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Water Resources Data Puerto Rico and the U.S. Virgin Islands Water Year 1997

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT
PR-97-1
Prepared in cooperation with the Commonwealth of Puerto Rico, the Government of the U.S. Virgin Islands and other agencies

CALENDAR FOR WATER YEAR 1997

1996

OCTOBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
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27	28	29	30	31		

NOVEMBER

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DECEMBER

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1997

JANUARY

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FEBRUARY

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MARCH

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APRIL

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JUNE

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JULY

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27	28	29	30	31		

AUGUST

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31						

SEPTEMBER

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	1	2	3	4	5	6
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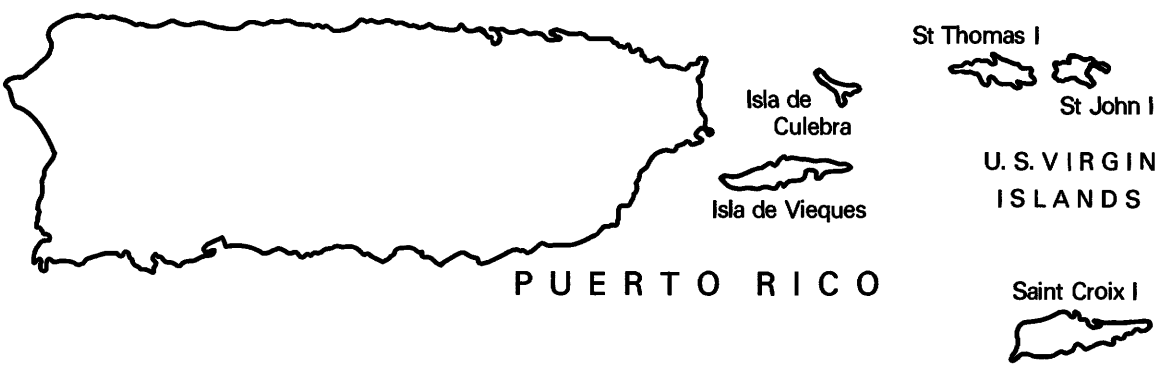
21	22	23	24	25	26	27
28	29	30				

Water Resources Data Puerto Rico and the U.S. Virgin Islands Water Year 1997

by P.L. Díaz, Z. Aquino, C. Figueroa-Alamo, R.J. Vachier, and A.V. Sánchez



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT
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U.S. DEPARTMENT OF THE INTERIOR
BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY
Gordon P. Eaton, Director

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1998

PREFACE

This annual hydrologic data report of Puerto Rico and the U.S. Virgin Islands is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface- and ground-water data-collection networks in each state, Puerto Rico, the U.S. Virgin Islands, and the other Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by state, local and Federal agencies, and the private sector for developing and managing our Nation's land and water resources.

The report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey, Water Resources Division who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete and adheres to Geological Survey policy and established guidelines, the following personnel contributed significantly to the collection, processing and tabulations of the data:

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This report was prepared in cooperation with agencies of the Commonwealth of Puerto Rico, the Government of the U.S. Virgin Islands, and with other federal agencies under the general supervision of Rafael W. Rodríguez, District Chief, Caribbean District, San Juan, Puerto Rico.

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Water resources data for surface-water, quality-of-water, and ground-water records for the 1997 water year for Puerto Rico and the U.S. Virgin Islands consists of records of discharge, water quality of streams, and water levels of wells. This report contains discharge records for 74 streamflow-gaging stations; daily sediment records for 26 streamflow stations; 95 partial-record or miscellaneous streamflow stations; stage records for 16 reservoirs; water-quality records for 16 streamflow-gaging stations, 42 ungaged streamsites, 11 lake sites, 2 lagoons, and 1 bay; and water-level records for 68 observation wells. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating local and federal agencies in Puerto Rico and the U.S. Virgin Islands.

14. SUBJECT TERMS

*Surface water, *Water quality, *Ground water, Aquifers, Chemical analysis, Gaging stations, Hydrologic data sediments, Streamflow, Water analysis, Water levels, Lakes

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SURFACE-WATER AND WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

(Letter after station name designates type of data:
(d) discharge, (c) chemical, (b) biological, (s) sediment, (p) pesticide, (e) elevation, gage heights)

	Station number	Page
RIO GUAJATACA BASIN		
Río Guajataca at Lares (d,c,b)	50010500	46
Lago Guajataca at Damsite near Quebradillas (e)	50010800	49
Canal Principal de Diversiones at Lago Guajataca (c,b)	50011000	50
Río Guajataca above mouth near Quebradillas (c,b)	50011400	52
RIO CAMUY BASIN		
Río Camuy near Bayaney (d)	50014800	56
RIO GRANDE DE ARECIBO BASIN		
Lago Garzas near Adjuntas (e)	50020100	58
Río Grande de Arecibo near Adjuntas (c,b)	50020500	59
Río Grande de Arecibo below Utuado (d,s)	50024950	61
Río Grande de Arecibo near Utuado (c,b)	50025000	71
Río Saliente at Coabey near Jayuya (d)	50025155	73
Río Caonillas at Paso Palma (d,s)	50026025	74
Río Caonillas above Lago Caonillas near Jayuya (c,b)	50026050	86
Lago Caonillas at Damsite near Utuado (e)	50026140	88
Río Grande de Arecibo below Lago Dos Bocas near Florida (c,b)	50027250	89
Río Grande de Arecibo above Arecibo (d,s)	50027750	91
Río Tanamá near Utuado (d,c,b,s)	50028000	98
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Río Grande de Arecibo at Central Cambalache (d,c,b)	50029000	108
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Río Orocovis near Orocovis (c,b)	50030700	113
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Lago El Guineo at Damsite near Villalba (e)	50032290	118
Lago de Matrullas at Damsite near Orocovis (e)	50032590	119
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Río de La Plata at Proyecto La Plata (c,b)	50043000	141
Río de La Plata at Comerio (d,s)	50043800	143
Río de La Plata near Comerio (c,b)	50044000	150
Río Guadiana near Naranjito (c,b)	50044850	152
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Río de La Plata below La Plata Dam (d,s)	50045010	155
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RIO HONDO BASIN		
Río Hondo at Flood Channel near Cataño (c,b)	50047530	166

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Río Sabana at Vista Monte (d)	50047540	169
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Río de Bayamón near Aguas Buenas (c,b)	50047600	178
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Laguna San José No 2 at San Juan (c,b)	50049820	191
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Bahía de San Juan No 5 at San Juan (c,b)	50049920	192
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Río Cayaguas at Cerro Gordo (d)	50051310	211
Río Grande de Loíza at Highway 183 near San Lorenzo (d,s)	50051800	212
Río Turabo above Borinquen (d,s)	50053025	219
Río Grande de Loíza at Caguas (d,c,b,s)	50055000	226
Río Caguitas near Aguas Buenas (d,s)	50055100	235
Río Caguitas near Caguas (d,s)	50055170	242
Río Caguitas at Villa Blanca at Caguas (d,s)	50055225	248
Río Caguitas at Highway 30 at Caguas (c,b)	50055250	255
Río Bairoa at Bairoa (d,s)	50055390	257
Río Bairoa near Caguas (c,b)	50055400	263
Río Gurabo:		
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Río Fajardo above Fajardo (d,s)	50070500	322
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RIO MAUNABO BASIN		
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Lago Patillas at Damsite near Patillas (e)	50093045	363
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Río Descalabrado near Los Llanos (d)	50108000	371
RIO JACAGUAS BASIN		
Río Toa Vaca above Lago Toa Vaca (d,s)	50110900	372
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RIO INABON BASIN		
Río Inabón at Real Abajo (d)	50112500	382
RIO BUCANA BASIN		
Río Bucaná:		
Río Cerrillos above Lago Cerrillos near Ponce (d)	50113800	383
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SURFACE-WATER AND WATER-QUALITY STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME--Continued

	Station number	Page
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Río Portugués near Ponce (d,c,b)	50115000	389
Río Portugués at Ponce (c,b,p)	50116200	392
RIO GUAYANILLA BASIN		
Río Guayanilla near Guayanilla (d)	50124200	394
Río Guayanilla at Central Rufina (c,b,p)	50124700	395
RIO YAUCO BASIN		
Lago Lucchetti at Damsite near Yauco (e)	50125780	397
RIO LOCO BASIN		
Lago Loco at Damsite near Yauco (e)	50128900	398
Río Loco at Guánica (c,b,p)	50129700	399
RIO GUANAJIBO BASIN		
Río Guanajibo at Highway 119 at San Germán (d)	50131990	402
Río Guanajibo near San Germán (c,b)	50133600	403
Río Rosario near Hormigueros (d,c,b,s)	50136400	405
Río Guanajibo near Hormigueros (d,c,b,p)	50138000	413
RIO YAGUEZ BASIN		
Río Yagüez near Mayagüez (c,b)	50138800	418
RIO GRANDE DE AÑASCO BASIN		
Lago Guayo at Damsite near Castañer (e)	50141500	420
Río Grande de Añasco near Lares (c,b)	50143000	421
Río Grande de Añasco near San Sebastián (d,c,b,s)	50144000	423
Río Grande de Añasco near Añasco (c,b,p)	50146000	426
RIO CULEBRINAS BASIN		
Río Culebrinas near San Sebastián (c,b)	50147600	430
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Turpentine Run at Mount Zion (d)	50274000	529
ST JOHN, US VIRGIN ISLANDS		
Guinea Gut at Bethany (d)	50295000	530
ST CROIX, US VIRGIN ISLANDS		
Jolly Hill Gut at Jolly Hill (d)	50345000	531

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RIO GUAJATACA BASIN
Well 182422067015100 Local number 165 464
Well 182647066552400 Local number 202 465

RIO GRANDE DE ARECIBO BASIN
Well 182737066370900 Local number 204 466
Well 182616066364100 Local number EN-1 468
Well 182737066370900 Local number FL-1 469
Well 182209066340600 Local number TI-1 470

RIO GRANDE DE MANATI BASIN
Well 182549066304300 Local number 166 471
Well 182757066325600 Local number 206 472
Well 182710066303700 Local number 207 473
Well 182308066260400 Local number 210 474
Well 182548066265700 Local number CS-7 475
Well 182506066280200 Local number HI-2 476

RIO CIBUCO BASIN
Well 182647066201700 Local number 70 477
Well 182615066235300 Local number 211 478
Well 182515066194000 Local number 212 479
Well 182330066185700 Local number 213 480
Well 182614066261500 Local number PA-2 481
Well 182712066251700 Local number TO-3 482

RIO DE LA PLATA BASIN
Well 182530066135400 Local number 216 483
Well 182655066142400 Local number 217 484
Well 182804066173500 Local number DA-1 485
Well 182620066163203 Local number HG-4 486
Well 182657066162700 Local number SA-1 487
Well 182657066162701 Local number SA-3 488
Well 182548066164101 Local number MA-2 489
Well 182526066165001 Local number SR-2 490
Well 182654066150600 Local number TB-1 491

RIO HONDO TO RIO PUERTO NUEVO BASINS
Well 182441066082600 Local number 219 492
Well 182511066045401 Local number PN-2 493
Well 182435066052700 Local number PN-5 494
Well 182445066043401 Local number PN-6 495
Well 182443066041502 Local number PN-8c 496
Well 182417066042700 Local number PN-10 497
Well 182349066032600 Local number PN-13 498
Well 182406066034700 Local number PN-19 499

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RIO GRANDE DE LOIZA BASIN
Well 181550065593200 Local number 50 500
Well 182515065594100 Local number 222 501
Well 181513065554601 Local number CJ-TW3B 502
Well 181352066025300 Local number CJ-TW19A 503

RIO HERRERA TO RIO ANTON RUIZ BASINS
Well 181823065401900 Local number RF-04 504
Well 181917065382701 Local number RF-12 505
Well 182131065421100 Local number RP-04 506
Well 182138065431800 Local number RS-02 507

RIO HUMACAO TO RIO SECO BASINS
Well 175858066100200 Local number 6 508
Well 180415065513900 Local number 96 509
Well 175719066085500 Local number P-13 510

RIO SALINAS TO RIO JACAGUAS BASINS
Well 175829066232200 Local number 87 511
Well 180002066132200 Local number HW-TW-01 512
Well 180001066122002 Local number HW-TW-03C 513
Well 175947066130601 Local number HW-TW-05B 514
Well 175957066123400 Local number HW-TW-13 515
Well 175903066165000 Local number PG-07 516
Well 175943066224800 Local number PS-07 517
Well 180206066135500 Local number RM-05 518
Well 180104066152300 Local number RM-10 519

RIO INABON TO RIO LOCO BASINS
Well 180133066503300 Local number 132 520
Well 175950066354200 Local number 141 521
Well 180045066381600 Local Number AN-1 522

RIO GUANAJIBO BASIN
Well 180132067033800 Local number 143 523
Well 180628067084300 Local number CA-1 524

RIO CULEBRINAS BASIN
Well 182442067091700 Local number 200 525

ST. CROIX, U.S. VIRGIN ISLANDS
Well 174225064472000 Local number 2 534
Well 174243064475100 Local number 3 535
Well 174316064480800 Local number 13 536

ST. THOMAS, U.S. VIRGIN ISLANDS
Well 182038064550300 Local number 6 537
Well 182038064580000 Local number 8 538

ST. JOHN, U.S. VIRGIN ISLANDS
Well 181956064464500 Local number 11 539

WATER RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1997
DISCONTINUED STREAMFLOW STATIONS

The following continuous-record streamflow stations in Puerto Rico and the U.S. Virgin Islands have been discontinued or converted to partial-record stations. Daily streamflow or stage records were collected for the period of record shown for each station.

Station number	Station name	Drainage area (mi^2)	Period of record
50007000	Quebrada de los Cedros near Isabela	6.91	1970
50010600	Río Guajataca above Lago de Guajataca	--	1984-89
50011000	Canal Diversion Lago Guajataca	--	1970
50011200	Río Guajataca below Lago Guajataca	--	1969-70,1984-87
50011400	Río Guajataca above mouth near Quebradillas	--	1969-70,1984-89
50013000	Río Camuy near Lares	7.62	1969-71
50014000	Río Criminales near Lares	4.68	1969-70
50014600	Río Camuy at Tres Pueblos Sinkhole	--	1990-96
50015700	Río Camuy near Hatillo	--	1984-96
50016000	Río Camuy near Camuy	--	1969-73
50021000	Río Pellejas at Central Pellejas	5.46	1968-70
50021050	Río Pellejas below Central Pellejas	7.89	1972-75
50021500	Río Pellejas near Utuado	9.55	1969-71
50023000	Río Viví near Central Pellejas	5.66	1969-75
50027200	Río Grande de Arecibo blw. Lago dos Bocas	169	1970-71
50029000	Río Grande de Arecibo at Central Cambalache	200	1969-83
50031500	Río Sana Muerto near Orocovis	3.68	1965-70
50035200	Río Grande de Manatí at Hwy 145 at Ciales	132	1972
50035950	Río Cialitos at Hwy 649 at Ciales	17	1970-82
50038360	Río Mavilla near Corozal	9.51	1969-70
50038600	Río Unibón near Morovis	5.29	1969-70
50038700	Río Morovis at Morovis	1.26	1968
50038900	Río Indio at Vega Baja	--	1963,66,71
50039600	Río Cibuco at Central San Vicente	--	1969-72
50043200	Río Usabon near Barranquitas	9.15	1968-69,71
50043400	Río Aibonito Tributary near Aibonito	1.13	1968-71
50044600	Río Guadiana near Naranjito	1.73	1971
50044650	Quebrada del Toro near Naranjito	0.54	1971
50044800	Quebrada Anones near Naranjito	2.32	1971
50045700	Río Lajas at Toa Alta	8.65	1966-75
50047820	Río de Bayamón at Hwy 174 near Bayamón	31.90	1966
50048000	Río de Bayamón at Bayamón	71.90	1963-67
50049000	Río Piedras at Río Piedras	12.5	1971-82, 1987-93
50049310	Quebrada Josefina at Piñero Avenue	3.84	1988-91
50053050	Río Turabo at Borinquen	7.89	1984-90
50054000	Quebrada de las Quebradillas near Caguas	6.25	1969-71,73
50055650	Quebrada Caimito near Juncos	0.82	1984-87
50056000	Río Valenciano near Las Piedras	6.85	1971
50056900	Quebrada Mamey near Gurabo	2.30	1984-92
50058300	Quebrada Arena near Caguas	--	1971

DISCONTINUED STREAMFLOW STATIONS--Continued

Station number	Station name	Drainage area (mi^2)	Period of record
50059000	Río Piedras at Río Piedras	12.5	1971-82,1987-93
50061300	Río Canovanillas near Loíza	14.40	1968-73
50062500	Río Herrera near Colonia Dolores	2.75	1968-72
50063300	Río Espíritu Santo near El Verde	2.23	1968-73
50063500	Quebrada Toronja at El Verde	0.064	1983-96
50065700	Río Mameyes at Hwy 191 at Mameyes	11.80	1967-85
50072000	Río Fajardo at Fajardo	21.60	1960-63
50073200	Río Daguao at Daguao	2.26	1966-82
50073400	Quebrada Palma at Daguao	4.84	1972-77
50074000	Río Santiago at Naguabo	4.99	1966-82
50075500	Río Blanco at Florida	11.00	1966-82
50076000	Río Blanco near Florida	12.30	1983-85
50077000	Río Blanco at Río Blanco	17.60	1973-77
50077400	Río Blanco at Colonia La Fe	18.80	1967-70
50078500	Río Anton Ruíz at Central Pasto Viejo	4.33	1968
50081500	Río Humacao near Humacao	9.23	1973
50082000	Río Humacao at Hwy 3 at Humacao	17.30	1983-85
50082200	Río Humacao near La Suiza	19.90	1965-66,1969-71
50082800	Río Guayanés near Colonia Laura	4.69	1969-82
50083500	Río Guayanés near Yabucoa	17.20	1969-71
50084000	Río Limones near Yabucoa	7.89	1969-71
50085100	Río Guayanés at Central Roig	26.60	1965-66,1968,70
50086100	Río del Ingenio at Comunas	5.50	1965-66,1968-69
50086500	Río Guayanés at Playa Guayanés	34.00	1965-66,1968-71
50087200	Caño Santiago near Central Roig	6.04	1965-71
50091000	Río Maunabo at Maunabo	12.40	1965,67,1969-82
50091200	Río Maunabo near Maunabo	12.70	1971-72
50091400	Río Jacaboa near Lamboglia	4.13	1965-73
50091700	Río Chico at Patillas	6.82	1965,1969-72
50091800	Río Chico at Providencia	4.90	1965,1967-69,1971
50094200	Río Grande de Patillas at Patillas	27.90	1967,1969,1971
50094300	Río Grande de Patillas at Providencia	29.00	1971
50094400	Río Nigua at Pitahaya	5.86	1965,1969,1970-71,1973
50095200	Río Guamaní at Guayama	8.22	1969-71
50095500	Río Guamaní near Guayama	12.30	1969-70
50099000	Quebrada Aguas Verdes near Salinas	0.39	1989
50106500	Río Coamo near Coamo	46.00	1967-68,1984-85,1986
50106900	Río Coamo below Lago Coamo near Coamo	65.40	1967-68
50107200	Río Coamo at mouth near Santa Isabel	69.30	1967-68
50108200	Río Descalabrado at Las Ollas	13.90	1965,1967-71
50108500	Río Descalabrado near Santa Isabel	18.10	1966-67
50111200	Río Toa Vaca near Villalba	21.40	1966-70
50111700	Río Jacaguas near Juana Díaz	53.20	1966-68
50111750	Río Jacaguas below Quebrada Guanábana	56.30	1989
50112100	Río Jacaguas near Arús	59.60	1966-67

DISCONTINUED STREAMFLOW STATIONS--Continued

Station number	Station name	Drainage area (mi^2)	Period of record
50112600	Río Inabón at Coto Laurel	--	1967-71
50113100	Río Guayo near Coto Laurel	11.80	1965, 1968-71
50113500	Río Inabón near Arús	30.20	1964-65
50114400	Río Bucaná near Ponce	25.60	1965-81
50114700	Río Bucaná near Playa de Ponce	28.40	1964-67
50115900	Río Portugués at Hwy 14 at Ponce	--	1965-82
50116500	Río Portugués at Highway 2 Bypass at Ponce	20.50	1964-65
50119000	Río Matilde at Ponce	19.40	1965-66
50121000	Río Tallaboa at Peñuelas	24.20	1959-82
50122000	Río Tallaboa at Tallaboa	31.50	1959-63
50124000	Río Guayanilla nr Guayanilla	18.50	1961-69
50124500	Río Guayanilla at Guayanilla	20.80	1971-82
50125900	Río Duey above Diversion near Yauco	8.93	1977-80
50126150	Río Yauco above Diversion Monserrate near Yauco	27.20	1978-85
50128000	Río Yauco near Yauco	45.50	1962-64,1977-85
50129000	Río Loco near Yauco	8.50	1963-67
50129500	Río Loco near Guánica	21.00	1963-69
50129900	Laguna Cartagena near Boquerón	--	1984-86
50130320	Quebrada Mamey at Joyuda	0.38	1986-88
50136000	Río Rosario at Rosario	16.40	1975-86
50141000	Río Yahuecas near Adjuntas	15.40	1980-85
50145000	Río Grande de Añasco at El Espino	108.00	1959-66,1961-63
50147000	Río Culebrinas at San Sebastian	16.70	1960-82
50214500	Quebrada Resaca near Monte Resaca, Culebra	0.23	1991-93
50215000	Drainage Canal at Culebra Airport, Culebra	0.08	1991-93
50231000	Quebrada Confresí Tributary near Isabel II, Vieques	0.28	1991-93
50232000	Quebrada La Mina near Esperanza, Vieques	0.68	1991-96
50233000	Quebrada Pilón at Colonia Puerto Real, Vieques	0.67	1991-96
50276000	Turpentine Run at Mariendal	2.97	1963-69,1978-86
50292600	Lameshur Bay Gut at Lameshur, St. John	0.38	1992-94
50294000	Fish Bay Gut at Fish Bay, St. John	1.48	1992-94
50295500	Cruz Bay Gut at Cruz Bay, St. John, V	0.09	1992-93
50332000	River Gut at River	1.42	1991-93
50333500	River Gut near Golden Grove	5.40	1990-93
50333700	River Gut at Hwy 66 at Fairplanes	5.89	1990-96
50334500	Bethehem Gut at Hwy 66 at Fairplanes	4.11	1990-96
50337500	Gut 4.5 at Cane Valley	0.2	1991-93
50348000	Salt River at Canaan	0.36	1991-93
50349000	Gut 10 near Altona	0.13	1991-93

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INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with local and federal agencies obtains a large amount of data pertaining to the water resources of the Commonwealth of Puerto Rico and the Territory of the U.S. Virgin Islands each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the area. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data for Puerto Rico and the U.S. Virgin Islands, 1997."

This report includes records on both surface and ground water. Specifically, it contains: (1) Discharge records for 74 streamflow-gaging stations, daily sediment records for 26 streamflow stations, 95 partial-record or miscellaneous streamflow stations, stage records for 16 reservoirs, and (2) water-quality records for 16 streamflow-gaging stations, and for 42 ungaged streamsites, 11 lake sites, 2 lagoons, and 1 bay; and (3) water-level records for 67 observation wells.

Water-resources data for Puerto Rico for calendar years 1958-67 were released in a series of reports entitled "Water Records of Puerto Rico". Water-resources data for the U.S. Virgin Islands for the calendar years 1962-69 were released in a report entitled "Water Records of U.S. Virgin Islands." Included were records of streamflow, ground-water levels, and water-quality data for both surface and ground water.

Beginning with the 1968 calendar year, surface-water records for Puerto Rico were released separately on an annual basis. Ground-water level records and water-quality data for surface and ground water were released in companion reports covering periods of several years. Data for the 1973-74 reports were published under separate covers. Water-resources data reports for 1975-76, 1977, 1978, 1979-80, 1981-82, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, and 1996 water years consist of one volume each and contain data for streamflow, water quality and ground water.

Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report PR-97-1." These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia, 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Chief at the address given on back of the title page or by telephone (787) 749-4346.

COOPERATION

The U.S. Geological Survey has had cooperative agreements with organizations of the Commonwealth of Puerto Rico and the Territory of the U.S. Virgin Islands for the systematic collections of water resources data since 1958. Organizations that supplied data are acknowledged in the station descriptions. Organizations that assisted in collecting data through cooperative agreements with the Survey are:

Puerto Rico Environmental Quality Board
Puerto Rico Aqueduct and Sewer Authority
Puerto Rico Department of Agriculture
Puerto Rico Industrial Development Company
Puerto Rico Department of Housing
Puerto Rico Highway Authority
Puerto Rico Department of Natural and Environmental Resources
Puerto Rico Department of Health
Puerto Rico Electric Power Authority
Puerto Rico Solid Waste Management Authority
Puerto Rico Legislature
Puerto Rico Civil Defense
U.S. Virgin Islands Department of Planning and Natural Resources

Funds were also provided by the Corps of Engineers, U.S. Army, for the collection of records at six gaging stations published in this report.

SUMMARY OF HYDROLOGIC CONDITIONS

Rainfall

Rainfall throughout Puerto Rico during the water year 1997 (October 1996 to September 1997) averaged about 77 percent of normal. During the months of October, December, and from March to September, rainfall was deficient with averages below normal that ranged from 8 to 81 percent. Significant deficient rainfall conditions were recorded during April, when recorded rainfall averaged 81 percent below normal. For the months of November, January, and February rainfall was above normal. Significant above normal rainfall conditions were recorded during January when rainfall averaged 214 percent of normal. Annual rainfall averaged about 85 percent of normal in northern Puerto Rico, 60 percent of normal in southern Puerto Rico, 76 percent of normal in western Puerto Rico, and 82 percent of normal in eastern Puerto Rico. Monthly average rainfall islandwide for the 1997 water year and for the 30-year period 1961-1990 used to define normal rainfall, as reported by the National Oceanic and Atmospheric Administration, are listed in table 1.

Table 1. Islandwide monthly rainfall for the water year 1997 and annual averages for the 30-year reference period, 1961-1990

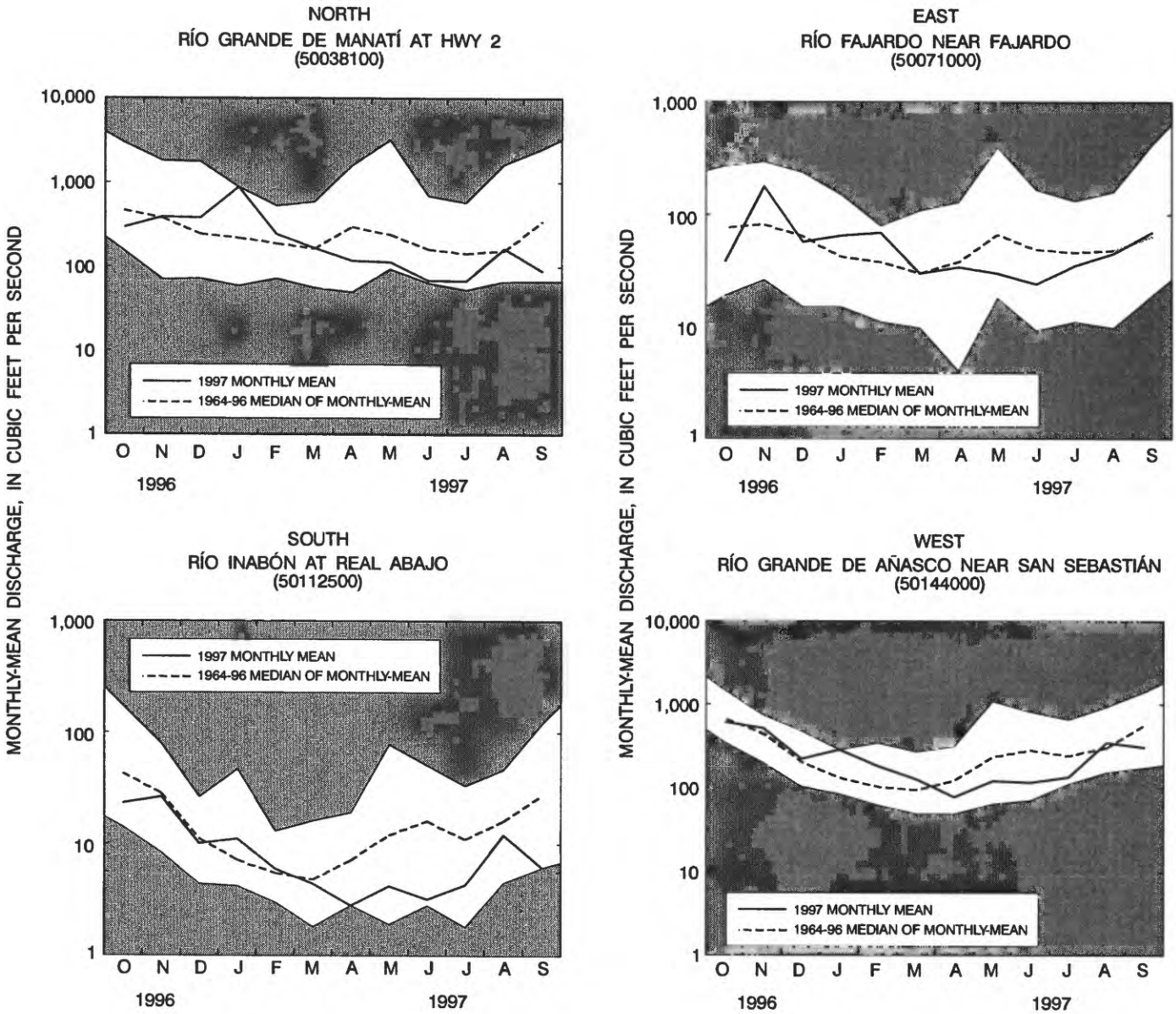
Month	1997 Water Year (inches)	30-year normal (inches)
October	4.71	8.29
November	7.11	6.55
December	3.18	4.38
January	6.13	2.86
February	3.30	2.52
March	2.09	3.02
April	0.87	4.46
May	3.53	6.96
June	2.19	4.99
July	4.64	5.08
August	5.97	6.89
September	4.64	7.14
TOTAL	48.36	63.14

Surface Water

Streamflow in Puerto Rico was, in general, below normal during water year 1997, based on the index stations with monthly-mean discharges lower than the long-term monthly median flow during several months. A monthly comparison of the monthly-mean flows for the period of record at the index stations on the Río Grande de Manatí, the Río Fajardo, the Río Inabón, and the Río Grande de Añasco are shown in figure 1. Islandwide, streamflow was below the long-term monthly median as recorded by the four index stations for the months of October and from April to July.

In the north coast, the Río Grande de Manatí index station recorded flows below the long-term monthly median during October, April to July, and September. Monthly mean flows during these months ranged from 26 to 63 percent of the long-term median of the monthly mean flows. Mean monthly flows were above normal from November to March and August. A historical maximum monthly mean flow was recorded during January with 401 percent of the long-term median.

In the east coast, the index station on the Río Fajardo, recorded monthly mean flows below the long-term median during October, December, and from April to August. Monthly mean flows during these months ranged from 45 to 94 percent of the long-term median of the monthly mean flows. The mean monthly flows were equal to the long-term monthly median during March and above normal during November, January, and September when mean monthly flows were 215, 155, and 109 percent, respectively, of the long-term monthly median of the monthly mean flows.



Unshaded area indicates range between highest and lowest monthly-mean discharges for the period of record to water year 1997.

Figure 1.--Monthly-mean discharge of selected streams in Puerto Rico.

In the south coast, the Río Inabón index station, recorded monthly mean flows below the long-term median from October to December, and from March to September. Monthly mean flows during these months ranged from 20 to 93 percent of the long-term median of the monthly mean flows. Historical minimum monthly mean flows of 2.8 and 6.2 cubic feet per second were recorded during April and September, respectively.

In the west coast, the Río Grande de Añasco index station, recorded mean monthly flows below normal during October, April to July, and September. Monthly mean flows during these months ranged from 41 to 91 percent of the long-term median of the monthly mean flows. Mean monthly flows were above normal from November to March, and during August ranging from 109 to 217 percent of the long-term median of the monthly mean flows. A historical maximum monthly mean flow was recorded during January with 217 percent of the long-term median.

Ground-Water Levels

Ground-water levels in most aquifers in Puerto Rico and the U.S. Virgin Islands generally declined during water year 1997. The ground-water levels were relatively unchanged from October to January after the effects of hurricane Hortense on September 9-10, 1996, and in response to high soil moisture and rainfall. From February to September, the ground-water levels declined in response to below-normal rainfall and sustained ground-water withdrawals. Record-low and record-high water levels were recorded at several observation wells in Puerto Rico and the U.S. Virgin Islands during water year 1997 (tables 2 and 3).

Ground-water levels in the North Coast Limestone aquifers of Puerto Rico fluctuated from October to January in response to seasonal rainfall patterns. From February to September, the water levels declined in response to below-normal rainfall in the area. At the Sabana Hoyos index well, the ground-water level declined 2.90 ft. (fig. 2).

In the South Coast aquifer of Puerto Rico, the ground-water levels generally declined in response to rainfall and streamflow patterns, irrigation, and ground-water withdrawals. The ground-water levels declined from November to September as streamflow in the area diminished and ground-water withdrawals increased for irrigation purposes. At the Alomar index well, the water level declined 3.65 ft. (fig. 2).

In the U.S. Virgin Islands (St. Thomas, St.Croix, and St. John) ground-water levels generally declined during water year 1997 in response to below-normal rainfall and sustained ground-water withdrawals. At the Guinea Gut observation well in St. John, U.S. Virgin Islands, the ground-water levels declined by 19.60 ft. from February to September (fig. 2).

Table 2. Highest ground-water levels recorded during water year 1997 and previous highest ground-water levels at selected wells in Puerto Rico and the U.S. Virgin Islands

[PR, Puerto Rico; St.T, St. Thomas; St.C, St. Croix; mm-dd-yy, month-day-year; ft-blsd, feet below land-surface datum; mm-yy, month-year]

Well name or number	Local number	Location	1997 Highest water level (ft-blsd)	Date (mm-dd-yy)	Previous highest water level (ft-blsd)	Date (mm-dd-yy)	Period of record (mm-yy)
Manatí 3	166	PR	22.11	01-25-97	22.43	09-20-96	01-82 to 09-97
Hill 2	HI-2	PR	267.96	01-24-97	282.62	09-10-96	05-96 to 09-97
RF-12	RF-12	PR	2.90	11-22-96	4.64	01-15-96	08-95 to 09-97
Fairplains 2	2	St.C	19.02	02-08-97	19.45	11-04-89	06-83 to 09-97
VIEO-6 Kirwan Terrace	8	St.T	14.34	12-06-96 12-07-96	22.79	01-21-93	10-91 to 09-97

Table 3. Lowest ground-water levels recorded during water year 1997 and previous lowest ground-water levels at selected wells in Puerto Rico and the U.S. Virgin Islands

[PR, Puerto Rico; mm-dd-yy, month-day-year; ft-blsd, feet below land-surface datum; mm-yy, month-year]

Well name or number	Local number	Location	1997 lowest water level (ft-blsd)	Date (mm-dd-yy)	Previous lowest water level (ft-blsd)	Date (mm-dd-yy)	Period of record (mm-yy)
Encantada 1	EN-1	PR	313.74	07-05-97 07-06-97	313.34	08-23-96	08-96 to 09-97
Tiburones 1	TI-1	PR	292.79	01-17-97	292.44	06-05-96	05-96 to 09-97
RF-04	RF-04	PR	18.82	07-21-97 to 07-25-97	18.22	05-07-96 to 05-13-96	08-95 to 09-97
RF-12	RF-12	PR	10.64	08-21-97 08-22-97	10.45	07-07-96 07-08-96	08-95 to 09-97
RP-04	RP-04	PR	14.05	08-21-97	9.66	04-26-96	08-95 to 09-97
RS-02	RS-02	PR	7.13	07-09-97 to 07-13-97	6.95	04-02-96 04-03-96 04-04-96	08-95 to 09-97
Vivoni Col. Amistad	143	PR	40.70	09-26-97	40.09	07-21-96 07-22-96 07-28-96	10-85 to 09-97
CR-TW-9A	CR-TW-9A	PR	7.22	08-14-97	5.99	05-19-93 05-20-93	07-92 to 09-97

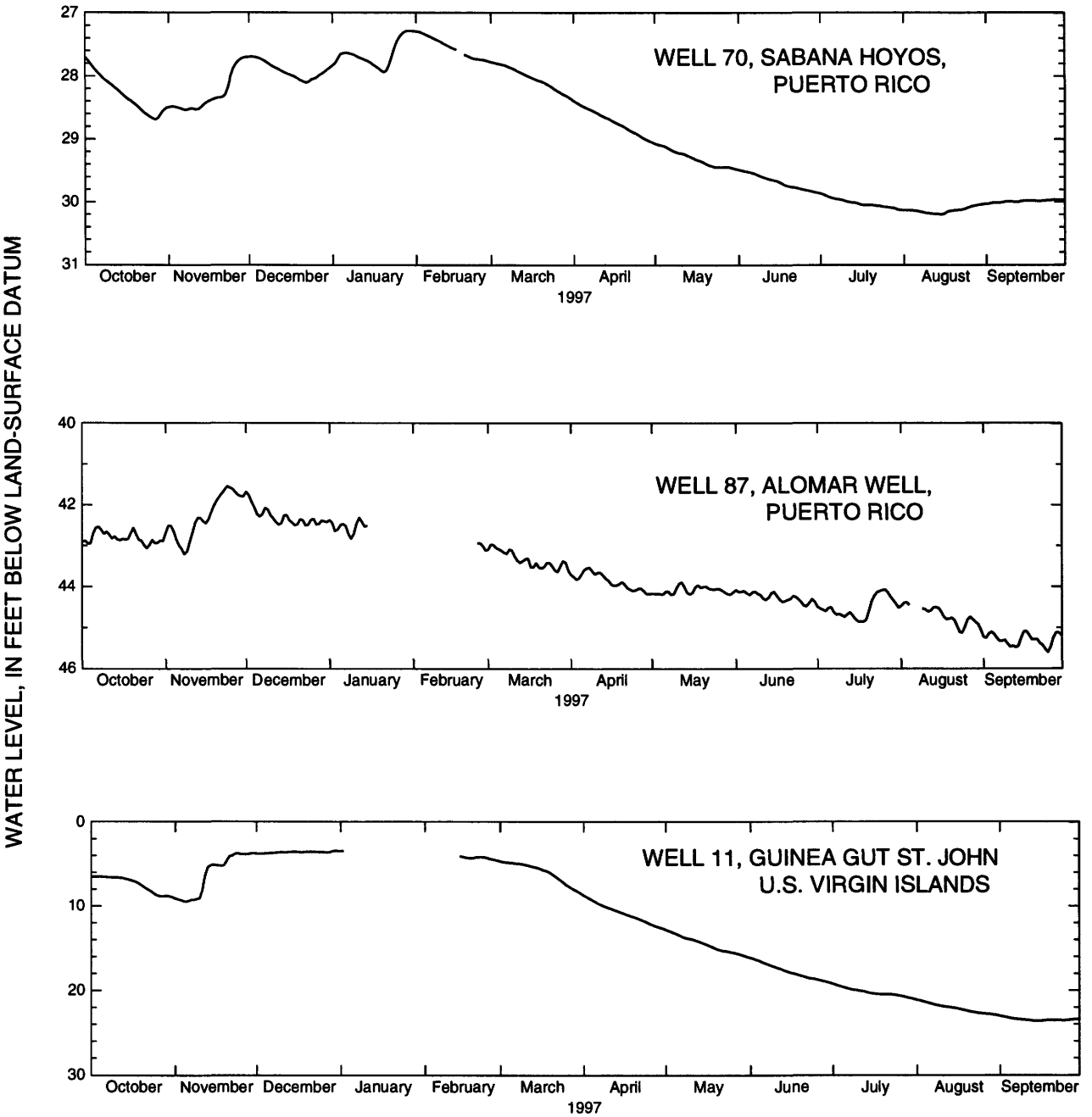


Figure 2. --Ground-water levels at selected wells in Puerto Rico and the U.S. Virgin Islands.

Water Quality

In water year 1997, the U.S. Geological Survey in cooperation with several local government agencies, collected water-quality data at 73 surface-water stations in Puerto Rico. The water-quality data collected at these stations included the major chemical constituents and several additional constituents that are listed in table 4. The highest concentration of each of these additional constituents detected during water year 1997 and the station where it was detected are summarized in table 4.

Table 4. Surface-water quality stations in Puerto Rico with highest concentration of selected constituents during water year 1997

[All constituent concentrations are in milligrams per liter; MBAS, Methylene blue active substance]

Station number	Station name	Constituent	Concentration
50044850	Río Guadiana near Naranjito	Sulfide	2.6
50129700	Río Loco at Guánica	Boron	2.2
50146000	Río Grande de Añasco near Añasco	Manganese	0.61
50146000	Río Grande de Añasco near Añasco	Iron	11
50091800	Río Chico at Providencia	Zinc	0.25
*	*	Cyanide	<0.010
50091800	Río Chico at Providencia	Phenols	0.09
50106500	Río Coamo near Coamo	Phenols	0.09
50144000	Río Grande de Añasco near San Sebastián	Phenols	0.09
50091800	Río Chico at Providencia	MBAS	4.8

* Cyanide concentrations at all water-quality stations were below the detection limit (<0.010).

The presence of high concentrations of fecal coliform (fig. 3) and fecal streptococcal (fig. 4) bacteria continued to be the principal surface-water quality problem in Puerto Rico during water year 1997. A bacteria concentration exceeding one million colonies per hundred milliliters of raw water was determined for a water sample collected at the station on San Juan Bay (50049920). This station is located in the San Juan metropolitan area, which has the highest population concentration in Puerto Rico. In addition to the effluent from the San Juan metropolitan area the streams are also receiving effluents from sewage treatment plants in the upper basin. The main sources of contamination in surface-water systems in Puerto Rico are discharges of liquid wastes from industrial and municipal sources. The highest concentration of fecal coliform and fecal streptococcal bacteria in surface waters in Puerto Rico generally occurred in streams draining from densely populated and industrialized areas.

Suspended sediment concentrations were monitored at 26 stations in Puerto Rico during the 1997 water as part of the cooperative program between the U.S. Geological Survey and various Commonwealth and Federal agencies. High suspended sediment concentrations are a common problem in many streams in Puerto Rico. Most of the streams with high suspended sediment concentration were related to land use, especially urban development, agriculture, and other activities where soil movement was involved. The high suspended sediment concentrations affect the water quality for drinking water and decrease the storage capacities of reservoirs used for water supply.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites on NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, diverse, and geographically distributed part of the Nation's ground- and surface-water resources, and to identify, describe, and explain the major natural and human factors that affect these observed conditions and trends.

Assessment activities have begun in more than one-third of the study units and ultimately will be conducted in 60 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Radiochemical Programs is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF RECORDS

The surface- and ground-water records published in this report are for the 1997 water year that began October 1, 1996 and ended September 30, 1997. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, water-quality data for surface and ground water, and ground-water-level data. The locations of the stations and wells where the data were collected are shown in figures 3 to 10. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each data station, whether streamsite or well, in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water well sites differ, but both are based on geographic location. The "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for wells.

Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations in first rank, second rank, and other ranks of tributaries.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 50028000, which appears just to the left of the station name, includes the 2-digit part number "50" plus the 6-digit downstream order number "028000."

Latitude-Longitude System

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. The numbers shown in the grid correspond to the local numbers assigned to each well as visited in the field. An example is well 16 (fig. 11).

