

## PROJECTED INCOME STATEMENT

Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
1. Water Produced (l/s) m/year	-	-	1200	1200	1500	1800	2000			
	-	-	37848	37848	47310	56772	63080	63080	63080	63080
2. Sales Revenues (million Rp.)			22708	22708	28386	35702	39983	40152	41357	42597
3. Less Operating Expenses										
Personel			1136	1136	1420	1859	2066	2273	2273	2273
Chemical			1080	1080	1350	1620	1800	1900	2178	2398
Electricity / Fuel			1080	1080	1350	1620	1800	1890	2079	2287
Repair & Maintenance			1260	1260	1575	1890	2100	2310	2540	2795
Office & Adm			600	600	750	900	1000	1100	1210	1330
Others			110	110	132	150	165	180	200	220
Total Operating Expenses			5266	5266	6577	8039	8931	9653	10480	11303
			17442	17442	21809	27663	30052	30499	30877	31296
Less : Depreciation.			4095	4095	4095	8190	8190	8190	8190	8190
Operating Income			13347	13347	17714	19473	21862	22309	22687	23106
Less Others Expenses										
- Interest			6010	5410	4810	4270	3570	2970	2370	1720
- Foreign Exch loss			1960	3090	5410	4800	4000	3340	2670	1990
Nett Profit Before Tax			5377	4847	7494	10403	14292	15999	17647	19396
Corporate Tax			1882	1696	2623	3640	5000	5600	6180	6770
Nett Profit After Tax			3495	3151	4871	6763	9292	10399	11467	12576
Accumulated Retained Earning			3495	6646	11517	18281	27572	37971	49438	62014

- no promotion cost / marketing expenses

- no dividend why you do not pay dividend

Annex 2.

CASH FLOW STATEMENT PROJECTION

*million ?*

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>FUNDS</b>										
Grant	8370	16740	16740	-	-	-	-	-	-	-
Loan	15030	30060	30060	-	-	-	-	-	-	-
Project	-	-	13347	13347	17714	19473	21862	22309	22687	23106
tion	-	-	4095	4095	4095	8190	8190	8190	8190	8190
cash inflow	23400	46800	64242	17442	21809	27663	30052	30499	30877	31296
of Funds for Project	23400	46800	46800	-	-	-	-	-	-	-
Capital cost	-	-	7520	7520	7520	7520	7520	7520	7520	7520
	-	-	6010	5410	4810	4270	3570	2970	2370	1770
	-	-	1960	3090	1410	4800	4000	3340	2670	1990
Tax <i>dividend</i>	-	-	1400	1696	2623	3640	5000	5600	6180	6770
Net	23400	46800	63690	17716	16363	20230	20090	19430	18740	18050
(deficit)	0	0	552	(274)	5446	7433	9962	11069	12137	13246
Cash Balance	-	-	552	278	<del>4347</del>	11780	21742	32791	44928	58174

*5724*

Annex 3

PROJECTED BALANCE SHEET

End of Year	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Balance	-	-	552	278	4347	11780	21742	32791	44928	58174
Revenue ?										
Accumulated Depreciation	23400	70200	117000	117000	117000	117000	117000	117000	117000	117000
Asset	-	-	4095	8190	12285	21195	29385	38295	47205	56115
Cost	23400	70200	112905	108810	104715	95805	87615	78705	69795	60885
	23400	70200	113457	109088	109062	107585	109357	111496	114723	119059
OWNER EQUITIES										
Raw water -	you pay cash all the time - how									
	15030	53460	68957	61437	56540	48300	40780	32520	24280	16040
	8370	16740	41850	41850	41850	41850	41850	41850	41850	41850
	-	-	2650	5801	10672	17435	26727	37126	48593	61169
ASSETS & OWNER EQUITIES	23400	70200	113457	109088	109062	107585	109357	111496	114723	119059

Why no insurance - or you don't insure all the equipment? or include in the purchase of equipment?

no time deposit  
pre-operating expenses during the revenue

Why you don't keep the retained earnings! and why don't you put (buy) marketable securities or deposit.

