

Overpressure	Per Blast	30/10/2023	250	121 - Trigger point <100	dB	Nil Trigger	Nil Trigger	Not required	1.00pm

Grant's Head Quarry - Licence Number 4040

EPL Point 1 - sump	Pollutant	Aluminium	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Comment
	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										
29/05/2023	1	0.477	0.0002	0.0005	0.0009	0.411	0.001	<0.00001	0.0259	0.044	Hy-Tec Qtrly Sample
06/06/2023	1	0.45	<0.001	0.0005	<0.001	0.42	0.001	<0.0001	0.025	0.043	ERM Qtrly sample
29/08/2023	1	0.315	0.0002	0.0004	0.0005	0.304	0.0004	<0.00001	0.0244	0.044	Hy-Tec Qtrly Sample

Wetland site (new Oct 2018)	Pollutant	Aluminium	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	COMMENTS
	Units of Measure	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
Date	No. of samples										
06/06/2023	1	0.07	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	<0.001	0.006	ERM Qtrly sample

Wetland site	Pollutant	pH	µS/cm	
	Units of Measure	mg/l	mg/l	
06/06/2023		6.03	253.9	ERM Qtrly sample

EPL Point 1 - sump	Pollutant	pH (wet) Range	Electrical Conductivity	Turbidity	Total Suspended Solids Max 30 Milligrams per litre	Oil and Grease	Hours of pump operation	Requirement to Monitor Volume or Mass - KL	COMMENTS
	Units of Measure		µS/cm	NTU	mg/l	Visible	Hours	KL	
Month	Number of	pH	µS/cm	NTU	mg/l	Visible	Hours	KL	
29/05/2023	1	6.2	375	2.4	6	<5	24	6,825.6	Qtrly sampling
6/06/2023	1	4.9	396					6,825.6	ERM Qtrly sample
27/06/2023	1	6.0	369	2.1	7	<5	24	6,825.6	
18/07/2023	1	6.5	382	16	15	<5	24	6,825.6	
24/07/2023	1	6.1	380	5.3	7	<5	24	6,825.6	
29/08/2023	1	6.1	379	1.8	3	<5	24	6,825.6	Qtrly sampling
Mean		6.18	377.50	6.30	8.00	#DIV/0!			
Lowest		6.00	369.00	1.80	3.00	0.00			
Highest		6.50	382.00	16.00	15.00	0.00			
								27,302.4	

Grant's Head Points 2 & 3	Position ID	Standing Water Level Meters (mAHD)	Position ID	Standing Water Level Metres (mAHD)
		Quarterly		Quarterly
03.06.2022	MW05	4.914	MW06	5.009
17/10/2022	MW05	4.885	MW06	4.944
07/12/2022	MW05	4.823	MW06	4.894
24/02/2023	MW05	4.659	MW06	4.735
06/06/2023	MW05	4.713	MW06	4.773
Mean	#DIV/0!		#DIV/0!	
Lowest	0.000		0.000	
Highest	0.000		0.000	

Grant's Head Point 4	Position ID	Conductivity	pH	Standing Water Level	Aluminium	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
		µS/cm		metres	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
24/02/2023	NW01D	254.7	5.74	-2.324	<0.05	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.003	0.006
06/06/2023	NW01D	487.9	7.71	-1.596	<0.05	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005
24/02/2023	NW01S	421.9	5.5	-1.45	0.36	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.002	0.008
06/06/2023	NW01S	521	8.41	-0.781	0.38	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.001	<0.005
Mean	NW01D			#DIV/0!	NW01S	Mean	#DIV/0!						
Lowest	NW01D			0.000	NW01S	Lowest	0.000						
Highest	NW01D			0.000	NW01S	Highest	0.000						

Grant's Head Point 5	Position ID	Conductivity	pH	Standing Water Level	Aluminium	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
		µS/cm		metres	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
24/02/2023	NW02D	782	6.3	0.804	<0.05	0.003	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.009	<0.005
06/06/2023	NW02D	464.7	6.24	0.865	<0.05	0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.001	<0.005
24/02/2023	NW02S	324.7	5.00	-9.012	0.53	<0.001	<0.0002	0.001	0.002	<0.001	<0.0001	<0.001	<0.005
06/06/2023	NW02S	311.7	5.04	-9.059	0.47	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.001	<0.005
Mean	NW02S			#DIV/0!	NW02D	Mean	#DIV/0!						

NW025		Lowest		0.000		NW02D		Lowest		0.000					
NW025		Highest		0.000		NW02D		Highest		0.000					
Grant's Head Point 6	Position ID	Conductivity	pH	Standline Water Level	Aluminium	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc		
24/02/2023	NW03D-A	970	6.67	-12.346	<0.05	0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005		
06/06/2023	NW03D-A	321.8	7.24	-12.192	<0.05	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.014		
24/02/2023	NW03S-A	276	5.55	-12.038	<0.05	0.005	<0.0002	0.001	<0.001	<0.001	<0.0001	0.003	0.007		
06/06/2023	NW03S-A	6019	7.24	-12.038	0.06	0.004	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	0.022		
				#DIV/0!	NW03S-A	Mean	#DIV/0!								
				0.000	NW03S-A	Lowest	0.000								
				0.000	NW03S-A	Highest	0.000								

