

Armidale Water Treatment Plant (WTP)

Location: Arundel Drive, Armidale NSW 2350 Environment Protection Licence Number: 2821 Activities: Drinking water treatment
Licensee under Protection of Environment Operations Act 1997 (POEO Act): Armidale Regional Council, PO Box 75A, Armidale NSW 2350

The internet link to Licence No. 2821 is <http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=31138&SYSUID=1&LICID=2821>

Council is required by the New South Wales Environment Protection Authority (EPA) to monitor the quality of water discharging from the final solids settlement pond outlet pit (EPA Point 1) and volume discharged daily. This document details recent results. To meet Council's obligation under Section 66 (6) of the POEO Act, a link to the current version of this document is available on Council's website.

The location of EPA Point No. 1 sampling point is shown on the adjacent figure.

Monitoring results from 31 March 2012 required under the licence are presented in the following tables. New results will be added over the next four years. From then on, the earliest result will be deleted each time a new result becomes available. In this way, the most current four years of results will always be available.

Discharge water quality results are provided in Table 1.
Discharge water volumes are provided in Table 2.

Abbreviations in the tables are as follows:

Al = Aluminium; BOD₅ = Biochemical Oxygen Demand over five days; SS = Total suspended solids; mg/L = milligram per litre (equivalent to ppm); kL = kilolitres.



Base map: NSW Department of Lands 2010

Choice of water quality analytes:

Particular analytes are chosen for testing because they give an understanding of the discharge quality of the backwash water. Backwash water cleans the water treatment plant filters and sedimentation tanks and is then allowed to settle in three solids settlement ponds. Testing gives insight into the effectiveness of the water treatment process and how it may affect Rockvale Creek to which the water is discharged.

Reasons for analytes are as follows:

- pH measures if the discharge water is acidic, neutral or alkaline. A neutral pH range between 6.5 and 8.5 is generally preferred so that freshwater aquatic ecosystems are not affected by extreme pH.
- Aluminium compounds are used to coagulate suspended particles in the raw water that arrives at the treatment plant. It is tested at the discharge point to assure that much of the aluminium has dropped out in the settlement tanks and the three solids settlement ponds.
- The BOD₅ test has traditionally been used by wastewater professionals to manage wastewater treatment processes. It is measured by the quantity of oxygen consumed by microorganisms during a five-day period, as a measure of the amount of biodegradable organic material in, or strength of, the wastewater. Wastewater high in BOD can deplete oxygen in receiving waters, causing fish kills and ecosystem changes. A commonly accepted wastewater treatment discharge standard for BOD₅ is 20 mg/L (i.e. 20 mg of O₂ are consumed per litre of water over 5 days to break down the waste).
- Suspended solids (SS) are removed during settlement in the sludge lagoons. Along with BOD₅, SS determines the efficiency of the treatment process. Suspended solids can also smother biota in waterbodies. A commonly accepted treatment standard for suspended solids is 30 mg/L.

• **Table 1: Discharge water quality EPA Point No. 1 +, Year 2016 & 2017**

EPA Point No. 1	Received from laboratory	Accessible on Council website	pH	AI	AI Rockvale Crossing	BOD	SS
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
16/08/16	23/08/16	14/09/16	7.59	0.047	0.051	7.56	40
23/08/16	29/08/16	14/09/16	7.63	0.056	0.034	9.00	75
29/08/16	05/09/16	14/09/16	7.39	0.059	0.047	3.36	300
05/09/16	12/09/16	18/10/16	7.33	0.068	0.040	6.03	400
12/09/16	19/09/16	18/10/16	7.53	0.026	0.050	6.66	5
19/09/16	27/09/16	18/10/16	7.59	0.029	0.040	11.49	20
27/09/16	04/10/16	18/10/16	7.52	0.024	0.049	3.48	10
04/10/16	10/10/16	23/11/16	7.70	0.030	0.040	6.99	120
10/10/16	17/10/16	23/11/16	7.34	0.026	0.032	8.34	450
17/10/16	24/10/16	23/11/16	7.72	0.028	0.022	3.49	400
24/10/16	31/10/16	23/11/16	7.60	0.026	0.019	12.36	80
31/10/16	07/11/16	23/11/16	7.38	0.029	0.016	4.56	360
07/11/16	15/11/16	22/12/16	7.48	0.027	0.014	5.16	60
15/11/16	22/11/16	22/12/16	7.49	0.029	0.020	6.51	60
22/11/16	28/11/16	22/12/16	7.43	0.037	0.039	23.78	15
28/11/16	06/12/16	22/12/16	7.47	0.039	0.031	5.73	180
06/12/16	14/12/16	22/12/16	7.43	0.041	0.049	7.50	100
14/12/16	20/12/16	02/02/17	7.89	0.039	0.037	2.67	600
20/12/16	27/12/16	02/02/17	7.58	0.043	0.033	5.64	120
27/12/16	03/01/17	02/02/17	7.67	0.039	0.033	5.28	15
03/01/17	10/01/17	02/02/17	7.69	0.043	0.039	16.98	10
10/01/17	17/01/17	02/02/17	7.68	0.038	0.036	6.51	20
17/01/17	23/01/17	02/02/17	7.22	0.122	0.254	13.32	15
23/01/17	31/01/17	02/02/17	7.39	0.053	0.187	3.96	5

