

## AuS-10 Rhyolite - Licence number 12323

**Dam 1 - SB1 - EPL Point 1**

Licence Discharge Point 1

Guidance range		Range - 6.5 - 8.5	<1500us/cm		<30 mg/l	20	10 mg/l			
Month	Number of Samples	pH	Electrical Conductivity	Turbidity	Total Dissolved Solids	Total Suspend Solids	Oxygen demand	Oil/Grease	Volume Discharged - KL	Comment
Jul-2016	0									
Aug-2016	0									
Sep-2016	0									
Oct-2016	0									
Nov-2016	0									
Dec-2016	0									
Jan-2017	0									
Feb-2017	0									
Mar-2017	0									
Apr-2017	0									
May-2017	0									
Jun-2017	0									
<b>Total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
	Mean	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	
	Lowest	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	
	Highest	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	

**EPL POINT 2**

Range - 6.5 - 8.5

Upstream Location AQW-1

Month	Number of Samples	pH	Electrical Conductivity	Turbidity	Total Dissolved Solids	Total Suspend Solids	Oxygen demand	Oil/Grease	Volume Discharged - KL
Jul-2016	1	7.66	481	4	316	0	<2	<5	Nil Discharge
Aug-2016	1	6.9	369	19	242	18	2	<5	Monthly sample
Sep-2016	1	8.47	443	5	270	0	2	<5	Monthly sample
Oct-2016	1	6.6	450	3	294	0	<2	<5	Monthly sample
Nov-2016	1	8.03	493	2	304	0	<2	<5	Monthly sample
Dec-2016	1	8.15	461	4	284	0	<2	<5	Monthly sample
Jan-2017	1	7.36	473	4	276	0	<2	<5	Monthly sample
Feb-2017	1	7.77	499	4	312	0	<2	<5	Monthly sample
02.03.2017	1	7.97	451	3	290	0	<2	<5	Monthly sample
29.03.2017	1	7.91	283	5	202	0	4	<5	Monthly sample
01.05.2017	1	6.79	183	2	218	12	<2	<5	Monthly sample
01.06.2017	1	7.95	438	2	254	0	<2	<5	Monthly sample
29.06.2017	1	8.2	452	1.7	220	0	5	<5	Monthly sample
<b>Total</b>		<b>99.76</b>	<b>5476</b>	<b>58.7</b>	<b>3482</b>	<b>30</b>	<b>13</b>	<b>0</b>	
	Mean	<b>8.31</b>	<b>456.33</b>	<b>4.89</b>	<b>290.17</b>	<b>2.50</b>	<b>1.08</b>	<b>0.00</b>	
	Lowest	<b>6.60</b>	<b>183.00</b>	<b>1.70</b>	<b>202.00</b>	<b>0.00</b>	<b>2.00</b>	<b>#DIV/0!</b>	
	Highest	<b>8.47</b>	<b>499.00</b>	<b>19.00</b>	<b>316.00</b>	<b>18.00</b>	<b>5.00</b>	<b>0.00</b>	

**EPL Point 3**

COXS RIVER LOWER CROSSING 6/7/2011 - AQW3

Month	Number of Samples	pH	Electrical Conductivity	Turbidity	Total Dissolved Solids	Total Suspend Solids	Oxygen demand	Oil/Grease	Volume Discharged - KL
Jul-2016	1	8.03	471	6	303	<5	<2	<5	Monthly sample
13.07.2016	1	8.05				<5		<5	Discharge EPL 10
14.07.2016	1	7.96				<5		<5	Discharge EPL 10
26.07.2016	1	7.86				<5		<5	Discharge EPL 10
27.07.2016	1	7.25				<5		<5	Discharge EPL 10
Aug-2016	1	7.14	331	33	186	26	2	<5	Monthly sample
10.08.2016	1	6.54				<5		6	Discharge EPL 9
30.08.2016	1	6.73				<5		<5	Discharge EPL 10

