Appendices

(Total No. of pages including blank pages = 298)

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Appendix 1

Monitoring Data and Records

(Total No. of pages including blank pages = 96)

2018-2019 Annual Return for Extractive Materials

2019 Transportation Movements

2019 Air Quality Monitoring

2019 Surface Water Monitoring

2019 Daily Rainfall Monitoring

2019 Noise Monitoring Reports

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Form S 1

NSW GOVERNMENT | Planning, Industry & Environment

RETURN FOR EXTRACTIVE MATERIALS: YEAR ENDED 30 JUNE 2019

Quote RIMS ID in all correspondence

Quarry Id: 1118	Rims ID: 400066
Operators Name: Address:	METROMIX PTY LTD PO BOX 1295 PARRAMATTA NSW 2124
Email:	moy@metromix.com.au
Quarry Name: Quarry Address:	TERALBA QUARRY RHONDDA RD

Inquiries please telephone: (02) 4063 6713

Completed or Nil Returns
Email – mineral.royalty@planning.nsw.gov.au
Postal Address (see below)

Please amend name, postal address and location of mine or quarry if incorrect or incomplete.

2018-2019

The return should be completed and forwarded to **Senior Advisory Officer, RESOURCE ECONOMICS, RESOURCE PLANNING & PROJECTS, NSW DEPARTMENT OF PLANNING, INDUSTRY & ENVIRONMENT, PO BOX 344 HUNTER REGION MAIL CENTRE NSW 2310 on or before 31 October 2019**. If completion of the return is unavoidably delayed, an application for extension of time should be requested **before** the due date. If no work was done during the year, a **NIL** return must be forwarded.

The return should relate to the **above quarrying establishment** and should cover the operations of quarrying and treatment (such as crushing, screening, washing etc.) carried out at or near the quarry. A return is required even if the operations are solely of a developmental nature and whether the area being worked is held under a mining title or otherwise.

Director, Resource Planning & Projects

Please complete all of the following information to assist in identifying the location of the Quarry

Typical Geology _____Conglomorate_____

Nearest Town to Quarry _____Teralba_____

Local Council Name _____Lake Macquarie_____

Deposited Plan and Lot Number/s of Quarry _____Lots 1 & 2 DP 224037_____

Email Address of Operator _____moy@metromix.com.au_____

Name of Owner or Licensee _____METROMIX PTY LIMITED_____

Postal Address of Licensee _____PO BOX 1295 PARRAMATTA NSW 2124_____

Licence/Lease Number/s (if any)

From Mineral Resources NSW (Industry & Investment NSW) _____N/A_____

From Department of Lands or other Department _____N/A_____

If any output was obtained from land NOT held under licence from the above Departments, state the Name/s and Address/es of the Owners of the land _____

To the best of my knowledge, information entered in this return is correct and no blank spaces left where figures should have been inserted.

- **SIGNATURE of PROPRIETOR or MANAGER** _____ **DATE** ___2/10/2019___
- **CONTACT PERSON for this return** _____**Muhammad Yunusa**_____
- **NAME** (Block letters) _____Muhammad Yunusa_____ **Telephone** ___0423832077_____

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY **Month: Jan-19**

	Daily Total	Max Hourly Daily	Max Hourly Daily	Max Hourly Daily	Max Hourly Daily	Westwards Daily	Eastwards Daily
		6pm to 5am	5am to 6am	6am to 7am	7am to 6pm		
Limits	**326**	**6**	**12**	**28**	**20**	**241**	**85**
Actuals							
1	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-
7	37	-	-	4	9	13	24
8	53	-	1	8	11	25	28
9	63	1	-	4	9	47	16
10	64	1	-	3	11	39	25
11	49	1	-	3	10	25	24
12	8	1	-	-	2	5	3
13	-	-	-	-	-	-	-
14	51	1	1	5	12	35	16
15	56	2	1	7	8	37	19
16	83	2	1	-	7	50	33
17	67	3	1	9	9	49	18
18	59	4	2	10	9	45	14
19	12	1	3	1	2	8	4
20	-	-	-	-	-	-	-
21	51	2	1	3	9	26	25
22	62	4	-	4	11	32	30
23	125	4	2	5	17	64	61
24	64	4	-	5	10	42	22
25	47	2	-	3	10	29	18
26	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-
29	42	2	1	2	7	28	14
30	58	3	1	6	11	35	23
31	87	5	-	8	12	39	48

Table 2A: Number of Laden Trucks - 6:00pm to 5:00am

TERALBA QUARRY		Month:				
						Jan-19
		Daily Total	Westwards		Eastwards	
			Daily	Max Hourly	Daily	Max Hourly
Limits		66	66	6	0	0
Actuals						
1		-	-	-	-	-
2		-	-	-	-	-
3		-	-	-	-	-
4		-	-	-	-	-
5		-	-	-	-	-
6		-	-	-	-	-
7		-	-	-	-	-
8		-	-	-	-	-
9		1	1	1	-	-
10		1	1	1	-	-
11		1	1	1	-	-
12		1	1	1	-	-
13		-	-	-	-	-
14		1	1	1	-	-
15		3	3	2	-	-
16		3	3	2	-	-
17		4	4	3	-	-
18		4	4	4	-	-
19		2	2	1	-	-
20		-	-	-	-	-
21		2	2	2	-	-
22		6	6	4	-	-
23		4	4	4	-	-
24		6	6	4	-	-
25		4	4	2	-	-
26		-	-	-	-	-
27		-	-	-	-	-
28		-	-	-	-	-
29		3	3	2	-	-
30		4	4	3	-	-
31		5	5	5	-	-

Table 2B: Number of Laden Trucks - 5:00am to 6:00am

TERALBA QUARRY		Month:		Jan-19
		Westwards		Eastwards
		Max Hourly		Max Hourly
Limits*		12		0
Actuals				
1		-		-
2		-		-
3		-		-
4		-		-
5		-		-
6		-		-
7		-		-
8		1		-
9		-		-
10		-		-
11		-		-
12		-		-
13		-		-
14		1		-
15		1		-
16		1		-
17		1		-
18		2		-
19		3		-
20		-		-
21		1		-
22		-		-
23		2		-
24		-		-
25		-		-
26		-		-
27		-		-
28		-		-
29		1		-
30		1		-
31		-		-

* Condition 2 (9)

Table 2C: Number of Laden Trucks - 6:00am to 7:00am

TERALBA QUARRY	**Month:**	**Jan-19**

	Westwards**	**Eastwards****
	Max Hourly	**Max Hourly**
Limits*	**28**	**8**
Actuals		
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	3	1
8	2	6
9	3	1
10	1	2
11	2	1
12	-	-
13	-	-
14	2	3
15	4	3
16	-	-
17	6	3
18	8	2
19	1	-
20	-	-
21	3	-
22	2	2
23	4	1
24	4	1
25	2	1
26	-	-
27	-	-
28	-	-
29	2	-
30	4	2
31	-	8

* Condition 2 (9)

** Combined Maximum hourly No. of laden trucks = 28

Table 2D: Number of Laden Trucks - 7:00am to 6pm

TERALBA QUARRY		Month:		Jan-19	
	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	305	220	20	85	8
Actuals					
1	-	-	-	-	-
2	-	-	-	-	-
3	-	-	-	-	-
4	-	-	-	-	-
5	-	-	-	-	-
6	-	-	-	-	-
7	33	10	3	23	6
8	44	22	6	22	8
9	58	43	7	15	4
10	60	37	8	23	4
11	45	22	5	23	5
12	7	4	2	3	1
13	-	-	-	-	-
14	45	32	8	13	4
15	45	29	7	16	4
16	79	46	7	33	6
17	53	38	9	15	4
18	43	31	9	12	3
19	6	2	2	4	2
20	-	-	-	-	-
21	45	20	5	25	4
22	52	24	8	28	7
23	114	54	9	60	8
24	53	32	9	21	4
25	40	23	7	17	3
26	-	-	-	-	-
27	-	-	-	-	-
28	-	-	-	-	-
29	36	22	5	14	5
30	47	26	7	21	4
31	74	34	7	40	8

** PLEASE NOTE: The Hilighted Max Hourly Movements Do Not Relate To Same One Hour Period

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY **Month:** **Feb-19**

	Daily Total	Max Hourly Daily	Max Hourly Daily	Max Hourly Daily	Max Hourly Daily	Westwards Daily	Eastwards Daily
		6pm to 5am	5am to 6am	6am to 7am	7am to 6pm		
Limits	**326**	**6**	**12**	**28**	**20**	**241**	**85**
Actuals							
1	77	2	1	3	12	50	27
2	9	3	2	3	1	9	-
3	-	-	-	-	-	-	-
4	61	1	1	-	9	33	28
5	73	4	-	6	10	59	14
6	109	2	2	7	13	77	32
7	100	3	1	11	12	54	46
8	122	2	2	7	16	71	51
9	16	-	2	1	4	10	6
10	-	-	-	-	-	-	-
11	81	3	2	5	12	60	21
12	106	3	1	10	13	70	36
13	90	3	1	9	13	60	30
14	48	2	1	4	9	36	12
15	71	3	-	7	12	44	27
16	20	3	1	5	5	16	4
17	-	-	-	-	-	-	-
18	65	-	4	2	10	37	28
19	70	4	1	1	11	33	37
20	51	5	-	2	9	36	15
21	44	2	-	4	6	23	21
22	56	2	2	4	9	37	19
23	8	2	1	2	1	7	1
24	-	-	-	-	-	-	-
25	62	2	3	2	8	32	30
26	86	2	2	9	10	50	36
27	80	4	-	6	11	40	40
28	97	2	2	11	12	59	38

Table 2A: Number of Laden Trucks - 6:00pm to 5:00am

TERALBA QUARRY		Month:		Feb-19

	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	66	66	6	0	0
Actuals					
1	3	3	2	-	-
2	3	3	3	-	-
3	-	-	-	-	-
4	1	1	1	-	-
5	4	4	4	-	-
6	2	2	2	-	-
7	3	3	3	-	-
8	2	2	2	-	-
9	-	-	-	-	-
10	-	-	-	-	-
11	3	3	3	-	-
12	4	4	3	-	-
13	3	3	3	-	-
14	2	2	2	-	-
15	4	4	3	-	-
16	4	4	3	-	-
17	-	-	-	-	-
18	-	-	-	-	-
19	4	4	4	-	-
20	5	5	5	-	-
21	2	2	2	-	-
22	4	4	2	-	-
23	2	2	2	-	-
24	-	-	-	-	-
25	2	2	2	-	-
26	3	3	2	-	-
27	5	5	4	-	-
28	2	2	2		

Table 2B: Number of Laden Trucks - 5:00am to 6:00am

TERALBA QUARRY		Month:		Feb-19
		Westwards		Eastwards
		Max Hourly		Max Hourly
Limits*		12		0
Actuals				
1		1		-
2		2		-
3		-		-
4		1		-
5		-		-
6		2		-
7		1		-
8		2		-
9		2		-
10		-		-
11		2		-
12		1		-
13		1		-
14		1		-
15		-		-
16		1		-
17		-		-
18		4		-
19		1		-
20		-		-
21		-		-
22		2		-
23		1		-
24		-		-
25		3		-
26		2		-
27		-		-
28		2		-
				-
				-
				-

* Condition 2 (9)

Table 2C: Number of Laden Trucks - 6:00am to 7:00am

TERALBA QUARRY	**Month:**	**Feb-19**

	Westwards**	**Eastwards****
	Max Hourly	**Max Hourly**
Limits*	**28**	**8**
Actuals		
1	2	1
2	3	-
3	**-**	**-**
4	-	-
5	4	2
6	3	4
7	9	2
8	3	4
9	1	-
10	**-**	**-**
11	5	-
12	7	3
13	6	3
14	2	2
15	5	2
16	4	1
17	**-**	**-**
18	2	-
19	-	1
20	2	-
21	4	-
22	4	-
23	2	-
24	**-**	**-**
25	1	1
26	7	2
27	4	2
28	9	2

* Condition 2 (9)

** Combined Maximum hourly No. of laden trucks = 28

Table 2D: Number of Laden Trucks - 7:00am to 6pm

TERALBA QUARRY		Month:		Feb-19	
	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	305	220	20	85	8
Actuals					
1	70	44	9	26	5
2	1	1	1	-	-
3	-	-	-	-	-
4	59	31	5	28	5
5	63	51	8	12	3
6	98	70	11	28	5
7	85	41	9	44	7
8	111	64	10	47	8
9	13	7	3	6	2
10	-	-	-	-	-
11	71	50	8	21	5
12	91	58	10	33	6
13	77	50	9	27	5
14	41	31	7	10	3
15	60	35	7	25	6
16	10	7	4	3	1
17	-	-	-	-	-
18	59	31	6	28	5
19	64	28	5	36	8
20	44	29	7	15	3
21	38	17	4	21	4
22	46	27	6	19	4
23	3	2	1	1	1
24	-	-	-	-	-
25	55	26	4	29	6
26	72	38	5	34	5
27	69	31	7	38	6
28	82	46	9	36	7

** PLEASE NOTE: The Hilighted Max Hourly Movements Do Not Relate To Same One Hour Period

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY **Month:** **Mar-19**

	Daily Total	Max Hourly Daily	Max Hourly Daily	Max Hourly Daily	Max Hourly Daily	Westwards Daily	Eastwards Daily
		6pm to 5am	5am to 6am	6am to 7am	7am to 6pm		
Limits	**326**	**6**	**12**	**28**	**20**	**241**	**85**
Actuals							
1	88	3	1	7	11	50	38
2	23	2	1	4	5	21	2
3	-	-	-	-	-	-	-
4	77	1	4	4	12	51	26
5	73	3	-	4	13	56	17
6	100	3	2	4	15	65	35
7	82	4	-	6	13	46	36
8	108	4	3	10	19	66	42
9	19	1	2	4	5	14	5
10	-	-	-	-	-	-	-
11	97	2	2	5	17	75	22
12	87	3	1	9	12	53	34
13	98	1	1	6	13	54	44
14	46	2	1	2	9	30	16
15	75	2	1	9	9	54	21
16	13	-	5	1	3	11	2
17	-	-	-	-	-	-	-
18	37	2	3	2	7	24	13
19	59	3	1	2	13	34	25
20	89	5	-	7	13	56	33
21	90	4	1	4	13	51	39
22	79	3	1	10	10	53	26
23	22	1	1	4	5	18	4
24	-	-	-	-	-	-	-
25	86	3	2	6	12	57	29
26	71	2	2	5	10	40	31
27	107	3	1	7	13	53	54
28	114	4	-	9	14	61	53
29	110	3	3	9	15	77	33
30	18	3	1	3	4	17	1
31	-	-	-	-	-	-	-

Table 2A: Number of Laden Trucks - 6:00pm to 5:00am

TERALBA QUARRY		Month:		Mar-19

	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	66	66	6	0	0
Actuals					
1	4	4	3	-	-
2	4	4	2	-	-
3	-	-	-	-	-
4	1	1	1	-	-
5	4	4	3	-	-
6	3	3	3	-	-
7	5	5	4	-	-
8	5	5	4	-	-
9	1	1	1	-	-
10	-	-	-	-	-
11	2	2	2	-	-
12	3	3	3	-	-
13	2	2	1	-	-
14	3	3	2	-	-
15	2	2	2	-	-
16	-	-	-	-	-
17	-	-	-	-	-
18	2	2	2	-	-
19	3	3	3	-	-
20	5	5	5	-	-
21	5	5	4	-	-
22	4	4	3	-	-
23	1	1	1	-	-
24	-	-	-	-	-
25	3	3	3	-	-
26	2	2	2	-	-
27	3	3	3	-	-
28	5	5	4	-	-
29	4	4	3	-	-
30	3	3	3	-	-
31	-	-	-	-	-

Table 2B: Number of Laden Trucks - 5:00am to 6:00am

TERALBA QUARRY		Month:		Mar-19
		Westwards		Eastwards
		Max Hourly		Max Hourly
Limits*		12		0
Actuals				
1		1		-
2		1		-
3		-		-
4		4		-
5		-		-
6		2		-
7		-		-
8		3		-
9		2		-
10		-		-
11		2		-
12		1		-
13		1		-
14		1		-
15		1		-
16		5		-
17		-		-
18		3		-
19		1		-
20		-		-
21		1		-
22		1		-
23		1		-
24		-		-
25		2		-
26		2		-
27		1		-
28		-		-
29		3		-
30		1		-
31		-		-

* Condition 2 (9)

Table 2C: Number of Laden Trucks - 6:00am to 7:00am

TERALBA QUARRY	**Month:**	**Mar-19**

	Westwards**	**Eastwards****
	Max Hourly	**Max Hourly**
Limits*	**28**	**8**
Actuals		
1	6	1
2	4	-
3	-	-
4	4	-
5	3	1
6	3	1
7	5	1
8	8	2
9	3	1
10	-	-
11	4	1
12	7	2
13	4	2
14	2	-
15	7	2
16	1	-
17	-	-
18	2	-
19	2	-
20	6	1
21	1	3
22	9	1
23	4	-
24	-	-
25	6	-
26	5	-
27	4	3
28	6	3
29	8	1
30	3	-
31	-	-

* Condition 2 (9)

** Combined Maximum hourly No. of laden trucks = 28

Table 2D: Number of Laden Trucks - 7:00am to 6pm

TERALBA QUARRY		Month:	Mar-19

	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	**305**	**220**	**20**	**85**	**8**
Actuals					
1	76	39	6	37	6
2	14	12	5	2	1
3	-	-	-	-	-
4	68	42	7	26	5
5	65	49	11	16	4
6	91	57	11	34	5
7	71	36	10	35	6
8	90	50	15	40	7
9	12	8	4	4	1
10	-	-	-	-	-
11	88	67	15	21	5
12	74	42	8	32	5
13	89	47	8	42	7
14	40	24	6	16	3
15	63	44	8	19	5
16	7	5	2	2	1
17	-	-	-	-	-
18	30	17	4	13	4
19	53	28	8	25	6
20	77	45	10	32	8
21	80	44	10	36	6
22	64	39	8	25	5
23	16	12	4	4	2
24	-	-	-	-	-
25	75	46	9	29	6
26	37	31	6	31	6
27	96	45	7	51	7
28	100	50	7	50	8
29	94	62	10	32	7
30	11	10	3	1	1
31	-	-	-	-	-

** PLEASE NOTE: The Hilighted Max Hourly Movements Do Not Relate To Same One Hour Period

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY **Month:** **Apr-19**

	Daily Total	Max Hourly Daily	Max Hourly Daily	Max Hourly Daily	Max Hourly Daily	Westwards Daily	Eastwards Daily
		6pm to 5am	5am to 6am	6am to 7am	7am to 6pm		
Limits	**326**	**6**	**12**	**28**	**20**	**241**	**85**
Actuals							
1	132	2	3	7	18	89	43
2	49	1	1	7	8	31	18
3	69	2	2	6	11	31	38
4	100	2	2	8	16	52	48
5	75	1	2	7	12	44	31
6	19	1	2	2	5	15	4
7	-	-	-	-	-	-	-
8	97	3	2	5	16	59	38
9	115	4	1	11	13	87	28
10	143	3	3	9	19	98	45
11	124	4	-	9	17	77	47
12	170	3	1	14	20	101	69
13	26	3	2	6	5	22	4
14	-	-	-	-	-	-	-
15	159	-	5	11	20	89	70
16	146	2	1	20	18	81	65
17	153	3	1	19	19	87	66
18	128	2	-	13	20	83	45
19	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-
23	74	-	1	7	11	37	37
24	89	1	4	9	14	38	51
25	-	-	-	-	-	-	-
26	40	2	1	4	6	26	14
27	10						
28	-	-	-	-	-	-	-
29	111	3	1	7	18	71	40
30	169	2	-	13	20	104	65

Table 2A: Number of Laden Trucks - 6:00pm to 5:00am

TERALBA QUARRY		Month:		Apr-19

	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	66	66	6	0	0
Actuals					
1	2	2	2	-	-
2	2	2	1	-	-
3	3	3	2	-	-
4	2	2	2	-	-
5	1	1	1	-	-
6	1	1	1	-	-
7	-	-	-	-	-
8	3	3	3	-	-
9	5	5	4	-	-
10	3	3	3	-	-
11	5	5	4	-	-
12	4	4	3	-	-
13	4	4	3	-	-
14	-	-	-	-	-
15	-	-	-	-	-
16	2	2	2	-	-
17	4	4	3	-	-
18	4	4	2	-	-
19	-	-	-	-	-
20	-	-	-	-	-
21	-	-	-	-	-
22	-	-	-	-	-
23	-	-	-	-	-
24	1	1	1	-	-
25	-	-	-	-	-
26	2	2	2	-	-
27	1	1	1	-	-
28	-	-	-	-	-
29	3	3	3	-	-
30	3	3	2	-	-
				-	-

Table 2B: Number of Laden Trucks - 5:00am to 6:00am

TERALBA QUARRY		Month:		Apr-19
		Westwards		Eastwards
		Max Hourly		Max Hourly
Limits*		12		0
Actuals				
1		3		-
2		1		-
3		2		-
4		2		-
5		2		-
6		2		-
7		-		-
8		2		-
9		1		-
10		3		-
11		-		-
12		1		-
13		2		-
14		-		-
15		5		-
16		1		-
17		1		-
18		-		-
19		-		-
20		-		-
21		-		-
22		-		-
23		1		-
24		4		-
25		-		-
26		1		-
27		-		-
28		-		-
29		1		-
30		-		-
				-

* Condition 2 (9)

Table 2C: Number of Laden Trucks - 6:00am to 7:00am

TERALBA QUARRY	**Month:**	**Apr-19**

	Westwards**	**Eastwards****
	Max Hourly	**Max Hourly**
Limits*	**28**	**8**
Actuals		
1	5	2
2	6	1
3	5	1
4	8	-
5	6	1
6	1	1
7	-	-
8	4	1
9	9	2
10	5	4
11	6	3
12	8	6
13	6	-
14	-	-
15	4	7
16	12	8
17	11	8
18	9	4
19	-	-
20	-	-
21	-	-
22	-	-
23	5	2
24	5	4
25	-	-
26	1	3
27	-	-
28	-	-
29	5	2
30	8	5

* Condition 2 (9)

** Combined Maximum hourly No. of laden trucks = 28

Table 2D: Number of Laden Trucks - 7:00am to 6pm

TERALBA QUARRY		Month:		Apr-19

	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	**305**	**220**	**20**	**85**	**8**
Actuals					
1	120	79	14	41	8
2	39	22	5	17	3
3	58	21	6	37	6
4	88	40	8	48	8
5	65	35	6	30	6
6	14	11	4	3	1
7	-	-	-	-	-
8	87	50	8	37	8
9	98	72	10	26	5
10	128	87	15	41	7
11	110	66	11	44	7
12	151	88	13	63	8
13	14	10	4	4	2
14	-	-	-	-	-
15	143	80	12	63	8
16	123	66	11	57	8
17	129	71	12	58	8
18	111	70	16	41	8
19	-	-	-	-	-
20	-	-	-	-	-
21	-	-	-	-	-
22	-	-	-	-	-
23	66	31	6	35	8
24	75	28	7	47	8
25	-	-	-	-	-
26	33	22	5	11	4
27	9	5	3	4	1
28	-	-	-	-	-
29	100	62	11	38	7
30	153	93	14	60	8

** PLEASE NOTE: The Hilighted Max Hourly Movements Do Not Relate To Same One Hour Period

Table 2A: Number of Laden Trucks - 6:00pm to 5:00am

TERALBA QUARRY		Month:		May-19

	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	66	66	6	0	0
Actuals					
1	3	3	2	-	-
2	4	4	4	-	-
3	6	6	6	-	-
4	2	2	2	-	-
5	-	-	-	-	-
6	3	3	3	-	-
7	4	4	3	-	-
8	5	5	4	-	-
9	4	4	3	-	-
10	4	4	2	-	-
11	2	2	1	-	-
12	-	-	-	-	-
13	4	4	4	-	-
14	5	5	4	-	-
15	3	3	2	-	-
16	4	4	4	-	-
17	3	3	3	-	-
18	2	2	2	-	-
19	-	-	-	-	-
20	4	4	4	-	-
21	4	4	4	-	-
22	4	4	4	-	-
23	2	2	2	-	-
24	5	5	4	-	-
25	3	3	2	-	-
26	-	-	-	-	-
27	4	4	4	-	-
28	5	5	4	-	-
29	4	4	2	-	-
30	5	5	4	-	-
31	4	4	2	-	-

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY **Month:** **May-19**

	Daily Total	Max Hourly Daily 6pm to 5am	Max Hourly Daily 5am to 6am	Max Hourly Daily 6am to 7am	Max Hourly Daily 7am to 6pm	Westwards Daily	Eastwards Daily
Limits	**326**	**6**	**12**	**28**	**20**	**241**	**85**
Actuals							
1	186	2	1	9	20	118	68
2	203	4	-	18	20	148	55
3	126	6	-	12	16	82	44
4	19	2	3	4	4	16	3
5	-	-	-	-	-	-	-
6	71	3	2	6	9	48	23
7	145	3	-	11	20	93	52
8	88	4	-	9	12	66	22
9	131	3	-	11	16	86	45
10	137	2	2	10	20	95	42
11	21	1	2	3	7	19	2
12	-	-	-	-	-	-	-
13	119	4	1	6	15	65	54
14	141	4	-	10	20	103	38
15	110	2	-	9	15	76	34
16	110	4	1	9	14	81	29
17	114	3	1	8	16	68	46
18	14	2	2	1	2	11	3
19	-	-	-	-	-	-	-
20	76	4	1	8	9	41	35
21	125	4	1	8	18	82	43
22	168	4	-	17	20	106	62
23	169	2	1	14	20	103	66
24	163	4	-	11	20	93	70
25	24	2	1	3	6	15	9
26	-	-	-	-	-	-	-
27	130	4	2	7	18	91	39
28	102	4	-	10	16	52	50
29	110	2	1	11	16	62	48
30	98	4	1	5	14	48	50
31	127	2	-	12	16	98	29

Table 2B: Number of Laden Trucks - 5:00am to 6:00am

TERALBA QUARRY		Month:		May-19
		Westwards		Eastwards
		Max Hourly		Max Hourly
Limits*		12		0
Actuals				
1		1		-
2		-		-
3		-		-
4		3		-
5		-		-
6		2		-
7		-		-
8		-		-
9		-		-
10		2		-
11		2		-
12		-		-
13		1		-
14		-		-
15		-		-
16		1		-
17		1		-
18		2		-
19		-		-
20		1		-
21		1		-
22		-		-
23		1		-
24		-		-
25		1		-
26		-		-
27		2		-
28		-		-
29		1		-
30		1		-
31		-		-

* Condition 2 (9)

Table 2C: Number of Laden Trucks - 6:00am to 7:00am

TERALBA QUARRY	**Month:**	**May-19**

	Westwards**	**Eastwards****
	Max Hourly	**Max Hourly**
Limits*	**28**	**8**
Actuals		
1	4	5
2	14	4
3	9	3
4	4	-
5	-	-
6	3	3
7	8	3
8	6	3
9	9	2
10	7	3
11	3	-
12	-	-
13	6	-
14	9	1
15	8	1
16	7	2
17	7	1
18	1	-
19	-	-
20	5	3
21	7	1
22	10	7
23	11	3
24	6	5
25	2	1
26	-	-
27	7	-
28	9	1
29	8	3
30	4	1
31	11	1

* Condition 2 (9)

** Combined Maximum hourly No. of laden trucks = 28

Table 2D: Number of Laden Trucks - 7:00am to 6pm

TERALBA QUARRY		Month:				May-19
		Daily Total	Westwards		Eastwards	
			Daily	Max Hourly	Daily	Max Hourly
Limits		305	220	20	85	8
Actuals						
1		173	110	14	63	8
2		181	130	16	51	7
3		108	67	12	41	7
4		10	7	3	3	2
5		-	-	-	-	-
6		60	40	6	20	4
7		130	81	14	49	8
8		74	55	10	19	5
9		116	73	10	43	7
10		121	82	14	39	6
11		14	12	6	2	1
12		-	-	-	-	-
13		108	54	9	54	8
14		126	89	16	37	8
15		98	65	11	33	5
16		96	69	10	27	6
17		102	57	11	45	8
18		9	6	2	3	2
19		-	-	-	-	-
20		63	31	6	32	5
21		112	70	11	42	8
22		147	92	14	55	8
23		152	89	13	63	8
24		147	82	14	65	8
25		17	9	4	8	3
26		-	-	-	-	-
27		117	78	11	39	7
28		87	38	8	49	8
29		94	49	8	45	8
30		87	38	6	49	8
31		111	83	11	28	5

** PLEASE NOTE: The Hilighted Max Hourly Movements Do Not Relate To Same One Hour Period

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY **Month:** **Jun-19**

	Daily Total	Max Hourly Daily 6pm to 5am	Max Hourly Daily 5am to 6am	Max Hourly Daily 6am to 7am	Max Hourly Daily 7am to 6pm	Westwards Daily	Eastwards Daily
Limits	**326**	**6**	**12**	**28**	**20**	**241**	**85**
Actuals							
1	23	2	1	3	5	14	9
2	-	-	-	-	-	-	-
3	55	3	3	3	10	39	16
4	40	6	-	11	5	37	3
5	37	4	-	1	5	24	13
6	69	3	1	3	10	56	13
7	91	-	3	5	15	55	36
8	20	3	-	2	5	20	-
9	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-
11	86	2	-	3	11	50	36
12	93	2	-	12	13	66	27
13	143	3	2	7	20	88	55
14	158	4	-	7	19	87	71
15	33	3	1	5	6	23	10
16	-	-	-	-	-	-	-
17	80	-	4	4	11	41	39
18	65	3	2	4	9	47	18
19	163	5	-	5	20	113	50
20	216	3	1	18	20	154	62
21	154	3	1	8	20	110	44
22	22	4	-	4	4	12	10
23	-	-	-	-	-	-	-
24	47	-	4	1	8	31	16
25	59	6	-	2	11	49	10
26	107	5	-	6	17	86	21
27	87	3	1	9	11	67	20
28	129	5	1	9	17	80	49
29	55	5	-	5	10	41	14
30	-	-	-	-	-	-	-