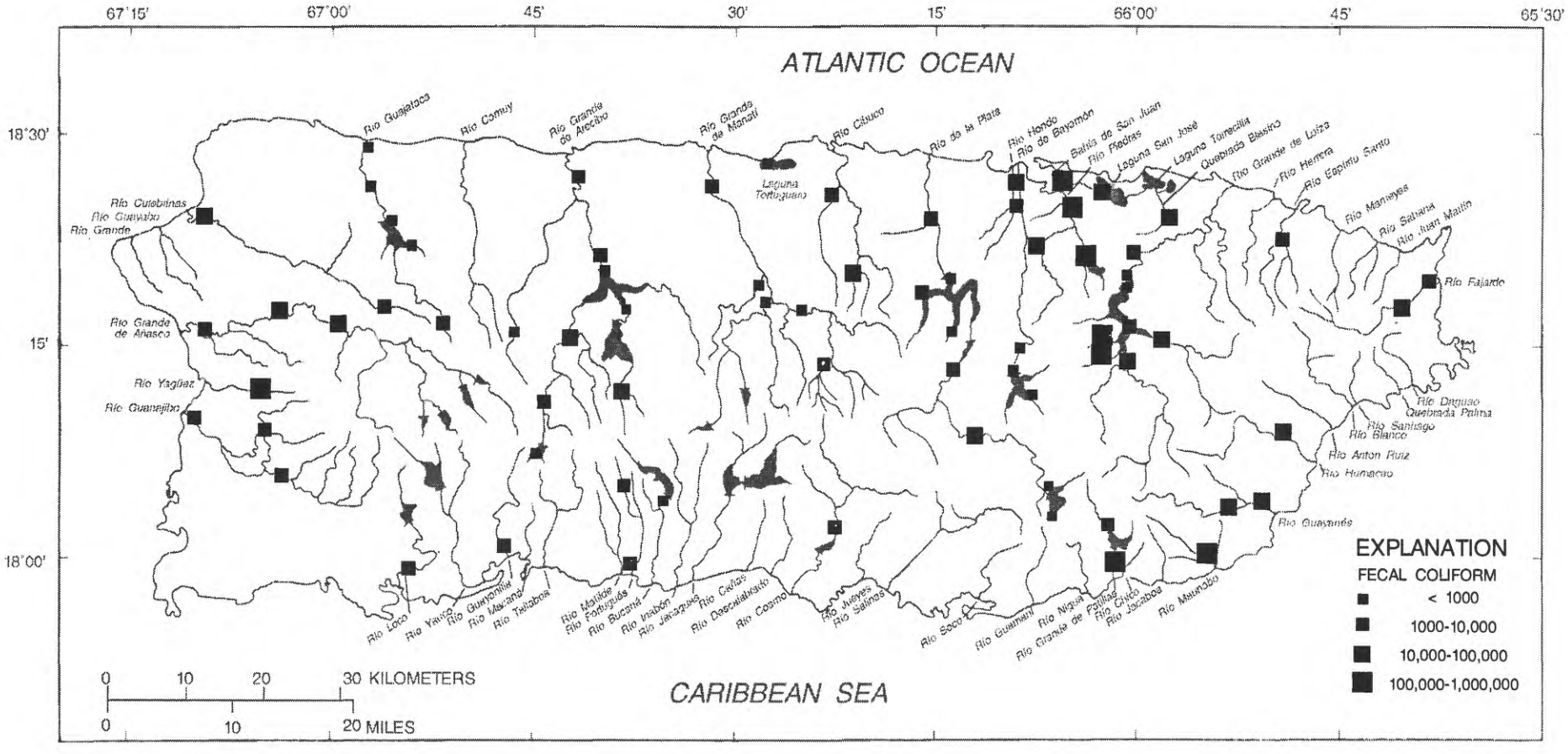


Figure 3.--Maximum concentration of fecal coliform bacteria at the water-quality sampling sites in Puerto Rico.

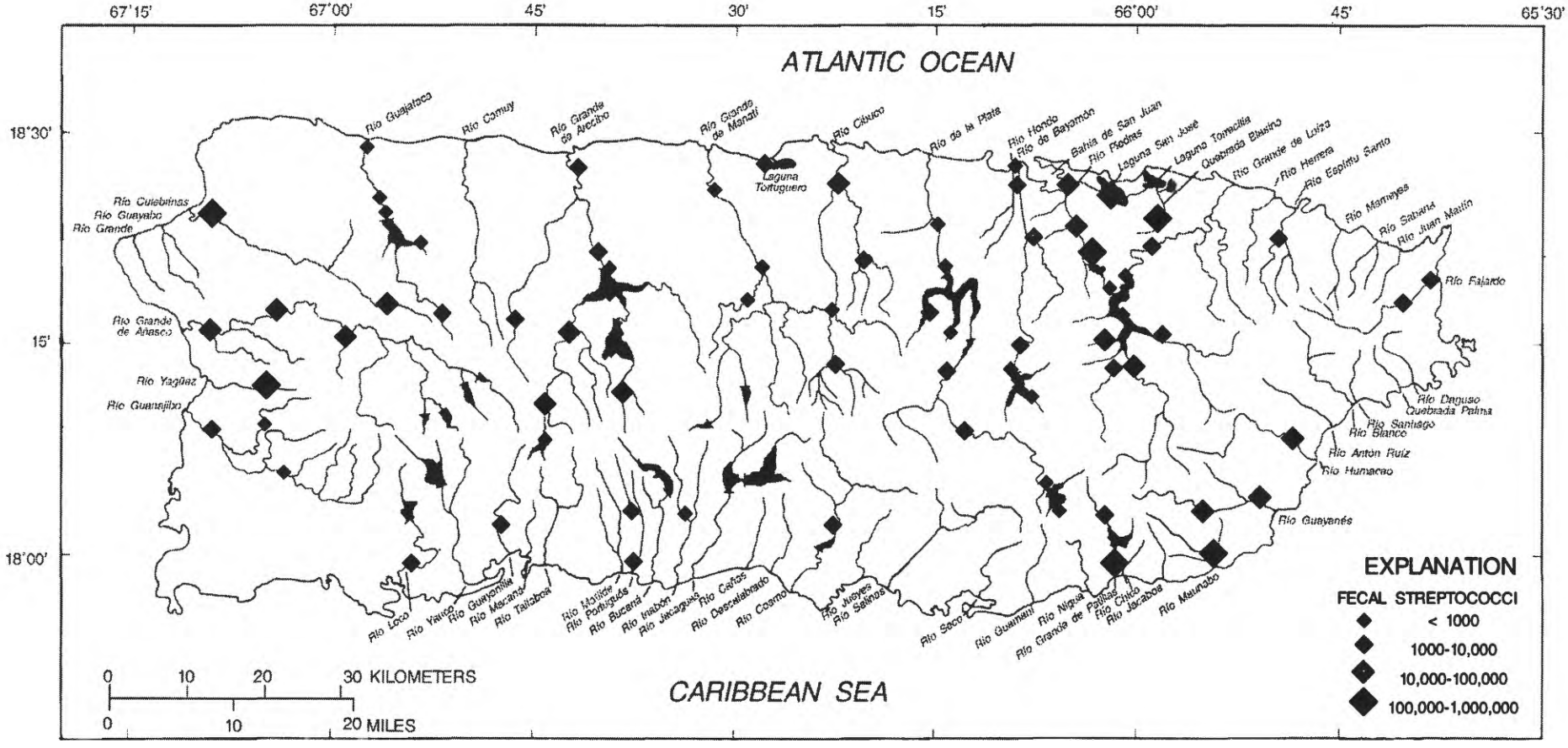


Figure 4.--Maximum concentration of fecal streptococci bacteria at the water-quality sampling sites in Puerto Rico.

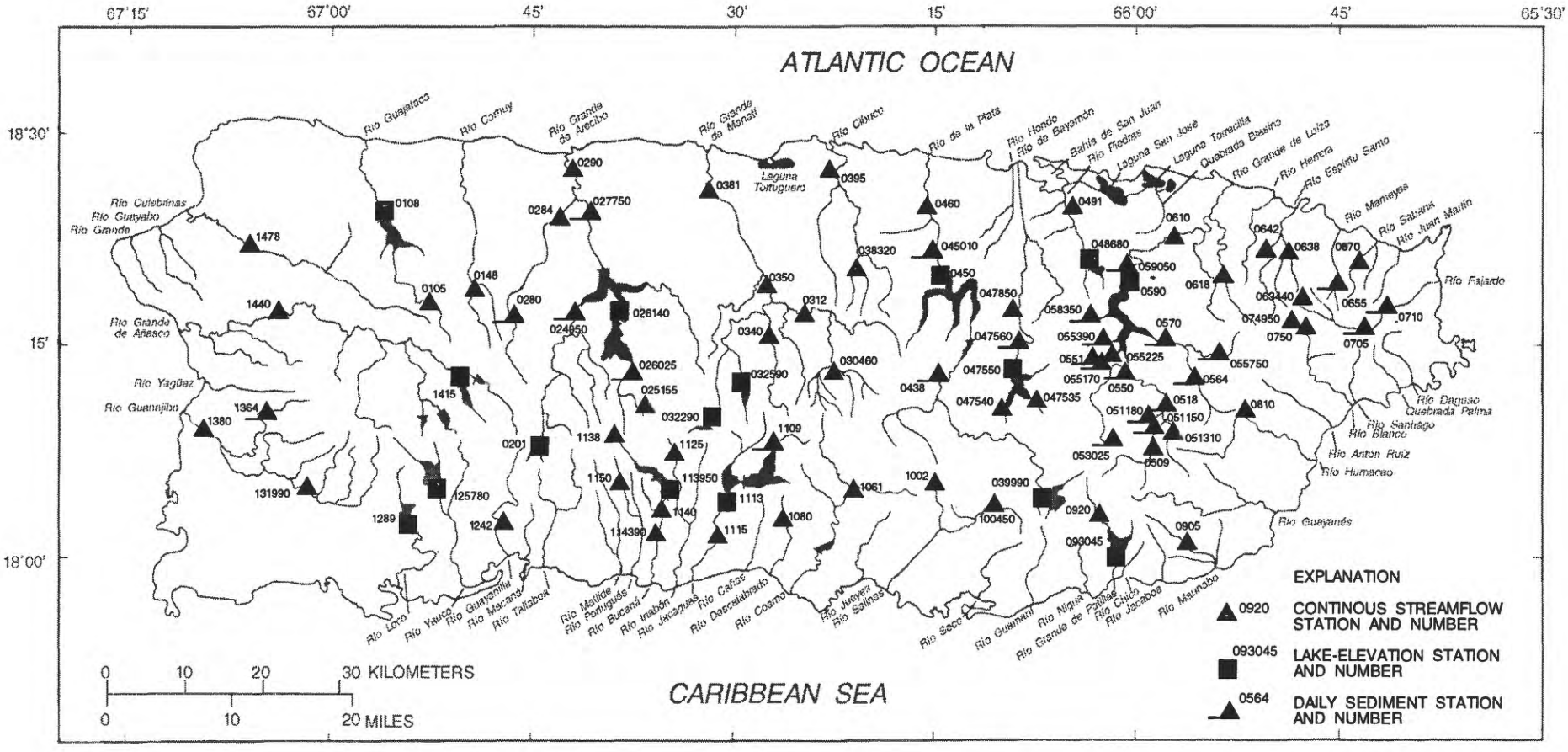
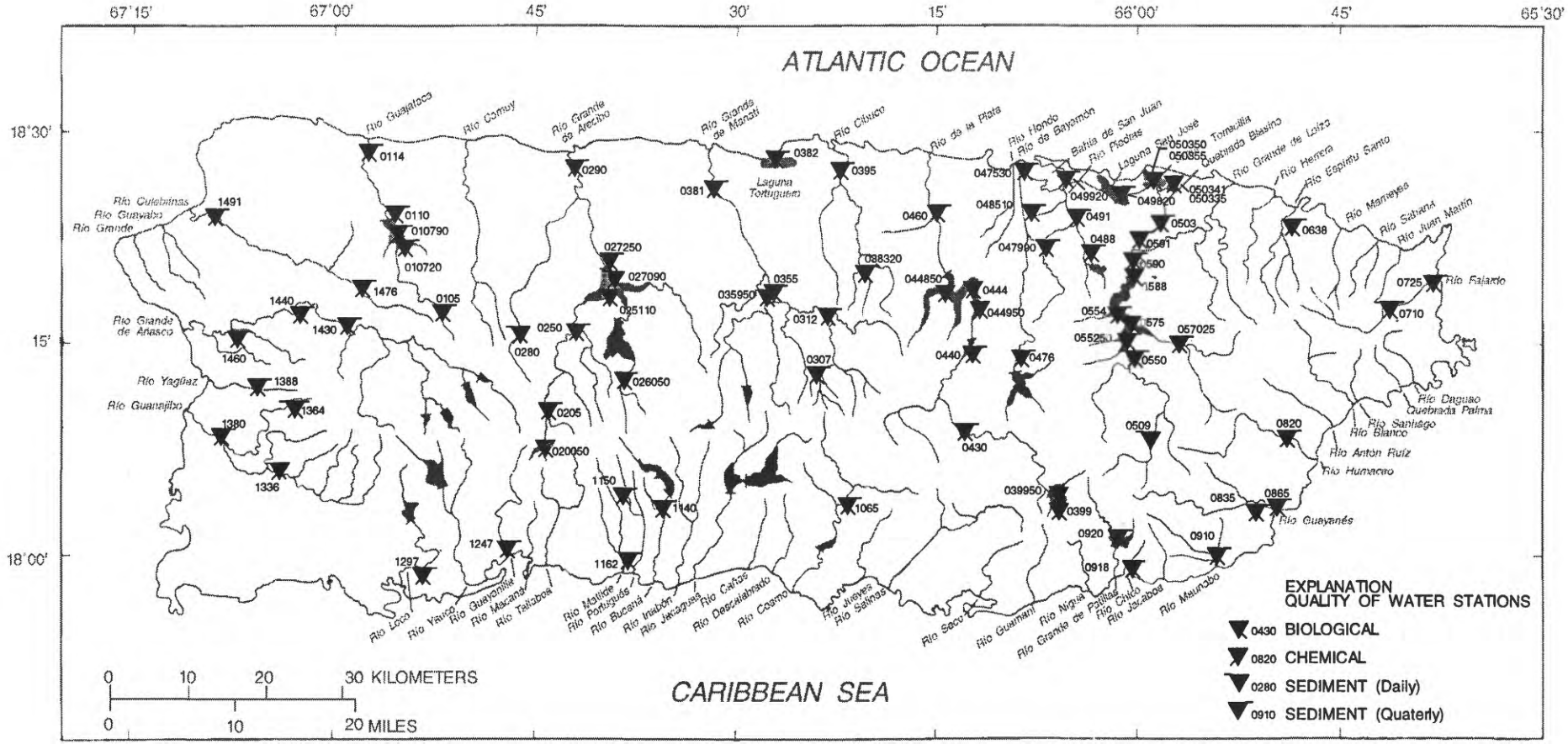


Figure 5.--Location of surface-water stations in Puerto Rico.



EXPLANATION
QUALITY OF WATER STATIONS

0430 BIOLOGICAL
0820 CHEMICAL
0280 SEDIMENT (Daily)
0910 SEDIMENT (Quaterly)

0 10 20 30 KILOMETERS
0 10 20 MILES

Figure 6.--Location of water-quality stations in Puerto Rico.

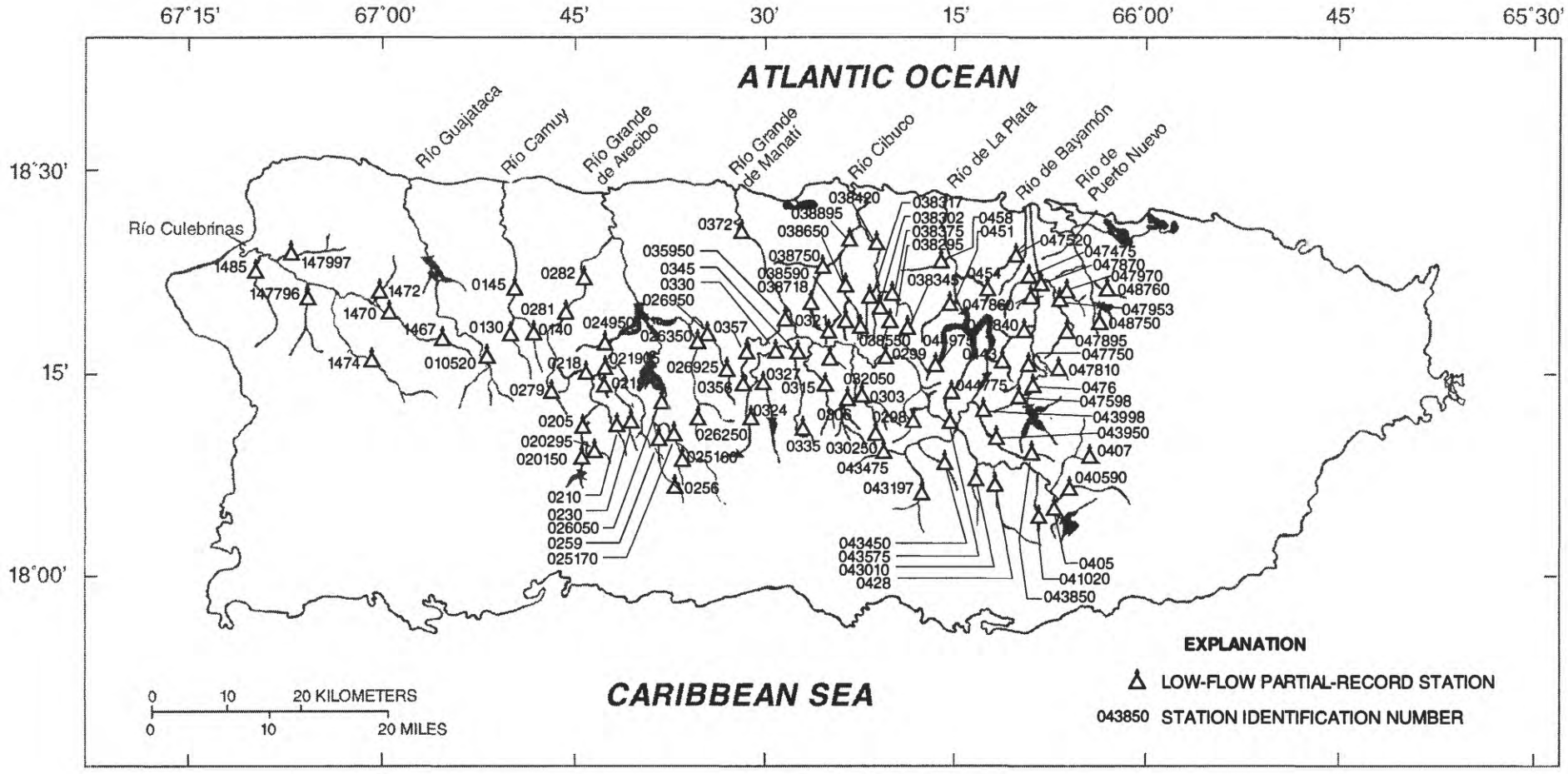


Figure 7.--Location of low-flow partial-record stations in northcentral Puerto Rico.

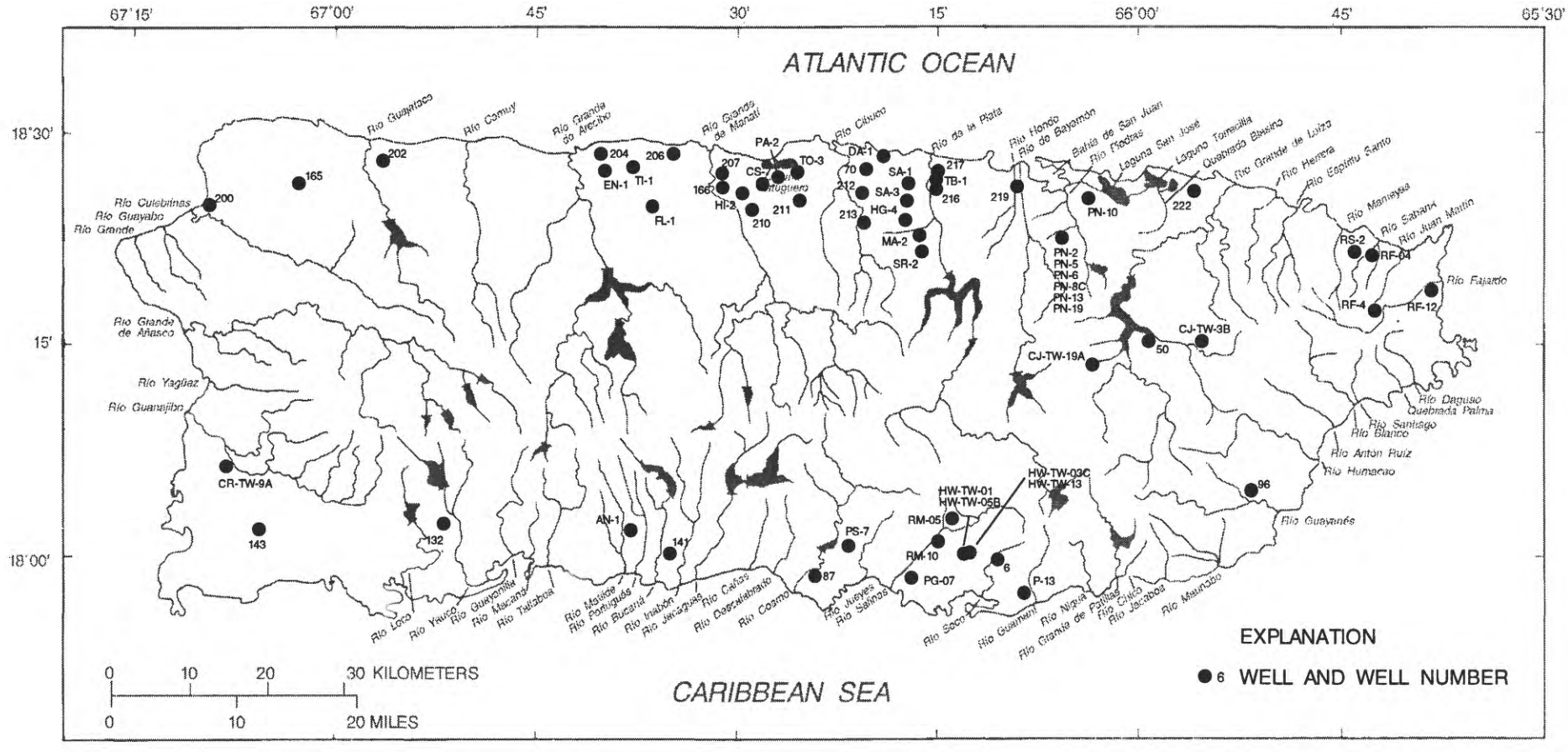


Figure 8.--Location of ground-water stations in Puerto Rico.

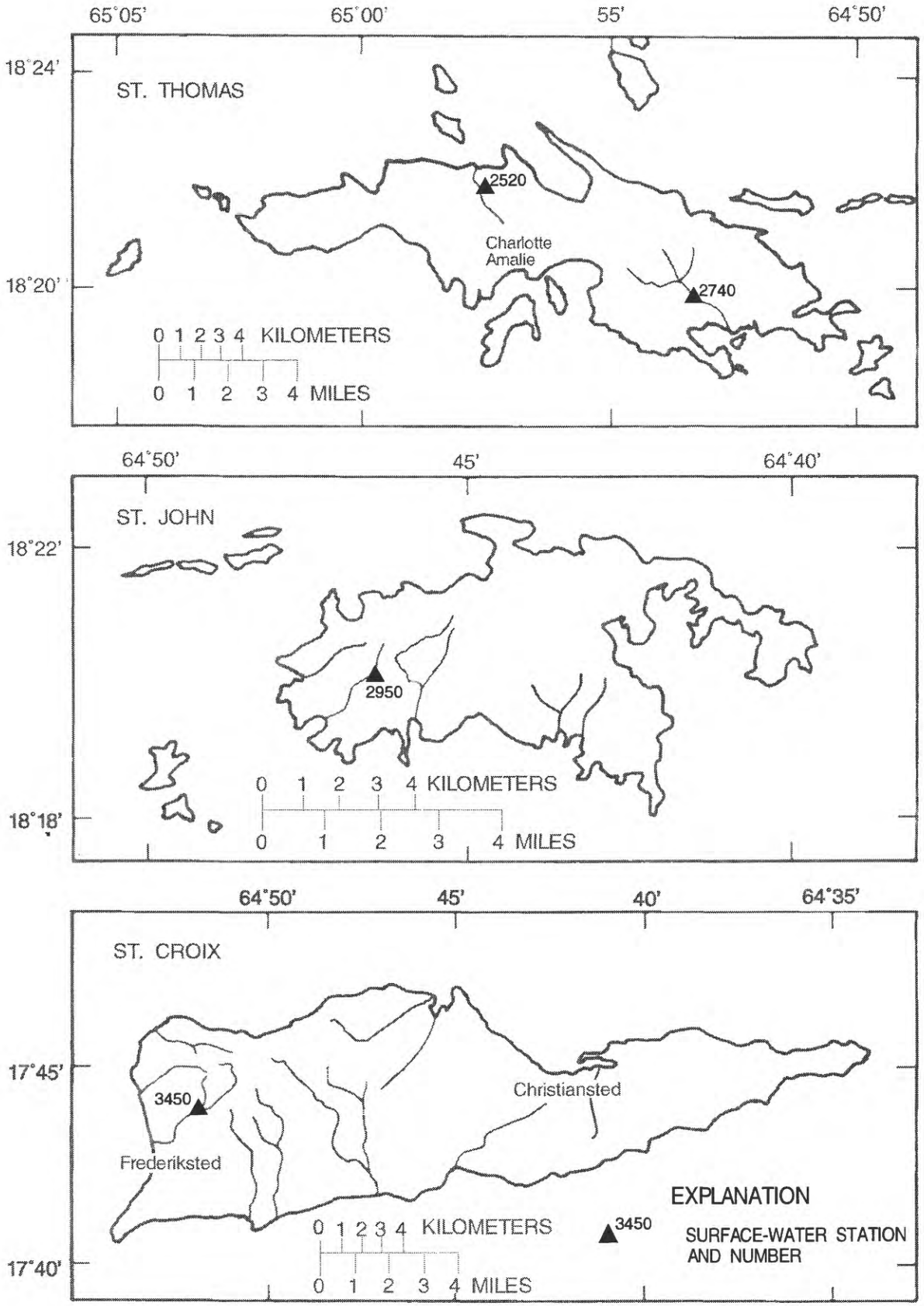


Figure 9.--Location of surface-water stations in the U.S. Virgin Islands.

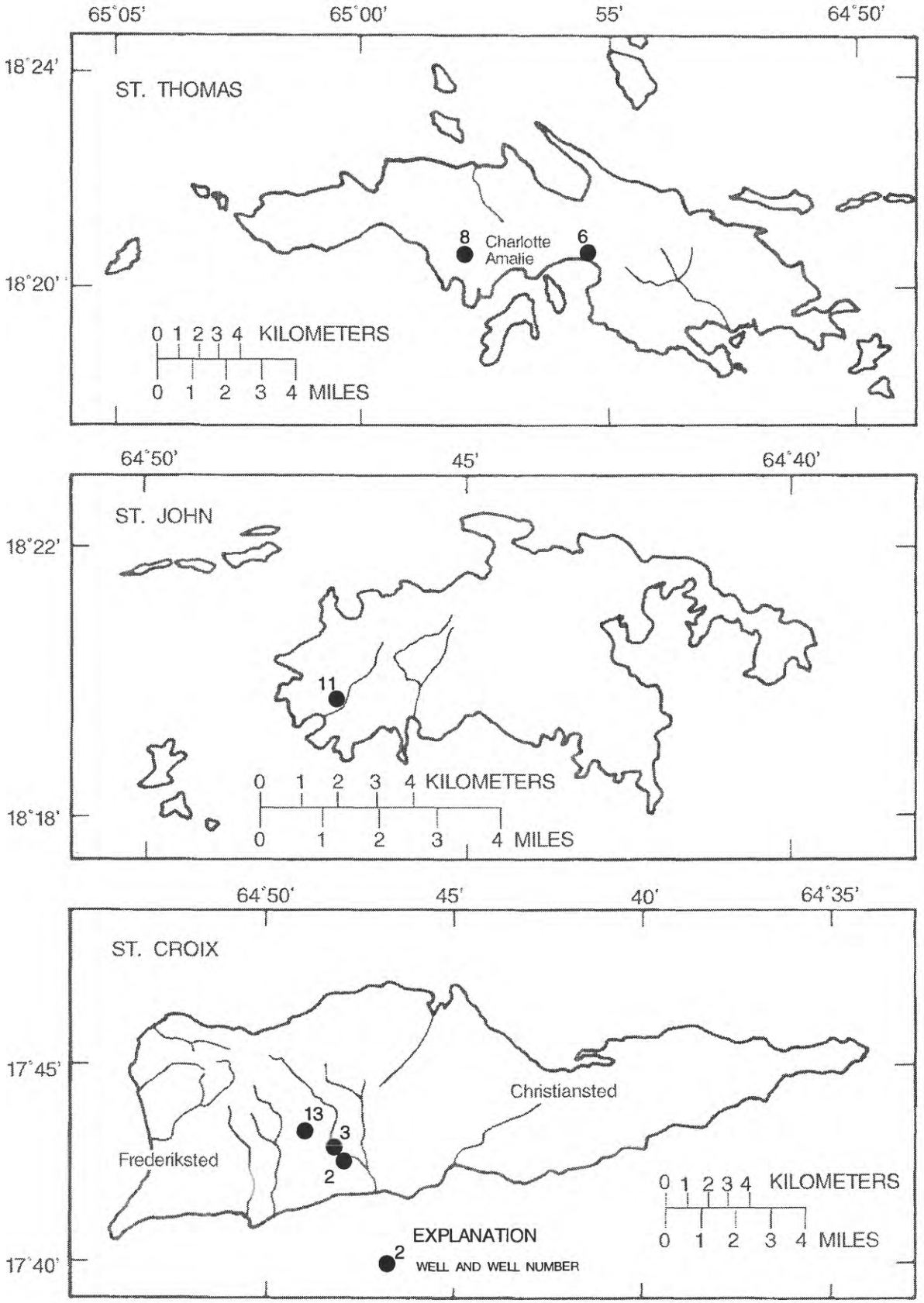


Figure 10.--Location of ground-water stations in the U.S. Virgin Islands.

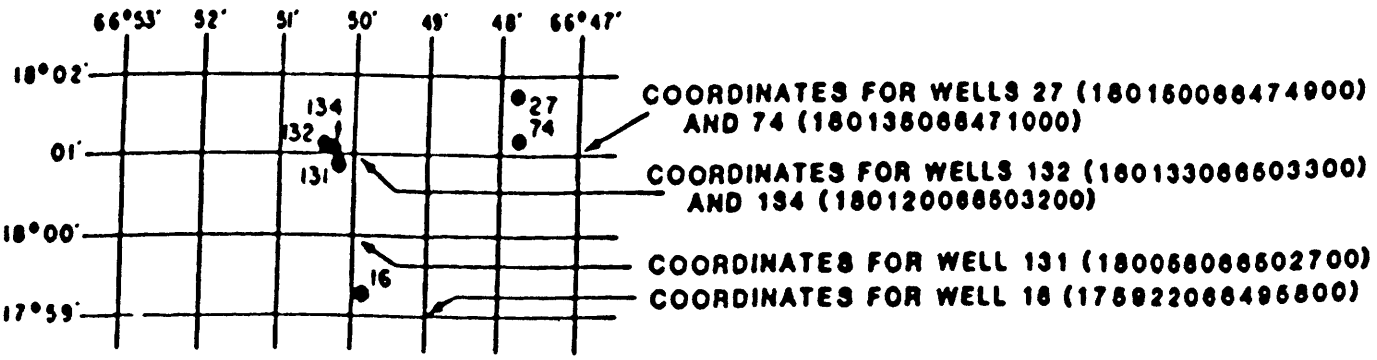


Figure 11.--Grid showing system for numbering wells and miscellaneous sites (latitude and longitude).

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharges may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow seepage studies, may be considered as partial records, but they are presented separately in this type of report. Location of all complete-record stations for which data are given in this report are shown in figures 5 and 8.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consists of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals or electronic satellite data collector platforms that receive stage values at selected time intervals. Measurements of discharge are made with current meters using methods adapted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow-over-dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relationship of stage and contents. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly or yearly changes then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic surveys may be necessary to redefine it. Even when this is done, as time between the last survey increases, the contents computed may increase in error. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

For some gaging stations there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is loose in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information. Information explaining how estimated daily-discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

Steamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1992 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consist of four parts, the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period, by water year; and a summary statistics table that includes statistical data of annual, daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimum, and flow duration.

Station manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information, as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the stations descriptions.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given.

DRAINAGE AREA.--Drainage areas are measured using the most accurate maps available. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not, and whose location was such that records from it can reasonable be considered equivalent with records from the present station.

REVISED RECORDS.--Because of new information, published records occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage, and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily-discharge record will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily-discharge table. (See next section, "Identifying Estimated Daily Discharge.") If a remarks statement is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computations, to conditions that affect natural flow at the station and, possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from previously published data reports may wish to contact the District office to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

Data table of daily mean value

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed "TOTAL" gives the sum of the daily figures for each month; the line headed "MEAN" gives the average flow in cubic feet per second for the month; and the lines headed "MAX" and "MIN" give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"); or in inches (line headed "IN"); or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if there is extensive regulations or diversion or if the drainage area includes large noncontributing areas.

Statistics of monthly mean data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed "MAX"), and minimum (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flow are provided immediately below those figures. The designated period will be expressed as "FOR WATER YEARS ____-____, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station records within the specified water years, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript.

Summary statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns, with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, "WATER YEARS ____-____," will consist of all of the station records within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (see line headings below), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments to follow clarify information presented under the various line headings of the summary statistics table.

ANNUAL TOTAL.--The sum of the daily mean values of discharge for the year. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

ANNUAL MEAN.--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

HIGHEST ANNUAL MEAN.--The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.--The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.--The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.--The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1 - March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistics).

INSTANTANEOUS PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period. Note that secondary instantaneous peak discharges above a selected base discharge are stored in District computer files for stations meeting certain criteria. Those discharge values may be obtained by writing to the District Office. (See address on back of the title page of this report.)

INSTANTANEOUS PEAK STAGE.--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.--The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.--Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurements in presenting annual runoff data:

Acre-foot (AC-FT) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming the runoff is distributed uniformly in time and area.

Inches (INCHES) indicates the depth to which the drainage area would be covered if all of the runoff for given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.--The discharge that is exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge that is exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.--The discharge that is exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in a table of discharge measurements at low-flow partial-record stations. These measurements are generally made in times of drought to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily-discharge values published in the water-discharge tables are identified by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated."

Accuracy of the Records

The accuracy of streamflow records depends primarily on: (1) The stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements; and (2) the accuracy of measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft^3/s; to the nearest tenth between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures for more than 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables are on file in the Caribbean District office. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the District office.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A **continuing-record station** is a site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, or quarterly. A **partial-record station** is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A **miscellaneous** sampling site is a location other than a continuing or partial-record station, where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 6.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurement at miscellaneous sites.

On-site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. Detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey District office.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals, depends on flow conditions and other factors which must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records, when available, (hourly values) may be obtained from the U.S.G.S. District office whose address is given on the back of the title page of this report.

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the District office.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating and pumping sediment samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, suspended-sediment loads for other periods of similar discharge, and computed by the subdivided-day method using the transport curves.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment are included for some stations.

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen demand (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey laboratories in Denver, Co. or Ocala, Fla. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the Geological Survey laboratories are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first, and tables of "daily values" of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence, when these parameters are studied.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to insure the most recent updates.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this report:

PRINTED OUTPUT	REMARK
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant

Records of Ground-Water Levels

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Data Collection and Computation

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability.

Each well is identified by means of (1) a 15-digit number that is based on latitude and longitude and (2) a local number that is provided for local needs. See figure 10.

Water-level records are obtained from direct measurements with a steel tape or from the graph or punched tape of a water-stage recorder. The water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every day and as an instantaneous observation at noon.

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error of determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth of a few hundredths of a foot. For lesser depths to water, the accuracy is greater. Accordingly, most measurements reported to a hundredth of a foot, but some are given to a tenth of a foot or a larger unit.

Data Presentation

Each well record consists of three parts, the station description, the data table of water levels observed during the water year and a graph of the water levels for the current water year and other selected period. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments to follow clarify information presented under the various headings of the well description.

LOCATION.--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds); a landline location designation; the hydrologic-unit number; the distance and direction from a geographic point of reference; and the owner's name.

AQUIFER.--This entry designates by name (if a name exists) and geologic age the aquifer(s) open to the well.

WELL CHARACTERISTICS.--This entry describes the well in terms of depth, diameter, casing depth and/or screened interval, method of construction, use, and additional information such as casing breaks, collapsed screen, and other changes since construction.

INSTRUMENTATION.--This paragraph provides information on both the frequency of measurment and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on weekly, monthly, or some other frequency of measurement.

DATUM.--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of collar, notch in top of casing, plug in pump base and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above (or below) sea level; it is reported with a precision depending on the method of determination.

REMARKS.--This entry describes factors that may influence the water level in a well or the measurement of the water level. It should identify wells that also are water-quality observation wells, and may be used to acknowledge the assistance of local (non-Survey) observers.

PERIOD OF RECORD.--This entry indicates the period for which there are published records for the well. It reports the month and year of the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year. Periods for which water-level records are available, but are not published by the Geological Survey, may be noted.

EXTREMES FOR PERIOD OF RECORD.--This entry contains the highest and lowest water levels of the period of published record, with respect to land-surface datum, and the dates of their occurrence.

A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum and all taped measurements of water level are listed. For wells equipped with recorders, daily values tables are published for the instantaneous water-level observation at noon. The highest and lowest water levels of the water year and their dates of occurrence are shown on a line below the table. Because all values are not published for wells with recorders, the extremes may be values that are not listed in the table. Missing records are indicated by dashes in place of the water level. A hydrograph for a selected period of record follows each water-level table.

Records of Ground-Water Quality

Records of ground-water quality in this type of report differ from other types of records in that for most sampling sites they consist of only one set of measurements for the water year. The quality of ground water ordinarily changes only slowly; therefore, for most general purposes one annual sampling, or only a few samples taken at infrequent intervals during the year, is sufficient. Frequent measurement of the same constituents is not necessary unless one is concerned with a particular problem, such as monitoring for trends in nitrate concentration. In the special cases where the quality of ground water may change more rapidly, more frequent measurements are made to identify the nature of the changes.

Data Collection and Computation

The records of ground-water quality in this report were obtained mostly as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some counties but none are presented for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide. Such a view can be attained only by considering records for this year in context with similar records obtained for these and other counties in earlier years.

Most methods for collecting and analyzing water samples are described in the "U.S. Geological Survey Techniques of Water-Resources Investigations" manuals listed on a following page. The values reported in this type of report represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. All samples are obtained by trained personnel. The wells sampled are pumped long enough to assure that the water collected comes directly from the aquifer and has not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

Data Presentation

The records of ground-water quality, when available, are published in a section titled QUALITY OF GROUND WATER immediately following the ground-water level records. Data for quality of ground water are listed alphabetically by County, and are identified by well number. The prime identification number for wells sampled is the 15-digit number derived from the latitude-longitude locations. No descriptive statements are given for ground-water-quality records; however, the well number, depth of well, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water. The REMARK codes listed for surface-water-quality records are also applicable to ground-water-quality records.

ACCESS TO U.S. GEOLOGICAL SURVEY WATER DATA

The U.S. Geological Survey provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at

http://water.usgs.gov

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices (see address on the back of the title page).

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data as used in this report, are defined below. See also the table for converting inch- pound units to the International System of units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to about 326,000 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present a stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

> Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as all the organisms which produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C $\pm$ 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as Gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 105°C for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and the ash mass and represents the actual matter. The organic mass is expressed in the same units as for ash and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common green pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic foot per second (ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Cubic foot per second-day ($ft^3/s/day$) is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,445 cubic meters.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Instantaneous discharge is the discharge at a particular instant of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Annual 7-day minimum is the lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1 - March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

Dissolved refers to that material in a representative water sample which passes through a 0.45 um membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculations of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\overline{d} = -\sum_{n}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

Where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (gh) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Ground-water station is a well at which observations of ground-water level are made, either continuously by recorder, or periodically by hand. In addition, various chemical or physical parameters may be obtained, usually on a periodic basis.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic Bench-Mark Network is a network in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an eight-digit number.

Land-surface datum (LSD) is a datum plane that is approximately at land surface at each ground-water observation well.

Measuring point (MP) is an arbitrary permanent reference point from which the distance to the water surface in a well is measured to obtain the water level.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (µg/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per liter (µG/L, ug/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture. Conversion of chemical concentrations in Mg/L to milliequivalents per liter can be done by using the factors in table 6.

Table 5. Factors for conversion of chemical constituents in milligrams per liter to milliequivalents per liter

Ion	Multiply by	Ion	Multiply by
Aluminum (Al+3)*	0.11119	Iodide (I-1	0.00788
Ammonia as NH4+1	.05544	Iron (Fe+3)	.05372
Barium (Ba+2)	.01456	Lead (Pb+2)	.00965
Bicarbonate (HCO3-1)	.01639	Lithium (Li+1)	.14411
Bromide (Br-1)	.01251	Magnesium (Mg+2)	.08226
Calcium (Ca+2)	.04990	Manganese (Mn+2)*	.03640
Carbonate (CO3-2)	.03333	Nickel (Ni+2)	.03406
Chloride (Cl-1)	.02821	Nitrate (N03-1)	.01613
Chromium (Cr+6)*	.11539	Nitrite (NO2-1)	.02174
Cobalt (Co+2)*	.03394	Phosphate (PO4-3)	.03159
Copper (Cu+2)*	.03148	Potassium (K+1)	.02557
Cyanide (CN-1)	.03844	Sodium (NA+1)	.04350
Fluoride (F-1)	.05264	Strontium (Sr+2)	.02283
Hydrogen (H+1)	.99209	Sulfate (SO4-2)	.02082
Hydroxide (OH-1)	.05880	Zinc (Zn+2)*	.03060

*Constituent reported in micrograms per liter; multiply by factor and divide results by 1,000.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

National Trends Network (NTN) is a network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per unit area habitat, usually square meters (m^2), acres, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can beexpressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle-size is the diameter, in millimeters (mm), of a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay.....	0.00024 - 0.004	Sedimentation
Silt.....	.004 - .062	Sedimentation
Sand.....	.062 - 2.0	Sedimentation or sieve
Gravel....	2.0 - 64.0	Sieve

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass or volume.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of ratioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg C/(m^2.time)] for periphyton and macrophytes and [mg C/(m^3.time)] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg0 / (m^2.time)] for periphyton and macrophytes and [mg0 /(m^3.time)] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotypes. The streams that are sampled represent major drainage basins in the conterminous United States.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentrations (mg/L) x discharge (ft^3/s) x 0.0027.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry mass or volume, that passes a section during a given time.

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

7-day 10-year low flow (7Q10) is the discharge at the 10-year recurrence interval taken from a frequency curve of annual values of the lowest mean discharge for 7 consecutive days (the 7-day low flow).

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electric current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Natural substrate refers to any naturally occurring emersed or submersed solid surface, such as a rock or tree, upon which an organism lives.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. It is associated with the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of representative water-suspended sediment sample that is retained on a 0.45 um membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchial scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata, is the following:

Kingdom.....Animal
Phylum.....Arthopoda
Class.....Insecta
Order.....Ephemeroptera
Family.....Ephemeridae
Genus.....Hexagenia
Species.....Hexagenia limbata

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table heading and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter by 0.00136.

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determined all of the constituent in the sample.)

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses, because different digestion procedures are likely to produce different analytical results.

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitations stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

Water year in Geological Survey reports dealing with surface water supply is the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1980, is called the "1980 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976).

