

PROPOSED STP ~ 27,000PE

- DO SAG CURVE - NORMAL CASE
- DO SAG CURVE - WORST CASE

- BOD SAG CURVE - NORMAL CASE
- BOD SAG CURVE - WORST CASE

BOD SAG CURVE STP - NORMAL CASE

Q_1, P_{in} = 0.012 m³/s
 Q_{Sg}, P_{in} = 0.012 m³/s
 Flow rate waterbody, Q_w = 0.012 m³/s
 BOD waterbody, BOD_w = 1 mg/l
 DO waterbody, DO_w = 3.9 mg/l
 Waterbody, θ = 1.016
 Temperature, T = 20 °C
 Average waterbody velocity = 0.01 m/s

 Flow rate STP, Q_{STP} = 6075 m³/day
 BOD STP, BOD_{STP} = 1 mg/l
 DO STP, DO_{STP} = 3.9 mg/l
 STP, θ = 1.047
 Temperature, T = 20 °C

 Correct reaction constants for temperature, k $k_r = k_{20} \theta^{T-20}$
 k_{mix} = 0.06198 m³/s
 BOD k_{mix} = 1.00000 mg/l
 DO k_{mix} = 3.00000 mg/l
 Temperature = 20.000 °C

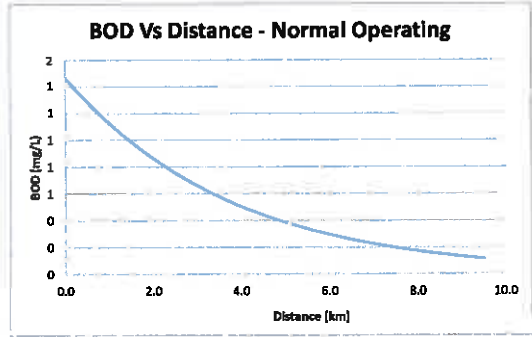
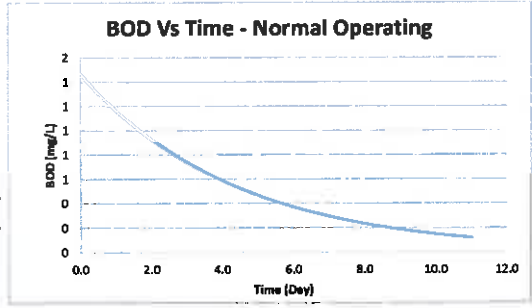
 BOD reaction rate, k_{BOD} = 0.34773 /d
 Waterbody reaction rate, k_{WB} = 0.46143 /d

 Ultimate BOD, L_0 = 0.0035 mg/l

Average flowrate
 1 MLD

 Refer Certificate Analysis (CA) - W1
 Refer Certificate Analysis (C2) - W1
 Refer Table 1
 Refer Certificate Analysis (CA) - W1
 = 0.854 m/day

 = 0.0709126 m/s
 Normal Scenario for Standard B
 Normal Case Scenario
 Refer Table 1
 Normal Case Scenario



Water Type	Temperature coefficient, θ
Waterbody	1.016
Domestic wastewater	1.135
Typical Effluent	1.047
Restoration	1.024

t (day)	$L = L_0 e^{-k t}$	$y = L_0 - L$	$x = v(t)$
0.00	1.46535	0.0000	0.00
0.25	1.38158	0.0838	0.22
0.50	1.30438	0.1660	0.43
0.75	1.23149	0.2319	0.65
1.00	1.16288	0.3007	0.85
1.25	1.09771	0.3686	1.08
1.50	1.03637	0.4270	1.30
1.75	0.97846	0.4849	1.51
2.00	0.92379	0.5399	1.73
2.25	0.87217	0.5912	1.94
2.50	0.82343	0.6390	2.16
2.75	0.77742	0.6859	2.38
3.00	0.73398	0.7304	2.59
3.25	0.69287	0.7724	2.81
3.50	0.65425	0.8131	3.02
3.75	0.61799	0.8527	3.24
4.00	0.58317	0.8913	3.46
4.25	0.55059	0.9288	3.67
4.50	0.51982	0.9655	3.89
4.75	0.49077	0.9928	4.10
5.00	0.46335	1.0000	4.32
5.25	0.43746	1.0250	4.54
5.50	0.41302	1.0500	4.75
5.75	0.38994	1.0734	4.97
6.00	0.36815	1.0952	5.18
6.25	0.34766	1.1158	5.40
6.50	0.32815	1.1352	5.62
6.75	0.30962	1.1535	5.83
7.00	0.29225	1.1708	6.05
7.25	0.27616	1.1872	6.26
7.50	0.26073	1.2026	6.48
7.75	0.24616	1.2172	6.70
8.00	0.23241	1.2309	6.91
8.25	0.21942	1.2439	7.13
8.50	0.20716	1.2562	7.34
8.75	0.19558	1.2678	7.56
9.00	0.18465	1.2787	7.78
9.25	0.17434	1.2890	7.99
9.50	0.16459	1.2988	8.21
9.75	0.15540	1.3090	8.42
10.00	0.14671	1.3185	8.64
10.25	0.13852	1.3274	8.86
10.50	0.13076	1.3328	9.07
10.75	0.12347	1.3390	9.29
11.00	0.11657	1.3468	9.50
1.05	1.00123	0.4821	1.43