Table 2A: Number of Laden Trucks - 6:00pm to 5:00am

TERALBA QUARRY		Month:		Jun-19
	Daily Total	Westwards		Eastwards
		Daily	Max Hourly	Daily	Max Hourly
Limits	66	66	6	0	0
Actuals					
1	3	2	2	-	-
2	-	-	-	-	-
3	3	3	3	-	-
4	6	6	6	-	-
5	5	5	4	-	-
6	3	3	3	-	-
7	-	-	-	-	-
8	4	4	3	-	-
9	-	-	-	-	-
10	-	-	-	-	-
11	3	3	2	-	-
12	4	4	2	-	-
13	4	4	3	-	-
14	4	4	4	-	-
15	3	3	3	-	-
16	-	-	-	-	-
17	-	-	-	-	-
18	3	3	3	-	-
19	6	6	5	-	-
20	3	3	3	-	-
21	4	4	3	-	-
22	6	6	4	-	-
23	-	-	-	-	-
24	-	-	-	-	-
25	6	6	6	-	-
26	5	5	5	-	-
27	4	4	3	-	-
28	5	5	5	-	-
29	5	5	5	-	-
30	-	-	-	-	-
				-	-

Table 2B: Number of Laden Trucks - 5:00am to 6:00am

TERALBA QUARRY		Month:		Jun-19
		Westwards		Eastwards
		Max Hourly		Max Hourly
Limits*		**12**		**0**
Actuals				
1		1		-
2		-		-
3		3		-
4		-		-
5		-		-
6		1		-
7		3		-
8		-		-
9		-		-
10		-		-
11		-		-
12		-		-
13		2		-
14		-		-
15		1		-
16		-		-
17		4		-
18		2		-
19		-		-
20		1		-
21		1		-
22		-		-
23		-		-
24		4		-
25		-		-
26		-		-
27		1		-
28		1		-
29		-		-
30		-		-
				-

* Condition 2 (9)

Table 2C: Number of Laden Trucks - 6:00am to 7:00am

TERALBA QUARRY	**Month:**	**Jun-19**

	Westwards**	**Eastwards****
	Max Hourly	**Max Hourly**
Limits*	**28**	**8**
Actuals		
1	3	-
2	-	-
3	2	1
4	11	-
5	-	1
6	3	-
7	4	1
8	2	-
9	-	-
10	-	-
11	3	-
12	8	4
13	5	2
14	2	5
15	5	-
16	-	-
17	4	-
18	2	2
19	5	-
20	15	3
21	5	3
22	2	2
23	-	-
24	-	1
25	2	-
26	4	2
27	7	2
28	8	1
29	4	1
30	-	-

* Condition 2 (9)

** Combined Maximum hourly No. of laden trucks = 28

Table 2D: Number of Laden Trucks - 7:00am to 6pm

TERALBA QUARRY		Month:		Jun-19	
	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	305	220	20	85	8
Actuals					
1	17	8	5	9	4
2	-	-	-	-	-
3	46	31	6	15	4
4	23	20	5	3	1
5	31	19	4	12	2
6	62	49	9	13	3
7	83	48	8	35	8
8	14	14	5	-	-
9	-	-	-	-	-
10	-	-	-	-	-
11	80	44	7	36	6
12	77	54	11	23	7
13	130	77	13	53	8
14	147	81	11	66	8
15	24	14	4	10	3
16	-	-	-	-	-
17	72	33	6	39	6
18	56	40	7	16	5
19	152	102	15	50	7
20	194	135	18	59	8
21	141	100	17	41	7
22	12	4	2	8	2
23	-	-	-	-	-
24	42	27	6	15	5
25	51	41	9	10	3
26	96	77	15	19	4
27	73	55	10	18	5
28	114	66	11	48	7
29	45	32	8	13	4
30	-	-	-	-	-

** PLEASE NOTE: The Hilighted Max Hourly Movements Do Not Relate To Same One Hour Period

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY **Month: Jul-19**

	Daily Total	Max Hourly Daily 6pm to 5am	Max Hourly Daily 5am to 6am	Max Hourly Daily 6am to 7am	Max Hourly Daily 7am to 6pm	Westwards Daily	Eastwards Daily
Limits	**326**	**6**	**12**	**28**	**20**	**241**	**85**
Actuals							
1	130	2	4	9	16	87	43
2	156	4	-	11	20	100	56
3	121	4	1	13	18	89	32
4	99	3	1	11	13	49	50
5	61	4	1	5	12	33	28
6	12	4	1	-	4	9	3
7	-	-	-	-	-	-	-
8	73	2	3	5	11	38	35
9	87	4	1	7	13	61	26
10	108	1	2	8	14	74	34
11	91	5	-	9	12	46	45
12	130	3	2	11	18	88	42
13	28	2	1	4	6	23	5
14	-	-	-	-	-	-	-
15	149	1	1	12	20	94	55
16	94	3	1	12	12	62	32
17	122	4	1	11	18	90	32
18	133	4	1	10	17	88	45
19	84	5	-	11	14	53	31
20	19	2	3	6	3	18	1
21	-	-	-	-	-	-	-
22	128	1	3	6	17	66	62
23	129	2	2	11	20	78	51
24	104	3	2	4	14	67	37
25	98	3	2	9	17	62	36
26	92	3	-	11	15	65	27
27	11	2	1	1	3	7	4
28	-	-	-	-	-	-	-
29	95	4	1	2	17	67	28
30	67	4	2	1	9	44	23
31	69	2	1	4	11	43	26

Table 2A: Number of Laden Trucks - 6:00pm to 5:00am

TERALBA QUARRY		Month:		Jul-19

	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	66	66	6	0	0
Actuals					
1	2	2	2	-	-
2	5	5	4	-	-
3	4	4	4	-	-
4	4	4	3	-	-
5	5	5	5	-	-
6	4	4	4	-	-
7	-	-	-	-	-
8	2	2	2	-	-
9	4	4	4	-	-
10	1	1	1	-	-
11	5	5	5	-	-
12	3	3	3	-	-
13	3	3	2	-	-
14	-	-	-	-	-
15	1	1	1	-	-
16	3	3	3	-	-
17	4	4	4	-	-
18	4	4	4	-	-
19	5	5	5	-	-
20	2	2	2	-	-
21	-	-	-	-	-
22	1	1	1	-	-
23	2	2	2	-	-
24	3	3	3	-	-
25	3	3	3	-	-
26	3	3	3	-	-
27	2	2	2	-	-
28	-	-	-	-	-
29	4	4	4	-	-
30	4	4	4	-	-
31	4	4	2	-	-

Table 2B: Number of Laden Trucks - 5:00am to 6:00am

TERALBA QUARRY	Month:	Jul-19

	Westwards	Eastwards
	Max Hourly	Max Hourly
Limits*	12	0
Actuals		
1	4	-
2	-	-
3	1	-
4	1	-
5	1	-
6	1	-
7	-	-
8	3	-
9	1	-
10	2	-
11	-	-
12	2	-
13	1	-
14	-	-
15	1	-
16	1	-
17	1	-
18	1	-
19	-	-
20	3	-
21	-	-
22	3	-
23	2	-
24	2	-
25	2	-
26	-	-
27	1	-
28	-	-
29	1	-
30	2	-
31	1	-

* Condition 2 (9)

Table 2C: Number of Laden Trucks - 6:00am to 7:00am

TERALBA QUARRY		Month:		Jul-19
		Westwards**		Eastwards**
		Max Hourly		Max Hourly
Limits*		28		8
Actuals				
1		7		2
2		8		3
3		10		3
4		5		6
5		5		-
6		-		-
7		-		-
8		5		-
9		5		2
10		6		2
11		5		4
12		9		2
13		3		1
14		-		-
15		11		1
16		10		2
17		7		4
18		8		2
19		7		4
20		6		-
21		-		-
22		4		2
23		5		6
24		4		-
25		7		2
26		7		4
27		1		-
28		-		-
29		2		-
30		1		-
31		4		-

* Condition 2 (9)

** Combined Maximum hourly No. of laden trucks = 28

Table 2D: Number of Laden Trucks - 7:00am to 6pm

TERALBA QUARRY		Month:		Jul-19	
	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	305	220	20	85	8
Actuals					
1	115	74	11	41	7
2	140	87	14	53	8
3	103	74	12	29	7
4	83	39	8	44	7
5	50	22	7	28	5
6	7	4	3	3	1
7	-	-	-	-	-
8	63	28	8	35	6
9	75	51	9	24	5
10	97	65	11	32	6
11	77	36	7	41	7
12	114	74	11	40	8
13	20	16	5	4	2
14	-	-	-	-	-
15	135	81	13	54	8
16	78	48	10	30	6
17	106	78	15	28	7
18	118	75	14	43	7
19	68	41	8	27	6
20	8	7	2	1	1
21	-	-	-	-	-
22	118	58	9	60	8
23	114	69	12	45	8
24	95	58	11	37	7
25	84	50	12	34	8
26	78	55	12	23	5
27	7	3	2	4	2
28	-	-	-	-	-
29	88	60	11	28	6
30	60	37	7	23	4
31	60	34	6	26	5

** PLEASE NOTE: The Hilighted Max Hourly Movements Do Not Relate To Same One Hour Period

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY **Month: Aug-19**

	Daily Total	Max Hourly Daily 6pm to 5am	Max Hourly Daily 5am to 6am	Max Hourly Daily 6am to 7am	Max Hourly Daily 7am to 6pm	Westwards Daily	Eastwards Daily
Limits	**326**	**6**	**12**	**28**	**20**	**241**	**85**
Actuals							
1	81	3	1	8	11	57	24
2	84	3	-	5	14	61	23
3	24	2	1	6	7	22	2
4	-	-	-	-	-	-	-
5	70	3	1	7	9	40	30
6	84	4	1	7	11	68	16
7	94	3	-	10	14	70	24
8	106	5	1	13	12	78	28
9	66	2	1	7	11	47	19
10	18	2	3	4	2	16	2
11	-	-	-	-	-	-	-
12	63	3	3	2	9	45	18
13	103	3	-	7	14	76	27
14	125	3	1	7	17	104	21
15	120	3	1	7	17	91	29
16	81	4	1	5	12	52	29
17	16	2	1	6	3	14	2
18	-	-	-	-	-	-	-
19	98	2	1	5	14	53	45
20	101	4	1	9	15	59	42
21	82	3	-	6	13	56	26
22	84	4	-	10	13	62	22
23	117	4	2	7	18	94	23
24	20	3	-	3	4	12	8
25	-	-	-	-	-	-	-
26	65	-	5	4	9	46	19
27	87	3	3	4	14	71	16
28	109	4	-	9	14	77	32
29	72	5	-	7	10	43	29
30	25	3	-	3	5	17	8
31	-	-	-	-	-	-	-

Table 2A: Number of Laden Trucks - 6:00pm to 5:00am

TERALBA QUARRY		Month:		Aug-19
	Daily Total	Westwards		Eastwards
		Daily	Max Hourly	Daily	Max Hourly
Limits	66	66	6	0	0
Actuals					
1	4	4	3	-	-
2	3	3	3	-	-
3	2	2	2	-	-
4	-	-	-	-	-
5	3	3	3	-	-
6	4	4	4	-	-
7	4	4	3	-	-
8	5	5	5	-	-
9	4	4	2	-	-
10	2	2	2	-	-
11	-	-	-	-	-
12	3	3	3	-	-
13	3	3	3	-	-
14	3	3	3	-	-
15	3	3	3	-	-
16	4	4	4	-	-
17	3	3	2	-	-
18	-	-	-	-	-
19	2	2	2	-	-
20	4	4	4	-	-
21	3	3	3	-	-
22	4	4	4	-	-
23	4	4	4	-	-
24	4	4	3	-	-
25	-	-	-	-	-
26	-	-	-	-	-
27	3	3	3	-	-
28	4	4	4	-	-
29	5	5	5	-	-
30	3	3	3	-	-
31	-	-	-	-	-

Table 2B: Number of Laden Trucks - 5:00am to 6:00am

TERALBA QUARRY		Month:		Aug-19
		Westwards		Eastwards
		Max Hourly		Max Hourly
Limits*		12		0
Actuals				
1		1		-
2		-		-
3		1		-
4		-		-
5		1		-
6		1		-
7		-		-
8		1		-
9		1		-
10		3		-
11		-		-
12		3		-
13		-		-
14		1		-
15		1		-
16		1		-
17		1		-
18		-		-
19		1		-
20		1		-
21		-		-
22		-		-
23		2		-
24		-		-
25		-		-
26		5		-
27		3		-
28		-		-
29		-		-
30		-		-
31		-		-

* Condition 2 (9)

Table 2C: Number of Laden Trucks - 6:00am to 7:00am

TERALBA QUARRY		Month:		Aug-19
		Westwards**		Eastwards**
		Max Hourly		Max Hourly
Limits*		28		8
Actuals				
1		6		2
2		5		-
3		6		-
4		-		-
5		5		2
6		6		1
7		10		-
8		9		4
9		6		1
10		4		-
11		-		-
12		1		1
13		6		1
14		6		1
15		6		1
16		3		2
17		6		-
18		-		-
19		4		1
20		7		2
21		4		2
22		9		1
23		6		1
24		3		-
25		-		-
26		4		-
27		4		-
28		6		3
29		5		2
30		3		-
31		-		-

* Condition 2 (9)

** Combined Maximum hourly No. of laden trucks = 28

Table 2D: Number of Laden Trucks - 7:00am to 6pm

TERALBA QUARRY		Month:		Aug-19

	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	**305**	**220**	**20**	**85**	**8**
Actuals					
1	68	46	9	22	5
2	76	53	10	23	6
3	15	13	5	2	2
4	-	-	-	-	-
5	59	31	6	28	5
6	72	57	10	15	4
7	80	56	10	24	4
8	87	63	9	24	6
9	54	36	9	18	3
10	9	7	2	2	1
11	-	-	-	-	-
12	55	38	7	17	4
13	93	67	10	26	4
14	114	984	14	20	3
15	109	81	13	28	5
16	71	44	8	27	6
17	6	4	2	2	1
18	-	-	-	-	-
19	90	46	9	44	6
20	87	47	10	40	6
21	73	49	8	24	5
22	70	49	9	21	4
23	104	82	13	22	6
24	13	5	2	8	2
25	-	-	-	-	-
26	56	37	5	19	4
27	77	61	11	16	3
28	96	67	11	29	7
29	60	33	7	27	6
30	19	11	3	8	5
31	-	-	-	-	-

** PLEASE NOTE: The Hilighted Max Hourly Movements Do Not Relate To Same One Hour Period

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY **Month: Sep-19**

	Daily Total	Max Hourly Daily	Max Hourly Daily	Max Hourly Daily	Max Hourly Daily	Westwards Daily	Eastwards Daily
		6pm to 5am	5am to 6am	6am to 7am	7am to 6pm		
Limits	**326**	**6**	**12**	**28**	**20**	**241**	**85**
Actuals							
1	-	-	-	-	-	-	-
2	54	4	2	1	8	35	19
3	88	6	-	4	14	47	41
4	87	4	1	6	13	51	36
5	99	3	-	6	15	48	51
6	86	4	-	5	12	65	21
7	12	2	2	3	2	7	5
8	-	-	-	-	-	-	-
9	65	3	3	6	10	43	22
10	98	1	4	8	11	54	44
11	94	4	-	7	13	59	35
12	90	5	1	9	11	42	48
13	92	4	1	6	13	48	44
14	20	4	1	4	3	19	1
15	-	-	-	-	-	-	-
16	96	-	5	7	11	70	26
17	53	5	-	3	8	41	12
18	23	4	1	2	4	9	14
19	59	3	2	3	7	49	10
20	73	4	2	8	10	56	17
21	15	2	1	3	5	11	4
22	-	-	-	-	-	-	-
23	85	4	1	5	13	54	31
24	120	4	1	7	16	79	41
25	119	4	2	11	17	88	31
26	91	3	1	3	12	58	33
27	92	4	1	8	14	71	21
28	19	2	2	5	5	16	3
29	-	-	-	-	-	-	-
30	86	1	5	4	12	37	49
31							

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Table 2A: Number of Laden Trucks - 6:00pm to 5:00am

TERALBA QUARRY		Month:		Sep-19	
	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	66	66	6	0	0
Actuals					
1	-	-	-	-	-
2	4	4	4	-	-
3	6	6	6	-	-
4	4	4	4	-	-
5	3	3	3	-	-
6	4	4	4	-	-
7	3	3	2	-	-
8	-	-	-	-	-
9	3	3	3	-	-
10	1	1	1	-	-
11	4	4	4	-	-
12	5	5	5	-	-
13	5	5	4	-	-
14	6	6	4	-	-
15	-	-	-	-	-
16	-	-	-	-	-
17	5	5	5	-	-
18	4	4	4	-	-
19	3	3	3	-	-
20	4	4	4	-	-
21	2	2	2	-	-
22	-	-	-	-	-
23	4	4	4	-	-
24	5	5	4	-	-
25	4	4	4	-	-
26	3	3	3	-	-
27	4	4	4	-	-
28	3	3	2	-	-
29	-	-	-	-	-
30	1	1	1	-	-
				-	-

Table 2B: Number of Laden Trucks - 5:00am to 6:00am

TERALBA QUARRY		Month:		Sep-19
		Westwards		Eastwards
		Max Hourly		Max Hourly
Limits*		12		0
Actuals				
1		-		-
2		2		-
3		-		-
4		1		-
5		-		-
6		-		-
7		2		-
8		-		-
9		3		-
10		4		-
11		-		-
12		1		-
13		1		-
14		1		-
15		-		-
16		5		-
17		-		-
18		1		-
19		2		-
20		2		-
21		1		-
22		-		-
23		1		-
24		1		-
25		2		-
26		1		-
27		1		-
28		2		-
29		-		-
30		5		-
				-

* Condition 2 (9)

Table 2C: Number of Laden Trucks - 6:00am to 7:00am

TERALBA QUARRY	Month:	Sep-19

	Westwards**	Eastwards**
	Max Hourly	Max Hourly
Limits*	28	8
Actuals		
1	-	-
2	1	-
3	3	1
4	6	-
5	4	2
6	5	-
7	2	1
8	-	-
9	5	1
10	4	4
11	5	2
12	5	4
13	3	3
14	4	-
15	-	-
16	6	1
17	1	2
18	1	1
19	3	-
20	8	-
21	3	-
22	-	-
23	3	2
24	6	1
25	9	1
26	2	2
27	6	1
28	5	-
29	-	-
30	2	2

* Condition 2 (9)

** Combined Maximum hourly No. of laden trucks = 28

Table 2D: Number of Laden Trucks - 7:00am to 6pm

TERALBA QUARRY		Month:			Sep-19
	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	305	220	20	85	8
Actuals					
1	-	-	-	-	-
2	47	28	7	19	4
3	78	38	8	40	7
4	76	40	9	36	8
5	90	41	7	49	8
6	77	56	10	21	4
7	4	-	-	4	2
8	-	-	-	-	-
9	53	32	6	21	3
10	85	45	7	40	7
11	83	50	8	33	7
12	75	31	6	44	8
13	80	39	8	41	7
14	9	8	3	1	1
15	-	-	-	-	-
16	84	59	9	25	6
17	45	35	6	10	2
18	16	3	1	13	2
19	51	41	7	10	3
20	59	42	7	17	4
21	9	5	2	4	3
22	-	-	-	-	-
23	75	46	9	29	5
24	107	67	13	40	8
25	102	73	13	29	5
26	84	52	10	32	6
27	79	60	11	19	4
28	9	6	2	3	3
29	-	-	-	-	-
30	76	29	5	47	7

** PLEASE NOTE: The Hilighted Max Hourly Movements Do Not Relate To Same One Hour Period

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY **Month: Oct-19**

	Daily Total	Max Hourly Daily 6pm to 5am	Max Hourly Daily 5am to 6am	Max Hourly Daily 6am to 7am	Max Hourly Daily 7am to 6pm	Westwards Daily	Eastwards Daily
Limits	**326**	**6**	**12**	**28**	**20**	**241**	**85**
Actuals							
1	93	2	1	6	12	44	49
2	113	3	1	7	17	70	43
3	115	2	2	11	16	71	44
4	85	1	1	7	14	45	40
5	7	1	-	1	2	2	5
6	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-
8	65	2	1	6	8	33	32
9	76	5	1	4	12	50	26
10	65	4	2	6	9	44	21
11	61	3	2	5	10	33	28
12	8	-	-	1	4	6	2
13	-	-	-	-	-	-	-
14	75	3	-	5	9	56	19
15	84	4	3	6	11	63	21
16	99	4	1	6	14	64	35
17	89	3	2	4	13	71	18
18	108	6	-	5	15	61	47
19	18	2	1	3	6	11	7
20	-	-	-	-	-	-	-
21	55	1	2	6	9	38	17
22	84	3	1	3	16	53	31
23	106	2	2	4	16	66	40
24	114	5	-	5	17	73	41
25	103	6	-	6	15	67	36
26	15	4	3	2	2	12	3
27	-	-	-	-	-	-	-
28	100	-	4	11	16	55	45
29	90	3	1	10	12	49	41
30	72	2	2	7	9	52	20
31	90	2	3	7	13	56	34
	1990					1245	745

Table 2A: Number of Laden Trucks - 6:00pm to 5:00am

TERALBA QUARRY		Month:	Oct-19

	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	66	66	6	0	0
Actuals					
1	2	2	2	-	-
2	3	3	3	-	-
3	3	3	2	-	-
4	1	1	1	-	-
5	1	1	1	-	-
6	-	-	-	-	-
7	-	-	-	-	-
8	2	2	2	-	-
9	5	5	5	-	-
10	4	4	4	-	-
11	4	4	3	-	-
12	-	-	-	-	-
13	-	-	-	-	-
14	4	4	3	-	-
15	4	4	4	-	-
16	5	5	4	-	-
17	3	3	3	-	-
18	6	6	6	-	-
19	2	2	2	-	-
20	-	-	-	-	-
21	1	1	1	-	-
22	3	3	3	-	-
23	2	2	1	-	-
24	5	5	5	-	-
25	6	6	6	-	-
26	4	4	4	-	-
27	-	-	-	-	-
28	-	-	-	-	-
29	4	4	3	-	-
30	2	2	2	-	-
31	2	2	2	-	-

Table 2B: Number of Laden Trucks - 5:00am to 6:00am

TERALBA QUARRY		Month:		Oct-19
		Westwards		Eastwards
		Max Hourly		Max Hourly
Limits*		12		0
Actuals				
1		1		-
2		1		-
3		2		-
4		1		-
5		-		-
6		-		-
7		-		-
8		1		-
9		1		-
10		2		-
11		2		-
12		-		-
13		-		-
14		-		-
15		3		-
16		1		-
17		2		-
18		-		-
19		1		-
20		-		-
21		2		-
22		1		-
23		2		-
24		-		-
25		-		-
26		3		-
27		-		-
28		4		-
29		1		-
30		2		-
31		3		-

* Condition 2 (9)

Table 2C: Number of Laden Trucks - 6:00am to 7:00am

TERALBA QUARRY		Month:		Oct-19
		Westwards**		Eastwards**
		Max Hourly		Max Hourly
Limits*		28		8
Actuals				
1		4		2
2		7		-
3		8		3
4		4		3
5		1		-
6		-		-
7		-		-
8		6		-
9		4		-
10		5		1
11		4		1
12		1		-
13		-		-
14		5		-
15		4		2
16		4		2
17		4		-
18		4		1
19		3		-
20		-		-
21		5		1
22		3		-
23		3		1
24		5		-
25		6		-
26		2		-
27		-		-
28		10		1
29		8		2
30		4		3
31		7		-

* Condition 2 (9)

** Combined Maximum hourly No. of laden trucks = 28

Table 2D: Number of Laden Trucks - 7:00am to 6pm

TERALBA QUARRY		Month:			Oct-19
	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	305	220	20	85	8
Actuals					
1	84	37	7	47	8
2	102	59	10	43	8
3	99	58	11	41	8
4	76	39	7	38	8
5	5	-	-	5	2
6	-	-	-	-	-
7	-	-	-	-	-
8	56	24	4	32	6
9	66	40	7	26	6
10	53	33	6	20	4
11	50	23	5	27	5
12	7	5	3	2	1
13	-	-	-	-	-
14	66	47	8	19	3
15	71	52	11	19	6
16	87	54	10	33	7
17	80	62	11	18	4
18	97	51	9	46	7
19	12	5	4	7	2
20	-	-	-	-	-
21	46	30	5	16	5
22	77	46	8	31	8
23	98	59	9	39	7
24	104	63	9	41	8
25	91	55	9	36	7
26	6	3	2	3	1
27	-	-	-	-	-
28	85	41	10	44	7
29	75	36	8	39	7
30	61	44	7	17	3
31	78	44	7	34	8

** PLEASE NOTE: The Hilighted Max Hourly Movements Do Not Relate To Same One Hour Period

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY **Month: Nov-19**

	Daily Total	Max Hourly Daily 6pm to 5am	Max Hourly Daily 5am to 6am	Max Hourly Daily 6am to 7am	Max Hourly Daily 7am to 6pm	Westwards Daily	Eastwards Daily
Limits	**326**	**6**	**12**	**28**	**20**	**241**	**85**
Actuals							
1	81	3	2	8	16	52	29
2	18	3	1	2	4	12	6
3	-	-	-	-	-	-	-
4	54	-	4	5	8	42	12
5	81	3	1	4	13	53	28
6	97	3	2	6	13	55	42
7	84	1	2	9	12	44	40
8	99	4	2	4	16	60	39
9	23	3	1	7	3	16	7
10	-	-	-	-	-	-	-
11	94	2	3	9	16	56	38
12	91	5	-	9	13	72	19
13	69	3	1	7	8	47	22
14	113	4	1	6	16	81	32
15	95	4	3	6	14	60	35
16	29	3	2	10	4	24	5
17	-	-	-	-	-	-	-
18	85	2	4	8	10	65	20
19	112	5	-	11	16	66	46
20	109	5	1	11	16	63	46
21	96	6	-	10	15	71	25
22	65	5	1	7	9	48	17
23	19	3	1	4	3	17	2
24	-	-	-	-	-	-	-
25	71	3	4	7	9	40	31
26	83	5	2	7	16	52	31
27	91	2	5	7	12	49	42
28	108	4	2	4	20	68	40
29	103	6	1	4	15	52	51
30	19	2	-	7	3	15	4

Table 2A: Number of Laden Trucks - 6:00pm to 5:00am

TERALBA QUARRY		Month:			Nov-19
	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	66	66	6	0	0
Actuals					
1	4	4	3	-	-
2	4	4	3	-	-
3	-	-	-	-	-
4	-	-	-	-	-
5	4	4	3	-	-
6	4	4	3	-	-
7	2	2	1	-	-
8	5	5	4	-	-
9	4	4	3	-	-
10	-	-	-	-	-
11	2	2	2	-	-
12	6	6	5	-	-
13	4	4	3	-	-
14	4	4	4	-	-
15	4	4	4	-	-
16	3	3	3	-	-
17	-	-	-	-	-
18	2	2	2	-	-
19	6	6	5	-	-
20	7	7	5	-	-
21	7	7	6	-	-
22	5	5	5	-	-
23	3	3	3	-	-
24	-	-	-	-	-
25	3	3	3	-	-
26	6	6	5	-	-
27	2	2	2	-	-
28	6	6	4	-	-
29	7	7	6	-	-
30	3	3	2	-	-
				-	-

Table 2B: Number of Laden Trucks - 5:00am to 6:00am

TERALBA QUARRY		Month:		Nov-19
		Westwards		Eastwards
		Max Hourly		Max Hourly
Limits*		12		0
Actuals				
1		2		-
2		1		-
3		-		-
4		4		-
5		1		-
6		2		-
7		2		-
8		2		-
9		1		-
10		-		-
11		3		-
12		-		-
13		1		-
14		1		-
15		3		-
16		2		-
17		-		-
18		4		-
19		-		-
20		1		-
21		-		-
22		1		-
23		1		-
24		-		-
25		4		-
26		2		-
27		5		-
28		2		-
29		1		-
30		-		-
				-

* Condition 2 (9)

Table 2C: Number of Laden Trucks - 6:00am to 7:00am

TERALBA QUARRY	Month:	Nov-19

	Westwards** Max Hourly	Eastwards** Max Hourly
Limits*	28	8
Actuals		
1	8	-
2	2	-
3	-	-
4	4	1
5	4	-
6	6	-
7	7	2
8	4	-
9	6	1
10	-	-
11	6	3
12	8	1
13	4	3
14	2	4
15	4	2
16	8	2
17	-	-
18	8	-
19	6	5
20	10	1
21	8	2
22	6	1
23	4	-
24	-	-
25	7	-
26	5	2
27	5	2
28	1	3
29	4	-
30	6	1

* Condition 2 (9)

** Combined Maximum hourly No. of laden trucks = 28

Table 2D: Number of Laden Trucks - 7:00am to 6pm

TERALBA QUARRY		Month:		Nov-19	
	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	305	220	20	85	8
Actuals					
1	67	38	11	29	5
2	11	5	3	6	2
3	-	-	-	-	-
4	45	34	6	11	4
5	72	44	9	28	6
6	85	43	7	42	7
7	71	33	8	38	7
8	88	49	9	39	7
9	11	5	2	6	2
10	-	-	-	-	-
11	80	45	10	35	7
12	76	58	10	18	3
13	57	38	7	19	5
14	102	74	12	28	5
15	82	49	9	33	7
16	14	11	8	3	2
17	-	-	-	-	-
18	71	51	8	20	4
19	95	54	8	41	8
20	90	45	8	45	8
21	79	56	10	23	6
22	52	36	7	16	3
23	11	9	3	2	1
24	-	-	-	-	-
25	57	26	5	31	5
26	68	39	11	29	6
27	77	37	6	40	7
28	96	59	12	37	8
29	91	40	7	51	8
30	9	6	2	3	1

** PLEASE NOTE: The Hilighted Max Hourly Movements Do Not Relate To Same One Hour Period

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY **Month: Dec-19**

	Daily Total	Max Hourly Daily 6pm to 5am	Max Hourly Daily 5am to 6am	Max Hourly Daily 6am to 7am	Max Hourly Daily 7am to 6pm	Westwards Daily	Eastwards Daily
Limits	**326**	**6**	**12**	**28**	**20**	**241**	**85**
Actuals							
1	-	-	-	-	-	-	-
2	80	3	2	3	13	37	43
3	96	4	-	6	15	41	55
4	100	6	1	6	16	79	21
5	92	6	1	8	11	41	51
6	82	4	2	8	12	52	30
7	25	2	-	6	5	18	7
8	-	-	-	-	-	-	-
9	104	1	4	6	13	64	40
10	66	5	1	9	10	47	19
11	64	5	-	8	11	49	15
12	75	4	2	4	11	56	19
13	75	2	2	5	10	39	36
14	25	2	3	3	5	17	8
15	-	-	-	-	-	-	-
16	73	4	4	6	9	52	21
17	76	6	1	6	13	61	15
18	82	4	2	6	11	57	25
19	71	4	1	5	16	43	28
20	40	5	1	5	9	28	12
21	6	1	1	2	1	4	2
22	-	-	-	-	-	-	-
23	28	2	-	2	7	24	4
24	21	2	-	2	4	20	1
25	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-
	1281					829	452

