



**Aeris**  
TRITTON OPERATIONS

# Tritton and Girilambone Operations

## Monthly Environmental Monitoring Report

December 2016

### **Environmental Protection License 11254**

TRITTON COPPER MINE

YARRANDALE ROAD, HERMIDALE, NSW, 2831

*<http://www.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=11254&id=11254&option=licence&searchrange=licence&range=POEO licence&prp=no&status=Issued>*

### **Environmental Protection License 4501**

TRITTON COPPER MINE

BOORAMUGGA ROAD, GIRILAMBONE, NSW, 2831

*<http://www.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=4501&id=4501&option=licence&searchrange=licence&range=POEO licence&prp=no&status=Issued>*

**DECEMBER 2016 – GROUNDWATER MONITORING REPORT**  
**TRITTON OPERATIONS LICENCE NO.11254**

Licensee: TRITTON RESOURCES LIMITED					
EPL No. 11254					
Sample Point	Monitoring Frequency	Date	Parameter	Measurement	Unit
EPA ID No. 18 - PZH007	Quarterly	Sampled: 12/12/16	Arsenic	0.002	mg/L
			Barium	0.11	mg/L
			Beryllium	0.001	mg/L
		Obtained: 03/01/17	Cadmium	0.0009	mg/L
			Chloride	2120	mg/L
			Chromium	0.001	mg/L
		Published: 16/01/2017	Cobalt	0.034	mg/L
			Conductivity (EC)	8230	µS/cm
			Copper	0.032	mg/L
			Iron	0.41	mg/L
			Lead	0.007	mg/L
			Manganese	0.751	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.152	mg/L
			pH	7.33	pH Unit
			Sulfate	1010	mg/L
			Vanadium	0.01	mg/L
Zinc	0.156	mg/L			
SWL	35.09	m			
EPA ID No. 19 - PZH008	Quarterly	Sampled: 12/12/16	Arsenic	0.009	mg/L
			Barium	0.022	mg/L
			Beryllium	0.001	mg/L
		Obtained: 03/01/17	Cadmium	0.0002	mg/L
			Chloride	4070	mg/L
			Chromium	0.001	mg/L
		Published: 16/01/2017	Cobalt	0.001	mg/L
			Conductivity (EC)	14200	µS/cm
			Copper	0.031	mg/L
			Iron	0.14	mg/L
			Lead	0.001	mg/L
			Manganese	0.07	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.006	mg/L
			pH	7.13	pH Unit
			Sulfate	1580	mg/L
			Vanadium	0.01	mg/L
Zinc	0.045	mg/L			
SWL	20.74	m			

EPA ID No. 20 - PZH009	Quarterly	Sampled: 22/12/16	Arsenic	0.001	mg/L
			Barium	0.043	mg/L
			Beryllium	0.001	mg/L
		Obtained: 11/01/17	Cadmium	0.0007	mg/L
			Chloride	4790	mg/L
			Chromium	0.001	mg/L
		Published: 16/01/2017	Cobalt	0.002	mg/L
			Conductivity (EC)	18200	µS/cm
			Copper	0.054	mg/L
			Iron	0.18	mg/L
			Lead	0.001	mg/L
			Manganese	0.141	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.004	mg/L
			pH	7.63	pH Unit
EPA ID No. 23 - PZH014	Quarterly	Sampled: 28/12/16	Arsenic	0.001	mg/L
			Barium	0.009	mg/L
			Beryllium	0.001	mg/L
		Obtained: 11/01/17	Cadmium	0.0002	mg/L
			Chloride	4290	mg/L
			Chromium	0.001	mg/L
		Published: 16/01/2017	Cobalt	0.001	mg/L
			Conductivity (EC)	15800	µS/cm
			Copper	0.008	mg/L
			Iron	0.08	mg/L
			Lead	0.001	mg/L
			Manganese	0.01	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.005	mg/L
			pH	7.39	pH Unit
EPA ID No. 24 - PZH015	Quarterly	Sampled: 28/12/16	Arsenic	0.001	mg/L
			Barium	0.016	mg/L
			Beryllium	0.001	mg/L
		Obtained: 11/01/17	Cadmium	0.0001	mg/L
			Chloride	4680	mg/L
			Chromium	0.151	mg/L
		Published: 16/01/2017	Cobalt	0.002	mg/L
			Conductivity (EC)	17700	µS/cm