EPA Point No. 1	Received from laboratory	Accessible on Council website	pH	AI	AI Rockvale Crossing	BOD	SS
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
31/01/17	07/02/17	14/03/17	7.39	0.053	0.187	2.40	200
07/02/17	13/02/17	14/03/17	7.27	0.047	0.106	10.23	320
13/02/17	21/02/17	14/03/17	7.51	0.049	0.089	6.99	320
21/02/17	28/02/17	14/03/17	7.63	0.043	0.067	5.61	5
28/02/17	06/03/17	14/03/17	7.64	0.046	0.059	9.36	10
06/03/17	14/03/17	26/04/17	7.82	0.096	0.108	5.94	20
14/03/17	21/03/17	26/04/17	7.83	0.087	0.099	7.68	40
21/03/17	28/03/17	26/04/17	7.91	0.048	0.039	11.46	10
28/03/17	04/04/17	26/04/17	7.87	0.039	0.037	17.28	4
04/04/17	11/04/17	26/04/17	7.51	0.043	0.049	6.51	20
11/04/17	18/04/17	24/05/17	7.24	0.037	0.045	5.67	320
18/04/17	25/04/17	24/05/17	7.64	0.039	0.047	7.53	40
25/04/17	02/05/17	24/05/17	7.78	0.042	0.049	10.29	80
02/05/17	09/05/17	24/05/17	8.10	0.068	0.089	9.60	10
09/05/17	16/05/17	24/05/17	7.80	0.081	0.101	5.25	240
16/05/17	23/05/17	24/05/17	7.58	0.076	0.099	7.17	240
23/05/17	30/05/17	21/06/17	7.74	0.076	0.089	3.78	100
30/05/17	06/06/17	21/06/17	7.74	0.077	0.090	5.43	60
06/06/17	13/06/17	21/06/17	7.59	0.063	0.079	4.53	60
13/06/17	20/06/17	21/06/17	7.76	0.067	0.073	13.74	140
22/06/17	27/06/17	27/06/17	7.69	0.063	0.078	7.56	220
27/06/17	04/07/17	27/07/17	7.78	0.058	0.067	3.87	100
04/07/17	12/07/17	27/07/17	7.80	0.049	0.069	4.32	160
12/07/17	18/07/17	27/07/17	7.39	0.053	0.078	5.13	60

Note:
Frequency of testing required by licence is weekly.

Table 2: Discharge volumes Year 2017 for EPA Point No. 1 (from electronic daily backwash flow measurements) Frequency of measurement required by licence is daily, and the daily limit is 2,000 kL.

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
Jan 2017	6573	85	212	500	02/02/2017
Feb 2017	7181	90	256	500	14/03/2017
Mar 2017	7090	60	229	470	26/04/2017
April 2017	5748	60	192	413	24/05/2017
May 2017	6164	70	199	436	21/06/2017
June 2017	7083	0	236	500	27/07/2017

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
July 2017	6789	60	219	500	19/09/2017
Aug 2017	6578	70	212	587	19/09/2017
Sept 2017	7251	80	242	409	13/11/2017
Oct 2017	6954	70	224	650	13/11/2017
Nov 2017	5671	70	189	440	13/12/2017
Dec 2017	8319	80	263	570	01/02/2018

Table 3: Discharge water quality EPA Point No. 1 +, Year 2017 & 2018

EPA Point No. 1	Received	Accessible	pH	AI		BOD	SS
	from laboratory	on Council website		AI Rockvale Crossing	mg/L		
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
18/07/17	25/07/17	27/07/17	7.47	0.064	0.069	5.28	80
25/07/17	01/08/17	19/09/17	7.67	0.069	0.073	12.15	40
01/08/17	08/08/17	19/09/17	7.83	0.032	0.041	13.89	80
08/08/17	15/08/17	19/09/17	7.47	0.038	0.044	6.21	60
15/08/17	22/08/17	19/09/17	7.40	0.032	0.039	19.80	18
22/08/17	29/08/17	19/09/17	7.72	0.037	0.053	26.82	8
29/08/17	05/09/17	19/09/17	7.43	0.046	0.063	15.96	53
05/09/17	12/09/17	13/11/17	7.49	0.047	0.065	5.70	360
12/09/17	19/09/17	13/11/17	7.28	0.030	0.045	14.04	267
19/09/17	26/09/17	13/11/17	7.47	0.048	0.067	25.53	160
26/09/17	04/10/17	13/11/17	7.45	0.049	0.074	7.77	120
04/10/17	10/10/17	13/11/17	7.76	0.037	0.058	4.50	150
10/10/17	17/10/17	13/11/17	7.90	0.039	0.046	9.45	75
17/10/17	24/10/17	13/11/17	7.51	0.034	0.034	13.08	25
24/10/17	31/10/17	13/11/17	7.42	0.034	0.038	3.48	10
31/10/17	07/11/17	13/11/17	7.29	0.043	0.065	4.35	10
07/11/17	14/11/17	13/12/17	7.39	0.046	0.067	6.15	5
14/11/17	21/11/17	13/12/17	7.39	0.047	0.062	3.18	175
21/11/17	28/11/17	13/12/17	7.59	0.039	0.062	3.48	240
28/11/17	05/12/17	13/12/17	7.45	0.048	0.073	6.12	100
05/12/17	12/12/17	13/12/17	7.39	0.026	0.033	4.17	20
12/12/17	19/12/17	01/02/18	7.38	0.032	0.048	8.73	120
19/12/17	26/12/17	01/02/18	7.42	0.043	0.059	5.28	80
26/12/18	02/01/18	01/02/18	7.63	0.039	0.067	5.79	50

