



Berrima Colliery in Medway POELA Act 2011 Monitoring Data - 2020

Berrima Colliery, Medway, NSW

Environmental Protection Licence Number 608, held by Boral Limited

Explanation of units of measure:

mg/m³ = milligrams per cubic metre

g/m²/month = grams per square metre per month

µg/m³ = micrograms per cubic metre

mg/L = milligrams per litre

ML/d = megalitres per day

Record updated on: **09 November 2020**

1. Water monitoring

Berrima Colliery has two licensed discharge points and four ambient background monitoring points:

Discharge Points:

- Mine Adit - Naturally occurring groundwater is captured in the underground workings and is discharged into the Wingecarribee River. The monitoring point is referred to as the V Notch Weir (Licence Point 4).
- Pit Top Dam – Referred to as the Chitter Dam, this dam collects water runoff from the surface facilities area. This dam did not discharge during the reporting period.

Ambient background monitoring points:

- Wingecarribee River upstream of the mine adit discharge at Old Hume Highway Crossing at Berrima (Licence Point 9).
- Wingecarribee River upstream of the mine adit discharge at Macarthur's Crossing (Licence Point 10).
- Wingecarribee River downstream of the mine adit discharge at Biloela Camp Site (Licence Point 11).
- Wingecarribee River downstream of mine adit discharge at Black Bob's confluence (Licence Point 12).

Licence limits for both discharge points are as follows:

pH: 6.5-8.5

Oil and Grease: 10 mg/L

Total Suspended Solids: 50 mg/L

Table 1 shows the results of parameters for Licence Point 4 for which the licence limits apply as listed above.

Table 2 provides the data for all of the parameters monitored at the Licenced Discharge Point 4 while Table 3 presents ambient water monitoring data. No concentration limits are assigned to these parameters with the exception of pH, suspended solids, and oil and grease as described above for the discharge point.

Table 1 – Discharge Monitoring Data (Licence Point 4)

Sampling Date	Report received	Date published	pH	Oil and Grease (mg/L)	Total Suspended Solids (mg/L)
23/01/17	03/02/17	6/02/17	6.72	<5	24
31/03/17	08/05/17	5/06/17	6.83	<5	7
30/05/17	06/06/17	4/07/17	6.71	<5	9
04/07/17	07/08/17	8/08/17	6.80	<5	9
12/09/17	10/10/17	13/10/17	6.75	<5	32
09/11/17	17/11/17	6/12/17	6.60	<5	10
31/01/18	09/02/18	13/02/18	6.77	<5	34
27/03/18	12/04/18	14/04/18	6.84	<5	8
31/05/18	11/06/18	12/06/18	6.98	<5	14
26/07/18	1/08/18	14/08/18	6.85	<5	11
25/09/18	3/10/18	4/10/18	6.62	<5	6
27/11/18	15/01/19	15/01/19	7.14	<5	<5
31/01/19	08/02/19	11/02/19	7.05	9.0	<5
26/03/19	11/04/19	12/04/19	7.29	<5	<5
23/05/19	12/06/219	13/06/19	7.28	<5	<5
25/07/19	29/07/19	08/08/19	6.72	<5	7
25/09/19	08/10/19	10/10/19	6.93	<5	7
28/11/19	10/12/19	12/12/19	7.27	<5	4
11/01/20	11/02/20	11/02/20	7.34	<5	<5
24/03/20	08/04/20	08/04/20	7.30	<5	<5
19/05/20	25/05/20	04/06/20	7.01	<5	19
21/07/20	29/07/20	11/08/20	7.01	<5	<5
21/09/20	28/09/20	01/10/20	6.33	<5	<5

Note: values noted as <5 means that the levels were below laboratory detection limits.
Compliance summary: Discharge within the licence limits.

Table 2 – Additional Monitoring Parameters for Licence Point 4

Parameter	Date Sampled: 23/01/17 Report Received: 03/02/17 Date Published: 06/02/17	Date Sampled: 31/03/17 Report Received: 08/05/17 Date Published: 05/06/17	Date Sampled: 30/05/17 Report Received: 06/06/17 Date Published: 04/07/17	Date Sampled: 04/07/17 Report Received: 07/08/17 Date Published: 08/08/17	Date Sampled: 12/09/17 Report Received: 10/10/17 Date Published: 13/10/17
pH	6.72	6.83	6.71	6.80	6.75
Electrical conductivity	1030	1100	960	997	976
Total Suspended Solids	24	7	9	9	32
Sulphate	333	323	332	310	335
Chloride	52	59	59	58	50
Cobalt (dissolved)	0.147	0.135	0.134	0.139	0.134

Copper (dissolved)	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	10.9	10.4	11.2	11.3	11.1
Nickel (dissolved)	0.421	0.367	0.393	0.414	0.386
Zinc (dissolved)	1.25	0.678	0.684	0.731	0.572
Iron (dissolved)	9.13	0.73	6.28	13.3	<0.05
Oil and Grease	<5	<5	<5	<5	<5
Dissolved oxygen	10.1	8.6	8.8	9.6	7.0

Units measured in milligrams per litre unless otherwise specified.

Table 2 – Additional Monitoring Parameters for Licence Point 4 (continued)

Parameter	Date Sampled: 09/11/17 Report Received: 17/11/17 Date Published: 06/12/17	Date Sampled: 31/01/18 Report Received: 09/02/18 Date Published: 13/02/18	Date Sampled: 27/03/18 Report Received: 12/04/18 Date Published: 14/04/18	Date Sampled: 31/05/18 Report Received: 11/06/18 Date Published: 12/06/18	Date Sampled: 26/07/18 Report Received: 1/07/18 Date Published: 14/08/18
pH	6.60	6.77	6.84	6.98	6.85
Electrical conductivity	931	931	970	923	910
Total Suspended Solids	10	34	8	14	11
Sulphate	343	380	357	341	332
Chloride	55	57	60	54	57
Cobalt (dissolved)	0.134	0.131	0.081	0.054	0.018
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	10.8	10.5	6.82	4.86	1.85
Nickel (dissolved)	0.357	0.345	0.262	0.198	0.123
Zinc (dissolved)	0.518	0.446	0.434	0.266	0.158
Iron (dissolved)	13.0	8.91	5.65	2.80	0.21
Oil and Grease	<5	<5	<5	<5	<5
Dissolved oxygen	7.6	7.1	7.7	8.6	11.1

Units measured in milligrams per litre unless otherwise specified.

Table 2 – Additional Monitoring Parameters for Licence Point 4 (continued)

Parameter	Date Sampled: 25/09/18 Report Received: 3/10/18 Date Published: 4/10/18	Date Sampled: 27/11/18 Report Received: 15/1/19 Date Published: 15/1/19	Date Sampled: 31/1/19 Report Received: 08/02/19 Date Published: 11/02/19	Date Sampled: 26/3/19 Report Received: 11/04/19 Date Published: 12/04/19	Date Sampled: 23/5/19 Report Received: 12/06/19 Date Published: 13/06/19
pH	6.62	7.14	7.05	7.29	7.28
Electrical conductivity	939	868	826	814	790
Total Suspended Solids	6	<5	<5	<5	<5
Sulphate	330	321	238	261	280
Chloride	71	57	64	59	41
Cobalt (dissolved)	0.049	0.063	0.002	0.002	0.025
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	4.46	5.52	1.13	0.543	1.94
Nickel (dissolved)	0.196	0.198	0.082	0.065	0.066
Zinc (dissolved)	0.215	0.210	0.093	0.064	0.114
Iron (dissolved)	2.87	2.32	<0.05	<0.05	<0.05
Oil and Grease	<5	<5	9.0	<5	<5
Dissolved oxygen	8.4	9.8	8.0	8.4	9.9

Units measured in milligrams per litre unless otherwise specified.

Table 2 – Additional Monitoring Parameters for Licence Point 4 (continued)

Parameter	Date Sampled: 27/7/19 Report Received: 29/07/19 Date Published: 08/08/19	Date Sampled: 26/9/19 Report Received: 08/10/19 Date Published: 10/10/19	Date Sampled: 28/11/19 Report Received: 10/12/19 Date Published: 12/12/19	Date Sampled: 14/01/20 Report Received: 11/02/20 Date Published: 12/03/20	Date Sampled: 24/03/20 Report Received: 08/04/20 Date Published: 08/04/20
pH	6.72	6.93	7.27	7.34	7.30
Electrical conductivity	743	782	748	915	1110
Total Suspended Solids	7	7	4	<5	<5
Sulphate	290	306	238	306	455
Chloride	45	55	48	54	54
Cobalt (dissolved)	0.021	0.022	0.018	0.01	0.008
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	1.68	1.68	1.31	0.674	3.61
Nickel (dissolved)	0.065	0.067	0.050	0.040	0.18
Zinc (dissolved)	0.13	0.144	0.137	0.115	0.25
Iron (dissolved)	0.53	0.1	<0.05	<0.05	<0.05
Oil and Grease	<5	<5	<5	<5	<5
Dissolved oxygen	9.7	9.5	8.7	7.9	8.0

Units measured in milligrams per litre unless otherwise specified.

