecutively, multiple movements are indicated on the same chart. Text between each chart and legend identifies the helicopter movements included on that chart.

The indicated time of engine shutdown or engine start is indicated on each chart as a dashed red line. In many cases the helicopter pilot appeared to have rounded the time to the nearest few minutes, as the indicated times do not exactly match the times of arrival or departure shown by the noise level trace measured at M4 near the helipad.

The period of highest noise level at each receptor is likely to occur when the helicopter is at a significant height above the ground, rather than on the helipad. The highest noise level at receptors is therefore assumed to occur approximately 30 seconds before arrival and 30 seconds after departure, rather than exactly at the time of arrival or departure. The approximate time of maximum noise level is indicated on each chart as a dashed blue line.

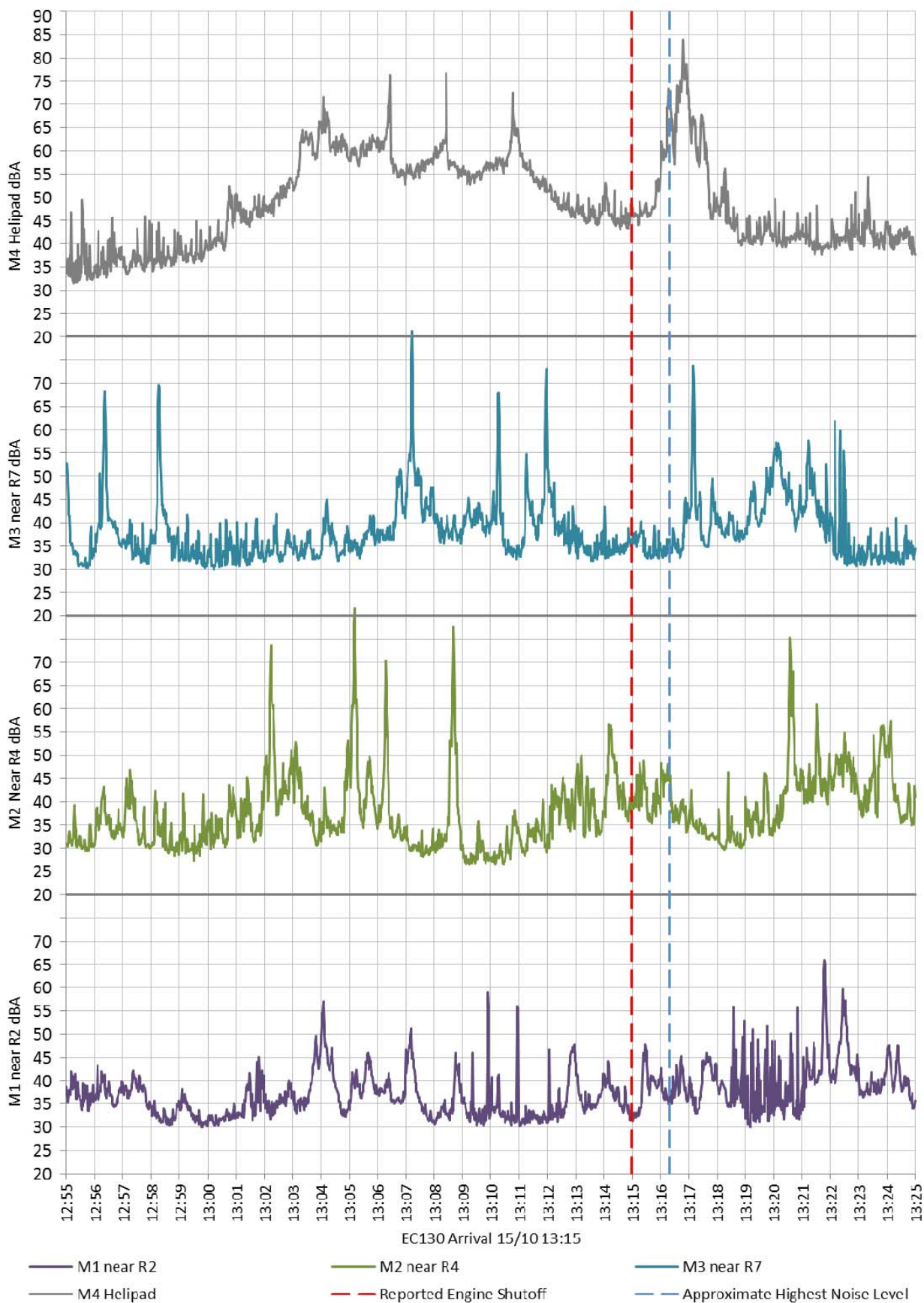
An extended period of 30 minutes has been included in each chart to indicate the ambient noise levels measured before and after each helicopter movement, to assist in identifying any additional noise above the ambient level due to the helicopter.

