



**COOTAMUNDRA-
GUNDAGAI REGIONAL
COUNCIL**

Gundagai Sewage Treatment Plant (STP)

Environmental Protection License No. 1721

Effluent Quality Monitoring Report

May 2022

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Gundagai Sewage Treatment Plant

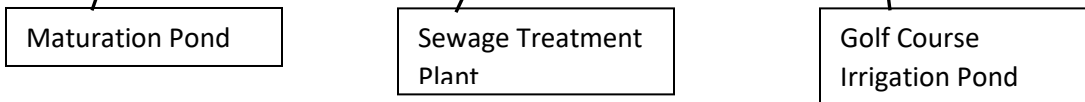
1.0 Background

Gundagai Sewerage system was constructed during 1930s. The sewerage systems consist of reticulation sewers, sewage pumping stations and rising mains and a sewage treatment plant. The existing sewage treatment plant has passed its useful life and a contract has been let to construct a new sewage treatment plant to replace the existing sewage treatment plant and part of the existing sewerage infrastructure.

The existing treatment plant consist of inlet works, Imhoff tank and trickling filters, humus tank, maturation pond and sludge digester. Digested sludge is discharged into drying beds and disposed at landfill sites. Treated effluent is used to irrigate parks, sporting fields and golf course.



Figure 1- Layout of Gundagai Sewage Treatment Plant



At present a new Sewage Treatment Plant is under construction with Intermittently Decanted Extended Aeration (IDEA) with sludge dewatering facilities. Upon completion of testing and commissioning of the new treatment plant which is designed to produce higher quality treated effluent for irrigation reuse.

The new plant will have screens, grit removal IDEA process with sludge dewatering facilities. The treated effluent will be disinfected with UV light unit prior to using it for irrigation of parks, garden, sporting fields and golf course. Treated Effluent will be discharged into the nearby waterways while there is not irrigation demand. Construction works are in progress and more than 80% completed.

2.0 Water Quality Monitoring

2.1 Water Quality Monitoring Locations

Sampling and testing of the Treated effluent is done at fortnightly interval at three locations which include;

- Maturation pond outlet
- Inlet to the irrigation pond
- Outlet to the irrigation pond irrigation delivery

The location of sampling points are shown in figure 2.