0  
0  
0  
0  
0  
26  
6  
0

06.09.2016	1	6.72				<5		<5	Discharge EPL 10	0
07.09.2016	1	6.95				<5		<5	Discharge EPL 9&10	0
Sep-2016	1	7.06	418	5	262	<5	2	<5	Monthly sample	0
21.09.2016	1	7.26		4		<5		<5	Discharge EPL 10	0
Oct-2016	1	6.68	438	3	292	<5	<2	<5	Monthly sample	0
05.10.2016	1	6.87	447	3		<5		<5	Discharge EPL 10	0
Nov-2016	1	8.2	497	4	296	6	<2	<5	Monthly sample	6
Dec-2016	1	8.09	454	2	254	<5	<2	<5	Monthly sample	0
Jan-2017	1	7.29	478	4	288	<5	4	<5	Monthly sample	0
Feb-2017	1	7.65	508	2	310	<5		<5	Monthly sample	0
02.03.2017	1	8.33	496	3	334	<5	<2	<5	Monthly sample	0
16.03.2017	1	7.95		8		<5		<5	Discharge EPL 9	0
29.03.2017	1	7.72	282	4	192	<5	4	<5	Monthly sample	0
04.04.2017	1	7.51		3		<5		<5	Discharge EPL 10	0
01.05.2017	1	7.56	183	1	214	<5	<2	<5	Monthly sample	0
01.06.2017	1	8.15	445	2	248	<5	<2	<5	Monthly sample	0
29.06.2017	1	8.0	415	1.5	241	<5	4	<5	Monthly sample	0
<b>Total</b>		<b>179.52</b>	<b>5392</b>	<b>82.5</b>	<b>3117</b>	<b>32</b>	<b>16</b>	<b>6</b>		
		<b>14.96</b>	<b>449.33</b>	<b>6.88</b>	<b>259.75</b>	<b>2.67</b>	<b>1.33</b>	<b>0.50</b>		
Mean		<b>7.50</b>	<b>418.79</b>	<b>5.21</b>	<b>263.08</b>		<b>3.20</b>	<b>6.00</b>	<b>#DIV/0!</b>	<b>1.52</b>
Lowest		<b>6.54</b>	<b>183.00</b>	<b>1.00</b>	<b>186.00</b>	<b>6.00</b>	<b>2.00</b>	<b>6.00</b>		<b>0.00</b>
Highest		<b>8.33</b>	<b>508.00</b>	<b>33.00</b>	<b>334.00</b>	<b>26.00</b>	<b>4.00</b>	<b>6.00</b>		<b>26.00</b>

Dust Monitoring

EPL Point 4

Month	Number of Samples	Sawmill	Insoluble Solids	Combustible Matter	Ash
Jul-2016	continuous	Sawmill	1.0	1.0	<0.1
Aug-2016	continuous	Sawmill	<0.1	<0.1	<0.1
Sep-2016	continuous	Sawmill	<0.1	<0.1	<0.1
Oct-2016	continuous	Sawmill	0.1	0.1	<0.1
Nov-2016	continuous	Sawmill	0.5	0.5	<0.1
Dec-2016	continuous	Sawmill	<0.1	<0.1	<0.1
Jan-2017	continuous	Sawmill	0.4	0.3	0.1
Feb-2017	continuous	Sawmill	1.9	1.1	0.8
Mar-2017	continuous	Sawmill	1.9	0.4	1.5
Apr-2017	continuous	Sawmill	0.8	0.3	0.5
May-2017	continuous	Sawmill	0.6	0.2	0.4
Jun-2017	continuous	Sawmill	2.6	1.8	0.8
			<b>9.8</b>	<b>5.7</b>	<b>4.1</b>
	Mean		<b>1.09</b>	<b>0.63</b>	<b>0.68</b>
	Lowest		<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
	Highest		<b>2.6</b>	<b>1.8</b>	<b>1.5</b>

