

## 13. 経 済 評 価

### 13.1 便 益

事業便益は以下のようによまとめることができる。

#### ① 給水人口の増加

目標年次の1987年には、給水人口が24,520人になると予測される。これは現状の32%増である。

#### ② 水圧の増加と時間給水の解消

現状の不十分な水圧が増加すると共に、“水無し地域”と時間制限給水の問題が解消される。また従来、受水者が用意していた水槽や加圧ポンプなどは不要となるはずである。

#### ③ 安全な水

現状では配水管が時として負圧となり、汚水を管内にひきこむ危険があるが、本事業完成後は水圧が上昇するのでこのような危険の機会は大巾に減少することになる。

#### ④ 環境改善

24時間給水の実現によって、給水区域内の生活環境は大きく改善されよう。

#### ⑤ 雇用機会の促進

本事業の実施により、土木工事の面で市民に雇用の機会を与えることになる。

#### ⑥ 地価の上昇

水道施設の完備によって土地の価値が上昇する。

#### ⑦ 火災損害の減少

本事業には、消火栓の設置および消火水量の貯水が含まれ、かつ水圧が増加するので消火活動の点から、火災時の損害を減少させるのに寄与する。

### 13.2 内部収益率

事業の経済的妥当性を判定するために投下資本と回収便益の比較検討を行った。これは数量化できるものが、できないものより必ずしも重要度が高いわけではないことを留意しておく必要がある。

ここでは数量化できる便益として、①給水量増加の便益、②水質改善の便益及び③火災損失の減少を計上した。

上記の数量化できる便益のほか、本事業の国民経済への波及効果を便益として計上した。

本水道区の場合、LWUAの基準に従い上記3便宜の合計額の10%を本事業の国民経済への波及便益とみなした。

内部収益率の計算は次のような種々の換算係数を用いる感度解析によった。

- 1) 換算係数を用いない場合
- 2) 換算ケースA
  - ・外貨……………1.25倍とする(外貨不足要因)
  - ・普通人夫賃……………0.5倍とする(失業対策効果)
  - ・その他の内貨……………0.95倍とする(関税相当分の除外)
- 3) 換算ケースB
  - ・外貨……………元の数値
  - ・普通人夫賃……………ケースAと同じ
  - ・その他の内貨……………ケースAと同じ
- 4) 換算ケースC
  - ・外貨……………ケースAと同じく1.25倍
  - ・普通人夫賃……………元の数値
  - ・その他の内貨……………元の数値

上記のそれぞれの場合について内部収益率の計算結果は次のようになり、経済的に妥当である。

- 1) 換算係数を用いない場合 : 27%
- 2) 換算ケースAの場合 : 26%
- 3) " B " : 30%
- 4) " C " : 24%



財 政 評 価 分 析 表

( 第 一 期 )

FINANCIAL TABLE 1  
 LEGASPI WATER SUPPLY PROJECT  
 PROJECT COSTS BY YEAR OF CONSTRUCTION  
 (P1,000's)

I

Project Components By Major Elements	Costs as of 7-1-81 By Construction Year						
	Total	1983	1984	1985	1986	1987	1988
1. Vehicle	140	-	140	-	-		
2. Chlorinator	10	-	10	-	-		
3. Meters	886	-	747	100	39		
4. Distribution	6,118	-	3,222	2,896	-		
5. Transmission	488	-	488	-	-		
6. Collection Chamber	1,780	-	1,780	-	-		
7. Reservoir	1,800	-	-	900	900		
8. Valve	126	-	109	17	-		
9. Spareparts & Equipment	135	-	135	-	-		
10. Fire Hydrant	216	-	180	36	-		
11. Engineering	1,228	1,228	-	-	-		
12. Supervision	409	-	163	163	83		
13. Lands	78	-	78	-	-		
14. Physical Cont.	1,342	123	705	411	103		
15.							
16.							
17.							
18.							
TOTAL, 7-1-81	14,756	1,351	7,757	4,523	1,125		
ESCALATION FACTORS		1.3225	1.520875	1.703380	1.907785		
ESCALATED COSTS	23,437	1,787	11,797	7,707	2,146		

FINANCIAL TABLE 2  
 LEGASPI WATER SUPPLY PROJECT  
 OPERATION AND MAINTENANCE COSTS  
 (P1,000's)

I

Year	Fixed, 7-1-81 Costs				Escalated Costs	
	Power	Chemicals	Others	Total	Factor <sup>1/</sup>	Amount
1981	22	34	140	196	1.000000	196
1982	22	34	159	215	1.150000	247
1983	22	34	179	235	1.322500	311
1984	22	35	198	255	1.520875	388
1985	--	68	217	285	1.703380	485
1986	--	73	275	348	1.907785	664
1987	--	78	343	421	2.136719	899
1988	--	78	343	421	2.393126	1,008
1989	--	78	343	421	2.680301	1,128
1990	--	78	343	421	2.948331	1,241
1991	--	78	343	421	3.243164	1,365
1992	--	78	343	421	3.567480	1,501
1993	--	78	343	421	3.924228	1,652
1994						
1995						
1996						
1997						
1998						

<sup>1/</sup> Escalation currently 15 percent per year to 1984 (1981 = 1.00), 12 percent per year between 1985 and 1989 and 10 percent per year in 1990 and afterwards.

FINANCIAL TABLE 3  
 LEGASPI WATER SUPPLY PROJECT  
 LOAN DISBURSEMENTS AND DEBT SERVICE  
 (#1,000's)

I

Year	(1) Disbursement <sup>1/</sup>		(2) Loans Outstanding		(4) Interest Payments		(6) Principal Payments <sup>3/</sup>	(7) Total Debt Service
	Grant	Loan	Beginning	Ending	First Year <sup>2/</sup>	Later Years		
1981								
1982								
1983	-	1,787		1,787	80			80
1984	-	11,797	1,787	13,584	530	160		690
1985	-	7,707	13,584	21,291	347	1,223		1,570
1986	-	2,146	21,291	23,437	97	1,916		2,013
1987			23,437	23,366		2,109	71	2,180
1988			23,366	22,823		2,103	543	2,646
1989			22,823	21,971		2,054	852	2,906
1990			21,971	21,034		1,977	937	2,914
1991			21,034	20,097		1,893	937	2,830
1992			20,097	19,160		1,809	937	2,746
1993			19,160	18,223		1,724	937	2,661
1994			18,223	17,286		1,641	937	2,578
1995			17,286	16,349		1,556	937	2,493
1996			16,349	15,412		1,471	937	2,408
1997			15,412	14,475		1,387	937	2,324
1998			14,475	13,538		1,303	937	2,240

<sup>1/</sup> From Financial Table 1.