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge- weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

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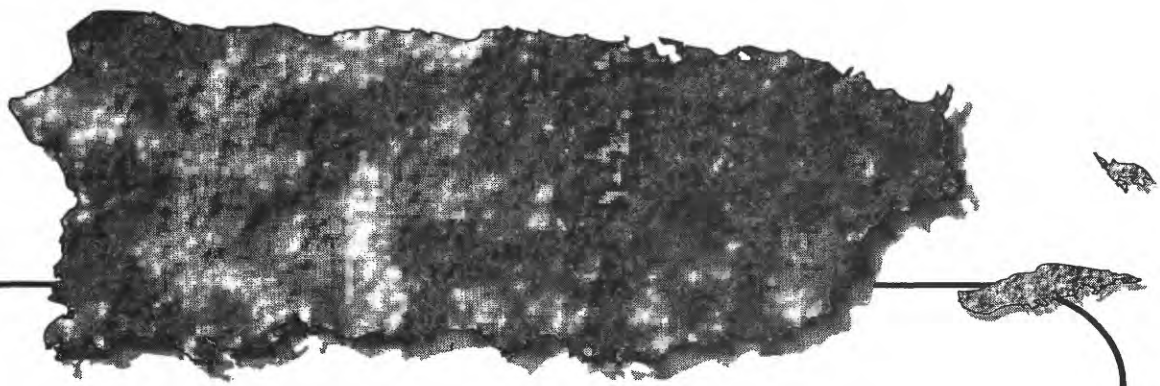

Surface and Quality-of-Water Records for Puerto Rico

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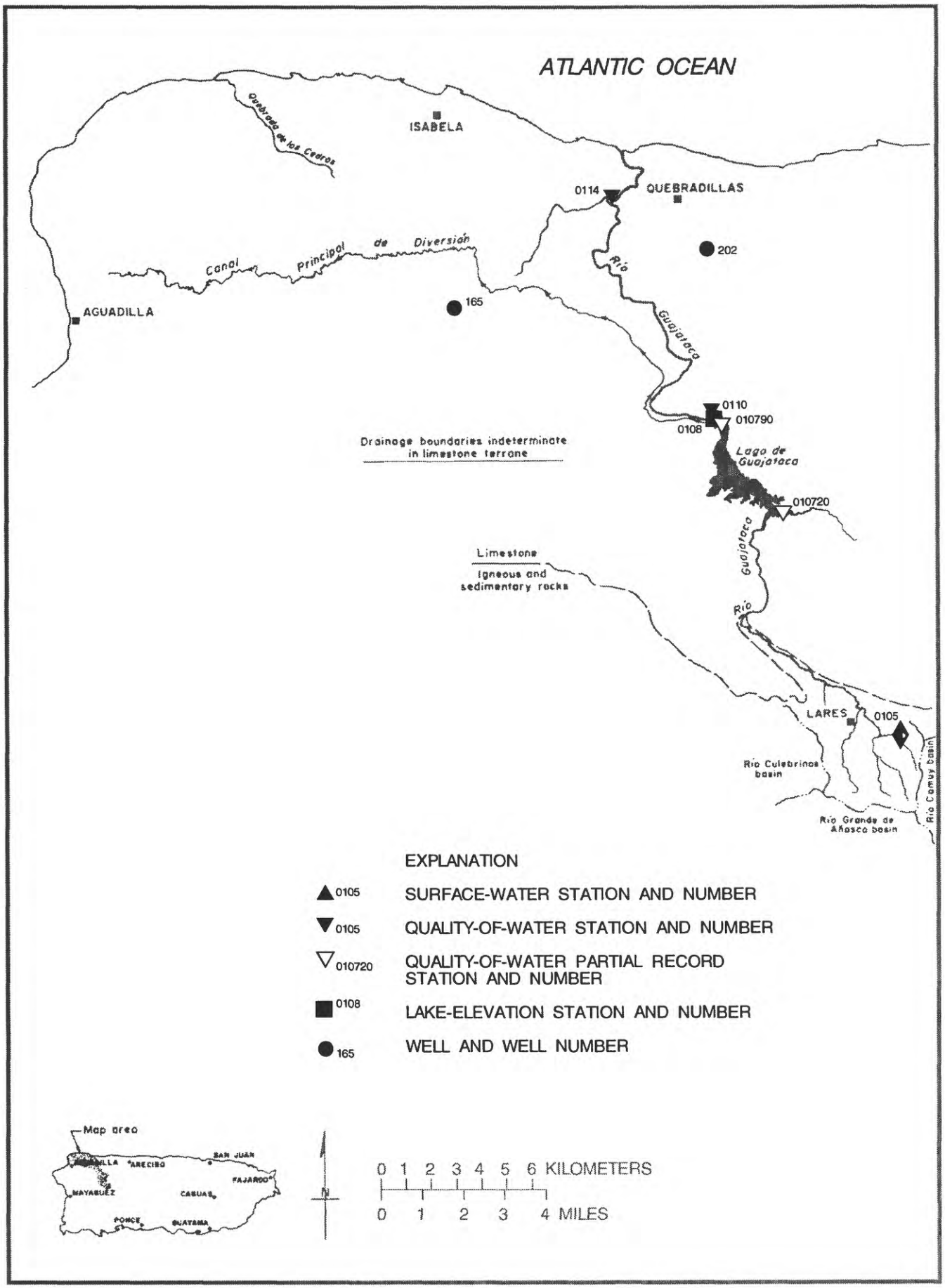

Figure 12.--Río Guajataca basin.

RIO GUAJATACA BASIN

50010500 RIO GUAJATACA AT LARES, PR

LOCATION.--Lat 18°18'01", long 66°52'24", Hydrologic Unit 21010001 at bridge on Highway 111, 0.1 mi (0.2 km) upstream from Quebrada Anón, and 0.4 mi (0.6 km) east of Lares.

DRAINAGE AREA.--3.16 mi² (8.18 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1959 to February 1962 (annual low-flow measurements only), January 1963 to April 1969 (monthly measurements only), May 1969 to December 1970 (February to May 1971 and March 1974 to November 1989, monthly measurements only), December 1989 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 935 ft (285 m), from topographic map.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station. Small diversion above station for sewage treatment plant; effluent re-enters stream below station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	12	6.8	2.9	4.0	1.2	1.9	.77	e2.0	e2.5	1.4	16
2	10	9.7	6.3	13	3.6	1.1	1.8	.70	e1.5	e1.7	1.6	8.8
3	31	8.9	5.9	24	3.4	1.1	1.8	.67	e1.2	e1.2	5.9	2.7
4	26	8.1	6.1	5.6	3.2	1.3	1.8	1.1	e1.6	e1.3	2.5	3.1
5	15	7.7	5.4	3.5	3.2	1.1	1.8	.75	e2.1	e2.0	1.8	2.5
6	12	7.5	5.5	2.6	3.2	.93	1.7	.75	e1.9	e1.0	1.7	2.9
7	11	7.4	5.1	2.5	3.4	1.1	1.9	.65	e2.0	e1.0	1.9	2.2
8	18	6.7	5.1	7.0	3.2	1.2	1.7	e.64	e1.9	1.7	5.7	2.0
9	10	6.1	5.8	3.7	9.4	.87	1.6	e.68	e1.8	1.6	11	1.7
10	9.0	31	8.1	2.0	4.7	.90	1.6	e.68	e1.6	1.3	8.9	1.5
11	7.9	13	18	1.9	4.0	.73	1.5	e.64	e2.1	1.2	2.5	1.4
12	8.9	13	5.5	3.4	3.0	.65	1.8	e.64	e1.9	1.6	2.5	5.8
13	22	10	5.0	15	2.3	.65	1.8	e.60	e1.7	1.4	2.7	3.4
14	16	8.6	4.9	11	2.3	.65	1.8	e.57	e1.8	3.0	15	6.9
15	8.5	11	4.4	3.8	2.1	.79	1.8	e.59	e1.6	5.0	3.7	2.6
16	7.2	15	4.2	2.4	2.0	.70	1.7	e.56	e1.7	2.2	4.0	2.6
17	35	12	4.3	2.2	1.9	1.3	1.2	e.50	e1.6	1.3	2.2	1.1
18	22	24	4.3	1.8	1.8	2.5	1.2	e.51	e1.3	1.7	2.3	1.3
19	11	12	3.8	5.4	1.9	8.5	1.0	e.58	e1.4	1.5	2.4	1.6
20	8.8	13	4.0	11	1.7	3.2	.90	e.98	e2.8	1.3	30	2.2
21	22	11	4.3	56	2.2	2.4	1.8	e2.2	e1.2	1.4	13	3.3
22	10	13	4.5	39	1.7	2.1	5.1	e6.0	e.90	1.4	4.1	7.3
23	8.6	12	3.5	9.6	1.6	1.7	1.4	e12	e.96	1.3	16	3.8
24	7.7	10	4.0	15	1.4	1.8	.89	e13	e.96	1.4	8.8	88
25	7.2	9.0	4.0	6.4	1.3	1.6	.75	e1.8	e1.8	1.4	4.0	11
26	21	8.0	3.3	4.9	1.1	1.8	.70	e10	e2.5	2.3	2.6	4.2
27	10	7.7	3.2	4.3	1.2	1.5	.85	e2.8	e1.5	1.8	2.5	14
28	26	7.1	3.2	4.3	1.2	11	.78	e3.5	e.96	1.4	14	5.8
29	23	6.5	3.9	4.2	---	4.9	.68	e3.2	e1.4	2.2	5.6	7.2
30	19	9.2	3.1	4.0	---	3.3	.71	e3.0	e3.4	1.6	4.6	4.7
31	26	---	2.9	3.8	---	1.9	---	e2.5	---	1.9	6.2	---
TOTAL	482.8	330.2	158.4	276.2	76.0	64.47	45.96	73.56	51.08	53.6	191.1	221.6
MEAN	15.6	11.0	5.11	8.91	2.71	2.08	1.53	2.37	1.70	1.73	6.16	7.39
MAX	35	31	18	56	9.4	11	5.1	13	3.4	5.0	30	88
MIN	7.2	6.1	2.9	1.8	1.1	.65	.68	.50	.90	1.0	1.4	1.1
AC-FT	958	655	314	548	151	128	91	146	101	106	379	440
CFSM	4.93	3.48	1.62	2.82	.86	.66	.48	.75	.54	.55	1.95	2.34
IN.	5.68	3.89	1.86	3.25	.89	.76	.54	.87	.60	.63	2.25	2.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1997, BY WATER YEAR (WY)

MEAN	16.9	8.65	3.84	3.41	2.71	2.23	3.38	9.23	7.24	4.12	6.11	11.9
MAX	33.7	16.7	7.31	8.91	7.21	6.38	7.63	20.2	16.4	9.85	11.1	24.7
(WY)	1991	1971	1971	1997	1996	1971	1993	1995	1995	1969	1996	1996
MIN	8.52	3.75	1.35	.66	.93	.92	1.09	2.37	1.70	1.73	3.34	5.95
(WY)	1995	1995	1991	1991	1992	1994	1994	1997	1997	1997	1970	1993

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1969 - 1997	
ANNUAL TOTAL	3154.8		2024.97			
ANNUAL MEAN	8.62		5.55		6.41	
HIGHEST ANNUAL MEAN					9.08	1996
LOWEST ANNUAL MEAN					4.13	1994
HIGHEST DAILY MEAN	129	Sep 10	88	Sep 24	216	Oct 7 1990
LOWEST DAILY MEAN	1.2	Jan 13	.50	May 17	.47	Jan 13 1991
ANNUAL SEVEN-DAY MINIMUM	1.4	Jan 7	.56	May 13	.51	Jan 9 1991
INSTANTANEOUS PEAK FLOW			2110	Sep 24	5300	Oct 7 1990
INSTANTANEOUS PEAK STAGE			15.71	Sep 24	21.30	Oct 7 1990
ANNUAL RUNOFF (AC-FT)	6260		4020		4640	
ANNUAL RUNOFF (CFSM)	2.73		1.76		2.03	
ANNUAL RUNOFF (INCHES)	37.14		23.84		27.55	
10 PERCENT EXCEEDS	20		13		15	
50 PERCENT EXCEEDS	4.9		2.6		3.5	
90 PERCENT EXCEEDS	1.9		.95		.96	

e Estimated

50010500 RIO GUAJATACA AT LARES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°18'01", long 66°52'24", at bridge on Highway 111 (km 32.9), 0.1 mi (0.2 km) upstream from Quebrada Anon, and 0.4 mi (0.6 km) northeast of Lares plaza.

DRAINAGE AREA.--3.16 mi² (8.18 km²).

PERIOD OF RECORD.--Water years 1958-71, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
31...	1110	11	226	6.7	22.5	7.1	7.8	89	<10	K1800	2900
FEB 1997											
11...	1300	4.2	246	6.4	21.5	13	8.7	99	<10	K1300	4500
JUN											
12...	0920	2.3	231	7.6	23.5	8.4	6.6	80	<10	3500	5900
AUG											
22...	1130	3.9	302	7.8	24.0	7.3	6.7	82	<10	3200	8500

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
31...	85	25	5.4	10	0.5	2.5	90	<0.5	6.8	11
FEB 1997										
11...	--	--	--	--	--	--	94	--	--	--
JUN										
12...	89	24	6.7	11	0.5	2.2	81	<0.5	9.5	12
AUG										
22...	68	22	3.1	6.2	0.3	2.8	120	--	8.0	8.4

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
31...	<0.10	31	146	4.44	<1	2.30	0.010	2.30	0.020	0.22
FEB 1997										
11...	--	--	--	--	18	2.00	0.010	2.00	0.020	0.20
JUN										
12...	0.11	30	145	0.91	9	0.790	<0.010	0.800	0.030	<0.20
AUG										
22...	<0.10	16	132	1.39	6	1.20	0.015	1.30	0.040	0.22

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
31...	0.24	2.5	11	0.030	1	<100	20	<1	<1	<10
FEB 1997										
11...	0.22	2.2	9.7	0.080	--	--	--	--	--	--
JUN										
12...	<0.20	0.99	4.4	0.060	1	<100	20	<1	<1	<10
AUG										
22...	0.26	1.5	6.7	0.030	--	--	--	--	--	--

K = non-ideal count

50010500 RIO GUAJATACA AT LARES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
31...	320	<1	30	<0.10	<1	<1	<10	<0.010	<1	<0.01
FEB 1997										
11...	--	--	--	--	--	--	--	--	--	--
JUN										
12...	290	<1	54	<0.10	<1	<1	<10	<0.010	1	<0.01
AUG										
22...	--	--	--	--	--	--	--	--	--	--

50010800 LAGO GUAJATACA AT DAMSITE NEAR QUEBRADILLAS, PR

LOCATION.--Lat 18°24'02", long 66°55'25", Hydrologic Unit 21010002, on right bank, in a concrete intake tower at Damsite, 5.2 mi (8.4 km) southeast from Quebradillas plaza, 0.5 mi (0.8 km) northeast from Iglesia San Antonio de Padua and 2.8 mi (4.5 km) from Escuela Segunda Unidad Baldorioty de Castro.

DRAINAGE AREA.--24.6 mi² (63.71 km²)

ELEVATION RECORDS

PERIOD OF RECORD.--April 1995 to current year.

GAGE.--Water stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago Guajataca was completed in 1928. The dam is a semihydraulic earthfill structure about 123 ft (37 m) hight, a top width of 31 ft (9.5 m) at crest elevation of 664 ft (202.5 m), a base width of 623 ft (190 m), a crest lenght of 1,036 ft (316 m) and has a maximum storage capacity of 49,200 acre-feet (60.6 hm³). The Guajataca Dam is owned by the Puerto Rico Electric Power Authority (P.R.E.P.A) and provides water for the municipalities of Aguadilla, Isabela, Moca, Aguada and Quebradillas although its primary purpose is for agricultural irrigation for the flatlands of the area. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 645.48 ft (196.7 m), Oct. 18, 1995; minimum elevation, 611.22 ft (186.3 m) Aug. 16, 1997.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 644.46 ft (196.4 m), Jan. 23; minimum elevation, 611.22 ft (186.3 m), Aug. 16.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
593	0	625	15,295
600	2,405	650	36,403

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	640.27	641.32	641.99	639.40	638.59	634.64	630.34	624.42	623.54	618.46	A	617.38
2	A	641.27	641.92	639.38	638.08	634.51	630.19	624.19	623.53	618.43	A	617.43
3	640.36	641.22	641.98	639.70	637.86	634.38	630.00	623.98	623.46	618.19	A	617.39
4	640.44	641.14	641.94	639.77	637.77	634.24	629.82	623.76	623.29	617.92	A	617.32
5	640.46	641.05	641.84	639.68	637.65	634.11	629.64	623.54	623.11	617.68	A	617.21
6	640.43	640.96	641.75	639.57	637.55	633.97	629.53	623.39	622.93	617.39	A	617.09
7	640.39	640.87	641.66	639.45	637.44	633.84	629.39	623.35	622.69	617.10	A	616.95
8	640.36	640.78	641.56	639.33	637.32	633.69	629.20	623.22	622.52	616.84	A	616.85
9	640.30	640.68	641.44	639.22	637.24	633.56	629.02	623.12	622.37	616.54	A	616.69
10	640.22	640.75	641.38	639.10	637.12	633.41	628.82	622.95	622.17	616.26	A	616.49
11	640.13	640.69	641.65	638.99	637.05	633.26	628.63	623.24	621.98	615.98	A	616.27
12	640.05	640.77	641.60	639.00	636.92	633.10	628.42	623.17	621.79	615.69	A	616.05
13	640.21	640.74	641.50	639.03	636.79	632.94	628.22	622.98	621.61	615.48	A	615.86
14	640.31	640.68	641.43	639.24	636.65	632.79	628.03	622.77	621.41	615.56	611.44	615.64
15	640.29	640.75	641.38	639.24	636.51	632.64	627.83	622.56	621.21	615.97	611.33	615.51
16	640.23	641.06	641.29	639.15	636.37	632.49	627.63	622.34	620.99	616.00	611.54	615.33
17	640.59	641.31	641.18	639.04	636.23	632.36	627.42	622.12	620.76	615.79	611.81	615.09
18	640.75	641.52	641.06	638.93	636.09	632.23	627.22	621.89	620.52	615.55	611.71	614.94
19	640.73	641.60	640.94	638.85	635.96	632.18	627.02	621.66	620.30	615.31	612.57	614.76
20	640.69	641.67	640.83	639.19	635.83	632.11	626.81	621.42	620.09	615.09	614.10	614.57
21	640.69	641.94	640.73	641.39	635.71	631.97	626.60	621.24	619.87	614.85	614.78	614.46
22	640.64	642.85	640.64	644.42	635.57	631.81	626.42	621.12	619.62	614.64	614.91	614.30
23	640.67	642.75	640.52	644.28	635.43	631.65	626.23	621.10	619.38	614.39	614.98	614.17
24	640.60	642.36	640.41	643.88	635.31	631.49	626.01	621.90	619.36	614.14	615.21	614.73
25	640.52	642.23	640.29	643.26	635.19	631.32	625.80	622.54	619.38	613.87	615.19	614.84
26	640.56	642.22	640.17	642.50	635.05	631.16	625.55	622.80	619.19	A	615.06	614.69
27	640.64	642.18	640.05	641.69	634.93	630.99	625.33	623.53	618.97	A	615.38	614.62
28	640.77	642.14	639.93	640.85	634.78	630.90	625.09	623.89	618.71	A	616.64	614.51
29	641.08	642.08	639.80	640.07	---	630.79	624.86	623.83	618.45	A	617.01	614.32
30	641.25	642.05	639.67	639.41	---	630.64	624.64	623.71	618.24	A	617.00	614.16
31	641.32	---	639.55	639.03	---	630.48	---	623.57	---	A	617.21	---
MAX	641.32	642.85	641.99	644.42	638.59	634.64	630.34	624.42	623.54	618.46	617.21	617.43
MIN	640.05	640.68	639.55	638.85	634.78	630.48	624.64	621.10	618.24	613.87	611.33	614.16

CAL YR 1996 MAX 642.99 MIN 629.08
WTR YR 1997 MAX 644.42 MIN 611.33

A No gage-height record

RIO GUAJATACA BASIN

50011000 CANAL PRINCIPAL DE DIVERSIONES AT LAGO DE GUAJATACA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'02", long 66°55'27", off Highway 476 at Lago Guajataca outlet, 3.0 mi (4.8 km) southwest of Segunda Unidad Baldorioty de Castro, and 5.3 mi (8.5 km) south of Quebradillas Plaza.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1958-64, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
15...	1200	E65	296	7.0	24.0	0.90	1.0	12	<10	K14	4
FEB 1997											
10...	1145	75	306	7.2	24.0	0.40	3.2	38	16	K4	97
MAY											
20...	1345	65	293	7.8	27.0	1.0	2.9	37	<10	K4	K12
AUG											
21...	0800	60	308	7.6	27.5	1.4	3.6	46	<10	K80	K99

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
15...	140	49	3.6	7.0	0.3	2.6	100	<0.5	7.6	6.9
FEB 1997										
10...	--	--	--	--	--	--	140	--	--	--
MAY										
20...	130	47	4.1	6.1	0.2	2.1	130	0.5	13	8.9
AUG										
21...	140	50	4.2	5.7	0.2	1.9	140	--	6.3	7.9

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
15...	0.10	7.2	144	E25.2	3	--	<0.010	<0.020	0.060	<0.20
FEB 1997										
10...	--	--	--	--	1	0.320	<0.010	0.320	<0.010	0.28
MAY										
20...	<0.10	4.9	164	28.7	1	<0.010	<0.010	<0.020	0.130	0.40
AUG										
21...	<0.10	7.2	174	28.2	5	0.020	<0.010	0.020	0.380	0.49

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
15...	0.26	0.26	1.1	<0.020	<1	<100	20	<1	<1	<10
FEB 1997										
10...	0.29	0.61	2.7	0.030	--	--	--	--	--	--
MAY										
20...	0.53	0.53	2.4	<0.020	<1	<100	<10	<1	<1	<10
AUG										
21...	0.87	0.89	4.0	<0.020	--	--	--	--	--	--

E = estimated
K = non-ideal count

50011000 CANAL PRINCIPAL DE DIVERSIONES AT LAGO DE GUAJATACA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
15...	50	<1	110	<0.10	<1	<1	<10	<0.010	<1	<0.01
FEB 1997										
10...	--	--	--	--	--	--	--	--	--	--
MAY										
20...	30	<1	80	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
21...	--	--	--	--	--	--	--	--	--	--

50011400 RIO GUAJATACA ABOVE MOUTH NEAR QUEBRADILLAS, PR--Continued

WATER-QUALITY RECORDS

LOCATION.--Lat 18°28'31", long 66°57'46", Hydrologic Unit 21010002, on left bank at ford 1.7 mi (2.7 km) upstream from bridge on highway 2, 1.6 mi (2.6 km) west of Quebradillas plaza, 2.1 mi (3.4 km) upstream from Atlantic Ocean, and 6.6 mi (10.6 km) downstream from Lago Guajataca.

DRAINAGE AREA.--Indeterminate

PERIOD OF RECORD.--Water years 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
15...	1030	11	489	7.0	23.0	1.0	6.0	68	<10	K140	K330
MAR 1997											
06...	1205	12	495	7.8	24.0	0.30	7.6	87	<10	K60	K82
MAY											
22...	1055	16	466	8.1	25.0	0.37	6.6	79	<10	K120	K190
AUG											
21...	1245	26	408	7.9	26.0	1.4	7.7	94	<10	K160	290

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
15...	200	67	7.0	16	0.5	1.5	200	<0.5	7.4	27
MAR 1997										
06...	--	--	--	--	--	--	200	--	--	--
MAY										
22...	230	60	20	35	1	2.7	190	<0.5	35	43
AUG										
21...	--	--	--	--	--	--	170	--	--	--

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
15...	<0.10	6.6	252	7.77	3	1.80	<0.010	1.80	0.020	<0.20
MAR 1997										
06...	--	--	--	--	14	2.10	0.010	2.10	0.020	--
MAY										
22...	0.14	34	343	14.8	4	1.60	<0.010	1.60	0.030	<0.20
AUG										
21...	--	--	--	--	--	0.910	<0.010	0.910	0.020	0.20

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
15...	<0.20	1.9	8.3	<0.020	<1	100	30	<1	<1	<10
MAR 1997										
06...	<0.20	2.1	9.3	0.040	--	--	--	--	--	--
MAY										
22...	<0.20	1.7	7.4	<0.020	<1	70	20	<1	<1	<10
AUG										
21...	0.22	1.1	5.0	<0.020	--	--	--	--	--	--

K = non-ideal count

50011400 RIO GUAJATACA ABOVE MOUTH NEAR QUEBRADILLAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
15...	70	<1	10	<0.10	<1	<1	<10	<0.010	<1	<0.01
MAR 1997										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
22...	50	<1	<10	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
21...	--	--	--	--	--	--	--	--	--	--

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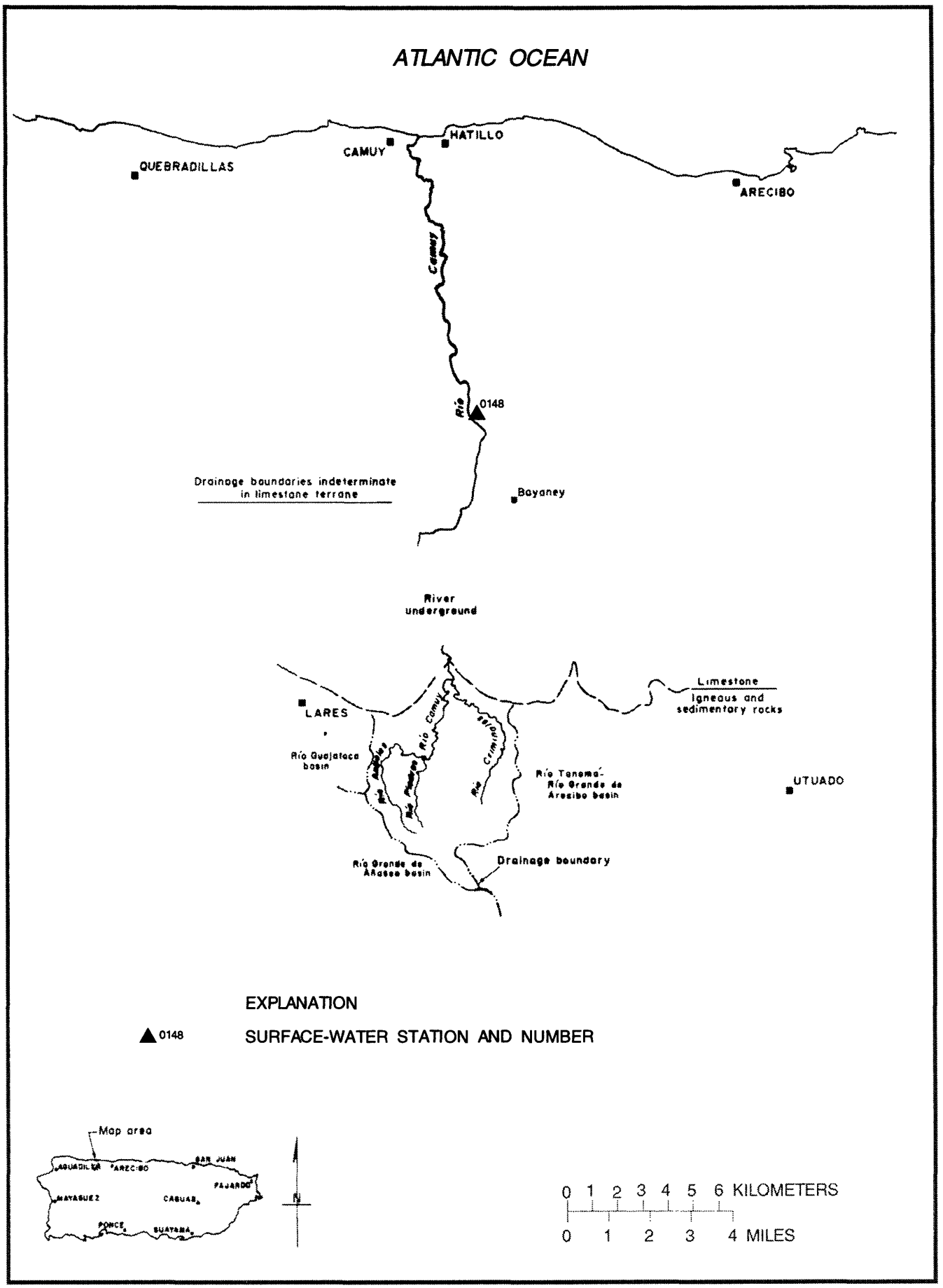

Figure 13.--Río Camuy basin.

RIO CAMUY BASIN

50014800 RIO CAMUY NEAR BAYANEY, PR

LOCATION.--Lat 18°23'48", long 66°49'04", Hydrologic Unit 21010002, on left bank at Highway 488, 1.4 mi (2.2 km) southeast of school at Santiago, 0.9 mi (1.4 km) northwest from Escuela Manuel A. Rivera at Bayaney and 9.1 mi (14.6 km) upstream from mouth.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--May 1984 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 341 ft (104 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	151	204	99	57	118	56	55	37	e85	e46	e38	73
2	113	140	90	151	108	55	50	36	e47	e36	e34	141
3	167	123	87	389	102	55	50	38	e43	e36	e38	83
4	207	115	85	224	97	55	48	36	e36	e34	e47	61
5	190	109	82	101	94	54	47	36	e34	e34	e36	54
6	146	104	78	83	91	54	46	35	e34	e34	e34	52
7	117	101	76	76	88	53	45	35	e32	e34	e34	50
8	135	98	74	74	89	52	45	34	e32	e62	e100	48
9	115	96	73	88	86	50	44	41	e30	e55	e117	46
10	98	156	74	72	87	50	44	49	e29	e36	e168	42
11	94	147	253	e65	82	49	43	38	e34	e34	e110	41
12	91	147	117	e70	81	48	42	40	e34	e38	e67	45
13	115	136	88	e120	78	47	42	36	e34	e38	e83	59
14	145	101	82	e168	76	47	41	35	e32	e34	e122	49
15	109	100	79	e82	74	47	41	35	e32	e140	e93	55
16	92	230	77	e75	72	48	40	e34	e30	e60	e113	49
17	153	194	74	e73	70	49	40	e33	e31	e40	e75	44
18	202	176	70	e70	69	54	41	e32	e36	e40	e65	40
19	128	186	68	e120	69	53	40	e32	e40	e40	e60	38
20	97	139	67	e180	68	95	40	e31	e110	e38	e166	36
21	348	157	68	e360	67	61	42	e31	e50	e58	356	35
22	251	210	71	e600	67	55	58	e36	e40	e40	172	39
23	204	177	67	e420	64	50	65	e65	e40	e36	175	43
24	132	169	64	301	63	48	48	e120	e32	e36	230	115
25	115	138	69	223	62	47	38	e130	e32	e40	100	128
26	171	117	64	174	61	47	37	e125	e73	e51	74	59
27	237	106	63	150	58	46	38	e85	e60	e38	62	84
28	171	100	62	138	57	53	38	e55	e40	e36	62	110
29	208	97	62	124	---	81	38	e43	e38	e62	69	66
30	208	116	59	117	---	70	37	e60	e60	e45	70	68
31	311	---	58	116	---	60	---	e118	---	e40	60	---
TOTAL	5021	4189	2500	5061	2198	1689	1323	1591	1280	1391	3030	1853
MEAN	162	140	80.6	163	78.5	54.5	44.1	51.3	42.7	44.9	97.7	61.8
MAX	348	230	253	600	118	95	65	130	110	140	356	141
MIN	91	96	58	57	57	46	37	31	29	34	34	35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1997, BY WATER YEAR (WY)

MEAN	201	118	68.8	59.0	51.6	47.8	90.0	172	109	73.9	91.5	163
MAX	427	244	97.4	163	96.4	66.0	202	624	235	109	137	363
(WY)	1986	1986	1988	1997	1996	1992	1986	1986	1995	1989	1996	1996
MIN	81.6	60.0	49.7	33.1	29.2	23.7	28.0	43.2	42.7	38.8	47.9	61.8
(WY)	1988	1995	1989	1991	1992	1994	1994	1989	1997	1994	1993	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1984 - 1997	
ANNUAL TOTAL	45152		31126			
ANNUAL MEAN	123		85.3		104	
HIGHEST ANNUAL MEAN					179	1986
LOWEST ANNUAL MEAN					61.5	1994
HIGHEST DAILY MEAN	3310	Sep 10	600	Jan 22	3820	Oct 7 1985
LOWEST DAILY MEAN	35	May 4	29	Jun 10	16	Mar 18 1994
ANNUAL SEVEN-DAY MINIMUM	36	Apr 30	32	Jun 5	17	Mar 16 1994
INSTANTANEOUS PEAK FLOW			1530	Oct 21	6450	Oct 7 1985
INSTANTANEOUS PEAK STAGE			10.19	Oct 21	17.66	Oct 7 1985
INSTANTANEOUS LOW FLOW					15	Mar 22 1994
10 PERCENT EXCEEDS	221		167		202	
50 PERCENT EXCEEDS	79		64		67	
90 PERCENT EXCEEDS	47		36		34	

e Estimated

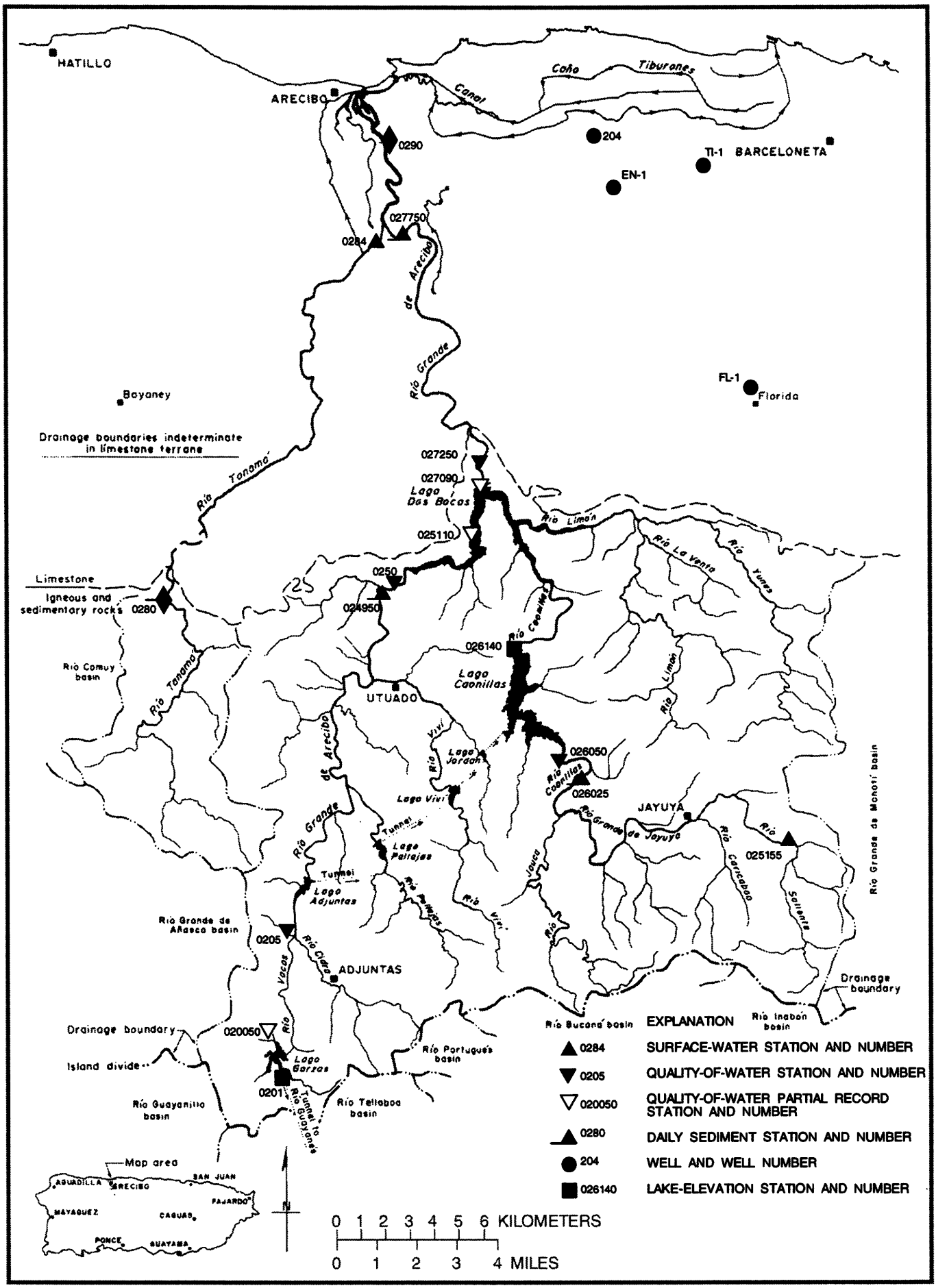

Figure 14.--Río Grande de Arecibo basin.

RIO GRANDE DE ARECIBO BASIN

50020100 LAGO GARZAS NEAR ADJUNTAS, PR

LOCATION.--Lat 18°08'20", long 66°44'29", Hydrologic Unit 21010002, in power gate tower of Garzas Dam on Río Vacas, 1.7 mi (2.7 km) upstream from Río Garzas, and 2.2 mi (3.5 km) southwest of Adjuntas.

DRAINAGE AREA.--15.6 mi² (40.4 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--January 1988 to May 1989, March 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,400.00 ft (731.520 m) above mean sea level. Prior to May 25, 1988 at datum 2,376.80 ft (724.449 m), May 25 to July 13, 1988 at datum 2,338.08 ft (712.647 m), July 14, 1988 to May 25, 1989 at datum 2,337.82 ft (712.560 m), above mean sea level.

REMARKS.--Lake is formed by earthfill dam completed in 1943. Outflow from lake controlled by vertical-lift sluice gate and fixed-crest concrete spillway. Spillway elevation, 2,415.00 ft (736.09 m). Lake is used for irrigation and power production. Operated by P.R. Electric Power Authorithy. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 2,417.66 ft (736.903 m), May 27,1993; minimum elevation, 2,364.79 ft (720.788 m), Aug. 23, 1988.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 2,415.28 ft (736.177 m), Oct. 29; minimum elevation, 2,376.80 ft (724.449 m), Jul. 13.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
2,364	660	2,415	4,082
2,382	1,500	2,418	4,411
2,394	2,250		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2414.77	2414.73	2414.75	2414.54	2414.08	2412.05	2407.75	2402.03	2393.29	2384.98	A	A
2	2414.77	2414.73	2414.75	2414.53	2414.17	2411.93	2407.60	2401.82	2393.02	2384.52	A	A
3	2414.77	2414.73	2414.75	2414.67	2414.13	2411.79	2407.45	2401.67	2392.86	2384.03	A	A
4	2414.77	2414.73	2414.83	2414.61	2414.46	2411.67	2407.27	2401.49	2392.76	2383.63	A	A
5	2414.77	2414.71	2414.84	2414.59	2414.45	2411.56	2407.04	2401.48	2392.67	2383.02	A	A
6	2414.75	2414.70	2414.70	2414.57	2414.39	2411.40	2406.86	2401.48	2392.57	2382.42	A	A
7	2414.75	2414.70	2414.70	2414.55	2414.34	2411.23	2406.67	2401.48	2392.47	2381.91	A	A
8	2414.74	2414.70	2414.68	2414.51	2414.23	2411.08	2406.49	2401.45	2392.38	2381.21	A	A
9	2414.74	2414.70	2414.68	2414.49	2414.17	2410.95	2406.52	2400.20	2392.28	2380.90	A	A
10	2414.74	2414.78	2414.72	2414.46	2414.08	2410.80	2406.34	2399.98	2392.18	2380.19	A	A
11	2414.74	2414.69	2414.72	2414.38	2414.01	2410.64	2406.16	2399.78	2392.09	2379.87	A	A
12	2414.74	2414.81	2414.68	2414.32	2413.93	2410.51	2405.98	2399.52	2391.89	2378.92	A	A
13	2414.74	2414.71	2414.74	2414.26	2413.82	2410.30	2405.80	2399.21	2391.53	2378.12	A	A
14	2414.74	2414.70	2414.68	2414.21	2413.75	2410.11	2405.61	2398.89	2391.21	A	A	A
15	2414.74	2414.70	2414.68	2414.17	2413.65	2409.97	2405.36	2398.54	2390.85	A	A	A
16	2414.74	2414.70	2414.68	2414.13	2413.55	2409.81	2405.17	2398.23	2390.44	A	A	A
17	2414.74	2414.85	2414.66	2414.07	2413.43	2409.65	2404.97	2397.82	2390.12	A	A	A
18	2414.74	2414.84	2414.66	2414.01	2413.32	2409.53	2404.77	2397.48	2389.89	A	A	A
19	2414.82	2414.76	2414.63	2414.02	2413.19	2409.38	2404.61	2397.14	2389.72	A	A	A
20	2414.79	2414.78	2414.63	2414.05	2413.09	2409.19	2404.33	2396.75	2389.36	A	A	A
21	2414.85	2414.82	2414.63	2414.56	2412.99	2409.03	2404.17	2396.40	2389.00	A	A	A
22	2414.88	2414.81	2414.64	2414.66	2412.89	2408.85	2403.99	2396.00	2388.78	A	A	A
23	2414.77	2414.81	2414.62	2414.64	2412.76	2408.68	2403.79	2395.73	2388.31	A	A	A
24	2414.75	2414.77	2414.61	2414.58	2412.65	2408.50	2403.55	2395.39	2387.94	A	A	A
25	2414.74	2414.77	2414.61	2414.55	2412.57	2408.33	2403.31	2394.97	2387.54	A	A	A
26	2414.72	2414.75	2414.59	2414.48	2412.45	2408.13	2403.09	2394.73	2387.13	A	A	A
27	2414.76	2414.75	2414.59	2414.41	2412.35	2408.10	2402.88	2394.98	2386.79	A	A	A
28	2414.76	2414.75	2414.59	2414.35	2412.19	2408.06	2402.67	2394.68	2386.30	A	A	A
29	2414.97	2414.75	2414.59	2414.26	---	2408.10	2402.45	2394.34	2385.89	A	A	A
30	2414.76	2414.75	2414.57	2414.19	---	2408.04	2402.17	2394.03	2385.45	A	A	A
31	2414.73	---	2414.57	2414.13	---	2407.90	---	2393.65	---	A	A	---
MAX	2414.97	2414.85	2414.84	2414.67	2414.46	2412.05	2407.75	2402.03	2393.29	2384.98	---	---
MIN	2414.72	2414.69	2414.57	2414.01	2412.19	2407.90	2402.17	2393.65	2385.45	2378.12	---	---

CAL YR 1996 MAX 2415.20 MIN 2410.81
WTR YR 1997 MAX 2414.97 MIN 2378.12

A No gage-height record

50020500 RIO GRANDE DE ARECIBO NEAR ADJUNTAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°10'54", long 66°44'12", at Highway 135 bridge, 1.0 mi (1.6 km) upstream from Lago Adjuntas, and 1.5 mi (2.4 km) northwest of Adjuntas plaza.

DRAINAGE AREA.--12.7 mi² (32.9 km²) this does not include 6.0 mi² (15.6 km²) above Lago Garzas.

PERIOD OF RECORD.--Water years 1969-74, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
19...	1135	106	230	6.8	21.5	6.5	8.1	94	<10	5200	K19000
FEB 1997											
12...	1130	18	366	6.8	22.0	0.40	10.0	117	<10	200	310
JUN											
10...	1130	6.4	414	8.1	27.0	1.0	8.5	112	<10	450	230
SEP											
03...	0825	37	318	7.5	21.5	4.1	7.9	94	<10	3600	5400

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
19...	94	23	8.9	26	1	3.3	59	<0.5	11	18
FEB 1997										
12...	--	--	--	--	--	--	120	--	--	--
JUN										
10...	140	37	11	25	0.9	2.0	130	<0.5	9.9	38
SEP										
03...	110	30	8.7	16	0.7	2.2	93	--	18	22

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
19...	<0.10	24	150	42.8	10	1.30	<0.010	1.30	0.030	<0.20
FEB 1997										
12...	--	--	--	--	1	1.10	0.010	1.20	0.020	0.21
JUN										
10...	<0.10	36	237	4.12	2	1.06	0.040	1.10	0.020	0.38
SEP										
03...	<0.10	23	176	17.5	36	1.60	<0.010	1.60	0.020	0.22

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
19...	<0.20	1.4	6.4	0.060	<1	<100	20	<1	<1	<10
FEB 1997										
12...	0.22	1.4	6.1	0.040	--	--	--	--	--	--
JUN										
10...	0.40	1.2	4.0	0.150	<1	<100	<10	<1	<1	<10
SEP										
03...	0.24	1.8	8.1	0.030	--	--	--	--	--	--

K = non-ideal count

RIO GRANDE DE ARECIBO BASIN

50020500 RIO GRANDE DE ARECIBO NR ADJUNTAS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
19...	400	1	30	<0.10	<1	<1	<10	<0.010	1	<0.01
FEB 1997										
12...	--	--	--	--	--	--	--	--	--	--
JUN										
10...	80	<1	34	<0.10	<1	<1	<10	<0.010	3	0.02
SEP										
03...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE ARECIBO BASIN

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR

LOCATION.--Lat 18°18'07", long 66°42'15", Hydrologic Unit 21010001, 2.4 mi (3.9 km) north of Utuado Plaza, 3.4 mi (5.5 km) southwest from Dos Bocas Dam, 3.5 mi (5.6 km) northwest from Caonillas Dam.

