

## **SOCIO-ECONOMIC ANNEX**

Table F. A.1 : WATER PRODUCTION AND CONSUMPTION PROJECTIONS (Arica)

&lt;Proyecciones de Producción y Consumo de Agua (Arica)&gt;

YEAR	POPULATION	CONSUMPTION PER CAPITA (l/d)	AVERAGE CONSUMPTION			AVERAGE PRODUCTION			
			SUB-TOTAL CONSUMPTION (m3/day)	CONSUMPTION FOR TOURISM (l/sec)	ALLOWANCE TOTAL CONSUMPTION (l/sec)	WATER LOSS (%)	TOTAL PRODUCTION (l/sec)	TOTAL PRODUCTION (m3/day)	
1992	169,212	220.00	37,226.64	430.90	7.00	437.90	40	729.8	63057.6
1993	172,170	220.66	37,991.03	439.70	8.00	447.70	40	746.2	64468.8
1994	175,129	221.32	38,759.55	448.60	9.00	457.60	40	762.7	65894.4
1995	178,087	221.98	39,531.75	457.50	10.00	467.50	40	779.2	67320.0
1996	181,046	222.65	40,309.89	466.50	11.00	477.50	39	782.8	67632.8
1997	184,004	223.32	41,091.77	475.60	12.00	487.60	38	786.5	67949.4
1998	186,962	223.99	41,877.62	484.70	13.00	497.70	37	790.0	68256.0
1999	189,921	224.66	42,667.65	493.80	14.00	507.80	36	793.4	68553.0
2000	192,879	225.33	43,461.43	503.00	15.00	518.00	35	796.9	68854.2
2001	197,026	226.01	44,259.85	515.40	16.00	531.40	34	805.2	69565.1
2002	201,262	226.69	45,024.08	528.10	17.00	545.10	33	813.6	70293.5
2003	205,589	227.37	46,744.77	541.00	18.00	559.00	32	822.1	71025.9
2004	210,009	228.05	47,892.55	554.30	19.00	573.30	31	830.9	71787.1
2005	214,525	228.73	49,068.30	567.90	20.00	587.90	30	839.9	72563.7
2006	219,137	229.42	50,274.41	581.90	22.00	603.90	30	862.7	74538.5
2007	223,848	230.11	51,509.66	596.20	24.00	620.20	30	886.0	76550.4
2008	228,661	230.80	52,774.96	610.80	26.00	636.80	30	909.7	78599.3
2009	233,577	231.49	54,070.74	625.80	28.00	653.80	30	934.0	80697.6
2010	238,599	232.18	55,397.92	641.20	30.00	671.20	30	958.9	82845.3
2011	243,729	232.88	56,759.61	656.90	32.00	688.90	30	984.1	85029.9
2012	248,969	233.58	58,154.18	673.10	34.00	707.10	30	1010.1	87276.3
2013	254,322	234.28	59,582.56	689.60	36.00	725.60	30	1036.6	89559.8
2014	259,790	234.98	61,045.45	706.30	38.00	744.50	30	1063.6	91892.6
2015	265,376	235.68	62,543.82	723.90	40.00	763.90	30	1091.3	94287.1
2016	271,081	236.39	64,080.84	741.70	42.00	783.70	30	1119.6	96731.0
2017	276,909	237.10	65,655.12	759.90	44.00	803.90	30	1148.4	99224.2
2018	282,863	237.81	67,267.65	778.60	46.00	824.60	30	1178.0	101779.2
2019	288,945	238.52	68,919.16	797.70	48.00	845.70	30	1208.1	104383.5
2020	295,157	239.24	70,613.36	817.30	50.00	867.30	30	1239.0	107049.6
2021	301,503	239.96	72,348.66	837.40	52.00	889.40	30	1270.6	109777.4
2022	307,985	240.68	74,125.83	857.90	54.00	911.90	30	1302.7	112554.5
2023	314,607	241.40	75,946.13	879.00	56.00	935.00	30	1335.7	115405.7
2024	321,371	242.12	77,810.35	900.60	58.00	958.60	30	1369.4	118318.6
2025	328,280	242.85	79,722.80	922.70	60.00	982.70	30	1403.9	121293.3
2026	335,338	243.58	81,681.63	945.40	62.00	1,007.40	30	1439.1	124341.9
2027	342,548	244.31	83,687.90	968.60	64.00	1,032.60	30	1475.1	127452.3
2028	349,913	245.04	85,742.66	992.40	66.00	1,058.40	30	1512.0	130636.8
2029	357,436	245.78	87,850.62	1,016.80	68.00	1,084.80	30	1549.7	133895.3
2030	365,121	246.52	90,009.63	1,041.80	70.00	1,111.80	30	1588.3	137277.9

Table F, A.1 : WATER PRODUCTION AND CONSUMPTION PROJECTIONS (Arica)

&lt;Proyecciones de Produccion y Consumo de Agua (Arica)&gt;

	PRODUCTION			CONSUMPTION			EXISTING PRODUCTION CAPACITY			REQUIRED ADDITIONAL PRODUCTION			ADDITIONAL AVAILABLE PRODUCTION FROM LLUTA RIVER			WATER LOSS FOR ADDITIONAL AVAILABLE PRODUCTION			ADDITIONAL CONSUMPTION	
	DAILY MAXIMUM (l/sec)	DAILY AVERAGE (l/sec)	DAILY MAXIMUM (l/sec)	DAILY MAXIMUM (l/sec)	DAILY AVERAGE (l/sec)	DAILY MAXIMUM (l/sec)	DAILY MAXIMUM (l/sec)	DAILY AVERAGE (l/sec)	DAILY MAXIMUM (l/sec)	DAILY MAXIMUM (l/sec)	DAILY AVERAGE (l/sec)	DAILY MAXIMUM (l/sec)	DAILY MAXIMUM (l/sec)	DAILY AVERAGE (l/sec)	DAILY MAXIMUM (l/sec)	%	AMOUNT OF WATER LOSS (l/sec)	AMOUNT OF INVOICABLE WATER (l/sec)		
1992	948.8	729.8	569.3	437.9	500	500	500	500	448.8	229.8	0	0	0	0	0	40.00	0	0		
1993	970.0	746.2	582.0	447.7	500	500	500	500	470.0	246.2	0	0	0	0	0	39.75	0	0		
1994	991.5	762.7	594.9	457.6	500	500	500	500	491.5	262.7	0	0	0	0	0	39.50	0	0		
1995	1013.1	779.3	607.9	467.6	500	500	500	500	513.1	279.3	0	0	0	0	0	39.25	0	0		
1996	1017.6	782.8	620.8	471.5	500	500	500	500	517.6	282.8	0	0	0	0	0	39.00	0	0		
1997	1022.4	786.5	633.9	487.6	500	500	500	500	522.4	286.5	0	0	0	0	0	38.00	0	0		
1998	1027.0	790.0	647.0	497.7	500	500	500	500	527.0	290.0	0	0	0	0	0	37.00	0	0		
1999	1031.5	793.4	660.1	507.8	500	500	500	500	531.5	293.4	414	414	293.4 (319)	36.00	114.84	36.00	204.2	204.2		
2000	1036.0	796.9	673.4	518.0	500	500	500	500	536.0	296.9	414	414	296.9 (319)	33.00	111.65	33.00	207.4	207.4		
2001	1046.7	805.2	690.8	531.4	500	500	500	500	546.7	305.2	414	414	305.2 (319)	34.00	108.46	34.00	210.5	210.5		
2002	1057.7	813.6	708.6	545.1	500	500	500	500	557.7	313.6	414	414	313.6 (319)	33.00	105.27	33.00	213.7	213.7		
2003	1068.7	822.1	726.7	559.0	500	500	500	500	568.7	322.1	414	414	319	32.00	102.08	32.00	216.9	216.9		
2004	1080.1	830.9	745.3	573.3	500	500	500	500	580.1	330.9	414	414	319	31.00	98.89	31.00	220.1	220.1		
2005	1091.8	839.9	764.3	587.9	500	500	500	500	591.8	339.9	414	414	319	30.00	95.70	30.00	223.3	223.3		
2006	1121.5	862.7	785.1	603.9	500	500	500	500	621.5	362.7	414	414	319	30.00	95.70	30.00	223.3	223.3		
2007	1151.8	886.0	806.3	620.2	500	500	500	500	651.8	386.0	414	414	319	30.00	95.70	30.00	223.3	223.3		
2008	1182.6	909.7	827.8	636.8	500	500	500	500	682.6	409.7	414	414	319	30.00	95.70	30.00	223.3	223.3		
2009	1214.2	934.0	849.9	653.8	500	500	500	500	714.2	434.0	414	414	319	30.00	95.70	30.00	223.3	223.3		
2010	1246.5	958.9	872.6	671.2	500	500	500	500	746.5	458.9	414	414	319	30.00	95.70	30.00	223.3	223.3		
2011	1279.4	984.1	895.6	688.9	500	500	500	500	779.4	484.1	414	414	319	30.00	95.70	30.00	223.3	223.3		
2012	1313.2	1010.1	919.2	707.1	500	500	500	500	813.2	510.1	414	414	319	30.00	95.70	30.00	223.3	223.3		
2013	1347.5	1036.6	943.3	725.6	500	500	500	500	847.5	536.6	414	414	319	30.00	95.70	30.00	223.3	223.3		
2014	1382.8	1063.7	968.0	744.6	500	500	500	500	882.8	563.7	414	414	319	30.00	95.70	30.00	223.3	223.3		
2015	1418.7	1091.3	993.1	763.9	500	500	500	500	918.7	591.3	414	414	319	30.00	95.70	30.00	223.3	223.3		
2016	1455.4	1119.6	1018.8	783.7	500	500	500	500	955.4	619.6	414	414	319	30.00	95.70	30.00	223.3	223.3		
2017	1493.0	1148.4	1045.1	803.9	500	500	500	500	993.0	648.4	414	414	319	30.00	95.70	30.00	223.3	223.3		
2018	1531.4	1178.0	1072.0	824.6	500	500	500	500	1031.4	678.0	414	414	319	30.00	95.70	30.00	223.3	223.3		
2019	1570.6	1208.1	1099.4	845.7	500	500	500	500	1070.6	708.1	414	414	319	30.00	95.70	30.00	223.3	223.3		
2020	1610.7	1239.0	1127.5	867.3	500	500	500	500	1110.7	739.0	414	414	319	30.00	95.70	30.00	223.3	223.3		
2021	1651.7	1270.6	1156.2	889.4	500	500	500	500	1151.7	770.6	414	414	319	30.00	95.70	30.00	223.3	223.3		
2022	1693.7	1302.9	1185.6	912.0	500	500	500	500	1193.7	802.9	414	414	319	30.00	95.70	30.00	223.3	223.3		
2023	1736.4	1335.7	1215.5	935.0	500	500	500	500	1236.4	835.7	414	414	319	30.00	95.70	30.00	223.3	223.3		
2024	1780.3	1369.4	1246.2	958.6	500	500	500	500	1280.3	869.4	414	414	319	30.00	95.70	30.00	223.3	223.3		
2025	1825.2	1404.0	1277.6	982.8	500	500	500	500	1325.2	904.0	414	414	319	30.00	95.70	30.00	223.3	223.3		
2026	1870.9	1439.1	1309.6	1007.4	500	500	500	500	1370.9	939.1	414	414	319	30.00	95.70	30.00	223.3	223.3		
2027	1917.7	1475.1	1342.4	1032.6	500	500	500	500	1417.7	975.1	414	414	319	30.00	95.70	30.00	223.3	223.3		
2028	1965.6	1512.0	1375.9	1058.4	500	500	500	500	1465.6	1012.0	414	414	319	30.00	95.70	30.00	223.3	223.3		
2029	2014.6	1549.7	1410.2	1084.8	500	500	500	500	1514.6	1049.7	414	414	319	30.00	95.70	30.00	223.3	223.3		
2030	2064.8	1588.3	1445.3	1111.8	500	500	500	500	1564.8	1088.3	414	414	319	30.00	95.70	30.00	223.3	223.3		

Table A-1 : WATER PRODUCTION AND CONSUMPTION PROJECTIONS

(ARICA)

&lt;Proyecciones de Producción y Consumo de Agua&gt;

&lt;Arica&gt;

	WATER CAPACITY SITUATION WITHOUT PROJECT		WATER CAPACITY SITUATION WITH PROJECT		WATER CAPACITY SITUATION WITHOUT PROJECT		WATER CAPACITY SITUATION WITH PROJECT		ADDITIONAL WATER CAPACITY
	(l/sec)	(l/sec)	(l/sec)	(l/sec)	(m3/year)	(m3/year)	(m3/year)	(m3/year)	
1992	300.00	300.00	300.00	0.00	9460.80	9460.80	9460.80	0.00	0.00
1993	301.25	301.25	301.25	0.00	9500.22	9500.22	9500.22	0.00	0.00
1994	302.50	302.50	302.50	0.00	9539.64	9539.64	9539.64	0.00	0.00
1995	303.75	303.75	303.75	0.00	9579.06	9579.06	9579.06	0.00	0.00
1996	305.00	305.00	305.00	0.00	9618.48	9618.48	9618.48	0.00	0.00
1997	310.00	310.00	310.00	0.00	9776.16	9776.16	9776.16	0.00	0.00
1998	315.00	315.00	315.00	0.00	9933.84	9933.84	9933.84	0.00	0.00
1999	320.00	320.00	320.00	204.16	10091.52	10091.52	10091.52	6438.39	6438.39
2000	325.00	325.00	325.00	207.35	10249.20	10249.20	10249.20	6538.99	6538.99
2001	330.00	330.00	330.00	210.54	10406.88	10406.88	10406.88	6639.59	6639.59
2002	335.00	335.00	335.00	213.73	10564.56	10564.56	10564.56	6740.19	6740.19
2003	340.00	340.00	340.00	216.92	10722.24	10722.24	10722.24	6840.79	6840.79
2004	345.00	345.00	345.00	220.11	10879.92	10879.92	10879.92	6941.39	6941.39
2005	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2006	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2007	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2008	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2009	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2010	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2011	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2012	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2013	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2014	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2015	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2016	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2017	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2018	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2019	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2020	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2021	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2022	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2023	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2024	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2025	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2026	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2027	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2028	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2029	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99
2030	350.00	350.00	350.00	223.30	11037.60	11037.60	11037.60	7041.99	7041.99

Table F, A.2 : Calculation of Periodic Cost Arica)  
 <Calculo de Costo Periodico (Arica)>  
 (Unit : Thousand Pesos)

Year	Personnel	Maintenance	Total Periodic Cost
1999	56,000	413,413	469,413
2000	56,000	413,413	469,413
2001	56,000	413,413	469,413
2002	56,000	413,413	469,413
2003	56,000	413,413	469,413
2004	56,000	413,413	469,413
2005	56,000	413,413	469,413
2006	56,000	413,413	469,413
2007	56,000	413,413	469,413
2008	56,000	413,413	469,413
2009	56,000	413,413	469,413
2010	56,000	413,413	469,413
2011	56,000	413,413	469,413
2012	56,000	413,413	469,413
2013	56,000	413,413	469,413
2014	56,000	413,413	469,413
2015	56,000	413,413	469,413
2016	56,000	413,413	469,413
2017	56,000	413,413	469,413
2018	56,000	413,413	469,413
2019	56,000	413,413	469,413
2020	56,000	413,413	469,413
2021	56,000	413,413	469,413
2022	56,000	413,413	469,413
2023	56,000	413,413	469,413
2024	56,000	413,413	469,413
2025	56,000	413,413	469,413
2026	56,000	413,413	469,413
2027	56,000	413,413	469,413
2028	56,000	413,413	469,413

Table F.A.3 : Calculation of Social Incremental Investment (Arica)  
<Cálculo de la Inversión Social Incremental (Arica)>

(Unit : Thousand Pesos)