Table 2 – Additional Monitoring Parameters for Licence Point 4 (continued)

Parameter	Date Sampled: 19/05/20 Report Received: 25/05/20 Date Published: 04/06/20	Date Sampled: 21/07/20 Report Received: 29/07/20 Date Published: 11/08/20	Date Sampled: 21/09/20 Report Received: 28/09/20 Date Published: 01/10/20	Date Sampled: Report Received: Date Published:	Date Sampled: Report Received: Date Published:
pH	7.01	7.01	6.33		
Electrical conductivity	968	1050	1100		
Total Suspended Solids	19	<5	<5		
Sulphate	404	462	448		
Chloride	44	58	55		
Cobalt (dissolved)	0.011	0.004	0.003		
Copper (dissolved)	<0.001	<0.001	<0.001		
Manganese (dissolved)	1.4	2.08	1.86		
Nickel (dissolved)	0.085	0.123	0.147		
Zinc (dissolved)	0.188	0.227	0.250		
Iron (dissolved)	0.4	0.05	<0.05		
Oil and Grease	<5	<5	<5		
Dissolved oxygen	9.2	9.4	8.8		

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data

Date Sampled: 31 January 2017

Report Received: 7 February 2017

Date Published: 8 March 2017

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.95	7.57	7.67	7.66
Electrical conductivity	393	301	577	586
Suspended Solids	8	<5	<5	8
Sulphate	29	11	126	114
Chloride	49	44	49	50
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	0.005	<0.001
Manganese (dissolved)	0.004	0.022	0.312	0.268
Nickel (dissolved)	<0.001	<0.001	0.006	0.004
Zinc (dissolved)	<0.005	<0.005	<0.005	<0.005
Iron (dissolved)	0.08	0.16	0.10	0.10

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data - Continued

Date Sampled: 28 March 2017

Report Received: 6 April 2017

Date Published: 5 May 2017

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.55	7.61	7.51	7.60
Electrical conductivity	161	168	186	189
Suspended Solids	13	24	6	<5
Sulphate	5	5	9	9
Chloride	19	20	22	22
Cobalt	<0.001	<0.001	0.001	<0.001
Copper (dissolved)	0.002	0.002	0.002	0.002
Manganese (dissolved)	0.027	0.046	0.124	0.111
Nickel (dissolved)	0.001	0.001	0.006	0.006
Zinc (dissolved)	0.005	<0.005	0.011	0.011
Iron (dissolved)	0.47	0.49	0.51	0.47

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data - Continued

Date Sampled: 30 May 2017

Report Received: 6 June 2017

Date Published: 4 July 2017

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.98	7.90	7.81	7.59
Electrical conductivity	213	222	312	302
Suspended Solids	7	6	6	<5
Sulphate	18	13	35	36
Chloride	33	33	37	36
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.036	0.006	0.078	0.064
Nickel (dissolved)	<0.001	<0.001	0.012	0.009
Zinc (dissolved)	0.038	0.034	0.046	0.044
Iron (dissolved)	0.74	0.56	0.52	0.42

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data - Continued

Date Sampled: 3 August 2017

Report Received: 17 August 2017

Date Published: 11 September 2017

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.69	7.82	7.67	7.67
Electrical conductivity	203	222	315	251
Suspended Solids	48	17	7	6
Sulphate	15	10	44	42
Chloride	34	35	38	37
Cobalt	<0.001	<0.001	0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.006	0.006	0.212	0.081
Nickel (dissolved)	<0.001	<0.001	0.020	0.013
Zinc (dissolved)	<0.005	<0.005	0.021	0.014
Iron (dissolved)	0.24	0.29	0.21	0.29

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data - Continued

Date Sampled: 5 September 2017

Report Received: 8 September 2017

Date Published: 13 October 2017

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.71	7.77	7.72	7.70

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
Electrical conductivity	270	273	372	378
Suspended Solids	6	<5	<5	6
Sulphate	17	14	48	52
Chloride	37	39	40	40
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.002	0.002	0.147	0.085
Nickel (dissolved)	<0.001	<0.001	0.014	0.010
Zinc (dissolved)	<0.005	<0.005	0.010	0.006
Iron (dissolved)	<0.05	<0.05	<0.05	<0.05

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data - Continued

Date Sampled: 8 and 9 November 2017

Report Received: 1 December 2017

Date Published: 6 December 2017

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.75	7.79	7.65	7.53
Electrical conductivity	347	315	390	347
Suspended Solids	564	14	6	<5
Sulphate	33	23	57	44
Chloride	45	43	42	40
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.041	0.011	0.404	0.157
Nickel (dissolved)	<0.001	<0.001	0.010	0.006
Zinc (dissolved)	<0.005	0.007	0.006	<0.005
Iron (dissolved)	0.07	0.11	0.06	<0.05

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data - Continued

Date Sampled: 31 January 2018

Report Received: 9 January 2018

Date Published: 13 February 2018

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.65	7.53	7.55	7.47
Electrical conductivity	325	293	420	552
Suspended Solids	6	<5	<5	7
Sulphate	23	18	65	151
Chloride	42	39	43	46
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
Manganese (dissolved)	0.039	0.034	0.262	0.336
Nickel (dissolved)	0.002	0.001	0.006	0.004
Zinc (dissolved)	<0.005	<0.005	0.005	<0.005
Iron (dissolved)	0.13	0.15	0.08	<0.05

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data - Continued

Date Sampled: 27/28 March 2018

Report Received: 12 April 2018

Date Published: 14 April 2018

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.51	7.7	7.54	7.67
Electrical conductivity	265	360	548	500
Suspended Solids	5	<5	<5	<5
Sulphate	24	34	117	84
Chloride	34	46	53	53
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	<0.001	0.018	0.291	0.255
Nickel (dissolved)	<0.001	<0.001	0.007	0.004
Zinc (dissolved)	<0.005	<0.005	0.012	0.006
Iron (dissolved)	0.09	0.09	<0.05	0.09

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data - Continued

Date Sampled: 28 May 2018

Report Received: 11 June 2018

Date Published: 12 June 2018

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.53	7.58	7.6	7.54
Electrical conductivity	320	268	428	483
Suspended Solids	8	<5	<5	----
Sulphate	27	19	91	114
Chloride	37	33	40	42
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	0.002
Manganese (dissolved)	0.033	0.018	0.064	0.071
Nickel (dissolved)	<0.001	0.002	0.004	0.003
Zinc (dissolved)	<0.005	0.007	<0.005	<0.005
Iron (dissolved)	0.16	0.14	0.08	<0.05

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data - Continued

Date Sampled: 26 July 2018

Report Received: 01 August 2018

Date Published: 14 August 2018

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.11	6.97	7.35	7.3
Electrical conductivity	307	315	455	428
Suspended Solids	<5	<5	<5	<5
Sulphate	36	36	86	71
Chloride	36	38	44	44
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.035	0.011	0.024	0.023
Nickel (dissolved)	0.264	0.001	0.005	0.003
Zinc (dissolved)	0.009	<0.005	0.006	0.008
Iron (dissolved)	0.15	0.09	0.09	0.08

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 25 September 2018

Report Received: 3 October 2018

Date Published: 4 October 2018

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.57	7.61	7.41	7.28
Electrical conductivity	317	307	596	542
Suspended Solids	<5	<5	<5	<5
Sulphate	34	27	145	119
Chloride	42	42	50	49
Cobalt	<0.0001	<0.0001	<0.001	<0.001
Copper (dissolved)	<0.0001	<0.0001	<0.001	<0.001
Manganese (dissolved)	0.038	0.016	0.119	0.094
Nickel (dissolved)	0.001	<0.001	0.007	<0.01
Zinc (dissolved)	<0.005	<0.005	<0.005	<0.005
Iron (dissolved)	0.07	0.06	0.05	<0.05

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 27 November 2018

Report Received: 7 December 2018

Date Published: 13 December 2018

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.81	7.75	7.72	7.77

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
Electrical conductivity	279	294	549	468
Suspended Solids	6	<5	<5	<5
Sulphate	30	32	145	84
Chloride	32	34	46	42
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.013	0.018	0.154	0.157
Nickel (dissolved)	<0.001	0.001	0.005	0.004
Zinc (dissolved)	<0.005	<0.005	<0.005	<0.005
Iron (dissolved)	0.1	0.13	0.05	0.09

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 31 January 2019

Report Received: 7 February 2019

Date Published: 11 February 2019

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.19	7.26	7.26	7.2
Electrical conductivity	152	145	260	255
Suspended Solids	6	10	<5	<5
Sulphate	13	10	44	40
Chloride	25	24	32	32
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	0.001
Manganese (dissolved)	0.018	0.005	0.326	0.455
Nickel (dissolved)	<0.001	<0.001	0.006	0.005
Zinc (dissolved)	<0.005	<0.005	<0.005	<0.005
Iron (dissolved)	0.23	0.36	0.19	0.23

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 26 March 2019

Report Received: 11 April 2019

Date Published: 12 April 2019

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.43	7.43	7.56	7.52
Electrical conductivity	175	173	217	208
Suspended Solids	10	11	9	8
Sulphate	13	11	21	23
Chloride	26	27	30	30
Cobalt	<0.001	<0.001	<0.001	<0.001

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
Copper (dissolved)	0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.06	0.045	0.211	0.202
Nickel (dissolved)	<0.001	0.001	0.005	0.004
Zinc (dissolved)	<0.005	<0.005	<0.005	<0.005
Iron (dissolved)	0.24	0.32	0.25	0.26

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 23 May 2019

Report Received: 12 June 2019

Date Published: 13 June 2019

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.27	7.48	7.37	7.38
Electrical conductivity	225	183	237	363
Suspended Solids	22	<5	<5	6
Sulphate	24	18	33	81
Chloride	29	26	29	35
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.021	0.019	0.076	0.138
Nickel (dissolved)	<0.001	<0.001	0.003	0.002
Zinc (dissolved)	0.006	0.011	0.127	<0.005
Iron (dissolved)	0.17	0.36	0.13	<0.05

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 25 July 2019

Report Received: 08 August 2019

Date Published: 08 August 2019

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.38	6.67	6.73	6.72
Electrical conductivity	248	254	280	285
Suspended Solids	6	<5	<5	<5
Sulphate	24	20	22	25
Chloride	32	34	37	37
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	0.001	0.001	0.001	<0.001
Manganese (dissolved)	0.021	0.013	0.032	0.045
Nickel (dissolved)	0.001	0.001	0.003	0.002
Zinc (dissolved)	0.056	0.005	0.011	0.006
Iron (dissolved)	0.27	0.16	0.09	0.11

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 25 September 2019

Report Received: 08 October 2019

Date Published: 10 October 2019

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.16	6.52	6.52	6.53
Electrical conductivity	291	291	286	280
Suspended Solids	12	16	9	7
Sulphate	33	33	29	28
Chloride	35	36	37	36
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.016	0.015	0.042	0.043
Nickel (dissolved)	0.001	0.006	0.002	0.002
Zinc (dissolved)	<0.005	<0.005	<0.005	<0.005
Iron (dissolved)	0.18	0.16	0.1	0.12

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 28 November 2019

Report Received: 10 December 2019

Date Published: 12 December 2019

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.44	7.49	7.76	7.6
Electrical conductivity	277	299	428	345
Suspended Solids	7	<5	<5	13
Sulphate	25	24	25	34
Chloride	34	35	45	40
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.073	0.136	1.16	0.182
Nickel (dissolved)	<0.001	<0.001	0.008	0.002
Zinc (dissolved)	<0.005	<0.005	<0.005	<0.005
Iron (dissolved)	0.17	0.16	0.09	0.13

Units measured in milligrams per litre unless otherwise specified.

