

# Appendix 2

## Monitoring Data and Records

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8.25 9/10/17



Planning &  
Environment  
Resources & Geoscience

Form S 1

RETURN FOR EXTRACTIVE MATERIALS: YEAR ENDED 30 JUNE 2017

Quote RIMS ID in all correspondence

Quarry Id: 1118 Rims ID: 400066

Operators Name: METROMIX PTY LTD  
Address: PO BOX 1295  
PARRAMATTA  
NSW 2124

Email: bills@metromix.com.au

Quarry Name: TERALBA QUARRY  
Quarry Location: RHONDDA RD

Inquiries please telephone:  
(02) 4931 6435  
Completed or Nil Returns  
Fax - (02) 4931 6776  
Email -  
[mineral.royalty@industry.nsw.gov.au](mailto:mineral.royalty@industry.nsw.gov.au)  
Postal Address (see address below)

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

The return should be completed and forwarded to the **STATISTICAL OFFICER, ROYALTY & ADVISORY SERVICES, NSW PLANNING & ENVIRONMENT, PO BOX 344 HUNTER REGION MAIL CENTRE NSW 2310** on or before **31 October 2017**. 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.

Zane West, Royalties and Advisory Services Manager

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

Typical Geology conglomerate  
Nearest Town to Quarry Teralba  
Local Council Name Lake Macquarie  
Deposited Plan and Lot Number/s of Quarry Lots 182 DP 224037  
Email Address of Operator Bills@metromix.com.au  
Name of Owner or Licensee Metromix  
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 Graem Kenby - 25 Robinson St, Spalding WA 6530

- To the best of my knowledge, the particulars which have been entered in this return are correct and no blank spaces have been left where figures should have been inserted.
- SIGNATURE of PROPRIETOR or MANAGER W. Sanderson DATE 3/10/17
- PERSON to be contacted if queries arise regarding this return William Sanderson
- NAME (Block letters) William Sanderson Telephone 0418 479 087



**SALES During 2016-2017**

Production information may be published in aggregated form for statistical reporting. However, production data for individual operations is kept strictly confidential.

Product	Description	Quantity Tonnes
<b>Virgin Materials</b>		
• <b>Crushed Coarse Aggregates</b>		
Over 75mm		
Over 30mm to 75mm		
5mm to 30mm		
Under 5mm		
Natural Sand		
Manufactured Sand		
Prepared Road Base & Sub Base		
Other Unprocessed Materials		
<b>Recycled Materials</b>		
• <b>Crushed Coarse Aggregates</b>		
Over 75mm		
Over 30mm to 75mm		
5mm to 30mm		
Under 5mm		
Natural Sand		
Manufactured Sand		
Prepared Road Base & Sub Base		6129
Other Unprocessed Materials		
• <b>River Gravel</b>	Conglomerate	
Over 30mm		127124
5mm to 30mm		349343
Under 5mm		
• <b>Construction Sand</b>	Excluding Industrial	161258
• <b>Industrial Sand</b>		
Foundry, Moulding		
Glass		
Other (Specify)		
• <b>Dimension Stone</b>	Building, Ornamental, Monumental	
Quarried in Blocks		
Quarried in Slabs		
• <b>Decorative Aggregate</b>	Including Terrazzo	
• <b>Loam</b>	Soil for Topdressing, Garden soil, Horticultural purposes)	/
• <b>TOTAL SITE PRODUCTION</b>		687725
• <b>Gross Value (\$) of all Sales</b>		16039825
• <b>Type of Material</b>	Conglomerate	
• <b>Number of Full-Time Equivalent (FTE) Employees</b>	Employees: 17	Contractors: 2

Annual Return Form



Table 2E: Total Number of Laden Trucks

TERALBA QUARRY		Month:		Jan-17		
		Daily Total		Westwards Daily		Eastwards Daily
Limits		326		241		85
Actuals						
1		-		-		-
2		-		-		-
3		37		9		28
4		23		13		10
5		21		11		10
6		19		6		13
7		1		-		1
8		-		-		-
9		54		33		21
10		81		52		29
11		61		32		29
12		77		43		34
13		65		36		29
14		14		9		5
15		-		-		-
16		53		32		21
17		81		52		29
18		65		38		27
19		80		42		38
20		53		25		28
21		19		16		3
22		-		-		-
23		102		65		37
24		82		55		27
25		59		42		17
26		-		-		-
27		26		20		6
28		8		5		3
29		-		-		-
30		54		33		21
31		74		41		33

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

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

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

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

\* Condition 2 (9)

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

TERALBA QUARRY		Month:		Jan-17	
		Westwards**		Eastwards**	
		Max Hourly		Max Hourly	
Limits*		28		8	
Actuals					
1		-		-	
2		-		-	
3		-		2	
4		2		2	
5		2		1	
6		-		2	
7		-		-	
8		-		-	
9		3		1	
10		3		-	
11		4		1	
12		1		1	
13		2		3	
14		-		-	
15		-		-	
16		4		-	
17		4		1	
18		4		3	
19		9		1	
20		-		-	
21		3		-	
22		-		-	
23		7		1	
24		5		3	
25		4		1	
26		-		-	
27		3			
28		-		1	
29		-		-	
30		5		2	
31		4		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:		Jan-17	
		Daily Total	Westwards		Eastwards	
			Daily	Max Hourly	Daily	Max Hourly
Limits		305	220	20	85	8
Actuals						
1		-	-	-	-	-
2		-	-	-	-	-
3		35	9	3	26	5
4		19	11	2	8	2
5		18	9	2	9	3
6		17	6	2	11	3
7		1	-	-	1	1
8		-	-	-	-	-
9		47	27	8	20	4
10		75	46	8	29	6
11		53	25	6	28	5
12		72	39	7	33	6
13		57	31	7	26	4
14		11	6	2	5	2
15		-	-	-	-	-
16		45	24	5	21	4
17		70	42	7	28	5
18		52	28	5	24	6
19		64	27	7	37	7
20		47	19	5	28	6
21		11	8	2	3	1
22		-	-	-	-	-
23		87	51	8	36	6
24		65	41	8	24	6
25		44	28	6	16	4
26		-	-	-	-	-
27		17	11	3	6	2
28		4	2	1	2	1
29		-	-	-	-	-
30		39	20	5	19	3
31		60	29	5	31	6

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

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY						Month: Feb-17	
	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		
		6	12	28	20		
Limits	326					241	85
Actuals							
1	84	6	2	5	12	43	41
2	84	4	3	10	10	41	43
3	81	3	5	11	11	38	43
4	25	4	-	2	5	19	6
5	-	-	-	-	-	-	-
6	80	5	2	9	9	56	24
7	77	5	-	7	12	45	32
8	68	3	2	3	10	32	36
9	70	3	2	5	12	52	18
10	89	3	1	9	13	61	28
11	21	4	1	2	4	20	1
12	-	-	-	-	-	-	-
13	79	6	2	3	11	49	30
14	79	5	1	4	13	49	30
15	67	-	9	6	12	36	31
16	71	4	3	7	10	48	23
17	84	5	3	4	13	44	40
18	24	5	-	1	5	22	2
19	-	-	-	-	-	-	-
20	73	5	3	4	14	55	18
21	150	4	-	9	19	106	44
22	166	5	-	10	20	113	53
23	145	4	-	5	20	106	39
24	115	5	-	6	17	78	37
25	38	6	1	3	10	27	11
26	-	-	-	-	-	-	-
27	59	6	4	4	7	46	13
28	32	-	3	6	5	19	13

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

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



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

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

\* Condition 2 (9)

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

TERALBA QUARRY		Month:		Feb-17	
		Westwards**		Eastwards**	
		Max Hourly		Max Hourly	
Limits*		28		8	
Actuals					
1		4		1	
2		7		3	
3		5		6	
4		1		1	
5		-		-	
6		6		3	
7		4		3	
8		3		-	
9		4		1	
10		8		1	
11		1		1	
12		-		-	
13		2		1	
14		3		1	
15		4		2	
16		6		1	
17		3		1	
18		1		-	
19		-		-	
20		4		-	
21		7		2	
22		7		3	
23		4		1	
24		4		2	
25		2		1	
26		-		-	
27		4		-	
28		5		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:		Feb-17		
		Daily Total	Westwards		Eastwards	
			Daily	Max Hourly	Daily	Max Hourly
Limits		305	220	20	85	8
Actuals						
1		71	31	5	40	7
2		67	27	4	40	6
3		62	25	6	37	8
4		15	10	3	5	2
5		-	-	-	-	-
6		64	43	6	21	5
7		63	34	8	29	6
8		60	24	4	36	7
9		60	43	7	17	5
10		76	49	9	27	6
11		11	11	4	0	0
12		-	-	-	-	-
13		68	39	7	29	5
14		65	36	6	29	7
15		52	23	7	29	5
16		54	32	5	22	5
17		72	33	8	39	6
18		14	12	5	2	1
19		-	-	-	-	-
20		61	43	12	18	5
21		133	91	13	42	8
22		148	98	16	50	8
23		132	94	14	38	8
24		100	65	13	35	7
25		26	16	6	10	4
26		-	-	-	-	-
27		45	32	6	13	3
28		23	11	3	12	2

\*\* 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-17
	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	38	1	2	5	6	14	24
2	74	2	4	5	13	56	18
3	57	5	-	4	9	31	26
4	4	2	-	1	1	4	-
5	-	-	-	-	-	-	-
6	82	4	2	6	14	48	34
7	129	3	1	8	18	92	37
8	62	-	5	7	10	32	30
9	106	2	4	10	17	63	43
10	104	4	3	6	19	72	32
11	39	6	-	5	7	32	7
12	-	-	-	-	-	-	-
13	104	3	5	9	13	70	34
14	67	6	1	9	11	40	27
15	28	-	2	7	3	16	12
16	26	1	3	4	4	17	9
17	26	5	2	-	7	20	6
18	3	-	-	-	2	2	1
19	-	-	-	-	-	-	-
20	55	3	5	-	9	38	17
21	142	4	2	6	20	98	44
22	121	3	-	11	17	79	42
23	93	4	3	3	16	60	33
24	75	3	1	2	13	46	29
25	24	4	-	4	5	19	5
26	-	-	-	-	-	-	-
27	81	4	5	4	10	60	21
28	128	3	5	11	17	76	52
29	108	6	-	9	16	69	39
30	89	5	1	6	15	56	33
31	63	5	-	4	9	43	20

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

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

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

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

\* Condition 2 (9)

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

TERALBA QUARRY		Month:	Mar-17
		Westwards**	Eastwards**
		Max Hourly	Max Hourly
Limits*		28	8
Actuals			
1		4	1
2		4	1
3		4	-
4		1	-
5		-	-
6		6	-
7		8	-
8		5	2
9		7	3
10		4	2
11		2	3
12		-	-
13		7	2
14		8	1
15		7	-
16		4	-
17		-	-
18		-	-
19		-	-
20		-	-
21		6	-
22		10	1
23		3	-
24		2	-
25		3	1
26		-	-
27		3	1
28		8	3
29		8	1
30		5	1
31		3	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:		Mar-17	
	Daily Total	Westwards		Eastwards	
		Daily	Max Hourly	Daily	Max Hourly
Limits	305	220	20	85	8
Actuals					
1	30	7	2	23	5
2	63	46	12	17	6
3	45	19	4	26	5
4	1	1	1	-	-
5	-	-	-	-	-
6	69	35	9	34	8
7	114	77	14	37	6
8	52	24	6	28	4
9	90	50	13	40	6
10	91	61	13	30	7
11	26	22	6	4	2
12	-	-	-	-	-
13	87	55	10	32	7
14	49	23	6	26	6
15	19	7	2	12	3
16	18	9	2	9	2
17	19	13	5	6	2
18	3	2	1	1	1
19	-	-	-	-	-
20	47	30	8	17	4
21	130	86	12	44	8
22	105	64	9	41	8
23	83	50	11	33	5
24	66	37	11	29	5
25	13	9	4	4	3
26	-	-	-	-	-
27	68	48	9	20	4
28	109	60	10	49	8
29	91	53	9	38	8
30	75	43	10	32	6
31	51	32	7	19	4