Dust Monitoring

EPL Point 5

Month	Number of Samples	Baners Lane	Insoluble Solids	Combustible Matter	Ash
Jul-2016	continuous	Baners Lane	0.4	0.4	<0.1
Aug-2016	continuous	Baners Lane	<0.1	<0.1	<0.1
Sep-2016	continuous	Baners Lane	<0.1	<0.1	<0.1
Oct-2016	continuous	Baners Lane	0.4	0.4	<0.1
Nov-2016	continuous	Baners Lane	1.3	0.9	0.4
Dec-2016	continuous	Baners Lane	<0.1	<0.1	<0.1
Jan-2017	continuous	Baners Lane	0.6	0.4	0.2
Feb-2017	continuous	Baners Lane	0.2	0.2	<0.1
Mar-2017	continuous	Baners Lane	0.4	0.2	0.2
Apr-2017	continuous	Baners Lane	0.3	0.2	0.1
May-2017	continuous	Baners Lane	0.1	0.1	<0.01
Jun-2017	continuous	Baners Lane	2.4	1.9	0.5
			<b>6.1</b>	<b>4.7</b>	<b>1.4</b>
	Mean		<b>0.68</b>	<b>0.52</b>	<b>0.28</b>

Lowest	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
Highest	<b>2.4</b>	<b>1.9</b>	<b>0.5</b>

Dust Monitoring

EPL Point 6

Month	Number of Samples	Bald Hill	Insoluble Solids	Combustible Matter	Ash
Jul-2016	continuous	Bald Hill	0.4	0.4	<0.1
Aug-2016	continuous	Bald Hill	<0.1	<0.1	<0.1
Sep-2016	continuous	Bald Hill	0.8	0.7	0.1
Oct-2016	continuous	Bald Hill	0.5	0.3	0.2
Nov-2016	continuous	Bald Hill	0.1	0.2	<0.1
Dec-2016	continuous	Bald Hill	<0.1	<0.1	<0.1
Jan-2017	continuous	Bald Hill	0.2	0.1	0.1
Feb-2017	continuous	Bald Hill	0.6	0.3	0.3
Mar-2017	continuous	Bald Hill	1.1	0.9	0.2
Apr-2017	continuous	Bald Hill	0.4	0.1	0.3
May-2017	continuous	Bald Hill	0.1	0.1	<0.01
Jun-2017	continuous	Bald Hill	4.1	2.7	1.4
			<b>8.3</b>	<b>5.8</b>	<b>2.6</b>
	Mean		<b>0.83</b>	<b>0.58</b>	<b>0.37</b>
	Lowest		<b>0.1</b>	<b>0.1</b>	<b>0.1</b>
	Highest		<b>4.1</b>	<b>2.7</b>	<b>1.4</b>

ND - Not Detected

Requirement to Monitor  
Volume or Mass - Points  
1, 8, 9, 10, 11

Kilolitres per day	Daily during any discharge	Estimate				
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EPL POINT 8

Dam 2 - SB2b

Range - 6.5 - 8.5

Month	Number of Samples	pH	Electrical Conductivity	Turbidity	Total Dissolved Solids	Total Suspend Solids	Oxygen demand	Oil/Grease	Volume Discharged - KL	Comment
Jul-2016	0									
Aug-2016	0									
Sep-2016	0									
Oct-2016	0									
Nov-2016	0									
Dec-2016	0									
Jan-2017	0									
Feb-2017	0									
Mar-2017	0									
Apr-2017	0									
May-2017	0									
Jun-2017	0									
		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		
	Mean	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		
	Lowest	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		
	Highest	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		

EPL POINT 9

South of O/Burden dump

Dam 3 - SB3a

Range - 6.5 - 8.5

Month	Number of Samples	pH	Electrical Conductivity	Turbidity	Total Dissolved Solids	Total Suspend Solids	Oxygen demand	Oil/Grease	Volume Discharged - KL	Comment
11.07.2016	1	6.68				19		<5	Nil Discharge	Sample only
12.07.2016	1	7.45				7		<5	1ml	Discharge
9.08.2016	1	6.61				<5		7		Sample Only



		0	0	0	0	0	0	0	0
Mean		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lowest		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Highest		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### AuS-10 Rhyolite - Licence number 12323

