



**CRAIG HILL ACOUSTICS. ACOUSTIC, CONSULTING, ENGINEERING AND DESIGNS**

# **CRAIG HILL ACOUSTICS**

**Acoustic Consultants**

**QLD & NSW**

**NOISE IMPACT ASSESSMENT**

## **Helicopter Landing Pad**

**477 Urliup Road Bilambil**

Thursday, 14 June 2018

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Helicopter Landing Pad  
Reference 140618/2

Report prepared for                    Mathew Karlos

Date                                        Thursday, 14 June 2018

Site                                         477 Urliup Road Bilambil

Authorised by                            Mathew Karlos

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## Contents

1.0	INTRODUCTION	4
2.0	SURROUNDINGS	5
3.0	CRITERIA	7
4.0	SOUND MEASUREMENTS	8
4.1	Equipment	8
4.2	Atmospheric Conditions	8
4.3	Test Results	9
6.0	Conclusions	10

## 1.0 INTRODUCTION

The purpose of this report is to examine noise levels for the private helicopter landing pad at 477 Uriup Road Bilanbil.

Proposed use up to 7 flights per week.

Operating hours Daylight hours.

Tests were conducted on Saturday 28 October 2017 at the nearest affected places as indicated on the site plan below.

The aircraft used for test is considered typical of what would be used on the site.

Type of Aircraft:	Bell 206BIII Jet Ranger
Model:	250-C20B
Engine:	Allison Gas Turbine engine

## 2.0 SURROUNDINGS

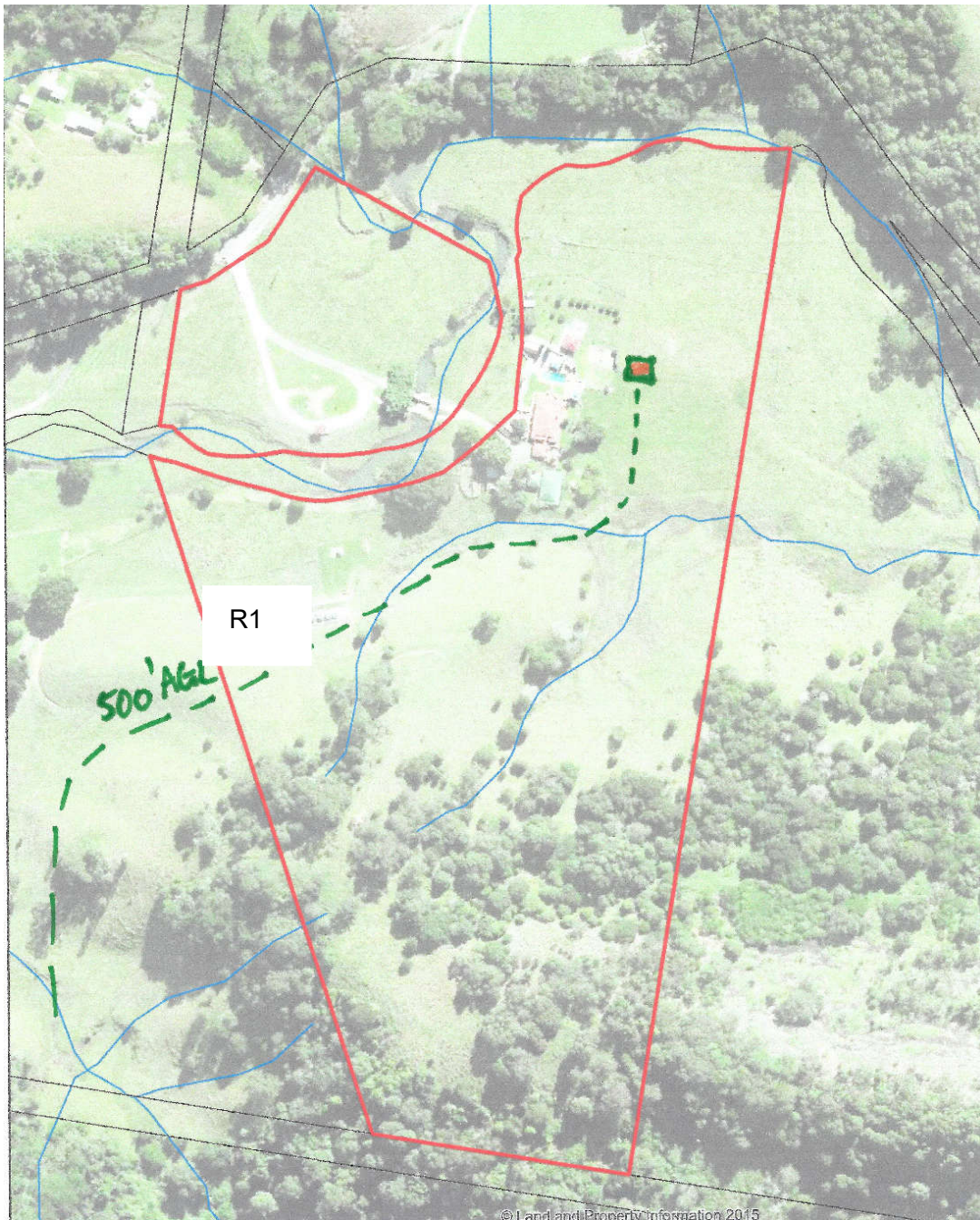
The pad is located on a private property at 447 Urliup Road, Bilambil.