<sup>2/</sup> Disbursements assumed to be equally spread during year. Charge with 50 per cent of annual interest in first year.

<sup>3/</sup> Principal payments according to LWUA year plan.

## FINANCIAL TABLE 4

LEGASPI WATER SUPPLY PROJECT  
CASH REQUIREMENTS PER REVENUE UNIT  
(P1,000's)

I

Year	Debt Service	O & M	Total Costs	Estimated Reserves <u>1/</u>	Cost With Reserves	Revenue Units <u>2/</u>	Cost Per Revenue Unit <u>3/</u>
1981	-	196	196	-	196	843	0.23
1982	-	247	247	-	247	869	0.28
1983	80	311	391	-	391	921	0.42
1984	690	388	1,078	-	1,078	948	1.14
1985	1,570	485	2,055	-	2,055	1,734	1.18
1986	2,013	664	2,677	-	2,677	1,985	1.35
1987	2,180	899	3,079	-	3,079	2,268	1.36
1988	2,646	1,008	3,654	183	3,837	2,268	1.69
1989	2,906	1,128	4,034	202	4,236	2,268	1.87
1990	2,914	1,241	4,155	416	4,571	2,268	2.02
1991	2,830	1,365	4,195	420	4,615	2,268	2.03
1992	2,746	1,501	4,247	425	4,672	2,268	2.06
1993	2,661	1,652	4,313	431	4,744	2,268	2.09
1994							
1995							
1996							
1997							
1998							

1/ Reserve estimate equal to 10 per cent of total costs. (5 per cent for the first two years)

2/ Reserve units from Tables 9A, 9B and 9C.

3/ Reserve units divided into costs with reserves.



FINANCIAL TABLE 5 - A  
 LEGASPI WATER SUPPLY PROJECT  
 ABILITY TO PAY FOR WATER

I

1 Year	2 Ave. Monthly Family Income <u>1/</u>	3 Available 5%	4 Average Family Size	5 Household Water Use		7 Revenue Units Per Month <u>2/</u>	8 Max. Ability Per Rev. Unit
				lpcd	Cubic Meters/ Month		
1981	615.57	30.78	5.70	58	10	25	1.23
1982	707.91	35.40	5.69	58	10	25	1.42
1983	814.09	40.71	5.68	58	10	25	1.63
1984	936.21	46.81	5.67	58	10	25	1.87
1985	1,048.56	52.40	5.66	107	18	35	1.50
1986	1,174.38	58.72	5.65	113	19	36	1.63
1987	1,315.31	65.77	5.64	144	24	43	1.53
1988	1,473.14	73.66	5.63	144	24	43	1.72
1989	1,649.92	82.50	5.62	144	24	43	1.92
1990	1,814.91	90.75	5.61	144	24	43	2.11
1991	1,996.41	99.82	5.60	144	24	43	2.32
1992	2,196.05	109.80	5.59	144	24	43	2.55
1993	2,415.65	120.78	5.58	144	24	43	2.81

1/ Average monthly income escalated by 15 per cent per year to 1984, 12 per cent per year between 1985 and 1989, and 10 per cent in 1990 and afterwards.

2/ Assumed 1/2" service.

FINANCIAL TABLE 6 - A

LEGASPI WATER SUPPLY PROJECT  
ILLUSTRATIVE CASH FLOW TABLE  
P1,000'S EXCEPT CHARGES PER UNIT

Year	Revenue Units 1/	Charges Per Unit	Gross Revenues	Net Revenue 2/		Basic Costs 3/	Required Reserves 4/	Total Costs 5/	Net Income	
				%	Amount				Annual	Cumulative
1981	843	0.60	506	95	481	196	-	196	285	285
1982	869	0.60	521	95	495	247	-	247	248	533
1983	921	0.90	829	95	787	391	-	391	396	929
1984	948	1.45	1,375	96	1,320	1,078	-	1,078	-242	1,171
1985	1,734	1.45	2,514	96	2,413	2,055	-	2,055	358	1,529
1986	1,985	1.45	2,878	97	2,792	2,677	-	2,677	115	1,644
1987	2,268	1.50	3,402	97	3,300	3,079	-	3,079	221	1,865
1988	2,268	1.70	3,856	97	3,740	3,654	193	3,847	-107	1,758
1989	2,268	1.70	3,856	97	3,740	4,034	193	4,227	-487	1,271
1990	2,268	1.70	3,856	98	3,779	4,155	386	4,541	-762	509
1991	2,268	2.30	5,216	98	5,112	4,195	522	4,717	395	904
1992	2,268	2.50	5,670	98	5,557	4,247	567	4,814	743	1,647
1993	2,268	2.80	6,350	98	6,223	4,313	635	4,948	1,275	2,922

1/ From Tables 9A, 9B and 9C.

2/ Gross revenues from water sales reduced by bad debt allowance.

3/ Total of project debt service, operation and maintenance costs.

4/ Ten percent of gross water sales, after completion of construction. (5 percent for the first two years)

5/ Includes the costs of replacing the first complement of project components with seven years of life expectancy.

FINANCIAL TABLE 7  
 LEGASPI WATER SUPPLY PROJECT I  
 ILLUSTRATIVE RATE SCHEDULE

DOMESTIC AND GOVERNMENTAL SERVICE CONNECTIONS, 1/2"

Year	First 10 m <sup>3</sup> 1/	Charge for Each Added m <sup>3</sup> 2/			Charge 3/ per Revenue Unit
		11-20	21-45	over 45	
1981	15.00	0.72	0.84	1.02	0.60
1982	15.00	0.72	0.84	1.02	0.60
1983	22.50	1.08	1.26	1.53	0.90
1984	36.25	1.74	2.03	2.47	1.45
1985	36.25	1.74	2.03	2.47	1.45
1986	36.25	1.74	2.03	2.47	1.45
1987	37.50	1.80	2.10	2.55	1.50
1988	42.50	2.04	2.38	2.89	1.70
1989	42.50	2.04	2.38	2.89	1.70
1990	42.50	2.04	2.38	2.89	1.70
1991	57.50	2.76	3.22	3.91	2.30
1992	62.50	3.00	3.50	4.25	2.50
1993	70.00	3.36	3.92	4.76	2.80

Note: 1/ To obtain charge per m<sup>3</sup> for the first 10 m<sup>3</sup> classified by connection size, multiply R.U. charge shown in 3/ above by the following connection size factors.  
 Domestic : 1.0 for 3/8"; 2.5 for 1/2"; 4.0 for 3/4"; 8 for 1"  
 Commercial: 5.0 for 1/2"; 8.0 for 3/4"; 16.0 for 1"; 40.0 for 1 1/2"