Blasting	Frequency	Date	Blast Number	Limits	Units of measure	Results	Monitor Location - Hartley Village
Ground Vibration	Per Blast	05.07.2016	110	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	05.07.2016	110	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	25.07.2016	111	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	25.07.2016	111	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	10.08.2016	112	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	10.08.2016	112	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	30.08.2016	113	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	30.08.2016	113	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	26.09.2016	114	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	26.09.2016	114	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	06.10.2016	115	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	06.10.2016	115	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	19.10.2016	116	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	19.10.2016	116	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	07.11.2016	117	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	07.11.2016	117	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	15.11.2016	118	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	15.11.2016	118	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	08.03.2017	119	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	08.03.2017	119	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	30.11.2016	120	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	30.11.2016	120	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	14.12.2016	121	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	14.12.2016	121	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	01.02.2017	122	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	01.02.2017	122	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	15.02.2017	123	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	15.02.2017	123	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	01.03.2017	124	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	01.03.2017	124	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	23.03.2017	125	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	23.03.2017	125	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	28.03.2017	126	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	28.03.2017	126	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast		127	5 - trigger point >0.51	mm/s		
Overpressure	Per Blast		127	115 - Trigger point <88	dB		
Ground Vibration	Per Blast	26.04.2017	128	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	26.04.2017	128	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	10.05.2017	129	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	10.05.2017	129	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	24.05.2017	130	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	24.05.2017	130	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	02.06.2017	131	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	02.06.2017	131	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	07.06.2017	132	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	07.06.2017	132	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	14.06.2017	133	5 - trigger point >0.51	mm/s	Nil Trigger	√
Overpressure	Per Blast	14.06.2017	133	115 - Trigger point <88	dB	Nil Trigger	√
Ground Vibration	Per Blast	28.06.2017	134	5 - trigger point >0.51	mm/s	0.62	√
Overpressure	Per Blast	28.06.2017	134	115 - Trigger point <88	dB	Nil Trigger	√

## Grant's Head Quarry - Licence Number 4040

	Pollutant	Aluminium	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
EPL Point 1 - sump	Units of Measure	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
Month	Number of Samples									
09.08.2016	1	0.20	0.001	<0.001	0.001	0.104	<0.001	<0.00001	0.014	0.091
16.11.2016	1	0.275	0.0003	0.0005	0.0011	0.158	0.0017	<0.00001	0.0256	0.126
24.01.2017	1	0.096	0.0003	0.0009	0.0012	0.17	0.0007	0.00023	0.0373	0.169
20.04.2017	1	0.215	<0.0002	0.0005	0.0005	0.324	0.0004	<0.00001	0.0244	0.09
29.06.2017	1	0.163	0.0003	0.0008	0.0007	0.143	0.0024	<0.0003	0.0269	0.208

	Pollutant				Total Suspended Solids Max 30 Milligrams per litre		Hours of pump operation	Requirement to Monitor Volume or Mass - KL
EPL Point 1 - sump	Units of Measure	pH (wet) Range 5.3 to 7.0	Electrical Conductivity	Turbidity	mg/l	Oil and Grease Visible	Hours	KL
Month	Number of Samples	pH	µS/cm	NTU	mg/l	Visible	Hours	KL
28.06.2016	1	6.6	342	2.9	5	<5	24	6,825.6
04.07.2016	1	5.6	454	5.2	6	<5	24	6,825.6
01.08.2016	1	5.9	452	18	7	<5	24	6,825.6
09.08.2016	1	6.3	343	24	11	<5	19	5,403.6
16.08.2016	1	6.3	358	18	15	<5	24	6,825.6
01.09.2016	1	5.7	393	25	7	<5	24	6,825.6
19.09.2016	1	6.7	413	1.9	<3	<5	24	6,825.6
16.11.2016	1	6.3	393	6.3	9	<5	19	5,403.6
07.12.2016	1	6.3	418	11	5	<5	24	6,825.6
03.01.2017	1	6.2	468	7.9	11	<5	24	6,825.6
24.01.2017	1	6.1	431	5.5	5	<5	11	3,128.4
16/02/2017	1	5.4	428	3.1	<3	<5	14	3,981.6
2/03/2017	1	6.2	437	2.9	4	<5	24	6,825.6
9/03/2017	1	5.7	378	9.4	10	<5	24	6,825.6
21/03/2017	1	6.3	230	7.8	9	<5	24	3,412.8
23/03/2017	1	6.4	239	7.7	9	<5	24	3,412.8
24/03/2017	1	6.2	248	5.2	7	<5	24	3,412.8
27/03/2017	1	6.0	275	7.8	8	<5	24	3,412.8
28/03/2017	1	5.7	249	9.2	10	<5	24	3,412.8
29/03/2017	1	6.7	293	5.8	10	<5	24	3,412.8
30/03/2017	1	6.1	224	7.3	9	<5	24	3,412.8
31/03/2017	1	5.6	262	12	11	<5	24	3,412.8
3/04/2017	1	5.8	244	8.3	7	<5	24	3,412.8
4/04/2017	1	5.6	250	9.6	9	<5	24	3,412.8
10/04/2017	1	5.8	278	6.7	6	<5	24	3,412.8
11/04/2017	1	5.3	282	4.1	4	<5	24	3,412.8
12/04/2017	1	5.8	292	4.7	5	<5	24	3,412.8
20/04/2017	1	5.2	315	2.4	<3	<5	0	
26/04/2017	1	6.3	341	3	<3	<5	24	3,412.8
17/05/2017	1	5.9	396	2.5	<3	<5	24	6,825.6
5/06/2017	1	5.6	391	2.7	<3	<5	24	6,825.6
6/06/2017	1	5.7	400	3.8	<3	<5	24	6,825.6