Table 2A: Number of Laden Trucks - 6:00pm to 5:00am

TERALBA QUARRY		Month:		Dec-19

	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	**66**	**66**	**6**	**0**	**0**
Actuals					
1	-	-	-	-	-
2	3	3	3	-	-
3	5	5	4	-	-
4	7	7	6	-	-
5	7	7	6	-	-
6	6	6	4	-	-
7	3	3	2	-	-
8	-	-	-	-	-
9	1	1	1	-	-
10	5	5	5	-	-
11	5	5	5	-	-
12	5	5	4	-	-
13	3	3	2	-	-
14	4	4	2	-	-
15	-	-	-	-	-
16	4	4	4	-	-
17	7	7	6	-	-
18	5	5	4	-	-
19	5	5	4	-	-
20	6	6	5	-	-
21	1	1	1	-	-
22	-	-	-	-	-
23	2	2	2	-	-
24	2	2	2	-	-
25	-	-	-	-	-
26	-	-	-	-	-
27	-	-	-	-	-
28	-	-	-	-	-
29	-	-	-	-	-
30	-	-	-	-	-
31	-	-	-	-	-

Table 2B: Number of Laden Trucks - 5:00am to 6:00am

TERALBA QUARRY		Month:		Dec-19
		Westwards		Eastwards
		Max Hourly		Max Hourly
Limits*		12		0
Actuals				
1		-		-
2		2		-
3		-		-
4		1		-
5		1		-
6		2		-
7		-		-
8		-		-
9		4		-
10		1		-
11		-		-
12		2		-
13		2		-
14		3		-
15		-		-
16		4		-
17		1		-
18		2		-
19		1		-
20		1		-
21		1		-
22		-		-
23		-		-
24		-		-
25		-		-
26		-		-
27		-		-
28		-		-
29		-		-
30		-		-
31		-		-

* Condition 2 (9)

Table 2C: Number of Laden Trucks - 6:00am to 7:00am

TERALBA QUARRY		Month:		Dec-19
		Westwards**		Eastwards**
		Max Hourly		Max Hourly
Limits*		**28**		**8**
Actuals				
1		-		-
2		1		2
3		3		3
4		6		-
5		3		5
6		5		3
7		5		1
8		-		-
9		4		2
10		7		2
11		6		2
12		4		-
13		4		1
14		2		1
15		-		-
16		4		2
17		4		2
18		4		2
19		3		2
20		5		-
21		1		1
22		-		-
23		2		-
24		2		-
25		-		-
26		-		-
27		-		-
28		-		-
29		-		-
30		-		-
31		-		-

* Condition 2 (9)

** Combined Maximum hourly No. of laden trucks = 28

Table 2D: Number of Laden Trucks - 7:00am to 6pm

TERALBA QUARRY		Month:		Dec-19	
	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	305	220	20	85	8
Actuals					
1	-	-	-	-	-
2	72	31	8	41	7
3	85	33	7	52	8
4	86	65	12	21	4
5	76	30	7	46	7
6	66	39	7	27	5
7	16	10	3	6	2
8	-	-	-	-	-
9	93	55	10	38	7
10	51	34	8	17	4
11	51	38	8	13	3
12	64	45	8	19	4
13	65	30	7	35	7
14	15	8	2	7	2
15	-	-	-	-	-
16	59	40	7	19	4
17	62	49	9	13	4
18	69	46	6	23	5
19	60	34	10	26	6
20	28	16	5	12	4
21	2	1	1	1	1
22	-	-	-	-	-
23	24	20	6	4	2
24	17	16	4	1	1
25	-	-	-	-	-
26	-	-	-	-	-
27	-	-	-	-	-
28	-	-	-	-	-
29	-	-	-	-	-
30	-	-	-	-	-
31	-	-	-	-	-

** PLEASE NOTE: The Hilighted Max Hourly Movements Do Not Relate To Same One Hour Period

Metromix Teralba Quarry - Deposited Dust Monitoring Results

	RHONDA RD			MYRTLE ST			HILLSIDE CRES			RODGERS ST			YORK ST			MARGARET ST		
Year	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash	Total Insoluble Solids	Ash Fraction	% Ash
Units	g/m^2/month	g/m^2/month		g/m^2/month	g/m^2/month		g/m^2/month	g/m^2/month		g/m^2/month	g/m^2/month		g/m^2/month	g/m^2/month		g/m^2/month	g/m^2/month	
EPA Approved Level	**4.0**			**4.0**			**4.0**			**4.0**			**4.0**			**4.0**		
2004	1.3	0.9	73	0.9	0.6	70	2.5	1.3	68									
2005	1.4	0.9	69	1.3	0.7	58	1.4	0.7	54									
2006	1.0	0.6	67	2.0	1.1	50	0.9	0.5	57									
2007	1.1	0.7	65	0.9	0.5	56	1.0	0.5	56									
2008	1.0	0.6	61	0.9	0.5	63	1.0	0.5	50									
2009	1.4	0.9	63	1.4	1.0	65	2.1	1.3	54									
2010	1.1	0.8	72	0.7	0.5	74	1.0	0.4	44									
2011	1.0	0.7	73	1.1	0.5	51	1.1	0.5	53	1.0	0.7	80				0.8	0.7	74
2012	0.8	0.5	66	0.9	0.5	63	1.4	0.5	36	1.0	0.7	74				1.2	0.7	71
2013	1.0	0.7	73	0.9	0.6	68	1.3	0.5	39	1.0	0.7	77				1.3	0.8	64
2014	0.9	0.5	60	0.9	0.5	60	1.5	0.8	52	1.9	1.3	51				1.0	0.6	62
2015	1.0	0.5	50	1.7	1.2	68	1.7	1.0	54	0.9	0.6	66				1.0	0.7	64
2016	0.9	0.5	62	1.2	0.7	61	1.8	1.1	61	0.8	0.5	67.3				1.1	0.7	66.6
2017	0.9	0.46	49	1.5	1.0	62.49	2.0	1.1	53	1.8	1.1	57.2				1.2	0.7	57.7
2018	0.9	0.53	56	1.0	0.6	65.06	2.1	1.2	52.38	1.11	0.60	58.29				1.14	0.78	69.28
Average (All Years)	**1.0**	**0.6**	**64**	**1.2**	**0.7**	**62**	**1.5**	**0.8**	**52**	**1.2**	**0.8**	**66**				**1.1**	**0.7**	**66**
2019 Results																		
07-Jan-19	2.7	1.6	59	2.5	1.7	68	3.5	1.6	46	3.4	1.9	56				2.1	1.3	62
01-Feb-19	1.0	0.7	70	3.0	1.8	60	2.8	1.6	57	1.2	0.7	58						
01-Mar-19	1.5	1.1	73	1.6	1.2	75	4.0	2.1	53	2.0	1.2	60	1.3	1.1	84.6			
02-Apr-19	1.6	1.1	69	1.5	1.2	80	7.1	2.6	37	1.3	1.0	77	1.6	1.2	75.0			
02-May-19	0.7	0.6	86	0.5	0.3	60	1.4	0.9	64	0.2	0.2	100	0.7	0.6	85.7			
04-Jun-19	1.2	0.8	67	0.9	0.7	78	1.7	1.2	71	0.7	0.4	57	1.3	0.9	69.2			
02-Jul-19	0.6	0.2	33	1.0	0.4	40	1.6	1.2	75	0.6	0.4	67	0.8	0.4	50.0			
02-Aug-19	0.3	0.2	67	0.7	0.5	71	0.7	0.4	57	0.4	0.3	75	0.7	0.5	71.4			
04-Sep-19	1.4	0.9	64	0.7	0.5	71	1.1	0.6	55	0.8	0.3	38	0.9	0.6	66.7			
01-Oct-19	0.9	0.5	56	0.8	0.5	63	0.6	0.3	50	0.5	0.4	80	1.0	0.6	60.0			
01-Nov-19	0.5	0.3	60	1.0	0.8	80	0.8	0.5	63	0.9	0.6	67	0.7	0.5	71.4			
02-Dec-19	3.3	2.3	70	2.6	2.1	81	3.0	1.9	63	7.8	6.6	85	2.9	2.1	72.4			

=Monitoring did not occur at this location until 2011.

=Monitoring location has been relocated.

=Monitoring started in March 2019

METROMIX

Metromix Teralba Quarry - Deposited Dust Monitoring Results

	RHONDA RD			MYRTLE ST			HILLSIDE CRES			RODGERS ST			YORK ST			MARGARET ST		
Year	**Total Insoluble Solids**	**Ash Fraction**	**% Ash**	**Total Insoluble Solids**	**Ash Fraction**	**% Ash**	**Total Insoluble Solids**	**Ash Fraction**	**% Ash**	**Total Insoluble Solids**	**Ash Fraction**	**% Ash**	**Total Insoluble Solids**	**Ash Fraction**	**% Ash**	**Total Insoluble Solids**	**Ash Fraction**	**% Ash**
Units	g/m^2/month	g/m^2/month		g/m^2/month	g/m^2/month		g/m^2/month	g/m^2/month		g/m^2/month	g/m^2/month		g/m^2/month	g/m^2/month		g/m^2/month	g/m^2/month	
EPA Approved Level	**4.0**			**4.0**			**4.0**			**4.0**			**4.0**			**4.0**		
2004	1.3	0.9	73	0.9	0.6	70	2.5	1.3	68									
2005	1.4	0.9	69	1.3	0.7	58	1.4	0.7	54									
2006	1.0	0.6	67	2.0	1.1	50	0.9	0.5	57									
2007	1.1	0.7	65	0.9	0.5	56	1.0	0.5	56									
2008	1.0	0.6	61	0.9	0.5	63	1.0	0.5	50									
2009	1.4	0.9	63	1.4	1.0	65	2.1	1.3	54									
2010	1.1	0.8	72	0.7	0.5	74	1.0	0.4	44									
2011	1.0	0.7	73	1.1	0.5	51	1.1	0.5	53	1.0	0.7	80				0.8	0.7	74
2012	0.8	0.5	66	0.9	0.5	63	1.4	0.5	36	1.0	0.7	74				1.2	0.7	71
2013	1.0	0.7	73	0.9	0.6	68	1.3	0.5	39	1.0	0.7	77				1.3	0.8	64
2014	0.9	0.5	60	0.9	0.5	60	1.5	0.8	52	1.9	1.3	51				1.0	0.6	62
2015	1.0	0.5	50	1.7	1.2	68	1.7	1.0	54	0.9	0.6	66				1.0	0.7	64
2016	0.9	0.5	62	1.2	0.7	61	1.8	1.1	61	0.8	0.5	67.3				1.1	0.7	66.6
2017	0.9	0.5	48.82	1.5	1.0	62.49	2.0	1.1	53	1.8	1.1	57.2				1.2	0.7	57.7
2018	0.9	0.5	56.35	1.0	0.6	65.06	2.1	1.2	52.38	1.11	0.60	58.29				1.14	0.78	69.28
2019	1.3	0.9	64.44	1.4	1.0	68.91	2.4	1.2	57.45	1.65	1.17	68.23	1.19	0.85	70.65	2.10	1.30	61.90
Average (All Years)	**1.1**	**0.7**	**64**	**1.2**	**0.7**	**63**	**1.5**	**0.8**	**52**	**1.3**	**0.8**	**66**	**1.2**	**0.9**	**71**	**1.1**	**0.7**	**66**
2020 Results																		
06-Jan-20	1.5	1.2	80	2.1	1.4	67	1.3	0.5	38	2.1	1.6	76	1.3	0.9	69			

=Monitoring did not occur at this location until 2011.

=Monitoring location has been relocated.

=Monitoring started in March 2019

METROMIX

Water Monitoring - Teralba Quarry - 2019 - EPA Point No.4 - Adit Overflow

	Sample No.	EPA No 4 - 161AB		EPA No 4 - 161AB		EPA No 4 -		EPA No 4 -		EPA No 4 -		EPA No 4 -		
	Dates	January 2019.		Febrary 2019.		March 2019.		April 2019.		May 2019.		June 2019.		
0		Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Guidelines
Sample	Units													
pH	**ph Unit**	7.12		7.45		7.18		7.82		7.05		7.37		**6.5 to 8.5 units**
Conductivity	**µS/cm**	2130		2140		2310		2020		2170		779		**125 - 2200[b]**
TSS	**mg/L**	8		<5		<5		<5		11		105		**<50**
Oil & Grease	**mg/L**	<5		<5		<5		<5		<5		<5		**5**
Aluminium	**mg/L**													**0.2**
Ammonia as N	**mg/L**													**0.01**
Antimony	**mg/L**													**NA**
Arsenic	**mg/L**													**0.05**
Barium	**mg/L**													**1**
Beryllium	**mg/L**													**NA**
Boron	**mg/L**													**1**
Cadmium	**mg/L**													**0.005**
Calcium	**mg/L**													**1000[c]**
Chromium	**mg/L**													**0.05**
Cobalt	**mg/L**													**1000**
Copper	**mg/L**													**1**
Iron	**mg/L**													**0.3**
Lead	**mg/L**													**0.05**
Lithium	**mg/L**													**0.075[d]**
Magnesium	**mg/L**													**NA**
Manganese	**mg/L**													**0.1**
Mercury	**mg/L**													**0.001**
Molybdenum	**mg/L**													**0.15[c]**
Nickel	**mg/L**													**0.1**
Phosphorous as P	**mg/L**													**NA**
Potassium	**mg/L**													**NA**
Selenium	**mg/L**													**0.01**
Silica as SiO2	**mg/L**													**NA**
Silver	**mg/L**													**0.05**
Sulfur as S	**mg/L**													**NA**
Tin	**mg/L**													**NA**
Titanium	**mg/L**													**NA**
Vanadium	**mg/L**													**NA**
Zinc	**mg/L**													**NA**

Indicates result Indicates results that varied between filtered and unfiltered samples

ND = Not Determined

NA = Not Applicable

[a] Based on ANZECC Guidelines for Fresh and Marine Water Quality - Recreational Water Quality (ANZECC 2000) except where indicate

[b] Based on ANZECC Guidelines slightly disturbed lowland river ecosystems in south-east Australia (ANZECC 2000

[c] Based on ANZECC Guidelines for Fresh and Marine Water Quality -Livestock Water Quality (ANZECC 2000

[d] Based on ANZECC Guidelines for Fresh and Marine Water Quality -Irrigation Water Quality (ANZECC 2000)

Water Monitoring - Teralba Quarry - 2019 - EPA Point No.4 - Adit Overflow

	Sample No.	EPA No 4 -		EPA No 4 -		EPA No 4 -		EPA No 4 -		EPA No 4 -		EPA No 4 -		
	Dates	July 2019.		August 2019.		September 2019.		October 2019.		November 2019.		December 2019.		
		Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Guidelines
Sample	Units													
pH	**ph Unit**	7.33		7.31		6.99		7.31		7.21		7.38		**6.5 to 8.5 units**
Conductivity	**µS/cm**	2340		2280		1990		2220		2060		2120		**125 - 2200[b]**
TSS	**mg/L**	11		<5		<5		<5		<5		10		**<50**
Oil & Grease	**mg/L**	<5		<5		<5		<5		<5		<5		**5**
Aluminium	**mg/L**													**0.2**
Ammonia as N	**mg/L**													**0.01**
Antimony	**mg/L**													**NA**
Arsenic	**mg/L**													**0.05**
Barium	**mg/L**													**1**
Beryllium	**mg/L**													**NA**
Boron	**mg/L**													**1**
Cadmium	**mg/L**													**0.005**
Calcium	**mg/L**													**1000[c]**
Chromium	**mg/L**													**0.05**
Cobalt	**mg/L**													**1000**
Copper	**mg/L**													**1**
Iron	**mg/L**													**0.3**
Lead	**mg/L**													**0.05**
Lithium	**mg/L**													**0.075[d]**
Magnesium	**mg/L**													**NA**
Manganese	**mg/L**													**0.1**
Mercury	**mg/L**													**0.001**
Molybdenum	**mg/L**													**0.15[c]**
Nickel	**mg/L**													**0.1**
Phosphorous as P	**mg/L**													**NA**
Potassium	**mg/L**													**NA**
Selenium	**mg/L**													**0.01**
Silicon as SiO2	**mg/L**													**NA**
Silver	**mg/L**													**0.05**
Sulfur as S	**mg/L**													**NA**
Tin	**mg/L**													**NA**
Titanium	**mg/L**													**NA**
Vanadium	**mg/L**													**NA**
Zinc	**mg/L**													**NA**

Water Monitoring - Teralba Quarry - 2019 - EPA Point No.5 - Overflow Dam B

	Sample No.	EPA No 5 - 161C												
	Dates	January 2019.		Febrary 2019.		March 2019.		April 2019.		May 2019.		June 2019.		
0		Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Guidelines
Sample	Units			No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA Point 5
pH	**ph Unit**	7.26		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		**6.5 to 8.5 units**
Conductivity	**µS/cm**	1110		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		**125 - 2200[b]**
TSS	**mg/L**	6		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		**<50**
Oil & Grease	**mg/L**	Not Sampled		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		No Water Discharge at EPA P		**5**
Aluminium	**mg/L**													**0.2**
Ammonia as N	**mg/L**													**0.01**
Antimony	**mg/L**													**NA**
Arsenic	**mg/L**													**0.05**
Barium	**mg/L**													**1**
Beryllium	**mg/L**													**NA**
Boron	**mg/L**													**1**
Cadmium	**mg/L**													**0.005**
Calcium	**mg/L**													**1000[c]**
Chromium	**mg/L**													**0.05**
Cobalt	**mg/L**													**1000**
Copper	**mg/L**													**1**
Iron	**mg/L**													**0.3**
Lead	**mg/L**													**0.05**
Lithium	**mg/L**													**0.075[d]**
Magnesium	**mg/L**													**NA**
Manganese	**mg/L**													**0.1**
Mercury	**mg/L**													**0.001**
Molybdenum	**mg/L**													**0.15[c]**
Nickel	**mg/L**													**0.1**
Phosphorous as P	**mg/L**													**NA**
Potassium	**mg/L**													**NA**
Selenium	**mg/L**													**0.01**
Silica as SiO2	**mg/L**													**NA**
Silver	**mg/L**													**0.05**
Sulfur as S	**mg/L**													**NA**
Tin	**mg/L**													**NA**
Titanium	**mg/L**													**NA**
Vanadium	**mg/L**													**NA**
Zinc	**mg/L**													**NA**

Indicates results that varied between filtered and unfiltered samples

ND = Not Determined

NA = Not Applicable

[a] Based on ANZECC Guidelines for Fresh and Marine Water Quality - Recreational Water Quality (ANZECC 2000) except where indicated

[b] Based on ANZECC Guidelines slightly disturbed lowland river ecosystems in south-east Australia (ANZECC 2000)

[c] Based on ANZECC Guidelines for Fresh and Marine Water Quality -Livestock Water Quality (ANZECC 2000)

[d] Based on ANZECC Guidelines for Fresh and Marine Water Quality -Irrigation Water Quality (ANZECC 2000)

Water Monitoring - Teralba Quarry - 2019 - EPA Point No.5 - Overflow Dam B

	Sample No.				
	Dates	July 2019.		August 2019.	
0		Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)
Sample	Units	No Water Discharge at EPA		No Water Discharge at EPA	
pH	ph Unit	No Water Discharge at EPA		No Water Discharge at EPA	
Conductivity	µS/cm	No Water Discharge at EPA		No Water Discharge at EPA	
TSS	mg/L	No Water Discharge at EPA		No Water Discharge at EPA	
Oil & Grease	mg/L	No Water Discharge at EPA		No Water Discharge at EPA	
Aluminium	mg/L				
Ammonia as N	mg/L				
Antimony	mg/L				
Arsenic	mg/L				
Barium	mg/L				
Beryllium	mg/L				
Boron	mg/L				
Cadmium	mg/L				
Calcium	mg/L				
Chromium	mg/L				
Cobalt	mg/L				
Copper	mg/L				
Iron	mg/L				
Lead	mg/L				
Lithium	mg/L				
Magnesium	mg/L				
Manganese	mg/L				
Mercury	mg/L				
Molybdenum	mg/L				
Nickel	mg/L				
Phosphorous as P	mg/L				
Potassium	mg/L				
Selenium	mg/L				
Silica as SiO2	mg/L				
Silver	mg/L				
Sulfur as S	mg/L				
Tin	mg/L				
Titanium	mg/L				
Vanadium	mg/L				
Zinc	mg/L				

	September 2019.																	
	Total (Unfiltered)																	Dissolved (Filtered)
Sample	4/09/2019	5/09/2019	9/09/2019	11/09/2019	12/09/2019	13/09/2019	16/09/2019	17/09/2019	18/09/2019	19/09/2019	20/09/2019	23/09/2019	24/09/2019	25/09/2019	26/09/2019	27/09/2019	30/09/2019	
pH	7.22	6.52	6.78	7.4	6.9	6.82	6.82	7.01	7.12	6.92	6.86	6.83	6.86	7.6	6.84	6.82	6.84	
Conductivity	1050	816	1230	1190	1180	1140	1140	1150	914	1020	1090	1120	1240	1170	1210	1070	1250	
TSS	<5	13	<5	11	<5	<5	<5	6	<5	<5	<5	<5	<5	<5	<5	<5	<5	
Oil & Grease	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
Aluminium																		
Ammonia as N																		
Antimony																		
Arsenic																		
Barium																		
Beryllium																		
Boron																		
Cadmium																		
Calcium																		
Chromium																		
Cobalt																		
Copper																		
Iron																		
Lead																		
Lithium																		
Magnesium																		
Manganese																		
Mercury																		
Molybdenum																		
Nickel																		
Phosphorous as P																		
Potassium																		
Selenium																		
Silica as SiO2																		
Silver																		
Sulfur as S																		
Tin																		
Titanium																		
Vanadium																		
Zinc																		

	October 2019.													
	Total (Unfiltered)													Dissolved (Filtered)
Sample	1/10/2019	2/10/2019	3/10/2019	4/10/2019	8/10/2019	9/10/2019	14/10/2019	15/10/2019	16/10/2019	17/10/2019	18/10/2019	21/10/2019	22/10/2019	
pH	6.87	6.85	6.97	7	7.05	7.07	7.28	7.28	7.24	8.26	7.35	7.33	7.33	
Conductivity	1090	1080	1200	1170	1040	1200	1180	1120	1120	1220	1270	1360	1350	
TSS	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
Oil & Grease	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
Aluminium														
Ammonia as N														
Antimony														
Arsenic														
Barium														
Beryllium														
Boron														
Cadmium														
Calcium														
Chromium														
Cobalt														
Copper														
Iron														
Lead														
Lithium														
Magnesium														
Manganese														
Mercury														
Molybdenum														
Nickel														
Phosphorous as P														
Potassium														
Selenium														
Silica as SiO2														
Silver														
Sulfur as S														
Tin														
Titanium														
Vanadium														
Zinc														

	November 2019.		December 2019.		
	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Guidelines
Sample	No Water Discharge at EPA Point 5		No Water Discharge at EPA Point 5		
pH	No Water Discharge at EPA Point 5		No Water Discharge at EPA Point 5		6.5 to 8.5 units
Conductivity	No Water Discharge at EPA Point 5		No Water Discharge at EPA Point 5		125 - 2200[b]
TSS	No Water Discharge at EPA Point 5		No Water Discharge at EPA Point 5		<50
Oil & Grease	No Water Discharge at EPA Point 5		No Water Discharge at EPA Point 5		5
Aluminium					0.2
Ammonia as N					0.01
Antimony					NA
Arsenic					0.05
Barium					1
Beryllium					NA
Boron					1
Cadmium					0.005
Calcium					1000[c]
Chromium					0.05
Cobalt					1000
Copper					1
Iron					0.3
Lead					0.05
Lithium					0.075[d]
Magnesium					NA
Manganese					0.1
Mercury					0.001
Molybdenum					0.15[c]
Nickel					0.1
Phosphorous as P					NA
Potassium					NA
Selenium					0.01
Silica as SiO2					NA
Silver					0.05
Sulfur as S					NA
Tin					NA
Titanium					NA
Vanadium					NA
Zinc					NA

[shaded cell] Indicates results that varied between filtered and unfiltered samples
ND = Not Determined
NA = Not Applicable
[a] Based on ANZECC Guidelines for Fresh and Marine Water Quality - Recreational Water Quality (ANZECC 2000) except where indic
[b] Based on ANZECC Guidelines slightly disturbed lowland river ecosystems in south-east Australia (ANZECC 2
[c] Based on ANZECC Guidelines for Fresh and Marine Water Quality -Livestock Water Quality (ANZECC 20
[d] Based on ANZECC Guidelines for Fresh and Marine Water Quality -Irrigation Water Quality (ANZECC 20

Daily Discharge EPA No.6				
Date	**Metromix Sample No.**	**pH**	**Suspended Solids (mg/L)**	**Comments**
Jan-19	**No Water Discharge at EPA Point 6**			
Feb-19	**No Water Discharge at EPA Point 6**			
Mar-19	**No Water Discharge at EPA Point 6**			
May-19	**No Water Discharge at EPA Point 6**			
Jun-19	**No Water Discharge at EPA Point 6**			
Jul-19	**No Water Discharge at EPA Point 6**			
Aug-19	**No Water Discharge at EPA Point 6**			
Sep-19	**No Water Discharge at EPA Point 6**			
Oct-19	**No Water Discharge at EPA Point 6**			
Nov-19	**No Water Discharge at EPA Point 6**			
Dec-19	**No Water Discharge at EPA Point 6**			

Daily Discharge EPA No.7				
Date	**Metromix Sample No.**	**pH**	**Suspended Solids (mg/L)**	**Comments**
Jan-19	**No Water Discharge at EPA Point 7**			
Feb-19	**No Water Discharge at EPA Point 7**			
Mar-19	**No Water Discharge at EPA Point 7**			
May-19	**No Water Discharge at EPA Point 7**			
Jun-19	**No Water Discharge at EPA Point 7**			
Jul-19	**No Water Discharge at EPA Point 7**			
Aug-19	**No Water Discharge at EPA Point 7**			
Sep-19	**No Water Discharge at EPA Point 7**			
Oct-19	**No Water Discharge at EPA Point 7**			
Nov-19	**No Water Discharge at EPA Point 7**			
Dec-19	**No Water Discharge at EPA Point 7**			

	Daily Rainfall (mm)											
Date	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
1	0.6	15.2	0	21	0	31.6	0	0.2	0.2	0	0	0.2
2	0	4.6	0	4.8	0	2.6	0	0.6	0	0	0	0
3	0	0	0	0	9.4	0	1.6	0.2	0	0	12.2	0
4	0	0	0	0	3.2	21.6	11	0	0	0	1.4	0
5	0	0	0	3	1.8	5.8	4.2	0	0	6.2	0.4	0
6	4.2	0	11.6	0.2	0	0	4.6	0	0.4	0	0	0
7	12	0	0	0	0	0.4	0.4	0	0	0	0	0
8	0	8.4	0	0	0	0	0.4	0	0	0	0	0
9	0.2	1.6	1.2	0.4	0	0	0.2	0	0	0	0	0
10	0.4	0	0.2	0.2	1	0	0	1	0.4	2.2	0	0
11	5.4	0	0	0	0.2	0	0	0.2	0.2	0.4	0	0
12	0.4	0	0	0	0	0	0	0.2	0	15.6	0	0
13	0	0	0	0	0	0	0	0	0	0.2	0	0
14	0	0	0	2.2	0	0	0	0	0	0	0	0
15	0	0	0.4	0.2	0	0	0	0	0	0	0	0
16	0	0	68.4	2	0	0	0	0	0	0	0	0
17	0	0	42.8	1.4	0	7.8	0	0	43.6	0.2	0	0
18	0	0	5.2	0	0	2.2	0	0	29	0	0	0
19	2	4	0.2	1	0	0	0	0	10.2	0	0	0
20	3.6	1.4	0	0	0	0	0	0	0	0	0	0
21	3.2	24.4	0.8	0.2	0	0	0	0	0	0	0	0
22	0	1	0.4	0	0	4.2	0	3.8	0	0	0.8	0
23	0	3.4	17.2	0	0	10	0	0	0	0	0.2	0
24	0	1.2	0.2	0	0.2	30	0	0	0	0	4	0
25	0	0.2	0.6	0	0	14.6	0	0	0	0	3.2	0
26	0	0	0	0	0	3.4	0	0	0	0	3.2	0
27	0	0	0	0	1.2	0.6	0	0	0	0	0	0
28	7.2	0	0	0	0	0	0	0	0	0	0	0
29	0		0	0	0	0	1	27	0	0	0	0
30	0		54.6	0	0	0	3.2	95.6	2.6	0	0	0
31	0		0		0		3.8	55.6		0		0
Total	39.2	65.4	203.8	36.6	17.0	134.8	30.4	180.6	86.6	24.8	25.4	0.2
											Annual Total	**844.8**

23 September 2019

Ref: 8413/8659

Metromix Pty Ltd
150 Rhondda Road
Teralba NSW 2284

AUGUST 2019 NOISE MONITORING RESULTS – TERALBA QUARRY

This letter report presents the results of attended noise monitoring conducted for the Metromix operated Teralba Quarry (TQ) commencing on Wednesday 14th and finishing on Friday 16th of August, 2019. Noise monitoring was carried out in accordance with the conditions of the TQ Noise Management Plan (NMP) as shown in extract on page 2 (referenced from EPL 536).

Although the project approval nominates noise criteria at nine locations, Metromix recognises that meaningful monitoring data will continue to be collected from the closest locations to the active operational areas. As a result of this, and as outlined within the approved NMP, for periods when operations are confined to areas south of Rhondda Road, noise monitoring will be undertaken at Locations EPL-A, B, D, E and H.

Further to this, location EPL-C and EPL-F have been omitted from the noise monitoring programme given they are not required as other monitoring locations are nearby and closer to quarry related noise sources. This has been recognised by the EPA by the removal of these locations from the monitoring locations detailed in EPL 536. **Table 1** lists the address and coordinates of each noise monitoring location, with the relevant monitoring locations that were monitored during the August 2018 period highlighted in **bold**. The locations are shown on the figure in **Appendix I**.

