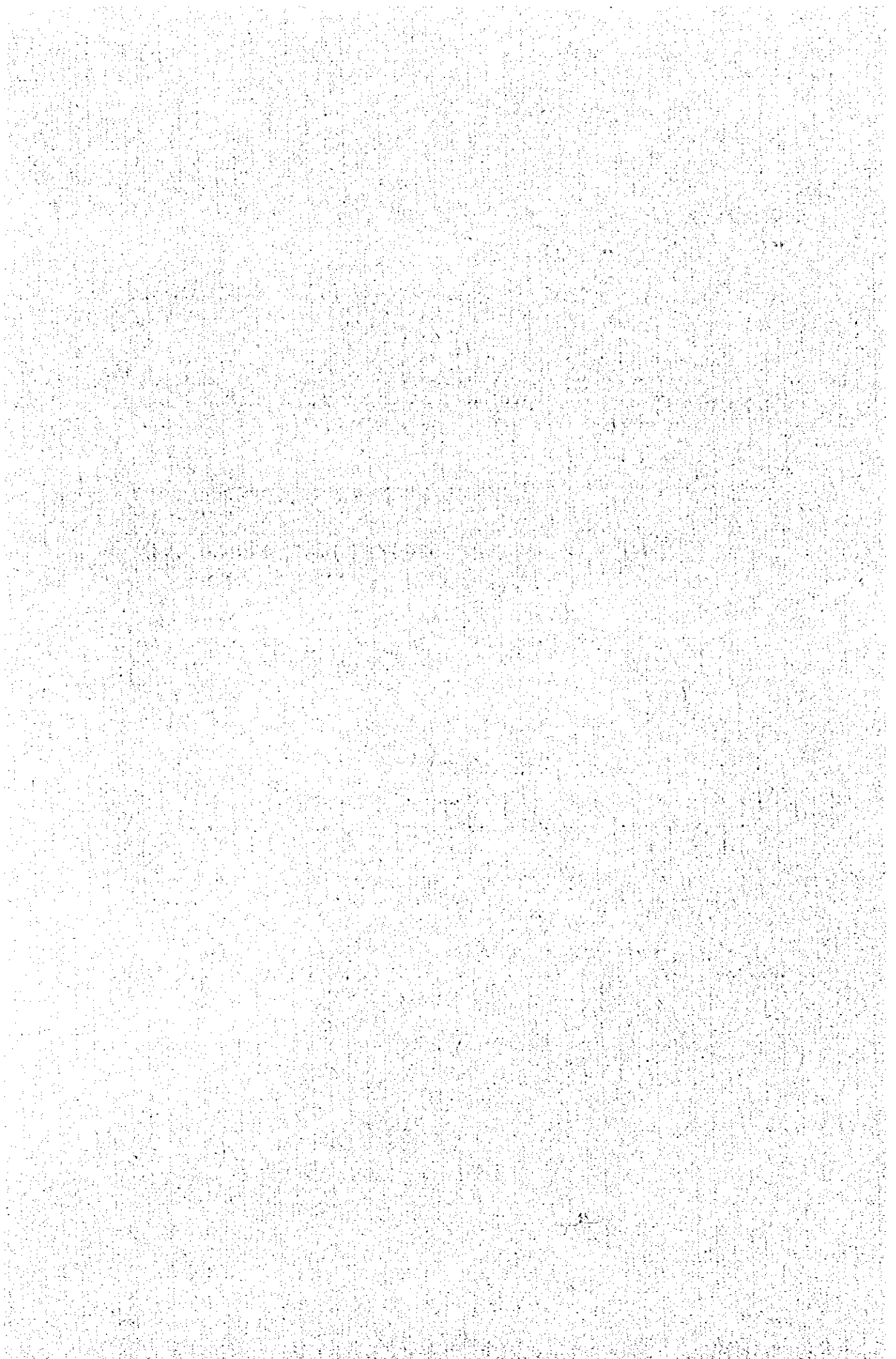


**APPENDIX 10 SIMPLIFIED MODEL FOR CASH
FLOW ANALYSIS**



Appendix 10 Simplified Model for Cash Flow Analysis

A. Aggregation (Bulk + Retail)

Study Area Total

1. Basis of Calculation

Water Demand: (mcm/year)	Stage 1	Stage 2	Stage 3	Total	Remarks
	60.018	50.413	46.891	157.322	
	Bulk Supply		Retail Supply		
Water Tariff	1.20 R/kl		1.30 R/kl		
Prod. Cost:	0.49 R/kl		1.0		% of Capital Cost
Overhead Cost:	0.04 R/kl		15.0		% of Production Cost