BOD waterbody, BOD_w = 1 mg/l
 DO waterbody, DO_w = 3.9 mg/l

PE ESTIMATION
 PE = 27000
 Design Flow, Q = 6075 m³/day
 Suspended Solid, SS = 1820 kg/day
 Unloading BOD = 1519 kg/day
 Unloading BOD (Standard A) = 122 kg/day

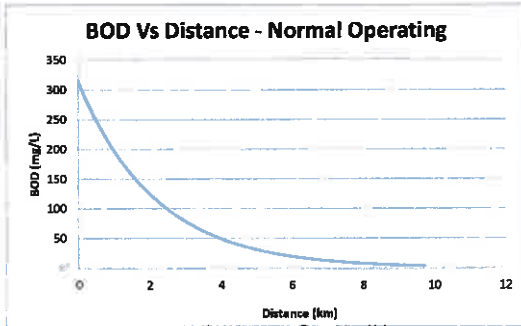
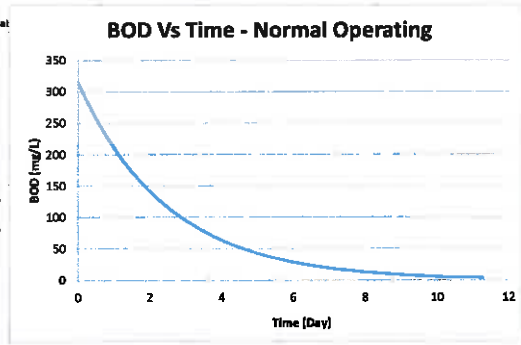
 * PE estimation Based on JRK Info

Water type	Range of k_{BOD} (base at 20 °C)
Small pond	0.1-0.23
Slow stream & large lake	0.23-0.35
Large stream & slow velocity	0.35-0.46
Large stream & fast velocity	0.46-0.89
Fast stream	0.89-1.15
Waterfall & rapid stream	>1.15

BOD SAG CURVE STP - WORST CASE

OSp, P_{del} = 0.012 m³/s
 QSp, P_{del} = 0.012 m³/s
 Flow rate waterbody, Q_w = 0.012 m³/s
 BOD waterbody, BOD_w = 1 mg/l
 DO waterbody, DO_w = 3.0 mg/l
 Waterbody, θ = 1.016
 Temperature, T = 20 °C
 Average waterbody velocity = 0.01 m/s
 Flow rate STP, Q_{st} = 6975 m³/day
 BOD STP, BOD_{st} = 250 mg/l
 DO STP, DO_{st} = 0 mg/l
 STP, θ = 1.135
 Temperature, T = 20 °C
 Correct reaction constants for temperature, k₁ = k₁₀θ^{T-20}
 Q mix = 0.08188 m³/s
 BOD mix = 214.80565 mg/l
 DO mix = 0.55124 mg/l
 Temperature = 20.000 °C
 BOD reaction rate, k_m = 0.71804 /d
 Waterbody reaction rate, k_w = 0.46143 /d
 Ultimate BOD, L₀ = 314.33588 mg/l

Average flow rate
 0.01157407 MLD
 Refer Certificate Analysis (CA) - W1
 Refer Certificate Analysis (CA) - W1
 Refer Table 1
 Refer Certificate Analysis (CA) - W1
 = 0.0703125 m/s
 Normal Scenario for Standard B
 Normal Case Scenario
 Refer Table 1
 Normal Case Scenario



Water Type	Temperature coefficient, θ
Waterbody	1.016
Domestic wastewater	1.135
Typical Effluent	1.047
Reservoir	1.024

t (day)	BOD Remaining, L _t (mg/l)	BOD Exerted / Deficit (mg/l)	Distance (km)
0.0	314.33588	0.0000	0.00
0.250	284.42295	29.9130	0.22
0.500	257.39854	56.93784	0.43
0.750	232.80582	81.4702	0.65
1.000	210.70571	103.6303	0.86
1.250	190.65441	123.6816	1.08
1.500	172.51125	141.8247	1.30
1.750	156.09483	158.2414	1.51
2.000	141.24028	173.0967	1.79
2.250	127.78947	186.5485	1.94
2.500	115.03775	198.8982	2.18
2.750	104.03110	209.7025	2.38
3.000	94.67816	219.6586	2.59
3.250	86.00655	228.9994	2.81
3.500	77.51430	236.8217	3.02
3.750	70.13794	244.1681	3.24
4.000	63.48534	250.8727	3.45
4.250	57.42401	256.9120	3.67
4.500	51.85239	262.3796	3.89
4.750	47.01480	267.3212	4.10
5.000	42.54075	271.7932	4.32
5.250	38.49248	275.8435	4.54
5.500	34.82942	279.5088	4.75
5.750	31.51490	282.8210	4.97
6.000	28.51592	285.8210	5.18
6.250	25.80227	288.5837	5.40
6.500	23.34690	290.9891	5.62
6.750	21.12511	293.2109	5.83
7.000	19.11479	295.2212	6.05
7.250	17.29678	297.0402	6.26
7.500	15.64987	298.6551	6.48
7.750	14.16059	300.1754	6.70
8.000	12.81303	301.5230	6.91
8.250	11.59371	302.7483	7.13
8.500	10.49042	303.8458	7.34
8.750	9.49212	304.8439	7.56
9.000	8.58333	305.7472	7.78
9.250	7.77149	306.5845	7.99
9.500	7.05194	307.3640	8.21
9.750	6.42276	307.9732	8.42
10.000	5.87929	308.5787	8.64
10.250	5.40930	309.1268	8.86
10.500	4.99985	309.6223	9.07
10.750	4.63909	310.0709	9.29
11.000	4.32221	310.4788	9.50
11.250	4.04106	310.8440	9.72
11.500	3.79095	311.1783	9.94
11.750	3.56997	311.4770	10.15
12.000	3.37491	311.7401	10.37
12.250	3.20073	311.9853	10.58
12.500	3.04478	312.2180	10.80
12.750	2.90443	312.4186	11.02
13.000	2.77805	312.5919	11.23
13.250	2.66404	312.7369	11.45
13.500	2.56197	312.8583	11.66
13.750	2.47042	312.9514	11.87
14.000	2.38897	313.0236	12.10
14.250	2.31726	313.0842	12.31
14.500	2.25497	313.1343	12.53

BOD waterbody, BOD_w = 1 mg/l
 DO waterbody, DO_w = 3.0 mg/l

PE ESTIMATION

PE = 27888
 Design Flow, Q = 6975 m³/day
 Suspended Solids, SS = 1829 kg/day
 Unloading BOD = 1518 kg/day
 Unloading BOD (Standard A) = 122 kg/day

* PE estimation Based on JRK Info

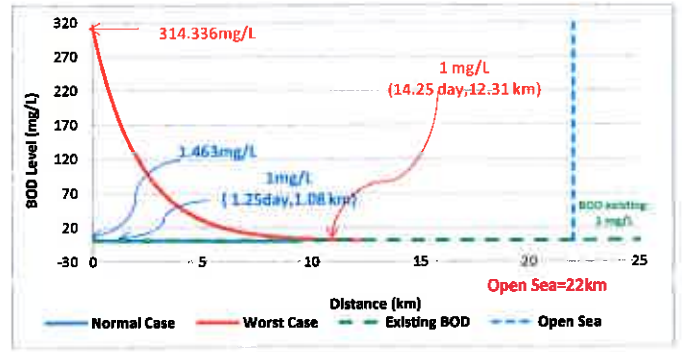
BOD existing 20mg/L

Reaction rate constants

Water type	Range of k ₁₀ (base at 20 °C)
Small pond	0.1-0.23
Slow stream & large lake	0.23-0.36
Large stream & fast velocity	0.35-0.46
Large stream & fast velocity	0.45-0.69
Fast stream	0.69-1.15
Waterfall & rapid stream	>1.15

Normal Case			
t (day)	BOD Remaining, Lt (mg/l)	BOD Exerted / Deficit (mg/l)	Distance, (km)
0.000	1.463	0.000	0.00
0.250	1.322	0.032	0.22
0.500	1.304	0.159	0.43
0.750	1.231	0.232	0.65
1.000	1.183	0.301	0.86
1.250	1.099	0.366	1.08
1.500	1.036	0.427	1.30
1.750	0.978	0.485	1.51
2.000	0.924	0.540	1.73
2.250	0.872	0.591	1.94
2.500	0.823	0.640	2.16
2.750	0.777	0.686	2.38
3.000	0.734	0.729	2.59
3.250	0.693	0.770	2.81
3.500	0.654	0.809	3.02
3.750	0.616	0.846	3.24
4.000	0.583	0.880	3.46
4.250	0.551	0.913	3.67
4.500	0.520	0.944	3.89
4.750	0.491	0.973	4.10
5.000	0.463	1.000	4.32
5.250	0.437	1.026	4.54
5.500	0.413	1.050	4.75
5.750	0.390	1.073	4.97
6.000	0.368	1.093	5.18
6.250	0.348	1.116	5.40
6.500	0.328	1.135	5.62
6.750	0.310	1.164	5.83
7.000	0.293	1.171	6.05
7.250	0.276	1.187	6.26
7.500	0.261	1.203	6.47
7.750	0.246	1.217	6.70
8.000	0.232	1.231	6.91
8.250	0.219	1.244	7.13
8.500	0.207	1.258	7.34
8.750	0.196	1.268	7.56
9.000	0.185	1.279	7.78
9.250	0.174	1.289	7.99
9.500	0.165	1.299	8.21
9.750	0.155	1.308	8.42
10.000	0.147	1.317	8.64
10.250	0.139	1.325	8.86
10.500	0.131	1.333	9.07
10.750	0.123	1.340	9.29
11.000	0.117	1.347	9.50
1.650	1.001	0.482	1.43

Worst Case			
t (day)	BOD Remaining, Lt (mg/l)	BOD Exerted / Deficit (mg/l)	Distance, (km)
0.000	314.336	0.000	0.00
0.250	284.423	29.913	0.22
0.500	257.357	56.979	0.43
0.750	232.866	81.470	0.65
1.000	210.706	103.630	0.86
1.250	190.654	123.682	1.08
1.500	172.511	141.825	1.30
1.750	156.095	158.241	1.51
2.000	141.240	173.096	1.73
2.250	127.799	186.537	1.94
2.500	115.638	198.698	2.16
2.750	104.639	209.703	2.38
3.000	94.676	219.660	2.59
3.250	85.667	228.669	2.81
3.500	77.514	236.822	3.02
3.750	70.138	244.198	3.24
4.000	63.463	250.673	3.46
4.250	57.424	256.912	3.67
4.500	51.959	262.377	3.89
4.750	47.015	267.321	4.10
5.000	42.541	271.795	4.32
5.250	38.492	275.844	4.54
5.500	34.829	279.507	4.75
5.750	31.515	282.821	4.97
6.000	28.516	285.820	5.18
6.250	25.802	288.534	5.40
6.500	23.347	290.989	5.62
6.750	21.125	293.211	5.83
7.000	19.115	295.221	6.05
7.250	17.296	297.040	6.26
7.500	15.650	298.688	6.47
7.750	14.161	300.175	6.70
8.000	12.813	301.523	6.91
8.250	11.594	302.742	7.13
8.500	10.490	303.846	7.34
8.750	9.492	304.844	7.56
9.000	8.589	305.747	7.78
9.250	7.771	306.564	7.99
9.500	7.032	307.304	8.21
9.750	6.363	307.973	8.42
10.000	5.757	308.579	8.64
10.250	5.209	309.127	8.86
10.500	4.714	309.622	9.07
10.750	4.265	310.071	9.29
11.000	3.859	310.477	9.50
11.250	3.492	310.844	9.72
11.500	3.160	311.178	9.94
11.750	2.859	311.477	10.15
12.000	2.587	311.749	10.37
12.250	2.341	311.995	10.58
12.500	2.118	312.218	10.80
12.750	1.916	312.420	11.02
13.000	1.734	312.602	11.23
13.250	1.569	312.767	11.45
13.500	1.420	312.916	11.66
13.750	1.285	313.051	11.88
14.000	1.162	313.174	12.10
14.250	1.052	313.284	12.31
14.500	0.952	313.384	12.53



BOD waterbody, $BOD_w = 1 \text{ mg/l}$
 DO waterbody, $DO_w = 3.9 \text{ mg/l}$

	BOD	open sea
0	1	22
1	1	22
2	1	22
3	1	22
4	1	22
5	1	22
6	1	22
7	1	22
8	1	22
9	1	22
30	1	22
350	1	22

DO SAG CURVE STP - NORMAL CASE

Assumption:-

$Q_{30, PULS}$ = 0.012 m³/s
 $Q_{30, PULS}$ = 0.012 m³/s
 Flow rate waterbody, Q_w = 0.012 m³/s
 BOD waterbody, BOD_w = 1 mg/l
 DO waterbody, DO_w = 3.9 mg/l
 Waterbody, θ = 1.016
 Temperature, T = 29 °C
 Average waterbody velocity = 0.01 m/s

 Flow rate STP, Q_{STP} = 6075 m³/day
 BOD STP, BOD_{STP} = 20 mg/l
 DO STP, DO_{STP} = 3 mg/l
 STP, θ = 1.047
 Temperature, T = 29 °C

Average flowrate
1 MLD

Refer Certificate Analysis (CA) - W1
Refer Certificate Analysis (CA) - W1
Refer Certificate Analysis (CA) - W1
0.564 m/day

0.0703125 m³/s Refer EIA
Normal Scenario for Standard B
Normal Case Scenario
Refer Table 1
Normal Case Scenario

Corrected reaction constants for temperature, k_1 = $k_{20} \theta^{T-20}$

Q_{mix} = 0.08189 m³/s
 BOD_{mix} = 17.31448 mg/l
 DO_{mix} = 3.12721 mg/l
 Temperature = 29 °C
 Depth, H = 3.3 m
 Reaeration rate constants, K_1 = 0.3 /d
 Reaeration rate constants, K_2 = 12.428 /d
 BOD reaction rate, k_1 = 0.45357 /d
 Waterbody reaction rate, k_2 = 14.33626 /d

Normal Case
Normal Case

Ultimate BOD, L_0 = 1.0 mg/l
Initial oxygen deficit, D_0 = 0.77279 mg/l

$D = C_u - C$

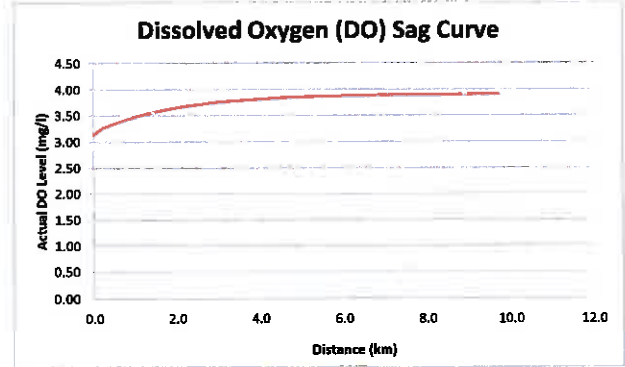
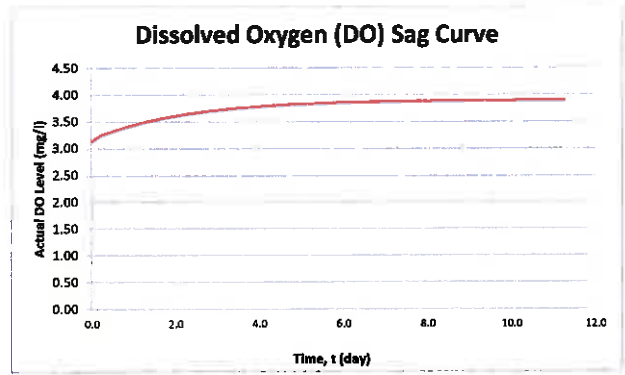
Critical time, t_c and critical deficit, D_c and location, X_c

A = 0.0720

B = -0.0613

C = 31.6078

Average estimate depth



BOD waterbody, BOD_w = 1 mg/l
DO waterbody, DO_w = 3.9 mg/l

Table 1

Water Type	Temperature coefficient, θ
Waterbody	1.016
Domestic wastewater	1.135
Typical Effluent	1.047
Reaeration	1.024

PE ESTIMATION

PE = 27000
 Design Flow, Q = 6076 m³/day
 Suspended Solid, SS = 1823 kg/day
 Unloading BOD = 1519 kg/day
 Unloading BOD (Standard A) = 122 kg/day

* PE estimation Based on JRC Info

Time, t (day)	Distance (km)	$D_0(t)$ deficit	$C(t)$ actual DO level
0.00	0.00	0.77	3.13
0.25	0.22	0.85	3.25
0.50	0.43	0.58	3.32
0.75	0.65	0.52	3.38
1.00	0.86	0.46	3.44
1.25	1.08	0.41	3.49
1.50	1.30	0.37	3.53
1.75	1.51	0.33	3.57
2.00	1.73	0.28	3.61
2.25	1.94	0.26	3.64
2.50	2.16	0.23	3.67
2.75	2.38	0.21	3.69
3.00	2.59	0.19	3.71
3.25	2.81	0.17	3.73
3.50	3.02	0.15	3.75
3.75	3.24	0.13	3.77
4.00	3.46	0.12	3.78
4.25	3.67	0.11	3.79
4.50	3.89	0.09	3.81
4.75	4.10	0.08	3.82
5.00	4.32	0.08	3.82
5.25	4.54	0.07	3.83
5.50	4.75	0.06	3.84
5.75	4.97	0.05	3.85
6.00	5.18	0.05	3.85
6.25	5.40	0.04	3.86
6.50	5.62	0.04	3.86
6.75	5.83	0.03	3.87
7.00	6.05	0.03	3.87
7.25	6.26	0.03	3.87
7.50	6.48	0.02	3.88
7.75	6.70	0.02	3.88
8.00	6.91	0.02	3.89
8.25	7.13	0.02	3.89
8.50	7.34	0.02	3.88
8.75	7.56	0.01	3.89
9.00	7.78	0.01	3.89
9.25	7.99	0.01	3.89
9.50	8.21	0.01	3.89
9.75	8.42	0.01	3.89
10.00	8.64	0.01	3.89
10.25	8.86	0.01	3.89
10.50	9.07	0.01	3.89
10.75	9.29	0.01	3.89
11.00	9.50	0.00	3.90
11.25	9.72	0.00	3.90

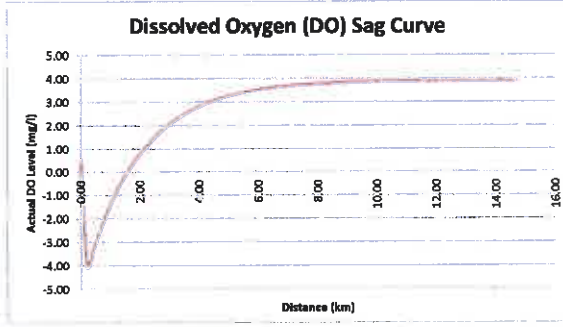
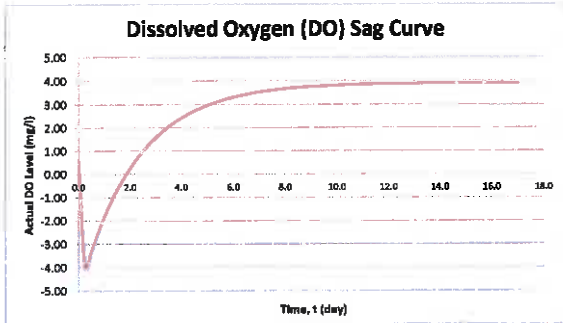
DO SAG CURVE - WORST CASE

Assumption:-

OS₂ Pule= 0.01 m³/s
 OS₁ Pule= 0.01 m³/s
 Flow rate waterbody, Q_w = 0.01 m³/s
 BOD waterbody, BOD_w = 1 mg/l
 DO waterbody, C_w = 3.0 mg/l
 Waterbody, Ø = 1.016
 Temperature, T = 29 °C
 Average waterbody velocity = 0.01 m/s
 Flow rate (TP), Q_{tp} = 6076 m³/day
 BOD STP, BOD_{stp} = 150 mg/l
 DO STP, DO_{stp} = 0 mg/l
 STP, Ø = 1.047
 Temperature, T = 29 °C

Average flowrate
1 MLD

Refer Certificate Analysis (CA) - W1
 Refer Certificate Analysis (CA) - W1
 Refer Certificate Analysis (CA) - W1
 0.575 m/s/day
 Refer E1:
 Worst Case Scenario for Standard B
 Worst Case Scenario
 Refer Table 1
 Worst Case Scenario



BOD waterbody, BOD_w = 1 mg/l
 DO waterbody, DO_w = 3.0 mg/l

PE ESTIMATION

PE = 27000
 Design Flow, Q = 6076 m³/day
 Suspended Solid, SS = 1823 kg/day
 Unloading BOD = 1619 kg/day
 Unloading BOD (Standard A) = 122 kg/day

*PE estimation Based on JRC Info

Correct reaction constants for temperature, h
 Q mix = 0.01840 m³/s
 BOD mix = 214.60565 mg/l
 DO mix, C = 0.55124 mg/l
 Temperature = 29.000 °C
 Depth, H = 29.000 m
 Reaeration rate constant, K₁ = 0.2 /d
 Reaeration rate constant, K₂ = 12.228 /d
 BOD reaction rate, k₁ = 0.02357 /d
 Waterbody reaction rate, k₂ = 14.33629 /d

$$k_2 = k_1 \theta^{T-20}$$

Worst Case
Worst Case

Average estimate depth

$$D = C_2 - C$$

$$D = 2.99026168 \ln \left[\frac{k_2}{k_1} (1 - D_0 \frac{k_2 - k_1}{k_1 T_c}) \right]$$

Critical time, t_c = 0.2153949 day

$$t_c = \frac{1}{k_2 - k_1} \ln \left[\frac{k_2}{k_1} (1 - D_0 \frac{k_2 - k_1}{k_1 T_c}) \right]$$

Ultimate BOD, L₀ = 2.99026168 mg/l
Initial oxygen deficit, D₀ = 3.34876 mg/l

Critical time, t_c and critical deficit, D₀ and location, X_c

$$A = 0.0720 \frac{1}{k_2 - k_1}$$

$$B = 0.6293 (1 - D_0 \frac{k_2 - k_1}{k_1 T_c})$$

$$C = 31.9078 \frac{k_2}{k_1}$$

D₀ = (k₁L₀)/k₂ + D_w
 Critical Deficit, D₀ = 7.8937 mg/l
 D_w = -4.0337 mg/l

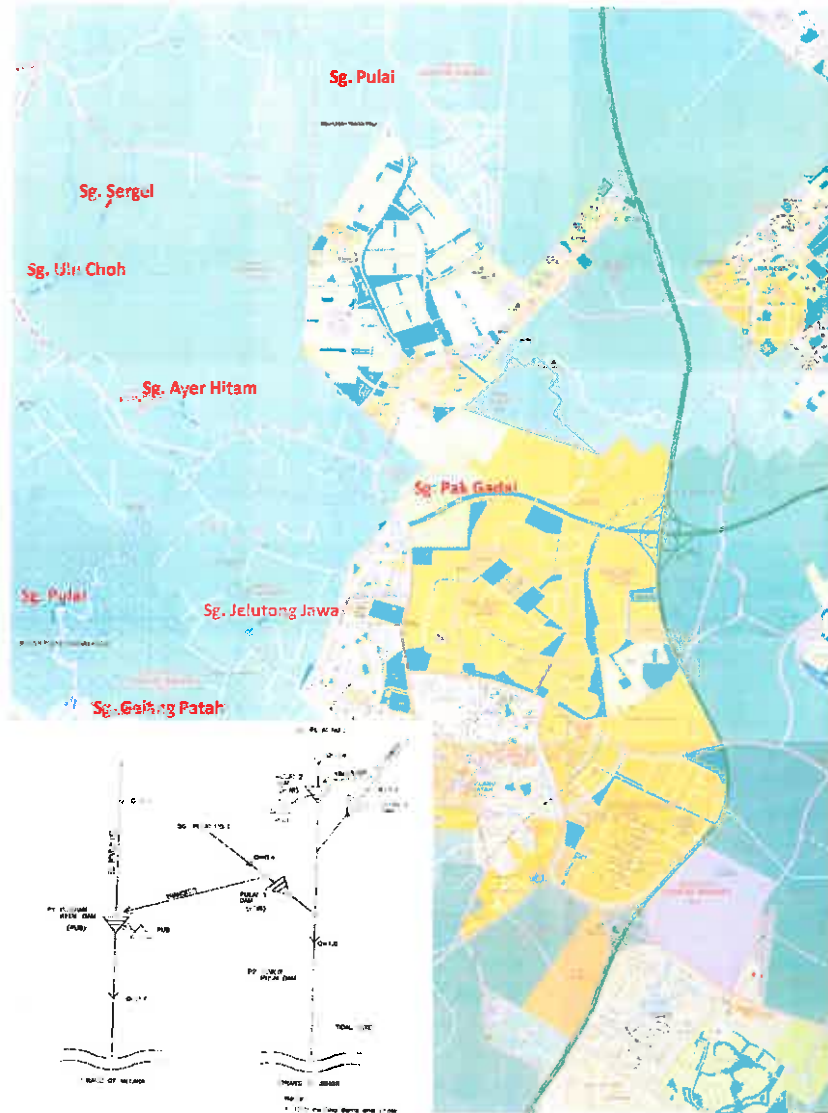
Table 1

Water Type	Temperature coefficient, Ø
Waterbody	1.016
Domestic wastewater	1.135
Typical Effluent	1.047
Reaeration	1.024

$$3.93 \frac{L^0.5}{H^{1.5}} = 12.4277612$$

u = mean velocity, m/s and H = depth, m

Time, t (day)	Distance (km)	D ₀ (t) deficit	D(t) actual DO level
0.00	0.00	3.35	0.66
0.26	0.22	7.91	-4.01
0.60	0.43	7.20	-3.30
0.76	0.66	6.49	-2.63
1.00	0.88	5.74	-1.94
1.25	1.08	5.12	-1.22
1.50	1.30	4.58	-0.66
1.75	1.61	4.08	-0.16
2.00	1.73	3.65	0.26
2.25	1.94	3.28	0.64
2.50	2.16	2.91	0.98
2.75	2.36	2.60	1.30
3.00	2.50	2.32	1.68
3.25	2.61	2.07	1.93
3.50	3.02	1.85	2.05
3.75	3.24	1.66	2.26
4.00	3.46	1.47	2.43
4.25	3.67	1.31	2.60
4.50	3.89	1.17	2.73
4.75	4.10	1.05	2.85
5.00	4.32	0.94	2.96
5.25	4.54	0.84	3.06
5.50	4.76	0.75	3.15
5.75	4.97	0.67	3.23
6.00	5.18	0.59	3.31
6.25	5.40	0.53	3.37
6.50	5.62	0.47	3.43
6.75	5.83	0.42	3.48
7.00	6.05	0.38	3.52
7.25	6.28	0.34	3.56
7.50	6.48	0.30	3.60
7.75	6.70	0.27	3.63
8.00	6.91	0.24	3.66
8.25	7.13	0.21	3.69
8.50	7.34	0.19	3.71
8.75	7.55	0.17	3.73
9.00	7.78	0.15	3.75
9.25	7.99	0.14	3.76
9.50	8.21	0.12	3.78
9.75	8.42	0.11	3.79
10.00	8.64	0.10	3.80
10.25	8.86	0.09	3.81
10.50	9.07	0.08	3.82
10.75	9.29	0.07	3.83
11.00	9.50	0.06	3.84
11.25	9.72	0.05	3.85
11.50	9.94	0.05	3.85
11.75	10.15	0.04	3.86
12.00	10.37	0.04	3.86
12.25	10.58	0.03	3.87
12.50	10.80	0.03	3.87
12.75	11.02	0.03	3.87
13.00	11.23	0.02	3.88
13.25	11.45	0.02	3.88
13.50	11.66	0.02	3.88
13.75	11.88	0.02	3.89
14.00	12.10	0.02	3.89
14.25	12.31	0.01	3.89
14.50	12.53	0.01	3.89
14.75	12.74	0.01	3.89
15.00	12.96	0.01	3.89
15.25	13.18	0.01	3.89
15.50	13.39	0.01	3.89
15.75	13.61	0.01	3.89
16.00	13.82	0.01	3.89
16.25	14.04	0.01	3.89
16.50	14.26	0.01	3.89
16.75	14.47	0.00	3.90
17.00	14.69	0.00	3.90



1. The map shows the river and its tributaries in the basin of Sg. Pulai.
 2. The map shows the location of the dam and the powerhouse.
 3. The map shows the location of the spillway and the powerhouse.
 4. The map shows the location of the dam and the powerhouse.
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