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

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY						Month: <b>Apr-17</b>	
	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	21	3	2	2	6	12	9
2	-	-	-	-	-	-	-
3	56	2	8	6	9	35	21
4	39	2	2	5	7	25	14
5	79	2	5	8	13	40	39
6	91	5	1	5	13	52	39
7	124	4	-	10	17	84	40
8	38	3	1	7	10	28	10
9	-	-	-	-	-	-	-
10	79	4	4	5	12	45	34
11	116	5	-	8	16	81	35
12	99	4	1	10	15	71	28
13	87	3	-	7	11	59	28
14	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-
18	113	2	1	10	17	76	37
19	108	4	-	8	16	76	32
20	110	5	-	5	16	64	46
21	111	4	-	7	13	83	28
22	34	4	1	4	9	26	8
23	-	-	-	-	-	-	-
24	80	-	1	10	12	58	22
25	-	-	-	-	-	-	-
26	121	-	2	7	19	95	26
27	126	3	3	9	20	102	24
28	121	-	5	9	17	98	23
29	33	3	-	5	12	26	7
30	-	-	-	-	-	-	-

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

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

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

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

\* Condition 2 (9)

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

TERALBA QUARRY		Month:		Apr-17	
		Westwards**		Eastwards**	
		Max Hourly		Max Hourly	
	Limits*	28		8	
	Actuals				
	1	1		1	
	2	-		-	
	3	5		1	
	4	5		-	
	5	6		2	
	6	2		3	
	7	8		2	
	8	5		2	
	9	-		-	
	10	3		2	
	11	7		1	
	12	7		3	
	13	6		1	
	14	-		-	
	15	-		-	
	16	-		-	
	17	-		-	
	18	10		-	
	19	5		3	
	20	4		1	
	21	5		2	
	22	3		1	
	23	-		-	
	24	9		1	
	25	-		-	
	26	7		-	
	27	8		1	
	28	7		2	
	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:		Apr-17	
		Daily Total	Westwards		Eastwards	
			Daily	Max Hourly	Daily	Max Hourly
Limits		305	220	20	85	8
Actuals						
1		12	4	4	8	2
2		-	-	-	-	-
3		40	20	6	20	4
4		30	16	5	14	4
5		63	26	7	37	8
6		78	42	8	36	7
7		107	69	11	38	6
8		24	16	6	8	5
9		-	-	-	-	-
10		66	34	7	32	7
11		101	67	12	34	8
12		82	57	10	25	6
13		74	47	8	27	5
14		-	-	-	-	-
15		-	-	-	-	-
16		-	-	-	-	-
17		-	-	-	-	-
18		100	63	14	37	7
19		93	64	11	29	8
20		97	52	10	45	7
21		97	71	10	26	4
22		23	16	6	7	3
23		-	-	-	-	-
24		69	48	8	21	5
25		-	-	-	-	-
26		112	86	16	26	5
27		111	88	16	23	4
28		107	86	14	21	5
29		23	17	9	6	3
30		-	-	-	-	-

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

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY						Month: May-17	
	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	101	2	3	4	13	80	21
2	121	4	2	5	15	91	30
3	105	2	3	12	17	64	41
4	114	2	4	8	18	70	44
5	109	5	1	5	17	75	34
6	39	3	3	8	6	32	7
7	-	-	-	-	-	-	-
8	111	3	5	5	14	77	34
9	88	5	1	6	12	62	26
10	106	6	1	5	17	69	37
11	103	3	1	6	13	69	34
12	74	3	1	4	11	52	22
13	41	4	-	6	7	37	4
14	-	-	-	-	-	-	-
15	79	1	6	4	13	64	15
16	125	4	2	3	17	107	18
17	107	6	2	6	16	92	15
18	117	5	-	7	16	93	24
19	49	4	1	2	8	32	17
20	18	5	-	2	3	17	1
21	-	-	-	-	-	-	-
22	73	3	3	3	12	57	16
23	68	2	3	7	10	49	19
24	62	6	-	5	8	40	22
25	101	5	1	8	13	64	37
26	96	4	2	8	12	86	10
27	42	4	-	3	11	21	21
28	-	-	-	-	-	-	-
29	114	3	2	7	18	93	21
30	105	4	-	8	15	81	24
31	148	3	1	8	18	114	34



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

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

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

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

\* Condition 2 (9)

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

TERALBA QUARRY		Month:		May-17
		Westwards**	Eastwards**	
		Max Hourly	Max Hourly	
Limits*		28	8	
Actuals				
1		4	-	
2		4	1	
3		10	2	
4		7	1	
5		4	1	
6		6	2	
7		-	-	
8		5	-	
9		6	-	
10		5	-	
11		6	-	
12		3	1	
13		6	-	
14		-	-	
15		4	-	
16		2	1	
17		5	1	
18		5	2	
19		-	2	
20		2	-	
21		-	-	
22		3	-	
23		5	2	
24		4	1	
25		6	2	
26		7	1	
27		3	-	
28		-	-	
29		7	-	
30		7	1	
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:		May-17			
		Daily Total		Westwards			Eastwards	
				Daily	Max Hourly		Daily	Max Hourly
Limits		305		220	20		85	8
Actuals								
1		90		69	10		21	5
2		108		79	14		29	6
3		87		48	14		39	8
4		99		56	13		43	8
5		95		62	10		33	8
6		23		18	5		5	1
7		-		-	-		-	-
8		98		64	12		34	6
9		74		48	8		26	4
10		93		56	10		37	8
11		91		57	9		34	7
12		63		42	8		21	5
13		28		24	6		4	1
14		-		-	-		-	-
15		68		53	11		15	4
16		114		97	15		17	4
17		93		79	14		14	5
18		102		80	13		22	4
19		40		25	5		15	4
20		9		8	2		1	1
21		-		-	-		-	-
22		62		46	10		16	3
23		56		39	8		17	4
24		50		29	5		21	4
25		87		52	8		35	6
26		81		72	11		9	2
27		33		12	3		21	8
28		-		-	-		-	-
29		102		81	16		21	4
30		91		68	11		23	5
31		133		99	16		34	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: Jun-17					
	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	119	5	2	11	17	93	26
2	103	3	2	13	13	77	26
3	29	5	-	3	5	21	8
4	-	-	-	-	-	-	-
5	77	2	4	9	11	54	23
6	92	6	-	5	15	72	20
7	44	3	1	7	5	29	15
8	31	1	2	4	5	26	5
9	31	1	3	4	6	28	3
10	13	4	-	1	2	13	-
11	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-
13	71	3	2	4	10	56	15
14	59	6	1	4	12	45	14
15	95	4	3	3	16	72	23
16	111	5	1	3	18	70	41
17	24	4	-	1	7	16	8
18	-	-	-	-	-	-	-
19	45	2	5	3	6	36	9
20	76	3	2	9	11	47	29
21	112	5	1	5	18	67	45
22	82	5	-	2	12	50	32
23	65	3	2	8	9	41	24
24	34	4	-	6	6	30	4
25	-	-	-	-	-	-	-
26	103	3	6	4	17	65	38
27	83	3	1	5	17	57	26
28	114	1	7	9	15	49	65
29	82	6	-	3	14	40	42
30	80	4	1	7	11	49	31

1775

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

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

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

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

\* Condition 2 (9)



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

TERALBA QUARRY		Month:		Jun-17	
		Westwards**		Eastwards**	
		Max Hourly		Max Hourly	
Limits*		28		8	
Actuals					
1		8		3	
2		12		1	
3		2		1	
4		-		-	
5		7		2	
6		4		1	
7		6		1	
8		4		-	
9		3		1	
10		1		-	
11		-		-	
12		-		-	
13		4		-	
14		4		-	
15		2		1	
16		3		-	
17		-		1	
18		-		-	
19		3		-	
20		6		3	
21		4		1	
22		1		1	
23		7		1	
24		6		-	
25		-		-	
26		1		3	
27		4		1	
28		5		4	
29		3		-	
30		5		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:		Jun-17		
		Daily Total	Westwards		Eastwards	
			Daily	Max Hourly	Daily	Max Hourly
Limits		305	220	20	85	8
Actuals						
1		101	78	15	23	7
2		84	59	9	25	5
3		20	13	5	7	3
4		-	-	-	-	-
5		60	39	9	21	5
6		81	62	12	19	3
7		33	19	5	14	3
8		24	19	4	5	2
9		23	21	6	2	1
10		6	6	2	-	-
11		-	-	-	-	-
12		-	-	-	-	-
13		62	47	8	15	5
14		48	34	9	14	4
15		84	62	12	22	4
16		102	61	11	41	8
17		16	9	4	7	3
18		-	-	-	-	-
19		35	26	6	9	2
20		62	36	6	26	5
21		99	55	12	44	7
22		72	41	8	31	4
23		50	27	5	23	5
24		20	16	5	4	2
25		-	-	-	-	-
26		90	55	12	35	7
27		72	47	10	25	7
28		97	36	7	61	8
29		70	28	8	42	6
30		65	36	8	29	6

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

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY						Month:	Jul-17
	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	33	6	1	2	7	15	18
2	-	-	-	-	-	-	-
3	92	3	3	3	16	58	34
4	94	5	-	8	12	61	33
5	82	5	2	5	13	51	31
6	109	1	4	8	14	78	31
7	89	5	-	8	10	55	34
8	48	4	1	4	11	28	20
9	-	-	-	-	-	-	-
10	103	3	4	8	19	57	46
11	93	4	-	8	12	38	55
12	71	5	1	4	10	50	21
13	71	5	-	2	10	39	32
14	86	5	-	6	14	54	32
15	22	3	-	4	3	18	4
16	-	-	-	-	-	-	-
17	62	4	1	6	8	46	16
18	88	4	-	11	11	63	25
19	115	5	4	6	16	62	53
20	98	3	3	8	13	69	29
21	156	1	4	7	20	120	36
22	38	5	4	4	7	29	9
23	-	-	-	-	-	-	-
24	101	2	6	7	15	60	41
25	114	4	1	11	20	57	57
26	130	5	3	10	20	80	50
27	95	5	2	8	16	74	21
28	94	5	2	8	15	73	21
29	23	5	-	1	6	18	5
30	-	-	-	-	-	-	-
31	62	4	5	4	8	42	20

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

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

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

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

\* Condition 2 (9)

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

TERALBA QUARRY		Month:	Jul-17
		Westwards** Max Hourly	Eastwards** Max Hourly
Limits*		28	8
Actuals			
1		1	1
2		-	-
3		1	2
4		6	2
5		4	1
6		7	1
7		6	2
8		2	2
9		-	-
10		7	1
11		3	5
12		4	-
13		2	-
14		6	-
15		3	1
16		-	-
17		5	1
18		10	1
19		3	3
20		7	1
21		6	1
22		3	1
23		-	-
24		4	3
25		6	5
26		7	3
27		6	2
28		6	2
29		1	-
30		-	-
31		3	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:		Jul-17	
		Daily Total	Westwards		Eastwards	
			Daily	Max Hourly	Daily	Max Hourly
Limits		305	220	20	85	8
Actuals						
1		24	7	2	17	5
2		-	-	-	-	-
3		82	50	9	32	8
4		77	46	7	31	5
5		68	38	9	30	5
6		95	65	11	30	6
7		73	41	8	32	7
8		37	19	7	18	5
9		-	-	-	-	-
10		88	43	11	45	8
11		79	29	5	50	8
12		60	39	7	21	4
13		62	30	6	32	7
14		71	39	8	32	8
15		13	10	3	3	1
16		-	-	-	-	-
17		49	34	6	15	3
18		69	45	9	24	6
19		100	50	11	50	8
20		82	54	8	28	5
21		143	108	16	35	8
22		25	17	5	8	3
23		-	-	-	-	-
24		86	48	8	38	7
25		96	44	12	52	8
26		112	65	12	47	8
27		78	59	16	19	4
28		78	59	11	19	4
29		14	9	5	5	2
30		-	-	-	-	-
31		49	30	5	19	4

\*\* 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-17	
	Daily Total	Max Hourly Daily				Westwards Daily	Eastwards Daily
		6pm to 5am	5am to 6am	6am to 7am	7am to 6pm		
		6	12	28	20		
Limits	326					241	85
Actuals							
1	108	3	4	6	17	68	40
2	92	2	3	5	13	52	40
3	93	1	2	9	13	54	39
4	76	5	-	4	11	42	34
5	21	5	-	3	7	21	-
6	-	-	-	-	-	-	-
7	80	1	4	4	12	45	35
8	103	3	-	6	16	69	34
9	83	4	-	6	11	52	31
10	93	3	2	6	12	53	40
11	66	4	-	4	9	45	21
12	20	1	1	7	5	15	5
13	-	-	-	-	-	-	-
14	107	3	2	5	14	77	30
15	111	4	-	8	15	78	33
16	79	3	2	8	15	56	23
17	77	2	1	8	12	41	36
18	99	3	-	7	17	53	46
19	21	4	-	5	4	18	3
20	-	-	-	-	-	-	-
21	127	4	3	1	20	77	50
22	128	4	-	8	19	84	44
23	160	4	-	7	20	107	53
24	132	4	2	5	20	80	52
25	80	2	2	6	14	44	36
26	34	4	1	1	8	14	20
27	-	-	-	-	-	-	-
28	96	4	2	6	16	57	39
29	132	5	2	9	18	85	47
30	174	5	1	7	20	133	41
31	152	2	3	8	20	105	47