Ambient water monitoring was not undertaken in January 2020 due to adverse conditions and catastrophic fire danger. Sampling of the ambient water quality sites is scheduled for February 2020.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 25 February 2020

Report Received: 12 March 2020

Date Published: 12 March 2020

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.16	7.13	7.13	7.14
Electrical conductivity	140	168	231	207
Suspended Solids	31	36	42	27
Sulphate	9	12	28	18
Chloride	22	26	30	30
Cobalt	<0.001	<0.001	0.004	0.001
Copper (dissolved)	0.002	0.002	0.002	0.003
Manganese (dissolved)	0.06	0.063	0.48	0.159
Nickel (dissolved)	0.001	0.002	0.007	0.006
Zinc (dissolved)	<0.005	<0.005	0.013	0.01
Iron (dissolved)	0.36	0.46	0.81	0.58

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 24 March 2020

Report Received: 08 April 2020

Date Published: 08 April 2020

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.11	7.37	7.26	7.41
Electrical conductivity	202	195	298	280
Suspended Solids	8	<5	40	8
Sulphate	<1	<1	65	58
Chloride	24	23	30	26
Cobalt	<0.001	<0.001	0.002	<0.001
Copper (dissolved)	0.001	0.002	<0.001	<0.001
Manganese (dissolved)	0.045	0.054	0.421	0.314
Nickel (dissolved)	0.001	0.001	0.008	0.005
Zinc (dissolved)	<0.005	<0.005	0.011	<0.005
Iron (dissolved)	0.35	0.4	0.7	0.47

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 19 May 2020

Report Received: 25 May 2020

Date Published: 04 June 2020

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.02	7.32	7.37	7.32

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
Electrical conductivity	278	244	270	287
Suspended Solids	6	<5	<5	<5
Sulphate	24	17	30	38
Chloride	36	34	33	34
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.03	0.023	0.109	0.115
Nickel (dissolved)	0.001	<0.001	0.004	0.002
Zinc (dissolved)	<0.005	<0.005	<0.005	<0.005
Iron (dissolved)	0.21	0.26	0.29	0.3

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 21 July 2020

Report Received: 29 July 2020

Date Published: 11 August 2020

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	7.23	7.33	7.52	7.51
Electrical conductivity	183	221	290	292
Suspended Solids	12	10	7	6
Sulphate	7	10	28	27
Chloride	28	34	37	38
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper (dissolved)	0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.012	0.009	0.036	0.037
Nickel (dissolved)	<0.001	<0.001	0.004	0.003
Zinc (dissolved)	<0.005	<0.005	0.009	0.013
Iron (dissolved)	0.39	0.39	0.21	0.22

Units measured in milligrams per litre unless otherwise specified.

Table 3 –Ambient Water Monitoring Data – Continued

Date Sampled: 22 September 2020

Report Received: 28 September 2020

Date Published: 01 October 2020

Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
pH	6.33	6.45	6.48	6.47
Electrical conductivity	141	151	185	194
Suspended Solids	11	<5	<5	<5
Sulphate	6	2	21	24
Chloride	21	23	25	26
Cobalt	<0.001	<0.001	<0.001	<0.001



Parameter	Berrima (Licence Point 9)	Macarthur's Crossing (Licence Point 10)	Biloela (Licence Point 11)	Black Bobs Creek (Licence Point 12)
Copper (dissolved)	<0.001	<0.001	<0.001	<0.001
Manganese (dissolved)	0.007	0.008	0.035	0.040
Nickel (dissolved)	<0.001	<0.001	0.002	0.005
Zinc (dissolved)	<0.005	<0.005	<0.005	<0.005
Iron (dissolved)	0.40	0.38	0.29	0.35

Units measured in milligrams per litre unless otherwise specified.

2. Water Volume

The volume of water discharged from the mine is recorded at the V Notch Weir and summarised as follows:

Table 4 - V Notch Weir Discharge Volume Data

Data obtained on	Data published on	Volume discharged (ML/d)
19-Dec-2016	6/02/17	2.22
20-Dec-2016		2.29
21-Dec-2016		2.07
22-Dec-2016		1.91
23-Dec-2016		1.98
24-Dec-2016		2.05
25-Dec-2016		1.92
26-Dec-2016		1.9
27-Dec-2016		1.86
28-Dec-2016		1.85
29-Dec-2016		1.84
30-Dec-2016		1.81
31-Dec-2016		1.8
1-Jan-2017		1.79
2-Jan-2017		1.92
3-Jan-2017		1.89
4-Jan-2017		1.98
5-Jan-2017		2.11
6-Jan-2017		2.12
7-Jan-2017		2.1
8-Jan-2017		2.11
9-Jan-2017		1.93
10-Jan-2017		1.88
11-Jan-2017	2.03	
12-Jan-2017	1.92	
13-Jan-2017	1.96	
14-Jan-2017	1.95	
15-Jan-2017	1.91	
16-Jan-2017	2.02	
17-Jan-2017	2.11	
18-Jan-2017	2.15	
19-Jan-2017	2.28	
20-Jan-2017	2.65	
21-Jan-2017	2.15	
22-Jan-2017	2.14	
23-Jan-2017	2.22	



Data obtained on	Data published on	Volume discharged (ML/d)
24-Jan-2017	6/2/17	2.31
25-Jan-2017		2.4
26-Jan-2017		2.62
27-Jan-2017		2.57
28-Jan-2017		2.55
29-Jan-2017		2.55
30-Jan-2017	8/3/17	2.49
31-Jan-2017		2.43
1-Feb-2017		2.43
2-Feb-2017		2.5
3-Feb-2017		2.39
4-Feb-2017		2.36
5-Feb-2017		2.35
6-Feb-2017		2.39
7-Feb-2017		2.29
8-Feb-2017		2.33
9-Feb-2017		2.75
10-Feb-2017		2.5
11-Feb-2017		2.4
12-Feb-2017		2.52
13-Feb-2017		2.36
14-Feb-2017		2.26
15-Feb-2017		2.44
16-Feb-2017		2.48
17-Feb-2017		2.48
18-Feb-2017		2.52
19-Feb-2017		2.62
20-Feb-2017		2.43
21-Feb-2017		2.35
22-Feb-2017		2.52
23-Feb-2017		2.48
24-Feb-2017		2.55
25-Feb-2017		2.63
26-Feb-2017		2.64
27-Feb-2017	4/4/17	2.56
28-Feb-2017		2.63
1-Mar-2017		2.67
2-Mar-2017		2.74
3-Mar-2017		2.68
4-Mar-2017		2.73
5-Mar-2017	2.85	
6-Mar-2017	2.71	



Data obtained on	Data published on	Volume discharged (ML/d)	
7-Mar-2017	4/4/17	2.74	
8-Mar-2017		2.83	
9-Mar-2017		2.86	
10-Mar-2017		2.88	
11-Mar-2017		2.79	
12-Mar-2017		2.72	
13-Mar-2017		2.52	
14-Mar-2017		2.38	
15-Mar-2017		2.57	
16-Mar-2017		2.9	
17-Mar-2017		2.73	
18-Mar-2017		2.69	
19-Mar-2017		2.88	
20-Mar-2017		2.78	
21-Mar-2017		2.74	
22-Mar-2017		2.69	
23-Mar-2017		2.63	
24-Mar-2017		2.68	
25-Mar-2017		2.87	
26-Mar-2017		2.8	
27-Mar-2017		5/6/17	2.74
28-Mar-2017			2.84
29-Mar-2017			2.43
30-Mar-2017			2.43
31-Mar-2017			2.26
1-Apr-2017			2.22
2-Apr-2017	2.06		
3-Apr-2017	2.23		
4-Apr-2017	2.4		
5-Apr-2017	2.59		
6-Apr-2017	2.6		
7-Apr-2017	2.42		
8-Apr-2017	2.6		
9-Apr-2017	2.98		
10-Apr-2017	2.91		
11-Apr-2017	2.33		
12-Apr-2017	2.22		
13-Apr-2017	2.41		
14-Apr-2017	2.65		
15-Apr-2017	2.65		
16-Apr-2017	2.67		
17-Apr-2017	2.57		



Data obtained on	Data published on	Volume discharged (ML/d)
18-Apr-2017	5/6/17	2.48
19-Apr-2017		2.54
20-Apr-2017		2.56
21-Apr-2017		2.72
22-Apr-2017		2.62
23-Apr-2017		2.62
24-Apr-2017		2.65
25-Apr-2017		2.81
26-Apr-2017		2.93
27-Apr-2017		2.42
28-Apr-2017		2.26
29-Apr-2017		2.42
30-Apr-2017		2.34
1-May-2017		2.46
2-May-2017		2.48
3-May-2017		2.3
4-May-2017		2.34
5-May-2017		2.55
6-May-2017		2.62
7-May-2017		2.55
8-May-2017		2.51
9-May-2017		2.54
10-May-2017		2.56
11-May-2017		2.53
12-May-2017		2.35
13-May-2017		2.35
14-May-2017		2.45
15-May-2017		2.52
16-May-2017	2.42	
17-May-2017	2.34	
18-May-2017	2.19	
19-May-2017	2.22	
20-May-2017	2.45	
21-May-2017	2.44	
22-May-2017	2.56	
23-May-2017	2.47	
24-May-2017	2.52	
25-May-2017	2.41	
26-May-2017	2.45	
27-May-2017	2.49	
28-May-2017	2.72	
29-May-2017	8/8/17	2.36



Data obtained on	Data published on	Volume discharged (ML/d)
30-May-2017	8/8/17	2.41
31-May-2017		2.4
1-Jun-2017		2.49
2-Jun-2017		2.66
3-Jun-2017		2.84
4-Jun-2017		2.69
5-Jun-2017		2.71
6-Jun-2017		2.64
7-Jun-2017		2.4
8-Jun-2017		2.16
9-Jun-2017		2.23
10-Jun-2017		2.28
11-Jun-2017		2.47
12-Jun-2017		2.5
13-Jun-2017		2.3
14-Jun-2017		2.39
15-Jun-2017		2.52
16-Jun-2017		2.5
17-Jun-2017		2.36
18-Jun-2017		2.27
19-Jun-2017		2.34
20-Jun-2017		2.46
21-Jun-2017		2.49
22-Jun-2017		2.39
23-Jun-2017		2.57
24-Jun-2017		2.44
25-Jun-2017		2.29
26-Jun-2017		2.11
27-Jun-2017		2.24
28-Jun-2017		2.38
29-Jun-2017		2.44
30-Jun-2017		2.32
1-Jul-2017		11/9/17
2-Jul-2017	2.57	
3-Jul-2017	2.71	
4-Jul-2017	2.94	
5-Jul-2017	2.37	
6-Jul-2017	2.15	
7-Jul-2017	2.47	
8-Jul-2017	2.31	
9-Jul-2017	2.14	
10-Jul-2017	2.07	