Year	Item	With-Project Situation			Without-Project Situation			Net Investment			Physical Contingency	Administration, Engineering Cost	Social Incremental Investment	Import Duty	Labour Adjustment	Foreign Exchange Adj.	Others	Foreign Component	Foreign	Compensation	Total Social Inter
		1996	1997	1998	1997	1998	1996	1997	1998												
1996	Design	750,813	0	0	0	0	750,813	0	0												
	Intake Works	0	2,405,864	2,405,864	75,202	346,060	0	2,330,663	2,059,803												
	Transmission	0	378,851	378,851	14,242	0	0	364,609	378,851												
	Treatment	0	1,369,383	15,617,831	0	0	0	1,369,383	15,617,831												
	Distribution	0	1,156,232	1,156,232	152,519	0	0	1,003,713	1,156,232												
1997	Electric Works	0	0	158,000	0	0	0	0	158,000												
	Net Investment	750,813	675,732	75,081	37,541	112,622	8,259														
	Component																				
	Domestic	675,732	75,081																		
	Foreign																				
1998	Design	750,813	0	0	0	0	750,813	0	0												
	Intake Works	2,330,663	1,584,851	745,812	88,565	60,597	82,039														
	Transmission	364,609	236,996	127,613	9,480	50,316	14,037														
	Treatment	1,369,383	547,753	821,630	49,298	34,235	90,379														
	Distribution	1,003,713	652,413	351,299	26,097	138,512	38,643														
1999	Electric Works	0	0	0	0	0	0														
	Net Investment	750,813	675,732	75,081	37,541	112,622	8,259														
	Component																				
	Domestic	675,732	75,081																		
	Foreign																				
2000	Design	750,813	0	0	0	0	750,813	0	0												
	Intake Works	2,059,803	1,400,666	659,137	78,273	53,555	72,505														
	Transmission	378,851	246,253	132,598	9,850	52,281	14,586														
	Treatment	15,617,831	6,247,132	9,370,699	562,242	390,446	1,030,777														
	Distribution	1,156,232	751,551	404,681	30,362	159,560	44,515														
2001	Electric Works	158,000	63,200	94,800	7,900	23,700	10,428														
	Net Investment	750,813	675,732	75,081	37,541	112,622	8,259														
	Component																				
	Domestic	675,732	75,081																		
	Foreign																				
2002	Design	750,813	0	0	0	0	750,813	0	0												
	Intake Works	2,330,663	1,584,851	745,812	88,565	60,597	82,039														
	Transmission	364,609	236,996	127,613	9,480	50,316	14,037														
	Treatment	1,369,383	547,753	821,630	49,298	34,235	90,379														
	Distribution	1,003,713	652,413	351,299	26,097	138,512	38,643														
2003	Electric Works	0	0	0	0	0	0														
	Net Investment	750,813	675,732	75,081	37,541	112,622	8,259														
	Component																				
	Domestic	675,732	75,081																		
	Foreign																				
2004	Design	750,813	0	0	0	0	750,813	0	0												
	Intake Works	2,059,803	1,400,666	659,137	78,273	53,555	72,505														
	Transmission	378,851	246,253	132,598	9,850	52,281	14,586														
	Treatment	15,617,831	6,247,132	9,370,699	562,242	390,446	1,030,777														
	Distribution	1,156,232	751,551	404,681	30,362	159,560	44,515														
2005	Electric Works	158,000	63,200	94,800	7,900	23,700	10,428														
	Net Investment	750,813	675,732	75,081	37,541	112,622	8,259														
	Component																				
	Domestic	675,732	75,081																		
	Foreign																				
2006	Design	750,813	0	0	0	0	750,813	0	0												
	Intake Works	2,330,663	1,584,851	745,812	88,565	60,597	82,039														
	Transmission	364,609	236,996	127,613	9,480	50,316	14,037														
	Treatment	1,369,383	547,753	821,630	49,298	34,235	90,379														
	Distribution	1,003,713	652,413	351,299	26,097	138,512	38,643														
2007	Electric Works	0	0	0	0	0	0														
	Net Investment	750,813	675,732	75,081	37,541	112,622	8,259														
	Component																				
	Domestic	675,732	75,081																		
	Foreign																				
2008	Design	750,813	0	0	0	0	750,813	0	0												
	Intake Works	2,059,803	1,400,666	659,137	78,273	53,555	72,505														
	Transmission	378,851	246,253	132,598	9,850	52,281	14,586														
	Treatment	15,617,831	6,247,132	9,370,699	562,242	390,446	1,030,777														
	Distribution	1,156,232	751,551	404,681	30,362	159,560	44,515														
2009	Electric Works	158,000	63,200	94,800	7,900	23,700	10,428														
	Net Investment	750,813	675,732	75,081	37,541	112,622	8,259														
	Component																				
	Domestic	675,732	75,081																		
	Foreign																				
2010	Design	750,813	0	0	0	0	750,813	0	0												
	Intake Works	2,330,663	1,584,851	745,812	88,565	60,597	82,039														
	Transmission	364,609	236,996	127,613	9,480	50,316	14,037														
	Treatment	1,369,383	547,753	821,630	49,298	34,235	90,379														
	Distribution	1,003,713	652,413	351,299	26,097	138,512	38,643														
2011	Electric Works	0	0	0	0	0	0														
	Net Investment	750,813	675,732	75,081	37,541	112,622	8,259														
	Component																				
	Domestic	675,732	75,081																		
	Foreign																				
2012	Design	750,813	0	0	0	0	750,813	0	0												
	Intake Works	2,330,663	1,584,851	745,812	88,565	60,597	82,039														
	Transmission	364,609	236,996	127,613	9,480	50,316	14,037														
	Treatment	1,369,383	547,753	821,630	49,298	34,235	90,379														
	Distribution	1,003,713	652,413	351,299	26,097	138,512	38,643														
2013	Electric Works	0	0	0	0	0	0														
	Net Investment	750,813	675,732	75,081	37,541	112,622	8,259														
	Component																				
	Domestic	675,732	75,081																		
	Foreign																				
2014	Design	750,813	0	0	0	0	750,813	0	0												
	Intake Works	2,330,663	1,584,851	745,812	88,565	60,597	82,039														
	Transmission	364,609	236,996	127,613	9,480	50,316	14,037														
	Treatment	1,369,383	547,753	821,630	49,298	34,235	90,379														
	Distribution	1,003,713	652,413	351,299	26,097	138,512	38,643														

Table F, A.4 : Calculation of Variable Cost (Arica)  
<Calculo de Costo Variable (Arica)>

Year	Electric Cost (Thousand Pesos)	Chemical Cost (Thousand Pesos)	Total Cost (Thousand Pesos)	Incremental Consumption (l/sec)	Incremental Consumption (Thousand M3)
1999	535,173	183,609	718,782	204	6,433
2000	541,601	185,424	727,025	207	6,528
2001	556,912	190,993	747,905	211	6,654
2002	572,398	196,250	768,648	214	6,749
2003	587,884	199,629	787,513	217	6,843
2004	587,884	199,629	787,513	220	6,938
2005	587,884	199,629	787,513	223	7,033
2006	587,884	199,629	787,513	223	7,033
2007	587,884	199,629	787,513	223	7,033
2008	587,884	199,629	787,513	223	7,033
2009	587,884	199,629	787,513	223	7,033
2010	587,884	199,629	787,513	223	7,033
2011	587,884	199,629	787,513	223	7,033
2012	587,884	199,629	787,513	223	7,033
2013	587,884	199,629	787,513	223	7,033
2014	587,884	199,629	787,513	223	7,033
2015	587,884	199,629	787,513	223	7,033
2016	587,884	199,629	787,513	223	7,033
2017	587,884	199,629	787,513	223	7,033
2018	587,884	199,629	787,513	223	7,033
2019	587,884	199,629	787,513	223	7,033
2020	587,884	199,629	787,513	223	7,033
2021	587,884	199,629	787,513	223	7,033
2022	587,884	199,629	787,513	223	7,033
2023	587,884	199,629	787,513	223	7,033
2024	587,884	199,629	787,513	223	7,033
2025	587,884	199,629	787,513	223	7,033
2026	587,884	199,629	787,513	223	7,033
2027	587,884	199,629	787,513	223	7,033
2028	587,884	199,629	787,513	223	7,033
	NPV		6,193,793		55,106

Unitary Marginal Cost of Electric Energy and Chemical : \$112

Table F, A.5 SIMOP Results (Arica)  
<Resultados del SIMOP (Arica)>

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ANO	CONSUMO POR GRUPOS					OFERTA Y DEMANDA DE AGUA PROYECTADAS		OFERTA TOTAL		NORMA DE DISTR.NO. 1	
	1	2	3	4	5	TOTAL		SIN	CON	SIN NVOS	CON NVOS
7	3640.	1134.	5016.	2817.	0.	12607.		10092.	16531.	X	
8	3748.	1177.	5391.	3021.	0.	13337.		10249.	16790.	X	
9	3860.	1222.	5795.	3239.	0.	14117.		10407.	17045.	X	
10	3977.	1269.	6231.	3474.	0.	14950.		10565.	17304.	X	
11	4097.	1318.	6700.	3724.	0.	15840.		10722.	17566.	X	
12	4222.	1370.	7205.	3993.	0.	16790.		10880.	17723.	X	
13	4351.	1423.	7749.	4282.	0.	17804.		11038.	18070.	X	
14	4484.	1479.	8335.	4591.	0.	18888.		11038.	18070.	X	
15	4622.	1537.	8965.	4922.	0.	20045.		11038.	18070.	X	
16	4765.	1597.	9644.	5276.	0.	21282.		11038.	18070.	X	
17	4913.	1660.	10374.	5657.	0.	22603.		11038.	18070.	X	
18	5066.	1726.	11159.	6064.	0.	24014.		11038.	18070.	X	
19	5224.	1794.	12004.	6501.	0.	25523.		11038.	18070.	X	
20	5388.	1865.	12913.	6968.	0.	27134.		11038.	18070.	X	
21	5557.	1940.	13891.	7470.	0.	28857.		11038.	18070.	X	
22	5733.	2017.	14942.	8007.	0.	30698.		11038.	18070.	X	
23	5914.	2097.	16073.	8582.	0.	32666.		11038.	18070.	X	
24	6102.	2181.	17288.	9199.	0.	34770.		11038.	18070.	X	
25	6296.	2268.	18595.	9859.	0.	37019.		11038.	18070.	X	
26	6497.	2359.	20001.	10567.	0.	39424.		11038.	18070.	X	
27	6705.	2454.	21511.	11325.	0.	41995.		11038.	18070.	X	
28	6921.	2553.	23135.	12137.	0.	44744.		11038.	18070.	X	
29	7143.	2655.	24880.	13006.	0.	47685.		11038.	18070.	X	
30	7374.	2762.	26756.	13938.	0.	50829.		11038.	18070.	X	
31	7613.	2873.	28772.	14936.	0.	54193.		11038.	18070.	X	
32	7859.	2988.	30939.	16005.	0.	57791.		11038.	18070.	X	
33	8115.	3109.	33267.	17149.	0.	61640.		11038.	18070.	X	
34	8379.	3234.	35769.	18375.	0.	65757.		11038.	18070.	X	
35	8653.	3364.	38458.	19688.	0.	70163.		11038.	18070.	X	
36	8936.	3500.	41346.	21094.	0.	74876.		11038.	18070.	X	



Table F, A.5 SIMOP Results (Arica)

&lt;Resultados del SIMOP (Arica)&gt;

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## RESUMEN DE BENEFICIOS PARA EL GRUPO DE CONSUMIDORES NO. 1 (GRUPO EXISTENTE ANTERIORMENTE)

AÑO	ELAST.	MAX	PRECIO		CONSUMO		SIN	NETO	BENEFICIOS ECONÓMICOS BRUTOS	
			CON.	PROY.	SIN	PROY.	CON		CONSUMO NETO	CONSUMO TOTAL
7	--.52	INDEFINIDO	178.22	178.22	273.41	3640.	3640.	2913.	726.	160243.
8	--.52	INDEFINIDO	181.25	181.25	300.77	3748.	3748.	2880.	868.	202540.
9	--.52	INDEFINIDO	184.28	184.28	331.25	3860.	3860.	2846.	1015.	250546.
10	--.52	INDEFINIDO	187.31	187.31	365.23	3977.	3977.	2810.	1167.	304902.
11	--.52	INDEFINIDO	190.34	190.34	403.11	4097.	4097.	2773.	1324.	366319.
12	--.52	INDEFINIDO	193.37	193.37	445.38	4222.	4222.	2736.	1486.	435581.
13	--.52	INDEFINIDO	196.40	196.40	492.57	4351.	4351.	2697.	1653.	513558.
14	--.52	INDEFINIDO	199.43	217.15	560.35	4484.	4290.	2620.	1670.	581508.
15	--.52	INDEFINIDO	202.46	247.16	637.80	4622.	4167.	2545.	1622.	642862.
16	--.52	INDEFINIDO	205.49	281.47	726.33	4765.	4046.	2471.	1575.	710862.
17	--.52	INDEFINIDO	208.52	320.69	827.54	4913.	3927.	2399.	1529.	786238.
18	--.52	INDEFINIDO	211.55	365.55	943.29	5066.	3812.	2328.	1483.	869801.
19	--.52	INDEFINIDO	214.58	416.86	1075.72	5224.	3699.	2259.	1439.	962451.
20	--.52	INDEFINIDO	217.62	475.58	1227.25	5388.	3588.	2192.	1396.	1065185.
21	--.52	INDEFINIDO	220.65	542.80	1400.70	5557.	3480.	2126.	1354.	1179114.
22	--.52	INDEFINIDO	223.68	619.75	1599.27	5733.	3374.	2061.	1313.	1305472.
23	--.52	INDEFINIDO	226.71	707.88	1826.68	5914.	3271.	1998.	1273.	1445627.
24	--.52	INDEFINIDO	229.74	808.82	2087.16	6102.	3171.	1937.	1234.	1601100.
25	--.52	INDEFINIDO	232.77	924.46	2385.58	6296.	3073.	1877.	1196.	1773582.
26	--.52	INDEFINIDO	235.80	1056.98	2727.56	6497.	2978.	1819.	1159.	1964947.
27	--.52	INDEFINIDO	238.83	1208.88	3119.52	6705.	2885.	1762.	1123.	2177286.
28	--.52	INDEFINIDO	241.86	1383.00	3568.85	6921.	2795.	1707.	1088.	2412906.
29	--.52	INDEFINIDO	244.89	1582.65	4084.05	7143.	2707.	1653.	1053.	2674388.
30	--.52	INDEFINIDO	247.92	1811.62	4674.89	7374.	2621.	1601.	1020.	2964593.
31	--.52	INDEFINIDO	250.95	2074.23	5352.57	7613.	2538.	1550.	988.	3286689.
32	--.52	INDEFINIDO	253.98	2375.50	6130.00	7859.	2457.	1501.	956.	3644209.
33	--.52	INDEFINIDO	257.01	2721.17	7021.98	8115.	2379.	1453.	926.	4041072.
34	--.52	INDEFINIDO	260.04	3117.82	8045.57	8379.	2303.	1407.	896.	4481641.
35	--.52	INDEFINIDO	263.07	3573.07	9220.32	8653.	2229.	1361.	867.	4970746.
36	--.52	INDEFINIDO	266.10	4095.61	*****	8936.	2157.	1317.	839.	5513768.

Table F, A.5 SIMOP Results (Arica)  
<Resultados del SIMOP (Arica)>

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RESUMEN DE BENEFICIOS PARA EL GRUPO DE CONSUMIDORES NO. 2 (GRUPO EXISTENTE ANTERIORMENTE)											
AÑO	ELAST.	MAX	PRECIO		CON.	PROY.	CON.	SIN	NETO	CONSUMO NETO ABORRO DE RECURSOS TOTAL	BENEFICIOS ECONOMICOS BRUTOS
			CON.	PROY.							
7	-26	858.55	178.22	178.22	313.96	1134.	1134.	908.	226.	55672.	0.
8	-26	887.51	181.25	181.25	344.78	1177.	1177.	905.	273.	71683.	0.
9	-25	917.60	184.28	184.28	377.02	1222.	1222.	901.	321.	90153.	0.
10	-25	948.86	187.31	187.31	410.71	1269.	1269.	897.	372.	111333.	0.
11	-24	981.33	190.34	190.34	445.89	1318.	1318.	892.	426.	135493.	0.
12	-24	1015.07	193.37	193.37	482.60	1370.	1370.	887.	482.	162923.	0.
13	-23	1050.12	196.40	196.40	520.86	1423.	1423.	882.	541.	193936.	0.
14	-28	1086.54	199.43	237.83	568.13	1479.	1415.	864.	550.	221842.	0.
15	-35	1124.37	202.46	293.30	616.74	1537.	1385.	846.	539.	245282.	0.
16	-43	1163.68	205.49	350.09	666.72	1597.	1356.	828.	528.	268295.	0.
17	-51	1204.51	208.52	408.26	718.14	1660.	1327.	811.	516.	290878.	0.
18	-60	1246.93	211.55	467.84	771.04	1726.	1298.	793.	505.	313031.	0.
19	-69	1291.00	214.58	528.89	825.49	1794.	1270.	776.	494.	334754.	0.
20	-79	1336.78	217.62	591.48	881.54	1865.	1242.	759.	483.	356050.	0.
21	-90	1384.35	220.65	655.64	939.24	1940.	1215.	742.	473.	376922.	0.
22	-1.01	1433.77	223.68	721.46	998.68	2017.	1187.	725.	462.	397374.	0.
23	-1.13	1485.11	226.71	788.99	1059.90	2097.	1160.	709.	452.	417410.	0.
24	-1.26	1538.44	229.74	858.30	1123.00	2181.	1134.	692.	441.	437037.	0.
25	-1.40	1593.85	232.77	929.46	1188.03	2268.	1107.	676.	431.	456262.	0.
26	-1.55	1651.42	235.80	1002.56	1255.08	2359.	1081.	661.	421.	475090.	0.
27	-1.70	1711.23	238.83	1077.66	1324.23	2454.	1056.	645.	411.	493529.	0.
28	-1.87	1773.36	241.86	1154.86	1395.57	2553.	1031.	630.	401.	511589.	0.
29	-2.04	1837.91	244.89	1234.23	1469.17	2655.	1006.	615.	392.	529276.	0.
30	-2.23	1904.97	247.92	1315.88	1545.14	2762.	982.	600.	382.	546601.	0.
31	-2.44	1974.64	250.95	1399.89	1623.57	2873.	958.	585.	373.	563572.	0.
32	-2.65	2047.01	253.98	1486.37	1704.56	2988.	934.	571.	364.	580198.	0.
33	-2.88	2122.21	257.01	1575.41	1788.21	3103.	911.	557.	355.	596489.	0.
34	-3.13	2200.33	260.04	1667.14	1874.64	3234.	889.	543.	346.	612455.	0.
35	-3.39	2281.49	263.07	1761.65	1963.96	3364.	866.	529.	337.	628105.	0.
36	-3.67	2365.80	266.10	1859.07	2056.28	3500.	845.	516.	329.	643451.	0.

