

APPENDIXES

APPENDIX A

Comparison between simulation and real experiment on amount of fresh water received for a whole day

Time	H 60%, S 2%		H 80%, S 5%		H 100%, S 3%	
	Sim.	Exp.	Sim.	Exp.	Sim.	Exp.
10:00	73.5	50	151.4	93		
10:30	400.9	307	311.9	267	56.4	18
11:00	411.6	359	345.1	307	264.6	210
11:30	420.1	386	352.7	317	273.8	264
12:00	423.5	400	359.0	338	276.9	269
12:30	422.2	414	360.3	356	283.9	315
13:00	418.7	424	358.4	366	283.1	295
13:30	412.6	439	354.3	359	280.5	281
14:00	402.5	421	349.0	343	274.8	280
14:30	389.0	405	337.5	318	253.1	234
15:00	359.9	373	319.0	302	241.3	187
15:30	276.8	294	258.7	249	185.2	197
16:00	95.1	181	126.8	136	79.7	144

Time	H 60%, S 3.5%		H 80%, S 3.5%		H 100%, S 3.5%	
	Sim.	Exp.	Sim.	Exp.	Sim.	Exp.
10:00					128.7	73
10:30	255.2	169			240.7	172
11:00	374.2	284	356.5	228	250.1	231
11:30	382.0	346	366.0	308	254.8	275
12:00	387.4	374	368.3	325	199.5	188
12:30	390.3	392	375.2	347	227.0	175
13:00	389.9	401	367.9	351	252.4	254
13:30	386.9	413	367.4	356	245.6	234
14:00	376.7	405	129.7	321	237.0	231
14:30	361.7	383	226.7	216	230.6	229
15:00	343.3	349	318.54	256	219.4	204
15:30	278.5	272	235.15	257	171.2	174
16:00	133.4	209	77.55	131	100.9	119

Time	H:60%, S:4%	
	Sim.	Exp.
10:00		
10:30	238.2	155
11:00	348.2	292
11:30	355.0	328
12:00	359.6	344
12:30	362.0	356
13:00	361.7	365
13:30	359.1	369
14:00	350.4	363
14:30	337.6	356
15:00	321.8	237
15:30	266.4	272
16:00	134.8	184

APPENDIX B

Comparison between simulation and real experiment on amount of fresh water
received in minutes

Time	H: 60%, S: 3%		
	Sim.(ml)	Exp.(ml)	T _{out} (°C)
11:00	13.7	12.0	100.4
11:30	14.0	12.9	101.5
12:00	14.1	13.3	102.2
12:30	14.1	13.8	102.6
13:00	14.0	14.1	103.0
13:30	13.8	14.6	103.1
14:00	13.4	14.0	102.5
14:30	13.0	13.5	101.8

Time	H: 80%, S: 3%		
	Sim.(ml)	Exp.(ml)	T _{out} (°C)
11:00	11.5	10.2	100.20
11:30	11.8	10.6	100.90
12:00	12.0	11.3	101.70
12:30	12.0	11.9	102.20
13:00	11.9	12.2	102.90
13:30	11.8	11.4	102.50
14:00	11.6	12.0	101.95
14:30	11.3	10.6	101.60

Time	H: 100%, S: 3%		
	Sim.(ml)	Exp.(ml)	T _{out} (°C)
11:00	8.8	7.0	101.4
11:30	9.1	8.8	102.4
12:00	9.2	9.0	102.8
12:30	9.5	10.5	103.5
13:00	9.4	9.8	102.6
13:30	9.4	9.4	102.4
14:00	9.2	9.3	102.0
14:30	8.4	7.8	100.3

Time	H:60%, S:3.5%		
	Sim.(ml)	Exp.(ml)	T _{out} (°C)
11:00	12.5	9.5	99.7
11:30	12.7	11.5	101.3
12:00	12.9	12.5	102.3
12:30	13.0	13.1	102.8
13:00	13.0	13.4	103.2
13:30	12.9	13.8	103.4
14:00	12.6	13.5	103.3
14:30	12.1	12.8	102.9

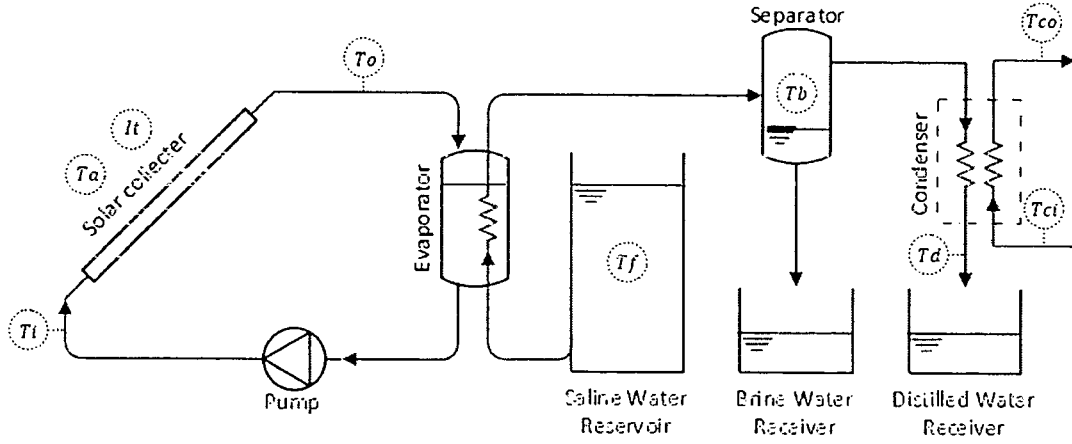
Time	H:50%, S:3.5%		
	Sim.(ml)	Exp.(ml)	T _{out} (°C)
11:00	11.9	7.6	98.4
11:30	12.2	10.3	100.60
12:00	12.3	10.8	101.44
12:30	12.5	11.6	101.90
13:00	12.3	11.7	102.50
13:30	12.2	11.9	102.80
14:00	4.3	10.7	101.40
14:30	7.6	7.2	99.90