Table 1
Noise Monitoring Locations (from PA 10-0183)

Location in EPL	Address	Easting	Northing
EPL-A	**Awaba Street, Teralba**	**369080**	**3651470**
EPL-B[1]	**Rhondda Road, Teralba**	**369250**	**6351915**
EPL-C	Rhondda Road, Teralba [2]	369205	6352015
EPL-D	**Rhondda Road, Teralba**	**369150**	**6352135**
EPL-E	**Victoria Avenue, Teralba**	**369060**	**6352620**
EPL-F	Victoria Avenue, Teralba [2]	369130	6352945
EPL-H	**School Road, Wakefield**	**366210**	**6352520**

1. See text in relation to changes to monitoring location
2. Metromix has obtained permission for this monitoring location to be omitted.

It is noted that during the period when monitoring is undertaken at Location B, Metromix is required to provide a spotter to record the number of trucks departing from the Quarry and not the Teralba Business Park. Spectrum Acoustics personnel undertook identification of quarry trucks as part of the noise monitoring procedure.

As part of pre monitoring protocols Spectrum Acoustics notified, by letterbox drop, all landowners in the close vicinity of each site of the impending monitoring. The resident at Location B has previously told Metromix that he doesn't want monitoring to be done near his residence so monitoring was undertaken at a point approximately 30m south (as shown in Appendix I).

The following presents noise related conditions of EPL 536 relevant to the compliance noise monitoring programme.

<table>
<tr><th>Condition</th><th>Requirement</th></tr>
<tr><td>L5.2</td><td>The licensee must ensure that noise generated by the activities within the premises do not exceed the following criteria measured by dB(A) at any residence or privately owned land.
<table>
<tr><th>Location</th><th>Day Shoulder 6:00am - 7:00am</th><th>Day 7:00am - 6:00pm</th><th>Evening 6:00pm – 10:00pm</th><th>Night 10:00pm – 6:00am</th></tr>
<tr><td></td><td>$L_{Aeq\ (15\ minute)}$</td><td>$L_{Aeq\ (15\ minute)}$</td><td>$L_{Aeq\ (15\ minute)}$</td><td>$L_{Aeq\ (15\ minute)}$
$L_{A1(1min)}$</td></tr>
<tr><td>EPL-A</td><td>38</td><td>38</td><td>37</td><td>35
45</td></tr>
<tr><td>EPL-B</td><td>42</td><td>46</td><td>36</td><td>35
45</td></tr>
<tr><td>EPL-C</td><td>42</td><td>42</td><td>35</td><td>35
45</td></tr>
<tr><td>EPL-D, EPL-E, EPL-H</td><td>35</td><td>35</td><td>35</td><td>35
45</td></tr>
<tr><td>EPL-F</td><td>37</td><td>38</td><td>38</td><td>35
45</td></tr>
</table>
Note: The licensee may provide to the EPA written evidence of any agreement with a landholder which is subject to the above noise limits. The written evidence may be submitted with a licence variation to remove the landholder from the above table.</td></tr>
<tr><td>L5.3</td><td>For the purposes of Condition L5.2:
a) Day-Shoulder is defined as the period between 6am to 7am Monday to Saturday.
b) Day is defined as:
a. the period from 7am to 6pm Monday to Saturday; and
b. the period from 8am to 6pm Sundays and Public Holidays.
c) Evening is defined as the period from 6pm to 10pm.
d) Night is defined as:
a. the period from 10pm to 7am Monday to Saturday; and
b. the period from 10pm to 8am Sundays and Public Holidays.</td></tr>
<tr><td>L5.4</td><td>The contributed noise level from the premises must not exceed the noise limits specified within EPL 536 at the most noise-affected point on or within the boundary of any residential premises to the north and/or south of the premises, except as expressly provided by this licence, or by the EPA in writing.</td></tr>
<tr><td>L5.5</td><td>The noise limits set out in conditions L5.2 apply under all meteorological conditions except for anyone of the following:
a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
b) Stability category F temperature inversion conditions and wind speeds greater the 2 metres/second at 10 metres above ground level; or
c) Stability category G temperature inversion conditions.</td></tr>
<tr><td>L5.6</td><td>For the purpose of condition L5.5:</td></tr>
</table>

	a) the meteorological data to be used for determining meteorological conditions is the data recorded at the meteorological station identified in this licence as EPA Identification Point W1. b) Stability category temperature inversion conditions are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the *NSW industrial Noise Policy (EPA 2000)* Note: The weather station must be designed, commissioned and operated in a manner to obtain the necessary parameters required under the above condition.
L5.7	To determine compliance: 1. With the $L_{Aeq(15\ min)}$ noise limits in condition L5.2, the licensee must locate noise monitoring equipment; a) approximately on the boundary, where any dwelling is situated 30 metres or less from the property boundary that is closest to the premises; or, b) within 30 metres of a dwelling facade (but not closer than 3 metres) where any dwelling on the property is situated more than 30 metres from the property boundary that is closest to the premises; or where applicable c) within approximately 50 metres if the boundary of a national park or nature reserve. 2. With the LA1(1 minute) noise limits in condition L5.2, the noise monitoring equipment must be located within 1 metre of a dwelling facade. 3. With the noise limits in condition L5.2, the noise monitoring equipment must be located; a) at the most affected point at a location where there is no dwelling at the location, or b) at the most affected point within an area at a location prescribed by conditions L5.7 1(a) or L5.7 1(b).
L5.8	A non-compliance will still occur where noise generated from the premises in excess of the appropriate noise limit is measured: a) at a location other than an area prescribed by the conditions of this licence, and /or b) at a point other than the most affected point at a location.
L5.9	For the purpose of determining the noise generated at the premises the licensee must use a Class 1 or Class 2 noise monitoring device as defined by AS IEC61672.1 and AS IEC61672.2-2004, or other noise monitoring equipment accepted by the EPA in writing.
L5.10	For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.
L7.1	The licensee must comply with the operating hours specified in Column 2, Column 3, and Column 4 of the table below:

Day	Loading and Dispatch of Quarry Trucks	Extraction and Processing	Receipt of Concrete
Monday - Friday	4:00am Monday to midnight Friday	7:00am to 7:00pm	7:00am to 5:00pm
Saturday	Midnight Friday to 6:00pm Saturday	7:00am to 2:00pm	7:00am to 2:00pm
Sundays and Public Holidays	None	none	none

Note: Maintenance activities may occur at any time provided they are inaudible at privately-owned residence.
*VENM = Virgin Excavated Natural Material
**ENM = Excavated Natural Material

M9 Noise monitoring

M9.1 To assess compliance with the noise limits specified within this licence, the licensee must undertake operator attended noise monitoring at each specified noise monitoring point in accordance with the table below.

POINT 12,13,15,16,18

Assessment period	Minimum frequency in a reporting period	Minimum duration within assessment period	Minimum number of assessment period
Day	2 times a year	1.5 hours	3 consecutive operation days
Evening	2 times a year	30 minutes	3 consecutive operation days
Night	2 times a year	1 hour	3 consecutive operation days

M9.2 The licensee must undertake the operator attended noise monitoring at each one of or at one or more noise monitoring points that is representative of the worse-case location(s) listed in this licence.

NOISE MEASUREMENTS

Attended noise monitoring was conducted with Brüel & Kjær Type 2250 Precision Sound Analysers. These instruments have Type 1 characteristics as defined in AS1259-1982 “Sound Level Meters” and have current NATA calibration. Field calibration of each instrument was carried out at the start and end of each monitoring period.

The noise monitoring was conducted in general accordance with the requirements of Section 9 of the NMP (Noise Monitoring Protocol and Evaluation of Compliance) as follows;

“*Metromix proposes to adopt a noise monitoring protocol that provides feedback on the effectiveness of the noise control measures and demonstrate compliance with the conditions within the Project Approval 10_0183 and Environment Protection Licence 0536.*

The approach to monitoring compliance is based substantially upon Metromix’s experience to date which has identified the on-site activities have not been the source of noise complaints or any recorded non-compliance. Hence, it is considered the monitoring program needs to reflect this fact.”

A-weighted noise levels were measured over 15 minute monitoring periods with data acquired at 1 second statistical intervals and the meter set to “fast” response. Each 1 second measurement is accompanied by a third-octave band spectrum from 20 - 20k Hz which is required for analysing INP ‘modifying factors’. Time based field notes allow for determination of the relative contributions to the overall noise level of all significant noise sources.

The worst case 15 minute Leq noise level for each monitoring period is shown in the tables below. Where the noise from TQ was audible, Bruel & Kjaer “*Evaluator*” analysis software was used to quantify the contributions of the quarry and other significant noise sources to the overall level.

Quarry noise from TQ is shown in the tables in bold type. Where noise from TQ is listed as faintly audible, this means the noise levels from the quarry were at least 10 dB below the ambient level during the measurement and not measurable.

Noise levels were recorded for each of the L10, Leq, Lmax, L1, L90 and Lmin percentiles. All noise levels shown in the tables of results are in dB(A) Leq (15 min). Levels for the other percentiles are not shown as they have no compliance criteria for comparison but are available on request. Meteorological data used in this report was obtained from the quarry-operated weather station at the site.

Noise Compliance Assessment

The results of the noise measurements undertaken throughout the various time periods are provided in **Tables 2** to **16**. EPL 536 refers to the various time periods as follows:

a) Day-Shoulder is defined as the period between 6am to 7am Monday to Saturday.

b) Day is defined as:
   (i) the period from 7am to 6pm Monday to Saturday; and
   (ii) the period from 8am to 6pm Sundays and Public Holidays.

c) Evening is defined as the period from 6pm to 10pm.

d) Night is defined as:
   (i) the period from 10pm to 7am Monday to Saturday; and
   (ii) the period from 10pm to 8am Sundays and Public Holidays.

Table 2
Teralba Quarry Noise Monitoring Results – 14 August 2019 (Night)

Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min)
A	5:33 am	45	35	0.8 / 308	Traffic (43), birds (38), **TQ inaudible**
B	4:32 am	48	35	Calm	Traffic (46), trains (42), **TQ inaudible**
D	4:31 am	43	35	Calm	Traffic (41), dog (36), **TQ inaudible**
E	5:32 am	39	35	0.8 / 308	Birds (36), traffic (34), **TQ inaudible**
H	5:02 am	46	35	0.9 / 300	Traffic (46), birds (30), **TQ inaudible**

Table 3
Teralba Quarry Noise Monitoring Results – 14 August 2019 (Day Shoulder)

Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min)
A	6:40 am	46	38	Calm	Traffic (42), train (41), Birds (36), **TQ inaudible**
B	6:23 am	49	42	Calm	Traffic (46), industrial noise (44), **TQ (23)**[1]
D	6:43 am	54	35	Calm	Traffic (54), birds (40), **TQ inaudible**
E	6:33 am	42	35	Calm	Birds (41), traffic (31), **TQ inaudible**
H	6:02 am	41	35	0.7 / 322	Traffic (38), birds (37), **TQ inaudible**

Note: 1 See text description and analysis

Table 4 Teralba Quarry Noise Monitoring Results – 14 August 2019 (Day)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed/ direction**	**Identified Noise Sources (Leq (15 min)**
A	7:45 am	45	38	Calm	Traffic (43), trains (40), birds (36), **TQ inaudible**
B	9:17 am	53	46	0.7 / 336	Traffic (51), trains (42), birds (40), **TQ (29)**[1]
D	10:51am	49	35	0.9 / 199	Traffic (48), birds (38), **TQ inaudible**
E	7:40 am	40	35	Calm	Birds (39), traffic (33), **TQ inaudible**
H	9:30 am	40	35	Calm	Birds (40), Traffic (33), **TQ inaudible**
Note: 1 See text description and analysis					

Table 5 Teralba Quarry Noise Monitoring Results – 14 August 2019 (Evening)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed/ direction**	**Identified Noise Sources (Leq (15 min)**
A	6:02 pm	43	37	1.3.7 / 237	Trains (40), industry (38), **TQ inaudible**
B	7:15 pm	52	36	1.3 / 28	Trains (51), traffic (45), **TQ inaudible**
D	7:52 pm	53	35	0.9 / 19	Traffic (53), birds (36), **TQ inaudible**
E	6:38 pm	39	35	1.1 / 178	Traffic (37), birds (33), **TQ inaudible**
H	8:27 pm	41	35	1.72 / 350	Birds (39), Traffic (34), **TQ barely audible**

Table 6 Teralba Quarry Noise Monitoring Results – 15 August 2019 (Night)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed/ direction**	**Identified Noise Sources (Leq (15 min)**
A	5:41 am	45	35	0.5 / 347	Traffic (43), trains (40), **TQ inaudible**
B	4:31 am	48	35	0.5 / 307	Traffic (46), train (41), **TQ inaudible**
D	4:32 am	42	35	0.5 / 307	Traffic (42), birds (29), **TQ inaudible**
E	5:31 am	41	35	0.5 / 347	Birds (40), traffic (31), **TQ inaudible**
H	5:01 am	42	35	Calm	Traffic (41), birds (34), **TQ inaudible**

Table 7 Teralba Quarry Noise Monitoring Results – 15 August 2019 (Day Shoulder)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed/ direction**	**Identified Noise Sources (Leq (15 min)**
A	6:38 am	58	38	0.5 / 332	Traffic (58), birds (42), **TQ inaudible**
B	6:26 am	48	42	0.59 / 332	Industrial noise (47), Traffic (40), **TQ (27)**[1]
D	6:44 am	49	35	Calm	Traffic (48), birds (42), **TQ inaudible**
E	6:32 am	42	35	0.5 / 332	Birds (41), traffic (34), **TQ inaudible**
H	6:01 am	45	35	Calm	Birds (44), traffic (34), **TQ inaudible**
Note: 1 See text description and analysis					

Table 8 Teralba Quarry Noise Monitoring Results – 15 August 2019 (Day)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed/ direction**	**Identified Noise Sources (Leq (15 min)**
A	4:07 pm	47	38	1.6 / 117	Birds (43), industrial noise (42), traffic (38), **TQ inaudible**
B	4:23 pm	56	46	1.5 / 119	Traffic (56), industry (42), birds (40), **TQ <20**[1]
D	8:02 am	50	35	1.5 / 298	Traffic (49), birds (39), industrial noise (26), **TQ inaudible**
E	7:42 am	40	35	0.8 / 166	Traffic (44), birds (36), **TQ inaudible**
H	9:42 am	40	35	1.37 / 278	Birds (47), traffic (40), **TQ inaudible**
Note: 1 See text description and analysis					

Table 9 Teralba Quarry Noise Monitoring Results – 15 August 2019 (Evening)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed/ direction**	**Identified Noise Sources (Leq (15 min)**
A	6:01 pm	44	37	0.9 / 175	Trains (43), Dog (36), **TQ barely audible**
B	7:17 pm	50	36	0.7 / 266	Traffic (49), birds (42), **TQ inaudible**
D	7:54 pm	57	35	0.6 / 125	Traffic (57), **TQ inaudible**
E	6:39 pm	39	35	0.8 / 214	Traffic (39), **TQ inaudible**
H	8:30 pm	37	35	0.8 / 159	Traffic (35), birds (31), **TQ inaudible**

Table 10 Teralba Quarry Noise Monitoring Results – 16 August 2019 (Night)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed/ direction**	**Identified Noise Sources (Leq (15 min)**
A	5:41 am	44	35	1.8 / 335	Trains (42), traffic (38), **TQ inaudible**
B	4:31 am	49	35	1.2 / 337	Traffic (48), trains (41), **TQ inaudible**
D	4:30 am	47	35	1.2 / 337	Traffic (46), birds (35), **TQ inaudible**
E	5:36 am	38	35	1.6 / 335	Traffic (37), birds (31), **TQ inaudible**
H	5:02 am	45	35	1.6 / 338	Traffic (43), birds (37), frogs (32), **TQ inaudible**

Table 11 Teralba Quarry Noise Monitoring Results – 16 August 2019 (Day Shoulder)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed/ direction**	**Identified Noise Sources (Leq (15 min)**
A	6:31 am	46	38	1.9 / 337	Traffic (42), Industrial noise (42), birds (40), **TQ inaudible**
B	6:28 am	47	42	1.9 / 337	Industrial noise (43), traffic (41), train (40), **TQ inaudible**
D	6:45 am	53	35	1.8 / 341	Traffic (52), birds (42), **TQ inaudible**
E	6:38 am	49	35	1.9 / 337	Birds (37), traffic (32), **TQ inaudible**
H	6:03 am	48	35	1.6 / 333	Birds (47), traffic (40), **TQ inaudible**

Table 12 Teralba Quarry Noise Monitoring Results – 16 August 2019 (Day)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed/ direction**	**Identified Noise Sources (Leq (15 min)**
A	7:03 am	48	38	2.4 / 340	Traffic (46), industrial noise (40), trains (40), **TQ inaudible**
B	4:25 pm	46	46	1.7 / 289	Traffic (44), birds (40), **TQ (29)**[1]
D	8:04 am	53	35	2.4 / 342	Traffic (53), birds (44), **TQ inaudible**
E	10:02 am	33	35	2.2 / 288	Birds (32), traffic (25), **TQ inaudible**
H	9:39 am	39	35	1.8 / 334	Birds (38), Traffic (31), **TQ inaudible**
Note: 1 See text description and analysis					

Table 13 Teralba Quarry Noise Monitoring Results – 16 August 2019 (Evening)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed/ direction**	**Identified Noise Sources (Leq (15 min)**
A	6:02 pm	53	37	1.0 / 240	Traffic (50), trains (48), **TQ inaudible**
B	7:15 pm	50	36	1.1 / 242	Traffic (49), trains (41), **TQ inaudible**
D	7:52 pm	52	35	1.3 / 247	Traffic (52), birds (37), **TQ inaudible**
E	6:38 pm	39	35	1.2 / 242	Traffic (37), birds (34), **TQ inaudible**
H	8:27 pm	37	35	0.8 / 258	Traffic (36), birds (28), **TQ (<20)**

The results shown in Tables 2 to 13 show that, under the operational and atmospheric conditions at the time of monitoring, noise emissions from TQ did not exceed the relevant criterion at any monitoring location during any part of the survey.

Monitoring location EPL-B is situated close to the corner of Rhondda Road and Railway Street. This monitoring location is included predominantly to measure quarry noise from emissions from trucks exiting the site along the private section of the access road (through the Teralba Business Park). From the monitoring location it was possible to determine which trucks were associated with the quarry and a dedicated spotter was not required during this monitoring period.

When measuring noise at the EPL-B location, the noise emissions from the exiting quarry trucks (whilst on the private section of the access road) was measured and the worst case 15 minute Leq noise level calculated based on the time each truck was on the private road. The worst case calculated Leq level for the trucks is that shown for Location B in Tables 2 to 13.

At location EPL-D the acoustic environment is significantly influenced by noise from traffic on Rhondda Rd, trains and other industries within the vicinity. Noise emissions from the batching plant which is located adjacent to TQ contributed to the received noise during some monitoring periods.

Data from those times where TQ operations were audible were analysed using the *"Evaluator"* software. This analysis showed the noise did not contain any tonal, impulsive or low frequency components as per definitions of "modifying factor corrections" in the NSW Industrial Noise Policy.

In addition to the operational noise, the noise from TQ must not exceed **45 dB(A) L1 (1 min)** within the night-time period i.e. between the hours of 10 pm and 7 am, in accordance with *Condition L4.1* of EPL 536. This is to minimise the potential for sleep disturbance as a result of individual loud noises from the quarry. The compliance measurement locations are different for each of the operational and sleep disturbance noise. That is, the sleep disturbance criterion is typically applicable at 1m from the façade of a bedroom window.

To avoid undue disturbance to residents, the L1 (1 min) noise level from the operational measurements are used to show general compliance with the sleep disturbance criterion. That is, as the distance between the noise source and the operational noise monitoring location is significantly greater than the distance between the operational noise monitoring location and the sleep disturbance monitoring location (i.e. 1m from the facade of the house) there will be little variation in L1 (1 min) levels between the two monitoring locations. It must be noted, however, that the sleep disturbance criterion is to be measured near a bedroom window. As the internal layout of each residence is not known, to consider a worst case, a bedroom window is assumed to be facing the operational noise monitoring location.

The results of the sleep disturbance measurements are shown in **Tables 14** to **16**.

Table 14
Teralba Quarry (L1 (1min)) Noise Monitoring Results – 14 August 2019 (Night)

Location	Time	dB(A), $L_{1(1minute)}$	Wind speed/ direction	L_{A1} source	Identified Quarry Sources ($L_{1\ (1\ min)}$)
A	5:33 am	57	0.8 / 308	Traffic	n/a
B	4:32 am	66	Calm	Traffic	n/a
D	4:31 am	56	Calm	Traffic	n/a
E	5:32 am	55	0.8 / 308	Birds	n/a
H	5:02 am	58	0.9 / 300	Birds	n/a

Table 15
Teralba Quarry (L1 (1min)) Noise Monitoring Results – 15 August 2019 (Night)

Location	Time	dB(A), $L_{1(1minute)}$	Wind speed/ direction	L_{A1} source	Identified Quarry Sources ($L_{1\ (1\ min)}$)
A	5:41 am	58	0.5 / 347	Birds	n/a
B	4:31 am	66	0.5 / 307	Traffic	n/a
D	4:32 am	64	0.5 / 307	Birds	n/a
E	5:31 am	54	0.5 / 347	Birds	n/a
H	5:01 am	60	Calm	Birds	n/a

Table 16
Teralba Quarry (L1 (1min)) Noise Monitoring Results – 15 August 2019 (Night)

Location	Time	dB(A), $L_{1(1minute)}$	Wind speed/ direction	L_{A1} source	Identified Quarry Sources ($L_{1\ (1\ min)}$)
A	5:41 am	56	1.8 / 335	Traffic	n/a
B	4:31 am	67	1.2 / 337	Traffic	n/a
D	4:30 am	59	1.2 / 337	Birds	n/a
E	5:36 am	52	1.6 / 335	Birds	n/a
H	5:02 am	59	1.6 / 338	Birds	n/a

As shown in Tables 14 to 16, during the night time measurement circuits the L1 (1 min) noise from TQ did not exceed 45 dB(A) at any monitoring location.

In summary the results of the noise monitoring programme have shown that the Teralba Quarry continues to operate within approved noise limits. No actions are recommended with respect to noise management at Teralba Quarry.

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 4954 2276.

Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

Author:

Neil Pennington MAIP, MAAS
Acoustical Consultant

Review:

Ross Hodge MAAS
Acoustical Consultant

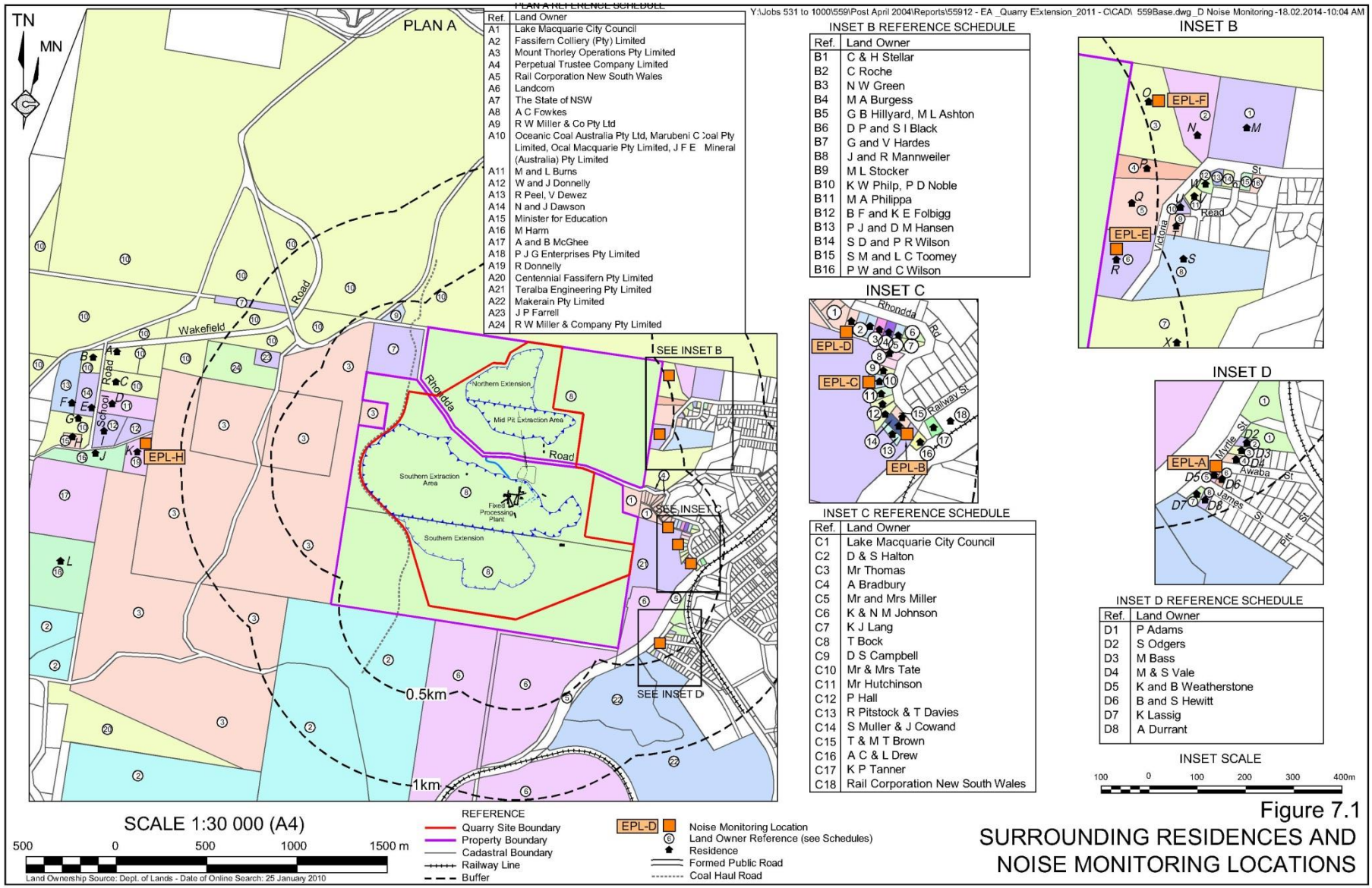

Figure 7.1
SURROUNDING RESIDENCES AND NOISE MONITORING LOCATIONS

Location EPL – B Modified noise monitoring location

30 December 2019

Ref: 8413/8802

Metromix Pty Ltd
150 Rhondda Road
Teralba NSW 2284

NOVEMBER 2019 NOISE MONITORING RESULTS – TERALBA QUARRY

This letter report presents the results of attended noise monitoring conducted for the Metromix operated Teralba Quarry (TQ) commencing on Tuesday 26th and finishing on Thursday 28th of November, 2019. Noise monitoring was carried out in accordance with the conditions of the TQ Noise Management Plan (NMP) as shown in extract on page 2 (referenced from EPL 536).

Although the project approval nominates noise criteria at nine locations, Metromix recognises that meaningful monitoring data will continue to be collected from the closest locations to the active operational areas. As a result of this, and as outlined within the approved NMP, for periods when operations are confined to areas south of Rhondda Road, noise monitoring will be undertaken at Locations EPL-A, B, D, E and H.

Further to this, location EPL-C and EPL-F have been omitted from the noise monitoring programme given they are not required as other monitoring locations are nearby and closer to quarry related noise sources. This has been recognised by the EPA by the removal of these locations from the monitoring locations detailed in EPL 536. **Table 1** lists the address and coordinates of each noise monitoring location, with the relevant monitoring locations that were monitored during the August 2018 period highlighted in **bold**. The locations are shown on the figure in **Appendix I**.

Table 1
Noise Monitoring Locations (from PA 10-0183)

Location in EPL	Address	Easting	Northing
EPL-A	**Awaba Street, Teralba**	**369080**	**3651470**
EPL-B[1]	**Rhondda Road, Teralba**	**369250**	**6351915**
EPL-C	Rhondda Road, Teralba [2]	369205	6352015
EPL-D	**Rhondda Road, Teralba**	**369150**	**6352135**
EPL-E	**Victoria Avenue, Teralba**	**369060**	**6352620**
EPL-F	Victoria Avenue, Teralba [2]	369130	6352945
EPL-H	**School Road, Wakefield**	**366210**	**6352520**

1. See text in relation to changes to monitoring location
2. Metromix has obtained permission for this monitoring location to be omitted.

It is noted that during the period when monitoring is undertaken at Location B, Metromix is required to provide a spotter to record the number of trucks departing from the Quarry and not the Teralba Business Park. Spectrum Acoustics personnel undertook identification of quarry trucks as part of the noise monitoring procedure.

As part of pre monitoring protocols Spectrum Acoustics notified, by letterbox drop, all landowners in the close vicinity of each site of the impending monitoring. The resident at Location B has previously told Metromix that he doesn't want monitoring to be done near his residence so monitoring was undertaken at a point approximately 30m south (as shown in Appendix I).

The following presents noise related conditions of EPL 536 relevant to the compliance noise monitoring programme.