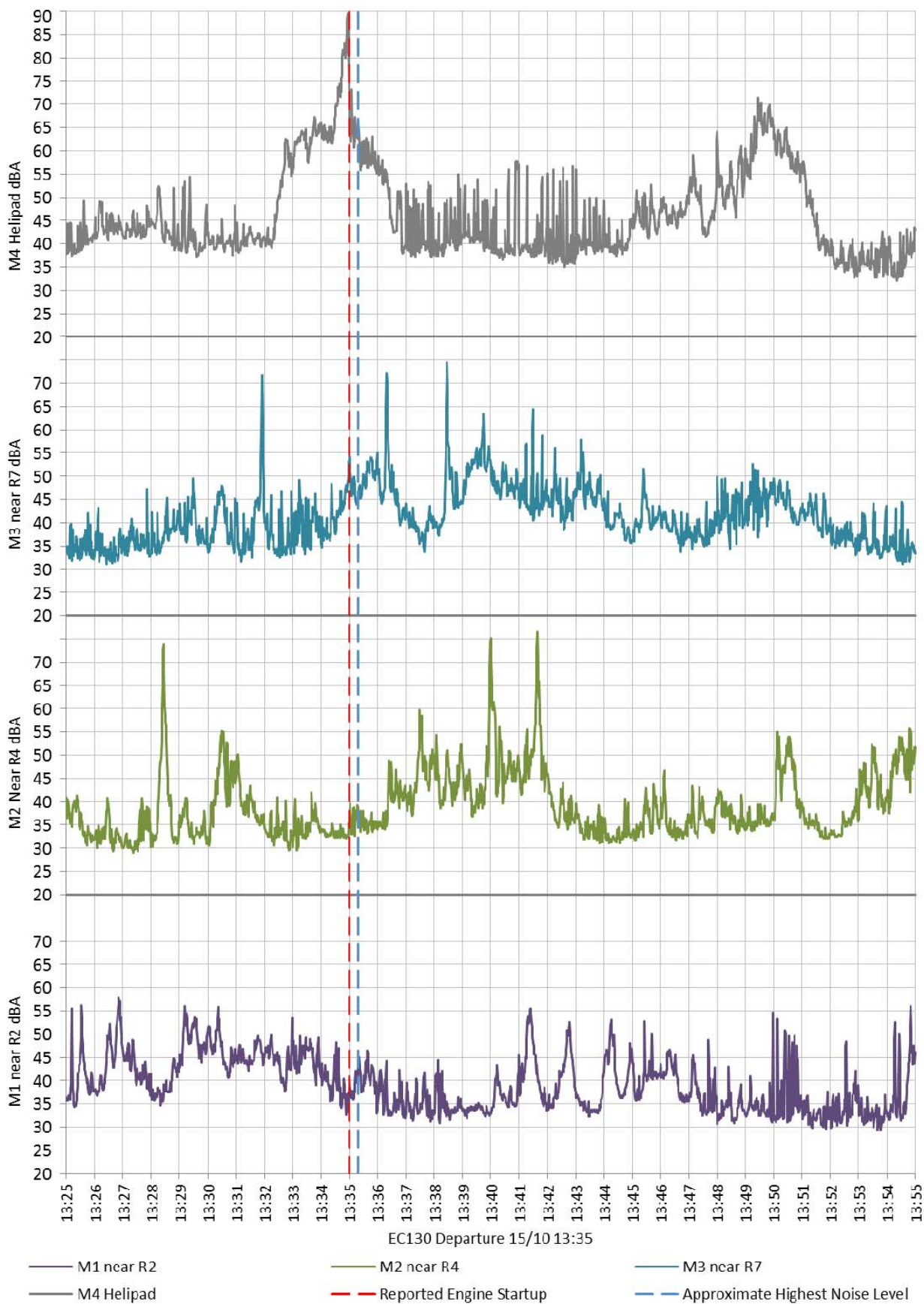
Engine shutoff and startup times logged by the helicopter pilots and provided by the resort for inclusion in this report are shown in Table B1.

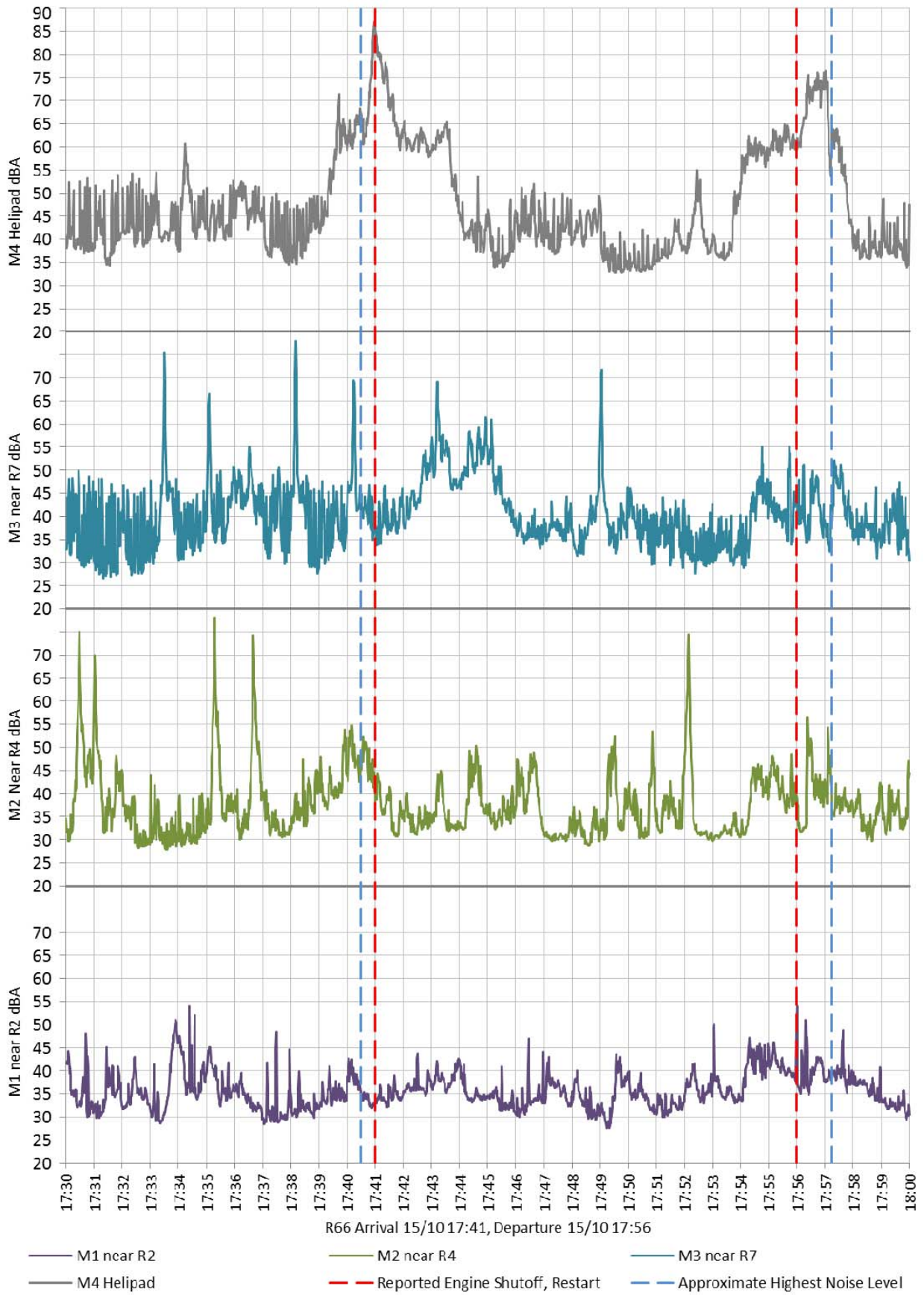
Table B1: Engine Shutoff and Startup Times Reported by Helicopter Pilots