Time	H:100%, S:3.5%		
	Sim.(ml)	Exp.(ml)	T _{out} (°C)
11:00	8.3	7.7	100.5
11:30	8.5	9.2	102.2
12:00	6.6	6.3	101.6
12:30	7.6	5.8	100.7
13:00	8.4	8.5	103.1
13:30	8.2	7.8	102.6
14:00	7.9	7.7	101.5
14:30	7.7	7.6	101.5

Time	H:60%, S:4%		
	Sim.(ml)	Exp.(ml)	T _{out} (°C)
11:00	11.6	9.7	100.2
11:30	11.8	10.9	101.4
12:00	12.0	11.5	102.2
12:30	12.1	11.9	102.7
13:00	12.1	12.2	103.0
13:30	12.0	12.3	103.1
14:00	11.7	12.1	102.9
14:30	11.3	11.9	102.4

Temperatures and solar radiation recording data

All experimental data of temperatures and solar radiation were computably recorded at the positions as shown in the diagram below.



- where, T_i : Inlet temperature of the solar working fluid.
 T_o : Out temperature of the solar working fluid.
 T_f : Temperature of the fed solution in the reservoir.
 T_b : Temperature of the boiling solution leaving the evaporator.
 T_d : Temperature of the distilled water after condensed.
 T_{ci} : Inlet temperature of the cooling water entering the condenser.
 T_{co} : Outlet temperature of the cooling water leaving the condenser.
 T_a : Ambient temperature.
 I_t : Solar radiation.

Date: 28.11.2014

Initial salinity: 3‰

Reservoir level: 162 mm (Relatively 60%)

Time	Ti	To	Tf	Tb	Td	Tci	Tco	Ta	It
9:40					Start				
9:50	66.7	95.4	21.1	36.1	30.5	17.0	17.0	23.3	788
10:00	81.3	98.0	22.7	42.0	32.2	17.4	17.5	23.3	812
10:10	90.4	98.0	23.3	36.1	32.0	18.2	18.1	24.0	835
10:20	89.7	98.7	24.4	41.8	32.6	18.9	18.8	23.4	861
10:30	89.5	99.0	25.0	42.6	32.1	19.4	19.2	23.3	879
10:40	90.2	100.0	29.8	43.7	32.2	19.6	19.5	24.6	900
10:50	90.6	100.3	31.3	44.2	32.5	20.7	20.4	24.7	916
11:00	91.2	101.0	31.9	44.5	33.0	21.0	20.8	26.1	934
11:10	91.3	101.3	32.7	44.6	33.2	21.3	21.2	25.6	943
11:20	91.5	101.7	33.6	45.3	34.3	22.2	22.0	25.9	951
11:30	92.6	101.6	34.8	45.5	35.3	22.5	22.3	26.4	961
11:40	92.3	101.9	35.1	45.5	34.8	23.1	22.8	26.5	965
11:50	92.2	102.1	35.4	45.4	35.0	23.7	23.2	25.8	974
12:00	92.4	102.6	34.3	45.2	34.5	22.5	22.3	26.5	965
12:10	92.6	103.0	36.1	45.7	34.3	24.0	23.7	26.3	965
12:20	91.7	102.2	36.9	45.1	33.0	24.6	24.1	26.8	952
12:30	91.7	102.5	37.3	45.3	33.0	24.7	24.2	26.1	951
12:40	91.7	102.6	38.0	45.2	33.2	25.2	24.6	25.1	938
12:50	92.7	102.8	38.7	45.3	33.8	25.0	24.6	27.1	936
13:00	94.5	103.5	39.8	46.4	34.5	25.7	25.3	26.6	916
13:10	94.4	103.1	40.8	45.8	35.1	25.8	25.4	26.6	907
13:20	94.7	103.3	41.3	46.0	36.0	26.6	26.0	26.2	880
13:30	95.0	102.8	41.9	46.0	36.5	26.8	26.2	26.8	862
13:40	93.4	102.0	31.4	45.8	37.1	27.1	26.6	26.3	839
13:50	90.3	102.8	30.9	44.7	36.9	26.6	26.2	27.3	817
14:00	90.0	102.7	30.8	44.7	37.6	27.4	26.9	28.5	782
14:10	90.8	102.3	31.3	44.8	38.0	26.4	26.1	28.4	743
14:20	89.8	101.5	30.8	44.6	37.6	27.1	26.6	28.0	726
14:30	90.8	101.7	31.1	44.6	38.4	26.6	26.1	28.2	690
14:40	91.3	101.5	31.7	45.2	38.3	26.7	26.2	28.8	655
14:50	90.2	100.7	31.1	44.5	37.5	26.8	26.4	27.8	631
15:00	90.8	101.1	31.8	45.1	37.7	27.4	26.8	27.7	595
15:10	89.0	100.6	30.7	44.0	37.2	27.4	26.6	27.8	555
15:20	89.7	99.4	31.1	44.3	37.5	27.0	26.4	28.4	521
15:30	89.6	100.1	31.6	44.2	37.7	27.4	26.8	26.7	487
15:40	88.6	99.1	31.1	43.5	37.5	27.6	26.8	26.9	447
15:50	89.9	98.0	31.8	43.4	38.1	27.1	26.6	27.9	406
16:00	89.8	97.6	32.0	42.7	37.2	27.2	26.7	26.5	359