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

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

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

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

\* Condition 2 (9)

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

TERALBA QUARRY		Month:		Aug-17	
		Westwards**		Eastwards**	
		Max Hourly		Max Hourly	
	Limits*	28		8	
Actuals					
1		4		2	
2		3		2	
3		7		2	
4		2		2	
5		3		-	
6		-		-	
7		1		3	
8		5		1	
9		6		-	
10		3		3	
11		4		-	
12		5		2	
13		-		-	
14		4		1	
15		7		1	
16		7		1	
17		6		2	
18		6		1	
19		5		-	
20		-		-	
21		1		-	
22		5		3	
23		7		-	
24		4		1	
25		3		3	
26		-		1	
27		-		-	
28		6		-	
29		7		2	
30		5		2	
31		6		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:		Aug-17	
		Daily Total	Westwards		Eastwards	
			Daily	Max Hourly	Daily	Max Hourly
Limits		305	220	20	85	8
Actuals						
1		95	57	11	38	7
2		81	43	7	38	8
3		81	44	6	37	8
4		63	31	7	32	6
5		10	10	7	-	-
6		-	-	-	-	-
7		67	35	8	32	6
8		91	58	10	33	6
9		71	40	7	31	6
10		80	43	9	37	7
11		55	34	6	21	6
12		10	7	5	3	1
13		-	-	-	-	-
14		95	66	12	29	5
15		97	65	12	32	6
16		66	44	12	22	3
17		64	30	7	34	6
18		87	42	9	45	8
19		12	9	4	3	1
20		-	-	-	-	-
21		119	69	12	50	8
22		113	72	16	41	8
23		146	93	14	53	8
24		119	68	13	51	8
25		68	35	8	33	7
26		26	7	3	19	5
27		-	-	-	-	-
28		82	43	13	39	8
29		114	69	13	45	7
30		158	119	16	39	6
31		139	94	16	45	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: Sep-17	
	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		
		6	12	28	20	241	85
Limits	326						
Actuals							
1	114	2	3	5	17	63	51
2	26	5	-	3	5	21	5
3	-	-	-	-	-	-	-
4	141	4	4	12	18	108	33
5	98	5	-	8	11	64	34
6	125	-	2	12	17	83	42
7	108	5	3	12	18	64	44
8	113	3	1	10	16	64	49
9	29	4	1	4	7	24	5
10	-	-	-	-	-	-	-
11	107	2	6	9	14	76	31
12	105	3	1	9	16	80	25
13	73	4	2	7	11	51	22
14	76	4	2	5	11	47	29
15	100	6	1	8	16	66	34
16	23	4	-	3	9	19	4
17	-	-	-	-	-	-	-
18	97	3	5	7	14	53	44
19	117	4	1	12	14	58	59
20	104	4	-	11	16	56	48
21	139	4	-	10	20	107	32
22	97	6	-	7	16	54	43
23	32	4	-	6	8	28	4
24	-	-	-	-	-	-	-
25	86	4	3	4	12	51	35
26	131	4	-	8	20	68	63
27	175	5	-	11	20	107	68
28	132	4	-	10	20	74	58
29	98	4	-	5	15	70	28
30	16	4	1	-	4	14	2

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

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



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

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

\* Condition 2 (9)

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

TERALBA QUARRY		Month:		Sep-17
		Westwards**		Eastwards**
		Max Hourly		Max Hourly
Limits*		28		8
Actuals				
1		4		1
2		3		-
3		-		-
4		12		-
5		6		2
6		11		1
7		8		4
8		5		5
9		4		-
10		-		-
11		9		-
12		6		3
13		5		2
14		5		-
15		6		2
16		2		1
17		-		-
18		5		2
19		9		3
20		8		3
21		8		2
22		3		4
23		6		-
24		-		-
25		4		-
26		4		4
27		5		6
28		6		4
29		5		-
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:		Sep-17	
		Daily Total	Westwards		Eastwards	
			Daily	Max Hourly	Daily	Max Hourly
Limits		305	220	20	85	8
Actuals						
1		103	53	9	50	8
2		14	9	4	5	4
3		-	-	-	-	-
4		121	88	15	33	6
5		81	49	7	32	5
6		111	70	10	41	7
7		88	48	10	40	8
8		96	52	9	44	7
9		17	12	5	5	2
10		-	-	-	-	-
11		90	59	12	31	7
12		90	68	12	22	5
13		59	39	9	20	4
14		65	36	6	29	5
15		83	51	10	32	6
16		13	10	8	3	1
17		-	-	-	-	-
18		82	40	10	42	8
19		97	41	7	56	8
20		85	40	8	45	8
21		121	91	17	30	7
22		83	44	9	39	8
23		19	15	7	4	1
24		-	-	-	-	-
25		75	40	7	35	8
26		116	57	12	59	8
27		157	95	13	62	8
28		115	61	13	54	8
29		86	58	11	28	4
30		9	7	4	2	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:	Oct-17	
		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		81	2	5	7	13	49	32
4		90	2	2	8	11	60	30
5		146	4	-	6	19	115	31
6		133	4	-	6	18	99	34
7		28	4	-	1	7	20	8
8		-	-	-	-	-	-	-
9		61	2	4	4	9	34	27
10		67	1	4	7	10	43	24
11		105	-	7	4	14	72	33
12		126	4	2	8	17	74	52
13		89	4	2	10	11	49	40
14		27	4	-	1	6	21	6
15		-	-	-	-	-	-	-
16		70	2	6	4	12	41	29
17		131	4	1	7	16	63	68
18		113	5	1	4	16	59	54
19		127	5	-	8	20	92	35
20		47	5	1	7	7	36	11
21		18	3	-	1	7	15	3
22		-	-	-	-	-	-	-
23		64	2	5	8	10	37	27
24		94	4	1	6	15	58	36
25		132	4	1	9	17	76	56
26		87	5	-	7	11	44	43
27		51	3	1	3	7	41	10
28		20	5	-	2	3	18	2
29		-	-	-	-	-	-	-
30		114	2	4	6	16	67	47
31		107	5	1	8	14	91	16

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

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

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

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

\* Condition 2 (9)

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

TERALBA QUARRY		Month:		Oct-17
		Westwards**		Eastwards**
		Max Hourly		Max Hourly
Limits*		28		8
Actuals				
1		-		-
2		-		-
3		6		1
4		6		2
5		4		2
6		5		1
7		-		1
8		-		-
9		3		1
10		6		1
11		2		2
12		5		3
13		4		6
14		1		1
15		-		-
16		3		1
17		6		1
18		2		2
19		7		1
20		7		-
21		1		-
22		-		-
23		8		-
24		5		1
25		5		4
26		3		4
27		2		1
28		2		-
29		-		-
30		5		1
31		7		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:		Oct-17	
		Daily Total	Westwards		Eastwards	
			Daily	Max Hourly	Daily	Max Hourly
Limits		305	220	20	85	8
Actuals						
1		-	-	-	-	-
2		-	-	-	-	-
3		67	36	7	31	7
4		78	50	8	28	5
5		134	105	15	29	4
6		120	87	13	33	6
7		20	13	5	7	3
8		-	-	-	-	-
9		51	25	6	26	4
10		55	32	8	23	5
11		94	63	11	31	7
12		110	61	9	49	8
13		71	37	6	34	6
14		19	14	5	5	2
15		-	-	-	-	-
16		58	30	6	28	7
17		116	49	8	67	8
18		102	50	8	52	8
19		111	77	12	34	8
20		32	21	5	11	3
21		14	11	5	3	3
22		-	-	-	-	-
23		49	22	5	27	7
24		81	46	9	35	6
25		115	63	11	52	8
26		72	33	8	39	8
27		42	33	6	9	2
28		11	9	3	2	1
29		-	-	-	-	-
30		100	54	9	46	8
31		91	76	13	15	3

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

Table 2E: Total Number of Laden Trucks

TERALBA QUARRY						Month: Nov-17	
	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		
		6	12	28	20		
Limits	326					241	85
Actuals							
1	126	4	1	6	17	86	40
2	126	3	1	8	19	87	39
3	116	5	1	7	15	64	52
4	39	3	1	6	10	33	6
5	-	-	-	-	-	-	-
6	43	3	2	5	7	28	15
7	81	1	3	5	12	50	31
8	71	4	2	8	11	60	11
9	120	3	1	10	20	79	41
10	128	5	-	9	20	80	48
11	41	4	-	3	9	31	10
12	-	-	-	-	-	-	-
13	119	3	4	10	14	87	32
14	141	-	4	11	20	101	40
15	163	4	1	9	20	108	55
16	111	5	-	10	15	79	32
17	114	3	1	10	16	69	45
18	31	4	-	5	6	22	9
19	-	-	-	-	-	-	-
20	97	4	-	7	18	71	26
21	86	3	1	8	13	56	30
22	109	2	2	11	14	69	40
23	103	4	1	9	14	68	35
24	114	3	1	7	18	92	22
25	23	4	-	3	4	17	6
26	-	-	-	-	-	-	-
27	104	2	4	8	16	79	25
28	96	3	2	9	11	54	42
29	114	4	1	6	17	71	43
30	98	5	-	8	12	71	27

2514

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

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



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

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

\* Condition 2 (9)

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

TERALBA QUARRY		Month: Nov-17	
		Westwards**	Eastwards**
		Max Hourly	Max Hourly
		28	8
Limits*			
Actuals			
1		5	1
2		7	1
3		3	4
4		5	1
5		-	-
6		5	-
7		3	2
8		8	-
9		9	1
10		6	3
11		3	-
12		-	-
13		9	1
14		9	2
15		6	3
16		8	2
17		5	5
18		4	1
19		-	-
20		5	2
21		6	2
22		9	2
23		8	1
24		5	2
25		3	-
26		-	-
27		7	1
28		7	2
29		1	5
30		7	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-17			
		Daily Total		Westwards			Eastwards	
				Daily	Max Hourly		Daily	Max Hourly
Limits		305		220	20		85	8
Actuals								
1		113		74	13		39	7
2		111		73	15		38	6
3		101		53	8		48	8
4		27		22	8		5	2
5		-		-	-		-	-
6		33		18	4		15	4
7		72		43	8		29	4
8		57		46	9		11	3
9		104		64	12		40	8
10		112		67	14		45	8
11		30		20	6		10	3
12		-		-	-		-	-
13		102		71	10		31	6
14		126		88	15		38	7
15		147		95	14		52	8
16		94		64	11		30	6
17		98		58	10		40	8
18		20		12	4		8	3
19		-		-	-		-	-
20		84		60	15		24	4
21		71		43	8		28	7
22		92		54	10		38	7
23		87		53	11		34	6
24		100		80	16		20	3
25		14		8	3		6	2
26		-		-	-		-	-
27		90		66	14		34	4
28		79		39	6		40	6
29		99		61	11		38	8
30		83		57	11		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: Dec-17					
	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		
		6	12	28	20	241	85
Limits	326						
Actuals							
1	105	4	1	9	15	72	33
2	35	4	1	4	6	29	6
3	-	-	-	-	-	-	-
4	79	3	2	7	13	57	22
5	72	-	2	9	11	44	28
6	102	5	1	8	14	70	32
7	108	3	-	7	14	65	43
8	97	4	-	9	15	65	32
9	33	4	-	4	6	23	10
10	-	-	-	-	-	-	-
11	89	3	4	6	13	56	33
12	91	4	1	11	13	53	38
13	102	4	-	6	16	45	57
14	99	3	1	6	15	46	53
15	77	4	-	8	12	48	29
16	34	3	1	8	6	28	6
17	-	-	-	-	-	-	-
18	72	4	3	8	10	50	22
19	71	4	-	5	9	40	31
20	79	6	-	7	13	52	27
21	63	4	1	9	10	47	16
22	37	5	-	6	7	29	8
23	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-