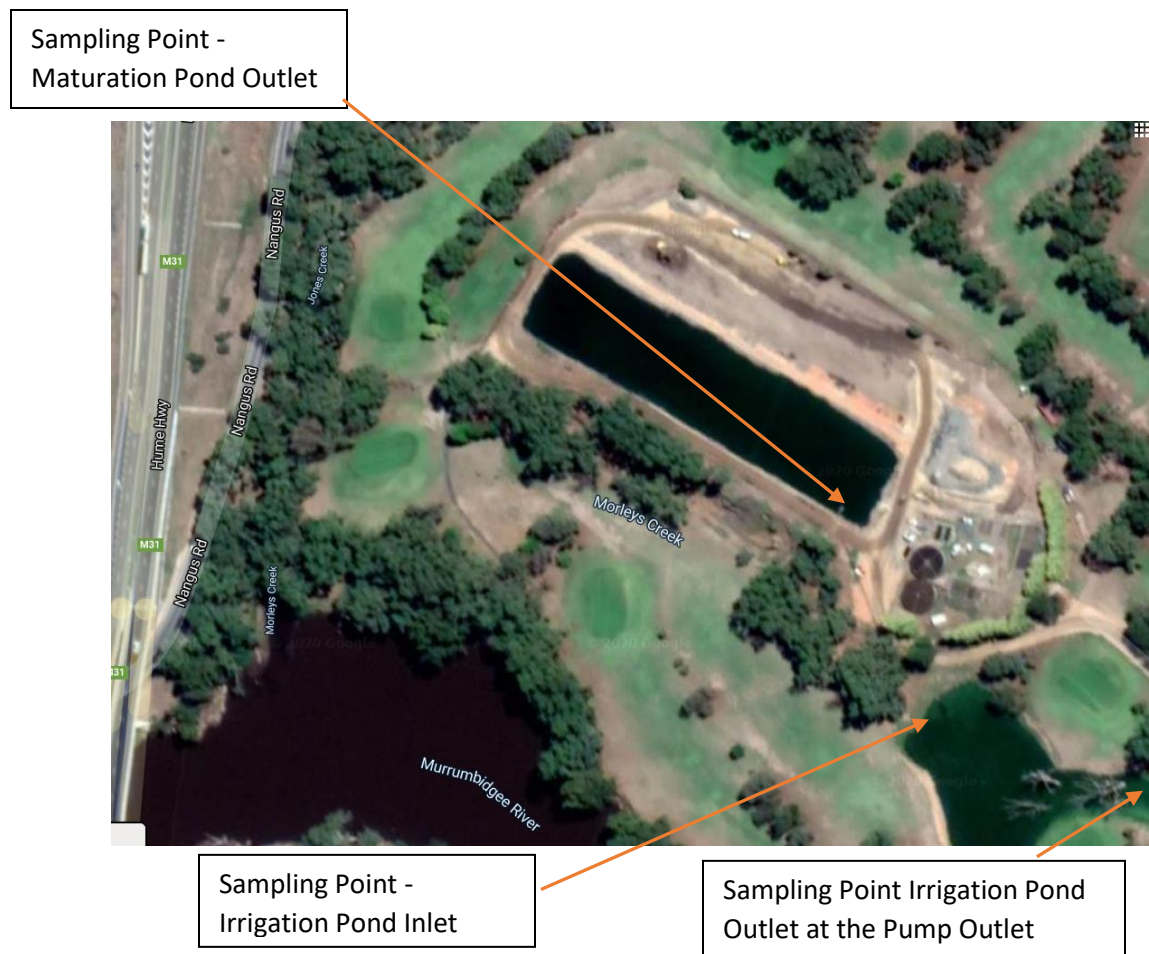


Figure 2- Location of Sampling Points

2.2 Water quality monitoring and reporting

Water samples are collected and dispatched for testing at NATA accredited laboratories and the test results are provided in Section 3 of this report.

Subsequent to a Risk Management Study on the treated effluent reuse facilities, it was proposed to install a disinfection unit based using sodium hypochlorite solution to reduce the coliform count on the irrigation water and to fully comply with License Requirements.

A skid Chlorinator using 12.5% hypochlorite solution was installed, tested and commissioned on 28 August 2020. Subsequent to this the coliform count in the irrigation point has dropped significantly representing an LRV of 3 and above achieved by the disinfection process. Further details can be found in the water quality report in Section 3 of this report.



Figure 3 - Chlorinator

2.3 Water Quality Monitoring Results

2.3.1 Coliform Count at Critical Control Points

Fortnightly Sampling of Treated Effluent - Bidgee Banks Golf Course (Point 1 Irrigation)		Bidgee Banks Golf Course (Golf Course Pond Inlet)		Bidgee Banks Golf Course (Maturation Pond Outlet)	
Date	Faecal coliforms	Date	Faecal coliforms	Date	Faecal coliforms
Units	cfu/100mL	Units	cfu/100mL	Units	cfu/100mL
1/2/18	30	1/2/18		1/2/18	
10/4/18	330	10/4/18		10/4/18	
15/10/18	45	15/10/18		15/10/18	
14/12/18	6160	14/12/18		14/12/18	
14/1/19	1	14/1/19	2500	14/1/19	
31/1/19	100	31/1/19	96700	31/1/19	
13/2/19	50	13/2/19	3670	13/2/19	6560
28/2/19	444	28/2/19	34400	28/2/19	40000
14/3/19	10	14/3/19	22500	14/3/19	15100
28/3/19	90	28/3/19	60000	28/3/19	83300
11/4/19	734	11/4/19	36000	11/4/19	41000
23/4/19	2600	23/4/19	73000	23/4/19	68000
9/5/19	6000	9/5/19	169000	9/5/19	187000
23/5/19	5600	23/5/19	96000	23/5/19	103000
6/6/19	6560	6/6/19	193000	6/6/19	212000
4/7/19	300	4/7/19	10800	4/7/19	13600
18/7/19	50	18/7/19	37400	18/7/19	12100
1/8/19	1	1/8/19	150	1/8/19	340
19/8/19	83	19/8/19	10000	19/8/19	10000
29/8/19	20	29/8/19	55	29/8/19	100
12/9/19	37	12/9/19	4500	12/9/19	4500
30/9/19	119	30/9/19	2020	30/9/19	2420
10/10/19	64	10/10/19	8590	10/10/19	44400
24/10/19	606	24/10/19	25600	24/10/19	90000
6/11/19	101	6/11/19	178000	6/11/19	178000
20/11/19	28	20/11/19	1620	20/11/19	8890
5/12/19	192	5/12/19	3160	5/12/19	6400
19/12/19	606	19/12/19	4340	19/12/19	4020
7/1/20	5050	7/1/20	122000	7/1/20	178000
24/1/20	550	24/1/20	50200	24/1/20	51100
5/2/20	140	5/2/20	27000	5/2/20	34000
18/2/20	10	18/2/20	33300	18/2/20	149000
3/3/20	505	3/3/20	33300	3/3/20	26300
16/3/20	2020	16/3/20	28300	16/3/20	45400