2/ To obtain charge for each added m<sup>3</sup>, multiply R.U. charges shown in 3/ by the following block factors.  
 Domestic : 1.2 for 11-20 m<sup>3</sup>; 1.4 for 21-45 m<sup>3</sup>; 1.7 for over 45 m<sup>3</sup>  
 Commercial: 2.4 for 21-45 m<sup>3</sup>; 2.8 for 45-100 m<sup>3</sup>; 2.4 for over 100 m<sup>3</sup>

FINANCIAL TABLE 8  
 LEGASPI WATER SUPPLY PROJECT  
 GROWTH IN POPULATION, SERVICE CONNECTIONS  
 AND IN DELIVERED AND PROCURED WATER

Year	Ave. Number Service Connections	Number For Service	Persons Served	Daily Use lpcd <u>l</u> /	Annual Water Supply (1,000 M <sup>3</sup> )	
					Delivered	% Unacct. Produced
1981	1,367	13.6	18,600	69	466	45 847
1982	1,411	13.6	19,200	69	483	43 847
1983	1,570	13.0	20,400	69	515	40 858
1984	1,716	12.1	20,900	69	526	40 877
1985	1,974	11.0	22,100	127	1,025	40 1,708
1986	2,322	10.0	23,300	135	1,151	37 1,827
1987	2,698	9.1	24,520	144	1,288	34 1,951
1988	2,698	9.1	24,520	144	1,288	34 1,951
1989	2,698	9.1	24,520	144	1,288	34 1,951
1990	2,698	9.1	24,520	144	1,288	34 1,951
1991	2,698	9.1	24,520	144	1,288	34 1,951
1992	2,698	9.1	24,520	144	1,288	34 1,951
1993	2,698	9.1	24,520	144	1,288	34 1,951

l / Liters per capita per day.

FINANCIAL TABLE 9A  
 LEGASPI WATER SUPPLY PROJECT  
 CALCULATION OF REVENUE UNITS

I

## A) AVERAGE NUMBER OF CONCESSIONAIRES

Year	Residential and Government					Commercial and Industrial					Total
	3/8"	1/2"	3/4"	1"	S-Total	1/2"	3/4"	1"	1 1/2"	S-Total	
1981	363	836	11	1	1,211	133	14	7	2	156	1,367
1982	363	836	11	1	1,211	133	14	7	2	156	1,367
1983	392	902	12	1	1,307	133	14	7	2	156	1,463
1984	428	985	13	1	1,427	141	15	7	2	165	1,592
1985	500	1,150	15	2	1,667	175	18	10	2	205	1,872
1986	587	1,350	18	2	1,957	260	27	15	3	305	2,262
1987	676	1,555	20	2	2,253	380	40	22	3	445	2,698
1988											
1989											
1990											
1991											
1992											
1993											

## B) SERVICE REVENUE UNITS PER CUBIC METER

Year	Residential and Government					Commercial and Industrial					Total
	1.00	2.50	4.0	8.0	S-total	5.0	8.0	16.0	40.0	S-Total	
1981	363	2,090	44	8	2,505	665	112	112	80	969	3,474
1982	363	2,090	44	8	2,505	665	112	112	80	969	3,474
1983	392	2,255	48	8	2,703	665	112	112	80	969	3,672
1984	428	2,463	52	8	2,951	705	120	112	80	1,017	3,968
1985	500	2,875	60	16	3,451	875	144	160	80	1,259	4,710
1986	587	3,375	72	16	4,050	1,300	216	240	120	1,876	5,926
1987	676	3,888	80	16	4,660	1,900	320	352	120	2,692	7,352
1988											
1989											
1990											
1991											
1992											
1993											

FINANCIAL TABLE 9B1  
 LEGASPI WATER SUPPLY PROJECT  
 CALCULATION OF REVENUE UNITS

I

DOMESTIC

Year	Delivered Water (x1000 cum)	Service Connections (x 0.12)	Net	11 - 20 cum		21 - 45 cum		over 45 cum		Total CRU's
				cum	x 1.2	cum	x 1.4	cum	x 1.7	
1981	415	145	270	145	174	125	175	-	-	349
1982	430	145	285	145	174	140	196	-	-	370
1983	458	157	301	157	188	144	202	-	-	390
1984	468	171	297	171	205	126	176	-	-	381
1985	912	200	712	200	240	512	717	-	-	957
1986	1,024	235	789	235	282	554	776	-	-	1,058
1987	1,146	270	876	270	324	606	848	-	-	1,172
1988	1,146	270	876	270	324	606	848	-	-	1,172
1989	1,146	270	876	270	324	606	848	-	-	1,172
1990	1,146	270	876	270	324	606	848	-	-	1,172
1991	1,146	270	876	270	324	606	848	-	-	1,172
1992	1,146	270	876	270	324	606	848	-	-	1,172
1993	1,146	270	876	270	324	606	848	-	-	1,172

FINANCIAL TABLE 9B2  
 LEGASPI WATER SUPPLY PROJECT  
 CALCULATION OF WATER REVENUES UNITS

I

COMMERCIAL

Year	Delivered Water (x1000 cum)	Service Connections (x 0.12)	Net	11 - 45 cum		46 - 100 cum		Over 100 cum		Total CRU's
				cum	x 2.4	cum	x 2.8	cum	x 3.4	
1981	51	19	32	32	77	-	-	-	-	77
1982	53	19	34	34	82	-	-	-	-	82
1983	57	19	38	38	91	-	-	-	-	91
1984	58	20	38	38	91	-	-	-	-	91
1985	113	25	88	86	206	2	6	-	-	212
1986	127	37	90	90	216	-	-	-	-	216
1987	142	53	89	89	214	-	-	-	-	214
1988	142	53	89	89	214	-	-	-	-	214
1989	142	53	89	89	214	-	-	-	-	214
1990	142	53	89	89	214	-	-	-	-	214
1991	142	53	89	89	214	-	-	-	-	214
1992	142	53	89	89	214	-	-	-	-	214
1993	142	53	89	89	214	-	-	-	-	214

FINANCIAL TABLE 9C  
SUMMARY OF REVENUE UNITS

I

Year	Residential and Governmental				Commercial and Industrial				Total All
	Service		Total R & C	Service		Total C & I			
	RU/Serv. Connection	Multiplied by 0.12		Commodity Rev. Units	RU/Serv. Connection		Multiplied by 0.12	Commodity Rev. Units	
1981	2,505	301	349	650	969	116	77	193	843
1982	2,505	301	370	671	969	116	82	198	869
1983	2,703	324	390	714	969	116	91	207	921
1984	2,951	354	381	735	1,017	122	91	213	948
1985	3,451	414	957	1,371	1,259	151	212	363	1,734
1986	4,050	486	1,058	1,544	1,876	225	216	441	1,985
1987	4,660	559	1,172	1,731	2,692	323	214	537	2,268
1988	4,660	559	1,172	1,731	2,692	323	214	537	2,268
1989	4,660	559	1,172	1,731	2,692	323	214	537	2,268
1990	4,660	559	1,172	1,731	2,692	323	214	537	2,268
1991	4,660	559	1,172	1,731	2,692	323	214	537	2,268
1992	4,660	559	1,172	1,731	2,692	323	214	537	2,268
1993	4,660	559	1,172	1,731	2,692	323	214	537	2,268