2. Required Capital Cost

(Unit: R Million)

		Loan Portion	Grant Portion	Direct Cost	Remarks
Bulk Supply	Stage 1	403.7	102.6	256.6	
	Stage 2	284.9	49.8	181.1	
	Stage 3	259.3	36.2	164.8	
	Total	947.9	188.6	602.5	
Retail Supply	Stage 1	410.5	230.1	260.8	
	Stage 2	274.8	173.5	174.6	
	Stage 3	176.7	151.1	112.3	
	Total	862.0	554.7	547.7	

3. Result

Overall Cash Balance

(Unit: R. Million)

	Stage 1	Stage 2	Stage 3	Total	Remarks
Bulk	(616.2)	(376.1)	(298.0)	(1,290.4)	
Retail	159.3	351.1	718.4	1,228.8	
Total	(457.0)	(25.0)	420.4	(61.6)	

Note: Figures in parentheses are negative.

Interest Rate:	10.00 %/year	Recovery R:	100 %
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B.1 Cash Flow Statement (Bulk Supply) -Stage 1

Supply Area: Study Area Total
 Stage: 1

Demand:	60.018	mcm/yr	W. Tariff:	1.20	R/ki	Recovery:	100	%
Loan Am:	403.7	R Mil.	Grant:	102.6	R Mil.	Direct C.	256.6	R Mil.
Loan Int:	10.0	%	Prod. Cost:	0.49	R/ki	Overhead:	0.04	R/ki
			(616.2)	Int. Subs:		1.00		

Project Year	Cash Inflow			Cash Outflow			Net Cash Flow	Reserve for Depreciat-ion	Remarks	
	Loan	Fund Received Grant	Water Sale	Capital Expense	Prod. C. Overhead	Loan Repayment				Total
1	40.4	10.3	-	50.6	2.4	-	53.0	(2.4)	(2.4)	-
2	60.6	15.4	-	75.9	2.4	-	78.3	(2.4)	(4.8)	-
3	121.1	30.8	-	151.9	5.3	-	157.2	(5.3)	(10.1)	-
4	121.1	30.8	21.6	173.5	12.7	-	164.6	8.9	(1.2)	-
5	60.6	15.4	50.4	126.4	25.9	-	101.9	24.5	23.3	-
6	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	7.9	12.8
7	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(7.4)	12.8
8	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(22.7)	12.8
9	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(38.0)	12.8
10	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(53.3)	12.8
11	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(68.6)	12.8
12	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(84.0)	12.8
13	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(99.3)	12.8
14	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(114.6)	12.8
15	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(129.9)	12.8
16	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(145.2)	12.8
17	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(160.5)	12.8
18	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(175.8)	12.8
19	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(191.2)	12.8
20	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(206.5)	12.8
21	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(221.8)	12.8
22	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(237.1)	12.8
23	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(252.4)	12.8
24	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(267.7)	12.8
25	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(283.1)	12.8
26	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(298.4)	-
27	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(313.7)	-
28	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(329.0)	-
29	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(344.3)	-
30	-	-	72.0	72.0	31.8	55.5	87.3	(15.3)	(359.6)	-
Total	403.7	102.6	1,872.6	2,378.9	844.0	1,388.2	2,738.5	(359.6)	-	256.6

B.2 Cash Flow Statement (Bulk Supply) - Stage 2

Demand:	50 413	mch/yr	W. Tariff:	1.20	R/k	Recovery:	100	%
Loan Am:	284.9	R Mil.	Grant:	49.8	R Mil.	Direct C:	181.1	R Mil.
Loan Int:	10.0	%	Prod. Cost:	0.49	R/k	Overhead:	0.04	R/k
(376.1)								