+ Metal suite - Discharge

Pump change 142,000Lt/Hr

Metal suite sample only - Nil Discharge

Pump change back to 284,400Lt/Hr

7/06/2017	1	5.7	386	4	4	<5	24	6,825.6
14/06/2017	1	6.1	272	9.8	7	<5	24	6,825.6
29.06.2017	1	6.0	369	5.8	9	<5	24	6,825.6

Grant's Head Points 2 & 3		Standing Water Level Meters (mAHD)		Standing Water Level Metres (mAHD)
	Position ID	Quarterly	Position ID	Quarterly
30.03.2016	MW05	4.609	MW06	4.759
26.05.2016	MW05	4.644	MW06	4.794
23.09.2016	MW05	4.589	MW06	4.757
12.12.2016	MW05	4.443	MW06	4.577
28.03.2017	MW05	4.814	MW06	4.934
19.06.2017	MW05	4.619	MW06	4.839

Grant's Head Point 4	Position ID	Conductivity	pH	Standing Water Level	Aluminium	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
23.09.2016	NW01S	417	4.83	-0.117									
23.09.2016	NW01D	410	6.62	-0.556									
12.12.2016	NW01S	454	5.1	-0.923	<0.05	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.001	0.003	0.032
12.12.2016	NW01D	470	4.39	-1.305	0.42	<0.001	<0.0002	<0.001	0.002	<0.001	<0.001	0.002	0.011
28.03.2017	NW01S	123.7	4.87	0.205									
28.03.2017	NW01D	444.1	4.43	-0.345									
19.06.2017	NW01S	481	4.65	0.83									
19.06.2017	NW01D	508	4.37	0.19									

Grant's Head Point 5	Position ID	Conductivity	pH	Standing Water Level	Aluminium	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
23.09.2016	NW02S	270	3.89	-7.696									
23.09.2016	NW02D	700	5.88	-0.307									
12.12.2016	NW02S	352	3.79	-8.112	0.34	<0.001	<0.0002	<0.001	0.002	<0.001	<0.001	<0.001	<0.005
12.12.2016	NW02D	870	5.86	-1.135	<0.05	0.004	<0.0002	<0.001	<0.001	<0.001	<0.001	0.014	<0.005
28.03.2017	NW02S	275.2	4.29	-7.73									
28.03.2017	NW02D	741	5.97	-0.92									
19.06.2017	NW02S	345	3.79	-7.9									
19.06.2017	NW02D	873	5.84	-0.845									

Grant's Head Point 6	Position ID	Conductivity	pH	Standing Water Level	Aluminium	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
23.09.2016	NW03S	332	3.99	-11.248									
23.09.2016	NW03D	1205	4.89	-29.519									
12.12.2016	NW03S	435	3.66	-11.336	0.23	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
12.12.2016	NW03D	1318	5.63	-30.475	<0.05	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.001	0.03	0.042
28.03.2017	NW03S	338.4	4.59	-10.83									
28.03.2017	NW03D	1301	7.05	-29.76									
19.06.2017	NW03S	440	5.25	-10.815									
19.06.2017	NW03D	1412	5.46	-30.45									