EPA Point No. 1	Received	Accessible	pH	AI		BOD	SS
	from laboratory	on Council website		AI Rockvale Crossing	mg/L		
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
02/01/18	09/01/18	01/02/18	7.67	0.049	0.078	11.67	400
09/01/18	16/01/18	01/02/18	7.43	0.066	0.089	9.24	40
16/01/18	23/01/18	01/02/18	7.49	0.043	0.043	7.80	10
23/01/18	30/01/18	01/02/18	7.28	0.083	0.118	7.26	15
30/01/18	06/02/18	24/04/18	7.27	0.079	0.102	2.46	15
06/02/18	13/02/18	24/04/18	7.43	0.047	0.08	6.24	15
13/02/18	20/02/18	24/04/18	7.03	0.024	0.043	2.22	60
20/02/18	27/02/18	24/04/18	7.48	0.067	0.078	3.48	440
27/02/18	06/03/18	24/04/18	7.53	0.056	0.087	5.40	150
06/03/18	12/03/18	24/04/18	7.47	0.059	0.073	7.62	30
12/03/18	19/03/18	24/04/18	7.93	0.110	0.082	5.76	16
19/03/18	27/03/18	24/04/18	7.35	0.162	0.220	8.40	320
27/03/18	03/04/18	24/04/18	7.29	0.159	0.213	2.97	13
03/04/18	10/04/18	24/04/18	7.67	0.161	0.214	4.35	100
10/04/18	17/04/18	21/06/18	7.46	0.156	0.210	4.35	100
17/04/18	24/04/18	21/04/18	7.49	0.156	0.190	6.42	200
24/04/18	01/05/18	21/06/18	7.50	0.163	0.190	9.12	34
01/05/18	08/05/18	21/06/18	7.53	0.164	0.197	5.46	333
08/05/18	15/05/18	21/06/18	7.40	0.189	0.200	1.59	60
15/05/18	22/05/18	21/06/18	7.52	0.067	0.098	3.36	80
22/05/18	28/05/18	21/06/18	7.55	0.047	0.076	6.99	100
28/05/18	05/06/18	21/06/18	7.67	0.084	0.044	5.88	23
05/06/18	12/06/18	21/06/18	7.46	0.079	0.092	3.72	100

Table 4: Discharge volumes Year 2018 for EPA Point No. 1 (from electronic daily backwash flow measurements) Frequency of measurement required by licence is daily, and the daily limit is 2,000 kL.

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
Jan 2018	7571	67	244	433	24/04/18
Feb 2018	6809	80	243	490	24/04/18
Mar 2018	6286	60	203	339	24/04/18
April 2018	6325	30	211	493	21/06/18
May 2018	7100	66	229	493	21/06/18
June 2018	5626	70	188	320	02/08/18

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
July 2018	5479	76	177	340	02/08/18
Aug 2018	6449	65	208	390	25/09/18
Sept 2018	5374	70	179	446	20/11/18
Oct 2018	6592	60	213	712	20/11/18
Nov 2018	8105	90	270	700	05/02/19
Dec 2018	10835	150	349	600	05/02/19