1445

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

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

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

TERALBA QUARRY		Month:		Dec-17	
		Westwards		Eastwards	
		Max Hourly		Max Hourly	
Limits*		12		0	
Actuals					
1		1		-	
2		1		-	
3		-		-	
4		2		-	
5		2		-	
6		1		-	
7		-		-	
8		-		-	
9		-		-	
10		-		-	
11		4		-	
12		1		-	
13		-		-	
14		1		-	
15		-		-	
16		1		-	
17		-		-	
18		3		-	
19		-		-	
20		-		-	
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-17	
		Westwards**		Eastwards**	
		Max Hourly		Max Hourly	
Limits*		28		8	
Actuals					
1		7		2	
2		2		2	
3		-		-	
4		6		1	
5		8		1	
6		7		1	
7		7		-	
8		8		1	
9		3		1	
10		-		-	
11		6		-	
12		9		2	
13		3		3	
14		4		2	
15		6		2	
16		8		-	
17		-		-	
18		7		1	
19		3		2	
20		5		2	
21		7		2	
22		6		-	
23		-		-	
24		-		-	
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-17			
		Daily Total		Westwards			Eastwards	
				Daily	Max Hourly		Daily	Max Hourly
Limits		305		220	20		85	8
Actuals								
1		88		57	11		31	5
2		24		20	5		4	2
3		-		-	-		-	-
4		65		44	9		21	4
5		61		34	7		27	6
6		86		55	10		31	7
7		95		52	8		43	7
8		81		50	9		31	7
9		22		13	5		9	4
10		-		-	-		-	-
11		76		43	10		33	7
12		74		38	8		36	8
13		89		35	8		54	8
14		86		35	8		51	8
15		62		35	7		27	5
16		19		13	4		6	3
17		-		-	-		-	-
18		57		36	9		21	4
19		59		30	6		29	5
20		65		40	9		25	5
21		48		37	9		14	4
22		25		17	6		8	2
23		-		-	-		-	-
24		-		-	-		-	-
25		-		-	-		-	-
26		-		-	-		-	-
27		-		-	-		-	-
28		-		-	-		-	-
29		-		-	-		-	-
30		-		-	-		-	-
31		-		-	-		-	-

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



Metromix Teralba Quarry - Deposited Dust Monitoring Results

Year	RHONDA RD			MYRTLE ST			HILLSIDE CRES			RODGERS ST			MARGARET ST		
	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	gm <sup>2</sup> /month	gm <sup>2</sup> /month		gm <sup>2</sup> /month	gm <sup>2</sup> /month		gm <sup>2</sup> /month	gm <sup>2</sup> /month		gm <sup>2</sup> /month	gm <sup>2</sup> /month		gm <sup>2</sup> /month	gm <sup>2</sup> /month	
EPA Approved Level	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		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	65	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	1.1	0.7	67
2017	0.9	0.5	49	1.5	1.0	62	2.0	1.1	53	1.8	1.1	57	1.2	0.7	58
Average (All Years)	1.0	0.6	64	1.2	0.7	62	1.4	0.7	52	1.2	0.8	67	1.1	0.7	65



2018 Results															
02-Jan-18	0.8	0.6	75	0.5	0.4	80	1.3	0.7	54	1.3	0.7	54	1.1	0.8	73
=Monitoring did not occur at this location until 2011.															

### Teralba Quarry – PM10 Monitoring Data Summary

Date	Metromix PM10 24 Hr	Monthly Average	Year to Date Annual Vverage	24hr Max Criteria	Annual Average Max Criteria
6/01/2017	4		4.0	50	30
12/01/2017	21		12.5	50	30
18/01/2017	30		18.3	50	30
24/01/2017	27		20.5	50	30
30/01/2017	18	20.0	20.0	50	30
5/02/2017	16		19.3	50	30
11/02/2017	34		21.4	50	30
17/02/2017	20		21.3	50	30
23/02/2017	15	21.3	20.6	50	30
1/03/2017	4		18.9	50	30
7/03/2017	15		18.5	50	30
13/03/2017	21		18.8	50	30
19/03/2017	16		18.5	50	30
25/03/2017	16		18.4	50	30
31/03/2017	14	14.3	18.1	50	30
6/04/2017	3		17.1	50	30
12/04/2017	5		16.4	50	30
18/04/2017	10		16.1	50	30
24/04/2017	15		16.0	50	30
30/04/2017	4	7.4	15.4	50	30
6/05/2017	12		15.2	50	30
12/05/2017	14		15.2	50	30
18/05/2017	18		15.3	50	30
24/05/2017	10		15.1	50	30
30/05/2017	12	13.2	15.0	50	30
5/06/2017	6		14.6	50	30
11/06/2017	7		14.3	50	30
17/06/2017	14		14.3	50	30
23/06/2017	14		14.3	50	30
29/06/2017	21	12.4	14.5	50	30
5/07/2017	4		14.2	50	30
11/07/2017	8		14.0	50	30
17/07/2017	11		13.9	50	30
23/07/2017	18		14.0	50	30
29/07/2017	13	10.8	14.0	50	30
4/08/2017	2		14.0	50	30
10/08/2017	11		14.0	50	30
16/08/2017	27		14.0	50	30
22/08/2017	21		14.0	50	30
28/08/2017	10	14.2	14.0	50	30
3/09/2017	21		14.2	50	30
9/09/2017	25		14.5	50	30
15/09/2017	7		14.3	50	30
21/09/2017	21		14.4	50	30
27/09/2017	18	18.4	14.5	50	30
3/10/2017	12		14.5	50	30
9/10/2017	15		14.5	50	30
15/10/2017	8		14.3	50	30
21/10/2017	16		14.4	50	30
27/10/2017	12	12.6	14.3	50	30
2/11/2017	16		14.4	50	30
8/11/2017	9		14.3	50	30
14/11/2017	7		14.1	50	30
20/11/2017	3		13.9	50	30
26/11/2017	8	8.6	13.8	50	30
2/12/2017	9		13.7	50	30
8/12/2017	17		13.8	50	30
14/12/2017	26		14.0	50	30
20/12/2017	35		14.3	50	30
26/12/2017	14	20.2	14.3	50	30
Current 2017	PM10				
Average	14.3				
Standard Deviation	7.6				
Minimum	2.0				
Maximum	35.0				
Count	60				

Water Monitoring - Teralba Quarry - 2017 - EPA Point No.4 - Adit Overflow													
Sample No.	Sample Dates	EPA No4 - 136 ABCDE January 2017.		EPA No4 - 137 ABCDE February 2017.		EPA No4 - 138 ABCDE March 2017.		EPA No4 - 139 ABCDE April 2017.		EPA No4 - 140 ABCDE May 2017.		EPA No4 - 141 ABCDE June 2017.	
		Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)
Sample	Units												
pH	ph Unit	6.94		7.13		7.31		7.36		7.09		7.49	
Conductivity	µS/cm	2050		1930		1800		1840		1750		1730	
TSS	mg/L	20		18		11		5		8		20	
Oil & Grease	mg/L	<5		<5		<5		<5		<5		<5	
Aluminium	mg/L	0.25	<0.01	0.36	<0.01	0.31	<0.01	0.06	<0.01	0.02	<0.01	0.28	<0.01
Ammonia as N	mg/L	0.04		0.04		0.04		0.1		0.13		0.02	
Antimony	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	mg/L	0.003	0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.001	0.002	0.002	0.002	0.002
Barium	mg/L	0.04	0.034	0.033	0.03	0.036	0.030	0.032	0.030	0.031	0.032	0.032	0.029
Beryllium	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	mg/L	0.16	0.15	0.1	0.11	0.11	0.11	0.12	0.12	0.13	0.11	0.11	0.12
Cadmium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcium	mg/L	55			54		50		48		46		44
Chromium	mg/L	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	mg/L	0.002	0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001
Copper	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Iron	mg/L	0.68	<0.05	0.58	<0.05	0.89	<0.05	0.25	<0.05	0.26	0.09	0.60	<0.05
Lead	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Lithium	mg/L	0.034	0.034	0.023	0.016	0.029	0.026	0.03	0.03	0.034	0.032	0.032	0.03
Magnesium	mg/L	61	64	62	60	63	62	53	55	55	51	48	54
Manganese	mg/L	0.471	0.404	0.217	0.18	0.349	0.282	0.282	0.259	0.275	0.257	0.149	0.126
Mercury	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum	mg/L	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.003	0.001	0.005	0.004
Nickel	mg/L	0.008	0.006	0.009	0.008	0.009	0.007	0.005	0.006	0.005	0.005	0.007	0.005
Phosphorous as P	mg/L	0.02		0.01		0.01						<0.01	
Potassium	mg/L	8			8		7		7		8		8
Selenium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Silica as SiO2	mg/L	16.5	15	14.8	11.8	15.9	14.2	14.7	13.8	14.2	13.4	13.2	12.1
Silver	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0005 mg/L
Sulfur as S	mg/L	85			98		97		82		92		79
Tin	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.002	<0.001
Titanium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Vanadium	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
										</			

Indicates result indicates results that varied between filtered and unfiltered samples

ND = Not Determined

NA = Not Applicable

<sup>a</sup> Based on ANZECC Guidelines for Fresh and Marine Water Quality - Recreational Water Quality (ANZECC 2000) except where indicated

<sup>b</sup> Based on ANZECC Guidelines slightly disturbed lowland river ecosystems in south-east Australia (ANZECC 2000)

<sup>c</sup> Based on ANZECC Guidelines for Fresh and Marine Water Quality - Livestock Water Quality (ANZECC 2000)

<sup>d</sup> Based on ANZECC Guidelines for Fresh and Marine Water Quality - Irrigation Water Quality (ANZECC 2000)



Water Monitoring - Teralba Quarry - 2017 - EPA Point No.4 - Adit Overflow													
Sample No.	EPA No 4 - 142 ABCDE	EPA No 4 - 143 ABCDE	EPA No 4 - 144 ABCDE	EPA No 4 - 145 ABCDE	EPA No 4 - 146 ABCDE								
Dates	July 2017	August 2017	September 2017	October 2017	November 2017	December 2017							
	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													
pH	7.77		7.28		7.46		7.42		7.19		7.15		6.5 to 8.5 units <sup>a</sup>
Conductivity	1950		1970		2520		2070		2050		2230		125 - 2200 µS/cm <sup>b</sup>
TSS	6		15		8		16		<5		<5		<50 mg/L <sup>c</sup>
Oil & Grease	<5		<5		<5		<5		<5		<5		<5 mg/L <sup>a</sup>
Ammonia as N	0.16	<0.01	0.22	<0.01	0.04		0.02	<0.01	0.06		0.09	<0.01	<0.05 mg/L
Antimony	0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001		<0.001	<0.001	<0.002 mg/L <sup>b</sup>
Arsenic	0.006	0.002	0.002	<0.001	0.001		0.001	<0.001	0.001		0.001	0.001	0.013 mg/L
Barium	0.033	0.028	0.034	0.027	0.031		0.032	0.030	0.038		0.033	0.031	NA
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001		<0.001	<0.001	ID
Boron	0.5	0.11	0.16	<0.05	0.16		0.14	0.15	0.15		0.16	0.18	<0.37 mg/L
Cadmium	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0002 mg/L
Calcium		41		46			56		56		56		NA
Chromium	<0.001	0.006	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001		<0.001	<0.001	<0.001 mg/L
Cobalt	<0.001	<0.001	0.002	<0.001	<0.001		<0.001	<0.001	<0.001		<0.001	<0.001	ID
Copper	0.001	0.003	0.002	0.001	0.001		0.001	<0.001	<0.001		<0.001	<0.001	<0.0014 mg/L
Iron	0.32	<0.05	0.50	<0.05	0.14		0.24	<0.05	0.23		0.27	<0.05	ID
Lead	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001		<0.001	<0.001	<0.0034 mg/L
Lithium	0.038	0.032	0.041	0.006	0.035		0.035	0.033	0.037		0.041	0.04	NA
Magnesium	56	50	63	60	73		60	56	62		66	58	NA
Manganese	0.155	0.122	0.160	0.116	0.068		0.123	0.116	0.333		0.272	0.250	<1.9 mg/L
Mercury	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0006 mg/L
Molybdenum	0.007	0.003	0.002	0.002	0.002		0.002	0.002	0.002		0.003	0.003	ID
Nickel	0.008	0.008	0.011	0.006	0.005		0.006	0.007	0.007		0.006	0.006	<0.011 mg/L
Phosphorous as P	0.02	8	<0.01	8	0.01		0.01	8	<0.01		<0.01	8	<0.025 mg/L <sup>c</sup>
Potassium													NA
Selenium	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01		<0.01	<0.01	<0.011 mg/L
Silicon as SiO2	12.8	12	13.0	14.5	13.1		13.5	13.1	13.9		15.4	14.9	NA
Silver	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001		<0.001	<0.001	<0.0005 mg/L
Sulfur as S		85		105			118		91		118		NA
Tin	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001		<0.001	<0.001	ID
Titanium	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01		<0.01	<0.01	NA
Vanadium	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01		<0.01	<0.01	ID
Zinc	<0.005	<0.005	0.012	0.005	0.008		<0.005	<0.005	<0.005		<0.005	<0.005	<0.008 mg/L