## Leverage Ratio

a. Total Debt to Total Assets Ratio =  $\frac{\text{Total debt}}{\text{Total Assets}} \times 100 \%$

1991	=	$\frac{15,030}{23,400}$	X 100 %	=	64.3 %
1992	=	$\frac{53,460}{70,200}$	X 100 %	=	76.2 %
1993	=	$\frac{68,957}{113,471}$	X 100 %	=	60.8 %
1994	=	$\frac{61,437}{109,088}$	X 100 %	=	56.4 %
1995	=	$\frac{56,540}{109,062}$	X 100 %	=	51.8 %
1996	=	$\frac{48,300}{107,585}$	X 100 %	=	44.9 %
1997	=	$\frac{40,780}{104,357}$	X 100 %	=	39.1 %
1998	=	$\frac{32,520}{111,496}$	X 100 %	=	28.3 %
1999	=	$\frac{24,280}{114,723}$	X 100 %	=	21.2 %
2000	=	$\frac{16,040}{119,039}$	X 100 %	=	13.5 %

b. <sup>Profit</sup> Sales Margin =  $\frac{\text{Net income after Tax}}{\text{Net Sales}} \times 100 \%$

$$1993 = \frac{2650}{22708} \times 100 \% = 15.4 \%$$

$$1994 = \frac{3151}{22708} \times 100 \% = 13.8 \%$$

$$1995 = \frac{4871}{28236} \times 100 \% = 17.2 \%$$

$$1996 = \frac{6763}{35702} \times 100 \% = 18.9 \%$$

$$1997 = \frac{9292}{39883} \times 100 \% = 23.2 \%$$

$$1998 = \frac{10399}{40152} \times 100 \% = 25.8 \%$$

$$1999 = \frac{11467}{41357} \times 100 \% = 27.7 \%$$

$$2000 = \frac{12576}{42397} \times 100 \% = 29.6 \%$$

c. Net operating Margin =  $\frac{\text{Net operating income}}{\text{Net Sales}} \times 100 \%$

1993 =  $\frac{13347}{22708} \times 100 \%$  = 58.7 %

1994 =  $\frac{13347}{22708} \times 100 \%$  = 58.7 %

1995 =  $\frac{17714}{28236} \times 100 \%$  = 62.3 %

1996 =  $\frac{19473}{35702} \times 100 \%$  = 54.5 %

1997 =  $\frac{21862}{39983} \times 100 \%$  = 54.6 %

1998 =  $\frac{22309}{40152} \times 100 \%$  = 55.5 %

1999 =  $\frac{22687}{41357} \times 100 \%$  = 54.8 %

2000 =  $\frac{23106}{42397} \times 100 \%$  = 54.5 %

*Rev - Cost =  
Net op. income.*

*} 2 1/2 %*

*10 - 12 - 13 - 15  
8 - 10 12 13*

d. Earning Capacity =  $\frac{\text{Net operating income}}{\text{Net operating assets}} \times 100 \%$

$$1993 = \frac{13347}{113471} \times 100 \% = 11.8 \%$$

$$1994 = \frac{13347}{109088} \times 100 \% = 12.3 \%$$

$$1995 = \frac{17714}{109062} \times 100 \% = 16.3 \%$$

$$1996 = \frac{19473}{107585} \times 100 \% = 18.1 \%$$

$$1997 = \frac{21862}{104357} \times 100 \% = 20.9 \%$$

$$1998 = \frac{22687}{111496} \times 100 \% = 20.0 \%$$

$$1999 = \frac{22687}{114723} \times 100 \% = 19.8 \%$$

$$2000 = \frac{23106}{119039} \times 100 \% = 19.5 \%$$

Pay Back Period

Year	Cash Flow	Needed <i>out/ln</i>	Balance	Pay Back Years Required
1	17422	117600	99558	1
2	21809	99558	77749	1
3	27663	77749	50086	1
4	30052	50086	20034	1
5	30499	20034	-	0.7
6	30877	-	-	
7	31296	-	-	
Pay Back Period			=	4.7 Years

The pay Back period required to recover fund invested through proceed gained ( Net profit + Depreciation ) every years. The pay back period for this project is 4.7 years.



Annex 6.