Date: 1.12.2014

Initial salinity: 3.5‰

Reservoir level: 162 mm (Relatively 60%)

Time	Ti	To	Tf	Tb	Td	Tci	Tco	Ta	Ir
9:50					Start				
10:00	58.7	87.9	25.1	31.3	27.9	15.4	15.2	20.7	817.4
10:10	75.0	93.5	26.4	34.0	29.7	17.4	17.0	23.7	839.0
10:20	88.2	99.1	25.9	45.8	30.0	18.5	18.0	23.1	858.8
10:30	92.3	99.3	25.4	94.1	29.6	19.5	18.8	24.2	875.0
10:40	92.9	100.2	24.3	94.7	28.5	20.6	19.9	24.3	896.6
10:50	93.3	99.7	24.1	95.0	28.8	21.7	20.9	24.2	911.0
11:00	92.7	101.1	23.6	94.6	28.8	23.1	22.1	24.6	923.6
11:10	94.5	101.2	25.3	95.8	30.0	23.0	22.1	25.6	938.0
11:20	95.4	101.6	27.0	96.5	31.0	23.3	22.4	25.6	947.0
11:30	92.8	101.8	25.4	94.8	30.5	25.6	24.6	25.4	948.8
11:40	91.6	102.4	24.7	94.0	29.7	25.5	24.5	25.9	965.0
11:50	92.8	102.7	25.2	94.3	29.9	25.3	24.4	26.1	965.0
12:00	93.8	102.9	26.6	94.9	30.3	25.7	24.9	27.8	965.0
12:10	94.3	102.5	27.0	95.0	30.7	26.2	25.4	27.7	965.0
12:20	95.4	102.8	29.2	95.6	31.6	26.7	25.7	28.0	965.0
12:30	94.6	103.2	28.5	95.2	31.1	27.4	26.4	29.0	965.0
12:40	94.0	103.4	27.3	94.5	30.5	27.9	27.0	28.3	961.4
12:50	94.4	103.2	27.7	94.8	30.9	28.2	27.3	28.5	957.8
13:00	94.5	103.3	28.2	94.9	31.2	28.5	27.5	28.7	948.4
13:10	94.5	103.4	28.2	95.1	31.9	28.7	27.7	29.1	944.0
13:20	96.3	103.5	30.1	95.9	33.7	28.4	27.4	29.8	930.2
13:30	95.4	103.4	29.0	95.4	33.8	29.3	28.3	28.6	920.8
13:40	96.0	103.2	30.0	95.5	35.3	29.1	28.2	30.0	885.8
13:50	96.6	103.2	31.2	96.5	35.9	28.8	27.9	29.9	855.2
14:00	94.8	103.1	30.0	95.6	35.3	29.6	28.6	29.4	833.6
14:10	95.9	103.0	28.8	95.1	34.6	30.1	29.1	29.0	810.2
14:20	93.4	102.7	28.9	95.0	35.3	30.1	29.1	29.2	776.8
14:30	92.4	102.7	29.5	94.6	34.8	30.0	29.1	29.6	753.4
14:40	93.3	102.3	28.4	95.0	34.6	29.2	28.4	28.7	717.4
14:50	92.5	101.7	29.2	94.8	34.6	29.8	28.9	28.2	672.4
15:00	93.2	102.3	29.6	94.7	35.6	28.6	27.9	28.9	641.8
15:10	95.6	101.3	31.2	96.4	36.9	28.2	27.5	29.0	614.8
15:20	95.5	100.7	32.2	96.8	36.9	28.2	27.5	28.7	569.8
15:30	95.2	100.6	31.4	96.7	37.7	28.2	27.6	29.1	533.8
15:40	94.5	99.8	32.0	96.6	37.0	28.6	27.8	28.3	496.0
15:50	94.2	98.3	32.3	96.4	37.4	27.9	27.3	27.7	452.8

Date: 2.12.2014

Initial salinity: 4‰

Reservoir level: 162 mm (Relatively 60%)