Table 5: Discharge water quality EPA Point No. 1 +, Year 2018 & 2019

EPA Point No. 1	Received	Accessible	pH	AI		BOD	SS
	from laboratory	on Council website		AI Rockvale Crossing	mg/L		
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
12/06/18	19/06/18	02/08/18	7.48	0.082	0.091	3.51	53
19/06/18	26/06/18	02/08/18	7.43	0.039	0.047	5.22	250
26/06/18	03/07/18	02/08/18	7.46	0.043	0.034	2.88	10
03/07/18	10/07/18	02/08/18	7.42	0.047	0.056	3.18	5
10/07/18	17/07/18	02/08/18	7.56	0.039	0.048	2.76	10
17/07/18	24/07/18	02/08/18	7.80	0.029	0.038	5.52	80
24/07/18	31/07/18	02/08/18	7.70	0.033	0.042	13.41	5
31/07/18	07/09/18	02/08/18	7.68	0.038	0.057	12.33	175
07/08/18	14/08/18	25/09/18	7.73	0.043	0.062	7.59	10
14/08/18	21/08/18	25/09/18	7.90	0.026	0.034	9.69	67
21/08/18	28/08/18	25/09/18	7.98	0.032	0.043	25.83	7
28/08/18	04/09/18	25/09/18	7.90	0.036	0.045	6.93	10
04/09/18	11/09/18	25/09/18	7.61	0.029	0.035	9.63	75
11/09/18	18/11/18	20/11/18	8.06	0.038	0.042	2.64	30
18/09/18	25/09/18	20/11/18	7.88	0.037	0.048	15.84	20
25/09/18	02/10/18	20/11/18	7.56	0.039	0.056	23.91	80
02/10/18	09/10/18	20/11/18	7.48	0.043	0.059		280
09/10/18	16/10/18	20/11/18	7.59	0.057	0.063		10
16/10/18	23/10/18	20/11/18	7.57	0.039	0.047		15
23/10/18	30/10/18	20/11/18	7.67	0.043	0.049	9.30	50
30/10/18	06/11/18	20/11/18	7.75	0.047	0.053	10.94	10
06/11/18	12/11/18	06/02/19	7.43	0.053	0.059	12.66	120
12/11/18	20/11/18	06/02/19	7.83	0.064	0.072	10.26	15
20/11/18	27/11/18	06/02/19	7.63	0.067	0.074	16.74	140

EPA Point No. 1	Received	Accessible	pH	AI		BOD	SS
	from laboratory	on Council website		AI Rockvale Crossing	mg/L		
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
27/11/18	04/12/18	05/02/19	7.53	0.069	0.072	12.90	80
04/12/18	11/12/18	05/02/19	7.54	0.067	0.043	7.95	80
11/12/18	18/12/18	05/02/19	7.43	0.108	0.031	16.23	60
18/12/18	24/12/18	05/02/19	7.48	0.112	0.037	7.42	13
24/12/18	01/01/19	05/02/19	7.58	0.078	0.049		
01/01/19	08/01/19	05/02/19	7.54	0.065	0.073	5.13	
08/01/19	15/01/19	05/02/19	7.50	0.067	0.079	3.51	280
15/01/19	22/01/19	05/02/19	7.47	0.073	0.086	4.17	100
22/01/19	29/01/19	05/02/19	7.45	0.061	0.086	22.8	17
29/01/19	05/02/19	27/03/19	7.43	0.067	0.072	17.70	240
05/02/19	12/02/19	27/03/19	7.61	0.078	0.079	13.14	60
12/02/19	19/02/19	27/03/19	7.60	0.078	0.089	7.11	13
19/02/19	25/02/19	27/03/19	7.56	0.068	0.091	5.43	80
25/02/19	05/03/19	27/03/19	7.60	0.056	0.093	6.75	40
05/03/19	12/03/19	01/07/19	7.60	0.053	0.078	4.26	300
12/03/19	19/03/19	01/07/19	7.46	0.049	0.076	5.76	15
19/03/19	26/03/19	01/07/19	7.56	0.089	0.107	14.25	160
26/03/19	02/04/19	01/07/19	7.58	0.067	0.089	1.74	10
02/04/19	09/04/19	01/07/19	7.70	0.059	0.073	11.52	5
09/04/19	15/04/19	01/07/19	7.60	0.064	0.087	2.58	20
15/04/19	23/04/19	01/07/19	7.54	0.071	0.081	10.11	160
23/04/19	30/04/19	01/07/19	7.76	0.078	0.084	5.76	120
30/04/19	06/05/19	01/07/19	7.49	0.079	0.093	7.35	120
06/05/19	14/05/19	01/07/19	7.78	0.087	0.089	6.27	80

Table 6: Discharge volumes Year 2019 for EPA Point No. 1 (from electronic daily backwash flow measurements) Frequency of measurement required by licence is daily, and the daily limit is 2,000 kL.

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
Jan 2019	15763	194	508	800	05/02/19
Feb 2019	10689	85	382	654	27/03/19
Mar 2019	12362	70	399	848	01/07/19
April 2019	10581	150	353	582	01/07/19
May 2019	7760	82	250	530	01/07/19
June 2019	5894	0	197	320	01/07/19

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
July 2019	6104	60	190	313	08/08/2019
Aug 2019	4949	30	159	300	02/10/2019
Sept 2019	5731	0	191	380	02/10/2019
Oct 2019	5265	30	170	308	21/11/2019
Nov 2019	5769	0	192	400	05/02/2020
Dec 2019	7984	0	258	615	05/02/2020