Fortnightly Sampling of Treated Effluent - Bidgee Banks Golf Course (Point 1 Irrigation)		Bidgee Banks Golf Course (Golf Course Pond Inlet)		Bidgee Banks Golf Course (Maturation Pond Outlet)	
Date	Faecal coliforms	Date	Faecal coliforms	Date	Faecal coliforms
31/3/20	1410	31/3/20	48500	31/3/20	52500
14/4/20	800	14/4/20	280000	14/4/20	300000
22/4/20	210	22/4/20	20000	22/4/20	100000
13/5/19	3200	13/5/19	3800	13/5/19	
19/5/19	3100	19/5/19	24400	19/5/19	23200
22/5/20	3500	22/5/20	222000	22/5/20	3330000
29/5/20	3330	29/5/20	233000	29/5/20	189000
2/6/20	108	2/6/20	14000	2/6/20	12700
5/6/20	800	5/6/20	167000	5/6/20	411000
9/6/20	1100	9/6/20	22200	9/6/20	33300
12/6/20	1110	12/6/20	14400	12/6/20	322000
16/6/20	372	16/6/20	10000	16/6/20	5300
19/6/20	3670	19/6/20	100000	19/6/20	100000
24/6/20	1670	24/6/20	178000	24/6/20	300000
26/6/20	12400	26/6/20	389000	26/6/20	511000
30/6/20	111	30/6/20	55600	30/6/20	44400
3/7/20	4670	3/7/20	144000	3/7/20	189000
14/7/20	26700	30/6/20	233000	30/6/20	66700
17/7/20	5330	17/7/20	75600	17/7/20	82200
21/7/20	1890	21/7/20	12200	21/7/20	32200
24/7/20	667	24/7/20	1110	24/7/20	27600
29/7/20	5110	30/6/20	27800	30/6/20	62200
31/7/20	1210	31/7/20	11100	31/7/20	47500
4/8/20	667	4/8/20	4440	4/8/20	1110
6/8/20	1560	6/8/20	16200	6/8/20	10100
11/8/20	222	11/8/20	4040	11/8/20	1010
25/8/20	73	25/8/20	5050	25/8/20	13100
8/9/20	1	8/9/20	7070	8/9/20	7070
23/9/20	1	23/9/20	2520	23/9/20	2420
6/10/20	1	6/10/20	6670	6/10/20	1670
20/10/20	70	20/10/20	88900	20/10/20	116000
3/11/20	<1	3/11/20	3030	3/11/20	3030
17/11/20	1440	17/11/20	147000	17/11/20	178000
1/12/20	<1	1/12/20	77800	1/12/20	44400
15/12/20	667	15/12/20	5560	15/12/20	7780

Fortnightly Sampling of Treated Effluent - Bidgee Banks Golf Course (Point 1 Irrigation)	
Date	Faecal coliforms
4/1/21	444
19/1/21	394
3/2/21	1440
16/2/21	556
2/3/21	55
16/3/21	1210
30/3/21	2420
13/4/21	1220
11/5/21	333
25/5/21	3330
8/6/21	1220
22/6/21	128
6/7/21	9
20/7/21	100
3/8/21	4
17/8/21	30
31/8/21	22
14/9/21	102
30/9/21	<1
12/10/21	4
26/10/21	<1
9/11/21	130
23/11/21	50
7/12/21	30
21/12/21	400
11/1/22	1940
25/1/22	360
8/2/22	4100
22/2/22	400
8/3/22	740
22/3/22	5000
5/4/22	330
19/4/22	24
3/5/22	1720
17/5/22	980
31/5/22	2280

Bidgee Banks Golf Course (Golf Course Pond Inlet)	
Date	Faecal coliforms
4/1/21	10000
19/1/21	11100
3/2/21	93300
16/2/21	88900
2/3/21	22200
16/3/21	267000
30/3/21	88900
13/4/21	45600
11/5/21	42200
25/5/21	100000
8/6/21	54400
22/6/21	1820
6/7/21	1110
20/7/21	<1
3/8/21	2000
17/8/21	667
31/8/21	6
14/9/21	140
30/9/21	5960
12/10/21	100
26/10/21	1020
9/11/21	23600
23/11/21	909
7/12/21	14400
21/12/21	280
11/1/22	188
25/1/22	526
8/2/22	110
22/2/22	940
8/3/22	39000
22/3/22	24000
5/4/22	6100
19/4/22	166
3/5/22	116000
17/5/22	2300
31/5/22	6000

Bidgee Banks Golf Course (Maturation Pond Outlet)	
Date	Faecal coliforms
4/1/21	15600
19/1/21	32200
3/2/21	200000
16/2/21	200000
2/3/21	122000
16/3/21	344000
30/3/21	156000
13/4/21	164000
11/5/21	31100
25/5/21	187000
8/6/21	244000
22/6/21	13300
6/7/21	8890
20/7/21	100
3/8/21	4800
17/8/21	778
31/8/21	20
14/9/21	238
30/9/21	8000
12/10/21	116
26/10/21	1820
9/11/21	21700
23/11/21	5560
7/12/21	13300
21/12/21	640
11/1/22	9500
25/1/22	3100
8/2/22	12600
22/2/22	20
8/3/22	54000
22/3/22	101000
5/4/22	15500
19/4/22	4900
3/5/22	9600
17/5/22	9200
31/5/22	21900