Data obtained on	Data published on	Volume discharged (ML/d)	
11-Jul-2017	11/9/17	2.04	
12-Jul-2017		2.05	
13-Jul-2017		2.68	
14-Jul-2017		2.79	
15-Jul-2017		2.44	
16-Jul-2017		2.43	
17-Jul-2017		2.51	
18-Jul-2017		2.71	
19-Jul-2017		2.58	
20-Jul-2017		2.55	
21-Jul-2017		2.24	
22-Jul-2017		2.36	
23-Jul-2017		2.56	
24-Jul-2017		2.36	
25-Jul-2017		2.22	
26-Jul-2017		2.22	
27-Jul-2017		2.28	
28-Jul-2017		2.43	
29-Jul-2017		2.29	
30-Jul-2017		2.18	
31-Jul-2017		2.04	
1-Aug-2017		1.83	
2-Aug-2017		1.98	
3-Aug-2017		13/10/17	2.38
4-Aug-2017			2.53
5-Aug-2017			2.09
6-Aug-2017			1.94
7-Aug-2017			1.92
8-Aug-2017			1.75
9-Aug-2017			1.7
10-Aug-2017			1.95
11-Aug-2017	1.9		
12-Aug-2017	1.78		
13-Aug-2017	1.89		
14-Aug-2017	2.01		
15-Aug-2017	2.03		
16-Aug-2017	2.1		
17-Aug-2017	1.82		
18-Aug-2017	1.87		
19-Aug-2017	1.84		
20-Aug-2017	1.98		
21-Aug-2017	2.15		

Data obtained on	Data published on	Volume discharged (ML/d)
22-Aug-2017	13/10/17	2.11
23-Aug-2017		2.09
24-Aug-2017		2.16
25-Aug-2017		2.06
26-Aug-2017		2.15
27-Aug-2017		2.48
28-Aug-2017		2.3
29-Aug-2017		2.12
30-Aug-2017		2.12
31-Aug-2017		2.11
1-Sep-2017		2.28
2-Sep-2017		2.25
3-Sep-2017		2.34
4-Sep-2017		2.37
5-Sep-2017		2.29
6-Sep-2017		2.18
7-Sep-2017		2.12
8-Sep-2017		2.3
9-Sep-2017		2.3
10-Sep-2017		2.37
11-Sep-2017	13/11/17	1.99
12-Sep-2017		1.64
13-Sep-2017		1.7
14-Sep-2017		1.65
15-Sep-2017		1.61
16-Sep-2017		1.82
17-Sep-2017		1.81
18-Sep-2017		1.88
19-Sep-2017		2.09
20-Sep-2017		1.98
21-Sep-2017		1.96
22-Sep-2017		1.88
23-Sep-2017		1.77
24-Sep-2017		1.77
25-Sep-2017		1.69
26-Sep-2017		1.63
27-Sep-2017		1.66
28-Sep-2017		2.01
29-Sep-2017	1.83	
30-Sep-2017	2.03	
1-Oct-2017	1.92	
2-Oct-2017	2.08	

Data obtained on	Data published on	Volume discharged (ML/d)	
3-Oct-2017	13/11/17	2.09	
4-Oct-2017		2.23	
5-Oct-2017		2.07	
6-Oct-2017		2.21	
7-Oct-2017		2.08	
8-Oct-2017		2.23	
9-Oct-2017		2.21	
10-Oct-2017		2.08	
11-Oct-2017		2.08	
12-Oct-2017		2.28	
13-Oct-2017		2.17	
14-Oct-2017		2.31	
15-Oct-2017		2.34	
16-Oct-2017		2.38	
17-Oct-2017		2.52	
18-Oct-2017		2.57	
19-Oct-2017		2.51	
20-Oct-2017		2.73	
21-Oct-2017		2.7	
22-Oct-2017		2.82	
23-Oct-2017		6/12/17	2.7
24-Oct-2017			2.68
25-Oct-2017	2.73		
26-Oct-2017	2.54		
27-Oct-2017	2.47		
28-Oct-2017	3.19		
29-Oct-2017	2.54		
30-Oct-2017	2.02		
31-Oct-2017	2.12		
1-Nov-2017	2.16		
2-Nov-2017	2.26		
3-Nov-2017	2.3		
4-Nov-2017	2.29		
5-Nov-2017	2.36		
6-Nov-2017	2.41		
7-Nov-2017	2.41		
8-Nov-2017	2.2		
9-Nov-2017	2.06		
10-Nov-2017	1.93		
11-Nov-2017	1.98		
12-Nov-2017	2.35		
13-Nov-2017	2.73		

Data obtained on	Data published on	Volume discharged (ML/d)
14-Nov-2017	6/12/17	2.93
15-Nov-2017		2.63
16-Nov-2017		2.42
17-Nov-2017		2.39
18-Nov-2017		2.7
19-Nov-2017		2.68
20-Nov-2017		2.73
21-Nov-2017		2.54
22-Nov-2017		2.47
23-Nov-2017		3.19
24-Nov-2017		2.54
25-Nov-2017		2.02
26-Nov-2017		2.12
27-Nov-2017		9/1/18
28-Nov-2017	3.03	
29-Nov-2017	2.84	
30-Nov-2017	3.11	
1-Dec-2017	2.86	
2-Dec-2017	2.98	
3-Dec-2017	2.81	
4-Dec-2017	2.67	
5-Dec-2017	2.9	
6-Dec-2017	2.85	
7-Dec-2017	2.55	
8-Dec-2017	2.7	
9-Dec-2017	2.59	
10-Dec-2017	2.66	
11-Dec-2017	2.78	
12-Dec-2017	2.78	
13-Dec-2017	2.74	
14-Dec-2017	2.7	
15-Dec-2017	2.49	
16-Dec-2017	2.54	
17-Dec-2017	2.65	
18-Dec-2017	2.76	
19-Dec-2017	2.61	
20-Dec-2017	13/2/18	2.18
21-Dec-2017		1.97
22-Dec-2017		2.17
23-Dec-2017		2.31
24-Dec-2017		2.33
25-Dec-2017		2.3

Data obtained on	Data published on	Volume discharged (ML/d)
26-Dec-2017	13/2/18	2.41
27-Dec-2017		2.53
28-Dec-2017		2.36
29-Dec-2017		2.34
30-Dec-2017		2.42
31-Dec-2017		2.22
1-Jan-2018		2.27
2-Jan-2018		2.18
3-Jan-2018		2.13
4-Jan-2018		2.13
5-Jan-2018		2.04
6-Jan-2018		2.12
7-Jan-2018		2.1
8-Jan-2018		2
9-Jan-2018		2.08
10-Jan-2018		2.22
11-Jan-2018		2.18
12-Jan-2018		2.26
13-Jan-2018		2.34
14-Jan-2018		2.44
15-Jan-2018		2.32
16-Jan-2018		2.24
17-Jan-2018		2.29
18-Jan-2018		2.31
19-Jan-2018		2.18
20-Jan-2018		2.16
21-Jan-2018		2.16
22-Jan-2018		1.85
23-Jan-2018		1.53
24-Jan-2018		1.71
25-Jan-2018		1.87
26-Jan-2018	1.77	
27-Jan-2018	1.85	
28-Jan-2018	1.94	
29-Jan-2018	2.12	
30-Jan-2018	2.19	
31-Jan-2018	13/3/18	3.92
1-Feb-2018		4.98
2-Feb-2018		5.05
3-Feb-2018		5.18
4-Feb-2018		5.21
5-Feb-2018	4.95	

Data obtained on	Data published on	Volume discharged (ML/d)	
6-Feb-2018	13/3/18	3.89	
7-Feb-2018		2.58	
8-Feb-2018		2	
9-Feb-2018		1.67	
10-Feb-2018		1.83	
11-Feb-2018		2.1	
12-Feb-2018		2.36	
13-Feb-2018		2.55	
14-Feb-2018		2.59	
15-Feb-2018		2.67	
16-Feb-2018		2.77	
17-Feb-2018		2.76	
18-Feb-2018		2.74	
19-Feb-2018		2.74	
20-Feb-2018		2.76	
21-Feb-2018		2.79	
22-Feb-2018		2.91	
23-Feb-2018		2.79	
24-Feb-2018		2.7	
25-Feb-2018		2.7	
26-Feb-2018		2.48	
27-Feb-2018		2.03	
28-Feb-2018		1.94	
1-Mar-2018		14/4/18	2.08
2-Mar-2018			2.15
3-Mar-2018			2.19
4-Mar-2018			2.11
5-Mar-2018			1.97
6-Mar-2018	2.1		
7-Mar-2018	2.11		
8-Mar-2018	2.36		
9-Mar-2018	2.29		
10-Mar-2018	2.33		
11-Mar-2018	2.3		
12-Mar-2018	2.32		
13-Mar-2018	2.16		
14-Mar-2018	2.13		
15-Mar-2018	2.07		
16-Mar-2018	2.11		
17-Mar-2018	2.04		
18-Mar-2018	1.97		
19-Mar-2018	2.17		

Data obtained on	Data published on	Volume discharged (ML/d)
20-Mar-2018	14/4/18	2.26
21-Mar-2018		2.35
22-Mar-2018		2.47
23-Mar-2018		2.45
24-Mar-2018		2.41
25-Mar-2018		2.45
26-Mar-2018		2.31
27-Mar-2018		2.34
28-Mar-2018		2.25
29-Mar-2018		11/5/18
30-Mar-2018	3.38	
31-Mar-2018	3.03	
1-Apr-2018	2.67	
2-Apr-2018	2.48	
3-Apr-2018	2.26	
4-Apr-2018	2.08	
5-Apr-2018	1.9	
6-Apr-2018	1.64	
7-Apr-2018	1.33	
8-Apr-2018	1.12	
9-Apr-2018	1.02	
10-Apr-2018	0.75	
11-Apr-2018	0.36	
12-Apr-2018	0.43	
13-Apr-2018	0.39	
14-Apr-2018	1.01	
15-Apr-2018	0.98	
16-Apr-2018	0.6	
17-Apr-2018	0.53	
18-Apr-2018	0.68	
19-Apr-2018	0.85	
20-Apr-2018	1.49	
21-Apr-2018	1.66	
22-Apr-2018	1.69	
23-Apr-2018	1.64	
24-Apr-2018	1.68	
25-Apr-2018	1.78	
26-Apr-2018	1.75	
27-Apr-2018	1.74	
28-Apr-2018	1.85	
29-Apr-2018	1.95	
30-Apr-2018	1.94	