BEP ANALISYS

YEAR	1993	1994	1995	1996	1997	1998	1999	2000
1. SALES	22708	22708	28386	35702	38983	40152	41357	42597
2. Fixed Cost	13911	14441	21160	20889	19711	18773	17633	16443
3. Variabel Cost	4330	3542	4319	6549	8231	9153	9863	10593
B E P =	17.188	17.109	24.957	25.581	24.986	24.316	23.154	21.885

$$\text{Break Even Point ( B E P )} = \frac{\text{Fixed Cost}}{1 - \frac{\text{Variabel Cost}}{\text{Sales}}}$$

## Annex 7. NET PRESENT VALUE

Net present Value  $r = 19\%$   
( Rp. million )

Year	EBIT (1)	Depre- ciation (2)	Cash Flow (3)=(1+2) X r	PV Cash- Flow	Cash out lay	NPV
1993					(117000)	(117000)
1994	13347	4095	17442 X 0,840	14651	-	14651
1995	17714	4095	21809 X 0,840	15282	-	15282
1996	19473	8190	27663 X 0,543	16404	-	16404
1997	21862	8190	30052 X 0,499	14996	-	14996
1998	22309	8190	30499 X 0,419	12779	-	12779
1999	22687	8190	30877 X 0,352	10869	-	10869
2000	23106	8190	31296 X 0,296	9264	-	9264
2001	23532	8190	31722 X 0,249	7898	-	7898
2002	24003	8190	32193 X 0,209	6467	-	6467
2003	24490	8190	32680 X 0,175	5719	-	5719
2004	24979	8190	33169 X 0,148	4909	-	4909
				119238	117000	2238

NPV is positive, thus the Project is feasible.

Internal Rate of Return

Year	r = 19 %		r = 20 %
	Cash Flow	FV. Cash Flow	FV. Cash Flow
1993	<del>(117000)</del>	(117000)	(117000)
1994	17422	14651	14529
1995	21809	15282	15167
1996	27663	16404	16017
1997	30052	14996	14515
1998	30499	12779	12261
1999	30877	10869	10344
2000	31296	9264	8732
2001	31722	7898	7391
2002	32193	6467	6245
2003	32680	5719	5295
2004	33169	4904	5374
		2238	(1140)

$$irr = 19 \% + \frac{2238}{2238 + 1140} \times 1 \%$$

$$irr = 19 \% + \frac{2238}{3378} \times 1 \%$$

$$= 19.66 \%$$

# Annex 9. DRINKING WATER STANDARD

Comparison of Various Drinking Water Standards (Continued)

Standard	MF technique	MF technique, 100 ml	MF technique
Standard using 50, or 500 ml			
Standard using arithmetic mean coliform bacterial count of all samples examined any month exceed one ml		1. The arithmetic mean coliform bacterial count of all samples examined throughout the year shall be less than one per 100 ml	No coliform organisms
Standard using coliform count shall not exceed three per 50 per 100 ml, or 200 ml, or 10 ml in two consecutive samples in the same month or in more of all samples examined during the year		2. The MF coliform count shall not exceed four per 100 ml in any two consecutive samples or in more than 10% of all samples examined during the year	
		1. The arithmetic mean coliform bacterial count of all samples examined throughout the year shall be less than 10 per 100 ml	
		2. The coliform count shall not exceed 20 per 100 ml in any two consecutive samples	
		<i>Fecal coliform</i>	
		Not more than 40% of the coliform index shall be found to be fecal coliform bacteria	

## B. Physical Characteristics

Criterion	U.S. Public Health Service, 1962		World Health Organization, European, 1961		World Health Organization, International, 1963			AWWA Recommended Potable Quality Water Goals, 1968
	Recommended limit <sup>c</sup>	Tolerance limit <sup>c</sup>	Recommended limit <sup>c</sup>	Tolerance limit <sup>c</sup>	Recommended limit <sup>c</sup>	Acceptable limit <sup>c</sup>	Tolerance Limit <sup>c</sup>	
Coliforms	15	.....	.....	.....	5	50	.....	<3
Threshold number	3, inoffensive	.....	.....	.....	Unobjectionable	.....	.....	No odor
Color, mg/l	500	.....	.....	.....	.....	.....	.....	<200
Turbidity, mg/l	.....	.....	.....	.....	.....	.....	.....	Virtually suspension-free
Iron, mg/l	.....	.....	.....	.....	500	1,500	.....	.....
.....	Inoffensive	.....	.....	.....	Unobjectionable	.....	.....	None objectionable
....., units	5	.....	.....	.....	5	25	.....	<0.1

