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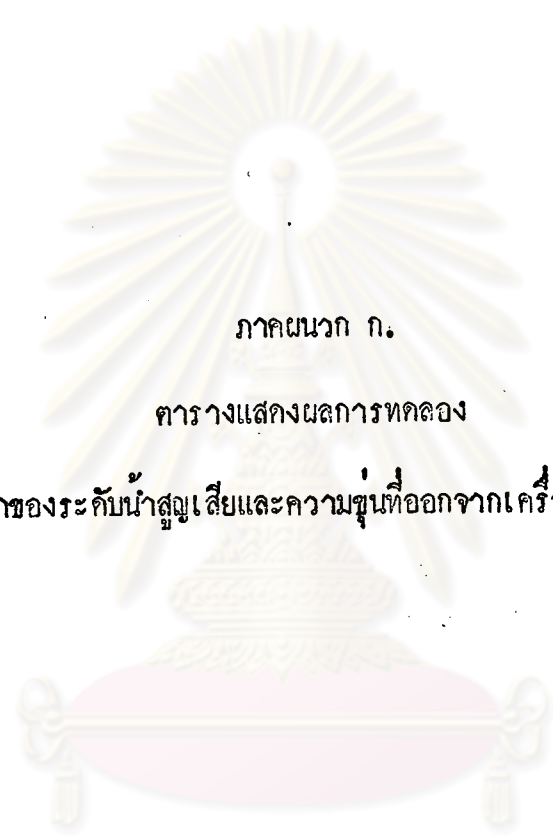
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ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย



ภาคผนวก ก.

ตารางแสดงผลการทดลอง

ค่าของระดับน้ำสูญเสียและความชื้นที่ออกจากเครื่องกรอง

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Filter rate 100 M/Day

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
0.0	10.2	2.8	1.1	4.2	6.0	6.7	8.8	8.5	8.5
0.5	12.0	3.0	1.1	4.2	5.9	6.6	8.8	8.8	8.8
1.0	11.8	2.8	1.1	4.2	6.0	7.0	9.0	9.4	9.4
1.5	10.9	3.1	1.1	4.2	6.1	6.9	9.5	9.5	9.5
2.0	11.5	3.0	1.1	4.2	6.1	7.0	9.3	9.5	9.5
2.5	11.6	2.8	1.1	4.2	6.1	7.1	9.4	9.8	9.8
3.0	11.8	3.1	1.2	4.2	6.1	7.2	9.2	10.9	11.0
3.5	12.1	3.0	1.2	4.2	6.2	7.3	9.6	11.0	11.1
4.0	12.5	2.9	1.2	4.3	6.5	7.5	10.1	11.2	11.3
4.5	10.8	2.8	1.1	4.2	6.4	7.5	10.2	11.6	11.6
5.0	10.8	3.0	1.1	4.4	6.8	8.0	11.7	12.4	12.5
5.5	11.0	3.8	1.1	4.3	6.5	7.8	11.6	12.3	12.3
6.0	12.0	2.8	1.1	4.5	6.8	8.2	12.1	13.8	13.9
6.5	12.2	2.8	1.1	4.2	6.5	7.8	12.0	13.9	14.0
7.0	12.4	2.9	1.0	4.1	6.4	7.6	12.5	13.9	13.9
7.5	12.0	3.1	1.0	4.3	6.6	8.1	12.7	15.2	15.2
8.0	12.4	3.1	1.0	4.2	6.6	8.1	12.9	15.6	15.6
8.5	12.2	2.9	1.0	4.3	6.7	8.2	13.2	16.6	16.7
9.0	12.0	3.0	0.9	4.3	6.8	8.6	14.2	17.5	17.5
9.5	11.8	3.1	0.9	4.4	6.9	8.7	13.2	15.3	15.4
10.0	11.8	3.3	1.0	4.5	7.0	8.9	13.9	16.5	16.5
10.5	12.0	3.0	1.0	4.5	7.1	8.9	14.6	17.5	17.5
11.0	12.2	2.9	1.0	4.5	7.0	8.8	14.4	18.0	18.0
11.5	11.0	2.8	1.1	4.5	7.0	9.0	15.3	19.0	19.0

Filter rate 100 M/Day (Continued)

Time	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
12.0	11.2	3.0	1.0	4.5	7.2	9.2	16.4	19.5	19.5
12.5	11.4	3.0	1.0	4.5	7.3	9.2	16.6	19.8	19.8
13.0	11.0	3.2	1.0	4.8	7.6	10.0	17.8	22.5	22.5
13.5	11.2	2.8	1.0	4.5	7.4	9.5	17.9	21.0	21.0
14.0	11.4	3.2	1.0	4.8	7.7	10.0	19.0	23.5	23.8
14.5	11.6	3.0	1.0	4.7	7.7	9.9	19.6	23.0	23.0
15.0	11.2	2.8	1.0	4.5	7.2	9.5	19.3	22.5	22.5
15.5	11.4	2.9	1.0	4.7	7.7	10.0	20.5	24.0	24.0
16.0	12.0	3.2	1.0	4.6	7.7	10.2	20.7	25.0	25.0
16.5	12.0	3.1	1.0	4.8	7.8	10.5	21.8	25.2	25.2
17.0	11.8	3.0	0.9	5.2	8.4	11.6	23.1	28.2	28.2
17.5	12.0	2.9	0.8	5.1	8.5	11.4	23.2	26.8	26.9
18.0	12.2	2.8	0.8	5.1	8.3	11.4	23.4	27.5	27.5
18.5	11.8	3.0	0.8	5.2	8.4	11.4	23.6	27.5	27.5
19.0	12.0	3.1	0.8	5.2	8.5	11.7	23.9	28.0	28.0
19.5	11.6	3.0	0.9	5.3	8.7	12.1	24.4	28.6	28.6
20.0	11.8	2.7	0.9	5.7	9.2	13.1	25.8	31.2	31.3
20.5	12.0	2.8	0.8	5.5	8.8	12.3	23.7	27.5	27.5
21.0	12.0	3.0	0.8	5.2	8.5	11.7	23.6	27.2	27.2
21.5	11.8	2.9	0.9	5.7	9.6	13.4	25.6	30.0	30.0
22.0	11.6	2.8	1.0	6.2	7.0	14.2	26.9	32.0	32.1
22.5	11.8	3.0	1.0	6.0	9.7	13.6	26.6	30.5	30.5
23.0	12.0	3.1	1.2	6.5	10.1	14.6	27.6	32.5	33.0
23.5	11.6	3.0	1.1	6.3	10.2	14.2	28.2	30.5	30.5