Table 7: Discharge water quality EPA Point No. 1 +, Year 2019 & 2020

EPA Point No. 1	Received	Accessible	pH	AI		BOD	SS
	from laboratory	on Council website		AI Rockvale Crossing	mg/L		
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
14/05/19	21/05/19	01/07/19	7.64	0.082	0.089	5.04	100
21/05/19	28/05/19	01/07/19	7.57	0.079	0.088	18.63	120
28/05/19	04/06/19	01/07/19	7.58	0.056	0.077	8.67	200
04/06/19	11/06/19	01/07/19	7.83	0.076	0.093	5.97	30
11/06/19	18/06/19	01/07/19	7.63	0.068	0.089	9.06	80
18/06/19	25/06/19	01/07/19	7.87	0.074	0.086	25.80	6
25/06/19	02/07/19	01/07/19	7.57	0.076	0.067	9.06	13
02/07/19	09/07/19	08/08/19	7.64	0.039	0.067	23.97	13
09/07/19	16/07/19	08/08/19	7.53	0.027	0.067	17.28	80
16/07/19	23/07/19	08/08/19	7.75	0.037	0.054	9.00	80
23/07/19	30/07/19	08/08/19	7.78	0.052	0.088	21.75	5
30/07/19	06/08/19	08/08/19	7.68	0.054	0.075	4.08	60
06/08/19	13/08/19	08/08/19	7.80	0.053	0.069	5.07	10
13/08/19	19/08/19	02/10/19	7.89	0.056	0.067	18.87	80
19/08/19	27/08/19	02/10/19	7.86	0.052	0.081	14.10	11
27/08/19	03/09/19	02/10/19	7.52	0.056	0.089	11.67	80
03/09/19	10/09/19	02/10/19	7.67	0.059	0.093	4.32	120
10/09/19	17/09/19	02/10/19	7.72	0.033	0.038	7.23	75
17/09/19	24/09/19	02/10/19	7.60	0.035	0.039	11.82	160
24/09/19	01/10/19	02/10/19	7.57	0.057	0.043	19.00	88
01/10/19	08/10/19	21/11/19	7.60	0.063	0.080	20	200
08/10/19	15/10/19	21/11/19	7.98	0.078	0.084	13.62	20
15/10/19	22/10/19	21/11/19	7.76	0.095	0.067	12.87	50
22/10/19	29/10/19	21/11/19	7.70	0.089	0.090	14.88	48

EPA Point No. 1	Received	Accessible	pH	AI		BOD	SS
	from laboratory	on Council website		AI Rockvale Crossing	mg/L		
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
29/10/19	04/11/19	21/11/19	7.62	0.094	0.099	7.95	120
04/11/19	11/11/19	21/11/19	7.70	0.087	0.085	8.79	260
11/11/19	19/11/19	21/11/19	7.80	0.089	0.075	19.80	40
19/11/19	26/11/19	05/02/20	7.68	0.092	0.099	15.33	160
26/11/19	02/12/19	05/02/20	7.38	0.089	0.102	6.18	200
02/12/19	10/12/19	05/02/20	7.90	0.102	0.112	3.84	20
10/12/19	17/12/19	05/02/20	7.90	0.084	0.089	3.63	15
17/12/19	24/12/19	05/02/20	7.90	0.085	0.093	22.11	30
24/12/19	07/01/20	05/02/20	7.82	0.064	0.079	20.37	40
07/01/20	13/01/20	05/02/20	7.61	0.071	0.084	23.73	60
13/01/20	22/01/20	05/02/20	7.49	0.062	0.079	3.90	5
22/01/20	28/01/20	05/02/20	7.60	0.039	0.048	9.78	5
28/01/20	03/02/20	05/02/20	8.20	0.049	0.057	4.77	48
03/02/20	11/02/20	05/02/20	8.06	0.067	0.088	11.76	23
11/02/20	18/02/20	26/03/20	7.39	0.077	0.089	9.78	5
18/02/20	25/02/20	26/03/20	7.43	0.079	0.086	12.42	7
25/02/20	03/03/20	26/03/20	7.68	0.077	0.093	4.38	13
03/03/20	10/03/20	26/03/20	7.56	0.079	0.087	2.82	200
10/03/20	17/03/20	06/05/20	7.80	0.068	0.087	9.60	10
17/03/20	24/03/20	06/05/20	7.83	0.073	0.099	3.98	5
24/03/20	30/03/20	06/05/20	7.74	0.086	0.102	3.54	67
30/03/20	06/04/20	06/05/20	7.82	0.069	0.087	4.56	160
06/04/20	14/04/20	06/05/20	7.86	0.077	0.096	3.75	120
14/04/20	20/04/20	06/05/20	7.45	0.089	0.102	5.16	175

Table 8: Discharge volumes Year 2020 for EPA Point No.1 from electronic daily backwash flow measurements) Frequency of measurement required by licence is daily, and the daily limit is 2,000 kL.