Time	Ti	To	Tf	Tb	Td	Tci	Tco	Ta	Ir
9:55					Start				
10:00	59.1	66.3	24.0	32.4	30.1	14.5	14.4	21.5	796.3
10:10	73.9	87.9	22.9	33.4	29.9	16.9	16.7	23.6	815.6
10:20	88.3	96.6	23.3	34.5	30.3	17.6	17.5	24.1	836.8
10:30	94.3	100.4	24.0	34.2	30.3	18.2	18.1	24.5	860.6
10:40	95.3	99.8	24.7	35.0	28.7	19.3	19.2	24.3	882.2
10:50	95.9	100.3	25.0	35.2	29.6	20.2	19.9	24.9	898.4
11:00	96.6	100.5	26.8	35.3	30.3	20.7	20.5	26.1	917.8
11:10	96.2	101.4	26.1	34.9	30.2	21.7	21.4	25.6	929.0
11:20	96.2	101.3	26.0	35.0	30.4	22.1	21.7	27.9	943.4
11:30	96.4	101.5	26.0	35.1	30.8	22.7	22.4	27.2	954.2
11:40	96.6	101.9	27.2	35.1	31.3	23.1	22.9	26.8	965.0
11:50	96.8	102.2	27.9	35.5	31.8	23.9	23.5	25.6	965.0
12:00	95.8	102.4	26.8	35.0	30.9	24.5	23.9	26.5	607.6
12:10	96.4	102.8	27.8	35.3	30.4	24.7	24.3	26.5	622.0
12:20	95.7	102.3	29.2	34.7	30.7	24.9	24.4	26.0	636.4
12:30	95.9	103.1	27.3	34.4	30.0	24.9	24.5	27.3	658.0
12:40	95.9	102.9	28.5	34.8	30.7	25.5	25.0	26.0	676.0
12:50	96.2	103.0	29.0	35.2	31.0	25.5	25.1	27.2	694.0
13:00	96.3	103.1	30.0	35.2	31.7	26.1	25.6	26.0	712.0
13:10	96.3	103.0	29.2	35.0	31.9	26.0	25.7	27.8	712.0
13:20	97.0	103.3	29.9	35.4	32.2	26.5	26.2	28.5	740.8
13:30	96.5	103.2	30.3	35.2	33.3	26.6	26.0	27.3	753.4
13:40	96.3	103.3	29.6	34.8	33.6	26.5	26.1	28.1	746.2
13:50	96.5	102.9	30.8	34.9	34.1	26.7	26.4	29.9	759.3
14:00	96.4	102.6	31.1	35.0	34.3	27.1	26.8	29.5	773.2
14:10	96.2	102.5	31.9	35.0	35.3	27.1	26.6	27.7	782.2
14:20	95.5	102.2	31.1	34.6	34.9	27.1	26.6	28.4	766.0
14:30	95.7	102.4	31.3	34.5	34.1	27.3	27.0	28.9	769.0
14:40	95.7	102.1	29.9	34.3	34.3	27.3	26.9	28.7	745.9
14:50	95.3	101.7	30.4	34.1	34.1	27.1	26.8	29.1	710.2
15:00	94.8	101.5	30.2	34.0	34.0	27.3	26.9	28.3	665.7
15:10	95.0	100.4	29.3	34.0	33.7	27.3	27.1	28.5	635.4
15:20	94.7	100.8	29.5	33.9	33.9	27.5	27.2	28.3	608.7
15:30	93.5	99.1	29.2	33.3	33.1	28.0	27.6	28.3	564.1
15:40	93.2	99.3	28.1	32.8	32.7	27.8	27.5	29.0	528.5
15:50	91.8	97.7	27.2	31.2	31.3	27.9	27.7	29.1	491.0
16:00	92.8	97.2	27.2	30.7	31.7	27.9	27.6	28.2	448.3

Date: 22.11.2014

Initial salinity: 3‰

Reservoir level: 216 mm (Relatively 80%)