### Grant's Head Quarry - Licence Number 4040

Blasting	Frequency	Date	Limits	Units of measure	Results Bonny Hills 1st House	Results - Sherwood House	Blast No #
Ground Vibration	Per Blast	19.01.2016	5 - trigger point >0.27	mm/s	4.42	Nil Trigger	# 109
Overpressure	Per Blast	19.01.2016	115 - Trigger point >100	dB	101.5	Nil Trigger	# 109

Ground Vibration	Per Blast	29.03.2016	5 - trigger point >0.27	mm/s	1.53	0.57	# 110
Overpressure	Per Blast	29.03.2016	115 - Trigger point >100	dB	106.5	113.1	# 110
Ground Vibration	Per Blast	13.07.2016	5 - trigger point >0.27	mm/s	1.5	0.76	# 111
Overpressure	Per Blast	13.07.2016	115 - Trigger point >100	dB	102.4	94.1	# 111
Ground Vibration	Per Blast	21.07.2016	5 - trigger point >0.27	mm/s	3.94	0.78	# 112
Overpressure	Per Blast	21.07.2016	115 - Trigger point >100	dB	110.2	108.7	# 112
Ground Vibration	Per Blast	23.08.2016	5 - trigger point >0.27	mm/s	2.12	Nil Trigger	# 113
Overpressure	Per Blast	23.08.2016	115 - Trigger point >100	dB	113	Nil Trigger	# 113
Ground Vibration	Per Blast	13.10.2016	5 - trigger point >0.27	mm/s	1.48	Nil Trigger	#114
Overpressure	Per Blast	13.10.2016	115 - Trigger point >100	dB	101.5	Nil Trigger	#114
Ground Vibration	Per Blast	14.12.2016	5 - trigger point >0.27	mm/s	1.68	Nil Trigger	#115
Overpressure	Per Blast	14.12.2016	115 - Trigger point >100	dB	101.7	Nil Trigger	#115
Ground Vibration	Per Blast	10.02.2017	5 - trigger point >0.27	mm/s	3.5	Nil Trigger	#116
Overpressure	Per Blast	10.02.2017	115 - Trigger point >100	dB	109.1	Nil Trigger	#116
Ground Vibration	Per Blast	05.07.2017	5 - trigger point >0.27	mm/s	1.18	Nil Trigger	#117
Overpressure	Per Blast	05.07.2017	115 - Trigger point >100	dB	98.9	Nil Trigger	#117

**Tumbulgam EPL 3430**

Tumbulgam Point 1		Pollutant	OIL and Grease -10 Milligrams per Lt.	Total Suspended Solids Max 50 Milligrams per litre	pH (wet) Range 6.5 to 8.5	Requirement to Monitor Volume or Mass	
Month	Number of Samples	Frequency	Less than 24 hours before Discharge	Less than 24 hours before Discharge	Less than 24 hours before Discharge	Daily when wastes (water) discharged Klitres per day	Why Sampled - Discharge or Random?
Jul-2016	Nil						
Aug-2016	Nil						
Sep-2016	Nil						
Oct-2016	Nil						
Nov-2016	Nil						
Dec-2016	Nil						
Jan-2017	Nil						
Feb-2017	Nil						
Mar-2017	Nil						
Apr-2017	Nil						
May-2017	Nil						
Jun-2017	Nil						

Tumbulgam Point 2		Pollutant	OIL and Grease -10 Milligrams per Lt.	Total Suspended Solids Max 50 Milligrams per litre	pH (wet) Range 6.5 to 8.5	Requirement to Monitor Volume or Mass	
Month	Number of Samples	Frequency		Monthly during discharge	<24hrs prior to discharge	Daily when wastes (water) discharged Klitres per day	Why Sampled - Discharge or Random?
Jul-2016	Nil						
Aug-2016	Nil						
Sep-2016	Nil						
Oct-2016	Nil						
Nov-2016	Nil						
Dec-2016	Nil						



Jan-2017	Nil						
Feb-2017	Nil						
Mar-2017	Nil						
Apr-2017	Nil						
May-2017	Nil						
Jun-2017	Nil						