Data obtained on	Data published on	Volume discharged (ML/d)
1-May-2018	12/6/18	2.01
2-May-2018		2.06
3-May-2018		2.35
4-May-2018		2.79
5-May-2018		2.01
6-May-2018		2.05
7-May-2018		2.72
8-May-2018		2.81
9-May-2018		3.16
10-May-2018		4.56
11-May-2018		4.94
12-May-2018		4.36
13-May-2018		3.23
14-May-2018		3.12
15-May-2018		3.52
16-May-2018		3.36
17-May-2018		3.67
18-May-2018		3.95
19-May-2018		4.21
20-May-2018		4.75
21-May-2018		4.86
22-May-2018		4.57
23-May-2018		4.26
24-May-2018		3.42
25-May-2018		2.6
26-May-2018		2.11
27-May-2018		2.11
28-May-2018		2.39
29-May-2018		2.56
30-May-2018		2.3
31-May-2018	10/7/18	2.31
1-Jun-2018		2.27
2-Jun-2018		2.25
3-Jun-2018		1.92
4-Jun-2018		1.82
5-Jun-2018		2.24
6-Jun-2018		2.26
7-Jun-2018		2.24
8-Jun-2018		2.22
9-Jun-2018		2.2
10-Jun-2018		2.08
11-Jun-2018	2.09	



Data obtained on	Data published on	Volume discharged (ML/d)
12-Jun-2018	10/7/18	2.16
13-Jun-2018		1.82
14-Jun-2018		1.72
15-Jun-2018		1.88
16-Jun-2018		2.07
17-Jun-2018		2.08
18-Jun-2018		1.95
19-Jun-2018		1.77
20-Jun-2018		1.49
21-Jun-2018		1.82
22-Jun-2018		2.06
23-Jun-2018		2.33
24-Jun-2018		2.28
25-Jun-2018		2.2
26-Jun-2018		2.29
27-Jun-2018		2.17
28-Jun-2018		3/8/18
29-Jun-2018	2.03	
30-Jun-2018	1.83	
1-Jul-2018	1.74	
2-Jul-2018	1.77	
3-Jul-2018	1.69	
4-Jul-2018	1.55	
5-Jul-2018	1.51	
6-Jul-2018	1.57	
7-Jul-2018	1.66	
8-Jul-2018	1.57	
9-Jul-2018	1.7	
10-Jul-2018	1.48	
11-Jul-2018	1.07	
12-Jul-2018	1.21	
13-Jul-2018	1.7	
14-Jul-2018	1.99	
15-Jul-2018	1.97	
16-Jul-2018	1.81	
17-Jul-2018	1.63	
18-Jul-2018	1.8	
19-Jul-2018	1.87	
20-Jul-2018	2	
21-Jul-2018	1.82	
23-Jul-2018	1.92	
24-Jul-2018	2.17	



Data obtained on	Data published on	Volume discharged (ML/d)
25-Jul-2018	3/8/18	2.27
26-Jul-2018	7/9/18	2.77
27-Jul-2018		3.46
28-Jul-2018		3.3
29-Jul-2018		3.6
30-Jul-2018		3.13
31-Jul-2018		3.29
1-Aug-2018		3.15
2-Aug-2018		2.74
3-Aug-2018		3.32
4-Aug-2018		3.39
5-Aug-2018		3.57
6-Aug-2018		4.44
7-Aug-2018		4.11
8-Aug-2018		5
9-Aug-2018		4.94
10-Aug-2018		6.3
11-Aug-2018		6.79
12-Aug-2018		6.01
13-Aug-2018		4.25
14-Aug-2018		3.38
15-Aug-2018		4.73
16-Aug-2018		3.81
17-Aug-2018		2.35
18-Aug-2018		2.61
19-Aug-2018	2.63	
20-Aug-2018	2.48	
21-Aug-2018	2.98	
22-Aug-2018	3.79	
23-Aug-2018	5.26	
24-Aug-2018	5.29	
25-Aug-2018	3.41	
26-Aug-2018	1.53	
27-Aug-2018	1.74	
28-Aug-2018	4/10/18	4.88
29-Aug-2018		5.39
30-Aug-2018		5.16
31-Aug-2018		4.89
1-Sept-2018		4.83
2-Sept-2018		5.14
3-Sept-2018		4.33
4-Sept-2018		2.31



Data obtained on	Data published on	Volume discharged (ML/d)	
5-Sept-2018	4/10/18	1.64	
6-Sept-2018		4.45	
7-Sept-2018		4.66	
8-Sept-2018		4.86	
9-Sept-2018		4.8	
10-Sept-2018		4.68	
11-Sept-2018		4.16	
12-Sept-2018		4.38	
13-Sept-2018		4.78	
14-Sept-2018		4.53	
15-Sept-2018		4.5	
16-Sept-2018		4.9	
17-Sept-2018		4.68	
18-Sept-2018		3.16	
19-Sept-2018		4.27	
20-Sept-2018		4.53	
21-Sept-2018		4.62	
22-Sept-2018		4.54	
23-Sept-2018		4.7	
24-Sept-2018		3.25	
25-Sep-2018		9/11/18	4.13
26-Sep-2018			4.44
27-Sep-2018			4.06
28-Sep-2018			3.88
29-Sep-2018	4.15		
30-Sep-2018	4.2		
1-Oct-2018	4.11		
2-Oct-2018	4.05		
3-Oct-2018	3.51		
4-Oct-2018	4.04		
5-Oct-2018	4.27		
6-Oct-2018	4.36		
7-Oct-2018	4.42		
8-Oct-2018	4.1		
9-Oct-2018	3.17		
10-Oct-2018	2.25		
11-Oct-2018	2.28		
12-Oct-2018	2.29		
13-Oct-2018	2.22		
14-Oct-2018	2.19		
15-Oct-2018	1.94		
16-Oct-2018	0.58		

Data obtained on	Data published on	Volume discharged (ML/d)
17-Oct-2018	9/11/18	0.29
18-Oct-2018		0.19
19-Oct-2018		0.12
20-Oct-2018		0.08
21-Oct-2018		0.07
22-Oct-2018		0.08
23-Oct-2018		0.13
24-Oct-2018		0.11
25-Oct-2018		0.05
26-Oct-2018		0.06
27-Oct-2018		0.05
28-Oct-2018		0.06
29-Oct-2018		0.06
30-Oct-2018		13/12/2018
31-Oct-2018	0.35	
1-Nov-2018	1.41	
2-Nov-2018	3.64	
3-Nov-2018	4.71	
4-Nov-2018	4.24	
5-Nov-2018	3.12	
6-Nov-2018	2.29	
7-Nov-2018	1.69	
8-Nov-2018	0.36	
9-Nov-2018	1.2	
10-Nov-2018	1.38	
11-Nov-2018	1.23	
12-Nov-2018	0.37	
13-Nov-2018	0.08	
14-Nov-2018	0.34	
15-Nov-2018	0.42	
16-Nov-2018	0.59	
17-Nov-2018	0.63	
18-Nov-2018	0.51	
19-Nov-2018	0.61	
20-Nov-2018	1.91	
21-Nov-2018	3.25	
22-Nov-2018	3.95	
23-Nov-2018	4.45	
24-Nov-2018	3.89	
25-Nov-2018	2.9	
26-Nov-2018	2.59	
27-Nov-2018	11/02/2019	3.04

Data obtained on	Data published on	Volume discharged (ML/d)
28-Nov-2018	11/02/2019	1.39
29-Nov-2018		3.18
30-Nov-2018		2.84
1-Dec-2018		2.03
2-Dec-2018		2
3-Dec-2018		2.19
4-Dec-2018		2.27
5-Dec-2018		2.43
6-Dec-2018		2.61
7-Dec-2018		2.59
8-Dec-2018		2.47
9-Dec-2018		2.58
10-Dec-2018		2.67
11-Dec-2018		2.74
12-Dec-2018		1.15
13-Dec-2018		0.54
14-Dec-2018		0.39
15-Dec-2018		0.3
16-Dec-2018		0.22
17-Dec-2018		0.21
18-Dec-2018		0.07
19-Dec-2018		0
20-Dec-2018		0
21-Dec-2018		0
22-Dec-2018		0
23-Dec-2018		0
24-Dec-2018		0
25-Dec-2018		0
26-Dec-2018		0
27-Dec-2018		8.48
28-Dec-2018		8.51
29-Dec-2018		7.29
30-Dec-2018		7.67
31-Dec-2018	5.65	
1-Jan-2019	6.47	
2-Jan-2019	3.38	
3-Jan-2019	0.21	
4-Jan-2019	5.42	
5-Jan-2019	5.28	
6-Jan-2019	0.01	
7-Jan-2019	0	
8-Jan-2019	0	

Data obtained on	Data published on	Volume discharged (ML/d)	
9-Jan-2019	11/02/2019	0	
10-Jan-2019		0	
11-Jan-2019		0	
12-Jan-2019		0.88	
13-Jan-2019		0.03	
14-Jan-2019		0.04	
15-Jan-2019		6.09	
16-Jan-2019		2.63	
17-Jan-2019		6.32	
18-Jan-2019		6.21	
19-Jan-2019		6.07	
20-Jan-2019		5.85	
21-Jan-2019		5.5	
22-Jan-2019		5.01	
23-Jan-2019		4.81	
24-Jan-2019		4.52	
25-Jan-2019		3.93	
26-Jan-2019		3.66	
27-Jan-2019		3.41	
28-Jan-2019		3.17	
29-Jan-2019		2.69	
30-Jan-2019		2.48	
31-Jan-2019		11/03/2019	2.42
1-Feb-2019			1.81
2-Feb-2019			1.79
3-Feb-2019			1.91
4-Feb-2019			2.03
5-Feb-2019			1.69
6-Feb-2019			0.57
7-Feb-2019			0.38
8-Feb-2019	1.37		
9-Feb-2019	2.6		
10-Feb-2019	1		
11-Feb-2019	1.14		
12-Feb-2019	3.16		
13-Feb-2019	3.51		
14-Feb-2019	1.42		
15-Feb-2019	1.03		
16-Feb-2019	1.79		
17-Feb-2019	2.23		
18-Feb-2019	2.46		
19-Feb-2019	2.59		