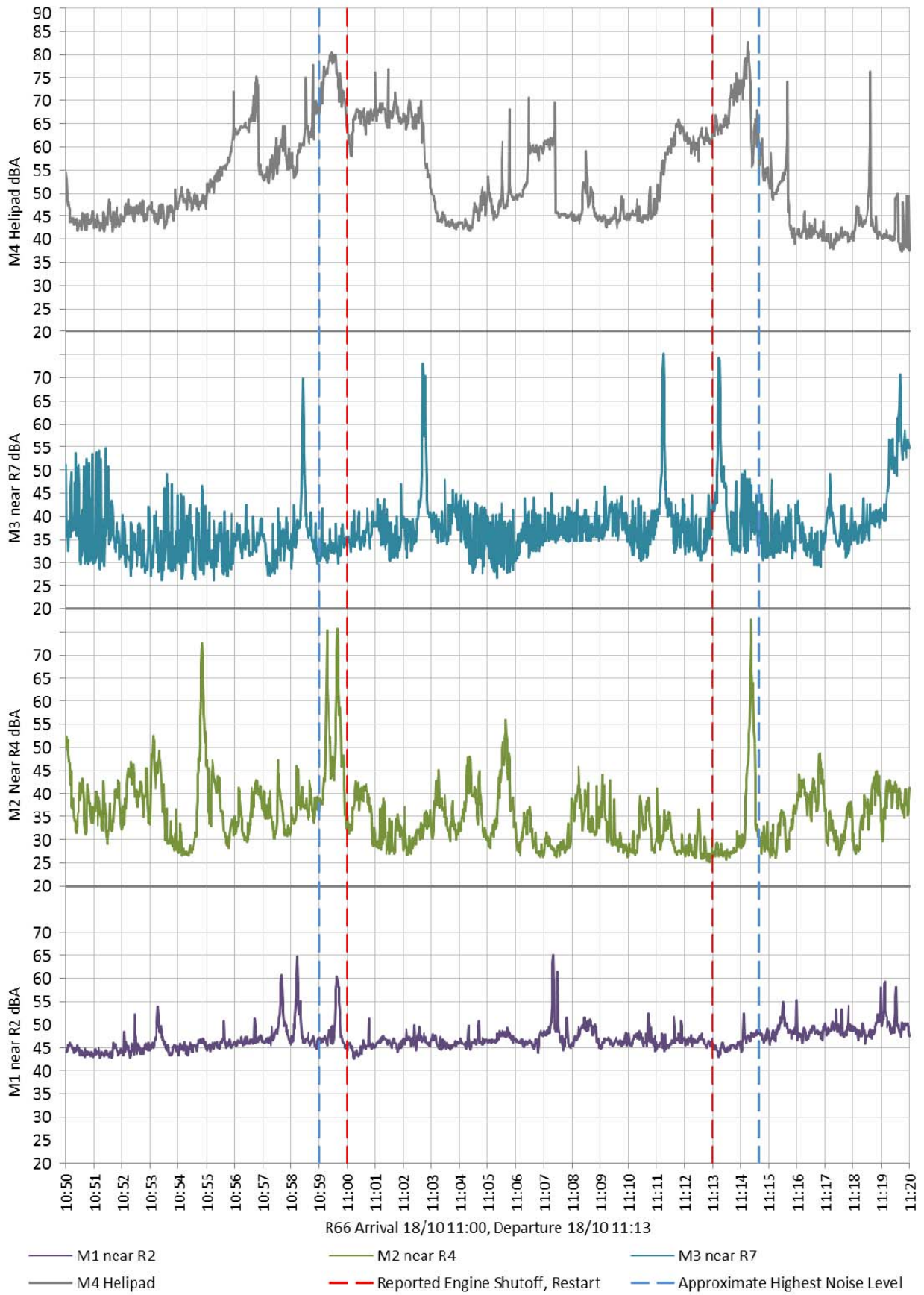
Date	Helicopter Type	Arrival (engine shutoff)	Departure (engine startup)
15/10/19	EC130	13:15	13:35
15/10/19	R66	17:41	17:56
18/10/19	R66	11:00	11:13
18/10/19	EC130	12:55	13:35
18/10/19	R66	13:26	13:30
18/10/19	EC130	16:50	16:55
18/10/19	R66	17:39	17:53
19/10/19	EC130	12:15	12:20
20/10/19	EC130	08:55	09:10
20/10/19	EC130	11:00	11:10
20/10/19	R66	11:17	11:36
20/10/19	EC135	15:10	15:20
21/10/19	R66	12:25	12:41
22/10/19 ¹	EC130 ¹	10:40 ¹	11:15 ¹

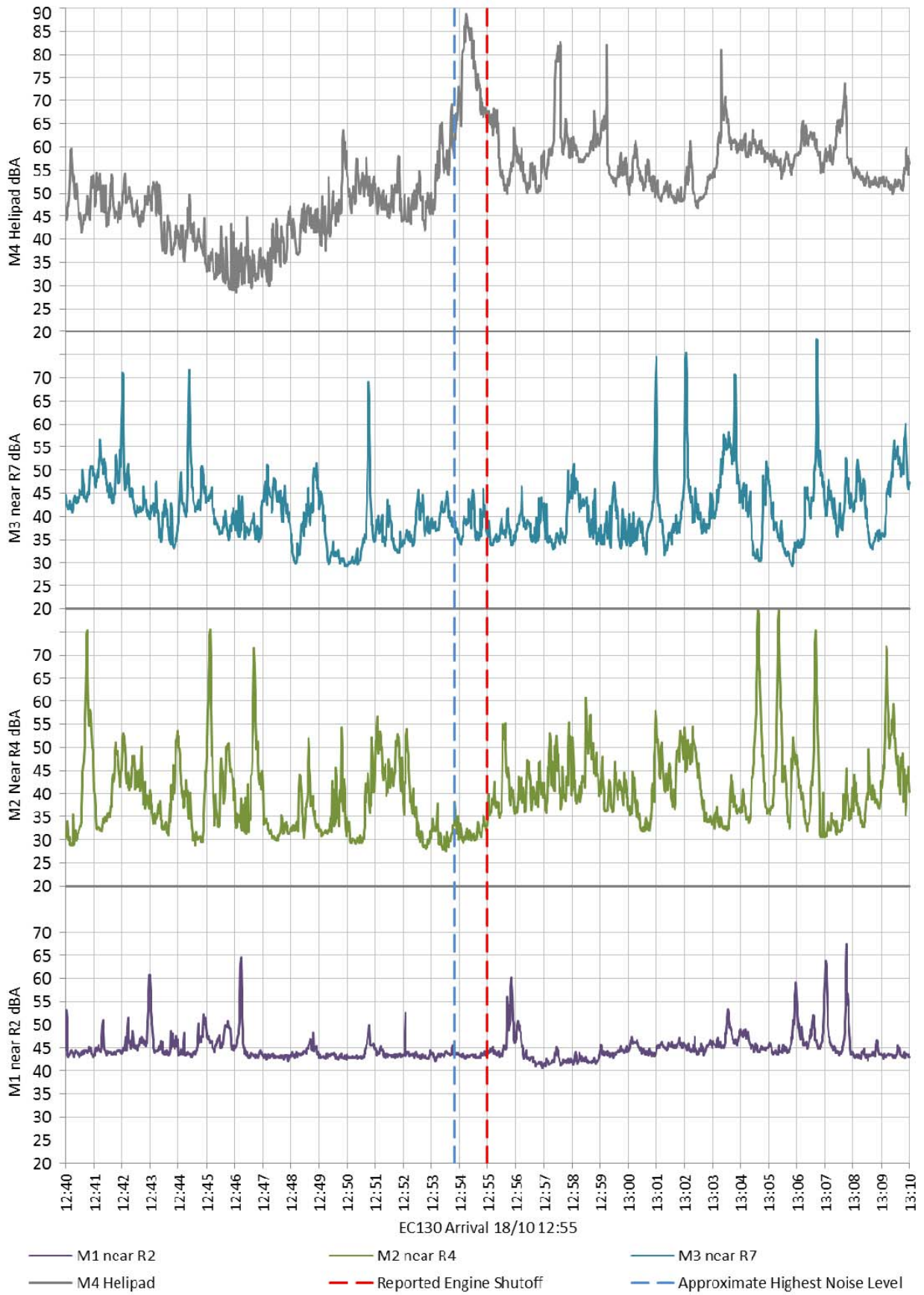
¹ The helicopter trip on 22/10/19 is omitted from the analysis as no data are available from noise monitors M2 and M4 for this trip.