Filter rate 100 M/Day (Continued)

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
24.0	12.0	3.0	1.1	6.2	10.0	14.2	27.8	31.0	31.5
24.5	11.8	2.8	1.2	6.5	10.3	14.9	28.7	33.0	33.5
25.0	11.6	2.8	1.2	6.4	10.3	14.9	29.1	32.1	32.1
25.5	11.8	2.9	1.2	6.8	10.9	16.1	31.0	35.5	35.5
26.0	12.0	3.0	1.2	6.5	10.4	15.8	30.3	33.4	33.4
26.5	11.6	3.1	1.3	6.6	10.5	15.5	30.7	34.5	35.0
27.0	11.8	3.0	1.2	6.4	10.1	15.3	30.8	34.7	34.8
27.5	11.8	2.9	1.3	7.1	11.3	17.4	34.0	38.3	38.4
28.0	12.0	2.8	1.3	6.8	10.7	16.0	31.3	34.0	34.0
28.5	12.2	3.0	1.4	7.0	10.9	16.5	32.6	36.5	36.5
29.0	12.0	2.9	1.4	7.0	11.0	16.9	33.1	37.5	38.0
29.5	11.8	2.9	1.3	7.0	11.1	16.8	33.7	35.9	36.1
30.0	11.6	3.0	1.3	7.2	11.6	17.7	35.3	38.2	38.2
30.5	11.8	2.8	1.2	6.9	11.2	17.1	35.2	38.5	38.5
31.0	12.0	2.9	1.2	6.9	11.1	17.7	35.2	39.5	39.5
31.5	11.6	3.0	1.2	6.9	11.2	17.8	36.7	40.3	40.3
32.0	12.0	3.0	1.3	7.0	11.3	17.9	36.8	41.0	41.5
32.5	12.2	3.1	1.2	7.1	11.8	19.0	38.3	42.5	42.6
33.0	12.0	3.0	1.1	7.0	11.4	18.1	38.1	41.0	41.0
33.5	11.8	2.9	1.1	6.9	11.2	18.1	38.2	41.5	42.0
34.0	12.0	3.0	1.2	7.0	11.4	18.6	38.7	43.0	43.5
34.5	11.8	2.9	1.2	7.2	11.8	19.5	40.4	45.0	45.5
35.0	11.8	2.8	1.1	7.0	11.3	19.2	40.0	44.0	44.0
35.5	11.6	2.9	1.1	7.0	11.8	19.5	41.0	45.5	45.5

Filter rate 100 M/Day (Continued)

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)							
			0	30	50	60	70	80	90	
36.0	11.8	3.0	1.1	7.0	11.7	19.7	41.0	46.0	46.0	
36.5	12.0	3.0	1.1	7.1	11.7	19.6	41.5	46.0	46.0	
37.0	12.2	2.9	1.1	7.5	12.4	21.0	43.7	47.0	47.0	
37.5	12.0	2.9	1.1	7.2	12.1	20.3	43.0	47.1	47.2	
38.0	11.8	3.0	1.0	7.3	12.2	21.0	43.5	48.0	48.0	
38.5	11.6	3.0	1.0	7.0	11.8	19.6	43.8	42.5	42.6	
39.0	11.8	3.0	1.0	7.4	12.4	21.1	43.4	47.5	47.6	
39.5	12.0	2.8	1.0	7.5	12.6	21.9	44.0	49.5	49.5	
40.0	12.0	2.3	0.9	7.3	12.3	20.8	43.5	45.5	45.5	
40.5	12.0	3.0	0.9	7.4	12.7	22.0	44.5	49.0	49.1	
41.0	11.8	3.2	1.0	7.7	13.0	23.0	46.0	51.0	51.0	
41.5	11.6	3.0	0.9	7.3	12.4	21.9	44.8	49.0	49.0	
42.0	11.8	3.0	1.0	7.6	13.0	22.6	47.0	50.5	50.5	
42.5	12.0	3.0	1.0	8.2	13.8	24.6	49.0	53.5	53.5	
43.0	12.2	3.2	0.9	7.8	13.4	23.5	48.2	50.0	50.0	
43.5	12.2	2.8	1.0	7.4	12.6	22.3	45.5	49.5	49.5	
44.0	12.2	2.8	1.0	8.0	13.7	24.6	49.5	54.0	54.0	
44.5	12.3	3.0	1.0	8.2	13.8	25.5	50.5	55.5	55.5	
45.0	12.4	3.0	1.0	8.2	14.1	25.7	51.0	54.8	54.8	
45.5	13.0	3.0	1.0	8.1	13.9	24.5	48.0	50.5	51.0	
46.0	11.8	3.0	1.0	8.1	14.0	25.1	49.5	53.3	53.5	
46.5	12.0	3.0	0.9	8.0	13.5	24.1	45.4	49.5	50.0	
47.0	11.8	2.9	0.9	8.3	14.3	25.2	47.9	51.0	52.0	
47.5	11.6	2.9	1.0	8.5	14.5	25.8	49.0	53.0	53.5	

Filter rate 100 M/Day. (Continued)