Supply Area: Study Area Total
Stage: 2

Project Year	Cash Inflow			Cash Outflow				Net Cash Flow	Cumul. Cash Flow	Reserve for Depreciation	Remarks
	Fund Received Loan	Grant	Water Sale	Capital Expense	Prod. C. Overhead	Loan Repayment	Total				
1	28.5	5.0	-	33.5	33.5	2.0	-	35.5	(2.0)	(2.0)	-
2	28.5	5.0	-	33.5	33.5	2.0	-	35.5	(2.0)	(4.0)	-
3	42.7	7.5	-	50.2	50.2	4.5	-	54.7	(4.5)	(8.5)	-
4	57.0	10.0	12.1	79.0	66.9	9.4	-	76.4	2.7	(5.8)	-
5	57.0	10.0	30.2	97.2	66.9	14.4	-	81.3	15.9	10.0	-
6	42.7	7.5	42.3	92.6	50.2	20.5	-	70.7	21.8	31.8	9.1
7	28.5	5.0	51.4	84.9	33.5	24.2	-	57.7	27.2	59.0	9.1
8	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	48.0	9.1
9	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	36.9	9.1
10	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	25.9	9.1
11	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	14.8	9.1
12	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	3.8	9.1
13	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(7.3)	9.1
14	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(18.3)	9.1
15	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(29.4)	9.1
16	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(40.4)	9.1
17	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(51.5)	9.1
18	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(62.5)	9.1
19	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(73.5)	9.1
20	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(84.6)	9.1
21	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(95.6)	9.1
22	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(106.7)	9.1
23	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(117.7)	9.1
24	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(128.8)	9.1
25	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(139.8)	9.1
26	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(150.9)	-
27	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(161.9)	-
28	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(173.0)	-
29	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(184.0)	-
30	-	-	60.5	60.5	-	26.7	44.8	71.5	(11.0)	(195.0)	-
Total	284.9	49.8	1,927.5	1,862.2	334.7	691.6	1,030.9	2,057.3	(195.0)	-	181.1

B.3 Cash Flow Statement (Bulk Supply) -Stage 3

Demand:	46.891	mcm/yr	W. Tariff:	1.20	R/Kl	Recovery:	100	%
Supply Area:	Study Area Total		Grant:	36.2	R Mil.	Direct C.	164.8	R Mil.
Loan Am.:	259.3	R Mil.	Prod. Cost	0.49	R/Kl	Overhd:	0.04	R/Kl
Loan Int:	10.0	%	(298.0)					

Project Year	Cash Inflow		Cash Outflow				Net Cash Flow	Cumul. Cash Flow	Reserve for Depreciat-ion	Remarks
	Loan	Fund Received Grant	Water Sale	Total	Capital Expense	Prod. C. Overhead				
1	25.9	3.6	-	29.6	29.6	1.9	-	31.4	(1.9)	-
2	38.9	5.4	-	44.3	44.3	1.9	-	46.2	(1.9)	-
3	51.9	7.2	-	59.1	59.1	4.2	-	63.3	(4.2)	-
4	51.9	7.2	14.1	73.2	59.1	9.9	-	69.0	4.1	-
5	51.9	7.2	28.1	87.2	59.1	15.7	-	74.8	12.5	-
6	38.9	5.4	42.2	86.5	44.3	22.6	-	66.9	19.6	8.2
7	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
8	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
9	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
10	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
11	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
12	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
13	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
14	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
15	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
16	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
17	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
18	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
19	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
20	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
21	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
22	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
23	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
24	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
25	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
26	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
27	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
28	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
29	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
30	-	-	56.3	56.3	-	24.9	38.1	63.0	(6.7)	8.2
Total	259.3	36.2	1,434.9	1,730.4	295.5	652.5	915.5	1,863.6	(133.2)	164.8

C.1. Cash Flow Statement (Retail Supply) Stage - 1

Supply Area: Study Area Total
 Stage: 1

Demand:	60.018	mcm/yr	W. Tariff:	1.30	R/KI	Recovery:	100	%
Loan Am:	410.5	R Mil.	Grant:	230.1	R Mil.	Direct C.	260.8	R Mil.
Loan Int:	10.0	%	Prod. Cost:	1.0	% of C.C.	Overhead:	15.0	% of Prod. Cost