			Copper	0.015	mg/L
			Iron	0.26	mg/L
			Lead	0.005	mg/L
			Manganese	0.034	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.009	mg/L
			pH	7.35	pH Unit
			Sulfate	2170	mg/L
			Vanadium	0.01	mg/L
			Zinc	0.015	mg/L
			SWL	51.52	m

**DECEMBER 2016 – GROUNDWATER MONITORING REPORT**  
**GIRILAMBONE OPERATIONS LICENCE NO.4501**

Licensee: TRITTON RESOURCES LIMITED					
EPL No. 4501					
Sample Point	Monitoring Frequency	Date	Parameter	Measurement	Unit
EPA ID No. 2 - GIP224	Monthly	Sampled: 28/12/16	Arsenic	0.01	mg/L
			Barium	0.024	mg/L
		Obtained: 11/01/17	Beryllium	0.01	mg/L
			Cadmium	0.001	mg/L
		Published: 16/01/2017	Chloride	8060	mg/L
			Chromium	0.01	mg/L
			Cobalt	0.01	mg/L
			Conductivity (EC)	31000	µS/cm
			Copper	0.034	mg/L
			Iron	0.1	mg/L
			Lead	0.01	mg/L
			Manganese	0.098	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.023	mg/L
		pH	7.63	pH Unit	
		Sulfate	3950	mg/L	
		Vanadium	0.1	mg/L	
Zinc	0.065	mg/L			
SWL	3.39	m			
EPA ID No. 3 - GIP225	Monthly	Sampled: 14/12/16	Arsenic	0.01	mg/L
			Barium	0.01	mg/L
		Obtained: 03/01/17	Beryllium	0.01	mg/L
			Cadmium	0.0022	mg/L
		Published: 16/01/2017	Chloride	5980	mg/L
			Chromium	0.01	mg/L
			Cobalt	0.01	mg/L
			Conductivity (EC)	34500	µS/cm
			Copper	0.017	mg/L
			Iron	0.1	mg/L
			Lead	0.01	mg/L
			Manganese	0.148	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.01	mg/L
		pH	6.72	pH Unit	
		Sulfate	15800	mg/L	
		Vanadium	0.1	mg/L	
Zinc	0.071	mg/L			
SWL	9.88	m			

EPA ID No. 4 - GIP234	Quarterly	Sampled: 28/12/16  Obtained: 28/12/16  Published: 16/01/2017	SWL	24.51	m
EPA ID No. 5 - GIP273	Quarterly	Sampled: 28/12/16  Obtained: 28/12/16  Published: 16/01/2017	SWL	21.91	m
EPA ID No. 7 - GIP274	Monthly	Sampled: 13/12/16  Obtained: 03/01/17  Published: 16/01/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.01 0.01 0.01 0.0092 10500 0.01 0.01 32700 0.01 0.1 0.01 0.023 0.0001 0.039 7.1 2860 0.1 0.05 17.46	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 6 - GIP276	Quarterly	Sampled: 28/12/16  Obtained: 28/12/16  Published: 16/01/2017	SWL	16.79	m
EPA ID No. 8 - GIP277	Quarterly	Sampled: 28/12/16	SWL	16.36	m

		Obtained: 28/12/16  Published: 16/01/2017			
EPA ID No. 9 - GIP278	Quarterly	Sampled: 28/12/16  Obtained: 28/12/16  Published: 16/01/2017	SWL	25.12	m
EPA ID No. 10 - GIP279A	Quarterly	Sampled: 28/12/16  Obtained: 28/12/16  Published: 16/01/2017	SWL	24.18	m
EPA ID No. 11 - GIP280A	Quarterly	Sampled: 28/12/16  Obtained: 28/12/16  Published: 16/01/2017	SWL	21.91	m
EPA ID No. 12 - GIP290	Monthly	Sampled: 28/12/16  Obtained: 11/01/17  Published: 16/01/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate	0.001 0.015 0.001 0.0326 3330 0.001 0.147 16700 0.059 0.07 0.014 12.4 0.0002 0.015 7.09 4270	mg/L mg/L mg/L mg/L mg/L mg/L mg/L μS/cm mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L