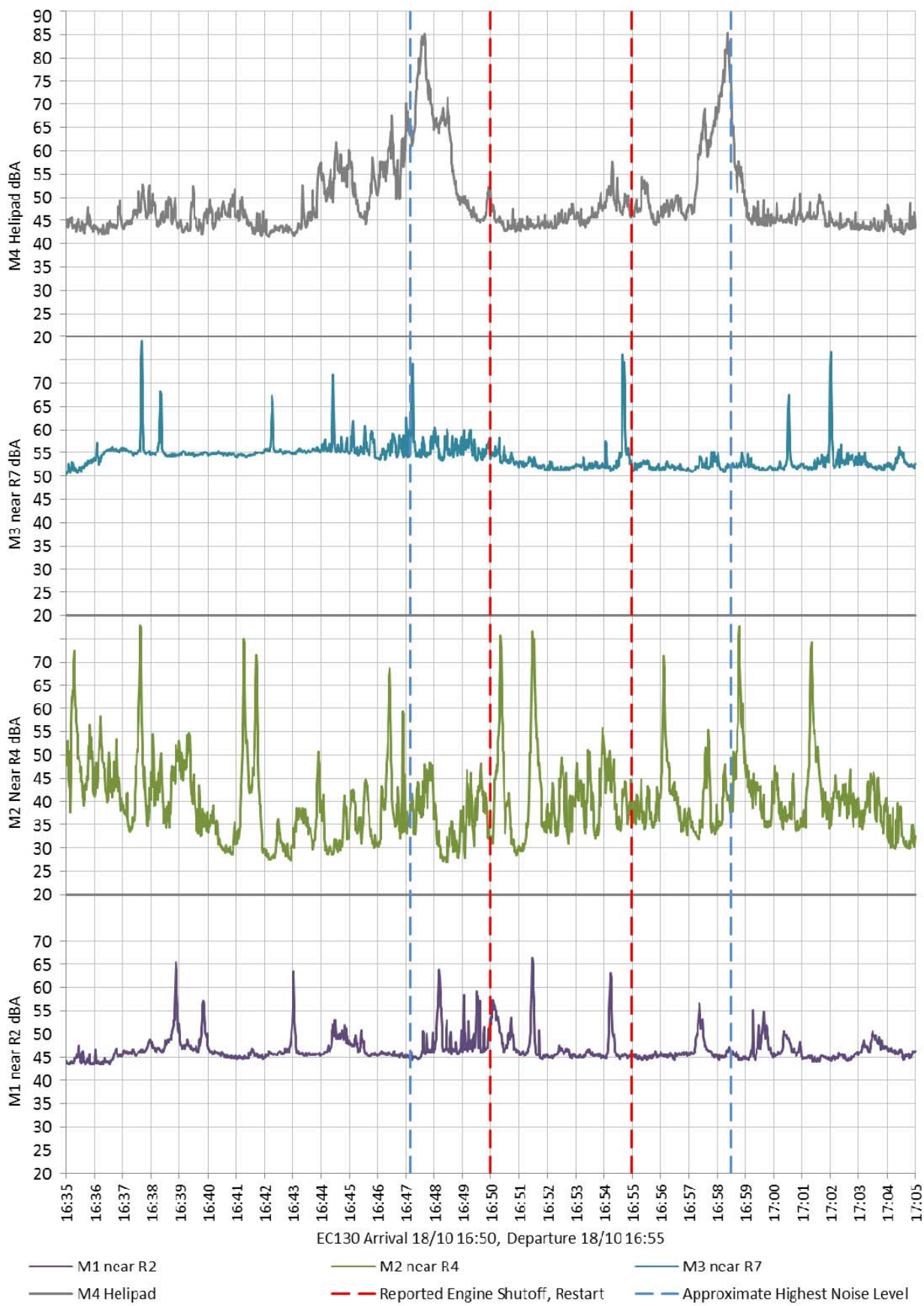


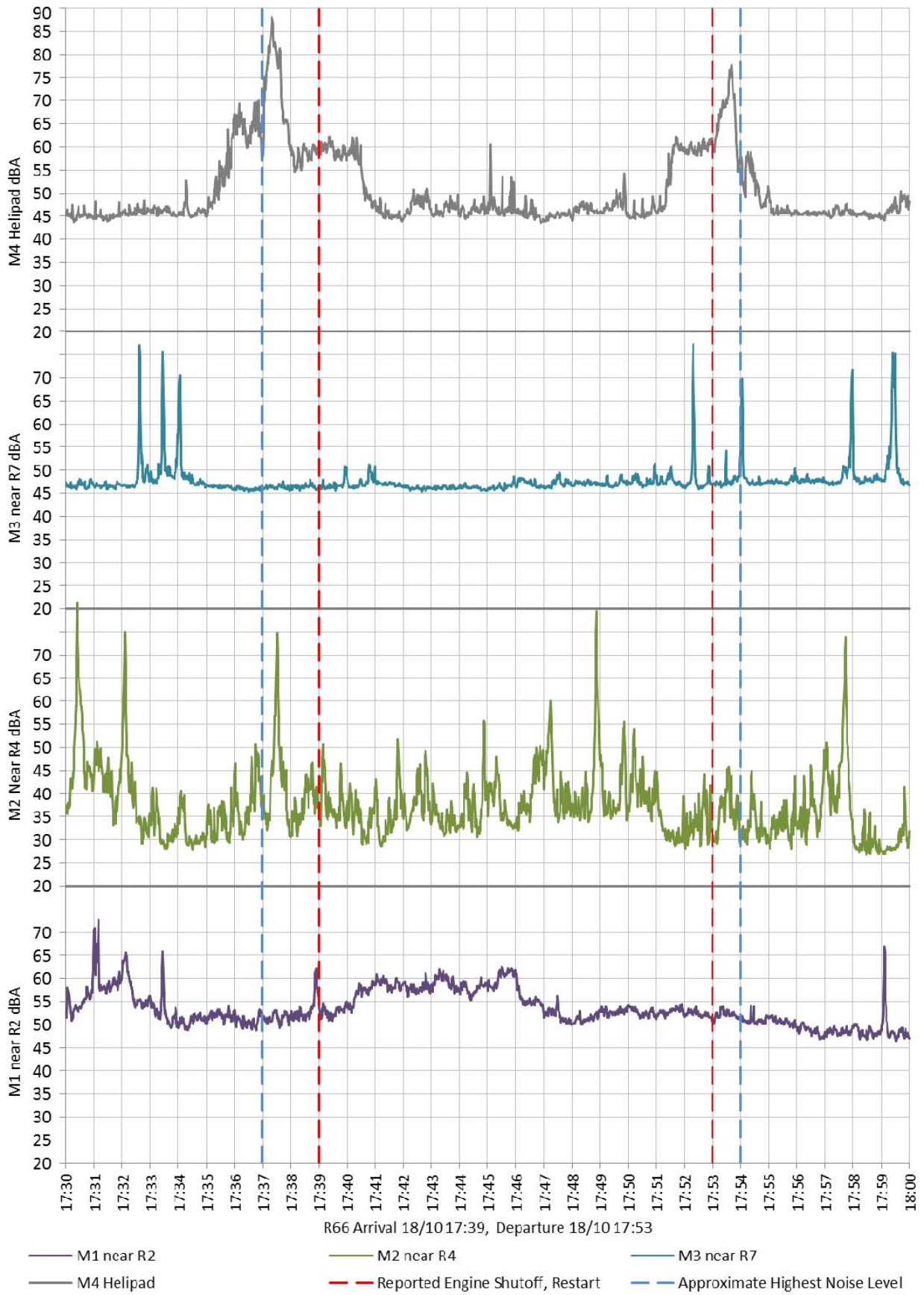