経 済 評 価 分 析 表

( 第 一 期 )

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ECONOMIC TABLE 1

LEGASPI WATER SUPPLY PROJECT  
SUMMARY OF PROJECT COST

I

Costs as of July 1, 1981 in 1,000 Pesos

Components	Total Cost	Foreign Currency Portion	Local Currency Portion
1. Vehicle	140	70	70
2. Chlorinator	10	9	1
3. Meters	886	683	203
4. Distribution System	6,118	4,099	2,019
5. Transmission System	488	327	161
6. Collection Chamber	1,780	445	1,335
7. Reservoir	1,800	450	1,350
8. Valves	126	92	34
9. Spareparts & Equipment	135	105	30
10. Fire Hydrant	216	143	73
11. Engineering	1,228	737	491
12. Supervision	409	246	163
13. Lands	78	-	78
14.			
15.			
16.			
17.			

Source: From Cost Estimates

ECONOMIC TABLE 2  
 LEGASPI WATER SUPPLY PROJECT I  
 ANNUAL DEMAND AND GROSS PRODUCTION IN 1,000 M<sup>3</sup>

Year	1	2	3	5		6	7	8	9
	Average Connections	Persons Per Service Connection	Population Served	Average Liters/ Capita Per Day	Average Water Use	Water Delivered Annually	Net Increase in Delivered Volume	Unaccounted Percentage	Annual Production
1981	1,367	13.6	18,600	69	466			45	847
1982	1,411	13.6	19,200	69	483			43	847
1983	1,570	13.0	20,400	69	515			40	858
1984	1,716	12.1	20,900	69	526		11	40	877
1985	1,974	11.0	22,100	127	1,025		510	40	1,708
1986	2,322	10.0	23,300	135	1,151		636	37	1,827
1987	2,698	9.1	24,520	144	1,288		773	34	1,951
1988									
1989									
1990									
1991									
1992									
1993									

ECONOMIC TABLE 3-A  
 LEGASPI WATER SUPPLY PROJECT  
 CONVERSION OF CONSTRUCTION COST TO ECONOMIC COST  
 Costs as of July 1, 1981 in 1,000 Pesos

I

Component	Foreign Costs	Local Costs	Common Labor Costs	Residual Local Cost	Converted Value			Total
					Foreign x 1.25	Labor x 0.5	Residual x 0.95	
1. Vehicle	70	70	-	70	87.5	-	66.5	154
2. Chlorinator	9	1	0.1	0.9	11.3	0.1	0.9	12.3
3. Meters	683	203	40.6	162.4	853.8	20.3	154.3	1,028.4
4. Distribution	4,099	2,019	807.6	1,211.4	5,123.8	403.8	1,150.8	6,678.4
5. Transmission	327	161	40.3	120.7	408.8	20.2	114.7	543.7
6. Collection Chamber	445	1,335	-	1,335	556.3	-	1,268.3	1,824.6
7. Reservoir	450	1,350	877.5	472.5	562.5	438.8	448.9	1,450.2
8. Valve	92	34	13.6	20.4	115	6.8	19.4	141.2
9. Spareparts & Equipment	105	30	-	30	131.3	-	28.5	159.8
10. Fire-Hydrants	143	73	29.2	43.8	178.8	14.6	41.6	235
11. Engineering	737	491	-	491	921	-	466.5	1,387.5
12. Supervision	246	163	-	163	307.5	-	154.9	462.4
13. Lands	-	78	-	78	-	-	74.1	74.1
14.								
15.								
16.								
17.								

## ECONOMIC TABLE 3-B

LEGASPI WATER SUPPLY PROJECT  
 CONVERSION OF CONSTRUCTION COST TO ECONOMIC COST  
 Costs as of July 1, 1981 in 1,000 Pesos

1

Component	Foreign Costs	Local Costs	Common Labor Costs	Residual Local Cost	Converted Value			Total
					Foreign x 1.0	Labor x 0.5	Residual x 0.95	
1. Vehicle	70	70	-	70	-	-	66.5	136.5
2. Chlorinator	9	1	0.1	0.9	9	0.1	0.9	10
3. Meters	683	203	40.6	162.4	683	20.3	154.3	857.6
4. Distribution	4,099	2,019	807.6	1,211.4	4,099	403.8	1,150.8	5,653.6
5. Transmission	327	161	40.3	120.7	327	20.2	114.7	461.9
6. Collection Chamber	445	1,335	-	1,335	445	-	1,268.3	1,713.3
7. Reservoir	450	1,350	877.5	472.5	450	438.8	448.9	1,337.7
8. Valve	92	34	13.6	20.4	92	6.8	19.4	118.2
9. Spareparts & Equipment	105	30	-	30	105	-	28.5	133.5
10. Fire Hydrants	143	73	29.2	43.8	143	14.6	41.6	199.2
11. Engineering	737	491	-	491	737	-	466.5	1,203.5
12. Supervision	246	163	-	163	246	-	154.9	400.9
13. Lands	-	78	-	78	-	-	74.1	74.1
14.								
15.								
16.								
17.								

ECONOMIC TABLE 3-C  
 LEGASPI WATER SUPPLY PROJECT  
 CONVERSION OF CONSTRUCTION COST TO ECONOMIC COST  
 Costs as of July 1, 1981 in 1,000 Pesos.

Component	Foreign Costs	Local Costs	Common Labor Costs	Residual Local Cost	Converted Value			Total
					Foreign x 1.25	Labor x 1.0	Residual x 1.0	
1. Vehicles	70	70	-	70	87.5	-	70	157.5
2. Chlorinator	9	1	0.1	0.9	11.3	0.1	0.9	12.3
3. Meters	683	203	40.6	162.4	853.8	40.6	162.4	1,056.8
4. Distribution	4,099	2,019	807.6	1,211.4	5,123.8	807.6	1,211.4	7,142.8
5. Transmission	327	161	40.3	120.7	408.8	40.3	120.7	569.8
6. Collection Chamber	445	1,335	-	1,335	556.3	-	1,335	1,891.3
7. Reservoir	450	1,350	877.5	472.5	562.5	877.5	472.5	1,912.5
8. Valve	92	34	13.6	20.4	115	13.6	20.4	149
9. Spareparts & Equipment	105	30	-	30	131.3	-	30	161.3
10. Fire Hydrants	143	73	29.2	43.8	178.8	29.2	43.8	251.8
11. Engineering	737	491	-	491	921	-	491	1,412
12. Supervision	246	163	-	163	307.5	-	163	470.5
13. Lands	-	78	-	78	-	-	78	78
14.								
15.								
16.								
17.								

