

MC 1 NORTH	EAST	ELEVATION
8.796.402,6740	668.234,3317	94,689

LOCATION: It is located on the west side of the dam site area neighbouring the path that comes from JENIPAPO, on the right bank of the river. From this survey point it is possible to look at survey points MC 2, 3, 6.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 1 on low prominence.

ITINERARY: Leaving from JENIPAPO on the EAST side, following the land path, passing by the cemetery, walking on the east direction till the end of transitable path; after that, only on foot. Plan # SE-TPS-DS-01/01 can be used.



MC 2 NORTH	EAST	ELEVATION
8.796.337,5030	668.666,7010	71,019

LOCATION: It is located on the East side at a high point next to a non vehicle transitable path. It is on the right bank of the river and it is possible to look at survey points MC 1, 6

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 2 on low prominence.

ITINERARY: Leaving from JENIPAPO on the EAST side, following the land path, passing by the cemetery, walking on the east direction till the end of transitable path; after that, only on foot. Plan # SE-TPS-DS-01/01 can be used.

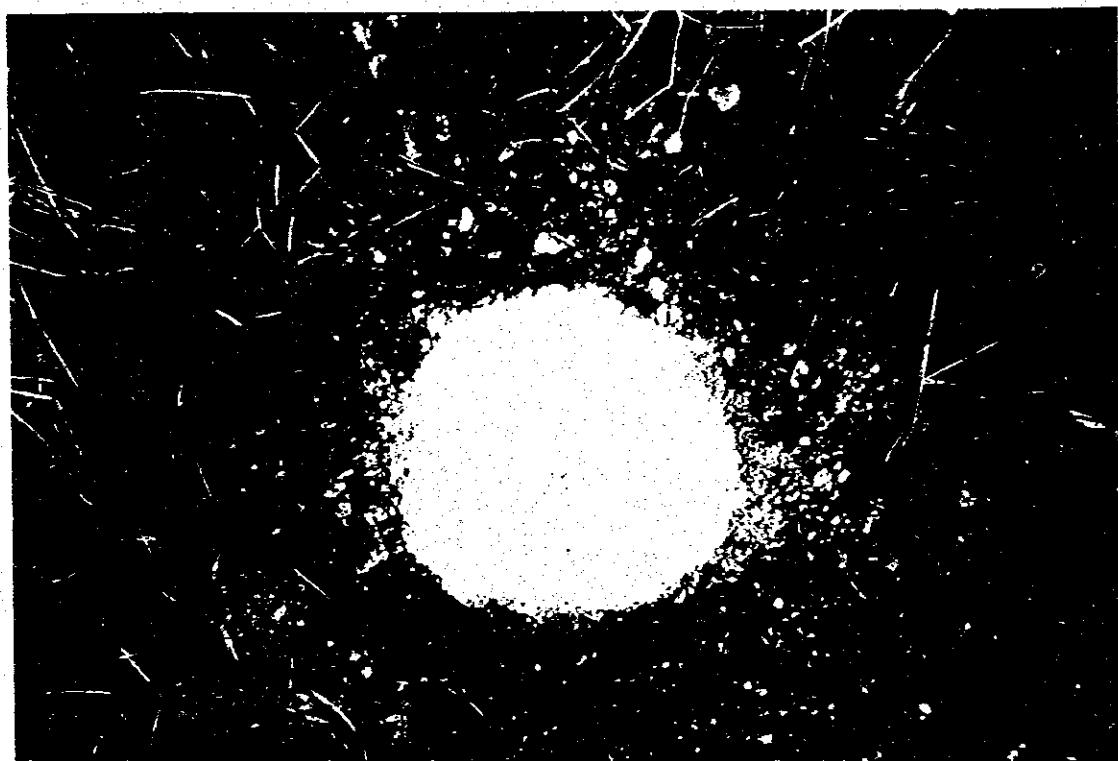


MC 3 NORTH	EAST	ELEVATION
8.796.794,0042	668.301,9407	53,472

LOCATION: It is located on the right bank of the river, inside the dam area where it is possible to look at survey points MC 1, 6

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 3 on low prominence.

ITINERARY: Leaving from JENIPAPO on the EAST side, following the land path, passing by the cemetery, walking on the east direction till the end of transitable path; after that, only on foot. Plan # SE-TPS-DS-01/01 can be used.



MC 4 NORTH	EAST	ELEVATION
8.797.192,2314	668.866,9050	87,411

LOCATION: It is located on the dam area. At the outermost North, on the left bank of the river the point permits to look at survey points MC 5 and 6.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molten "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 4 on low prominence.

ITINERARY: Leaving from JENIPAPO on the EAST side, following the land path, passing by the cemetery, walking on the east direction till the end of transitable path; after that, only on foot. Plan # SE-TPS-DS-01/01 can be used.

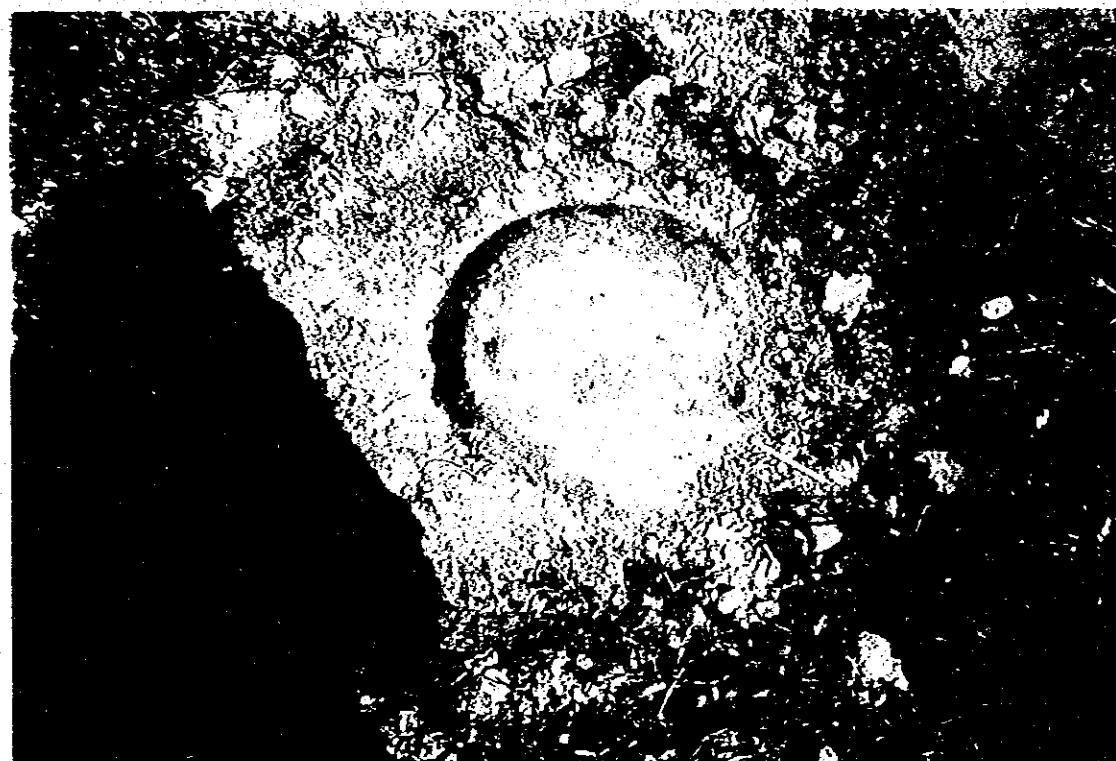


MC 5 NORTH	EAST	ELEVATION
8.797.089,0250	668.940,4237	90,355

LOCATION: It is located on the North end of the dam area, on the left bank of the river. From this point it is possible to look at survey points MC 4 and 6.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 5 on low prominence.

ITINERARY: Leaving from JENIPAPO on the EAST side, following the land path, passing by the cementery, walking on the east direction till the end of transitable path; after that, only on foot. Plan # SE-TPS-DS-01/01 can be used.

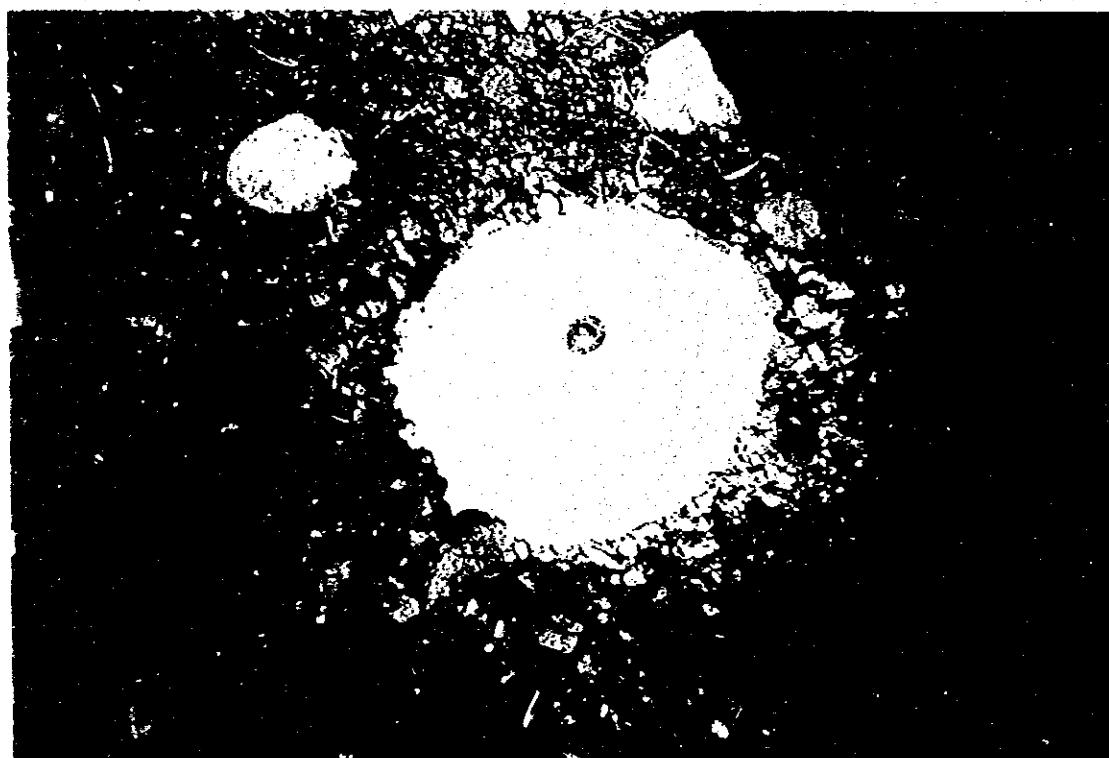


MC 6 NORTH	EAST	ELEVATION
8.796.988,7696	668.852,8751	91,165

LOCATION: It is located at a North side high point, inside the dam area on the left bank of the river. From this point it is possible to look at survey points MC 4 and 5.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was melted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 6 on low prominence.

ITINERARY: Leaving from JENIPAPO on the EAST side, following the land path, passing by the cemetery, walking on the east direction till the end of transitable path; after that, only on foot. Plan # SE-TPS-DS-01/01 can be used.

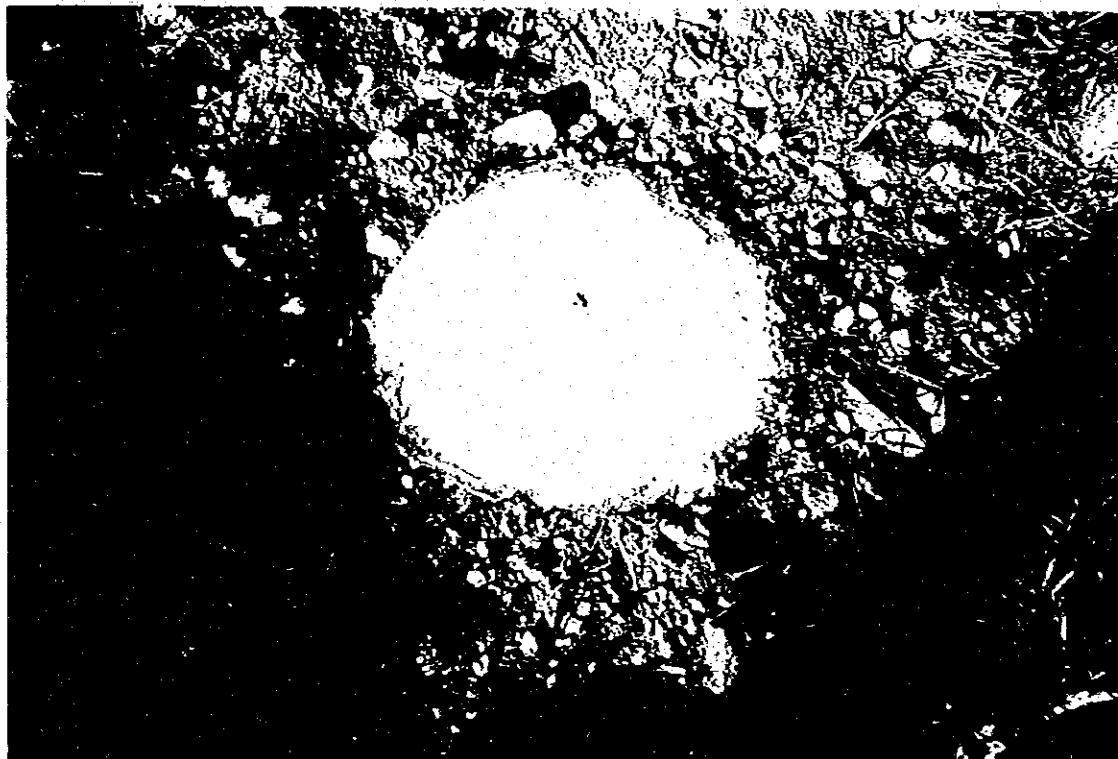


MC 7 NORTH	EAST	ELEVATION
8.797.846,8623	669.131,9008	81,729

LOCATION: It is located on the South lateral of the spillway area at a section without vegetation. It is also on the left bank of the river. from this point it is possible to look at survey points MC 8, 4 and 11.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 7 on low prominence.

ITINERARY: Leaving from JENIPAPO on the EAST side, following the land path, passing by the cemetery, walking on the east direction till the end of transitable path; after that, only on foot. Plan # SE-TPS-SS-01/01 can be used.



MC 8 NORTH	EAST	ELEVATION
8.797.831,2282	668.855,9728	78,849

LOCATION: It is located on the South partian next to the river, on the high section of the spillway area. From this point it is possible to look at survey points MC 7, 1 and 11.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 8 on low prominence.

ITINERARY: Leaving from JENIPAPO on the EAST side, following the land path, passing by the cementery, walking on the east direction till the end of transitable path; after that, only on foot. Plan # SE-TPS-SS-01/01 can be used.

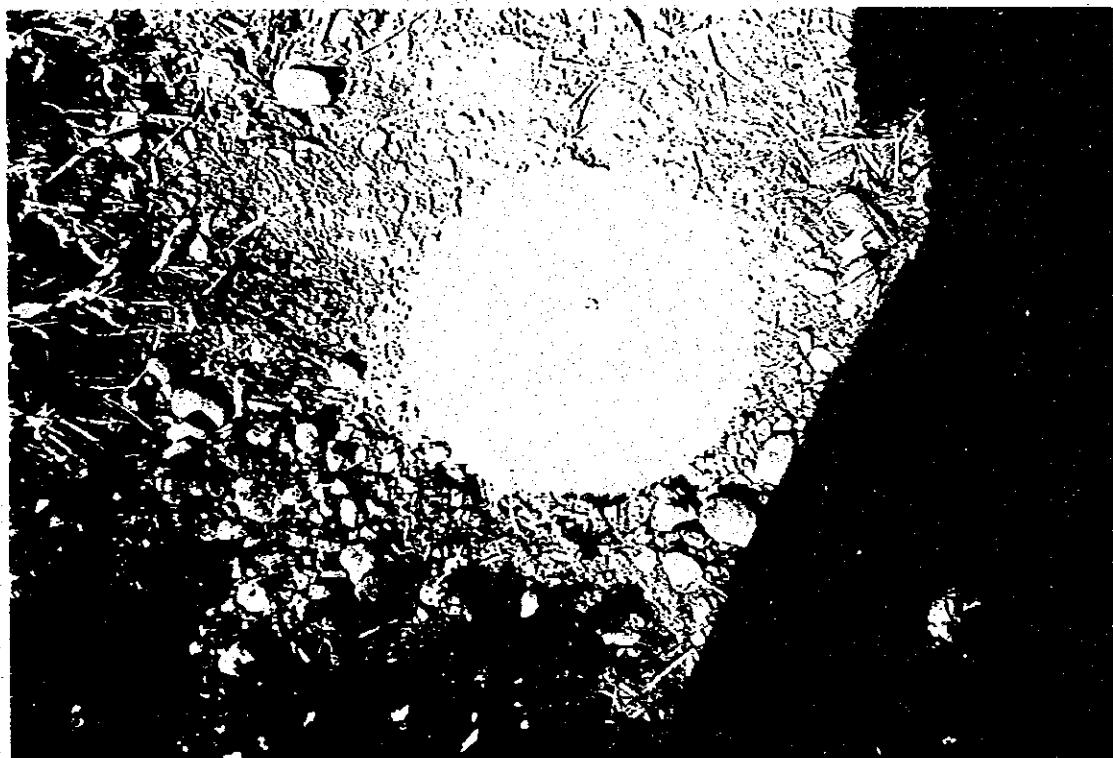


MC 9 NORTH	EAST	ELEVATION
8.798.194,6591	669.930,1643	73,466

LOCATION: It is located on the North countenance of the spillway area, on the left bank of the river. From this point it is possible to look at survey point MC 10.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 9 on low prominence.

ITINERARY: Leaving from JENIPAPO on the EAST side, following the land path, passing by the cemetery, walking on the east direction till the end of transitable path; after that, only on foot. Plan # SE-TPS-SS-01/01 can be used.



MC 10 NORTH EAST ELEVATION
8.798.123,5245 670.273,1159 55,644

LOCATION: It is located on the West end of the spillway area, on the right bank of the river. From this point it is possible to look at survey point MC 9.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was melted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 10 on low prominence.

ITINERARY: Leaving from JENIPAPO on the EAST side, following the land path, passing by the cemetery, walking on the east direction till the end of transitable path; after that, only on foot. Plan # SE-TPS-SS-01/01 can be used.



MC11 NORTH	EAST	ELEVATION
8.798.114,4172	668.804,3041	76,413

LOCATION: It is located on the North end of the spillway area, at a high portion of the river left bank. From this point it is possible to look at survey point MC 1, 7 and 8.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was melted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 11 on low prominence.

ITINERARY: Leaving from JENIPAPO on the EAST side, following the land path, passing by the cemetery, walking on the east direction till the end of transitable path; after that, only on foot. Plan # SE-TPS-SS-01/01 can be used.



MC12 NORTH	EAST	ELEVATION
8.800.834,7990	661.973,3871	40,819

LOCATION: It is located on the left bank of the river next to section MC 60. From this point it is possible to look at survey point MC 13.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 12 on low prominence.

ITINERARY: Leaving from SÃO DOMINGOS by the highway that takes to the city of LAGARTO passing through 100 meters after the police station, take a left on a land path for 6Km approximatlly, getting to the river bank where the survey point is check on plan SE-TPS-GE-02/06.



MC13 NORTH	EAST	ELEVATION
8.800.899,4525	661.831,2970	39,393

LOCATION: It is located on the left bank of the river next to section MC 60. From this point it is possible to look at survey point MC 12.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 13 on low prominence.

ITINERARY: Leaving from SÃO DOMINGOS by the highway that takes to the city of LAGARTO passing through 100 meters after the police station, take a left on a land path for 6Km approximatlly, getting to the river bank where the survey point is check on plan SE-TPS-GE-02/06.

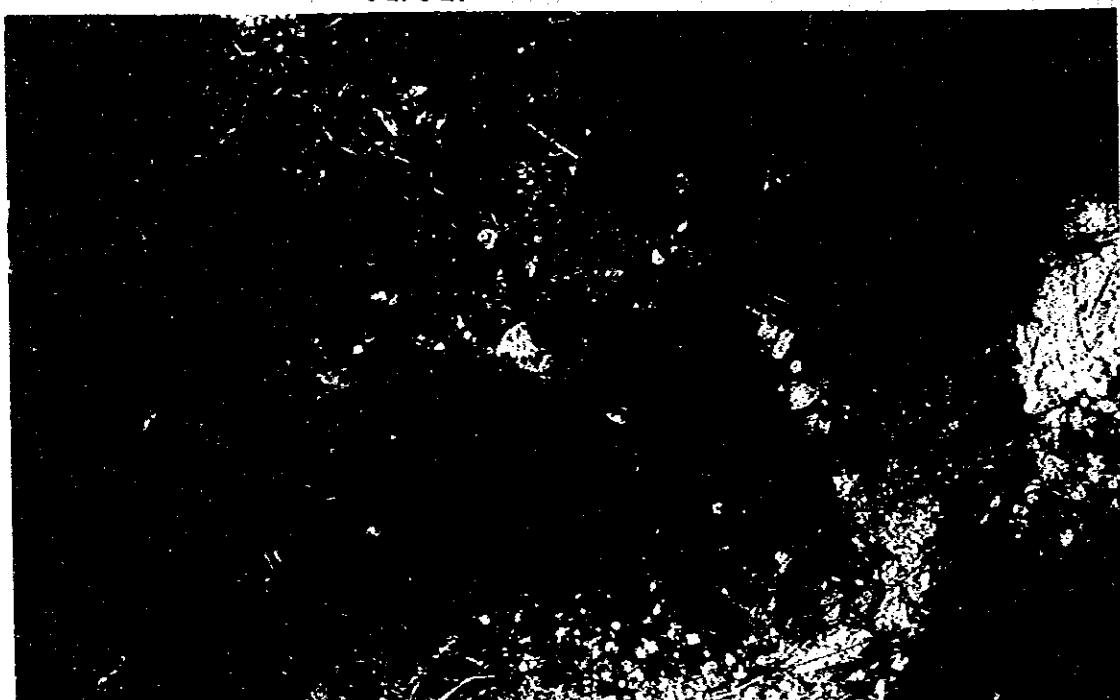


MC14 NORTH	EAST	ELEVATION
8.806.004,0410	651.658,3028	85,525

LOCATION: It is located on the South end of the check dam site area, at the high portion of the river left bank. From this point it is possible to look at survey points MC 15 and 16.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 14 on low prominence.

ITINERARY: Leaving from the only square on the South of São Domingos city by the LAND ROAD to the South direction between the HIGHWAY to LAGARTO and the path to BOA VISTA, passing by Farinheira do Estado, going through 4 km getting to a Vaza Barris River bank, neighbouring the power line. From that point, following the river up for 150 meters getting to the South limit of the dam site area. The plan that can be used is SE-TPS-CS-01/01.



MC15 NORTH	EAST	ELEVATION
8.806.104,2205	661.649,3657	97,725

LOCATION: It is located inside the check dam site area at the highest portion of the river left bank and the survey point MC 14 is visible.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molten "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 15 on low prominence.

ITINERARY: Leaving from the only square on the South of São Domingos city by the LAND ROAD to the South direction between the HIGHWAY to LAGARTO and the path to BOA VISTA, passing by Farinheira do Estado, going through 4 km getting to a Vaza Barris River bank, neighbouring the power line. From that point, following the river up for 150 meters getting to the South limit of the dam site area. The plan that can be used is SE-TPS-CS-01/01.



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MC16 NORTH	EAST	ELEVATION
8.806.102,2684	651.308,3095	97,766

LOCATION: It is located on the Southwest end of the check dam site area, on then right bank of the river. The survey point MC 14 is visible on the East direction.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 16 on low prominence.

ITINERARY: Leaving from the only square on the South of São Domingos city by the LAND ROAD to the South direction between the HIGHWAY to LAGARTO and the path to BOA VISTA, passing by Farinheira do Estado, going through 4 km getting to a Vaza Barris River bank, neighbouring the power line. From that point, following the river up for 150 meters getting to the South limit of the dam site area. The plan that can be used is SE-TPS-CS-01/01.



MC17 NORTH	EAST	ELEVATION
8.807.673,3086	653.062,0100	65,998

LOCATION: It is located on the left bank of the river, next to section MC 94. From this point it is possible to look at survey point MC 18.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 17 on low prominence.

ITINERARY: Leaving from the only square on the South of São Domingos city by the LAND ROAD to the South direction between the HIGHWAY to LAGARTO and the path to BOA VISTA, passing by Farinheira do Estado, going through 4 km getting to a Vaza Barris River bank, neighbouring the power line. Following by the bank of the river above, on an extension of approximatty 2,4 km. See plan SE-TPS-GE-04/06.



MC18 NORTH	EAST	ELEVATION
8.807.889,0404	653.089,8700	67,405

LOCATION: It is located on the left bank of the river, next to section MC 94. From this point it is possible to look at survey point MC 17.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molten "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 18 on low prominence.

ITINERARY: Leaving from the only square on the South of São Domingos city by the LAND ROAD to the South direction between the HIGHWAY to LAGARTO and the path to BOA VISTA, passing by Farinheira do Estado, going through 4 km getting to a Vaza Barris River bank, neighbouring the power line. Following by the bank of the river above, on an extension of approximattly 2,6 km. See plan SE-TPS-GE-04/06.



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MC19 NORTH	EAST	ELEVATION
8.815.996,5058	650.656,7373	70,859

LOCATION: It is located on the right bank of the river, 300 meters down side from section MC 107. From this point it is possible to look at survey point MC 20.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 19 on low prominence.

ITINERARY: Leaving from Lagarto taking the highway forward SIMÃO DIAS city till the indicative sign of OLHO D'ÁGUA on the right side, following through the road on OLHO D'ÁGUA and SERRA DA MIABA direction till the river bank. See plan SE-TPS-GE 06/06.

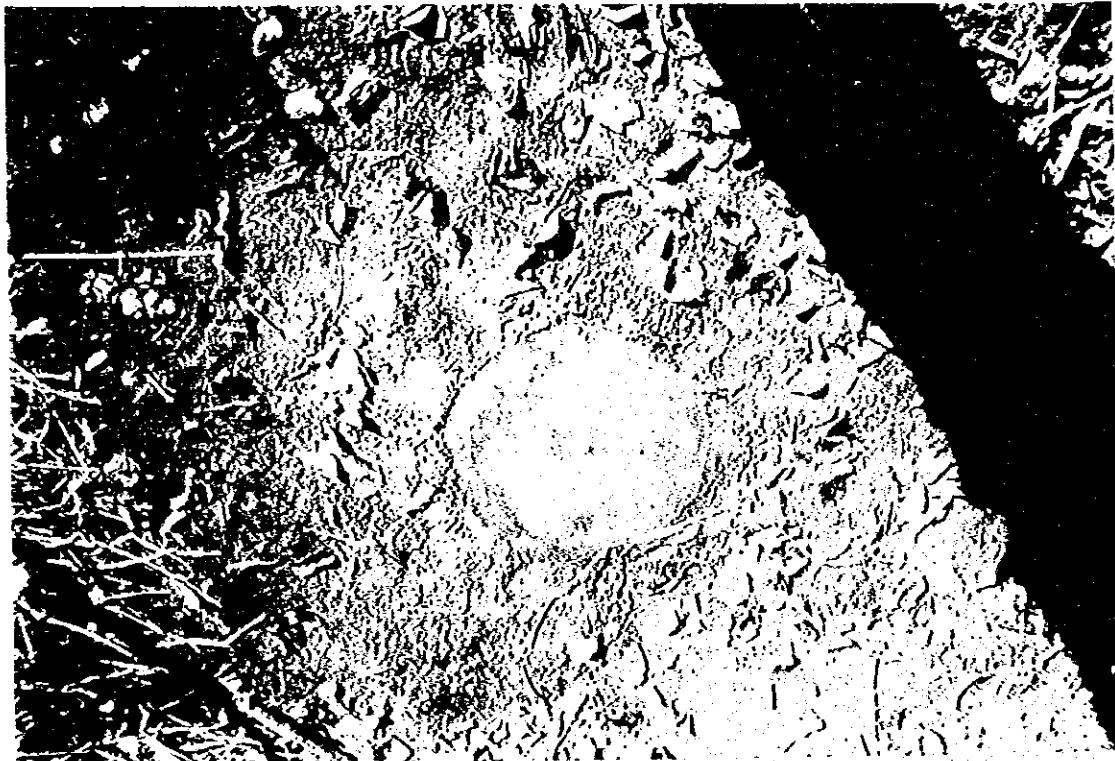


MC20 NORTH	EAST	ELEVATION
8.815.996,1008	650.369,6544	72,312

LOCATION: It is located on the right bank of the river, exactly at section MC 107. From this point it is possible to look at survey point MC 19.

DESCRIPTION: The cement survey point with 0,20 meters of diameter and 0,50 meters of depth was molted "in loco" with a brass pin and the inscription JICA-SHIBUYA MC 20 on low prominence.

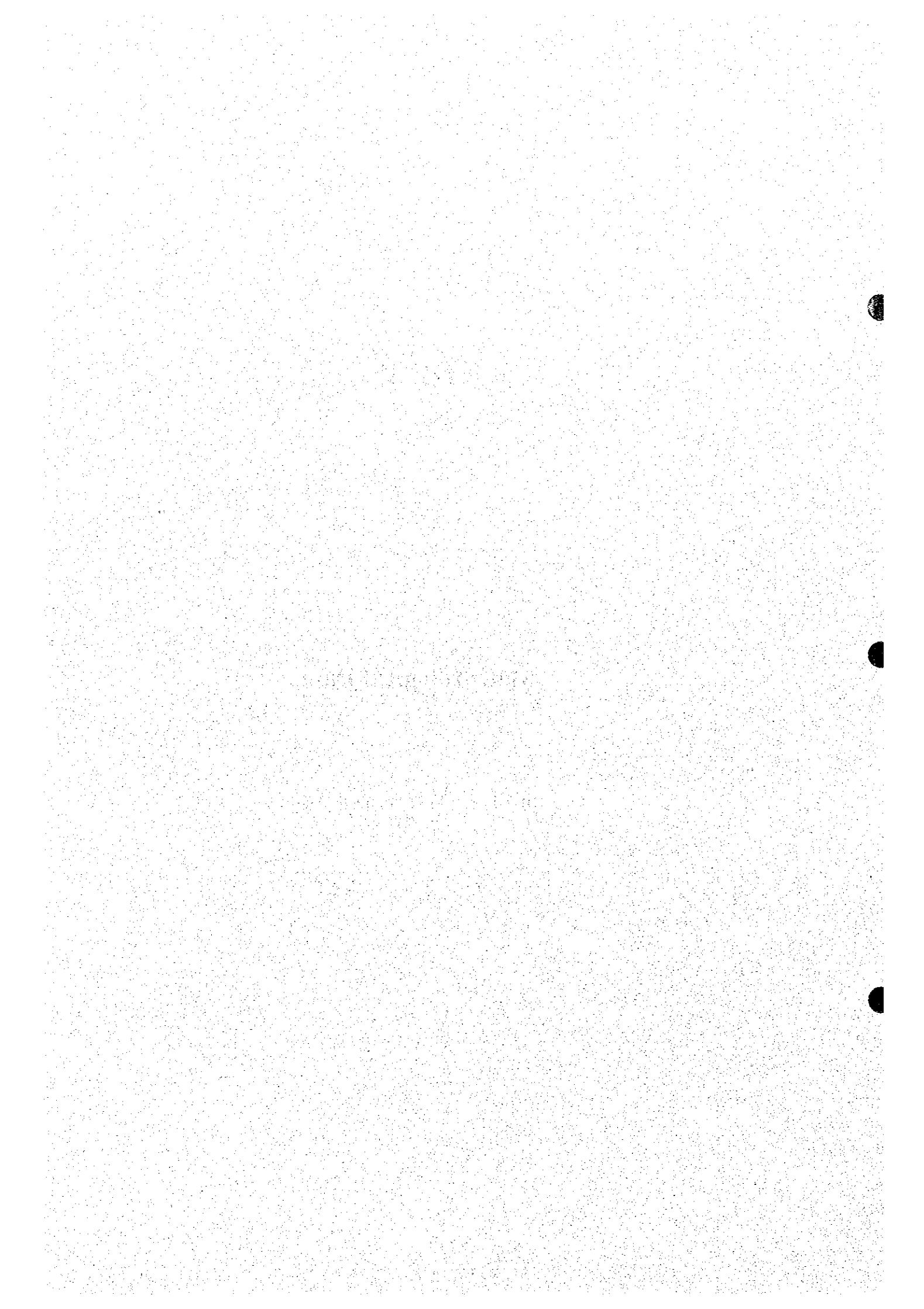
ITINERARY: Leaving from Lagarto taking the highway forward SIMÃO DIAS city till the indicative sign of OLHO D'ÁGUA on the right side, following through the road on OLHO D'ÁGUA and SERRA DA MIABA direction till the river bank. See plan SE-TPS-GE 06/06.



DB-2

Meteorological Data

DB-2-1 Meteorological Data



Airport Meteorological Data

Monthly Average Max Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1985	31.1	30.2	30.6	29.2	29.3	28.5	27.3	27.4	28.1	29.5	29.9	29.6
1986	30.1	28.1	30	30.1	28.9	28.2	27.4	27.8	27.4	28.2	28.9	29.6
1987	29.7	30.1	30.5	30.1	29.9	28.5	27.9	28.3	28.9	29.8	30.4	30.6
1988	31	31	31.1	30.3	29.6	29.5	28.8	27.4	27.3	27.9	28.9	29.1
1989	30.3	30.8	30.7	29.7	28.6	28.2	27.3	27.8	28.2	28.8	29.4	28.7
1990	29.7	30.7	30.9	30.8	29.8	28.3	27.9	28.3	28.3	28.7	30	30.1
1991	30.6	30.8	30.6	30.1	29.3	28.1	28	27.4	28.3	29.1	30	30.3
1992	30.4	30.1	30.7	30.6	30.2	28.7	27.8	27.9	27.9	29.3	29.5	30
1993	30.6	31	31.3	31	29.6	28.5	28.2	28.1	29.2	29.4	30.4	30.8
1994	31.6	31.3	32	30.8	29.8	28.7	28.5	27.8	28.4	29.8	29.9	30.3
1995	31.3	31.9	32	30.9	30.2	28.5	28.3	28.2	28.5	30.4	29.9	30.9
1996	31.4	32.2	31.6	30.2	29.3	28.8	27.8	27.3	27.8	29.3	29.8	31.2
1997	31.4	31.1	30.8	30.1	29	28.6	27.8	27.8	29.4	30.3	30.5	31.5
Average	30.7	30.7	31	30.3	29.5	28.5	27.9	27.8	28.3	29.3	29.8	30.2

Monthly Average Min Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1985	25.2	24.3	24.2	23.6	23.4	22.8	22.5	22.7	23.5	23.6	24	24
1986	24.8	25.1	24.6	24.5	23.9	23.3	21.9	22.6	22.8	23.3	24.3	24.8
1987	24.6	25.7	25.1	24.4	24.4	23.5	22.7	22.8	23.6	24.6	25.5	25.7
1988	25.8	25.7	25.5	24.9	23.6	24.1	22.8	22.1	21.7	23.1	24.3	24.6
1989	25.1	25.1	25.3	24.3	23.7	23.2	22.6	22.6	23	24	24.6	24.1
1990	24.8	24.8	25.1	25.1	23.6	23.3	22.5	23.3	23.4	24.1	24.9	24.3
1991	25	25.3	24.8	24.9	24.1	23.4	22.5	22.6	23.5	23.6	24.3	25.2
1992	24.8	25.2	26	24.5	24.4	24.1	23.6	22.8	23.7	23.9	24.7	24.8
1993	25.4	26.1	26	25.4	24.5	23.3	22.3	23	24	24.8	25.4	25.4
1994	25.8	25.4	25.5	24.8	24.5	23.9	23.1	22.6	23.6	24.6	24.8	25
1995	25.6	26.3	26.7	25.9	24.5	23.4	23.1	23.3	23.7	25	25.4	26
1996	26.5	27	25.8	25.1	24	24.3	22.4	23.3	23.6	24.7	24.7	26.2
1997	26	25.8	25.6	25	24.3	23.1	22.9	22.9	23.5	24.5	25.1	26.2
Average	25.3	25.5	25.4	24.8	24.1	23.5	22.7	22.8	23.4	24.1	24.8	25.1

Monthly Average Mean Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1985	28.15	27.25	27.4	26.4	26.35	25.65	24.9	25.05	25.8	26.55	26.95	26.8
1986	27.45	26.6	27.3	27.3	26.4	25.75	24.65	25.2	25.1	25.75	26.6	27.2
1987	27.15	27.9	27.8	27.25	27.15	26	25.3	25.55	26.25	27.2	27.95	28.15
1988	28.4	28.35	28.3	27.6	26.6	26.8	25.8	24.75	24.5	25.5	26.6	26.85
1989	27.7	27.95	28	27	26.15	25.7	24.95	25.2	25.6	26.4	27	26.4
1990	27.25	27.75	28	27.95	26.7	25.8	25.2	25.8	25.85	26.4	27.45	27.2
1991	27.8	28.05	27.7	27.5	26.7	25.75	25.25	25	25.9	26.35	27.15	27.75
1992	27.6	27.65	28.35	27.55	27.3	26.4	25.7	25.35	25.8	26.6	27.1	27.4
1993	28	28.55	28.65	28.2	27.05	25.9	25.25	25.55	26.6	27.1	27.9	28.1
1994	28.7	28.35	28.75	27.8	27.15	26.3	25.8	25.2	26	27.2	27.35	27.65
1995	28.45	29.1	29.35	28.3	27.35	25.95	25.7	25.75	26.1	27.7	27.65	28.45
1996	28.95	29.6	28.7	27.65	26.65	26.55	25.1	25.3	25.7	27	27.25	28.7
1997	28.7	28.45	28.2	27.55	26.65	25.85	25.35	25.35	26.45	27.4	27.8	28.85
Average	28	28.1	28.2	27.5	26.8	26	25.3	25.3	25.8	26.7	27.3	27.7

ea (mbar)	37.8	37.8	37.8	35.7	33.6	33.6	31.7	31.7	31.7	33.6	35.7	35.7
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Airport Meteorological Data

Monthly Average Windspeed (m's)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1985	6.2	4	4.1	4.8	5.9	3.6	4.8	5	5.4	6.3	6.6	4.7
1986	5.7	4.7	3.7	4.2	4.6	4.2	5.7	6.4	7.2	6.5	6.9	7.4
1987	6.6	6.3	5.5	4.7	4.8	4.3	4.7	5.6	5.5	7.2	7.7	N.a.
1988	6.8	6.5	6.9	5.6	5.4	6.2	6.4	7.3	6.7	7	6.6	6.2
1989	7.7	7.8	7.5	6.1	6.4	6.5	7.5	7.2	7.3	7.4	7.8	6.8
1990	7.6	8	7.9	7.6	7.1	7.1	6.5	6.4	6.5	6.6	6.8	5.9
1991	6.1	5.9	6.6	6	6.6	6.1	7.3	8.4	7	7.7	8.4	7.6
1992	7.8	7.5	6.8	6.9	6.7	6.6	7.2	7.4	7.6	8	8.7	7.7
1993	7.9	7.9	8	7.4	6.5	7.2	7.2	7.4	7.8	8.4	8.6	8.5
1994	8.1	7.4	7.2	5.6	5.7	5.1	6.5	6.7	7.5	8.2	12.6	8.2
1995	7.6	6.7	8.6	7.4	6.9	6.4	7.5	7	7.8	8.4	8.2	9.2
1996	7.7	7.8	6.1	5.9	5.6	7.7	6.7	7.3	7.6	7.9	7.2	7.7
1997	7.1	7.4	6.1	5	5.7	5.9	8	9.5	9.2	10.3	10	9.9
Average	7.1	6.8	6.5	5.7	5.7	5.9	6.6	7	7.2	7.7	8.2	7.5

wind (km/day)	613.4	587.5	561.6	492.5	492.5	509.8	570.2	604.8	622.1	665.3	708.5	648
f(U)	1.9	1.9	1.8	1.6	1.6	1.6	1.8	1.9	1.9	2.1	2.2	2

Monthly Average Humidity (%)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1985	75.6	76.9	78.1	84.2	81.8	79.8	78.6	78.3	74.3	76.1	77.1	78.2
1986	74.7	76.7	77.9	76.8	80.4	75.9	78.7	76.6	75.8	79.9	76.2	78.4
1987	77	75.6	77.8	78	77	79.4	78.5	77.5	75.3	73.6	74.8	74.8
1988	73.3	72	76.7	80.4	77.7	79.5	81.3	79.4	76.3	75.8	77.7	78.5
1989	76	75.4	77.9	81.5	85.2	81.4	81.8	77.1	80.5	77.7	79	84.7
1990	75.9	73.1	74.3	78.2	78.5	78.1	82.2	83.7	86.8	87.4	78.6	83.5
1991	81.4	77.4	78.8	77.3	82	82.9	76.8	84.6	83.9	80.4	81.5	80
1992	84.2	84.8	82	82	79.8	83.2	81.4	81	82.9	81.8	82.8	80.7
1993	77.9	74.9	74.3	77.8	83.4	86.2	85.1	85	82	83	78.1	78
1994	78.2	79	77.2	79.9	81.3	84.8	85.4	83.2	81.3	78.8	79	77.8
1995	76.3	76.8	75.3	80.6	81.9	85.5	84.6	84	80.6	77.9	82.4	79.7
1996	78.4	75.3	77.8	83.8	83.2	80.9	82.8	84	84.9	83.1	82.5	79.6
1997	79.9	79.1	82.2	85.1	86	84.6	80.2	82.8	82.7	81	74.7	75.5
Average	77.6	76.7	77.7	80.4	81.4	81.7	81.3	81.3	80.6	79.7	78.8	79.2
ea (mbar)	37.8	37.8	37.8	35.7	33.6	33.6	31.7	31.7	31.7	33.6	35.7	35.7
ed (mbar)	29.3	29	29.4	28.7	27.4	27.5	25.8	25.8	25.6	26.8	28.1	28.3

Monthly Total Rainfall (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1985	16.2	252.1	81.4	428.7	384.3	280.9	286.9	177.5	116.4	14.7	30.1	23.2
1986	93.2	117.6	3.1	190.2	295.5	85.9	171.8	76.4	137.1	256.6	112.4	31.1
1987	116.2	80.8	113.1	239.9	121.4	227.3	215	127.2	33.8	8.1	28.7	31.1
1988	48.5	65.1	183.9	313.6	173.1	94.3	262	343.2	67.3	70.2	61.9	98
1989	55.4	5.2	163.3	366.4	538.2	158.9	272.6	155.8	138.4	190.4	35.6	125
1990	68.2	4.5	81.2	208.8	68.6	121.9	214.9	141.9	129.8	96.3	37.5	65.7
1991	32.5	38.2	92.8	147.4	412.2	285.8	95	110.4	42.5	26.2	9.3	0
1992	131.1	110.2	126.4	200.7	302.2	375.8	149.4	149.2	158.3	22.7	116.4	18.9
1993	4.6	7.3	30.2	64.5	143.6	129.8	88.4	95.1	54.8	268.1	33.3	38.2
1994	25.5	135	55.8	143.6	174.7	429.1	312.5	142.7	86.5	30.4	62.8	22.3
1995	18.5	32	55.7	257.3	140.8	267.5	203.8	111.5	83.7	9.8	163.7	1
1996	19.4	21.2	78.1	507	406	220.4	157.3	305.1	76.6	85.3	98.7	40.4
1997	95.6	147.2	105.1	273.1	352.3	216.1	114.9	63.8	12.2	14.4	15	7.8
Average	55.8	78.2	90	259.3	270.2	226.4	195.7	153.8	87.5	84.1	62	38.9

Aracaju (Inmet) Meteorological Data

Monthly Total Sunshine Hours (hrs)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993		253	282.4	223.1	214.2	181.3	217.3	214.9	249.2	237.1	270.9	296.8
1994	314.1		247.3	221.1	206.2		186	202	223.2	287.2	279.1	274.8
1995	291.2	261.5		215	233.5	268.7	195.2	177.8		134.4	128.6	155.4
1996	281.3	290.8	257.8	156.1	181.4	216.7	182.4	183.6	232.3	291.5	229.9	310.8
1997	228.3	208.7	202.4		176.7	183.2	206.8	218.5	297.1	280.5	308.5	295.9
Average	279.5	254.3	247.5	203.8	202.4	212.5	197.5	199.4	250.5	246.1	243.4	266.7
Avg. Daily	9.0	9.1	8.0	6.8	6.5	7.1	6.4	6.4	8.4	7.9	8.1	8.6

Monthly Average Windspeed (m/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993												
1994												
1995												
1996	0.5	0.6	0.3	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
1997	0.2	0.2	0.2		2.6	2.3	2.3	2.7	3.4	4.1	3.8	4
Average	0.4	0.4	0.3	0.2	1.4	1.3	1.3	1.5	1.8	2.2	2	2.1
wind (km/day)	34.6	34.6	25.9	17.3	121	112.3	112.3	129.6	155.5	190.1	172.8	181.4
f(U)	0.4	0.4	0.3	0.3	0.6	0.6	0.6	0.6	0.7	0.8	0.7	0.8

Monthly Total Evaporation (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	129.6	120.32	127.5	117.9	115.1	114.8	126.4	127.1	130.6	126.2	131.6	138.6
1994	138.4	129.7	137.9	124.7	155.1	112.9						
1995	158.5	140.9	151.8	133	134.1	106.9	118.9	121.3	116.3	127.2	103	104.3
1996	105.3	113.8	104.8	64.7	62.8	85.7	83.7	85.5	86.6	89.1	75	92.1
1997	89.2	93.1	89.3		119.5	95	128	143.1	127.9	148.2	142	142.5
Average	124.2	119.6	122.3	110.1	117.3	103.1	114.3	119.3	115.4	122.7	112.9	119.4

Monthly Total Rainfall (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993		5.8	16.1	29.7	106.7	194	95.3	96.5	52.4	221.3	31.2	43.2
1994		81.4	97.3	164	120.7	349.6	222.8	110.9	79.8	34.4	33.5	15
1995	5	55.5	42.3	174.3	115.5	204.2	187	47.4		1.6	153.2	2
1996	27	14.4	46.7	455	317.4	176.7	118.2	197.5	69.6	26.3	81.4	32.7
1997	60.7	107	84.5		304.1	232	150.6	61.5	4.2	4.4	13.2	9.1
Average	30.9	52.8	57.4	205.8	192.9	231.3	154.8	102.8	51.5	57.6	62.5	20.4

Aracaju (Inmet) Meteorological Data

Monthly Average Humidity (%)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	77	78	78	79	79	78	77	76	77	78	75	74
1994	74	74	75	78	77	82	82	81	81	77	75	75
1995	73	73	73	80	79	82	80	78	76	75	78	76
1996	75	73	74	81	82	78	80	83	84	83	81	79
1997	80	79	80		80	81	78	76	79	80	80	79
Average	75.8	75.4	76	79.5	79.4	80.2	79.4	78.8	79.4	78.6	77.8	76.6

ea(mbar)	33.6	35.7	35.7	33.6	33.6	31.7	29.8	29.8	31.7	33.6	33.6	33.6
ed(mbar)	25.5	26.9	27.1	26.7	26.7	25.4	23.7	23.5	25.2	26.4	26.1	25.7

Monthly Average Max Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	29.7	30.1	30.3	30.1	29.1	27.7	27.2	27.1	28	28.3	29	29.5
1994	30.1	30.4	30.4	30	29.3	28.4	27.9	27.8	27.7	28.5	29.5	29.9
1995	30.4	29.9	30.7	30.1	30	28.4	27.8	27.7		28.8	28.5	29.2
1996	29.9	30.9	31.3	29.7	28.7	28.3	27.5	27.2	28	28.8	29.6	30.1
1997	30.3	30.2	30.2		28.3	27.9	27.4	27.4	28.4	29.3	29.9	30.4
Average	30.1	30.3	30.6	30	29.1	28.1	27.6	27.4	28	28.7	29.3	29.8

Monthly Average Min Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	22.8	23	23.4	22.5	22.8	22.4	21.9	22	22.5	22.9	23.4	23.3
1994	23.6	23.6	23.5	23.5	23.1	22.5	22	21.8	22.3	22.8	23.1	23.3
1995	23.6	23.5	23.4	23	23	20.6				23.4	23.8	24.1
1996	24.5	24.6	24.7	24.3	23.4	22.9	21.1	22.3	23	24	23.8	24.2
1997	24	23.3	24.1		23	21.3	21.5	21.3	21.9	23.2	23.7	24.4
Average	23.7	23.6	23.8	23.3	23.1	21.9	21.6	21.9	22.4	23.3	23.6	23.9

Monthly Average Mean Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	26.25	26.55	26.85	26.3	25.95	25.05	24.55	24.55	25.25	25.6	26.2	26.4
1994	26.85	27	26.95	26.75	26.2	25.45	24.95	24.8	25	25.65	26.3	26.6
1995	27	26.7	27.05	26.55	26.5	24.5				26.1	26.15	26.65
1996	27.2	27.75	28	27	26.05	25.6	24.3	24.75	25.5	26.4	26.7	27.15
1997	27.15	26.75	27.15		25.65	24.6	24.45	24.35	25.15	26.25	26.8	27.4
Average	26.9	27	27.2	26.7	26.1	25	24.6	24.6	25.2	26	26.4	26.8

ea(mbar)	33.6	35.7	35.7	33.6	33.6	31.7	29.8	29.8	31.7	33.6	33.6	33.6
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Boquim Meteorological Data

Monthly Average Max Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1975	31.5	33.2	30.9	29.9	27.7	27	26.1	26.4	26.6	30.1	31.3	29.4
1976	30.5	29.9	29.6	28.4	28.5	27.7	26.6	27.1	28.3	28	30	31
1977	30.9	29.5	31.1	29.6	28	27.9	26.5	27.5	27.7	27.8	N.A.	N.A.
1978	N.A.	31.3	30.6									
1979	32.3	31.1	30.9	30	28.4	26.5	26.3	26.9	27.4	29.3	30.2	31.1
1980	30.9	29.5	29.3	30.2	28.4	N.A.	26.9	27.2	28.3	28.6	30	31.3
1981	30.3	30.7	30.8	28.9	28.1	26.9	26.1	26	27	30.3	30	30.2
1982	30.9	30.5	32.7	30.4	27.9	27	26.4	26.9	27.2	28.3	30.6	31.2
1983	32.8	31.1	31.7	30	29.6	28.5	27.6	27	28.8	29.5	31.4	31.4
1984	32.5	N.A.	N.A.	29.6	28.8	27.6	26.6	26.3	27.7	29.3	30.4	32.3
1985	33.9	31.2	30.7	29	29	26.7	26.2	26.8	27.8	30.1	30.3	30
1986	31.4	31.4	29.7	29.9	28.3	26.8	26.5	27.4	26.9	27.9	28.8	30.4
1987	30.6	31.1	31.5	29.9	30.2	28.3	28.2	28.2	29.3	30.5	31.7	31.7
1988	32.6	32.8	31.8	29.2	28.8	27.4	26.2	26.2	27.2	28.5	29.3	29.3
1989	31	32.3	31.9	29.6	27.6	27.6	27	26.9	28.2	29.5	30.5	28.9
1990	29.8	31.4	31.4	29.9	29.2	27.5	27.3	27.1	27.8	28.4	29.9	30.4
1991	31.3	32.6	31.4	30	28	26.6	26.2	26.2	27.3	28.7	30.7	31.8
1992	31.5	28.7	29.4	29.7	29.4	26.8	26.3	26.4	27.4	29.2	30.1	29.9
1993	30.9	31.7	32	31.2	28.9	27	27	27.2	28.7	29.3	30.4	31.6
1994	32.3	31.9	33.6	30.4	28.9	27.9	26.3	27.1	27.5	29.4	31.2	32
1995	32.4	33.1	33	30.7	29.5	27.2	26.6	26.5	27.2	29.8	29.4	31.4
1996	31.2	32.3	32.1	29.6	28.3	27.1	26.4	26.5	27.8	29.8	29.8	N.A.
1997	31.4	29.8	30	29.2	27.9	27.7	26.5	26.7	30	30.9	32.1	33.1
1998	32.1	32.8	31.9	31.3	29.3	26.9	26.8	N.A.	N.A.	N.A.	N.A.	N.A.
Average	31.5	31.2	31.2	29.8	28.6	27.3	26.6	26.9	27.8	29.3	30.4	30.9

Monthly Average Min Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1975	20.8	21.3	21.1	21.1	20.3	19.1	18.3	17.9	18.4	19.1	19.7	20.2
1976	19.8	20.4	20.2	19.9	19.2	18	17.2	16.7	18.3	19.6	19.9	20.1
1977	20.7	20.5	20.5	21	20	19.2	18.3	18	18.5	19.3	20	20.3
1978	19.9	20.3	20.1	20.3	19.7	18.5	19.5	18.4	18.7	20.3	20.7	21.3
1979	22	22.8	22.8	22.5	22.3	19.7	19	18.8	19.1	20.3	21.1	21.6
1980	21.9	21.9	20.9	21.1	20.7	N.A.	19	18.4	19.9	20	21.4	21.7
1981	21.7	21.4	22.3	21.6	20.4	19.9	18.4	18.2	18.8	20.3	21.5	21.6
1982	21.6	21.8	22.1	22.2	21	20.5	19.4	19.3	19.9	19.5	20.4	21.7
1983	22.7	22.7	22.9	22.2	21	20	19.5	19.4	19.6	20.4	21.5	21.6
1984	21.8	N.A.	N.A.	22.3	21.3	20.2	19.3	19	19.8	20.4	20.9	21.1
1985	22.7	22.1	22.1	21.4	21.4	19.6	19.1	19.3	19	20	20.7	21
1986	20.8	21.7	21.6	21.4	20.7	19.4	18.5	18.6	18.7	20	20.1	20.8
1987	20.7	21.3	21.7	21.2	20.7	20	18.8	18.9	19.2	19.5	21.1	21.7
1988	21.7	21.5	22.1	21.7	20	19.3	18.3	17.5	18.3	19.2	19.7	20.2
1989	20.3	20.6	21	20.6	20.1	19.3	18.5	18.2	19	19.2	20.1	20.7
1990	19.6	19.8	20.2	20.3	19.8	18.4	17.9	17.8	18	18.9	19.3	19.8
1991	20.2	20.5	20.8	20.4	19.7	18.7	17.2	17	17.3	17.5	19.3	20
1992	20.3	20.2	19.9	19.7	18.4	17.8	17	16.6	17.3	17.5	18.6	19.1
1993	18.9	19.3	19.4	21.5	21.6	19.9	19.1	19.6	20.1	21.2	21.6	22
1994	22.9	22.7	23.3	22.6	21.4	20.9	19.7	19.1	19.5	20.4	21.1	22
1995	22.1	23.4	23.2	22.9	22.1	20.6	19.7	19.4	19.3	19.9	21.2	21.5
1996	21.8	21	21.6	21.7	20.9	20.1	18.7	19.1	19.9	20.4	21.5	N.A.
1997	22.2	21.7	21.5	20.5	19.8	19.1	18.4	19.2	20.7	21.4	22.7	
1998	21.4	23.3	23.4	22.6	21.4	20.4	20	N.A.	N.A.	N.A.	N.A.	N.A.
Average	21.2	21.3	21.4	21.4	20.6	19.5	18.7	18.4	18.9	19.7	20.6	21

Monthly Average Mean Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1975	26.15	27.25	26	25.5	24	23.05	22.2	22.15	22.5	24.6	25.5	24.8
1976	25.15	25.15	24.9	24.15	23.85	22.85	21.9	21.9	23.3	23.8	24.95	25.55
1977	25.8	25	25.8	25.3	24	23.35	22.4	22.75	23.1	23.55	N.A.	N.A.
1978	N.A.	26	25.95									
1979	27.15	26.95	26.85	26.25	25.35	23.1	22.65	22.85	23.25	24.8	25.65	26.35
1980	26.4	25.7	25.1	25.65	24.55	N.A.	22.95	22.8	24.1	24.3	25.7	26.5
1981	26	26.05	26.55	25.25	24.25	23.4	22.25	22.1	22.9	25.3	25.75	25.9
1982	26.25	26.15	27.4	26.3	24.45	23.73	22.9	23.1	23.35	24.2	25.5	26.45
1983	27.75	26.9	27.3	26.1	25.3	24.23	23.35	23.2	24.2	24.95	26.45	26.5
1984	27.15	N.A.	N.A.	26.05	25.05	23.9	22.95	22.75	23.73	24.85	25.65	26.7
1985	28.3	26.65	26.4	25.4	25.2	23.15	22.65	23.05	23.4	25.05	25.5	25.5
1986	26.1	26.35	25.65	25.65	24.5	23.1	22.3	22	22.8	23.95	24.45	25.6
1987	25.75	26.3	26.6	25.55	25.35	24.15	23.5	23.55	24.35	25	26.4	26.7
1988	27.15	27.15	26.95	25.45	24.4	23.45	22.25	21.85	22.75	23.85	24.5	24.75
1989	25.65	26.35	26.45	25.1	23.85	23.45	22.75	22.55	23.6	24.35	25.3	24.8
1990	24.7	25.6	25.8	25.1	24.5	22.95	22.6	22.45	22.9	23.65	24.6	25.1
1991	25.75	26.55	26.1	25.2	23.85	22.65	21.7	21.6	22.4	23.1	23	25.9
1992	25.5	24.45	24.65	24.7	23.9	22.3	21.65	21.3	22.35	23.35	24.35	24.5
1993	24.9	25.6	25.7	26.35	25.25	23.45	23.05	23.4	24.4	25.25	26	26.8
1994	27.7	27.3	28.45	26.5	25.15	24.4	23.1	23.1	23.3	24.9	26.15	27
1995	27.25	28.25	28.1	26.8	25.8	23.9	23.15	22.95	23.25	24.85	25.3	26.45
1996	26.5	26.75	26.85	25.65	24.6	23.6	22.55	22.8	23.85	25.1	25.65	N.A.
1997	26.8	25.75	25.85	25.35	24.2	23.75	22.8	22.55	24.6	25.8	26.75	27.9
1998	26.75	28.05	27.65	26.95	25.35	23.65	23.4	N.A.	N.A.	N.A.	N.A.	N.A.
Average	26.4	26.3	26.4	25.6	24.6	23.4	22.6	22.6	23.4	24.3	25.5	26
ea (mbar)	33.6	33.6	33.6	31.7	29.8	28.1	26.4	26.4	28.1	29.8	31.7	31.6

Boquim Meteorological Data

Monthly Average Sunshine Hours (hrs)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1975	4.7	6.6	6.8	4.6	3	3.4	3.1	4.5	4.7	4.4	3.6	2.6
1976	4.3	2.2	3.1	3.8	4.8	4.7	6.1	3.7	4.2	3.7	3.8	5.7
1977	1.3	2.1	1.9	1.8	2.7	3.4	2.2	2.3	0.3	Na	1.1	1.1
1978	1.4	0.8	2.1	1.8	1.4	2.6	2	2	2.8	1.4	0.9	1.6
1979	1.4	2	2.7	3.7	4.8	3.9	4.5	4.6	2.6	2.2	0.7	0.3
1980	1	3	3.4	2.9	1.4	Na	0.4	5.4	0.3	4.4	1.7	3.1
1981	1.9	2.5	4.1	5.2	6.6	3	6.7	4.7	Na	7.6	6.2	5.6
1982	6.7	5.6	Na									
1983	4.8	5.2	6.2	6.7	8.3	6.5	6.1	6.2	8.3	7.4	7.8	7.8
1984	9	Na	Na	4.5	6.7	6.4	3.6	5.9	6.2	7.1	9.4	9
1985	5.3	6.9	6.9	3.4	5.3	5.4	5.5	6.3	6.8	7.7	6.3	5.1
1986	8.7	8	3.3	7.3	6.1	6.1	5.2	6.9	5.8	6	6.7	7.1
1987	7.9	7.9	6.3	6.1	7.1	5.1	5.7	6	5.7	7.2	6.4	5.3
1988	7.3	8.4	7.2	5.6	6.4	5.8	5.1	4.9	4.9	5	5.7	5.3
1989	7.7	8.2	6.4	5.3	4.1	5.1	3.6	3.7	6.1	5.8	6.3	3
1990	5.4	7.8	7.8	6.3	6	6.1	5.3	6.6	7.2	5.6	7.1	6.8
1991	7.4	8.9	6.5	7.4	4.2	3.5	1.6	1.3	5.6	7.5	3.3	6.2
1992	2.8	1.5	2.7	6.3	6.4	2.4	1	0.7	3.6	6.4	2.9	2.3
1993	2.5	3.2	10	5.2	2.1	1.6	2.9	2.2	1.7	1.9	1.8	2.8
1994	3	2.7	8	5.8	4.2	3.6	2.8	1.4	2.7	2.4	4.8	4.1
1995	4.9	1.9	9.1	4.6	3.1	2.6	3	1	6	4.1	0.8	2.8
1996	3.3	1.3	2.1	1.1	1.1	1.1	1.7	2.4	3.8	3.8	3	Na
1997	3.9	1.1	1.6	1.2	2.4	1.7	1.9	0.8	4.5	4.1	5.2	6.1
1998	3.1	6	8.3	8.8	4.2	2.4	2.2	Na	Na	Na	Na	Na
Ave(75-97)	4.6	4.4	5.6	4.6	4.5	4.1	3.7	3.9	4.6	5.1	4.4	4.5
Ave(83-97)	5.6	5.2	6.3	5.2	4.9	4.2	3.8	3.8	5.4	5.5	5.2	5.3

Monthly Average Windspeed (m/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1975	3.3	3.6	2.6	3.1	3	2.7	3.1	2.9	3.1	3.5	3.8	3.4
1976	3.3	2.8	2.6	2.5	2.4	2.4	2.2	2.4	2.7	2.8	3.2	3.2
1977	3	2.5	2.4	2	2.3	2.6	2.2	2.2	2.5	2.2	2.8	2.6
1978	2.5	2.4	2.1	2.3	2.1	2.3	2.3	2.4	2.6	2.7	2.8	2.7
1979	2.9	2.5	2.6	2.3	2.3	2.6	2.5	2.5	2.6	3	3.3	3.1
1980	2.9	2.1	2.3	2.6	2.1	Na	2.2	2.1	2.4	3	2.8	3.3
1981	2.5	2.8	2.8	2.1	2.1	2.1	2.5	2.3	2.8	3.2	3.1	3
1982	3	2.4	3.1	2.8	2.5	2.2	2	2.6	2.4	2.9	3	2.9
1983	3.6	2.8	2.9	2.1	2.3	2.1	2.2	2.7	2.9	3.4	4.1	3.7
1984	3.4	Na	Na	1.9	1.9	2	2.2	2.2	2.4	2.9	3.6	3.6
1985	3.6	2.8	2.2	2.5	1.8	2.6	3.1	2.9	3.1	3.7	3.4	3
1986	3.3	2.4	2.4	2.7	2.1	2.3	2.7	3	3.3	3.1	3	3.4
1987	3	2.7	2.7	2.4	2.4	2.3	2.6	2.7	3.3	3.2	3.6	3.9
1988	3.6	3.4	2.6	1.9	1.9	2.5	2.9	3	3	2.9	3.1	2.8
1989	3.2	3.5	3	2.3	2.4	2.3	3	2.8	2.9	3.1	3.5	2.4
1990	2.6	2.5	2.4	2.6	2.1	2.3	2.4	2.5	2.8	2.6	2.7	2.7
1991	2.9	3.3	2.9	2.3	2.5	2.2	2.5	2.7	2.8	3.2	4	3.7
1992	4	2.4	2.7	2.2	2.4	2.2	2.1	2.4	2.5	3	3.6	3
1993	2.8	2.7	2.9	2.8	2.2	2.3	2.3	2.3	2.8	3	3.2	3.5
1994	3.1	2.5	2.9	1.9	2.2	2.1	2.2	2.5	2.5	2.5	3.4	3.3
1995	3.2	2.3	3.1	2.3	2.2	2.1	2.7	2.1	2.4	2.6	2.6	3
1996	2.6	2.3	2.7	2.1	2.2	2.3	2.4	2.4	2.6	3.2	2.7	Na
1997	3	1.9	2	1.8	2.2	1.9	2.8	2.6	2.8	3.2	3.4	3.1
1998	3.3	2.9	1.9	1.6	1.6	1.7	2	Na	Na	Na	Na	Na
Average	3.1	2.7	2.6	2.3	2.2	2.3	2.3	2.5	2.7	3	3.2	3.2

wind (km/day)	267.8	233.3	224.6	198.7	190.1	198.7	216	216	233.3	239.2	276.5	276.5
(RU)	1	0.9	0.9	0.8	0.8	0.8	0.9	0.9	0.9	1	1	1

Monthly Total Evaporation (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1975	116.2	124.6	89	63.3	51.9	42.1	49.4	61.9	59.4	102.7	127	84.2
1976	118.4	77.2	70.4	54.1	65.5	64.9	68.2	78	71.1	63.6	89.1	112
1977	88.8	70.6	92.6	53.4	51.1	50.5	54.2	61.6	67.1	67.1	88.3	81.7
1978	103.6	65.8	55.1	51.8	39.4	53.4	42.3	55.7	60.5	93.9	115.3	103.4
1979	117	95.4	89.4	74.6	56.8	49	55.4	61.2	60.4	77.2	88.4	90.3
1980	80.6	51.7	69.4	73.8	60	NA	62.7	70.8	71.7	78.7	85.2	111.9
1981	99.1	96.2	67.3	59.3	47.3	40	77	38.4	71.8	92.3	81.3	79.9
1982	89.8	66	99.9	69.9	49	39.7	46.3	51.9	48	78.1	102.4	101
1983	120.6	80.7	84.3	63	68.4	57.7	53.1	67.4	83.2	99	128.9	132.4
1984	145.8	NA	NA	56.4	34.1	33.6	47.1	39.6	53.6	80.2	106.7	140.9
1985	127.2	57.3	45.6	40.9	19.3	31.2	58.6	64.1	68.7	101.9	101.8	88.1
1986	123.2	98.6	70.8	78.6	62	66.2	66.8	80.6	72.8	69.4	81.2	100.7
1987	97.8	99.7	89.6	70.6	77.7	52.1	66.3	75.3	97.9	127.7	129.3	147.9
1988	150.5	147.2	99	56.1	58.6	59.3	60.2	71.4	85	89.1	89.1	76.7
1989	117.3	129.4	129.4	58.2	35	31.4	57.3	53	68.8	99.4	99.3	61.7
1990	104.7	112.7	117.7	79.4	70.8	56.8	71	67.5	74.5	77.1	95.7	106.4
1991	120	139.9	117.8	80.6	62.5	43.6	71.8	59.3	58.4	115.7	113.8	134.9
1992	130.2	61.5	92.6	73	83.5	57.3	64.2	57.8	71.9	106	119.2	121.3
1993	127.4	136.8	155.7	114.5	84.9	56.4	72	69.6	78.4	85.1	103.8	146
1994	150.3	120	140.4	90.1	85.3	50.8	57.3	73.3	76.4	100.4	132.3	139.9
1995	152	141.4	164.7	91.7	72	62.6	44.9	64	76.1	129.3	101.1	128.2
1996	NA	139.8	146.7	83.6	64.3	63.2	75.8	63.1	79.3	103	91.3	NA
1997	110.5	77.2	77.6	52.4	56.7	57.9	72	85.7	105.4	147.7	151.6	157
1998	151.6	143.4	122.7	94.5	91.8	67.6	61.1	NA	NA	NA	NA	NA
Average	117.8	99.5	98.4	68.2	59.1	50.9	60.6	64.8	72.3	93	105.1	111.2

Boquim Meteorological Data

Monthly Average Humidity (%)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1975	77.2	74.6	81.6	84.7	85.7	88.4	88.1	85.3	85	78.2	75.7	82
1976	76.2	81.1	82.3	84.8	84.3	81.4	81.3	80.7	80.8	83.8	79.7	77
1977	80.2	82.2	78.9	86.5	84.2	84.7	85	83.7	83.7	86.5	82.3	82.8
1978	80	83.8	85.7	85.8	88.2	87	88.8	84.7	81.3	78.7	73	78.4
1979	76.8	78.1	79.8	82.7	87	87.1	85.4	84.2	84.4	80.2	79.9	78.5
1980	80.5	86.9	82.6	79.7	84.7	N.a.	83.7	82.3	82	81.7	80.1	77.4
1981	79.6	76.1	81.5	85.1	83.5	86	83.1	84.3	79.5	76.1	78.8	79.3
1982	75.9	78.3	73.1	81.4	85.6	87.5	87	85.6	85.2	79.3	75.1	76.3
1983	72.7	78.3	78.9	83.2	81.4	82.2	85.7	83.8	80.1	79.7	73	74.3
1984	72.5	N.a.	N.a.	86.3	86.3	87.7	85	85.3	84.5	81.6	77.7	73.7
1985	72.9	78.5	82.2	89	88.9	85.9	85.7	85.1	82	77.6	79.4	80.4
1986	75.8	78.5	83	81.8	85.4	84.3	86.1	82	83.2	84.9	81.8	80.1
1987	79.4	79.3	81	83.9	82.7	85.3	84.9	82.9	80	74	73.7	72.6
1988	73.1	71.6	78.3	83.6	84.6	85	87	83.7	80.8	81.9	77.5	79.6
1989	74	67.6	73.4	83.1	88.4	85.2	85.2	81	80	75.6	74.8	84.3
1990	75.1	69	72.2	79.2	81.8	82.4	82.5	82.1	79.2	80.9	76.4	73.7
1991	72.6	61.5	72.4	78.3	83.4	85.4	79.4	82.1	78.3	72.2	72.2	69.2
1992	71.7	82.6	79.3	79.7	78.3	83.2	84.3	82.8	80.9	72.2	71.4	74.7
1993	71.1	67.5	65.9	73.6	79.7	82.4	80.9	81.4	78	79.3	72.7	67.6
1994	67.1	70.9	66.7	77.9	79.7	84.9	83.8	79.3	79.1	73.7	66.9	69.4
1995	67	67.4	66.9	76.3	81.2	83.5	83.7	81.6	78.6	70.7	76.8	71.7
1996	71.6	68.1	70.8	81.7	82.6	84	80.3	82.3	79.4	73.1	79.8	N.a.
1997	76	81.3	80.3	83.3	83.4	83.7	79.3	77.5	74.5	70.4	65.7	68.7
1998	65.7	68.8	75.6	77	80.6	85.5	85.1	N.a.	N.a.	N.a.	N.a.	N.a.
Average	74.7	75.9	77.1	82.3	84	84.9	84.2	82.8	80.9	78	76	76
ea (mbar)	33.6	33.6	33.6	31.7	29.8	28.1	26.4	26.4	28.1	29.8	31.7	33.6
ed (mbar)	25.1	25.5	25.9	26.1	25	23.9	22.2	21.9	22.7	23.2	24.1	25.5

Monthly Total Rainfall (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1975	26.1	21.3	139.3	180.9	233.6	313.6	374.5	176.6	155.3	88.9	12.6	118.3
1976	41.5	126.7	117.9	100	75.1	89.8	117.8	69.9	29.2	234.7	82.1	17.8
1977	103.5	134	36.7	196.2	291.7	196.1	162.2	75.8	61.8	150.9	87.2	151.3
1978	11.7	155.2	245.7	109.6	208.8	144.3	256.3	131.8	46.8	17.4	4.2	37.8
1979	35.4	69	64.2	176.3	95.9	240.1	125.2	100.2	67.5	28.9	246.8	19.2
1980	30.3	47.5	70.5	25.1	104	N.A.	171.3	86	94	118.4	95.1	23.7
1981	71.9	36.3	148.9	153	89.2	103.5	100.5	121.6	40.7	1.3	47.7	108.1
1982	24.9	60.7	4.8	289.2	122.7	200.6	227.3	123.4	139.4	59.9	14.1	19.5
1983	3.5	63	100.4	153.3	46.3	109.8	198.9	124.5	29.2	57.3	78.3	22.8
1984	21.2	N.A.	N.A.	263.1	162.6	133.3	103.9	93.4	230.3	83.5	63	0.8
1985	10.6	94.5	124	368.3	230.1	199	209.8	168.3	100.8	17.3	162.7	48.3
1986	46.2	77.3	186.1	136.9	318.6	143.9	214.5	72.3	113	185.3	79.9	76.3
1987	81.2	102.9	77.3	147.5	175.5	132.5	175.3	131.1	51.7	27.6	29.8	28.4
1988	33.9	32.8	203.1	212.2	185.5	304.9	255.3	99.7	90.1	112.9	85.5	123.9
1989	32.1	4.1	110.2	278.1	500.6	196.1	292.3	237	137.7	142.4	44.8	262.9
1990	78.3	10.4	61.7	145.8	97.7	166.6	136	150.2	87.2	152.7	31.7	62.4
1991	16.9	6.7	62.9	126.1	291.5	252.1	89.7	146.1	78.2	22.9	61.2	27.7
1992	231.9	210.7	218.9	101.6	72.4	176.3	211	67.4	141	37.4	107.5	36
1993	14.9	1.2	18.4	95.4	73.8	145	99.2	112.4	33.5	124.1	22.3	3.4
1994	9.9	51.9	26.5	80.4	101.9	226.1	177.4	73.2	105.1	32.7	7.5	33.3
1995	10.7	18.8	25.7	169.7	145.6	125.9	213.1	101.3	85.1	4.8	202.2	12
1996	39.3	12.3	46.3	202.5	123.7	209.6	77.9	167.8	74	24.5	190.7	N.A.
1997	51.7	211.2	172.7	198.2	345.7	160.3	85.3	64	9.9	23	1.6	3.1
1998	2.2	37.1	110.2	69.2	165.9	258.1	183.3	N.A.	N.A.	N.A.	N.A.	N.A.
Average	44.7	87.2	103.8	170	177.9	180.5	177.2	117.1	87	76	76.3	57.3

California Meteorological Data

Monthly Average Maximum Temperature (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	33	35	33.6	30.9	28.8	28.4	27.9	29.7	32.5	34.2	34.3	29.9
1990	32	34.1	32.3	N.A.	29.5	28.9	28	30.1	32.2	34.7	33.9	33.6
1991	32.6	N.A.	32.4	N.A.	27.5	26.6	26.3	25.8	28.7	30.1	32.2	33.7
1992	36.8	32.8	32.4	30.9	31.6	29.2	27.4	28.6	29.7	32.6	32.5	32.4
1993	33.2	34.1	34.7	33.8	31.5	29.8	29.1	29.3	32.4	32.4	32.7	34.1
1994	34.7	34.2	33.5	32.3	30.2	27.4	27.6	29.6	31	31.1	35.4	35.4
1995	36.2	36.6	37.9	35.3	33.9	30.6	28.6	29.1	30.8	34.6	34.4	36.9
1996	35.5	36.9	36.4	33.4	30.8	28.7	28.2	28.8	32.4	35.3	35.4	35.8
1997	35.5	33.9	33.7	31.2	29.1	29.2	28.4	29.2	33.9	35.2	N.A.	N.A.
Average	34.4	34.7	34.1	32.5	30.3	28.8	27.9	28.9	31.5	33.4	33.9	34

Monthly Average Minimum Temperature (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	21	21.4	22.6	22.8	21.7	20.7	21.2	20	21.4	21.1	21.8	21.6
1990	20.4	22.2	22.8	N.A.	20.5	19.5	20.2	19.8	20.9	21.5	21.7	20.8
1991	21.2	N.A.	21.2	N.A.	19.6	19.7	17.7	17	18.4	18.1	19.5	20.8
1992	24.1	24.5	23.9	20.7	19.4	20.3	20.5	18.9	19.8	19.7	20	20.7
1993	20.3	21.1	20.9	21.2	20	19.5	18.7	19	19.6	20.9	21.6	22
1994	22.5	22.2	22.9	22	20.8	20.6	18.4	17.7	18.5	18.4	20.4	21.1
1995	21.3	22	22.3	21.9	21.2	19.7	18.8	18	18.1	19.3	20.8	21.7
1996	21.6	21.9	22.4	22.3	20.8	19.6	18.2	18.5	19.2	20.8	21.6	21.9
1997	22	21.4	21.7	21.3	20.2	19.1	18.2	18.1	18.9	20	N.A.	N.A.
Average	21.6	22.1	22.3	21.7	20.5	19.9	19.1	18.6	19.4	20	20.9	21.3

Monthly Average Mean Temperature (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	27	28.2	28.1	26.85	25.25	24.55	24.55	24.85	26.95	27.65	28.05	25.75
1990	26.2	28.15	27.55	N.A.	25	24.2	24.1	24.95	26.55	28.1	27.8	27.2
1991	26.9	N.A.	26.8	N.A.	23.55	23.15	22	21.4	23.55	24.1	25.85	27.25
1992	30.45	28.65	28.15	25.8	25.5	24.75	23.95	23.75	24.75	26.15	26.25	26.55
1993	26.75	27.6	27.8	27.5	25.75	24.65	23.9	24.15	26	26.65	27.15	28.05
1994	28.6	28.2	28.2	27.15	25.5	24	23	23.65	24.75	24.75	27.9	28.25
1995	28.75	29.3	30.1	28.6	27.55	25.15	23.9	23.55	24.45	26.95	27.6	29.3
1996	28.55	29.4	29.4	27.85	25.8	24.15	23.2	23.65	25.8	28.05	28.5	28.85
1997	28.75	27.65	27.7	26.25	24.65	24.15	23.3	23.65	26.4	27.6	N.A.	N.A.
Average	28	28.4	28.2	27.1	25.4	24.3	23.5	23.7	25.5	26.7	27.4	27.7

ea (mbar)	37.8	37.8	37.8	35.7	31.7	29.8	28.1	28.1	31.7	33.6	35.7	35.7
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Monthly Average Sunshine Hours (hrs)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	6.9	9	7	5.8	5.2	5.1	4.3	6.3	7.6	9.1	8.6	4.5
1990	7.5	8.2	9.4	7.3	7	6.6	5.7	6.5	6.8	7.8	8.7	10
1991	8.9	9.6	7.9	7.3	4.3	4.5	4	4.4	5.8	8.7	8.3	8.7
1992	7	6.1	6.1	8.1	7.5	5.4	7.2	7.2	7.1	9.3	9	7.8
1993	7.9	8.5	8.5	7.6	6.2	5.6	5.5	6.9	7.5	7.8	9.1	8.8
1994	8.5	7.6	7.2	7.2	6.4	4.7	5.4	6.7	5.6	5.6	9.1	8.5
1995	8.2	8	8	5.7	6.1	4.2	5.6	6.5	6.9	9.9	7	9
1996	8.2	8.8	8	5.1	5.4	5.3	4.5	4.5	6.5	8.9	6.8	8
1997	7.9	6.8	6.2	N.A.								
Average	7.9	8.1	7.6	6.8	6	5.2	5.3	6.1	6.7	8.4	8.3	8.2

California Meteorological Data

Monthly Average Windspeed (m's)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	1.8	1.9	1.6	1.1	0.8	1	1.2	0.9	1	1.1	1.9	1.1
1990	1.2	1.2	1.4	1.2	1	1.1	0.8	0.9	1.2	1.3	1.4	1.7
1991	1.6	1.7	1.6	1.5	1.5	1.2	1.2	1.5	1.5	1.8	1.7	1.7
1992	1.6	1.7	1.8	1.7	1.5	1.5	1.5	1.7	1.9	2.3	2.2	2.2
1993	1.9	1.8	1.6	1.5	1.4	1.2	1.3	1.6	2.5	2.9	3	2.9
1994	2.6	2.5	2.8	2.3	2.1	2.2	2.1	2.2	2.4	2.5	2.6	2.3
1995	1.6	1.7	1.6	1.5	1.5	1.2	1.2	1.5	1.5	1.8	1.7	1.7
1996	2.7	2.7	2.4	2.3	1.9	2.1	2	2.2	2.6	2.9	2.7	2.6
1997	2.4	2.3	2.1	1.7	1.8	1.4	1.8	2.2	2.2	2.5	N.A.	N.A.
Average	1.9	1.9	1.9	1.6	1.5	1.4	1.5	1.6	1.9	2.1	2.2	2

wind (km/day)	164.2	164.2	164.2	138.2	129.6	121	129.6	138.2	164.2	181.4	190.1	172.8
R(U)	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.8	0.8	0.7

Monthly Total Evaporation (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	249.8	272.1	249.4	158.1	140.2	120.8	105.7	123.1	175.3	237.6	253	146.6
1990	190.1	185.7	227.7	174	139.9	124.1	135	146.2	182.4	211.4	226.8	273
1991	244.1	167.9	159.1	184	139.9	110	137.1	133	155.4	223	219.8	247.8
1992	204.5	146.2	164.1	259.3	189.9	136.6	110.7	158.2	158.3	243.5	186.3	197.2
1993	197.9	192.2	215.6	187.6	154	130.1	133.6	149.8	204.1	221	235.9	257.5
1994	270.4	212	187.6	173.5	126.1	98.7	116.3	134.6	170.4	217.6	271	261.7
1995	244.7	218.9	231.9	180	127.3	103.7	115.7	128.5	162.8	239	195.9	231.1
1996	231.9	244.5	224.5	153.4	128.3	102.1	103	117.8	197.4	269.3	247.6	225.1
1997	209	210.3	175	119.7	97.7	94.3	135.6	137.6	197.7	192.5	0	0
Average	226.9	205.5	203.9	176.6	138.1	113.4	121.4	136.5	178.2	228.3	204	204.4

Monthly Average Humidity (%)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	54.6	47.1	51	67.3	72.7	77.9	78.8	71.4	63.5	54.9	53.5	60
1990	49.8	63.7	69.4	75.2	75.6	73.7	86.5	59.4	52.3	50.1	52.6	52.8
1991	N.A.	N.A.	N.A.	N.A.	83.9	80.2	74.5	72.1	70	52.9	53	49.1
1992	47	56.2	57.1	61.1	54.2	77.3	82.5	76.4	74.5	64	62.7	66.9
1993	65.4	61.9	55.8	58.3	65.9	72.3	70.9	74.9	65.8	65.7	63.5	57.6
1994	59	59.1	69.1	78.4	81.8	90.6	87.1	61.9	60.4	60.6	59.2	61.5
1995	59.4	62.1	61.8	73.4	74	85.6	83.3	71.8	63.7	50.8	51.1	47.2
1996	N.A.	N.A.	N.A.	78.1	71.5	64.4	63.2	64.9	49.2	N.A.	N.A.	N.A.
1997	N.A.											
Average	55.9	58.4	60.7	70.3	72.5	77.8	78.4	69.1	62.4	57	56.5	56.4

ea (mbar)	37.8	37.8	37.8	35.7	31.7	29.8	28.1	28.1	31.7	33.6	35.7	35.7
ed (mbar)	21.1	22.1	22.9	25.1	23	23.2	22	19.4	19.8	19.2	20.2	20.1

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	13.6	0	55.7	142.4	149.7	90.9	131.7	68.3	44.2	7	29.4	269.1
1990	26.5	52.4	8.6	71.3	52.4	69.1	160.1	40.4	10.9	7	3	4.2
1991	12.8	7.7	240.6	62.6	121.2	98.1	58.8	77.9	91.3	2.6	47	0
1992	129.6	264.7	128.3	72.8	3	45.1	125	26.6	48.2	2.8	5.9	106.7
1993	0	2.5	0	2.6	39.1	78.6	57.6	37.6	23.1	18.8	5.2	9.2
1994	16.9	2.5	30.9	40	44.4	227.5	96.8	14	25.9	16.7	5.6	11.1
1995	0.9	65.6	40.5	75.2	48.4	137.5	138.4	41.6	11	0.5	21.6	21.1
1996	20.4	13.2	18.1	138.9	31.8	103.8	54.6	72.6	9.5	0	46.5	17
1997	146.8	47.5	187.4	82.4	119.4	49.5	68.2	51.5	0	21	N.A.	N.A.
Average	40.8	50.7	78.9	76.5	67.7	100	99	47.8	29.3	8.5	20.5	54.8

Cotinguiba Meteorological Data

Monthly Average Max Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	33.4	34.7	35.2	33.5	31.5	28.7	31.2	29.4	30.6	30.6	30.8	30.9
1991	31.5	31.7	31.7	31.3	29.2	29.2	28.2	27.1	29.6	29.9	31.5	31.9
1993	31.7	32	32.2	32	29.7	28.7	28.2	27.4	29.6	29.6	30.2	32.1
1994	36.3	33.4	33.6	30.1	28.9	28.2	26.6	27.3	27.3	28.9	30.5	32.4
1995	31.9	32.3	32.4	30.1	30.1	28.2	27.5	28	28.8	32.6	29.7	32.4
Average	33	32.8	33	31.4	29.9	28.6	28.3	27.8	29.2	30.3	30.5	31.9

Monthly Average Min Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	23	22.2	21.8	21.9	20.6	19.4	19.9	19.8	19.7	21.1	21.6	21.8
1991	22.4	22.4	22.7	21.9	22.1	21.3	19.8	19.4	20	20.1	21.7	21.6
1993	22	21.8	21.5	22.3	21.6	20.5	20	19.7	20.9	21.5	21.7	22.8
1994	22	21.8	21.5	22.3	21.6	20.5	20	19.7	20.9	21.5	21.7	22.8
1995	22.7	23.7	23.4	22.9	23	22.2	20.5	20.1	20.4	21.4	21.7	23
Average	22.4	22.4	22.2	22.3	21.8	20.8	20	19.7	20.4	21.1	21.7	22.4

Monthly Average Mean Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	28.2	28.45	28.5	27.7	26.05	24.05	25.55	24.6	25.15	25.85	26.2	26.35
1991	26.95	27.05	27.2	26.6	25.65	25.25	23.9	23.25	24.8	25	26.6	26.75
1993	26.85	26.9	26.85	27.13	25.65	24.6	24.1	23.55	25.25	25.55	25.95	27.45
1994	29.15	27.6	27.55	26.2	25.25	24.35	23.3	23.5	24.1	25.2	26.1	27.6
1995	27.3	28	27.9	26.5	26.55	25.2	24	24.05	24.6	27	25.7	27.7
Average	27.7	27.6	27.6	26.8	25.8	24.7	24.2	23.8	24.8	25.7	26.1	27.2
ea (mbar)	35.7	35.7	35.7	33.6	31.7	29.8	29.8	28.1	29.8	31.7	33.6	35.7

Monthly Average Windspeed Elev.(2m) (km/day)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	169.81	162.43	172.98	176.26	123.33	126.14	114.13	130.46	158.11	188.99	216	214.27
1991	210.82	209.09	176.26	167.62	131.2	127.81	139.1	187.62	136.31	167.62	223.78	229.82
1993	217.1	206.1	200.3	198.17	128	118.5	114	104.5	136.6	159.6	149.2	218.7
1994	193	162.9	169.6	122	103.2	94.9	121.7	110.1	131	168.1	203.7	196.5
1995	192	183.7	187.6	141.6	111.1	123.1	127	118.5	120.4	146.6	180.8	201.6
Average	196.6	184.8	182.3	161.1	119.4	118.1	123.2	130.2	136.3	166.2	194.7	212.2
wind (km/day)	196.6	184.8	182.3	161.1	119.4	118.1	123.2	130.2	135.5	166.2	194.7	212.2
f(U)	0.8	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.8	0.8

Monthly Average Windspeed Elev.(2m) (m/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	2	1.9	2.1	2	1.6	1.5	1.3	1.5	1.8	2.2	2.5	2.5
1991	2.4	2.4	2	1.9	1.5	1.5	1.6	2.2	1.6	1.9	2.6	2.7
1993	2.5	2.4	2.3	2.3	1.5	1.4	1.3	1.2	1.6	1.8	1.7	2.5
1994	2.2	1.9	2	1.4	1.2	1.1	1.4	1.3	1.5	1.9	2.4	2.3
1995	2.2	2.1	2.2	1.6	1.3	1.4	1.5	1.4	1.4	1.7	2.1	2.3
Average	2.3	2.1	2.1	1.8	1.6	1.4	1.4	1.5	1.6	1.9	2.3	2.5

Cotinguiba Meteorological Data

Monthly Total Evaporation (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	210.46	171.4	219.4	171.1	139.48	113.95	136.7	140.85	169.45	181.1	205.35	232.3
1991	240.46	201.5	202.2	175.23	126.6	123.3	180.8	124.63	132.7	185.25	207.7	245.08
1993	227.7	216	225.4	207.1	142.6	103.1	113.5	131.3	173.9	160.6	159.5	212.5
1994	224.6	195.5	225.9	159.1	114.6	91.1	122.7	111.8	132.5	153.9	152.5	189.7
1995	174.5	171.3	207.7	140.3	137.7	115.5	112.4	119.55	128.75	160	178.6	183.9
Average	215.5	191.1	216.1	170.6	132.2	109.4	133.2	125.6	147.5	168.2	180.9	212.5

Monthly Average Humidity (%)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	72	70.4	69.7	72	74.9	76.8	78	76.7	73.6	73.8	71.9	74.9
1991	76.4	77.7	80.3	80.6	83.4	85.2	83.9	84.7	81.5	74.2	67.6	66.1
1993	69.4	68.9	69.4	71.1	76.4	78.2	79	77.6	72.8	76.9	77.3	73
1994	71.8	71.7	73.7	80.7	84.6	86.1	85.9	81.9	81.7	76.8	74	70.4
1995	71	69.2	68.7	74.8	77.8	80.3	82.1	78.2	77.2	65.7	80.6	63.7
Average	72.1	71.6	72.4	75.8	79.4	81.5	81.8	79.8	77.4	73.5	74.3	69.6
ea (mbar)	35.7	35.7	35.7	33.6	31.7	29.8	29.8	28.1	29.8	31.7	33.6	35.7
e3 (mbar)	25.7	25.6	25.8	25.5	25.2	24.3	24.4	22.4	23.1	23.3	25	24.8

Monthly Average Sunshine Hours (hrs)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990												
1991												
1992												
1993												
1994												
1995												
Av(90-96)												

Monthly Total Rainfall (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	58.3	31.3	26.8	129	79.2	78.6	157.3	82.2	81.4	45.2	9.8	20.8
1991	82.3	0	53.6	14	387.2	153.4	55.8	119.6	19.8	5.4	17.6	0
1993	3.2	0.6	3.2	4.6	80.9	117	98.2	62.8	5.9	272.4	13.1	21.8
1994	5.7	15.8	80.8	101.4	202.2	454.9	251	62	51.4	21.5	14.1	49.2
1995	6	4.8	6	58	122	244.8	151.4	99.2	48.6	6	87.2	0
Average	31.1	10.5	34.1	61.4	174.3	209.7	142.7	85.2	41.4	70.1	28.4	18.4

Araçaju Meteorological Data

1993

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	29.7	22.8	77	5.8	129.6		
FEV	30.1	23.0	78	16.1	120.3	253.0	
MAR	30.3	23.4	78	29.7	127.5	282.4	
ABR	30.1	22.5	79	106.7	117.9	223.1	
MAI	29.1	22.8	79	194.0	115.1	214.2	
JUN	27.7	22.4	77	95.3	114.8	181.3	
JUL	27.2	21.9	77	96.5	126.4	217.3	
AGO	27.1	22.0	76	127.1	214.9		
SET	28.0	22.5	77	52.4	130.6	249.2	
OUT	28.3	22.9	78	221.3	126.2	237.1	
NOV	29.0	23.4	75	31.2	131.6	270.9	
DEZ	29.5	23.3	74	43.2	138.6	296.8	

1994

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	30.1	23.6	74	81.4	138.4	314.1	
FEV	30.4	23.6	74	97.3	129.7		
MAR	30.4	23.5	75	164.0	137.9	247.3	
ABR	30.0	23.5	78	120.7	124.7	221.1	
MAI	29.3	23.1	77	155.1	155.1	206.2	
JUN	28.4	22.5	82	349.6	112.9		
JUL	27.9	22.0	82	222.8	186.0		
AGO	27.8	21.8	81	110.9	202.0		
SET	27.7	22.3	81	79.8	223.2		
OUT	28.5	22.8	77	34.4	287.2		
NOV	29.5	23.1	75	33.5	279.1		
DEZ	29.9	23.3	75	15.0	274.8		

1995

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	30.4	23.6	73	5.0	158.5	294.2	
FEV	29.9	23.5	73	55.5	140.9	264.5	
MAR	30.7	23.4	73	42.3	151.8		
ABR	30.1	23.0	80	174.3	133.0	215.0	
MAI	30.0	23.0	79	115.5	134.1	233.5	
JUN	28.4	20.6	82	204.2	106.9	268.7	
JUL	27.8		80	187.0	118.9	195.2	
AGO	27.7		78	47.4	121.3	177.8	
SET			76		116.3		
OUT	28.8	23.4	75	1.6	127.2	134.4	
NOV	28.5	23.8	78	153.2	103.0	128.6	
DEZ	29.2	24.1	76	2.0	104.3	155.4	

1996

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	29.9	24.5	75	27.0	105.3	281.3	0.5
FEV	30.9	24.6	73	14.4	113.8	290.8	0.6
MAR	31.3	24.7	74	46.7	104.8	257.8	0.3
ABR	29.7	24.3	81	455.0	64.7	156.1	0.2
MAI	28.7	23.4	82	317.4	62.8	181.4	0.1
JUN	28.3	22.9	78	126.7	85.7	216.7	0.2
JUL	27.5	21.1	80	118.2	83.7	182.4	0.2
AGO	27.2	22.3	83	197.5	85.5	183.6	0.2
SET	28.0	23.0	84	69.6	86.6	232.3	0.2
OUT	28.8	24.0	83	26.3	89.1	291.5	0.2
NOV	29.6	23.8	81	81.4	75.0	229.9	0.2
DEZ	30.1	24.2	79	32.7	92.1	310.8	0.2

1997

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	30.3	24.0	80	60.7	89.2	228.3	0.2
FEV	30.2	23.3	79	107.0	93.1	208.7	0.2
MAR	30.2	24.1	80	84.5	89.3	202.4	0.2
ABR							
MAI	28.3	23.0	80	304.1	119.5	176.7	2.6
JUN	27.9	21.3	81	232.0	95.0	183.2	2.3
JUL	27.4	21.5	78	150.6	128.0	206.8	2.3
AGO	27.4	21.3	76	61.5	143.1	218.5	2.7
SET	28.4	21.9	79	4.2	127.9	297.1	3.4
OUT	29.3	23.2	80	4.4	148.2	280.5	4.1
NOV	29.9	23.7	80	13.2	142.0	308.5	3.8
DEZ	30.4	24.4	79	9.1	142.5	295.9	4.0

Itabaianinha Meteorological Data

1993

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	31.2	20.7	82		138.3		4.1
FEV	31.7	20.9	80	26	146.8		4.1
MAR	32.0	23.3	78	83	170.8	237.4	4.6
ABR	31.3	24.4	83	70.7		193.3	3.9
MAI	28.9		88	35.2	84.3	179.8	3.0
JUN	26.8		91	123.8	61.6	138.9	2.6
JUL	26.8		90	81.7	75.0	195.9	2.7
AGO	26.9		90	111.0	74.3		3.3
SET	28.6		87	26.0	92.1	183.5	3.8
OUT	28.7		88	122.7	85.2	176.9	3.8
NOV	30.3		84	12.1	114.9	212.0	3.9
DEZ	31.7			20.0	148.8		4.5

1994

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	32.9		79			263.7	4.0
FEV	31.7		83	61.8	125.4	199.2	3.2
MAR	33.6		81	12.4	145.8	208.2	4.1
ABR	30.3		85	52.4	94.6	176.2	3.1
MAI	28.8		88	102.8	87.6	188.9	2.9
JUN	27.2		92	252.6	52.1	140.4	2.8
JUL							
AGO	26.6		90		76.5	187.4	
SET	27.0		93	56.1	81.6	163.0	2.9
OUT	29.2		90	64.8	113.3		3.8
NOV	30.9		86	4.3	148.4	250.8	4.4
DEZ	31.5		84	17.0	145.1	218.7	4.3

1995

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	32.6		82	13.9	154.4	243.1	4.5
FEV	33.1		81	30.0	134.1		3.2
MAR	32.8		82	16.9	147.9	233.8	
ABR	30.8		86	87.2	104.3	169.5	2.9
MAI	29.5		88	83.4	97.0	188.9	2.6
JUN	27.0	20.3	92	91.2	60.3	118.1	2.4
JUL	26.3	19.5	91	117.7	59.6	140.6	2.9
AGO	26.5	19.1	90	61.5	63.9	134.5	2.8
SET	27.0	19.8	87	59.6	78.6	144.4	3.4
OUT	30.3	20.8	78	5.2	141.7	257.2	3.8
NOV	29.8	21.6	82	123.5	118.3	172.7	3.2
DEZ	32.1	21.9	80	19.3	136.6	249.4	3.8

1996

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	31.6	22.3	76	21.9	146.7	244.4	4.3
FEV	32.6	22.7	73	10.2	172.1	256.3	3.6
MAR	32.8	23.4	75	12.9	156.9	233.6	
ABR	29.3	22.6	86	155.8	80.6	140.1	2.7
MAI	27.9	21.5	85	88.1	71.6	162.0	2.8
JUN	26.4	19.8	89	179.5	50.3	148.0	2.4
JUL	26.3	18.7	87	53.2	73.4	163.6	2.4
AGO	26.3	19.0	88	110.6	72.2	147.1	2.5
SET	27.4	20.3	86	63.1	84.1	186.6	3.1
OUT	29.8	21.4	82	14.5	123.1	246.5	4.1
NOV	30.0	21.8	83	134.0	106.9	156.2	3.9
DEZ	31.4	22.3	78	19.3	125.6	238.5	3.9

1997

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	31.4	23.0	78	66.1	138.1	202.5	4.4
FEV	29.7	22.2	83	85.0	89.1	160.9	2.9
MAR	30.0	22.3	84	128.2	88.0	151.4	3.3
ABR	28.8	21.8	88	215.8	67.2	132.6	2.6
MAI	27.2	20.8	88	339.2	57.7	137.6	2.7
JUN	27.4	20.3	87	63.3		139.9	2.8
JUL	26.0	18.8	84	81.3	81.0		2.9
AGO	26.4	18.4	82	38.9	96.6	179.1	3.3
SET	30.1	20.4	79	2.5	130.5	249.0	3.6
OUT	31.5	21.0	77	19.2	169.6	251.6	4.3
NOV	32.3	21.5	75	0.0	206.5	269.3	5.0
DEZ	33.2	23.2	77	5.9	201.3		4.9

Propria Meteorological Data

1993

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	32.8	23.2	79			123.5	3.6
FEB	32.9	23.1	76	45.8	117.2		3.9
MAR	33.3	23.1	75	1.1	169.7	241.4	3.3
APR	32.8	23.2	74	152	153.4	201.6	3.0
MAY	30.4	22.2	71	84.2	100.0	189.4	2.9
JUN	28.2	20.4		117.8	64.0	171.3	
JUL	28.0	19.8		61.3	68.9	175.5	
AUG	28.7	19.5		41.3	84.8	199.4	
SEP	31.0	18.5		7.8	165.2	140.4	
OCT	30.9	20.2			136.8	197.1	
NOV	31.2	20.1		11.0	111.0	244.1	
DEC	32.8	22.4		18.5	152.2	275.2	

1994

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	34.1	23.3		6.0	164.7	280.0	
FEB	33.8	23.5		10.2	143.2	203.7	
MAR		24.2			140.4	201.5	
APR	23.0			108.5	81.1	194.5	
MAY	21.9			134.7	54.6	178.7	
JUN	21.8			326.2	41.6	145.3	
JUL		20.4		208.5	58.6	167.0	
AUG		19.9		53.4	64.6	175.5	
SEP		20.0		55.4	85.3	151.0	
OCT		20.9		11.1	132.2	206.3	
NOV		21.8		12.9	163.7	219.3	
DEC		22.9		18.6	144.7	221.0	

1995

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN		23.1		3.0	153.6	263.5	
FEB		24.4		21	152.0	231.4	
MAR		23.8		20	176.4	248.3	
APR		23.3		51.4	96.1	176.6	
MAY		22.7		150.0	65.0	204.8	
JUN	27.7	21.3		235.0	40.3	133.7	
JUL	27.6	20.4		134.0	52.7	148.8	
AUG	27.6	19.9		93.2	61.2	139.0	
SEP	28.4	19.5	83	35.4	76.0	134.0	
OCT	31.7	19.9	73	4.4	149.6	214.9	3.3
NOV	31.5	21.5	76	57.1	101.4	102.6	3.6
DEC	34.0	22.5	70	0.0	120.7	158.1	4.0

1996

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	32.7	22.0	72	24.9	106.7	168.7	3.4
FEB	34.5	20.7	67	18	115.7	271.0	3.7
MAR	34.0		73	60.5	132.3	214.9	3.2
APR	30.6		84	233.6	103.4	121.5	2.4
MAY	29.3		87	187.5	86.3	156.8	2.0
JUN	28.4		87	157.9	79.1	180.8	2.2
JUL	27.2		89	131.6	68.9	130.2	2.1
AUG	27.4		87	160.5	70.8	125.0	2.1
SEP							
OCT	32.0		75	28.5	129.2	233.7	
NOV	32.8		74	48.5	132.6	184.7	
DEC	33.5		73	33.7	139.4	255.7	

1997

	TMAX (°C)	TMIN (°C)	UMI REL(%)	PRECIP (mm)	EVAP (mm)	INSL (h)	V.VENT(m/S)
JAN	33.6		73	77.6	142.2	206.6	3.8
FEB	32.9		73	19.4	119.4	195.6	3.4
MAR	33.3		77	96.0	124.9	162.4	3.4
APR	30.3		86	152.9	50.0	120.6	2.0
MAY	28.7		88	183.6	45.8	140.2	
JUN	28.6				54.5	153.7	
JUL							
AUG							
SEP							
OCT							
NOV							
DEC							

Itabaianinha (Inmet) Meteorological Data

Monthly Average Max Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	31.2	31.7	32	31.3	28.9	26.8	26.8	26.9	28.6	28.7	30.3	31.7
1994	32.9	31.7	33.6	30.3	28.8	27.2		26.6	27	29.2	30.9	31.5
1995	32.6	33.1	32.8	30.8	29.5	27	26.3	26.5	27	30.3	29.8	32.1
1996	31.6	32.6	32.8	29.3	27.9	26.4	26.3	26.3	27.4	29.8	30	31.4
1997	31.4	29.7	30	28.8	27.2	27.4	26	26.4	30.1	31.5	32.3	33.2
Average	31.9	31.8	32.2	30.1	28.5	27	26.4	26.5	28	29.9	30.7	32

Monthly Average Min Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	20.7	20.9	23.3	24.4								
1994												
1995						20.3	19.5	19.1	19.8	20.8	21.6	21.9
1996	22.3	22.7	23.4	22.6	21.5	19.8	18.7	19	20.3	21.4	21.8	22.3
1997	23	22.2	22.3	21.8	20.8	20.3	18.8	18.4	20.4	21	21.5	23.2
Average	22	21.9	23	22.9	21.2	20.1	19	18.8	20.2	21.1	21.6	22.5

Monthly Average Mean Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	25.95	26.3	27.65	27.85								
1994												
1995						23.65	22.9	22.8	23.4	25.55	25.7	27
1996	26.95	27.65	28.1	25.95	24.7	23.1	22.5	22.65	23.85	25.6	25.9	26.85
1997	27.2	25.95	26.15	25.3	24	23.85	22.4	22.4	25.25	26.25	26.9	28.2
Average	26.7	26.6	27.3	26.4	24.4	23.5	22.6	22.6	24.2	25.8	26.2	27.4
ea (mbar)	33.6	33.6	35.7	33.6	29.8	28.1	26.4	26.4	29.8	31.7	33.6	35.7

Monthly Total Sunshine Hours (hr's)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993			237.4	193.3	179.8	138.9	195.9		183.5	176.9	212	
1994	263.7	199.2	208.2	176.2	188.9	140.4		187.4	163		250.8	218.7
1995	243.1		233.8	169.5	188.9	118.1	140.6	134.5	144.4	257.2	172.7	249.4
1996	244.4	256.3	223.6	140.1	162	148	163.6	147.1	186.6	246.5	156.2	238.5
1997	202.5	160.9	151.4	132.6	137.6	139.9		179.1	249	251.6	269.3	
Average	238.4	205.5	210.9	162.3	171.4	137.1	166.7	162	185.3	233.1	212.2	235.5
Av. Daily	7.7	7.3	6.8	5.4	5.5	4.6	5.4	5.2	6.2	7.5	7.1	7.6

Itabaianinha (Inmet) Meteorological Data

Monthly Average Windspeed (m's)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	4.1	4.1	4.6	3.9	3	2.6	2.7	3.3	3.8	3.8	3.9	4.5
1994	4	3.2	4.1	3.1	2.9	2.8			2.9	3.8	4.4	4.3
1995	4.5	3.2		2.9	2.6	2.4	2.9	2.8	3.4	3.8	3.2	3.8
1996	4.3	3.6		2.7	2.8	2.4	2.4	2.5	3.1	4.1	3.9	3.9
1997	4.4	2.9	3.3	2.6	2.7	2.8	2.9	3.3	3.6	4.3	5	4.9
Average	4.3	3.4	4	3	2.8	2.6	2.7	3	3.4	4	4.1	4.3

wind (km/day)	371.5	293.8	345.6	259.2	241.9	224.6	233.3	259.2	293.8	345.6	354.2	371.5
f(U)	1.3	1.1	1.2	1	0.9	0.9	0.9	1	1.1	1.2	1.2	1.3

Monthly Total Evaporation (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	138.3	146.8	170.8		84.3	61.6	75	74.3	92.1	85.2	114.9	148.8
1994		125.4	145.8	94.6	87.6	52.1		76.5	81.6	113.3	148.4	145.1
1995	154.4	134.1	147.9	104.3	97	60.3	59.6	63.9	78.6	141.7	118.3	136.6
1996	146.7	172.1	156.9	80.6	71.6	50.3	73.4	72.2	84.1	123.1	106.9	125.6
1997	138.1	89.1	88	67.2	57.7		81	96.6	130.5	169.6	206.5	201.3
Average	144.4	133.5	141.9	86.7	79.6	56.1	72.3	76.7	93.4	126.6	139	151.5

Monthly Average Humidity (%)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	82	80	78	83	88	91	90	90	87	88	84	
1994	79	83	81	85	88	92		90	93	90	86	84
1995	82	81	82	86	88	92	91	90	87	78	82	80
1996	76	73	75	86	86	89	87	88	86	82	83	78
1997	78	83	84	88	88	87	84	82	79	77	75	77
Average	79.4	80	80	85.6	87.6	90.2	88	88	86.4	83	82	79.8

ea(mbar)	33.6	33.6	35.7	33.6	29.8	28.1	26.4	26.4	29.8	31.7	33.6	35.7
ed(mbar)	26.7	26.9	28.6	28.8	26.1	25.3	23.2	23.2	25.7	26.3	27.6	28.5

Monthly Total Rainfall (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993		2.6	8.3	70.7	35.2	123.8	81.7	111	26	122.7	12.1	20
1994		61.8	12.4	52.4	102.8	252.6			56.1	64.8	4.3	17
1995	13.9	30	16.9	87.2	83.4	91.2	117.7	61.5	59.6	5.2	123.5	19.3
1996	21.9	10.7	17.9	155.8	88.1	179.5	53.2	110.6	63.1	14.5	134	19.3
1997	66.1	85	128.2	215.8	339.2	68.3	81.3	38.9	2.5	19.2	0	5.9
Average	34	38	36.7	116.4	129.7	143.1	83.5	80.5	41.5	45.3	54.8	16.3

Jabiberi Meteorological Data

Monthly Average Max Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	30.7	32.8	30.6	27.3	25.5	26.5	25.8	25.1	28.2	29	29.1	27
1990	28.3	30.4	30.2	28.1	27.5	25.9	27.9	25.4	26.8	27	29.6	31
1991	30.8	31.8	30	27.7	25.1	25.3	24.7	25.5	26.2	29.2	30.4	29.5
1992	N.A.	N.A.	30.3	30.4	31.8	28.1	26.4	26.8	27.7	29.8	31.2	30.6
1993	32	32.2	34.2	32.4	29.8	27.6	27.6	27.1	29.4	28.3	29.9	33
1994	33.6	32.6	33.8	30.7	28.8	26.5	25.1	26.7	27.4	30.7	32.6	33.1
1995	34.3	34.5	34.4	31.4	30	26.8	26.2	26.8	27.4	31.8	31.1	33.6
1996	32.7	34	34.5	30.5	28.6	26.1	26.8	26.8	28.3	31.3	31.9	32.2
1997	32.5	30.4	30.9	30.1	27.9	28.2	26.8	27.3	31.6	33.7	34.4	35.4
Average	31.9	32.3	32.1	29.8	28.3	26.8	26.4	26.4	28.1	30.1	31.1	31.7

Monthly Average Min Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	20.9	21.7	21.4	20.5	19.8	20.1	20	18	20.8	20.5	20.8	20.8
1990	18.9	19.1	20.1	19.3	18.5	18.2	20	17.6	18.1	19.7	20.5	20.7
1991	21.1	21.6	21.1	20.2	18.9	19.1	17.2	17.9	18.5	18.1	20.8	21.5
1992	N.A.	N.A.	21.2	21.3	20.6	18.9	18.4	18.2	19.2	20.5	21.4	21.3
1993	21.7	22	23.1	22.2	21.1	19.3	19.8	19.3	21	21.3	22	22.7
1994	22.9	22.6	23.2	22.5	20.8	20.1	18.4	17.9	18.1	19.7	20.7	20.2
1995	22	23.1	22.6	22.2	21.7	19.4	18.3	17.6	18.2	19.9	21.4	22
1996	21.6	22.3	22.6	22.5	20.8	19.3	17.7	18.5	19.3	21.1	21.9	22
1997	22.3	21.8	21.9	21.3	20	19.3	17.8	17	19.5	21.2	21.3	22.6
Average	21.4	21.8	21.9	21.3	20.2	19.3	18.6	18	19.2	20.2	21.2	21.5

Monthly Average Mean Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	25.8	27.25	26	23.9	22.65	23.3	22.9	21.55	24.5	24.75	24.95	23.9
1990	23.6	24.75	25.15	23.7	23	22.05	23.95	21.5	22.45	23.35	25.05	25.85
1991	25.95	26.7	25.55	23.95	22	22.2	20.95	21.7	22.35	23.65	25.6	25.5
1992	N.A.	N.A.	25.75	25.85	26.2	23.5	22.4	22.5	23.45	25.15	26.3	25.95
1993	26.85	27.1	28.65	27.3	25.45	23.45	23.7	23.2	25.2	24.8	25.95	27.85
1994	28.25	27.6	28.5	26.6	24.8	23.3	21.75	22.3	22.75	25.2	26.65	26.65
1995	28.15	28.8	28.5	26.8	25.85	23.1	22.25	22.2	22.8	25.85	26.25	27.8
1996	27.15	28.15	28.55	26.5	24.7	22.7	22.25	22.65	23.8	26.2	26.9	27.1
1997	27.4	26.1	26.4	25.7	23.95	23.75	22.3	22.15	25.55	27.45	27.85	29
Average	26.65	27.05	27	25.55	24.25	23.05	22.5	22.2	23.65	25.15	26.15	26.6
ea (mbar)	33.6	35.7	35.7	31.7	29.8	28.1	26.4	26.4	28.1	31.7	33.6	33.6

Monthly Average Sunshine Hours (hrs)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	5.6	6.6	4.4	3.7	2.7	3.2	2.3	5.6	5.9	6.9	7.9	3.9
1990	7.4	7.1	8.1	7.1	6.6	6.1	6.2	7	6.4	6.2	8.4	8.3
1991	7.9	8.5	8.3	6.5	4.6	4.4	4.7	3.8	5.5	8.4	6.7	9.1
1992	6	3.7	5.9	5.9	8.2	5	4.5	5.1	5.9	9.2	7.8	6.6
1993	7.6	8.9	9.1	7.4	5.8	4.8	5.8	5.9	6.3	6.9	8.3	9
1994	9.2	7.6	8	6.5	6.4	4.7	4.6	6.3	6.9	6.7	8.2	9.1
1995	8	7.4	7.6	5.2	5.6	3.8	4.9	4.2	5.8	8.6	6	8.7
1996	7.8	8.7	7.8	5	5.1	4.4	5.2	4.6	6.3	9.1	6.1	8.6
1997	7.1	5.5	5.3	4.5	4.1	3.5	5	5.7	N.A.	7.7	8.2	8.3
Av(89-97)	7.4	7.1	7.2	5.8	5.5	4.4	4.8	5.4	6.1	7.7	7.5	8

Jabiberi Meteorological Data

Monthly Average Windspeed (m/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	1.4	1.6	1.2	0.6	0.3	0.6	0.9	0.7	1	1	1.3	0.9
1990	0	0	0	0	0	0	0	0	0	0	0	0
1991	2.5	1.8	0.7	1.9	2	1.6	1.7	2.1	2	2.5	3.1	2.6
1992	2.3	1.6	1.8	1.7	2	1.7	1.7	1.7	2.1	2.1	3.1	2.9
1993	2.8	2.9	2.8	2.7	2	1.8	1.8	1.9	2.1	2.6	2.9	3.5
1994	3.1	2.8	2.8	2.2	1.8	1.6	1.7	1.6	1.9	2.5	3.1	3.3
1995	3	2.9	3	2.2	1.8	1.6	1.7	1.5	1.8	2.6	2.7	2.7
1996	2.5	2.7	2.5	1.9	1.4	1.5	1.5	1.7	1.9	2.1	2.5	2.6
1997	2.4	1.9	1.8	1.2	1.3	1.1	1.2	1.4	2	2.8	2.8	3
Average	2.2	2	1.8	1.6	1.4	1.3	1.4	1.4	1.7	2.2	2.4	2.4

wind (km/day)	190.1	172.8	155.5	138.2	121	112.3	121	121	146.9	190.1	207.4	207.4
(RU)	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.7	0.8	0.8	0.8	0.8

Monthly Total Evaporation (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	17.5	131.1	117.6	101.6	
1990	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	
1991	81.6	65.4	116.5	130.1	70	13.7	76.7	58.1	95.1	116.4	133	174.2
1992	127.3	67.7	85.7	100.1	136.4	92.4	82.4	96	107.1	185.1	155.8	175.3
1993	205.5	201.1	258.2	174.2	116.9	82.3	106.2	90	175.1	109.8	164.7	261.6
1994	289.8	180.9	254.8	158.2	112.2	76.1	104.5	124.6	121	210	267.8	225.5
1995	283.2	208.3	239.8	139.1	127.9	64.4	81.1	107.3	119.7	222.5	163.5	204.2
1996	186.3	229.6	250.7	130.3	95.8	82.7	97.7	104.2	130.3	221.9	158.8	181.2
1997	196.2	144.6	162.8	112	97.2	90.4	59.9	133.2	199.2	225.7	243.2	250.3
Average	195.7	156.8	195.5	134.9	108.1	71.7	92.6	101.9	120.6	177.8	175.6	196.7

Monthly Average Humidity (%)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	71.5	65.7	68.9	79.3	82.2	77.8	76.9	75.1	72	68.8	68	76.1
1990	69.3	62	63.6	67.1	67.7	71.3	71.8	71.3	67.7	66.9	59.3	57.5
1991	57.7	55.6	58.7	62.2	65.9	80.4	78.9	85.8	N.A.	74	73.3	74.8
1992	N.A.											
1993	N.A.											
1994	N.A.	64.6	63.2	66.8	73.6	78.2	73.9	61.7	61.9	56.5	64.7	64.5
1995	63.5	63.1	62.9	70.6	76.3	80.3	79	77.4	79.1	65.7	87.1	68.8
1996	68.9	63.4	65.5	75.8	80.7	81.8	73.8	76.9	77.1	72.1	74.4	72.1
1997	72.6	77.9	N.A.	70.6	67.7	65.5						
Average	67.3	64.6	63.8	70.3	74.4	78.3	75.7	74.7	71.6	67.8	70.6	68.5

ea (mbar)	33.6	35.7	35.7	31.7	29.8	28.1	26.4	26.4	28.1	31.7	33.6	-33.6
ed (mbar)	22.6	23.1	22.8	22.3	22.2	22	20	19.7	20.1	21.5	23.7	23

Monthly Total Rainfall (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	70.1	0.5	202.7	334	589.9	354.9	359.7	175.3	66.9	106	17.4	224.5
1990	16	11	0	59.7	38	76.8	88.9	77.8	44	39	12.1	24.2
1991	7	19.2	106.7	50.3	133	148.6	49	105	26.3	5	104.7	0
1992	83.2	174.2	109.1	79.4	20.4	123.3	219.3	47.6	124.5	23.7	17.8	75.2
1993	12.4	6.2	9.3	63.2	47.1	87.1	81.2	91.1	12.4	124.4	18	8
1994	16.3	45.3	15.5	96.9	72.4	216.5	184.3	80	53.1	11.2	2.2	23.3
1995	1.4	7.1	7.8	55.2	87.8	90.2	135.9	86.2	51	1.4	93.8	32.2
1996	22.5	11.4	7.2	167.6	75.3	196.8	62.6	108	53.5	32.1	141.5	43.2
1997	152.2	134.3	222.8	150.4	234.4	114.9	93.9	52.5	0.5	2.1	2.7	7.5
Average	42.3	45.5	75.7	117.4	144.3	156.6	141.6	91.5	48	38.3	45.6	48.7

Jacarecica Meteorological Data

Monthly Average Max Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	25.5	26.5	27.8	28.8	28.9	25.8
1990	28.4	31.8	30.9	28.5	26	N.A.	26.2	27.2	27.7	30.2	32.5	32.4
1991	33	34	32.9	32.1	28	27.2	27.3	28.1	29.5	30.5	32.4	33.6
1992	32.2	28.3	27.5	28.8	28.6	26.6	26	26.8	27.2	30	30.3	30.8
1993	31.9	32.6	32.4	31.8	29	26.8	26.6	25.9	26.8	27.4	28.9	30.7
1994	32.3	32.6	33.1	29.8	27.5	25.8	25.1	28.7	24.8	30.5	32.6	34.1
1995	34.9	35.7	35.1	28.8	27.6	25.1	27.6	28.7	29.3	30.3	30	32.5
1996	32.4	33.9	33.6	30.4	28.6	28	27.3	27.8	28.3	30.3	30.7	32
1997	32.2	30.8	31.8	29.4	27.7	27.7	26.7	26.9	30.5	32.4	33.1	33.6
Average	32.2	32.5	32.2	30	27.9	26.7	26.5	27.4	28	30	31	31.7

Monthly Average Min Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	20	19.4	20.3	20.4	20.3	19.9
1990	19.8	21	21.1	20	18	N.A.	19.3	20.3	20.2	22.6	23.9	23.4
1991	23.3	24.1	23.8	23.5	22.3	21.6	20.7	21.7	22	20.8	22.7	23.1
1992	22.4	22.1	20.6	21.2	20	19.8	19.9	20.2	20.8	21.4	22.2	22.8
1993	23	23.4	22.9	23.2	22.1	20.1	19.4	19	19.6	20.4	21	21.7
1994	23.1	23.2	23.8	22.2	20.5	20.6	20.2	13.9	18.4	20.5	21.7	21.2
1995	21	22.6	21.4	20.7	20.2	18.9	18.4	16.5	17.2	18.5	20	21.3
1996	22.2	23.3	23.4	23.2	21.6	21	19.5	20.6	20.1	21.1	21.7	22.6
1997	22.8	22.5	23	22.2	21.1	20.8	21	20.3	21.7	22.1	22.6	23.7
Average	22.2	22.8	22.5	22	20.7	20.4	19.8	19.1	20	20.9	21.8	22.2

Monthly Average Mean Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	22.75	22.95	24.05	24.6	24.6	22.85
1990	24.1	26.4	26	24.25	22	N.A.	22.75	23.75	23.95	26.4	28.2	27.9
1991	28.15	29.05	28.35	27.8	25.15	24.4	24	24.9	25.75	25.65	27.55	28.35
1992	27.3	25.2	24.05	25	24.3	23.2	22.95	23.5	24	25.7	26.25	26.8
1993	27.45	28	27.65	27.5	25.55	23.45	23	22.45	23.2	23.9	24.95	26.2
1994	27.7	27.9	28.45	26	24	23.2	22.65	21.3	21.6	23.5	27.15	27.65
1995	27.95	29.15	28.25	24.75	23.9	22	23	22.6	23.25	24.4	25	26.9
1996	27.3	28.6	28.5	26.8	25.1	24.5	23.4	24.2	24.2	25.7	26.2	27.3
1997	27.5	26.65	27.4	25.8	24.4	24.25	23.85	23.6	26.1	27.25	27.85	28.65
Average	27.2	27.6	27.3	26	24.3	23.6	23.2	23.3	24	25.5	26.4	27
ea (mbar)	35.7	35.7	35.7	33.6	29.8	28.1	28.1	28.1	29.8	31.7	33.6	35.7

Monthly Average Sunshine Hours (hrs)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	N.a.	N.a.	N.a.	4.9	3.4	4.6	3.4	6.3	6.5	6.6	8.8	3.6
1990	8.1	8.3	9.3	7.4	7.1	6.2	5.5	7.1	7.4	7.9	8.2	9.2
1991	8.2	9.4	7.5	8.1	4.4	5.2	3.7	3.2	4.8	8.6	7.9	9.8
1992	7.5	5.3	7.2	7.3	7.9	5.6	5	5.3	4.9	9.5	7.7	7.4
1993	7.7	9.1	9.4	7.6	6.4	5	6.1	6.1	7.1	7.3	8.7	10.1
1994	10.1	8	7.3	6.8	6.9	4.4	5.4	6.2	5.9	8.1	8.8	8
1995	9.1	8.6	9.4	5.9	6.5	4.3	5.8	4.9	6.1	9.9	6.7	9.8
1996	8.7	9.9	8	4.9	4.5	6.1	5	4.5	6.5	9.3	7.1	9.1
1997	9	7.4	5.6	4.3	4.8	6	6.3	6.4	9.2	8.6	9.9	10.1
Av(89-97)	8.6	8.3	8	6.4	5.8	5.3	5.1	5.6	6.5	8.4	8.2	8.6

Monthly Average Windspeed (m/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	N.a.	N.a.	N.a.	0.7	0.7	0.8	0.9	0.8	0.8	1	1.2	0.8
1990	1.8	1.9	2	1.8	1.4	1.4	1.4	1.5	1.7	2.4	2.8	2.9
1991	2.7	2.6	2.2	1.9	1.8	1.5	1.6	1.8	1.8	2	2.5	2.5
1992	2.4	1.6	1.4	1.9	1.8	1.7	1.7	1.7	2.2	2.6	2.9	2.7
1993	2.5	2.6	2.5	2.2	1.5	1.3	1.2	1.6	2.3	2.7	2.7	3.2
1994	2.5	2.3	2	1.5	1.3	1.2	1.4	1.5	1.8	2.1	2.4	2.6
1995	2.3	2.2	2.3	1.7	1.3	1.4	1.5	1.3	1.5	1.8	1.9	2.1
1996	1.8	2	1.9	1.5	1.4	1.5	1.4	1.5	1.7	2.1	2	2.1
1997	2.2	1.8	1.8	1.3	1.5	1.2	1.3	1.6	1.8	2.3	2.4	2.4
Average	2.3	2.1	2	1.6	1.4	1.3	1.4	1.5	1.7	2.1	2.3	2.4
wind (km/day)	198.7	181.4	172.8	138.2	121	112.3	121	129.6	146.9	181.4	198.7	207.4
f(U)	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.8	0.8	0.8

Jacarecica Meteorological Data

Monthly Total Evaporation (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	N.A.	N.A.	N.A.	109.7	105	101	81.3	118.1	137.3	168.9	190	126.3
1990	171.5	180.9	224.7	160.3	121.5	109.6	109.1	120.8	134.3	166.8	191	229.4
1991	208.3	221.5	193.5	169.6	86.8	77.6	116.8	100.6	135.2	171.7	190.9	232.4
1992	217.5	138.7	166.5	157.8	147.2	87.1	81.3	100.5	113.7	192.3	198.9	196.7
1993	218.3	224.1	250.7	184	120.8	78.4	87.2	125	157.9	165.9	193.2	N.A.
1994	136.2	210.3	225.9	183.8	128.5	83.5	92.5	123.8	157.1	211.1	217	221.9
1995	236.7	219.4	222.3	128.1	127.4	86	116.1	114.6	135.6	209.5	156.2	245.5
1996	211.8	215.2	228.7	144.7	122.5	115.7	127.7	115.1	132.1	200.6	193.6	228.7
1997	228.6	178.7	196.5	99.2	107.8	115.9	106.2	125.3	193.7	244	262	258.7
Average	203.6	198.6	213.6	148.6	118.6	95	102	116	144.1	192.3	199.2	217.5

Monthly Total Evaporation (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	N.A.	N.A.	N.A.	109.7	105	101	81.3	118.1	137.3	168.9	190	126.3
1990	171.5	180.9	224.7	160.3	121.5	109.6	109.1	120.8	134.3	166.8	191	229.4
1991	208.3	221.5	193.5	169.6	86.8	77.6	116.8	100.6	135.2	171.7	190.9	232.4
1992	217.5	138.7	166.5	157.8	147.2	87.1	81.3	100.5	113.7	192.3	198.9	196.7
1993	218.3	224.1	250.7	184	120.8	78.4	87.2	125	157.9	165.9	193.2	N.A.
1994	136.2	210.3	225.9	183.8	128.5	83.5	92.5	123.8	157.1	211.1	217	221.9
1995	236.7	219.4	222.3	128.1	127.4	86	116.1	114.6	135.6	209.5	156.2	245.5
1996	211.8	215.2	228.7	144.7	122.5	115.7	127.7	115.1	132.1	200.6	193.6	228.7
1997	228.6	178.7	196.5	99.2	107.8	115.9	106.2	125.3	193.7	244	262	258.7
Average	203.6	198.6	213.6	148.6	118.6	95	102	116	144.1	192.3	199.2	217.5

Monthly Average Humidity (%)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	N.A.	N.A.	N.A.	82.4	85	83.6	84.3	80.8	79.5	75.8	70.8	79.1
1990	72.8	67.9	68.4	73.1	71.4	68.5	75.3	81.6	79.3	77.9	73	71.9
1991	71.9	68.9	72.6	75.8	83.1	81.2	75.5	79.2	76.5	78	73.1	72
1992	66.9	83.2	79.3	77.6	66	81.2	81.5	79.2	78.9	66.1	66.7	66.8
1993	63	63.3	62	64.7	70.6	73	71.1	72.4	71.4	71.1	67.5	62.9
1994	61.8	62.8	63.2	69	74.1	82.3	80.7	77.4	75.7	69.8	58.3	58.1
1995	65.8	60.3	62.6	75.2	77.8	80.8	72.3	73.5	78.5	72.7	76.8	65.7
1996	68.5	65	N.A.									
1997	N.A.											
Average	67.2	67.3	68	74	75.4	78.7	77.2	77.7	77.1	73.1	69.5	68.1

ea (mbar)	35.7	35.7	35.7	33.6	29.8	28.1	28.1	28.1	29.8	31.7	33.6	35.7
ed (mbar)	24	24	24.3	24.9	22.5	22.1	21.7	21.8	23	23.2	23.4	24.3

Monthly Total Rainfall (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1989	N.A.	N.A.	N.A.	344.9	479.4	164.1	303.4	83.9	64.8	29.8	7.4	331
1990	61.7	10.3	54.8	159.7	95.4	141.6	177.3	118.2	60.7	63.2	55.5	30.1
1991	31.9	4.1	46.1	79	299.5	219.4	88.9	179.9	49	25.4	59.9	0
1992	138.2	143.2	162.8	69.4	86.5	101	222.7	66.8	76.3	7.2	56.2	18.3
1993	7.5	0.8	9.1	81.7	48.2	154.2	89.3	91.9	37.3	123	11.5	8.4
1994	12.4	21.5	18.6	99.1	98.5	295.5	245.6	62.1	43.8	22	4.5	4.6
1995	1.5	7	5.4	62.8	148.7	312.2	195.6	118.7	33.5	2.4	16.5	0
1996	3.1	9.1	20.3	332.2	98.4	196	66.3	161	67.5	33.3	122.7	34.2
1997	64.1	103.5	35.6	238.2	284.2	177.2	176.5	90.7	3.8	2.5	0	8.2
Average	41.7	37.4	44.1	163	182.1	195.7	174	108.1	48.5	34.3	37.1	48.3

Piaui Meteorological Data

Monthly Average Max Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	30.6	32	31.6	29.9	28.9	27.4	27.1	26.4	26.9	28.6	30.5	29.4
1991	30	31	30	29.7	27	26.5	26.1	24.5	26.7	29.6	31.6	31.8
1992	31.3	27.8	28.6	29.1	28.7	26.5	24.4	24.8	26.9	28.6	29.3	29.2
1993	31.8	30.9	31.6	30.4	28.1	25.7	25.7	25.3	27.8	27.8	29.5	31.2
1994	32.9	33	30.8	31.3	28.8	27.7	26.8	26.3	26.9	29.3	31.8	32.2
1995	33.3	33.7	33.5	31	29.3	26.8	26.7	26.9	27.9	27.9	30.2	33.2
1996	32.1	33.8	33.7	30.3	28.6	27.6	27.5	26.9	28.1	30.6	31.3	32.1
1997	32.3	30.9	31.5	30.3	28.3	28.1	27.3	27.7	30.9	33	33.5	34.4
Average	31.8	31.6	31.4	30.3	28.5	27	26.5	26.1	27.8	29.4	31	31.7

Monthly Average Min Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	21.8	21	22.4	22.4	21	20.7	20.5	19.2	19.2	20.6	21.7	19.8
1991	20.3	20.4	20.9	21.9	21.1	20.6	19.4	17.6	19.1	19.3	21.7	22.1
1992	21.9	21.5	21.1	21.3	19.8	19.9	18.1	17.7	20.5	19.3	20.4	20.6
1993	22.2	21.1	20.8	21.5	20.4	19.2	18.4	18.8	19.4	20	20.6	21.4
1994	22.5	23.4	23	22.9	21.7	21.9	20	19.2	19.2	20.3	21.4	21.9
1995	21.9	22.5	22	22	21.1	20	18.3	17.9	18.9	18.9	21	20.9
1996	21.2	21.9	22.4	21.9	20.4	19.2	18.3	18.8	19.9	20.8	21.7	21.8
1997	22.4	21.7	22.3	21.5	20.5	20	19.5	18.6	19.5	20.8	21.3	22.4
Average	21.8	21.7	21.9	21.9	20.8	20.2	19.1	18.5	19.5	20	21.2	21.4

Monthly Average Mean Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	26.2	26.5	27	26.15	24.95	24.05	23.8	22.8	23.05	24.6	26.1	24.6
1991	25.15	25.7	25.45	25.8	24.05	23.55	22.75	21.05	22.9	24.45	26.65	26.95
1992	26.6	24.65	24.85	25.2	24.25	23.2	21.25	21.25	23.7	23.95	24.85	24.9
1993	27	26	26.2	25.95	24.25	22.45	22.05	22.05	23.6	23.9	25.05	26.3
1994	27.7	28.2	26.9	27.1	25.25	24.8	23.4	22.75	23.05	24.8	26.6	27.05
1995	27.6	28.1	27.75	26.5	25.2	23.4	22.5	22.4	23.4	23.4	25.6	27.05
1996	26.65	27.85	28.05	26.1	24.5	23.4	22.9	22.85	24	25.7	26.5	26.95
1997	27.35	26.3	26.9	25.9	24.4	24.05	23.4	23.15	25.2	26.9	27.4	28.4
Average	26.8	26.7	26.6	26.1	24.6	23.6	22.8	22.3	23.6	24.7	26.1	26.5
ea (mbar)	33.6	33.6	33.6	33.6	29.8	28.1	26.4	26.4	28.1	29.8	33.6	33.6

Monthly Average Sunshine Hours (hrs)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	7.3	7.6	7.7	6.3	6.6	5.4	5.3	6.8	6.6	6.7	7.5	7.8
1991	7.6	9	6.8	7	4.3	4.9	4.6	4.6	5.3	7.8	7.3	9.1
1992	5.9	3.9	7.1	7.6	7.9	4.9	5.2	5.1	5.8	8.8	7.4	6.8
1993	8.5	8	8.3	6.9	5.9	5	6	6.1	6.2	6.9	7.8	8.8
1994	8.8	7.7	6.5	7	6.6	4.8	5	6.2	6	8.1	8.5	7.7
1995	8.6	7.6	7.8	5.6	6.4	4.3	5.5	4.5	5.9	8.8	5.9	9
1996	8.4	9.2	7.8	4.8	5	5.8	5.4	4.5	5.9	8.5	6.1	8.7
1997	7	6.7	5.3	5.4	5.2	5.2	6.3	6.5	9.3	8.3	9.2	9.4
Av(90-97)	7.8	7.5	7.2	6.3	6	5	5.4	5.5	6.4	8	7.5	8.4

Piaui Meteorological Data

Monthly Average Windspeed (m's)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	0.5	1.2	1.3	1.1	0.9	1	1	1.1	1.2	1.4	1.6	1.7
1991	1.6	1.8	1.5	1.2	1.1	1	1	1.1	1.2	1.5	1.8	1.9
1992	2	1.1	1.1	1	1.2	1	1	1.1	1.3	1.6	2	1.6
1993	1.5	1.5	1.6	1.5	1.1	1	1.1	1.1	1.4	1.5	1.7	2.1
1994	1.9	1.7	1.7	1.2	1	0.9	1	1.1	1.2	1.5	1.9	2
1995	1.8	1.7	1.8	1.2	1	1	1.1	1	1.1	1.5	1.6	1.7
1996	1.5	1.6	1.4	1.1	0.9	1.1	1	1.1	1.2	1.6	1.6	1.5
1997	1.5	1.2	1.3	0.9	0.9	0.9	1	1.1	1.4	1.7	1.8	1.9
Average	1.5	1.5	1.5	1.2	1	1	1	1.1	1.3	1.5	1.8	1.8

wind (km/day)	129.6	129.6	129.6	103.7	86.4	86.4	86.4	95	112.3	129.6	155.5	155.5
f(U)	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7

Monthly Total Evaporation (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	413.7	375.2	488.7	379.6	319.6	124.4	97	112.5	142.3	142.8	173	198.8
1991	202.7	203	186.1	152.3	113.9	81	94.9	93.1	123.8	184.1	194.3	229.8
1992	203.8	123.3	151.7	128.7	136.7	91	83.3	104.4	126.3	192.6	192.5	187.5
1993	197.2	195.7	216	167.8	123.3	95.8	100.6	106.1	133.2	144.7	182.6	232.3
1994	244.9	191.3	221.5	156	121.4	83.9	88	113.7	124.1	175.2	212.4	222.5
1995	224.5	203	226.2	147.8	116.3	85.3	92	99.8	119.2	197.4	152.7	215.3
1996	197	210.7	203.3	114.3	100	100	104.3	99.2	114	179.2	161.6	196.7
1997	170.9	141.7	147.1	117.7	95.1	89.7	103.2	116.9	161.2	201.1	226.7	243.5
Average	231.8	205.5	230.1	170.5	140.8	93.9	95.4	105.7	130.5	177.1	187	215.8

Monthly Average Humidity (%)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	69.8	65.3	66.6	74	77	81.3	79	76.2	77.1	76.8	70.1	63.8
1991	64	61	65.9	68.2	76.5	83.4	78.2	79.6	70.1	59.6	64.8	62
1992	65	76.2	72.3	72.3	69	81.4	79.7	78.1	78.1	67.1	67	67.6
1993	62.4	61.6	60.7	65.5	69	74.4	71.6	74.1	69.4	69.3	64.7	62.5
1994	60.8	62.4	69.9	67.7	73.9	79.6	81.2	73.5	72.4	66.4	59.1	59
1995	59	57.5	58.3	67	72.9	76	72	66.7	76.7	67.4	71.8	65.1
1996	66.6	63	64.7	76	79.4	80.5	82.2	86.2	82.7	78.7	80.1	76.1
1997	77.5	80.4	79.6	84.9	85.7	86.9	81.9	77.4	72.2	69.1	68	68.2
Average	65.6	65.9	67.3	72	75.4	80.4	78.2	76.5	74.8	69.3	68.2	65.5
ea (mbar)	33.6	33.6	33.6	33.6	29.8	28.1	26.4	26.4	28.1	29.8	33.6	33.6
ed (mbar)	22	22.1	22.6	24.2	22.5	22.6	20.6	20.2	21	20.7	22.9	22

Monthly Total Rainfall (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1990	82.4	12.8	61.5	94.5	84.7	136.4	126.3	160.8	66	92.2	44	51.8
1991	13.7	4.6	60.8	91.9	202.8	212.2	64.2	106.6	36.4	1.8	62.1	31.5
1992	202.3	150	144.4	49.1	51.6	168.1	164.3	65.9	108.4	15.9	8.6	21
1993	4.4	0.7	8.9	51.4	46.2	133.1	71	106.5	22.5	129.1	26	12.1
1994	5.9	40.8	43	91.8	126.5	213	216	59	70.6	25.3	11.6	12.5
1995	14.6	30.9	14.7	160	136.1	200.8	146.8	94.9	62.1	4.5	92.3	62
1996	43	23.3	19.9	196.2	148	161.3	84	113.6	53.8	21.9	162.3	29
1997	99.8	91.9	229.2	164.7	303.4	119.9	113.9	74.6	1.7	7.9	0	4.6
Average	58.3	44.4	72.8	112.5	137.4	168.1	123.3	97.7	52.7	37.3	50.9	21.1

Piaui (Inmet) Meteorological Data

Monthly Average Max Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	32.8	32.9	33.3	32.8	30.4	28.2	28	28.7	31	30.9	31.2	32.8
1994	34.1	33.8										
1995						27.7	27.6	27.6	28.4	31.7	31.5	34
1996	32.7	34.5	34	30.6	29.3	28.4	27.2	27.4		32	32.8	33.5
1997	33.6	32.9	33.3	30.3	28.7	28.6						
Average	33.3	33.5	33.5	31.2	29.5	28.2	27.6	27.9	29.7	31.5	31.8	33.4

Monthly Average Min Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	23.2	23.1	23.1	23.2	22.2	20.4	19.8	19.5	18.5	20.2	20.1	22.4
1994	23.3	23.5	24.2	23	21.9	21.8	20.4	19.9	20	20.9	21.8	22.9
1995	23.1	24.4	23.8	23.3	22.7	21.3	20.4	19.9	19.5	19.9	21.5	22.5
1996	22	20.7										
1997												
Average	22.9	22.9	23.7	23.2	22.3	21.2	20.2	19.8	19.3	20.3	21.1	22.6

Monthly Average Mean Temp (C)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	28	28	28.2	28	26.3	24.3	23.9	24.1	24.75	25.55	25.65	27.6
1994	28.7	28.65										
1995						24.5				25.8	26.5	28.25
1996	27.35	27.6										
1997												
Average	28	28.1	28.2	28	26.3	24.4	23.9	24.1	24.8	25.7	26.1	27.9

ea (mbar)	37.8	37.8	37.8	37.8	33.6	29.8	28.1	29.8	29.8	31.7	33.6	35.7
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Monthly Total Sunshine Hours (hrs)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	123.5		241.4	201.6	189.4	171.3	175.5	199.4	140.4	197.1	244.1	275.2
1994	280	203.7	201.5	194.5	178.7	146.3	167	175.5	151	206.3	219.3	221
1995	263.5	231.4	248.3	176.6	204.8	133.7	148.8	139	134	214.9	102.6	158.1
1996	168.7	271	214.9	121.5	156.8	180.8	130.2	125		233.7	184.7	255.7
1997	206.6	195.6	162.4	120.6	140.2	153.7						
Average	208.5	225.4	213.7	163	174	157.2	155.4	159.7	141.8	213	187.7	227.5
Av. Daily	6.7	8.1	6.9	5.4	5.6	5.2	5.0	5.2	4.7	6.9	6.3	7.3

Piaui (Inmet) Meteorological Data

Monthly Average Windspeed (m's)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	3.6	3.9	3.3	3	2.9							
1994												
1995										3.3	3.6	4
1996	3.4	3.7	3.2	2.4	2	2.2	2.1	2.1				
1997	3.8	3.4	3.4	2								
Average	3.6	3.7	3.3	2.5	2.5	2.2	2.1	2.1		3.3	3.6	4

wind (km/day)	311	319.7	285.1	216	216	190.1	181.4	181.4	0	285.1	311	345.6
f(U)	1.1	1.1	1	0.9	0.9	0.8	0.8	0.8	0.3	1	1.1	1.2

Monthly Total Evaporation (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993		117.2	169.7	153.4	100	61	68.9	84.8	165.2	136.8	111	152.2
1994	164.7	143.2	140.4	81.1	54.6	41.6	58.6	64.6	85.3	132.2	163.7	144.7
1995	153.6	152	176.4	96.1	65	40.3	52.7	61.2	76	149.6	101.4	120.7
1996	106.7	115.7	132.3	103.4	86.3	79.1	68.9	70.8		129.2	132.6	139.4
1997	142.2	119.4	124.9	50	45.8	54.5						
Average	141.8	129.5	148.7	96.8	70.3	55.9	62.3	70.4	108.8	137	127.2	139.3

Monthly Average Humidity (%)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	79	76	75	74	77							
1994												
1995									83	73	76	70
1996	72	67	73	84	87	87	88	87		75	74	73
1997	73	73	77	86	88							
Average	74.7	72	75	81.3	84	87	88	87	83	74	75	71.5
ea (mbar)	37.8	37.8	37.8	37.8	33.6	29.8	28.1	29.8	29.8	31.7	33.6	35.7
ed (mbar)	28.2	27.2	28.4	30.7	28.2	25.9	24.7	25.9	24.7	23.5	25.2	23.5

Monthly Total Rainfall (mm)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993		45.8	1.1	15.2	84.2	117.8	61.3	41.3	7.8		11	18.5
1994	6	10.2		108.5	134.7	326.2	208.5	53.4	55.4	11.1	12.9	18.6
1995	3	2.1	2	51.4	150	235	134	93.2	35.4	4.4	57.1	0
1996	24.9	1.8	60.5	233.6	187.5	157.9	131.6	160.5		28.5	48.5	33.7
1997	77.6	19.4	96	152.9	183.6							
Average	27.9	15.9	39.9	112.3	148	209.2	133.9	87.1	32.9	14.7	32.4	17.7