Fortnightly Sampling of Treated Effluent - Bidgee Banks Golf Course (Point 1 Irrigation)	
Date	Faecal coliforms
Average	1563

Bidgee Banks Golf Course (Golf Course Pond Inlet)	
Date	Faecal coliforms
Average	50930

Bidgee Banks Golf Course (Maturation Pond Outlet)	
Date	Faecal coliforms
Average	104679

2.3.3 Coliform Count at Golf Course Irrigation Point

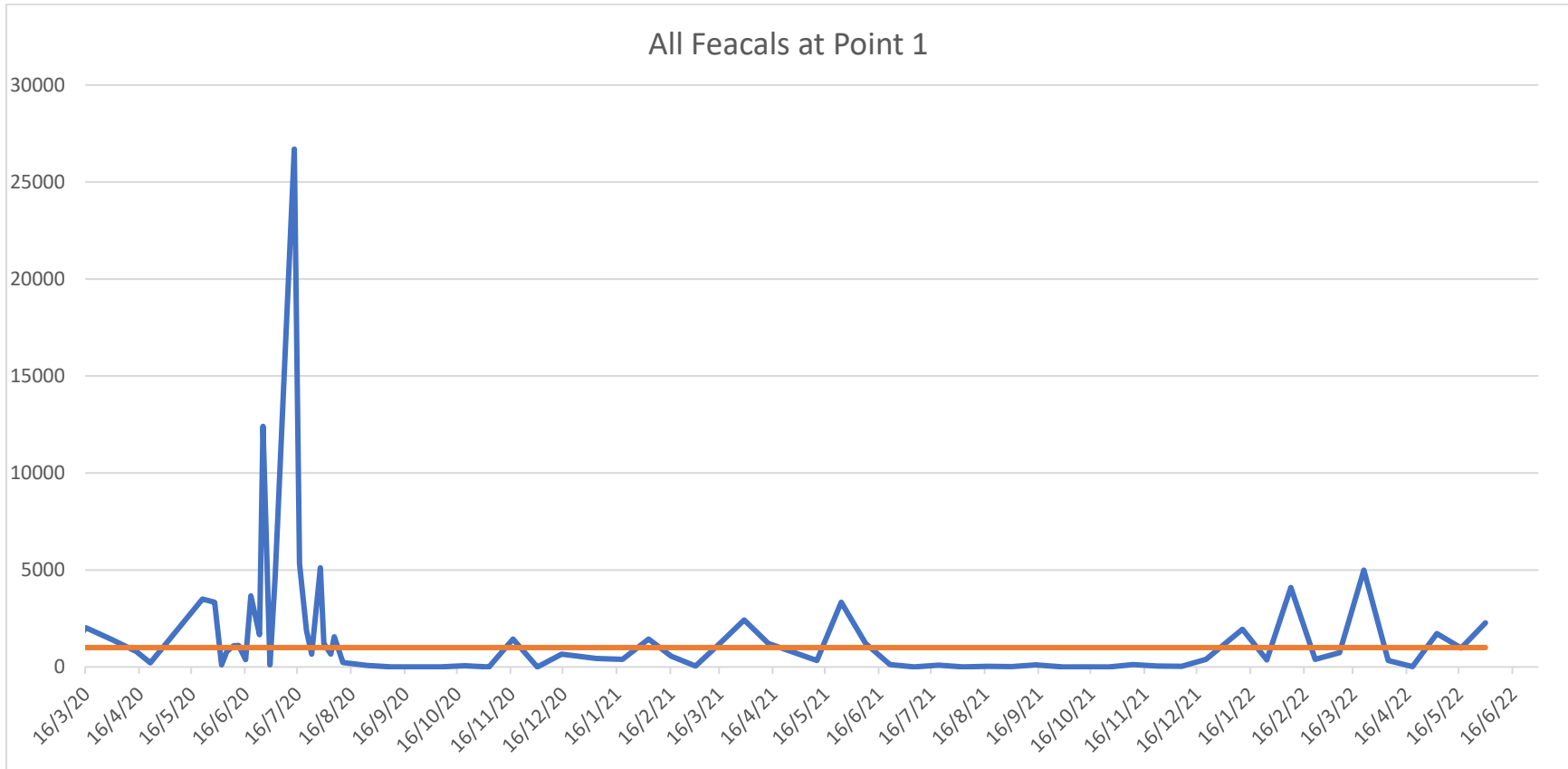


Figure 4 - Fecal Coliform Count (cfu/100 ml) at Irrigation Point