<table>
<tr><th>Condition</th><th>Requirement</th></tr>
<tr><td>L5.2</td><td>The licensee must ensure that noise generated by the activities within the premises do not exceed the following criteria measured by dB(A) at any residence or privately owned land.
<table>
<tr><th>Location</th><th>Day Shoulder 6:00am - 7:00am</th><th>Day 7:00am - 6:00pm</th><th>Evening 6:00pm – 10:00pm</th><th>Night 10:00pm – 6:00am</th></tr>
<tr><td></td><td>$L_{Aeq\ (15\ minute)}$</td><td>$L_{Aeq\ (15\ minute)}$</td><td>$L_{Aeq\ (15\ minute)}$</td><td>$L_{Aeq\ (15\ minute)}$
$L_{A1(1min)}$</td></tr>
<tr><td>EPL-A</td><td>38</td><td>38</td><td>37</td><td>35
45</td></tr>
<tr><td>EPL-B</td><td>42</td><td>46</td><td>36</td><td>35
45</td></tr>
<tr><td>EPL-C</td><td>42</td><td>42</td><td>35</td><td>35
45</td></tr>
<tr><td>EPL-D, EPL-E, EPL-H</td><td>35</td><td>35</td><td>35</td><td>35
45</td></tr>
<tr><td>EPL-F</td><td>37</td><td>38</td><td>38</td><td>35
45</td></tr>
</table>
Note: The licensee may provide to the EPA written evidence of any agreement with a landholder which is subject to the above noise limits. The written evidence may be submitted with a licence variation to remove the landholder from the above table.</td></tr>
<tr><td>L5.3</td><td>For the purposes of Condition L5.2:
a) Day-Shoulder is defined as the period between 6am to 7am Monday to Saturday.
b) Day is defined as:
a. the period from 7am to 6pm Monday to Saturday; and
b. the period from 8am to 6pm Sundays and Public Holidays.
c) Evening is defined as the period from 6pm to 10pm.
d) Night is defined as:
a. the period from 10pm to 7am Monday to Saturday; and
b. the period from 10pm to 8am Sundays and Public Holidays.</td></tr>
<tr><td>L5.4</td><td>The contributed noise level from the premises must not exceed the noise limits specified within EPL 536 at the most noise-affected point on or within the boundary of any residential premises to the north and/or south of the premises, except as expressly provided by this licence, or by the EPA in writing.</td></tr>
<tr><td>L5.5</td><td>The noise limits set out in conditions L5.2 apply under all meteorological conditions except for anyone of the following:
a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
b) Stability category F temperature inversion conditions and wind speeds greater the 2 metres/second at 10 metres above ground level; or
c) Stability category G temperature inversion conditions.</td></tr>
<tr><td>L5.6</td><td>For the purpose of condition L5.5:</td></tr>
</table>

	a) the meteorological data to be used for determining meteorological conditions is the data recorded at the meteorological station identified in this licence as EPA Identification Point W1. b) Stability category temperature inversion conditions are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the *NSW industrial Noise Policy (EPA 2000)* Note: The weather station must be designed, commissioned and operated in a manner to obtain the necessary parameters required under the above condition.
L5.7	To determine compliance: 1. With the $L_{Aeq(15\ min)}$ noise limits in condition L5.2, the licensee must locate noise monitoring equipment; a) approximately on the boundary, where any dwelling is situated 30 metres or less from the property boundary that is closest to the premises; or, b) within 30 metres of a dwelling facade (but not closer than 3 metres) where any dwelling on the property is situated more than 30 metres from the property boundary that is closest to the premises; or where applicable c) within approximately 50 metres if the boundary of a national park or nature reserve. 2. With the LA1(1 minute) noise limits in condition L5.2, the noise monitoring equipment must be located within 1 metre of a dwelling facade. 3. With the noise limits in condition L5.2, the noise monitoring equipment must be located; a) at the most affected point at a location where there is no dwelling at the location, or b) at the most affected point within an area at a location prescribed by conditions L5.7 1(a) or L5.7 1(b).
L5.8	A non-compliance will still occur where noise generated from the premises in excess of the appropriate noise limit is measured: a) at a location other than an area prescribed by the conditions of this licence, and /or b) at a point other than the most affected point at a location.
L5.9	For the purpose of determining the noise generated at the premises the licensee must use a Class 1 or Class 2 noise monitoring device as defined by AS IEC61672.1 and AS IEC61672.2-2004, or other noise monitoring equipment accepted by the EPA in writing.
L5.10	For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.
L7.1	The licensee must comply with the operating hours specified in Column 2, Column 3, and Column 4 of the table below:

Day	Loading and Dispatch of Quarry Trucks	Extraction and Processing	Receipt of Concrete
Monday - Friday	4:00am Monday to midnight Friday	7:00am to 7:00pm	7:00am to 5:00pm
Saturday	Midnight Friday to 6:00pm Saturday	7:00am to 2:00pm	7:00am to 2:00pm
Sundays and Public Holidays	None	none	none

Note: Maintenance activities may occur at any time provided they are inaudible at privately-owned residence.
*VENM = Virgin Excavated Natural Material
**ENM = Excavated Natural Material

M9 Noise monitoring

M9.1 To assess compliance with the noise limits specified within this licence, the licensee must undertake operator attended noise monitoring at each specified noise monitoring point in accordance with the table below.

POINT 12,13,15,16,18

Assessment period	Minimum frequency in a reporting period	Minimum duration within assessment period	Minimum number of assessment period
Day	2 times a year	1.5 hours	3 consecutive operation days
Evening	2 times a year	30 minutes	3 consecutive operation days
Night	2 times a year	1 hour	3 consecutive operation days

M9.2 The licensee must undertake the operator attended noise monitoring at each one of or at one or more noise monitoring points that is representative of the worse-case location(s) listed in this licence.

NOISE MEASUREMENTS

Attended noise monitoring was conducted with Brüel & Kjær Type 2250 Precision Sound Analysers. These instruments have Type 1 characteristics as defined in AS1259-1982 “Sound Level Meters” and have current NATA calibration. Field calibration of each instrument was carried out at the start and end of each monitoring period.

The noise monitoring was conducted in general accordance with the requirements of Section 9 of the NMP (Noise Monitoring Protocol and Evaluation of Compliance) as follows;

“*Metromix proposes to adopt a noise monitoring protocol that provides feedback on the effectiveness of the noise control measures and demonstrate compliance with the conditions within the Project Approval 10_0183 and Environment Protection Licence 0536.*

The approach to monitoring compliance is based substantially upon Metromix’s experience to date which has identified the on-site activities have not been the source of noise complaints or any recorded non-compliance. Hence, it is considered the monitoring program needs to reflect this fact.”

A-weighted noise levels were measured over 15 minute monitoring periods with data acquired at 1 second statistical intervals and the meter set to “fast” response. Each 1 second measurement is accompanied by a third-octave band spectrum from 20 - 20k Hz which is required for analysing INP ‘modifying factors’. Time based field notes allow for determination of the relative contributions to the overall noise level of all significant noise sources.

The worst case 15 minute Leq noise level for each monitoring period is shown in the tables below. Where the noise from TQ was audible, Bruel & Kjaer “*Evaluator*” analysis software was used to quantify the contributions of the quarry and other significant noise sources to the overall level.

Quarry noise from TQ is shown in the tables in bold type. Where noise from TQ is listed as faintly audible, this means the noise levels from the quarry were at least 10 dB below the ambient level during the measurement and not measurable.

Noise levels were recorded for each of the L10, Leq, Lmax, L1, L90 and Lmin percentiles. All noise levels shown in the tables of results are in dB(A) Leq (15 min). Levels for the other percentiles are not shown as they have no compliance criteria for comparison but are available on request. Meteorological data used in this report was obtained from the quarry-operated weather station at the site.

Noise Compliance Assessment

The results of the noise measurements undertaken throughout the various time periods are provided in **Tables 2** to **16**. EPL 536 refers to the various time periods as follows:

a) Day-Shoulder is defined as the period between 6am to 7am Monday to Saturday.

b) Day is defined as:
   (i) the period from 7am to 6pm Monday to Saturday; and
   (ii) the period from 8am to 6pm Sundays and Public Holidays.

c) Evening is defined as the period from 6pm to 10pm.

d) Night is defined as:
   (i) the period from 10pm to 7am Monday to Saturday; and
   (ii) the period from 10pm to 8am Sundays and Public Holidays.

Table 2
Teralba Quarry Noise Monitoring Results – 26 November 2019 (Night)

Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed (m/s) / direction	Identified Noise Sources (Leq (15 min)
A	5:35 am	47	35	2.1 / 25	Industry (44), traffic (43), birds (40), **TQ (30)**[1]
B	4:30 am	43	35	1.9 / 26	Traffic (41), insects (37), train (35), **TQ inaudible**
D	4:31 am	43	35	1.9 / 26	Traffic (40), dog (38), **TQ inaudible**
E	5:31 am	40	35	2.1 / 25	Birds (39), traffic (32), **TQ inaudible**
H	5:01 am	35	35	2.1 / 25	Traffic (33), birds (30), **TQ inaudible**

Notes: 1. Trucks on access road.

Table 3
Teralba Quarry Noise Monitoring Results – 26 November 2019 (Day Shoulder)

Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed (m/s) / direction	Identified Noise Sources (Leq (15 min)
A	6:35 am	49	38	1.7 / 12	Birds (45), Traffic (43), industry (41), **TQ (32)**[1]
B	6:22 am	49	42	2.3 / 15	Traffic (46), industrial noise (44), **TQ (35)**[1]
D	6:44 am	50	35	1.7 / 12	Traffic (50), birds (37), **TQ inaudible**
E	6:33 am	46	35	1.7 / 12	Birds (46), traffic (34), **TQ inaudible**
H	6:03 am	44	35	2.3 / 15	Traffic (42), birds (39), **TQ inaudible**

Notes: 1. Trucks on access road.

Table 4 Teralba Quarry Noise Monitoring Results – 26 November 2019 (Day)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed (m/s) / direction**	**Identified Noise Sources (Leq (15 min)**
A	8:35 am	44	38	2.2 / 334	Birds (40), traffic (39), **TQ (36)**[1], trains (30)
B	7:00 am	44	46	1.7 / 12	Traffic (43), industry (35), birds (30), **TQ (32)**[2]
D	10:53 am	47	35	2.7 / 319	Traffic (46), birds (36), **TQ inaudible**
E	7:40 am	40	35	1.7 / 12	Birds (39), traffic (30), **TQ inaudible**
H	9:32 am	41	35	2.4 / 337	Birds (40), Traffic (30), **TQ inaudible**
Notes: 1. Dozer on topsoil. 2. Trucks on access road					

Table 5 Teralba Quarry Noise Monitoring Results – 26 November 2019 (Evening)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed (m/s) / direction**	**Identified Noise Sources (Leq (15 min)**
A	6:01 pm	46	37	1.7 / 257	Trains (44), industry (39), **TQ inaudible**
B	7:17 pm	49	36	2.7 / 239	Traffic (47), trains (42), **TQ inaudible**
D	7:51 pm	50	35	2.7 / 239	Traffic (50), birds (39), **TQ inaudible**
E	6:39 pm	40	35	1.7 / 257	Traffic (39), birds (30), **TQ inaudible**
H	8:30 pm	36	35	3.3 235	Birds (34), Traffic (31), **TQ barely audible**

Table 6 Teralba Quarry Noise Monitoring Results – 27 November 2019 (Night)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed (m/s) / direction**	**Identified Noise Sources (Leq (15 min)**
A	5:35 am	48	35	1.2 / 224	Birds (45), traffic (42), industry (40), **TQ inaudible**
B	4:30 am	42	35	0.6 / 201	Traffic (40), birds (38), train (32), **TQ inaudible**
D	4:31 am	36	35	0.6 / 201	Traffic (35), birds (29), **TQ inaudible**
E	5:31 am	44	35	1.2 / 224	Birds (44), traffic (32), **TQ inaudible**
H	5:00 am	39	35	1.2 / 224	Traffic (37), birds (34), **TQ inaudible**

Table 7 Teralba Quarry Noise Monitoring Results – 27 November 2019 (Day Shoulder)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed (m/s) / direction**	**Identified Noise Sources (Leq (15 min)**
A	6:35 am	43	38	1.5 / 214	Birds (40), traffic (37), industry (35), **TQ inaudible**
B	6:24 am	49	42	1.2 / 224	Industry (48), Traffic (40), **TQ (29)**[1]
D	6:45 am	49	35	1.5 / 214	Traffic (47), birds (44), **TQ inaudible**
E	6:31 am	49	35	1.5 / 214	Birds (49), traffic (38), **TQ inaudible**
H	6:01 am	43	35	1.2 / 224	Birds (42), traffic (32), **TQ inaudible**
Note: 1 Trucks on access road					

Table 8 Teralba Quarry Noise Monitoring Results – 27 November 2019 (Day)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed (m/s) / direction**	**Identified Noise Sources (Leq 15 min)**
A	8:35 am	43	38	1.4 / 191	Birds (40), industry (38), **TQ (32)**[1]
B	7:00 am	46	46	1.5 / 214	Industry (44), traffic (42), birds (30), **TQ inaudible**
D	8:01 am	51	35	1.4 / 191	Traffic (51), birds (36), industry (32), **TQ inaudible**
E	7:43 am	46	35	1.4 / 199	Traffic (45), birds (38), **TQ inaudible**
H	9:44 am	43	35	1.4 / 191	Birds (42), traffic (33), **TQ inaudible**
Note: 1 Trucks on access road					

Table 9 Teralba Quarry Noise Monitoring Results – 27 November 2019 (Evening)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed (m/s) / direction**	**Identified Noise Sources (Leq 15 min)**
A	6:01 pm	42	37	1.2 / 66	Trains (41), Dog (33), **TQ barely audible**
B	7:19 pm	49	36	1.3 / 53	Traffic (48), birds (40), **TQ inaudible**
D	7:58 pm	53	35	1.3 / 53	Traffic (53), **TQ inaudible**
E	6:40 pm	37	35	1.3 / 61	Traffic (34), birds (32), **TQ inaudible**
H	8:36 pm	38	35	1.3 / 45	Traffic (37), birds (30), **TQ inaudible**

Table 10 Teralba Quarry Noise Monitoring Results – 28 November 2019 (Night)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed (m/s) / direction**	**Identified Noise Sources (Leq 15 min)**
A	5:35 am	48	35	0.7 / 225	Birds (45), traffic (42), industry (40), **TQ inaudible**
B	4:30 am	42	35	0.6 / 192	Traffic (41), birds (30), trains (30), **TQ inaudible**
D	4:30 am	45	35	0.6 / 192	Traffic (44), birds (34), **TQ inaudible**
E	5:34 am	37	35	0.7 / 225	Traffic (34), birds (34), **TQ inaudible**
H	5:01 am	46	35	0.7 / 225	Traffic (44), birds (39), **TQ inaudible**

Table 11 Teralba Quarry Noise Monitoring Results – 28 November 2019 (Day Shoulder)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed (m/s) / direction**	**Identified Noise Sources (Leq 15 min)**
A	6:35 am	48	38	0.6 / 197	Birds (45), traffic (43), industry (39), trains (36), **TQ inaudible**
B	6:32 am	49	42	0.6 / 197	Industry (45), traffic (45), train (38), **TQ inaudible**
D	6:47 am	51	35	0.6 / 197	Traffic (50), birds (40), **TQ inaudible**
E	6:39 am	40	35	0.6 / 197	Birds (39), traffic (31), **TQ inaudible**
H	6:01 am	49	35	0.7 / 225	Birds (49), traffic (34), **TQ inaudible**

Table 12 Teralba Quarry Noise Monitoring Results – 28 November 2019 (Day)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed (m/s) / direction**	**Identified Noise Sources (Leq (15 min)**
A	8:35 am	48	38	1.1 / 31	Birds (43), industry (42), traffic (40), trains (38), **TQ inaudible**
B	7:00 am	46	46	0.7 / 197	Industry (45), traffic (35), birds (40), **TQ (30)**[1]
D	8:03 am	55	35	1.1 / 31	Traffic (55), birds (40), **TQ inaudible**
E	11:31 am	35	35	1.8 / 132	Birds (33), traffic (30), **TQ inaudible**
H	9:41 am	40	35	1.1 / 123	Birds (39), traffic (30), **TQ inaudible**
Note: 1 Trucks on access road					

Table 13 Teralba Quarry Noise Monitoring Results – 28 November 2019 (Evening)					
Location	**Start Time**	**Total noise dB(A) Leq**	**Criterion dB(A) Leq**	**Wind speed (m/s) / direction**	**Identified Noise Sources (Leq (15 min)**
A	6:01 pm	52	37	1.7 / 69	Traffic (52), trains (44), **TQ inaudible**
B	7:16 pm	47	36	1.6 / 61	Traffic (44), trains (43), **TQ inaudible**
D	7:52 pm	54	35	1.6 / 61	Traffic (54), birds (30), **TQ inaudible**
E	6:37 pm	39	35	1.1 / 69	Birds (37), traffic (32), **TQ inaudible**
H	8:29 pm	34	35	1.9 / 43	Traffic (32), birds (29), **TQ (<20)**

The results shown in Tables 2 to 13 show that, under the operational and atmospheric conditions at the time of monitoring, noise emissions from TQ did not exceed the relevant criterion at any monitoring location during any part of the survey.

Monitoring location EPL-B is situated close to the corner of Rhondda Road and Railway Street. This monitoring location is included predominantly to measure quarry noise from emissions from trucks exiting the site along the private section of the access road (through the Teralba Business Park). From the monitoring location it was possible to determine which trucks were associated with the quarry and a dedicated spotter was not required during this monitoring period.

When measuring noise at the EPL-B location, the noise emissions from the exiting quarry trucks (whilst on the private section of the access road) was measured and the worst case 15 minute Leq noise level calculated based on the time each truck was on the private road. The worst case calculated Leq level for the trucks is that shown for Location B in Tables 2 to 13.

At location EPL-D the acoustic environment is significantly influenced by noise from traffic on Rhondda Rd, trains and other industries within the vicinity. Noise emissions from the batching plant which is located adjacent to TQ contributed to the received noise during some monitoring periods.

Data from those times where TQ operations were audible were analysed using the *"Evaluator"* software. This analysis showed the noise did not contain any tonal, impulsive or low frequency components as per definitions of "modifying factor corrections" in the NSW Industrial Noise Policy.

In addition to the operational noise, the noise from TQ must not exceed **45 dB(A) L1 (1 min)** within the night-time period i.e. between the hours of 10 pm and 7 am, in accordance with *Condition L4.1* of EPL 536. This is to minimise the potential for sleep disturbance as a result of individual loud noises from the quarry. The compliance measurement locations are different for each of the operational and sleep disturbance noise. That is, the sleep disturbance criterion is typically applicable at 1m from the façade of a bedroom window.

To avoid undue disturbance to residents, the L1 (1 min) noise level from the operational measurements are used to show general compliance with the sleep disturbance criterion. That is, as the distance between the noise source and the operational noise monitoring location is significantly greater than the distance between the operational noise monitoring location and the sleep disturbance monitoring location (i.e. 1m from the facade of the house) there will be little variation in L1 (1 min) levels between the two monitoring locations. It must be noted, however, that the sleep disturbance criterion is to be measured near a bedroom window. As the internal layout of each residence is not known, to consider a worst case, a bedroom window is assumed to be facing the operational noise monitoring location.

The results of the sleep disturbance measurements are shown in **Tables 14** to **16**.

Table 14
Teralba Quarry (L1 (1min)) Noise Monitoring Results – 26 November 2019 (Night)

Location	Time	dB(A), $L_{1(1minute)}$	Wind speed (m/s) / direction	L_{A1} source	Identified Quarry Sources ($L_{1\ (1\ min)}$)
A	5:35 am	55	2.1 / 25	Traffic	n/a
B	4:30 am	68	1.9 / 26	Traffic	n/a
D	4:31 am	57	1.9 / 26	Traffic	n/a
E	5:31 am	54	2.1 / 25	Birds	n/a
H	5:01 am	53	2.1 / 25	Birds	n/a

Table 15
Teralba Quarry (L1 (1min)) Noise Monitoring Results – 27 November 2019 (Night)

Location	Time	dB(A), $L_{1(1minute)}$	Wind speed (m/s) / direction	L_{A1} source	Identified Quarry Sources ($L_{1\ (1\ min)}$)
A	5:35 am	56	1.2 / 224	Birds	n/a
B	4:30 am	62	0.6 / 201	Traffic	n/a
D	4:31 am	64	0.6 / 201	Birds	n/a
E	5:31 am	54	1.2 / 224	Birds	n/a
H	5:00 am	54	1.2 / 224	Birds	n/a

Table 16
Teralba Quarry (L1 (1min)) Noise Monitoring Results – 28 November 2019 (Night)

Location	Time	dB(A), $L_{1(1minute)}$	Wind speed (m/s) / direction	L_{A1} source	Identified Quarry Sources ($L_{1\ (1\ min)}$)
A	5:35 am	54	0.7 / 225	Traffic	n/a
B	4:30 am	67	0.6 / 192	Traffic	n/a
D	4:30 am	63	0.6 / 192	Birds	n/a
E	5:34 am	54	0.7 / 225	Birds	n/a
H	5:01 am	58	0.7 / 225	Birds	n/a

As shown in Tables 14 to 16, during the night time measurement circuits the L1 (1 min) noise from TQ did not exceed 45 dB(A) at any monitoring location.

In summary the results of the noise monitoring programme have shown that the Teralba Quarry continues to operate within approved noise limits. No actions are recommended with respect to noise management at Teralba Quarry.

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 4954 2276.

Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

Author:

Neil Pennington MAIP, MAAS
Acoustical Consultant

Review:

Ross Hodge MAAS
Acoustical Consultant

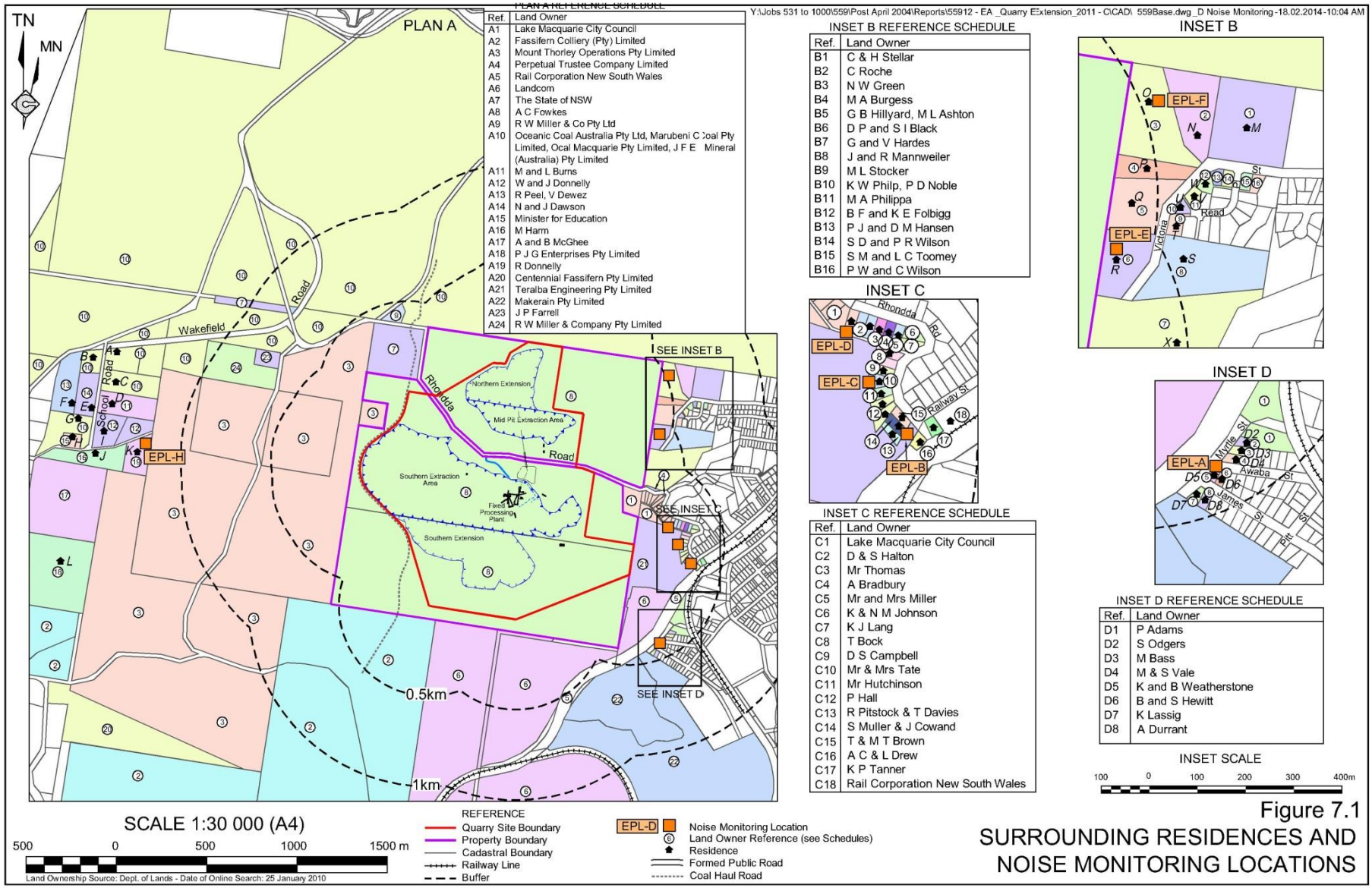

Figure 7.1
SURROUNDING RESIDENCES AND NOISE MONITORING LOCATIONS

Location EPL – B Modified noise monitoring location

Appendix 2

2019 Echo Ecology – Annual Nesting Box Inspection

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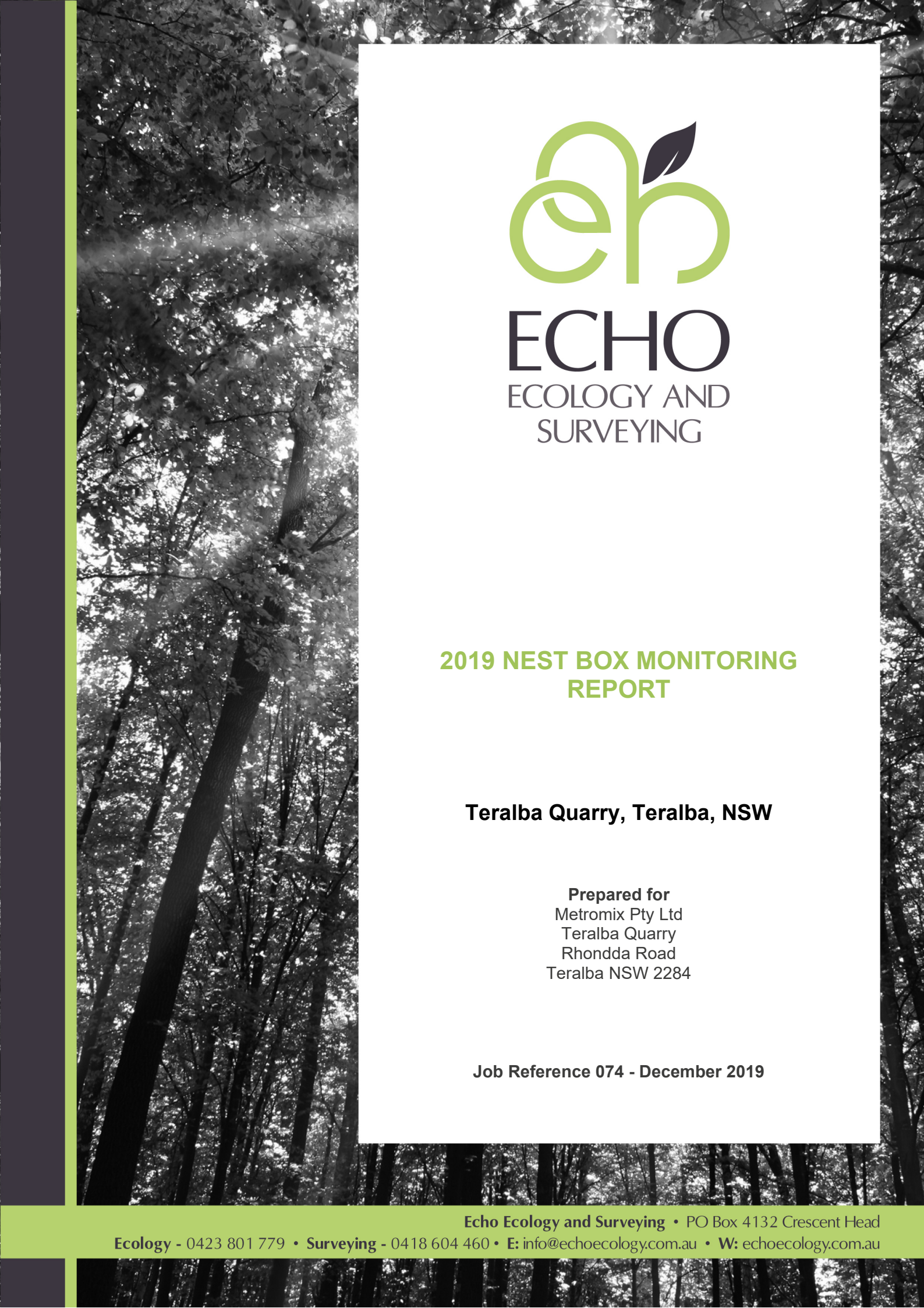


ECHO
ECOLOGY AND SURVEYING

2019 NEST BOX MONITORING REPORT

Teralba Quarry, Teralba, NSW

Prepared for
Metromix Pty Ltd
Teralba Quarry
Rhondda Road
Teralba NSW 2284

Job Reference 074 - December 2019

Echo Ecology and Surveying • PO Box 4132 Crescent Head
Ecology - 0423 801 779 • **Surveying** - 0418 604 460 • **E:** info@echoecology.com.au • **W:** echoecology.com.au

Document Control

Project Name	Teralba Quarry
Project Number	074
Client	Metromix
File Name	074 – Teralba Quarry 2019 NB Monitoring Report 18-12-19.docx
Document Description	2019 Nest Box Monitoring Report
Prepared by	Dr Anna McConville (PhD, B.Env.Sc.) Ecologist / Director
Status	FINAL
Version	R0
Date	18 December 2019

This report should be cited as: Echo Ecology and Surveying 2019. *2019 Annual Nest Box Monitoring Report: Teralba Quarry*. Prepared for Metromix.

Contents

List of Figures

1.0 INTRODUCTION

Echo Ecology and Surveying has been engaged by Metromix to undertake annual nest box monitoring at their Teralba Quarry to meet consent conditions.

2.0 BACKGROUND

The fauna assessment for the Teralba Quarry Extension (Kendall & Kendall Ecological Services 2011), recommended that nest boxes be installed to mitigate the potential impacts of the quarry expansion on hollow-dependent fauna species. Subsequently the project approval requires the installation, maintenance and monitoring of nest boxes within the Teralba Quarry site.

Condition 50 of the project approval for Teralba Quarry states:

- The Proponent shall install 20 nest boxes for microbats, 20 nest boxes for Little Lorikeets and 30 nest boxes for Sugar Gliders. These boxes must be monitored and maintained regularly over the life of the project, and re-located or replaced if not used by targeted fauna for a period of 12 months.