## C. Chemical Constituents, mg/l

Substance	U.S. Public Health Service, 1962		World Health Organization, European, 1961		World Health Organization, International, 1963			AWWA Recommended Potable Quality Water Goal, 1968
	Recommended limit <sup>c</sup>	Tolerance limit <sup>c</sup>	Recommended limit <sup>c</sup>	Tolerance limit <sup>c</sup>	Recommended limit <sup>c</sup>	Acceptable limit <sup>c</sup>	Tolerance limit <sup>c</sup>	
Sulfonamide (ABS)	0.5	.....	.....	.....	0.5	1.0	.....	<0.2
Aluminum (Al)	.....	.....	0.5	.....	.....	.....	.....	<0.05
Arsenic (As)	0.01	0.05	.....	0.2	.....	.....	0.05	.....
Bismuth (Bi)	.....	1.0	.....	.....	.....	.....	1.0	.....
Cadmium (Cd)	.....	0.01	.....	0.05	.....	.....	0.01	.....
Copper (Cu)	.....	.....	.....	.....	75	200	.....	.....
Chlorophyll extract (CAE)	.....	.....	.....	.....	.....	.....	.....	<0.1
Chloroform extract (CCE)	0.2	.....	.....	.....	0.2	0.5 <sup>d</sup>	.....	<0.04
Carbon dioxide, free (CO <sub>2</sub> )	.....	.....	0	.....	.....	.....	.....	.....
Chloride (Cl)	250	.....	350	.....	200	600	.....	.....
Chromium, hexavalent (Cr <sup>+6</sup> )	.....	0.05	.....	0.05	.....	.....	0.05	.....
Copper (Cu)	1.0	.....	3.0 <sup>e</sup>	.....	1.0	1.5	.....	<0.2

Paul, chemical -

How do you transport?  
 If ~~no~~ ~~steps~~ include in  
 The price -

Annex 2.

Start 7:30

Comparison of Various Drinking Water Standards

Health Service, 1962	World Health Organization, European, 1961		World Health Organization, International, 1963		AWWA Recommended Potable Quality Water Goals, 1968
Water from the distribution system	Water entering the distribution system	Water from the distribution system	Treated water	Untreated water <sup>b</sup>	Water from the distribution system

A. Bacteriological Characteristics

Dilution technique, five 10-ml portions	Dilution technique, five 10-ml portions	Dilution technique, five 10-ml portions		Dilution technique, five 10-ml portions
More than 10% of all samples examined each month shall show presence of coliform bacteria (MPN <math>\leq 100</math> per 100 ml) No two consecutive samples taken from same location, not more than 10% of all samples examined each month, shall show presence of coliform bacteria in three or more of the five portions examined		1. Not more than 10% of all samples examined throughout the year shall show presence of coliform bacteria, or the annual arithmetical mean MPN shall not exceed one per 100 ml 2. None of the samples examined should show presence of coliform bacteria in more than three of the five portions examined 3. No two consecutive samples taken from the same location shall show presence of coliform bacteria in three or more of the five portions examined	1. Not more than 10% of all samples examined throughout the year shall show presence of coliform bacteria in more than three of the five portions examined (see fecal coliform) 2. None of the samples examined shall show presence of coliform bacteria in all five portions examined 3. No two consecutive samples taken from the same location shall show presence of coliform bacteria in four or more of the five portions examined	No coliform organisms

Health Service, 1962	World Health Organization, European, 1961		World Health Organization, International, 1963		AWWA Recommended Potable Quality Water Goals, 1968
Water from the distribution system	Water entering the distribution system	Water from the distribution system	Treated water	Untreated water <sup>b</sup>	Water from the distribution system

A. Bacteriological Characteristics (Continued)

Dilution technique, one 100-ml portion	Dilution technique, one 100-ml portion	Dilution technique, 100-ml portions		Dilution technique, 100-ml portions
More than 60% of all portions examined each month shall show presence of coliform bacteria (MPN <math>\leq 0.9</math> per 100 ml) No two consecutive samples taken from same location, not more than 10% of all samples examined each month shall show presence of coliform bacteria in all five portions examined	None of the 100-ml samples examined shall show presence of coliform bacteria	1. Not more than 5% of all 100-ml samples examined during the year shall show presence of coliform bacteria (coliform MPN <math>\leq 0.06</math> per 100 ml) 2. No two consecutive samples shall show presence of coliform bacteria		No coliform organisms