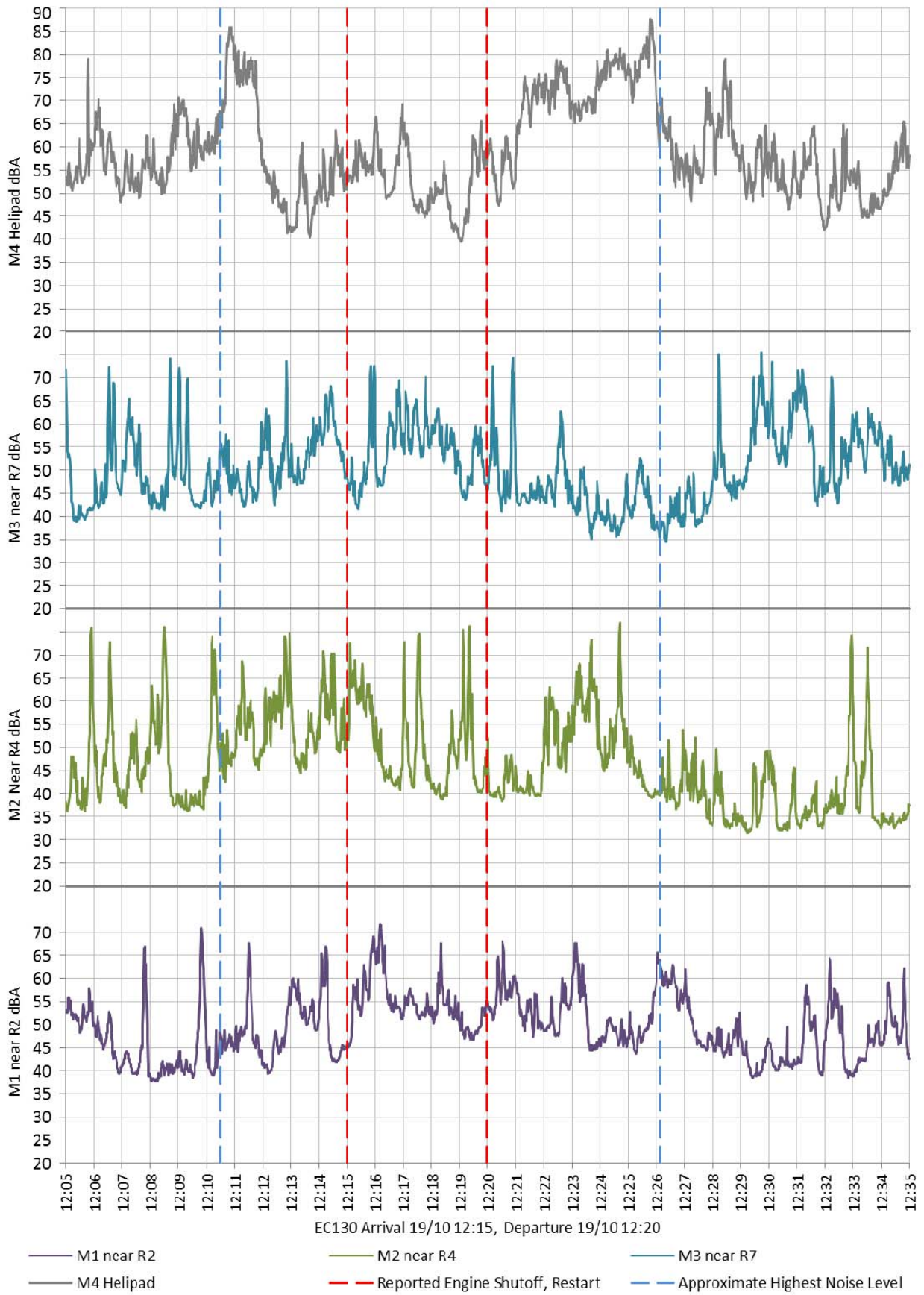


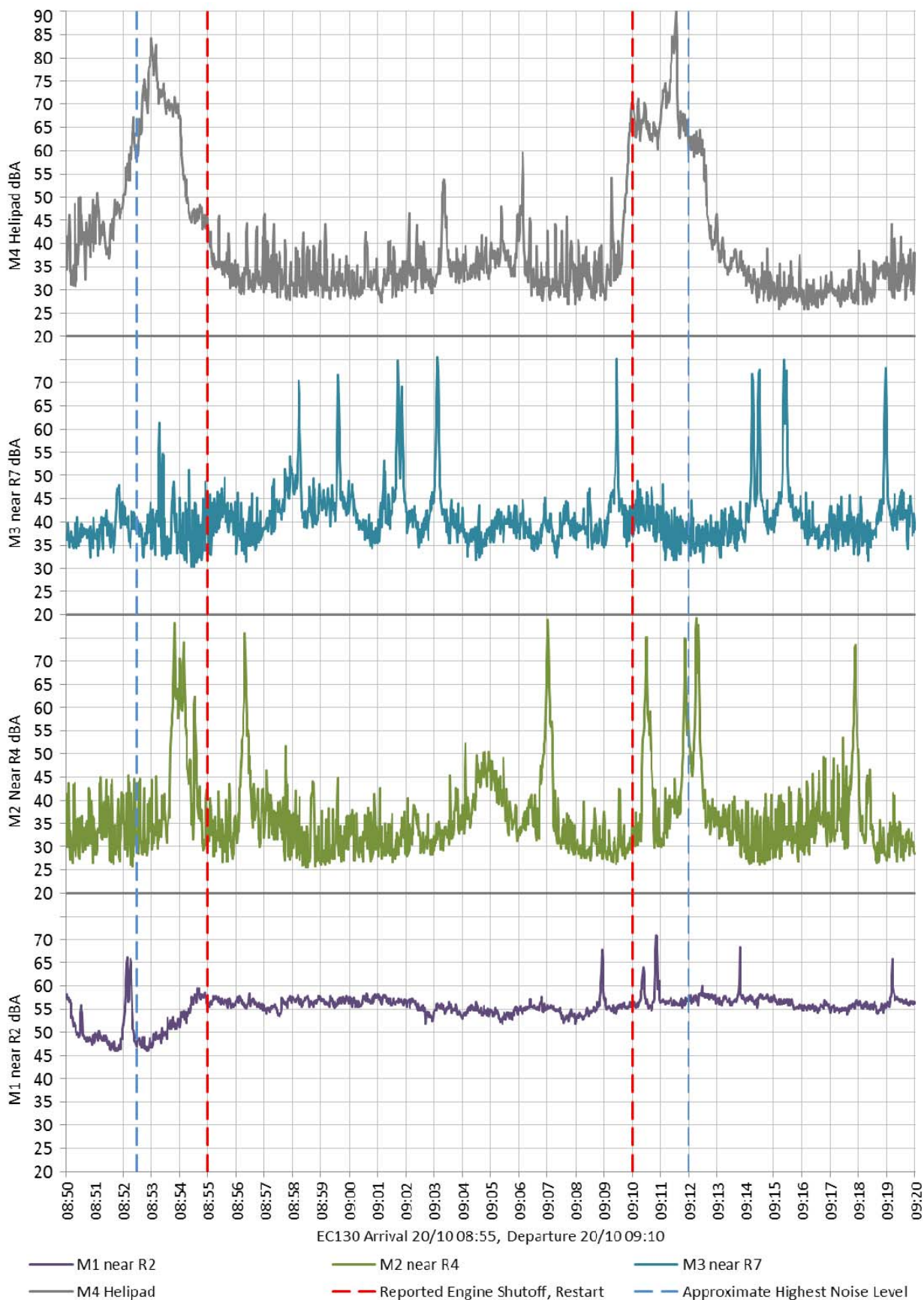