ECONOMIC TABLE 4-0  
 LEGASPI WATER SUPPLY PROJECT  
 ECONOMIC COSTS DISTRIBUTED TO YEARS  
 P x 1,000

I

Value without CONVERSION

Components	Total	1983	1984	1985	1986	1987	1988
1. Vehicle	140	-	140	-	-		
2. Chlorinator	10	-	10	-	-		
3. Meter	886	-	747	100	39		
4. Distribution	6,118	-	3,222	2,896	-		
5. Transmission	488	-	488	-	-		
6. Collection Chamber	1,780	-	1,780	-	-		
7. Reservoir	1,800	-	-	900	900		
8. Valve	126	-	109	17	-		
9. Spare parts & Equipment	135	-	135	-	-		
10. Fire Hydrants	216	-	180	36	-		
11. Engineering	1,228	1,228	-	-	-		
12. Supervision	409	-	163	163	83		
13. Lands	78	-	78	-	-		
14.							
15.							
16.							
17.							
18.							
<b>Total</b>	<b>13,414</b>	<b>1,228</b>	<b>7,052</b>	<b>4,112</b>	<b>1,022</b>		



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ECONOMIC TABLE 4-A  
LEGASPI WATER SUPPLY PROJECT  
 ECONOMIC COSTS DISTRIBUTED TO YEARS  
 P x 1,000

I

Value with CONVERSION A

Components	Total	1983	1984	1985	1986	1987	1988
1. Vehicle	154	-	154	-	-		
2. Chlorinator	12.3	-	12.3	-	-		
3. Meter	1,028.4	-	863.9	113.1	51.4		
4. Distribution	6,678.4	-	3,539.6	3,138.8	-		
5. Transmission	543.7	-	543.7	-	-		
6. Collection Chamber	1,824.6	-	1,824.6	-	-		
7. Reservoir	1,450.2	-	-	725.1	725.1		
8. Valve	141.2	-	122.8	18.4	-		
9. Spare parts & Equipment	159.8	-	159.8	-	-		
10. Fire Hydrants	235	-	195.1	39.9	-		
11. Engineering	1,387.5	1,387.5	-	-	-		
12. Supervision	462.4	-	185	185	92.4		
13. Lands	74.1	-	74.1	-	-		
14.							
15.							
16.							
17.							
18.							
<b>Total</b>	<b>14,151.6</b>	<b>1,387.5</b>	<b>7,674.9</b>	<b>4,220.3</b>	<b>868.9</b>		

ECONOMIC TABLE 4-B  
LEGASPI WATER SUPPLY PROJECT  
 ECONOMIC COSTS DISTRIBUTED TO YEARS  
 ₱ x 1,000

I

Value with CONVERSION B

Components	Total	1983	1984	1985	1986	1987	1988
1. Vehicle	136.5	-	136.5	-	-		
2. Chlorinator	10	-	10	-	-		
3. Meter	857.6	-	720.4	94.3	42.9		
4. Distribution	5,653.6	-	2,996.4	2,657.2	-		
5. Transmission	461.9	-	461.9	-	-		
6. Collection Chamber	1,713.3	-	1,713.3	-	-		
7. Reservoir	1,337.7	-	-	668.9	668.9		
8. Valve	118.2	-	102.8	15.4	-		
9. Spareparts & Equipment	133.5	-	133.5	-	-		
10. Fire Hydrants	199.2	-	165.3	33.9	-		
11. Engineering	1,203.5	1,203.5	-	-	-		
12. Supervision	400.9	-	160.4	160.4	80.1		
13. Lands	74.1	-	74.1	-	-		
14.							
15.							
16.							
17.							
18.							
<b>Total</b>	<b>12,300</b>	<b>1,203.5</b>	<b>6,674.6</b>	<b>3,630.1</b>	<b>791.9</b>		

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ECONOMIC TABLE 4-C  
 LEGASPI WATER SUPPLY PROJECT  
 ECONOMIC COSTS DISTRIBUTED TO YEARS  
 P x 1,000

I

Value with CONVERSION C

Components	Total	1983	1984	1985	1986	1987	1988
1. Vehicle	157.5	-	157.5	-	-		
2. Chlorinator	12.3	-	12.3	-	-		
3. Meter	1,056.8	-	887.7	116.3	52.8		
4. Distribution	7,142.8	-	3,785.7	3,357.1	-		
5. Transmission	569.8	-	569.8	-	-		
6. Collection Chamber	1,891.3	-	1,891.3	-	-		
7. Reservoir	1,912.5	-	-	956.3	956.3		
8. Spareparts & Equipment	161.3	-	161.3	-	-		
9. Fire Hydrants	251.8	-	209	42.8	-		
10. Engineering	1,412	1,412	-	-	-		
11. Supervision	470.5	-	188.2	188.2	94.1		
12. Lands	78	-	78	-	-		
13. Valves	149	-	129.6	19.4	-		
14.							
15.							
16.							
17.							
18.							
<b>Total</b>	<b>15,265.6</b>	<b>1,412</b>	<b>8,070.4</b>	<b>4,680.1</b>	<b>1,103.2</b>		

ECONOMIC TABLE 5  
 LEGASPI WATER SUPPLY PROJECT  
 OPERATION AND MAINTENANCE EXPENSES  
 Costs as of July 1, 1981 in 1,000 Pesos

I

Year	Power	Chemicals	Others	Total	Net Costs
1981	22	34	140	196	
1982	22	34	159	215	
1983	22	34	179	235	20
1984	22	35	198	255	40
1985	-	68	217	285	70
1986	-	73	275	348	133
1987	-	78	343	421	206
1988	-	78	343	421	206
1989	-	78	343	421	206
1990	-	78	343	421	206
1991	-	78	343	421	206
1992	-	78	343	421	206
1993	-	78	343	421	206

Base Year = 1983

ECONOMIC TABLE 6-0  
**LEGASPI WATER SUPPLY PROJECT**  
**LIFE EXPECTANCY AND REPLACEMENT SCHEDULES**  
**P x 1,000**

I

Value without CONVERSION

Components	Life Expectancy of Components				
	7 Years	15 Years	50 Years	Infinite	Total
1. Vehicle	140				140
2. Chlorinator	10				10
3. Spareparts & Equipment	135				135
4. Meters		886			886
5. Distribution			6,118		6,118
6. Transmission			488		488
7. Fire Hydrants			216		216
8. Collection Chamber			1,780		1,780
9. Reservoir			1,800		1,800
10. Lands				78	78
11. Valve			126		126
12.					