Time	Ti	To	Tf	Tb	Td	Tci	Tco	Ta	It
8:40	27.2	93.2	21.4	28.4	27.7	16.5	16.4	20.0	476.2
8:50	39.3	96.3	21.8	30.9	29.9	18.9	18.7	23.0	514.0
9:00	53.3	98.6	22.2	32.5	29.9	19.8	19.6	23.5	539.2
9:10	65.6	99.1	21.9	34.3	30.8	20.5	20.2	23.3	586.0
9:20	76.9	99.4	21.9	36.2	30.7	21.2	20.9	23.2	613.0
9:30	88.4	99.5	22.7	42.1	32.7	21.1	21.0	24.8	643.6
9:40	89.9	99.9	22.8	91.7	31.5	21.8	21.4	25.1	676.0
9:50	91.1	100.4	24.3	93.6	31.7	21.6	21.3	25.1	712.0
10:00	91.1	100.3	24.9	94.3	30.9	22.8	22.3	25.5	728.2
10:10	90.3	100.4	24.3	94.0	30.7	23.7	23.1	26.3	771.4
10:20	90.3	101.6	24.5	93.9	31.3	24.4	23.7	26.4	788.0
10:30	90.2	100.7	25.5	93.8	31.4	24.5	23.9	27.4	828.2
10:40	90.9	101.7	26.7	94.4	31.8	25.0	24.4	26.9	835.4
10:50	91.4	101.5	26.9	94.3	31.9	25.5	24.9	26.8	860.6
11:00	91.3	101.8	27.1	94.3	32.2	26.1	25.4	27.2	871.8
11:10	91.8	101.9	28.0	94.7	32.7	25.8	25.2	28.7	875.0
11:20	93.5	102.2	29.9	96.1	34.2	25.5	24.9	27.6	909.2
11:30	92.1	102.4	28.4	94.6	35.2	26.5	25.8	28.9	936.2
11:40	93.2	102.7	29.4	95.3	35.8	26.2	25.5	29.3	920.0
11:50	91.1	103.0	28.0	94.1	32.5	27.3	26.3	28.9	938.0
12:00	91.6	103.1	28.4	94.0	32.0	27.3	26.5	30.6	953.0
12:10	92.6	102.9	29.9	94.9	32.8	27.5	26.8	29.3	939.8
12:20	92.5	102.6	30.0	94.9	32.3	28.0	27.2	29.2	947.0
12:30	92.5	102.0	30.3	95.0	32.6	28.0	27.2	29.1	933.0
12:40	93.9	101.9	32.0	96.1	33.6	27.2	26.6	29.4	921.8
12:50	94.7	102.0	34.0	97.3	34.5	26.9	26.3	28.8	923.6
13:00	94.9	101.9	33.7	96.8	34.9	26.8	26.3	29.5	925.4
13:10	94.4	101.8	33.8	96.7	34.9	27.5	26.9	29.0	900.2
13:20	94.8	101.7	34.6	97.1	36.1	27.2	26.6	29.2	880.4
13:30	92.5	101.2	32.9	95.6	35.6	28.6	27.9	30.2	873.2
13:40	93.0	100.5	34.0	96.0	36.3	28.3	27.6	29.7	864.2
13:50	93.1	100.4	34.8	96.5	36.9	27.8	27.2	29.9	840.8
14:00	93.2	100.6	35.0	96.6	37.3	28.2	27.5	28.6	819.2
14:10	92.7	100.1	34.5	96.1	36.7	28.3	27.7	29.3	782.4
14:20	94.1	99.3	36.2	97.4	37.9	27.6	27.1	29.5	753.4
14:30	92.8	98.6	35.1	96.4	36.8	28.1	27.5	29.3	706.6
14:40	92.8	98.4	35.0	96.2	37.2	28.2	27.6	30.1	692.2
14:50	92.3	97.2	35.2	96.1	36.9	28.3	27.7	30.0	647.2
15:00	92.7	96.7	35.6	96.3	37.2	28.0	27.4	29.1	616.6
15:10	92.0	100.8	34.6	95.4	36.4	28.4	27.9	30.3	582.4
15:20	91.4	99.9	34.3	95.0	35.6	28.7	28.1	29.8	519.4

Time	Ti	To	Tf	Tb	Td	Tci	Tco	Ta	It
15:30	91.2	99.3	34.3	94.6	35.3	28.7	28.1	29.3	465.4
15:40	91.2	99.4	34.5	94.6	35.5	28.4	27.9	29.4	450.0
15:50	91.0	98.2	34.3	93.7	35.0	28.5	27.9	28.7	428.5
16:00	90.7	97.4	33.9	92.8	35.1	28.1	27.6	27.6	394.0

Date: 31.10.2014

Initial salinity: 3.5%

Reservoir level: 216 mm (Relatively 80%)

Time	Ti	To	Tf	Tb	Td	Tci	Tco	Ta	It
9:30					Start				
9:40	33.5	36.3	24.6	32.8	29.1	22.4	22.3	26.0	588
9:50	47.6	52.2	26.5	35.8	31.7	23.4	23.2	26.8	473
10:00	61.6	65.6	26.2	36.6	33.1	24.0	23.9	28.7	790
10:10	76.4	79.8	25.1	38.4	34.1	24.7	24.6	30.3	830
10:20	89.8	91.9	24.3	41.1	34.5	25.5	25.4	31.8	819
10:30	95.4	93.5	25.6	90.0	33.6	26.7	26.6	31.4	864
10:40	93.8	95.0	25.8	92.6	34.4	27.6	27.6	32.6	880
10:50	94.6	99.3	26.9	93.5	32.8	28.8	28.8	34.8	895
11:00	96.1	100.9	27.4	94.5	32.8	29.7	29.7	34.9	916
11:10	97.1	101.7	28.0	94.9	32.3	30.4	30.4	35.7	925
11:20	97.9	101.9	29.2	95.4	32.8	31.6	31.4	35.3	898
11:30	96.0	101.2	28.1	94.1	31.2	31.7	31.0	32.9	869
11:40	96.7	101.5	29.4	95.0	32.9	30.2	29.6	34.4	920
11:50	96.7	101.3	29.9	95.2	33.0	31.2	30.7	33.1	954
12:00	96.7	101.5	29.9	94.9	32.8	31.3	30.6	33.7	978
12:10	95.7	101.6	29.2	94.0	32.3	32.3	31.5	33.7	988
12:20	96.0	102.1	29.9	94.1	33.1	32.1	31.5	34.1	970
12:30	95.9	102.1	30.4	94.3	33.0	32.7	31.9	33.4	954
12:40	95.3	102.2	29.8	93.6	32.3	32.7	32.0	33.5	936
12:50	95.8	102.4	30.8	94.4	33.7	32.4	31.8	33.0	934
13:00	95.1	102.7	30.4	93.6	32.8	33.2	32.5	32.9	938
13:10	95.7	102.8	31.1	94.0	34.2	32.9	32.2	34.3	931
13:20	96.3	102.5	31.9	94.5	35.4	32.4	31.8	34.0	933
13:30	98.0	103.0	34.1	96.2	37.4	32.0	31.5	33.3	952
13:40	97.0	102.5	33.1	95.1	35.5	33.2	32.6	32.5	357
13:50	95.0	101.3	33.9	94.8	33.9	33.1	32.6	31.1	285
14:00	94.1	100.4	33.4	87.7	32.6	33.0	32.5	30.8	424