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
48.0	11.6	2.8	0.9	8.6	14.7	26.2	50.0	54.8	52.2
48.5	11.5	2.9	1.0	8.4	14.5	25.6	50.0	53.9	54.0
49.0	11.6	3.1	0.9	8.3	14.3	25.6	49.7	54.0	54.2
49.5	11.8	2.7	0.9	8.5	14.8	26.9	52.0	56.5	57.0
50.0	11.5	2.8	1.0	8.5	14.7	26.7	52.0	56.5	57.0
50.5	12.0	2.9	1.0	8.5	14.5	26.6	52.0	57.0	57.5
51.0	12.2	3.0	1.0	8.6	14.9	27.8	53.5	59.2	60.0
51.5	11.8	2.9	1.0	8.9	15.3	28.6	55.8	60.0	65.0
52.0	11.6	2.9	1.0	8.6	15.0	27.8	55.5	59.0	60.0
52.5	11.8	3.0	0.8	8.7	15.1	28.2	55.1	60.5	61.0
53.0	12.0	3.0	0.8	8.8	15.2	28.8	57.3	61.0	61.2
53.5	11.8	3.1	0.8	8.7	15.0	28.4	56.5	61.5	62.0
54.0	12.0	3.0	0.8	8.6	15.1	27.9	58.5	58.0	59.0
54.5	12.2	2.9	0.8	8.9	15.4	29.7	58.7	63.5	63.8
55.0	12.0	2.9	0.8	8.8	15.3	19.9	59.0	64.0	64.1
55.5	11.8	3.0	0.8	9.0	15.7	30.4	60.7	65.0	65.5
56.0	12.0	3.0	0.8	9.1	15.8	31.1	60.9	66.8	67.5
56.5	11.6	2.8	0.8	9.3	16.7	32.1	62.4	69.5	70.0
57.0	11.5	2.8	0.8	9.1	16.0	31.0	62.2	66.0	67.0
57.5	11.6	3.0	0.8	9.1	15.9	31.2	62.3	67.1	67.8
58.0	11.8	3.0	0.8	9.2	16.2	32.1	63.5	69.7	69.9
58.5	11.8	3.0	0.8	9.3	16.4	32.9	64.0	70.8	71.1
59.0	12.0	2.9	0.8	9.5	16.7	33.3	66.2	72.9	72.5
59.5	12.2	2.8	0.8	9.7	17.0	34.2	67.4	72.2	73.2

Filter rate 100 M/Day (Continued)

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
60.0	11.8	3.2	0.8	9.6	16.8	33.7	66.8	71.0	72.0
60.5	11.6	3.1	0.8	9.6	11.9	30.0	66.9	71.5	73.0
61.0	11.8	3.0	0.9	9.6	11.0	34.6	66.7	72.0	73.0
61.5	12.0	2.9	0.9	9.8	17.1	34.8	67.1	71.5	72.5
62.0	11.6	3.0	1.0	9.9	17.4	35.3	67.3	72.5	73.0
62.5	11.8	3.0	1.1	9.7	17.2	34.9	66.8	70.5	71.0
63.0	11.8	3.0	1.0	10.1	18.1	37.0	69.0	72.5	73.0
63.5	12.0	2.8	0.8	10.1	18.5	36.2	65.7	69.4	70.5
64.0	11.8	3.0	0.7	9.8	17.8	34.0	65.1	66.9	67.5
64.5	12.0	3.0	0.7	10.0	18.2	35.4	67.1	69.8	70.5
65.0	11.8	2.9	0.7	10.0	18.2	35.4	67.1	70.1	71.0
65.5	11.6	3.0	0.7	10.2	18.6	35.8	68.0	71.5	72.5
66.0	11.6	3.1	0.9	9.8	17.4	31.8	65.5	62.5	63.0
66.5	11.8	3.2	0.6	10.3	18.3	34.5	65.0	69.5	70.0
67.0	12.2	2.9	0.7	10.4	18.7	35.8	67.5	72.5	72.8
67.5	12.6	3.0	0.6	10.4	19.0	36.1	72.0	72.5	73.4
68.0	12.0	2.9	0.7	10.1	18.1	35.2	70.0	72.0	73.0
68.5	11.8	3.0	0.6	10.6	19.3	37.5	73.1	77.5	77.0
69.0	12.0	3.1	0.6	10.5	19.2	37.7	73.5	77.7	77.1
69.5	12.2	3.0	0.6	10.5	19.2	37.5	74.5	77.5	77.3
70.0	12.2	4.0	0.6	10.6	19.5	38.4	75.5	79.0	81.0
70.5	12.0	4.3	0.6	10.5	19.2	38.0	72.5	78.5	79.0
71.0	12.3	4.6	0.9	10.4	19.2	38.0	75.5	78.5	79.5
71.5	12.0	5.0	0.6	10.8	20.2	40.9	73.0	75.5	76.0

Filter rate 100 M/Day (Continued)

Time (hr.)	Turbidity in filter influent holding tank	Turbidity in filtrate water	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
72.0	11.8	6.0	0.6	10.6	20.3	39.5	73.0	73.0	73.0
72.5	12.0	9.0	0.6	10.6	20.0	39.9	71.5	74.5	75.0
73.0	12.2	9.4	0.6	10.8	20.4	40.4	73.0	76.0	76.0
73.5	11.8	10.6	0.7	10.5	19.9	39.0	72.5	72.6	73.5



ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Filter rate 150 M/Day

Time hr.	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
0.0	11.7	1.0	3.0	7.0	9.8	10.9	11.8	13.9	13.9
1.0	11.0	1.2	3.0	7.0	9.9	11.4	12.0	14.1	14.1
1.5	11.2	1.2	3.2	7.4	10.3	11.6	12.5	14.8	14.8
2.0	10.8	1.4	3.4	7.9	10.9	12.4	13.2	15.4	15.4
2.5	10.8	1.4	3.4	7.6	10.6	12.2	13.4	15.9	15.9
3.0	9.0	1.6	3.4	7.6	10.6	12.2	13.4	15.9	15.9
3.5	9.0	1.9	3.4	7.8	10.8	12.4	13.9	16.6	16.0
4.0	10.2	2.0	3.4	8.1	11.4	12.9	14.9	18.1	17.5
4.5	11.0	2.0	3.4	7.8	11.0	12.6	14.8	18.3	17.9
5.0	10.0	2.0	3.4	7.9	10.9	12.6	15.4	18.7	18.2
5.5	11.2	2.0	3.4	7.9	10.9	12.6	15.4	19.1	18.4
6.0	10.4	2.0	3.4	8.1	11.4	13.2	16.5	20.7	20.2
6.5	11.0	4.0	3.4	8.3	11.7	13.8	17.8	21.9	21.5
7.0	10.8	2.8	3.4	8.3	11.7	13.8	18.1	22.4	21.8
7.5	10.6	3.0	3.4	8.3	11.9	14.1	19.1	23.7	23.2
8.0	11.2	3.0	3.4	8.4	12.1	14.5	20.0	24.9	24.4
8.5	10.8	2.9	3.4	8.1	11.6	13.8	20.0	24.8	24.0
9.0	8.0	3.0	3.4	8.1	11.6	13.8	20.1	25.4	24.9
9.5	8.6	3.0	3.4	8.0	11.4	13.8	20.4	25.4	24.9
10.0	9.0	3.2	3.4	8.1	11.8	14.4	21.7	27.4	26.9
10.5	9.7	2.9	3.4	8.5	12.3	15.0	21.9	28.2	28.2
11.0	10.0	2.8	3.4	8.5	12.5	15.6	23.9	29.6	29.6
11.5	11.0	2.8	3.4	8.5	12.6	15.7	24.6	29.8	29.8
12.0	10.0	2.8	3.4	8.5	12.6	15.7	25.5	30.4	30.4