7 Year Items	Years of Installation					Years of Replacement				
	1984					1991	1998	2005	2012	
1. Vehicle	1984					1991	1998	2005	2012	
2. Chlorinator	1984					1991	1998	2005	2012	
3. Spareparts & Equipment	1984					1991	1998	2005	2012	
4.										

15 Year Items	Years of Installation					Years of Replacement				
	1984	1985	1986			1999	2000	2001		
1. Meters	1984	1985	1986			1999	2000	2001		
2.										
3.										
4.										

ECONOMIC TABLE 6-A

LEGASPI WATER SUPPLY PROJECT  
LIFE EXPECTANCY AND REPLACEMENT SCHEDULES  
P x 1,000

I

Value with CONVERSION A

Components	Life Expectancy of Components				
	7 Years	15 Years	50 Years	Infinite	Total
1. Vehicle	154				154
2. Chlorinator	12.3				12.3
3. Spare parts & Equipment	159.8				159.8
4. Meters		1,028.4			1,028.4
5. Distribution			6,678.4		6,678.4
6. Transmission			543.7		543.7
7. Fire Hydrants			235		235
8. Collection Chamber			1,824.6		1,824.6
9. Reservoir			1,450.2		1,450.2
10. Land				74.1	74.1
11. Valve			141.2		141.2
12.					

7 Year Items	Years of Installation				Years of Replacement			
	1984				1991	1998	2005	2012
1. Vehicle	1984				1991	1998	2005	2012
2. Chlorinator	1984				1991	1998	2005	2012
3. Spare parts & Equipment	1984				1991	1998	2005	2012
4								

15 Year Items	Years of Installation				Years of Replacement			
	1984	1985	1986		1999	2000	2001	
1. Meters								
2.								
3.								
4.								

ECONOMIC TABLE 6-B  
 LEGASPI WATER SUPPLY PROJECT  
 LIFE EXPECTANCY AND REPLACEMENT SCHEDULES  
 P x 1,000

Value with CONVERSION B

Components	Life Expectancy of Components				
	7 Years	15 Years	50 Years	Infinite	Total
1. Vehicle	136.5				136.5
2. Chlorinator	10				10
3. Spare parts & Equipment	133.5				133.5
4. Meters		857.6			857.6
5. Distribution			5,653.6		5,653.6
6. Transmission			461.9		461.9
7. Fire Hydrants			199.2		199.2
8. Collection Chamber			1,713.3		1,713.3
9. Reservoir			1,337.7		1,337.7
10. Land				74.1	74.1
11. Valves			118.2		118.2
12.					

7 Year Items	Years of Installation				Years of Replacement				
	1984				1991	1998	2005	2012	
1. Vehicle	1984				1991	1998	2005	2012	
2. Chlorinator	1984				1991	1998	2005	2012	
3. Spare parts & Equipment	1984				1991	1998	2005	2012	
4.									

15 Year Items	Years of Installation				Years of Replacement				
	1984	1985	1986		1999	2000	2001		
1. Meters	1984	1985	1986		1999	2000	2001		
2.									
3.									
4.									

ECONOMIC TABLE 6-C  
**LEGASPI WATER SUPPLY PROJECT**  
 LIFE EXPECTANCY AND REPLACEMENT SCHEDULES  
 P x 1,000

I

Value of CONVERSION C

Components	Life Expectancy of Components				
	7 Years	15 Years	50 Years	Infinite	Total
1. Vehicle	157.5				157.5
2. Chlorinator	12.3				12.3
3. Spare parts & Equipment	161.3				161.3
4. Meters		1,056.8			1,056.8
5. Distribution			7,142.8		7,142.8
6. Transmission			569.8		569.8
7. Fire Hydrants			251.8		251.8
8. Collection Chamber			1,891.3		1,891.3
9. Reservoir			1,912.5		1,912.5
10. Land				78	78
11. Valve			149		149
12.					

7 Year Items	Years of Installation				Years of Replacement			
	1984				1991	1998	2005	2012
1. Vehicle	1984				1991	1998	2005	2012
2. Chlorinator	1984				1991	1998	2005	2012
3. Spare parts & Equipment	1984				1991	1998	2005	2012
4.								

15 Year Items	Years of Installation				Years of Replacement			
	1984	1985	1986		1999	2000	2001	
1. Meters	1984	1985	1986		1999	2000	2001	
2.								
3.								
4.								



ECONOMIC TABLE 7-0  
LEGASPI WATER SUPPLY PROJECT  
 CALCULATION OF SALVAGE VALUES  
 ₱ x 1,000

Value without CONVERSION

Components	Base Year Value	Percentage of Base Year Value	31st Year Salvage Base Year Values
<b>Infinite Life, Year Purchased</b>			
1984	78	75%	59
<b>50 Year Life, Year Constructed</b>			
1 1984	5,779	42%	2,427
2 1985	3,849	44%	1,694
3 1986	900	46%	414
<b>15 Year Life, Year of Replacement</b>			
1 1999	747	7%	52
2 2000	100	13%	13
3 2001	39	20%	8
<b>7 Year Life, Years of Final Replacement</b>			
1 2012	285	86%	245
<b>Total</b>			<b>4,912</b>

## ECONOMIC TABLE 7-A

LEGASPI WATER SUPPLY PROJECT  
 CALCULATION OF SALVAGE VALUES  
 P x 1,000

Value with CONVERSION A

Components	Base Year Value	Percentage of Base Year Value	31st Year Salvage Base Year Values
<b>Infinite Life, Year Purchased</b>			
1984	74	75%	56
<b>50 Year Life, Year Constructed</b>			
1 1984	6,226	42%	2,615
2 1985	3,922	44%	1,726
3 1986	725	46%	334
<b>15 Year Life, Year of Replacement</b>			
1 1999	864	7%	60
2 2000	113	13%	15
3 2001	51	20%	10
<b>7 Year Life, Years of Final Replacement</b>			
1 2012	326	86%	280
<b>Total</b>			<b>5,096</b>

ECONOMIC TABLE 7-B  
 LEGASPI WATER SUPPLY PROJECT  
 CALCULATION OF SALVAGE VALUES  
 P x 1,000

Value with CONVERSION B

Components	Base Year Value	Percentage of Base Year Value	31st Year Salvage Base Year Values
<b>Infinite Life, Year Purchased</b>			
1984	74	75%	56
<b>50 Year Life, Year Constructed</b>			
1 1984	5,440	42%	2,285
2 1985	3,375	44%	1,485
3 1986	669	46%	308
<b>15 Year Life, Year of Replacement</b>			
1 1999	720	7%	50
2 2000	94	13%	12
3 2001	43	20%	9
<b>7 Year Life, Years of Final Replacement</b>			
1 2012	280	86%	241
<b>Total</b>			<b>4,446</b>