Data obtained on	Data published on	Volume discharged (ML/d)
20-Feb-2019	11/03/2019	2.45
21-Feb-2019		2.1
22-Feb-2019		1.9
23-Feb-2019		1.8
24-Feb-2019		1.49
25-Feb-2019		1.63
26-Feb-2019	12/04/2019	1.84
27-Feb-2019		1.89
28-Feb-2019		1.7
1-Mar-2019		1.68
2-Mar-2019		1.62
3-Mar-2019		1.65
4-Mar-2019		1.37
5-Mar-2019		1.29
6-Mar-2019		2.14
7-Mar-2019		1.79
8-Mar-2019		1.59
9-Mar-2019		1.62
10-Mar-2019		1.56
11-Mar-2019		1.58
12-Mar-2019		1.65
13-Mar-2019		1.61
14-Mar-2019		1.66
15-Mar-2019		1.64
16-Mar-2019		1.76
17-Mar-2019		1.66
18-Mar-2019		1.62
19-Mar-2019		1.69
20-Mar-2019		1.64
21-Mar-2019		1.61
22-Mar-2019	1.68	
23-Mar-2019	1.63	
24-Mar-2019	1.58	
25-Mar-2019	1.57	
26-Mar-2019	08/08/2019	1.79
27-Mar-2019		1.59
28-Mar-2019		1.62
29-Mar-2019		1.56
30-Mar-2019		1.58
31-Mar-2019		1.65
1-Apr-2019		1.61
2-Apr-2019	1.66	

Data obtained on	Data published on	Volume discharged (ML/d)
3-Apr-2019		1.64
4-Apr-2019		1.76
5-Apr-2019		1.66
6-Apr-2019		1.62
7-Apr-2019		1.69
8-Apr-2019		1.64
9-Apr-2019		1.61
10-Apr-2019		1.68
11-Apr-2019		1.63
12-Apr-2019		1.58
13-Apr-2019		1.57
14-Apr-2019		1.79
15-Apr-2019		1.59
16-Apr-2019		1.62
17-Apr-2019		1.56
18-Apr-2019		1.58
19-Apr-2019		0.044
20-Apr-2019		0.044
21-Apr-2019		0.044
22-Apr-2019		0.044
23-Apr-2019		0.044
24-Apr-2019		0.044
25-Apr-2019		0.044
26-Apr-2019		0.044
27-Apr-2019		0.044
28-Apr-2019		0.044
29-Apr-2019		0.044
30-Apr-2019		0.044
1-May-2019		0.044
2-May-2019		0.044
3-May-2019		0.044
4-May-2019		0.044
5-May-2019		0.044
6-May-2019		0.044
7-May-2019		0.044
8-May-2019		0.044
9-May-2019		0.044
10-May-2019		0.044
11-May-2019		0.04
12-May-2019		0.04
13-May-2019		0.04
14-May-2019		0.04

Data obtained on	Data published on	Volume discharged (ML/d)
15-May-2019		0.04
16-May-2019		0.04
17-May-2019		0.04
18-May-2019		0.04
19-May-2019		0.04
20-May-2019		0.04
21-May-2019		0.04
22-May-2019		0.04
23-May-2019		0.03
24-May-2019		0.03
25-May-2019		0.03
26-May-2019		0.03
27-May-2019		0.03
28-May-2019		0.03
29-May-2019		0.03
30-May-2019		0.03
31-May-2019		0.03
1-Jun-2019		0.03
2-Jun-2019		0.03
3-Jun-2019		0.03
4-Jun-2019		0.03
5-Jun-2019		0.03
6-Jun-2019		0.03
7-Jun-2019		0.03
8-Jun-2019		0.03
9-Jun-2019		0.03
10-Jun-2019		0.03
11-Jun-2019		0.03
12-Jun-2019		0.03
13-Jun-2019		0.03
14-Jun-2019		0.03
15-Jun-2019		0.03
16-Jun-2019		0.03
17-Jun-2019		0.03
18-Jun-2019		0.03
19-Jun-2019		0.03
20-Jun-2019		0.03
21-Jun-2019		0.03
22-Jun-2019		0.03
23-Jun-2019		0.03
24-Jun-2019		0.03
25-Jun-2019		0.03

Data obtained on	Data published on	Volume discharged (ML/d)
26-Jun-2019		0.03
27-Jun-2019		0.03
28-Jun-2019		0.03
29-Jun-2019		0.03
30-Jun-2019		0.03
1-Jul-2019		0.03
2-Jul-2019		0.03
3-Jul-2019		0.03
4-Jul-2019		0.03
5-Jul-2019		0.03
6-Jul-2019		0.03
7-Jul-2019		0.03
8-Jul-2019		0.03
9-Jul-2019		0.03
10-Jul-2019		0.03
11-Jul-2019		0.03
12-Jul-2019		0.03
13-Jul-2019		0.03
14-Jul-2019		0.03
15-Jul-2019		0.03
16-Jul-2019		0.03
17-Jul-2019		0.03
18-Jul-2019		0.03
19-Jul-2019		0.03
20-Jul-2019		0.03
21-Jul-2019		0.03
22-Jul-2019		0.03
23-Jul-2019		0.03
24-Jul-2019		0.03
25-Jul-2019		0.03
26-Jul-2019		0.03
27-Jul-2019		0.03
28-Jul-2019		0.03
29-Jul-2019		0.126
30-Jul-2019		0.124
31-Jul-2019		0.124
1-Aug-2019		0.124
2-Aug-2019		0.124
3-Aug-2019		0.131
4-Aug-2019		0.131
5-Aug-2019		0.131
6-Aug-2019		0.131

Data obtained on	Data published on	Volume discharged (ML/d)
7-Aug-2019		0.12
8-Aug-2019		0.12
9-Aug-2019		0.12
10-Aug-2019		0.12
11-Aug-2019		0.12
12-Aug-2019		0.12
13-Aug-2019		0.12
14-Aug-2019		0.12
15-Aug-2019		0.12
16-Aug-2019		0.12
17-Aug-2019		0.12
18-Aug-2019		0.12
19-Aug-2019		0.12
20-Aug-2019		0.12
21-Aug-2019		0.12
22-Aug-2019		0.12
23-Aug-2019		0.12
24-Aug-2019		0.12
25-Aug-2019		0.12
26-Aug-2019		0.12
27-Aug-2019		0.12
28-Aug-2019		0.12
29-Aug-2019		0.12
30-Aug-2019		0.12
31-Aug-2019		0.12
1-Sep-2019		0.13
2-Sep-2019		0.13
3-Sep-2019		0.13
4-Sep-2019		0.13
5-Sep-2019		0.13
6-Sep-2019		0.13
7-Sep-2019		0.13
8-Sep-2019		0.13
9-Sep-2019		0.13
10-Sep-2019		0.13
11-Sep-2019		0.13
12-Sep-2019		0.13
13-Sep-2019		0.13
14-Sep-2019		0.13
15-Sep-2019		0.13
16-Sep-2019		0.13
17-Sep-2019		0.13

Data obtained on	Data published on	Volume discharged (ML/d)
18-Sep-2019		0.13
19-Sep-2019		0.13
20-Sep-2019		0.13
21-Sep-2019		0.13
22-Sep-2019		0.13
23-Sep-2019		0.13
24-Sep-2019		0.13
25-Sep-2019		0.13
26-Sep-2019		0.13
27-Sep-2019		0.13
28-Sep-2019		0.13
29-Sep-2019		0.13
30-Sep-2019		0.14
1-Oct-2019		0.13
2-Oct-2019		0.13
3-Oct-2019		0.13
4-Oct-2019		0.13
5-Oct-2019		0.13
6-Oct-2019		0.13
7-Oct-2019		0.13
8-Oct-2019		0.13
9-Oct-2019		0.13
10-Oct-2019		0.13
11-Oct-2019		0.13
12-Oct-2019		0.13
13-Oct-2019		0.13
14-Oct-2019		0.13
15-Oct-2019		0.13
16-Oct-2019		0.13
17-Oct-2019		0.13
18-Oct-2019		0.13
19-Oct-2019		0.13
20-Oct-2019		0.13
21-Oct-2019		0.13
22-Oct-2019		0.13
23-Oct-2019		0.13
24-Oct-2019		0.138
25-Oct-2019		0.138
26-Oct-2019		0.138
27-Oct-2019		0.138
28-Oct-2019		0.138
29-Oct-2019		0.138

Data obtained on	Data published on	Volume discharged (ML/d)
30-Oct-2019		0.138
31-Oct-2019		0.138
1-Nov-2019		0.138
2-Nov-2019		0.138
3-Nov-2019		0.138
4-Nov-2019		0.138
5-Nov-2019		0.138
6-Nov-2019		0.138
7-Nov-2019		0.138
8-Nov-2019		0.138
9-Nov-2019		0.138
10-Nov-2019		0.138
11-Nov-2019		0.138
12-Nov-2019		0.138
13-Nov-2019		0.138
14-Nov-2019		0.138
15-Nov-2019		0.138
16-Nov-2019		0.138
17-Nov-2019		0.138
18-Nov-2019		0.141
19-Nov-2019		0.141
20-Nov-2019		0.141
21-Nov-2019		0.141
22-Nov-2019		0.141
23-Nov-2019		0.141
24-Nov-2019		0.141
25-Nov-2019		0.255
26-Nov-2019		0.255
27-Nov-2019		0.255
28-Nov-2019		0.255
29-Nov-2019		0.255
30-Nov-2019		0.255
1-Dec-2019		0.255
2-Dec-2019		0.255
3-Dec-2019		0.255
4-Dec-2019		0.255
5-Dec-2019		1.530
6-Dec-2019		1.530
7-Dec-2019		1.530
8-Dec-2019		1.530
9-Dec-2019		1.530
10-Dec-2019		1.530