Filter rate 150 M/Day (Continued)

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
12.5	10.4	3.0	3.1	8.2	12.1	15.1	25.4	29.9	29.9
13.0	10.6	3.0	3.2	8.4	11.9	15.4	25.6	30.4	30.4
13.5	11.8	3.0	3.2	8.4	11.7	15.2	25.9	30.4	30.4
14.0	11.0	3.0	3.2	8.9	13.0	16.6	23.1	26.4	26.4
14.5	10.4	2.8	3.2	8.9	13.2	16.8	23.6	27.6	28.0
15.0	12.0	2.8	3.2	8.8	12.9	16.4	23.4	27.2	27.5
15.5	12.0	2.8	3.2	8.9	13.2	17.0	24.8	28.9	28.9
16.0	10.6	2.8	3.2	9.1	13.7	17.7	25.9	30.6	30.6
16.5	11.0	3.0	3.2	9.3	14.3	18.7	27.9	32.4	32.4
17.0	11.3	3.0	3.2	9.5	14.7	19.7	30.6	36.4	36.4
18.0	10.6	3.2	3.2	9.1	13.6	19.2	32.2	34.2	34.4
19.0	11.0	3.0	3.2	9.4	14.5	20.3	32.9	35.7	35.7
20.0	11.2	3.0	3.3	10.2	15.9	22.8	57.2	40.9	41.4
21.0	10.6	3.4	3.4	10.1	15.9	23.4	38.4	41.7	41.8
22.0	11.0	3.0	3.5	9.0	16.0	22.8	38.6	40.4	40.6
23.0	11.2	2.8	3.5	8.7	13.6	19.8	37.2	35.9	36.3
24.0	11.2	3.0	3.1	7.2	11.6	16.8	35.1	32.2	32.6
24.5	12.0	3.0	3.5	9.7	13.9	23.4	39.4	42.9	42.9
25.0	12.0	2.6	3.6	9.9	15.7	23.1	38.9	39.9	39.9
25.5	12.0	2.8	3.6	10.1	15.9	23.7	38.9	40.9	41.0
26.0	13.0	2.8	3.6	9.9	15.7	23.2	40.1	40.1	40.0
26.5	11.0	3.0	3.6	10.2	15.9	24.0	39.8	41.9	42.0
27.0	12.0	3.0	3.5	9.7	16.0	23.5	39.9	40.1	40.0
27.5	11.0	3.0	3.5	9.7	15.6	23.6	39.2	40.9	40.0

Filter rate 150 M/Day (Continued)

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
28.0	10.8	3.2	3.6	9.4	14.8	22.3	38.8	39.5	39.6
29.0	11.2	2.8	3.6	9.8	15.2	25.0	41.4	44.9	44.9
29.5	10.8	2.8	3.5	9.6	15.4	24.0	40.4	41.6	41.6
30.0	10.0	3.0	3.5	9.2	14.9	23.2	39.9	40.4	40.4
30.5	9.0	3.0	2.9	10.4	17.8	25.6	39.7	41.8	41.4
31.5	10.2	3.2	3.1	10.9	18.0	27.2	42.1	44.4	43.0
32.5	10.0	2.8	3.2	10.4	16.7	26.4	39.5	43.9	43.9
33.5	10.8	3.1	3.2	10.7	17.5	27.5	40.9	43.8	43.4
34.0	11.2	3.2	3.2	10.5	17.2	26.8	40.4	43.0	43.1
34.5	10.0	3.0	3.2	10.3	17.0	26.9	40.9	44.4	43.9
35.0	9.0	2.9	3.2	10.6	17.6	28.5	42.9	47.4	46.9
35.5	15.0	3.0	3.2	10.7	18.1	29.5	45.2	48.9	48.9
36.0	13.0	3.2	3.2	10.7	18.1	29.9	45.9	50.4	49.9
36.5	12.0	3.0	3.2	10.6	18.1	30.4	46.9	51.9	50.9
37.0	13.0	2.7	3.2	10.7	18.4	31.7	48.9	53.7	52.9
37.5	13.6	2.8	3.2	10.5	18.1	31.7	48.9	53.9	52.9
38.0	10.0	2.7	3.1	10.4	17.9	31.5	48.9	53.4	52.9
38.5	10.8	2.8	3.1	10.9	19.2	35.1	48.4	60.4	59.2
39.0	11.2	3.2	3.1	10.9	19.2	34.9	49.4	59.4	58.4
40.0	10.6	3.0	3.1	11.0	19.1	35.1	56.4	63.4	61.6
41.0	12.0	3.2	3.1	11.4	20.7	38.9	60.2	65.6	64.7
42.0	13.0	3.2	3.1	11.4	20.8	39.1	60.6	66.2	66.0
43.0	11.0	2.8	3.1	11.8	21.2	38.1	59.4	61.6	64.9
43.5	10.9	3.0	3.1	11.9	21.3	37.9	58.9	63.2	62.1

Filter rate 150 M/Day (Continued)

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
44.0	10.8	3.2	3.1	12.1	21.7	38.9	60.1	65.2	59.1
44.5	11.0	3.0	3.0	12.3	22.2	41.2	60.0	67.4	66.4
45.0	11.0	2.7	3.1	11.8	21.1	38.5	61.1	64.8	62.9
45.5	10.8	2.8	3.1	12.1	20.9	37.4	61.2	67.5	65.9
46.0	10.6	2.7	3.1	12.1	21.4	38.4	62.1	68.5	66.7
46.5	11.0	3.0	3.2	12.4	22.3	41.4	66.3	66.4	66.4
47.0	11.2	3.3	3.4	12.6	22.3	41.5	67.4	69.4	69.4
48.0	10.8	3.3	2.4	11.9	22.6	40.9	65.7	70.4	70.4
49.0	11.2	3.2	2.4	12.4	24.0	43.1	68.5	76.4	76.4
49.5	11.4	3.0	2.4	12.4	24.1	44.9	71.2	74.4	74.4
50.0	10.6	2.8	2.4	12.4	24.5	44.9	71.4	77.4	77.4
50.5	10.8	3.0	2.4	12.5	25.0	45.9	73.8	78.4	78.4
51.0	11.6	3.2	2.4	11.9	18.9	45.2	73.4	76.4	76.4
51.5	12.5	2.8	2.4	12.4	24.4	43.9	73.5	76.4	76.4
52.0	13.0	4.1	2.4	12.7	25.7	46.6	79.4	86.4	86.4
52.5	12.0	12.0	2.5	13.7	26.9	49.4	86.4	91.4	91.4