ECONOMIC TABLE 7-C  
 LEGASPI WATER SUPPLY PROJECT  
 CALCULATION OF SALVAGE VALUES  
 P x 1,000

Value with CONVERSION C

Components	Base Year Value	Percentage of Base Year Value	31st Year Salvage Base Year Values
<b>Infinite Life, Year Purchased</b>			
1984	78	75%	59
<b>50 Year Life, Year Constructed</b>			
1 1984	6,585	42%	2,766
2 1985	4,376	44%	1,925
3 1986	956	46%	440
<b>15 Year Life, Year of Replacement</b>			
1 1999	888	7%	62
2 2000	116	13%	15
3 2001	53	20%	11
<b>7 Year Life, Years of Final Replacement</b>			
1 2012	331	86%	285
<b>Total</b>			<b>5,563</b>

## ECONOMIC TABLE 8-0

LEGASPI WATER SUPPLY PROJECT  
SUMMARY OF ALL PROJECT COSTS  
Costs as of July 1, 1981 in 1,000 Pesos

I

Value without CONVERSION

Year	Cost of Facilities	Net O & M	Replacement Costs	Total	Salvage	Net Cost
1982						
1983	1,228	20		1,248		
1984	7,052	40		7,092		
1985	4,112	70		4,182		
1986	1,022	133		1,155		
1987		206		206		
1988		206		206		
1989		206		206		
1990		206		206		
1991		206	285	491		
1992		206		206		
1993		206		206		
1994		206		206		
1995		206		206		
1996		206		206		
1997		206		206		
1998		206	285	491		
1999		206	747	953		
2000		206	100	306		
2001		206	39	245		
2002		206		206		
2003		206		206		
2004		206		206		
2005		206	285	491		
2006		206		206		
2007		206		206		
2008		206		206		
2009		206		206		
2010		206		206		
2011		206		206		
2012		206	285	491		
Total	13,414	5,619	2,026	21,059	(4,912)	16,147

## ECONOMIC TABLE 8-A

## LEGASPI WATER SUPPLY PROJECT

I

## SUMMARY OF ALL PROJECT COSTS

Costs as of July 1, 1981 in 1,000 Pesos

Value with CONVERSION A

Year	Cost of Facilities	Net O & M	Replacement Costs	Total	Salvage	Net Cost
1982						
1983	1,388	20		1,408		
1984	7,675	40		7,715		
1985	4,220	70		4,290		
1986	869	133		1,002		
1987		206		206		
1988		206		206		
1989		206		206		
1990		206		206		
1991		206	326	532		
1992		206		206		
1993		206		206		
1994		206		206		
1995		206		206		
1996		206		206		
1997		206		206		
1998		206	326	532		
1999		206	864	1,070		
2000		206	113	319		
2001		206	51	257		
2002		206		206		
2003		206		206		
2004		206		206		
2005		206	326	532		
2006		206		206		
2007		206		206		
2008		206		206		
2009		206		206		
2010		206		206		
2011		206		206		
2012		206	326	532		
Total	14,152	5,619	2,332	22,103	(5,096)	(17,007)

## ECONOMIC TABLE 8-B

LEGASPI WATER SUPPLY PROJECT  
 SUMMARY OF ALL PROJECT COSTS  
 Costs as of July 1, 1981 in 1,000 Pesos

I

Value with CONVERSION B

Year	Cost of Facilities	Net O & M	Replacement Costs	Total	Salvage	Net Cost
1982						
1983	1,204	20		1,224		
1984	6,675	40		6,715		
1985	3,630	70		3,700		
1986	792	133		925		
1987		206		206		
1988		206		206		
1989		206		206		
1990		206		206		
1991		206	280	486		
1992		206		206		
1993		206		206		
1994		206		206		
1995		206		206		
1996		206		206		
1997		206		206		
1998		206	280	486		
1999		206	720	926		
2000		206	94	300		
2001		206	43	249		
2002		206		206		
2003		206		206		
2004		206		206		
2005		206	280	486		
2006		206		206		
2007		206		206		
2008		206		206		
2009		206		206		
2010		206		206		
2011		206		206		
2012		206	280	486		
Total	12,301	5,619	1,977	19,897	(4,446)	(15,451)

## ECONOMIC TABLE 8-C

## LEGASPI WATER SUPPLY PROJECT

I

## SUMMARY OF ALL PROJECT COSTS

Costs as of July 1, 1981 in 1,000 Pesos

Value with CONVERSION C

Year	Cost of Facilities	Net O & M	Replace-ment Costs	Total	Salvage	Net Cost
1982						
1983	1,412	20		1,432		
1984	8,070	40		8,110		
1985	4,680	70		4,750		
1986	1,103	133		1,236		
1987		206		206		
1988		206		206		
1989		206		206		
1990		206		206		
1991		206	331	537		
1992		206		206		
1993		206		206		
1994		206		206		
1995		206		206		
1996		206		206		
1997		206		206		
1998		206	331	537		
1999		206	888	1,094		
2000		206	116	322		
2001		206	53	259		
2002		206		206		
2003		206		206		
2004		206		206		
2005		206	331	537		
2006		206		206		
2007		206		206		
2008		206		206		
2009		206		206		
2010		206		206		
2011		206		206		
2012		206	331	537		
Total	15,265	5,619	2,381	23,265	(5,563)	17,702



ECONOMIC TABLE 9  
 LEGASPI WATER SUPPLY PROJECT  
 BENEFITS AT 1981 PRICES  
 (P x 1,000)

I

Year	Volume	Qualitative	Fire Loss Reduction	Total	National Interest Adjustment
1982					
1983					
1984	41	191	67	299	329
1985	1,887	381	89	2,357	2,593
1986	2,353	572	116	3,041	3,345
1987	2,860	572	148	3,580	3,938
1988	2,860	572	148	3,580	3,938
1989	2,860	572	148	3,580	3,938
1990	2,860	572	148	3,580	3,938
1991	2,860	572	148	3,580	3,938
1992	2,860	572	148	3,580	3,938
1993	2,860	572	148	3,580	3,938
1994	2,860	572	148	3,580	3,938
1995	2,860	572	148	3,580	3,938
1996	2,860	572	148	3,580	3,938
1997	2,860	572	148	3,580	3,938
1998	2,860	572	148	3,580	3,938
1999	2,860	572	148	3,580	3,938
2000	2,860	572	148	3,580	3,938
2001	2,860	572	148	3,580	3,938
2002	2,860	572	148	3,580	3,938
2003	2,860	572	148	3,580	3,938
2004	2,860	572	148	3,580	3,938
2005	2,860	572	148	3,580	3,938
2006	2,860	572	148	3,580	3,938
2007	2,860	572	148	3,580	3,938
2008	2,860	572	148	3,580	3,938
2009	2,860	572	148	3,580	3,938
2010	2,860	572	148	3,580	3,938
2011	2,860	572	148	3,580	3,938
2012	2,860	572	148	3,580	3,938
Total	78,641	16,016	4,120	98,777	108,655