Data obtained on	Data published on	Volume discharged (ML/d)
11-Dec-2019	13/01/2020	1.530
12-Dec-2019		1.878
13-Dec-2019		1.878
14-Dec-2019		1.878
15-Dec-2019		1.878
16-Dec-2019		0.539
17-Dec-2019		0.539
18-Dec-2019		0.539
19-Dec-2019		0.539
20-Dec-2019		0.294
21-Dec-2019		0.294
22-Dec-2019		0.294
23-Dec-2019		0.294
24-Dec-2019		0.294
25-Dec-2019		0.294
26-Dec-2019		0.294
27-Dec-2019		0.220
28-Dec-2019		0.220
29-Dec-2019		0.220
30-Dec-2019		0.220
31-Dec-2019		0.220
1-Jan-2020		0.220
2-Jan-2020		0.220
3-Jan-2020		0.220
4-Jan-2020		0.220
5-Jan-2020		0.220
6-Jan-2020		0.294
7-Jan-2020		0.294
8-Jan-2020		0.294
9-Jan-2020		0.294
10-Jan-2020		0.294
11-Jan-2020		0.294
12-Jan-2020		0.294
13-Jan-2020		0.294
14-Jan-2020		0.220
15-Jan-2020		0.462
16-Jan-2020		0.462
17-Jan-2020		0.462
18-Jan-2020		0.462
19-Jan-2020		0.462
20-Jan-2020		0.677
21-Jan-2020		0.677

Data obtained on	Data published on	Volume discharged (ML/d)
22-Jan-2020	11/02/2020	0.677
23-Jan-2020		0.677
24-Jan-2020		0.677
25-Jan-2020		0.677
26-Jan-2020		0.677
27-Jan-2020		0.381
28-Jan-2020		0.381
29-Jan-2020		0.294
30-Jan-2020		0.294
31-Jan-2020		0.294
1-Feb-2020		0.294
2-Feb-2020		0.294
3-Feb-2020		0.294
4-Feb-2020		0.294
5-Feb-2020		0.294
6-Feb-2020		2.360
7-Feb-2020		2.360
8-Feb-2020		2.360
9-Feb-2020		2.360
10-Feb-2020		2.360
11-Feb-2020	2.360	
12-Feb-2020	2.360	
13-Feb-2020	2.360	
14-Feb-2020	2.360	
15-Feb-2020	2.360	
16-Feb-2020	2.360	
17-Feb-2020	2.360	
18-Feb-2020	2.360	
19-Feb-2020	2.360	
20-Feb-2020	2.360	
21-Feb-2020	2.360	
22-Feb-2020	2.360	
23-Feb-2020	2.360	
24-Feb-2020	2.360	
25-Feb-2020	2.360	
26-Feb-2020	2.360	
27-Feb-2020	2.360	
28-Feb-2020	2.360	
29-Feb-2020	2.360	
1-Mar-2020	2.360	
2-Mar-2020	2.360	
3-Mar-2020	2.360	

Data obtained on	Data published on	Volume discharged (ML/d)	
4-Mar-2020	12/03/2020	2.360	
5-Mar-2020		2.360	
6-Mar-2020		2.360	
7-Mar-2020		2.360	
8-Mar-2020		2.360	
9-Mar-2020		2.360	
10-Mar-2020		2.360	
11-Mar-2020		2.360	
12-Mar-2020		2.360	
13-Mar-2020		08/04/2020	0.294
14-Mar-2020			0.294
15-Mar-2020			0.294
16-Mar-2020	0.294		
17-Mar-2020	0.294		
18-Mar-2020	0.294		
19-Mar-2020	0.294		
20-Mar-2020	0.294		
21-Mar-2020	0.294		
22-Mar-2020	0.294		
23-Mar-2020	0.294		
24-Mar-2020	0.294		
25-Mar-2020	0.294		
26-Mar-2020	0.294		
27-Mar-2020	0.294		
28-Mar-2020	0.294		
29-Mar-2020	0.294		
30-Mar-2020	0.294		
31-Mar-2020	0.294		
1-Apr-2020	0.294		
2-Apr-2020	0.294		
3-Apr-2020	0.294		
4-Apr-2020	0.294		
5-Apr-2020	0.294		
6-Apr-2020	0.294		
7-Apr-2020	0.293		
8-Apr-2020			
9-Apr-2020			
10-Apr-2020			
11-Apr-2020			
12-Apr-2020			
13-Apr-2020			
14-Apr-2020			



Data obtained on	Data published on	Volume discharged (ML/d)
15-Apr-2020	12/05/2020	0.293
16-Apr-2020		0.293
17-Apr-2020		0.293
18-Apr-2020		0.293
19-Apr-2020		0.293
20-Apr-2020		0.293
21-Apr-2020		0.293
22-Apr-2020		0.293
23-Apr-2020		0.293
24-Apr-2020		0.293
25-Apr-2020		0.293
26-Apr-2020		0.293
27-Apr-2020		0.293
28-Apr-2020		0.001
29-Apr-2020		0.001
30-Apr-2020		0.001
1-May-2020		0.001
2-May-2020		0.001
3-May-2020		0.001
4-May-2020		0.001
5-May-2020		0.001
6-May-2020		0.001
7-May-2020		0.001
8-May-2020		0.001
9-May-2020		0.001
10-May-2020		0.001
11-May-2020		0.001
12-May-2020		0.001
13-May-2020		0.001
14-May-2020		0.001
15-May-2020		0.001
16-May-2020	0.001	
17-May-2020	0.003	
18-May-2020	0.003	
19-May-2020	0.003	
20-May-2020	0.003	
21-May-2020	0.003	
22-May-2020	0.003	
23-May-2020	0.003	
24-May-2020	0.003	
25-May-2020	0.003	
26-May-2020	0.003	

Data obtained on	Data published on	Volume discharged (ML/d)
27-May-2020		0.003
28-May-2020		0.003
29-May-2020		0.003
30-May-2020		0.003
31-May-2020		0.003
1-Jun-2020		04/06/2020
2-Jun-2020		0.003
3-Jun-2020		0.003
4-Jun-2020		0.003
5-Jun-2020		0.003
6-Jun-2020		0.003
7-Jun-2020		0.003
8-Jun-2020		0.003
9-Jun-2020		0.003
10-Jun-2020		0.003
11-Jun-2020		0.001
12-Jun-2020		0.001
13-Jun-2020		0.001
14-Jun-2020		0.001
15-Jun-2020		0.002
16-Jun-2020		0.002
17-Jun-2020		0.002
18-Jun-2020		1.900
19-Jun-2020		1.900
20-Jun-2020		1.900
21-Jun-2020		1.900
22-Jun-2020		1.900
23-Jun-2020		1.900
24-Jun-2020		1.900
25-Jun-2020		1.900
26-Jun-2020		1.900
27-Jun-2020		1.900
28-Jun-2020		1.900
29-Jun-2020		2.360
30-Jun-2020		2.360
1-Jul-2020		1/07/2020
2-Jul-2020		2.360
3-Jul-2020		2.360
4-Jul-2020		2.360
5-Jul-2020		2.360
6-Jul-2020		1.900
7-Jul-2020		1.900

Data obtained on	Data published on	Volume discharged (ML/d)
8-Jul-2020		1.900
9-Jul-2020		1.900
10-Jul-2020		1.900
11-Jul-2020		1.900
12-Jul-2020		1.900
13-Jul-2020		1.490
14-Jul-2020		1.490
15-Jul-2020		1.490
16-Jul-2020		1.490
17-Jul-2020		1.490
18-Jul-2020		1.490
19-Jul-2020		1.490
20-Jul-2020		1.490
21-Jul-2020		1.490
22-Jul-2020		1.490
23-Jul-2020		1.490
24-Jul-2020		1.490
25-Jul-2020		1.490
26-Jul-2020		1.490
27-Jul-2020		1.900
28-Jul-2020		1.900
29-Jul-2020		1.900
30-Jul-2020		1.900
31-Jul-2020		1.900
1-Aug-2020		1.900
2-Aug-2020		1.900
3-Aug-2020	11/08/2020	1.900
4-Aug-2020		1.490
5-Aug-2020		1.490
6-Aug-2020		1.490
7-Aug-2020		1.490
8-Aug-2020		1.490
9-Aug-2020		1.490
10-Aug-2020		1.490
11-Aug-2020		1.490
12-Aug-2020		1.490
13-Aug-2020		1.490
14-Aug-2020		1.490
15-Aug-2020		1.490
16-Aug-2020		1.490
17-Aug-2020		1.490
18-Aug-2020		1.490

Data obtained on	Data published on	Volume discharged (ML/d)
19-Aug-2020		1.490
20-Aug-2020		1.490
21-Aug-2020		1.490
22-Aug-2020		1.490
23-Aug-2020		1.490
24-Aug-2020		1.490
25-Aug-2020		1.490
26-Aug-2020		1.490
27-Aug-2020		1.490
28-Aug-2020		1.490
29-Aug-2020		1.490
30-Aug-2020		1.490
31-Aug-2020		1.490
1-Sep-2020		1.490
2-Sep-2020		1.490
3-Sep-2020		1.490
4-Sep-2020		1.490
5-Sep-2020		1.490
6-Sep-2020		1.490
7-Sep-2020		1.490
8-Sep-2020		1.490
9-Sep-2020		1.490
10-Sep-2020	11/09/2020	1.490
11-Sep-2020		1.490
12-Sep-2020		1.490
13-Sep-2020		1.490
14-Sep-2020		1.490
15-Sep-2020		1.490
16-Sep-2020		1.490
17-Sep-2020		1.490
18-Sep-2020		1.490
19-Sep-2020		1.490
20-Sep-2020		1.490
21-Sep-2020		1.490
22-Sep-2020		1.490
23-Sep-2020		1.490
24-Sep-2020		1.490
25-Sep-2020		1.490
26-Sep-2020		1.490
27-Sep-2020		1.490
28-Sep-2020		1.9
29-Sep-2020		1.9

Data obtained on	Data published on	Volume discharged (ML/d)
30-Sep-2020	01/10/2020	1.9
1-Oct-2020		1.9
2-Oct-2020	09/11/2020	1.13
3-Oct-2020		1.13
4-Oct-2020		1.13
5-Oct-2020		1.49
6-Oct-2020		1.49
7-Oct-2020		1.49
8-Oct-2020		1.49
9-Oct-2020		1.49
10-Oct-2020		1.49
11-Oct-2020		1.49
12-Oct-2020		1.90
13-Oct-2020		1.90
14-Oct-2020		1.90
15-Oct-2020		1.90
16-Oct-2020		1.90
17-Oct-2020		1.90
18-Oct-2020		1.90
19-Oct-2020		1.49
20-Oct-2020		1.49
21-Oct-2020		1.90
22-Oct-2020		1.90
23-Oct-2020		1.90
24-Oct-2020		1.90
25-Oct-2020		1.90
26-Oct-2020		2.36
27-Oct-2020		2.36
28-Oct-2020		2.36
29-Oct-2020		1.90
30-Oct-2020		1.90
31-Oct-2020	1.90	
1-Nov-2020	09/11/2020	1.90
2-Nov-2020		1.90

Licence Limit: 10 ML/d. Compliance summary: Discharge within licence limits.