Filter rate 200 M/Day

Time (hr.)	Turbidity in filter influent holding tank(JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
0.0	14.5	3.5	0.8	12.1	16.5	18.8	21.2	22.4	22.4
0.5	14.5	3.4	0.8	11.2	16.1	17.9	20.6	22.2	22.2
1.0	17.5	2.0	0	11.0	16.1	18.5	22.0	23.7	23.8
1.5	10.0	3.6	0	11.0	15.8	18.3	21.9	23.7	23.8
2.0	11.0	2.2	0.1	11.1	16.2	18.7	22.5	24.4	24.5
2.5	11.3	2.8	0.1	11.1	16.2	18.8	22.9	24.7	24.8
3.0	11.7	3.0	0.1	11.1	16.2	19.0	23.5	25.5	25.5
4.0	10.5	4.5	0.1	11.0	15.8	18.4	23.2	25.5	25.5
5.0	9.4	3.1	0.1	11.3	16.6	19.7	25.6	28.5	28.6
6.0	11.6	3.2	0.1	11.4	16.8	20.0	27.0	30.5	30.5
7.0	7.4	3.0	0.1	11.9	17.5	21.3	29.6	33.7	33.7
9.0	7.5	3.3	0.5	12.3	18.2	22.0	32.5	37.0	37.0
10.0	7.5	3.5	0.6	13.0	19.7	24.4	36.8	41.0	41.0
11.0	9.4	2.5	0.6	12.9	19.5	24.3	37.8	42.3	42.3
11.5	10.6	2.4	0.1	11.9	18.2	23.6	36.8	41.5	41.5
12.0	11.2	2.5	0.2	11.7	17.8	23.5	36.5	41.0	41.0
12.5	10.5	2.3	0.2	12.1	18.4	23.4	38.3	42.5	42.7
13.0	11.5	2.3	0.2	12.2	18.5	24.0	39.9	44.5	44.8
13.5	12.4	2.5	0.2	12.9	20.1	26.5	44.5	49.2	49.5
14.0	11.0	3.8	0.2	13.0	20.3	26.8	45.5	50.8	50.9
14.5	8.0	2.3	0.2	12.6	19.6	26.1	45.0	50.0	50.0
15.0	8.0	2.3	0.2	12.5	19.3	25.7	45.5	51.5	51.5
15.5	12.0	2.3	0.2	12.8	20.1	26.9	47.6	52.0	52.0
16.0	12.8	2.2	0.2	13.4	21.2	29.1	52.4	58.5	58.5

Filter rate 200 M/Day (continued)

Time (hr.)	Turbidity in filter influent holding tank(JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
16.5	13.0	2.5	0.2	12.5	19.5	26.5	47.5	53.0	53.0
17.0	11.5	2.4	0.2	12.8	20.3	27.9	51.5	57.0	57.0
17.5	10.0	4.0	0.2	13.3	21.4	29.6	54.2	60.1	60.2
18.0	10.5	2.4	0.2	12.8	20.4	28.0	51.8	57.0	57.1
18.5	12.5	1.9	0.3	13.2	21.2	30.1	57.0	62.6	62.6
19.0	12.3	4.0	0.3	14.1	22.9	32.1	59.3	64.1	64.1
19.5	13.3	2.3	0.3	14.0	22.9	32.7	61.8	67.2	67.5
20.0	9.2	2.3	0.3	14.3	23.3	33.5	62.9	68.5	68.8
20.5	11.6	4.2	0.4	14.0	22.5	33.0	64.0	68.5	68.5
21.0	8.9	4.1	0.4	13.8	22.5	32.6	63.0	68.5	68.5
21.5	8.9	2.4	0.5	14.5	23.3	34.7	67.0	72.0	72.0
22.0	12.0	4.1	0.6	14.4	23.3	33.9	66.0	71.0	71.0
22.5	8.5	4.0	0.6	14.6	23.9	35.6	69.0	72.5	72.5
23.0	11.2	4.1	0.6	14.5	24.1	35.8	69.5	73.0	73.0
23.5	9.0	3.2	0.6	14.8	24.6	37.0	73.0	77.0	77.0
24.0	11.5	3.3	0.6	14.3	23.5	35.5	70.5	74.0	74.0
24.5	12.0	4.0	0.6	14.0	23.1	36.2	73.2	76.0	76.0
25.0	11.0	4.5	0.6	15.0	25.0	39.0	77.0	81.0	81.0
25.5	9.3	4.8	0.6	15.6	26.7	41.8	83.2	87.0	87.0
26.0	10.2	9.4	0.6	16.3	28.1	44.0	84.0	90.0	90.0

Filter rate 250 M/Day

Time (hr.)	Turbidity in filter influent holding tank(JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm)						
			0	30	50	60	70	80	90
0	14.0	4.0	1.9	11.3	17.1	20.4	21.6	27.9	27.8
0.5	12.0	3.8	2.0	12.1	17.7	20.7	22.3	28.8	28.8
1.0	12.4	3.4	2.1	12.4	18.5	20.9	23.6	30.0	30.0
1.5	12.0	3.2	2.1	12.5	18.8	21.8	24.7	30.8	30.9
2.0	9.0	2.8	2.3	13.1	20.2	22.5	25.9	31.4	31.5
2.5	10.5	3.0	2.3	13.9	20.9	23.9	27.2	32.3	32.4
3.0	10.7	2.8	2.4	14.0	21.7	25.8	28.4	33.3	33.1
3.5	9.8	2.5	2.3	14.1	21.4	25.9	30.0	35.5	35.4
4.0	11.0	3.0	2.3	14.2	21.3	25.9	31.4	35.9	35.8
4.5	10.6	3.1	2.4	14.3	21.4	26.1	32.2	36.6	36.6
5.0	10.2	2.8	2.3	14.3	21.6	26.4	32.9	37.8	37.9
5.5	11.0	3.3	2.2	14.2	21.7	26.3	33.8	38.7	38.7
6.0	9.4	3.4	2.2	14.2	21.8	26.5	34.9	39.4	39.5
6.5	9.6	3.0	2.2	14.3	21.7	26.9	36.0	41.1	41.2
7.0	7.8	3.5	2.3	14.4	21.8	26.9	36.8	43.0	43.0
7.5	8.4	3.2	2.4	14.3	22.0	27.1	38.3	44.8	44.9
8.0	8.2	3.3	2.4	14.4	22.2	27.3	39.6	46.9	46.9
8.5	8.4	3.3	2.4	14.3	22.3	27.4	39.8	47.0	47.1
9.0	9.0	3.2	2.3	14.8	22.6	28.1	41.4	48.2	48.3
9.5	9.2	3.0	2.3	15.1	22.8	28.4	43.3	50.1	50.0
10.0	9.8	2.9	2.4	15.0	23.0	28.8	46.0	52.2	52.1
10.5	11.0	3.0	2.4	15.3	23.2	29.5	47.8	54.0	54.0
11.0	10.5	3.2	2.5	15.5	23.3	30.2	49.6	55.1	55.1
11.5	10.8	3.2	2.4	15.4	23.5	30.8	50.2	56.6	56.7