ECONOMIC TABLE 10-0  
 LEGASPI WATER SUPPLY PROJECT  
 INTERNAL RATE OF RETURN COMPUTATION

I

Cost Value without CONVERSION

Year	Total Cost	Total Benefit	Net Benefit	Present Net Benefit
1982				
1983	1,248	-	-1,248	-1,248
1984	7,092	329	-6,763	-5,304
1985	4,182	2,593	-1,589	-977
1986	1,155	3,345	2,190	1,057
1987	206	3,938	3,732	1,412
1988	206	3,938	3,732	1,108
1989	206	3,938	3,732	869
1990	206	3,938	3,732	681
1991	491	3,938	3,447	494
1992	206	3,938	3,732	419
1993	206	3,938	3,732	329
1994	206	3,938	3,732	258
1995	206	3,938	3,732	202
1996	206	3,938	3,732	159
1997	206	3,938	3,732	124
1998	491	3,938	3,447	90
1999	953	3,938	2,985	61
2000	306	3,938	3,632	58
2001	245	3,938	3,693	47
2002	206	3,938	3,732	37
2003	206	3,938	3,732	29
2004	206	3,938	3,732	23
2005	491	3,938	3,447	16
2006	206	3,938	3,732	14
2007	206	3,938	3,732	11
2008	206	3,938	3,732	9
2009	206	3,938	3,732	7
2010	206	3,938	3,732	5
2011	206	3,938	3,732	4
2012	491	3,938	8,359*	7*
Salvage(-)	4,912			
Total	16,147	108,655	92,508	1

Rate of Return = 0.27

## ECONOMIC TABLE 10-A

LEGASPI WATER SUPPLY PROJECT  
INTERNAL RATE OF RETURN COMPUTATION

Cost Value with CONVERSION A

Year	Total Cost	Total Benefit	Net Benefit	Present Benefit
1982				
1983	1,408	-	-1,408	-1,408
1984	7,715	329	-7,386	-5,872
1985	4,290	2,593	-1,697	-1,073
1986	1,002	3,345	2,343	1,178
1987	206	3,938	3,732	1,491
1988	206	3,938	3,732	1,186
1989	206	3,938	3,732	943
1990	206	3,938	3,732	750
1991	532	3,938	3,406	544
1992	206	3,938	3,732	474
1993	206	3,938	3,732	377
1994	206	3,938	3,732	300
1995	206	3,938	3,732	238
1996	206	3,938	3,732	189
1997	206	3,938	3,732	151
1998	532	3,938	3,406	109
1999	1,070	3,938	2,868	73
2000	319	3,938	3,619	73
2001	257	3,938	3,681	59
2002	206	3,938	3,732	48
2003	206	3,938	3,732	38
2004	206	3,938	3,732	30
2005	532	3,938	3,406	22
2006	206	3,938	3,732	19
2007	206	3,938	3,732	15
2008	206	3,938	3,732	12
2009	206	3,938	3,732	10
2010	206	3,938	3,732	8
2011	206	3,938	3,732	6
2012	532	3,938	8,502*	11*
Salvage(-)	5,096			
Total	17,007	108,655	91,648	1

\* Values include salvage.

Rate of Return = 0.26

ECONOMIC TABLE 10-B  
 LEGASPI WATER SUPPLY PROJECT  
 INTERNAL RATE OF RETURN COMPUTATION

I

Cost Value with CONVERSION B

Year	Total Cost	Total Benefit	Net Benefit	Present Benefit
1982				
1983	1,224	-	-1,224	-1,224
1984	6,715	329	-6,386	-4,923
1985	3,700	2,593	-1,107	-658
1986	925	3,345	2,420	1,109
1987	206	3,938	3,732	1,318
1988	206	3,938	3,732	1,016
1989	206	3,938	3,732	784
1990	206	3,938	3,732	604
1991	486	3,938	3,452	431
1992	206	3,938	3,732	359
1993	206	3,938	3,732	277
1994	206	3,938	3,732	213
1995	206	3,938	3,732	164
1996	206	3,938	3,732	127
1997	206	3,938	3,732	98
1998	486	3,938	3,452	70
1999	926	3,938	3,012	47
2000	300	3,938	3,638	44
2001	249	3,938	3,689	34
2002	206	3,938	3,732	27
2003	206	3,938	3,732	21
2004	206	3,938	3,732	16
2005	486	3,938	3,452	11
2006	206	3,938	3,732	9
2007	206	3,938	3,732	7
2008	206	3,938	3,732	6
2009	206	3,938	3,732	4
2010	206	3,938	3,732	3
2011	206	3,938	3,732	3
2012	486	3,938	7,898*	4*
Salvage(-)	4,446			
Total	15,451	108,655	93,204	1

\* Values include salvage.

Rate of Return = 0.30

## ECONOMIC TABLE 10-C

LEGASPI WATER SUPPLY PROJECT  
INTERNAL RATE OF RETURN COMPUTATION

Cost Value with CONVERSION C

Year	Total Cost	Total Benefit	Net Benefit	Present Benefit
1982				
1983	1,432	-	-1,432	-1,432
1984	8,110	329	-7,781	-6,272
1985	4,750	2,593	-2,157	-1,402
1986	1,236	3,345	2,109	1,105
1987	206	3,938	3,732	1,576
1988	206	3,938	3,732	1,270
1989	206	3,938	3,732	1,024
1990	206	3,938	3,732	826
1991	537	3,938	3,401	606
1992	206	3,938	3,732	536
1993	206	3,938	3,732	432
1994	206	3,938	3,732	349
1995	206	3,938	3,732	281
1996	206	3,938	3,732	227
1997	206	3,938	3,732	183
1998	537	3,938	3,401	134
1999	1,094	3,938	2,844	90
2000	322	3,938	3,616	93
2001	259	3,938	3,679	76
2002	206	3,938	3,732	62
2003	206	3,938	3,732	50
2004	206	3,938	3,732	40
2005	537	3,938	3,401	30
2006	206	3,938	3,732	26
2007	206	3,938	3,732	21
2008	206	3,938	3,732	17
2009	206	3,938	3,732	14
2010	206	3,938	3,732	11
2011	206	3,938	3,732	9
2012	537	3,938	8,964*	17*
Salvage(-)	5,563			
Total	17,702	108,655	90,953	-1

\* Values include salvage.

Rate of Return = 0.24