			Vanadium	0.01	mg/L
			Zinc	0.298	mg/L
			SWL	14.85	m
EPA ID No. 13 - GIP291	Monthly	Sampled: 19/12/16	Arsenic	0.001	mg/L
			Barium	0.023	mg/L
		Obtained: 06/01/17	Beryllium	0.001	mg/L
			Cadmium	0.0005	mg/L
		Published: 16/01/2017	Chloride	7910	mg/L
			Chromium	0.001	mg/L
			Cobalt	0.002	mg/L
			Conductivity (EC)	27100	µS/cm
			Copper	0.007	mg/L
			Iron	0.05	mg/L
			Lead	0.001	mg/L
			Manganese	0.049	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.003	mg/L
		pH	7.47	pH Unit	
		Sulfate	2710	mg/L	
		Vanadium	0.01	mg/L	
Zinc	0.023	mg/L			
SWL	8.9	m			
EPA ID No. 14 - GIP292A	Monthly	Sampled: 13/12/16	Arsenic	0.055	mg/L
			Barium	0.01	mg/L
		Obtained: 03/01/17	Beryllium	0.087	mg/L
			Cadmium	3	mg/L
		Published: 16/01/2017	Chloride	2670	mg/L
			Chromium	0.274	mg/L
			Cobalt	45	mg/L
			Conductivity (EC)	33700	µS/cm
			Copper	256	mg/L
			Iron	29.3	mg/L
			Lead	0.01	mg/L
			Manganese	534	mg/L
			Mercury	0.0002	mg/L
			Nickel	15.3	mg/L
		pH	3.73	pH Unit	
		Sulfate	28600	mg/L	
		Vanadium	0.1	mg/L	
Zinc	196	mg/L			
SWL	4.24	m			
EPA ID No. 16 - GIP292AS	Monthly	Sampled: 13/12/16	Arsenic	0.229	mg/L
			Barium	0.01	mg/L
		Obtained: 03/01/17	Beryllium	0.435	mg/L
			Cadmium	6.44	mg/L
			Chloride	1560	mg/L



		Published: 16/01/2017	Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.158 107 33600 838 1450 0.01 711 0.0002 26.6 3.49 44500 1.14 400 4.29	mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 17 - GIP293	Monthly	Sampled: 28/12/16  Obtained: 11/01/17  Published: 16/01/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.068 0.01 0.034 2.98 3830 0.01 41 42500 97.1 0.34 0.016 668 0.0002 14.3 4.05 42600 0.1 168 12.12	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 18 - GIP294	Monthly	Sampled: 28/12/16  Obtained: 11/01/17  Published: 16/01/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury	0.01 0.01 0.01 3.04 1670 0.01 32.6 51000 163 0.36 0.01 278 0.0006	mg/L mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L

			Nickel	11	mg/L
			pH	5.36	pH Unit
			Sulfate	52500	mg/L
			Vanadium	0.1	mg/L
			Zinc	188	mg/L
			SWL	11.45	m
EPA ID No. 19 - GIP295	Monthly	Sampled: 14/12/16	Arsenic	0.01	mg/L
			Barium	0.047	mg/L
		Obtained: 03/01/17	Beryllium	0.01	mg/L
			Cadmium	0.001	mg/L
		Published: 16/01/2017	Chloride	9590	mg/L
			Chromium	0.01	mg/L
			Cobalt	0.01	mg/L
			Conductivity (EC)	30200	µS/cm
			Copper	0.039	mg/L
			Iron	0.1	mg/L
			Lead	0.01	mg/L
			Manganese	0.552	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.01	mg/L
		pH	7.19	pH Unit	
		Sulfate	2570	mg/L	
		Vanadium	0.1	mg/L	
Zinc	0.05	mg/L			
SWL	18.16	m			
EPA ID No. 20 - GIP296	Monthly	Sampled: 16/12/16	Arsenic	0.001	mg/L
			Barium	0.012	mg/L
		Obtained: 06/01/17	Beryllium	0.001	mg/L
			Cadmium	0.0001	mg/L
		Published: 16/01/2017	Chloride	1820	mg/L
			Chromium	0.001	mg/L
			Cobalt	0.001	mg/L
			Conductivity (EC)	18500	µS/cm
			Copper	0.002	mg/L
			Iron	0.06	mg/L
			Lead	0.001	mg/L
			Manganese	0.005	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.003	mg/L
		pH	7.47	pH Unit	
		Sulfate	6060	mg/L	
		Vanadium	0.01	mg/L	
Zinc	0.011	mg/L			
SWL	5.85	m			
EPA ID No. 21 -	Monthly	Sampled: 22/12/16	Arsenic	0.006	mg/L
			Barium	0.001	mg/L