Noise levels were monitored during takeoff and landing at the boundaries of the nearest noise sensitive residences indicated on the site plan.

Table 2.1

Receiver	Distance from source		metres from flight path	altitude of aircraft feet at max exposure
	Description	metres from pad		
R1	Residential	477	477	>500
R2	Residential	280	280	0-100
R3	Residential	365	365	0-100
R4	Residential	221	221	0-100
R5	Residential Hogans road	504	504	elevated receiver above pad





**Flight path above**

### 3.0 CRITERIA

As New South Wales does not have recognised guidelines for Helipad the NSW Noise Control Manual will be used for the assessment.

Helicopters must be a minimum of 300m (1000ft) above any populated areas (suburban) except during takeoff and landings.

The criteria comprises of 3 separate components, each of which should be satisfied, at the nearest noise affected buildings.

- (i) The measured LAeq,T (assessed over the entire daily operational time of the helipad) should not exceed 55dB(A) at the residence or 65 dB(A) at a commercial property.

Where the existing ambient Leq is greater than these criteria an increase of 2dB(A) above the existing ambient Leq is acceptable.

The measured LAm<sub>ax</sub> should not exceed 82dB(A) at the residence or 85 dB(A) at a commercial property.

#### **Measurement of noise from helicopter operations - AS 2363**

AS 2363 has been used as guideline for on site measurements in this report.

The test shall be done in calm air or in no more than light wind conditions (5 km/h).

#### **CIVIL AVIATION REGULATIONS 1988 - REG 157 Low flying**

##### **Low flying**

- (1) The pilot in command of an aircraft must not fly the aircraft over:
  - (a) any city, town or populous area at a height lower than 1,000 feet; or
  - (b) any other area at a height lower than 500 feet.

## 4.0 SOUND MEASUREMENTS

### 4.1 Equipment

The following equipment was utilised during the test assessments:

Svantec Type 1, Sound and Vibration Analyser Model 949 Serial No 6023. calibrated May 2016.

BSWA Sound Level Calibrator Serial No 490190. calibrated May 2017.

The above equipment complies with the requirements of Australian Standards 1259.2 1990, Sound Level Meters, Part 2 Integrating – Averaging, as required by the Australian Standards.

Equipment was calibrated before the tests and checked after and found to be within the acceptable drift.

The above equipment complies with the requirements in **IEC 61672**.

### 4.2 Atmospheric Conditions

Table 4.1

Humidity	65%
Wind Speed	0-5 kts
Wind Direction	NE
Atmospheric Pressure	1010hpa
Cloud Cover	0%
Temp	26 C



## 5.0 TEST RESULTS

The following tests were carried out at receivers 1-5 as indicated on the attached site plan. Monitoring was conducted at the boundaries of receivers 1-5 for a worst case and beside the dwelling at receiver 5.

Ambient LAeq 15 min was measured before and after measurement period.

Table 5.2

Location	Distance from flight path	LAm <sub>ax</sub>	>82 LAm <sub>ax</sub> criteria	Ambient LA <sub>eq</sub>	flight measurement duration	Ambient LA <sub>eq</sub> 15 min,	dB increase to ambient LA <sub>eq</sub> for up to 3 flights in 15 hours	>55LA <sub>eq</sub> criteria
R1	100m >500 feet above	76	-6	64.0	3.01	45	<1.0	0
		78	-4	68.0	2.40	45		
R2	280m	78	-4	62.2	2.36	45	<1.0	0
		70	-12	65.0	2.18	45		
R3	365m	71	-11	61.4	2.18	45	<1.0	0
		76	-6	64.7	2.06	45		
R4	221m	76	-6	65.0	2.00	45	<1.0	0
		77	-5	65.0	2.33	45		
R5	504 m	70	-12	64.0	2.30	45	<1.0	0
		70	-12	62.0	2.50	45		

Any other properties flown over altitude greater than 1000 feet.

## 5.0 Conclusions

Based on the above proposed use and flight path predicted levels from proposed operations would not exceed the 82 LA<sub>max</sub> limit required in the criteria at nearby residences.

The measured LA<sub>eq,T</sub> (assessed over the entire daily operational time of the helipad) would not exceed 55dB(A) at nearby residences.