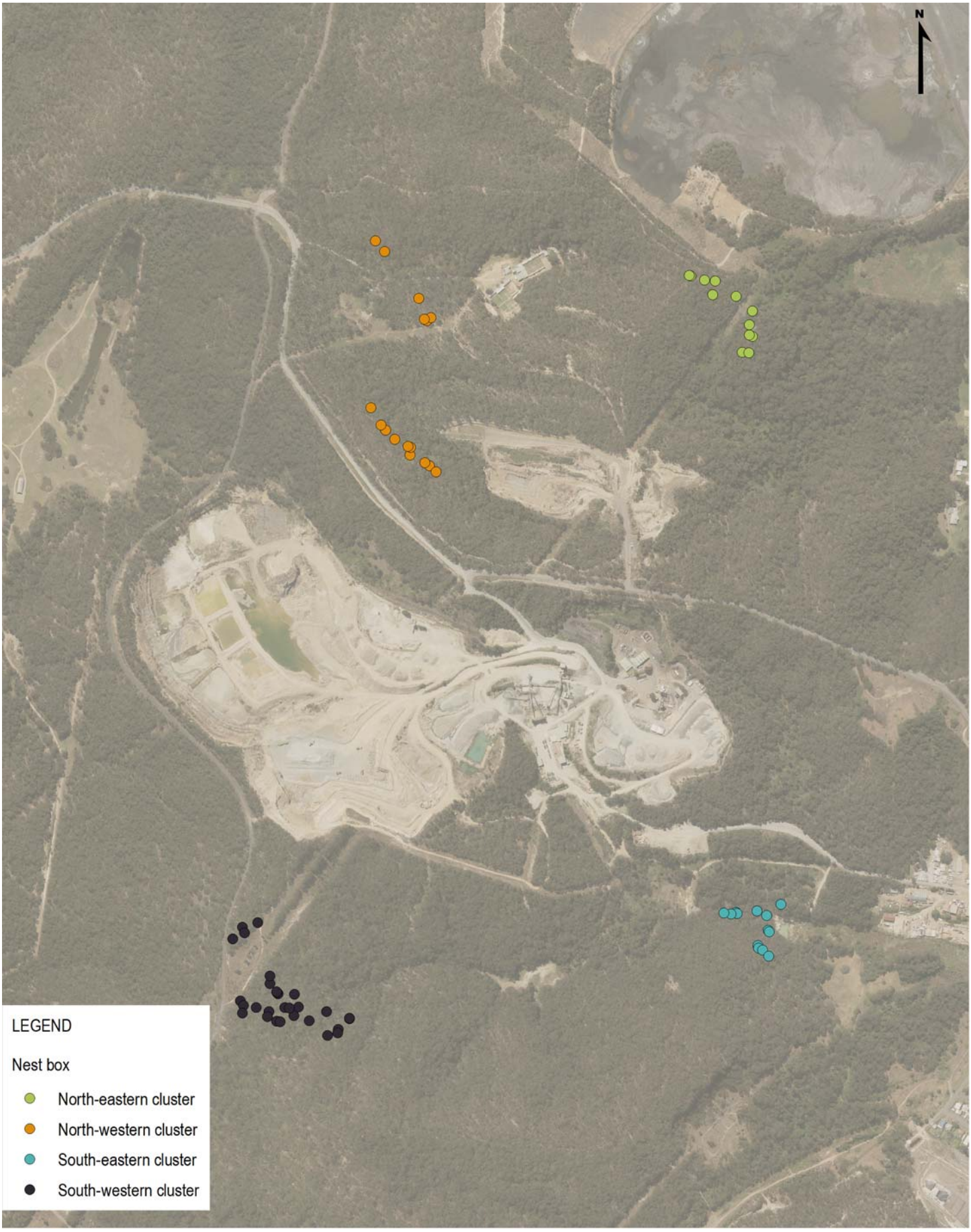
While the project approval condition specifies nest boxes be installed for Sugar Gliders, the fauna assessment report (Kendall & Kendall Ecological Services 2011), recommended that these nest boxes be installed to enhance habitat for Squirrel Gliders, a threatened species. Squirrel Gliders haven't been recorded onsite to date, but it is known from the local area.

In 2014, 70 nest boxes were installed at Teralba Quarry (Kendall & Kendall Ecological Services 2015) and these were monitored in 2015 (Kendall & Kendall Ecological Services 2015), 2016 (Kendall & Kendall Ecological Services 2016) and 2017 (Kendall & Kendall Ecological Services 2017). Due to theft and fire damage, 18 of these nest boxes were replaced in 2017. Five additional nest boxes for each of the target species are stored at Teralba Quarry so that replacements can be quickly installed if other boxes are damaged.

3.0 METHODS

Nest boxes were checked by Anna McConville on 31 October 2019 using a wireless nest box inspection camera (Brite Star Electronics) mounted on an extension pole. We returned on 15 November 2019 to carry out some repairs using a ladder (as recommended during

the 2018 work). We recorded nest box location, type, aspect, height, occupation evidence and fauna species present. The locations of nest boxes are shown in Figure 3-1 below.



ECHO ECOLOGY AND SURVEYING

0 100 200 300 400 m

BACKGROUND SOURCE: NSW imagery © DFSI
DISCLAIMER: Indicative only. All boundaries, scale and points are approximate only

TERALBA QUARRY		
Job No: 074	Rev: A Date: 03 Oct 2018	A4
NEST BOX MONITORING - 2018	Figure 3-1: Nest Box Locations	

Echo Ecology and Surveying PO Box 4132 Crescent Head, NSW 2440 Australia
Ecology: 0423801779 E: anna@echoecology.com.au W: echoecology.com.au

4.0 RESULTS

None of the target species (Squirrel Gliders, Little Lorikeets or microbats) were observed using nest boxes during the inspection. Feral bees were also not recorded using nest boxes.

Sugar Gliders (*Petaurus breviceps*) were recorded occupying four of the nest boxes, two of which have been occupied during previous years. A further 18 boxes were found to have leaves with depressions like those created by gliders, indicating that the Sugar Gliders are using many of the nest boxes for sheltering. Another 14 boxes had leaves present (but no defined nest) indicating that animals had visited the boxes. Ants were found in one of the boxes.

Only 21 of the nest boxes showed no sign of occupation, with 85 % of these being microbat boxes. Evidence of use is difficult to determine in microbat nest boxes unless the animals are present as the bottom opening hole means that guano falls through.

While nest box occupancy by Sugar Gliders has been steadily increasing since installation, we recorded a decrease during this survey (Figure 4-1). With occupancy relatively steady in the north-east of the study area, and less reliable in other areas (Figure 4-2). Reduced occupancy may be due to drought conditions experienced in NSW during 2019.

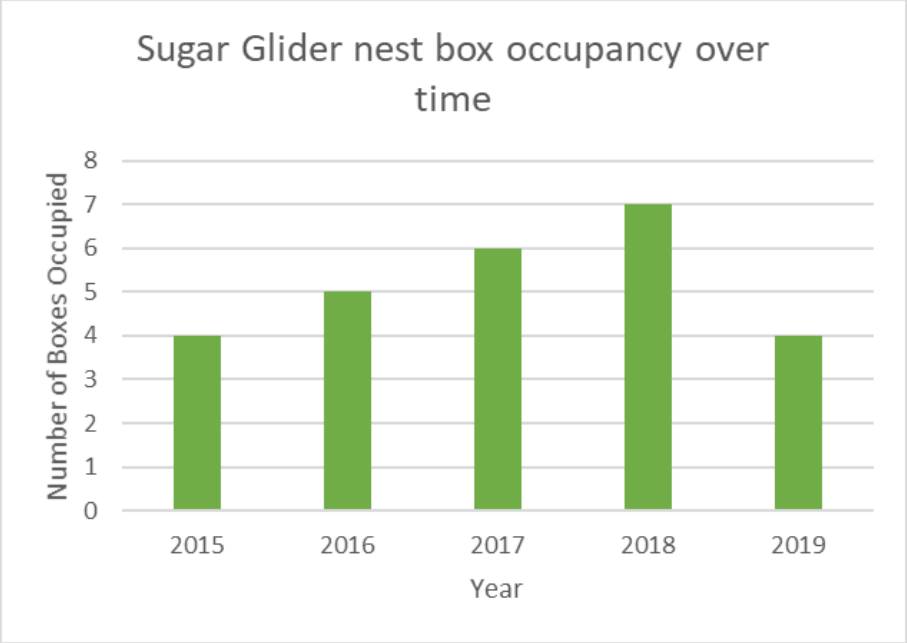


Figure 4-1: Sugar Glider nest box occupancy

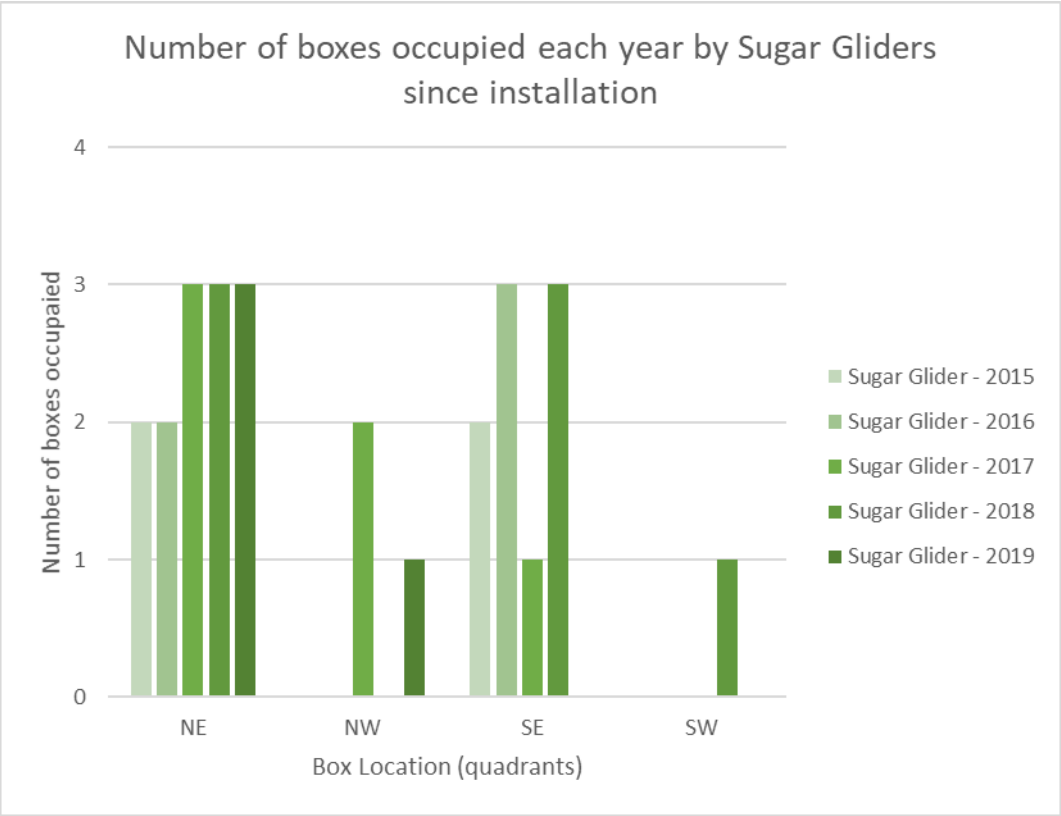


Figure 4-2: Nest box occupancy by Sugar Gliders since installation by nest box location

Appendix A contains the nest box inspection results for 2019 and previous years and Appendix B contains the digital forms completed during the field work.

5.0 RECOMMENDATIONS

The Project Approval conditions state that nest boxes are to be relocated or replaced if not used by the target species within 12 months. None of the nest boxes have been used by the target species. However, for Squirrel Glider and Little Lorikeet boxes, the requirement to relocate or replace nest boxes if not used within 12 months is not very appropriate. The boxes are being used by native fauna species (e.g. Sugar Gliders) and removal or replacement would impact these non-target species. Microbat nest boxes are not typically very successful for threatened microbats and have varying success rates. For example, bats have been found not to begin occupying nest boxes until they have been installed for some time (e.g. 10 years at Mt Owen).

Therefore, we recommend that the Project Approval conditions are reviewed and revised to:

- Conduct ongoing regular monitoring and maintenance
- At 10 years post installation, undertake a review of the effectiveness of the nest boxes for the target species and if necessary, consider installing boxes of a different design or boxes in a different location to improve success rates.

6.0 REFERENCES

Kendall & Kendall Ecological Services. 2011. Teralba Quarry Extensions Fauna Assessment. Prepared for R.W. Corkery & Co on behalf of Metromix Pty Ltd.

Kendall & Kendall Ecological Services. 2015. Teralba Quarry Extension Project Approval 50 - Nesing box Installation and First Annual Inspection. Prepared for Metromix Pty Ltd.

Kendall & Kendall Ecological Services. 2016. Teralba Quarry Extension Project Approval 50 - Annual Nesting Box Inspection. Prepared for Metromix Pty Ltd.

Kendall & Kendall Ecological Services. 2017. Teralba Quarry Extension Project Approval 50 - Annual Nesting Box Inspection. Prepared for Metromix Pty Ltd.

APPENDIX A NEST BOX MONITORING RESULTS

Table A: Nest box monitoring results

Tag No.	Cluster	Box Type	Tree Species	Aspect	Approx Height (m)	Easting (GDA Zone56)	Northing (GDA zone 56)	2015 Results	2016 Results	2017 Results	2018 Results	2019 Results
1	NW	Little Lorikeet	Spotted Gum	102	3.7	367958	6353147	-	Leaves with depression	Ants	Ants	Ants
2	NW	Little Lorikeet	Stringybark/ Mahogany	34	3.6	367940	6353168	-	Leaves with depression	Leaves	Leaves with depression	Leaf nest
3	NW	Little Lorikeet	Spotted Gum	160	-	368025	6353055	Leaves	Leaves with depression	2 Sugar Gliders	Leaves with depression	Leaf nest
4	NW	Little Lorikeet	Spotted Gum	100	4	368041	6353011	-	Leaves	Leaf nest	old Leaves with depression	Leaf nest
5	NW	Little Lorikeet	Spotted Gum	100	2.2	368049	6353017	Leaves	Leaves	Leaves and ants	Old leaves with depression and ants	Leaf nest
6	NW	Little Lorikeet	Spotted Gum	188	2.8	368036	6353014	Leaves	Leaves	1 Sugar Glider	Leaves with depression	Leaf nest
7	SW	Squirrel Glider	Stringybark/ Mahogany	112	3.1	367675	6351673	-	Old bits of bark	Bird egg shell	Leaves	Leaves (loose)
8	SW	Microbat	Bloodwood	88	3.1	367681	6351664	-	-	-	-	
9	SW	Squirrel Glider	Stringybark/ Mahogany	48	2.9	367679	6351649	-	Old bits of bark	-	Leaves and bark	Leaves (loose)
10	SW	Squirrel Glider	Stringybark/ Mahogany	62	2.9	367731	6351652	-	-	Leaves	Leaves with depression	Leaf nest, Glider type nest
11	SW	Microbat	Bloodwood	108	2.9	367728	6351642	-	-	-	-	
12	SW	Squirrel Glider	Bloodwood	138	3.1	367746	6351633	-	-	Leaf nest	Sugar Gliders 2+	Leaf nest, Glider type nest
13	SW	Microbat	Stringybark/ Mahogany	76	2.8	367753	6351632	-	-	-	Mud Wasps	
14	SW	Squirrel Glider	Stringybark/ Mahogany	74	3.1	367762	6351660	-	Old bits of bark	-	Leaves with depression	Leaf nest, Glider nest
15	SW	Microbat	Bloodwood	68	3.2	367749	6351687	-	-	-	-	
16	SW	Squirrel Glider	Bloodwood	118	3.4	367733	6351707	-	-	-	-	

Tag No.	Cluster	Box Type	Tree Species	Aspect	Approx Height (m)	Easting (GDA Zone56)	Northing (GDA zone 56)	2015 Results	2016 Results	2017 Results	2018 Results	2019 Results
17	SW	Little Lorikeet	Bloodwood	262	4.2	367733	6351722	Box Missing	Box Missing	New Box Installed	Leaves with depression	Leaf nest, Recent nest
18	SW	Little Lorikeet	Bloodwood	144	3.4	367747	6351689	Box Missing	Box Missing	New Box Installed	Leaves	Leaf nest, Feather tail glider/antechinus type
19	SW	Little Lorikeet	Bloodwood	180	-	367781	6351686	Box Missing	Box Missing	New Box Installed	Leaves	Leaf nest, Feather tail glider/antechinus type
20	SW	Little Lorikeet	Stringybark/ Mahogany	108	2.9	367789	6351661	Box Missing	Box Missing	New Box Installed	Leaves	Leaves (loose)
21	SW	Little Lorikeet	Stringybark/ Mahogany	104	2.8	367810	6351634	Box Missing	Box Missing	New Box Installed	Leaves	Leaves (loose)
22	SW	Little Lorikeet	Stringybark/ Mahogany	116	3.1	367844	6351652	Box Missing	Box Missing	New Box Installed	Leaves	Leaves (loose)
23	SW	Little Lorikeet	Stringybark/ Mahogany	32	-	367889	6351638	Box Missing	Box Missing	New Box Installed	Leaves	Leaf nest, Feather tail glider/antechinus type
24	SW	Little Lorikeet	Stringybark/ Mahogany	-	-	367889	6351639	Box Missing	Box Missing	New Box Installed	Leaves	
25	SW	Little Lorikeet	Stringybark/ Mahogany	1	3.8	367867	6351617	Box Missing	Box Missing	New Box Installed	Leaves	Leaf nest
26	SW	Little Lorikeet	Stringybark/ Mahogany	54	3	367866	6351610	Box Missing	Box Missing	New Box Installed	Leaves	Leaves (loose)
27	SW	Little Lorikeet	Stringybark/ Mahogany	222	3.6	367846	6351605	Box Missing	Box Missing	New Box Installed	Leaves	Leaves (loose)
28	SW	Little Lorikeet	Bloodwood	68	3	367780	6351644	Box Missing	Box Missing	New Box Installed	Leaves	Leaves (loose)
29	SW	Little Lorikeet	Bloodwood	342	3.9	367771	6351659	Box Missing	Box Missing	New Box Installed	Leaves	Leaf nest
30	SW	Little Lorikeet	Bloodwood	272	3.2	367746	6351691	Box Missing	Box Missing	New Box Installed	Leaves	Leaves (loose)
31	SW	Squirrel Glider	Spotted Gum	162	4	367709	6351827	Box Missing	Box Missing	New Box Installed	Leaves	Leaves (loose)
32	SW	Squirrel Glider	Spotted Gum	50	3.9	367679	6351818	Box Missing	Box Missing	New Box Installed	Leaves	Leaf nest, Old nest
33	SW	Squirrel Glider	Spotted Gum	214	3.2	367683	6351807	Box Missing	Box Missing	New Box Installed	Leaves	Leaves (loose)

Tag No.	Cluster	Box Type	Tree Species	Aspect	Approx Height (m)	Easting (GDA Zone56)	Northing (GDA zone 56)	2015 Results	2016 Results	2017 Results	2018 Results	2019 Results
34	SW	Squirrel Glider	Spotted Gum	158	3.8	367660	6351795	Box Missing	Box Missing	New Box Installed	Leaves	Leaf nest, Glider type nest
35	SE	Squirrel Glider	Grey Gum	252	3.2	368738	6351863	-	Old leaves	-	Sugar glider 3+	Leaves (loose)
36	SE	Microbat	Stringybark/ Mahogany	282	-	368710	6351841	Leaves	No leaves	-	-	
37	SE	Squirrel Glider	Grey Gum	246	3.8	368691	6351850	Leaves	Leaves	-	Old Leaves with depression. Chew marks on hole	Observed Sugar Glider 2+ Adult male id by scent gland. HLH box
38	SE	Microbat	Stringybark/ Mahogany	314	3.6	368650	6351847	Leaves	Brown Antechinus and Leaves	Leaves	Leaves taking up the entire bat box. Opened the top and there were scats on top.	Leaf nest, Couldn't see inside leaf nest with entry hole up one side.
39	SE	Squirrel Glider	Tallowwood	325	-	368652	6351845	2 Sugar Gliders	Sugar Glider	-	Sugar gliders 2+	Leaf nest, Glider type nest
40	SE	Microbat	Tallowwood	354	3.4	368640	6351844	-	-	-	-	Wasps
41	SE	Squirrel Glider	Tallowwood	204	-	368626	6351846	Leaves	Leaves	-	Chew marks on hole. Leaves with depression	Leaf nest, Glider type nest
42	SE	Microbat	Stringybark/ Mahogany	300	3.7	368713	6351812	-	-	-	Mud wasp	Wasps
43	SE	Squirrel Glider	Stringybark/ Mahogany	330	3.6	368715	6351809	-	Sugar Glider	-	Sugar glider 2+	Observed Sugar Glider 1 Adult male
44	SE	Squirrel Glider	Spotted Gum	344	3.5	368693	6351782	4 Sugar Gliders	Sugar Glider	-	Leaves with depression	Leaf nest; Glider type nest
45	SE	Squirrel Glider	Tallowwood	308	3	368694	6351777	Leaves	Old leaves	3 Sugar Gliders	Leaves with depression	Observed, Sugar Glider 3+
46	SE	Microbat	Spotted Gum	10	3	368702	6351773	-	-	-	-	Spider webs everywhere.
47	SE	Squirrel Glider	Ironbark	324	3.6	368714	6351761	Leaves	Leaves	-	Leaves with depression	Observed Sugar Glider 2+; Adult male ID by scent gland
48	NW	Microbat	Tallowwood	220	2.8	368046	6352726	-	-	-	-	Wasps, stick inside
49	NW	Microbat	Tallowwood	140	3	368059	6352714	-	-	-	-	
50	NW	Microbat	Tallowwood	108	3.1	368037	6352732	-	-	-	-	
51	NW	Microbat	Stringybark/ Mahogany	106	3	368008	6352747	-	-	-	-	Shadecloth replaced

Tag No.	Cluster	Box Type	Tree Species	Aspect	Approx Height (m)	Easting (GDA Zone56)	Northing (GDA zone 56)	2015 Results	2016 Results	2017 Results	2018 Results	2019 Results
52	NW	Microbat	Tallowwood	106	3.6	368009	6352762	-	-	-	-	
53	NW	Microbat	Ironbark	88	3.6	368004	6352764	-	-	-	-	Shadecloth replaced
54	NW	Microbat	Stringybark/ Mahogany	116	3	367978	6352778	-	-	-	-	Shadecloth replaced
55	NW	Microbat	Stringybark/ Mahogany	132	2.9	367960	6352796	-	-	-	-	
56	NW	Microbat	Stringybark/ Mahogany	118	3	367951	6352806	-	-	-	Leaves	Leaf nest
57	NW	Microbat	Ironbark	102	3.6	367931	6352840	-	-	-	Mudwasps	
58	NE	Squirrel Glider	Ironbark	13	3.5	368662	6352949	Leaves	Old leaves	-	New leaves, chews on hole	Leaf nest, Glider type nest
59	NE	Squirrel Glider	Ironbark	12	2.6	368675	6352948	-	-	2 Sugar Gliders	Leaves with depression chews on hole	Leaf nest, Old nest
60	NE	Squirrel Glider	Tallowwood	2	3.1	368682	6352980	Bee hive	Abandoned Bee hive, now leaves	-	Leaves with depression and mud wasps	Wasps, Leaves (loose)
61	NE	Squirrel Glider	Tallowwood	78	2.1	368676	6352983	Leaves	Leaves	Leaves	Leaves with depression	Leaf nest, Glider type nest
62	NE	Squirrel Glider	Ironbark	116	3.1	368676	6353003	Leaves	Leaves	-	Sugar glider 1 +	Leaf nest, Glider type nest
63	NE	Squirrel Glider	Ironbark	118	4	368682	6353030	Leaves	Leaves	Leaf nest	Leaves, chews on hole	Leaf nest, Old nest
64	NE	Squirrel Glider	Stringybark/ Mahogany	62	-	368650	6353059	Leaves	Leaves	-	Leaves with depression	Leaf nest, Glider type nest
65	NE	Squirrel Glider	Ironbark	56	3.6	368604	6353062	1 Sugar Glider	Sugar Glider (1+)	2 Sugar Gliders	Sugar gliders 2+	Leaf nest, Glider type nest
66	NE	Squirrel Glider	Stringybark/ Mahogany	8	4	368609	6353089	Bee hive	Abandoned Bee hive, now leaves	2 Sugar Gliders	-	Leaf nest
67	NE	Squirrel Glider	Spotted Gum	0	-	368588	6353091	Leaves	Leaves	-	-	
68	NE	Squirrel Glider	Spotted Gum	256	3.7	368561	6353099	Leaves	Sugar Glider	Leaf nest	Leaves	Leaf nest, Glider type nest
69	NE	Squirrel Glider	Stringybark/ Mahogany	96	3.4	368558	6353100	1 Sugar Glider	Leaves	-	Sugar glider 5	Leaves (loose)

Tag No.	Cluster	Box Type	Tree Species	Aspect	Approx Height (m)	Easting (GDA Zone56)	Northing (GDA zone 56)	2015 Results	2016 Results	2017 Results	2018 Results	2019 Results
70	SW	Microbat	Stringybark/ Mahogany	90	-	367706	6351660	-	-	-	-	Termite trail going thru box

APPENDIX B NEST BOX CHECK FIELD SHEETS

1, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 08:59:07 AEDT by Anna McConville
Updated	2019-12-18 06:08:50 AEDT by Anna McConville
Location	-32.9515916622, 151.587075172
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	08:59

Box Details

Nestbox Number	1
Tree Species	Spotted Gum
Box Type	Little Lorikeet
Aspect	102

Checking Results

Check Method	Nestbox camera
Pests?	Yes
Pest Species	Ants
Repairs required?	No
Occupation Evidence?	No
OccupationComments	3.7m

Media

Box Photo

2, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 09:02:53 AEDT by Anna McConville
Updated	2019-11-15 14:47:45 AEDT by Anna McConville
Location	-32.9514755728, 151.586449128
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	09:02

Box Details

Nestbox Number	2
Tree Species	Stringybark/Mahogany
Box Type	Little Lorikeet
Aspect	34

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	3.6m

Media

Fauna Video or Photo Recorded	No

Box Photo

3, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 08:36:36 AEDT by Anna McConville
Updated	2019-11-15 14:52:34 AEDT by Anna McConville
Location	-32.9529780709, 151.587937754
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	08:37

Box Details

Nestbox Number	3
Tree Species	Spotted Gum
Box Type	Little Lorikeet
Aspect	160

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	N

Media

Fauna Video or Photo Recorded	No

Box Photo

4, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 08:46:18 AEDT by Anna McConville
Updated	2019-12-18 06:13:48 AEDT by Anna McConville
Location	-32.953839479, 151.588548459
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	08:46

Box Details

Nestbox Number	4
Tree Species	Spotted Gum
Box Type	Little Lorikeet
Aspect	100

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	4m

Media

Fauna Video or Photo Recorded	No

Box Photo

5, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 08:43:09 AEDT by Anna McConville
Updated	2019-12-18 06:16:49 AEDT by Anna McConville
Location	-32.9532503151, 151.588313934
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	08:43

Box Details

Nestbox Number	5
Tree Species	Spotted Gum
Box Type	Little Lorikeet
Aspect	100

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	2.2m

Media

Fauna Video or Photo Recorded	No

Box Photo

6, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 08:49:09 AEDT by Anna McConville
Updated	2019-12-18 06:17:02 AEDT by Anna McConville
Location	-32.95331012, 151.588035235
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	08:49

Box Details

Nestbox Number	6
Tree Species	Spotted Gum
Box Type	Little Lorikeet
Aspect	188

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	2.8m

Media

Fauna Video or Photo Recorded	No

Box Photo

7, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 15:48:08 AEDT by Anna McConville
Updated	2019-11-15 14:47:14 AEDT by Anna McConville
Location	-32.9653471615, 151.584113008
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:48

Box Details

Nestbox Number	7
Tree Species	Stringybark/Mahogany
Box Type	Squirrel Glider
Aspect	112

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	3.1m

Media

Fauna Video or Photo Recorded	No

Box Photo

8, Bloodwood

Project	Teralba Quarry
Created	2019-10-31 15:45:46 AEDT by Anna McConville
Updated	2019-11-15 14:26:10 AEDT by Anna McConville
Location	-32.9655227624, 151.584153157
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:45

Box Details

Nestbox Number	8
Tree Species	Bloodwood
Box Type	Bat - single chamber panel box
Aspect	88

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No
OccupationComments	3.1m

Media

Box Photo

9, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 15:42:40 AEDT by Anna McConville
Updated	2019-11-15 14:39:57 AEDT by Anna McConville
Location	-32.9654538632, 151.584251896
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:42

Box Details

Nestbox Number	9
Tree Species	Stringybark/Mahogany
Box Type	Squirrel Glider
Aspect	48

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	2.9m

Media

Fauna Video or Photo Recorded	No

Box Photo

10, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 15:34:29 AEDT by Anna McConville
Updated	2019-11-15 14:47:36 AEDT by Anna McConville
Location	-32.9656372592, 151.584567893
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:34

Box Details

Nestbox Number	10
Tree Species	Stringybark/Mahogany
Box Type	Squirrel Glider
Aspect	62

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Glider type nest. 2.9m

Media

Fauna Video or Photo Recorded	No

Box Photo

11, Bloodwood

Project	Teralba Quarry
Created	2019-10-31 15:32:00 AEDT by Anna McConville
Updated	2019-11-15 14:40:54 AEDT by Anna McConville
Location	-32.9656795459, 151.584819602
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:32

Box Details

Nestbox Number	11
Tree Species	Bloodwood
Box Type	Bat - single chamber panel box
Aspect	108

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No
OccupationComments	2.9m

Media

Box Photo

12, Bloodwood

Project	Teralba Quarry
Created	2019-10-31 15:28:46 AEDT by Anna McConville
Updated	2019-11-15 14:40:44 AEDT by Anna McConville
Location	-32.9657483613, 151.584780878
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:28

Box Details

Nestbox Number	12
Tree Species	Bloodwood
Box Type	Squirrel Glider
Aspect	138

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Glider type nest 3.1m

Media

Fauna Video or Photo Recorded	No

Box Photo

13, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 15:26:40 AEDT by Anna McConville
Updated	2019-11-15 14:47:05 AEDT by Anna McConville
Location	-32.9658799991, 151.584996041
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:26

Box Details

Nestbox Number	13
Tree Species	Stringybark/Mahogany
Box Type	Bat - single chamber panel box
Aspect	76

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No
OccupationComments	2.8m

Media

Box Photo

14, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 15:08:51 AEDT by Anna McConville
Updated	2019-11-15 14:40:15 AEDT by Anna McConville
Location	-32.9655549908, 151.585085644
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:08

Box Details

Nestbox Number	14
Tree Species	Stringybark/Mahogany
Box Type	Squirrel Glider
Aspect	74

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Glider nest. 3.1m

Media

Fauna Video or Photo Recorded	No

Box Photo

15, Bloodwood

Project	Teralba Quarry
Created	2019-10-31 15:04:55 AEDT by Anna McConville
Updated	2019-11-15 14:43:15 AEDT by Anna McConville
Location	-32.9654016439, 151.584725306
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:04