Water Monitoring - Teralba Quarry - 2017 - EPA Point No.5 - Overflow Dam B											
Sample No.	Dates	January 2017.		February 2017.		March 2017.		April 2017.		May 2017.	
		Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)
Sample	Units										
pH	ph Unit										
Conductivity	µS/cm	No Discharge		No Discharge		No Discharge		7.07		No Discharge	
TSS	mg/L							1030			
Oil & Grease	mg/L							<5			
Aluminium	mg/L							0.42	<0.01		
Ammonia as N	mg/L							0.05			
Antimony	mg/L							<0.001	<0.001		
Arsenic	mg/L							0.007	0.001		
Barium	mg/L							0.067	0.027		
Beryllium	mg/L							<0.001	<0.001		
Boron	mg/L							0.14	0.14		
Cadmium	mg/L							<0.0001	<0.0001		
Calcium	mg/L							31			
Chromium	mg/L							<0.001	<0.001		
Cobalt	mg/L							0.013	0.001		
Copper	mg/L							0.002	<0.001		
Iron	mg/L							4.13	0.18		
Lead	mg/L							<0.001	<0.001		
Lithium	mg/L							0.016	0.013		
Magnesium	mg/L							33	32		
Manganese	mg/L							0.463	0.231		
Mercury	mg/L							<0.0001	<0.0001		
Molybdenum	mg/L							0.004	0.001		
Nickel	mg/L							0.011	0.004		
Phosphorous as P	mg/L										
Potassium	mg/L							5			
Selenium	mg/L							<0.01	<0.01		
Silica as SiO2	mg/L							25.3	22.5		
Silver	mg/L							<0.001	<0.001		
Sulfur as S	mg/L							46			
Tin	mg/L							<0.001	<0.001		
Titanium	mg/L							<0.01	<0.01		
Vanadium	mg/L							<0.01	<0.01		
Zinc	mg/L							<0.005	<0.005		

Indicates results that varied between filtered and unfiltered samples

ND = Not Determined

NA = Not Applicable

\* Based on ANZECC Guidelines for Fresh and Marine Water Quality - Recreational Water Quality (ANZECC 2000) except where indicated

\* Based on ANZECC Guidelines slightly disturbed lowland river ecosystems in south-east Australia (ANZECC 2000)

\* Based on ANZECC Guidelines for Fresh and Marine Water Quality - Livestock Water Quality (ANZECC 2000)

\* Based on ANZECC Guidelines for Fresh and Marine Water Quality - Irrigation Water Quality (ANZECC 2000)

Water Monitoring - Teralba Quarry - 2017 - EPA Point No.5 - Overflow Dam B											
Sample No. Dates	Units	July 2017.		August 2017.		September 2017.		October 2017.		November 2017.	
		Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)	Total (Unfiltered)	Dissolved (Filtered)
Sample											
pH		NO DISCHARGE		NO DISCHARGE		NO DISCHARGE		NO DISCHARGE		NO DISCHARGE	
Conductivity	µS/cm										
TSS	mg/L										
Oil & Grease	mg/L										
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										

Indicates results that varied between filtered and unfiltered samples

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\* Based on ANZECC Guidelines for Fresh and Marine Water Quality - Irrigation Water Quality (ANZECC 2000)

Date	Metromix Sample No.	pH	Suspended Solids (mg/L)	Comments
Jan-17	No Water Discharge at EPA Point 6			
Feb-17	No Water Discharge at EPA Point 6			
Mar-17	No Water Discharge at EPA Point 6			
Apr-17	No Water Discharge at EPA Point 6			
May-17	No Water Discharge at EPA Point 6			
Jun-17	No Water Discharge at EPA Point 6			
Jul-17	No Water Discharge at EPA Point 6			
Aug-17	No Water Discharge at EPA Point 6			
Sep-17	No Water Discharge at EPA Point 6			
Oct-17	No Water Discharge at EPA Point 6			
Nov-17	No Water Discharge at EPA Point 6			
Dec-17	No Water Discharge at EPA Point 6			

Date	Metromix Sample No.	pH	Suspended Solids (mg/L)	Comments
Jan-17	No Water Discharge at EPA Point 7			
Feb-17	No Water Discharge at EPA Point 7			
Mar-17	No Water Discharge at EPA Point 7			
Apr-17	No Water Discharge at EPA Point 7			
May-17	No Water Discharge at EPA Point 7			
Jun-17	No Water Discharge at EPA Point 7			
Jul-17	No Water Discharge at EPA Point 7			
Aug-17	No Water Discharge at EPA Point 7			
Sep-17	No Water Discharge at EPA Point 7			
Oct-17	No Water Discharge at EPA Point 7			
Nov-17	No Water Discharge at EPA Point 7			
Dec-17	No Water Discharge at EPA Point 7			



Metromix Teralba Quarry Daily Rainfall 2017

Date	Daily Rainfall (mm)											
	January	February	March	April	May	June	July	August	September	October	November	December
1	7	3.4	6.4	0	0	0	0	0	0	0	0	0
2	7	0.2	0.2	9	0	0	0	0	0	0	0	11.6
3	0	0	13.6	18.4	0.4	1.8	0	6.4	0	0	0	0
4	4.4	7.8	2.4	17.2	0.2	0	0	0.2	0	0	16.8	1.6
5	1.4	0	2	2.4	0	0	0	0	0	0	9.6	1
6	0	0	0	0	0	0	0	0	0	0	6.2	7
7	0	0.2	9.2	0	0	46.4	0	0	0	0	0.2	0
8	0	2.6	3	0	0	10.6	0	0	0	0	18	0
9	0	4.2	2.4	4.6	0	19	0	0	0	0.4	0.2	2.4
10	0	0	0.2	0.4	0	20	0	0	0	0.2	0	0
11	0	0	0	6.8	0	1.4	0.4	0	0	0	0	0
12	0	0	0	6.2	0.4	0	4.8	0	0	0.8	0	0
13	0	10.4	0	1.4	0	0	0.2	0	0	0	0	0
14	0	4.4	7	0	2.2	2.8	0	0	14.2	4.6	0	0
15	0	0.2	6.6	0	0.2	0.2	0	0	0	19.2	0	0
16	0	0	10	0	0	0	0	0	0	0	3	0
17	0	4.2	46.6	0	0	0.4	0	0	0	0	0	0
18	0	1	32.4	0	0	32	0	0	0	0.2	0.8	2.6
19	0.2	3.4	8.4	0	11.8	0.2	0	0	0	0	0.2	0.2
20	9.6	0	0	0	1.4	0.2	0	0	0	41.6	0	7
21	0	0	0.2	0	0.2	0	0	0	0	0.4	0	2.2
22	0	0	6.2	0	0	0	0	0	0	9.8	0	0
23	0	0	1.2	0	0	0	0	0	0	12.4	0	0
24	36	0	2.2	0	0.8	0	0	0	0	0	0	0
25	0	21.6	0	3.6	0	0	0	0	0	0	0	2.2
26	4.5	18.8	0	0.4	0	0	0	0	0	41.6	0	0.2
27	0	21.2	0	0	0	0	0	0	0	30.4	0	0
28	0	18.8	0	0	0	3.8	0	0	0	0	0	0
29	0		0	0	0	1.6	0	0	0	0	0	0
30	0		39.8	0	0	0.2	0	0	0	0	0	0.6
31	0.8		0.8		1.6		0	0		0		0
Monthly Total	70.9	122.4	222.4	70.4	19.2	140.6	5.4	6.6	14.2	161.6	55	38.6
	Annual Total											927.3

Note: Rainfall on three days in January 2017 was not recorded and therefore monthly and annual total may not be complete.





18 September 2017

Ref: 8413/7345

Metromix Pty Ltd  
150 Rhondda Road  
Teralba NSW 2284

### AUGUST 2017 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 29<sup>th</sup> and finishing on Thursday 31<sup>st</sup> of August, 2017. 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 2017 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 <sup>1</sup>	Rhondda Road, Teralba	369250	6351915
EPL-C	Rhondda Road, Teralba <sup>2</sup>	369205	6352015
EPL-D	Rhondda Road, Teralba	369150	6352135
EPL-E	Victoria Avenue, Teralba	369060	6352620
EPL-F	Victoria Avenue, Teralba <sup>2</sup>	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.





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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 decided that after the day time survey on 30<sup>th</sup> August he didn't want the monitoring to be done near his residence. The remainder of the monitoring surveys were, therefore, 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.

Condition	Requirement																																			
L5.2	<p>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.</p> <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<sub>Aeq</sub> (15 minute)</td><td>L<sub>Aeq</sub> (15 minute)</td><td>L<sub>Aeq</sub> (15 minute)</td><td>L<sub>Aeq</sub> (15 minute) L<sub>A1</sub>(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> <p>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.</p>	Location	Day Shoulder 6:00am - 7:00am	Day 7:00am - 6:00pm	Evening 6:00pm – 10:00pm	Night 10:00pm – 6:00am		L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute) L <sub>A1</sub> (1min)	EPL-A	38	38	37	35 45	EPL-B	42	46	36	35 45	EPL-C	42	42	35	35 45	EPL-D, EPL-E, EPL-H	35	35	35	35 45	EPL-F	37	38	38	35 45
Location	Day Shoulder 6:00am - 7:00am	Day 7:00am - 6:00pm	Evening 6:00pm – 10:00pm	Night 10:00pm – 6:00am																																
	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute) L <sub>A1</sub> (1min)																																
EPL-A	38	38	37	35 45																																
EPL-B	42	46	36	35 45																																
EPL-C	42	42	35	35 45																																
EPL-D, EPL-E, EPL-H	35	35	35	35 45																																
EPL-F	37	38	38	35 45																																
L5.3	<p>For the purposes of Condition L5.2:</p> <ul style="list-style-type: none"><li>a) Day-Shoulder is defined as the period between 6am to 7am Monday to Saturday.</li><li>b) Day is defined as:<ul style="list-style-type: none"><li>a. the period from 7am to 6pm Monday to Saturday; and</li><li>b. the period from 8am to 6pm Sundays and Public Holidays.</li></ul></li><li>c) Evening is defined as the period from 6pm to 10pm.</li><li>d) Night is defined as:<ul style="list-style-type: none"><li>a. the period from 10pm to 7am Monday to Saturday; and</li><li>b. the period from 10pm to 8am Sundays and Public Holidays.</li></ul></li></ul>																																			
L5.4	<p>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.</p>																																			
L5.5	<p>The noise limits set out in conditions L5.2 apply under all meteorological conditions except for anyone of the following:</p> <ul style="list-style-type: none"><li>a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or</li><li>b) Stability category F temperature inversion conditions and wind speeds greater</li></ul>																																			





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	the 2 metres/second at 10 metres above ground level; or c) Stability category G temperature inversion conditions.																
L5.6	For the purpose of condition L5.5: 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 <i>NSW industrial Noise Policy (EPA 2000)</i>  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 $L_{Aeq}(15 \text{ min})$ 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 $LA1(1 \text{ minute})$ 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	<p>The licensee must comply with the operating hours specified in Column 2, Column 3, and Column 4 of the table below:</p> <table><tr><th>Day</th><th>Loading and Dispatch of Quarry Trucks</th><th>Extraction and Processing</th><th>Receipt of Concrete</th></tr><tr><td>Monday - Friday</td><td>4:00am Monday to midnight Friday</td><td>7:00am to 7:00pm</td><td>7:00am to 5:00pm</td></tr><tr><td>Saturday</td><td>Midnight Friday to 6:00pm Saturday</td><td>7:00am to 2:00pm</td><td>7:00am to 2:00pm</td></tr><tr><td>Sundays and Public Holidays</td><td>None</td><td>none</td><td>none</td></tr></table> <p>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</p>	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
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														





## 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:





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- (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.