(N) .....	0.01	0.2	.....	0.01	.....	.....	0.2	.....
(P) .....	0.8-1.7 <sup>i,ii</sup>	1.4-2.4 <sup>f</sup>	1.5	.....	.....	1.0-1.5	.....	.....
as CaCO <sub>3</sub> ) .....	.....	.....	100-500 <sup>h</sup>	.....	.....	.....	.....	80-100
on concentration (pH) .....	.....	.....	.....	.....	7.0-8.5 <sup>h</sup>	6.5-9.2 <sup>h</sup>	.....	.....
.....	0.3	.....	0.1	0.3 <sup>f</sup>	0.3	1.0	.....	<0.05
.....	.....	0.05	0.1	0.3 <sup>f</sup>	.....	.....	0.05	.....
(Mg) .....	.....	.....	125 <sup>h</sup>	.....	50	150	.....	.....
+ sodium sulfate .....	.....	.....	.....	.....	500	1,000	.....	.....
(Mn) .....	0.05	.....	0.1	.....	0.1	0.5	.....	<0.01
(O <sub>2</sub> ) .....	45	.....	50	.....	.....	45	.....	.....
olved (O <sub>2</sub> ) .....	.....	.....	≥5 <sup>f</sup>	.....	.....	.....	.....	.....
mpounds (as phenol) .....	0.001	.....	0.001	.....	0.001	0.002	.....	.....
(Se) .....	.....	0.01	.....	0.05	.....	.....	0.01	.....
.....	.....	0.05	.....	.....	.....	.....	.....	.....
(O <sub>2</sub> ) .....	250	.....	250	.....	200	400	.....	.....
.....	5	.....	5	.....	5	15	.....	<1.0

#### D. Radioactivity, $\mu\mu\text{Ci/l}$

Substance	U.S. Public Health Service 1962 Recommended limits <sup>m</sup>	World Health Organization, European, 1961 Recommended limits	World Health Organization, International, 1963 Tentative limits	AWWA Recommended Potable Quality Water Goals, <sup>n</sup> 1968
ium 226 (Ra <sup>226</sup> ) .....	3	.....	10	.....
ium 90 (Sr <sup>90</sup> ) .....	10	.....	30	.....
beta activity .....	1,000 <sup>n</sup>	10 <sup>n</sup>	1,000 <sup>n</sup>	<100
emitters .....	.....	1 <sup>n</sup>	.....	.....

a public health standard but desirable consumer goals.

ommunal supplies which are distributed without treatment or disinfection cannot be maintained to the bacteriological standard established  
ted and disinfected water, steps should be taken to institute chlorination, disinfection, or other treatment of the water.

ommended limit:

## -2 Comparison of Various Drinking Water Standards

concentrations which should not be exceeded where more suitable water supplies are available.

European—concentrations above which may give rise to aesthetic and other troublesome problems.

International—concentrations which are generally satisfactory to the consumer.

limit:

International—concentrations above which the potability of the water would be "markedly" impaired.

limit:

concentrations above which shall constitute grounds for rejection of the supply.

European—concentrations above which are likely to give rise to actual danger to health.

International—concentrations above which may give rise to actual danger to health.

concentrations in excess of 0.2 mg/l indicate need for additional analyses to determine the causative agent.

permitted limit is 0.05 mg/l for water entering the distribution system; 0.3 after 16-hr contact with new pipes.

limit on annual average maximum daily air temperature over not less than a 5 yr period.

oxidation is practiced, minimum recommended limits are also specified.

minimum to maximum limits.

installations where removal of iron is economic, water entering the distribution system should not contain more than 0.1 mg/l.

limit should be 0.1 mg/l; 0.3 permitted after 16-hr contact with lead pipes.

more than 30 mg/l if the sulfate content equals or exceeds 250 mg/l.

concentration.

supplies containing concentrations in excess of these limits will be approved if surveillance of total intakes of radioactivity from all sources

such intakes are within the limits recommended by the Federal Radiation Council for control action (see Chap. 13).

of strontium 90 and alpha emitters.

with higher radioactivity may be safe for use if radiochemical analyses confirm the absence of the more dangerous radionuclides.