DRAINAGE AREA.--65.62 mi² (170 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 295.28 ft (90 m), from topographic map.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								40	96	65	132	62
2								45	88	63	e205	60
3								48	86	61	e179	56
4								60	137	60	e86	63
5								38	251	59	65	219
6								38	e129	57	61	90
7								39	e102	64	68	97
8								43	86	157	74	80
9								52	70	254	61	65
10								76	69	192	79	e5790
11								112	66	120	e137	2040
12								62	61	129	e237	1110
13								50	64	87	74	656
14								46	68	88	53	775
15								49	132	111	59	548
16							e53	76	117	83	69	405
17							e53	137	93	77	53	432
18							e55	64	91	74	56	367
19							e79	245	e462	80	95	336
20							e89	285	309	70	92	273
21							e58	193	199	e67	62	234
22							e60	137	118	e64	64	217
23							e62	93	98	63	69	204
24							e57	80	88	62	148	e194
25							e52	85	81	63	110	e216
26							e51	e283	79	61	83	191
27							e49	384	140	59	71	184
28							e45	213	83	67	67	e178
29							42	126	70	87	e95	e316
30							39	120	67	66	e88	297
31							---	106	---	68	67	---
TOTAL							---	3425	3600	2678	2859	15755
MEAN							---	110	120	86.4	92.2	525
MAX							---	384	462	254	237	5790
MIN							---	38	61	57	53	56
AC-FT							---	6790	7140	5310	5670	31250
CFSM							---	1.68	1.83	1.32	1.41	8.00
IN.							---	1.94	2.04	1.52	1.62	8.93

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1996, BY WATER YEAR (WY)

MEAN							---	110	120	86.4	92.2	525
MAX							---	110	120	86.4	92.2	525
(WY)							---	1996	1996	1996	1996	1996
MIN							---	110	120	86.4	92.2	525
(WY)							---	1996	1996	1996	1996	1996

e Estimated

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	318	e302	e105	75	95	62	56	42	53	37	30	440
2	e221	285	e100	75	105	61	e55	84	41	31	26	338
3	e299	268	e99	e90	99	66	62	86	39	30	33	189
4	e233	e248	e106	e95	90	83	53	44	37	31	37	91
5	147	e231	e114	86	87	90	51	40	36	31	26	88
6	e161	e200	118	90	96	76	50	40	36	33	24	103
7	147	e167	111	75	143	68	49	40	e35	34	23	60
8	116	e138	e114	80	87	68	48	39	e34	59	34	55
9	115	e128	e127	77	85	61	48	61	e33	64	106	52
10	109	226	134	80	82	62	47	57	e32	40	61	51
11	104	200	277	74	87	62	46	41	e31	36	50	50
12	101	265	e165	74	82	64	46	40	e30	35	32	61
13	176	e324	e151	77	85	65	45	38	e30	33	240	70
14	e285	273	151	107	84	65	44	38	e29	32	327	58
15	156	e280	148	82	85	65	44	39	e29	42	138	101
16	156	e327	139	e74	78	65	43	39	e29	32	112	52
17	e245	e434	131	71	80	64	43	38	e28	28	82	48
18	e242	463	120	70	82	73	42	37	e29	39	61	46
19	e220	386	e109	90	83	103	41	36	32	41	53	44
20	e234	e345	e105	161	78	78	41	37	44	34	86	44
21	375	e312	107	253	73	60	43	40	e55	46	98	45
22	e272	e228	115	344	71	60	66	54	58	33	76	45
23	e333	254	128	220	70	56	e44	48	42	30	116	44
24	e262	e222	105	214	69	56	40	72	55	28	109	67
25	e226	e174	90	183	68	e55	38	101	29	26	62	61
26	242	e131	86	164	66	e56	39	71	62	30	48	45
27	e207	e116	88	151	64	e58	40	46	88	26	44	67
28	e346	e110	84	139	63	e89	41	50	42	27	43	53
29	271	e103	82	127	---	e77	40	36	37	64	56	94
30	e272	117	e79	112	---	e74	40	39	68	32	52	58
31	e362	---	79	100	---	e67	---	103	---	50	103	---
TOTAL	6953	7257	3667	3710	2337	2109	1385	1576	1223	1134	2388	2620
MEAN	224	242	118	120	83.5	68.0	46.2	50.8	40.8	36.6	77.0	87.3
MAX	375	463	277	344	143	103	66	103	88	64	327	440
MIN	101	103	79	70	63	55	38	36	28	26	23	44
AC-FT	13790	14390	7270	7360	4640	4180	2750	3130	2430	2250	4740	5200
CFSM	3.42	3.69	1.80	1.82	1.27	1.04	.70	.77	.62	.56	1.17	1.33
IN.	3.94	4.11	2.08	2.10	1.32	1.20	.79	.89	.69	.64	1.35	1.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1997, BY WATER YEAR (WY)

MEAN	224	242	118	120	83.5	68.0	46.2	80.7	80.4	61.5	84.6	306
MAX	224	242	118	120	83.5	68.0	46.2	110	120	86.4	92.2	525
(WY)	1997	1997	1997	1997	1997	1997	1997	1996	1996	1996	1996	1996
MIN	224	242	118	120	83.5	68.0	46.2	50.8	40.8	36.6	77.0	87.3
(WY)	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997	1997

SUMMARY STATISTICS	FOR 1997 WATER YEAR		WATER YEARS 1996 - 1997	
ANNUAL TOTAL	36359			
ANNUAL MEAN	99.6		99.6	
HIGHEST ANNUAL MEAN			99.6	1997
LOWEST ANNUAL MEAN			99.6	1997
HIGHEST DAILY MEAN	463	Nov 18	5790	Sep 10 1996
LOWEST DAILY MEAN	23	Aug 7	23	Aug 7 1997
ANNUAL SEVEN-DAY MINIMUM	28	Aug 1	28	Aug 1 1997
INSTANTANEOUS PEAK FLOW	4700	Sep 1	25900	Sep 10 1996
INSTANTANEOUS PEAK STAGE	9.31	Sep 1	19.03	Sep 10 1996
INSTANTANEOUS LOW FLOW	22	Aug 7	22	Aug 7 1997
ANNUAL RUNOFF (AC-FT)	72120		72170	
ANNUAL RUNOFF (CFSM)	1.52		1.52	
ANNUAL RUNOFF (INCHES)	20.61		20.63	
10 PERCENT EXCEEDS	236		245	
50 PERCENT EXCEEDS	70		74	
90 PERCENT EXCEEDS	34		37	

e Estimated

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- April, 1996 to current water year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: April, 1996 to current water year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1996.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediments samples were collected by local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 10,600 mg/L September 10, 1996; Minimum daily mean, 3 mg/L August 6, 1996.

SEDIMENT LOADS: Maximum daily mean, 201,000 tons (183,300 tonnes) September 10, 1996; Minimum daily mean, 0.50 ton (0.45 tonne) August 6, 1996.

EXTREMES FOR CURRENT YEAR 1997.
SEDIMENT CONCENTRATION: Maximum daily mean, 4,620 mg/L September 2, 1997; Minimum daily mean, 11 mg/L June 14, 1997.

SEDIMENT LOADS: Maximum daily mean, 9,140 tons (8,290 tonnes) September 1, 1997; Minimum daily mean, 0.87 ton (0.79 tonne) June 14, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	---	---	---	40	62	6.8	96	93	24
2	---	---	---	45	61	7.4	88	90	22
3	---	---	---	48	64	8.6	86	88	20
4	---	---	---	60	74	12	137	482	433
5	---	---	---	38	60	6.1	251	2520	2180
6	---	---	---	38	58	6.0	e129	679	e415
7	---	---	---	39	59	6.2	e102	92	e25
8	---	---	---	43	60	6.9	86	33	7.8
9	---	---	---	52	382	123	70	24	4.6
10	---	---	---	76	151	36	69	24	4.4
11	---	---	---	112	949	835	66	23	4.1
12	---	---	---	62	125	24	61	22	3.7
13	---	---	---	50	68	9.1	64	21	3.7
14	---	---	---	46	64	8.1	68	21	3.8
15	---	---	---	49	66	9.0	132	558	471
16	e53	143	e20	76	82	18	117	111	36
17	e53	112	e16	137	505	408	93	92	23
18	e55	87	e13	64	78	14	91	92	23
19	e79	763	e363	245	1200	3150	e462	3640	e7290
20	e89	370	e135	285	2030	1870	309	895	785
21	e58	77	e13	193	134	70	199	592	321
22	e60	77	e13	137	111	41	118	403	130
23	e62	76	e13	93	95	24	98	274	73
24	e57	68	e10	80	90	20	88	187	44
25	e52	68	e9.4	85	90	21	81	127	28
26	e51	67	e9.1	e283	1970	e3570	79	87	18
27	e49	65	e8.6	384	2610	5130	140	59	22
28	e45	62	e7.6	213	1110	695	83	42	9.5
29	42	62	7.1	126	112	38	70	40	7.6
30	39	63	6.7	120	585	304	67	40	7.2
31	---	---	---	106	99	28	---	---	---
TOTAL	---	---	---	3425	---	16505.2	3600	---	12439.4

e Estimated

RIO GRANDE DE ARECIBO BASIN

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	65	40	7.0	132	651	421	62	441	74
2	63	40	6.7	e205	1140	e678	60	190	31
3	61	39	6.5	e179	235	e122	56	108	16
4	60	39	6.4	e86	23	e6.0	63	241	56
5	59	39	6.2	65	5	.84	219	2360	4450
6	57	39	6.0	61	3	.50	90	1510	384
7	64	54	10	68	8	2.0	97	381	102
8	157	118	53	74	80	16	80	187	41
9	254	158	108	61	46	7.5	65	105	19
10	192	137	72	79	63	15	5790	10600	201000
11	120	108	35	e137	1040	e961	2040	4990	29000
12	129	183	109	e237	2010	e3520	1110	999	3190
13	87	93	22	74	89	18	656	280	513
14	88	87	21	53	65	9.2	775	2780	11200
15	111	85	25	59	48	7.7	548	5080	7590
16	83	84	19	69	38	7.2	405	522	592
17	77	83	17	53	32	4.6	432	2130	2920
18	74	82	16	56	27	4.1	367	1040	1040
19	80	86	19	95	23	5.9	336	473	429
20	70	81	15	92	183	189	273	438	324
21	e67	79	e14	62	158	27	234	273	173
22	e64	78	e13	64	126	22	217	170	99.8
23	63	78	13	69	99	18	204	185	102
24	62	77	13	148	1110	1530	e194	153	e80
25	63	77	13	110	72	22	e216	1190	e851
26	61	76	13	83	44	9.8	191	747	391
27	59	76	12	71	41	7.6	184	264	131
28	67	80	15	67	40	7.4	e178	249	e134
29	87	79	19	e95	1710	e614	e316	236	e184
30	66	66	12	e88	2740	e665	297	1330	1490
31	68	69	13	67	1040	189	---	---	---
TOTAL	2678	---	729.8	2859	---	9107.34	15755	---	266606.8

e Estimated

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	318	752	736	e302	311	e252	e105	108	e31
2	e221	138	e86	285	115	89	e100	94	e25
3	e299	136	e101	268	90	65	e99	96	e26
4	e233	146	e91	e248	71	e48	e106	117	e33
5	147	156	62	e231	48	e30	e114	144	e45
6	e161	164	e70	e200	32	e17	118	138	44
7	147	165	65	e167	27	e12	111	123	37
8	116	132	41	e138	24	e9.1	e114	110	e34
9	115	94	29	e128	22	e7.7	e127	241	e198
10	109	73	21	226	1260	1140	134	213	86
11	104	75	21	200	140	77	277	1270	1130
12	101	72	20	265	1710	2500	e165	122	e54
13	176	1290	1460	e324	896	e795	e151	87	e35
14	e285	834	e1060	273	170	126	151	65	26
15	156	119	50	e280	394	e369	148	65	26
16	156	112	47	e327	681	e865	139	67	25
17	e245	2320	e3070	e434	1270	e3710	131	70	25
18	e242	1380	e980	463	1600	2880	120	60	20
19	e220	337	e201	386	308	322	e109	58	e17
20	e234	191	e121	e345	161	e149	e105	76	e21
21	375	1430	5250	e312	773	e1170	107	77	22
22	e272	148	e109	e228	1500	e1240	115	74	23
23	e333	145	e130	254	151	103	128	385	184
24	e262	142	e102	e222	174	e104	105	122	34
25	e226	139	e85	e174	200	e93	90	109	26
26	242	488	481	e131	231	e82	86	107	25
27	e207	173	e99	e116	267	e83	88	106	25
28	e346	1670	e1960	e110	307	e91	84	91	21
29	271	2200	1590	e103	327	e91	82	75	17
30	e272	1710	e1270	117	197	61	e79	58	e12
31	e362	2440	e4800	---	---	---	79	44	9.4
TOTAL	6953	---	24208	7257	---	16580.8	3667	---	2336.4

e Estimated

RIO GRANDE DE ARECIBO BASIN

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	75	32	6.5	95	23	5.9	62	211	35
2	75	23	4.7	105	46	15	61	127	21
3	e90	44	e13	99	92	25	66	84	15
4	e95	79	e21	90	59	15	83	3150	867
5	86	94	22	87	39	9.2	90	2560	622
6	90	47	12	96	189	99	76	1510	399
7	75	26	5.3	143	684	362	68	1490	276
8	80	39	9.2	87	169	39	68	350	64
9	77	77	16	85	292	67	61	777	129
10	80	46	10	82	267	59	62	2250	377
11	74	26	5.1	87	195	46	62	1340	225
12	74	14	2.9	82	142	32	64	582	100
13	77	12	2.4	85	105	24	65	508	89
14	107	139	68	84	89	20	65	576	100
15	82	83	19	85	2610	636	65	1480	259
16	e74	51	e10	78	1560	330	65	3210	566
17	71	33	6.3	80	693	149	64	1820	315
18	70	25	4.8	82	463	102	73	815	164
19	90	402	229	83	320	72	103	2080	1020
20	161	847	555	78	164	35	78	750	175
21	253	1540	1570	73	85	17	60	181	30
22	344	1670	2120	71	164	31	60	138	22
23	220	553	330	70	432	81	56	125	19
24	214	411	238	69	986	184	56	112	17
25	183	293	145	68	791	146	e55	101	e15
26	164	206	92	66	501	90	e56	90	e14
27	151	137	56	64	390	67	e58	79	e13
28	139	47	18	63	321	54	e89	1650	e453
29	127	36	12	---	---	---	e77	788	e161
30	112	34	10	---	---	---	e74	498	e95
31	100	28	7.7	---	---	---	e67	462	e85
TOTAL	3710	---	5620.9	2337	---	2812.1	2109	---	6742

e Estimated

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	56	287	43	42	20	2.3	53	76	11
2	e55	186	e27	84	1470	651	41	43	4.7
3	62	183	31	86	2340	717	39	32	3.3
4	53	187	27	44	256	31	37	25	2.6
5	51	119	17	40	147	16	36	20	2.0
6	50	74	9.9	40	121	13	36	16	1.6
7	49	66	8.7	40	98	11	e35	14	e1.3
8	48	49	6.4	39	80	8.4	e34	15	e1.4
9	48	40	5.2	61	2330	507	e33	18	e1.6
10	47	47	5.9	57	661	134	e32	15	e1.3
11	46	42	5.2	41	251	28	e31	12	e.98
12	46	35	4.3	40	316	34	e30	13	e1.1
13	45	33	4.0	38	129	13	e30	16	e1.3
14	44	33	4.0	38	37	3.9	e29	11	e.87
15	44	34	4.0	39	30	3.1	e29	16	e1.2
16	43	35	4.0	39	36	3.7	e29	28	e2.2
17	43	43	5.1	38	71	7.2	e28	27	e2.1
18	42	56	6.4	37	149	15	e29	23	e1.8
19	41	60	6.7	36	93	9.1	32	20	1.8
20	41	60	6.6	37	39	3.9	44	550	162
21	43	60	7.0	40	42	4.7	e55	562	e222
22	66	1110	477	54	817	174	58	451	114
23	e44	87	e10	48	579	76	42	923	150
24	40	76	8.2	72	1710	493	55	526	134
25	38	43	4.5	101	2000	1640	29	43	3.4
26	39	22	2.3	71	1280	429	62	1520	551
27	40	19	2.1	46	68	8.4	88	1540	746
28	41	21	2.3	50	145	20	42	63	7.2
29	40	22	2.4	36	142	14	37	71	7.4
30	40	21	2.3	39	80	8.3	68	1160	689
31	---	---	---	103	938	1800	---	---	---
TOTAL	1385	---	749.5	1576	---	6879.0	1223	---	2830.15

e Estimated

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	37	85	9.2	30	2230	187	440	1530	9140
2	31	54	4.5	26	768	53	338	4620	4230
3	30	38	3.1	33	1190	142	189	795	521
4	31	24	2.0	37	1830	224	91	152	38
5	31	21	1.8	26	330	23	88	119	34
6	33	22	1.9	24	221	14	103	283	85
7	34	32	3.0	23	116	7.2	60	121	20
8	59	62	13	34	65	6.5	55	52	7.7
9	64	76	14	106	1680	1800	52	41	5.8
10	40	48	5.3	61	462	176	51	44	6.1
11	36	27	2.6	50	70	9.9	50	76	10
12	35	16	1.5	32	57	5.0	61	105	17
13	33	15	1.3	240	2500	5330	70	79	16
14	32	24	2.3	327	3200	6360	58	198	62
15	42	346	67	138	2020	815	101	186	51
16	32	370	32	112	859	330	52	152	21
17	28	125	9.4	82	105	23	48	94	12
18	39	62	7.0	61	130	21	46	57	7.1
19	41	63	7.5	53	170	24	44	74	8.9
20	34	58	5.3	86	809	351	44	131	15
21	46	159	20	98	731	318	45	229	28
22	33	102	9.2	76	319	70	45	376	46
23	30	62	5.0	116	1760	1170	44	206	25
24	28	37	2.8	109	379	142	67	100	21
25	26	28	2.0	62	129	22	61	142	23
26	30	36	3.0	48	87	11	45	131	16
27	26	43	3.0	44	72	8.6	67	1450	504
28	27	39	3.0	43	63	7.3	53	68	9.8
29	64	2660	998	56	595	196	94	751	457
30	32	4410	386	52	62	9.2	58	80	13
31	50	2680	439	103	93	27	---	---	---
TOTAL	1134	---	2064.7	2388	---	17882.7	2620	---	15450.4
YEAR	36359		104156.65						

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
OCT 1996							
13...	2400	336	10100	9460	36	48	59
17...	1745	915	25100	62000	23	29	36
21...	1710	3000	12800	104000	16	22	32
NOV							
10...	1800	283	7000	5350	22	30	38
APR 1997							
22...	1700	81	10200	2230	20	24	32
22...	1800	231	14500	9030	20	26	32
MAY							
24...	1630	79	13700	2920	22	28	36
25...	1730	365	20000	19700	18	21	27
JUN							
02...	1336	40	9230	997	24	28	35
26...	1701	200	7440	4020	36	44	57
26...	1720	204	8160	4490	28	35	46
JUL							
29...	1833	220	11000	6530	32	34	48
31...	1735	73	2060	406	48	57	69
AUG							
13...	1531	1440	13800	5360	20	28	34
21...	1715	177	10200	4880	33	39	50
SEP							
27...	1800	242	8640	5650	25	34	45

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
OCT 1996							
13...	75	83	97	98	99	100	100
17...	47	60	80	95	97	97	98
21...	39	48	60	73	84	95	100
NOV							
10...	50	59	74	93	99	100	100
APR 1997							
22...	42	52	71	91	99	100	100
22...	44	58	77	98	100	100	100
MAY							
24...	47	56	71	87	99	100	100
25...	37	49	73	93	100	100	100
JUN							
02...	46	61	82	97	99	100	100
26...	73	83	94	99	100	100	100
26...	62	75	91	98	100	100	100
JUL							
29...	63	78	93	99	100	100	100
31...	79	84	97	99	100	100	100
AUG							
13...	45	56	81	97	99	99	100
21...	63	79	95	99	100	100	100
SEP							
27...	59	72	88	98	99	99	100

RIO GRANDE DE ARECIBO BASIN

50024950 RIO GRANDE DE ARECIBO BELOW UTUADO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JUN 1996					
19...	2102	708	5670	10800	80
20...	0047	616	1580	2630	92
AUG					
12...	1900	521	14000	19700	42
SEP					
05...	1716	325	6410	87	87
10...	0216	2060	9330	51800	72
11...	1733	2560	639	4400	99
OCT					
13...	1845	392	6000	6350	98
14...	1650	841	3760	8540	87
17...	2100	412	6380	7100	92
29...	1610	239	5560	3590	82
NOV					
10...	1720	428	6220	7190	86
DEC					
08...	0930	113	111	34	75
JAN 1997					
21...	1450	322	2720	2360	86
24...	1500	220	397	236	93
MAR					
30...	1300	62	726	122	90
24...	1630	79	13700	2920	71
25...	1730	365	20000	19700	73
29...	1730	35	124	12	93
JUN					
26...	1700	207	7270	4060	94
27...	1830	166	6410	2870	90
JUL					
15...	1830	138	1080	402	88
AUG					
06...	1730	23	183	11	98
09...	1616	175	6850	3240	93
13...	1746	210	4100	2330	91
24...	0030	239	1260	813	94
SEP					
03...	1500	137	340	126	97
27...	1845	170	6410	2940	98
29...	1630	273	8990	6630	98

50025000 RIO GRANDE DE ARECIBO NEAR UTUADO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°18'11", long 66°41'59", at bridge near Highway 10 at km 56.4, 0.5 mi (0.8 km) downstream from Río de Caguana, and 2.5 mi (4.0 km) north of Utuado plaza.

DRAINAGE AREA.--66.0 mi² (170.9 km²) this excludes 6.0 mi² (15.5 km²) upstream from Lago Garzas to Río Guayanés in the Río Tallaboa basin.

PERIOD OF RECORD.--Water years 1959-74, 1979 to current year

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
06...	0845	130	262	6.9	22.5	16	7.7	88	<10	K6600	K1800
FEB 1997											
12...	1345	85	312	6.2	25.5	5.7	7.4	89	<10	K1500	550
JUN											
10...	1350	35	320	8.1	22.5	2.5	8.2	108	<10	230	490
SEP											
03...	1050	215	200	7.0	25.5	260	7.6	93	<10	26000	32000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
06...	100	27	8.1	12	0.5	2.3	92	<0.5	22	13
FEB 1997										
12...	--	--	--	--	--	--	93	--	--	--
JUN										
10...	120	32	8.7	16	0.7	2.6	97	<0.5	30	17
SEP										
03...	71	19	5.5	9.7	0.5	2.7	57	--	16	11

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
06...	<0.10	30	170	59.5	26	1.30	0.020	1.30	0.020	0.34
FEB 1997										
12...	--	--	--	--	30	1.57	0.130	1.70	0.180	0.28
JUN										
10...	0.10	31	195	18.3	4	1.10	0.160	1.30	0.090	0.36
SEP										
03...	<0.10	19	117	68.2	344	1.30	0.014	1.30	0.030	0.78

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	HARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
06...	0.36	1.7	7.6	0.080	<1	<100	20	<1	<1	10
FEB 1997										
12...	0.46	2.2	9.5	0.120	--	--	--	--	--	--
JUN										
10...	0.45	1.7	7.6	<0.020	<1	<100	<10	<1	<1	<10
SEP										
03...	0.81	2.2	9.5	0.330	--	--	--	--	--	--

K = non-ideal count

RIO GRANDE DE ARECIBO BASIN

50025000 RIO GRANDE DE ARECIBO NEAR UTUADO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
06...	1400	1	90	<0.10	<1	<1	10	<0.010	<1	<0.01
FEB 1997										
12...	--	--	--	--	--	--	--	--	--	--
JUN										
10...	160	<1	17	<0.10	<1	<1	<10	<0.010	2	<0.01
SEP										
03...	--	--	--	--	--	--	--	--	--	--

50025155 RIO SALIENTE AT COABEY NEAR JAYUYA, PR

LOCATION.--Lat 18°12'48", long 66°33'49", Hydrologic Unit 21010002, 2.0 mi (3.2 km) southeast of Jayuya, 1.4 mi (2.2 km) northeast of Hacienda Gripiñas.

DRAINAGE AREA.--9.25 mi² (23.96 km²).

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,706 ft (520 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e16	e19	e17	e17	e20	e10	8.2	4.2	6.8	4.5	7.2	15
2	e13	e13	e15	e17	e20	e10	8.1	6.0	6.3	4.1	4.0	34
3	e18	e12	e14	e33	e19	e10	11	5.2	5.8	3.9	5.3	28
4	e14	e11	e14	e32	e18	e10	8.8	5.2	5.8	3.6	7.1	17
5	e13	e10	e13	e22	e18	10	8.2	4.2	5.8	3.4	4.2	15
6	e18	e10	e13	e18	e18	9.5	7.7	4.2	5.7	3.3	3.5	14
7	e13	e11	e12	e17	e17	9.0	7.2	5.1	5.1	3.5	3.1	12
8	e11	e8.4	e12	e15	e16	9.8	6.8	4.1	4.7	3.9	58	11
9	e10	e17	e11	e15	e16	9.4	6.6	22	4.3	3.6	132	9.5
10	e10	e16	e11	e15	e15	8.7	6.6	20	4.3	3.5	43	8.9
11	e10	e19	e58	e15	e15	8.2	6.2	6.9	4.3	3.4	20	8.5
12	e9.6	e17	e40	e15	e14	8.0	6.0	5.4	4.0	4.0	24	9.6
13	e9.6	e13	e34	e15	e14	8.0	5.7	4.6	4.0	4.9	85	9.8
14	e9.0	e9.4	e29	e20	e13	7.8	5.6	4.4	4.3	3.9	110	7.9
15	e9.4	e8.2	e27	e17	e13	7.6	5.5	4.5	4.0	3.7	65	7.6
16	e11	e10	e26	e15	e12	7.6	5.4	4.3	3.6	3.9	26	7.3
17	e15	e50	e23	e14	e12	7.4	5.3	4.6	3.6	3.5	19	7.0
18	e15	e58	e22	e14	e12	7.2	5.1	4.3	4.0	4.1	14	6.9
19	e16	e33	e22	e24	e13	7.3	4.9	3.8	10	5.4	11	6.6
20	e15	e26	e21	e30	e12	6.9	4.9	3.8	7.9	24	10	6.3
21	e14	e49	e21	e140	e12	6.8	4.9	3.8	4.6	15	11	6.8
22	e12	e37	e20	e110	e11	6.4	5.1	3.8	4.0	7.4	11	7.6
23	e10	e34	e19	e60	e11	6.1	4.9	4.7	3.8	5.3	28	7.0
24	e9.2	e32	e18	e45	e10	6.0	4.7	4.7	3.7	4.3	25	20
25	e8.8	e24	e18	e38	e11	5.8	4.5	4.7	3.6	4.1	15	18
26	e11	e20	e18	e31	e11	5.7	4.5	33	6.4	3.8	11	10
27	e20	e18	e18	e27	e10	5.8	4.2	83	11	3.6	28	12
28	e23	e17	e17	e25	e10	6.7	4.1	43	7.7	3.4	62	11
29	e17	e16	e18	e23	---	14	4.1	12	5.0	3.2	30	43
30	e14	e18	e18	e21	---	13	4.0	8.2	4.8	3.2	19	21
31	e20	---	e18	e20	---	8.7	---	7.4	---	19	15	---
TOTAL	414.6	636.0	637	920	393	257.4	178.8	335.1	158.9	170.4	906.4	398.3
MEAN	13.4	21.2	20.5	29.7	14.0	8.30	5.96	10.8	5.30	5.50	29.2	13.3
MAX	23	58	58	140	20	14	11	83	11	24	132	43
MIN	8.8	8.2	11	14	10	5.7	4.0	3.8	3.6	3.2	3.1	6.3
AC-FT	822	1260	1260	1820	780	511	355	665	315	338	1800	790
CFSM	1.45	2.29	2.22	3.21	1.52	.90	.64	1.17	.57	.59	3.16	1.44
IN.	1.67	2.56	2.56	3.70	1.58	1.04	.72	1.35	.64	.69	3.65	1.60

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1997, BY WATER YEAR (WY)

MEAN	38.6	24.4	13.2	19.7	15.9	10.8	20.4	37.9	21.8	16.8	23.0	88.4
MAX	72.0	40.0	22.7	48.1	44.4	15.5	46.4	98.6	35.4	50.9	49.0	365
(WY)	1996	1991	1993	1992	1996	1996	1993	1995	1994	1996	1995	1996
MIN	11.6	10.0	5.97	4.13	4.67	4.79	5.95	5.35	5.30	2.83	9.82	10.8
(WY)	1992	1994	1995	1995	1994	1994	1994	1990	1997	1994	1994	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1989 - 1997	
ANNUAL TOTAL	21343.0		5405.9			
ANNUAL MEAN	58.3		14.8		27.5	
HIGHEST ANNUAL MEAN					64.0	1996
LOWEST ANNUAL MEAN					10.9	1994
HIGHEST DAILY MEAN	4700	Sep 10	140	Jan 21	4700	Sep 10 1996
LOWEST DAILY MEAN	4.7	Jan 12	3.1	Aug 7	2.3	Jul 27 1994
ANNUAL SEVEN-DAY MINIMUM	5.5	Jan 1	3.5	Jul 5	2.5	Jul 23 1994
INSTANTANEOUS PEAK FLOW			unknown	Jan 21	14500	Sep 10 1996
INSTANTANEOUS PEAK STAGE			unknown	Jan 21	19.29	Sep 10 1996
INSTANTANEOUS LOW FLOW			3.0	Aug 7	2.1	Jul 26 1994
ANNUAL RUNOFF (AC-FT)	42330		10720		19940	
ANNUAL RUNOFF (CFSM)	6.30		1.60		2.98	
ANNUAL RUNOFF (INCHES)	85.83		21.74		40.44	
10 PERCENT EXCEEDS	75		27		47	
50 PERCENT EXCEEDS	17		10		12	
90 PERCENT EXCEEDS	8.6		4.0		4.4	

e Estimated

50026025 RIO CAONILLAS AT PASO PALMA, PR

LOCATION.--Lat 18°13'53", long 66°38'14", Hydrologic Unit 21010001, 3.5 mi (5.6 km) south of Lago Caonillas Dam, 4.8 mi (7.72 km) southeast of Utuado Plaza and 2.78 mi (4.47 km) east of Lago Viví Dam.

DRAINAGE AREA.--37.94 mi² (98.26 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 984 ft (300 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	133	e90	53	37	42	53	33	e25	e82	e29	107	31
2	119	e88	52	35	38	49	29	e25	e60	e26	121	29
3	159	e88	50	34	37	46	124	31	e50	e25	73	65
4	164	e90	48	33	35	e45	202	28	e200	e26	48	e90
5	170	88	48	33	33	e45	111	23	e140	e26	41	139
6	117	98	47	36	33	44	90	23	e110	e25	37	59
7	106	95	47	34	82	e40	59	23	e66	e26	36	43
8	97	93	47	33	76	e37	49	24	e56	e1200	35	60
9	92	110	47	37	47	e120	44	25	e48	e920	33	e58
10	90	131	46	34	83	e94	41	25	e46	141	38	e5360
11	129	93	52	31	94	e130	40	25	e39	81	70	e2400
12	147	82	48	30	48	e100	83	24	e34	66	66	e498
13	153	116	48	35	41	e58	83	27	e34	e57	45	316
14	99	99	45	99	37	e50	59	34	e29	78	37	385
15	88	129	45	167	35	e66	59	38	e500	127	35	295
16	149	158	44	62	33	e62	51	e190	e98	73	36	224
17	129	112	43	45	41	e58	47	e240	e54	60	33	202
18	139	93	49	39	41	e47	e48	e90	e190	54	38	e175
19	136	83	60	38	36	e42	e64	e350	142	50	52	155
20	301	79	48	50	35	e40	e56	e1200	68	47	50	138
21	333	73	44	45	186	e37	e47	e250	50	e44	48	121
22	214	75	42	35	214	e33	e44	e84	46	41	35	111
23	163	73	41	33	491	e33	e37	e90	44	40	e32	105
24	e381	63	41	31	240	e32	e35	e54	41	39	74	97
25	e315	62	40	37	130	e32	e35	e43	39	39	59	100
26	244	66	40	62	89	e32	e32	e48	38	37	40	96
27	e169	65	50	98	73	e31	e30	e42	38	36	e36	90
28	e120	59	57	92	66	e30	e30	e36	e35	59	e35	e89
29	e150	55	43	70	59	e30	e28	e32	e32	77	e34	e85
30	e120	54	40	55	---	39	e28	e600	e32	42	e32	89
31	e100	---	38	46	---	36	---	e170	---	39	30	---
TOTAL	5026	2660	1443	1546	2495	1591	1718	3919	2441	3630	1486	11705
MEAN	162	88.7	46.5	49.9	86.0	51.3	57.3	126	81.4	117	47.9	390
MAX	381	158	60	167	491	130	202	1200	500	1200	121	5360
MIN	88	54	38	30	33	30	28	23	29	25	30	29
AC-FT	9970	5280	2860	3070	4950	3160	3410	7770	4840	7200	2950	23220
CFSM	4.27	2.34	1.23	1.31	2.27	1.35	1.51	3.33	2.14	3.09	1.26	10.3
IN.	4.93	2.61	1.41	1.52	2.45	1.56	1.68	3.84	2.39	3.56	1.46	11.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1996, BY WATER YEAR (WY)

MEAN	162	88.7	46.5	49.9	86.0	51.3	57.3	126	81.4	117	47.9	390
MAX	162	88.7	46.5	49.9	86.0	51.3	57.3	126	81.4	117	47.9	390
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996
MIN	162	88.7	46.5	49.9	86.0	51.3	57.3	126	81.4	117	47.9	390
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996

SUMMARY STATISTICS FOR 1996 WATER YEAR

ANNUAL TOTAL	39660	
ANNUAL MEAN	108	
HIGHEST DAILY MEAN	5360	Sep 10
LOWEST DAILY MEAN	23	May 5
ANNUAL SEVEN-DAY MINIMUM	24	May 5
INSTANTANEOUS PEAK FLOW	22100	Sep 10
INSTANTANEOUS PEAK STAGE	26.10	Sep 10
INSTANTANEOUS LOW FLOW	22	May 5
ANNUAL RUNOFF (AC-FT)	78670	
ANNUAL RUNOFF (CFSM)	2.86	
ANNUAL RUNOFF (INCHES)	38.89	
10 PERCENT EXCEEDS	163	
50 PERCENT EXCEEDS	50	
90 PERCENT EXCEEDS	32	

e Estimated

RIO GRANDE DE ARECIBO BASIN

50026025 RIO CAONILLAS AT PASO PALMA, PR

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	100	94	e52	61	28	e23	12	39	14	30	54
2	e72	71	82	e52	60	28	e23	48	22	12	15	100
3	e98	64	76	e98	59	28	e28	37	19	11	15	79
4	88	e59	e73	e98	54	28	e25	18	17	10	21	45
5	70	56	70	e64	e53	29	e23	14	16	11	15	40
6	e100	e55	e68	e54	53	28	e22	14	16	10	13	36
7	69	59	e64	e52	51	28	e21	15	16	10	12	30
8	61	e45	e66	e44	48	30	e20	13	15	17	121	26
9	57	e95	e60	e44	47	29	e19	51	14	17	e177	24
10	54	86	e60	e44	46	26	e19	e43	14	13	90	22
11	56	102	e310	e44	44	25	e19	e22	13	11	51	21
12	e52	93	e170	e44	43	27	e18	e19	13	12	34	25
13	e52	e72	e110	e44	41	26	e18	e17	14	14	206	29
14	49	e53	e86	e60	39	25	e17	e16	13	12	269	22
15	51	e44	e78	e50	38	25	e17	e16	11	12	e162	21
16	58	46	e78	e42	36	25	e17	14	11	13	73	20
17	81	e258	e66	e42	35	24	e15	15	11	12	54	18
18	79	e310	e70	e42	35	25	e15	14	e14	12	42	18
19	84	186	e66	e72	38	26	e14	13	22	14	34	17
20	79	141	e64	e90	37	23	e14	13	25	26	30	17
21	76	e269	e64	e420	36	22	e14	13	14	55	36	17
22	64	e204	e62	e350	35	21	e15	13	13	24	36	20
23	56	180	e58	e190	32	20	e14	27	11	18	45	18
24	50	176	e54	e135	31	20	13	31	11	15	76	46
25	47	130	e54	116	33	19	12	e36	11	14	39	53
26	55	109	e54	94	31	20	11	45	11	14	31	27
27	110	96	e54	80	30	20	11	135	19	12	38	24
28	125	93	e52	74	28	22	11	93	20	12	67	26
29	95	e85	e54	69	---	e37	11	29	20	11	57	47
30	75	97	e54	63	---	38	11	20	18	12	34	55
31	113	---	e54	61	---	e26	---	37	---	32	27	---
TOTAL	2261	3434	2425	2784	1174	798	510	903	483	482	1950	997
MEAN	72.9	114	78.2	89.8	41.9	25.7	17.0	29.1	16.1	15.5	62.9	33.2
MAX	125	310	310	420	61	38	28	135	39	55	269	100
MIN	47	44	52	42	28	19	11	12	11	10	12	17
AC-FT	4480	6810	4810	5520	2330	1580	1010	1790	958	956	3870	1980
CFSM	1.92	3.02	2.06	2.37	1.11	.68	.45	.77	.42	.41	1.66	.88
IN.	2.22	3.37	2.38	2.73	1.15	.78	.50	.89	.47	.47	1.91	.98

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1997, BY WATER YEAR (WY)

MEAN	118	102	62.4	69.8	64.4	38.5	37.1	77.8	48.7	66.3	55.4	212
MAX	162	114	78.2	89.8	86.0	51.3	57.3	126	81.4	117	62.9	390
(WY)	1996	1997	1997	1997	1996	1996	1996	1996	1996	1996	1997	1996
MIN	72.9	88.7	46.5	49.9	41.9	25.7	17.0	29.1	16.1	15.5	47.9	33.2
(WY)	1997	1996	1996	1996	1997	1997	1997	1997	1997	1997	1996	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1996 - 1997	
ANNUAL TOTAL	38651		18201			
ANNUAL MEAN	106		49.9		79.2	
HIGHEST ANNUAL MEAN					108	1996
LOWEST ANNUAL MEAN					49.9	1997
HIGHEST DAILY MEAN	5360	Sep 10	420	Jan 21	5360	Sep 10 1996
LOWEST DAILY MEAN	23	May 5	10	Jul 4	10	Jul 4 1997
ANNUAL SEVEN-DAY MINIMUM	24	May 5	11	Jul 1	11	Jul 1 1997
INSTANTANEOUS PEAK FLOW			unknown	Jan 21	22100	Sep 10 1996
INSTANTANEOUS PEAK STAGE			unknown	Jan 21	26.10	Sep 10 1996
INSTANTANEOUS LOW FLOW			9.5	Jul 6	9.5	Jul 6 1997
ANNUAL RUNOFF (AC-FT)	76660		36100		57340	
ANNUAL RUNOFF (CFSM)	2.78		1.31		2.09	
ANNUAL RUNOFF (INCHES)	37.90		17.85		28.35	
10 PERCENT EXCEEDS	159		95		130	
50 PERCENT EXCEEDS	54		36		45	
90 PERCENT EXCEEDS	32		13		16	

e Estimated

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- October, 1995 to current water year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October, 1995 to current water year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1996.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediments samples were collected by local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 24,700 mg/L September 10, 1996; Minimum daily mean, 1 mg/L several years.

SEDIMENT LOADS: Maximum daily mean, 495,000 tons (449,000 tonnes) September 10, 1996; Minimum daily mean, 0.08 ton (0.07 tonne) June 14, 1997.

EXTREMES FOR WATER YEARS 1996-1997.
SEDIMENT CONCENTRATION: Maximum daily mean, 24,700 mg/L September 10, 1996; Minimum daily mean, 1 mg/L June 26-27 and July 17, 1996.
SEDIMENT LOADS: Maximum daily mean, e495,000 tons (e449,000 tonnes) September 10, 1996; Minimum daily mean, 0.13 ton (0.12 tonne) June 26, 1996.

SEDIMENT CONCENTRATION: Maximum daily mean, 1,220 mg/L November 22, 1996; Minimum daily mean, 1 mg/L February 17, 1997.
SEDIMENT LOADS: Maximum daily mean, e1,570 tons (e1,420 tonnes) November 17, 1996; Minimum daily mean, 0.08 ton (0.07 tonne) June 14, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	133	217	91	e90	86	e22	53	14	2.0
2	119	261	85	e88	87	e21	52	13	1.8
3	159	367	236	e88	88	e21	50	12	1.6
4	164	313	165	e90	88	e21	48	10	1.3
5	170	133	76	88	89	21	48	10	1.3
6	117	32	10	98	111	30	47	10	1.3
7	106	25	7.1	95	113	30	47	10	1.3
8	97	27	7.1	93	108	27	47	10	1.3
9	92	32	7.8	110	158	67	47	10	1.3
10	90	83	22	131	151	64	46	10	1.2
11	129	227	103	93	51	13	52	22	3.3
12	147	217	124	82	64	14	48	44	5.7
13	153	284	139	116	203	105	48	33	4.3
14	99	46	12	99	165	45	45	25	3.1
15	88	50	12	129	244	169	45	19	2.3
16	149	248	202	158	328	155	44	14	1.7
17	129	286	123	112	148	46	43	11	1.2
18	139	287	157	93	105	26	49	18	2.9
19	136	234	94	83	120	27	60	61	10
20	301	601	1250	79	133	28	48	45	5.8
21	333	940	1160	73	107	21	44	33	3.9
22	214	242	156	75	85	18	42	24	2.8
23	163	198	87	73	44	9.2	41	18	2.0
24	e381	494	e438	63	20	3.4	41	17	1.9
25	e315	711	e1090	62	16	2.7	40	16	1.7
26	244	108	75	66	40	8.0	40	17	1.9
27	e169	55	e25	65	50	8.9	50	51	7.0
28	e120	64	e20	59	21	3.3	57	78	12
29	e150	84	e30	55	15	2.3	43	48	5.7
30	e120	85	e31	54	15	2.1	40	43	4.6
31	e100	85	e25	---	---	---	38	41	4.2
TOTAL	5026	---	6060.0	2660	---	1030.9	1443	---	102.4

e Estimated

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	37	40	4.0	42	19	2.2	53	16	2.2
2	35	39	3.7	38	14	1.5	49	12	1.5
3	34	38	3.5	37	10	1.0	46	8	.94
4	33	37	3.3	35	7	.63	e45	5	e.65
5	33	35	3.2	33	4	.38	e45	5	e.67
6	36	34	3.3	33	4	.31	44	6	.69
7	34	33	3.1	82	136	80	e40	6	e.60
8	33	32	2.9	76	144	30	e37	5	e.54
9	37	33	3.3	47	126	16	e120	6	e1.2
10	34	29	2.6	83	221	92	e94	13	e3.6
11	31	21	1.8	94	224	72	e130	27	e8.4
12	30	12	.96	48	40	5.3	e100	27	e8.3
13	35	29	2.9	41	23	2.6	e58	20	e4.1
14	99	355	306	37	14	1.4	e50	21	e3.0
15	167	194	117	35	12	1.1	e66	25	e3.9
16	62	88	15	33	11	1.0	e62	30	e5.1
17	45	75	9.0	41	11	1.2	e58	35	e5.7
18	39	63	6.6	41	13	1.4	e47	42	e5.9
19	38	53	5.4	36	17	1.7	e42	212	e25
20	50	98	15	35	23	2.1	e40	46	e5.1
21	45	51	6.4	186	658	1190	e37	60	e6.2
22	35	32	3.1	214	850	956	e33	79	e7.2
23	33	22	2.0	491	1040	3180	e33	104	e9.2
24	31	15	1.3	240	649	482	e32	127	e11
25	37	14	1.4	130	340	123	e32	64	e5.6
26	62	60	12	89	157	38	e32	23	e2.0
27	98	125	33	73	72	14	e31	8	e.71
28	92	91	23	66	33	5.8	e30	4	e.29
29	70	60	12	59	20	3.2	e30	10	e.83
30	55	40	6.0	---	---	---	39	33	4.4
31	46	27	3.3	---	---	---	36	202	21
TOTAL	1546	---	616.06	2495	---	6305.82	1591	---	155.52

e Estimated

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	33	32	2.9	e25	4	e.29	e82	170	e61
2	29	21	1.6	e25	9	e.61	e60	33	e6.5
3	124	403	363	31	29	.9	e50	37	e5.5
4	202	973	927	28	29	2.2	e200	692	e210
5	111	341	117	23	24	1.5	e140	156	e75
6	90	629	160	23	19	1.2	e110	18	e6.2
7	59	104	17	23	13	.79	e66	12	e2.8
8	49	14	1.9	24	9	.58	e56	12	e2.1
9	44	11	1.3	25	6	.39	e48	6	e.89
10	41	18	2.0	25	3	.23	e46	3	e.42
11	40	35	3.8	25	5	.35	e39	3	e.40
12	83	529	126	24	9	.61	e34	4	e.40
13	83	139	35	27	21	1.7	e34	5	e.45
14	59	14	2.2	34	23	2.4	e29	6	e.50
15	59	6	1.0	38	39	9.0	e500	240	e218
16	51	5	.69	e190	148	e24	e98	448	e385
17	47	22	2.7	e240	344	e152	e54	76	e16
18	e48	201	e27	e90	398	e183	e190	75	e17
19	e64	744	e132	e350	356	e232	142	208	208
20	e56	52	e8.7	e1200	1340	e2280	68	121	23
21	e47	12	e1.7	e250	1490	e1620	50	41	5.7
22	e44	10	e1.2	e84	414	e183	46	26	3.2
23	e37	10	e1.1	e90	160	e37	44	16	1.9
24	e35	12	e1.1	e54	975	e184	41	9	1.0
25	e35	24	e2.2	e43	51	e6.7	39	4	.37
26	e32	81	e7.4	e48	48	e5.9	38	1	.13
27	e30	29	e2.4	e42	701	e85	38	1	.14
28	e30	25	e2.0	e36	28	e3.0	e35	2	e.25
29	e28	13	e.99	e32	17	e1.5	e32	14	e1.9
30	e28	6	e.45	e600	917	e751	e32	339	e35
31	---	---	---	e170	1100	e1140	---	---	---
TOTAL	1718	---	1953.33	3919	---	6912.85	2441	---	1288.75

e Estimated

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	e29	17	e1.4	107	279	197	31	30	2.5
2	e26	5	e.36	121	350	156	29	32	2.5
3	e25	2	e.17	73	94	21	65	251	131
4	e26	4	e.26	48	53	6.9	e90	156	e43
5	e26	5	e.35	41	36	4.0	139	349	223
6	e25	6	e.38	37	20	2.0	59	53	8.9
7	e26	15	e1.1	36	10	1.0	43	13	1.5
8	e1200	574	e1090	35	5	.52	60	57	10
9	e920	820	e1220	33	5	.40	e58	51	e6.6
10	141	201	81	38	27	3.2	e5360	24700	e495000
11	81	87	19	70	89	24	e2400	4360	e12100
12	66	36	6.4	66	75	15	e498	16600	e21400
13	e57	9	e1.4	45	34	4.4	316	14600	12500
14	78	61	21	37	10	.95	385	9430	10200
15	127	175	76	35	12	1.1	295	663	537
16	73	3	.64	36	16	1.6	224	320	195
17	60	1	.24	33	18	1.6	202	165	90
18	54	2	.34	38	29	3.4	e175	85	e40
19	50	5	.68	52	55	8.0	155	38	16
20	47	10	1.3	50	84	15	138	16	6.1
21	e44	11	e1.3	48	207	28	121	16	5.2
22	41	12	1.3	35	38	3.6	111	25	7.6
23	40	17	1.8	e32	12	e1.5	105	87	24
24	39	26	2.7	74	273	102	97	278	73
25	39	36	3.7	59	96	15	100	236	63
26	37	13	1.3	40	86	9.4	96	143	37
27	36	3	.27	e36	69	e6.7	90	113	27
28	59	58	28	e35	24	e2.2	e89	169	e41
29	77	68	24	e34	7	e.67	e85	122	e28
30	42	16	1.8	e32	11	e.98	89	185	46
31	39	24	2.5	30	25	2.0	---	---	---
TOTAL	3630	---	2590.69	1486	---	639.12	11705	---	552864.9
YEAR	39660		580520.34						

e Estimated

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	85	94	22	100	377	106	94	29	7.4
2	e72	82	e17	71	84	17	82	18	4.0
3	e98	141	e48	64	18	3.1	76	13	2.6
4	88	86	22	e59	17	e2.6	e73	10	e2.0
5	70	28	5.3	56	17	2.6	70	8	1.5
6	e100	37	e8.2	e55	28	e4.3	e68	8	e1.5
7	69	71	13	59	49	8.2	e64	13	e2.2
8	61	54	9.0	e45	36	e4.4	e66	59	e10
9	57	43	6.7	e95	22	e2.8	e60	186	e32
10	54	35	5.1	86	107	35	e60	69	e11
11	56	28	4.2	102	140	41	e310	70	e48
12	e52	23	e3.2	93	103	26	e170	301	e209
13	e52	18	e2.5	e72	80	e16	e110	34	e13
14	49	15	2.0	e53	50	e7.3	e86	21	e5.5
15	51	24	3.5	e44	35	e4.2	e78	21	e4.6
16	58	63	9.9	46	44	5.7	e78	52	e11
17	81	388	146	e258	623	e1570	e66	126	e24
18	79	99	23	e310	629	e518	e70	96	e18
19	84	47	11	186	198	113	e66	137	e25
20	79	31	6.6	141	85	32	e64	66	e12
21	76	72	16	e269	612	e895	e64	125	e22
22	64	41	7.4	e204	1220	e678	e62	34	e5.8
23	56	26	4.0	180	929	450	e58	13	e1.9
24	50	28	3.8	176	382	200	e54	23	e3.4
25	47	43	5.4	130	150	53	e54	37	e5.5
26	55	77	13	109	114	34	e54	35	e5.1
27	110	239	114	96	98	26	e54	33	e4.8
28	125	425	153	93	78	20	e52	44	e6.3
29	95	428	111	e85	59	e14	e54	80	e11
30	75	315	64	97	45	12	e54	60	e12
31	113	346	129	---	---	---	e54	124	e21
TOTAL	2261	---	988.8	3434	---	4901.2	2425	---	543.1

e Estimated

RIO GRANDE DE ARECIBO BASIN

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	e52	44	e6.3	61	26	4.3	28	25	1.9
2	e52	37	e5.1	60	75	12	28	49	3.7
3	e98	75	e15	59	202	32	28	96	7.4
4	e98	65	e17	54	137	20	28	149	11
5	e64	75	e16	e53	59	e8.5	29	173	13
6	e54	36	e5.8	53	25	3.6	28	90	6.9
7	e52	19	e2.8	51	12	1.6	28	42	3.2
8	e44	11	e1.5	48	18	2.3	30	15	1.2
9	e44	10	e1.2	47	33	4.2	29	6	.49
10	e44	9	e1.1	46	29	3.5	26	6	.43
11	e44	9	e1.1	44	23	2.8	25	8	.53
12	e44	10	e1.2	43	39	4.5	27	21	1.5
13	e44	15	e1.8	41	74	8.2	26	42	3.0
14	e60	22	e3.2	39	34	3.7	25	26	1.8
15	e50	38	e5.5	38	9	.94	25	16	1.1
16	e42	101	e12	36	3	.29	25	14	.93
17	e42	40	e4.5	35	1	.13	24	12	.76
18	e42	69	e7.8	35	4	.36	25	6	.42
19	e72	55	e8.6	38	12	1.2	26	4	.25
20	e90	130	e29	37	11	1.1	23	6	.38
21	e420	903	e620	36	9	.91	22	11	.64
22	e350	424	e450	35	8	.76	21	13	.74
23	e190	117	e68	32	7	.62	20	12	.69
24	e135	46	e17	31	7	.63	20	6	.34
25	116	23	7.2	33	9	.75	19	4	.23
26	94	22	5.5	31	14	1.2	20	17	.92
27	80	22	4.8	30	24	1.9	20	50	2.7
28	74	22	4.4	28	25	1.9	22	38	2.2
29	69	16	3.1	---	---	---	e37	87	14
30	63	11	1.9	---	---	---	38	27	3.0
31	61	15	2.4	---	---	---	e26	8	.55
TOTAL	2784	---	1330.8	1174	---	123.89	798	---	85.90

e Estimated

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	e23	7	e.45	12	9	.33	39	38	4.5
2	e23	8	e.52	48	166	69	22	13	.77
3	e28	11	e.78	37	40	4.7	19	12	.61
4	e25	14	e.99	18	20	.96	17	12	.54
5	e23	11	e.69	14	12	.43	16	11	.45
6	e22	9	e.56	14	7	.26	16	18	.76
7	e21	15	e.86	15	10	.42	16	15	.63
8	e20	129	e7.1	13	17	.59	15	11	.45
9	e19	10	e.52	51	108	60	14	7	.26
10	e19	4	e.18	e43	208	e59	14	4	.16
11	e19	5	e.25	e22	44	4.1	13	4	.15
12	e18	6	e.30	e19	19	1.0	13	4	.14
13	e18	4	e.17	e17	16	.78	14	3	.10
14	e17	3	e.15	e16	151	6.8	13	2	.08
15	e17	23	e1.0	e16	15	.64	11	4	.12
16	e17	86	e4.0	14	16	.63	11	7	.19
17	e15	21	e.94	15	9	.36	11	8	.24
18	e15	4	e.18	14	5	.20	e14	10	e.41
19	e14	9	e.34	13	5	.19	22	21	1.6
20	e14	78	e2.9	13	6	.20	25	22	1.6
21	e14	161	e6.1	13	4	.15	14	18	.68
22	e15	206	e8.1	13	4	.14	13	18	.61
23	e14	263	e9.8	27	23	4.3	11	16	.49
24	13	322	11	31	13	1.4	11	15	.45
25	12	317	9.9	e36	12	e.95	11	13	.37
26	11	268	8.3	45	54	18	11	11	.33
27	11	46	1.4	135	253	248	19	17	.90
28	11	5	.16	93	77	36	20	11	.65
29	11	5	.14	29	4	.35	20	185	14
30	11	5	.16	20	4	.21	18	328	15
31	---	---	---	37	39	13	---	---	---
TOTAL	510	---	77.94	903	---	533.09	483	---	47.24

e Estimated

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	14	165	6.5	30	39	3.4	54	84	39
2	12	81	2.7	15	17	.73	100	139	44
3	11	39	1.2	15	9	.35	79	93	22
4	10	19	.54	21	9	.51	45	34	4.3
5	11	9	.27	15	10	.39	40	25	2.9
6	10	6	.15	13	8	.28	36	27	2.6
7	10	7	.21	12	7	.25	30	15	1.2
8	17	71	6.4	121	371	482	26	13	.95
9	17	13	.62	e177	556	e340	24	12	.78
10	13	6	.20	90	267	75	22	8	.50
11	11	8	.23	51	30	4.5	21	6	.34
12	12	11	.36	34	29	3.0	25	10	.95
13	14	15	.57	206	685	672	29	15	1.3
14	12	23	.75	269	941	1200	22	6	.32
15	12	54	1.7	e162	328	e175	21	4	.25
16	13	80	2.7	73	98	20	20	6	.33
17	12	31	1.1	54	45	6.7	18	8	.38
18	12	14	.44	42	22	2.5	18	4	.21
19	14	47	1.9	34	11	1.0	17	4	.19
20	26	162	12	30	6	.46	17	4	.18
21	55	200	29	36	19	2.7	17	4	.19
22	24	168	11	36	40	3.9	20	5	.24
23	18	37	1.8	45	61	16	18	6	.28
24	15	10	.39	76	106	26	46	210	84
25	14	14	.55	39	30	3.3	53	366	68
26	14	17	.65	31	18	1.5	27	19	1.4
27	12	9	.28	38	34	4.4	24	12	.86
28	12	5	.14	67	83	22	26	25	1.8
29	11	7	.19	57	53	9.0	47	66	12
30	12	10	.30	34	14	1.4	55	58	10
31	32	166	32	27	11	.78	---	---	---
TOTAL	482	---	116.84	1950	---	3079.05	997	---	301.45
YEAR	18201		12129.30						

e Estimated

RIO GRANDE DE ARECIBO BASIN

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
OCT 1996							
02...	1705	72	7600	1480	10	15	21
NOV							
21...	1645	844	2860	6520	32	39	49
AUG 1997							
13...	1315	159	3950	1700	34	34	46
SEP							
03...	1700	61	2230	367	38	47	60

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
OCT 1996							
02...	29	34	44	67	94	99	99
NOV							
21...	67	78	94	98	100	100	100
AUG 1997							
13...	60	72	87	96	99	100	100
SEP							
03...	71	80	96	98	99	99	100

RIO GRANDE DE ARECIBO BASIN

50026025 RIO CAONILLAS AT PASO PALMA, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1995					
03...	1851	356	1650	1590	78
24...	0935	440	570	677	97
25...	1750	1130	224	683	93
NOV					
13...	1730	255	255	176	87
JAN 1996					
14...	2055	327	3020	2670	93
15...	0415	281	307	233	88
FEB					
23...	1815	2150	1740	10100	92
23...	2330	422	5020	5720	94
APR					
03...	1830	132	2570	916	98
MAY					
04...	1610	25	5370	362	46
21...	1835	E250	7300	E4930	82
30...	1600	E600	2120	E505	80
JUN					
04...	0930	E220	1570	E848	69
19...	1800	606	976	1600	95
30...	1541	E32	1310	E113	65
JUL					
09...	2100	400	450	486	97
31...	1130	39	547	38	55
AUG					
01...	1625	430	1290	1500	92
OCT					
02...	1705	72	7600	1480	44
JAN 1997					
18...	1400	E42	617	E70	63
FEB					
25...	1200	33	8	0.71	93
MAR					
29...	1825	75	604	122	84
JUN					
30...	1130	14	339	13	97
AUG					
13...	1315	159	3950	1700	87
28...	1130	45	3940	479	76
SEP					
03...	1700	61	2230	367	96

50026050 RIO CAONILLAS ABOVE LAGO CAONILLAS NEAR JAYUYA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°13'26", long 66°38'22", 300 ft (91 m) off Highway 531, 700 ft (213 m) upstream from Lago Caonillas, 3.3 mi (5.3 km) northwest of Jayuya plaza.

DRAINAGE AREA.--40.4 mi² (104.6 km²).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
19...	0900	E191	147	6.6	20.5	37	7.8	87	11	4500	28000
FEB 1997											
21...	0810	38	240	6.7	20.5	0.70	7.5	84	<10	K940	480
JUN											
12...	1225	16	283	8.2	31.5	1.6	7.6	98	<10	K36	230
SEP											
02...	1510	64	186	7.1	27.0	60	7.3	95	<10	20000	7000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
19...	57	15	4.7	8.5	0.5	1.9	58	<0.5	12	8.5
FEB 1997										
21...	--	--	--	--	--	--	84	--	--	--
JUN										
12...	110	29	8.4	15	0.6	2.1	95	<0.5	20	16
SEP										
02...	65	17	5.3	9.7	0.5	2.6	61	--	12	10

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
19...	<0.10	20	105	E54	62	1.30	0.020	1.30	0.030	0.29
FEB 1997										
21...	--	--	--	--	2	1.10	<0.010	1.10	0.020	0.27
JUN										
12...	0.12	24	172	7.22	<1	0.030	<0.010	0.030	0.030	<0.20
SEP										
02...	<0.10	20	114	19.8	60	0.580	<0.010	0.590	0.030	0.52

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
19...	0.32	1.6	7.1	0.100	<1	<100	20	<1	2	10
FEB 1997										
21...	0.30	1.4	6.0	0.050	--	--	--	--	--	--
JUN										
12...	<0.23	0.22	0.95	0.040	<1	<100	30	<1	<1	<10
SEP										
02...	0.55	1.1	5.0	0.120	--	--	--	--	--	--

K = non-ideal count
E = estimated

50026050 RIO CAONILLAS ABOVE LAGO CAONILLAS NEAR JAYUYA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
19...	2300	2	130	<0.10	<1	<1	10	<0.010	<1	<0.01
FEB 1997										
21...	--	--	--	--	--	--	--	--	--	--
JUN										
12...	60	<1	22	<0.10	<1	<1	<10	<0.010	<1	<0.01
SEP										
02...	--	--	--	--	--	--	--	--	--	--

50026140 LAGO CAONILLAS AT DAMSITE NEAR UTUADO, PR

LOCATION.--Lat 18°16'43", long 66°39'24", Hydrologic Unit 21010001, at Lago Caonillas Dam on Río Caonillas, 2.9 mi (4.7 km) northeast of Plaza de Utuado, 0.3 mi (0.6 km) west from Iglesia Santa María del Monte Carmelo, and 1.8 mi (3.0 km) northwest from Hacienda Carbonell.

DRAINAGE AREA.--48.4 mi² (125.4 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--March 1991 to current year. Prior to October 1994, published as Lago Caonillas at Caonillas.

GAGE.--Water stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago Caonillas was completed in 1948. The dam is a concrete gravity structure with a total length of 815 ft (248 m), a maximum height of 235 ft (72 m), and a maximum base width of 195 ft (59 m). Non-overflow sections on each abutment have a total length of 603 ft (184 m). The dam is the main unit of Caonillas Hydroelectric Project, and provides 49,000 acre-feet (60 hm³) of usable storage for power generation at Caonillas Power Plant No. 1 located 2.5 mi (4.0 km) downstream from the dam. The dam is owned by Puerto Rico Electric Power Authority. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 829.37 ft (252.79 m), Sept. 11, 1996; minimun elevation, 737.92 ft (224.92 m), Aug. 8, 1997.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 827.63 ft (252.26 m), Jan. 27; minimum elevation, 737.92 ft (224.92 m), Aug. 8.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
705	0	800	27,982
750	8,421	830	46,161

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	805.98	A	824.13	825.38	826.04	813.90	794.81	766.09	746.44	739.71	739.62	761.05
2	804.77	812.89	824.28	825.51	825.96	813.81	794.78	764.70	745.99	739.62	739.58	761.69
3	805.09	813.06	824.55	825.84	825.86	813.03	A	764.73	743.38	739.51	739.59	762.10
4	805.36	813.20	824.81	825.92	825.40	812.35	A	764.71	743.10	739.34	739.65	762.27
5	805.44	813.33	824.97	826.07	824.57	811.78	A	763.63	743.09	739.17	739.58	762.39
6	805.53	813.44	825.18	826.19	823.92	811.06	A	762.35	742.99	739.07	739.51	762.48
7	805.35	813.63	825.27	825.81	823.85	810.30	A	761.03	742.12	738.94	739.41	762.52
8	805.53	813.74	825.26	825.60	823.81	810.33	A	760.96	741.76	738.88	740.87	762.63
9	805.70	813.88	824.90	825.70	823.91	810.33	A	761.47	741.71	738.81	743.44	762.78
10	805.84	814.17	824.87	825.49	823.62	809.74	A	759.57	741.63	738.71	744.46	762.86
11	805.99	814.50	825.37	825.21	822.76	808.99	A	759.13	741.52	738.59	744.84	762.86
12	806.13	814.81	825.88	825.15	821.89	808.55	A	756.67	741.39	738.46	745.10	762.86
13	806.26	814.19	826.22	825.04	821.17	807.70	A	756.12	741.28	738.37	748.60	762.90
14	806.40	814.25	826.51	824.31	820.53	806.74	A	754.00	741.14	738.26	754.54	762.89
15	806.37	814.41	826.68	823.72	820.57	806.24	A	751.87	741.01	738.11	756.57	762.88
16	806.52	814.66	826.05	823.39	819.77	805.86	A	751.44	740.85	738.09	757.22	762.86
17	807.17	816.14	826.03	823.48	819.44	804.88	A	750.75	740.38	738.04	757.66	762.83
18	807.42	817.38	826.17	823.46	819.25	804.49	A	747.48	740.28	738.11	757.89	762.80
19	807.67	818.08	826.17	823.69	818.65	803.75	A	745.82	740.25	738.14	758.07	762.80
20	807.89	818.51	826.23	823.90	817.91	802.69	A	745.94	740.29	738.30	758.20	762.79
21	A	819.70	826.32	825.61	817.07	801.95	A	746.06	740.04	738.76	758.52	762.81
22	A	820.71	826.48	827.04	817.14	801.67	A	745.19	739.89	738.84	758.75	762.82
23	A	820.90	826.33	827.21	817.03	801.19	777.31	745.30	739.79	738.80	758.82	762.84
24	A	821.43	826.23	827.31	816.59	800.36	775.90	745.41	739.67	738.79	759.47	763.01
25	A	821.93	826.27	827.43	816.08	799.20	774.64	745.47	739.47	738.73	759.65	763.24
26	A	822.36	825.73	827.59	815.09	798.07	772.71	745.60	739.35	738.72	759.74	763.31
27	A	822.72	825.80	826.96	814.74	797.36	772.48	745.64	739.39	738.67	759.86	763.37
28	A	823.09	825.89	826.72	813.84	796.98	771.37	745.88	739.38	738.62	760.21	763.42
29	A	823.36	826.00	825.90	---	796.96	769.78	745.87	739.79	A	760.54	762.53
30	A	823.80	825.43	825.83	---	796.36	767.86	745.86	740.06	A	760.74	762.82
31	A	---	825.30	825.88	---	796.01	---	746.25	---	A	761.05	---
MAX	807.89	823.80	826.68	827.59	826.04	813.90	794.81	766.09	746.44	739.71	761.05	763.42
MIN	804.77	812.89	824.13	823.39	813.84	796.01	767.86	745.19	739.35	738.04	739.41	761.05

CAL YR 1996 MAX 828.47 MIN 773.30
WTR YR 1997 MAX 827.59 MIN 738.04

A No gage-height record

50027250 RIO GRANDE DE ARECIBO BELOW LAGO DOS BOCAS NEAR FLORIDA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'50", long 66°40'02", at pedestrian bridge, 0.7 mi (1.1 km) downstream from Lago Dos Bocas and 6.6 mi (10.6 km) west of Florida plaza.

DRAINAGE AREA.--169 mi² (436 km²) does not include 6.0 mi² (15.6 km²) above Lago Garzas.

PERIOD OF RECORD.--Water years 1970-71, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
30...	1200	E1500	198	6.8	25.5	95	5.8	69	<10	K830	4800
FEB 1997											
13...	0845	22	226	6.6	22.5	4.0	5.4	61	<10	K10	K500
JUN											
10...	0820	17	233	7.3	27.0	1.5	4.1	51	<10	K150	K40
SEP											
03...	1215	E1500	222	6.8	27.5	180	4.5	57	<10	2600	3900

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
30...	77	22	5.3	9.2	0.5	2.7	70	<0.5	13	8.8
FEB 1997										
13...	--	--	--	--	--	--	80	--	--	--
JUN										
10...	88	24	7.0	10	0.5	2.3	80	<0.5	14	12
SEP										
03...	81	23	5.9	9.7	0.5	2.5	73	--	13	10

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
30...	<0.10	21	124	E 502	90	1.00	0.050	1.10	0.060	0.37
FEB 1997										
13...	--	--	--	--	5	0.960	<0.010	0.960	0.010	<0.20
JUN										
10...	<0.10	20	137	6.46	2	0.140	0.030	0.170	0.160	0.25
SEP										
03...	<0.10	18	126	E 510	108	0.560	0.050	0.610	0.070	0.57

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
30...	0.42	1.5	6.6	0.060	<1	<100	30	<1	2	<10
FEB 1997										
13...	0.20	1.2	5.1	0.020	--	--	--	--	--	--
JUN										
10...	0.42	0.59	2.6	0.120	<1	<100	<10	<1	<1	<10
SEP										
03...	0.64	1.2	5.5	0.240	--	--	--	--	--	--

E= estimated
K = non-ideal count

50027250 RIO GRANDE DE ARECIBO BELOW LAGO DOS BOCAS NEAR FLORIDA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
30...	2700	2	150	<0.10	<1	<1	<10	<0.010	<1	<0.01
FEB 1997										
13...	--	--	--	--	--	--	--	--	--	--
JUN										
10...	80	<1	88	<0.10	<1	<1	<10	<0.010	<1	0.01
SEP										
03...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE ARECIBO BASIN

50027750 RIO GRANDE DE ARECIBO ABOVE ARECIBO, PR

LOCATION.--Lat 18°25'22", long 66°41'58", Hydrologic Unit 21010002, 0.5 mi (0.8 km) upstream from Río Tanamá, 3.6 mi (5.8 km) south of Arecibo and 4.9 mi (7.9 km) above mouth, and 6.2 mi (9.97 km) downstream from Lago Dos Bocas.

DRAINAGE AREA.--174 mi² (451 km²), approximately, of which an undetermined amount does not contribute directly to surface runoff.

PERIOD OF RECORD.--April 1982 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 30 ft (9 m), from topographic map.

REMARKS.--Records fair. Flow regulated by Lago Dos Bocas Dam 10.4 mi (16.7 km) upstream from gage. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	582	554	468	140	199	136	255	287	37	202	221	81
2	631	164	527	158	230	91	249	303	35	274	113	299
3	666	143	363	162	265	296	140	200	102	187	110	418
4	592	315	205	377	331	313	278	135	282	70	41	358
5	548	160	431	203	378	263	221	155	312	41	37	241
6	294	291	406	200	363	293	141	200	281	37	65	240
7	425	497	559	151	250	371	67	226	178	36	75	101
8	152	389	292	234	198	166	230	218	70	78	93	259
9	115	223	483	122	183	86	286	109	135	72	70	328
10	87	268	505	85	390	275	336	314	51	37	70	224
11	64	376	434	311	386	346	340	198	176	83	68	224
12	58	319	207	131	406	281	142	258	75	56	134	109
13	99	454	116	215	358	314	75	336	39	37	166	64
14	136	343	371	463	329	335	63	213	34	34	317	48
15	401	194	376	419	177	245	208	310	30	119	587	52
16	561	307	498	334	296	312	351	245	45	73	273	132
17	374	210	314	308	237	328	340	103	77	58	243	93
18	480	730	227	231	214	259	360	263	61	103	231	85
19	174	926	197	249	252	297	148	313	34	101	162	91
20	153	873	187	278	314	256	97	141	31	85	294	47
21	526	448	203	673	372	201	132	90	29	128	137	85
22	512	518	206	2730	296	94	135	80	56	136	276	43
23	596	594	273	1040	188	233	327	134	162	118	251	38
24	473	282	264	713	274	268	315	166	66	189	151	65
25	478	464	159	669	245	286	168	181	38	107	270	48
26	169	431	440	496	360	327	68	269	35	43	264	39
27	209	420	427	558	367	343	363	270	31	37	294	54
28	87	194	181	439	326	183	241	73	31	176	300	108
29	122	319	143	447	---	153	216	133	33	302	149	361
30	534	224	431	439	---	204	285	130	37	267	102	326
31	566	---	233	432	---	257	---	62	---	257	63	---
TOTAL	10864	11630	10126	13407	8184	7812	6577	6115	2603	3543	5627	4661
MEAN	350	388	327	432	292	252	219	197	86.8	114	182	155
MAX	666	926	559	2730	406	371	363	336	312	302	587	418
MIN	58	143	116	85	177	86	63	62	29	34	37	38
AC-FT	21550	23070	20080	26590	16230	15500	13050	12130	5160	7030	11160	9250
CFSM	1.75	1.94	1.63	2.16	1.46	1.26	1.10	.99	.43	.57	.91	.78
IN.	2.02	2.16	1.88	2.49	1.52	1.45	1.22	1.14	.48	.66	1.05	.87

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1997, BY WATER YEAR (WY)

MEAN	600	525	286	249	229	217	343	566	339	245	246	506
MAX	1984	1413	570	437	428	351	617	2000	683	374	474	1479
(WY)	1986	1986	1988	1988	1988	1985	1986	1986	1987	1987	1988	1996
MIN	171	123	72.4	83.5	61.3	91.2	65.7	178	69.3	62.7	82.8	99.9
(WY)	1995	1995	1995	1995	1995	1994	1995	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1982 - 1997	
ANNUAL TOTAL	129056		91149			
ANNUAL MEAN	353		250		362	
HIGHEST ANNUAL MEAN					729	1986
LOWEST ANNUAL MEAN					132	1994
HIGHEST DAILY MEAN	12300	Sep 10	2730	Jan 22	14800	May 18 1985
LOWEST DAILY MEAN	30	Jul 31	29	Jun 21	16	Apr 14 1994
ANNUAL SEVEN-DAY MINIMUM	60	Jul 25	39	Jun 24	22	Mar 30 1994
INSTANTANEOUS PEAK FLOW			4280	Jan 22	45800	May 18 1985
INSTANTANEOUS PEAK STAGE			10.47	Jan 22	18.22	May 18 1985
ANNUAL RUNOFF (AC-FT)	256000		180800		262100	
ANNUAL RUNOFF (CFSM)	1.76		1.25		1.81	
ANNUAL RUNOFF (INCHES)	24.00		16.95		24.58	
10 PERCENT EXCEEDS	560		463		742	
50 PERCENT EXCEEDS	223		224		237	
90 PERCENT EXCEEDS	77		57		55	

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water year 1982 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October, 1995 to current year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1995.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediments samples were collected by local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,540 mg/L September 10, 1996; Minimum daily mean, 2 mg/L several years.

SEDIMENT LOADS: Maximum daily mean, 53,700 tons (48,700 tonnes) September 10, 1996; Minimum daily mean, 0.18 ton (0.16 tonne) June 15, 1997.

EXTREMES FOR CURRENT YEAR 1997.
SEDIMENT CONCENTRATION: Maximum daily mean, 141 mg/L January 22, 1997; Minimum daily mean, 2 mg/L June 14-15, 1997.

SEDIMENT LOADS: Maximum daily mean, 1,060 tons (961 tonnes) January 22, 1997; Minimum daily mean, 0.18 ton (0.16 tonne) June 15, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	582	61	129	554	49	94	468	52	91
2	631	45	91	164	16	8.1	527	52	98
3	666	51	113	143	14	7.3	363	36	46
4	592	47	95	315	31	38	205	21	13
5	548	27	43	160	17	13	431	45	90
6	294	25	24	291	24	35	406	46	63
7	425	38	59	497	51	100	559	60	122
8	152	16	8.5	389	37	56	292	29	35
9	115	12	4.4	223	24	23	483	51	96
10	87	9	2.3	268	30	36	505	53	96
11	64	6	1.1	376	38	49	434	41	63
12	58	6	.88	319	32	38	207	23	18
13	99	11	7.9	454	45	67	116	11	3.6
14	136	15	8.5	343	35	41	371	40	71
15	401	43	69	194	41	27	376	39	57
16	561	58	122	307	32	35	498	53	105
17	374	26	38	210	44	33	314	37	39
18	480	48	79	730	113	273	227	27	23
19	174	20	18	926	116	292	197	21	14
20	153	58	27	873	139	346	187	30	19
21	526	30	77	448	42	66	203	22	17
22	512	75	129	518	53	100	206	22	19
23	596	38	76	594	56	111	273	31	28
24	473	53	97	282	29	35	264	28	27
25	478	50	105	464	68	98	159	16	9.4
26	169	17	11	431	43	66	440	50	87
27	209	22	17	420	39	59	427	45	75
28	87	8	2.5	194	31	19	181	20	11
29	122	23	16	319	36	46	143	15	7.4
30	534	73	124	224	23	21	431	40	65
31	566	66	143	---	---	---	233	47	37
TOTAL	10864	---	1738.08	11630	---	2232.4	10126	---	1545.4

50027750 RIO GRANDE DE ARECIBO ABOVE ARECIBO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	140	14	7.5	199	22	17	136	15	6.1
2	158	21	12	230	24	19	91	9	2.1
3	162	16	9.5	265	29	26	296	20	20
4	377	38	52	331	33	36	313	24	26
5	203	20	19	378	40	54	263	25	24
6	200	22	17	363	41	53	293	33	42
7	151	16	10	250	26	21	371	40	53
8	234	23	22	198	20	12	166	17	10
9	122	23	7.9	183	21	19	86	8	1.9
10	85	19	5.2	390	45	61	275	17	21
11	311	33	36	386	43	56	346	29	34
12	131	13	5.6	406	45	63	281	29	28
13	215	21	15	358	32	38	314	30	32
14	463	44	82	329	33	38	335	37	42
15	419	43	56	177	19	13	245	28	23
16	334	37	41	296	33	40	312	34	41
17	308	33	34	237	25	20	328	24	28
18	231	24	17	214	20	13	259	28	24
19	249	27	22	252	27	29	297	28	28
20	278	29	25	314	35	40	256	26	22
21	673	50	131	372	42	56	201	16	13
22	2730	141	1060	296	32	35	94	6	1.8
23	1040	116	324	188	19	14	233	25	19
24	713	116	229	274	29	30	268	24	24
25	669	84	154	245	23	21	286	26	26
26	496	52	74	360	36	49	327	28	32
27	558	68	107	367	38	47	343	29	34
28	439	55	79	326	33	38	183	24	14
29	447	50	75	---	---	---	153	19	9.1
30	439	49	72	---	---	---	204	21	14
31	432	48	70	---	---	---	257	32	25
TOTAL	13407	---	2870.7	8184	---	958	7812	---	720.0

RIO GRANDE DE ARECIBO BASIN

50027750 RIO GRANDE DE ARECIBO ABOVE ARECIBO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	255	21	22	287	27	28	37	5	.48
2	249	25	21	303	28	28	35	4	.34
3	140	14	6.7	200	22	19	102	8	2.5
4	278	23	24	135	15	9.0	282	46	44
5	221	19	16	155	14	12	312	34	43
6	141	15	8.1	200	16	16	281	47	40
7	67	7	1.3	226	21	20	178	17	11
8	230	19	21	218	23	18	70	7	1.6
9	286	26	26	109	15	4.8	135	36	13
10	336	27	32	314	27	33	51	5	.78
11	340	28	32	198	19	12	176	14	15
12	142	16	6.5	258	30	24	75	7	2.0
13	75	9	1.9	336	31	33	39	3	.29
14	63	7	1.2	213	22	16	34	2	.23
15	208	49	29	310	23	25	30	2	.18
16	351	26	22	245	24	18	45	4	.56
17	340	35	43	103	11	3.0	77	7	2.7
18	360	41	54	263	31	38	61	6	1.2
19	148	16	11	313	29	31	34	4	.34
20	97	10	3.5	141	14	5.6	31	3	.28
21	132	13	11	90	6	1.5	29	3	.25
22	135	23	13	80	4	.87	56	6	.97
23	327	27	31	134	13	5.4	162	29	18
24	315	28	30	166	17	11	66	28	6.0
25	168	18	8.8	181	16	9.3	38	26	2.5
26	68	7	1.5	269	23	18	35	61	5.7
27	363	23	30	270	22	23	31	67	5.6
28	241	24	21	73	9	1.8	31	64	5.3
29	216	19	17	133	14	10	33	61	5.4
30	285	24	24	130	11	5.3	37	58	5.7
31	---	---	---	62	7	1.3	---	---	---
TOTAL	6577	---	569.5	6115	---	480.87	2603	---	234.90

RIO GRANDE DE ARECIBO BASIN

50027750 RIO GRANDE DE ARECIBO ABOVE ARECIBO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	202	56	35	221	22	18	81	8	6.0
2	274	17	15	113	11	3.9	299	27	35
3	187	17	15	110	11	4.5	418	93	148
4	70	8	1.6	41	4	.49	358	39	56
5	41	6	.69	37	3	.34	241	27	32
6	37	5	.50	65	6	1.4	240	21	21
7	36	4	.38	75	7	1.8	101	11	6.8
8	78	7	3.7	93	9	2.7	259	23	22
9	72	13	2.6	70	7	1.4	328	35	38
10	37	7	.65	70	8	1.6	224	24	20
11	83	7	3.2	68	8	1.7	224	28	21
12	56	14	2.2	134	11	6.3	109	11	3.6
13	37	13	1.3	166	12	8.7	64	7	1.2
14	34	11	1.0	317	27	31	48	5	.66
15	119	13	5.2	587	71	115	52	5	.79
16	73	16	3.1	273	25	28	132	19	9.3
17	58	7	1.1	243	25	24	93	24	6.8
18	103	9	3.2	231	21	20	85	12	3.0
19	101	10	3.7	162	16	8.8	91	10	2.8
20	85	9	2.5	294	31	41	47	5	.65
21	128	13	8.6	137	15	8.6	85	18	4.2
22	136	15	8.9	276	19	25	43	18	2.0
23	118	8	3.5	251	25	21	38	16	1.7
24	189	16	10	151	16	12	65	14	2.3
25	107	11	4.2	270	23	25	48	5	.69
26	43	4	.52	264	30	36	39	4	.44
27	37	4	.37	294	30	32	54	5	1.2
28	176	14	17	300	25	28	108	11	5.9
29	302	25	28	149	14	8.9	361	30	47
30	267	23	24	102	10	6.0	326	28	35
31	257	23	23	63	9	1.8	---	---	---
TOTAL	3543	---	229.71	5627	---	524.93	4661	---	535.03
YEAR	91149		12639.52						

50027750 RIO GRANDE DE ARECIBO ABOVE ARECIBO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
OCT 1996							
21...	1915	1230	1970	6550	37	43	53

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
OCT 1996							
21...	67	68	79	91	99	99	100

50027750 RIO GRANDE DE ARECIBO ABOVE ARECIBO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
21...	2355	1390	84	315	88
22...	1815	500	196	265	100
23...	2315	1010	129	352	85
24...	0215	1000	134	362	94
NOV					
18...	2244	1030	344	957	86
19...	0129	1050	134	380	96
19...	2139	1080	156	454	93
JAN 1997					
14...	2055	1110	55	165	93
21...	1840	1290	91	317	95
21...	2355	1740	107	503	87
22...	0240	2190	100	590	96
22...	0755	3320	161	1440	87
MAR					
13...	1235	112	115	35	66

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR

LOCATION.--Lat 18°18'02", long 66°46'58", Hydrologic Unit 21010001, on downstream side of left abutment of bridge on Highway 111, 1.2 mi (1.9 km) upstream from natural tunnel, 1.5 mi (2.4 km) northeast of Angeles, and 5.8 mi (9.3 km) northwest of Utuado.

DRAINAGE AREA.--18.4 mi² (47.7 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1944 to June 1958 (daily stage and two to four measurements per month by Puerto Rico Water Resources Authority), November 1959 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 938.32 ft (286.000 m) above mean sea level. Datum of gage was lowered 3.00 ft (0.914 m) on Oct. 1978. Prior to Nov. 17, 1966, non-recording gage and Nov. 17, 1966 to Sept. 30, 1978 recording gage, both at present site.

REMARKS.--Records fair except those for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	100	71	40	59	33	30	16	39	21	17	e34
2	68	90	66	59	62	32	30	46	22	17	16	e125
3	74	85	63	102	61	32	29	27	20	17	17	e44
4	64	81	61	57	54	33	28	19	17	16	21	e36
5	62	79	57	46	52	32	27	18	16	16	17	32
6	88	78	54	43	52	30	26	18	16	16	16	29
7	68	75	52	42	54	30	25	17	15	16	16	28
8	66	76	50	43	51	30	25	17	15	29	46	27
9	62	77	47	40	52	29	25	18	14	24	55	25
10	59	135	72	38	49	28	25	18	14	16	78	24
11	57	85	139	37	49	27	24	17	16	15	48	23
12	61	113	58	39	48	27	24	17	16	17	30	34
13	175	85	52	68	47	28	23	16	16	17	39	26
14	133	73	50	94	45	29	20	16	15	15	58	51
15	e77	70	49	47	44	31	22	15	15	64	43	35
16	e97	83	48	42	43	32	21	16	14	24	53	25
17	206	109	47	41	43	35	21	15	15	18	32	22
18	e85	134	46	40	42	35	19	16	17	18	29	21
19	104	95	45	64	42	42	19	15	19	18	28	21
20	96	89	44	91	41	37	22	14	51	17	34	19
21	461	91	45	209	42	29	22	15	23	26	38	22
22	136	92	48	251	39	29	46	21	19	18	27	25
23	111	94	44	104	37	28	22	33	19	16	112	22
24	100	82	45	105	37	27	25	56	15	16	63	51
25	92	84	44	82	36	28	21	61	15	18	38	31
26	116	75	e44	e71	35	28	20	58	34	23	30	22
27	104	72	e43	e67	34	27	19	37	27	17	28	80
28	139	74	e43	e63	33	47	18	25	19	16	26	36
29	102	74	e42	e60	---	40	17	20	18	28	44	93
30	93	84	e41	e58	---	47	17	29	28	20	142	48
31	128	---	e40	e57	---	39	---	55	---	18	e78	---
TOTAL	3360	2634	1650	2200	1283	1001	712	781	599	627	1319	1111
MEAN	108	87.8	53.2	71.0	45.8	32.3	23.7	25.2	20.0	20.2	42.5	37.0
MAX	461	135	139	251	62	47	46	61	51	64	142	125
MIN	57	70	40	37	33	27	17	14	14	15	16	19
AC-FT	6660	5220	3270	4360	2540	1990	1410	1550	1190	1240	2620	2200
CFSM	5.89	4.77	2.89	3.86	2.49	1.75	1.29	1.37	1.09	1.10	2.31	2.01
IN.	6.79	5.33	3.34	4.45	2.59	2.02	1.44	1.58	1.21	1.27	2.67	2.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997, BY WATER YEAR (WY)

MEAN	80.1	67.9	42.5	30.0	26.1	24.9	36.0	56.8	42.0	35.6	45.5	74.3
MAX	195	159	121	71.0	50.8	71.2	143	193	116	65.7	110	177
(WY)	1990	1969	1966	1997	1996	1972	1969	1963	1979	1981	1979	1961
MIN	25.4	25.1	21.5	18.0	13.3	11.0	9.70	12.4	15.6	9.18	15.9	25.0
(WY)	1963	1995	1965	1974	1965	1984	1984	1977	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1960 - 1997	
ANNUAL TOTAL	20699		17277			
ANNUAL MEAN	56.6		47.3		46.9	
HIGHEST ANNUAL MEAN					71.1	1969
LOWEST ANNUAL MEAN					20.7	1994
HIGHEST DAILY MEAN	1390	Sep 10	461	Oct 21	2170	May 17 1963
LOWEST DAILY MEAN	15	Jul 21	14	May 20	5.4	Aug 4 1994
ANNUAL SEVEN-DAY MINIMUM	17	Jul 17	15	May 15	6.4	Jul 29 1994
INSTANTANEOUS PEAK FLOW			7420	Oct 21	12200	May 18 1985
INSTANTANEOUS PEAK STAGE			15.76	Oct 21	17.45	May 18 1985
INSTANTANEOUS LOW FLOW			14	May 20	5.4	Aug 4 1994
ANNUAL RUNOFF (AC-FT)	41060		34270		33950	
ANNUAL RUNOFF (CFSM)	3.07		2.57		2.55	
ANNUAL RUNOFF (INCHES)	41.85		34.93		34.61	
10 PERCENT EXCEEDS	103		91		83	
50 PERCENT EXCEEDS	37		37		33	
90 PERCENT EXCEEDS	21		16		16	

e Estimated

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: January 1968 to current year.

INSTRUMENTATION.--USD-49 sediment sampler since October 1968. Automatic sediment sampler since 1990.

REMARKS.--Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected by a local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 20,400 mg/L November 27, 1968; minimum daily mean, <1 mg/L during water year 1985.
SEDIMENT LOADS: Maximum daily, 167,000 tons (152,000 tonnes) May 18, 1985, minimum daily, <0.01 ton (<0.01 tonne) several days during many years.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,010 mg/L October 21, 1996; minimum daily mean, 3.0 mg/L April 16, 1997.
SEDIMENT LOADS: Maximum daily, 14,500 tons (13,200 tonnes) October 21, 1996; minimum daily, 0.20 ton (0.18 tonne) April 16, 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
31...	0855	86	155	6.5	21.5	4.9	8.1	92	<10	400	720
FEB 1997											
12...	0830	49	168	6.4	19.0	1.6	8.4	91	<10	230	640
MAY											
20...	1115	13	169	8.3	24.5	1.2	7.9	98	10	K30	K160
AUG											
27...	1255	27	178	7.7	27.0	5.6	7.5	97	<10	K180	230

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
31...	56	14	5.2	7.4	0.4	2.2	46	<0.5	11	8.6
FEB 1997										
12...	--	--	--	--	--	--	59	--	--	--
MAY										
20...	69	18	5.9	9.2	0.5	1.7	56	0.5	13	9.0
AUG										
27...	66	17	5.4	8.3	0.4	2.1	59	--	11	7.6

K = non-ideal count

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER-QUALITY DATA, WATER YEARS OCTOBER 1996 TO SEPTEMBER 1997

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
31...	<0.10	25	101	23.3	11	1.10	<0.010	1.10	0.010	<0.20
FEB 1997										
12...	--	--	--	--	3	0.980	<0.010	0.980	<0.010	<0.20
MAY										
20...	<0.10	26	115	4.15	<1	0.550	<0.010	0.560	0.020	<0.20
AUG										
27...	0.10	25	112	8.18	9	0.830	<0.010	0.840	0.020	<0.20

DATE	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT 1996										
31...	<0.20	1.3	5.6	<0.020	<1	<100	20	<1	<1	<10
FEB 1997										
12...	<0.20	1.1	4.8	<0.020	--	--	--	--	--	--
MAY										
20...	<0.20	0.61	2.7	<0.020	<1	<100	10	<1	<1	<10
AUG										
27...	<0.20	1.0	4.5	0.080	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L) (38260)
OCT 1996										
31...	420	<1	30	<0.10	<1	<1	<10	<0.010	4	<0.01
FEB 1997										
12...	--	--	--	--	--	--	--	--	--	--
MAY										
20...	340	<1	20	<0.10	<1	<1	<10	<0.010	2	<0.01
AUG										
27...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	76	51	11	100	89	24	71	33	6.4
2	68	30	5.6	90	60	15	66	14	2.6
3	74	50	13	85	34	7.7	63	7	1.2
4	64	32	5.6	81	18	3.9	61	6	1.0
5	62	19	3.2	79	11	2.3	57	7	1.0
6	88	248	133	78	10	2.1	54	7	1.0
7	68	45	8.3	75	10	2.0	52	7	1.0
8	66	42	7.6	76	15	3.4	50	8	1.0
9	62	30	5.0	77	52	11	47	9	1.1
10	59	20	3.2	135	426	335	72	160	45
11	57	15	2.2	85	117	27	139	702	363
12	61	20	4.0	113	334	200	58	22	3.5
13	175	625	1420	85	66	16	52	13	1.9
14	133	297	219	73	21	4.1	50	11	1.5
15	e77	52	e11	70	18	3.5	49	9	1.2
16	e97	56	e14	83	109	37	48	8	1.1
17	206	845	2500	109	286	179	47	8	.95
18	e85	114	e26	134	431	277	46	8	.94
19	104	54	15	95	109	29	45	11	1.3
20	96	28	7.4	89	31	7.6	44	15	1.8
21	461	2010	14500	91	56	14	45	20	2.4
22	136	593	247	92	81	23	48	15	1.9
23	111	88	27	94	78	20	44	11	1.3
24	100	40	11	82	50	11	45	8	.96
25	92	37	9.0	84	41	9.5	44	6	.74
26	116	267	161	75	15	3.0	e44	5	e.59
27	104	198	61	72	12	2.4	e43	4	e.50
28	139	457	355	74	11	2.2	e43	6	e.65
29	102	79	22	74	10	2.0	e42	8	e.88
30	93	27	6.8	84	52	15	e41	10	e1.1
31	128	331	218	---	---	---	e40	10	e1.1
TOTAL	3360	---	20031.9	2634	---	1288.7	1650	---	450.61

e Estimated

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	40	11	1.1	59	10	1.6	33	5	.47
2	59	116	46	62	21	4.0	32	5	.48
3	102	320	214	61	38	6.4	32	8	.71
4	57	57	8.8	54	23	3.4	33	13	1.1
5	46	48	6.0	52	28	3.9	32	17	1.5
6	43	32	3.6	52	37	5.2	30	12	.96
7	42	20	2.3	54	44	6.4	30	7	.61
8	43	18	2.2	51	32	4.4	30	5	.45
9	40	26	2.8	52	34	4.9	29	7	.56
10	38	23	2.4	49	25	3.3	28	10	.74
11	37	20	2.0	49	15	2.0	27	12	.89
12	39	23	2.4	48	9	1.2	27	10	.76
13	68	294	176	47	6	.72	28	9	.65
14	94	160	79	45	5	.61	29	7	.56
15	47	28	3.6	44	5	.60	31	6	.52
16	42	18	2.0	43	5	.62	32	6	.48
17	41	15	1.6	43	7	.83	35	10	1.1
18	40	17	1.8	42	10	1.1	35	20	1.9
19	64	168	120	42	13	1.4	42	26	3.6
20	91	207	87	41	8	.85	37	39	4.1
21	209	1650	1330	42	4	.50	29	16	1.3
22	251	1870	1810	39	5	.55	29	12	.96
23	104	63	18	37	7	.66	28	10	.78
24	105	134	45	37	8	.77	27	11	.81
25	82	33	7.3	36	7	.70	28	12	.89
26	e71	13	e2.4	35	7	.62	28	13	.96
27	e67	9	e1.7	34	6	.56	27	14	1.0
28	e63	8	e1.3	33	6	.50	47	52	11
29	e60	6	e1.0	---	---	---	40	29	3.5
30	e58	7	e1.1	---	---	---	47	64	18
31	e57	8	e1.3	---	---	---	39	27	3.1
TOTAL	2200	---	3983.7	1283	---	58.29	1001	---	64.44

e Estimated

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	30	19	1.5	16	6	.25	39	94	9.9
2	30	15	1.2	46	137	78	22	75	4.5
3	29	12	.95	27	115	8.6	20	56	3.0
4	28	10	.78	19	76	3.9	17	34	1.6
5	27	12	.83	18	48	2.4	16	20	.88
6	26	13	.92	18	30	1.5	16	15	.62
7	25	15	.99	17	21	.97	15	21	.83
8	25	13	.90	17	26	1.2	15	30	1.2
9	25	12	.82	18	36	1.7	14	42	1.6
10	25	11	.74	18	45	2.1	14	44	1.6
11	24	11	.74	17	41	1.9	16	43	1.8
12	24	12	.75	17	35	1.6	16	44	1.9
13	23	11	.69	16	30	1.3	16	51	2.3
14	23	7	.45	16	24	1.0	15	60	2.5
15	22	5	.28	15	19	.78	15	60	2.5
16	22	3	.20	16	16	.69	14	33	1.3
17	21	5	.25	15	18	.71	15	17	.69
18	20	7	.37	16	21	.90	17	10	.49
19	19	10	.52	15	25	1.1	19	12	.68
20	19	11	.56	14	29	1.1	51	220	128
21	22	13	.84	15	33	1.4	23	82	5.3
22	46	200	75	21	32	1.7	19	15	.82
23	29	18	1.5	33	36	6.4	19	58	3.0
24	22	14	.83	56	270	124	15	42	1.7
25	21	11	.66	61	193	117	15	31	1.3
26	21	9	.49	58	260	93	34	35	4.6
27	20	6	.35	37	27	2.9	27	19	1.4
28	19	5	.26	25	27	1.9	19	17	.86
29	18	5	.26	20	13	.70	18	11	.54
30	17	6	.26	29	36	5.1	28	33	3.3
31	---	---	---	55	235	109	---	---	---
TOTAL	722	---	94.89	781	---	574.80	599	---	190.71

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	21	85	4.8	17	28	1.3	e34	405	e429
2	17	77	3.6	16	29	1.2	e125	1080	e1070
3	17	83	3.8	17	30	1.4	e44	76	e9.1
4	16	91	4.0	21	66	3.8	e36	33	e3.3
5	16	91	3.9	17	24	1.1	32	21	1.8
6	16	73	3.1	16	10	.42	29	23	1.8
7	16	57	2.5	16	9	.40	28	23	1.7
8	29	48	4.1	46	230	128	27	24	1.7
9	24	62	4.0	55	206	68	25	24	1.6
10	16	52	2.3	78	286	160	24	19	1.2
11	15	52	2.1	48	49	7.1	23	14	.88
12	17	53	2.4	30	93	7.7	34	19	2.0
13	17	55	2.5	39	86	11	26	17	1.2
14	15	55	2.2	58	170	71	51	147	57
15	64	285	181	43	32	4.0	35	159	20
16	24	224	15	53	75	13	25	18	1.2
17	18	88	4.4	32	22	1.9	22	21	1.3
18	18	16	.78	29	22	1.7	21	26	1.5
19	18	13	.65	28	22	1.8	21	29	1.6
20	17	14	.71	34	22	2.5	19	32	1.6
21	26	92	6.5	38	30	4.4	22	34	2.1
22	18	79	3.8	27	30	2.2	25	21	1.6
23	16	59	2.6	112	794	834	22	24	1.5
24	16	29	1.3	63	64	13	51	210	95
25	18	21	1.6	38	28	2.9	31	30	2.5
26	23	53	3.5	30	30	2.4	22	29	1.7
27	17	18	.86	28	34	2.5	80	440	313
28	16	10	.43	26	32	2.3	36	26	2.7
29	28	18	1.8	44	103	33	93	420	427
30	20	30	1.6	142	965	2420	48	190	28
31	18	29	1.4	e78	296	e101	---	---	---
TOTAL	627	---	273.23	1319	---	3905.02	1111	---	2484.58
YEAR	17287		33400.87						

e Estimated

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
NOV 1996							
17...	2030	279	3100	2340	30	39	51
MAY 1997							
24...	1825	224	2690	1620	18	23	32
AUG							
23...	2020	552	4970	7410	30	41	55
30...	2030	1730	14400	67300	13	18	25
SEP							
01...	2400	881	15800	37600	15	20	29

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
NOV 1996							
17...	62	75	92	98	100	100	100
MAY 1997							
24...	47	63	75	92	98	99	100
AUG							
23...	70	83	93	98	99	100	100
30...	35	47	63	81	92	98	99
SEP							
01...	39	49	63	79	93	99	99

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
26...	1925	230	4680	2910	61
26...	2055	246	780	518	82
31...	1635	259	3760	2630	37
31...	1730	379	1350	1380	93
NOV					
17...	1935	437	1520	1790	80
23...	0805	106	150	43	96
JAN 1997					
14...	1608	350	1380	1300	85
MAR					
20...	0856	35	50	4.7	94
JUL					
11...	0700	16	220	9.5	84
SEP					
02...	0225	e221	3680	e2200	94
15...	0705	37	364	36	97

e Estimated

50028400 RIO TANAMA AT CHARCO HONDO, PR

LOCATION.--Lat 18°24'52", long 66°42'52", Hydrologic Unit 21010002 on right bank at abandoned power house at Charco Hondo, 1.5 mi (2.4 km) upstream from mouth, and 4 mi (6 km) south of Arecibo.

DRAINAGE AREA.--57.6 mi² (149.2 km²).

PERIOD OF RECORD.--April 1969 to June 1971, October 1981 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 60 ft (18 m), from topographic map.

REMARKS.--Records poor. Diversion 0.8 mi (1.3 km) upstream for municipal supply of Arecibo. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	145	178	108	86	108	59	56	33	112	48	69	e131
2	113	142	96	99	107	59	51	39	57	38	47	221
3	126	126	93	209	110	59	52	66	50	36	42	134
4	123	117	90	194	94	60	50	34	47	e35	45	90
5	116	111	88	105	91	59	50	33	45	e37	45	80
6	150	107	85	95	90	57	48	34	44	e39	40	75
7	130	103	84	90	89	55	48	33	42	e41	37	73
8	101	99	83	89	86	55	47	35	e37	e44	58	71
9	105	102	80	95	84	55	47	42	e35	e62	146	70
10	96	e225	95	85	83	53	48	42	e35	e39	136	68
11	95	e225	e330	84	79	51	46	40	e38	37	113	68
12	92	146	181	95	79	51	45	35	e40	38	70	74
13	103	161	123	100	76	50	45	34	e39	44	91	87
14	155	108	111	e226	73	49	45	33	e38	46	157	77
15	263	108	108	e174	73	49	43	35	e37	97	192	122
16	129	175	106	94	71	50	44	35	e35	108	118	82
17	110	247	102	88	70	48	43	33	e34	62	134	77
18	253	232	99	83	70	57	44	34	38	47	88	72
19	146	224	96	84	69	66	46	34	38	50	53	71
20	124	149	96	264	68	93	47	33	e63	43	89	69
21	113	146	98	338	69	56	51	36	69	62	140	70
22	322	147	103	e600	70	53	73	41	46	45	103	78
23	186	167	93	359	64	50	81	79	44	40	97	82
24	155	134	91	304	64	49	52	89	42	38	156	83
25	139	130	114	243	64	48	46	e117	38	38	76	109
26	153	109	110	192	63	48	44	102	41	56	60	75
27	300	103	89	169	60	48	42	90	64	72	52	119
28	208	103	90	159	59	61	39	78	46	44	50	127
29	187	107	89	133	---	70	38	53	38	65	91	125
30	197	117	86	117	---	66	35	47	39	92	177	127
31	188	---	85	111	---	79	---	70	---	61	132	---
TOTAL	4823	4348	3302	5164	2183	1763	1446	1539	1371	1604	2904	2807
MEAN	156	145	107	167	78.0	56.9	48.2	49.6	45.7	51.7	93.7	93.6
MAX	322	247	330	600	110	93	81	117	112	108	192	221
MIN	92	99	80	83	59	48	35	33	34	35	37	68
AC-FT	9570	8620	6550	10240	4330	3500	2870	3050	2720	3180	5760	5570
CFSM	7.01	6.53	4.80	7.50	3.51	2.56	2.17	2.24	2.06	2.33	4.22	4.21
IN.	8.08	7.29	5.53	8.65	3.66	2.95	2.42	2.58	2.30	2.69	4.87	4.70

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1997, BY WATER YEAR (WY)

MEAN	164	135	80.3	60.6	50.9	42.9	66.9	128	88.2	63.9	76.2	124
MAX	335	260	219	167	106	70.0	141	371	196	120	125	269
(WY)	1990	1982	1982	1997	1996	1971	1986	1986	1995	1969	1991	1996
MIN	72.1	50.4	36.4	22.3	16.8	16.6	25.9	15.8	23.3	22.0	35.1	44.9
(WY)	1983	1995	1989	1989	1989	1988	1989	1989	1989	1989	1994	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1969 - 1997	
ANNUAL TOTAL	39552		33254			
ANNUAL MEAN	108		91.1		87.9	
HIGHEST ANNUAL MEAN					124	1986
LOWEST ANNUAL MEAN					46.9	1994
HIGHEST DAILY MEAN	1360	Sep 10	600	Jan 22	2500	Oct 7 1985
LOWEST DAILY MEAN	38	Jul 27	33	May 1	4.2	May 28 1989
ANNUAL SEVEN-DAY MINIMUM	41	Jul 22	34	May 14	5.4	May 22 1989
INSTANTANEOUS PEAK FLOW			2080	Sep 1	15000	May 18 1985
INSTANTANEOUS PEAK STAGE			10.23	Sep 1	17.95	May 18 1985
ANNUAL RUNOFF (AC-FT)	78450		65960		63700	
ANNUAL RUNOFF (CFSM)	4.87		4.10		3.96	
ANNUAL RUNOFF (INCHES)	66.28		55.72		53.82	
10 PERCENT EXCEEDS	187		158		176	
50 PERCENT EXCEEDS	83		77		65	
90 PERCENT EXCEEDS	49		38		29	

e Estimated

50029000 RIO GRANDE DE ARECIBO AT CENTRAL CAMBALACHE, PR

LOCATION.--Lat 18°27'20", long 66°42'10", Hydrologic Unit 21010002, at bridge on unimproved road, about 500 ft (152 m) upstream from Central Cambalache, near Highway 2, 13.9 mi (22.4 km) downstream from Dos Bocas Reservoir, 1.9 mi (3.1 km) downstream from Río Tanamá, and 1.6 mi (2.6 km) southeast of Arecibo.

DRAINAGE AREA.--200 mi² (520 km²).

PERIOD OF RECORD.--January 1963 to January 1965 (monthly measurements only), February 1965 to April 1969 (occasional measurements only), May 1969 to Sepetember 1983, October 1996 to September 1997.

GAGE.--Water-stage recorder. Datum of gage is 3.73 ft (1.14 m) above mean sea level.

REMARKS.--Records poor. Flow regulated by Lago Dos Bocas dam, 13.9 mi (22.4 km) upstream. Gage-height satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate discharges and elevations above mean sea level of major floods at valley cross sections along Expressway PR-22 about 1.0 mi (1.6 km) above gage site are as follows: Aug. 8, 1899, 195,000 ft³/s (5,520 m³/s), gage-height, 24.4 ft (7.44 m); Sept. 13, 1928, 105,000 ft³/s (2,970 m³/s), gage-height, 21.6 ft (6.58 m); Oct. 13, 1954, 76,000 ft³/s (2,150 m³/s), gage-height, 19.1 ft (5.82 m); and Nov. 26, 1968, 21,000 ft³/s (595 m³/s) gage-height, 16.6 ft (5.06 m).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e963	932	677	220	367	210	343	387	154	272	333	191
2	e1160	361	759	255	350	143	365	410	101	464	184	570
3	e1020	292	548	295	395	381	186	291	315	300	167	668
4	911	515	323	558	476	471	371	227	447	153	93	575
5	838	352	601	332	551	377	280	211	412	101	88	435
6	e526	460	595	321	511	388	225	274	264	87	106	452
7	703	750	799	e219	396	519	106	309	214	79	103	266
8	319	617	347	e284	292	272	290	310	140	107	139	394
9	262	390	691	e143	253	137	364	175	190	163	202	471
10	225	458	739	e130	545	356	428	428	105	85	191	359
11	e197	624	672	412	543	493	462	244	244	116	193	330
12	e187	527	388	213	566	404	198	314	157	103	212	200
13	e238	695	198	300	518	430	117	419	90	77	251	152
14	e402	536	494	678	462	475	99	252	81	74	495	114
15	657	365	547	645	287	353	253	386	74	186	819	149
16	e682	493	688	472	389	407	457	304	86	188	431	221
17	e631	456	456	440	363	459	452	119	122	123	444	153
18	e792	1060	320	327	311	386	502	307	132	148	400	147
19	e468	1260	271	347	362	414	265	417	95	151	274	149
20	e321	1160	259	472	442	392	158	164	94	128	419	101
21	878	704	302	1020	529	293	182	103	135	199	340	143
22	890	771	317	4120	441	155	236	90	110	221	447	104
23	914	896	369	1670	321	309	452	174	211	170	436	103
24	785	485	372	1100	385	345	444	203	137	268	365	120
25	718	671	258	1000	e330	402	258	251	89	190	423	148
26	402	633	590	761	e482	439	137	349	85	102	415	97
27	511	623	605	820	e535	476	456	369	109	125	468	128
28	325	348	286	673	492	285	358	167	90	237	463	240
29	333	459	211	669	---	232	304	200	81	448	318	455
30	861	373	370	650	---	280	386	194	82	423	292	493
31	901	---	356	641	---	357	---	141	---	376	247	---
TOTAL	19020	18266	14408	20187	11894	11040	9134	8189	4646	5864	9758	8128
MEAN	614	609	465	651	425	356	304	264	155	189	315	271
MAX	1160	1260	799	4120	566	519	502	428	447	464	819	668
MIN	187	292	198	130	253	137	99	90	74	74	88	97
AC-FT	37730	36230	28580	40040	23590	21900	18120	16240	9220	11630	19350	16120
CFSM	3.07	3.04	2.32	3.26	2.12	1.78	1.52	1.32	.77	.95	1.57	1.35
IN.	3.54	3.40	2.68	3.75	2.21	2.05	1.70	1.52	.86	1.09	1.81	1.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1997, BY WATER YEAR (WY)

MEAN	811	755	539	365	302	328	387	564	457	381	421	704
MAX	1577	1388	1327	651	425	627	641	1192	1220	854	1269	1866
(WY)	1971	1978	1982	1997	1997	1972	1983	1980	1979	1979	1979	1979
MIN	404	299	195	155	152	141	196	188	139	189	218	271
(WY)	1983	1974	1972	1973	1974	1977	1975	1977	1977	1997	1974	1997

SUMMARY STATISTICS	FOR 1997 WATER YEAR		WATER YEARS 1969 - 1997	
ANNUAL TOTAL	140534			
ANNUAL MEAN	385		501	
HIGHEST ANNUAL MEAN			691	1979
LOWEST ANNUAL MEAN			290	1974
HIGHEST DAILY MEAN	4120	Jan 22	15900	Aug 31 1979
LOWEST DAILY MEAN	74	Jun 15	60	Aug 4 1982
ANNUAL SEVEN-DAY MINIMUM	96	Jun 24	86	Jun 29 1977
INSTANTANEOUS PEAK FLOW	5750	Jan 22	26100	Aug 31 1979
INSTANTANEOUS PEAK STAGE	10.74	Jan 22	13.74	Aug 31 1979
INSTANTANEOUS LOW FLOW	68	Jun 15	50	Feb 26 1974
ANNUAL RUNOFF (AC-FT)	278700		363100	
ANNUAL RUNOFF (CFSM)	1.93		2.51	
ANNUAL RUNOFF (INCHES)	26.14		34.05	
10 PERCENT EXCEEDS	684		964	
50 PERCENT EXCEEDS	347		358	
90 PERCENT EXCEEDS	112		139	

e Estimated

50029000 RIO GRANDE DE ARECIBO AT CENTRAL CAMBALACHE, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°27'20", long 66°42'10", Hydrologic Unit 21010002, at bridge on unimproved road, about 500 ft (152 m) upstream from Central Cambalache, near Highway 2, 8.3 mi (13.4 km) downstream from Dos Bocas Reservoir, 1.9 mi (3.1 km) downstream from Río Tanamá , and 1.6 mi (2.6 km) southeast of Arecibo.

DRAINAGE AREA.--200 mi² (520 km²), approximately.

PERIOD OF RECORD.--Water years 1963-66, 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
30...	0930	451	250	7.2	24.0	59	7.5	87	<10	3500	4200
FEB 1997											
21...	1230	214	268	6.5	23.5	2.6	7.6	86	<10	K180	K1100
JUN											
05...	1145	158	271	7.9	27.5	3.6	7.7	98	<10	40	K80
AUG											
26...	1050	185	325	7.6	27.0	8.2	7.1	88	<10	K690	K130

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
30...	100	34	4.7	8.0	0.3	2.2	98	<0.5	11	8.6
FEB 1997										
21...	--	--	--	--	--	--	110	--	--	--
JUN										
05...	110	34	6.2	9.6	0.4	2.0	110	<0.5	12	11
AUG										
26...	98	30	5.5	8.6	0.4	2.3	110	--	11	10

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
30...	<0.10	16	143	174	72	0.900	0.020	0.920	0.040	0.38
FEB 1997										
21...	--	--	--	--	5	0.790	<0.010	0.790	0.030	<0.20
JUN										
05...	<0.10	19	160	68.2	1	0.400	0.020	0.420	0.050	0.22
AUG										
26...	<0.10	18	141	70.4	15	0.690	0.010	0.700	0.030	0.24

K = non-ideal count

50029000 RIO GRANDE DE ARECIBO AT CENTRAL CAMBALACHE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT 1996										
30...	0.43	1.3	6.0	0.040	<1	<100	20	<1	2	<10
FEB 1997										
21...	0.22	1.0	4.5	0.020	--	--	--	--	--	--
JUN										
05...	0.26	0.69	3.1	<0.020	<1	<100	20	<1	<1	20
AUG										
26...	0.28	0.98	4.3	<0.020	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L) (38260)
OCT 1996										
30...	2000	2	120	<0.10	<1	<1	10	<0.010	<1	<0.01
FEB 1997										
21...	--	--	--	--	--	--	--	--	--	--
JUN										
05...	120	<1	25	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
26...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLORDANE, TECHNICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DIAZINON, TOTAL (UG/L) (39570)	DIELDRIN TOTAL (UG/L) (39380)	ENDOSULFAN, I TOTAL (UG/L) (39388)
JUN 1997										
05...	1145	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALATHION, TOTAL (UG/L) (39530)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHYL PARATHION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)
JUN 1997									
05...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	PARATHION, TOTAL (UG/L) (39540)	PCNS UNFILT RECOVER (UG/L) (39250)	PERTHANE TOTAL (UG/L) (39034)	TOXAPHENE, TOTAL (UG/L) (39400)	TOTAL TRITHION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	2, 4-DP TOTAL (UG/L) (82183)	SILVEX, TOTAL (UG/L) (39760)
JUN 1997									
05...	<0.010	<0.100	<0.100	<1.00	<0.010	0.040	<0.010	<0.010	<0.010

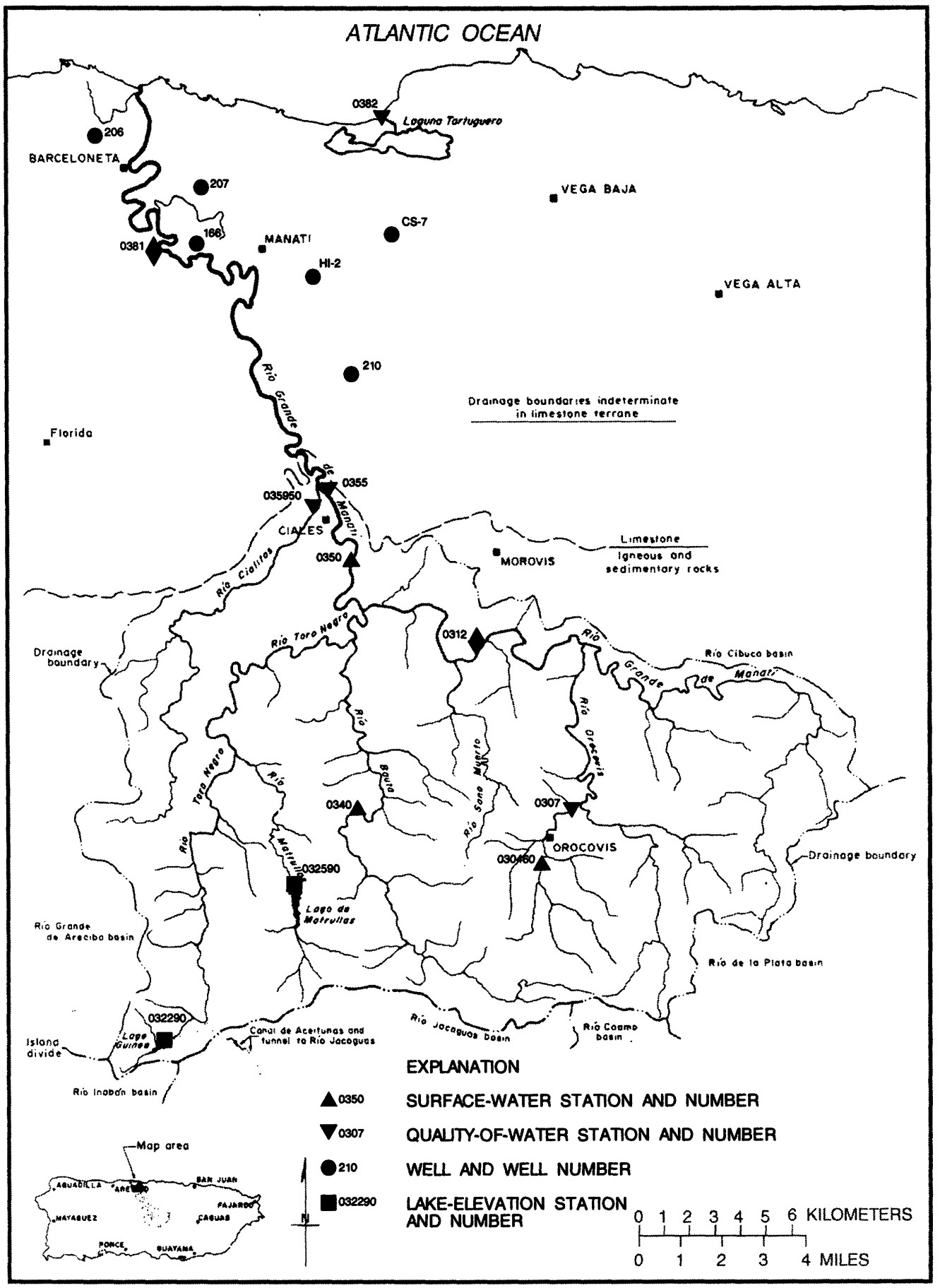

Figure 15.--Río Grande de Manatí basin.

RIO GRANDE DE MANATI BASIN

50030460 RIO OROCOVIS AT OROCOVIS, PR

LOCATION.--Lat 18°13'25", long 66°23'34", Hydrologic Unit 21010001, on right bank, 0.4 mi (0.6 km) south of junction of Highways 155 and 156 in Orocovis, 2.1 mi (3.38 km) upstream from Rio Botijas, and 250 ft (76 m) upstream from bridge on Highway 599.

DRAINAGE AREA.--5.03 mi² (13.03 km²).

PERIOD OF RECORD.--April 1981 to September 1982, October 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 500 ft (152 m), from topographic map.

REMARKS.--Records poor. Low flow affected by diversions for water supply. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	6.2	12	2.9	3.3	e1.3	e1.2	.78	.63	1.9	10	2.1
2	3.1	5.3	5.9	e2.9	3.2	e1.3	e1.1	.88	.63	.40	6.4	2.3
3	7.9	4.3	4.4	e5.8	3.5	e1.3	e1.2	1.1	.52	.56	3.7	.84
4	4.1	4.3	3.9	e5.8	3.3	e1.2	e.95	1.1	.48	.24	3.2	.86
5	4.0	3.8	3.3	e3.1	3.7	e1.5	e1.0	1.2	.44	.45	1.6	.85
6	10	3.6	2.6	e2.7	3.8	e1.4	e1.1	.99	.50	.51	1.4	.90
7	5.1	3.3	2.7	e2.6	2.8	e1.2	e1.1	.97	.47	1.3	1.6	1.4
8	4.5	4.3	2.5	e2.4	2.8	e1.2	e1.1	.88	.42	1.0	1.3	.78
9	4.1	5.0	2.4	e2.4	2.4	e1.2	e1.1	.81	.48	.25	11	.79
10	3.6	3.9	2.6	e2.4	2.6	e1.2	e1.1	1.1	.90	.23	9.2	.83
11	3.3	5.2	62	2.8	2.2	e1.1	e1.0	1.0	.60	.43	3.0	.85
12	3.2	4.0	23	3.2	3.2	e1.1	e1.0	.83	.43	.41	2.1	1.5
13	3.2	2.9	9.4	3.1	1.9	e1.1	e1.1	.86	.49	.86	12	1.8
14	3.4	2.7	5.8	3.3	1.9	e1.1	e1.0	.81	.57	.85	12	1.4
15	3.3	2.6	4.5	3.2	1.8	e1.0	e1.0	.79	.49	.64	3.2	1.0
16	3.1	2.5	4.6	2.1	1.6	e1.0	e1.0	.78	.43	.33	1.7	.81
17	3.0	2.5	3.4	2.2	1.7	e1.0	e.98	1.0	.36	.50	3.7	.97
18	2.4	50	3.1	2.1	2.1	e1.0	e.90	.73	.52	1.1	2.4	1.0
19	4.9	8.1	2.7	3.1	e2.9	e1.2	e.86	.79	.36	1.6	1.1	1.2
20	3.8	7.1	3.1	6.2	e2.0	e1.1	e1.0	.87	.33	6.4	1.1	1.2
21	2.7	4.8	3.1	43	e1.8	e1.1	e1.4	.80	.35	1.9	1.6	1.6
22	2.2	5.2	2.7	35	e1.7	e1.0	1.1	.73	.42	.95	2.1	2.7
23	2.8	13	3.2	24	e1.5	e1.0	1.2	.91	.55	1.0	1.7	3.4
24	2.1	26	3.0	31	e1.5	e.96	1.3	1.1	.55	1.6	1.7	1.4
25	1.7	19	2.9	19	e1.5	e1.1	1.2	1.0	.38	2.1	2.6	1.1
26	15	7.3	2.5	9.1	e1.6	e1.1	.90	.76	.36	2.1	1.9	1.7
27	8.0	4.2	2.7	5.6	e1.4	e1.9	1.0	.68	1.0	.95	1.6	2.8
28	11	4.6	2.7	5.0	e1.3	e1.9	.95	.63	2.8	1.4	1.1	2.7
29	39	3.9	4.0	3.9	---	e15	1.0	.63	8.6	1.1	.90	4.1
30	21	21	3.5	3.4	---	e2.3	1.3	.61	6.1	1.2	.89	2.7
31	9.3	---	3.2	3.4	---	e1.2	---	.62	---	11	1.1	---
TOTAL	198.5	240.6	197.4	246.7	65.0	52.06	32.14	26.74	31.16	45.26	108.89	47.58
MEAN	6.40	8.02	6.37	7.96	2.32	1.68	1.07	.86	1.04	1.46	3.51	1.59
MAX	39	50	62	43	3.8	15	1.4	1.2	8.6	11	12	4.1
MIN	1.7	2.5	2.4	2.1	1.3	.96	.86	.61	.33	.23	.89	.78
AC-FT	394	477	392	489	129	103	64	53	62	90	216	94
CFSM	1.27	1.59	1.27	1.58	.46	.33	.21	.17	.21	.29	.70	.32
IN.	1.47	1.78	1.46	1.82	.48	.39	.24	.20	.23	.33	.81	.35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1997, BY WATER YEAR (WY)

MEAN	16.2	6.91	5.16	6.55	3.52	1.82	5.24	14.0	4.38	3.56	3.67	19.5
MAX	58.0	15.2	15.8	34.3	15.7	3.07	21.0	45.9	15.2	9.07	12.3	73.0
(WY)	1990	1991	1982	1992	1996	1996	1993	1995	1992	1996	1989	1996
MIN	1.95	1.56	.65	.77	.96	.90	.93	.86	.88	.88	1.03	.88
(WY)	1994	1995	1995	1995	1995	1994	1995	1997	1994	1994	1982	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1981 - 1997	
ANNUAL TOTAL	4261.2		1292.03			
ANNUAL MEAN	11.6		3.54		7.41	
HIGHEST ANNUAL MEAN					11.8	1996
LOWEST ANNUAL MEAN					1.49	1994
HIGHEST DAILY MEAN	1570	Sep 10	62	Dec 11	1570	Sep 10 1996
LOWEST DAILY MEAN	1.1	Mar 31	.23	Jul 10	.20	Oct 4 1992
ANNUAL SEVEN-DAY MINIMUM	1.2	Aug 26	.40	Jun 16	.33	Oct 11 1992
INSTANTANEOUS PEAK FLOW			388	Nov 18	8890	Sep 10 1996
INSTANTANEOUS PEAK STAGE			7.53	Nov 18	17.38	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	8450		2560		5370	
ANNUAL RUNOFF (CFSM)	2.31		.70		1.47	
ANNUAL RUNOFF (INCHES)	31.51		9.56		20.02	
10 PERCENT EXCEEDS	11		6.3		11	
50 PERCENT EXCEEDS	2.8		1.7		1.9	
90 PERCENT EXCEEDS	1.4		.63		.85	

e Estimated

RIO GRANDE DE MANATI BASIN

50030700 RIO OROCOVIS NEAR OROCOVIS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°14'20", long 66°22'58", at flat low bridge about 300 ft (91 m) northwest of Highway 568, 1.0 mi (1.6 km) north of Orocovis plaza.

DRAINAGE AREA.--10.1 mi² (26.2 km²).

PERIOD OF RECORD.--Water year 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
17...	1100	12	296	7.5	24.0	0.60	7.9	96	<10	K1400	940
FEB 1997											
25...	0930	10	330	7.6	20.0	2.5	8.0	90	<10	K1300	210
JUN											
11...	1310	5.3	352	8.4	27.0	0.23	7.0	94	<10	K180	3200
SEP											
10...	0930	2.3	378	8.2	26.0	0.35	6.8	88	<10	K160	260

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
17...	120	28	11	13	0.5	2.1	120	<0.5	8.1	15
FEB 1997										
25...	--	--	--	--	--	--	130	--	--	--
JUN										
11...	140	36	13	15	0.5	1.7	150	<0.5	8.3	17
SEP										
10...	160	41	14	16	0.6	1.7	160	--	7.8	18

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
17...	0.10	31	180	5.65	2	1.00	0.010	1.00	0.020	<0.20
FEB 1997										
25...	--	--	--	--	<1	1.00	0.010	1.10	0.040	<0.20
JUN										
11...	<0.10	31	212	3.04	<1	0.940	<0.010	0.950	0.030	0.20
SEP										
10...	<0.10	29	224	1.42	<1	1.00	<0.010	1.10	0.030	0.20

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
17...	<0.20	1.1	5.0	0.070	<1	<100	20	<1	<1	<10
FEB 1997										
25...	0.21	1.3	5.6	0.060	--	--	--	--	--	--
JUN										
11...	0.23	1.2	5.2	0.130	<1	<100	<10	<1	<1	<10
SEP										
10...	0.23	1.3	5.7	0.070	--	--	--	--	--	--

K = non-ideal count

RIO GRANDE DE MANATI BASIN

50030700 RIO OROCOVIS NEAR OROCOVIS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
17...	130	<1	20	<0.10	<1	<1	<10	<0.010	<1	<0.01
FEB 1997										
25...	--	--	--	--	--	--	--	--	--	--
JUN										
11...	60	<1	14	<0.10	<1	<1	<10	<0.010	2	0.02
SEP										
10...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE MANATI BASIN

50031200 RIO GRANDE DE MANATI NEAR MOROVIS, PR

LOCATION.--Lat 18°17'45", long 66°24'47", Hydrologic Unit 21010001, on right bank , 0.1 mi (0.2 km) downstream from Quebrada Perchas, 0.8 mi (1.3 km) upstream from Río Sana Muerto, and 2.2 mi (3.5 km) south of Morovis.

DRAINAGE AREA.--55.2 mi² (143.0 km²).

PERIOD OF RECORD.--January 1965 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 440 ft (134 m), from topographic map. Feb. 2, 1966 to Apr. 27, 1967, staff gage read twice daily.

REMARKS.--Records poor. Public water-supply pumpage, about 300 ft (91 m) above the station, influences low-flow discharges. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	e58	e160	e64	123	57	51	28	32	16	19	10
2	66	e52	e110	e58	121	59	49	28	28	14	11	9.2
3	67	e47	e90	e210	103	66	63	28	29	13	9.9	8.2
4	78	e48	e78	e140	93	74	e51	28	28	11	17	8.1
5	63	e45	e72	e90	95	91	49	27	26	11	11	8.1
6	71	e45	e64	e70	96	74	46	26	24	11	9.7	7.7
7	72	e45	e60	e58	82	60	41	25	22	13	9.3	7.7
8	59	49	e60	e54	80	63	41	25	21	24	8.6	7.8
9	56	54	e58	e64	81	62	41	25	21	11	8.6	8.4
10	55	57	e170	e84	82	53	39	26	21	11	13	9.4
11	54	55	e400	e58	74	53	39	27	19	11	11	7.6
12	49	65	e150	e56	73	53	40	24	20	12	10	7.4
13	51	59	e100	e54	80	54	39	24	20	12	19	9.3
14	50	54	e86	e66	74	55	37	24	21	11	46	9.9
15	49	52	e82	e80	72	57	34	23	19	10	15	8.7
16	57	41	e100	e56	67	57	34	23	17	11	12	7.7
17	47	40	e84	e52	66	57	35	23	17	9.7	21	7.6
18	45	e130	e72	e49	66	57	33	25	18	15	47	7.2
19	44	e130	e62	e54	71	52	32	23	23	21	17	7.3
20	48	e110	e58	e150	79	49	37	21	23	21	12	7.4
21	60	e120	e60	e800	96	46	44	22	19	27	11	8.3
22	59	e140	e60	e2100	91	46	42	26	17	15	11	12
23	46	e170	e58	e700	71	42	34	35	16	12	13	18
24	46	e200	e52	e520	68	41	32	e80	16	11	12	9.8
25	47	e210	e51	e420	66	39	32	e150	17	11	12	15
26	e160	e120	e50	e250	65	42	30	e94	16	11	11	16
27	e210	e92	e58	e190	64	43	29	e68	16	10	9.3	13
28	e120	e94	e56	e150	59	61	32	e38	15	9.3	11	14
29	e120	e96	e80	138	---	154	29	e33	14	9.0	13	10
30	e140	e150	e84	117	---	128	27	59	14	9.4	12	19
31	e74	---	e72	110	---	62	---	35	---	12	13	---
TOTAL	2232	2628	2797	7062	2258	1907	1162	1143	609	405.4	455.4	299.8
MEAN	72.0	87.6	90.2	228	80.6	61.5	38.7	36.9	20.3	13.1	14.7	9.99
MAX	210	210	400	2100	123	154	63	150	32	27	47	19
MIN	44	40	50	49	59	39	27	21	14	9.0	8.6	7.2
AC-FT	4430	5210	5550	14010	4480	3780	2300	2270	1210	804	903	595
CFSM	1.30	1.59	1.63	4.13	1.46	1.11	.70	.67	.37	.24	.27	.18
IN.	1.50	1.77	1.88	4.76	1.52	1.29	.78	.77	.41	.27	.31	.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1997, BY WATER YEAR (WY)

MEAN	152	143	108	82.1	63.5	64.4	106	157	60.2	45.3	53.9	101
MAX	1037	491	522	228	179	226	412	915	173	157	435	432
(WY)	1971	1971	1966	1997	1969	1972	1969	1985	1987	1979	1979	1996
MIN	24.0	11.4	8.65	10.4	15.3	12.7	8.80	15.7	6.75	5.54	9.70	6.87
(WY)	1978	1995	1995	1995	1994	1984	1995	1994	1994	1994	1984	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1965 - 1997	
ANNUAL TOTAL	31831		22958.6			
ANNUAL MEAN	87.0		62.9		94.6	
HIGHEST ANNUAL MEAN					248	1971
LOWEST ANNUAL MEAN					24.2	1994
HIGHEST DAILY MEAN	7500	Sep 10	2100	Jan 22	17100	May 18 1985
LOWEST DAILY MEAN	13	Jul 6	7.2	Sep 18	3.5	May 1 1995
ANNUAL SEVEN-DAY MINIMUM	14	Jul 1	7.7	Sep 15	4.0	Jul 22 1994
INSTANTANEOUS PEAK FLOW			unknown	Jan 22	48000	May 18 1985
INSTANTANEOUS PEAK STAGE			unknown	Jan 22	17.89	May 18 1985
ANNUAL RUNOFF (AC-FT)	63140		45540		68510	
ANNUAL RUNOFF (CFSM)	1.58		1.14		1.71	
ANNUAL RUNOFF (INCHES)	21.45		15.47		23.28	
10 PERCENT EXCEEDS	140		113		170	
50 PERCENT EXCEEDS	46		46		48	
90 PERCENT EXCEEDS	21		11		21	

e Estimated

50031200 RIO GRANDE DE MANATI NEAR MOROVIS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
17...	0915	46	238	7.0	25.5	0.40	8.1	98	<10	K120	100
FEB 1997											
25...	1215	63	290	8.0	25.0	1.5	10.1	121	<10	K10	K40
JUN											
11...	1050	18	304	8.2	28.5	4.3	8.1	105	<10	K49	K70
SEP											
10...	1230	9.4	312	8.2	30.5	6.4	8.6	117	<10	K140	K54

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
17...	110	26	11	13	0.5	2.8	150	<0.5	8.0	16
FEB 1997										
25...	--	--	--	--	--	--	110	--	--	--
JUN										
11...	120	28	12	14	0.5	2.1	120	<0.5	8.7	17
SEP										
10...	130	31	13	15	0.6	1.8	130	--	6.8	17

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
17...	0.10	24	191	23.8	2	0.670	0.010	0.680	0.020	<0.20
FEB 1997										
25...	--	--	--	--	<1	0.710	<0.010	0.720	0.020	0.22
JUN										
11...	0.10	27	180	8.65	1	--	--	--	--	--
SEP										
10...	0.11	27	190	4.80	<1	0.140	<0.010	0.140	0.030	0.25

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
17...	<0.20	0.80	3.5	<0.020	<1	<100	30	<1	<1	<10
FEB 1997										
25...	0.24	0.96	4.2	0.030	--	--	--	--	--	--
JUN										
11...	--	--	--	--	<1	<100	<10	<1	1	<10
SEP										
10...	0.28	0.42	1.9	0.020	--	--	--	--	--	--

K = non-ideal count

RIO GRANDE DE MANATI BASIN

50031200 RIO GRANDE DE MANATI NEAR MOROVIS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
17...	70	<1	30	<0.10	<1	<1	<10	<0.010	<1	<0.01
FEB 1997										
25...	--	--	--	--	--	--	--	--	--	--
JUN										
11...	230	<1	30	<0.10	<1	<1	<10	<0.010	2	<0.01
SEP										
10...	--	--	--	--	--	--	--	--	--	--

50032290 LAGO EL GUINEO AT DAMSITE NEAR VILLALBA, PR

LOCATION.--Lat 18°09'41", long 66°31'36", Hydrologic Unit 21010001, at damsite on Rio Toro Negro, 3.0 mi (4.8 km) northwest from Villalba plaza and 1.9 mi (3.1 km) northeast of Cerro Maravillas. The reservoir itself fixes the territorial limits between the Municipality of Ciales and Orocovis.

DRAINAGE AREA.--1.64 mi² (4.25 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--May 1988 to current year. Prior to October 1994, published as Lago El Guineo at Damsite.

GAGE.--Water-stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago El Guineo was completed in 1931. It provides a maximum storage of approximately 2,180 ac-ft (2.688 hm³) for power and irrigation. Waters are discharged through an outlet power tunnel into the Rio Toro Negro and coveyed to the head water works of Toro Negro Hydroelectric Plant No.2, for energy generation at Toro Negro Hydroelectric plant No.1, and are discharged into the Guayabal Reservoir to be later used for irrigation at South Coast Irrigation System. The dam is rockfill with a vertical concrete corewall, rock toes, and riprap facing of upstream slope, with a total length of 565 ft (172 m), a maximum structural height of 125 ft (38 m) to top of corewall. At a maximum reservoir water surface elevation the uncontrolled morning-glory tunnel spillway crest has an elevation of 2,966 ft (904 m) above mean sea level and a design capacity of 7,000 ft³/s. The dam is owned by Puerto Rico Electric Power Authority. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 2,961.70 ft (902.73 m), Oct. 21, 1990; minimun elevation, 2,919.79 ft (899.95 m), May 27, 1988.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 2,961.12 ft (902.55 m), Nov. 23; minimun elevation, 2,927.61 ft (892.34 m), May 23.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
2,872	0	2,943	1,029
2,919	361	2,950	1,308
2,925	491	2,961	1,852

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2956.86	2955.71	2959.01	2958.85	2957.93	2950.14	2942.12	2934.31	2932.16	2930.34	2930.67	2936.79
2	2956.43	2955.89	2959.04	2958.69	2958.12	2950.24	2941.58	2933.79	2931.26	2930.39	2930.71	2937.01
3	2956.34	2956.05	2958.88	2958.71	2958.24	2949.66	2941.68	2933.95	2929.88	2930.44	2930.84	2937.16
4	2955.93	2956.08	2959.09	2958.88	2957.87	2949.04	2941.15	2934.01	2928.60	2930.39	2930.89	2937.29
5	2956.14	2955.81	2959.27	2958.99	2957.53	2948.43	2941.25	2933.30	2929.35	2930.46	2930.79	2937.42
6	2956.34	2955.95	2959.32	2959.09	2957.19	2947.99	2941.29	2932.74	2927.90	2930.47	2930.83	2937.51
7	2955.82	2956.10	2959.49	2958.68	2956.86	2948.06	2941.10	2932.46	2928.60	2930.56	2930.86	2937.63
8	2955.28	2956.23	2959.65	2959.22	2956.96	2948.16	2940.79	2932.17	2928.68	2930.62	2932.06	2937.72
9	2954.76	2956.38	2959.62	2958.89	2957.08	2948.24	2940.56	2932.17	2928.76	2930.67	2932.89	2937.50
10	2954.39	2956.70	2959.58	2958.41	2956.64	2947.67	2940.36	2932.35	2928.84	2930.71	2933.72	2937.60
11	2953.91	2957.24	2959.47	2958.54	2956.01	2947.08	2940.21	2932.43	2928.92	2930.67	2933.96	2937.70
12	2954.07	2957.44	2959.07	2958.65	2955.38	2946.47	2940.28	2932.16	2929.00	2930.74	2934.09	2937.89
13	2954.23	2957.13	2958.63	2959.07	2954.90	2945.88	2940.33	2932.24	2929.07	2930.79	2934.98	2937.99
14	2953.76	2957.26	2958.81	2959.53	2954.53	2945.29	2939.65	2931.96	2929.14	2930.62	2937.43	2938.07
15	2953.34	2956.91	2958.97	2959.25	2954.59	2945.38	2938.90	2931.65	2929.20	2930.66	2937.31	2938.15
16	2952.89	2957.04	2959.00	2959.15	2954.68	2945.45	2938.27	2931.34	2929.26	2930.71	2937.54	2938.23
17	2953.15	2958.07	2959.02	2959.28	2954.76	2945.53	2937.63	2931.40	2929.32	2930.75	2937.74	A
18	2953.50	2959.26	2958.99	2959.39	2954.23	2945.11	2937.05	2931.46	2929.38	2930.82	2937.26	A
19	2954.17	2959.56	2958.89	2959.58	2953.70	2944.91	2937.10	2931.25	2929.50	2930.97	2937.26	2938.40
20	2954.68	2959.37	2958.90	2959.72	2953.36	2944.39	2937.16	2930.58	2929.63	2931.36	2936.72	2938.51
21	2954.81	2960.83	2959.04	2960.13	2952.81	2943.92	2937.24	2929.54	2929.69	2931.53	2935.96	2938.60
22	2955.10	2960.65	2959.15	2960.44	2952.90	2943.99	2936.58	2928.36	2929.77	2931.62	2935.29	2938.70
23	2955.34	2960.95	2959.14	2960.53	2952.97	2944.05	2936.66	2928.12	2929.82	2931.54	2935.39	2938.63
24	2955.15	2960.36	2958.94	2959.99	2952.47	2943.52	2936.71	2928.20	2929.87	2931.59	2935.62	2938.51
25	2954.92	2959.80	2959.05	2959.42	2951.93	2942.97	2936.79	2928.27	2929.91	2931.62	2935.15	2938.37
26	2955.16	2959.38	2959.16	2959.56	2951.37	2942.41	2936.84	2931.54	2930.00	2931.67	2935.25	2938.45
27	2955.37	2959.07	2959.26	2959.06	2950.78	2942.49	2936.91	2933.72	2930.10	2931.71	2934.56	2938.53
28	2955.15	2959.36	2959.37	2958.57	2950.18	2942.59	2936.21	2933.30	2930.15	2931.75	2935.92	2938.61
29	2954.93	2958.84	2959.46	2958.10	---	2942.81	2935.54	2932.65	2930.24	2931.46	2936.25	2939.35
30	2955.30	2959.00	2959.15	2957.65	---	2942.90	2934.98	2931.95	2930.30	2931.51	2936.46	2939.48
31	2955.52	---	2958.76	2957.77	---	2942.58	---	2932.06	---	2931.31	2936.63	---
MAX	2956.86	2960.95	2959.65	2960.53	2958.24	2950.24	2942.12	2934.31	2932.16	2931.75	2937.74	2939.48
MIN	2952.89	2955.71	2958.63	2957.65	2950.18	2942.41	2934.98	2928.12	2927.90	2930.34	2930.67	2936.79

CAL YR 1996 MAX 2961.05 MIN 2936.81
WTR YR 1997 MAX 2960.95 MIN 2927.90

A No gage-height record

50032590 LAGO DE MATRULLAS AT DAMSITE NEAR OROCOVIS, PR

LOCATION.--Lat 18°12'46", long 66°28'50", Hydrologic Unit 21010001, in shelter house at damsite, and 5.8 mi (9.3 km) southwest of Orocovis.

DRAINAGE AREA.--4.46 mi² (11.55 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--May 1988 to current year. Prior to October 1994, published as Lago de Matrullas at Damsite.

GAGE.--Water-stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago Matrullas was completed in 1934. The dam is an earthfill structure about 120 ft (37 m) height, a top width of 30 ft (9 m) and a length of 710 ft (216 m), and has a maximum storage capacity of about 4,274 ac-ft (5.220 hm³) at top of dam elevation. The Matrullas Dam is owned by the Puerto Rico Electric Power Authority and is part of the Toro Negro Hydroelectric Project; a project developed by the P.R.E.P.A. for the primary purpose of generating electric power. Discharges from the Power Plants are collected by the Jacaguas River which flows into Guayabal Dam, at which dam they are regulated for irrigation of lands served by the Juana Díaz Canal. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 2,419.90 ft (737.58 m), Sept. 10, 1996; minimum elevation, 2,375.55 ft (724.06 m), Sept. 24, 25, 1994.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 2,416.16 ft (736.44 m), Jan. 21; minimum elevation, 2,398.96 ft (731.20 m), Aug. 8.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
2,338	2	2,399	1,845
2,360	302	2,420	3,331

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2415.24	A	2415.73	2415.46	2415.67	2415.58	2415.07	2412.76	2409.20	2402.73	2399.52	2404.37
2	A	A	2415.60	2415.46	2415.68	2415.63	2414.94	2412.47	2408.86	2402.50	2399.53	2407.64
3	2415.22	A	2415.55	2415.69	2415.59	2415.53	2414.77	2412.55	2408.58	2402.25	2399.60	2407.94
4	2415.20	A	2415.54	2415.68	2415.58	2415.48	2414.63	A	2408.23	2402.27	2399.46	2408.01
5	2415.47	A	2415.50	2415.66	2415.57	2415.48	2414.75	A	2407.94	2402.27	2399.34	2408.06
6	A	A	2415.47	2415.66	2415.56	2415.45	2414.87	A	2407.68	2402.29	2399.22	2408.20
7	2415.50	A	2415.66	2415.47	2415.55	2415.41	2414.68	A	A	2402.02	2399.10	2408.32
8	2415.37	A	2415.69	2415.38	2415.65	2415.58	2414.56	A	A	2401.76	2400.01	2408.29
9	2415.29	A	2415.53	2415.30	2415.66	2415.62	2414.45	A	A	2401.47	2402.17	2408.12
10	2415.24	A	2415.50	2415.19	2415.56	2415.50	2414.33	A	A	2401.20	2402.39	2408.08
11	2415.18	A	2415.83	2415.41	2415.45	2415.42	2414.14	A	A	2400.91	2402.37	2408.03
12	2415.42	A	2415.63	2415.58	2415.38	2415.37	2414.25	A	A	2400.93	2402.38	2408.06
13	2415.55	A	2415.57	2415.80	2415.40	2415.31	2414.35	A	A	2400.95	2403.25	2408.17
14	2415.41	A	2415.70	2415.56	2415.41	2415.23	2414.09	2410.80	A	2400.72	2403.36	2408.26
15	2415.32	A	2415.72	2415.39	2415.58	2415.38	2413.82	2410.53	A	2400.44	2403.37	2408.22
16	2415.24	A	2415.60	2415.29	2415.63	2415.34	2413.60	2410.26	A	2400.19	2403.49	2408.15
17	2415.24	A	2415.53	2415.18	2415.64	2415.27	2413.37	2410.35	A	2399.90	2403.61	2408.24
18	2415.19	A	2415.48	2415.44	2415.55	2415.20	2413.26	2410.42	A	2399.67	2403.55	2408.31
19	2415.57	A	2415.45	2415.78	2415.56	2415.14	2413.35	2410.14	2405.24	2399.80	2403.50	2408.37
20	2415.91	A	2415.45	2415.70	2415.57	2415.08	2413.44	2409.85	2404.89	2399.97	2403.34	2408.45
21	2415.57	A	2415.65	2416.15	2415.54	2414.99	2413.54	2409.58	2404.81	2400.04	2403.05	2408.54
22	2415.45	2415.68	2415.69	2415.82	2415.62	2415.12	2413.33	2409.30	2404.74	2399.95	2402.89	2408.55
23	2415.41	2415.76	2415.53	2415.64	2415.63	2415.25	2413.41	2409.03	2404.36	2399.86	2402.96	2408.62
24	2415.34	2415.65	2415.39	A	2415.55	2415.17	2413.49	2409.17	2404.06	2399.77	2403.15	2408.71
25	2415.34	2415.55	2415.47	2415.51	2415.50	2415.09	2413.57	2409.29	2403.74	2399.81	2403.10	2408.74
26	2415.70	2415.47	2415.31	2415.69	2415.49	2415.02	2413.65	2409.90	2403.41	2399.85	2403.02	2408.79
27	2415.71	2415.43	2415.23	2415.57	2415.46	2414.89	2413.74	2409.76	2403.01	2399.88	2402.87	2408.93
28	2415.56	2415.68	2415.49	2415.53	2415.44	2415.07	2413.52	2409.55	2403.06	2399.92	2403.76	2409.02
29	2415.93	2415.50	2415.64	2415.50	---	2415.27	2413.27	2409.28	2403.10	2399.82	2403.89	2409.19
30	2415.63	2415.74	2415.44	2415.48	---	2415.41	2413.02	2409.02	2402.90	2399.74	2404.03	2409.24
31	A	---	2415.32	2415.47	---	2415.25	---	2409.11	---	2399.67	2404.23	---
MAX	2415.93	2415.76	2415.83	2416.15	2415.68	2415.63	2415.07	2412.76	2409.20	2402.73	2404.23	2409.24
MIN	2415.18	2415.43	2415.23	2415.18	2415.38	2414.89	2413.02	2409.02	2402.90	2399.67	2399.10	2404.37

CAL YR 1996 MAX 2416.52 MIN 2411.50
WTR YR 1997 MAX 2416.15 MIN 2399.10

A No gage-height record

50034000 RIO BAUTA NEAR OROCOVIS, PR

LOCATION.--Lat 18°14'10", long 66°27'18", Hydrologic Unit 21010001, on left bank, at bridge on Highway 157 (12.1 km), and 4.2 mi (6.8 km) west of Orocovis.

DRAINAGE AREA.--16.7 mi² (43.3 km²).

PERIOD OF RECORD.--February 1959 to April 1966 (annual low-flow measurements only), February to September 1969 (occasional measurements only), October 1969 to September 1982, October 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 772.82 ft (235.556 m) above mean sea level.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	19	61	23	e33	18	14	7.5	7.5	15	6.6	6.1
2	37	17	43	23	e30	18	14	12	7.4	e11	4.6	37
3	30	16	35	43	e29	18	16	8.2	7.4	e9.0	4.3	25
4	26	14	31	43	e28	17	e12	7.3	6.7	e5.0	5.2	9.5
5	38	13	29	28	e28	20	e11	7.3	6.2	e5.0	4.3	7.5
6	34	13	27	24	e26	19	e10	6.6	5.7	e5.0	4.6	6.9
7	28	13	26	23	e26	18	e9.5	7.0	6.0	e6.0	4.4	6.3
8	25	13	26	21	e25	18	e9.5	7.2	e6.0	e8.8	5.0	5.5
9	22	17	25	21	e25	18	e9.5	7.4	6.2	e4.2	126	5.3
10	22	26	25	21	e25	17	e9.4	7.8	e6.5	e4.2	e39	5.3
11	21	29	131	21	e25	16	e9.2	7.7	e6.2	e4.2	e13	5.5
12	21	27	76	21	e24	16	e9.2	7.8	6.4	e4.4	e11	6.1
13	20	19	49	21	e25	16	e9.4	8.1	6.3	e4.4	e26	6.7
14	19	16	38	26	e24	16	e8.8	7.7	6.7	e4.2	e25	6.1
15	18	15	34	25	e23	15	e8.8	7.0	6.2	e3.9	e13	5.7
16	16	16	34	21	e22	15	e8.7	7.1	5.6	e5.5	e9.5	5.7
17	16	18	33	21	e21	15	e8.5	7.7	5.5	e3.9	e11	5.3
18	17	88	31	21	e21	15	e8.0	8.3	5.3	3.6	e9.2	5.3
19	19	72	29	35	24	16	e7.5	7.6	5.9	4.3	e9.5	5.3
20	21	58	28	47	24	15	e11	7.4	6.1	5.1	e10	5.3
21	19	56	28	e212	24	15	e13	7.7	6.1	6.9	e9.4	5.3
22	16	62	27	e177	22	15	e16	7.9	6.1	4.4	e9.0	5.5
23	15	94	25	e124	21	14	e14	8.5	5.7	4.1	e9.1	5.7
24	15	109	24	e101	21	14	e12	14	5.7	3.9	e12	5.5
25	14	81	24	e81	20	14	e10	14	6.6	3.9	e13	5.3
26	27	51	24	e59	21	14	e9.0	13	6.3	3.8	7.6	5.3
27	44	38	24	e44	19	14	e8.6	13	5.9	4.4	6.7	5.8
28	26	37	23	e42	19	15	e8.0	15	6.8	4.6	6.5	8.1
29	41	34	24	e36	---	23	e7.6	9.6	11	4.6	7.2	35
30	41	61	24	e34	---	18	7.0	8.3	32	4.8	6.8	20
31	23	---	24	e32	---	14	---	7.1	---	9.3	6.1	---
TOTAL	758	1142	1082	1471	675	506	309.2	272.8	218.0	171.4	434.6	272.9
MEAN	24.5	38.1	34.9	47.5	24.1	16.3	10.3	8.80	7.27	5.53	14.0	9.10
MAX	44	109	131	212	33	23	16	15	32	15	126	37
MIN	14	13	23	21	19	14	7.0	6.6	5.3	3.6	4.3	5.3
AC-FT	1500	2270	2150	2920	1340	1000	613	541	432	340	862	541
CFSM	1.46	2.28	2.09	2.84	1.44	.98	.62	.53	.44	.33	.84	.54
IN.	1.69	2.54	2.41	3.28	1.50	1.13	.69	.61	.49	.38	.97	.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1997, BY WATER YEAR (WY)

MEAN	84.5	52.6	27.9	21.2	15.1	15.1	26.1	48.8	18.7	16.0	20.1	101
MAX	392	205	108	83.4	40.1	59.9	80.2	179	78.6	104	152	1104
(WY)	1971	1971	1971	1992	1996	1972	1980	1981	1979	1979	1979	1996
MIN	14.6	7.12	4.29	3.66	5.70	4.18	4.92	4.24	3.59	3.22	3.97	3.55
(WY)	1994	1995	1995	1995	1994	1994	1995	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1969 - 1997	
ANNUAL TOTAL	41802.6		7312.9			
ANNUAL MEAN	114		20.0		37.2	
HIGHEST ANNUAL MEAN					117	1996
LOWEST ANNUAL MEAN					6.56	1994
HIGHEST DAILY MEAN	19500	Sep 10	212	Jan 21	19500	Sep 10 1996
LOWEST DAILY MEAN	8.3	Jul 6	3.6	Jul 18	2.8	Jul 23 1994
ANNUAL SEVEN-DAY MINIMUM	8.8	Jul 1	4.2	Jul 22	2.8	Jul 23 1994
INSTANTANEOUS PEAK FLOW			924	Aug 9	25900	Sep 10 1996
INSTANTANEOUS PEAK STAGE			10.61	Aug 9	25.14	Sep 10 1996
INSTANTANEOUS LOW FLOW					2.6	Jul 26 1994
ANNUAL RUNOFF (AC-FT)	82920		14510		26950	
ANNUAL RUNOFF (CFSM)	6.84		1.20		2.23	
ANNUAL RUNOFF (INCHES)	93.12		16.29		30.26	
10 PERCENT EXCEEDS	76		37		63	
50 PERCENT EXCEEDS	16		15		13	
90 PERCENT EXCEEDS	10		5.3		5.3	

e Estimated

RIO GRANDE DE MANATI BASIN

50035000 RIO GRANDE DE MANATI AT CIALES, PR

LOCATION.--Lat 18°19'26", long 66°27'36", Hydrologic Unit 21010001, on left bank, 1.6 mi (2.6 km) upstream from Hwy 145 bridge, 0.8 mi (1.3 km) downstream from Quebrada Saliente, 0.9 mi (1.4 km) upstream from Quebrada Cojo Valés, and 1.2 mi (1.9 km) southeast of Ciales.

DRAINAGE AREA.--128 mi² (332 km²), excludes 6.0 mi² (15.5 km²), the runoff from which is diverted through El Guineo and de Matrullas reservoirs.

PERIOD OF RECORD.--September 1946 to September 1953, May 1956 to December 1957 (unpublished, available in files of Caribbean District Office and in the National Water Data Storage and Retrieval System, Washington, D.C.); February 1959 to September 1960 (monthly discharge measurements only); October 1960 to current year. Equivalent record from January 1971 to December 1972 published as 50035200 Río Grande de Manatí at Highway 145 at Ciales at site 1.6 mi (2.6 km) downstream, drainage area 132 mi² (342 km²).

GAGE.--Water-stage recorder. Elevation of gage is 140 ft (43 m), from topographic map. Prior to Apr. 1, 1962, staff gage, read twice daily, at site 100 ft (30 m) upstream at same datum. January 1971 to December 1972 at site 1.6 mi (2.6 km) downstream at different datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate gage heights of major floods, pointed out by local residents are as follows: August 1899, 50 ft (15 m), September 1928, 36 ft (11 m), and September 1932, 34 ft (10 m) at site 1.6 mi (2.6 km) upstream.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	146	182	491	185	e230	e113	e116	56	55	123	e200	38
2	139	161	332	171	e250	e108	e96	99	51	65	e75	92
3	192	148	263	650	e220	e123	e110	119	48	47	e40	195
4	191	150	232	446	e200	e127	e100	72	e48	39	e28	73
5	146	142	213	269	e190	e139	e93	64	e61	35	e28	51
6	180	143	189	205	e190	e134	e86	60	e50	36	24	46
7	199	142	181	170	e180	e110	e82	59	e45	38	22	41
8	150	133	178	157	e170	e117	e80	54	e46	66	22	37
9	139	146	172	189	e170	e119	e76	54	e45	49	369	38
10	133	171	640	258	e170	e110	e74	61	e43	39	208	38
11	130	266	1200	172	e155	e106	e71	64	e45	36	73	32
12	123	261	476	169	e150	e96	e73	56	e45	34	50	33
13	121	194	315	e160	e149	e98	e70	53	e43	35	254	42
14	124	161	258	e200	e149	e98	e67	51	e41	35	232	45
15	122	142	247	e240	e140	e94	e65	50	e41	35	138	41
16	127	148	303	e170	e135	e92	e62	50	e39	40	62	38
17	134	193	247	e155	e135	e90	e55	52	e37	37	98	34
18	170	515	217	e145	e135	e90	50	53	e39	37	141	32
19	127	518	187	e160	e140	e92	48	48	47	48	67	30
20	161	334	172	e500	e140	e87	47	46	46	60	64	29
21	351	357	179	e2500	e145	e80	72	45	41	89	73	34
22	217	420	180	e4200	e155	e82	97	52	35	61	47	40
23	151	505	171	e1500	e132	e76	76	52	33	44	44	57
24	139	598	158	e1100	e130	e77	68	177	31	36	39	41
25	122	635	151	e900	e130	e78	63	317	36	31	49	54
26	534	367	149	e550	e125	e77	61	199	34	e29	39	58
27	655	275	176	e400	e118	e122	61	134	34	e27	31	52
28	379	276	165	e340	112	e139	62	76	43	e26	97	65
29	370	288	235	e300	---	e141	59	66	50	e24	108	166
30	436	433	253	e260	---	e365	56	81	97	e24	53	158
31	243	---	211	e240	---	e175	---	59	---	e60	41	---
TOTAL	6551	8404	8541	17061	4445	3555	2196	2479	1349	1385	2816	1730
MEAN	211	280	276	550	159	115	73.2	80.0	45.0	44.7	90.8	57.7
MAX	655	635	1200	4200	250	365	116	317	97	123	369	195
MIN	121	133	149	145	112	76	47	45	31	24	22	29
AC-FT	12990	16670	16940	33840	8820	7050	4360	4920	2680	2750	5590	3430
CFSM	1.65	2.19	2.15	4.30	1.24	.90	.57	.62	.35	.35	.71	.45
IN.	1.90	2.44	2.48	4.96	1.29	1.03	.64	.72	.39	.40	.82	.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 1997, BY WATER YEAR (WY)

MEAN	425	341	256	195	168	137	256	414	151	105	148	299
MAX	2422	1006	1296	679	1394	477	1174	2293	458	438	1212	1295
(WY)	1971	1971	1966	1952	1950	1969	1969	1985	1979	1979	1979	1996
MIN	91.9	34.7	29.7	26.2	41.6	29.7	28.5	29.6	17.8	14.1	27.0	23.9
(WY)	1994	1995	1995	1995	1957	1994	1984	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1946 - 1997	
ANNUAL TOTAL	93630		60512			
ANNUAL MEAN	256		166		242	
HIGHEST ANNUAL MEAN					520	1971
LOWEST ANNUAL MEAN					47.3	1994
HIGHEST DAILY MEAN	26400	Sep 10	4200	Jan 22	42700	May 18 1985
LOWEST DAILY MEAN	58	May 6	22	Aug 7	8.5	Jul 28 1994
ANNUAL SEVEN-DAY MINIMUM	60	May 2	28	Jul 24	9.5	Jul 24 1994
INSTANTANEOUS PEAK FLOW			e 9800	Jan 22	128000	Sep 10 1996
INSTANTANEOUS PEAK STAGE			unknown	Jan 22	25.20	Sep 10 1996
INSTANTANEOUS LOW FLOW			21	Aug 8	8.5	Jul 27 1994
ANNUAL RUNOFF (AC-FT)	185700		120000		175500	
ANNUAL RUNOFF (CFSM)	2.00		1.30		1.89	
ANNUAL RUNOFF (INCHES)	27.21		17.59		25.72	
10 PERCENT EXCEEDS	391		308		438	
50 PERCENT EXCEEDS	123		110		113	
90 PERCENT EXCEEDS	68		37		51	

e Estimated

50035500 RIO GRANDE DE MANATI AT HIGHWAY 149 AT CIALES, RP

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'46", long 66°28'06", at bridge on Highway 149, about 800 ft (244 m) upstream from confluence with Río Cialitos, 0.5 mi (0.8 km) north of Ciales plaza.

DRAINAGE AREA.--136 mi² (352 km²) this excludes the 6 mi² (15.5 km²) upstream from Lago El Guineo and Lago de Matrullas, flow from which is diverted to Río Jacaguas.

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
21...	0935	157	226	7.2	27.0	2.0	7.2	88	<10	K1100	280
FEB 1997											
20...	1100	191	257	7.0	21.5	0.60	8.6	94	<10	310	240
JUN											
04...	1015	59	272	8.1	29.5	1.9	8.4	111	<10	K1300	410
AUG											
28...	1330	113	243	7.7	29.0	3.3	8.6	111	<10	580	420

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
21...	85	22	7.3	11	0.5	2.2	74	<0.5	7.9	11
FEB 1997										
20...	--	--	--	--	--	--	100	--	--	--
JUN										
04...	110	27	9.5	13	0.6	2.4	110	<0.5	10	15
AUG										
28...	98	26	8.2	13	0.6	2.2	100	--	10	12

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
21...	0.10	21	127	53.8	9	0.480	0.010	0.490	0.050	0.37
FEB 1997										
20...	--	--	--	--	<1	0.500	0.010	0.510	0.030	<0.20
JUN										
04...	0.15	27	170	27.2	2	0.310	<0.010	0.320	0.040	0.23
AUG										
28...	0.15	27	158	48.2	7	0.090	<0.010	0.100	0.020	0.25

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
21...	0.41	0.90	4.0	0.060	3	<100	20	<1	<1	<10
FEB 1997										
20...	<0.20	0.64	2.8	0.030	--	--	--	--	--	--
JUN										
04...	0.27	0.59	2.6	0.040	<1	<100	30	<1	<1	19
AUG										
28...	0.28	0.38	1.7	0.260	--	--	--	--	--	--

K = non-ideal count

RIO GRANDE DE MANATI BASIN

50035500 RIO GRANDE DE MANATI AT HIGHWAY 149 AT CIALES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
21...	300	1	50	<0.10	<1	<1	<10	<0.010	6	<0.01
FEB 1997										
20...	--	--	--	--	--	--	--	--	--	--
JUN										
04...	200	<1	56	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
28...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE MANATI BASIN

50035950 RIO CIALITOS AT HIGHWAY 649 AT CIALES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'18", long 66°28'28", 100 ft (30 m) upstream from bridge on Highway 649, 0.7 mi (1.1 km) upstream from mouth, and about 0.4 mi (0.6 km) west of Ciales plaza.

DRAINAGE AREA.--17.0 mi² (44.0 km²).

PERIOD OF RECORD.--Water years 1969-71, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
21...	1045	17	238	7.8	25.5	0.60	8.6	103	<10	K1600	3500
FEB 1997											
13...	1135	34	233	6.6	22.0	0.50	9.1	102	<10	K900	310
JUN											
04...	1300	9.6	247	8.1	28.5	2.0	8.1	105	<10	K80	K120
SEP											
10...	1510	9.5	237	8.5	30.0	2.8	7.3	97	<10	300	270

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
21...	92	26	6.6	11	0.5	1.9	100	<0.5	5.9	11
FEB 1997										
13...	--	--	--	--	--	--	97	--	--	--
JUN										
04...	96	27	7.0	11	0.5	2.0	100	<0.5	6.5	12
SEP										
10...	93	27	6.6	11	0.5	1.7	93	--	5.5	11

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
21...	0.10	29	151	7.16	4	0.630	<0.010	0.640	0.030	0.30
FEB 1997										
13...	--	--	--	--	<1	0.940	<0.010	0.940	<0.010	<0.20
JUN										
04...	0.11	31	156	4.05	<1	0.360	<0.010	0.370	0.030	<0.20
SEP										
10...	<0.10	27	145	3.70	1	0.250	<0.010	0.260	0.030	<0.20

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
21...	0.32	0.96	4.2	0.060	<1	<100	10	<1	<1	<10
FEB 1997										
13...	<0.20	1.0	4.5	0.050	--	--	--	--	--	--
JUN										
04...	<0.20	0.56	2.5	0.050	<1	<100	20	<1	<1	11
SEP										
10...	0.22	0.47	2.1	0.030	--	--	--	--	--	--

K = non-ideal count

RIO GRANDE DE MANATI BASIN

50035950 RIO CIALITOS AT HIGHWAY 649 AT CIALES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
21...	150	<1	20	<0.10	<1	<1	<10	<0.010	6	<0.01
FEB 1997										
13...	--	--	--	--	--	--	--	--	--	--
JUN										
04...	150	<1	22	<0.10	<1	<1	<10	<0.010	<1	<0.01
SEP										
10...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE MANATI BASIN

50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR

LOCATION.--Lat 18°25'52", long 66°31'37", Hydrologic Unit 21010002, at bridge on Highway 2, and 2.3 mi (3.7 km) west of Manatí.

DRAINAGE AREA.--197 mi² (510 km²), approximately, of which about 38 mi² (98 km²) is partly or entirely noncontributing, excludes 6.0 mi² (15.5 km²) upstream from Lago El Guineo and Lago de Matrullas.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1963-68 (annual maximum discharge only), February 1970 to current year.

REVISED RECORDS.--WRD PR-86-1: 1970-71 (M), 1975, 1979, 1982-85 (P).

GAGE.--Water-stage recorder. Elevation of gage is 14 ft (4 m), from topographic map. Prior to 1968 crest-stage gage at same site and datum 3.57 ft (1.09 m) lower.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station. Possible water extraction about 500 ft (152.4 m) upstream of gage by unknown source affecting low flow.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate gage heights to gage datum of major floods, pointed out by local residents, are as follows: Sept. 13, 1928, 36.6 ft (11.16 m), Sept. 27, 1932, 36.3 ft (11.06 m), and Aug. 4, 1945, 34.3 ft (10.45 m).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	231	274	735	233	349	172	153	93	96	121	487	77
2	220	224	463	221	386	173	141	e96	94	94	145	72
3	229	192	372	1150	330	184	151	172	88	75	81	266
4	345	181	326	1310	305	191	151	115	82	62	70	149
5	248	180	299	483	295	185	142	94	77	55	71	107
6	246	176	270	331	290	212	136	97	72	52	60	90
7	285	167	251	276	268	180	130	94	67	55	54	81
8	224	170	236	248	259	177	127	87	67	61	51	73
9	201	169	224	236	257	184	125	85	67	77	203	74
10	189	189	216	221	255	174	123	92	66	59	695	71
11	183	252	1690	211	238	168	121	105	64	54	181	65
12	176	259	1270	205	233	161	120	91	65	e54	120	61
13	172	309	539	200	229	159	119	86	65	e55	145	69
14	183	204	369	243	227	156	116	81	63	e55	527	88
15	209	183	323	300	217	152	112	79	61	e54	260	69
16	184	165	391	216	212	151	110	78	62	e62	143	63
17	165	189	354	196	209	149	107	78	60	e58	117	59
18	218	390	292	186	207	148	106	78	58	e58	293	57
19	176	978	264	205	215	150	103	76	66	e76	163	55
20	175	494	243	513	216	150	101	71	72	e94	114	54
21	268	450	241	4560	224	144	108	71	69	e140	146	56
22	442	689	259	6880	239	140	127	73	64	e94	105	59
23	216	840	232	2250	206	138	115	81	62	e72	93	70
24	190	855	220	1710	203	136	105	142	58	e56	86	e64
25	165	1190	212	1420	200	134	99	258	61	54	84	e86
26	225	615	208	867	192	136	98	384	64	60	84	e90
27	1390	453	286	630	190	138	97	212	61	55	73	e82
28	488	410	224	519	178	142	96	131	62	54	85	e90
29	561	419	246	470	---	207	98	119	70	50	165	e96
30	617	451	340	400	---	302	94	114	91	51	116	287
31	360	---	259	367	---	181	---	105	---	95	87	---
TOTAL	9181	11717	11854	27257	6829	5174	3531	3538	2074	2112	5104	2680
MEAN	296	391	382	879	244	167	118	114	69.1	68.1	165	89.3
MAX	1390	1190	1690	6880	386	302	153	384	96	140	695	287
MIN	165	165	208	186	178	134	94	71	58	50	51	54
AC-FT	18210	23240	23510	54060	13550	10260	7000	7020	4110	4190	10120	5320
CFSM	1.50	1.98	1.94	4.46	1.24	.85	.60	.58	.35	.35	.84	.45
IN.	1.73	2.21	2.24	5.15	1.29	.98	.67	.67	.39	.40	.96	.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1997, BY WATER YEAR (WY)

MEAN	722	536	361	270	202	185	353	654	230	155	210	509
MAX	2958	1803	1498	879	444	521	1037	3178	747	577	1644	2506
(WY)	1971	1971	1971	1997	1988	1972	1993	1985	1987	1979	1979	1996
MIN	154	71.0	71.8	59.1	72.0	56.2	49.9	93.7	63.8	53.0	67.9	67.4
(WY)	1995	1995	1995	1995	1994	1994	1995	1989	1994	1994	1984	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1970 - 1997	
ANNUAL TOTAL	153686		91051			
ANNUAL MEAN	420		249		364	
HIGHEST ANNUAL MEAN					756	1971
LOWEST ANNUAL MEAN					96.5	1994
HIGHEST DAILY MEAN	42000	Sep 10	6880	Jan 22	55900	May 18 1985
LOWEST DAILY MEAN	70	Jul 6	50	Jul 29	31	Jan 24 1995
ANNUAL SEVEN-DAY MINIMUM	74	Jul 1	54	Jul 24	33	Jul 23 1994
INSTANTANEOUS PEAK FLOW			13400	Jan 21	Not determined	Sep 10 1996
INSTANTANEOUS PEAK STAGE			28.58	Jan 21	36.39	Sep 10 1996
INSTANTANEOUS LOW FLOW			51	Sep 20	28	Jan 23 1995
ANNUAL RUNOFF (AC-FT)	304800		180600		263800	
ANNUAL RUNOFF (CFSM)	2.13		1.27		1.85	
ANNUAL RUNOFF (INCHES)	29.02		17.19		25.11	
10 PERCENT EXCEEDS	522		428		633	
50 PERCENT EXCEEDS	178		156		166	
90 PERCENT EXCEEDS	95		62		84	

e Estimated

RIO GRANDE DE MANATI BASIN

50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
21...	1050	481	230	7.0	24.0	63	7.2	84	<10	K6500	5400
FEB 1997											
26...	1010	E199	220	7.0	25.0	5.2	7.5	88	<10	K9100	750
JUN											
03...	0945	88	334	7.5	28.5	6.0	6.8	87	<10	K7600	640
AUG											
28...	1125	70	332	7.6	28.5	10	6.6	85	<10	3400	540

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
21...	89	25	6.4	9.6	0.4	2.5	90	<0.5	8.2	11
FEB 1997										
26...	--	--	--	--	--	--	130	--	--	--
JUN										
03...	140	41	8.6	11	0.4	2.2	140	<0.5	10	15
AUG										
28...	140	43	7.2	11	0.4	2.0	130	--	9.2	12

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
21...	0.10	21	138	179	60	1.10	0.030	1.10	0.060	0.35
FEB 1997										
26...	--	--	--	--	12	0.700	0.020	0.710	0.050	0.23
JUN										
03...	0.13	20	192	45.8	15	0.730	0.020	0.750	0.040	0.52
AUG										
28...	0.14	20	182	34.2	20	0.770	0.023	0.790	0.040	0.37

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
21...	0.41	1.5	6.6	0.140	<1	<100	20	<1	4	<10
FEB 1997										
26...	0.28	1.0	4.4	0.060	--	--	--	--	--	--
JUN										
03...	0.56	1.3	5.8	0.080	<1	<100	30	<1	1	11
AUG										
28...	0.41	1.2	5.3	0.150	--	--	--	--	--	--

K = non-ideal count
E = estimated

50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
21...	3000	1	160	<0.10	<1	<1	10	<0.010	2	<0.01
FEB 1997										
26...	--	--	--	--	--	--	--	--	--	--
JUN										
03...	540	<1	87	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
28...	--	--	--	--	--	--	--	--	--	--

LAGUNA TORTUGUERO BASIN

50038200 LAGUNA TORTUGUERO OUTLET NEAR VEGA BAJA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°28'29", long 66°26'50", at bridge on Highway 686, 4.2 mi (6.8 km) northeast of Manatí, and 4.4 mi (7.1 km) northwest of Vega Baja plaza.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1964-66, 1969-71, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	COLIFORM, FECAL, 0.45 UM-MF (COLS./100 ML) (31616)	STREPTOCOCCI FECAL, (COLS. PER 100 ML) (31679)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)
NOV 1996										
06...	1115	1130	6.7	28.5	4.1	50	20	K660	220	150
FEB 1997										
18...	0815	750	7.0	25.0	4.6	54	14	220	200	140
MAY										
16...	1045	920	7.8	29.0	3.6	46	31	220	2700	120
SEP										
04...	0950	1140	7.7	30.5	5.2	69	28	420	810	100

DATE	SULFIDE TOTAL (MG/L AS S) (00745)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)
NOV 1996										
06...	<0.5	2	0.230	0.010	0.240	0.550	0.74	1.3	1.5	6.8
FEB 1997										
18...	--	<1	0.580	0.020	0.590	0.120	0.76	0.88	1.5	6.5
MAY										
16...	<0.5	4	0.100	<0.010	0.110	0.180	1.1	1.2	1.4	6.0
SEP										
04...	--	6	0.150	0.014	0.170	0.170	1.2	1.4	1.5	6.7

DATE	PHOSPHORUS TOTAL (MG/L AS P) (00665)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L) (38260)
NOV 1996									
06...	<0.020	80	<10	70	<10	<10	<0.010	1	0.03
FEB 1997									
18...	0.030	--	--	--	--	--	--	--	--
MAY									
16...	<0.020	60	12	100	11	<10	<0.010	<1	0.07
SEP									
04...	<0.020	--	--	--	--	--	--	--	--

K = non-ideal count

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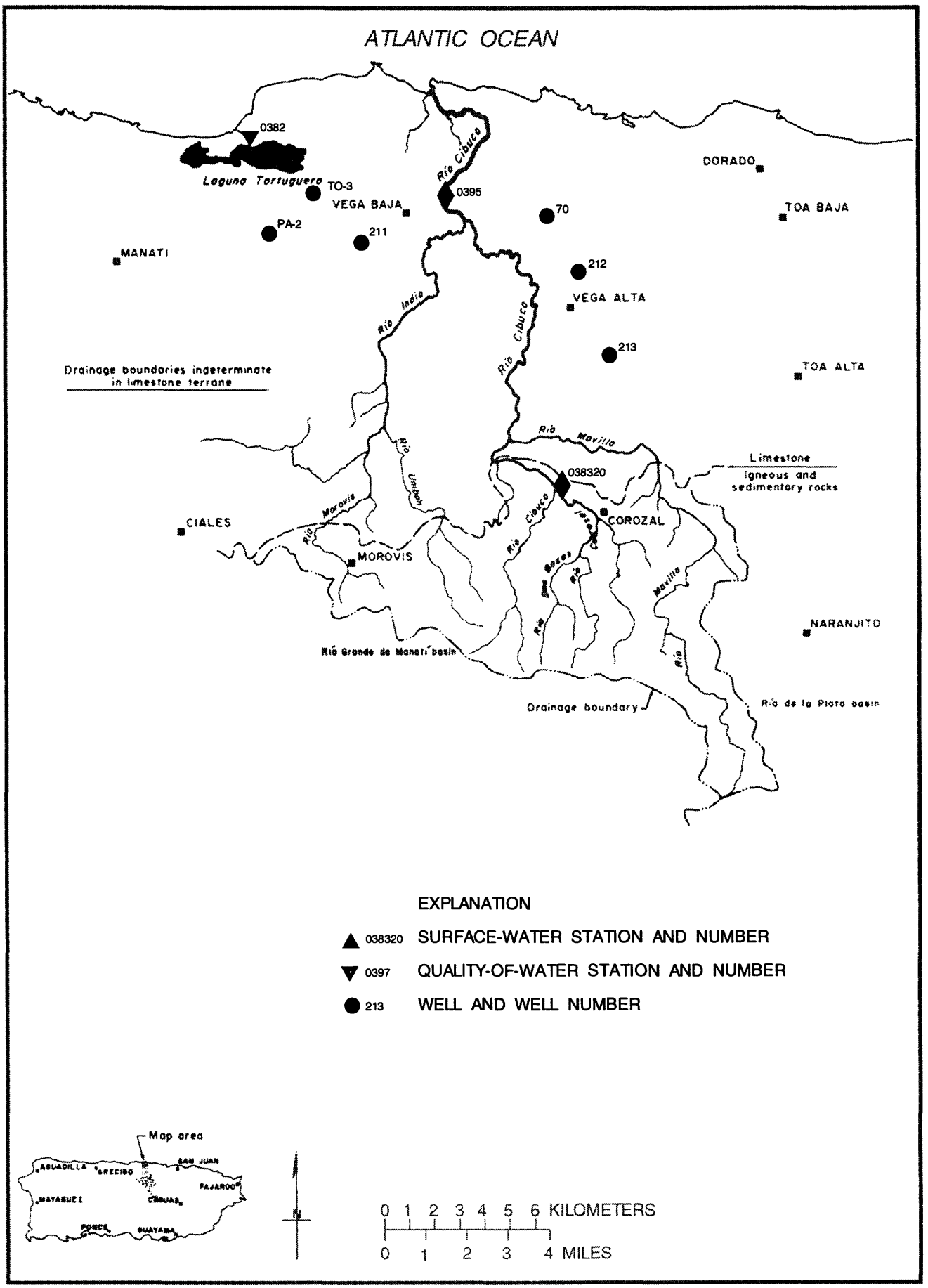

Figure 16.--Río Cibuco basin.

50038320 RIO CIBUCO BELOW COROZAL, PR

LOCATION.--Lat 18°21'13", long 66°20'07", Hydrologic Unit 21010001, on right bank, 150 ft (46 m) downstream from junction with Río Corozal, and 1.4 mi (2.3 km) northwest of Corozal.