159.3

Project Year	Cash Inflow			Cash Outflow			Net Cash Flow	Cumul. Cash Flow	Reserve for Depreciat- ion	Remarks
	Loan	Fund Received Grant	Water Sale	Capital Expense	Prod. C. Overhead	Loan Repayment				
1	41.1	23.0	-	64.1	1.0	-	65.0	(1.0)	-	
2	61.6	34.5	-	96.1	1.0	-	97.1	(1.0)	-	
3	123.2	69.0	-	192.2	1.6	-	193.8	(1.6)	-	
4	123.2	69.0	23.4	192.2	3.2	-	195.4	20.2	-	
5	61.6	34.5	54.6	150.7	6.1	-	102.2	48.5	65.2	-
6	-	-	78.0	78.0	7.4	56.5	63.8	14.2	79.4	13.0
7	-	-	78.0	78.0	7.4	56.5	63.8	14.2	93.6	13.0
8	-	-	78.0	78.0	7.4	56.5	63.8	14.2	107.8	13.0
9	-	-	78.0	78.0	7.4	56.5	63.8	14.2	122.0	13.0
10	-	-	78.0	78.0	7.4	56.5	63.8	14.2	136.2	13.0
11	-	-	78.0	78.0	7.4	56.5	63.8	14.2	150.4	13.0
12	-	-	78.0	78.0	7.4	56.5	63.8	14.2	164.6	13.0
13	-	-	78.0	78.0	7.4	56.5	63.8	14.2	178.8	13.0
14	-	-	78.0	78.0	7.4	56.5	63.8	14.2	193.0	13.0
15	-	-	78.0	78.0	7.4	56.5	63.8	14.2	207.1	13.0
16	-	-	78.0	78.0	7.4	56.5	63.8	14.2	221.3	13.0
17	-	-	78.0	78.0	7.4	56.5	63.8	14.2	235.5	13.0
18	-	-	78.0	78.0	7.4	56.5	63.8	14.2	249.7	13.0
19	-	-	78.0	78.0	7.4	56.5	63.8	14.2	263.9	13.0
20	-	-	78.0	78.0	7.4	56.5	63.8	14.2	278.1	13.0
21	-	-	78.0	78.0	7.4	56.5	63.8	14.2	292.3	13.0
22	-	-	78.0	78.0	7.4	56.5	63.8	14.2	306.5	13.0
23	-	-	78.0	78.0	7.4	56.5	63.8	14.2	320.7	13.0
24	-	-	78.0	78.0	7.4	56.5	63.8	14.2	334.9	13.0
25	-	-	78.0	78.0	7.4	56.5	63.8	14.2	349.1	13.0
26	-	-	78.0	78.0	7.4	56.5	63.8	14.2	363.3	-
27	-	-	78.0	78.0	7.4	56.5	63.8	14.2	377.5	-
28	-	-	78.0	78.0	7.4	56.5	63.8	14.2	391.7	-
29	-	-	78.0	78.0	7.4	56.5	63.8	14.2	405.9	-
30	-	-	78.0	78.0	7.4	56.5	63.8	14.2	420.1	-
Total	410.5	230.1	2,028.6	2,669.2	197.0	1,411.6	640.6	2,249.2	420.1	260.8

C.2 Cash Flow Statement (Retail Supply) Stage - 2

Demand:	50.413	mcm/yr	W. Tariff:	1.30	R/Ki	Recovery:	100	%
Loan Am:	274.8	R Mil.	Grant:	173.5	R Mil.	Direct C.	174.6	R Mil.
Loan Int:	10.0	%	Prod. Cost:	1.00	R/Ki	Overhd:	15.00	R/Ki
Supply Area:	Study Area Total		351.1					
Stage:	2							

Project Year	Cash Inflow			Cash Outflow			Net Cash Flow	Cumul. Cash Flow	Reserve for Depreciat-ion	Remarks
	Loan	Fund Received Grant	Water Sale	Capital Expense	Prod. C. Overhead	Loan Repayment				
1	27.5	17.4	-	44.8	0.7	-	45.5	(0.7)	-	-
2	27.5	17.4	-	44.8	0.7	-	45.5	(0.7)	-	-
3	41.2	26.0	-	67.2	1.1	-	68.4	(1.1)	-	-
4	55.0	34.7	13.1	102.8	2.0	-	91.7	11.1	-	-
5	55.0	34.7	32.8	122.4	2.9	-	92.6	29.9	-	-
6	41.2	26.0	45.9	113.1	4.0	-	71.3	41.8	8.7	8.7
7	27.5	17.4	55.7	100.5	4.7	-	49.5	51.0	8.7	8.7
8	-	-	65.5	65.5	5.2	43.2	48.4	17.1	148.5	8.7
9	-	-	65.5	65.5	5.2	43.2	48.4	17.1	165.6	8.7
10	-	-	65.5	65.5	5.2	43.2	48.4	17.1	182.8	8.7
11	-	-	65.5	65.5	5.2	43.2	48.4	17.1	199.9	8.7
12	-	-	65.5	65.5	5.2	43.2	48.4	17.1	217.1	8.7
13	-	-	65.5	65.5	5.2	43.2	48.4	17.1	234.2	8.7
14	-	-	65.5	65.5	5.2	43.2	48.4	17.1	251.4	8.7
15	-	-	65.5	65.5	5.2	43.2	48.4	17.1	268.5	8.7
16	-	-	65.5	65.5	5.2	43.2	48.4	17.1	285.7	8.7
17	-	-	65.5	65.5	5.2	43.2	48.4	17.1	302.8	8.7
18	-	-	65.5	65.5	5.2	43.2	48.4	17.1	319.9	8.7
19	-	-	65.5	65.5	5.2	43.2	48.4	17.1	337.1	8.7
20	-	-	65.5	65.5	5.2	43.2	48.4	17.1	354.2	8.7
21	-	-	65.5	65.5	5.2	43.2	48.4	17.1	371.4	8.7
22	-	-	65.5	65.5	5.2	43.2	48.4	17.1	388.5	8.7
23	-	-	65.5	65.5	5.2	43.2	48.4	17.1	405.7	8.7
24	-	-	65.5	65.5	5.2	43.2	48.4	17.1	422.8	8.7
25	-	-	65.5	65.5	5.2	43.2	48.4	17.1	440.0	8.7
26	-	-	65.5	65.5	5.2	43.2	48.4	17.1	457.1	-
27	-	-	65.5	65.5	5.2	43.2	48.4	17.1	474.3	-
28	-	-	65.5	65.5	5.2	43.2	48.4	17.1	491.4	-
29	-	-	65.5	65.5	5.2	43.2	48.4	17.1	508.6	-
30	-	-	65.5	65.5	5.2	43.2	48.4	17.1	525.7	-
Total	274.8	173.5	1,654.8	2,103.1	134.7	994.4	1,577.4	525.7	-	174.6