Time	Ti	To	Tf	Tb	Td	Tci	Tco	Ta	It
14:10	93.0	99.8	32.5	92.6	35.0	32.0	31.5	33.1	850
14:20	94.0	99.6	33.1	94.1	35.4	32.0	31.5	32.2	784
14:30	95.0	100.4	33.2	94.5	35.9	31.9	31.3	33.2	737
14:40	95.0	100.9	32.7	94.0	35.6	32.7	31.9	32.6	728
14:50	95.2	101.4	32.7	94.0	36.1	32.5	31.8	32.8	681
15:00	95.9	101.1	33.6	94.7	36.9	32.7	32.0	33.1	649
15:10	95.3	100.6	33.8	94.6	35.5	32.9	32.3	32.1	564
15:20	95.7	100.1	34.4	95.1	36.7	32.7	31.9	32.9	588
15:30	95.5	99.5	34.4	94.9	36.3	32.7	32.0	31.6	510
15:40	95.0	98.3	34.2	94.5	36.1	32.5	31.8	32.0	471
15:50	94.4	96.1	34.3	94.3	34.8	32.6	31.9	30.7	236
16:00	94.0	95.5	34.5	92.8	35.0	32.1	31.6	30.6	357

Date: 14.10.2014

Initial salinity: 3‰

Reservoir level: 270 mm (Relatively 100%)

Time	Ti	To	Tf	Tb	Td	Tci	Tco	Ta	It
9:30					Start				
9:40	60.9	64.0	24.7	35.8	31.2	23.8	23.9	27.6	494
9:50	71.4	73.8	25.1	37.9	33.1	24.6	24.6	27.4	690
10:00	81.8	84.3	25.5	37.4	33.0	25.9	25.8	28.0	776
10:10	92.2	91.4	25.9	38.6	32.2	26.4	26.2	27.5	494
10:20	93.9	94.7	26.2	90.2	33.1	26.4	26.3	29.0	710
10:30	93.7	97.5	26.6	92.4	32.8	26.5	26.4	29.2	339
10:40	96.8	100.7	30.0	95.6	34.9	22.2	22.1	24.9	839
10:50	98.7	101.6	32.1	97.3	36.2	22.9	22.8	24.6	853
11:00	100.2	101.8	33.5	98.1	37.9	22.9	22.9	24.3	873
11:10	100.9	102.0	34.5	98.6	38.8	23.9	23.8	26.9	905
11:20	101.2	102.3	35.4	98.8	38.8	24.2	24.0	26.6	922
11:30	101.3	102.8	36.4	99.0	39.1	24.5	24.6	25.2	870
11:40	101.4	102.7	36.9	98.8	38.0	25.4	25.3	26.9	893
11:50	101.2	102.6	37.4	98.9	39.2	24.4	24.5	25.0	933
12:00	101.6	103.0	37.8	98.8	39.1	24.8	24.9	25.4	940
12:10	101.7	103.4	38.1	98.6	39.0	24.9	25.1	26.3	956
12:20	101.7	103.4	38.2	98.8	39.1	25.6	25.6	27.3	963
12:30	102.1	103.5	38.7	98.8	39.6	25.6	25.7	26.6	949

Time	Ti	To	Tf	Tb	Td	Tci	Tco	Ta	It
12:40	102.0	102.3	39.6	99.0	40.5	25.9	26.0	27.7	933
12:50	101.0	102.5	39.1	98.6	40.1	26.6	26.5	28.0	965
13:00	100.9	102.6	38.9	98.6	41.3	26.1	26.2	27.8	941
13:10	101.3	102.4	39.0	98.5	40.6	26.7	26.8	26.5	922
13:20	101.4	102.3	38.8	98.3	41.7	27.1	27.2	28.2	929
13:30	101.3	102.5	39.0	98.4	40.7	28.0	28.0	29.8	899
13:40	101.5	102.3	39.0	98.4	40.8	28.8	28.8	30.1	875
13:50	101.4	102.0	38.9	98.2	41.6	28.8	28.7	29.7	880
14:00	101.4	101.8	38.5	97.4	40.3	30.0	29.8	29.5	844
14:10	100.5	100.7	37.9	96.4	38.9	30.1	30.3	31.1	777
14:20	99.0	100.2	36.5	95.3	37.9	30.3	30.1	30.4	730
14:30	96.8	100.0	35.0	93.9	36.9	30.7	30.5	30.7	682
14:40	96.3	99.1	34.9	93.5	36.6	29.9	29.7	29.8	669
14:50	95.8	97.8	34.7	93.8	37.3	30.2	30.2	32.2	663
15:00	96.9	97.6	35.8	94.5	38.4	30.6	30.3	32.3	616
15:10	98.6	98.7	38.1	96.6	40.4	30.1	30.0	32.1	598
15:20	98.9	99.0	38.5	96.3	40.0	30.2	30.1	30.9	559
15:30	98.6	99.3	38.4	95.8	39.1	30.2	30.0	30.1	518
15:40	98.3	99.2	38.2	95.5	40.1	29.4	29.5	30.9	474
15:50	97.5	98.6	37.6	94.6	38.4	29.7	29.5	30.6	442
16:00	96.7	97.4	37.1	93.3	34.8	28.9	28.9	30.0	411

