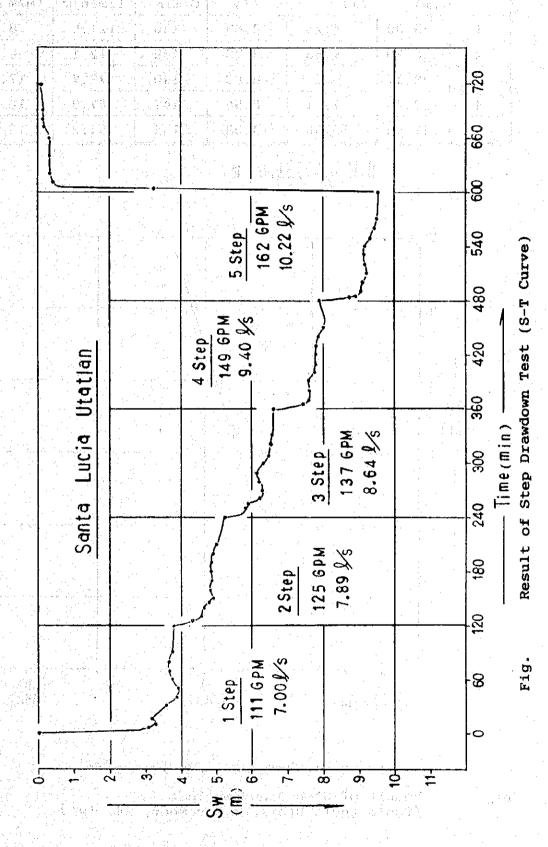
	7 1 E	H P D		43 st 63 kg	≈ N 1 V	ELES	PRODUCCION	くしば Hoja No. OBSERVACIONES
FECHA	Hora	Minutos	Presión	Pulgadas	Dinàmico	Estático	S.P.H.	
27/11/94		300			131.97			
		360			131.97			
		420			131.97			
		480			131.97			
						Y v v		
: 			28					
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· .								
		<u> </u>		1				
						Part of		



Step	Water	Sw	Pumping	Rate	Sc	Sw
	Level (m)	Drawdown (m)	l/s	G/min	1/min/m	(m/m³/min)
1	135.80	4.26	8.63	136	121.5	8.23
2	136.20	4.66	8.73	138	112.1	8.92
3	138.17	6.63	8.83	140	79.9	12.51
4	139.45	7.91	8.96	142	67.9	14.71
5	141.60	10.06	9.08	144	54.2	18.45

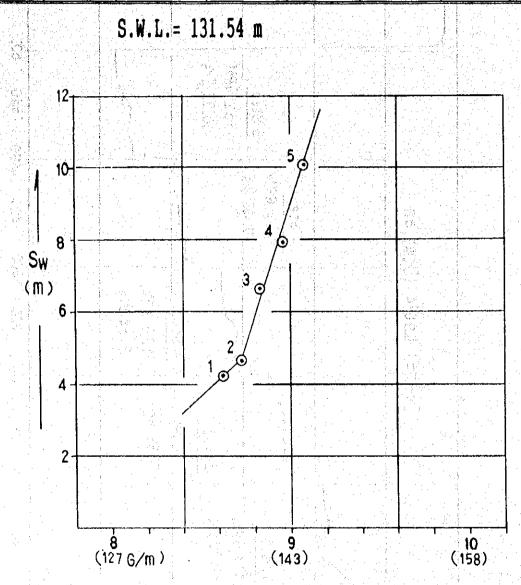
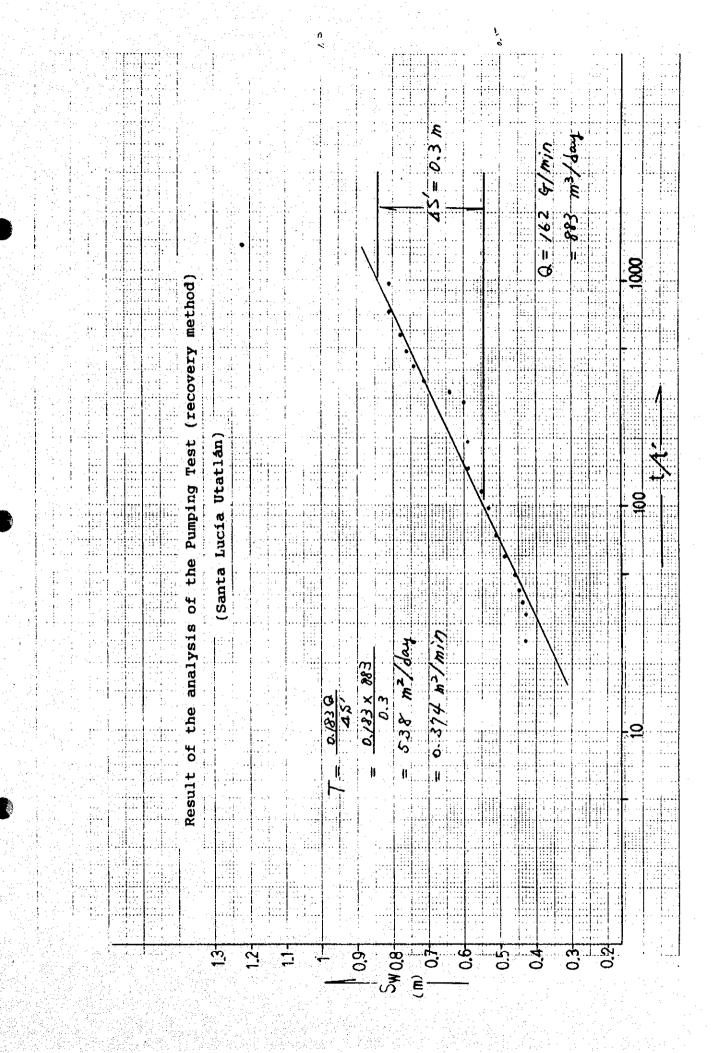


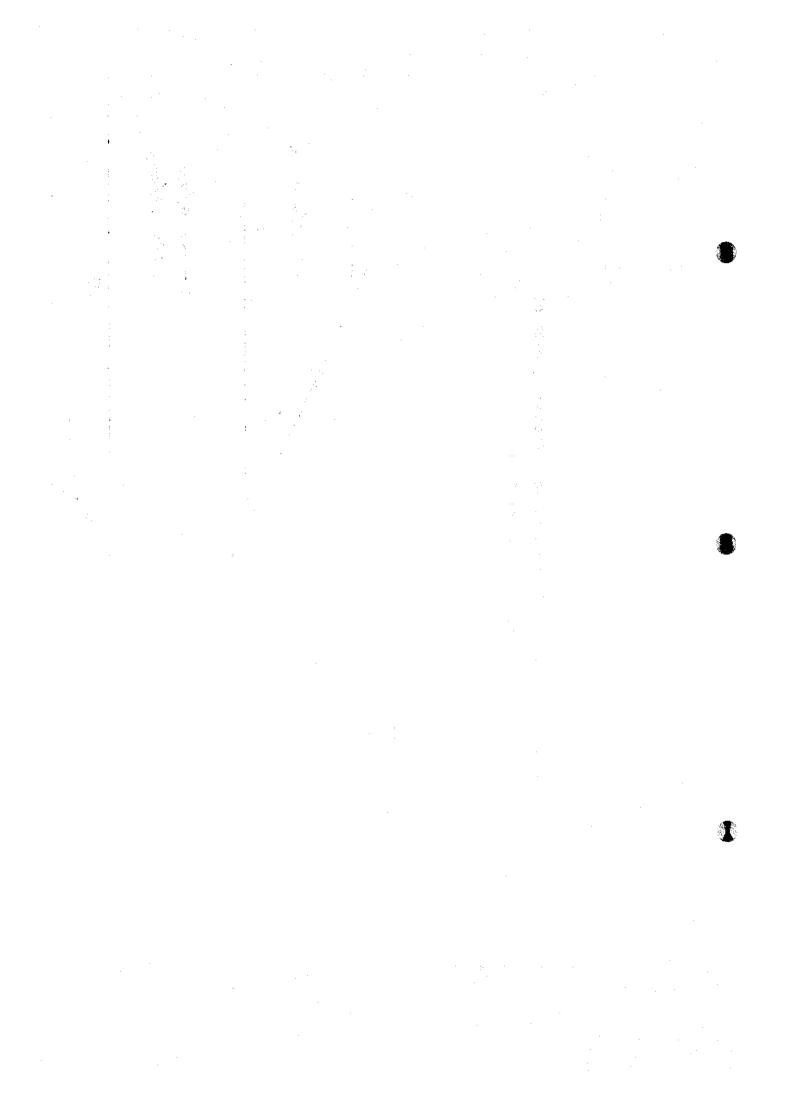
Fig. Result of Step Drawdown Test (Santa Lucia Utatlán: November, 24, '94)

Discharging (1/sec)

lit of the analysis of the Pumping Test (Santa Luc) $ \frac{-0.836}{15} $ S= 2.45 m ² /4 S=		(pou							0000
11t of the analysis		44	1	6 1	883 = 35¢.	0.247			
		Result of the analysis			3			45 = 0:45 m	

	MP 0-10-11 W(U)=25	S=7.7m 1/t=10-1 Q=883.m=1/day = 162.4/min	<i>wo</i> , 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,	
	0 MP (1-10-11) (1-10-11)	\$ × & "		Ç
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ping T		1. day	85/.0.	10-2
he Pum Lucía		(w) = 228 m²/dw = 0.158 m²/m	- 6.12 × 10 3	7
sis of the Pumping Test (Santa Lucia Utatian)		3		
S.j.		4 T.S. 4 4 T.S. 4 4 T.X. 7.7	75	
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of the analy				.0.
the analy				.0.





Result of pumping test

(Momostenango)

PRUEBA DE BONBEO (ESCALONADA)

ORIFICIO 4º en tubo de 6º ORIFICIO 4º en tubo de 6º NIVEL DE BOMBEO 145.34 Metros NIVEL ESTATICO 63.50 Metros

JICA - 1 N F O H BOMBA INSTALADA A 581 PIES PRODUCCION 295 G.P.M. BONBA DE 14 ETAPAS, DE: 60 H.P. OPERADOR : ANTONIO DE PAZ

EQUIPO: F-3 MOMOSTENANGO DEPARTAMENTO DE TOTONICAPAN

	1 I E	N P O		eren ost National	NIV	ELES	PRODUCCION	ORSERVACIONES
FECHA	Hora	Hinutos	Presion	Pulgadas	Dinámico	Estático	6.P.H.	PRUERA DE BOMBEO ESCALONADA
07/12/94	6.00	0				63.50		PRIMER ESCALON CON 179 GPM.
		2		7.5	64.30		179	NIVEL DE BONBEO MEDIDO CON
Bank.		•		7.5	65.35		179	SONDA ELECTRICA.
		6		7.5	66.45		179	
	e e esercia.	8		7.5	67.50		179	
		10		7.5	68.20		179	
		15		7.5	70.00		179	
		20		7.5	72,50		179	
		25		7.5	72.80		179	
		30		7.5	73.70		179	
		40		7.5	74.30		179	
		50		7.5	75.20		179	
	N	60		7.5	76.10		179	
		70		7.5	77.35		179	
		80		7.5	78.20		179	
		90		7.5	78.25		179	
		120		7.5	80,00		179	
	8.00	0		12.5	80.00		230	SEGUNDO ESCALON CON 230 GPM.
		2		12.5	85.00		230	
		4		12.5	87,50		230	
		6		12.5	88.50		230	
		8		12.5	89.50		230	
		10:		12.5	90.30		230	
		15		12.5	97.20		230	
		20		12.5	92.00	7	230	

	TIE	M P O			NIV	E L'E'S	PRODUCCION	OBSERVACIONES
FECHA	Hora	Minutos	Presion	Pulgadas	Dinamico	Estático	G.P.M.	
7/12/94	8.00	25		12.5	92,80		230	
		30		12.5	93,00		230	
		40		12.5	94.50		230	
		50		12.5	97,30		230	
		60		12.5	98.30		230	
		70		12.5	99.00		230	
		80		12.5	99.66		230	
		90		12.5	100.45		230	
		120		12.5	102.00		230	
	10.00	0		19	102.00		278	TERCER ESCALON CON 278 GPM:
		2		19	105.40		278	
				19	108.06		278	
		6		19	108.79		278	
		8		19	109.13		278	
		10		19	109.49		278	
		15		19	110.33		278	
		20	13	19	111.50		278	
		25		19	112.40		278	
		30		19	114.94		278	
		40		19	115.30		278	
		50		19	116.51		278	
		50		19	117.16		278	
		70		19	118.08		278	
282 277		80		19	119.36		278	
 		. ,90		19	120,00		278	
	1	120		19	121.77		278	
	12.00	. 0		27	121.77		329	CUARTO ESCALON CON 329 GPM.
·		2		27	128.77		329	

<u> </u>	1 1 E	X P O			NIV	ELES	PRODUCCION	Mom """ ORSERVACIONES
FECHA	Hora	Minutos	Presión	Pulgadas		Estático	G.P.M.	
07/12/94	12.00	4		27	128.79		329	
		6		27	129.26		329	
		8			130.09		329	
				27	\			
		10		26.5	130.96		326	
		15		28	132.50		323	
		20		26	133.17		323	
		25		25.5	133.51		320	
		30		25	134.69		317	
		40		24.5	136.45		314	
		50		24	137.00		310	
		60		24	138,49	1	310	
		70	100 707 000	23	140.58		305	
		80		23	141.10		305	
		90		23	141.70	2 2 1	305	
		120		21.5	145.34		295	SE PARO PRUEBA DE BOMBEO
		0			145.34			RECUPERACION DEL POZO
		2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		124.00			
		4			95.34			
		6			93.70			
		8			93.00			
		10			92.21			
		15			89.36			
		20			87.87	1 2 2 2		
		25			86.00			
		30		V-1	85.00		· · · · · · · · · · · · · · · · · · ·	
		40			83.22			
		50			81.92			

FERR Hors Minutos Presión Pulgades Dinásico Estático Gapa.		TIE	N P O			NEL V	ELES	PRODUCCION	OBSERVACIONES
60 79.24 90 78.36 120 76.75 150 75.58 190 75.60 240 75.72	FECHA	Hora	Minutos	Presión	Pulgadas	Dinámico	Estático	B.P.N.	
90 78.55 120 75.75 150 75.80 190 75.60 190 75.77 190 190 190 190 190 190 190 190 190 190	07/12/94		70			79.92			
120			80			79.24	77.18.3		
150 75.58 150 75.60 240 75.92			90			78.55			
180 75. 60 246 75. 92		Agricological Paris Santana Agricological	120			76.75			
240 75.72			150			75.58			
		e de la companya de l	180			75.60			
			240			75.92			
			1	}			<u></u>		
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		-	<u> </u>						
									
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The Later Was placed that ORIFICIO 4º en tubo de 6º

San april

PRUEBA DE BONBEO (LARGA DURACION)

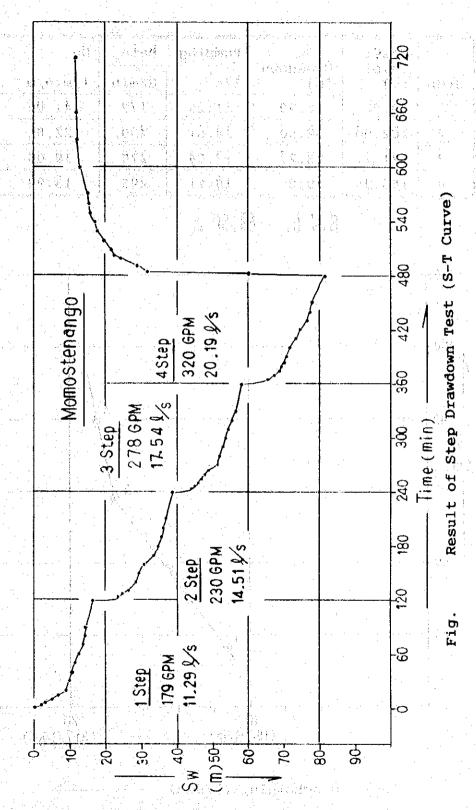
ORIFICIO 4º en tubo de 6º
NIVEL DE BOMBEO 133.80 Hètros J-1 C A -- J-N F-O M BOMBA INSTALADA A 581 PIES
NIVEL ESTATICO 65.00 Mètros PRODUCCION 200 G.P.M.
EQUIPO: FAILING -- 3 MOMOSTENANGO, DEPTO. TOTONICAPAN BOMBA DE 14 ETAPAS, DE: 60 H.P.

	TIE	MPÔ			NIV	ELES	PRODUCCION	OBSERVACIONES
FECHA	- Hora	Minutos	Presion	Pulgadas	Dinâmico	Estático	G.P.M.	
08/12/94	6:00	0				85.00		
eri Geografiya dan ili		2	en enĝine ar L	.9.5	85.00		200	NIVEL DE BONREO MEDIDO CON
	i w new n i w n	11 A 1		9.5	77.70		200	SONDA ELECTRICA.
				9.5	73.13		200	
		.8		9.5	83.83		200	
		10		9.5	86.65		200	
		15		9.5	86.81		200	
		20		9.5	87.64		200	
		25	e gerkus	7.5	88.21		200	
		- 30	ta ay basa Ta	9.5	88.58		200	
		40		9,5	90.40		200	
		50		9.5	92.00		200	
		60		7.5	92.59		200	
		70		9.5	93.20		200	
		80		9.5	93.69		200	
	i e ellere elek	90		9.5	94.79		200	
		120		9.5	95.00	10 m	200	
		150		9.5	97.00		200	
	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	180		9.5	98.00		200	
		210		9.5	99.00		200	
		240		9.5	97.58		200	
		300		9.5	101.00		200	
		360		9.5	103,12		200	
		420	-	9.5	104.00	1	200	

	1 1 E	MPO			NIV	ELES	PRODUCCION	OBSERVACIONES
FECHA	Hora	Minutos	Presión	Pulgadas	Dinamico	Estático	G.P.M.	
		540		9.5	109.53		200	
		800		9.5	110.83		200	
		660		9.5	111.00		200	
		720		9.5	113.05		200	
		780		9.5	114.10		200	
		840		9.5	115.00		200	
		900		9.5	115.10		200	
2/12/94	1.00	960		9.5	116.00		200	
		1020		9,5	116.30		200	
		1080		9.5	116.94		200	
		1140		9.5	117.60		200	
		1200		9,5	118.10		200	
		1260		9.5	118.85		200	
1. 1. 2. 1. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		1320		9.5	119.00		200	
		1380		9,5	119.92		200	
		1440		9,5	120.30		200	
3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1500		9.5	121.51		200	
		1560		9.5	121.54		200	
		1620	and dispersi	9.5	122.21		200	
		1680		9.5	123.69		200	
		1740		9.5	124.42		200	
		1900		9.5	125.33		200	
		1920	2 2	9.5	126.53		200	
		2040		9.5	127.40		200	
		2160		9.5	127.80		200	
		2280		9.5	128.70		200	
		2400		9.5	129.80		200	
		2520		9.5	130.80		200	

	11E	NPO			NIV	ELES	PRODUCCION	ORSERVACIONES
FECHA	Hora	Minutos	Presion	Pulgadas	Dinàmico	Estático	G.P.M.	
		2640		9.5	131.80		200	
		2760		9.5	132.80		200	
		2880		9.5	133.80		200	SE PARO PRUEBA DE BOMBEO.
		1			130.90			RECUPERACION DEL POZO.
		2			128.63			
		3			125.24			
		•			124.33			
		5			122.44			
		b			120.10			
		7			118.08			
		8			116.11			
		9			114.45			
		10			112.77			
		15			110.78			
		20			108.19			
		25			104.25			
		30			100.33			
		40			98.48			
		50			96.60			
		60			95.04			
		70			95.98]		
		80			94.50	 		
		90			92.48			
		120			90.04			
		150			89.13		1	
		180			97.15			
		210	1		85.34	3		

	TIE			<u>4.442.19.</u> Helia 1921	N T O	ELES	PRODUCCION	Ho. M. DRSERVACIONES	
Perus					<u> </u>		G.P.N.		
FECHA	Hora	Minutos	Presion	Pulgadas	and the second	A Decidence	8.7.5		
		300		(to ;	81.50	1			
	,	360			77.53				
	of lands ()	420			74,85				
		490			72.93				
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	Water	Sw	Pumping	Rate	Sc	Sw
Step	Level	Drawdown (m)	1/s	G/min	l/min/m	Q (m/m³/min)
1	80.00	16.50	11.29	179	41.06	24.35
2	102.00	38.50	14.51	230	22.61	44.22
3	121.77	58.27	17.54	278	18.06	55.37
4	145.34	79.84	18.61	295	/ 13.99	71.49

S.W.L. = 63.50 m

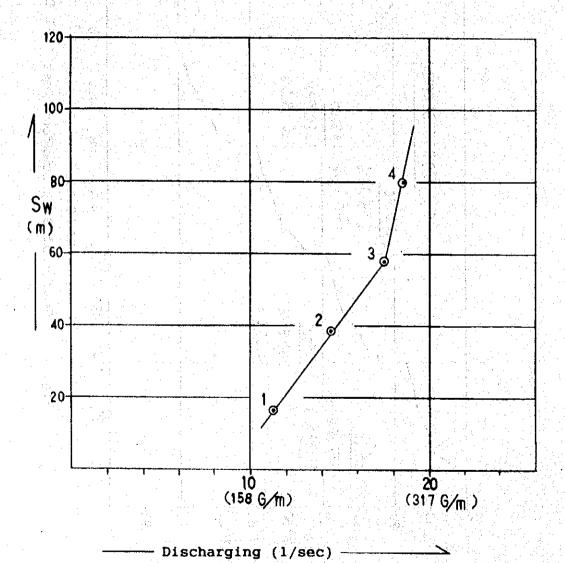
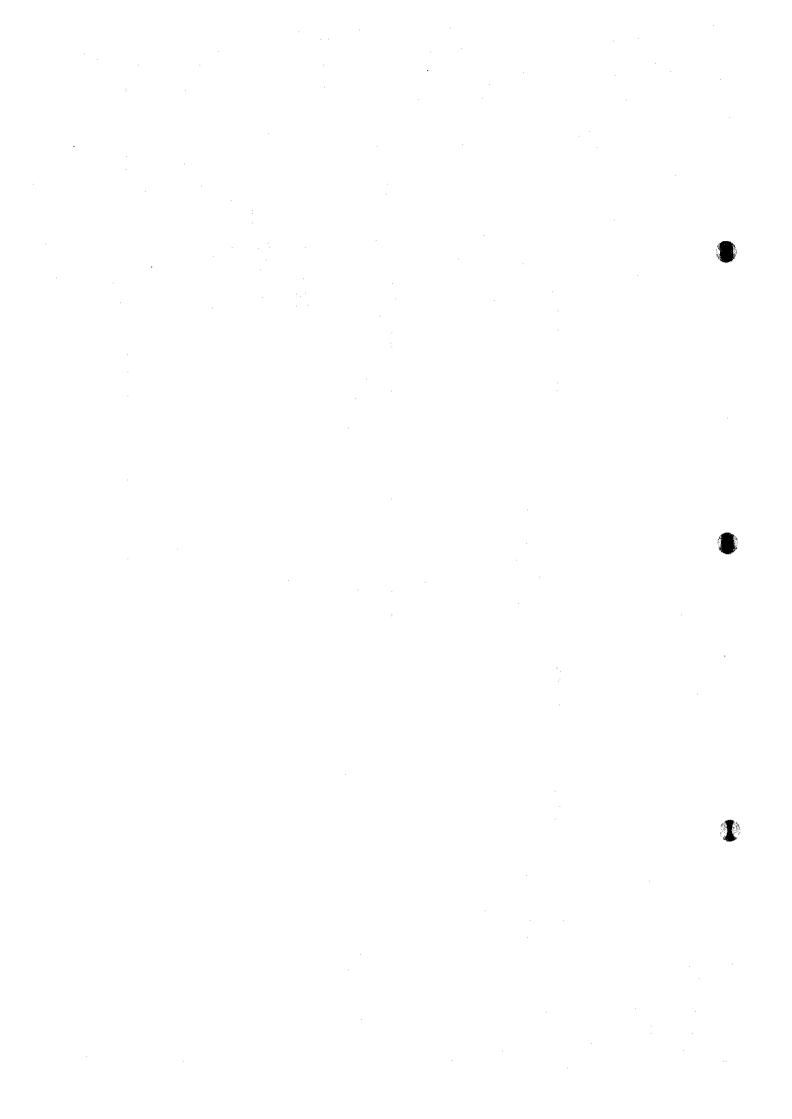


Fig. Result of the Step Drawdown Test (Momostenango: 6 de Diciembre de 1994)

						45= 28 m					Mayaaz = 0	= 72.62 R/sec	= 1000 cm3 / 6m	`		8			
	acob method	12.5														9			
	Test (3						, 6												
	the Pumping	Momostenando			71	/@ 										Q			
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	the analyai			0	•														
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Result of pumping test

(Génova)

PRUEBA DE BONBÉO (ESCALONADA)

ORIFICIO 3" en tubo de 4" NIVEL DE BOMBEO 155.38 Metros NIVEL ESTATICO 27.85 Netros EQUIPO: TH-60

JICA - INFON

GENOVA COATEPEQUE

BOMBA INSTALADA A 486 PIES

PRODUCCION 207 G.P.M. BOMBA DE S ETAPAS, DE: 40 H.P.

OPERADOR : AUGUSTO BLANCO

	ΤΙE	MPO			HIV	ELES	PRODUCCION	OBSERVACIONES
FECHA	Hora	Hinutos	Presión	Pulgadas	Dinâmico	Estático	G.P.M.	PRUERA DE ROMBEO ESCALONADA
10/12/94	9.00	0				27.85		PRIMER ESCALON CON 151 GPM.
		2		13	45,77		151	NIVEL DE BOMBEO MEDIDO CON
				13	43.53		151	SONDA ELECTRICA.
				13	43,84		151	
		8		13	44.22		151	
		10		13	44.68		151	
		15		13	48,23		151	
		20		13	50.75		151	
		25		13	52.38		151	
		30		13	54.58		151	
		40		13	55.59		151	
		50		13	56.51		151	
		60		13	57.69		151	
4 (2) (4) 1 (1) (1)		70		- 13	58.55		151	
		80		13	59.12	. 1	151	
		90		13	59,75		151	
		120		13	61.32		151	
	11.00	0		16.5	61.32		170	SEGUNDO ESCALON CON 170 GPM.
		2		16.5	64.08		170	
		4		16.5	64.54		170	
		6		16.5	64.88		170	
		8		18.5	64.99		170	
		10		16.5	65,18		170	
		15		16.5	65.86		170	
		20		16.5	66.37		170	

•	
	40
	TC

	J 1 E	MPÓ	já s ze se		NIV	ELES	PRODUCCION	OBSERVACIONES
FECHA	Hora	Minutos	Presión	Pulgadas	Dinamico	Estático	G.P.M.	
10/12/94	11,00%	25		16.5	66.71		170	
		30		16.5	65,95		170	
	2 (-2 (-2 (-2 (-2 (-2 (-2 (-2 (-2 (-2 (-	40		16.5	67.59		170	
×		50		16.5	68.28		170	
	in dina. Series	60	ana bar a Distribation	16.5	68.87		170	
		70	in a second	18.5	69.28		170	
		80		16.5	70.03		170	
	eti, ili ili ili ili ili ili ili ili ili i	90		16.5	70.39		170	
		120		16.5	71.54		170	
	13.00	0		18.5	71.54		180	TERCER ESCALON CON 180 GPM.
		2		18.5	73.10		180	
				18.5	73.37		180	
,		Ь.		18.5	73.53		180	
		8		18.5	73.59		180	
		10		18.5	73.70		180	
		15		18.5	74.00		180	
		20		18.5	74.42		180	
		25		18.5	74.68		180	
		30		18.5	74.85		180	
		40		18.5	75,53		180	
		50		18.5	75.96		180	
	}	50		18.5	76.33		180	
		70		18.5	76.84		180	
	1 1 1 1 1 1	80	1	18.5	77.12	}	190	
		90		18.5	77.42		180	
		120		18.5	78.39		180	
}	15,00	0.		23	78.39		201	CUARTO ESCALON CON 201 GPM.
\		2		23	91.24		201	

			<u> </u>		T			9e
	1.1 E					E.L.E.S.	PRODUCCION	OBSERVACIONES
FECHA	Hora	Minutos	Presión	Pulgadas	Dinamico	Estático	G.P.N.	
10/12/94	15.00			23	82.06		201	
		ь		23	82.35		201	
		8		23	82.49		201	
	e de Marine	10		23	82.66		201	
		15		23	83.22		201	
an Park State		20		23	93.79		201.	
		25		23	84.18		201	
ala se se se se		30		23	84.53		201	
		40		23	85.26		201	
		50	- }	23	85.60		201	
		50		23	86,10		201	
	0,500	70		23	86.56		201	
		80		23	87.00		201	
		90		23	87.25		201	
		120		23	88.66		201	
	17.00	0		43	88.66		275	OUINTO ESCALON
		2		42	94.59		272	
		4		35	105.17		250	
		b	1	. 33	107.40		242	
		8		30	108.47		230	
		10::		30	109.09		230	
		15		28	110.13		222	
		20		27.	111.14	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	219	
		25		26.5	112.24		216	
		30		25.5	112.35		212	
		40		25.5	112.99		212	
		50		25	113.29		210	
		60		24.5	113.64		207	
	<u> </u>	1	1	1	1	1	1	1

		1						Ge Hoja H
	I I E	NPO			NIV		PRODUCCION	OBSERVACIONES
FECHA	Hora	Minutos	Presion	Pulgadas	Dinámico	Estático	6.P.M.	
10/12/94	18.00	70		24.5	113,80		207	
		80		24.5	114,22		207	
		90		24.5	114.72		207	
		120		24.5	115.38		207	SE PARO PRUERA DE BOMBEO.
	19.00	2			81.93			RECUPERACION DEL POZO.
		4			64.05			
		6			61.20			
		8			59.67			
		10			59.41			
		15			56.17			
 		20			54.20	1/4		
		25			52.74			
		30			51.80			
		40			50.26			
		50			49.06			
		60	17 (2) (B) (1) (1)		48.23			
		70			47.62			
		90			46.37			
		90			45.60			
	21.00	120			44.64			
			i					
	}	, i						
				1.12				
	}	}	 	<u>} ≥ 21 </u>	}			

ORIFICIO 3° en tubo de 4° NIVEL DE BOMBEO 122.00 Metros NIVEL ESTATICO 33.64 Metros EQUIPO: TH-60

V . 64 3. 41

PRUEBA DE BOMBEO

(LARGA DURACION)

JICA - INFON

GENOVA COATEPEQUE

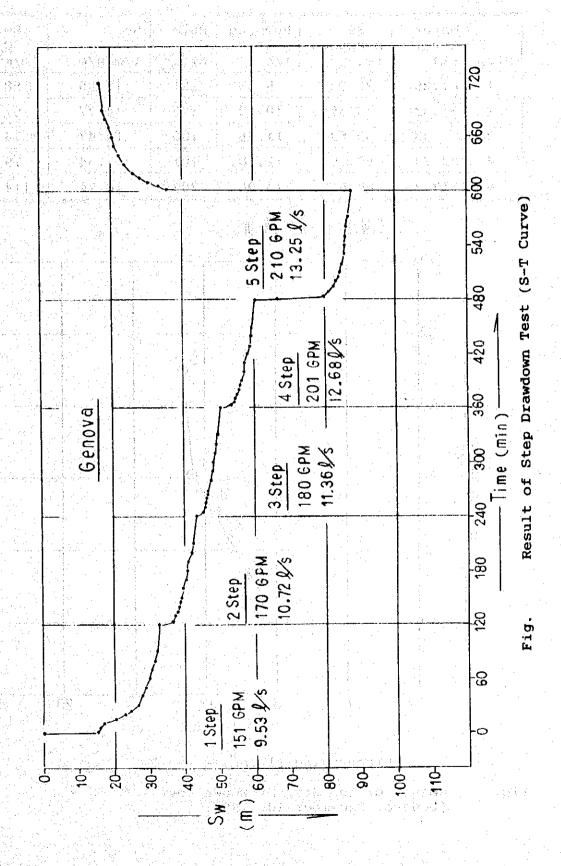
BOMBA INSTALADA A 486 PIES PRODUCCION 201 G.P.M. BOMBA DE 5 ETAPAS, DE: 40 H.P. OPERADOR: AUGUSTO BLANCO

TIEMPO NIVELES PRODUCCION OBSERVACIONES **FECHA** Presión Pulgadas Dinámico Estático G.P.N. Hora Minutos 11/12/94 9.00 0 33.54 2 23 51.77 201 NIVEL DE BONSEO MEDIDO CON-4 56.23 201 SONDA ELECTRICA. 201 .6 23 59.36 201 8 23 61.13 201 10 23 62.74 15 23 65.13 201 20. 23 67.24 201 25 23 68.92 201 23 70.42 201 30 71.95 201 40 23. 50. 23 73.73 201 75.09 201 60 23 23 76.23 201 70 77.22 23 80 201 90 23 78.07 201 -- 120 23 80.56 201 23 82.23 201 150% 83.98 201 23 180 201 210 23 85.49 23 86.75 201 240 300 23 89.52 201 201 23 91.33 360 201 23 93,49 420 201 480 23 94.43

	TIE	H P O			NIV	E L'ÈS	PRODUCCION	Ge Hoja No. 2 DBSERVACIONES
FECHA	Hora	Hinutos	Presión	Pulgadas	Dinámico	Estático	6.P.N.	
11/12/94	18.00	540		23	100.98		201	
		600		23	102.11		201	
		- 660		23	102.43		201	
		720		23	102.80		201	
		780		23	103.44		201	
		840		23	103.93		201	
		900		23	103.97		201	
12/12/94	1.00	960		23	104.50		201	
		1020		23	104,00		201	
		1080		23	104.12		201	
		1140		23	104.57		201	
		1200		23	106.52		201	
		1260		23	107.22		201	
		1320		23	107.54		201	
		1380	1	23	107.57		201	
		1440		23	107.59		201	
		1500		23	117.06		201	
		1560		23	121.32		201	
		1620		23	121.55		201	
		1680		23	121.42		201	
		1740		23	121.34		201	
		1800		23	121.62	7	201	
		1920		23	121.62		201	
		2040		23	121.98		201	
		2160		23	122.00		201	
		2280		23	122.00		201	
13/12/94	1.00	2400		23	122.00		201	
·		2520		23	122,00		201	

								Ge Hoja No. 3
	(11E	N P O		Dans F	HIV	ELES	PRODUCCION	OBSERVACIONES
FECHA	Hora	Minutos	Presión	Pulgadas	Dinámico	Estático	. G.P.M. →	
13/12/94	5.00	2540		23	122.00	4	201	
		2750		23	122.00		201	
	9.00	2890		23	122.00		201	SE PARO PRUEBA DE BOMBEO.
		ı			101.69			RECUPERACION DEL POZO.
		2			90.38			
		3			77.46			
					71.51			
		5			70.15			
		6			69.98			
		7	4		69.77			
		8			69.65			
		ÿ			69.51			
		10			89.45			
		15			58.91			
		20			68.44			
		25			68.05			
		30			67.69			
		40			66.96			
		50	1		65.30			
		50		,	65.64			
		70			65.64			
		80			54,98			
		90			64.20			
		120			63.06			
		150			61.23			
		180			59.71			
	121 10	210			58.96			

FECHA	TÎENP.O				NIVELES		PRODUCCION	Ge Hoja No. 4 OBSERVACIONES		
	Hora	Minutos	Presión	Pulgadas	Dinámico	Estático	6.P.H.			
13/12/94	14.00	300			57.67					
		360			57.02					
		420			56.41					
		480			56.41					
				The second						
									}	
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			N 11							
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Step	Water	Sw Drawdown (m)	Pumping	Rate	Sc	Sw Q (m/m³/min)		
	Level (m)		1/s	G/min	1/min/m			
1	61.26	33.52	9.53	151	17.05	58.64		
2	71.32	43.58	10.72	170	14.77	67.72		
3 🖰	78.33	50.59	11.36	180	13.47	74.25		
4	88.39	60.65	12.68	201	12.54	79.71		
5 ි	117.35	89.61	13.06	207	8.74	114.36		

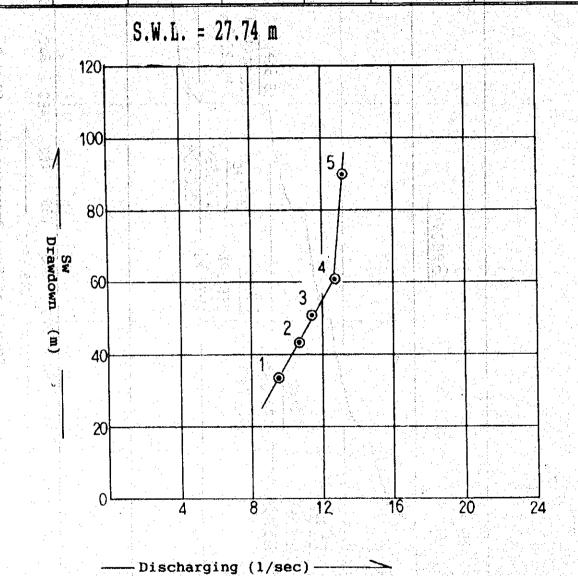
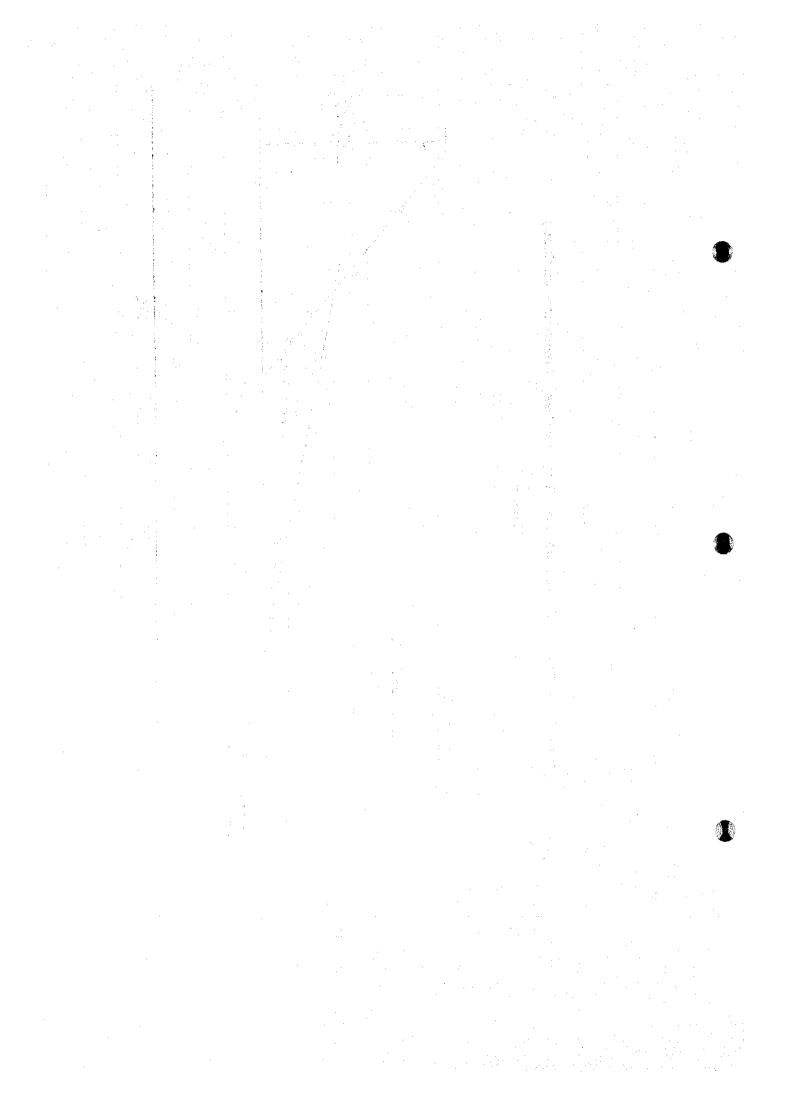


Fig. Result of the Step Drawdown Test (Genova: December 10, 1994)

		, , , , , , , , , , , , , , , , , , ,				
		Q = 201 GPM Q = /2.68 1/Sec				
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(Jacob method)				නික්තරය / එමල ල ල		3
		16=21		,		
the Pumping Test	(Génova)		9/ 9/ 9/			
of the P	(Gén		9			(Min)
of the analysis				7.5%	17 day	
Result		/6	0.736	0./83×/085.6	7.55 1	9
		•		u i		
		0				

				~ <u>0</u> * 3			49	Q= 1095. 6 m3/day			
				m 4m	8	S=26 m	0/0=3	Q = 10)		1.0	
	(Theis curve			6 6							
	the Pumping Test (' (Génova)					10.000 xxx.010)					
	of the Pump (Génova)		• • •		S= _u4TE	4.00.0074 4x0.0074 (0.1016) = 15	=-0.192			10'0	
	analysis c		0 0 0 0 0 0 0 0								
	Result of the		0 -0 22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Q W(U)	1085.6×3.2	10.74 m = / day	0.00745			10070	
	Re	(No. 10)			?	*	-				
		100	.		*S (€		0		•		

										S2= 52														
										7														
		hod)					N																	
		ry met							•	X										8	 	21		
		(recovery method)					***************************************				1	9	९			. 11				<u> </u>		11		
		Test ()											0.0		\									
				-									6											
		the Pumping	(Génova)										\ 6) D										
		of	<u>.</u>		.,.								1	9 9						100	1/1			
		nalysis								J				9										
		the a					7-10-	0,0						ð										
		_			\83 Q	45'	7-10-1-5 (01 0	(0/ V 50) ((")	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \					. L	,								
		Result			- 0			i .		₹ !				4)	0000	II.	[: [:]] [Q				
			. :										7	70,7))	9								
			\$				- T) E		S	8													



3. RESULTS OF WATER QUALITY ANALYSIS

Quality Standard for Drinking Water in Guatemala by COGUANOR

Table A1-1

Quality Standard for Drinking Water in Guatemala by COGJANOR

Physical Quality

	n					
운	_	_	_	(T-1	_	_
6.5-9.2	•	•	•	•	•	•
No detected						No detected
1500 me/1	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	500 me/	solids 500 mg/l
· .	· -	· -	· -	· -	500 mg/1	solids 500 mg/l
	7.	mg/1	500 mg/1	500 mg/1		solids
	7 EG 2. EG	rtected - 1-8.5 rtected	o detected -7.0-8.5 o detected 500 mg/1	No detected 7.0-8.5 No detected 500 mg/l		solids

Note: * platinum-cobalt scale

** Jackson Turbidity Metrics Unit (J.T.M)

or Neferometric Unit (n.t.u.) 1-3 u of Odor in INFOM Standaard Electric Conductivity : 50 - 1500 uS/cm at 25 °C

Table A1-3 Quality Standard for Drinking Water in Guatemala by COGNANOR

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MAI in INFOM Standrad: 0.7 mg/l PAI in INFOM Standrad: 0.5 mg/l<

Table A1-2 Quality Standard for Drinking Water in Guatemala by COGUANOR

Chemical Quality

etergents* (A1)* (A1)* (A2)* (C1-) (WC) (WC) (WC) (WC) (WC) (WC) (WC) (WC	(1) MPL $(mg/1)$	1 000 T	0	1.000	1.000	200.000	.009	1.500	1.700	150.	<u>.</u>	6	0	400.			1.000	15,000
	Parameter MAL (mg/1)	Anionic Detergents* 0.200	Aluminium (AI) * 0.050	Barium (Ba) -1)	Boron (B) *	Calcium (Ca) 75.000	7hlorine (Cl−) 200.000	Copper (Cu) * 0.050	Fluorine (F-)	Magensium (Mg) 50.000	Manganese (Mr) 0.05(Ö	bstances 0.		Total Hardness 100.000	(as Ca(0)3)	Total Iron(Fe) 0.100	7:nc (7n) * 5 00/

*: Not standardized peremeters in INFOM Standard 1), 2): Found in Toxic Substances in INFOM Standard

Quality Standard for Drinking Water in Guatemala by COGUANOR Table A1-4

Toxic Substances

Parameter	MPL (mg/1)
Arsenic (As)	0.050
Cadmium (Cd)	0.010
Chromium (Cr)	0.050
Cyanide (CN-)	0.050
Lead (Pb)	0.100
Mercury (Hg)	0.005
Nitrate (NO3-) -1)	45.000
Nitrite (NO2-) *	0.010
Silver (Ag) *	0.050
Selenium (Se)	0.010

*: Not standardized parameters in INFOM Standard 1): Found in Chemical Substances of INFOM Standard

Quality Standard for Drinking Water in Guatemala by COGUANOR Table A1-6

Bacteriological Quality

Parameter	PML
General Bacteria	500 CFU/m1 >
Total Coliform	2 MPN/100m1 >
Fecal Coliform	Negative

Quality Standard for Drinking Water in Guatemala by COGUANOR Table A1-5

Biocide Quality

Parameter	MAI (mg/l)	MPL (mg/1)
	0.0010	0.0170
Chlordene	0.0030	0.0030
Organophsphorus		
and Carbanate	0.1000	0.1000
	0.0500	0.0500
Dieldrin	0.0010	0.0170
	0.0002	0.0010
Heptachlor	0.0010	0.0180
Epoxyheptachlor	0.0010	0.0180
	0.0010	0.0560
Methoxychlor	0.0040	0.0350
Toxaphene	0.0050	0.0250
Chlorophenoxy		
Hebicides:		
(1)	0.0200	0.1000
TP (2)	0.0300	0.1000
T (3)	0.0020	0.1000

(1): 2.4-Dichlorophenoxyacetic Acid
(2): 2.4.5-Trichlorophenoxypropanic Acid
(3): 2.4.5-Trichlorophenoxyacetic Acid

3-2

Water Quality of the Existing Water
Supply Systems by Simple Method

Water Quality of the Exisiting Mater Supply Systems by Simple Method (April 13 - 29, 1994)

Water Quality of the Exisitng Water Supply Systems by Simple Method (April 13 - 29, 1994)

₹ 0	unicipality	Water	Place of	Temp.	Hd	EC (US/cm)	Coliforns	G. Bacteria	Turbid.	Solor	Odor	Taste	. 140	
		somce	measurement	٠		(22. C)	(NO/m1)	(NO/mI)						
===				# 4					11	į	,			1
		Spring-1	Common tap	~	-	1.88.	1, 1, 2	U, 4, 15	O.	Clear	2		AND OF LIPSTUMMED	
S	anta Maria		Common tap	21.7	~	211.0	0, 0, 0	12, 44	No.	Clear	S.	1.	*Common tap-every	
\$	de Jesus	Soring-2	Common tap	21.7	5	139.9	6, 10	64, 100	No	Clear	No	ġ.	2 days supply	2
1		Well	House tap	20.4	6.57	291.0	0, 1	44, 20	Ñ	Clear	2		*No payment	
					Ċ.								*Turbidity by eye	
1700	≆ Ø	Municipality Santa Maria Ganta de Jesus	Municipality Water source source Santa Maria Spring-1 Spring-2 Well Well	Municipality Water Place of source measurement Santa Maria Common tap Common tap Common tap Well House tap	Water Place of Te source measurement (Spring-1 Common tap Common tap Common tap Hell House tap	Water Place of Te source measurement (Spring-1 Common tap Common tap Common tap Hell House tap	Water Place of Te source measurement (Spring-1 Common tap Common tap Common tap Hell House tap	Water Place of Te source measurement (Spring-1 Common tap Common tap Common tap Hell House tap	Water Place of Te source measurement (Spring-1 Common tap Common tap Common tap Hell House tap	Water Place of Te source measurement (Spring-1 Common tap Common tap Common tap Hell House tap	Water Place of Te source measurement (Spring-1 Common tap Common tap Common tap Hell House tap	Water Place of Te source measurement (Spring-1 Common tap Common tap Common tap Hell House tap	Mater Place of measurement Temp. pH EC (US/cm) Coliforms G. Bacteria Turbid. Color Odor Taste Spring-1 Common tap 22.2 7 199.1 1, 1, 2 0, 4, 13 No Clear No No Spring-2 Common tap 21.7 7 211.0 0, 0 12, 44 No Clear No No Spring-2 Common tap 21.7 6.5 139.9 6, 10 64, 100 No Clear No No Well House tap 20.4 6.5 291.0 0, 1 44, 20 No Clear No No	Mater Place of measurement Temp. pH EC (US/cm) Coliforms G. Bacteria Turbid. Color Odor Taste Spring-1 Common tap 22.2 7 199.1 1.1,2 0,4,13 No Clear No No Spring-2 Common tap 21.7 7 211.0 0,0,0 12,44 No Clear No No Spring-2 Common tap 21.7 6.5 139.9 6.10 No Clear No No No Well House tap 20.4 6.5 291.0 0,1 44,20 No Clear No No No

Water Quality of the Exisitng Water Supply Systems by Simple Method (April 13 - 29, 1994)

Table A2-3

Source Source [S-1+2] [S-1+2] [Tank-1] [Tank-2] [S-3] [Tank-1] [Ta	source measurement source measurement k-1 -1+2) k-1-1+2) k-1 Common tap k-2 -3) k-1 House tap	(C) 18.1 6.5 13.7 6 19.7 6 20.6 6 20.6 6 19.0 6	6.5 6 6 6 6	EC(US/cm) Colifor (25°C) (NO/ml) 106.1 0.0 106.3 0.0 97.1 0.0 108.5 0.0 106.1 0.0 98.0 0.0	C(US/cm) (Oliforms (25: C) (NO/ml) 106.1 0.0 106.3 0.0 97.1 0.0 108.5 0.0 106.1 0.0 98.0 0.0	emp. pH EC(US/cm) Coliforms G. Bacteria Turbid Color Taste 18.1 6.5 106.1 0.0 11.1 No Clear No No 21.3 6 106.1 0.0 1.1 No Clear No No 17.7 6 106.2 0.0 1.0 No Clear No No 19.7 6 108.5 0.0 7.1 No Clear No No 20.6 6 106.1 0.0 5.8 No Clear No No 16.0 6 98.0 0.0 8.3 No Clear No No 16.0 6 94.1 19.32 68.88 No Clear No No	Turbid No No No No No No	rrbid. Color No Clear No Clear No Clear No Clear No Clear No Clear	000 00 00 00 00 00 00 00 00 00 00 00 00	Taste No No No No	14- No. 3 14- 14- 14- 14- 14- 14- 14- 14- 14- 14-
	Common tap House tap	17.0 6 17.8 6	တယ	94.3	94.3 4. 4 94.7 2. 3	32. 36 15. 8	2 2 2	No Clear No Clear	≗ £	2 2	*2/ Us/year *Water supply until

Water Quality of the Existing Water Supply Systems by Simple Method (April 13 - 29, 1994)

		or Ins
	Temp. pH EC(US/cm) Coliforms G. Bacteria Turbid. Color Taste Remarks ('C) (25:C) (NO/ml)	18.1 6 34.4 1.1 40.44 No Clear No Flurbidity by eyes 20.7 6 91.8 1.1 120.60 No Clear No 600 houses 16.8 6 35.6 2.5 44.36 No Clear No 43hs-dry and 12 hs-dry and 13 hs-dry and 12 hs-dry and 12 hs-dry and 13 hs-dry and 12 hs-dry and 13 hs-dry and 13 hs-dry and 14 hs-dry and 15 hs-dry a
	Taste	No N
	Odor	N N N N N N N N N N N N N N N N N N N
9. 1994)	Color	Clear Clear Clear Clear
1 13 - 2	Turbid.	No Clear No Clear No Clear No Clear
Wrater Quality of the Exisitng Water Supply Systems by Simple Wethod (April 13 - 29, 1994)	G. Bacteria (NO/ml)	18.1 6 34.4 1.1 40.44 20.7 6 91.8 1.1 120.60 16.8 6 35.6 2.5 44.36 17.1 6 34.8 1.1 24.16
rs by Simple	Coliforns (NO/ml)	1. 1. 2. 5 1. 1
pply System	EC (US/cm) (25°C)	34.4 91.8 35.6 34.8
n N	围	9 9
ng Wat	100	18.1 20.7 16.8 17.1
of the Exisit	er Place of source measurement	Tank-1 Tank-2 House tap Common tap
er Quality c	Water	Tank-1 Tank-1 (S-1+2) Tank-2 (S-3) Tank-1 Tank-1 Tank-1
. Depart	Wo Municipelity Water source	Momostenango
Table A2-4 Totonicapar	2	

Water Quality of the Exisitng Water Supply Systems by Simple Method (April 13 - 29, 1994)

§	muncipation	NO Municipality Water source	Place of measurement	Temp. (°C)	75.	EC (US/cm) (25°C)	Coliforms (NO/ml)	G. Bacteria 24 hrs	Turbid.	Color	Odor	Taste	Remarks
			Tank	15.0	9	48.6	0, 8	20. 12	Ŋ	Clear	No	N	*No treatment
		(S-1 - 3)		,				(,		*Water supply for
		Tank	Common tap	15.3	တ	49.4	3, 7	28, 40	2	Clear	2 ;	2	*350 houses (100 %
		Tank	House tap	17.4	တ	47.9		8. 32	٤	Clear		2	in urban)
	San Carlos Sija	Private-	Private-	13.1	ဖ	175.5	6.9	36. 64	Locked	Slightly		2	*Private wells and
		Spring	Spring		- 1				very	white	-		springs with water
		}			•	· .			low				the supply system
					<u> </u>								*New tank is under-
													construction
_		Took-1	Tank-1	1	1	-			1		1		*No treatment
19 		1 dumo (2)	1 4101										*Simply for 102-
		(3) Tomba-9	Tonk-2	10 1	Ľ	126.3	· ·	88 88	Ş	Clear	2	۶	houses-100 % in
	Con Emphysica	7_110	on w	7.5	>	7.071		9	}		2	2	urban area
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	rransico Je Heier	(3) Decimen	12 =	, L	ŭ	286.0	17 25	35 100	Tookad	S1:oft1v	<u> </u>	Ş	#From ?dave only
	nomin et	rrivare	(cd. 13 III	12.0	>	2			Jon	white		?	
		Deimto	(45-3) # (45-3)	т.	u	186.3	c	24 12	5 2	Clear	۶	Ş	#5 Os/month
		rrade	(Cd. 63 III	¥ ::	>	100.0			2	1	}	2	*Private wells with
		1	(doop										water supply system
					+								
<u>,</u>	. ,		Tank	25.6	ۍ	91.1	10, 9	24, 24	£	Clear	2	%	*No treatment
		(S-1-7)			, , ,		2						*Water supply for
		Tank	Common tap	30.0	9	91.0	7, 10	24, 32	2	Clear	2	2	350 houses (70 %)
		Tank	House tap	29.4	9	91.3	4. 7	44, 176	2	Clear	<u>2</u>	2	*2 hs only a.m.
21 Genova	V2	Private	(ca. 7 m	26.8	ۍ	133.9	18, 17	1118, 1264	2	Clear	<u>.</u> 2	2	*Private wells with
		Well	(deeb)										water supply system
													*Pipe from springs
-													will be exchanged
					<u> </u>								to bigger one -
													% water supply up
		Tank-1	Tank-1	24.3	4	107 1	13 11	120 80	Ş	Clear	2	, S	*Tank-1 · for 30 vs
		~	1 111111	, ;	•	1::01			?	}	!	· ·	
Flores	S	Tank-2	Tarık-2	25.9	9	201.0	13, 22	72, 108	£	Clear	2	No.	*Tank-2: for 1.5 ys
22	Costa Cuca	(T-1+W)										- ;	
-		Tank-2	House tap	25.9	9	178.9	8, 10		<u>,</u>	Clear	2	No.	*0.75 Os/month
		Private-	(Sa. 8 ≡	25.0	9	166.4	41. 40	256, 200	£	Clear	2	2	*Privae well with

Water Quality of the Existing
Supply Systems by INFOM
(1990)

Table A2+6 ... Water Quality of the Existing Supply System analyzed by INFOM since 1990

Guatemala Department Municipality San Jose del Golfo Sta. Catarina Pinula Date 4-9-90 4-9-90 30-4-91 8-9-92 15-2-93 10-8-93 Munici-Place Casa N. Munici-Casa A. Casa G. A Llena-Dionisio pality cantaros Carrera pality Barillas Parameter | 0.0 Residual 0.0 0.0 0.0 0.0 0.0 chloride (mg/1) Appearance Clear Clear Clear Clear Yellowish Clear Temp. (C) ÷ .; ; ; 22.4 рH 6.8 True color 140 Odor : No No No No No No 2# 3\$ 22 1* 1* 1* 1* Turbidity (U.N.T) ÷ × 22.4 Hardness (mg/1) 113 Chlorine (mg/1) 25 T-Fe (mg/1) 2.35 Mn (mg/1) 2 NO3-N (mg/1) 0.0 NO2-N (mg/1) 0.00 Sulphide (mg/l) 0 EC (uS/cm) 表现的 1 T-S (mg/1) 186 200 General-bacteria 40 :60 500 90 5000 (NO/m1)Total-coliforms 13 346**17** 220 23 220 79 (MPN/100m1) Fecal-coliforms 2 2 8 <2 79 <2 (MPN/100m1)

<u> </u>	Guatemala	Deaprtmen	t daya	Sacatepég	uez Departm	ent
Municipality	San Pe	dro Sacate	péquez	Santa	Maria de J	esus
Date	28-8-90	19-4-93	28-9-93	13-8-90	8-5-91	24-8-92
Place	Disri.	Munici-	Park	Iglrsia	Llena-	Central
	Tank	pality		Property.	cantaros	Park
Parameter :	7					The En
Residual	0.0	0.0	0.0	0.0	0.0	0, 0
chloride (mg/l)						a the state
Appearance	Clear	Clear	Clear	Clear	Clear	Clear
Temp. ('C)	19.7	-	22.6	18	; -	11 S = 41
pH	-		7.1	7.2	7 -	÷ :
True color	10	_	5	∴5	ļ -	-
0dor	1	No	0	. 2	No	No :
SS	1*	1*		3\$	2*	2*
Turbidity (U.N.T)	0.3	j -	0.5	0.25	-	
Hardness (mg/1)	45	-	48	76	- 🗀	7.
Chlorine (mg/l)	36	-	23	28	-	-
T-Fe (mg/l)	0,01	-	0.00	0.00	-	·
Vin (mg/1)	0.1	-	0.0	0.1	-	
NO3-N (mg/1)	1.8	-	1.4	0.7		-
NO2-N (mg/1)	0.002		0.001	0.003	-	
Sulphide (mg/1)	1.0	-	0.0	0.0	-	1 1 1 1 1 1 1 1
EC (uS/cm)	143.7		-	171.8	:i = 1	a 🚗 jagan
T-S (mg/1)	72.0	-	1.6	86.1	-	:
General-bacteria	300	400	-	80	20	10000
(NO/m1)			100		Tarana F	
Total-coliforms	11	70	-	2	8.	34
(MPN/100m1)						rigi
Fecal-coliforms	<2	<2		<2	2	22
(MPN/100m1)	Impolia.		lend in the	. 7. J. 14.	1994	

Table A2-7 Mater Quality of the Existing Supply System analyzed by INFOM since 1990

Sacatenéques Department Chimaltenango Departmen

unicipality	49. W. 14	Ciudad	Vieja	A WAST	San Juan	Comalapa
Date Place	10-1-90 Munici- pality	10-8-92 Pozo Nuevo	2-8-93 Pozo Fluyente	1-6-93 Munici- pality	25-11-91 Llena- cantaros	24-11-92 N. el Cojol
Parameter						- នាក្រស់ស្នា
Residual (mg/l)		0.0	0.0	0.0	0.1	0.0
Appearance	16 (2 12 VIII)	Clear	Clear	Clear	Clear	Clear
Temp. ('C)	21.5		24.3	5.5	-	la de j + #n∂\$
pH \	7.2		7.4			
True color	10		40	-		
Odor	1	No	, ⇒ 0	No	+	No No
SS	- 04	1*	1 1 ₹ ₹	a	2#	- ! ≉ //
Turbidity (U.N.T)	0.3		4.0			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Hardness (mg/1)	120		123			
Chlorine (mg/1)	31	-	28			0.50 K#1844
T-Fe (mg/1)	0.02		0.02	1		
Mn (mg/1)	0.2	-	0.0	-		
NO3-N (mg/1)	3.7		0.3			
NO2-N (mg/1)	0.004		0.001			
Sulphide (mg/1)	14.0	<u></u>	0.0	7	-(4.050)	1000 O TOTAL (1990)
EC (uS/cm)	156.7		169.9		-	
T-S (mg/1)	1	31 - 31	00000		-	1000
General-bacteria		20	60000	40	600	10000
(NO/m1)		/ 0	11000	7	1 1201111111111111111111111111111111111	
Total-coliforms		<2	>1600		79	1435 1446 [1345 1456 145
(MPN/100m1)				-0	1 1 2 2 2	· · · .
Fecal-coliforms (MPN/100ml)	.		<2	<2	23	1 1 Sept 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Solola Department Totonicapan Department Nahuala Municipality Sololá **Mom**ostenango Date 22-7-91 31-8-93 2-7-90 17-4-90 Place Hospital Munici-Centro Llena-Nacional pality de Salud cantaros Parameter Residual 1.0 0.0 1.0 chloride (mg/1) Appearance Clear - Clear Clear Temp. ('C) 18.7 pH 6.6 True color 10 Odor -No No Ò No SS 1* 1* 1* 4 0.4Turbidity (U.N.T) Hardness (mg/1) Chlorine (mg/l) 30 T-Fe (mg/1) 0.02 $Mn \pmod{1}$ 0.0 NO3-N (mg/1) 1.0 NO2-N (mg/1) 0.003Sulphide (mg/1) 1.0 EC (uS/cm) 16.4 T-S (mg/1) 33.1 General-bacteria 1 1000 1 (NO/m1)<2 ⟨2 8 Total-coliforms (MPN/100m1) Fecal-coliforms 4 (MPN/100m1)

Table A2-8 Water Quality of the Existing Supply System analysed by INFOM since 1990

Quetzaltenango Department

A CONTRACTOR OF THE PROPERTY O	<u>que czar tena</u>	rigo nebar c	ARCT I.C.			
Municipality	Genova Cos	ta Cuca	F. C. C.	Sa	n Carlos S	ijá
Date	27-8-90	7-10-91	7-10-91	27-3-90	27-3-90	27-3-90
Place	Casa de	Tank	Casa de	Casa de	Market	Casa de
	M. Escobal	Lavadero	F. V.	F. R. G	* . '	F. Ramon
Parameter						
Residual	0.0	0.0	0.0	0.0	0.0	0.0
chloride (mg/1)			Marie Barre			
Appearance	Clear	Clear	Clear	Clear	Clear	Clear
Temp. ('C)	_	-	-	-	-	17.6
pH	_	6.6	_	·		7.3
True color	-	10	10		-	10
0dor	No	0	0	No	No	1
SS	3∗	1*	1*	1*	2#	1*
Turbidity (U.N.T)		0.55	1.3	- <u>-</u> 1	≥	0.45
Hardness (mg/1)		-		-	-	22
Chlorine (mg/1)	-	27	29	-	-	39
T-Fe (mg/1)	es i =iter	0.01	0.03	ing special little	· _	0.01
Mn (mg/1)	<u> </u>	1	_	-	· 🛖	0.3
NO3-N (mg/1)	-	3.2	8.0	_	_ -	1.5
NO2-N (mg/1)	-	0.003	0.007	_	_	0.003
Sulphide (mg/l)	_	0.0	0.0	_	-	0.0
EC (uS/cm)	-	82.2	96.0	, - ,	· -	47.7
T-S (mg/1)	_	41.1	48.1	- :	_	23.8
General-bacteria	59000	3	600	180	700	200
(NO/m1)						
Total-coliforms	2	<2	350	8	49	79
(NMP/100m1)			1, 1			
Fecal-coliforms	2	-	33	<2	49	<2
(NMP/100m1)						,_

Quetzaltenango Department

Municipality	San Fco. 1	a Unión	Cajola			
Date	28-8-90		26-2-90			
Place	Munici-		Munici~			
	pality	·	pality			
Parameter						
Residual	0.0		0.0			
chloride (mg/l)			T.	<u> </u>		
Appearance	Yellowish		Clear	*		
Temmo. ('C)	16.7		17.1			
pli	7.4		7.3			
True color	30		20			
0dor	1		2	ļ .		
22	2#		1*		.:	·
Turbidity (U.N.T)	0.94		3.0			
Hardness (mg/1)	75		162			
Chlorine (mg/l)	32		28			
T-Fe (mg/1)	0.79		0.04	ļ		
Mn (mg/1)	0.3	, N. J.	0.2			
NO3-N (mg/1)	1.2		1.6			
NO2-N (mg/1)	0.001		0.002	:		
Sulphide (mg/1)	5.0		9.0			
EC (uS/cm)	170.7		143.0			
T-S (mg/1)	86.0		71.5			
General-bacteria	150		60			
(NO/m1)				į .		
Total-coliforms	2		8			
(NMP/100ml)						
Fecal-coliforms			2			
(NMP/100m1)						

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ing series Table Marine		from	Diet	ributi	ion Tai	ak Kirkin III
		TT OIII	<i>D</i> 150.	L IDU U.	rom rai	
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	Test					
. Herebergerer			Maria de Maria			
			1000		and a filter to con-	

Table A3-i Quality of Drinking Water from Distribution Tank

Municipality: San José Pinula

Appearance: Clear Tank No. 1

Odor: No

17 19 18

sign of reducing head

AND DIMER HAS

Date: October 8, 1994

Taste: No

Parameter Value	Parameter Value	Parameter Value
Temp. ('C) 20.0	T-Fe (mg/1) 0.12	Pb (mg/1) 0.0
pH 6.6	T-Hardness	T-Residual
EC (uS/cm) 65.0	(mg/1 as CaCO3) 32.54	(mg/1 at 104°C) 142.40
Color (u) 5.0	Cr(6+) (mg/1) 0.0	General bacteria
Turbid. (mg/1) 0.0	Chloride (mg/1) 13.25	(CFU/ml) 33
Residual Clorine 0.0	Min (mg/1) 0.0	Total coliforms
COD (Mn) (mg/1)	Zn (mg/1) 0.0	(MPN/100m1) 2>
NO3-N (mg/1)	Cu (mg/1) 0.0	Fecal coliforms N
NO2-N (mg/1) 0.0	As (mg/l) 0.0	The first section of the first
NH4-N (mg/1) 0.0	Cd (mg/1) 0.0	

Table A3-2 Quality of Drinking Water from Distribution Tank

Municipality: San Pedro Sacatepequez

Appearance: Clear

Tank No. 2

Odor: No

Date: October 13, 1994

Taste: No

Parameter Val	ue Parameter Value	Parameter Value
Temp. ('C) 21	.0 T-Fe (mg/1) 0.04	Pb (mg/1) 0.0
pH 6	.9 T-Hardness	T-Residual
EC (uS/cm) 340	.0 (mg/1 as CaCO3) 52.88	(mg/l at 104°C) 159.6
Color (u) 10	.0 Cr(6+) (mg/1) 0.0	General bacteria
Turbid. (mg/1) 0	.0 Chloride (mg/1) 8.37	(CFU/m1) 1450
Residual Clorine	- Min (mg/1) 0.0	Total coliforms
COD (Mn) (mg/1) 0	.0 Zn (mg/1) 0.01	(MPN/100m1) 93
NO3-N (mg/1) 5	Cu (mg/1) 0.0	Fecal coliforms N
NO2-N (mg/1) 0	0 As (mg/1) 0.0	
NH4-N (mg/1) 0	.0 Cd (mg/1) 0.0	

Table A3-3 Quality of Drinking Water from Distribution Tank

Municipality: Santa María de Jusús

Appearance: Clear

Tank No. 2

Odor: No

Date: November 5, 1994

Taste: No

Parameter Value	Parameter	Value	Parameter	Value
Temp. (*C) 20.0	T-Fe (mg/1)	0.01	Pb (mg/1)	0.0
pH 7.2	T-Hardness		T-Residual	
EC (uS/cm) 200	(mg/1 as CaCO3)	138.30	(mg/1 at 104°C)	250.8
Color (u) 5.0	Cr (6+) (mg/1)	0.0	General bacteria	4 14 1
Turbid. (mg/1) 0.0	Chloride (mg/l)	11.16	(CFU/m1)	4610
Residual Clorine	Mn (mg/1)	0.0	Total coliforms	
COD (Mn) (mg/1) 0.0	$2n \pmod{1}$	0.03	(MPN/100m1)	110
NO3-N (mg/1) 10	Cu (mg/1)	0.0	Fecal coliforms	N
NO2-N (mg/1) 0.0	As (mg/1)	0.0		
NH4-N (mg/1) 0.0	Cd (mg/1)	0.0		

Table A3-4 Quality of Drinking Water from Distribution Tank

Municipality: San Martin Jilotepeque

Tank No.

Date: October 29, 1994

Appearance: Clear

and the production of the

Odor: No Taste: No

Parameter Value	Parameter Value	Parameter Value
Temp. ('C) 22.0	T-Fe (mg/1) 0.39	Pb (mg/1) 0.0
pH 7.0	T-liardness	T-Residual
EC (uS/cm) 130.0	(mg/1 as CaCO3) 63.05	(mg/1 at 104°C) 179.2
Color (u) 5.0	Cr (6+) (mg/1) 0.0	General bacteria
Turbid. (mg/1) 0.0	Chloride (mg/1) 9.76	(CFU/m1) 1030
Residual Clorine	Mr (mg/1) 0.0	Total coliforms
COD (Mn) (mg/1)	Zn (mg/1) 0.08	(MPN/100m1) 1100
NO3-N (mg/1) 0	Cu (mg/1) 0.0	Fecal coliforms N
NO2-N (mg/1) 0.0	As (mg/1) 0.0	
NH4-N (mg/1) 0.0	Cd (mg/1) 0.0	

Table A3-5 Quality of Drinking Water from Distribution Tank

Municipality: San Juan Comalapa

Tank No. 1

Date: November 10, 1994

Appearance: Clear

Odor: No Taste: No

Parameter Value	Parameter Value	Parameter Value
Temp. ('C) 17.0	T-Fe (mg/1) 0.11	Pb (mg/1) 0.0
pH 7.2	T-Hardness	T-Residual
EC (uS/cm) 55	(mg/1 as CaCO3) 32.54	(mg/1 at 104 C) 92.8
Color (u) 5.0	Cr(6+) (mg/1) 0.0	General bacteria
Turbid. (mg/1) 0.0	Chloride (mg/1) 9.07	(CFU/m1) 21
Residual Clorine 0.0	Mn (mg/1) 0.0	Total coliforms
COD (Mn) (mg/1) 0.0	Zn (mg/1) 0.03	(MPN/100m1) 2>
NO3-N (mg/1) 0	Cu (mg/1) 0.0	Fecal coliforms N
NO2-N (mg/1) 0.0	As (mg/1) 0.0	
NH4-N (mg/1) 0.0	Cd (mg/1) 0.0	

Table A3-6 Quality of Drinking Water from Distribution Tank

Municipality: Solola

Tank No. 1

Date: November 10, 1994

Appearance: Clear

Odor: No Taste: No

Parameter Value	Parameter Value	Parameter Value
Temp. (°C) 16.0	T-Fe (mg/1) 0.0	Pb $(mg/1)$ 0.0
р Н	T-Hardness	T-Residual
EC (uS/cm) 75	(mg/1 as CaCO3) 44.76	(mg/1 at 104 C) 140.4
Color (u) 0.0	Cr (6+) (mg/1) 0.0	General bacteria
furbid. (mg/1) 0.0	Chloride (mg/l) 9.76	(CFU/m1) 4
desidual Clorine 1.0	Mn (mg/1) 0.0	Total coliforms
OD (Mn) (mg/1) 0.0	Zn (mg/1) 0.0	(MPN/100m1) 2>
103-N (mg/1) 5	Cu (mg/1) 0.0	Fecal coliforms N
102-N (mg/1) 0.0	As (mg/1) 0.0	[4] (4] [4] [4] [4] [4] [4] [4] [4] [4] [4] [
NH4-N (mg/1) 0.0	Cd (mg/1) 0.0	

Table A3-7

Quality of Drinking Water from Distribution Tank

Municipality: Santa Lucía Utatlán

Tank No. 1

Date: November 10, 1994

Appearance: Clear

Odor: No Taste: No

Parameter	Value	Parameter	Value	Parameter	Value
Temp. ('C)	15.0	T-Fe (mg/1)	0.0	Pb (mg/1)	0.0
pH	6.8	T-Hardness	e a gallea la esc e e e e de a altra	T-Residual	
EC (uS/cm)	50	(mg/1 as CaCO3)	30.52	(mg/l at 104°C)	109.6
Color (u)	5.0	Cr (6+) (mg/1)	0.0	General bacteria	
Turbid. (mg/1)	0.0	Chloride (mg/l)	11.16	(CFU/ml)	10
Residual Clorine		Mn (mg/1)	0.0	Total coliforms	
COD (Mn) (mg/1)	0.0	Zn (mg/1)	0.01	(MPN/100m1)	2>
NO3-N (mg/1)	0	Cu (mg/1)	0.0	Fecal coliforms	N
NO2-N (mg/1)	0.0	As (mg/1)	0.0		
NH4-N (mg/1)	0.0	Cd (mg/1)	0.0		in Aryana Araba

Table A3-8

Quality of Drinking Water from Distribution Tank

Municipality: Momostenango

Tank No. 1

Date: November 17, 1994

Appearance: Clear

Odor: No Taste: No

Parameter	Value	Parameter	Value	Parameter	Value
Temp. ('C)	18.0	T-Fe (mg/1)	0.0	Pb (mg/1)	0.0
рH	7.0	T-Hardness		T-Residual	
EC (uS/cm)	90	(mg/1 as CaCO3)	24.41	(mg/1 at 104°C)	112.0
Color (u)	5	Cr (6+) (mg/1)	0.0	General bacteria	**
Turbid. (mg/1)	0.0	Chloride (mg/1)	7,67	(CFU/ml)	616
Residual Clorine		Mn (mg/1)	0.0	Total coliforms	
COD (Mn) (mg/1)	0.0	Zn (mg/1)	0.01	(MPN/100m1)	460
NO3-N (mg/1)	0	Cu (mg/1)	0.0	Fecal coliforms	N
NO2-N (mg/1)	0.0	As (mg/1)	0.0		
NH4-N (mg/1)	0.0	Cd (mg/1)	0.0		to all the state of

Table A3-9 Quality of Drinking Water from Distribution Tank

Municipality: San Francisco La Union

Tank No. 1

Appearance: Clear

Odor: No

Date: November 17, 1994

Taste: No

Parameter	Value	Parameter	Value	Parameter	Value
Temp, (°C)	16.0	T-Fe (mg/1)	0.18	Pb (mg/1)	0.0
p₩	7.3	T-Hardness		T-Residual	
EC (uS/cm)	175	(mg/1 as CaCO3)	54.97	(mg/l at 104°C)	128.8
Color (u)	0	Cr (6+) (mg/1)	0.0	General bacteria	
Turbid. (mg/l)	0	Chloride (mg/1)	9.07	(CFU/m1)	1336
Residual Clorine	<u> </u>	Mn (mg/1)	0, 16	Total coliforms	
COD (Mn) (mg/1)	0.0	2n (mg/1)	0.02	(MPN/100m1)	290
NO3-N (mg/1)	0	Cu (mg/1)	0.0	Fecal coliforms	N
NO2-N (mg/1)	0.0	As (mg/1)	0.0		
NH4-N (mg/1)	0.0	Cd (mg/1)	0.0		

Table A3-10 Quality of Drinking Water from Distribution Tank

to the Specialists

Municipality: Génova

Tank No. 1

Date: November 18, 1994

Appearance: Clear

Colorador Spring

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Lukeding):

Section States

Odor: No

Taste: No

Parameter Value	Parameter Value	Parameter Value
Temp. ('C) 24.0	T-Fe (mg/1) 0.04	Pb (mg/1) 0.0
pH 6.8	T-Hardness	T-Residual
EC (uS/cm) 70	(mg/l as CaCO3) 32.54	(mg/1 at 104°C) 77.2
Color (u)	Cr (6+) (mg/1) 0.0	General bacteria
Turbid. (mg/1) 0	Chloride (mg/l) 13.25	(CFU/∎1) 63
Residual Clorine	Mn (mg/1) 0.16	Total coliforms
COD (Mn) (mg/1) 0.0	Zn (mg/1) 0.0	(MPN/100m1) 29
NO3-N (mg/1) 10	Cu (mg/1) 0.0	Fecal coliforms P
NO2-N (mg/1) 0.0	As (mg/1) 0.0	
NH4-N (mg/1) 0.0	Cd (mg/1) 0.0	

Table A3-11 Quality for Drinking Water from Test Well

Municipality: San José Pinula

Date: October 8, 1994

Appearnce: Clear

Odor: No Taste: No

Parameter ' Value Parameter Value Parameter Value 0.10 Temp. ('C) 23.0 T-Fe (mg/1) Cd (mg/1) 0.0 6.7 T-Hardness Pb (mg/1) 0.0 pH: EC (uS/cm) (mg/l as CaCO3) 152.54 T-Residual 240 Color (u) 0 Cr (6+) (mg/1) 0.0 (mg/1 at 104'C) 309.2 Turbid. (mg/1) 18.83 General bacteria 0 Chloride (mg/1) 2200 COD (Mn) (mg/1) Mn (mg/1) 0.0 (CFU/ml) NO3-N (mg/1) 10 2n (mg/1)0.05 Total coliforms NO2-N (mg/1) (MPN/100m1) Cu (mg/1) 0.0 0.0 0.0 NH4-N (mg/1) Fecal coiliform 0.0 As (mg/1)

Table A3-12 Quality for Drinking Water from Test Well

Municipality: San Pedro Sacatepéquez

Date: October 13, 1994

Appearnce: Clear

Odor: No Taste: No

Parameter	Value	Parameter	Value	Parameter Value
Temp. ('C)	20.0	T-Fe (mg/1)	0.06	Cd (mg/1) 0.0
pH	6.8	T-Hardness		Pb (mg/1) 0.0
EC (uS/cm)	380	(mg/l as CaCO3)	44.74	T-Residual
Color (u)	5	Cr(6+) (mg/1)	0.0	(mg/1 at 104'C) 198.0
Turbid. (mg/1)	0	Chloride (mg/l)	8.37	General bacteria
COD(Mn) (mg/1)	0.0	Mn (mg/1)	0.0	(CFU/m1) 2300
NO3-N (mg/1)	0	Zn (mg/1)	0.12	Total coliforms
NO2-N (mg/1)	0.0	Cu (mg/1)	0.0	(MPN/100ml) 1100
NH4-N (mg/1)	0.0	As (mg/1)	0.0	Fecal coiliforms N