Grant's Head Quarry - Licence Number 4040

Blasting	Frequency	Date	Limits	Units of measure	Results Bonny Hills 1st House	Results - Sherrord Park	Blast No #	
Ground Vibration	Per Blast	17/01/2022	5 - trigger point >0.27	5 - trigger point >0.10	1.41	0.25	#133	
Overpressure	Per Blast	17/01/2022	115 - Trigger point >100	115 - Trigger point >100	101.8	102.8	#133	
Ground Vibration	Per Blast	06/06/2022	5 - trigger point >0.27	5 - trigger point >0.10	2.16	0.13	#134	
Overpressure	Per Blast	06/06/2022	115 - Trigger point >100	115 - Trigger point >100	106.9	106.9	#134	
Ground Vibration	Per Blast	20/09/2022	6 - trigger point >0.27	6 - trigger point >0.10	1.19	0.21	#135	
Overpressure	Per Blast	20/09/2022	115 - Trigger point >100	115 - Trigger point >100	103.5	108.5	#135	
Ground Vibration	Per Blast	21/02/2023	7 - trigger point >0.27	7 - trigger point >0.10	1.44	0.25	#136	12.49pm
Overpressure	Per Blast	21/02/2023	115 - Trigger point >100	115 - Trigger point >100	100.9	108.0	#136	
Ground Vibration	Per Blast	01/05/2023	8 - trigger point >0.27	8 - trigger point >0.10	2.17	0.13	#137	12.55pm
Overpressure	Per Blast	01/05/2023	115 - Trigger point >100	115 - Trigger point >100	111.7	103.5	#137	
Ground Vibration	Per Blast	29/08/2023	8 - trigger point >0.27	8 - trigger point >0.10	2.4	0.13	#138	12.54pm
Overpressure	Per Blast	29/08/2023	115 - Trigger point >100	115 - Trigger point >100	110.0	106.0	#138	
Ground Vibration	Per Blast	12/10/2023	9 - trigger point >0.27	9 - trigger point >0.27	0.57	No Trigger	#138	1.34pm
Overpressure	Per Blast	12/10/2023	115 - Trigger point >100	115 - Trigger point >95	96.8	No Trigger	#138	

Tumbulgem EPL 3430

Tumbulgem 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	Why Sampled - Discharge or Random?
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 Kilres per day	
Jul-2023	0						NII Controlled Discharge
Aug-2023	0						NII Controlled Discharge
Sep-2023	0						NII Controlled Discharge
Oct-2023	0						NII Controlled Discharge
Nov-2023							
Dec-2023							
Jan-2024							
Feb-2024							
Mar-2024							
Apr-2024							
May-2024							
Jun-2024							

Tumbulgem 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	Why Sampled - Discharge or Random?
Month	Number of Samples	Frequency	Monthly during discharge	Monthly during discharge	<24hrs prior to discharge	Daily when wastes (water) discharged Kilres per day	
Jul-2023	0						NII Controlled Discharge
Aug-2023	0						NII Controlled Discharge
Sep-2023	0						NII Controlled Discharge
Oct-2023	0						NII Controlled Discharge
Nov-2023							
Dec-2023							
Jan-2024							
Feb-2024							
Mar-2024							
Apr-2024							
May-2024							
Jun-2024							

Tumbulgem Additional to EPL requirements testing sites		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	Why Sampled - Discharge
Date	Site Location	Samples	Monthly during	Monthly during	<24hrs prior to discharge	Daily when	
	location						

EPL 3430 - Condition L2.5 The concentration limits in the above tables do not apply to any discharge from the final sediment basin arising from rainfall exceeding 82.5mm in total falling over any consecutive five day period

Tumbulgem EPL 3430

Tumbulgem Blast Monitoring results

Blasting	Frequency	Date	Limits	Units of measure	Loc # 1 - 43 Pollard Rd	Loc # 2 - 23 Pollard Rd	Loc # 3 - 729 - 731 Dulgugan Rd	Blast #	
Ground Vibration	Per Blast	02.03.2023	12 - trigger point >0.26	mm/s	1.02	1.65	Not required	#103	12.31
Overpressure	Per Blast	02.03.2023	Max 115 - Trigger point >107	dB	111.20	112.80	Not required	#103	
Ground Vibration	Per Blast	02.03.2023	13 - trigger point >0.26	mm/s	1.02	1.65	Not required	#104	12.31
Overpressure	Per Blast	02.03.2023	Max 115 - Trigger point >108	dB	111.20	112.80	Not required	#104	
Ground Vibration	Per Blast	29.05.2023	13 - trigger point >0.26	mm/s	1.40	2.40	Not required	#105	2.00pm
Overpressure	Per Blast	29.05.2023	Max 115 - Trigger point >108	dB	114.40	113.20	Not required	#105	
Ground Vibration	Per Blast	29.05.2023	13 - trigger point >0.26	mm/s	1.40	2.40	Not required	#106	2.00pm
Overpressure	Per Blast	29.05.2023	Max 115 - Trigger point >108	dB	114.40	113.20	Not required	#106	
Ground Vibration	Per Blast	16.08.2023	14 - trigger point >0.26	mm/s	1.78	Not Required	Not required	#107	3.15pm
Overpressure	Per Blast	16.08.2023	Max 115 - Trigger point >109	dB	114.50	Not Required	Not required	#107	
Ground Vibration	Per Blast	16.08.2023	15 - trigger point >0.26	mm/s	1.78	Not Required	Not required	#108	3.15pm
Overpressure	Per Blast	16.08.2023	Max 115 - Trigger point >110	dB	114.50	Not Required	Not required	#108	
Ground Vibration	Per Blast	16.08.2023	16 - trigger point >0.26	mm/s	1.78	Not Required	Not required	#109	3.15pm
Overpressure	Per Blast	16.08.2023	Max 115 - Trigger point >111	dB	114.50	Not Required	Not required	#109	