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
Jan 2020	8173	55	264	571	05/02/2020
Feb 2020	8324	74	287	573	26/03/2020
Mar 2020	10630	100	343	600	06/05/2020
April 2020	10148	170	338	500	06/05/2020
May 2020	9047	160	292	410	21/07/2020
June 2020	9872	125	329	540	21/07/2020

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
July 2020	10237	140	330	463	14/09/2020
Aug 2020	9620	81	310	450	14/09/2020
Sept 2020	8544	156	285	440	19/11/2020
Oct 2020	9383	140	303	510	19/11/2020
Nov 2020	9818	190	327	544	09/02/2021
Dec 2020	8150	100	263	500	09/02/2021

Table 9: Discharge water quality EPA Point No. 1 +, Year 2020 & 2021

EPA Point No. 1	Received	Accessible	pH	AI	AI	BOD	SS
	from laboratory	on Council website			Rockvale Crossing		
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
20/04/20	28/04/20	06/05/20	7.67	0.093	0.106	8.34	100
28/04/20	05/05/20	06/05/20	8.20	0.102	0.118	2.16	5
05/05/20	12/05/20	21/07/20	7.82	0.095	0.097	4.71	220
12/05/20	19/05/20	21/07/20	7.78	0.078	0.083	9.33	200
19/05/20	26/05/20	21/07/20	7.48	0.047	0.059	4.08	225
26/05/20	01/06/20	21/07/20	7.97	0.035	0.048	3.21	160
01/06/20	09/06/20	21/07/20	7.90	0.047	0.053	2.85	125
09/06/20	15/06/20	21/07/20	7.96	0.049	0.057	4.68	267
15/06/20	22/06/20	21/07/20	8.05	0.037	0.042	3.24	5
22/06/20	29/06/20	21/07/20	7.85	0.090	0.112	2.49	80
29/06/20	07/07/20	21/07/20	8.10	0.079	0.089	6.12	125
07/07/20	13/07/20	21/07/20	8.06	0.67	0.079	7.77	300
13/07/20	20/07/20	21/07/20	8.19	0.023	0.140	3.90	5
20/07/20	27/07/20	21/07/20	7.91	0.060	0.015	2.94	5
27/07/20	03/08/20	14/09/20	8.09	0.073	0.042	2.37	5
03/08/20	10/08/20	14/09/20	7.63	0.036	0.048	5.52	160
10/08/20	17/08/20	14/09/20	7.86	0.037	0.048	3.54	5
17/08/20	24/08/20	14/09/20	7.91	0.035	0.200	2.01	2
24/08/20	31/08/20	14/09/20	7.87	0.047	0.126	2.91	67
31/08/20	07/09/20	14/09/20	7.69	0.036	0.129	12.39	50
07/09/20	14/09/20	19/11/20	7.59	0.056	0.079	8.22	85
14/09/20	21/09/20	19/11/20	7.59	0.046	0.102	11.16	57
21/09/20	28/09/20	19/11/20	7.48	0.057	0.103	16.11	80

EPA Point No. 1	Received	Accessible	pH	AI	AI	BOD	SS
	from laboratory	on Council website			Rockvale Crossing		
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
28/09/20	06/10/20	19/11/20	7.47	0.067	0.122	11.25	120
06/10/20	12/10/20	19/11/20	7.48	0.089	0.122	7.02	80
12/10/20	19/10/20	19/11/20	7.43	0.092	0.133	9.81	100
19/10/20	26/10/20	19/11/20	7.74	0.087	0.102	7.98	75
26/10/20	02/11/20	19/11/20	7.72	0.099	0.137	9.69	250
02/11/20	09/11/20	19/11/20	7.59	0.102	0.147	5.04	280
09/11/20	16/11/20	09/02/21	7.63	0.059	0.076	11.85	200
16/11/20	23/11/20	09/02/21	8.08	0.095	0.102	8.61	3
23/11/20	30/11/20	09/02/21	8.12	0.091	0.093	9.90	3
30/11/20	07/12/20	09/02/21	8.10	0.103	0.144	8.19	80
07/12/20	14/12/20	09/02/21	7.97	0.096	0.112	7.83	3
14/12/20	21/12/20	09/02/21	7.74	0.108	0.127	13.56	53
21/12/20	28/12/20	09/02/21	7.83	0.058	0.079	8.13	8
28/12/20	04/01/21	09/02/21	7.91	0.061	0.081	5.64	178
04/01/21	11/01/21	09/02/21	7.97	0.080	0.089	20.31	6
11/01/21	18/01/21	09/02/21	8.02	0.087	0.094	6.66	60
18/01/21	25/01/21	09/02/21	7.81	0.117	0.139	7.11	93
25/01/21	01/02/21	09/02/21	8.20	0.107	0.129	16.41	133
01/02/21	08/02/21	25/05/21	8.12	0.118	0.127	9.27	8
08/02/21	15/02/21	25/05/21	7.56	0.123	0.139	9.18	53
15/02/21	22/02/21	25/05/21	7.59	0.104	0.120	6.63	18
22/02/21	01/03/21	25/05/21	7.82	0.112	0.127	11.10	140
01/03/21	08/03/21	25/05/21	7.73	0.121	0.133	10.95	225

Table 10: Discharge volumes Year 2021 for EPA Point No.1 from electronic daily backwash flow measurements) Frequency of measurement required by licence is daily, and the daily limit is 2,000 kL.