<b>Table 2</b> <b>Teralba Quarry Noise Monitoring Results – 29 August 2017</b> <b>Night</b>					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	5:35 am	45	35	0.8 m/s 225°	Birds (43), industrial noise (38), traffic (35), <b>TQ inaudible</b>
B	4:30 am	36	35	0.9 m/s 235°	Traffic (34), birds (30), <b>TQ inaudible</b>
D	4:30 am	38	35	0.9 m/s 235°	Traffic (37), birds (31), <b>TQ inaudible</b>
E	5:35 am	36	35	0.8 m/s 225°	Birds (34), traffic (32), <b>TQ inaudible</b>
H	5:00 am	42	35	0.8 m/s 226°	Traffic (40), birds (39), <b>TQ inaudible</b>

<b>Table 3</b> <b>Teralba Quarry Noise Monitoring Results – 29 August 2017</b> <b>Day Shoulder</b>					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	6:45 am	45	38	0.4 m/s 278°	Birds (42), industrial noise (40), traffic (36), <b>TQ inaudible</b>
B	6:21 am	46	42	0.9 m/s 236°	Traffic (44), industrial noise (40), <b>TQ (30)<sup>1</sup></b>
D	6:39 am	46	35	0.4 m/s 272°	Traffic (46), birds (34), industrial noise (30), <b>TQ inaudible</b>
E	6:35 am	40	35	0.6 m/s 256°	Birds (38), traffic (32), <b>TQ inaudible</b>
H	6:00 am	47	35	0.8 m/s 231°	Traffic (44), birds (44), <b>TQ inaudible</b>
Note: 1 See text description and analysis					

<b>Table 4</b> <b>Teralba Quarry Noise Monitoring Results – 29 August 2017</b> <b>Day</b>					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	8:55 am	42	38	1.2 m/s 187°	Birds (38), industrial noise (37), traffic (36), domestic noise (30), <b>TQ inaudible</b>
B	7:15 am	48	46	0.6 m/s 250°	Industrial noise (46), traffic (42), birds (30), <b>TQ (25)<sup>1</sup></b>
D	7:05 am	46	35	0.5 m/s 261°	Traffic (44), birds (40), <b>TQ (28)</b> , industrial noise (28)
E	8:40 am	40	35	1.2 m/s 196°	Birds (39), traffic (30), <b>TQ inaudible</b>
H	7:02 am	47	35	0.5 m/s 261°	Traffic (44), birds (44), <b>TQ inaudible</b>
Note: 1 See text description and analysis					





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Table 5 Teralba Quarry Noise Monitoring Results – 29 August 2017 Evening					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	9:05 pm	34	37	1.3 m/s 347°	Birds & insects (33), traffic (28), <b>TQ inaudible</b>
B	9:20 pm	41	36	1.1 m/s 340°	Traffic (41), <b>TQ inaudible</b>
D	7:23 pm	46	35	0.7 m/s 320°	Traffic (44), birds (42), <b>TQ inaudible</b>
E	6:47 pm	44	35	0.4 m/s 92°	Traffic (42), birds (40), insects (30), <b>TQ inaudible</b>
H	6:10 pm	37	35	0.7 m/s 133°	Traffic (34), birds (32), insects (30), <b>TQ barely audible</b>

Table 6 Teralba Quarry Noise Monitoring Results – 30 August 2017 Night					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	5:40 am	48	35	0.3 m/s 316°	Birds (47), traffic (40), industrial noise (25), <b>TQ inaudible</b>
B	4:30 am	60	35	0.4 m/s 211°	Traffic (60), birds (35), <b>TQ inaudible</b>
D	4:30 am	32	35	0.4 m/s 211°	Traffic (30), birds (28), <b>TQ inaudible</b>
E	5:35 am	41	35	0.3 m/s 316°	Birds (40), traffic (32), <b>TQ inaudible</b>
H	5:00 am	42	35	0.3 m/s 261°	Traffic (40), birds (38), <b>TQ inaudible</b>

Table 7 Teralba Quarry Noise Monitoring Results – 30 August 2017 Day Shoulder					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	6:45 am	48	38	0.4 m/s 76°	Birds (47), traffic (39), industrial noise (30), <b>TQ inaudible</b>
B	6:21 am	48	42	0.3 m/s 321°	Traffic (48), industrial noise (40), <b>TQ (28)<sup>1</sup></b>
D	6:40 am	47	35	0.4 m/s 54°	Traffic (46), birds (36), industrial noise (30), <b>TQ inaudible</b>
E	6:35 am	39	35	0.3 m/s 40°	Birds (38), traffic (32), trains (25), <b>TQ inaudible</b>
H	6:00 am	48	35	0.3 m/s 302°	Traffic (47), birds (40), <b>TQ inaudible</b>
Note: 1 See text description and analysis					





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<b>Table 8</b> <b>Teralba Quarry Noise Monitoring Results – 30 August 2017</b> <b>Day</b>					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	7:00 am	47	38	0.7 m/s 190°	Birds (45), industrial noise (40), traffic (38), <b>TQ inaudible</b>
B	8:35 am	46	46	1.1 m/s 214°	Traffic (45), industrial noise (40), <b>TQ (30)<sup>1</sup></b>
D	7:05 am	41	35	0.7 m/s 197°	Traffic (40), birds (32), industrial noise (30), <b>TQ occasionally audible</b>
E	8:45 am	38	35	1.2 m/s 216°	Birds (38), traffic (25), <b>TQ inaudible</b>
H	7:00 am	50	35	0.7 m/s 190°	Traffic (48), birds (45), <b>TQ inaudible</b>
Note: 1 See text description and analysis					

<b>Table 9</b> <b>Teralba Quarry Noise Monitoring Results – 30 August 2017</b> <b>Evening</b>					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	9:05 pm	32	37	1.5 m/s 188°	Traffic (32), <b>TQ barely audible</b>
B	6:44 pm	41	36	1.5 m/s 182°	Traffic (39), train (34), domestic noise (33), <b>TQ inaudible</b>
D	7:19 pm	41	35	1.2 m/s 181°	Traffic (41), <b>TQ inaudible</b>
E	8:30 pm	38	35	1.1 m/s 195°	Traffic (38), trains (26), <b>TQ inaudible</b>
H	7:54 pm	33	35	1.3 m/s 190°	Traffic (31), birds (28), <b>TQ inaudible</b>

<b>Table 10</b> <b>Teralba Quarry Noise Monitoring Results – 31 August 2017</b> <b>Night</b>					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	5:38 am	44	35	2.4 m/s 235°	Traffic (41), birds (40), industrial noise (30), <b>TQ inaudible</b>
B	4:32 am	54	35	2.0 m/s 228°	Traffic (54), industrial noise (30), <b>TQ inaudible</b>
D	4:30 am	40	35	2.0 m/s 228°	Traffic (38), wind in trees (35), birds (30), <b>TQ occasionally audible</b>
E	5:35 am	41	35	2.4 m/s 235°	Birds (40), traffic (30), <b>TQ (27)</b>
H	5:00 am	38	35	2.1 m/s 232°	Frogs (36), traffic (32), <b>TQ inaudible</b>







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Table 11 Teralba Quarry Noise Monitoring Results – 31 August 2017 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	39	38	2.4 m/s 234°	Traffic (34), birds (34), Industrial noise (33), TQ inaudible
B	6:20 am	45	42	2.7 m/s 236°	Traffic (42), wind (40), train (36), TQ inaudible
D	6:40 am	43	35	2.4 m/s 234°	Industrial noise (40), traffic (38), birds (30), trains (30), TQ inaudible
E	6:40 am	37	35	2.4 m/s 234°	Birds (36), traffic (30), TQ (<20)
H	6:00 am	45	35	2.3 m/s 234°	Birds (44), traffic (40), TQ inaudible

Table 12 Teralba Quarry Noise Monitoring Results – 31 August 2017 Day					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/direction	Identified Noise Sources (Leq (15 min))
A	7:00 am	42	38	2.1 m/s 234°	Traffic (40), birds (35), industrial noise (35), TQ inaudible
B	8:35 am	48	46	2.2 m/s 228°	Wind (45), traffic (42), birds (42), TQ (29) <sup>1</sup>
D	8:40 am	46	35	2.2 m/s 228°	Industrial noise (42), traffic (40), birds (40), TQ inaudible
E	10:10 am	38	35	2.0 m/s 202°	Birds (37), traffic (30), TQ inaudible
H	7:00 am	45	35	2.1 m/s 234°	Traffic (43), birds (40), TQ inaudible

Note: 1 See text description and analysis

Table 13 Teralba Quarry Noise Monitoring Results – 31 August 2017 Evening					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/direction	Identified Noise Sources (Leq (15 min))
A	8:05 pm	38	37	1.7 m/s 208°	Birds (35), traffic (34), TQ inaudible
B	7:30 pm	45	36	1.5 m/s 212°	Traffic (45), TQ inaudible
D	6:56 pm	43	35	1.5 m/s 212°	Traffic (42), wind (35), TQ inaudible
E	8:45 pm	32	35	1.8 m/s 228°	Traffic (32), TQ inaudible
H	6:28 pm	35	35	1.4 m/s 192°	Traffic (34), birds (30), 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.





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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 –29 August 2017 (Night)					
Location	Time	dB(A), L1 (1 minute)	Wind speed/ direction	LA1 source	Identified Quarry Sources (L1 (1 min))
A	5:35 am	55	0.8 m/s 225°	Birds	n/a
B	4:30 am	60	0.9 m/s 235°	Traffic	n/a
D	4:30 am	48	0.9 m/s 235°	Traffic	n/a
E	5:35 am	50	0.8 m/s 225°	Birds	n/a
H	5:00 am	60	0.8 m/s 226°	Birds	n/a





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Table 15 Teralba Quarry (L1 (1min)) Noise Monitoring Results – 30 August 2017 (Night)					
Location	Time	dB(A), L <sub>1</sub> (1minute)	Wind speed/ direction	L <sub>A1</sub> source	Identified Quarry Sources (L <sub>1</sub> (1 min))
A	5:40 am	58	0.3 m/s 316°	Birds	n/a
B	4:30 am	68	0.4 m/s 211°	Traffic	n/a
D	4:30 am	48	0.4 m/s 211°	Birds	n/a
E	5:35 am	50	0.3 m/s 316°	Birds	n/a
H	5:00 am	60	0.3 m/s 261°	Birds	n/a

Table 16 Teralba Quarry (L1 (1min)) Noise Monitoring Results – 31 August 2017 (Night)					
Location	Time	dB(A), L <sub>1</sub> (1minute)	Wind speed/ direction	L <sub>A1</sub> source	Identified Quarry Sources (L <sub>1</sub> (1 min))
A	5:38 am	50	2.4 m/s 235°	Traffic	n/a
B	4:32 am	65	2.0 m/s 228°	Traffic	n/a
D	4:30 am	48	2.0 m/s 228°	Birds	n/a
E	5:35 am	49	2.4 m/s 235°	Birds	32 (reverse alarms)
H	5:00 am	42	2.1 m/s 232°	Frogs	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:

**Ross Hodge**  
Acoustical Consultant

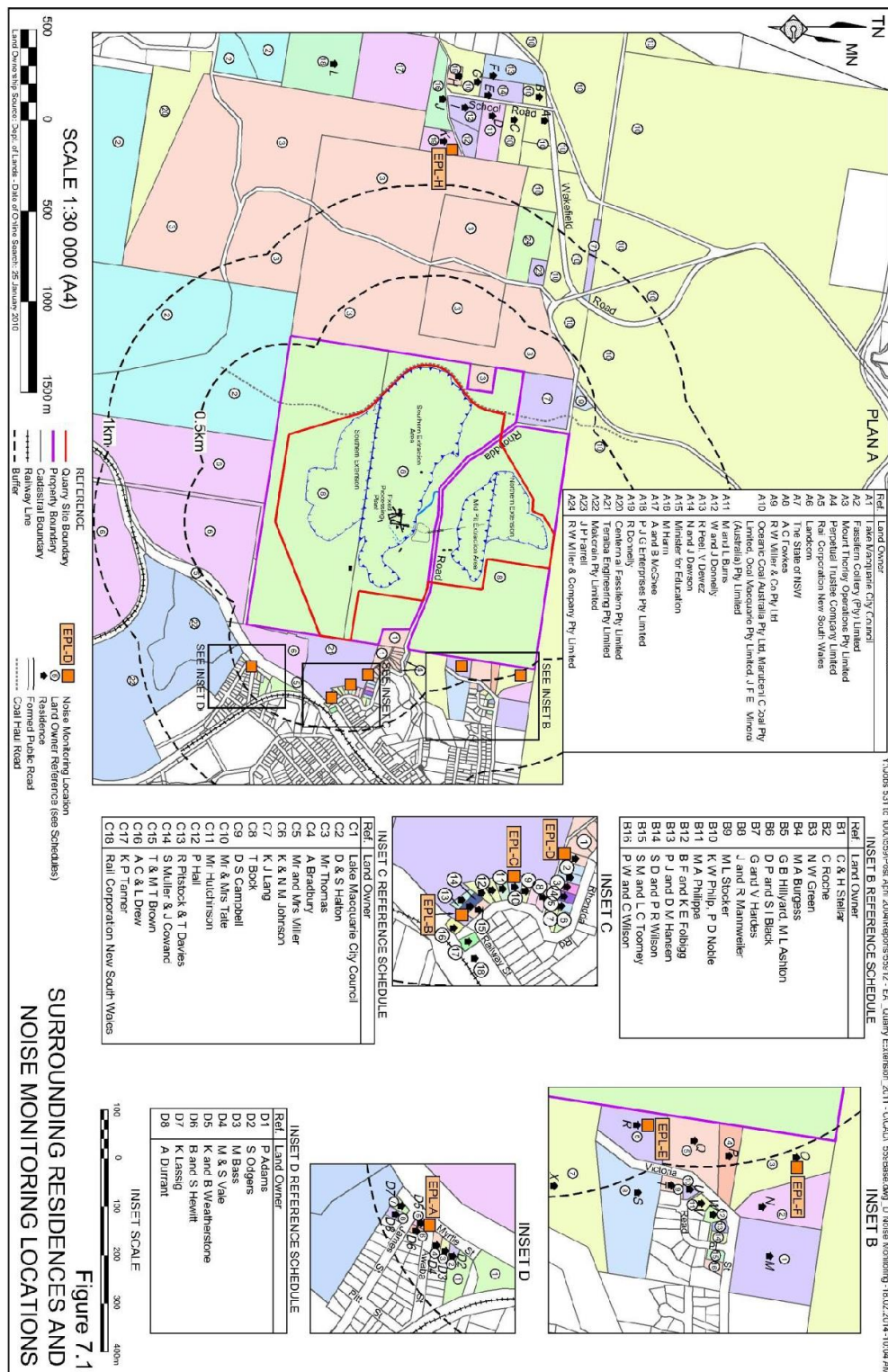
Review:

**Neil Pennington**  
Acoustical Consultant





Teralba Quarry Noise Monitoring – August 2017







Location EPL – B Modified noise monitoring location



18 December 2017

Ref: 8413/7548

Metromix Pty Ltd  
150 Rhondda Road  
Teralba NSW 2284

#### NOVEMBER 2017 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 Monday 27<sup>th</sup> and finishing on Wednesday 29<sup>th</sup> of November, 2017. 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 November 2017 period highlighted in **bold**. The locations are shown on the figure attached at the end of this report. Details of quarry operating locations and plant operating times are also appended to this report.

Table 1 Noise Monitoring Locations (from PA 10-0183)			
Location in EPL	Address	Easting	Northing
EPL-A	Awaba Street, Teralba	369080	3651470
EPL-B <sup>1</sup>	Rhondda Road, Teralba	369250	6351915
EPL-C	Rhondda Road, Teralba <sup>2</sup>	369205	6352015
EPL-D	Rhondda Road, Teralba	369150	6352135
EPL-E	Victoria Avenue, Teralba	369060	6352620
EPL-F	Victoria Avenue, Teralba <sup>2</sup>	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.



Teralba Quarry Noise Monitoring – November 2017

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 notified Metromix during the August 2017 survey that he didn't want the monitoring to be done near his residence. This survey was therefore 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.

Condition	Requirement																																			
L5.2	<p>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.</p> <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<sub>Aeq</sub> (15 minute)</td><td>L<sub>Aeq</sub> (15 minute)</td><td>L<sub>Aeq</sub> (15 minute)</td><td>L<sub>Aeq</sub> (15 minute)</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> <p>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.</p>	Location	Day Shoulder 6:00am - 7:00am	Day 7:00am - 6:00pm	Evening 6:00pm – 10:00pm	Night 10:00pm – 6:00am		L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	EPL-A	38	38	37	35 45	EPL-B	42	46	36	35 45	EPL-C	42	42	35	35 45	EPL-D, EPL-E, EPL-H	35	35	35	35 45	EPL-F	37	38	38	35 45
Location	Day Shoulder 6:00am - 7:00am	Day 7:00am - 6:00pm	Evening 6:00pm – 10:00pm	Night 10:00pm – 6:00am																																
	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)																																
EPL-A	38	38	37	35 45																																
EPL-B	42	46	36	35 45																																
EPL-C	42	42	35	35 45																																
EPL-D, EPL-E, EPL-H	35	35	35	35 45																																
EPL-F	37	38	38	35 45																																
L5.3	<p>For the purposes of Condition L5.2:</p> <ul style="list-style-type: none"><li>a) Day-Shoulder is defined as the period between 6am to 7am Monday to Saturday.</li><li>b) Day is defined as:<ul style="list-style-type: none"><li>a. the period from 7am to 6pm Monday to Saturday; and</li><li>b. the period from 8am to 6pm Sundays and Public Holidays.</li></ul></li><li>c) Evening is defined as the period from 6pm to 10pm.</li><li>d) Night is defined as:<ul style="list-style-type: none"><li>a. the period from 10pm to 7am Monday to Saturday; and</li><li>b. the period from 10pm to 8am Sundays and Public Holidays.</li></ul></li></ul>																																			
L5.4	<p>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.</p>																																			
L5.5	<p>The noise limits set out in conditions L5.2 apply under all meteorological conditions except for anyone of the following:</p> <ul style="list-style-type: none"><li>a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or</li><li>b) Stability category F temperature inversion conditions and wind speeds greater</li></ul>																																			





**Teralba Quarry Noise Monitoring – November 2017**

	the 2 metres/second at 10 metres above ground level; or c) Stability category G temperature inversion conditions.																
L5.6	<p>For the purpose of condition L5.5:</p> <p>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.</p> <p>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 <i>NSW industrial Noise Policy (EPA 2000)</i></p> <p>Note: The weather station must be designed, commissioned and operated in a manner to obtain the necessary parameters required under the above condition.</p>																
L5.7	<p>To determine compliance:</p> <p>1. With the <math>L_{Aeq(15\text{ min})}</math> noise limits in condition L5.2, the licensee must locate noise monitoring equipment;</p> <p>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,</p> <p>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</p> <p>c) within approximately 50 metres if the boundary of a national park or nature reserve.</p> <p>2. With the <math>L_{A1}(1\text{ minute})</math> noise limits in condition L5.2, the noise monitoring equipment must be located within 1 metre of a dwelling facade.</p> <p>3. With the noise limits in condition L5.2, the noise monitoring equipment must be located;</p> <p>a) at the most affected point at a location where there is no dwelling at the location, or</p> <p>b) at the most affected point within an area at a location prescribed by conditions L5.7 1(a) or L5.7 1(b).</p>																
L5.8	<p>A non-compliance will still occur where noise generated from the premises in excess of the appropriate noise limit is measured:</p> <p>a) at a location other than an area prescribed by the conditions of this licence, and /or</p> <p>b) at a point other than the most affected point at a location.</p>																
L5.9	<p>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.</p>																
L5.10	<p>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.</p>																
L7.1	<p>The licensee must comply with the operating hours specified in Column 2, Column 3, and Column 4 of the table below:</p> <table><tr><th>Day</th><th>Loading and Dispatch of Quarry Trucks</th><th>Extraction and Processing</th><th>Receipt of Concrete</th></tr><tr><td>Monday - Friday</td><td>4:00am Monday to midnight Friday</td><td>7:00am to 7:00pm</td><td>7:00am to 5:00pm</td></tr><tr><td>Saturday</td><td>Midnight Friday to 6:00pm Saturday</td><td>7:00am to 2:00pm</td><td>7:00am to 2:00pm</td></tr><tr><td>Sundays and Public Holidays</td><td>None</td><td>none</td><td>none</td></tr></table> <p>Note: Maintenance activities may occur at any time provided they are inaudible at privately-owned residence.</p> <p>*VENM = Virgin Excavated Natural Material</p> <p>**ENM = Excavated Natural Material</p>	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
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														







## 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:





Teralba Quarry Noise Monitoring – November 2017

- (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 – 27 November 2017**  
**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	46	35	0.8 / 206	Birds (45), industrial noise (37), TQ inaudible
B	4:36 am	58	35	0.6 / 245	Trains (58), birds (47), TQ inaudible
D	4:33 am	40	35	0.6 / 245	Traffic (39), birds (35), TQ inaudible
E	5:37 am	51	35	0.8 / 206	Birds (50), traffic (41), TQ inaudible
H	5:01 am	45	35	0.6 / 231	Birds (44), Traffic (37), TQ inaudible

**Table 3**  
**Teralba Quarry Noise Monitoring Results – 27 November 2017**  
**Day Shoulder**

Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	6:43 am	51	38	1.0 / 183	Birds (51), industrial noise (36), TQ inaudible
B	6:23 am	49	42	0.7 / 232	Industrial noise (46), Traffic (43), birds (43), TQ (31) <sup>1</sup>
D	6:43 am	48	35	1.0 / 183	Traffic (45), birds (44), industrial noise (35), TQ inaudible
E	6:33 am	48	35	0.8 / 161	Traffic (46), Birds (42), TQ inaudible
H	6:01 am	52	35	1.2 / 176	Birds (52), traffic (38), TQ inaudible

Note: 1 See text description and analysis

**Table 4**  
**Teralba Quarry Noise Monitoring Results – 27 November 2017**  
**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	44	38	0.9 / 182	Traffic (41), birds (37), industrial noise (36), TQ inaudible
B	9:17 am	56	46	Calm	Traffic (50), train (49), birds (49), Industrial noise (41), TQ (26) <sup>1</sup>
D	9:00 am	46	35	0.6 / 133	Traffic (44), birds (41), TQ inaudible
E	7:00 am	50	35	0.9 / 182	Birds (48), traffic (44), TQ inaudible
H	10:30 am	42	35	1.6 / 63	Insects (39), traffic (35), industry (34), TQ inaudible

Note: 1 See text description and analysis





Teralba Quarry Noise Monitoring – November 2017

Table 5 Teralba Quarry Noise Monitoring Results – 27 November 2017 Evening					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	8:52 pm	50	37	Calm	Birds & insects (47), traffic (47), TQ inaudible
B	7:58 pm	70	36	0.7 / 55	Insects (70), train (55), TQ inaudible
D	7:10 pm	45	35	2.2 / 24	Traffic (45), TQ inaudible
E	7:45 pm	52	35	Calm	Insects (51), traffic (42), TQ inaudible
H	7:20 pm	47	35	1.2 / 30	Birds (46), plane (37), insects (35), TQ barely audible (<25)

Table 6 Teralba Quarry Noise Monitoring Results – 28 November 2017 Night					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	5:44 am	45	35	0.6 / 185	Birds (43), industrial noise (37), traffic (36), TQ inaudible
B	4:36 am	51	35	0.6 / 201	Birds (50), traffic (42), TQ inaudible
D	4:30 am	37	35	0.6 / 201	Traffic (36), birds (29), TQ inaudible
E	5:36 am	48	35	1.0 / 186	Birds (48), traffic (36), TQ inaudible
H	5:00 am	45	35	1.0 / 175	Birds (43), traffic (38), TQ inaudible

Table 7 Teralba Quarry Noise Monitoring Results – 28 November 2017 Day Shoulder					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	6:45 am	46	38	Calm	Birds (44), industrial noise (38), TQ inaudible
B	6:40 am	49	42	Calm	Industry (48), Traffic (40), TQ inaudible
D	6:22 am	53	35	Calm	Traffic (51), birds (45), TQ inaudible
E	6:35 am	55	35	Calm	Traffic (55), Birds (40), TQ inaudible
H	6:01 am	49	35	Calm	Birds (48), traffic (40), TQ inaudible

Table 8 Teralba Quarry Noise Monitoring Results – 28 November 2017 Day					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/ direction	Identified Noise Sources (Leq (15 min))
A	3:05 pm	49	38	1.6 / 105	Wind (46), insects (42), industrial noise (40), TQ inaudible
B	4:39 pm	52	46	2.2 / 120	Traffic (50), birds (42), industrial noise (42), TQ inaudible
D	4:35 pm	48	35	2.2 / 120	Traffic (48), TQ inaudible
E	7:30 am	53	35	0.6 / 226	Birds (51), Insects (47), traffic (37), TQ inaudible
H	3:00 pm	43	35	1.6 / 105	Insects (40), traffic (36), birds (34), TQ inaudible