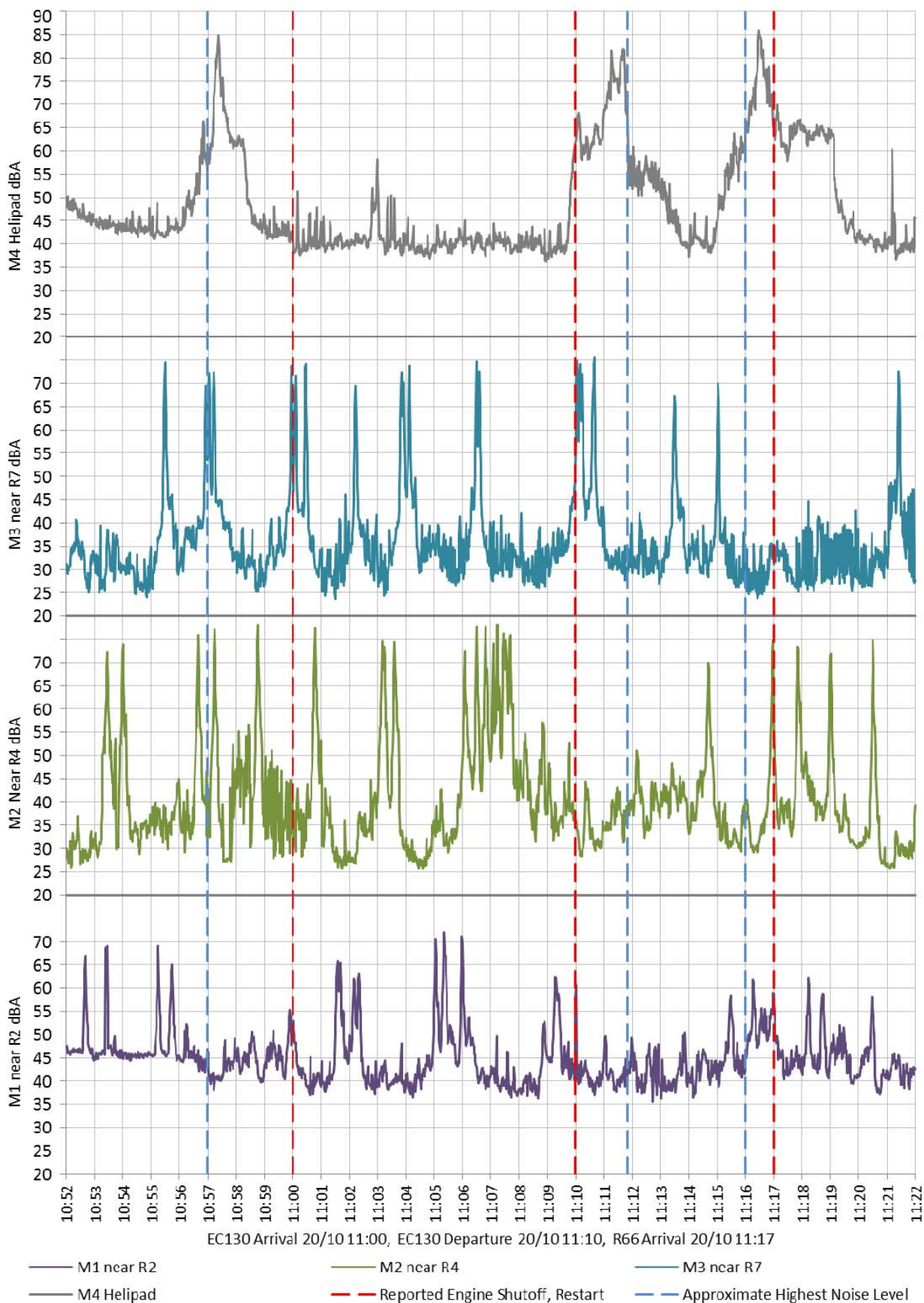


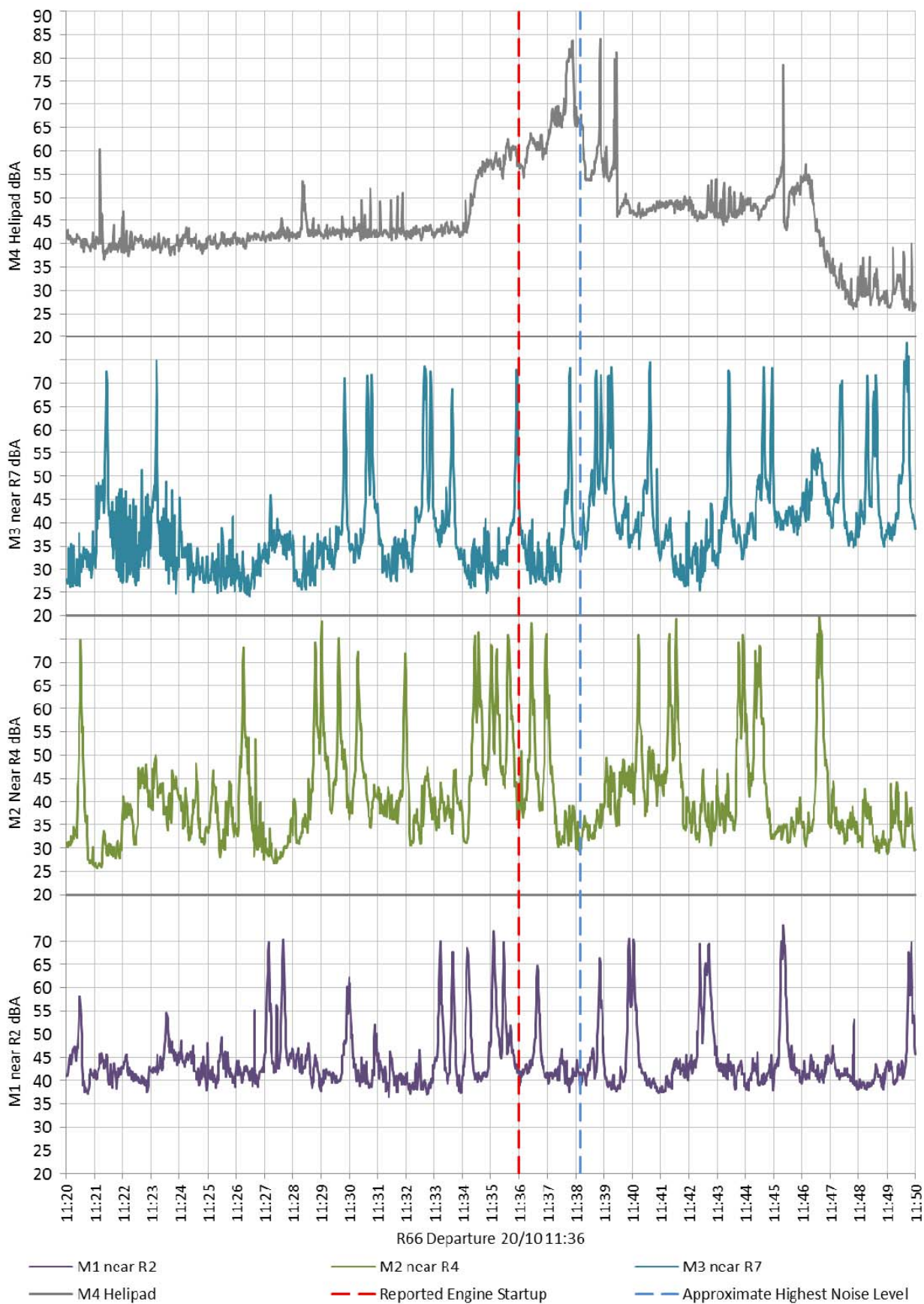