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
Jan 2021	9008	110	291	500	09/02/2021
Feb 2021	9080	168	324	591	25/05/2021
Mar 2021	9897	150	319	456	25/05/2021
April 2021	9169	156	306	416	25/05/2021
May 2021	8120	100	262	520	30/07/2021
June 2021	8557	160	276	400	30/07/2021

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
July 2021	8966	80	299	504	09/11/2021
Aug 2021	8816	110	284	409	09/11/2021
Sept 2021	9006	70	300	462	09/11/2021
Oct 2021	8432	150	272	400	09/11/2021
Nov 2021	7964	85	265	479	03/02/2022
Dec 2021	7609	170	245	340	03/02/2022

Table 11: Discharge water quality EPA Point No. 1 +, Year 2021 & 2022

EPA Point No. 1	Received from laboratory	Accessible on Council website	pH	AI	AI Rockvale Crossing	BOD	SS
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
08/03/21	15/03/21	25/05/21	7.87	0.090	0.102	11.76	10
15/03/21	22/03/21	25/05/21	7.88	0.106	0.127	7.59	50
22/03/21	29/03/21	25/05/21	7.97	0.076	0.089	7.44	7
29/03/21	06/04/21	25/05/21	7.59	0.127	0.133	7.44	7
06/04/21	12/04/21	25/05/21	7.39	0.087	0.098	7.83	240
12/04/21	19/04/21	25/05/21	7.36	0.090	0.102	11.55	120
19/04/21	26/04/21	25/05/21	7.39	0.046	0.069	8.01	250
26/04/21	03/05/21	25/05/21	7.37	0.056	0.076	10.08	180
03/05/21	10/05/21	25/05/21	7.38	0.058	0.073	15.06	20
10/05/21	17/05/21	25/05/21	7.49	0.047	0.053	9.84	100
17/05/21	24/05/21	30/07/21	7.45	0.049	0.057	6.57	120
24/05/21	31/05/21	30/07/21	7.43	0.052	0.067	10.11	100
31/05/21	07/06/21	30/07/21	7.90	0.085	0.089	12.57	14
07/06/21	15/06/21	30/07/21	7.67	0.078	0.086	5.94	100
15/06/21	21/06/21	30/07/21	7.59	0.089	0.092	10.8	300
21/06/21	28/06/21	30/07/21	7.76	0.090	0.086	9.15	16
28/06/21	05/07/21	30/07/21	7.81	0.079	0.091	15.58	18
05/07/21	12/07/21	30/07/21	7.86	0.083	0.092	6.96	6
12/07/21	19/07/21	30/07/21	7.89	0.032	0.047	6.06	3
19/07/21	26/07/21	09/11/2	7.61	0.023	0.039	17.46	3
26/07/21	02/08/21	09/11/21	7.68	0.027	0.039	13.11	5
02/08/21	09/08/21	09/11/21	7.82	0.026	0.034	6.39	5
09/08/21	15/08/21	09/11/21	7.57	0.029	0.035	4.38	4

EPA Point No. 1	Received from laboratory	Accessible on Council website	pH	AI	AI Rockvale Crossing	BOD	SS
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
15/08/21	23/08/21	09/11/21	7.62	0.033	0.041	8.94	33
23/08/21	30/08/21	09/11/21	7.57	0.037	0.046	7.65	129
30/08/21	06/09/21	09/11/21	7.69	0.041	0.039	7.56	7
06/09/21	13/09/21	09/11/21	7.80	0.039	0.043	19.11	5
13/09/21	20/09/21	09/11/21	7.81	0.083	0.049	10.1	3
20/09/21	27/09/21	09/11/21	7.60	0.080	0.118	4.98	18
27/09/21	05/10/21	09/11/21	7.57	0.046	0.067	5.25	156
05/10/21	11/10/21	09/11/21	7.62	0.057	0.069	6.36	6
11/10/21	18/10/21	09/11/21	7.47	0.059	0.079	6.45	14
18/10/21	25/10/21	09/11/21	7.50	0.038	0.042	6.03	33
25/10/21	01/11/21	09/11/21	7.45	0.043	0.056	6.84	9
01/11/21	08/11/21	09/02/22	7.46	0.038	0.047	9.12	6
08/11/21	15/11/21	09/02/22	7.69	0.058	0.069	10.12	0
15/11/21	22/11/21	09/02/22	7.63	0.054	0.073	12.87	9
22/11/21	29/11/21	09/02/22	7.61	0.057	0.069	3.87	3
29/11/21	06/12/21	09/02/22	7.58	0.056	0.067	6.15	340
06/12/21	13/12/21	09/02/22	7.76	0.058	0.063	4.8	6
13/12/21	20/12/21	09/02/22	7.78	0.037	0.045	10.17	0
20/12/21	29/12/21	09/02/22	7.69	0.04	0.050	6.63	12
29/12/21	05/01/22	09/02/22	7.59	0.038	0.048	3.96	20
05/01/22	10/01/22	09/02/22	7.60	0.074	0.032	2.97	5
10/01/22	17/01/22	09/02/22	7.68	0.109	0.076	12.09	4

Table 12: Discharge volumes Year 2022 for EPA Point No.1 from electronic daily backwash flow measurements) Frequency of measurement required by licence is daily, and the daily limit is 2,000 kL.