C.3 Cash Flow Statement (Retail Supply) Stage - 3

Demand:	46.891	mcm/yr	W. Tariff:	1.30	R/kl	Recovery:	100	%
Supply Area:	Study Area Total		Grant:	151.1	R Mil.	Direct C.	112.3	R Mil.
Stage:	3		Prod. Cost:	1.00	R/kl	Overhead:	15.00	R/kl

718.4

Project Year	Cash Inflow			Cash Outflow				Net Cash Flow	Reserve for Depreciation	Remarks
	Loan	Fund Received Grant	Water Sale	Capital Expense	Prod. C. Overhead	Loan Repayment	Total			
1	17.7	15.1	-	32.8	0.5	-	33.3	(0.5)	-	
2	26.5	22.7	-	49.2	0.5	-	49.7	(0.5)	-	
3	35.3	30.2	-	65.6	0.8	-	66.4	(0.8)	-	
4	35.3	30.2	15.2	80.8	1.6	-	67.2	13.6	-	
5	35.3	30.2	30.5	96.0	2.5	-	68.0	28.0	-	
6	26.5	22.7	45.7	94.9	3.4	-	52.6	42.3	-	
7	-	-	61.0	61.0	3.8	26.0	29.8	31.2	113.3	5.6
8	-	-	61.0	61.0	3.8	26.0	29.8	31.2	144.5	5.6
9	-	-	61.0	61.0	3.8	26.0	29.8	31.2	175.7	5.6
10	-	-	61.0	61.0	3.8	26.0	29.8	31.2	206.9	5.6
11	-	-	61.0	61.0	3.8	26.0	29.8	31.2	238.1	5.6
12	-	-	61.0	61.0	3.8	26.0	29.8	31.2	269.3	5.6
13	-	-	61.0	61.0	3.8	26.0	29.8	31.2	300.4	5.6
14	-	-	61.0	61.0	3.8	26.0	29.8	31.2	331.6	5.6
15	-	-	61.0	61.0	3.8	26.0	29.8	31.2	362.8	5.6
16	-	-	61.0	61.0	3.8	26.0	29.8	31.2	394.0	5.6
17	-	-	61.0	61.0	3.8	26.0	29.8	31.2	425.2	5.6
18	-	-	61.0	61.0	3.8	26.0	29.8	31.2	456.4	5.6
19	-	-	61.0	61.0	3.8	26.0	29.8	31.2	487.6	5.6
20	-	-	61.0	61.0	3.8	26.0	29.8	31.2	518.8	5.6
21	-	-	61.0	61.0	3.8	26.0	29.8	31.2	550.0	5.6
22	-	-	61.0	61.0	3.8	26.0	29.8	31.2	581.2	5.6
23	-	-	61.0	61.0	3.8	26.0	29.8	31.2	612.4	5.6
24	-	-	61.0	61.0	3.8	26.0	29.8	31.2	643.6	5.6
25	-	-	61.0	61.0	3.8	26.0	29.8	31.2	674.8	5.6
26	-	-	61.0	61.0	3.8	26.0	29.8	31.2	706.0	-
27	-	-	61.0	61.0	3.8	26.0	29.8	31.2	737.1	-
28	-	-	61.0	61.0	3.8	26.0	29.8	31.2	768.3	-
29	-	-	61.0	61.0	3.8	26.0	29.8	31.2	799.5	-
30	-	-	61.0	61.0	3.8	26.0	29.8	31.2	830.7	-
Total	176.7	151.1	1,554.4	1,882.2	99.8	623.9	1,051.5	830.7	-	112.3

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