Box Details

Nestbox Number	15
Tree Species	Bloodwood
Box Type	Bat - single chamber panel box
Aspect	68

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No
OccupationComments	3.2m

Media

Box Photo

16, Bloodwood

Project	Teralba Quarry
Created	2019-10-31 14:55:55 AEDT by Anna McConville
Updated	2019-11-15 14:43:53 AEDT by Anna McConville
Location	-32.9646680178, 151.584642073
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	14:55

Box Details

Nestbox Number	16
Tree Species	Bloodwood
Box Type	Squirrel Glider
Aspect	118

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No
OccupationComments	3.4m

Media

Box Photo

17, Bloodwood

Project	Teralba Quarry
Created	2019-10-31 14:53:10 AEDT by Anna McConville
Updated	2019-11-15 14:41:52 AEDT by Anna McConville
Location	-32.9647877114, 151.584804934
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	14:53

Box Details

Nestbox Number	17
Tree Species	Bloodwood
Box Type	Little Lorikeet
Aspect	262

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Recent 4.2m

Media

Fauna Video or Photo Recorded	No

Box Photo

18, Bloodwood

Project	Teralba Quarry
Created	2019-10-31 14:59:52 AEDT by Anna McConville
Updated	2019-11-15 14:46:36 AEDT by Anna McConville
Location	-32.9649178824, 151.584668979
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	14:59

Box Details

Nestbox Number	18
Tree Species	Bloodwood
Box Type	Little Lorikeet
Aspect	144

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Feather tail/antechinus type3.4m

Media

Fauna Video or Photo Recorded	No

Box Photo

19, Bloodwood

Project	Teralba Quarry
Created	2019-10-31 15:22:04 AEDT by Anna McConville
Updated	2019-11-15 14:40:23 AEDT by Anna McConville
Location	-32.9654537374, 151.585427541
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2020-10-31
Time	15:22

Box Details

Nestbox Number	19
Tree Species	Bloodwood
Box Type	Little Lorikeet
Aspect	180

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Ante/feather tail type nest

Media

Fauna Video or Photo Recorded	No

Box Photo

20, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 15:19:10 AEDT by Anna McConville
Updated	2019-11-15 14:27:24 AEDT by Anna McConville
Location	-32.965540113, 151.585280271
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:19

Box Details

Nestbox Number	20
Tree Species	Stringybark/Mahogany
Box Type	Little Lorikeet
Aspect	108

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	2.9

Media

Fauna Video or Photo Recorded	No

Box Photo

21, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 15:59:33 AEDT by Anna McConville
Updated	2019-11-15 14:26:19 AEDT by Anna McConville
Location	-32.9655406578, 151.585395858
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:59

Box Details

Nestbox Number	21
Tree Species	Stringybark/Mahogany
Box Type	Little Lorikeet
Aspect	104

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	2.8m

Media

Fauna Video or Photo Recorded	No

Box Photo

22, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 16:02:36 AEDT by Anna McConville
Updated	2019-11-15 14:43:05 AEDT by Anna McConville
Location	-32.9656535201, 151.585989799
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	16:02

Box Details

Nestbox Number	22
Tree Species	Stringybark/Mahogany
Box Type	Little Lorikeet
Aspect	116

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	3.1m

Media

Fauna Video or Photo Recorded	No

Box Photo

23, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 16:07:22 AEDT by Anna McConville
Updated	2019-11-15 14:44:49 AEDT by Anna McConville
Location	-32.9654711718, 151.585908244
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	16:07

Box Details

Nestbox Number	23
Tree Species	Stringybark/Mahogany
Box Type	Little Lorikeet
Aspect	32

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Ante/feather tail type nest

Media

Fauna Video or Photo Recorded	No

Box Photo

25, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 16:11:17 AEDT by Anna McConville
Updated	2019-11-15 14:40:06 AEDT by Anna McConville
Location	-32.9656237644, 151.586346282
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	16:11

Box Details

Nestbox Number	25
Tree Species	Stringybark/Mahogany
Box Type	Little Lorikeet
Aspect	1

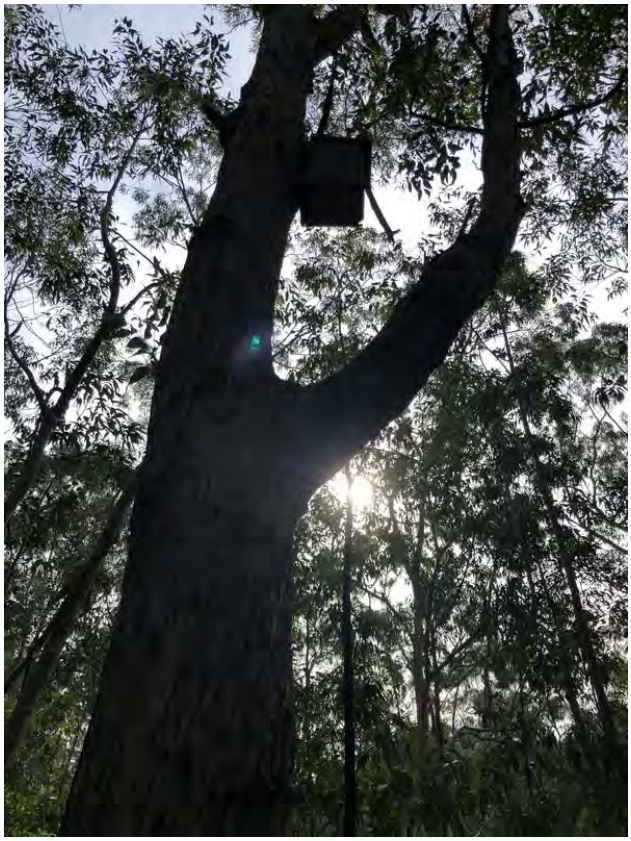
Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	3.8m

Media

Fauna Video or Photo Recorded	No

Box Photo



26, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 16:13:10 AEDT by Anna McConville
Updated	2019-11-15 14:47:27 AEDT by Anna McConville
Location	-32.9657529714, 151.586098177
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	16:13

Box Details

Nestbox Number	26
Tree Species	Stringybark/Mahogany
Box Type	Little Lorikeet
Aspect	54

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	3m

Media

Fauna Video or Photo Recorded	No

Box Photo

27, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 16:15:58 AEDT by Anna McConville
Updated	2019-11-15 14:26:40 AEDT by Anna McConville
Location	-32.9658319708, 151.585976137
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	16:16

Box Details

Nestbox Number	27
Tree Species	Stringybark/Mahogany
Box Type	Little Lorikeet
Aspect	222

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	3.6m

Media

Fauna Video or Photo Recorded	No

Box Photo

28, Bloodwood

Project	Teralba Quarry
Created	2019-10-31 15:16:07 AEDT by Anna McConville
Updated	2019-11-15 14:28:05 AEDT by Anna McConville
Location	-32.9656639137, 151.585348249
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:16

Box Details

Nestbox Number	28
Tree Species	Bloodwood
Box Type	Little Lorikeet
Aspect	68

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	3m

Media

Fauna Video or Photo Recorded	No

Box Photo

29, Bloodwood

Project	Teralba Quarry
Created	2019-10-31 15:13:16 AEDT by Anna McConville
Updated	2019-11-15 14:41:21 AEDT by Anna McConville
Location	-32.9653392826, 151.584972739
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:13

Box Details

Nestbox Number	29
Tree Species	Bloodwood
Box Type	Little Lorikeet
Aspect	342

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	3.9m

Media

Fauna Video or Photo Recorded	No

Box Photo

30, Bloodwood

Project	Teralba Quarry
Created	2019-10-31 15:02:41 AEDT by Anna McConville
Updated	2019-11-15 14:45:00 AEDT by Anna McConville
Location	-32.9651137675, 151.584899314
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:02

Box Details

Nestbox Number	30
Tree Species	Bloodwood
Box Type	Little Lorikeet
Aspect	272

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	3.2m

Media

Fauna Video or Photo Recorded	No

Box Photo

31, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 16:23:35 AEDT by Anna McConville
Updated	2019-12-18 06:12:06 AEDT by Anna McConville
Location	-32.9658303783, 151.585743707
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	16:23

Box Details

Nestbox Number	31
Tree Species	Spotted Gum
Box Type	Squirrel Glider
Aspect	162

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	4m

Media

Fauna Video or Photo Recorded	No

Box Photo

32, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 16:26:53 AEDT by Anna McConville
Updated	2019-12-18 06:12:17 AEDT by Anna McConville
Location	-32.9640284786, 151.584121725
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	16:26

Box Details

Nestbox Number	32
Tree Species	Spotted Gum
Box Type	Squirrel Glider
Aspect	50

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	Old, 3.9m

Media

Fauna Video or Photo Recorded	No

Box Photo

33, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 16:30:11 AEDT by Anna McConville
Updated	2019-12-18 06:12:28 AEDT by Anna McConville
Location	-32.9643733101, 151.584199341
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	16:30

Box Details

Nestbox Number	33
Tree Species	Spotted Gum
Box Type	Squirrel Glider
Aspect	214

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	3.2m

Media

Fauna Video or Photo Recorded	No

Box Photo

34, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 16:33:19 AEDT by Anna McConville
Updated	2019-12-18 06:12:43 AEDT by Anna McConville
Location	-32.9642329552, 151.584000103
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	16:33

Box Details

Nestbox Number	34
Tree Species	Spotted Gum
Box Type	Squirrel Glider
Aspect	158

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	Glider type nest 3.8m

Media

Fauna Video or Photo Recorded	No

Box Photo

35, Grey Gum

Project	Teralba Quarry
Created	2019-10-31 10:28:51 AEDT by Anna McConville
Updated	2019-11-15 14:44:21 AEDT by Anna McConville
Location	-32.9641342582, 151.595229255
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	10:28

Box Details

Nestbox Number	35
Tree Species	Grey Gum
Box Type	Squirrel Glider
Aspect	252

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	3.2m

Media

Fauna Video or Photo Recorded	No

Box Photo

36, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 09:28:52 AEDT by Anna McConville
Updated	2019-11-15 14:42:01 AEDT by Anna McConville
Location	-32.9636241356, 151.595399827
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	09:28

Box Details

Nestbox Number	36
Tree Species	Stringybark/Mahogany
Box Type	Bat - single chamber panel box
Aspect	282

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No

Media

Box Photo

37, Grey Gum

Project	Teralba Quarry
Created	2019-10-31 09:34:33 AEDT by Anna McConville
Updated	2019-11-15 14:45:35 AEDT by Anna McConville
Location	-32.9639433604, 151.595202685
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	09:34

Box Details

Nestbox Number	37
Tree Species	Grey Gum
Box Type	Squirrel Glider
Aspect	246

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Observed
Fauna Species Observed	Sugar Glider
Number of fauna Species	2
Count Accuracy	Minimum (at least ...)
OccupationComments	Adult male id by scent gland. 3.8m hlh box

Media

Fauna Video or Photo Recorded	Yes

Box Photo

38, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 09:40:01 AEDT by Anna McConville
Updated	2019-11-15 14:25:58 AEDT by Anna McConville
Location	-32.9638422747, 151.594922729
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	09:40

Box Details

Nestbox Number	38
Tree Species	Stringybark/Mahogany
Box Type	Bat - single chamber panel box
Aspect	314

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Couldn’t see inside leaf nest with entry hole up one side. 3.6m

Media

Fauna Video or Photo Recorded	No

Box Photo

39, Tallowwood

Project	Teralba Quarry
Created	2019-10-31 09:43:38 AEDT by Anna McConville
Updated	2019-12-18 06:13:22 AEDT by Anna McConville
Location	-32.9638549313, 151.594677726
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	09:43

Box Details

Nestbox Number	39
Tree Species	Tallowwood
Box Type	Squirrel Glider
Aspect	325

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	Glider nest

Media

Fauna Video or Photo Recorded	No

Box Photo

40, Tallowwood

Project	Teralba Quarry
Created	2019-10-31 09:48:26 AEDT by Anna McConville
Updated	2019-12-18 06:14:10 AEDT by Anna McConville
Location	-32.9637654126, 151.5944432
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	09:48

Box Details

Nestbox Number	40
Tree Species	Tallowwood
Box Type	Bat - single chamber panel box
Aspect	354

Checking Results

Check Method	Nestbox camera
Pests?	Yes
Pest Species	Wasps
Repairs required?	No
Occupation Evidence?	No
OccupationComments	3.4m

Media

Box Photo

41, Tallowwood

Project	Teralba Quarry
Created	2019-10-31 09:51:29 AEDT by Anna McConville
Updated	2019-12-18 06:14:32 AEDT by Anna McConville
Location	-32.9641200928, 151.593928551
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	09:51

Box Details

Nestbox Number	41
Tree Species	Tallowwood
Box Type	Squirrel Glider
Aspect	204

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	Glider nest

Media

Fauna Video or Photo Recorded	No

Box Photo

42, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 10:24:43 AEDT by Anna McConville
Updated	2019-11-15 14:46:54 AEDT by Anna McConville
Location	-32.9641381139, 151.595279882
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	10:24

Box Details

Nestbox Number	42
Tree Species	Stringybark/Mahogany
Box Type	Bat - single chamber panel box
Aspect	300

Checking Results

Check Method	Nestbox camera
Pests?	Yes
Pest Species	Wasps
Repairs required?	No
Occupation Evidence?	No
OccupationComments	3.7m

Media

Box Photo

43, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 10:21:37 AEDT by Anna McConville
Updated	2019-11-15 14:42:38 AEDT by Anna McConville
Location	-32.9646776989, 151.595307039
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	10:21

Box Details

Nestbox Number	43
Tree Species	Stringybark/Mahogany
Box Type	Squirrel Glider
Aspect	330

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Observed
Fauna Species Observed	Sugar Glider
Number of fauna Species	1
Count Accuracy	Minimum (at least ...)
OccupationComments	Adult male check ID on pics. 3.6m

Media

Fauna Video or Photo Recorded	Yes

Box Photo

44, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 09:58:06 AEDT by Anna McConville
Updated	2019-11-15 14:41:12 AEDT by Anna McConville
Location	-32.9638438253, 151.594101051
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	09:58

Box Details

Nestbox Number	44
Tree Species	Spotted Gum
Box Type	Squirrel Glider
Aspect	344

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Glider nest 3.5m

Media

Fauna Video or Photo Recorded	No

Box Photo

45, Tallowwood

Project	Teralba Quarry
Created	2019-10-31 10:01:00 AEDT by Anna McConville
Updated	2019-12-18 06:15:04 AEDT by Anna McConville
Location	-32.9644966917, 151.595056839
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	10:01

Box Details

Nestbox Number	45
Tree Species	Tallowwood
Box Type	Squirrel Glider
Aspect	308

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Observed
Fauna Species Observed	Sugar Glider
Number of fauna Species	3
Count Accuracy	Minimum (at least ...)
OccupationComments	3m

Media

Fauna Video or Photo Recorded	Yes

Box Photo

46, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 10:05:43 AEDT by Anna McConville
Updated	2019-11-15 14:46:04 AEDT by Anna McConville
Location	-32.9645161378, 151.595132025
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	10:05

Box Details

Nestbox Number	46
Tree Species	Spotted Gum
Box Type	Bat - single chamber panel box
Aspect	10

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No
OccupationComments	Spider webs everywhere. 3m

Media

Box Photo

47, Ironbark

Project	Teralba Quarry
Created	2019-10-31 10:15:33 AEDT by Anna McConville
Updated	2019-11-15 14:46:27 AEDT by Anna McConville
Location	-32.964701294, 151.595257921
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	10:15

Box Details

Nestbox Number	47
Tree Species	Ironbark
Box Type	Squirrel Glider
Aspect	324

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Observed
Fauna Species Observed	Sugar Glider
Number of fauna Species	2
Count Accuracy	Minimum (at least ...)
OccupationComments	Adult male is by scent gland 3.6m

Media

Fauna Video or Photo Recorded	Yes

Box Photo

48, Tallowwood

Project	Teralba Quarry
Created	2019-10-31 11:18:27 AEDT by Anna McConville
Updated	2019-11-15 14:41:33 AEDT by Anna McConville
Location	-32.9558056221, 151.588200275
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	11:18

Box Details

Nestbox Number	48
Tree Species	Tallowwood
Box Type	Bat - single chamber panel box
Aspect	220

Checking Results

Check Method	Nestbox camera
Pests?	Yes
Pest Species	Wasps
Repairs required?	No
Occupation Evidence?	No
OccupationComments	2.8m stick inside

Media

Box Photo

49, Tallowwood

Project	Teralba Quarry
Created	2019-10-31 11:04:21 AEDT by Anna McConville
Updated	2019-11-15 14:42:10 AEDT by Anna McConville
Location	-32.9567531124, 151.588284429
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	11:04

Box Details

Nestbox Number	49
Tree Species	Tallowwood
Box Type	Bat - single chamber panel box
Aspect	140

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No
OccupationComments	3m

Media

Box Photo

50, Tallowwood

Project	Teralba Quarry
Created	2019-10-31 11:09:11 AEDT by Anna McConville
Updated	2019-11-15 14:43:26 AEDT by Anna McConville
Location	-32.9559863359, 151.588181667
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	11:09

Box Details

Nestbox Number	50
Tree Species	Tallowwood
Box Type	Bat - single chamber panel box
Aspect	108

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No
OccupationComments	3.1m

Media

Box Photo

yes, 51, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 11:22:55 AEDT by Anna McConville
Updated	2019-12-18 06:19:08 AEDT by Anna McConville
Location	-32.955555087, 151.58835073
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	11:22

Box Details

Nestbox Number	51
Tree Species	Stringybark/Mahogany
Box Type	Bat - single chamber panel box
Aspect	106

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	Yes
What sort of repairs?	New shadecloth
Repairs complete?	Yes
Occupation Evidence?	No
OccupationComments	3m

Media

Box Photo

52, Tallowwood

Project	Teralba Quarry
Created	2019-10-31 11:27:39 AEDT by Anna McConville
Updated	2019-11-15 14:44:39 AEDT by Anna McConville
Location	-32.9557171092, 151.587492759
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	11:27

Box Details

Nestbox Number	52
Tree Species	Tallowwood
Box Type	Bat - single chamber panel box
Aspect	106

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No
OccupationComments	3.6m

Media

Box Photo

yes, 53, Ironbark

Project	Teralba Quarry
Created	2019-10-31 11:34:43 AEDT by Anna McConville
Updated	2019-12-18 06:19:50 AEDT by Anna McConville
Location	-32.9554959946, 151.587826023
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	11:34

Box Details

Nestbox Number	53
Tree Species	Ironbark
Box Type	Bat - single chamber panel box
Aspect	88

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	Yes
What sort of repairs?	Shadecloth
Repairs complete?	Yes
Occupation Evidence?	No
OccupationComments	3.6m

Media

Box Photo

yes, 54, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 11:37:53 AEDT by Anna McConville
Updated	2019-12-18 06:20:34 AEDT by Anna McConville
Location	-32.9553479282, 151.587601723
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	11:37

Box Details

Nestbox Number	54
Tree Species	Stringybark/Mahogany
Box Type	Bat - single chamber panel box
Aspect	116

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	Yes
What sort of repairs?	Shadecloth replaced
Repairs complete?	Yes
Occupation Evidence?	No
OccupationComments	3m

Media

Box Photo

55, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 11:40:59 AEDT by Anna McConville
Updated	2019-12-18 06:20:46 AEDT by Anna McConville
Location	-32.9551550187, 151.587236356
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	11:41

Box Details

Nestbox Number	55
Tree Species	Stringybark/Mahogany
Box Type	Bat - single chamber panel box
Aspect	132

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No
OccupationComments	2.9m

Media

Box Photo

56, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 11:43:01 AEDT by Anna McConville
Updated	2019-12-18 06:20:57 AEDT by Anna McConville
Location	-32.9550843174, 151.587103922
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	11:43

Box Details

Nestbox Number	56
Tree Species	Stringybark/Mahogany
Box Type	Bat - single chamber panel box
Aspect	118

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	3m

Media

Fauna Video or Photo Recorded	No

Box Photo

57, Ironbark

Project	Teralba Quarry
Created	2019-10-31 11:47:50 AEDT by Anna McConville
Updated	2019-11-15 14:42:18 AEDT by Anna McConville
Location	-32.9551152047, 151.587193441
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	11:47

Box Details

Nestbox Number	57
Tree Species	Ironbark
Box Type	Bat - single chamber panel box
Aspect	102

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No
OccupationComments	3.6m

Media

Box Photo

58, Ironbark

Project	Teralba Quarry
Created	2019-10-31 13:02:53 AEDT by Anna McConville
Updated	2019-12-18 06:21:39 AEDT by Anna McConville
Location	-32.9539331468, 151.594985929
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	13:02

Box Details

Nestbox Number	58
Tree Species	Ironbark
Box Type	Squirrel Glider
Aspect	13

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Glider nest. 3.5m

Media

Fauna Video or Photo Recorded	No

Box Photo

59, Ironbark

Project	Teralba Quarry
Created	2019-10-31 12:59:56 AEDT by Anna McConville
Updated	2019-12-18 06:22:26 AEDT by Anna McConville
Location	-32.953669536, 151.595068742
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	12:59

Box Details

Nestbox Number	59
Tree Species	Ironbark
Box Type	Squirrel Glider
Aspect	12

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	Old 2.6m

Media

Fauna Video or Photo Recorded	No

Box Photo

60, Tallowwood

Project	Teralba Quarry
Created	2019-10-31 12:56:26 AEDT by Anna McConville
Updated	2019-11-15 14:39:45 AEDT by Anna McConville
Location	-32.9532157397, 151.595343752
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	12:56

Box Details

Nestbox Number	60
Tree Species	Tallowwood
Box Type	Squirrel Glider
Aspect	2

Checking Results

Check Method	Nestbox camera
Pests?	Yes
Pest Species	Wasps
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Accurate
OccupationComments	3.1m

Media

Fauna Video or Photo Recorded	No

Box Photo

61, Tallowwood

Project	Teralba Quarry
Created	2019-10-31 12:53:41 AEDT by Anna McConville
Updated	2019-11-15 14:43:43 AEDT by Anna McConville
Location	-32.9534947314, 151.595147532
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	12:53

Box Details

Nestbox Number	61
Tree Species	Tallowwood
Box Type	Squirrel Glider
Aspect	78

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Glider nest. 2.1m

Media

Fauna Video or Photo Recorded	No

Box Photo

62, Ironbark

Project	Teralba Quarry
Created	2019-10-31 13:07:38 AEDT by Anna McConville
Updated	2019-11-15 14:46:15 AEDT by Anna McConville
Location	-32.9538268224, 151.594838994
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	13:07

Box Details

Nestbox Number	62
Tree Species	Ironbark
Box Type	Squirrel Glider
Aspect	116

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Glider nest. 3.1m

Media

Fauna Video or Photo Recorded	No

Box Photo

63, Ironbark

Project	Teralba Quarry
Created	2019-10-31 13:12:55 AEDT by Anna McConville
Updated	2019-11-15 14:46:45 AEDT by Anna McConville
Location	-32.9532326712, 151.595009146
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	13:12

Box Details

Nestbox Number	63
Tree Species	Ironbark
Box Type	Squirrel Glider
Aspect	118

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Old. 4m

Media

Fauna Video or Photo Recorded	No

Box Photo

64, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 13:44:10 AEDT by Anna McConville
Updated	2019-12-18 06:23:22 AEDT by Anna McConville
Location	-32.953203083, 151.594958352
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	13:44

Box Details

Nestbox Number	64
Tree Species	Stringybark/Mahogany
Box Type	Squirrel Glider
Aspect	62

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Glider nest

Media

Fauna Video or Photo Recorded	No

Box Photo

65, Ironbark

Project	Teralba Quarry
Created	2019-10-31 13:47:54 AEDT by Anna McConville
Updated	2019-11-15 14:42:30 AEDT by Anna McConville
Location	-32.9528494925, 151.594363991
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	13:47

Box Details

Nestbox Number	65
Tree Species	Ironbark
Box Type	Squirrel Glider
Aspect	56

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Glider nest 3.6m

Media

Fauna Video or Photo Recorded	No

Box Photo

66, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 13:52:42 AEDT by Anna McConville
Updated	2019-11-15 14:41:44 AEDT by Anna McConville
Location	-32.9528294178, 151.594148409
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	13:52

Box Details

Nestbox Number	66
Tree Species	Stringybark/Mahogany
Box Type	Squirrel Glider
Aspect	8

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	4m

Media

Fauna Video or Photo Recorded	No

Box Photo

67, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 13:59:41 AEDT by Anna McConville
Updated	2019-11-15 14:42:55 AEDT by Anna McConville
Location	-32.9525996698, 151.593798297
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	13:59

Box Details

Nestbox Number	67
Tree Species	Spotted Gum
Box Type	Squirrel Glider
Aspect	0

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No

Media

Box Photo

68, Spotted Gum

Project	Teralba Quarry
Created	2019-10-31 13:56:53 AEDT by Anna McConville
Updated	2019-11-15 14:41:03 AEDT by Anna McConville
Location	-32.9524389049, 151.593921846
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	13:56

Box Details

Nestbox Number	68
Tree Species	Spotted Gum
Box Type	Squirrel Glider
Aspect	256

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaf nest
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	Glider nest. 3.7m

Media

Fauna Video or Photo Recorded	No

Box Photo

69, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 14:11:28 AEDT by Anna McConville
Updated	2019-11-15 14:47:55 AEDT by Anna McConville
Location	-32.9524363065, 151.593765691
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	14:11

Box Details

Nestbox Number	69
Tree Species	Stringybark/Mahogany
Box Type	Squirrel Glider
Aspect	96

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	Yes
OccupationEvidenceType	Leaves (loose)
Fauna Species Observed	None
Number of fauna Species	0
Count Accuracy	Estimate
OccupationComments	3.4m

Media

Fauna Video or Photo Recorded	No

Box Photo

70, Stringybark/Mahogany

Project	Teralba Quarry
Created	2019-10-31 15:38:46 AEDT by Anna McConville
Updated	2019-11-15 14:40:32 AEDT by Anna McConville
Location	-32.9655874288, 151.584622543
Survey Year	2019

Job Details

Nestbox monitoring	
Job Number	74
Job Name	Teralba quarry nest boxes
Observer Name	Anna
Date	2019-10-31
Time	15:38

Box Details

Nestbox Number	70
Tree Species	Stringybark/Mahogany
Box Type	Bat - single chamber panel box
Aspect	90

Checking Results

Check Method	Nestbox camera
Pests?	No
Repairs required?	No
Occupation Evidence?	No
OccupationComments	Termite trail going thru box

Media

Box Photo

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Appendix 3

2019 T.E.N.T.A.C.L.E. Incorporated Rehabilitation Report

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T.E.N.T.A.C.L.E INC.

The Education Network Training Applying Conserving Landbased Ecosystems

Bushland Regeneration Service

ABN: 39 738 451 129

Coordinator & Director – Christy Woolcock

Treasurer – Sue McDonnell

METROMIX TERALBA BUSH REGENERATION

Annual Report
2019

Prepared by Alexander Oates-Power

Table of Contents

INTRODUCTION

The following report details the aims, objectives, hours worked, herbicide used, observations, bush regeneration activates, revegetation works and areas worked by Tentacle incorporated at Teralba Metromix quarry & biodiversity offset/Biobanking area during 2019.

BACKGROUND

Works by Tentacle Incorporated were carried out in accordance with all current applicable legislation including:

- Environmental Protection and Biodiversity Conservation Act 1999
- Pesticides Act 1995
- Protection of Environment Operations Act 1997
- National Parks and Wildlife Act 1974
- Threatened Species Conservation Act 1995
- Lake Macquarie City Councils Local Environmental Plan 2012

All works were compliant with the conditions of the National Parks and Wildlife Services checklist, for bush regeneration activities in the habitat of threatened species, endangered populations and endangered ecological communities.

Bush regeneration techniques applied were conformed to the best practice guidelines outlined within the Bush Regenerators handbook (National Trust of Australia, NSW 1991).

The rehabilitation works aim to improve the overall natural condition of the site by controlling invasive weed species. The rehabilitation of native vegetation will increase biodiversity within the designated area. Improved native vegetation communities will also protect waterways from increased sedimentation by enhancing erosion control and protecting and conserving the habitat for native and threatened flora and fauna. The works will improve the overall site condition encouraging an increase in native biodiversity.

AIMS

The aims of the project are to restore and maintain ecosystem health by aiding the natural regeneration of indigenous plants and their communities. To manage the habitat for increased native biodiversity across the site by reducing the population and abundance of weed species.

These works are performed in the best interest of Metromix's BioBanking initiative by maintaining areas of healthy vegetative status and improving those that are degraded.

The aims of the project are to reduce noxious weeds, Environmental weeds, Weeds of National Significance and target weeds that were identified by the Tentacle team.

OBJECTIVES

The Objectives of the project are to remove target weed species allowing the increase of biodiversity of endemic species using industry standard bush regeneration. To regenerate an area that has been prepared by Metromix for the planting of approximately 1090 native plant species, continuously monitor the health and growth of those plants and attend to them when required until they are established. To prepare large infestations of Lantana for splatter gunning and to carry out splatter gunning on those infestations.

To continually maintain and monitor areas that have been previously weeded and to improve the zones categorized by Eco Logical Australia in their Biobank Agreement Credit Assessment report of 2014.

HOURS WORKED

A total of **878.5** hours have been worked this year performing environmental restoration and bush regeneration activities during 2019.

HERBICIDE USED

Approximately **5.185** litres of Roundup Biactive® Herbicide has been used for the treatment of woody and other environmental weeds. Roundup Biactive® Herbicide was selected as the preferred form of chemical control as it designed to be used in environmentally sensitive areas.

OBSERVATIONS

A number of observations have been made this year by the Tentacle team to give an indication of the diverse fauna living in the area.