Filter rate 250 M/Day (Continued).

Time (hr.)	Turbidity in filter influent holding tank(JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
12.0	11.0	3.2	2.4	15.6	23.6	31.1	51.3	57.8	57.9
12.5	9.9	2.8	2.3	15.4	23.9	32.0	52.9	59.1	59.0
13.0	8.6	3.0	2.3	15.5	24.0	32.2	53.8	60.5	60.4
13.5	10.5	3.2	2.4	15.8	24.3	32.1	55.0	62.0	62.1
14.0	11.0	3.4	2.4	16.0	24.2	32.2	56.1	63.6	63.7
14.5	11.5	3.5	2.4	16.0	24.5	32.2	56.9	64.4	64.4
15.0	11.8	3.4	2.4	16.2	24.7	32.4	57.2	65.8	65.8
15.5	11.2	3.2	2.4	16.2	24.9	32.9	59.8	66.6	68.1
16.0	12.0	3.4	2.3	16.4	25.5	34.0	61.4	67.4	68.8
16.5	11.5	3.6	2.4	16.6	26.1	34.2	64.5	68.1	69.0
17.0	11.6	3.8	2.5	16.6	26.8	35.3	66.8	69.2	69.7
17.5	11.2	4.0	2.4	16.7	27.0	36.0	69.4	70.8	70.8
18.0	12.0	4.0	2.4	16.9	27.2	36.7	71.8	75.5	75.5
18.5	11.8	13.0	2.4	17.1	27.3	37.0	72.4	75.8	75.8
19.0	11.8	15.0	2.5	17.2	27.4	38.8	73.1	76.4	76.5
19.5	11.6	18.0	2.4	17.9	28.0	39.6	74.0	76.7	76.8

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Filter rate 300 M/Day

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
0.0	18.0	4.4	1.7	10.3	15.5	17.8	20.1	22.1	21.4
0.5	15.0	3.2	1.7	10.7	15.9	18.4	21.3	23.7	22.9
1.0	13.5	3.5	1.7	10.8	16.0	18.5	22.0	24.5	23.7
1.5	16.0	4.5	1.7	11.1	16.5	19.0	23.2	26.5	25.5
2.0	14.8	3.2	1.7	11.5	16.9	19.8	24.7	28.1	27.3
2.5	10.0	3.0	1.7	11.1	16.3	19.4	24.8	28.2	27.4
3.0	12.3	3.1	1.7	11.5	16.9	20.1	26.8	30.6	29.8
3.5	8.8	3.0	1.7	11.4	16.7	20.0	27.4	31.7	30.6
4.0	16.0	3.5	1.7	11.6	17.3	20.7	29.3	33.5	32.9
4.5	12.3	3.6	1.5	11.9	17.8	21.5	31.5	35.9	35.0
5.0	12.0	4.8	1.5	11.9	17.9	21.9	32.6	36.8	36.3
5.5	14.8	5.5	1.5	12.0	18.3	22.6	34.0	38.2	37.3
6.0	16.5	5.8	1.4	11.9	18.2	22.8	35.1	39.7	38.9
6.5	16.0	6.0	1.3	12.0	18.5	23.6	36.9	41.6	40.9
7.0	12.6	5.6	1.3	11.8	18.1	23.2	37.5	42.0	40.5
7.5	15.5	4.4	1.3	12.5	19.4	25.3	40.6	45.3	44.5
8.0	13.5	4.0	1.2	12.5	19.6	25.6	41.8	46.5	45.8
8.5	13.0	2.9	1.2	12.2	19.2	25.5	42.3	47.0	46.5
9.0	13.0	4.3	1.2	12.2	19.3	26.0	43.4	47.0	47.0
9.5	13.0	3.1	1.1	12.3	19.5	26.3	43.9	47.8	47.5
10.0	7.3	3.4	1.1	12.5	19.7	26.8	45.0	49.7	49.0
10.5	6.3	4.2	1.2	13.0	20.5	28.1	47.5	51.5	51.1
11.0	10.0	3.5	1.2	12.8	20.5	28.1	48.0	52.0	51.5
11.5	9.3	2.5	1.2	12.5	20.0	27.7	48.0	52.0	51.7

Filter rate 300 M/Day (continued)

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
12.0	8.7	3.7	1.2	13.0	20.9	29.4	51.5	55.5	55.0
12.5	9.8	4.3	1.2	12.8	20.5	29.2	51.5	55.5	55.0
13.0	9.8	2.5	1.2	13.1	21.2	30.5	52.1	56.0	55.5
13.5	7.2	4.0	1.2	14.2	23.2	33.5	57.5	61.0	60.5
14.0	9.8	2.8	1.2	14.0	22.9	33.3	57.3	60.5	60.5
14.5	7.4	2.3	1.0	14.0	23.1	34.2	60.3	62.5	62.5
15.0	6.5	2.1	1.0	13.6	22.7	33.9	61.0	63.7	63.7
15.5	7.7	2.8	1.0	14.2	23.8	36.1	65.6	69.0	69.0
16.0	5.3	2.3	1.0	14.5	24.7	37.9	69.5	73.0	73.0
16.5	6.0	2.3	1.0	14.5	24.9	38.3	70.7	73.0	73.0
17.0	6.0	3.4	1.0	14.9	25.7	40.0	74.3	75.5	76.5
17.5	8.5	2.6	1.0	15.2	26.4	41.6	77.0	80.5	80.5
18.0	10.0	4.6	1.0	15.5	27.3	43.0	80.1	82.0	82.0
18.5	8.6	3.8	1.1	15.5	27.1	43.5	81.7	82.5	82.5
19.0	13.0	6.0	1.1	15.5	27.2	43.5	81.5	82.0	82.0
19.5	12.8	9.4	1.1	15.9	27.9	44.7	84.0	84.9	85.0