Date: 27.10.2014

Initial salinity: 3.5‰

Reservoir level: 270 mm (Relatively 100%)

Time	Ti	To	Tf	Tb	Td	Tci	Tco	Ta	It
9:30					Start				
9:40	81.9	89.0	30.6	44.0	36.2	20.6	20.6	27.0	777
9:50	95.1	95.0	29.5	85.3	36.2	25.9	25.6	31.0	810
10:00	93.8	97.0	28.5	93.8	34.0	27.1	26.6	31.2	828
10:10	92.0	97.8	27.9	93.7	33.9	27.3	26.7	32.2	855
10:20	93.2	98.4	27.1	93.8	33.7	28.4	27.6	31.0	857
10:30	92.4	98.6	26.7	93.0	32.2	29.2	28.5	33.8	882
10:40	92.1	99.9	26.9	92.5	32.4	30.3	29.7	33.5	909
10:50	93.2	100.4	28.0	93.0	33.1	31.6	30.8	36.2	925
11:00	93.8	101.2	29.1	93.4	33.9	32.7	31.9	35.0	941
11:10	95.9	101.7	31.9	95.1	35.6	33.7	32.4	32.9	963
11:20	97.0	102.6	33.5	96.0	36.5	32.5	30.1	31.8	970
11:30	96.4	102.2	33.0	95.9	36.8	31.3	29.7	33.3	960

Time	Ti	To	Tf	Tb	Td	Tci	Tco	Ta	Ir
11:40	97.6	102.1	34.4	96.7	37.4	31.3	30.1	33.3	958
11:50	96.5	101.2	35.0	96.1	35.9	31.8	31.0	32.1	801
12:00	96.9	101.6	35.0	96.3	37.2	31.5	30.6	32.1	1001
12:10	96.8	100.6	34.7	96.2	37.2	31.8	30.9	33.6	972
12:20	97.0	100.2	35.3	97.2	38.1	29.7	28.5	32.0	714
12:30	95.9	101.3	35.3	95.7	35.8	29.7	29.1	33.0	806
12:40	96.2	102.8	35.4	96.5	37.5	28.8	28.0	30.2	969
12:50	96.4	103.1	35.2	96.3	37.5	28.0	27.3	32.7	990
13:00	96.8	103.3	35.5	96.5	38.6	28.9	27.8	30.6	970
13:10	96.3	102.4	35.5	96.1	37.8	28.9	28.1	32.1	922
13:20	96.6	102.7	35.6	95.9	37.6	29.0	28.4	34.3	904
13:30	96.5	102.6	36.2	96.0	38.5	28.8	28.3	30.7	875
13:40	95.7	101.9	36.1	95.8	38.2	29.3	28.5	30.9	832
13:50	95.2	101.1	35.7	95.1	37.6	28.9	28.2	32.8	798
14:00	95.7	101.5	36.5	95.5	37.9	28.9	28.4	30.7	766
14:10	95.9	101.5	36.7	95.7	38.6	28.9	28.2	31.2	796
14:20	95.3	101.3	36.4	95.3	36.2	28.8	28.2	32.1	775
14:30	95.6	101.6	36.6	95.4	38.5	28.6	28.0	31.5	735
14:40	95.5	101.1	36.3	95.4	38.7	28.8	28.1	32.0	689
14:50	95.8	101.4	36.6	95.6	39.2	28.7	28.1	30.7	660
15:00	95.5	100.8	36.4	95.4	38.3	28.9	28.1	32.6	649
15:10	95.6	100.7	36.4	95.3	38.3	28.8	28.2	32.0	586
15:20	95.7	100.2	36.7	95.4	38.1	29.0	28.4	30.4	543
15:30	95.3	99.8	36.4	95.0	37.9	28.9	28.4	31.1	516
15:40	94.9	99.3	36.4	94.8	37.9	28.7	28.2	31.2	487
15:50	94.8	98.7	36.4	94.5	37.7	28.7	28.3	29.7	446
16:00	94.5	98.5	36.4	94.2	37.7	28.9	28.4	28.5	442

APPENDIX C

Solar radiation data from in Chiang Mai for long term analysis, calculated from Pratinthong [19].