**Tumbulgum EPL 3430**

Tumbulgum Blast Monitoring results

Blasting	Frequency	Date	Limits	Units of measure	Loc # 1 - 43 Pollard Rd	Loc # 2 - 2 Pollard Rd	Loc # 3 - 729 - 731 Dulguigan Rd	Blast #
Ground Vibration	Per Blast	07.07.2016	5 - trigger point >0.51	mm/s	No Trigger	1.048	Not required	#21
Overpressure	Per Blast	07.07.2016	Max 115 - Trigger point >110	dB	No Trigger	113.5	Not required	#21
Ground Vibration	Per Blast	07.07.2016	5 - trigger point >0.26	mm/s	0.302	0.571	Not required	#22
Overpressure	Per Blast	07.07.2016	Max 115 - Trigger point >100	dB	104.2	105.5	Not required	#22
Ground Vibration	Per Blast	26.08.2016	5 - trigger point >0.26	mm/s	0.58	0.89	Not required	#24
Overpressure	Per Blast	26.08.2016	Max 115 - Trigger point >100	dB	106.5	104.2	Not required	#24
Ground Vibration	Per Blast	07.10.2016	5 - trigger point >0.26	mm/s	0.29	0.6	Not required	#25
Overpressure	Per Blast	07.10.2016	Max 115 - Trigger point >100	dB	101.9	100	Not required	#25
Ground Vibration	Per Blast	14.10.2016	5 - trigger point >0.26	mm/s	0.51	1.7	Not required	#26
Overpressure	Per Blast	14.10.2016	Max 115 - Trigger point >100	dB	105.5	108.4	Not required	#26
Ground Vibration	Per Blast	20.02.2017	5 - trigger point >0.51	mm/s	No Trigger	0.696	Not required	#27
Overpressure	Per Blast	20.02.2017	Max 115 - Trigger point >115	dB	No Trigger	102.8	Not required	#27
Ground Vibration	Per Blast	20.02.2017	5 - trigger point >0.51	mm/s	No Trigger	0.539	Not required	#28
Overpressure	Per Blast	20.02.2017	Max 115 - Trigger point >115	dB	No Trigger	102.8	Not required	#28
Ground Vibration	Per Blast	03.05.2017	5 - trigger point >0.26	mm/s	No Trigger	0.55	Not required	#29
Overpressure	Per Blast	03.05.2018	Max 115 - Trigger point >100	dB	No Trigger	104.9	Not required	#29
Ground Vibration	Per Blast	03.05.2019	5 - trigger point >0.26	mm/s	0.52	2.29	Not required	#30
Overpressure	Per Blast	03.05.2020	Max 115 - Trigger point >100	dB	107.5	108	Not required	#30
Ground Vibration	Per Blast	23.05.2017	5 - trigger point >0.26	mm/s	0.34	0.35	Not required	#31
Overpressure	Per Blast	23.05.2017	Max 115 - Trigger point >100	dB	104.2	105.5	Not required	#31
Ground Vibration	Per Blast	23.05.2017	5 - trigger point >0.26	mm/s	0.34	0.35	Not required	#32
Overpressure	Per Blast	23.05.2017	Max 115 - Trigger point >100	dB	104.2	105.5	Not required	#32
Ground Vibration	Per Blast	23.05.2017	5 - trigger point >0.26	mm/s	0.67	1.12	Not required	#33
Overpressure	Per Blast	23.05.2017	Max 115 - Trigger point >100	dB	107.5	105.5	Not required	#33

**Yarrabee Rd Quarry - Licence Number 11462**

Yarrabee Rd Point 3		Pollutant	Total Suspended Solids Max 50 Milligrams per litre	pH (wet) Range 6.5 to 8.5	Requirement to Monitor Volume or Mass
Month	Number of Samples	Frequency	<24hrs prior to discharge	<24hrs prior to discharge	Daily when wastes (water) discharged Litres per day

29.06.2016	1		6	8.1	Nil Discharge	Sample only
06.03.2017	1		7	8.2		Sample only
01.05.2017	1		<3	8.9		Sample only
Number of samples	<b>3</b>					

Mean  
Lowest  
Highest

<b>6.50</b>	<b>8.40</b>	<b>#DIV/0!</b>
<b>6.00</b>	<b>8.10</b>	-
<b>7.00</b>	<b>8.90</b>	-