จุฬาลงกรณ์มหาวิทยาลัย

Filter rate 400 M/Day

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
0.00	13.0	4.1	1.7	12.6	18.9	22.1	25.4	27.7	27.8
0.25	12.5	4.1	1.7	12.9	19.3	22.6	26.2	28.7	28.9
0.50	12.5	4.0	1.7	13.1	19.8	23.0	27.0	29.7	29.9
0.75	12.5	4.1	1.6	13.3	19.9	23.1	27.7	30.4	30.5
1.00	12.5	4.1	1.6	13.7	20.6	24.2	29.1	32.4	32.5
1.25	15.0	6.0	1.4	13.7	20.6	24.2	29.7	33.1	33.1
1.50	15.0	5.8	1.4	13.3	19.9	23.4	29.5	33.0	33.0
1.75	16.0	5.0	1.5	13.4	20.1	23.6	30.0	33.8	33.8
2.00	14.0	4.1	1.4	13.9	21.0	24.9	32.0	36.4	36.4
2.25	15.0	3.8	1.4	14.0	21.3	25.3	32.9	37.1	37.1
2.50	14.3	4.4	1.4	14.0	21.4	25.6	33.8	38.0	38.0
2.75	15.0	5.8	1.4	14.1	21.5	25.9	36.8	39.1	39.1
3.00	13.0	6.1	1.4	14.2	21.7	26.2	36.1	40.4	40.4
3.25	12.0	6.1	1.4	14.2	21.7	26.3	36.8	40.4	40.4
3.50	12.5	7.0	1.4	14.3	21.9	26.9	38.1	41.9	41.9
3.75	12.0	7.1	1.4	14.4	22.1	26.9	39.0	42.4	42.4
4.00	12.5	7.0	1.4	14.6	22.3	27.6	40.2	43.4	43.4
4.25	11.0	5.1	1.4	14.6	22.6	28.2	41.4	43.9	44.1
4.50	11.2	6.6	1.4	14.7	22.7	28.4	41.7	44.9	44.9
4.75	12.0	5.2	1.4	14.7	22.8	28.5	42.8	45.6	45.6
5.00	10.0	5.1	1.4	14.7	22.8	28.8	43.4	46.7	46.7
5.25	10.5	6.0	1.4	14.7	22.8	28.7	43.9	46.9	46.9
5.50	12.0	5.5	1.4	14.7	22.8	29.1	44.6	47.4	47.4
5.75	12.4	6.0	1.4	15.9	25.0	31.9	47.9	49.9	50.1

Filter rate 400 M/Day (continued)

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
6.00	12.0	7.0	1.4	15.9	25.2	32.4	47.6	49.9	49.9
6.25	10.0	7.0	1.4	16.2	25.6	33.1	47.9	50.6	50.6
6.50	10.5	6.5	1.4	16.4	26.1	34.1	48.9	51.9	51.9
6.75	19.4	6.5	1.4	16.4	26.1	34.1	48.9	51.9	51.9
7.00	12.0	6.5	1.4	17.0	27.3	35.8	51.4	54.4	54.4
7.25	12.6	6.0	1.4	17.1	27.3	35.7	50.9	53.4	53.4
7.50	13.0	5.2	1.4	16.9	27.2	35.9	50.9	53.9	53.9
7.75	12.4	5.4	1.6	17.4	28.2	37.4	51.9	55.4	55.4
8.00	12.0	6.0	1.7	17.2	27.8	37.4	51.4	53.4	53.6
8.25	11.8	6.1	1.7	18.4	35.1	40.4	55.1	57.4	57.9
8.50	10.0	6.6	1.7	18.0	29.5	39.2	51.4	54.9	55.4
8.75	9.4	6.5	1.6	18.0	29.8	40.0	53.0	55.9	55.9
9.00	9.6	7.2	1.6	18.2	30.4	41.8	54.6	58.4	58.6
9.25	10.0	6.8	1.7	18.2	30.4	42.0	55.2	58.9	58.9
9.50	10.0	6.6	1.7	18.3	30.9	43.4	56.9	60.4	60.6
9.75	10.4	6.5	1.7	18.4	31.2	44.2	58.2	61.9	62.0
10.00	10.0	6.4	1.7	18.4	31.4	44.6	59.2	62.4	62.9
10.25	11.0	6.4	1.7	18.5	31.8	45.4	60.4	63.9	64.0
10.50	10.5	6.4	1.7	18.6	32.4	46.4	61.4	65.4	65.4
10.75	11.0	6.4	1.7	18.9	32.9	47.6	62.7	66.4	66.7
11.00	11.6	6.4	1.7	18.9	32.9	47.7	62.8	66.6	66.8
11.25	12.0	6.5	1.7	19.0	33.6	48.9	63.6	66.8	67.4
11.50	11.0	6.8	1.7	19.2	34.4	50.2	65.2	68.9	69.2
11.75	12.0	7.5	1.6	19.5	34.7	50.5	65.2	68.9	69.1

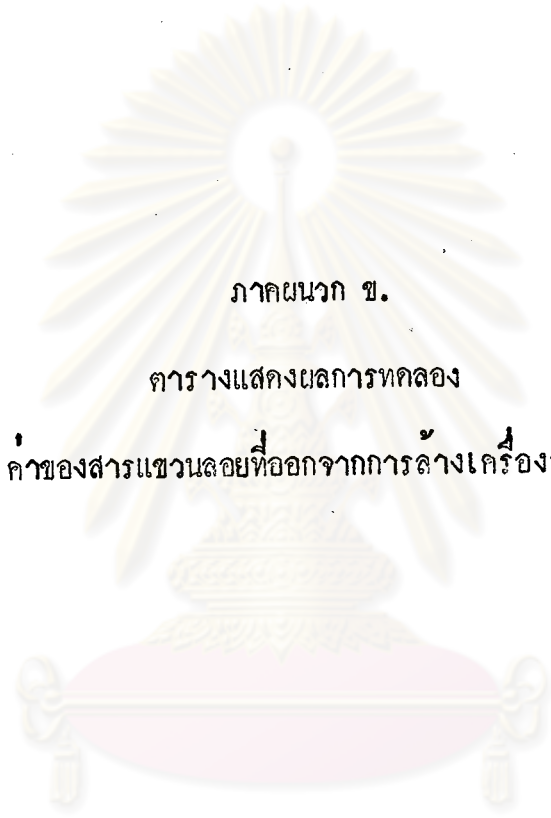
Filter rate 400 M/Day (continued)