Table F, A.5 SIMOP Results (Arica)

&lt;Resultados del SIMOP (Arica)&gt;

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## RESUMEN DE BENEFICIOS PARA EL GRUPO DE CONSUMIDORES NO. 3 (GRUPO EXISTENTE ANTERIORMENTE)

AÑO	ELAST.	MAX	PRECIO		SIN	PROY.	CONSUMO		SIN	NETO	BENEFICIOS ECONOMICOS BRUTOS	
			CON.	PROY.			CON	CONSUMO			CONSUMO NETO	AHORRO DE RECURSOS TOTAL
7	-22	979.74	178.22	178.22	338.14	5016.	5016.	4015.	1001.	258382.	0.	258382.
8	-21	1042.69	181.25	181.25	380.71	5391.	5391.	4143.	1248.	350733.	0.	350733.
9	-20	1110.30	184.28	184.28	427.67	5795.	5795.	4272.	1523.	466051.	0.	466051.
10	-19	1182.92	187.31	187.31	479.38	6231.	6231.	4403.	1828.	609286.	0.	609286.
11	-18	1260.90	190.34	190.34	536.22	6700.	6700.	4535.	2165.	786344.	0.	786344.
12	-17	1344.66	193.37	193.37	598.61	7205.	7205.	4659.	2536.	1004256.	0.	1004256.
13	-16	1434.62	196.40	196.40	666.99	7749.	7749.	4804.	2945.	1271368.	0.	1271368.
14	-20	1531.23	199.43	257.08	752.96	8335.	7974.	4871.	3103.	1567222.	0.	1567222.
15	-27	1635.00	202.46	343.61	846.19	8965.	8082.	4937.	3145.	1871126.	0.	1871126.
16	-33	1746.44	205.49	438.04	947.24	9644.	8188.	5002.	3187.	2207238.	0.	2207238.
17	-41	1866.12	208.52	540.94	1056.67	10374.	8293.	5066.	3228.	2578222.	0.	2578222.
18	-49	1994.67	211.55	652.93	1175.11	11159.	8397.	5129.	3268.	2986933.	0.	2986933.
19	-57	2132.73	214.58	774.68	1303.20	12004.	8499.	5191.	3308.	3436437.	0.	3436437.
20	-66	2281.00	217.62	906.89	1441.67	12913.	8599.	5253.	3347.	3930020.	0.	3930020.
21	-76	2440.25	220.65	1050.34	1591.27	13891.	8698.	5313.	3385.	4471211.	0.	4471211.
22	-86	2611.28	223.68	1205.84	1752.81	14942.	8796.	5372.	3423.	5063799.	0.	5063799.
23	-97	2794.96	226.71	1374.27	1927.17	16073.	8891.	5431.	3460.	5711851.	0.	5711851.
24	-1.08	2992.24	229.74	1556.55	2115.29	17288.	8985.	5488.	3497.	6419735.	0.	6419735.
25	-1.21	3204.12	232.77	1753.71	2318.18	18595.	9077.	5544.	3533.	7192151.	0.	7192151.
26	-1.34	3431.68	235.80	1966.82	2536.91	20001.	9167.	5600.	3568.	8034139.	0.	8034139.
27	-1.49	3676.07	238.83	2197.05	2772.65	21511.	9256.	5654.	3602.	8951129.	0.	8951129.
28	-1.64	3938.55	241.86	2445.63	3026.65	23135.	9343.	5707.	3636.	9948943.	0.	9948943.
29	-1.80	4220.46	244.89	2713.91	3300.23	24880.	9428.	5759.	3669.	11033860.	0.	11033860.
30	-1.98	4523.22	247.92	3003.33	3594.84	26756.	9512.	5810.	3702.	12212620.	0.	12212620.
31	-2.16	4848.39	250.95	3315.42	3912.02	28772.	9594.	5860.	3734.	13492470.	0.	13492470.
32	-2.36	5197.63	253.98	3651.84	4253.43	30939.	9674.	5909.	3765.	14881210.	0.	14881210.
33	-2.58	5572.70	257.01	4014.37	4620.84	33267.	9752.	5957.	3795.	16387220.	0.	16387220.
34	-2.80	5975.53	260.04	4404.91	5016.17	35769.	9829.	6004.	3825.	18019550.	0.	18019550.
35	-3.05	6408.18	263.07	4825.53	5441.46	38458.	9905.	6050.	3855.	19787900.	0.	19787900.
36	-3.31	6872.83	266.10	5278.41	5898.92	41346.	9978.	6095.	3883.	21702730.	0.	21702730.

Table F, A.5 SIMOP Results (Arica)  
<Resultados del SIMOP (Arica)>

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RESUMEN DE BENEFICIOS PARA EL GRUPO DE CONSUMIDORES NO. 4 (GRUPO EXISTENTE ANTERIORMENTE)

AÑO	ELAST.	MAX	PRECIO		PROY.	CONSUMO	SIN	NETO	CONSUMO NETO	ABORRO DE RECURSOS TOTAL	BENEFICIOS ECONOMICOS BRUTOS	
			CON.	PROY.		CON						
7	-03	774.18	178.22	178.22	297.12	2817.	2255.	562.	133595.	0.	133595.	0.
8	-31	774.18	181.25	181.25	318.54	3021.	2322.	699.	174800.	0.	174800.	0.
9	-31	774.18	184.28	184.28	339.32	3239.	2388.	851.	222906.	0.	222906.	0.
10	-32	774.18	187.31	187.31	359.47	3474.	2455.	1019.	278579.	0.	278579.	0.
11	-33	774.18	190.34	190.34	378.97	3724.	2521.	1203.	342523.	0.	342523.	0.
12	-33	774.18	193.37	193.37	397.81	3993.	2588.	1406.	415484.	0.	415484.	0.
13	-34	774.18	196.40	196.40	415.99	4282.	2654.	1627.	498254.	0.	498254.	0.
14	-41	774.18	199.43	224.31	438.31	4392.	2683.	1709.	566277.	0.	566277.	0.
15	-50	774.18	202.46	258.80	459.37	4437.	2710.	1727.	620013.	0.	620013.	0.
16	-60	774.18	205.49	291.31	479.24	4480.	2737.	1744.	671752.	0.	671752.	0.
17	-71	774.18	208.52	321.96	497.95	4522.	2762.	1760.	721503.	0.	721503.	0.
18	-83	774.18	211.55	350.82	515.58	4563.	2787.	1776.	769286.	0.	769286.	0.
19	-95	774.18	214.58	377.98	532.18	4602.	2811.	1791.	815124.	0.	815124.	0.
20	-1.09	774.18	217.62	403.54	547.78	4641.	2835.	1806.	859047.	0.	859047.	0.
21	-1.23	774.18	220.65	427.56	562.46	4677.	2857.	1820.	901092.	0.	901092.	0.
22	-1.39	774.18	223.68	450.13	576.24	4713.	2879.	1834.	941298.	0.	941298.	0.
23	-1.56	774.18	226.71	471.33	589.19	4747.	2900.	1848.	979707.	0.	979707.	0.
24	-1.74	774.18	229.74	491.23	601.35	4781.	2920.	1860.	1016365.	0.	1016365.	0.
25	-1.93	774.18	232.77	509.90	612.75	4812.	2940.	1873.	1051322.	0.	1051322.	0.
26	-2.14	774.18	235.80	527.41	623.45	4843.	2958.	1885.	1084625.	0.	1084625.	0.
27	-2.36	774.18	238.83	543.82	633.47	4873.	2976.	1896.	1116327.	0.	1116327.	0.
28	-2.60	774.18	241.86	559.20	642.87	4901.	2994.	1908.	1146478.	0.	1146478.	0.
29	-2.86	774.18	244.89	573.60	651.66	4929.	3011.	1918.	1175133.	0.	1175133.	0.
30	-3.14	774.18	247.92	587.09	659.90	4955.	3027.	1928.	1202343.	0.	1202343.	0.
31	-3.44	774.18	250.95	599.71	667.61	4980.	3042.	1938.	1228160.	0.	1228160.	0.
32	-3.76	774.18	253.98	611.52	674.83	5004.	3057.	1948.	1252635.	0.	1252635.	0.
33	-4.11	774.18	257.01	622.57	681.57	5027.	3071.	1957.	1275821.	0.	1275821.	0.
34	-4.48	774.18	260.04	632.89	687.88	5049.	3084.	1965.	1297766.	0.	1297766.	0.
35	-4.88	774.18	263.07	642.55	693.77	5071.	3097.	1973.	1318523.	0.	1318523.	0.
36	-5.31	774.18	266.10	651.56	699.28	5091.	3109.	1981.	1338137.	0.	1338137.	0.

Table F, A.5 SIMOP Results (Arica)  
<Resultados del SIMOP (Arica)>

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AÑO	BENEFICIOS Y COSTOS TOTALES										BENEFICIOS ECONOMICOS NETOS	
	BENEFICIOS ECONOMICOS BRUTOS					COSTOS ECONOMICOS BRUTOS					TOTAL	
	1	2	3	4	5	TOTAL	PERIODICOS	NO PERIODICOS	VARIABLES DE PRODUCCION	SUMINISTRO		
1												
2												
3												
4												
5												
6												
7	160242	55671	258382	133595		607891	469861		281708		0	0
8	202539	71683	350733	174799		799755	469861		345869		0	0
9	250545	90153	466050	222905		1029655	469861		415572		0	0
10	304902	111333	609285	278578		1304099	469861		491198		0	0
11	366319	135493	786344	342522		1630678	469861		573156		0	0
12	435581	162923	1004256	415483		2018244	469861		661883		0	0
13	513557	193936	1271367	498253		2477115	469861		757848		0	0
14	581507	221841	1567221	566277		2936848	469861		787643		0	0
15	642861	245282	1871126	620013		3379283	469861		787643		0	0
16	710862	268295	2207238	671751		3858146	469861		787643		0	0
17	786238	290878	2578221	721503		4376841	469861		787643		0	0
18	869801	313030	2986932	769285		4939050	469861		787643		0	0
19	962450	334754	3436436	815123		5548764	469861		787643		0	0
20	1065184	356049	3930019	859047		6210301	469861		787643		0	0
21	1179114	376921	4471211	901092		6282339	469861		787643		0	0
22	1305471	397373	5063798	941297		7707942	469861		787643		0	0
23	1445626	417410	5711850	979706		8545494	469861		787643		0	0
24	1601100	437037	6419735	1016365		9474237	469861		787643		0	0
25	1773581	456261	7192151	1051321		10473316	469861		787643		0	0
26	1964947	475089	8034138	1084624		11558801	469861		787643		0	0
27	2177285	493529	8951129	1116326		12738270	469861		787643		0	0
28	2412906	511588	9948943	1146478		14019916	469861		787643		0	0
29	2674387	529276	11033859	1175132		15412656	469861		787643		0	0
30	2964592	546601	12212615	1202343		16926152	469861		787643		0	0
31	3286688	563572	13492470	1228160		18570890	469861		787643		0	0
32	3644209	580198	14881205	1252635		20358248	469861		787643		0	0
33	4041072	596489	16387223	1275820		22300604	469861		787643		0	0
34	4481641	612454	18019554	1297766		24411416	469861		787643		0	0
35	4970746	628105	19787902	1318522		26705276	469861		787642		0	0
36	5513767	643450	21702732	1338137		29198088	469861		787643		0	0

Table F, A.5 SIMOP Results (Arica)  
<Resultados del SIMOP (Arica)>

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VALOR PRESENTE DE LOS BENEFICIOS Y LOS COSTOS (TASA DE DESCUENTO=		.000	.120	.120	.120	.120	.120
A. BENEFICIOS		MONTO					
GRUPO 1		3462966.					
GRUPO 2		990532.					
GRUPO 3		11738120.					
GRUPO 4		2382222.					
GRUPO 5		0.					
SUBTOTAL		18573840.					
B. COSTOS							
PERIODICOS		2147607.					
NO PERIODICOS		15228810.					
VARIABLES DE PRODUCCION		2773910.					
VARIABLES DE SUMINISTRO		0.					
SUBTOTAL		20150330.					
C. VALOR NETO (A-B)		-1576491.					
TASA INTERNA DE RETORNO =		11.36					
COSTO INCREMENTAL PROMEDIO (UM/M3) =		5475.5					

Table F, A.5 SIMOP Results (Arica)  
<Resultados del SIMOP (Arica)>

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ANALISIS DE INICIACION OPTIMA				
INICIACION CONSTRUCCION	INICIACION PRODUCCION	VALOR PRESENTE NETO	----CAMBIO PORCENTUAL CON RELACION AL ANTERIOR	-----
1	7	-1576490.	.0	.0
2	8	643250.	140.8	140.8
3	9	2606187.	305.2	265.3
4	10	4329265.	66.1	374.6
5	11	5827867.	34.6	469.7
6	12	7115971.	22.1	551.4
7	13	8206254.	15.3	620.5
8	14	9110185.	11.0	677.9
9	15	9840114.	8.0	724.2
10	16	10420640.	5.9	761.0
11	17	10868960.	4.3	789.4
12	18	11200460.	3.0	810.5
13	19	11428860.	2.0	825.0
14	20	11566440.	1.2	833.7
* 15	21	11624150.	.5	837.3
16	22	11611800.	-.1	836.6

\* SEÑALA FECHA OPTIMA DE INICIACION  
(SI SE PRESENTA DENTRO DEL PERIODO DE TIEMPO BAJO ESTUDIO)

Table F, A.5 SIMOP Results (Arica)  
<Resultados del SIMOP (Arica)>

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WATER SUPPLY PROJECT ARICA										PASADA PARAMETRICA 1.00									
RESUMEN DE PASADAS PARA ANALIZAR LA SENSIBILIDAD																			
PASADA NO.	SEQ. NO.	VAR. NO.	NOMBRE DE LA VARIABLE	GRUPO DE CONSUMIDORES INGRESOS NO.	CATEGORIA ANO	FLUJO NO.	CAMBIO PROGRESIVO O CONSTANTE	VALOR DEL PARAMETRO		PASADA NO.	SEQ. NO.	VAR. NO.	NOMBRE DE LA VARIABLE	GRUPO DE CONSUMIDORES INGRESOS NO.	CATEGORIA ANO	FLUJO NO.	CAMBIO PROGRESIVO O CONSTANTE	VALOR DEL PARAMETRO	
8	1	5	ELASTICIDAD	1				-.82		8	1	5	ELASTICIDAD	1				-.82	
8	2	5	ELASTICIDAD	2				-.35		8	2	5	ELASTICIDAD	2				-.35	
8	3	5	ELASTICIDAD	3				-.40		8	3	5	ELASTICIDAD	3				-.40	
8	4	5	ELASTICIDAD	4				-.35		8	4	5	ELASTICIDAD	4				-.35	
9	1	5	ELASTICIDAD	1				-.72		9	1	5	ELASTICIDAD	1				-.72	
9	2	5	ELASTICIDAD	2				-.30		9	2	5	ELASTICIDAD	2				-.30	
9	3	5	ELASTICIDAD	3				-.35		9	3	5	ELASTICIDAD	3				-.35	
9	4	5	ELASTICIDAD	4				-.30		9	4	5	ELASTICIDAD	4				-.30	
10	1	5	ELASTICIDAD	1				-.62		10	1	5	ELASTICIDAD	1				-.62	
10	2	5	ELASTICIDAD	2				-.25		10	2	5	ELASTICIDAD	2				-.25	
10	3	5	ELASTICIDAD	3				-.30		10	3	5	ELASTICIDAD	3				-.30	
10	4	5	ELASTICIDAD	4				-.25		10	4	5	ELASTICIDAD	4				-.25	
11	1	5	ELASTICIDAD	1				-.52		11	1	5	ELASTICIDAD	1				-.52	
11	2	5	ELASTICIDAD	2				-.20		11	2	5	ELASTICIDAD	2				-.20	
11	3	5	ELASTICIDAD	3				-.25		11	3	5	ELASTICIDAD	3				-.25	
11	4	5	ELASTICIDAD	4				-.20		11	4	5	ELASTICIDAD	4				-.20	
12	1	5	ELASTICIDAD	1				-.42		12	1	5	ELASTICIDAD	1				-.42	
12	2	5	ELASTICIDAD	2				-.15		12	2	5	ELASTICIDAD	2				-.15	
12	3	5	ELASTICIDAD	3				-.20		12	3	5	ELASTICIDAD	3				-.20	
12	4	5	ELASTICIDAD	4				-.15		12	4	5	ELASTICIDAD	4				-.15	
13	1	5	ELASTICIDAD	1				-.32		13	1	5	ELASTICIDAD	1				-.32	
13	2	5	ELASTICIDAD	2				-.10		13	2	5	ELASTICIDAD	2				-.10	
13	3	5	ELASTICIDAD	3				-.15		13	3	5	ELASTICIDAD	3				-.15	
13	4	5	ELASTICIDAD	4				-.10		13	4	5	ELASTICIDAD	4				-.10	
14	1	5	ELASTICIDAD	1				-.22		14	1	5	ELASTICIDAD	1				-.22	
14	2	5	ELASTICIDAD	2				-.05		14	2	5	ELASTICIDAD	2				-.05	
14	3	5	ELASTICIDAD	3				-.10		14	3	5	ELASTICIDAD	3				-.10	
14	4	5	ELASTICIDAD	4				-.05		14	4	5	ELASTICIDAD	4				-.05	



Table F, A.5 SIMOP Results (Arica)  
<Resultados del SIMOP (Arica)>

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WATER SUPPLY PROJECT ARICA			PASADA PARAMETRICA 1.00		
* * * RESULTADOS SEGUN LIMITES PARAMETRICOS * * *					
PASADA TOTAL NO.	BENEFICIOS BRUTOS DESCONTADOS	TOTAL COSTO DESCONTADO	VALOR PRESENTE NETO	TASA DE RETORNO	COST. INCR. PROMEDIO
8	11504190.00	19816280.00	-8312093.00	7.870	5384.69
9	13112950.00	19931750.00	-6818802.00	8.780	5416.07
10	15192440.00	20042110.00	-4849671.00	9.830	5446.06
11	17687090.00	20150330.00	-2463232.00	10.950	5475.46
12	21424130.00	20254960.00	1169170.00	12.480	5503.90
13	31359380.00	20354450.00	11004930.00	15.490	5530.93
14	129647500.00	20441630.00	109205900.00	23.840	5554.62

Table F, A.5 SIMOP Results (Arica)

&lt;Resultados del SIMOP (Arica)&gt;