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Table 9 Teralba Quarry Noise Monitoring Results – 28 November 2017 Evening					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/direction	Identified Noise Sources (Leq (15 min))
A	6:56 pm	46	37	1.4 / 114	Dog (44), plane (41), traffic (37), TQ barely audible
B	6:03 pm	52	36	1.7 / 135	Traffic (49), train (46), wind (44), TQ inaudible
D	6:04 pm	43	35	1.7 / 135	Traffic (41), insects (37), TQ inaudible
E	7:02 pm	48	35	1.4 / 114	Traffic (38), trains (26), TQ inaudible
H	7:36 pm	42	35	1.2 / 186	Insects (41), birds (33), TQ inaudible

Table 10 Teralba Quarry Noise Monitoring Results – 29 November 2017 Night					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/direction	Identified Noise Sources (Leq (15 min))
A	5:40 am	45	35	0.7 / 138	Birds (43), traffic (36), industrial noise (35), TQ inaudible
B	4:36 am	54	35	1.0 / 138	Insects (54), industrial noise (38), TQ inaudible
D	4:30 am	35	35	1.0 / 138	Traffic (34), insects (26), TQ inaudible
E	5:37 am	51	35	0.7 / 138	Birds (50), traffic (41), TQ inaudible
H	5:02 am	46	35	0.9 / 131	Birds (46), traffic (34), TQ inaudible

Table 11 Teralba Quarry Noise Monitoring Results – 29 November 2017 Day Shoulder					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/direction	Identified Noise Sources (Leq (15 min))
A	6:48 am	48	38	0.5 / 147	Traffic (47), traffic (37), Industrial noise (36), TQ inaudible
B	6:42 am	47	42	0.8 / 131	Industry (45), traffic (41), TQ inaudible
D	6:24 am	46	35	0.8 / 129	Traffic (42), birds (40), Industrial noise (34), TQ inaudible
E	6:35 am	52	35	1.0 / 139	Birds (51), traffic (41), TQ inaudible
H	6:03 am	49	35	0.6 / 136	Birds (47), traffic (42), TQ inaudible

Table 12 Teralba Quarry Noise Monitoring Results – 29 November 2017 Day					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/direction	Identified Noise Sources (Leq (15 min))
A	7:07 am	48	38	0.8 / 147	Insects (44), birds (42), traffic (37), industrial noise (36), TQ inaudible
B	4:33 pm	60	46	1.8 / 153	Train (57), traffic (56), TQ inaudible
D	9:37 am	55	35	1.5 / 123	Traffic (52), birds (52), TQ inaudible
E	7:04 am	51	35	0.8 / 147	Birds (47), traffic (45), insects (44), TQ inaudible
H	11:13 am	50	35	1.9 / 128	Birds (49), Traffic (41), TQ inaudible
Note: 1 See text description and analysis					





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Table 13 Teralba Quarry Noise Monitoring Results – 29 November 2017 Evening					
Location	Start Time	Total noise dB(A) Leq	Criterion dB(A) Leq	Wind speed/direction	Identified Noise Sources (Leq (15 min))
A	6:39 pm	44	37	1.3 / 124	Traffic (41), birds (37), plane (36), TQ inaudible
B	6:03 pm	48	36	1.3 / 120	Traffic (44), wind (43), birds (40), TQ inaudible
D	6:00 pm	39	35	1.3 / 120	Traffic (38), birds (31), TQ inaudible
E	6:37 pm	47	35	1.3 / 124	Birds (46), traffic (37), TQ inaudible
H	7:23 pm	41	35	1.3 / 126	Birds (41), traffic (27), TQ (28)

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





**Teralba Quarry Noise Monitoring – November 2017**

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**.

<b>Table 14</b> <b>Teralba Quarry (L1 (1min)) Noise Monitoring Results – 27 November 2017 (Night)</b>					
Location	Time	dB(A), L <sub>1</sub> (1minute)	Wind speed/ direction	L <sub>A1</sub> source	Identified Quarry Sources (L <sub>1</sub> (1 min))
A	5:33 am	57	0.8 / 206	Birds	n/a
B	4:36 am	59	0.6 / 245	Traffic	n/a
D	4:33 am	62	0.6 / 245	Traffic	n/a
E	5:37 am	56	0.8 / 206	Birds	n/a
H	5:01 am	65	0.6 / 231	Birds	n/a

<b>Table 15</b> <b>Teralba Quarry (L1 (1min)) Noise Monitoring Results – 28 November 2017 (Night)</b>					
Location	Time	dB(A), L <sub>1</sub> (1minute)	Wind speed/ direction	L <sub>A1</sub> source	Identified Quarry Sources (L <sub>1</sub> (1 min))
A	5:44 am	64	0.6 / 185	Birds	n/a
B	4:36 am	61	0.6 / 201	Traffic	n/a
D	4:30 am	68	0.6 / 201	Birds	n/a
E	5:36 am	59	1.0 / 186	Birds	n/a
H	5:00 am	67	1.0 / 175	Birds	n/a

<b>Table 16</b> <b>Teralba Quarry (L1 (1min)) Noise Monitoring Results – 29 November 2017 (Night)</b>					
Location	Time	dB(A), L <sub>1</sub> (1minute)	Wind speed/ direction	L <sub>A1</sub> source	Identified Quarry Sources (L <sub>1</sub> (1 min))
A	5:40 am	61	0.7 / 138	Birds	n/a
B	4:36 am	63	1.0 / 138	Traffic	n/a
D	4:30 am	66	1.0 / 138	Birds	n/a
E	5:37 am	58	0.7 / 138	Birds	n/a
H	5:02 am	66	0.9 / 131	Birds	n/a

As shown in Tables 14 to 16, during the night time measurement circuits the L<sub>1</sub> (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.





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Teralba Quarry Noise Monitoring – November 2017

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:

A handwritten signature in black ink, appearing to read 'Neil Pennington'.

Neil Pennington MAIP, MAAS  
Acoustical Consultant

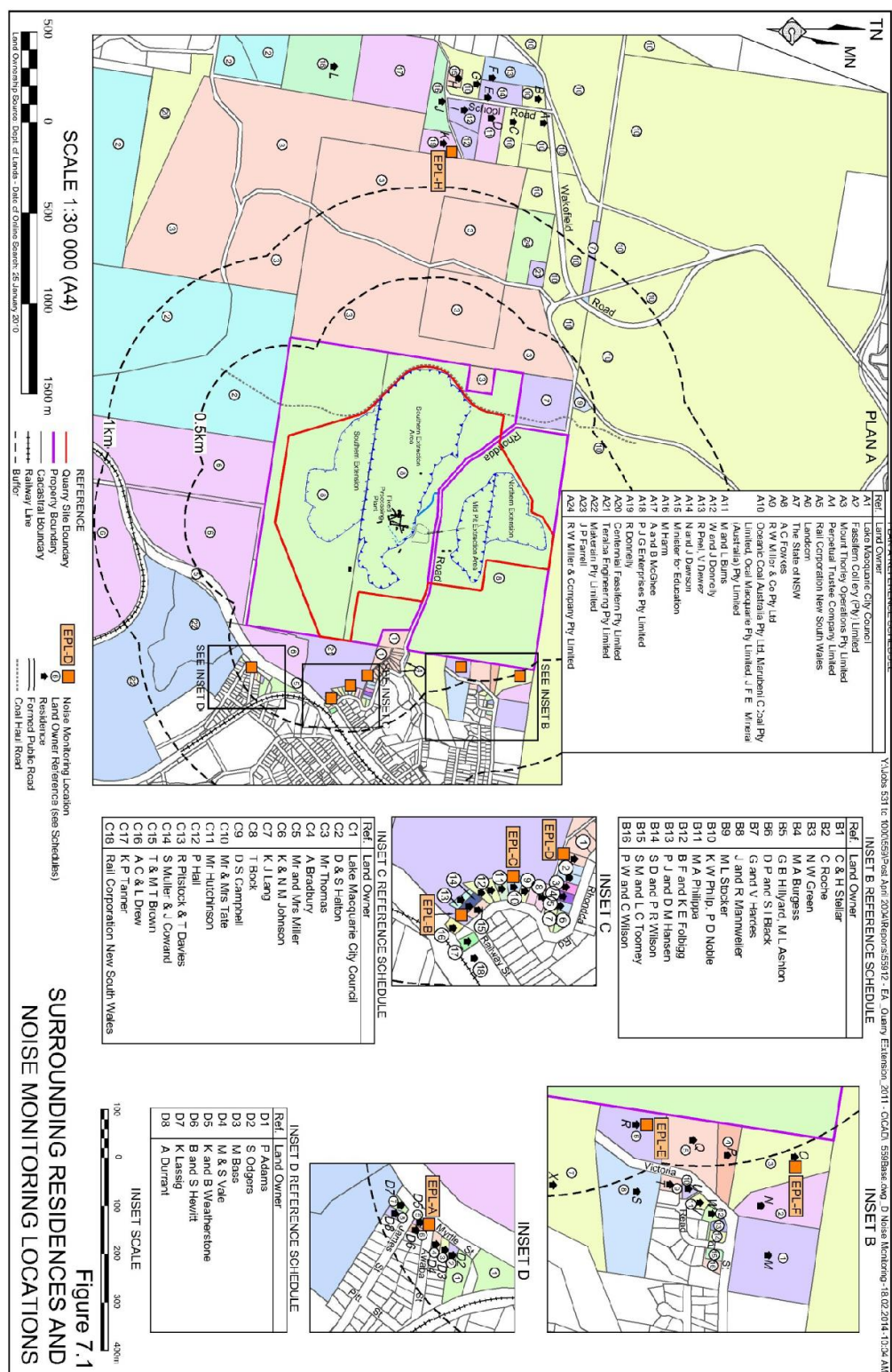
Review:

A handwritten signature in black ink, appearing to read 'Ross Hodge'.

Ross Hodge MAAS  
Acoustical Consultant











Teralba Quarry Noise Monitoring – November 2017



Location EPL – B Modified noise monitoring location



Location of quarrying activities during the survey.



Teralba Quarry Noise Monitoring – November 2017

Noise Monitoring Information																	
Hours of Operational Plant				Location & Hours of Operational Mobile Plant													
Date	Fixed Wet	Fixed Dry	Pugmill	Downer	EX001	RD001	RD003	AD001	WL001	WL002	WL003	DR001	WC001	WC002	Hire DZ	Hire EX	Hire AD
				Asphalt Plant	85 Tonne Excavator	60 Tonne Rigid Dumper	40 Tonne Rigid Dumper	40 Tonne Articulated Dumper	Wheel Loader	Wheel Loader	Wheel Loader	Drill	35 Tonne Water Cart	On Road Water Cart	D11 Dozer	30 Tonne Excavator	40 Tonne Articulated Dumper
																AHD 64	
27-Nov	0700-1900	N/A	First Load 700 Last Load 1330	First Load 730 Last Load 1230	AHD 57 to 0700 to 1700	AHD 57 to Dump Hooper 0700 - 1700 10 hrs	N/A	From Bins to Stockpile areas 0700 to 1900	Sales Yard and Boot Area AHD 50 to AHD 55 0430 to 1900	Sales Yard and Boot Area AHD 50 to AHD 55 0700 to 1700	N/A	N/A	0700 to 1700	N/A	N/A	1500 to 1700	AHD 57 to Dump Hooper 0700 - 1700
28-Nov	0700-1900	N/A	First Load 1130 Last Load 1430	First Load 735 Last Load 1335	AHD 20 to 0700 to 1700	AHD 20 to Dump Hooper 0700 - 1700 10 hrs	N/A	From Bins to Stockpile areas 0700 to 1900	Sales Yard and Boot Area AHD 50 to AHD 55 0530 to 1700	Sales Yard and Boot Area AHD 50 to AHD 55 0700 to 1700	Sales Yard and Boot Area AHD 50 to AHD 55 0700 to 1700	N/A	0700 to 1700	N/A	N/A	0700 to 1700	AHD 20 to Dump Hooper 0700 - 1700
29-Nov	0700-1900	N/A	First Load 700 Last Load 1345	First Load 700 Last Load 1320	AHD 20 to 0700 to 1730	AHD 20 to Dump Hooper 0700 - 1730 10 hrs	N/A	From Bins to Stockpile areas 0700 to 1900	Sales Yard and Boot Area AHD 50 to AHD 55 0530 to 1730	N/A	Sales Yard and Boot Area AHD 50 to AHD 55 0700 to 1700	N/A	0700 to 1700	N/A	N/A	N/A	AHD 20 to Dump Hooper 0700 - 1730

Noise source locations and operational hours.