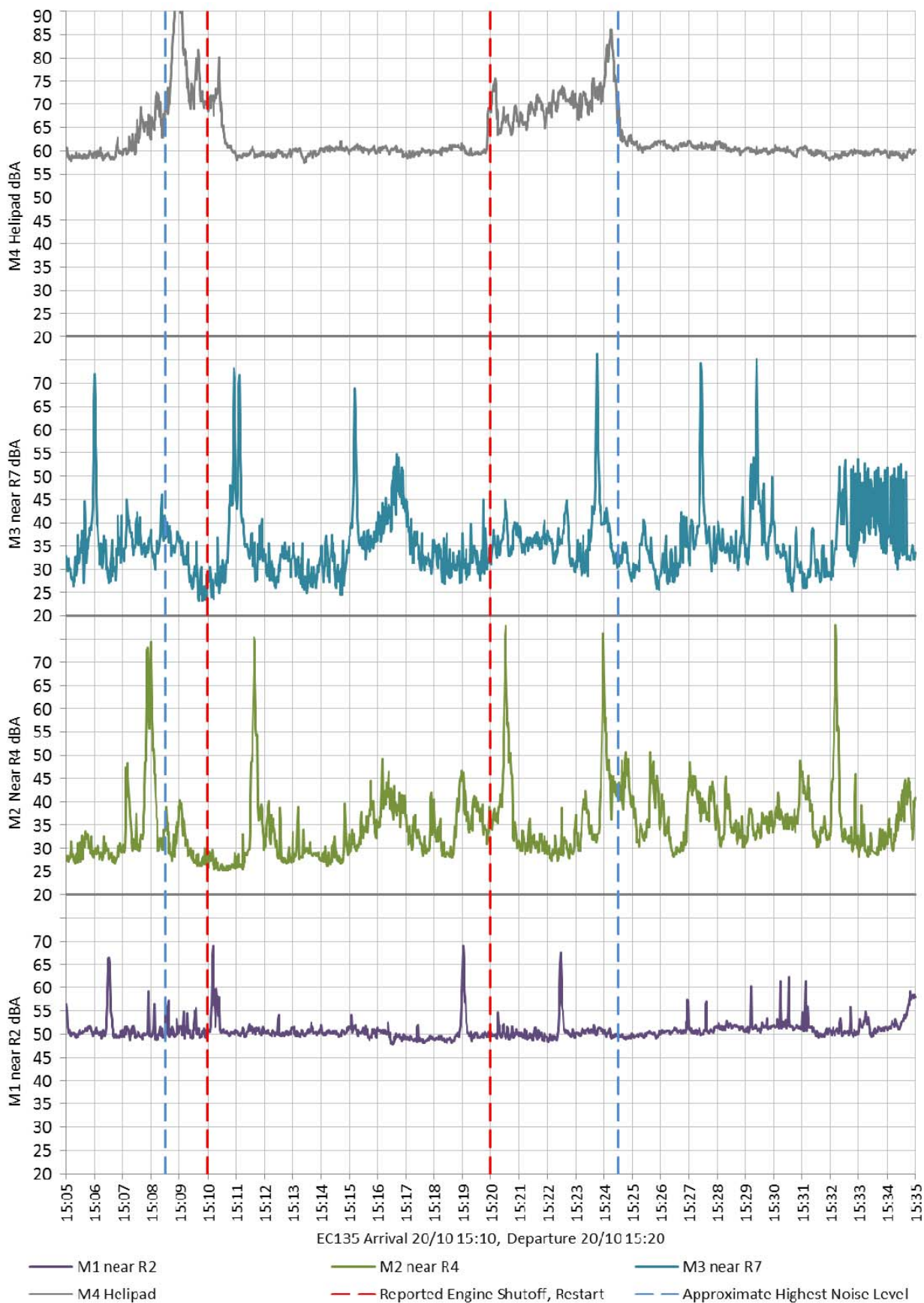


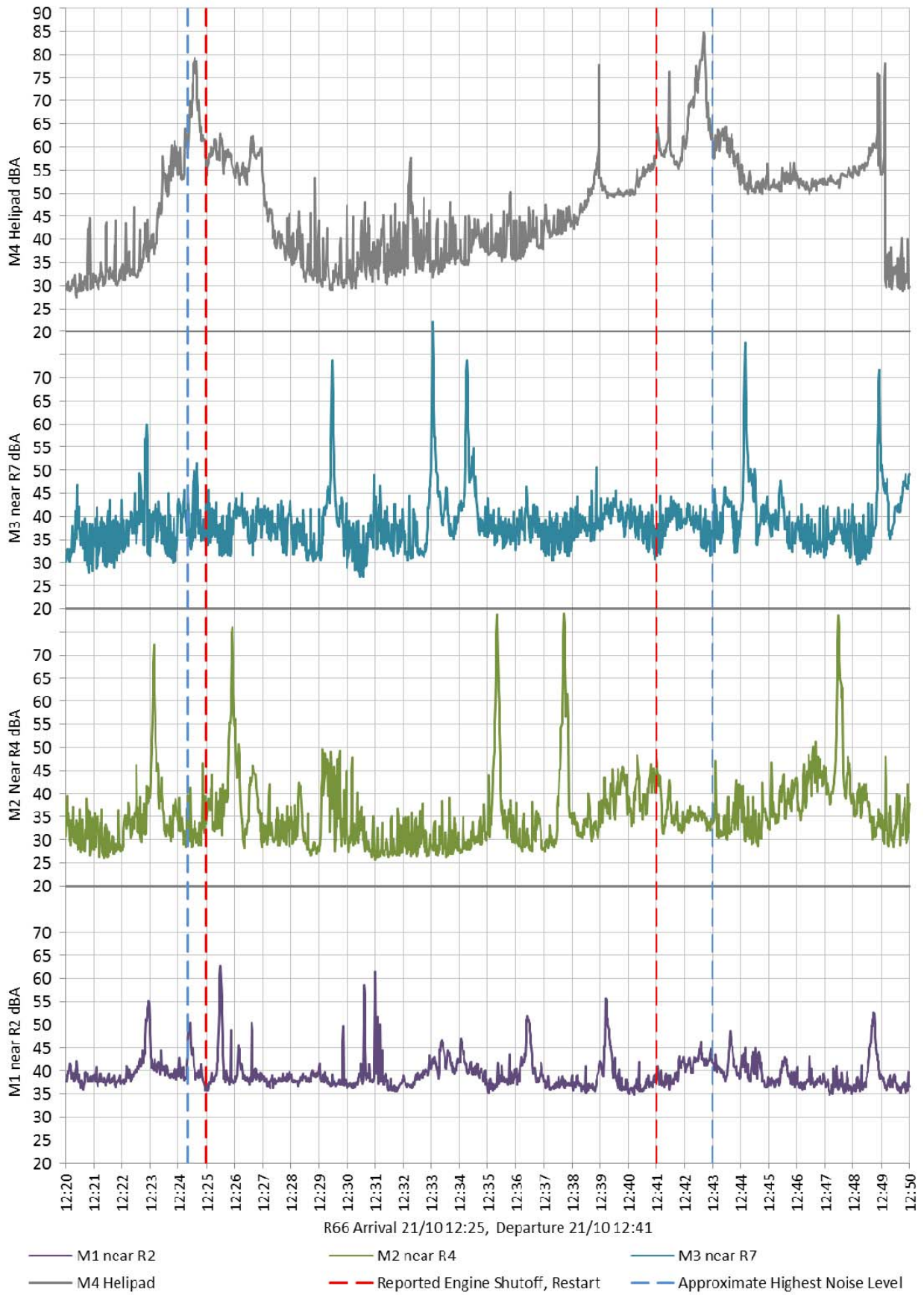












APPENDIX E
Site Inspection Plates



Plate 1
Existing Helipad



Plate 2
Relocated Helipad