Common Name	Scientific name
Bell Miner	*Manorina melanophrys*
Brown Thornbill	*Acanthiza pusilla*
Eastern Dwarf Tree Frog	*Litoria fallax*
Eastern Rosella	*Platycercus eximius*
Eastern Spinebill	*Acanthorhynchus tenuirostris*
Eastern Whipbird	*Psophodes olivaceus*
Galah	*Eolophus roseicapillus*
Golden Whistler	*Pachycephala pectoralis*
Grey Fantail	*Rhipidura albiscapa*
King Parrot	*Alisterus scapularis*
Kookaburra	*Dacelo novaeguineae*
Laughing Kookaburra	*Dacelo novaeguineae*
Raven	*Corvus coronoides*
Red fox	*Vulpes vulpes*
Red-browed Finch	*Neochmia temporalis*
Rufous Fantail	*Rhipidura rufifrons*
Satin Bowerbird	*Ptilonorhynchus violaceus*
Superb Fairy-wren	*Malurus cyaneus*
Swamp Wallaby	*Wallabia bicolor*
Wedge-tailed Eagle	*Aquila audax*
Welcome Swallow	*Hirundo neoxena*
White-bellied Sea-Eagle	*Haliaeetus leucogaster*
White-browed Scrubwren	*Sericornis frontalis*
Wonga Pigeon	*Leucosarcia picata*
Yellow-tailed Black-Cockatoo	*Calyptorhynchus funereus*

BUSH REGENERATION

During this year a number of environmental restoration and bush regeneration activities were performed. Clearings were made throughout heavily infested areas of Lantana to gain better access for splatter gunning to take place. Large infestations of lantana were splatter gunned the months of May and October, the splatter gunning was successful in reducing the density of lantana in those areas however they will need secondary treatment in the following year to further reduce the infestations.

Primary, secondary and maintenance weeding was performed in sections throughout the site (see Figure 3) targeting primarily Lantana wild tobacco and Crofton, Crofton was hand removed and rafted before it had the chance to set seed, Lantana and wild tobacco were cut and painted with glyphosate and rafted. A section of pampas grass was treated adjacent to the planted revegetation area.

Where there were dense infestations of Lantana but also an abundance of native flora present it was determined the best course of action was to hand remove the Lantana to eliminate the risk of off-target poisoning. Other weeds treated included wild tobacco, pampas grass and fireweed.

Weeds treated this year include:

Blackberry (*Rubus fruticosus*)	Green cestrum (*Cestrum parqui*)
Castor oil plant (*Ricinus communis*)	Paspalum (*Paspalum dilatatum*)
Crofton weed *(Ageratina adenophora*)	Asparagus Fern (*Asparagus aethiopicus*)
Lantana (*Lantana camara*)	Cassia (*Senna pendula var. glabrata*)
Pampas grass (*Cortaderia selloana*)	Fireweed (*Senecio madagascariensis*)
Small Leaf Privet (*Ligustrum sinense*)	Costal Morning Glory (*Ipomoea cairica*)
Wild tobacco (*Solanum mauritianum*)	Chinese Tallow Tree (*Triadica sebifera*)

TETRATHECA

Ongoing monitoring of the *Tetratheca juncea* translocation area was carried out as this year. A sweep was done through the area to ensure no weeds had emerged and to monitor the health of the Teratheca. A few Lantana seedlings were hand removed from the area. The Tetratheca have continued to maintain healthy with no new plants spotted within the site.

Future monitoring of the Tetratheca will be carried out in 2020 to observe any changes in the population of the plants.

Figure 1: A healthy *Tetratheca juncea* plant in flower.
Date taken: 22/08/2019

REVEGETATION

An assortment of 1090 native tree, shrub, and grass species were planted in a section located in the western side of the Metromix Terlba site (see Figure 3), as part of Metromix's rehabilitation program. Before planting was commenced Global Soil Systems spread a seed mix across the prepared revegetation area, consisting of native plant seeds, fertilizer and non-germinating oats. Since the seeds were spread a considerable amount of seedlings have started to emerge.

A number of the assorted native trees, shrubs, and grass species that were planted in were badly damaged and/or killed due to fauna eating the plants. During September wire guards were constructed and placed around each plant to combat this issue. Trees and shrubs were prioritized as a higher percentage of them were effected and they are less likely to regenerate after being eaten by the animals.

Additionally the product D-ter was spread across the border of the revegetation area in attempt to stop the offending fauna from entering the area. Seasol was also watered onto the plants to help with stress that the plants were undergoing and to promote regrowth.

The guards have been successful in protecting the plants from fauna feeding on them. The plants damaged by the animals have shown regeneration and have grown significantly since the guards were fixed in place. A number of days were spent watering throughout long periods when no rain had occurred to give the plants the best chance at survival.

The areas planted out in 2017 and 2018 have continued to thrive, the plants have grown significantly with minimal losses since the plantings were completed. Small amounts of weeds have surfaced and will require treating in 2020 before they have the opportunity to develop and spread seeds across the site.

Species List

The species and number of plants planted this year include:

Trees

Common Name	Scientific Name	Number Planted
Spotted Gum	*Corymbia maculata*	50
White Mahogany	*Eucalyptus acmenoides*	50
Grey Ironbark	*Eucalyptus paniculata*	50
Broad-leaved White Mahogany	*Eucalyptus umbra*	50
Smooth-barked Apple	*Angophora costata*	50

Shrubs

Common Name	Scientific Name	Number Planted
Hickory Wattle	*Acacia implexa*	120
Prickly Moses	*Acacia ulicifolia*	120
Prickly Shaggy-pea	*Podolobium ilicifolium*	120

Grasses

Common Name	Scientific Name	Number Planted
Wattle Mat-rush	*Lomandra filiformis*	120
Wiry Panic	*Entolasia stricta*	120
Cogon Grass	*Imperata cylindrical*	120
Kangaroo Grass	*Themeda australis*	120

Figure 2: All of the plants before being planted.
Date taken: 30/04/2019

AREAS WORKED

Figure 3: Map depicting the areas worked during 2019.

	Areas Worked
	Revegetation Area

N

RECOMMENDATIONS

Continued primary weeding in the areas where heavy infestations of lantana remain will be required in the following year, in addition to reducing the density of weeds across the whole site along with treating the condensed sections of lantana that remain were splatter gunning took place this year. Secondary and maintenance weeding will need to be performed across the site in 2020 to ensure the weeds do not retake the areas worked.

Regular inspections of the planted revegetation areas will be carried out to identify whether weed infestations need to be addressed. Further pampas grass plants (*Cortaderia selloana*) require removing throughout the site as some plants still remain, it is best that they are removed before mid-March to late May as this is the time they set seed.

It is recommended that maintenance weeding is preformed throughout the bushland north of Rhondda road as no work has been performed in this section since 2017, as extensive amounts of weeds were removed from this area it is likely that weeds have started to appear from the seed bank within the soil. It is more time effective to remove the weeds while they are seedlings before they have the chance to overrun the areas previously worked.

Further inspections of the Tetratheca will need to be carried out next year to observe any changes in the health and population of the plants.

CONCLUSION

In conclusion the aims and objectives have been met, the removal of target weed species allowing the increase of biodiversity of endemic species has been achieved. A great deal of Lantana and other target weeds have been cleared this year, creating a more sustainable ecosystem within the treated areas. A number of new fauna species have been observed this year showing the great diversity within the site and surrounding areas.

Further treatment of weeds is required throughout the entire site, secondary and maintenance weeding will need to be done next year in the areas worked to ensure that the weeds removed do not have the chance to re-establish in the clears zones. Primary weeding will need to be conducted in the more heavily infested areas throughout the site.

The planting that was done this year was overall successful with 85% of the plants surviving. While there were some losses to the plants due to fauna feeding on them, the plant guards that were constructed helped the plants to regenerate without being further damaged. The seeds spread by Global Soil Systems have been successful with large amounts of seedlings starting to appear.

The Tetratheca juncea that were transplanted have continued to thrive with no new reported deaths. Further monitoring will be completed in the future to see whether the Tetratheca has populated the surrounding areas and to see whether any deaths have occurred.

PHOTO DOCUMENTATION

Figure 4: Area of Lantana being treated with the use of a splatter gun.
Date taken: 16/10/2019

Figure 5: Area of Lantana before being treated.
Date taken: 16/10/2019

Figure 6: Area of Lantana after being treated with a splatter gun.
Date taken: 11/12/2019

Figure 7: Area of Lantana before being treated.
Date taken: 16/10/2019

Figure 8: Area of Lantana after being treated with a splatter gun.
Date taken: 11/12/2019

Figure 9: Area of Lantana before being treated
Date taken: 16/10/2019

Figure 10: Area of Lantana after being treated with a splatter gun.
Date taken: 11/12/2019

Figure 11: The revegetation area planted out this year.
Date taken: 11/12/2019

Figure 12: Plant guard constructed to deter fauna.
Date taken: 11/12/2019

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Appendix 4

2019 Austral Archaeology Field Survey Letter Report

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AUSTRAL ARCHAEOLOGY

Reference: 1905
7 March 2019

Mr Nick Warren
Senior Environmental Consultant
RW Corkery & Co Pty Ltd
Level 1, 12 Dangar Road
Brooklyn NSW 2083

Dear Nick,

Re: Teralba Quarry; Aboriginal Archaeological Field Survey Letter Report

This letter report documents the results of an archaeological inspection undertaken by Austral Archaeology (Austral) on behalf of Metromix Pty Ltd prior to vegetation clearance and construction of a new haul road associated with the expansion of the extraction area for the Teralba Quarry.

The overall project was approved as a development under Part 3A of the *Environmental Planning and Assessment Act 1979* (since repealed). The current works relate to works approved through a modification to the existing approval via a transitional arrangement and with approval made on 16 April 2018 (Application Number MP 10_0183 Mod 1).

1. FIELD SURVEY METHODOLOGY

The site inspection was undertaken by David Marcus (Director, Austral Archaeology) on Monday 25 February 2019 with assistance from the following representatives of Aboriginal stakeholder groups:

- Tracey Howie (Guringai Tribal Link Aboriginal Corporation)
- Tori Leven (Awabakal Descendants Traditional Owners Aboriginal Corporation)
- Jackson Walker (Awabakal Traditional Owners Aboriginal Corporation)
- Dylan Newman (Kawul/Wonn1 Sites)
- Ashley Sampson (Cacatua Cultural Services)
- Norm Archibald (Biriban Local Aboriginal Land Council)

The location of the heritage monitoring works is shown on Figure 1. Prior to the commencement of the site inspection, land either side of the existing track had been subject to vegetation clearance to provide optimum ground surface visibility.

The site inspection was carried out on foot, with the participants spaced between 1 and 2 metres apart along two transects. The first transect ran west to east along the northern side of the existing track, while the second transect ran east to west along the southern side of the existing track (Figure 2).

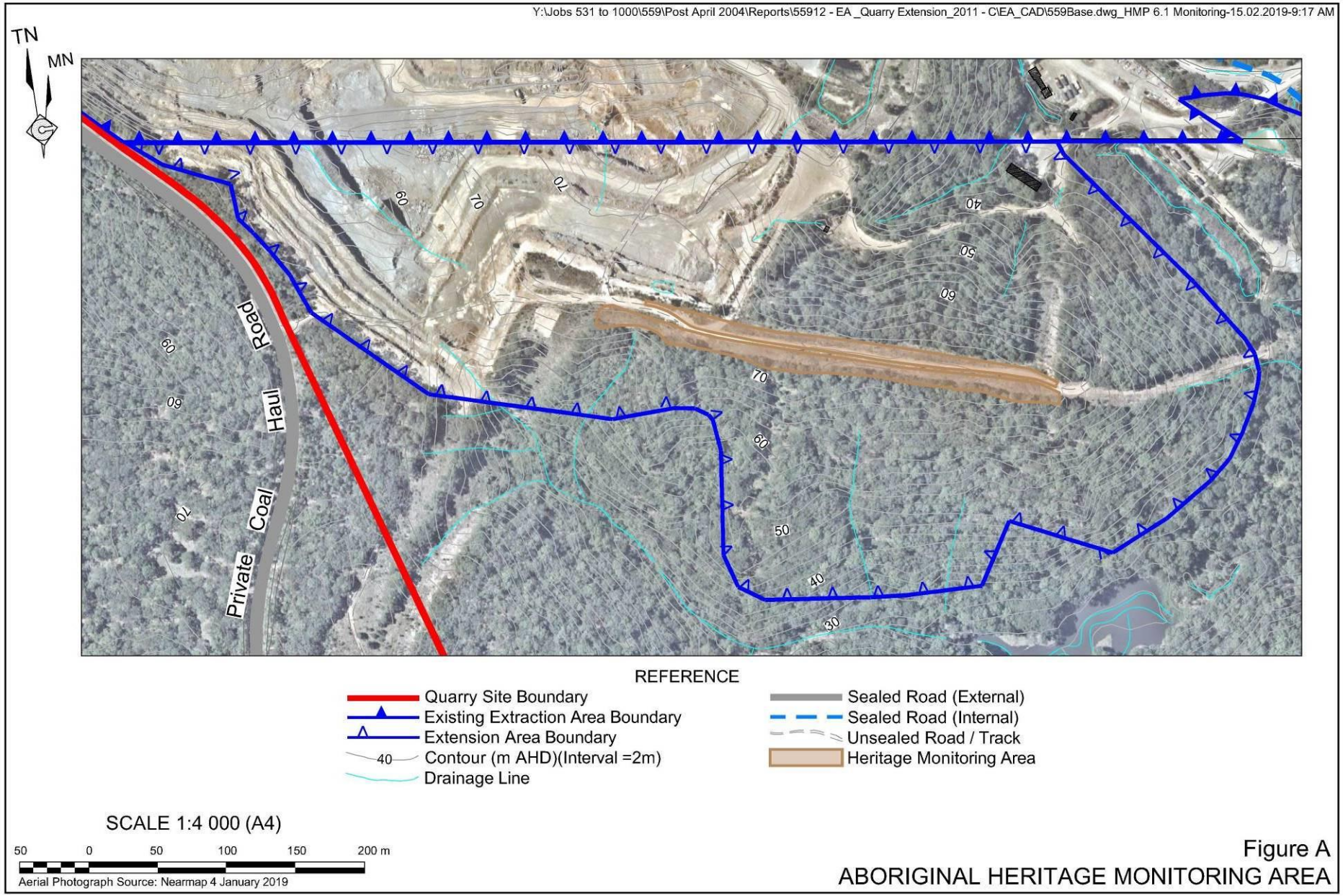

Figure 1 **Area of Aboriginal site inspection (Provided by RW Corkerys Pty Ltd).**

Figure 2 **Transect data from GPS showing route of survey.**

2. SURVEY RESULTS

The survey was conducted along the crest of a spur of a narrow ridgeline extending eastwards. Land to the west and north of the study area has already been subject to quarrying, isolating the ridgeline from the surrounding topography. The study area consisted of the flatter, upper part of the ridgeline over an area of no wider than approximately 25 metres, with the land dropping off sharply either side of the flattened crest. The area has already been subject to significant impacts with the construction of an access track along the centre of the ridgeline, and the installation of poles to support powerlines which also run along the crest of the hill. It is understood that the electrical company operating the powerlines also undertake regular vegetation clearance within the study area (Figure 3).

Figure 3 East facing view looking along survey area. Note powerlines running along ridge.

Soils along the western end of the ridgeline had been eroded down to the underlying sandstone bedrock (Figure 4), with a thin, light grey silty clay soil appearing in areas subject to less erosion, containing frequent inclusions of shale and ironstone fragments. One Aboriginal object, Artefact 1, was found on this soil profile (Figure 5).

Figure 4 North facing view showing general surface visibility at western end of survey area.

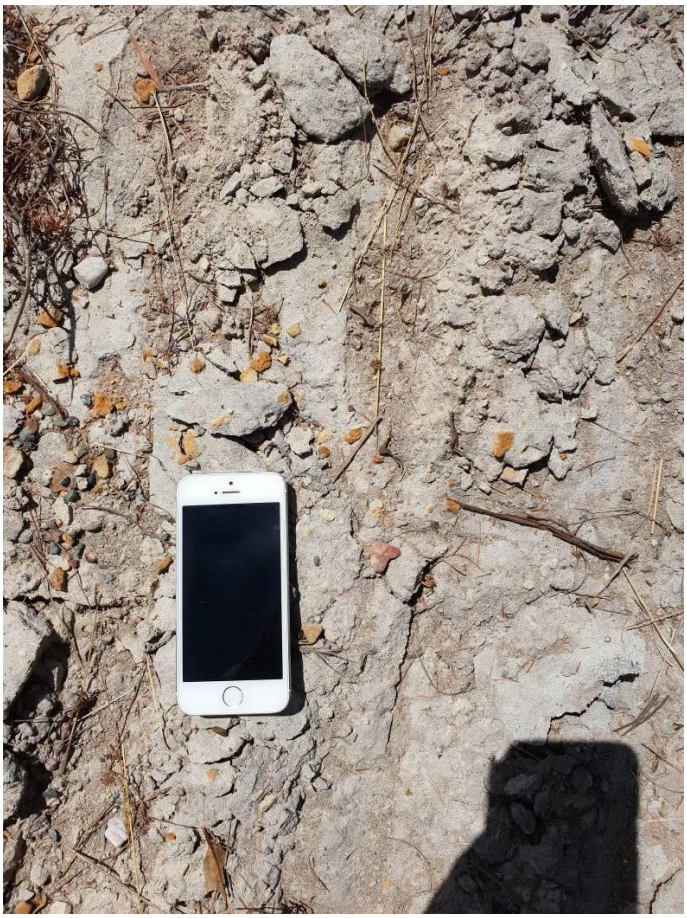

Figure 5 General surface visibility at location of Artefact 1.

Figure 6 **West facing view along survey area looking towards location of Artefact 1 (below traffic cone).**

While the western parts of the ridgeline were highly eroded, where vegetation was present adjacent to the eastern parts of the ridgeline, a remnant A-horizon soil was present consisting of a loose, light greyish-brown silty clay containing frequent inclusions of shale and humic material (Figure 7 and Figure 8). A second potential Aboriginal object, Artefact 2, was identified from this soil profile (Figure 9).

Following the completion of the field survey, both artefacts were collected and removed from the impact area with the verbal agreeance of all Aboriginal representatives who participated in the fieldwork.

Figure 7 West facing view looking along northern side of survey area.

Figure 8 North-east facing view showing surface visibility at eastern end of transect.

Figure 9 General view showing surface visibility at location of Artefact 2.

3. ARTEFACT ANALYSIS

A total of two artefacts were identified during the course of archaeological survey.

Artefact 1 was collected at the following coordinates:

- E 367960, N 6352012 (GDA, Zone 56)

The artefact consists of a silcrete distal flake fragment measuring 15 millimetres in length, 14 millimetres wide, and 6 millimetres thick. There is no use wear or retouch present on the artefact, however it has the appearance of having been heat-treated.

Artefact 2 was collected at the following coordinates:

- E 367988, N 6351922 (GDA, Zone 56)

The artefact consists of a possible chert core measuring 42 millimetres in length, 29 millimetres wide and 15 millimetres thick. The core has two probable flake scares while the location of the platforms for these scars has been subject to crushing, removing any actual evidence of knapping. The core demonstrates evidence of heat-shatter, with a light grey/white colour which indicates burning. However, blackening on the artefact suggests that this heating may have been caused by exposure to bushfires rather than intentional heating. The small size of the core and flake fragments, and the lack of cortex present indicates a later stage of stone artefact manufacturing.

Figure 10 **Front side of artefacts.**

Figure 11 **Rear side of artefacts.**

4. REVIEW OF ABORIGINAL CULTURAL HERITAGE INDUCTION

In addition to undertaking the site survey, the archaeologist and representatives of the Aboriginal stakeholder groups were offered an opportunity to review the Aboriginal cultural heritage package which had been prepared to form part of the overall site induction package for employees and contractors working on the mine site.

In summary, the attendees determined that the proposed induction is well-prepared and explains all legislative requirements, including outlining detailed procedures for handling the unexpected finds process and showing examples of the types of cultural material which may be identified. Verbal feedback was provided by the Aboriginal stakeholders supporting the inclusion of the presentation in the induction package.

5. RECOMMENDATIONS

The following recommendations are based on the requirements of the existing management plan, and legislative requirements of the project in accordance with the *Environmental Planning and Assessment Act 1979*:

1) The pedestrian survey identified all Aboriginal heritage values contained within the study area and no further investigative actions are required in this regard.

2) All artefacts identified during the site survey should be reburied in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).

3) Provide a copy of this letter report to the Office of Environment and Heritage, and all relevant Aboriginal stakeholders.

Please do not hesitate to contact me on 0417 084 396 if you wish to discuss any aspect of this letter report.

Yours sincerely,

David Marcus

Director

Austral Archaeology

M: 0417 084 396

P: 02 9568 6701

E: davidm@australarch.com.au

Appendix 5

2019 Community Consultative Committee Meeting Minutes

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MINUTES OF MEETING
TERALBA QUARRY
COMMUNITY CONSULTATIVE COMMITTEE (CCC)

DATE: Wednesday 8 May 2019

VENUE: Club Macquarie, 458 Lake Rd, Argenton

MEETING COMMENCED: 4.04pm

PRESENT:

Member Name	Organisation
Margaret Macdonald-Hill (MMH)	Independent Chairperson
Colin Wright (CW)	Community Representative
Richard Metcalf (RM)	Teralba Public School
Sara Lee (SL)	Metromix
Mo Yunusa (MY)	Metromix

IN ATTENDANCE:

Name	Organisation
Lisa Andrews	Independent Minute Taker

APOLOGIES:

Name	Organisation
Cr Wendy Harrison	Lake Macquarie City Council

ITEM	ACTION
1.0 Welcome and Introductions MMH, opened the meeting at 4.04pm and welcomed those present.	
2.0 Declaration of Interest MMH advised that she was appointed by the Secretary of the Department of Planning and Environment as the Independent Chairperson for Teralba Quarry and that she is no longer a Board Member of the Mine Subsidence Board, following its disbandment on 31 December 2018.	**No changes to members' previously made declarations**
3.0 Confirmation of Previous Minutes MMH asked that the previous minutes of Wednesday 17 October 2018 be confirmed.	**Moved: RM** **Seconded: CW**
4.0 Business Arising from Previous Minutes Biodiversity – A project approval modification was granted on 16/4/18 for the Teralba Quarry regarding the Biodiversity Offset Strategy, Rehabilitation and Rehabilitation conditions. Biodiversity credits were retired on 21/12/18, which will allow for the continued extraction of Stage 1 and 2 in the southern extension area.	

5.0 Correspondence 8/5/19 – Chair's Annual Report of Activities of the CCC submitted to DP&E. (This document will be placed on the DP&E website.)	
6.0 Reports/Updates • The CCC members were provided with a hard copy of the Metromix presentation. • The Department of Planning conducted a site inspection on 9/11/18 to view the operations, water management system, extraction area, air emission management and rehabilitation. Feedback from the tour was positive, in particular, how mud leaving the site is managed and the rehabilitation area. • The 2018 summary activities was presented: o Sales – 471,984 tonnes o Number of blasts was 18 o Continued financial support to Teralba Primary School, Teralba Bowling Club and the Variety Bash o Community Complaints – 1 (A noisy truck, which has since been removed from operations) o Non Compliance – the weather station was vandalised and hence out of action for 10 days while parts were sourced. The fence has been repaired and a bigger lock placed on the gate. o Ongoing monitors of water, air, noise, blasting and transport continues. o The Lower Level Management Plan is in place. o Ongoing rehabilitation and weeding program. o Extraction – approximately 615,000t was extracted, of which 79,000t was overburden material. o Rehabilitation – a total of 480 tree saplings and 400 shrubs were planted in the southern portion of the quarry. o The 2018 Annual Environmental Review was submitted on 29 March 2019 to the Department and is available on the Metromix website: http://www.metromix.com.au/files/4415/5702/3691/Teralba_Quarry_-_Annual_Review_2018_-_Main_Text.pdf • The 2019 year to date - summary of activities was presented: o Sales 149,107t compared to 133,982t last year to date. o Number of blasts YTD March = 4 o No Community complaints. o Non-Compliance - Access to the Margaret Street sampling point was lost in January. A replacement sampling point was established on York Street (at the school), accordingly sampling resumed in February. o A high volume air sampler recorded an exceedance in the 24hr PM10, which was caused by bush fire activity in the area and wind conditions. o Truck Movements – east through Teralba are 1745 to date and west along Rhondda Rd is 2,863 to date. o Rehabilitation – comparison photographs were shown to members indicating the success of the growth over a surface area of 7,742m2, with a total of 0.84ha of seed mix and 1,090 plants placed. Discussions ensued regarding the best time of year for successful planting and current weather conditions. o Part of the conditions of the project approval required a heritage assessment of the area not previously disturbed. Consultant - RW Corkery & their archaeologist undertook a survey of the area and after several passes, found 2 artefacts (rocks containing strike marks). o SL advised that several aboriginal groups surveyed the site in February and the induction package prepared by MY for them has been submitted for a CCIA award for heritage management awareness. o An ecologist will be surveying for hollow trees.	**Refer to attached presentation.** **CW provided positive feedback on the photographs and works undertaken.**

7.0 General Business Nil.	
8.0 NEXT MEETING The next meeting will be held on **Wednesday 23 October 2019** at Club Macquarie, Argenton, commencing at 4pm.	

Meeting closed at 4.35pm

MMH thanked all members for their attendance.

MINUTES OF MEETING
TERALBA QUARRY
COMMUNITY CONSULTATIVE COMMITTEE (CCC)

DATE: Wednesday 23 October 2019

VENUE: Club Macquarie, 458 Lake Rd, Argenton

MEETING COMMENCED: 4.03pm

PRESENT:

Member Name	Organisation
Margaret MacDonald-Hill (MMH)	Independent Chairperson
Colin Wright (CW)	Community Representative
Richard Metcalf (RM)	Teralba Public School
Cr Wendy Harrison	Lake Macquarie City Council
Mo Yunusa (MY)	Metromix
Darryn Bosch (DB)	Metromix

IN ATTENDANCE:

Name	Organisation
Lisa Andrews	Independent Minute Taker

APOLOGIES:

Janelle Kerr	Metromix

ITEM	ACTION
1.0 Welcome and Introductions MMH, opened the meeting at 4.03pm and welcomed those present.	DB was introduced to committee members.
2.0 Declaration of Interest MMH advised that she was appointed by the Secretary of the Department of Planning, Industry and Environment as the Independent Chairperson for Teralba Quarry.	**No changes to members' previously made declarations**
3.0 Confirmation of Previous Minutes MMH asked that the previous minutes of Wednesday 8 May 2019 be confirmed.	**Moved: RM** **Seconded: CW**
4.0 Business Arising from Previous Minutes Nil.	
5.0 Correspondence Nil.	
6.0 Reports/Updates 1. Sales - YTD October 395,457 t compared to 382,837 t LYTD	

2. No of Blasts YTD September - 13 Blasts
3. Continued financial support of Teralba Primary School and the Teralba Bowling Club (Sponsored a tournament).
4. Community Complaints Currently – Nil for 2019.
5. On Going Monitoring:
   (i) Water
   (ii) Air
   (iii) Noise
   (iv) Blasting
   (v) Transport; and
   (vi) Meteorological Conditions
6. Non Compliances - In June the result for unfiltered suspended solids exceeded 50mgL. The cause of this was that the water sample was taken after a significant rain event and the water in the Adit Dam was still settling.

2019 Activities

	YTD Sept 2019	**LYTD Sept 2018**
Sales (kt)	395	382
Production (kt)	453	361
Truck Movements		
East through Teralba	6430	7293
West – Rhondda Rd	11736	10585
TOTAL	**18166**	**17878**

Rehabilitation

Photographs were shown of the 2015, 2017, 2018 and 2019 rehabilitation works on site and its progress/comparison between 2018 and 2019.

- Surface Area: 7,742m2
- What was Planted: 0.84Ha of seed mix and 1,090 plants made up of the below species:
  - Corymbia maculata – 50
  - Eucalyptus acmenoides – 50
  - Eucalyptus paniculata – 50
  - Eucalyptus umbra – 50
  - Angophora costata – 50
  - Acacia implexa – 120
  - Acacia ulicifolia – 120
  - Podolobium ilicifolium – 120
  - Lomandra filiformis – 120
  - Entolasia stricta – 120
  - Imperata cylindrica – 120
  - Themeda australis – 120

MY explained that protection around the plants needs to be reinforced due to wallabies eating the tops of the plants. Accordingly, some stocks have been lost and therefore additional planting will be undertaken to compensate for this. Next year's program will be amended to include adjustments for losses.

Stage 2A

Preparations for Stage 2A extraction has begun. Aerial photographs and explanation provided by MY. (See figures in table overpage.)

	Stage 2A – Strip 1	
Geology 2016	**Volume**	**Tonnes**
Overburden	115,962	296,539
Extremely to highly wth	46,135	112,780
Moderately wth	25,083	64,216
Slightly wth to Fresh	32,351	85,730
TOTAL	**219,531**	**560,265**

7.0 General Business

- CW asked what overburden was. MY explained that it was material that was not used for product, however, would be used for capping/rehabilitation.
- CW asked for an explanation of biodiversity credits. MY explained that biodiversity credits are used to offset the loss of biodiversity values for the development of the quarry. To increase the quarry to the next stage biodiversity credits are required (either by monetary contribution, purchasing from the biodiversity bank or sourcing 'like' vegetation in another area) to compensate for the loss of vegetation from the development. Land is held in perpetuity and managed to mitigate weeds, feral pests, etc. WH commented that all developments are obliged to meet these requirements with MMH stating that this is to ensure environmental sustainability.
- CW enquired about the previous dust exceedance and the measurement used. MY explained the measurement (1 billionth of a metre).
- CW asked why Metromix were unable to access the dust monitor in Margaret Street. MY explained this monitor is on private property and they have been unable to gain access from the home owner. Following several attempts, a decision has been made to find an alternate sampling point.

8.0 Next Meeting

MMH advised the committee that complaints concerning quarry operations have been negligible over last few years:

- 2016 – 4 complaints
- 2017 – 1
- 2018 – 0; and
- 2019 – 0 to date.

Accordingly, as the quarry is operating in compliance with its conditions of consent and mindful of community members time as volunteers on the CCC, MMH suggested that the meetings move from bi-annually to annually. Members agreed that this was appropriate on the proviso that a meeting could be called if any issues were to arise. **Agreed.**

RM offered to host the meetings in the Teralba Primary School Library. **Agreed.**

The next meeting will be held on **Wednesday 6 May 2019** commencing at 4pm.

Meeting closed at 4.35pm

As this was the last meeting for 2019 - MMH thanked all members for their attendance and wished them a Merry Christmas and happy, safe & healthy New Year.

Action Items – Nil.

Appendix 6

2019 Community Complaints Register

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2019 Community Complaints

Date	Issue/s	Outcome
January 2019	Nil Received	
February 2019	Nil Received	
March 2019	Nil Received	
April 2019	Nil Received	
May 2019	Nil Received	
June 2019	Nil Received	
July 2019	Nil Received	
August 2019	Nil Received	
September 2019	Nil Received	
October 2019	Nil Received	
November 2019	Nil Received	
December 2019	Nil Received	

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