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
Jan 2022	9295	200	300	644	09/02/2022
Feb 2022	7451	150	266	380	06/04/2022
Mar 2022	8275	150	267	417	06/04/2022
April 2022	8139	170	271	400	12/07/2022
May 2022	9350	0	302	606	12/07/2022
June 2022	8877	108	296	565	12/07/2022

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
July 2022	9509	174	307	510	04/10/2022
Aug 2022	10194	187	329	490	04/10/2022
Sept 2022	9502	190	317	420	04/10/2022
Oct 2022					
Nov 2022					
Dec 2022					

Table 13: Discharge water quality EPA Point No. 1 +, Year 2022 & 2023

EPA Point No. 1	Received from laboratory	Accessible on Council website	pH	AI	AI Rockvale Crossing	BOD	SS
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
17/01/22	24/01/22	06/04/22	7.68	0.109	0.076	12.09	4
24/01/22	31/01/22	06/04/22	7.49	0.112	0.089	4.35	11
31/01/22	07/02/22	06/04/22	7.53	0.108	0.090	3.42	22
07/02/22	14/02/22	06/04/22	7.65	0.052	0.073	8.79	100
14/02/22	21/02/22	06/04/22	7.69	0.060	0.079	7.38	9
21/02/22	28/02/22	06/04/22	7.76	0.057	0.069	8.40	25
28/02/22	07/03/22	06/04/22	7.79	0.063	0.074	3.99	8
07/03/22	14/03/22	06/04/22	7.73	0.070	0.080	9.06	394
14/03/22	21/03/22	06/04/22	7.78	0.089	0.092	3.39	17
21/03/22	28/03/22	06/04/22	7.65	0.087	0.094	4.11	11
28/03/22	04/04/22	06/04/22	8.02	0.072	0.088	10.62	5
04/04/22	11/04/22	12/07/22	7.53	0.083	0.093	10.23	5
11/04/22	19/04/22	12/07/22	7.60	0.071	0.084	2.59	3
19/04/22	26/04/22	12/07/22	7.56	0.069	0.083	5.07	3
26/04/22	02/05/22	12/07/22	7.85	0.063	0.085	8.73	3
02/05/22	09/05/22	12/07/22	7.80	0.067	0.074	7.02	5
09/05/22	16/05/22	12/07/22	7.69	0.072	0.089	24.09	5
16/05/22	23/05/22	12/07/22	7.79	0.067	0.057	6.99	3
23/05/22	30/05/22	12/07/22	7.78	0.040	0.057	8.88	3
30/05/22	06/06/22	12/07/22	7.58	0.043	0.057	24.75	5
06/06/22	14/06/22	12/07/22	7.78	0.032	0.040	7.41	3
14/06/22	20/06/22	12/07/22	7.72	0.029	0.034	11.88	8
20/06/22	27/06/22	12/07/22	7.59	0.032	0.039	11.10	52
27/06/22	04/07/22	12/07/22	7.67	0.042	0.059	23.16	3

EPA Point No. 1	Received from laboratory	Accessible on Council website	pH	AI	AI Rockvale Crossing	BOD	SS
Measure			1-14	mg/L		mg/L	mg/L
Sampling date							
04/07/22	11/07/22	04/10/22	7.66	0.046	0.095	23.16	3
11/07/22	18/07/22	04/10/22	7.52	0.037	0.086	26.25	8
25/07/22	01/08/22	04/10/22	7.67	0.030	0.046	10.20	27
01/08/22	08/08/22	04/10/22	7.86	0.052	0.069	3.06	5
08/08/22	15/08/22	04/10/22	7.67	0.043	0.059	1.95	3
15/08/22	22/08/22	04/10/22	7.79	0.046	0.068	2.37	3
22/08/22	29/08/22	04/10/22	7.83	0.043	0.067	8.10	3
29/08/22	05/09/22	04/10/22	7.64	0.084	0.028	16.92	8
05/09/22	12/09/22	04/10/22	7.58	0.039	0.038	3.54	20
12/09/22	19/09/22	04/10/22	7.58	0.027	0.049	2.52	3
19/09/22	26/09/22	04/10/22	7.80	0.056	0.079	5.55	260
26/09/22	04/10/22	04/10/22	7.69	0.067	0.073	2.31	55

Table 17: Discharge volumes Year 2023 for EPA Point No.1 from electronic daily backwash flow measurements) Frequency of measurement required by licence is daily, and the daily limit is 2,000 kL.

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
Jan 2023					
Feb 2023					
Mar 2023					
April 2023					
May 2023					
June 2023					

Reporting month	Month's Total	Lowest daily volume	Mean daily volume	Greatest daily volume _x	Accessible on Council website
	kL	kL/day	kL/day	kL/day	
July 2023					
Aug 2023					
Sept 2023					
Oct 2023					
Nov 2023					
Dec 2023					