### Yarrabee Rd Quarry - Licence Number 11462

Blasting	Frequency	Date	Limits	Units of measure	Results	Blast #	Blast ID
Ground Vibration	Per Blast	18.01.2016	5 - trigger point >0.27	mm/s	0.49	#52	SEQ2016-01
Overpressure	Per Blast	18.01.2016	Max 115 - Trigger point >100	dB	111.6	#52	SEQ2016-01
Ground Vibration	Per Blast	08.02.2016	5 - trigger point >0.27	mm/s	3.21	#53	SEQ2016-02
Overpressure	Per Blast	08.02.2016	Max 115 - Trigger point >100	dB	114.6	#53	SEQ2016-02
Ground Vibration	Per Blast	08.03.2016	5 - trigger point >1.00	mm/s	0.89	#54	YRQ-1601
Overpressure	Per Blast	08.03.2016	Max 115 - Trigger point >105	dB	118.1	#54	YRQ-1601
Ground Vibration	Per Blast	30.03.2016	5 - trigger point >1.00	mm/s	2.23	#55	YRQ-1602
Overpressure	Per Blast	30.03.2016	Max 115 - Trigger point >105	dB	109.9	#55	YRQ-1602
Ground Vibration	Per Blast	28.04.2016	5 - trigger point >1.00	mm/s	No Trigger	#56	YRQ-1603
Overpressure	Per Blast	28.04.2016	Max 115 - Trigger point >105	dB	No Trigger	#56	YRQ-1603
Ground Vibration	Per Blast	30.06.2016	5 - trigger point >1.00	mm/s	1.68	#57	SEQ2016-03
Overpressure	Per Blast	30.06.2016	Max 115 - Trigger point >105	dB	114.9	#57	SEQ2016-03
Ground Vibration	Per Blast	02.08.2016	5 - trigger point >1.00	mm/s	1.59	#58	YRQ-1604
Overpressure	Per Blast	02.08.2016	Max 115 - Trigger point >105	dB	104.9	#58	YRQ-1604
Ground Vibration	Per Blast	25.08.2016	5 - trigger point >1.00	mm/s	0.54	#59	YRQ-1605
Overpressure	Per Blast	25.08.2016	Max 115 - Trigger point >105	dB	107.8	#59	YRQ-1605
Ground Vibration	Per Blast	05.10.2016	5 - trigger point >1.00	mm/s	1.36	#60	YRQ-1606
Overpressure	Per Blast	05.10.2016	Max 115 - Trigger point >105	dB	114.0	#60	YRQ-1606
Ground Vibration	Per Blast	17.11.2016	5 - trigger point >1.00	mm/s	1.11	#61	YRQ-1607
Overpressure	Per Blast	17.11.2016	Max 115 - Trigger point >105	dB	112.5	#61	YRQ-1607
Ground Vibration	Per Blast	15.12.2016	5 - trigger point >1.00	mm/s	1.28	#62	YRQ-1608
Overpressure	Per Blast	15.12.2016	Max 115 - Trigger point >105	dB	111.1	#62	YRQ-1608
Ground Vibration	Per Blast	16.02.2017	5 - trigger point >1.00	mm/s	0.65	#63	YRQ-1701
Overpressure	Per Blast	16.02.2017	Max 115 - Trigger point >105	dB	114.8	#63	YRQ-1701
Ground Vibration	Per Blast	28.03.2017	5 - trigger point >1.00	mm/s	Nil Trigger	#64	YRQ-1702
Overpressure	Per Blast	28.03.2017	Max 115 - Trigger point >105	dB	Nil Trigger	#64	YRQ-1702
Ground Vibration	Per Blast	06.06.2017	5 - trigger point >1.00	mm/s	1.61	#65	YRQ-1703
Overpressure	Per Blast	06.06.2017	Max 115 - Trigger point >105	dB	110.1	#65	YRQ-1703
Ground Vibration	Per Blast	21.06.2017	5 - trigger point >1.00	mm/s	0.52	#66	YRQ-1704
Overpressure	Per Blast	21.06.2017	Max 115 - Trigger point >105	dB	111.7	#66	YRQ-1704