GIP297		Obtained: 11/01/17  Published: 16/01/2017	Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.001 0.0001 45 0.001 0.001 949 0.006 0.05 0.001 0.002 0.0001 0.001 7.84 183 0.01 0.006 25.14	mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L mg/L m
EPA ID No. 22 - GIP298	Monthly	Sampled: 16/12/16  Obtained: 06/01/17  Published: 16/01/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron Lead Manganese Mercury Nickel pH Sulfate Vanadium Zinc SWL	0.003 0.016 0.001 0.0001 9890 0.001 0.002 32800 0.022 2.37 0.001 0.304 0.0001 0.002 7.5 2790 0.01 0.014 20.33	mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L mg/L mg/L mg/L mg/L pH Unit mg/L mg/L mg/L m
EPA ID No. 23 - GIP299	Monthly	Sampled: 16/12/16  Obtained: 06/01/17  Published: 16/01/2017	Arsenic Barium Beryllium Cadmium Chloride Chromium Cobalt Conductivity (EC) Copper Iron	0.002 0.003 0.001 0.0031 7410 0.001 0.001 33000 0.002 0.05	mg/L mg/L mg/L mg/L mg/L mg/L µS/cm mg/L mg/L

			Lead	0.001	mg/L
			Manganese	0.013	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.001	mg/L
			pH	7.38	pH Unit
			Sulfate	7940	mg/L
			Vanadium	0.01	mg/L
			Zinc	0.035	mg/L
			SWL	27.89	m
EPA ID No. 24 - GIP300	Monthly	Sampled: 16/12/16  Obtained: 06/01/17  Published: 16/01/2017	Arsenic	0.001	mg/L
			Barium	0.02	mg/L
			Beryllium	0.001	mg/L
			Cadmium	0.0007	mg/L
			Chloride	4880	mg/L
			Chromium	4880	mg/L
			Cobalt	0.001	mg/L
			Conductivity (EC)	36800	µS/cm
			Copper	0.004	mg/L
			Iron	0.12	mg/L
			Lead	0.001	mg/L
			Manganese	0.005	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.002	mg/L
			pH	7.44	pH Unit
			Sulfate	17300	mg/L
			Vanadium	0.01	mg/L
			Zinc	0.009	mg/L
			SWL	18.89	m
EPA ID No. 25 - GIP301	Monthly	Sampled: 19/12/16  Obtained: 06/01/17  Published: 16/01/2017	Arsenic	0.001	mg/L
			Barium	0.036	mg/L
			Beryllium	0.001	mg/L
			Cadmium	0.0001	mg/L
			Chloride	5560	mg/L
			Chromium	0.001	mg/L
			Cobalt	0.013	mg/L
			Conductivity (EC)	20200	µS/cm
			Copper	0.002	mg/L
			Iron	0.05	mg/L
			Lead	0.001	mg/L
			Manganese	0.611	mg/L
			Mercury	0.0001	mg/L
			Nickel	0.007	mg/L
			pH	7.53	pH Unit
			Sulfate	2100	mg/L
			Vanadium	0.01	mg/L
			Zinc	0.016	mg/L

			SWL	13.94	m
EPA ID No. 26 - GIP302	Monthly	Sampled: 16/12/16	Arsenic	0.001	mg/L
		Barium	0.016	mg/L	
		Beryllium	0.001	mg/L	
		Obtained: 06/01/17	Cadmium	0.0023	mg/L
		Chloride	6060	mg/L	
		Chromium	0.001	mg/L	
		Published: 16/01/2017	Cobalt	0.054	mg/L
		Conductivity (EC)	31100	µS/cm	
		Copper	0.007	mg/L	
		Iron	0.26	mg/L	
		Lead	0.007	mg/L	
		Manganese	11.3	mg/L	
		Mercury	0.0001	mg/L	
		Nickel	0.059	mg/L	
		pH	7.12	pH Unit	
		Sulfate	8930	mg/L	
		Vanadium	0.01	mg/L	
Zinc	0.019	mg/L			
SWL	15.16	m			