3. Ambient Air/Dust Monitoring

Berrima Colliery has 4 dust monitoring locations as described below:

- Mine Office Dust Deposition (Gauge 1)
- Medway Village Dust Deposition (Gauge 2)
- Loch Catherine Coal Stockpile Dust Deposition (Gauge 3)
- Mine Entry Road PM₁₀ Atmospheric Dust (Gauge 4)

3.1 Dust Deposition Gauges: Total Insoluble Matter (grams per metre² per month)

Gauges 1 to 3 are dust deposition gauges which measure the levels of coarse dust. It is a measure of dust nuisance rather than an indication of potential health problems as this dust fraction does not penetrate into the respiratory system.

Licence limit: Not specified

Adopted limits: For dust deposition, the NSW State guideline of 4 g/m² /month (presented as a 12-month rolling average) has been adopted.

Table 5 – Dust Deposition Data

	Dust Deposition Gauges (g/m ² /month as 12-month rolling average)		
	Site 1 Office	Site 2 Medway Village	Site 3 Loch Catherine
December 2016 Report Received: 9/01/17 Date Published: 6/02/17	1.61	0.44	0.46
January 2017 Report Received: 6/02/17 Date Published: 6/02/17	1.58	0.58	0.45
February 2017 Report Received: 8/03/17 Date Published: 8/03/17	1.53	0.61	0.47
March 2017 Report Received: 16/03/17 Date Published: 4/04/17	1.65	0.65	0.50
April 2017 Report Received: 3/05/17 Date Published: 5/05/17	1.64	0.64	0.49
May 2017 Report Received: 5/06/17 Date Published: 5/06/17	1.67	0.65	0.50
June 2017 Report Received: 3/07/17 Date Published: 4/07/17	1.55	0.60	0.40
July 2017 Report Received: 7/08/17 Date Published: 8/08/17	1.49	0.61	0.40
August 2017 Report Received: 1/09/17 Date Published: 11/09/17	1.53	0.66	0.39



	Dust Deposition Gauges (g/m ² /month as 12-month rolling average)		
	Site 1 Office	Site 2 Medway Village	Site 3 Loch Catherine
September 2017 Report Received: 15/09/17 Date Published: 13/10/17	1.24	0.62	0.38
October 2017 Report Received: 15/09/17 Date Published: 13/10/17	1.23	0.65	0.42
November 2017 Report Received: 15/11/17 Date Published: 6/12/17	1.34	No Result*	0.48
December 2017 Report Received: 5/01/18 Date Published: 9/1/18	2.07	0.70	0.48
January 2018 Report Received: 9/03/18 Date Published: 13/3/18	2.04	0.63	0.55
February 2018 Report Received: 21/02/18 Date Published: 13/3/18	2.12	0.69	0.50
March 2018 Report Received: 15/03/18 Date Published: 14/4/18	1.99	0.64	0.48
April 2018 Report Received: 11/06/18 Date Published: 12/06/18	1.98	0.65	0.55
May 2018 Report Received: 11/06/18 Date Published: 12/06/18	0.97	0.69	0.58
June 2018 Report Received: 18/06/18 Date Published: 10/07/18	1.97	0.75	No Result#
July 2018 Report Received: 03/08/18 Date Published: 14/08/18	1.98	0.75	0.64
August 2018 Report Received: 05/09/18 Date Published: 07/09/18	1.96	0.71	0.81
September 2018 Report Received: 02/10/18 Date Published: 04/10/18	1.95	0.75	0.85
October 2018 Report Received: 07/11/18 Date Published: 09/11/18	2.0	0.78	0.85
November 2018 Report Received: 7/12/18 Date Published: 13/12/18	1.81	0.77	0.83
December 2018 Report Received: 15/01/19 Date Published: 15/01/19	1.73	0.82	0.93
January 2019 Report Received: 08/02/19 Date Published: 11/02/19	2.42	0.93	1.07
February 2019 Report Received: 14/03/19 Date Published: 14/03/19	2.32	0.84	1.15
March 2019 Report Received: 11/04/19 Date Published: 12/04/19	2.28	0.86	1.19



	Dust Deposition Gauges (g/m ² /month as 12-month rolling average)		
	Site 1 Office	Site 2 Medway Village	Site 3 Loch Catherine
April 2019 Report Received: 1/05/19 Date Published: 13/05/19	2.33	0.86	1.24
May 2019 Report Received: 12/06/19 Date Published: 13/06/19	2.29	0.82	1.21
June 2019 Report Received: 12/07/19 Date Published: 12/07/19	2.34	0.83	1.14
July 2019 Report Received: 08/08/19 Date Published: 08/08/19	2.36	0.83	1.12
August 2019 Report Received: 04/09/19 Date Published: 10/09/19	2.34	0.83	0.97
September 2019 Report Received: 08/10/19 Date Published: 10/10/19	2.46	0.83	1.15
October 2019 Report Received: 13/11/19 Date Published: 13/11/19	2.42	0.83	1.14
November 2019 Report Received: 10/12/19 Date Published: 12/12/19	2.49	0.88	1.18
December 2019 Report Received: 18/12/19 Date Published: 13/01/20	1.88	0.87	1.18
January 2020 Report Received: 11/02/20 Date Published: 11/02/20	1.34	0.75	1.41
February 2020 Report Received: 12/03/20 Date Published: 12/03/20	2.16	0.98	1.56
March 2020 Report Received: 08/04/20 Date Published: 08/04/20	2.47	1.17	1.68
April 2020 Report Received: 12/05/20 Date Published: 12/05/20	2.49	1.13	1.56
May 2020 Report Received: 04/06/20 Date Published: 04/06/20	2.56	1.18	1.54
June 2020 Report Received: 16/06/20 Date Published: 01/07/20	2.56	1.18	1.54
July 2020 Report Received: 15/07/20 Date Published: 11/08/20	2.56	1.23	1.55
August 2020 Report Received: 14/08/20 Date Published: 11/09/20	2.62	1.27	1.66
September 2020 Report Received: 14/09/20 Date Published: 01/10/20	2.70	1.33	1.46
October 2020 Report Received: Date Published:			



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Compliance summary: The dust levels at site office and Loch meet the adopted criteria.

*Dust gauge missing from Medway Village therefore no result for November 2017.

Dust gauge destroyed in fire at Loch Catherine (Site 3) therefore no result for June 2018.

3.2 Atmospheric Dust Sampling

Berrima Colliery is required to measure the very small fraction of total suspended particulate matter, namely the 10 micron fraction (PM₁₀). This test measures the levels of the very fine dust suspended in the air which is a measure of potential health effects (irritation of the respiratory tract) as the small particles can penetrate into the airways and the lungs. Fine dust can persist in the atmosphere for days or even months before it settles and can travel some distance. Gauge 4 is located near the mine entrance which is midway between the mine facilities and the village of Medway.

Licence limit: Not specified

Adopted limits: The National Environment Protection (Ambient Air Quality) Measure standard of 50 µg/m³ for a 24-hour average has been adopted. This is in line with current standards for the coal industry.

Table 7 – Atmospheric Dust Data

Month	Report Received	Date Published	PM ₁₀ µg/m ³ 24 hour average
January 2017	23/01/17	06/02/17	13.6
February 2017	16/02/17	08/03/17	73.3
March 2017	16/03/17	04/04/17	8.5
April 2017	20/04/17	05/05/17	11.6
May 2017	15/05/17	05/06/17	8.8
June 2017	14/06/17	04/07/17	2.8
July 2017	03/08/17	08/08/17	<0.1
August 2017	18/09/17	13/10/17	<0.1
September 2017	18/09/17	13/10/17	7.0
October 2017	13/10/17	06/12/17	15.5
November 2017	14/11/17	06/12/17	10.2
December 2017	18/12/17	09/01/18	9.1
January 2018	24/01/18	13/02/18	15.16
February 2018	22/02/18	13/03/18	12.0
March 2018	26/03/18	14/04/18	17.3
April 2018	24/04/18	11/05/18	21.1
May 2018	18/05/18	12/06/18	14.5
June 2018	21/06/18	26/06/18	6.7
July 2018	19/07/18	14/08/18	3.2
August 2018	28/08/18	07/09/18	12.4
September 2018	26/09/18	04/10/18	5.5
October 2018	12/10/18	09/11/18	11.6
November 2018	7/12/18	13/12/18	37.8
December 2018	20/12/18	15/01/19	136
January 2019	22/01/19	11/02/19	25.9
February 2019	08/03/19	14/03/19	14.0

March 2019	27/03/19	12/04/19	8.8
April 2019	30/04/19	13/06/19	7.6
May 2019	27/05/19	13/06/19	43.5
June 2019	18/06/19	12/07/19	11.0
July 2019	18/07/19	8/08/19	2.0
August 2019	16/08/19	10/09/19	5.6
September 2019	20/09/19	10/10/19	6.6
October 2019	25/10/19	13/11/19	18.2
November 2019	18/11/19	12/12/19	44.4
December 2019	02/12/19	16/12/19	18.6
January 2020	29/01/20	11/02/20	35.0
February 2020	24/02/20	12/03/20	93.8
March 2020	17/03/20	08/04/20	15.8
April 2020	20/04/20	12/05/20	9.3
May 2020	18/05/20	04/06/20	14.0
June 2020	16/06/20	01/07/20	6.0
July 2020	13/08/20	11/09/20	12.9
August 2020	13/08/20	11/09/20	13.2
September 2020	23/09/20	01/10/20	9.0
October 2020	16/10/20	09/11/2020	9.0

Compliance summary:

The February 2017 result exceeded the NEPM standard at the mine office. The corresponding deposition monitoring data at the mine office and at Medway Village was still in compliance despite the elevated PM₁₀ reading on the mine site, and therefore deposition rates at the nearest residential receptor remain in compliance.

The December 2018 result exceeded the NEPM standard at the mine office. This was due to localised dust generation resulting from handling of limestone aggregate for use in underground water treatment. The corresponding deposition monitoring data at the mine office was elevated relative to the village and the stockpile sites. Given that the result at Medway Village was still in compliance despite the elevated PM₁₀ reading on the mine site, deposition rates at the nearest residential receptor remain in compliance. Elevated dust readings will be expected in future as part of the earthworks component of the rehabilitation program.

The November 2019 result was effected by hazard reduction burning in the region, while the January and February 2020 levels were effected by bushfires in the local area.

REPORT ENDS