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WATER SUPPLY PROJECT ARICA										PASADA PARAMETRICA 2.00	
RESUMEN DE PASADAS PARA ANALIZAR LA SENSIBILIDAD											
PASADA NO.	SEQ. NO.	VAR. NO.	NOMBRE DE LA VARIABLE	GRUPO DE CONSUMIDORES INGRESOS NO.	CATEGORIA ANO	FLUJO NO.	CAMBIO PROGRESIVO O CONSTANTE	VALOR DEL PARAMETRO			
5	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	-.18			
6	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	-.15			
7	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	-.12			
8	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	-.09			
9	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	-.06			
10	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	-.03			
11	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	.00			
12	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	.03			
13	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	.06			
14	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	.09			
15	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	.12			
16	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	.15			
17	1	18	COSTOS NO PERIODICOS			1	CONSTANTE	.18			

Table F, A.5 SIMOP Results (Arica)  
<Resultados del SIMOP (Arica)>

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WATER SUPPLY PROJECT ARICA			PASADA PARAMETRICA 2.00			
* * * RESULTADOS SEGUN LIMITES PARAMETRICOS * * *						
PASADA TOTAL NO.	BENEFICIOS BRUTOS DESCONTADOS	TOTAL COSTO DESCONTADO	VALOR PRESENTE NETO	TASA DE RETORNO	COST. INCR. PROMEDIO	
5	18573840.00	17409140.00	1164698.00	12.550	4730.60	
6	18573840.00	17866000.00	707834.00	12.330	4854.74	
7	18573840.00	18322870.00	250966.00	12.120	4978.89	
8	18573840.00	18779730.00	-205898.00	11.920	5103.03	
9	18573840.00	19236600.00	-662760.00	11.730	5227.18	
10	18573840.00	19693460.00	-1119626.00	11.540	5351.32	
11	18573840.00	20150330.00	-1576490.00	11.360	5475.46	
12	18573840.00	20607190.00	-2033354.00	11.190	5599.61	
13	18573840.00	21064050.00	-2490216.00	11.030	5723.75	
14	18573840.00	21520920.00	-2947082.00	10.860	5847.90	
15	18573840.00	21977780.00	-3403948.00	10.710	5972.04	
16	18573840.00	22434650.00	-3860810.00	10.560	6096.18	
17	18573840.00	22891510.00	-4317676.00	10.400	6220.33	

Table F, A.5 SIMOP Results (Arica)  
<Resultados del SIMOP (Arica)>

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WATER SUPPLY PROJECT ARICA				PASADA PARAMETRICA 3.00			
RESUMEN DE PASADAS PARA ANALIZAR LA SENSIBILIDAD							
PASADA NO.	SEQ. NO.	VAR. NO.	NOMBRE DE LA VARIABLE	GRUPO DE CONSUMIDORES NO.	CATEGORIA INGRESOS	ANO	FLUJO NO. CAMBIO PROGRESIVO O CONSTANTE VALOR DEL PARAMETRO
6	1	3	TASA DE DESCUENTO				.070
7	1	3	TASA DE DESCUENTO				.080
8	1	3	TASA DE DESCUENTO				.090
9	1	3	TASA DE DESCUENTO				.100
10	1	3	TASA DE DESCUENTO				.110
11	1	3	TASA DE DESCUENTO				.120
12	1	3	TASA DE DESCUENTO				.130
13	1	3	TASA DE DESCUENTO				.140
14	1	3	TASA DE DESCUENTO				.150
15	1	3	TASA DE DESCUENTO				.160
16	1	3	TASA DE DESCUENTO				.170

Table F, A.5 SIMOP Results (Arica)

&lt;Resultados del SIMOP (Arica)&gt;

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WATER SUPPLY PROJECT ARICA			PASADA PARAMETRICA 3.00		
* * * RESULTADOS SEGUN LIMITES PARAMETRICOS * * *					
PASADA TOTAL BENEFICIOS BRUTOS DESCONTADOS	TOTAL COSTO DESCONTADO	VALOR PRESENTE NETO	TASA DE RETORNO	COST. INCR. PROMEDIO	
6	51881650.00	28849080.00	23032570.00	11.360	7839.18
7	41644490.00	26626070.00	15018420.00	11.360	7235.12
8	33671010.00	24691640.00	8979370.00	11.360	6709.48
9	27420630.00	22993450.00	4427180.00	11.360	6248.03
10	22489390.00	21490470.00	998916.00	11.360	5839.62
11	18573840.00	20150330.00	-1576490.00	11.360	5475.46
12	15444840.00	18947230.00	-3502392.00	11.360	5148.55
13	12928460.00	17860500.00	-4932041.00	11.360	4853.25
14	10891990.00	16873380.00	-5981392.00	11.360	4585.02
15	9233616.00	15972240.00	-6738619.00	11.360	4340.15
16	7874850.00	15145830.00	-7270983.00	11.360	4115.59

TABLE F, A.6 : WATER PRODUCTION AND CONSUMPTION PROJECTIONS (IQUIQUE STAGE I)  
 <Proyecciones Produccion y Consumo de Agua (Iquique Etapa I)>

	POPULATION	AVERAGE CONSUMPTION				AVERAGE PRODUCTION	
		CONSUMPTION PER CAPITA (l/c/d)	TOTAL CONSUMPTION		WATER LOSS (%)	TOTAL PRODUCTION	
			(m3/day)	(l/sec)		(m3/day)	(l/sec)
1992	152,529.00	220.00	33,556.38	388.40	40.00	55,927.30	647.30
1993	156,685.00	220.66	34,574.11	400.20	40.00	57,623.52	666.90
1994	160,918.00	221.32	35,614.69	412.20	40.00	59,357.82	687.00
1995	165,236.00	221.99	36,680.07	424.50	40.00	61,133.45	707.60
1996	169,628.00	222.65	37,768.00	437.10	39.00	61,914.75	716.60
1997	174,108.00	223.32	38,881.77	450.00	38.00	62,712.54	725.80
1998	178,677.00	223.99	40,021.83	463.20	37.00	63,526.71	735.30
1999	183,335.00	224.66	41,188.37	476.70	36.00	64,356.83	744.90
2000	188,100.00	225.34	42,385.66	490.60	35.00	65,208.71	754.70
2001	192,933.00	226.01	43,605.13	504.70	34.00	66,068.38	764.70
2002	197,877.00	226.69	44,856.70	519.20	33.00	66,950.30	774.90
2003	202,073.00	227.37	45,945.31	531.80	32.00	67,566.64	782.00
2004	208,073.00	228.05	47,451.46	549.20	31.00	68,770.24	796.00
2005	213,356.00	228.74	48,802.23	564.80	30.00	69,717.47	806.90
2006	218,697.00	229.42	50,173.98	580.70	30.00	71,677.12	829.60
2007	224,178.00	230.11	51,585.74	597.10	30.00	73,693.91	852.90
2008	229,776.00	230.80	53,032.52	615.80	30.00	75,760.74	876.90
2009	235,494.00	231.49	54,515.30	631.00	30.00	77,879.00	901.40
2010	241,379.00	232.19	56,045.27	648.70	30.00	80,064.67	926.70
2011	247,306.00	232.88	57,593.71	666.60	30.00	82,276.73	952.30
2012	253,407.00	233.58	59,191.58	685.10	30.00	84,559.40	978.70
2013	259,644.00	234.28	60,830.39	704.10	30.00	86,900.55	1,005.80
2014	266,020.00	234.99	62,511.15	723.50	30.00	89,301.64	1,033.60
2015	272,605.00	235.69	64,250.71	743.60	30.00	91,786.73	1,062.30
2016	279,208.00	236.40	66,004.41	763.90	30.00	94,292.01	1,091.30
2017	286,028.00	237.11	67,819.50	784.90	30.00	96,884.99	1,121.40
2018	293,005.00	237.82	69,682.22	806.50	30.00	99,546.03	1,152.20
2019	300,143.00	238.53	71,593.91	828.60	30.00	102,277.02	1,183.80
2020	307,540.00	239.25	73,578.41	851.60	30.00	105,112.02	1,216.60
2021	314,924.00	239.97	75,571.06	874.70	30.00	107,958.65	1,249.50
2022	322,576.00	240.69	77,639.50	898.60	30.00	110,913.57	1,283.70
2023	330,411.00	241.41	79,763.85	923.20	30.00	113,948.36	1,318.80
2024	338,432.00	242.13	81,945.28	948.40	30.00	117,064.69	1,354.90
2025	346,647.00	242.86	84,186.20	974.40	30.00	120,266.00	1,392.00
2026	355,060.00	243.59	86,488.06	1,001.00	30.00	123,554.37	1,430.00
2027	363,677.00	244.32	88,852.81	1,028.40	30.00	126,932.59	1,469.10
2028	372,506.00	245.05	91,282.92	1,056.50	30.00	130,404.18	1,509.30
2029	381,551.00	245.79	93,779.91	1,085.40	30.00	133,971.30	1,550.60
2030	390,821.00	246.52	96,346.52	1,115.10	30.00	137,637.88	1,593.00

Table F, A.7 : Calculation of Periodic Cost (Iquique Stage I)  
<Calculo de Costo Periodico (Iquique Etapa I)>  
(Unit : Thousand Pesos)

Year	Personnel	Maintenance	Total Periodic Cost
1999	11,520	355,711	367,231
2000	11,520	355,711	367,231
2001	11,520	355,711	367,231
2002	11,520	355,711	367,231
2003	11,520	355,711	367,231
2004	11,520	355,711	367,231
2005	11,520	355,711	367,231
2006	11,520	355,711	367,231
2007	11,520	355,711	367,231
2008	11,520	355,711	367,231
2009	11,520	355,711	367,231
2010	11,520	355,711	367,231
2011	11,520	355,711	367,231
2012	11,520	355,711	367,231
2013	11,520	355,711	367,231
2014	11,520	355,711	367,231
2015	11,520	355,711	367,231
2016	11,520	355,711	367,231
2017	11,520	355,711	367,231
2018	11,520	355,711	367,231
2019	11,520	355,711	367,231
2020	11,520	355,711	367,231
2021	11,520	355,711	367,231
2022	11,520	355,711	367,231
2023	11,520	355,711	367,231
2024	11,520	355,711	367,231
2025	11,520	355,711	367,231
2026	11,520	355,711	367,231
2027	11,520	355,711	367,231
2028	11,520	355,711	367,231

(Unit : Thousand Pesos)

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Table F, A.9 : Calculation of Variable Cost (Iquique Stage I)  
<Calculo de Costo variable (Iquique Etapa I)>

Year	Electric Cost (Thousand Pesos)	Chemical Cost (Thousand Pesos)	Total Cost (Thousand Pesos)	Incremental Consumption (l/sec)	Incremental Consumption (Thousand M3)
1999	188,014	4,687	192,701	142	4,478
2000	196,410	4,893	201,303	151	4,762
2001	204,890	5,104	209,994	160	5,046
2002	213,541	5,320	218,861	169	5,330
2003	219,562	5,470	225,032	176	5,550
2004	231,435	5,766	237,201	188	5,929
2005	240,683	5,997	246,680	199	6,276
2006	240,683	5,997	246,680	199	6,276
2007	240,683	5,997	246,680	199	6,276
2008	240,683	5,997	246,680	199	6,276
2009	240,683	5,997	246,680	199	6,276
2010	240,683	5,997	246,680	199	6,276
2011	240,683	5,997	246,680	199	6,276
2012	240,683	5,997	246,680	199	6,276
2013	240,683	5,997	246,680	199	6,276
2014	240,683	5,997	246,680	199	6,276
2015	240,683	5,997	246,680	199	6,276
2016	240,683	5,997	246,680	199	6,276
2017	240,683	5,997	246,680	199	6,276
2018	240,683	5,997	246,680	199	6,276
2019	240,683	5,997	246,680	199	6,276
2020	240,683	5,997	246,680	199	6,276
2021	240,683	5,997	246,680	199	6,276
2022	240,683	5,997	246,680	199	6,276
2023	240,683	5,997	246,680	199	6,276
2024	240,683	5,997	246,680	199	6,276
2025	240,683	5,997	246,680	199	6,276
2026	240,683	5,997	246,680	199	6,276
2027	240,683	5,997	246,680	199	6,276
2028	240,683	5,997	246,680	199	6,276

Table F, A.10 SIMOP Results (Iquique: Stage I)  
<Resultados del SIMOP (Iquique Etapa I)>

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AÑO	CONSUMO POR GRUPOS					OFERTA Y DEMANDA DE AGUA PROYECTADAS		OFERTA TOTAL		NORMA DE DISTR.NO. 1	
	1	2	3	4	5	TOTAL	SIN	CON	SIN NVOS	CON NVOS	
7	4839.	1727.	7522.	3992.	0.	18081.	13724.	18203.	X	X	
8	5065.	1819.	8231.	4366.	0.	19481.	13939.	18685.	X	X	
9	5302.	1915.	9003.	4774.	0.	20995.	14153.	19183.	X	X	
10	5551.	2015.	9844.	5221.	0.	22631.	14368.	19688.	X	X	
11	5810.	2120.	10759.	5710.	0.	24400.	14582.	20136.	X	X	
12	6082.	2230.	11755.	6244.	0.	26313.	14797.	20735.	X	X	
13	6367.	2345.	12841.	6829.	0.	28382.	15011.	21277.	X	X	
14	6665.	2466.	14022.	7468.	0.	30621.	15011.	21277.	X	X	
15	6977.	2592.	15309.	8167.	0.	33045.	15011.	21277.	X	X	
16	7303.	2724.	16710.	8932.	0.	35670.	15011.	21277.	X	X	
17	7645.	2862.	18236.	9768.	0.	38511.	15011.	21277.	X	X	
18	8003.	3007.	19897.	10682.	0.	41589.	15011.	21277.	X	X	
19	8378.	3159.	21706.	11682.	0.	44924.	15011.	21277.	X	X	
20	8770.	3317.	23676.	12775.	0.	48538.	15011.	21277.	X	X	
21	9180.	3483.	25821.	13971.	0.	52455.	15011.	21277.	X	X	
22	9610.	3657.	28157.	15279.	0.	56702.	15011.	21277.	X	X	
23	10059.	3839.	30700.	16709.	0.	61307.	15011.	21277.	X	X	
24	10530.	4029.	33470.	18273.	0.	66302.	15011.	21277.	X	X	
25	11023.	4229.	36485.	19983.	0.	71720.	15011.	21277.	X	X	
26	11539.	4437.	39769.	21853.	0.	77598.	15011.	21277.	X	X	
27	12079.	4656.	43344.	23899.	0.	83978.	15011.	21277.	X	X	
28	12644.	4884.	47238.	26136.	0.	90902.	15011.	21277.	X	X	
29	13236.	5124.	51478.	28582.	0.	98419.	15011.	21277.	X	X	
30	13855.	5374.	56094.	31257.	0.	106581.	15011.	21277.	X	X	
31	14504.	5637.	61121.	34183.	0.	115444.	15011.	21277.	X	X	
32	15183.	5911.	66595.	37382.	0.	125071.	15011.	21277.	X	X	
33	15893.	6199.	72555.	40881.	0.	135528.	15011.	21277.	X	X	
34	16637.	6499.	79046.	44708.	0.	146890.	15011.	21277.	X	X	
35	17416.	6814.	86113.	48892.	0.	159235.	15011.	21277.	X	X	
36	18231.	7144.	93809.	53469.	0.	172652.	15011.	21277.	X	X	

Table F, A.10 SIMOP Results (Iquique: Stage I)  
<Resultados del SIMOP (Iquique Etapa I)>

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RESUMEN DE BENEFICIOS PARA EL GRUPO DE CONSUMIDORES NO. 1 (GRUPO EXISTENTE ANTERIORMENTE)											
AÑO	ELAST.	MAX	PRECIO		PROY.	CONSUMO		SIN	NETO	BENEFICIOS ECONÓMICOS BRUTOS	
			CON.	PROY.		CON	CONSUMO			CONSUMO NETO	ABORRO DE RECURSOS TOTAL
7	-52	INDEFINIDO	311.09	311.09	528.59	4839.	4839.	3673.	1166.	472554.	0.
8	-52	INDEFINIDO	311.09	337.09	592.22	5065.	4858.	3624.	1234.	551090.	0.
9	-52	INDEFINIDO	311.09	370.04	664.08	5302.	4845.	3575.	1270.	629391.	0.
10	-52	INDEFINIDO	311.09	406.66	745.30	5551.	4829.	3524.	1305.	717926.	0.
11	-52	INDEFINIDO	311.09	450.09	837.16	5810.	4795.	3473.	1322.	811269.	0.
12	-52	INDEFINIDO	311.09	491.87	941.14	6082.	4793.	3420.	1373.	933280.	0.
13	-52	INDEFINIDO	311.09	541.40	1058.93	6367.	4773.	3367.	1406.	1063557.	0.
14	-52	INDEFINIDO	311.09	626.53	1225.45	6665.	4631.	3267.	1364.	1063557.	0.
15	-52	INDEFINIDO	311.09	725.38	1418.79	6977.	4492.	3169.	1323.	1063557.	0.
16	-52	INDEFINIDO	311.09	840.21	1643.38	7303.	4357.	3074.	1283.	1063557.	0.
17	-52	INDEFINIDO	311.09	973.66	1904.41	7645.	4224.	2980.	1244.	1063557.	0.
18	-52	INDEFINIDO	311.09	1128.83	2207.90	8003.	4094.	2889.	1206.	1063557.	0.
19	-52	INDEFINIDO	311.09	1309.32	2560.95	8378.	3968.	2799.	1169.	1063557.	0.
20	-52	INDEFINIDO	311.09	1519.38	2971.80	8770.	3844.	2712.	1132.	1063557.	0.
21	-52	INDEFINIDO	311.09	1763.95	3450.16	9180.	3724.	2627.	1097.	1063557.	0.
22	-52	INDEFINIDO	311.09	2048.82	4007.35	9610.	3606.	2544.	1062.	1063557.	0.
23	-52	INDEFINIDO	311.09	2380.78	4656.64	10059.	3491.	2463.	1028.	1063557.	0.
24	-52	INDEFINIDO	311.09	2767.77	5413.56	10530.	3379.	2384.	995.	1063557.	0.
25	-52	INDEFINIDO	311.09	3219.09	6296.32	11023.	3270.	2307.	963.	1063557.	0.
26	-52	INDEFINIDO	311.09	3745.67	7326.27	11539.	3164.	2232.	932.	1063557.	0.
27	-52	INDEFINIDO	311.09	4360.29	8528.41	12079.	3060.	2159.	901.	1063557.	0.
28	-52	INDEFINIDO	311.09	5077.94	9932.08	12644.	2960.	2088.	872.	1063557.	0.
29	-52	INDEFINIDO	311.09	5916.22	*****	13236.	2861.	2019.	843.	1063557.	0.
30	-52	INDEFINIDO	311.09	6895.77	*****	13855.	2766.	1951.	815.	1063557.	0.
31	-52	INDEFINIDO	311.09	8040.80	*****	14504.	2673.	1886.	787.	1063557.	0.
32	-52	INDEFINIDO	311.09	9379.75	*****	15183.	2583.	1822.	761.	1063557.	0.
33	-52	INDEFINIDO	311.09	*****	*****	15893.	2495.	1760.	735.	1063557.	0.
34	-52	INDEFINIDO	311.09	*****	*****	16637.	2410.	1700.	710.	1063557.	0.
35	-52	INDEFINIDO	311.09	*****	*****	17416.	2327.	1642.	685.	1063557.	0.
36	-52	INDEFINIDO	311.09	*****	*****	18231.	2247.	1585.	662.	1063557.	0.

Table F, A.10 SIMOP Results (Iquique: Stage I)

&lt;Resultados del SIMOP (Iquique Etapa I)&gt;

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## RESUMEN DE BENEFICIOS PARA EL GRUPO DE CONSUMIDORES NO. 2 (GRUPO EXISTENTE ANTERIORMENTE)

AÑO	ELAST.	MAX	PRECIO		PROY.	CON.	SIN	NETO	CONSUMO NETO AHORRO DE RECURSOS TOTAL	
			CON.	PROY.					BENEFICIOS ECONOMICOS BRUTOS	
7	-30	1356.60	311.09	311.09	562.99	1727.	1727.	416.	181896.	0.
8	-34	1412.04	311.09	356.09	624.31	1819.	1745.	443.	217239.	0.
9	-39	1470.08	311.09	411.09	688.76	1915.	1750.	459.	252295.	0.
10	-44	1530.83	311.09	469.70	756.44	2015.	1753.	474.	290449.	0.
11	-51	1594.42	311.09	535.35	827.45	2120.	1750.	483.	328847.	0.
12	-56	1660.99	311.09	597.24	901.88	2230.	1758.	503.	377287.	0.
13	-63	1730.67	311.09	666.45	979.86	2345.	1758.	518.	426258.	0.
14	-74	1803.62	311.09	766.54	1071.96	2466.	1713.	505.	426258.	0.
15	-86	1879.98	311.09	869.80	1167.30	2592.	1669.	492.	426258.	0.
16	-99	1959.91	311.09	976.37	1266.02	2724.	1625.	479.	426258.	0.
17	-113	2043.58	311.09	1086.39	1368.28	2862.	1582.	466.	426258.	0.
18	-129	2131.17	311.09	1200.01	1474.24	3007.	1538.	453.	426258.	0.
19	-145	2222.86	311.09	1317.40	1584.06	3159.	1496.	441.	426258.	0.
20	-163	2318.84	311.09	1438.72	1697.92	3317.	1454.	428.	426258.	0.
21	-183	2419.31	311.09	1564.16	1816.00	3483.	1413.	416.	426258.	0.
22	-204	2524.49	311.09	1693.91	1938.52	3657.	1372.	404.	426258.	0.
23	-227	2634.58	311.09	1828.19	2065.67	3839.	1332.	392.	426258.	0.
24	-251	2749.83	311.09	1967.20	2197.68	4029.	1293.	381.	426258.	0.
25	-278	2870.47	311.09	2111.17	2334.79	4229.	1255.	369.	426258.	0.
26	-307	2996.76	311.09	2260.35	2477.23	4437.	1217.	358.	426258.	0.
27	-338	3128.96	311.09	2415.00	2625.26	4656.	1180.	347.	426258.	0.
28	-372	3267.35	311.09	2575.38	2779.16	4884.	1143.	337.	426258.	0.
29	-409	3412.21	311.09	2741.77	2939.22	5124.	1108.	326.	426258.	0.
30	-449	3563.85	311.09	2914.48	3105.72	5374.	1073.	316.	426258.	0.
31	-492	3722.59	311.09	3093.82	3278.99	5637.	1039.	306.	426258.	0.
32	-539	3888.75	311.09	3280.11	3459.36	5911.	1006.	296.	426258.	0.
33	-590	4062.70	311.09	3473.71	3647.17	6199.	973.	287.	426258.	0.
34	-645	4244.78	311.09	3674.98	3842.79	6499.	941.	277.	426258.	0.
35	-705	4435.39	311.09	3884.29	4046.59	6814.	911.	268.	426258.	0.
36	-770	4634.92	311.09	4102.05	4258.98	7144.	880.	259.	426258.	0.

Table F, A.10 SIMOP Results (Iquique: Stage I)

&lt;Resultados del SIMOP (Iquique Etapa I)&gt;

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## RESUMEN DE BENEFICIOS PARA EL GRUPO DE CONSUMIDORES NO. 3 (GRUPO EXISTENTE ANTERIORMENTE)

AÑO	ELAST.	MAX	PRECIO		CON.	PROY.	SIN	PROY.	CON.	SIN	NETO	BENEFICIOS ECONOMICOS BRUTOS		
			CON.	PROY.								CONSUMO	CONSUMO NETO	AHORRO DE RECURSOS TOTAL
7	-21	1820.81	311.09	311.09	311.09	674.84	5710.	7522.	7522.	5710.	1812.	893433.	893433.	0.
8	-24	1963.09	311.09	378.61	311.09	781.08	5889.	8231.	7895.	5889.	2005.	1162784.	1162784.	0.
9	-28	2118.01	311.09	467.00	311.09	899.90	6069.	9003.	8226.	6069.	2157.	1474181.	1474181.	0.
10	-33	2286.71	311.09	568.00	311.09	1032.43	6249.	9844.	8564.	6249.	2314.	1851744.	1851744.	0.
11	-39	2470.40	311.09	688.43	311.09	1179.91	6430.	10759.	8879.	6430.	2449.	2287568.	2287568.	0.
12	-44	2670.42	311.09	811.22	311.09	1343.67	6611.	11755.	9264.	6611.	2653.	2858428.	2858428.	0.
13	-49	2888.23	311.09	956.21	311.09	1525.19	6791.	12841.	9626.	6791.	2835.	3517354.	3517354.	0.
14	-60	3125.40	311.09	1169.88	311.09	1745.78	6874.	14022.	9743.	6874.	2869.	3517354.	3517354.	0.
15	-71	3383.65	311.09	1405.28	311.09	1987.91	6954.	15309.	9857.	6954.	2903.	3517354.	3517354.	0.
16	-83	3664.86	311.09	1664.29	311.09	2253.46	7032.	16710.	9968.	7032.	2936.	3517354.	3517354.	0.
17	-96	3971.07	311.09	1948.95	311.09	2544.46	7108.	18236.	10075.	7108.	2967.	3517354.	3517354.	0.
18	-111	4304.50	311.09	2261.45	311.09	2863.13	7182.	19897.	10180.	7182.	2998.	3517354.	3517354.	0.
19	-126	4667.58	311.09	2604.23	311.09	3211.89	7253.	21706.	10281.	7253.	3028.	3517354.	3517354.	0.
20	-143	5062.93	311.09	2979.90	311.09	3593.36	7322.	23676.	10379.	7322.	3057.	3517354.	3517354.	0.
21	-161	5493.43	311.09	3391.33	311.09	4010.40	7389.	25821.	10474.	7389.	3085.	3517354.	3517354.	0.
22	-181	5962.20	311.09	3841.63	311.09	4466.14	7454.	28157.	10566.	7454.	3112.	3517354.	3517354.	0.
23	-203	6472.65	311.09	4334.21	311.09	4963.98	7517.	30700.	10655.	7517.	3138.	3517354.	3517354.	0.
24	-226	7028.47	311.09	4872.74	311.09	5507.61	7578.	33470.	10741.	7578.	3163.	3517354.	3517354.	0.
25	-251	7633.70	311.09	5461.28	311.09	6101.06	7636.	36485.	10824.	7636.	3188.	3517354.	3517354.	0.
26	-279	8292.74	311.09	6104.19	311.09	6748.72	7693.	39769.	10905.	7693.	3211.	3517354.	3517354.	0.
27	-309	9010.37	311.09	6806.25	311.09	7455.37	7748.	43344.	10982.	7748.	3234.	3517354.	3517354.	0.
28	-341	9791.80	311.09	7572.66	311.09	8226.20	7801.	47238.	11057.	7801.	3256.	3517354.	3517354.	0.
29	-376	10599.00	311.09	8409.09	311.09	9066.89	7851.	51478.	11129.	7851.	3278.	3517354.	3517354.	0.
30	-415	11499.00	311.09	9321.71	311.09	9983.61	7900.	56094.	11198.	7900.	3298.	3517354.	3517354.	0.
31	-456	12499.00	311.09	10299.00	311.09	10983.61	7948.	61121.	11265.	7948.	3318.	3517354.	3517354.	0.
32	-501	13599.00	311.09	11299.00	311.09	11983.61	7993.	66595.	11329.	7993.	3336.	3517354.	3517354.	0.
33	-551	14799.00	311.09	12299.00	311.09	12983.61	8036.	72555.	11391.	8036.	3355.	3517354.	3517354.	0.
34	-604	16099.00	311.09	13299.00	311.09	13983.61	8078.	79046.	11450.	8078.	3372.	3517354.	3517354.	0.
35	-662	17499.00	311.09	14299.00	311.09	14983.61	8118.	86113.	11507.	8118.	3389.	3517354.	3517354.	0.
36	-725	18999.00	311.09	15299.00	311.09	15983.61	8156.	93809.	11561.	8156.	3405.	3517354.	3517354.	0.

Table F, A.10 SIMOP Results (Iquique: Stage I)

&lt;Resultados del SIMOP (Iquique Etapa I)&gt;

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## RESUMEN DE BENEFICIOS PARA EL GRUPO DE CONSUMIDORES NO. 4 (GRUPO EXISTENTE ANTERIORMENTE)

AÑO	ELAST.	MAX	PRECIO			PROY.	CONSUMO	CON	SIN	NETO	BENEFICIOS ECONOMICOS BRUTOS		
			CON.	PROY.	SIN						CONSUMO NETO	ABORRO DE RECURSOS	TOTAL
7	-02	1322.52	311.09	311.09	554.78	3992.	3992.	3992.	3030.	962.	416414.	0.	416414.
8	-36	1322.52	311.09	352.43	598.84	4366.	4187.	3124.	3124.	1064.	505896.	0.	505896.
9	-43	1322.52	311.09	398.36	640.68	4774.	4362.	3219.	3219.	1144.	594261.	0.	594261.
10	-50	1322.52	311.09	442.62	680.39	5221.	4542.	3315.	3315.	1227.	689208.	0.	689208.
11	-58	1322.52	311.09	487.84	718.05	5710.	4712.	3413.	3413.	1300.	783604.	0.	783604.
12	-66	1322.52	311.09	525.49	753.75	6244.	4921.	3512.	3512.	1409.	901387.	0.	901387.
13	-74	1322.52	311.09	564.28	787.58	6829.	5119.	3612.	3612.	1508.	1019096.	0.	1019096.
14	-88	1322.52	311.09	619.73	826.70	7468.	5189.	3661.	3661.	1528.	1019096.	0.	1019096.
15	-1.03	1322.52	311.09	671.28	863.07	8167.	5259.	3710.	3710.	1549.	1019096.	0.	1019096.
16	-1.19	1322.52	311.09	719.19	896.87	8932.	5328.	3759.	3759.	1569.	1019096.	0.	1019096.
17	-1.37	1322.52	311.09	763.71	928.28	9768.	5397.	3807.	3807.	1589.	1019096.	0.	1019096.
18	-1.56	1322.52	311.09	805.07	957.46	10682.	5465.	3855.	3855.	1609.	1019096.	0.	1019096.
19	-1.76	1322.52	311.09	843.48	984.56	11682.	5533.	3903.	3903.	1629.	1019096.	0.	1019096.
20	-1.98	1322.52	311.09	879.15	1009.72	12775.	5600.	3951.	3951.	1649.	1019096.	0.	1019096.
21	-2.22	1322.52	311.09	912.26	1033.08	13971.	5667.	3998.	3998.	1669.	1019096.	0.	1019096.
22	-2.48	1322.52	311.09	942.98	1054.76	15279.	5733.	4045.	4045.	1688.	1019096.	0.	1019096.
23	-2.77	1322.52	311.09	971.49	1074.87	16709.	5799.	4091.	4091.	1708.	1019096.	0.	1019096.
24	-3.07	1322.52	311.09	997.93	1093.53	18273.	5864.	4137.	4137.	1727.	1019096.	0.	1019096.
25	-3.41	1322.52	311.09	1022.46	1110.82	19983.	5928.	4182.	4182.	1746.	1019096.	0.	1019096.
26	-3.77	1322.52	311.09	1045.19	1126.86	21853.	5992.	4227.	4227.	1765.	1019096.	0.	1019096.
27	-4.16	1322.52	311.09	1066.26	1141.73	23899.	6055.	4272.	4272.	1783.	1019096.	0.	1019096.
28	-4.59	1322.52	311.09	1085.78	1155.50	26136.	6118.	4316.	4316.	1802.	1019096.	0.	1019096.
29	-5.05	1322.52	311.09	1103.86	1168.25	28582.	6179.	4359.	4359.	1820.	1019096.	0.	1019096.
30	-5.55	1322.52	311.09	1120.60	1180.07	31257.	6240.	4402.	4402.	1838.	1019096.	0.	1019096.
31	-6.09	1322.52	311.09	1136.10	1191.00	34183.	6300.	4445.	4445.	1855.	1019096.	0.	1019096.
32	-6.69	1322.52	311.09	1150.45	1201.13	37382.	6360.	4487.	4487.	1873.	1019096.	0.	1019096.
33	-7.33	1322.52	311.09	1163.73	1210.49	40881.	6418.	4528.	4528.	1890.	1019096.	0.	1019096.
34	-8.03	1322.52	311.09	1176.01	1219.16	44708.	6476.	4569.	4569.	1907.	1019096.	0.	1019096.
35	-8.79	1322.52	311.09	1187.37	1227.17	48892.	6533.	4609.	4609.	1924.	1019096.	0.	1019096.
36	-9.61	1322.52	311.09	1197.87	1234.58	53469.	6589.	4649.	4649.	1941.	1019096.	0.	1019096.

Table F, A.10 SIMOP Results (Iquique: Stage I)  
<Resultados del SIMOP (Iquique Etapa I)>

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BENEFICIOS Y COSTOS TOTALES											
AÑO	BENEFICIOS ECONOMICOS BRUTOS					COSTOS ECONOMICOS BRUTOS					BENEFICIOS ECONOMICOS NETOS
						VARIABLES DE PRODUCCION					
						PERIODICOS SUMINISTRO					
1	2	3	4	5	TOTAL	PERIODICOS	NO PERIODICOS	PRODUCCION	SUMINISTRO	TOTAL	
1	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	552511	0	0	552511	
5	0	0	0	0	0	0	9026071	0	0	9026071	
6	0	0	0	0	0	0	9320702	0	0	9320702	
7	472553	181895	893432	416414	0	1964296	367231	0	175645	542876	
8	551089	217238	1162784	505895	0	2437008	367231	0	191365	558596	
9	629391	252295	1474181	594260	0	2950128	367231	0	202809	570040	
10	717925	290449	1851744	689208	0	3549327	367231	0	214507	581738	
11	811269	328847	2287567	783604	0	4211288	367231	0	223916	591147	
12	933279	377286	2858428	901387	0	5070381	367231	0	239429	606660	
13	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
14	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
15	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
16	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
17	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
18	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
19	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
20	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
21	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
22	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
23	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
24	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
25	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
26	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
27	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
28	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
29	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
30	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
31	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
32	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
33	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
34	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
35	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	
36	1063557	426258	3517353	1019095	0	6026265	367231	0	252653	619884	

Table F, A.10 SIMOP Results (Iquique: Stage I)  
*<Resultados del SIMOP (Iquique Etapa I)>*

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VALOR PRESENTE DE LOS BENEFICIOS Y LOS COSTOS (TASA DE DESCUENTO=		.000	.120	.120	.120	.120	.120)
A. BENEFICIOS		MONTO					
GRUPO 1	3911323.						
GRUPO 2	1565281.						
GRUPO 3	11671200.						
GRUPO 4	3720321.						
GRUPO 5	0.						
SUBTOTAL	20868120.						
B. COSTOS							
PERIODICOS	1678513.						
NO PERIODICOS	11418310.						
VARIABLES DE PRODUCCION	1041130.						
VARIABLES DE SUMINISTRO	0.						
SUBTOTAL	14137960.						
C. VALOR NETO (A-B)	6730165.						
TASA INTERNA DE RETORNO =	17.33						
COSTO INCREMENTAL PROMEDIO (UM/M3) =		2528.9					



Table F, A.10 SIMOP Results (Iquique: Stage I)  
 <Resultados del SIMOP (Iquique Etapa I)>

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ANÁLISIS DE INICIACIÓN OPTIMA				
INICIACIÓN CONSTRUCCIÓN	INICIACIÓN PRODUCCIÓN	VALOR NETO	---CAMBIO PORCENTUAL--- PRESENTE CON RELACION AL ANTERIOR	----- ACUMULATIVO
1	7	6730162.	0	0
2	8	7324841.	8.8	8.8
3	9	7649084.	4.4	13.7
4	10	7735970.	1.1	14.9
5	11	7601685.	-1.7	12.9
6	12	7271685.	-4.3	8.0
7	13	6734533.	-7.4	1
8	14	6012978.	-10.7	-10.7
9	15	5368730.	-10.7	-20.2
10	16	4793510.	-10.7	-28.8
11	17	4279920.	-10.7	-36.4
12	18	3821358.	-10.7	-43.2
13	19	3411925.	-10.7	-49.3
14	20	3046362.	-10.7	-54.7
15	21	2719966.	-10.7	-59.6
16	22	2428541.	-10.7	-63.9

\* SENALA FECHA OPTIMA DE INICIACIÓN  
 (SI SE PRESENTA DENTRO DEL PERIODO DE TIEMPO BAJO ESTUDIO)

Table F, A.10 SIMOP Results (Iquique: Stage I)  
 <Resultados del SIMOP (Iquique Etapa I)>

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WATER SUPPLY PROJECT FOR IQUIQUE (STAGE I)				PASADA PARAMETRICA 1.00				
RESUMEN DE PASADAS PARA ANALIZAR LA SENSIBILIDAD								
PASADA NO.	SEQ. NO.	VAR. NO.	NOMBRE DE LA VARIABLE	GRUPO DE CONSUMIDORES INGRESOS NO.	CATEGORIA ANO	FLUJO NO.	CAMBIO PROGRESIVO O CONSTANTE	VALOR DEL PARAMETRO
8	1	5	ELASTICIDAD	1				-.82
8	2	5	ELASTICIDAD	2				-.35
8	3	5	ELASTICIDAD	3				-.40
8	4	5	ELASTICIDAD	4				-.35
9	1	5	ELASTICIDAD	1				-.72
9	2	5	ELASTICIDAD	2				-.30
9	3	5	ELASTICIDAD	3				-.35
9	4	5	ELASTICIDAD	4				-.30
10	1	5	ELASTICIDAD	1				-.62
10	2	5	ELASTICIDAD	2				-.25
10	3	5	ELASTICIDAD	3				-.30
10	4	5	ELASTICIDAD	4				-.25
11	1	5	ELASTICIDAD	1				-.52
11	2	5	ELASTICIDAD	2				-.20
11	3	5	ELASTICIDAD	3				-.25
11	4	5	ELASTICIDAD	4				-.20
12	1	5	ELASTICIDAD	1				-.42
12	2	5	ELASTICIDAD	2				-.15
12	3	5	ELASTICIDAD	3				-.20
12	4	5	ELASTICIDAD	4				-.15
13	1	5	ELASTICIDAD	1				-.32
13	2	5	ELASTICIDAD	2				-.10
13	3	5	ELASTICIDAD	3				-.15
13	4	5	ELASTICIDAD	4				-.10
14	1	5	ELASTICIDAD	1				-.22
14	2	5	ELASTICIDAD	2				-.05
14	3	5	ELASTICIDAD	3				-.10
14	4	5	ELASTICIDAD	4				-.05

Table F, A.10 SIMOP Results (Iquique: Stage I)  
<Resultados del SIMOP (Iquique Etapa I)>

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WATER SUPPLY PROJECT FOR IQUIQUE (STAGE I)						PASADA PARAMETRICA 1.00	
* * * RESULTADOS SEGUN LIMITES PARAMETRICOS * * *							
PASADA NO.	TOTAL BENEFICIOS BRUTOS DESCONTADOS	TOTAL COSTO DESCONTADO	VALOR PRESENTE NETO	TASA DE RETORNO	COST. INCR. PROMEDIO		
8	13951040.00	14093360.00	-142322.00	11.880	2520.91		
9	15592680.00	14112460.00	1480226.00	13.280	2524.32		
10	17767920.00	14127430.00	3640495.00	15.030	2527.00		
11	20868120.00	14137960.00	6730162.00	17.330	2528.89		
12	25609280.00	14140450.00	11468840.00	20.500	2529.33		
13	32004290.00	14140450.00	17863840.00	24.550	2529.33		
14	43912180.00	14140450.00	29771730.00	30.860	2529.33		

Table F, A.10 SIMOP Results (Iquique: Stage I)

&lt;Resultados del SIMOP (Iquique Etapa I)&gt;

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WATER SUPPLY PROJECT FOR IQUIQUE (STAGE I)										PASADA PARAMETRICA 2.00	
RESUMEN DE PASADAS PARA ANALIZAR LA SENSIBILIDAD											
PASADA NO.	SEQ. NO.	VAR. NO.	NOMBRE DE LA VARIABLE	GRUPO DE CONSUMIDORES NO.	CATEGORIA INGRESOS	ANO	FLUJO NO.	CAMBIO PROGRESIVO O CONSTANTE	VALOR DEL PARAMETRO		
1	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-1.50		
2	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-1.35		
3	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-1.20		
4	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-1.05		
5	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-.90		
6	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-.75		
7	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-.60		
8	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-.45		
9	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-.30		
10	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-.15		
11	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.00		
12	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.15		
13	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.30		
14	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.45		
15	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.60		
16	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.75		
17	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.90		
18	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	1.05		
19	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	1.20		
20	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	1.35		
21	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	1.50		

Table F, A.10 SIMOP Results (Iquique: Stage I)

&lt;Resultados del SIMOP (Iquique Etapa I)&gt;

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WATER SUPPLY PROJECT FOR IQUIQUE (STAGE I) PASADA PARAMETRICA 2.00						
* * * RESULTADOS SEGUN LIMITES PARAMETRICOS * * *						
PASADA TOTAL	TOTAL COSTO	VALOR	TASA DE	COST. INCR.		
NO.	DESCONTADO	PRESENTE NETO	RETORNO	PROMEDIO		
DESCONTADOS						
6	20868120.00	-19512880.00	40381000.00	100.000	-3490.31	
7	20868120.00	-12782710.00	33650820.00	100.000	-2286.47	
8	20868120.00	-6052541.00	28920660.00	100.000	-1082.63	
9	20868120.00	677625.40	20190490.00	100.000	121.21	
10	20868120.00	7407791.00	13460330.00	31.990	1325.05	
11	20868120.00	14137960.00	6730162.00	17.330	2528.89	
12	20868120.00	20868120.00	-6730164.00	12.010	3732.72	
13	20868120.00	27598280.00	-13460330.00	9.000	4936.56	
14	20868120.00	34328450.00	-20190490.00	6.970	6140.40	
15	20868120.00	41058610.00	-20190490.00	5.480	7344.24	
16	20868120.00	47788780.00	-26920660.00	4.300	8548.08	

Table F, A.10 SIMOP Results (Iquique: Stage I)

&lt;Resultados del SIMOP (Iquique Etapa I)&gt;

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WATER SUPPLY PROJECT FOR IQUIQUE (STAGE I)										PASADA PARAMETRICA 3.00	
RESUMEN DE PASADAS PARA ANALIZAR LA SENSIBILIDAD											
PASADA NO.	SEQ. NO.	VAR. NO.	NOMBRE DE LA VARIABLE	GRUPO DE CONSUMIDORES NO.	CATEGORIA INGRESOS	ANO	FLUJO NO.	CAMBIO PROGRESIVO O CONSTANTE	VALOR DEL PARAMETRO		
6	1	3	TASA DE DESCUENTO	-	-	-	-	-	-	-.130	
7	1	3	TASA DE DESCUENTO	-	-	-	-	-	-	-.080	
8	1	3	TASA DE DESCUENTO	-	-	-	-	-	-	-.030	
9	1	3	TASA DE DESCUENTO	-	-	-	-	-	-	.020	
10	1	3	TASA DE DESCUENTO	-	-	-	-	-	-	.070	
11	1	3	TASA DE DESCUENTO	-	-	-	-	-	-	.120	
12	1	3	TASA DE DESCUENTO	-	-	-	-	-	-	.170	
13	1	3	TASA DE DESCUENTO	-	-	-	-	-	-	.220	
14	1	3	TASA DE DESCUENTO	-	-	-	-	-	-	.270	
15	1	3	TASA DE DESCUENTO	-	-	-	-	-	-	.320	
16	1	3	TASA DE DESCUENTO	-	-	-	-	-	-	.370	

Table F, A.10 SIMOP Results (Iquique: Stage I)  
<Resultados del SIMOP (Iquique Etapa I)>

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WATER SUPPLY PROJECT FOR IQUIQUE (STAGE I)				PASADA PARAMETRICA 3.00	
* * * RESULTADOS SEGUN LIMITE PARAMETRICOS * * *					
PASADA TOTAL NO. BENEFICIOS BRUTOS DESCONTADOS	TOTAL COSTO DESCONTADO	VALOR PRESENTE NETO	TASA DE RETORNO	COST. INCR. PROMEDIO	
6	5924735000.00	648937900.00	5275798000.00	17.330	*****
7	1249154000.00	158612400.00	1090541000.00	17.330	28371.32
8	329113000.00	57257290.00	271855700.00	17.330	10241.73
9	108556500.00	29645430.00	78911050.00	17.330	5302.74
10	43861000.00	19306780.00	24554220.00	17.330	3453.44
11	20868120.00	14137960.00	6730162.00	17.330	2528.89
12	11217030.00	10978940.00	238090.00	17.330	1963.83
13	6588683.00	8806604.00	-2217922.00	17.330	1575.26
14	4130818.00	7209674.00	-3078856.00	17.330	1289.61
15	2720773.00	5988093.00	-3267320.00	17.330	1071.10
16	1862463.00	5029167.00	-3166705.00	17.330	899.58

TABLE F, A.11 : WATER PRODUCTION AND CONSUMPTION PROJECTIONS  
(IQUIQUE STAGE I+II)

<Proyecciones de Producción y Consumo de Agua>  
<Iquique Etapas I+II>

		AVERAGE CONSUMPTION			AVERAGE PRODUCTION		
POPULATION	CONSUMPTION PER CAPITA (l/c/d)	TOTAL CONSUMPTION (m3/day)	WATER LOSS (l/sec)		TOTAL PRODUCTION (m3/day)		
			(%)			(l/sec)	
1992	152,529	220.00	33,556	388.4	40	55,927	647.3
1993	156,685	220.66	34,574	400.2	40	57,624	666.9
1994	160,918	221.32	35,615	412.2	40	59,358	687.0
1995	165,236	221.99	36,680	424.5	40	61,133	707.6
1996	169,628	222.65	37,768	437.1	39	61,915	716.6
1997	174,108	223.32	38,882	450.0	38	62,713	725.8
1998	178,677	223.99	40,022	463.2	37	63,527	735.3
1999	183,335	224.66	41,188	476.7	36	64,357	744.9
2000	188,100	225.34	42,386	490.6	35	65,209	754.7
2001	192,933	226.01	43,605	504.7	34	66,068	764.7
2002	197,877	226.69	44,857	519.2	33	66,950	774.9
2003	202,073	227.37	45,945	531.8	32	67,567	782.0
2004	208,073	228.05	47,451	549.2	31	68,770	796.0
2005	213,356	228.74	48,802	564.8	30	69,717	806.9
2006	218,697	229.42	50,174	580.7	30	71,677	829.6
2007	224,178	230.11	51,586	597.1	30	73,694	852.9
2008	229,776	230.80	53,033	613.8	30	75,761	876.9
2009	235,494	231.49	54,515	631.0	30	77,879	901.4
2010	241,379	232.19	56,045	648.7	30	80,065	926.7
2011	247,306	232.88	57,594	666.6	30	82,277	952.3
2012	253,407	233.58	59,192	685.1	30	84,559	978.7
2013	259,644	234.28	60,830	704.1	30	86,901	1005.8
2014	266,020	234.99	62,511	723.5	30	89,302	1033.6
2015	272,605	235.69	64,251	743.6	30	91,787	1062.3
2016	279,208	236.40	66,004	763.9	30	94,292	1091.3
2017	286,028	237.11	67,819	784.9	30	96,885	1121.4
2018	293,005	237.82	69,682	806.5	30	99,546	1152.2
2019	300,143	238.53	71,594	828.6	30	102,277	1183.8
2020	307,540	239.25	73,578	851.6	30	105,112	1216.6
2021	314,924	239.97	75,571	874.7	30	107,959	1249.5
2022	322,576	240.69	77,639	898.6	30	110,914	1283.7
2023	330,411	241.41	79,764	923.2	30	113,948	1318.8
2024	338,432	242.13	81,945	948.4	30	117,065	1354.9
2025	346,647	242.86	84,186	974.4	30	120,266	1392.0
2026	355,060	243.59	86,488	1001.0	30	123,554	1430.0
2027	363,677	244.32	88,853	1028.4	30	126,933	1469.1
2028	372,506	245.05	91,283	1056.5	30	130,404	1509.3
2029	381,551	245.79	93,780	1085.4	30	133,971	1550.6
2030	390,821	246.52	96,347	1115.1	30	137,638	1593.0



Table F, A.12 : Calculation of Periodic Cost (Iquique I + II)  
<Calculo de Costo Periodico (Iquique Etapas I+II)>  
(Unit : Thousand Pesos)

Year	Personnel	Maintenance	Total Periodic Cost
1999	11,520	702,696	714,216
2000	11,520	702,696	714,216
2001	11,520	702,696	714,216
2002	11,520	702,696	714,216
2003	11,520	702,696	714,216
2004	11,520	702,696	714,216
2005	11,520	702,696	714,216
2006	11,520	702,696	714,216
2007	11,520	702,696	714,216
2008	11,520	702,696	714,216
2009	11,520	702,696	714,216
2010	11,520	702,696	714,216
2011	11,520	702,696	714,216
2012	11,520	702,696	714,216
2013	11,520	702,696	714,216
2014	11,520	702,696	714,216
2015	11,520	702,696	714,216
2016	11,520	702,696	714,216
2017	11,520	702,696	714,216
2018	11,520	702,696	714,216
2019	11,520	702,696	714,216
2020	11,520	702,696	714,216
2021	11,520	702,696	714,216
2022	11,520	702,696	714,216
2023	11,520	702,696	714,216
2024	11,520	702,696	714,216
2025	11,520	702,696	714,216
2026	11,520	702,696	714,216
2027	11,520	702,696	714,216
2028	11,520	702,696	714,216

Table F.A.13 : Calculation of Social Incremental Investment (Iquique Stage I + II)  
 <Cálculo de la Inversión Social Incremental (Iquique Etapas I+II)>

Year	Item	With-Project Situation					Without-Project Situation					Net Investment					Total Social Incr.								
		Investment	Domestic Component	Foreign Component	Labour Non-skilled	Semi-skilled	Import Duty	Investment	Domestic Component	Foreign Component	Labour Non-skilled	Semi-skilled	Import Duty	Investment	Domestic Component	Foreign Component	Labour Non-skilled	Semi-skilled	Import Duty	Investment	Domestic Component	Foreign Component	Labour Non-skilled	Semi-skilled	Import Duty
1996 Design	Design	60289.78	60289.78	50260.802	60289.78	50144.489	90433.467	6631.78758	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Inlets Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Transmission	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Electric Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1997 Inlets Works	Design	60289.78	60289.78	50260.802	60289.78	50144.489	90433.467	6631.78758	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Inlets Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Transmission	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Electric Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1998 Inlets Works	Design	60289.78	60289.78	50260.802	60289.78	50144.489	90433.467	6631.78758	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Inlets Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Transmission	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Electric Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2003 Design	Design	60289.78	60289.78	50260.802	60289.78	50144.489	90433.467	6631.78758	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Inlets Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Transmission	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Electric Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2004 Inlets Works	Design	60289.78	60289.78	50260.802	60289.78	50144.489	90433.467	6631.78758	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Inlets Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Transmission	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Electric Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2005 Inlets Works	Design	60289.78	60289.78	50260.802	60289.78	50144.489	90433.467	6631.78758	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Inlets Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Transmission	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Distribution	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Electric Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

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Table F. A.14 : Calculation of Variable Cost (Iquique Stage I + II)  
<Cálculo de Costo Variable (Iquique Etapas I+II)>

Year	Electric Cost (Thousand Pesos)	Chemical Cost (Thousand Pesos)	Total Cost (Thousand Pesos)	Incremental Consumption (l/sec)	Incremental Consumption (Thousand M3)
1999	188,014	4,687	192,701	142	4,478
2000	196,410	4,893	201,303	151	4,762
2001	204,890	5,104	209,994	160	5,046
2002	213,541	5,320	218,861	169	5,330
2003	219,562	5,470	225,032	176	5,550
2004	231,435	5,766	237,201	188	5,929
2005	240,683	5,997	246,680	199	6,276
2006	261,041	6,476	267,517	215	6,780
2007	281,398	6,968	288,366	231	7,285
2008	301,729	7,475	309,204	248	7,821
2009	322,086	7,992	330,078	265	8,357
2010	342,443	8,527	350,970	283	8,925
2011	365,436	9,068	374,504	300	9,461
2012	388,402	9,625	398,027	319	10,060
2013	411,394	10,197	421,591	338	10,659
2014	442,428	10,786	453,214	357	11,258
2015	457,272	11,392	468,664	377	11,889
2016	457,272	11,392	468,664	377	11,889
2017	457,272	11,392	468,664	377	11,889
2018	457,272	11,392	468,664	377	11,889
2019	457,272	11,392	468,664	377	11,889
2020	457,272	11,392	468,664	377	11,889
2021	457,272	11,392	468,664	377	11,889
2022	457,272	11,392	468,664	377	11,889
2023	457,272	11,392	468,664	377	11,889
2024	457,272	11,392	468,664	377	11,889
2025	457,272	11,392	468,664	377	11,889
2026	457,272	11,392	468,664	377	11,889
2027	457,272	11,392	468,664	377	11,889
2028	457,272	11,392	468,664	377	11,889
	NPV			57206.59952	
	2302044.782				

Unitary Marginal Cost of Electric Energy and Chemical : \$40.24

Table F.A.15 SIMOP Results (Iquique: Stage I+II)  
<Resultados del SIMOP (Iquique Etapas I+II)>

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AÑO	CONSUMO POR GRUPOS					OFERTA Y DEMANDA DE AGUA PROYECTADAS			OFERTA TOTAL		NORMA DE DISTR.NO. 1	
	1	2	3	4	5	TOTAL	SIN	CON	CON	SIN	CON	SIN
7	4839.	1727.	7522.	3992.	0.	18081.	13724.	18203.	X	18203.	X	X
8	5065.	1819.	8231.	4366.	0.	19481.	13939.	18685.	X	18685.	X	X
9	5302.	1915.	9003.	4774.	0.	20995.	14153.	19183.	X	19183.	X	X
10	5551.	2015.	9844.	5221.	0.	22631.	14368.	19688.	X	19688.	X	X
11	5810.	2120.	10759.	5710.	0.	24400.	14582.	20136.	X	20136.	X	X
12	6082.	2230.	11755.	6244.	0.	26313.	14797.	20735.	X	20735.	X	X
13	6367.	2345.	12841.	6829.	0.	28382.	15011.	21277.	X	21277.	X	X
14	6665.	2466.	14022.	7468.	0.	30621.	15011.	21776.	X	21776.	X	X
15	6977.	2592.	15309.	8167.	0.	33045.	15011.	22293.	X	22293.	X	X
16	7303.	2724.	16710.	8932.	0.	35670.	15011.	22823.	X	22823.	X	X
17	7645.	2862.	18236.	9768.	0.	38511.	15011.	23362.	X	23362.	X	X
18	8003.	3007.	19897.	10682.	0.	41589.	15011.	23920.	X	23920.	X	X
19	8378.	3159.	21706.	11682.	0.	44924.	15011.	24485.	X	24485.	X	X
20	8770.	3317.	23676.	12775.	0.	48538.	15011.	25068.	X	25068.	X	X
21	9180.	3483.	25821.	13971.	0.	52455.	15011.	25667.	X	25667.	X	X
22	9610.	3657.	28157.	15279.	0.	56702.	15011.	26913.	X	26913.	X	X
23	10059.	3839.	30700.	16709.	0.	61307.	15011.	26913.	X	26913.	X	X
24	10530.	4029.	33470.	18273.	0.	66302.	15011.	26913.	X	26913.	X	X
25	11023.	4229.	36485.	19983.	0.	71720.	15011.	26913.	X	26913.	X	X
26	11539.	4437.	39769.	21853.	0.	77598.	15011.	26913.	X	26913.	X	X
27	12079.	4656.	43344.	23899.	0.	83978.	15011.	26913.	X	26913.	X	X
28	12644.	4884.	47238.	26136.	0.	90902.	15011.	26913.	X	26913.	X	X
29	13236.	5124.	51478.	28582.	0.	98419.	15011.	26913.	X	26913.	X	X
30	13855.	5374.	56094.	31257.	0.	106381.	15011.	26913.	X	26913.	X	X
31	14504.	5637.	61121.	34183.	0.	115444.	15011.	26913.	X	26913.	X	X
32	15183.	5911.	66595.	37382.	0.	125071.	15011.	26913.	X	26913.	X	X
33	15893.	6199.	72555.	40881.	0.	135528.	15011.	26913.	X	26913.	X	X
34	16637.	6499.	79046.	44708.	0.	146890.	15011.	26913.	X	26913.	X	X
35	17416.	6814.	86113.	48922.	0.	159235.	15011.	26913.	X	26913.	X	X
36	18231.	7144.	93809.	53469.	0.	172652.	15011.	26913.	X	26913.	X	X

Table F.A.15 SIMOP Results (Iquique: Stage I+II)  
<Resultados del SIMOP (Iquique Etapas I+II)>

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RESUMEN DE BENEFICIOS PARA EL GRUPO DE CONSUMIDORES NO. 1 (GRUPO EXISTENTE ANTERIORMENTE)									
AÑO	ELAST.	MAX	PRECIO		PROY.	CONSUMO			BENEFICIOS ECONÓMICOS BRUTOS
			CON.	PROY.		SIN	NETO	CONSUMO NETO ALCORRO DE RECURSOS TOTAL	
7	-52	INDEFINIDO	311.09	311.09	528.59	4839.	4839.	1166.	472554.
8	-52	INDEFINIDO	311.09	337.09	592.22	5065.	4858.	1234.	551090.
9	-52	INDEFINIDO	311.09	370.04	664.08	5302.	4845.	1270.	629391.
10	-52	INDEFINIDO	311.09	406.66	745.30	5551.	4829.	1305.	717926.
11	-52	INDEFINIDO	311.09	450.09	837.16	5810.	4795.	1322.	811269.
12	-52	INDEFINIDO	311.09	491.87	941.14	6082.	4793.	1373.	933279.
13	-52	INDEFINIDO	311.09	541.40	1058.93	6367.	4773.	1406.	1063557.
14	-52	INDEFINIDO	311.09	599.25	1225.45	6665.	4740.	1472.	1260631.
15	-52	INDEFINIDO	311.09	663.17	1418.79	6977.	4707.	1537.	1489831.
16	-52	INDEFINIDO	311.09	734.23	1643.38	7303.	4673.	1599.	1755003.
17	-52	INDEFINIDO	311.09	813.48	1904.41	7645.	4638.	1658.	2060902.
18	-52	INDEFINIDO	311.09	901.26	2207.90	8003.	4603.	1714.	2415073.
19	-52	INDEFINIDO	311.09	999.51	2560.95	8378.	4566.	1767.	2822264.
20	-52	INDEFINIDO	311.09	1108.51	2971.80	8770.	4529.	1817.	3292587.
21	-52	INDEFINIDO	311.09	1229.79	3450.16	9180.	4492.	1865.	3834583.
22	-52	INDEFINIDO	311.09	1303.98	4007.35	9610.	4561.	2017.	4601226.
23	-52	INDEFINIDO	311.09	1515.25	4656.64	10059.	4416.	1953.	5176550.
24	-52	INDEFINIDO	311.09	1761.55	5413.56	10530.	4274.	1890.	5825070.
25	-52	INDEFINIDO	311.09	2048.80	6296.32	11023.	4136.	1829.	6556237.
26	-52	INDEFINIDO	311.09	2383.94	7326.27	11539.	4002.	1770.	7380755.
27	-52	INDEFINIDO	311.09	2775.11	8528.41	12079.	3871.	1712.	8310694.
28	-52	INDEFINIDO	311.09	3231.86	9932.08	12644.	3743.	1655.	9359735.
29	-52	INDEFINIDO	311.09	3765.39	*****	13236.	3619.	1601.	10543350.
30	-52	INDEFINIDO	311.09	4388.82	*****	13855.	3499.	1547.	11879030.
31	-52	INDEFINIDO	311.09	5117.58	*****	14504.	3381.	1495.	13386540.
32	-52	INDEFINIDO	311.09	5969.75	*****	15183.	3267.	1445.	15088310.
33	-52	INDEFINIDO	311.09	6966.61	*****	15893.	3156.	1396.	17009650.
34	-52	INDEFINIDO	311.09	8133.08	*****	16637.	3048.	1348.	19179240.
35	-52	INDEFINIDO	311.09	9498.49	*****	17416.	2943.	1302.	21629510.
36	-52	INDEFINIDO	311.09	*****	*****	18231.	2842.	1257.	24397180.

Table F.A.15 SIMOP Results (Iquique: Stage I+II)  
<Resultados del SIMOP (Iquique Etapas I+II)>

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RESUMEN DE BENEFICIOS PARA EL GRUPO DE CONSUMIDORES NO. 2 (GRUPO EXISTENTE ANTERIORMENTE)

AÑO	ELAST.	MAX	PRECIO		SIN	PROY.	CON	SIN	NETO	CONSUMO		CONSUMO NETO	ABORRO DE RECURSOS	TOTAL
			CON.	PROY.										
7	-30	1356.60	311.09	311.09	562.99	1727.	1727.	1311.	416.	181896.	0.	181896.	0.	181896.
8	-34	1412.04	311.09	356.09	624.31	1819.	1745.	1302.	443.	217239.	0.	217239.	0.	217239.
9	-39	1470.08	311.09	411.09	688.76	1915.	1750.	1291.	459.	252295.	0.	252295.	0.	252295.
10	-44	1530.83	311.09	469.70	756.44	2015.	1753.	1279.	474.	290449.	0.	290449.	0.	290449.
11	-51	1594.42	311.09	535.35	827.45	2120.	1750.	1267.	483.	328847.	0.	328847.	0.	328847.
12	-56	1660.99	311.09	597.24	901.88	2230.	1758.	1254.	503.	377286.	0.	377286.	0.	377286.
13	-63	1730.67	311.09	666.45	979.86	2345.	1758.	1241.	518.	426258.	0.	426258.	0.	426258.
14	-70	1803.62	311.09	742.25	1071.96	2466.	1754.	1209.	545.	494148.	0.	494148.	0.	494148.
15	-78	1879.98	311.09	821.59	1167.30	2592.	1749.	1178.	571.	568017.	0.	568017.	0.	568017.
16	-86	1959.91	311.09	904.94	1266.02	2724.	1743.	1146.	597.	647591.	0.	647591.	0.	647591.
17	-94	2043.58	311.09	992.61	1368.28	2862.	1736.	1116.	621.	732698.	0.	732698.	0.	732698.
18	-1.04	2131.17	311.09	1084.36	1474.24	3007.	1730.	1085.	644.	824092.	0.	824092.	0.	824092.
19	-1.13	2222.86	311.09	1180.91	1584.06	3159.	1722.	1055.	666.	920857.	0.	920857.	0.	920857.
20	-1.24	2318.84	311.09	1281.92	1697.92	3317.	1713.	1026.	687.	1024048.	0.	1024048.	0.	1024048.
21	-1.35	2419.31	311.09	1387.73	1816.00	3483.	1704.	997.	708.	1133491.	0.	1133491.	0.	1133491.
22	-1.40	2524.49	311.09	1473.93	1938.52	3657.	1736.	968.	768.	1309712.	0.	1309712.	0.	1309712.
23	-1.58	2634.58	311.09	1614.61	2065.67	3839.	1685.	940.	745.	1371389.	0.	1371389.	0.	1371389.
24	-1.78	2749.83	311.09	1759.91	2197.68	4029.	1636.	912.	723.	1431272.	0.	1431272.	0.	1431272.
25	-1.99	2870.47	311.09	1910.06	2334.79	4229.	1587.	885.	702.	1489392.	0.	1489392.	0.	1489392.
26	-2.22	2996.76	311.09	2065.31	2477.23	4437.	1539.	858.	681.	1545784.	0.	1545784.	0.	1545784.
27	-2.46	3128.96	311.09	2225.90	2625.26	4656.	1492.	832.	660.	1600486.	0.	1600486.	0.	1600486.
28	-2.73	3267.35	311.09	2392.11	2779.16	4884.	1446.	807.	640.	1653538.	0.	1653538.	0.	1653538.
29	-3.02	3412.21	311.09	2564.20	2939.22	5124.	1401.	781.	620.	1704985.	0.	1704985.	0.	1704985.
30	-3.34	3563.85	311.09	2742.49	3105.72	5374.	1357.	757.	600.	1754869.	0.	1754869.	0.	1754869.
31	-3.68	3722.59	311.09	2927.29	3278.99	5637.	1314.	733.	581.	1803239.	0.	1803239.	0.	1803239.
32	-4.05	3898.75	311.09	3118.91	3459.36	5911.	1272.	709.	563.	1850138.	0.	1850138.	0.	1850138.
33	-4.45	4062.70	311.09	3317.71	3647.17	6199.	1231.	687.	544.	1895617.	0.	1895617.	0.	1895617.
34	-4.89	4244.78	311.09	3524.06	3842.79	6499.	1191.	664.	527.	1939722.	0.	1939722.	0.	1939722.
35	-5.36	4435.39	311.09	3738.33	4046.59	6814.	1152.	642.	509.	1982505.	0.	1982505.	0.	1982505.
36	-5.88	4634.92	311.09	3960.92	4258.98	7144.	1114.	621.	492.	2024009.	0.	2024009.	0.	2024009.

Table F.A.15 SIMOP Results (Iquique: Stage I+II)  
<Resultados del SIMOP (Iquique Etapas I+II)>

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RESUMEN DE BENEFICIOS PARA EL GRUPO DE CONSUMIDORES NO. 3 (GRUPO EXISTENTE ANTERIORMENTE)

AÑO	ELAST.	MAX	PRECIO			CONSUMO		SIN	NETO	BENEFICIOS ECONOMICOS BRUTOS	
			CON.	PROY.	SIN	PROY.	CON			CONSUMO NETO	ABORRO DE RECURSOS TOTAL
7	-21	1820.81	311.09	311.09	674.84	7522.	7522.	5710.	1812.	893433.	0.
8	-24	1963.09	311.09	378.61	781.08	8231.	7895.	5889.	2005.	1162784.	0.
9	-28	2118.01	311.09	467.00	899.90	9003.	8226.	6069.	2157.	1474181.	0.
10	-33	2286.71	311.09	568.00	1032.43	9844.	8564.	6249.	2314.	1851744.	0.
11	-39	2470.40	311.09	688.43	1179.91	10759.	8879.	6430.	2449.	2287568.	0.
12	-44	2670.42	311.09	811.22	1343.67	11755.	9264.	6611.	2653.	2858425.	0.
13	-49	2888.23	311.09	956.21	1525.19	12841.	9626.	6791.	2835.	3517354.	0.
14	-56	3125.40	311.09	1124.08	1745.78	14022.	9972.	6874.	3098.	4444880.	0.
15	-63	3383.65	311.09	1310.86	1987.91	15309.	10328.	6954.	3373.	5564081.	0.
16	-71	3664.86	311.09	1519.00	2253.46	16710.	10692.	7032.	3659.	6902620.	0.
17	-79	3971.07	311.09	1750.84	2544.46	18236.	11062.	7108.	3954.	8492380.	0.
18	-87	4304.50	311.09	2007.70	2863.13	19897.	11444.	7182.	4262.	10380310.	0.
19	-97	4667.58	311.09	2293.21	3211.89	21706.	11830.	7253.	4577.	12599330.	0.
20	-1.06	5062.93	311.09	2608.80	3593.36	23676.	12228.	7322.	4906.	15212570.	0.
21	-1.17	5493.43	311.09	2957.64	4010.40	25821.	12635.	7389.	5245.	18275180.	0.
22	-1.22	5962.20	311.09	3279.98	4466.14	28157.	13364.	7454.	5910.	22890130.	0.
23	-1.39	6472.65	311.09	3767.82	4963.98	30700.	13477.	7517.	5960.	26020300.	0.
24	-1.58	7028.47	311.09	4301.78	5507.61	33470.	13586.	7578.	6008.	29467710.	0.
25	-1.78	7633.70	311.09	4885.89	6101.06	36485.	13691.	7636.	6055.	33260880.	0.
26	-2.00	8292.74	311.09	5524.53	6748.72	39769.	13793.	7693.	6100.	37430790.	0.
27	-2.23	9010.37	311.09	6222.47	7455.37	43344.	13891.	7748.	6143.	42011200.	0.
28	-2.49	9791.80	311.09	6984.91	8226.20	47238.	13985.	7801.	6185.	47038800.	0.
29	-2.77	10666.66	311.09	7817.50	9066.89	51478.	14077.	7851.	6225.	52553610.	0.
30	-3.07	11666.66	311.09	8726.43	9983.61	56094.	14164.	7900.	6264.	58599080.	0.
31	-3.40	12800.00	311.09	9718.40	10980.500.	61121.	14249.	7948.	6301.	65222590.	0.
32	-3.76	14000.00	311.09	10718.40	12000.00	66595.	14330.	7993.	6337.	72475620.	0.
33	-4.14	15300.00	311.09	11718.40	13100.00	72555.	14408.	8036.	6372.	80414180.	0.
34	-4.57	16700.00	311.09	12718.40	14200.00	79046.	14483.	8078.	6405.	89099260.	0.
35	-5.02	18200.00	311.09	13718.40	15300.00	86113.	14554.	8118.	6436.	98597410.	0.
36	-5.52	20000.00	311.09	14718.40	16400.00	93809.	14623.	8156.	6467.	108980500.	0.

Table F.A.15 SIMOP Results (Iquique: Stage I+II)  
<Resultados del SIMOP (Iquique Etapas I+II)>

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RESUMEN DE BENEFICIOS PARA EL GRUPO DE CONSUMIDORES NO. 4 (GRUPO EXISTENTE ANTERIORMENTE)

AÑO	ELAST.	MAX	PRECIO			PROY.	CONSUMO	CON	SIN	NETO	BENEFICIOS ECONOMICOS BRUTOS		
			CON.	PROY.	SIN						CONSUMO NETO	AHORRO DE RECURSOS	TOTAL
7	-0.02	1322.52	311.09	311.09	554.78	3992.	3992.	3992.	3030.	962.	416414.	0.	416414.
8	-0.36	1322.52	311.09	352.43	598.84	4366.	4187.	4187.	3124.	1064.	505896.	0.	505896.
9	-0.43	1322.52	311.09	398.36	640.68	4774.	4362.	4362.	3219.	1144.	594261.	0.	594261.
10	-0.50	1322.52	311.09	442.62	680.39	5221.	4542.	4542.	3315.	1227.	689208.	0.	689208.
11	-0.58	1322.52	311.09	487.84	718.05	5710.	4712.	4712.	3413.	1300.	783604.	0.	783604.
12	-0.66	1322.52	311.09	525.49	753.75	6244.	4921.	4921.	3512.	1409.	901386.	0.	901386.
13	-0.74	1322.52	311.09	564.28	787.58	6829.	5119.	5119.	3612.	1508.	1019096.	0.	1019096.
14	-0.84	1322.52	311.09	603.27	826.70	7468.	5311.	5311.	3661.	1650.	1179554.	0.	1179554.
15	-0.94	1322.52	311.09	640.20	863.07	8167.	5510.	5510.	3710.	1800.	1352688.	0.	1352688.
16	-1.04	1322.52	311.09	675.37	896.87	8932.	5715.	5715.	3759.	1956.	1537640.	0.	1537640.
17	-1.16	1322.52	311.09	708.96	928.28	9768.	5925.	5925.	3807.	2118.	1733835.	0.	1733835.
18	-1.27	1322.52	311.09	740.80	957.46	10682.	6144.	6144.	3855.	2288.	1942954.	0.	1942954.
19	-1.40	1322.52	311.09	771.27	984.56	11682.	6367.	6367.	3903.	2463.	2162635.	0.	2162635.
20	-1.53	1322.52	311.09	800.16	1009.72	12775.	6598.	6598.	3951.	2647.	2395306.	0.	2395306.
21	-1.67	1322.52	311.09	827.61	1033.08	13971.	6836.	6836.	3998.	2838.	2640414.	0.	2640414.
22	-1.75	1322.52	311.09	842.46	1054.76	15279.	7252.	7252.	4045.	3207.	3042129.	0.	3042129.
23	-1.98	1322.52	311.09	878.52	1074.87	16709.	7335.	7335.	4091.	3244.	3168080.	0.	3168080.
24	-2.22	1322.52	311.09	911.97	1093.53	18273.	7417.	7417.	4137.	3280.	3289071.	0.	3289071.
25	-2.48	1322.52	311.09	942.98	1110.82	19983.	7499.	7499.	4182.	3316.	3405307.	0.	3405307.
26	-2.77	1322.52	311.09	971.73	1126.86	21853.	7579.	7579.	4227.	3352.	3516984.	0.	3516984.
27	-3.08	1322.52	311.09	998.38	1141.73	23899.	7659.	7659.	4272.	3387.	3624293.	0.	3624293.
28	-3.42	1322.52	311.09	1023.07	1155.50	26136.	7738.	7738.	4316.	3422.	3727420.	0.	3727420.
29	-3.78	1322.52	311.09	1045.94	1168.25	28582.	7816.	7816.	4359.	3456.	3826540.	0.	3826540.
30	-4.18	1322.52	311.09	1067.12	1180.07	31257.	7893.	7893.	4402.	3490.	3921826.	0.	3921826.
31	-4.61	1322.52	311.09	1086.73	1191.00	34183.	7969.	7969.	4445.	3524.	4013448.	0.	4013448.
32	-5.08	1322.52	311.09	1104.88	1201.13	37382.	8044.	8044.	4487.	3557.	4101562.	0.	4101562.
33	-5.58	1322.52	311.09	1121.67	1210.49	40981.	8118.	8118.	4528.	3590.	4186328.	0.	4186328.
34	-6.14	1322.52	311.09	1137.21	1219.16	44708.	8191.	8191.	4569.	3622.	4267891.	0.	4267891.
35	-6.74	1322.52	311.09	1151.58	1227.17	48892.	8263.	8263.	4609.	3654.	4346399.	0.	4346399.
36	-7.39	1322.52	311.09	1164.86	1234.58	53469.	8335.	8335.	4649.	3686.	4421992.	0.	4421992.



Table F.A.15 SIMOP Results (Iquique: Stage I+II)  
<Resultados del SIMOP (Iquique Etapas I+II)>

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AÑO	BENEFICIOS Y COSTOS TOTALES										BENEFICIOS ECONOMICOS NETOS		
	BENEFICIOS ECONOMICOS BRUTOS					COSTOS ECONOMICOS BRUTOS					BENEFICIOS ECONOMICOS NETOS		
	1	2	3	4	5	TOTAL	PERIODICOS	NO PERIODICOS	PRODUCCION	VARIABLES DE SUMINISTRO	TOTAL		
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	552511	0	0	552511	-552511	0
5	0	0	0	0	0	0	0	9026071	0	0	9026071	-9026071	0
6	0	0	0	0	0	0	0	9320702	0	0	9320702	-9320702	0
7	472553	181895	893432	416414	0	1964296	714216	0	175297	0	889513	1074783	0
8	551089	217238	1162784	505895	0	2437008	714216	0	190985	0	905201	1531806	0
9	629391	252295	1474181	594260	0	2950128	714216	0	202406	0	916622	2033505	0
10	717225	290449	1851744	689208	0	3549327	714216	0	214081	0	928297	2621030	0
11	811269	328847	2287567	783604	0	4211288	714216	0	223472	0	1402379	2808308	0
12	933278	377286	2858424	901385	0	5070375	714216	0	238954	0	9706844	-4636468	0
13	1063557	426258	3517353	1019095	0	6026265	714216	0	252151	0	9720042	-3693777	0
14	1260630	494147	444880	1179553	0	7379212	714216	0	272202	0	986418	6392794	0
15	1489831	568017	5564081	1352687	0	874617	714216	0	293014	0	1007230	7967387	0
16	1755003	647590	6902620	1537640	0	10842854	714216	0	314333	0	1028549	9814304	0
17	2060902	732698	8492380	1733835	0	13019815	714216	0	336033	0	1050249	11969566	0
18	2415073	824091	10380309	1942954	0	15562428	714216	0	358494	0	1072710	14489717	0
19	2822263	920856	12599329	2162634	0	18505084	714216	0	381210	0	1095426	17409658	0
20	3292587	1024048	15212565	2395306	0	21924506	714216	0	404686	0	1118902	20805604	0
21	3834583	1133491	18275178	2640413	0	25883666	714216	0	428797	0	1143013	24740652	0
22	4601226	1309712	22890134	3042129	0	31843200	714216	0	478924	0	1193140	30650060	0
23	5176549	1371389	26020300	3168079	0	35736320	714216	0	478923	0	1193140	34543180	0
24	5825070	1431271	29467714	3289071	0	40013128	714216	0	478923	0	1193139	38819988	0
25	6556236	1489391	33260880	3405307	0	44711816	714216	0	478923	0	1193140	43518676	0
26	7380754	1545783	37430792	3516984	0	49874312	714216	0	478923	0	1193140	48681172	0
27	8310694	1600485	42011204	3624293	0	55546676	714216	0	478923	0	1193139	54353536	0
28	9359735	1653538	47038800	3826539	0	61779492	714216	0	478923	0	1193139	60586352	0
29	10543353	1704984	52553608	3921825	0	68628480	714216	0	478923	0	1193139	67435344	0
30	11879025	1754869	58599076	4013448	0	76154792	714216	0	478923	0	1193139	74961656	0
31	13386544	1803238	65222592	4101562	0	84425824	714216	0	478923	0	1193139	83232688	0
32	15088310	1850138	72475616	4186378	0	93515624	714216	0	478923	0	1193140	92322480	0
33	17009650	1895616	80414184	4186378	0	103505776	714216	0	478923	0	1193139	102312640	0
34	19179240	1933721	89099256	4267890	0	114486104	714216	0	478923	0	1193139	113292968	0
35	21629508	1982504	98597408	4346399	0	126555824	714216	0	478924	0	1193140	125362688	0
36	24397184	2024008	108980528	4421991	0	139823712	714216	0	478924	0	1193140	138630576	0

Table F,A.15 SIMOP Results (Iquique: Stage I+II)  
 <Resultados del SIMOP (Iquique Etapas I+II)>

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VALOR PRESENTE DE LOS BENEFICIOS Y LOS COSTOS (TASA DE DESCUENTO=		.000	.120	.120	.120	.120	.120
A. BENEFICIOS		MONTOS					
GRUPO 1		11189540.					
GRUPO 2		2784339.					
GRUPO 3		48706210.					
GRUPO 4		6462477.					
GRUPO 5		0.					
SUBTOTAL		69142570.					
B. COSTOS							
PERIODICOS		3264487.					
NO PERIODICOS		16331450.					
VARIABLES DE PRODUCCION		1305472.					
VARIABLES DE SUMINISTRO		0.					
SUBTOTAL		20901400.					
C. VALOR NETO (A-B)		48241160.					
TASA INTERNA DE RETORNO =		23.23					
COSTO INCREMENTAL PROMEDIO (UM/M3) =		3738.7					

Table F,A.15 SIMOP Results (Iquique: Stage I+II)  
 <Resultados del SIMOP (Iquique Etapas I+II)>

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ANALISIS DE INICIACION OPTIMA				
INICIACION CONSTRUCCION	INICIACION PRODUCCION	VALOR PRESENTE CON NETO	-----CAMBIO PORCENTUAL----- RELACION ACCUMULATIVO AL ANTERIOR	
1	7	48241160.	-0	-0
2	8	52017800.	7.8	7.8
3	9	55383170.	6.5	14.8
4	10	58380020.	5.4	21.0
5	11	61006670.	4.5	26.5
6	12	63292680.	3.7	31.2
7	13	65227420.	3.1	35.2
8	14	66835750.	2.5	38.5
9	15	68077100.	1.9	41.1
10	16	68963190.	1.3	43.0
11	17	69507020.	.8	44.1
12	18	69722260.	.3	44.5
13	19	69620620.	-.1	44.3
14	20	69216160.	-.6	43.5
15	21	68520250.	-1.0	42.0
16	22	67544560.	-1.4	40.0

\* SENALA FECHA OPTIMA DE INICIACION  
 (SI SE PRESENTA DENTRO DEL PERIODO DE TIEMPO BAJO ESTUDIO)

Table F.A.15 SIMOP Results (Iquique: Stage I+II)  
<Resultados del SIMOP (Iquique Etapas I+II)>

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WATER SUPPLY PROJECT IQUIQUE (STAGE I + II)					PASADA PARAMETRICA 1.00				
RESUMEN DE PASADAS PARA ANALIZAR LA SENSIBILIDAD									
PASADA NO.	SEQ. NO.	VAR. NO.	NOMBRE DE LA VARIABLE	GRUPO DE CONSUMIDORES NO.	CATEGORIA INGRESOS	ANO	FLUJO NO.	CAMBIO PROGRESIVO O CONSTANTE	VALOR DEL PARAMETRO
8	1	5	ELASTICIDAD	1					-.82
8	2	5	ELASTICIDAD	2					-.35
8	3	5	ELASTICIDAD	3					-.40
8	4	5	ELASTICIDAD	4					-.35
9	1	5	ELASTICIDAD	1					-.72
9	2	5	ELASTICIDAD	2					-.30
9	3	5	ELASTICIDAD	3					-.35
9	4	5	ELASTICIDAD	4					-.30
10	1	5	ELASTICIDAD	1					-.62
10	2	5	ELASTICIDAD	2					-.25
10	3	5	ELASTICIDAD	3					-.30
10	4	5	ELASTICIDAD	4					-.25
11	1	5	ELASTICIDAD	1					-.52
11	2	5	ELASTICIDAD	2					-.20
11	3	5	ELASTICIDAD	3					-.25
11	4	5	ELASTICIDAD	4					-.20
12	1	5	ELASTICIDAD	1					-.42
12	2	5	ELASTICIDAD	2					-.15
12	3	5	ELASTICIDAD	3					-.20
12	4	5	ELASTICIDAD	4					-.15
13	1	5	ELASTICIDAD	1					-.32
13	2	5	ELASTICIDAD	2					-.10
13	3	5	ELASTICIDAD	3					-.15
13	4	5	ELASTICIDAD	4					-.10
14	1	5	ELASTICIDAD	1					-.22
14	2	5	ELASTICIDAD	2					-.05
14	3	5	ELASTICIDAD	3					-.10
14	4	5	ELASTICIDAD	4					-.05

Table F.A.15 SIMOP Results (Iquique: Stage I+II)  
 <Resultados del SIMOP (Iquique Etapas I+II)>

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WATER SUPPLY PROJECT IQUIQUE (STAGE I + II)			PASADA PARAMETRICA 1.00		
* * * RESULTADOS SEGUN LIMITES PARAMETRICOS * * *					
PASADA TOTAL NO.	BENEFICIOS BRUTOS DESCONTADOS	TOTAL COSTO DESCONTADO	VALOR PRESENTE NETO	TASA DE RETORNO	COST. INCR. PROMEDIO
8	42499190.00	20856890.00	21642300.00	18.280	3730.72
9	48259470.00	20875950.00	27383510.00	19.540	3734.12
10	54673700.00	20890890.00	33782810.00	20.980	3736.80
11	62146260.00	20901400.00	41244860.00	22.670	3738.68
12	75603790.00	20903890.00	54699900.00	24.990	3739.12
13	130186000.00	20903890.00	109282100.00	29.260	3739.12
14	1157664000.00	20903890.00	1136760000.00	40.640	3739.12

Table F.A.15 SIMOP Results (Iquique: Stage I+II)  
<Resultados del SIMOP (Iquique Etapas I+II)>

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WATER SUPPLY PROJECT IQUIQUE (STAGE I + II)										PASADA PARAMETRICA 2.00
RESUMEN DE PASADAS PARA ANALIZAR LA SENSIBILIDAD										
PASADA NO.	SEQ. NO.	VAR. NO.	NOMBRE DE LA VARIABLE	GRUPO DE CONSUMIDORES NO.	CATEGORIA INGRESOS	ANO	FLUJO NO.	CAMBIO PROGRESIVO O CONSTANTE	VALOR DEL PARAMETRO	
1	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-1.50	
2	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-1.35	
3	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-1.20	
4	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-1.05	
5	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-.90	
6	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-.75	
7	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-.60	
8	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-.45	
9	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-.30	
10	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	-.15	
11	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.00	
12	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.15	
13	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.30	
14	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.45	
15	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.60	
16	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.75	
17	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	.90	
18	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	1.05	
19	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	1.20	
20	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	1.35	
21	1	18	COSTOS NO PERIODICOS				1	CONSTANTE	1.50	

Table F, A.15 SIMOP Results (Iquique: Stage I+II)  
<Resultados del SIMOP (Iquique Etapas I+II)>

WATER SUPPLY PROJECT IQUIQUE (STAGE I + II)				PASADA PARAMETRICA 2.00	
* * * RESULTADOS SEGUN LIMITES PARAMETRICOS * * *					
PASADA TOTAL NO.	BENEFICIOS BRUTOS DESCONTADOS	TOTAL COSTO DESCONTADO	VALOR PRESENTE NETO	TASA DE RETORNO	COST. INCR. PROMEDIO
6	69142570.00	-99701500.00	168844100.00	100.000	*****
7	69142570.00	-75580910.00	144723500.00	100.000	*****
8	69142570.00	-51460340.00	120602900.00	100.000	-9204.82
9	69142570.00	-27339760.00	96482330.00	100.000	-4890.32
10	69142570.00	-3219174.00	72361740.00	100.000	-575.82
11	69142570.00	20901400.00	48241160.00	23.230	3738.68
12	69142570.00	45021980.00	24120580.00	15.320	8053.17
13	69142570.00	69142570.00	0.00	12.000	12367.67
14	69142570.00	93263150.00	-24120580.00	9.960	16682.17
15	69142570.00	117383700.00	-48241160.00	8.490	20996.67
16	69142570.00	141504300.00	-72361750.00	7.340	25311.17

Table F, A.15 SIMOP Results (Iquique: Stage I+II)  
<Resultados del SIMOP (Iquique Etapas I+II)>

WATER SUPPLY PROJECT IQUIQUE (STAGE I + II)										PASADA PARAMETRICA 3.00	
RESUMEN DE PASADAS PARA ANALIZAR LA SENSIBILIDAD											
PASADA NO.	SEQ. NO.	VAR. NO.	NOMBRE DE LA VARIABLE	GRUPO DE CONSUMIDORES NO.	CATEGORIA INGRESOS	ANO	FLUJO NO.	CAMBIO PROGRESIVO O CONSTANTE	VALOR DEL PARAMETRO		
6	1	3	TASA DE DESCUENTO	-	-	-	-	-	.070		
7	1	3	TASA DE DESCUENTO	-	-	-	-	-	.080		
8	1	3	TASA DE DESCUENTO	-	-	-	-	-	.090		
9	1	3	TASA DE DESCUENTO	-	-	-	-	-	.100		
10	1	3	TASA DE DESCUENTO	-	-	-	-	-	.110		
11	1	3	TASA DE DESCUENTO	-	-	-	-	-	.120		
12	1	3	TASA DE DESCUENTO	-	-	-	-	-	.130		
13	1	3	TASA DE DESCUENTO	-	-	-	-	-	.140		
14	1	3	TASA DE DESCUENTO	-	-	-	-	-	.150		
15	1	3	TASA DE DESCUENTO	-	-	-	-	-	.160		
16	1	3	TASA DE DESCUENTO	-	-	-	-	-	.170		



Table F, A.15 SIMOP Results (Iquique: Stage I+II)  
<Resultados del SIMOP (Iquique Etapas I+II)>

WATER SUPPLY PROJECT IQUIQUE (STAGE I + II)				PASADA PARAMETRICA 3.00	
* * * RESULTADOS SEGUN LIMITES PARAMETRICOS * * *					
PASADA TOTAL NO.	BENEFICIOS BRUTOS DESCONTADOS	TOTAL COSTO DESCONTADO	VALOR PRESENTE NETO	TASA DE RETORNO	COST. INCR. PROMEDIO
6	206974800.00	31423190.00	175551600.00	23.230	5620.73
7	163971700.00	28733860.00	135237900.00	23.230	5139.68
8	130791700.00	26389690.00	104402000.00	23.230	4720.38
9	105039500.00	24332390.00	80707120.00	23.230	4352.39
10	84933580.00	22515430.00	62418160.00	23.230	4027.38
11	69142570.00	20901400.00	48241160.00	23.230	3738.68
12	56666540.00	19460030.00	37206510.00	23.230	3480.86
13	46750840.00	18166550.00	28584290.00	23.230	3249.49
14	38823160.00	17000600.00	21822560.00	23.230	3040.93
15	32447370.00	15945270.00	16502090.00	23.230	2852.16
16	27289400.00	14986460.00	12302940.00	23.230	2680.66