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
7:00	134.1	149.0	198.6	247.2	251.8	222.3	188.3	165.8	167.0	175.2	186.1	181.4
7:30	248.4	269.7	321.8	366.4	345.1	292.2	252.4	231.9	247.5	270.1	290.9	294.9
8:00	373.8	403.3	457.0	495.4	445.8	368.2	323.1	304.6	334.4	370.7	401.4	416.0
8:30	504.9	544.1	598.2	628.2	549.1	446.9	397.1	380.5	423.8	472.1	512.4	539.1
9:00	635.2	685.4	738.8	758.5	649.9	524.2	470.6	455.8	511.0	569.2	618.4	658.3
9:30	758.4	820.1	871.6	879.6	743.1	596.2	540.0	526.7	591.5	657.1	713.9	767.5
10:00	868.3	941.5	990.1	985.4	823.8	659.1	601.6	589.4	661.2	731.2	794.2	861.2
10:30	959.0	1043.2	1088.0	1070.4	887.7	709.5	652.0	640.5	716.3	787.4	854.8	934.4
11:00	1025.9	1120.0	1160.2	1129.9	931.3	744.6	688.6	677.4	753.8	822.7	892.6	983.2
11:30	1065.4	1167.6	1202.8	1160.9	952.3	762.6	709.4	697.9	771.5	835.3	905.5	1005.1
12:00	1075.5	1183.6	1213.5	1161.7	949.6	762.4	713.1	701.0	768.7	824.4	892.9	998.8
12:30	1055.0	1167.0	1191.7	1132.1	923.2	744.1	699.7	686.4	745.3	790.7	855.4	964.8
13:00	1005.8	1118.9	1138.6	1073.9	874.7	708.6	669.8	655.0	702.8	735.9	795.0	904.8
13:30	930.2	1041.7	1057.1	990.1	806.6	657.9	625.0	608.5	643.3	663.0	715.0	822.0
14:00	832.3	939.5	951.5	885.2	722.7	594.8	567.9	549.5	570.2	576.0	619.5	720.8
14:30	717.1	817.9	827.4	764.7	627.3	522.7	501.5	481.0	487.3	479.3	513.6	606.4
15:00	590.7	683.0	691.1	634.7	525.5	445.3	429.3	406.8	399.1	378.1	402.7	484.7
15:30	459.5	541.7	549.5	501.9	422.3	366.6	355.0	330.7	310.0	277.3	292.2	361.8
16:00	329.7	401.0	409.6	372.6	322.9	290.6	282.5	256.5	224.4	181.8	187.3	243.4
16:30	207.5	267.5	277.9	252.7	231.8	220.9	215.1	187.7	146.4	96.0	92.8	134.9
17:00	148.4	202.6	214.3	195.5	188.8	187.9	183.0	155.0	109.7	56.0	48.6	83.5

Ambient temperature data in Chiang Mai for long term analysis, calculated from Chaichana et al [20]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
7:00	17.9	20.0	21.9	26.3	26.1	26.2	25.8	25.7	25.6	24.9	21.6	18.7
7:30	19.0	21.1	22.8	27.3	26.8	26.8	26.4	26.3	26.2	25.6	22.5	19.7
8:00	20.1	22.3	23.8	28.3	27.6	27.5	27.0	26.9	26.8	26.3	23.4	20.8
8:30	21.3	23.5	24.8	29.3	28.5	28.1	27.6	27.6	27.4	27.0	24.3	21.8
9:00	22.5	24.7	25.9	30.3	29.3	28.7	28.2	28.2	28.1	27.8	25.3	22.9
9:30	23.7	25.9	26.9	31.3	30.1	29.4	28.9	28.8	28.7	28.5	26.2	23.9
10:00	24.9	27.1	27.9	32.3	30.9	30.0	29.5	29.5	29.3	29.2	27.0	24.9
10:30	26.0	28.3	28.9	33.2	31.7	30.6	30.1	30.1	29.9	29.8	27.9	25.9
11:00	27.0	29.4	29.8	34.1	32.4	31.1	30.6	30.6	30.4	30.5	28.6	26.8
11:30	28.0	30.4	30.6	34.9	33.1	31.6	31.1	31.1	30.9	31.0	29.3	27.6
12:00	28.9	31.3	31.4	35.6	33.7	32.1	31.6	31.6	31.4	31.5	29.9	28.3
12:30	29.6	32.2	32.1	36.3	34.2	32.5	32.0	32.0	31.7	31.9	30.4	29.0
13:00	30.3	32.8	32.6	36.8	34.6	32.8	32.3	32.3	32.0	32.3	30.9	29.5
13:30	30.8	33.4	33.1	37.2	34.9	33.0	32.6	32.6	32.3	32.5	31.2	29.8
14:00	31.1	33.8	33.4	37.4	35.1	33.2	32.8	32.8	32.4	32.6	31.3	30.1
14:30	31.3	34.0	33.5	37.6	35.2	33.3	32.9	32.9	32.5	32.7	31.4	30.2
15:00	31.4	34.1	33.6	37.6	35.2	33.3	32.9	32.9	32.5	32.7	31.3	30.2
15:30	31.3	34.0	33.5	37.4	35.1	33.2	32.8	32.8	32.4	32.5	31.2	30.0
16:00	31.0	33.8	33.3	37.2	34.8	33.0	32.7	32.7	32.2	32.3	30.9	29.7
16:30	30.6	33.4	32.9	36.8	34.5	32.8	32.5	32.4	32.0	32.0	30.5	29.3
17:00	30.4	33.1	32.7	36.6	34.3	32.6	32.3	32.3	31.8	31.8	30.2	29.0