Time (hr.)	Turbidity in filter influent holding tank (JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
12.00	13.0	8.0	1.6	19.7	35.4	51.8	65.6	69.4	69.4
12.25	12.0	8.2	1.6	19.9	37.3	53.9	67.9	71.4	71.4
12.50	11.0	9.5	1.6	20.4	37.7	55.4	70.5	73.5	73.5
12.75	9.8	6.8	1.6	20.7	38.0	56.5	71.4	74.4	75.4
13.00	10.0	12.0	1.6	20.5	37.9	56.9	72.1	76.4	76.4

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Filter rate 500 M/Day

Time (hr.)	Turbidity in filter influent holding tank(JTU)	Turbidity in filtrate water (JTU)	Head loss from sand surface (cm.)						
			0	30	50	60	70	80	90
0.0	13.0	4.2	0.7	16.1	25.8	30.5	35.8	38.2	38.4
0.25	10.5	4.0	0.7	16.2	25.8	30.5	35.8	38.3	38.5
0.50	10.1	3.6	0.6	16.1	25.7	30.4	36.0	38.7	39.0
0.75	12.0	3.5	0.6	16.0	25.7	30.4	36.1	39.5	39.7
1.00	15.0	4.5	0.6	16.0	25.7	30.4	36.5	40.2	40.4
1.25	12.8	4.2	0.6	16.8	27.1	32.5	36.6	42.5	42.6
1.50	9.8	4.8	0.6	16.7	27.1	32.1	39.5	43.8	44.0
1.75	9.6	6.0	0.6	16.7	27.1	32.6	40.3	45.0	45.0
2.00	12.2	4.1	0.6	16.5	26.8	32.2	40.7	45.0	45.1
2.25	8.0	4.1	0.6	16.5	26.8	32.4	41.2	45.5	35.5
2.50	8.2	4.1	0.6	16.4	26.8	32.5	41.9	46.8	46.3
2.75	7.8	3.8	0.6	17.1	28.0	34.4	44.8	48.5	48.5
3.00	7.8	4.3	0.6	17.0	28.0	34.4	45.5	49.0	49.3
3.25	9.4	5.0	0.6	17.0	28.0	34.5	46.3	50.3	50.6
3.50	8.0	4.0	0.6	17.1	28.3	35.5	48.0	52.4	52.5
3.75	10.0	4.0	0.6	17.4	29.0	36.4	48.6	52.9	53.0
4.00	8.5	7.8	0.6	17.4	29.0	36.9	49.6	53.5	53.6
4.25	8.0	8.5	0.6	17.5	29.4	37.6	51.0	55.2	55.3
4.50	8.0	11.5	0.6	17.5	29.8	38.5	52.0	56.2	56.3



ภาคผนวก ข.
ตารางแสดงผลการทดลอง
ค่าของสารแขวนลอยที่ออกจากการล้างเครื่องกรอง

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Backwash water at filter rate 100 M/Day

Backwash rate (m/mm.)	Time after backwash (min.)	Suspended Solids (ppm.)
0.44	1	1600
	2	1860
	3	1040
	4	460
	4½	1820
	5	720
	5½	420
1.05	6	80
	6½	240
	7	110
	8	38
	9½	10.7

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Backwash at filter rate 150 M/Day

Backwash rate (m/min.)	Time after backwash (min.)	Suspended Solids (ppm.)
0.44	1	30.0
	1½	5080
	2	2880
	2½	1440
	3	640
	3½	200
	4	105
	4½	64
	5	72
	6	13
1.05	7	38
	8	340
	10	27
	12	17

Backwash water at filter rate 200 M/Day

Backwash rate (m/min.)	Time after backwash (min)	Suspended Solids (ppm.)
0.44	1	15.0
	1½	370
	2	740
	2½	380
	3	240
1.05	3½	165
	4	480
	4½	920
	5	840
	5½	410
	6	90
	7	32

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Backwash water at filter rate 250 M/Day

Backwash rate (m/mm.)	Time after backwash (min.)	Suspended Solids (ppm.)
0.44	1	750
	2	1050
	3	1220
	$3\frac{1}{2}$	1150
1.05	4	100
	$4\frac{1}{2}$	210
	5	28
	6	5

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Backwash water at filter rate 300M/Day

Backwash rate (m/min.)	Time after backwash (min.)	Suspended Solids (ppm.)
0.44	1	410
	2	800
	2½	920
	3	1000
	3½	1100
	4	1240
	4½	560
	5	240
1.05	5½	110
	6	430
	6½	150
	8½	27.5

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Backwash water at filter rate 400 M/Day

Backwash rate (m/min.)	Time after backwash (min.)	Suspended Solids (ppm.)
0.44	2	1740
	2½	1100
	3	720
	3½	290
1.05	4	135
	4½	500
	5	180
	5½	53.3
	7	10

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

Backwash at filter rate 500 M/Day

Backwash rate (m/mm.)	Time after backwash (min.)	Suspended Solids (ppm.)
0.44	1	48.0
	1½	240.0
	2	420
	2½	450
	3	420
1.05	3½	300
	4	170
	4½	72.0
	5	-
	6	16.0

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

ประวัติผู้วิจัย



ผู้ดำเนินการวิจัย นายภิญโญ ธรรมศิริ เกิดวันที่ 8 เมษายน 2495 ที่
จังหวัดสกลนคร ประเทศไทย ได้รับปริญญาตรีวิศวกรรมศาสตรบัณฑิต สาขาวิศวกรรม
สุขาภิบาล จากคณะวิศวกรรมศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย ในปีการศึกษา 2517

ปัจจุบัน ผู้ดำเนินการวิจัยรับราชการในตำแหน่งนักวิชาการสิ่งแวดล้อม กอง
สิ่งแวดล้อมโรงงาน กรมโรงงานอุตสาหกรรม กระทรวงอุตสาหกรรม.

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย