

ENVIRONMENTAL DATA FOR PERIOD  
14 APRIL - 20 MAY, 1977

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MATO EL FRIO, APOURE STATE, VENEZUELA  
FIGURE 8 POND, PRESTIMO ON ROAD TO MANIRUTO -

VARIABLES MONITORED

WATER TEMPERATURES

- C WITHIN 5-10 CM OF SURFACE
- B AT 50 CM. DEPTH
- A ON BOTTOM IN MUD SUBSTRATE
- D SURFACE TEMPERATURE OF SAND ON SHORELINE  
20 CM. FROM WATER.
- E AIR TEMPERATURE AT 1.5M. HEIGHT

Wspd. WIND SPEED + DIRECTION

R/H RELATIVE HUMIDITY - WET BULB / DRY BULB  
and % REL HUM.

L LIGHT METER READINGS WITH LUNA PRO  
LIGHT METER - INCIDENT LIGHT AT 1M,  
FACING NORTH, E METER HORIZONTAL

CORRECTION FACTORS FOR TEMPERATURE PROBES.

C	+0.7 °C	(SUBTRACT 0.7 °C FOR CORRECT READING)
B	+0.3 °C	( " 0.3 " " " )
A	+0.5 °C	( " 0.5 " " " )
D	+0.3 °C	( " 0.3 " " " )
E	+0.3 °C	( " 0.3 " " " )

C B A D E

Environmental Data

APRIL 1977	T <sub>w-s</sub>	T <sub>w-5D</sub>	T <sub>w-b</sub>	T <sub>s</sub>	T <sub>a</sub>	Wspd.	R/H	L
0800-0810	29	29	30.1	25.5	30.7	8-E	$\frac{24.30}{62\%}$	19
0900-	29.3	29	30.0	27.5	32.0	12-E	$\frac{25.75}{60\%}$	19
1000	30	29.9	30.3	31.0	34.5	12-E	$\frac{24.30}{50}$	19
1100	30.5	30	30.2	32.9	35.0	9-E	$\frac{25.50}{52}$	19
1200	31.0	30.8	30.0	34.5	36.7	6-E	$\frac{24.30}{51}$	19.5
1300	31.5	31.0	30.0	35.0	38.1	12-E	$\frac{27.50}{46}$	19.5
1400	32.0	31.5	30.0	34.5	39.0	9-E	$\frac{27.30}{46}$	20
1500	32.1	31.9	29.8	34.4	39.0	<5-E	$\frac{26.30}{42}$	20
1600	32.0	31.5	29.0	32.5	41.5	<5-E	$\frac{24.30}{42}$	20
1700	31.5	31.5	29.5	31.2	38.0	25-E	$\frac{26.50}{40}$	19.5
1800	31.3	31.3	29.3	28.7	35	<3-E	$\frac{26.30}{50}$	17
1900	31.2	31.2	29.5	28.0	31.8	<2-E	$\frac{25.50}{52}$	10

5 APRIL 1977

0830	29.8	29.5	30.0	27.5	33.0	8-E	$\frac{24.50}{60}$	19
0900	30.0	30.0	30.5	29.8	34.0	8-E	$\frac{24.50}{60}$	19
1000	30.5	30.5	30.5	31.0	35.3	<5-E	$\frac{24.50}{55}$	19
1100	31.0	30.8	30.5	34.0	38	10-SE	$\frac{27.30}{55}$	19
1200	31.5	31.0	30.5	36.0	38	6-E	$\frac{27.30}{49}$	20
1300	31.8	31.5	30.5	33	39	6-SE	$\frac{27.50}{48}$	18
1400	32.0	31.8	30.7	32	37	5-SE	$\frac{27.30}{50}$	18
2000	31.0	31.0	31.0	29	27	2/0-		

C B A D E

Environmental Data

16 April 1977

Time	T <sub>max</sub>	T <sub>min</sub>	T <sub>w-b</sub>	T <sub>s</sub>	T <sub>a</sub>	W <sup>dir</sup> spd	%RH	L	Notes
0700	29	29	30.2	26	21	<3-ESE	25/25/72	14	overcast, cloudy front to S
0800	29	29	30.2	26	22	calm	25/26/72	15.3	"
0900	29	29	30	27	30.2	<3-ESE	25/26/72	17.5	slowly clearing
1000	29.5	29.5	30.1	27.5	29.0	<5-SE	25/26/72	18	
1100	29.5	29.5	30	28.5	31	6-E	25/26/76	18.5	overcast but brighter
1200	29.9	29.8	30.1	29.0	31.5	6-E	25/26/76	18.7	
1300	29.8	29.8	30.0	31.3	31.0	8-E	25/26/76	18.5	breakdown of sunshine @ 12.2
1400	29.7	29.7	30.0	29.0	29.5	8-E	26/26/76	17.5	
1500	29.7	29.7	30.0	28.0	29.5	8-E	26/26/76	17	
1600	29.7	29.7	30.0	28	30	5-E	26/26/76	17	
1700	29.9	29.9	29.9	27.5	31	6-NE	26/26/76	18	
1800	29.8	29.6	30.0	27	29.5	5-ENE	26/26/80	16	1375 1830 12@1845
1900	29.5	29.5	31.0	26.5	28	<3-E	26/26/86	T	
2100	29.0	29.0	30.0	26.0	26	<2-E	25/26/86		
2200	29	29	30	25	24.5	<2-E	25/26/86		
2400	29	29	30	25	24	<2-E	25/26/86		
0230	28.5	28.5	30	24.5	23	<2-E	25/26/86		
0530	28	28	29.8	24.5	23.5	<2-E	25/26/86		
0600	27.5	28.0	29.8	24	24	<2-E	25/26/86	6	0630 13 sunrise

7.14.77

0700	28	28	29.8	24.4	22.2	<4-SE	23/24/82		overcast
0800	28	28.2	29.8	25.5	26.2	<4-SE	24/25/82		"
0900	28	28.2	29.8	28.0	29.9	13 E	26/27/80	18.4	P/c
10:25	29	29	30	28	23.2	<6-SE		20	sun - still P/c clearing in W
11:00	30	29	30	31.5	34	6 ESE	26/27/80	19.8	sun slight haze
12:00	31	30.1	30	34	36.2	7 ESE	27/28/80	20	" " " hot
13:15	31.2	31	29.8	34	37	7.5 E	27/28/80	19.9	" " " "
14:00	31	31	29.5	32.5	27	7.5 E	26/27/82	19.5	" " " "
15:00	32	31	29.5	32.5	29	8.5 E	28/29/86	20	" partly cloudy hot
16:00	31.2	31	29	31.5	27	6.5 E	25/26/86	18.7	hazy no shadows
17:00	31	31	29	28.9	25.5	4.5 E	25/26/86	18	P/c
18:00	31	31	29	28.6	25.0	4.5 E	26/34/86	18.4	80% cloud cover

19:00

C B A D E

18 April	T <sub>w-s</sub>	T <sub>m-50</sub>	T <sub>m-6</sub>	T <sub>s</sub>	T <sub>a</sub>	W <sub>SP</sub>	RH	L
0730	29	29	30	25	29	7 ESE	21.5-26 / 66	18
0830	29.5	29	30	23.5	32	10 ESE	21.5-26 / 66	19
0930	29.5	29.5	30	-	33	10 ESE	21.5-26 / 60	19
1030	30.2	30.0	30	27.5	35.5	10 "	27-35 / 50	19
1130	30.5	30.5	30	32.5	36	7 "	27-35 / 56	19
1230	31.5	31	30	33	37.5	7 "	28-35 / 50	17.5
1330	32	31.5	30	35	40	5 "	27-35 / 48	18.5
1530	32	32	30	33	39	5 "	29-35 / 64	20
2030	31.5	31.5	30.5	32	27.5	<5 "	-	-

19 April								
1100	30.5	30.8	30.0	33	36	6 WSW	20-32 / 64	
1200	31.0	31.0	30.2	34.5	40	8 SW	23-30 / 48	
1300	31.5	31.5	30.2	-	39	6 SW	28-35 / 48	
1500	32.5	32.2	30.8	33.7	39	6 SW	28-35 / 48	
1700	32.3	32.3	30.3	31	36	6 SW	27-36 / 60	
1800	32	32	30.5	28	34.5	8 SW	27-36 / 44	
1900	32	32	30.5	27	32.5	10 SW	27-36 / 50	<1
2000	31.5	31.5	30.5	26	30	<5 S	27-36 / 60	
2300	30.8	30.8	30.5	25	26	CALM	23-27 / 76	

overcast + cloudy since 1630  
s. diameter down again

20 April

0615	29	29	30.5	23	25.5	<5 E	21.1-28.5 / 74	7.5
0730	29	29	30.5	24	28	7 SE	22-34 / 68	17.5
0815	29	29	30.5	25.5	30	10 E	22-34 / 68	18
0900	29	29	30.5	27	31.5	16 E	25-35 / 62	
1000	29	29	30.5	27.5	35.5	16 E	25-35 / 58	
1200	30.5	30	30.5	30	36	10 E	26-35 / 56	
1400	30	30.2	30	28	35	12 NE	26-35 / 60	
1600	30	30	29.9	29	34	12 NE	27-35 / 66	
1700	30	30	30	27	34	10 NE	27-35 / 50	16
1800	29.5	29.5	30	26	32.5	18 N	27-35 / 48	14.5
1900	29.5	29.5	30	25.5	31	10 N	27-35 / 50	on knots
1930	29	29	30	25	30	<5 N	-	

(5 minutes) CTR 9.5-10  
0630 = 12

wind gusts to 20+

a little less windy, gusts back  
up to 20 wind!

wind still heavy

C D A D E

1 Apr.	T <sub>s</sub>	T <sub>so</sub>	T <sub>b</sub>	T <sub>sub</sub>	T <sub>a</sub>	WSP	RH	L
0730	27	27	30	27.5	27.5	10 NE	27-27	
0900	27	27	29.5	26	29.5	14 NE	27.5-28	gusts to 16 mph
1000	28	28	29.5	-	32.5	8 NE	24-22	gusts to 20
1100	28	28	29.5	30.5	33.5	10 E	25-23	wind die down
1200	29.3	28	29.5	32.5	35.5	8 NE	26.5-26	gusty
1300	29.8	29.5	29.0	32.5	36	6 NE	26-25	
1400	30	30	29.0	33	37	6 NE	26-25	gusty
1500	30.5	30.5	29.0	35	39	10 NE	26-25	
1700	30.8	30.8	29.5	29.5	35.5	10 E	23.5-21.5	
1800	30.5	30.5	29.5	28	35	10 E	25-23	
1900	30.3	30.3	29.5	28.5	32	5 E	25-23	
2000	30	30	29.8	26	29.5	calm	23.5-23	
2100	30	30	30	26	29.5	calm	23-22	
2300	30	30	30.7	25	28	calm	23-22	
2400	29.5	29.5	30	24.5	25	calm	21-20	
2 APR. 0100	29	29	30	24.5	24.5	gusty	20-20	gusty
0200	29	29	30	24	25	calm	21.5-21	
0400	28.5	28.5	30	24	23.5	calm	21-20	
0500	28	28	30	23	24	5 E	21-20	0610 3
0700	28	28	30	23	24.5	5 E	21-20	0615 5
0800	28	28	30	24	27.5	7 E	21-20	0620 7
0900	28	28	30	26	30	10 NE	21-20	0625 9.5
1730	31	31.5	29.8	27.5	34.5	4 S		clear

C B A D E

23 April Ts T50 Tb Tsub Ta W RH L

0700	27.5	28	29.5	22	22.5	calm	19-21.5	82	
0800	28	28	29.8	23.5	27.5	8 NE	20.5-26	64	
0900	28	28	29	25	29	10 E	23-25	62	
1000	28.5	28.5	29.5	28	31	10 NE	23.5-31	48	
1100	29	29	29.5	27	33	7 E	25-31.5	52	
1200	30	30	29.5	-	35	8 NE	26-30	38	
1300	29.5	29.5	28	-	34.5	16 NE	26-30	42	gusts to 10
1300	30.5	30.5	29.5	33	36				
1500	31.5	31.5	29	32	36	6 NE	27-34	34	gusts
1720	31	31.5	29	30	36	6 NE	27-34	30	gusts
1800	31	31	29	27.5	34	5 ENE	24-30	46	
1900	31	31	29	26	31.5	4 S	23-30	58	

24 April

0830	23.0*	28	29.8	28	29.5	12 NE	24-30	64	windy
1020		29	29	28.5	30	14 NE			windy, hazy at times and like yesterday
1845	30.5	31	29.5	26	32				

C B A D E

5 April

0805	28	28	29.5	24.5	28	= 8 NE
1000	28.5	28.5	29	26.5	33	= 10 NE
1630	32	32	29.5	33	36.5	

6 April

S 50 b = @ center of pond  
50

0700	—	29	30	—	24	4 E	21.5-23
0800		29	29.8	—	30	8 ENE	23-25 88
0900		29.8	30		31.5	10 ENE	25-31 70
1100	30.5	30.5	30	—	35	6 ENE	28-36 64
1200	31	31	30		35	5 ENE	26-34 47
1400	—	32.3	30		39	8 ENE	35-35 50
1500		33	30		37	5 ENE	25-33 40
1900		33	30		31.5	Caln	38

90% to 1.0  
90% to 8

period of calm

C B A D E

27 April

Tuesday 124

0630	-	30	30	-	24		122
0845		30	30		31.0	8 ENE 24.5-30 66	
1150		31	30		35.5	5 E	

3 April

0600	B	30.3	30.3		25	45 E 22.5-26 76	<del>121.7</del> 121.7
0700		30	30.7		26	45 E 22-25 88	
0800		30	30		29.7	8 E 23-27 64	
0900		30	30		32	15 E 24-30 64	gusts to 20
1000		30.8	30		33	16 E 24.5-32.5 54	gusts to 20
1100		31.3	30		33.8	12 E 25-32 54	" 16
1200		32.5	30.3		35	10 E 25.5-35 42	gusts, mainly at 20
1300		33.0	30.3		35.5	14 E 26.5-32 42	gusts to 18
1400		33.5	30.3		35	10 E	
1500		33.5	30.3		35	8 E 25-35 46	gusts to 12
1600		33.5	30.3		34.5	8 E 25-35 46	gusts to 10
1700		33.0	30.3		33.5	5 E 25-35 55	
1800		32.5	30		32	4 E 24.5-31.5 58	calm
1900		32	30		29	calm 25-30 50	calm
2000		-	-		28	23.5-28 68	
2100		-	-		27	calm 24-27 80	
2200		-	-		26.5	calm 25-27 78	
2330		-	-		26.0	calm 23-27 80	
2030		-	-		25.5	calm 27-28 80	

7 April

0100					25.5	- 23-27 86	
0200					26	45 E 22-25 80	cloudy, overcast
0400					25	calm 22-25 86	
0515					24	calm 22-25 84	
0600					24	" "	
0700					25.5		
0800					29	8 E	
1300					36	8 E 25-36 44	p/c w sun clear
2000					29	4-5 E 21-27 72	
0100					25	4-5 E 22-25 72	
0330					25	3-4 E 22-25 72	
0515					24	5 E 21-24 68	



see notes on installation of probe

	C	B	A	D	E	W	RH	
	Ts	Tsu	Ts	Tsb	Ta			
3 May								
0700	28.2	28.9	30	24	26	<4 E	21-25/72	
0800	28	28.5	30	25	28.5	8 E	23-25/84	gusts to 12
0900	28.3	28.5	30	27	31.5	10 E	21-30/64	14
1000	28.5	28.5	30	29	33	10 E	21.5-24/56	gusts to 14
1100	29.3	29.5	29.8	32	35	10 E	26-34/56	16
1200	30	30	29.8	33	35.5	8 E	26-33/50	gusts to 12
1300	30.3	30.3	29.8	33	37	8 E		
1530	31	31	29.5	31	36	6 E	26-35/50	
1600	31	31.7	29.5	32	38	6 E		
1700	31.5	31.5	29.5	31	36.5	6 E	26-35/50	
1800	31.3	31.5	29.5	30	36	6 E		
May 1800	29	29.5	30	27	26			rain
1930	29	29.3	30	26.5	26			"
2100	28.8	29.0	30	26.3	25.5	rain	24.5-25/76	rain April = 2000, cloudy
2200	28.8	29.0	30	26.5	25.5	rain	21.5-25/96	clear, bright moonlight
May 2400	28	28.5	29.8	26.0	25.0	cal	21-22/100	
0200	28	28.3	29.8	25.5	25.0	cal	21.5/100	
0500	28	28.3	29.8	25.2	24.8	cal	21.5-23/100	dec. full moon
0600	27.5	28	29.8	25.0	24.8	rain	100	
0700	27.5	28	29.8	25.3	24.8	rain	100	slight breeze
0800	27.8	28	29.5	26	25.5	rain	100	
0900	27.6	28	29.5	26	26.5			rain @ 0910 - rain 23-25-48
1400	26	26	29.8	26*	30?	<3	25-27/70	moderate 1130 → 43mm
1630	26.5	27	30	26	29.8	8 N	25-27/80	
1830	27	27.1	30	26.4	27.25	N	25-26.5/80	
2000	27	27.3	30	27	26.5	<3 N	25-27/90	
2200	27	27.3	30	27.5	25	<3 N		full moon

C B A D E

T<sub>1</sub> T<sub>2</sub> T<sub>3</sub> T<sub>4</sub> T<sub>5</sub> W RH

6 May

0800	26.5	27	29	26.5	26	calm	24-25 24
0930	26.8	27	29	26.5	27.3	E 6	24.5-27 25
1130	27	27.5	29.3	27	32	NE 4.5	26-30 27
1330	28	28.5	29.4	27	34	E 6	27-31 29
1530	28.9	29	29	27	35	ES.5	28-34 31
1730	29.5	29.8	28.9	27	34	E.3	27-34 30.5
1830	29.8	30	29	29	30	SE 2	26-30 29

7-V-77

0530	29.0	29.0	29.0	28.5	25.2	calm	24-25 24	
0730	29.0	29.0	29.0	28.3	27.5	SE 2	24.5-26 25	
0800	28.8	29.1	29.3	28.5	29.5	SE	24-26 25	
0900	29.0	29.3	29.3	28.5	30	7E	24-26 25	gusts to 10
1000	29.0	29.1	29.3	28.5	31	8E	26-30 28	gusts to 12
1200	29.5	29.5	29.3	28.5	34.5	SE	27-34 30.5	gusts to 10
1300	29.7	29.7	29.0	28.5	35	SE	28-34 31	remainder of calm
1400	30.3	30.3	29.3	29	36	8E	27-34 30.5	"
1500	30.5	30.5	29.3	29.3	36.5	SE	27-34 30.5	gusts to 12
1600	31	31	29.3	29.5	36	SE	27-34 30.5	gusts to 8-10
1700	31	31	29.3	29.6	36	SE	27-34 30.5	
1800	31	31	29.5	30	33	SE	27-34 30.5	remainder of calm

8-V-77

0530	30	30.2	30	29.8	25.5	calm	24-25.5 25
0730	30	30.1	30	29.8	27.6	E 7	24.5-26.5 25.5
1700	31.5	31.5	29.5	30.5	33		

C B A D E

1 2 3 4 5 wind RH % Bar.

9-V-77

0545	30.0	30.0	30.0	30.0	29.5	calm	$\frac{29.5}{24} =$	818	28.7
0800	30.0	30.0	30.3	29.8	27	calm		95	29.7
<del>0730</del> 1100	30.3	30.3	30.5	29.8	37	calm		70	28.7 ↓
1100									

0-V-77

0600	30.5	30.5	30.7	30.3	27.5	<2N	21.5-25	98	28.68 cloudy, ? rain
0800	30.5	30.5	30.5	30.3	28.8	<2NE	25.5-26.5	92	28.72 ↑

1-V-77

0530	29.0	29.0	30.5	29.5	24.0	calm	23-24	92	28.72
0700	29.0	29.0	31.0	29.5	25.0	calm	24-25	98	28.80
0800	29.7	29.0	30.5	29.3	26.5	calm	27.5-25	98	28.84
0900	29.3	29.1	30.8	29.3	28.0	calm	24.5-27	76	28.84
1000	29.3	29.3	30.5	29.3	31	calm <2E	26.5-29	84	
1100	30.0	30.0	31.0	29.5	34	calm <2.5E	27.31	74	28.84
1200	30.0	30.0	30.3	29.5	36	"	25.5-33	74	
1300	30.5	30.2	30.3	29.8	35.5	<5 E	28.5-34	56	28.60
1400	30.6	30.5	30.0	29.8	38.0	<2 E	28.5-37	50	28.60
1500	30.7	30.6	30.0	29.8	38	SE	30-36	66	28.45 ↓
1600	31.0	31.0	30.1	30	36	SE	28-35	53	28.50 ↓
1700	31.0	31.0	30.7	30	33.5	calm	24.5-25	75	28.52 ↑
1800	31	31	30.1	30.1	30.5	SS	28-32	76	28.52 ↓
1900	31	31	30.0	30.1	29.0	calm	27-29	86	28.71 ↑
2000	31	31	30	30.5	28.0	calm	26.5-28	90	28.71 +
2400	30.5	30.5	30.3	30	26.0	<2	25-25.5	96	28.73
0230	30.5	30.5	30.5	30	26	"	"	"	28.73
0700	29.8	29.8	30.5	29.8	27	calm	25.5-26	96	28.74
0800	30	30	30.5	29.8	28.5	calm	25-26	92	28.74.5
0900	30	30	30.5	29.8	29	calm	26-28	86	28.75
1000	29.8	29.8	30.5	29.8	31	calm	"	"	28.75

direct

data revised on rain sheet

C A B D E  
 (bottom)

2-V-77	C	A	B	BK	402		RH	WT-d	°D	Bar	
	1	2	3	4	5	wind					
1900	31.0	29.5	31.0	31.0	28.0	calm		25.5/27	96	28.66	
2000	31.0	29.5	31.0	30.5	28.0	S.3.5		25/27	90	28.68	
2100	31.0	30.5	31.0	31.0	27.0	S.2		25/27	94	28.71	
2200	31.0	30.3	31.0	30.5	27.0	calm		25/27	94	28.75	stars PK
2300	31.0	30.2	31.0	30.4	27.0	calm		25/26.5	96	28.76	stars PK
2400	31.0	31.0	31.0	30.2	26.5	calm		24.5/26	79	28.76	stars PK
0100	30.5	30.5	30.5	30.1	25.5	calm		24.5/25.5	80	28.76	stars PK
0200	30.5	30.5	30.5	30.1	25.5	calm		24.2/25.5	80	28.74	stars PK
0300	30.1	30.5	30.1	30.0	25.5	calm		24/25	98	28.72	stars PK
0400	30.0	30.5	30.0	30.0	25.7	calm		24/25	98	28.73	stars PK
0500	30.0	31.0	30.0	30.0	25.0	calm		24/25	98	28.71	stars PK
0600	30.0	30.1	30.0	30.0	25.0	calm		24/25	98	28.74	down
0730	29.8	30.5	29.8	29.8	26.0	calm		25-26	78	28.76	9.15
1000	30.0	30.5	29.9	29.9	30.0	calm		26-30	76	28.77	

4-V-77

0600	30.0	30.8	30.0	30.0	26.5	calm		25-26	98	28.67	
0700	30.0	30.5	29.8	29.8	27	"		25-27.5	95	28.70	↑
0800	30.0	30.5	30	29.8	28.5	"		25.5-27	90	28.70	
0900	29.8	30.5	29.8	29.7	31.5	calm		26-28.5	84	28.74	1030-1300 rain
1300	29.0	29.0	30.5	29.0	24.5	calm					

5-V-77

0630	28.0	30.3	28.0	28.0	24.5	calm		23.5/24.5	80	28.74	Rain 25.5mm
0800	28.0	30.1	28.0	28.0	29.5	calm		26-27	94	28.76	
0900	28.0	30.2	28.0	28.0	32	calm		26.5/27.5	77	28.78	
1000	28.5	30.1	28	28	34.5	—		20-21.5	70	28.77	
1100	28.5	30	28.1	28	34.0	<3K		27.5-28.5	77	28.73	
	30.5	30	30.5	29.5	30	<5E					

6-V-77

C B A D E

C B A D E wind W D RH Bar

0615 29 29.8 30.0 29 26 E 4 24.5 25 100 28.75

0700 29.8 29.8 30.0 29.3 25 E 8 25 24.5 90 28.80

0800 29.3 29.3 30.0 29.3 25.8 <4E 28.82 *sun @ 0800*

17 May

8 May

0600 27 27.3 30.0 27.5 24.5 calm 23 24 98 28.81 *51mm*

0700 27.0 27.0 30.0 27.3 25 calm 24 24 100 28.82

0830 27 27 30.0 27.5 27 &lt;3 NE 25 26 92 28.82

0900 27 27 30.0 27.3 27 " " " 28.85

1000 27 27 30.0 27.5 29.5 &lt;5 NE 25.5 28 84 28.87

1130 27 27 30.0 27.3 31.0 &lt;5 ENE 27 31 76 28.86

1315 27 27 30.0 27.0 32.0 &lt;5 ENE 27 31 76 28.82

1500 27.5 27.5 30.0 27.5 35.0 Calm 29 34 72 28.68

1700 27.5 27.5 30.0 27.5 30.5 calm 28.5 33 74 28.61

19-V-77

1900 27.8 27.9 30.0 27.9 27.0 calm 25 27 94 28.72 *from 1900-1900 28mm*

20 May

0600 28.3 28.5 30.0 28.0 25 Calm

0700 28.5 28.5 30.0 28.3 25.5

0815 28.5 28.5 30.0 28.3 26.0 S S E 24 25 95 28.80

67°54'N 67°25'W El. 57m.

Tempo.	Rel. Hum.			Prec.		Evap	Insr. P.	Rad.	Mitosi- dad Rel. a Día Octavos	Viento	Velocid. Med. Km/hr.				
	$\bar{X}$	$\bar{X}_{max}$	$\bar{X}_{min}$	$\bar{X}$	$\bar{X}_{max}$							$\bar{X}_{min}$	TOT	DAYS ≥ 0.1mm	mm
5	Jan.	26.3	32.7	21.5	75	97	50	0	—	8.0	9.3	478	2.8	NE	16.5
	Feb.	26.9	33.4	22.3	69	92	47	0	—	9.7	9.4	505	4.2	ENE	17.8
	Mar.	28.7	35.2	23.9	66	89	43	1	1	10.2	9.7	560	4.5	NE/ENE	17.1
	Apr.	29.1	34.1	24.6	66	87	47	37	3	9.7	7.4	495	6.6	NE/ENE	16.6
	May	27.2	32.6	23.4	78	94	53	123	10	4.9	6.7	463	7.2	NE/ENE	10.4
	June	26.0	31.0	22.6	81	96	56	139	15	3.4	6.8	422	6.5	ENE	10.6
	July	25.2	30.1	22.0	86	96	62	257	22	2.3	6.0	432	6.7	ENE	9.0
	August	26.3	30.7	23.2	88	97	65	318	22	2.0	6.1	463	7.2	ENE	7.5
	Sept.	25.9	30.5	22.7	86	96	63	185	18	2.3	7.0	511	7.0	ENE	7.8
	Oct.	26.4	31.5	23.3	85	96	61	47	19	3.2	7.0	477	7.1	ENE	7.8
	Nov.	27.0	32.2	23.1	79	96	59	18	5	4.4	9.7	467	6.9	ENE	10.7
	Dec.	26.1	31.7	22.0	79	96	54	12	6	4.6	8.7	421	6.4	ENE	11.1

0611	1847	10 Jan	Full moon	April 4	May 3
0650	1835	25 Jan	1/2	" 10	May 10
			New	18	" 17
			1/2	26	" 25
14 April	0622	1840			
20 May	0611	1842			

	Fin Crepusculo Astronomico	Fin Luz Civil	Sunset
April 10	1950	1902	1838
	0512	0555	Sunrise 0620
May 20	1958	1908	1842
	<del>0606</del> 0442	0540	0606

from. Almanaque Venezolano 1977  
 Servicio de meteorología y Comunicaciones  
 Ministerio de la Defensa  
 Comando Aereo Logístico

CUADRO RESUMEN DE LOS DATOS CLIMATOLOGICOS RECOPIADOS DE LA ESTACION METEREOLÓGICA  
SITUADA EN EL MÓDULO EXPERIMENTAL DE MANTECAL

ESTACION: MANTECAL  
ENT. FED: APURE.

LAT: 07-35

LONG: 69-10

ALTITUD: 79 m. SNM

MES	E	F	M	A	M	J	J	A	S	O	N	D
AÑO												
TEMPERATURA MÁXIMA MEDIA												
1971						29.9	29.7	29.8	30.7	30.5	31.1	31.2
1972	31.0	33.8	34.6	31.5	30.0	29.7	29.6	30.2	30.8	31.8	31.6	32.8
1973	34.1	35.7	36.2	35.0	31.3	30.3	29.8	31.5	30.1	30.9	30.6	31.0
1974	32.2	34.1	35.2	34.0	30.8	32.0	29.3	29.6	29.9	30.7	30.9	31.8
TEMPERATURA MÍNIMA MEDIA												
1971						22.6	22.4	22.4	23.0	23.3	23.3	21.7
1972	21.9	21.7	22.6	22.9	23.7	23.5	23.1	23.0	23.3	23.2	23.2	21.9
1973	21.3	21.2	22.1	23.8	23.5	22.9	23.9	23.2	23.0	23.7	23.2	21.4
1974	20.9	21.4	22.3	22.9	22.9	22.5	22.1	22.8	22.8	23.2	23.4	21.1
TEMPERATURA MEDIA												
1971						26.2	26.0	26.1	26.9	26.9	27.2	26.4
1972	26.5	27.7	28.6	27.2	26.8	26.6	26.3	26.6	27.0	27.5	27.4	27.2
1973	27.2	28.4	29.1	29.4	27.4	26.6	26.3	27.3	26.5	27.3	26.9	26.2
1974	26.6	27.7	28.7	28.4	26.8	27.2	25.7	26.2	26.3	26.9	27.1	26.4
PRECIPITACION												
1972	12.9	0.4	101.4	225.9	228.2	144.9	301.6	164.2	125.3	140.6	43.2	6.8
1973	.0	.0	8.8	127.3	96.1	171.6	226.4	213.8	256.5	103.7	101.6	7.7
1974	1.2	26.2	.0	73.7	154.9	160.0	218.2	338.2	148.8	115.9	131.9	.0
1975	1.1											
EVAPORACION												
1972	306.5	316.5	321.7	220.8	161.6	144.7	169.8	186.5	168.0	186.5	192.2	232.4
1973	287.7	219.9	357.9	295.6	204.8	146.2	162.4	162.2	141.1	173.0	177.6	203.3
1974	268.1	292.2	364.1	267.4	169.7	204.0	152.2	173.9	141.4	181.4	181.1	235.2

TABLA 2.1