DRAINAGE AREA.--15.1 mi² (39.1 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1969 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 195 ft (59 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station. Daily discharge affected by sewage treatment plant about 0.6 mi (1.0 km) upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	35	63	e36	33	18	11	7.4	6.3	7.4	4.3	6.2
2	48	27	49	e48	32	21	11	7.5	7.1	4.9	3.4	5.6
3	56	24	41	e49	30	27	13	7.3	7.0	4.3	2.9	4.9
4	47	22	36	e47	29	32	15	8.5	6.7	4.5	4.0	5.1
5	84	25	31	e44	26	33	12	6.6	6.7	4.3	3.3	4.5
6	76	25	31	e31	31	24	10	6.6	6.5	5.8	3.4	4.4
7	57	26	30	e29	31	23	9.6	6.6	e6.1	5.8	2.6	4.3
8	48	20	28	e27	36	42	8.8	6.6	e5.8	14	2.6	4.2
9	45	23	26	e27	30	29	10	6.5	e5.6	9.6	2.8	20
10	46	49	28	e25	28	23	10	6.8	e5.6	5.2	2.9	10
11	47	34	164	e25	28	18	11	5.7	e5.4	5.0	8.9	4.5
12	44	78	54	e23	29	18	11	5.7	e5.4	4.4	3.9	4.5
13	57	128	35	e23	29	19	9.5	6.6	e5.2	4.3	3.4	15
14	57	62	34	e24	27	18	10	5.8	e4.7	4.2	5.8	13
15	45	39	82	e23	25	16	9.0	6.0	e4.5	5.2	8.9	8.4
16	39	31	69	e22	25	16	9.0	8.3	e4.5	5.0	6.8	5.3
17	34	33	43	e20	26	16	9.2	7.5	e4.3	4.4	16	4.4
18	33	53	33	e21	27	18	9.3	7.1	e4.0	5.3	18	4.1
19	31	55	30	e47	29	17	9.2	6.2	8.6	9.4	5.8	3.9
20	35	64	e27	e31	27	16	12	5.4	8.2	9.5	4.5	3.7
21	32	50	e28	e200	58	14	14	6.9	6.2	8.1	4.1	7.5
22	32	129	e28	e380	33	14	13	6.9	5.7	5.0	4.9	7.2
23	41	97	e26	e140	25	12	10	9.8	6.8	5.3	5.7	12
24	34	234	e27	e150	30	12	9.0	63	8.9	4.1	7.0	8.2
25	43	117	e26	e94	26	11	8.5	30	8.1	7.2	7.1	45
26	255	59	55	e64	23	13	8.9	53	6.7	6.1	4.3	e20
27	83	42	e85	e52	20	12	11	22	6.9	3.9	5.2	e13
28	30	56	e52	e46	19	13	9.2	11	5.3	3.6	5.5	9.8
29	129	37	e69	38	---	12	7.9	9.1	5.1	3.1	33	7.5
30	47	129	e94	36	---	11	7.9	7.7	4.6	3.8	12	8.2
31	40	---	e46	36	---	12	---	6.5	---	3.9	9.7	---
TOTAL	1737	1803	1470	1858	812	580	309.0	360.6	182.5	176.6	212.7	274.4
MEAN	56.0	60.1	47.4	59.9	29.0	18.7	10.3	11.6	6.08	5.70	6.86	9.15
MAX	255	234	164	380	58	42	15	63	8.9	14	33	45
MIN	30	20	26	20	19	11	7.9	5.4	4.0	3.1	2.6	3.7
AC-FT	3450	3580	2920	3690	1610	1150	613	715	362	350	422	544
CFSM	3.71	3.98	3.14	3.97	1.92	1.24	.68	.77	.40	.38	.45	.61
IN.	4.28	4.44	3.62	4.58	2.00	1.43	.76	.89	.45	.44	.52	.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1997, BY WATER YEAR (WY)

MEAN	41.1	47.8	35.5	25.3	21.2	21.4	32.6	44.1	14.5	11.8	16.6	32.5
MAX	135	155	169	69.6	51.3	65.1	111	157	44.4	34.6	50.8	191
(WY)	1991	1971	1971	1992	1988	1981	1973	1986	1987	1979	1979	1996
MIN	8.05	8.15	4.14	6.93	7.75	4.36	3.32	3.20	1.63	2.19	3.44	3.88
(WY)	1979	1974	1995	1995	1994	1984	1984	1977	1994	1994	1978	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1969 - 1997	
ANNUAL TOTAL	15064.2		9775.8			
ANNUAL MEAN	41.2		26.8		28.8	
HIGHEST ANNUAL MEAN					56.5	1971
LOWEST ANNUAL MEAN					7.47	1994
HIGHEST DAILY MEAN	3070	Sep 10	380	Jan 22	3070	Sep 10 1996
LOWEST DAILY MEAN	3.2	Jul 23	2.6	Aug 7	.91	Jul 17 1994
ANNUAL SEVEN-DAY MINIMUM	4.9	Jul 17	3.1	Aug 3	1.2	Jun 21 1994
INSTANTANEOUS PEAK FLOW			6930	Jan 21	20400	Nov 9 1995
INSTANTANEOUS PEAK STAGE			15.61	Jan 21	22.35	Nov 9 1995
ANNUAL RUNOFF (AC-FT)	29880		19390		20870	
ANNUAL RUNOFF (CFSM)	2.73		1.77		1.91	
ANNUAL RUNOFF (INCHES)	37.11		24.08		25.92	
10 PERCENT EXCEEDS	79		55		50	
50 PERCENT EXCEEDS	17		15		13	
90 PERCENT EXCEEDS	6.0		4.5		5.2	

e Estimated

50038320 RIO CIBUCO BELOW COROZAL, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-76, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
28...	0810	26	309	7.1	23.5	5.6	7.2	83	<10	K890	600
FEB 1997											
26...	1430	22	395	7.1	25.0	1.3	7.7	91	<10	>60000	1000
MAY											
14...	1140	6.9	387	8.0	27.0	1.7	8.3	105	<10	K1100	380
SEP											
08...	0915	4.4	499	7.8	27.5	1.0	6.6	84	<10	K720	470

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
28...	120	29	11	14	0.6	4.0	110	<0.5	17	23
FEB 1997										
26...	--	--	--	--	--	--	130	--	--	--
MAY										
14...	140	36	12	21	0.8	3.7	130	<0.5	13	28
SEP										
08...	140	33	12	22	0.8	3.3	160	--	16	24

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
28...	0.10	25	189	13.1	10	1.70	<0.010	1.70	0.030	0.27
FEB 1997										
26...	--	--	--	--	3	2.30	0.030	2.30	0.140	0.32
MAY										
14...	0.12	33	225	4.16	4	2.70	0.030	2.80	0.060	0.39
SEP										
08...	0.10	34	210	2.49	4	2.20	0.066	2.20	0.060	0.30

K = non-ideal count

50038320 RIO CIBUCO BELOW COROZAL, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT 1996										
28...	0.30	2.0	8.8	0.130	1	<100	30	<1	1	<10
FEB 1997										
26...	0.47	2.8	12	0.210	--	--	--	--	--	--
MAY										
14...	0.46	3.2	14	0.340	<1	<100	30	<1	1	13
SEP										
08...	0.36	2.6	12	0.680	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L) (38260)
OCT 1996										
28...	480	<1	30	<0.10	<1	<1	<10	<0.010	3	<0.01
FEB 1997										
26...	--	--	--	--	--	--	--	--	--	--
MAY										
14...	100	<1	50	<0.10	<1	<1	<10	<0.010	<1	0.06
SEP										
08...	--	--	--	--	--	--	--	--	--	--

50039500 RIO CIBUCO AT VEGA BAJA, PR

LOCATION.--Lat 18°26'53", long 66°22'29", Hydrologic Unit 21010002, on left bank, at bridge on Hwy 2, 0.6 mi (1.0 km) downstream from Río Indio, and 0.8 mi (1.3 km) east of Vega Baja.

DRAINAGE AREA.--99.1 mi² (256.7 km²), of which 25.4 mi² (65.8 km²), does not contribute directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is 7.79 ft (2.374 m) above mean sea level.

REMARKS.--Records fair, except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 11, 1965 reached a stage of 26.2 ft (7.99 m), datum unknown, discharge about 28,000 ft³/s (793 m³/s).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	88	155	359	165	188	64	47	31	40	26	30	e28
2	83	115	251	176	184	69	45	31	36	27	28	e26
3	77	124	202	291	161	86	52	30	37	21	25	e22
4	117	97	183	494	151	134	56	33	34	19	29	e24
5	133	82	161	245	173	139	60	30	31	19	29	e21
6	126	115	143	208	144	129	58	31	29	22	26	e20
7	75	104	132	149	139	85	52	29	28	22	24	e20
8	63	115	121	131	131	109	50	29	27	25	e20	e20
9	72	94	116	117	153	114	50	29	26	39	e21	e94
10	65	92	113	108	129	83	49	29	26	27	e18	e40
11	58	161	612	100	110	78	47	29	25	22	e41	e21
12	54	219	270	95	114	75	45	29	25	20	e22	e21
13	50	725	136	87	134	73	42	29	24	20	e21	e70
14	86	292	112	93	107	70	41	30	22	20	e30	e60
15	54	243	151	112	102	68	39	29	21	21	e40	e38
16	60	145	518	80	92	66	36	28	21	28	e31	e24
17	44	121	210	72	94	64	35	27	20	31	e76	e22
18	42	205	152	67	86	64	36	24	18	31	e82	e21
19	e42	264	125	89	103	64	36	23	m28	44	48	e20
20	e46	324	109	211	97	62	35	24	36	46	25	e19
21	e42	207	121	1250	225	60	45	25	25	47	25	e35
22	e42	656	133	2270	217	54	39	26	24	39	e23	e34
23	e54	871	103	815	125	56	41	26	26	28	e26	e54
24	e45	676	172	894	128	54	35	133	34	^[26	e33	e38
25	e56	759	134	544	125	45	33	249	45	25	e33	e210
26	e330	335	113	382	90	44	35	274	28	40	e21	e110
27	e120	245	543	308	80	45	34	224	25	27	e24	e60
28	e50	256	230	284	70	63	35	95	23	23	e25	e45
29	e200	250	301	247	---	84	32	51	22	22	e150	e35
30	e180	423	337	217	---	55	32	46	22	22	e54	e38
31	163	---	223	200	---	47	---	40	---	36	e45	---
TOTAL	2717	8470	6586	10501	3652	2303	1272	1763	828	865	1125	1290
MEAN	87.6	282	212	339	130	74.3	42.4	56.9	27.6	27.9	36.3	43.0
MAX	330	871	612	2270	225	139	60	274	45	47	150	210
MIN	42	82	103	67	70	44	32	23	18	19	18	19
AC-FT	5390	16800	13060	20830	7240	4570	2520	3500	1640	1720	2230	2560
CFSM	.88	2.85	2.14	3.42	1.32	.75	.43	.57	.28	.28	.37	.43
IN.	1.02	3.18	2.47	3.94	1.37	.86	.48	.66	.31	.32	.42	.48

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1997, BY WATER YEAR (WY)

MEAN	155	194	172	103	88.8	83.6	150	190	70.3	51.4	78.6	141
MAX	559	523	1316	339	190	339	667	655	239	162	461	690
(WY)	1986	1980	1982	1997	1988	1990	1987	1985	1987	1979	1979	1996
MIN	45.9	40.0	25.1	30.2	27.3	20.5	16.2	24.7	12.5	14.0	21.2	26.7
(WY)	1974	1974	1995	1995	1994	1994	1984	1977	1994	1994	1978	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1973 - 1997	
ANNUAL TOTAL	55145		41372			
ANNUAL MEAN	151		113		122	
HIGHEST ANNUAL MEAN					236	1982
LOWEST ANNUAL MEAN					38.5	1994
HIGHEST DAILY MEAN	12800	Sep 10	2270	Jan 22	14600	Dec 13 1981
LOWEST DAILY MEAN	18	Jul 5	18	Jun 18	7.2	May 3 1995
ANNUAL SEVEN-DAY MINIMUM	20	Jun 30	22	Jun 12	8.1	Apr 28 1995
INSTANTANEOUS PEAK FLOW			2730	Jan 22	34000	Apr 12 1987
INSTANTANEOUS PEAK STAGE			14.66	Jan 22	19.10	Apr 12 1987
INSTANTANEOUS LOW FLOW					7.2	May 2 1995
ANNUAL RUNOFF (AC-FT)	109400		82060		88060	
ANNUAL RUNOFF (CFSM)	1.52		1.14		1.23	
ANNUAL RUNOFF (INCHES)	20.70		15.53		16.67	
10 PERCENT EXCEEDS	252		244		225	
50 PERCENT EXCEEDS	63		54		58	
90 PERCENT EXCEEDS	28		23		22	

e Estimated

50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
28...	1000	99	333	7.2	24.5	63	6.3	74	<10	K7700	K20000
FEB 1997											
18...	1140	85	448	6.8	23.5	18	7.9	91	<10	K1000	210
MAY											
16...	1445	28	470	8.0	27.5	3.0	6.6	83	<10	560	330
SEP											
04...	1200	21	479	7.8	29.5	2.5	5.2	68	<10	K1700	560

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
28...	130	41	7.0	11	0.4	4.4	130	<0.5	14	17
FEB 1997										
18...	--	--	--	--	--	--	180	--	--	--
MAY										
16...	200	65	10	18	0.6	2.7	190	<0.5	13	26
SEP										
04...	190	61	9.2	19	0.6	3.1	180	--	13	28

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
28...	0.10	16	188	50.4	84	1.30	0.040	1.40	0.090	0.62
FEB 1997										
18...	--	--	--	--	<1	1.50	0.020	1.60	0.030	<0.20
MAY										
16...	0.14	20	268	20.4	5	1.80	0.020	1.80	0.030	0.29
SEP										
04...	0.11	16	257	14.4	3	2.10	0.019	2.10	0.030	1.4

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
28...	0.71	2.1	9.2	0.190	<1	<100	30	<1	5	<10
FEB 1997										
18...	<0.20	1.7	7.6	0.080	--	--	--	--	--	--
MAY										
16...	0.32	2.2	9.6	0.160	<1	<100	<10	<1	3	<10
SEP										
04...	1.4	3.5	15	0.170	--	--	--	--	--	--

K = non-ideal count

RIO CIBUCO BASIN

50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
28...	2800	2	130	<0.10	<1	<1	<10	<0.010	<1	<0.01
FEB 1997										
18...	--	--	--	--	--	--	--	--	--	--
MAY										
16...	690	<1	110	<0.10	<1	<1	<10	<0.010	2	<0.01
SEP										
04...	--	--	--	--	--	--	--	--	--	--

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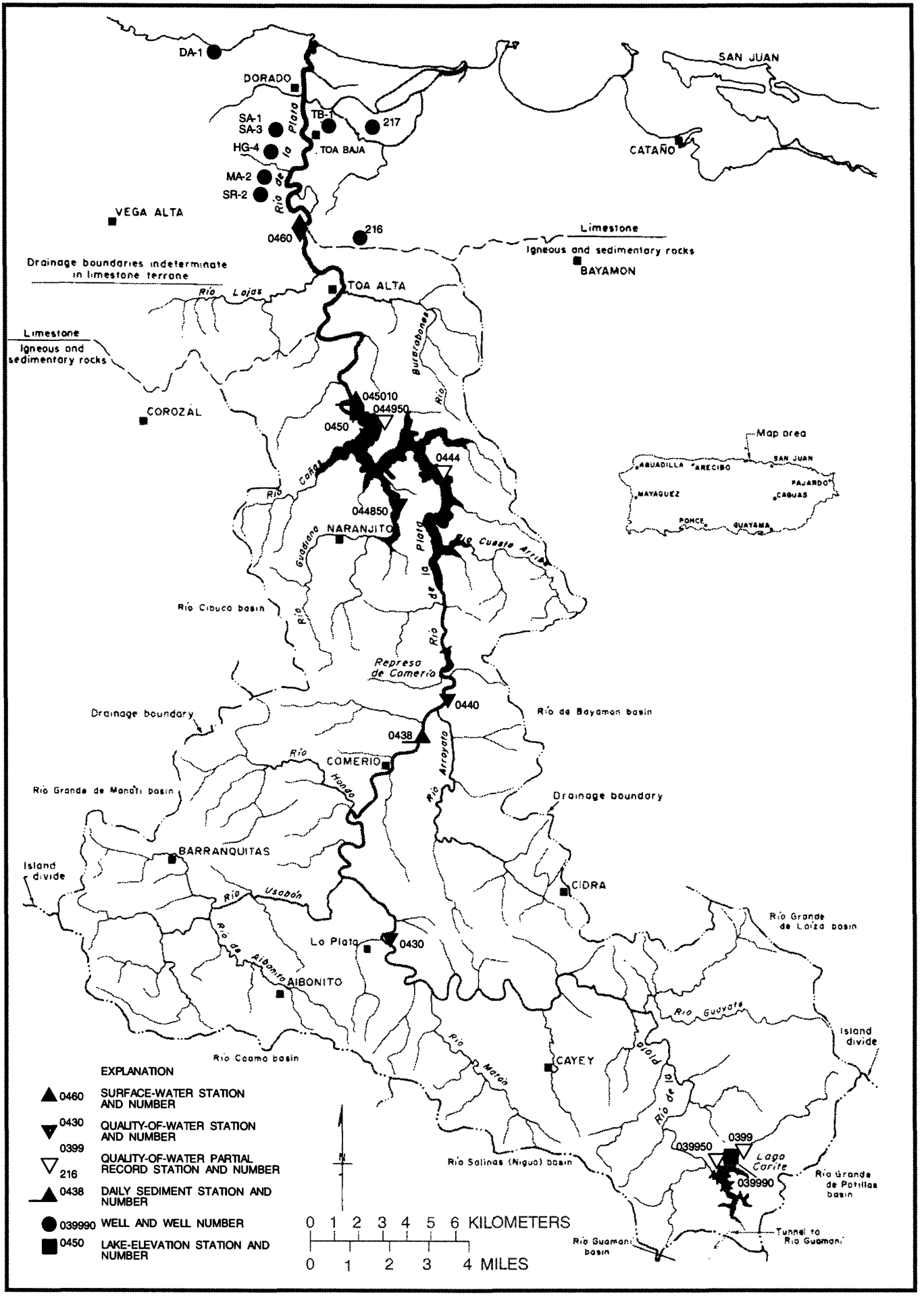

Figure 17.--Río de la Plata basin.

RIO DE LA PLATA BASIN

50039990 LAGO CARITE AT GATE TOWER NEAR CAYEY, PR

LOCATION.--Lat 18°03'46", long 66°05'58", Hydrologic Unit 21010005, on top of a concrete tower at diversion tunnel on Carite Reservoir, 0.7 mi (1.1 km) northwest from Escuela Carite Chino, 1.2 mi (1.9 km) northeast from Central Hidroeléctrica de Carite Num. 1 and 1.8 mi (2.9 km) northeast from Escuela Segunda Unidad.

DRAINAGE AREA.--8.20 mi² (21.24 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--May 1989 to current year. Prior to October 1994, published as Lago Carite at Gate Tower.

GAGE.--Water stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago Carite Dam was completed in 1913. The operation of the reservoir is controlled by the utilization of water to meet the demands for domestic, industrial and agricultural purposes in the Guayama Area. The dam is an earthfill with crest elevation of 1,806 ft (550 m) above mean sea level, with a structural height of 104 ft (32 m) and a lenght of 500 ft (152 m). The dam has a capacity of approximately 11,310 acre-feet (13.9 hm³). The Dam is operated by the Puerto Rico Electric and Power Authority. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 1,788.73 ft (545.20 m), Sep. 10, 1996; minimum elevation, 1,761.22 ft (536.81 m), May 28, 1995.

EXTREMES FOR CURRENT YEAR.--Maximum elevation 1,782.08 ft (543.18 m), Nov. 12; minimum elevation, 1,768.95 ft (539.18 m), Sep. 21.

Capacity Table

(based on Data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
1,746	0	1,775	6,194
1,760	2,471	1,780	7,704
1,769	4,561	1,790	11,048

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	A	1781.55	1781.46	1781.47	1781.61	1781.44	1780.99	1779.70	1776.27	1772.63	1770.20	1770.81
2	A	1781.51	1781.45	1781.43	1781.56	1781.47	1781.51	1779.65	1776.23	1772.50	1770.14	1770.77
3	A	1781.50	1781.43	1781.48	1781.54	1781.44	1781.48	1779.51	1776.30	1772.36	1770.11	1770.66
4	A	1781.53	1781.41	1781.39	1781.49	1781.44	1781.45	1779.35	1776.23	1772.22	1770.09	1770.54
5	1781.52	1781.51	1781.43	1781.40	1781.51	1781.41	1781.41	1779.25	1776.12	1772.11	1770.04	1770.45
6	1781.54	1781.51	1781.46	1781.39	1781.47	1781.38	1781.33	1779.15	1775.97	1772.03	1770.00	1770.34
7	1781.52	1781.51	1781.42	1781.34	1781.48	1781.36	1781.33	1778.99	1775.84	1771.92	1769.97	1770.22
8	1781.49	1781.52	1781.43	1781.33	1781.44	1781.40	1781.28	1778.88	1775.72	1771.81	1769.94	1770.13
9	1781.54	1781.50	1781.40	1781.31	1781.48	1781.40	1781.28	1778.80	1775.57	1771.67	1769.94	1770.02
10	1781.67	1781.45	1781.38	1781.29	1781.44	1781.37	1781.20	1778.69	1775.45	1771.55	1770.02	1769.90
11	1781.63	1781.91	1781.64	1781.38	1781.41	1781.30	1781.17	1778.58	1775.31	1771.40	1770.02	1769.78
12	1781.56	1782.08	1781.55	1781.34	1781.41	1781.32	1781.13	1778.45	1775.18	1771.28	1770.01	1769.72
13	1781.52	1781.85	1781.50	1781.34	1781.55	1781.33	1781.15	1778.37	1775.04	1771.17	1769.96	1769.67
14	1781.52	1781.68	1781.50	1781.28	1781.57	1781.29	1781.05	1778.28	1774.94	1771.04	1769.85	1769.59
15	1781.55	1781.59	1781.51	1781.25	1781.48	1781.35	1781.04	1778.17	1774.81	1770.91	1769.84	1769.52
16	1781.55	1781.54	1781.45	1781.30	1781.49	1781.39	1781.04	1778.08	1774.68	1770.85	1769.76	1769.39
17	1781.49	1781.54	1781.43	1781.20	1781.40	1781.37	1780.98	1778.03	1774.55	1770.75	1769.73	1769.32
18	1781.53	1781.50	1781.43	1781.18	1781.47	1781.39	1780.95	1777.91	1774.40	1770.65	1769.68	1769.23
19	1781.54	1781.50	1781.43	1781.18	1781.44	1781.31	1780.91	1777.78	1774.25	1770.64	1769.60	1769.11
20	1781.50	1781.56	1781.42	1781.22	1781.44	1781.37	1780.89	1777.67	1774.12	1770.73	1769.51	1768.99
21	1781.40	1781.88	1781.34	1781.36	1781.51	1781.32	1780.70	1777.53	1774.01	1770.90	1769.42	1769.23
22	1781.36	1781.65	1781.37	1781.53	1781.53	1781.25	1780.76	1777.38	1773.85	1770.81	1770.85	1769.36
23	1781.38	1781.62	1781.38	1781.50	1781.56	1781.21	1780.68	1777.23	1773.73	1770.72	1770.88	1769.46
24	1781.48	1781.54	1781.37	1781.50	1781.47	1781.25	1780.66	1777.13	1773.59	1770.64	1771.11	1769.42
25	1781.43	1781.48	1781.38	1781.49	1781.48	1781.19	1780.63	1776.98	1773.45	1770.52	1771.12	1769.44
26	1781.47	1781.46	1781.35	1781.46	1781.57	1781.10	1780.43	1776.82	1773.33	1770.45	1771.09	1769.54
27	1781.48	1781.44	1781.35	1781.42	1781.58	1781.11	1780.29	1776.78	1773.21	1770.39	1771.03	1769.53
28	1781.49	1781.45	1781.34	1781.43	1781.51	1781.19	1780.13	1776.66	1773.06	1770.40	1770.96	1769.48
29	1781.45	1781.44	1781.56	1781.43	---	1781.15	1779.99	1776.56	1772.92	1770.29	1770.93	1769.47
30	1781.45	1781.44	1781.56	1781.37	---	1781.12	1779.87	1776.46	1772.78	1770.19	1770.92	1769.44
31	1781.48	---	1781.50	1781.38	---	1781.12	---	1776.39	---	1770.24	1770.89	---
MAX	1781.67	1782.08	1781.64	1781.53	1781.61	1781.47	1781.51	1779.70	1776.30	1772.63	1771.12	1770.81
MIN	1781.36	1781.44	1781.34	1781.18	1781.40	1781.10	1779.87	1776.39	1772.78	1770.19	1769.42	1768.99

CAL YR 1996 MAX 1782.84 MIN 1779.31
WTR YR 1997 MAX 1782.08 MIN 1768.99

A No gage-height record

50043000 RIO DE LA PLATA AT PROYECTO LA PLATA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
09...	1000	55	379	7.8	27.0	1.2	8.0	100	<10	K150	410
FEB 1997											
19...	1115	19	376	6.9	23.5	1.2	8.7	102	<10	K50	K73
MAY											
13...	0945	20	393	8.1	27.0	2.4	7.9	101	<10	250	360
SEP											
09...	1045	77	333	7.8	27.5	2.2	7.0	92	<10	24000	9400

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
09...	140	36	13	28	1	2.4	160	<0.5	19	51
FEB 1997										
19...	--	--	--	--	--	--	140	--	--	--
MAY										
13...	120	30	12	31	1	2.5	130	<0.5	17	29
SEP										
09...	110	31	10	29	1	2.3	110	--	18	36

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
09...	0.10	20	265	39.6	2	1.20	0.020	1.30	0.040	<0.20
FEB 1997										
19...	--	--	--	--	<1	1.40	0.010	1.40	0.020	0.26
MAY										
13...	0.14	22	221	12.0	1	1.30	0.030	1.30	0.040	0.43
SEP										
09...	0.12	17	203	42.2	<1	1.10	0.054	1.20	0.090	0.48

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
09...	<0.20	1.4	6.2	0.130	<1	<100	50	<1	<1	<10
FEB 1997										
19...	0.28	1.7	7.5	0.170	--	--	--	--	--	--
MAY										
13...	0.48	1.8	7.9	0.320	1	<100	60	<1	<1	10
SEP										
09...	0.57	1.8	7.8	0.150	--	--	--	--	--	--

K = non-ideal count

50043000 RIO DE LA PLATA AT PROYECTO LA PLATA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
09...	80	<1	20	<0.10	<1	<1	<10	<0.010	<1	<0.01
FEB 1997										
19...	--	--	--	--	--	--	--	--	--	--
MAY										
13...	170	<1	27	<0.10	<1	<1	<10	<0.010	<1	0.10
SEP										
09...	--	--	--	--	--	--	--	--	--	--

RIO DE LA PLATA BASIN

50043800 RIO DE LA PLATA AT COMERIO, PR

LOCATION.--Lat 18°13'23", long 66°13'30", Hydrologic Unit 21010005, on right bank 50 ft (15 m) upstream from bridge off Highway 167 in the Town of Comerío, 0.4 mi (0.6 km) southwest of Comerío High School, and 0.2 mi (0.3 km) northeast of Plaza de Comerío.

DRAINAGE AREA.--109 mi² (282 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 604.2 ft (184.160 m) above mean sea level.

REMARKS.--Records fair. Filtration plant more or less 1,000 feet upstream from station. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	65	129	56	157	66	35	35	36	16	31	14
2	82	67	101	41	168	62	33	34	33	16	24	14
3	83	67	84	36	107	62	344	36	32	15	19	14
4	85	62	72	34	80	63	82	34	43	14	16	12
5	79	64	71	32	70	64	60	33	37	14	14	11
6	79	60	65	31	67	60	51	33	30	14	12	11
7	87	57	62	30	64	54	42	33	27	24	12	11
8	77	58	63	31	60	54	38	33	26	25	12	14
9	75	61	57	31	60	54	36	33	24	19	12	141
10	80	65	55	29	64	51	35	48	22	17	13	31
11	94	217	194	30	59	49	34	52	21	15	14	16
12	86	409	153	37	57	44	34	39	20	15	13	16
13	79	489	73	33	57	44	34	36	20	14	13	20
14	75	252	60	30	75	45	33	36	20	14	14	26
15	77	186	55	36	71	45	32	37	21	13	14	19
16	75	153	51	33	63	48	32	39	22	15	13	18
17	66	134	48	31	61	52	31	46	18	19	18	14
18	63	184	46	27	56	47	30	59	e19	35	20	12
19	84	199	41	29	54	41	30	41	22	24	19	12
20	92	215	39	45	57	41	29	35	19	23	23	11
21	76	212	34	153	71	39	29	34	23	56	15	12
22	73	445	35	627	99	38	30	35	21	116	222	23
23	66	293	33	249	76	35	30	48	18	42	261	51
24	62	193	33	e190	80	31	29	292	20	28	54	37
25	58	151	35	e149	62	30	28	75	23	26	359	32
26	64	99	35	e119	74	30	28	47	20	22	56	49
27	108	82	36	e90	103	29	29	42	17	21	28	78
28	87	88	35	e74	75	40	38	37	19	22	24	31
29	123	84	47	76	---	89	41	33	18	42	40	20
30	161	93	64	72	---	66	40	37	16	32	24	16
31	69	---	98	65	---	39	---	44	---	33	16	---
TOTAL	2549	4804	2004	2546	2147	1512	1397	1496	707	801	1425	786
MEAN	82.2	160	64.6	82.1	76.7	48.8	46.6	48.3	23.6	25.8	46.0	26.2
MAX	161	489	194	627	168	89	344	292	43	116	359	141
MIN	58	57	33	27	54	29	28	33	16	13	12	11
AC-FT	5060	9530	3970	5050	4260	3000	2770	2970	1400	1590	2830	1560
CFSM	.76	1.48	.60	.76	.71	.45	.43	.44	.22	.24	.42	.24
IN.	.87	1.65	.69	.87	.74	.52	.48	.51	.24	.27	.49	.27

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1997, BY WATER YEAR (WY)

MEAN	191	96.3	54.4	144	81.6	41.9	53.3	90.0	77.5	97.0	75.9	382
MAX	866	166	112	732	247	75.7	162	263	213	291	193	1433
(WY)	1991	1993	1993	1992	1989	1989	1993	1992	1996	1993	1996	1996
MIN	40.6	19.0	17.1	21.3	24.4	20.6	22.3	19.7	13.2	10.4	12.7	26.2
(WY)	1992	1995	1995	1995	1990	1993	1991	1994	1994	1994	1994	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1989 - 1997	
ANNUAL TOTAL	86395		22174			
ANNUAL MEAN	236		60.8		113	
HIGHEST ANNUAL MEAN					239	1996
LOWEST ANNUAL MEAN					35.3	1994
HIGHEST DAILY MEAN	32400	Sep 10	627	Jan 22	32400	Sep 10 1996
LOWEST DAILY MEAN	13	May 5	11	Sep 5	5.8	Jun 25 1994
ANNUAL SEVEN-DAY MINIMUM	15	May 1	12	Sep 1	7.3	Jul 31 1994
INSTANTANEOUS PEAK FLOW			1750	Aug 22	127000	Jan 5 1992
INSTANTANEOUS PEAK STAGE			6.19	Aug 22	29.22	Jan 5 1992
ANNUAL RUNOFF (AC-FT)	171400		43980		81770	
ANNUAL RUNOFF (CFSM)	2.18		.56		1.04	
ANNUAL RUNOFF (INCHES)	29.62		7.60		14.13	
10 PERCENT EXCEEDS	320		107		159	
50 PERCENT EXCEEDS	66		39		35	
90 PERCENT EXCEEDS	21		16		15	

e Estimated

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1989 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1989 to current year.

INSTRUMENTATION.-- USD-77 sediment sampler since 1989. Automatic sediment sampler since 1989.

REMARKS.--Sediment samples were collected by a local observer on a week basis. During high flow events sediment samples were collected by local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 8,800 mg/L Jan. 05, 1992; Minimum daily mean, 1 mg/L several years.

SEDIMENT LOADS: Maximum daily mean, 950,000 tons (862,000 tonnes) Jan. 05, 1992; Minimum daily mean, 0.04 tons (0.04 tonne) November 28, 1994.

EXTREMES FOR WATER YEARS 1997.--
SEDIMENT CONCENTRATION: Maximun daily mean, 494 mg/l May 24, 1997; Minimun daily mean, 1 mg/L April 18, 1997.

SEDIMENT LOADS: Maximun daily mean, 611 tons (554 tonnes) January 22, 1997; Minimun daily mean .11 tons (.10 tonnes) April 18, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	84	10	2.3	65	19	3.2	129	38	13
2	82	11	2.3	67	14	2.5	101	21	5.6
3	83	11	2.4	67	10	1.8	84	11	2.4
4	85	10	2.2	62	8	1.4	72	6	1.2
5	79	9	1.9	64	10	1.7	71	6	1.2
6	79	8	1.7	60	11	1.9	65	7	1.2
7	87	39	9.5	57	13	2.0	62	7	1.2
8	77	17	3.6	58	14	2.2	63	7	1.2
9	75	7	1.4	61	21	3.6	57	8	1.2
10	80	10	2.0	65	20	3.7	55	8	1.2
11	94	14	3.5	217	111	228	194	82	57
12	86	18	4.3	409	228	267	153	47	22
13	79	18	3.9	489	347	481	73	30	5.9
14	75	18	3.6	252	121	85	60	21	3.5
15	77	16	3.3	186	51	26	55	15	2.3
16	75	11	2.3	153	24	10	51	11	1.5
17	66	8	1.4	134	22	8.1	48	8	1.0
18	63	6	1.0	184	64	45	46	6	.73
19	84	24	6.3	199	116	65	41	5	.57
20	92	16	4.2	215	243	163	39	4	.47
21	76	6	1.3	212	375	228	34	4	.39
22	73	11	2.2	445	239	329	35	5	.44
23	66	18	3.1	293	163	134	33	5	.48
24	62	19	3.1	193	168	90	33	6	.54
25	58	19	3.0	151	61	26	35	7	.66
26	64	23	4.1	99	22	6.0	35	8	.76
27	108	57	17	82	45	9.9	36	9	.93
28	87	47	11	88	79	19	35	12	1.1
29	123	18	8.8	84	59	13	47	23	3.3
30	161	83	53	93	42	11	64	17	2.9
31	69	31	5.8	---	---	---	98	19	5.9
TOTAL	2549	---	175.5	4804	---	2268.0	2004	---	141.77

RIO DE LA PLATA BASIN

50043800 RIO DE LA PLATA AT COMERIO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	56	8	1.2	157	56	64	66	11	2.0
2	41	7	.82	168	94	51	62	11	1.9
3	36	9	.85	107	21	6.2	62	12	2.0
4	34	10	.96	80	19	4.0	63	18	3.0
5	32	13	1.1	70	18	3.4	64	22	3.8
6	31	15	1.2	67	17	3.2	60	18	2.9
7	30	18	1.5	64	15	2.6	54	14	2.0
8	31	20	1.7	60	13	2.0	54	12	1.7
9	31	17	1.4	60	11	1.8	54	15	2.2
10	29	14	1.1	64	11	2.0	51	20	2.7
11	30	12	.99	59	12	1.9	49	22	2.9
12	37	17	1.8	57	12	1.8	44	17	2.0
13	33	10	.90	57	12	1.8	44	13	1.5
14	30	23	3.2	75	11	2.3	45	11	1.3
15	36	90	9.7	71	11	2.1	45	13	1.5
16	33	20	1.8	63	11	1.8	48	15	2.0
17	31	23	2.0	61	10	1.7	52	18	2.5
18	27	20	1.5	56	10	1.6	47	18	2.3
19	29	15	1.2	54	12	1.7	41	19	2.1
20	45	23	2.9	57	13	2.1	41	19	2.1
21	153	71	69	71	23	4.8	39	19	2.0
22	627	338	611	99	51	14	38	19	2.0
23	249	133	95	76	41	8.4	35	21	2.0
24	e190	55	e22	80	9	2.1	31	23	1.9
25	e149	23	e7.8	62	5	.84	30	24	1.9
26	e119	10	e2.7	74	10	2.6	30	23	1.9
27	e90	4	e.96	103	19	5.9	29	23	1.8
28	e74	3	e.61	75	12	2.4	40	25	3.2
29	76	8	1.8	---	---	---	89	55	17
30	72	7	1.3	---	---	---	66	46	8.3
31	65	5	.93	---	---	---	39	39	4.1
TOTAL	2546	---	850.92	2147	---	200.04	1512	---	90.5

e Estimated

50043800 RIO DE LA PLATA AT COMERIO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	35	31	2.9	35	12	1.1	36	28	2.8
2	33	22	1.9	34	11	1.0	33	26	2.3
3	344	159	227	36	11	1.0	32	20	1.8
4	82	50	11	34	10	.96	43	103	14
5	60	39	6.3	33	11	1.0	37	139	14
6	51	31	4.2	33	13	1.1	30	93	7.5
7	42	24	2.8	33	14	1.2	27	61	4.4
8	38	19	2.0	33	13	1.1	26	41	2.8
9	36	17	1.6	33	12	1.0	24	28	1.8
10	35	18	1.7	48	23	3.3	22	19	1.1
11	34	19	1.7	52	29	4.1	21	14	.80
12	34	18	1.7	39	28	2.9	20	13	.72
13	34	15	1.4	36	29	2.8	20	12	.67
14	33	13	1.1	36	37	3.6	20	12	.64
15	32	9	.78	37	49	5.0	21	18	1.1
16	32	4	.36	39	56	6.0	22	26	1.6
17	31	2	.16	46	45	5.6	18	20	.99
18	30	1	.11	59	29	4.7	e19	18	e1.1
19	30	3	.23	41	12	1.3	22	65	3.8
20	29	7	.51	35	13	1.2	19	55	2.9
21	29	11	.90	34	14	1.3	23	47	3.0
22	30	11	.88	35	16	1.5	21	41	2.3
23	30	10	.80	48	95	25	18	35	1.7
24	29	9	.73	292	494	387	20	22	1.2
25	28	11	.82	75	42	8.9	23	12	.78
26	28	12	.95	47	34	4.3	20	10	.54
27	29	14	1.1	42	41	4.6	17	8	.38
28	38	19	1.9	37	36	3.6	19	9	.46
29	41	16	1.7	33	32	2.8	18	10	.47
30	40	13	1.4	37	29	2.9	16	9	.39
31	---	---	---	44	29	3.4	---	---	---
TOTAL	1397	---	280.63	1496	---	495.26	707	---	78.04

e Estimated

50043800 RIO DE LA PLATA AT COMERIO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	16	8	.32	31	15	1.3	14	26	.97
2	16	7	.29	24	12	.74	14	21	.78
3	15	7	.26	19	9	.46	14	17	.63
4	14	6	.24	16	8	.32	12	14	.47
5	14	6	.22	14	7	.24	11	14	.44
6	14	7	.26	12	6	.20	11	15	.45
7	24	12	.85	12	6	.20	11	15	.43
8	25	14	.96	12	6	.20	14	13	.47
9	19	13	.64	12	6	.20	141	72	38
10	17	11	.50	13	7	.24	31	22	1.8
11	15	10	.41	14	7	.25	16	15	.66
12	15	9	.34	13	6	.22	16	11	.46
13	14	8	.29	13	6	.22	20	11	.64
14	14	7	.25	14	7	.26	26	17	1.2
15	13	6	.22	14	7	.27	19	18	.91
16	15	7	.29	13	7	.27	18	19	.90
17	19	9	.49	18	9	.44	14	18	.68
18	35	18	1.7	20	11	.60	12	13	.44
19	24	13	.82	19	10	.52	12	9	.30
20	23	12	.73	23	10	.64	11	7	.20
21	56	26	4.0	15	7	.29	12	6	.19
22	116	61	23	222	109	370	23	11	1.1
23	42	22	2.6	261	136	154	51	26	3.6
24	28	15	1.2	54	28	4.2	37	20	2.1
25	26	14	1.0	359	183	282	32	17	1.5
26	22	13	.75	56	29	4.8	49	25	7.4
27	21	12	.68	28	14	1.1	78	41	9.6
28	22	11	.63	24	12	1.0	31	16	1.4
29	42	20	2.7	40	26	3.3	20	11	.59
30	32	16	1.4	24	25	1.6	16	9	.38
31	33	16	1.4	16	28	1.2	---	---	---
TOTAL	801	---	49.44	1425	---	831.28	786	---	78.69
YEAR	22174		5540.07						

RIO DE LA PLATA BASIN

50043800 RIO DE LA PLATA AT COMERIO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
MAY 1997							
24...	0645	67	4230	788	44	56	67

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
MAY 1997							
24...	81	89	99	100	100	100	100

50043800 RIO DE LA PLATA AT COMERIO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1996					
13...	1910	555	699	1050	100
JAN 1997					
23...	0745	289	2370	1850	100
MAY					
24...	0630	67	318	57	100
SEP					
09...	0715	248	129	86	91

RIO DE LA PLATA BASIN

50044000 RIO DE LA PLATA NEAR COMERIO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°14'33", long 66°12'28", at bridge on Highway 156, 0.56 mi (0.9 km) upstream from dam, about 2.0 mi (3.2 km) northeast of Comerío plaza.

DRAINAGE AREA.--139 mi² (360 km²), excludes 8.2 mi² (21.1 km²) upstream from Carite Reservoir, the flow of which is diverted to Río Guamaní.

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
08...	1230	91	432	7.7	28.0	1.0	7.6	95	<10	K8600	K1500
FEB 1997											
24...	0935	110	424	7.7	22.0	1.2	8.2	93	11	510	380
JUN											
06...	1105	36	408	8.1	28.0	4.3	7.8	99	<10	590	250
SEP											
05...	1100	19	390	8.2	29.5	3.1	9.2	123	<10	470	260

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
08...	160	39	15	23	0.8	2.9	180	<0.5	17	28
FEB 1997										
24...	--	--	--	--	--	--	140	--	--	--
JUN										
06...	150	34	16	25	0.9	2.3	150	<0.5	15	27
SEP										
05...	140	34	14	24	0.9	2.6	140	--	16	26

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
08...	0.10	23	256	63.2	3	1.10	0.010	1.10	0.070	<0.20
FEB 1997										
24...	--	--	--	--	<1	1.20	0.010	1.20	0.030	0.26
JUN										
06...	0.16	29	238	23.4	3	0.520	0.020	0.530	0.040	0.34
SEP										
05...	0.13	26	227	11.8	10	0.500	0.018	0.520	0.030	0.26

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
08...	0.23	1.4	6.0	0.090	<1	<100	50	<1	<1	<10
FEB 1997										
24...	0.30	1.5	6.5	0.080	--	--	--	--	--	--
JUN										
06...	0.38	0.91	4.0	0.080	1	<100	60	<1	<1	<10
SEP										
05...	0.30	0.82	3.6	0.110	--	--	--	--	--	--

K = non-ideal count

RIO DE LA PLATA BASIN

50044000 RIO DE LA PLATA NEAR COMERIO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
08...	100	<1	30	<0.10	<1	<1	<10	<0.010	<1	0.03
FEB 1997										
24...	--	--	--	--	--	--	--	--	--	--
JUN										
06...	200	<1	37	<0.10	<1	<1	<10	<0.010	<1	0.03
SEP										
05...	--	--	--	--	--	--	--	--	--	--

RIO DE LA PLATA BASIN

50044850 RIO GUADIANA NEAR NARANJITO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°18'39", long 66°13'28", at steel-cross-bridge 0.8 mi (1.3 km) northwest of Highway 164, 1.2 mi (1.9 km) upstream from mouth and about 2.0 mi (3.2 km) northeast of Naranjito plaza.

DRAINAGE AREA.--4.0 mi² (10.3 km²).

PERIOD OF RECORD.--Water year 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
15...	0850	8.6	338	7.4	26.0	19	7.2	87	<10	K14000	4900
FEB 1997											
24...	1145	13	390	7.5	23.0	26	8.0	91	<10	5800	K1800
MAY											
12...	1000	4.5	385	8.0	27.5	0.32	9.2	116	<10	5000	360
SEP											
05...	1225	3.4	445	7.9	32.0	0.52	7.3	101	<10	260	330

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
15...	140	30	15	16	0.6	2.4	130	2.6	16	22
FEB 1997										
24...	--	--	--	--	--	--	130	--	--	--
MAY										
12...	160	38	16	18	0.6	2.6	160	<0.5	16	25
SEP										
05...	180	43	17	22	0.7	2.4	150	--	26	29

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
15...	0.20	24	204	4.75	50	--	<0.010	1.70	0.020	0.28
FEB 1997										
24...	--	--	--	--	37	1.70	0.020	1.80	0.040	0.36
MAY										
12...	0.13	27	239	2.91	<1	1.00	0.020	1.00	0.020	<0.20
SEP										
05...	0.14	25	254	2.31	2	1.30	0.031	1.40	0.030	<0.20

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
15...	0.31	2.0	8.7	0.170	1	<100	30	<1	4	<10
FEB 1997										
24...	0.40	2.2	9.6	0.140	--	--	--	--	--	--
MAY										
12...	<0.20	1.2	5.3	0.100	2	<100	30	<1	<1	<10
SEP										
05...	0.21	1.6	6.9	0.130	--	--	--	--	--	--

K = non-ideal count

50044850 RIO GUADIANA NEAR NARANJITO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
15...	2100	2	160	<0.10	<1	<1	80	<0.010	2	<0.01
FEB 1997										
24...	--	--	--	--	--	--	--	--	--	--
MAY										
12...	90	<1	100	<0.10	<1	<1	<10	<0.010	<1	0.02
SEP										
05...	--	--	--	--	--	--	--	--	--	--

RIO DE LA PLATA BASIN

50045000 LAGO LA PLATA AT DAMSITE NEAR TOA ALTA, PR

LOCATION.--Lat 18°20'40", long 66°14'10", Hydrologic Unit 21010005, 2.9 mi (4.7 km) at northeast of Plaza de Naranjito, 2.7 mi (4.3 km) West of Road 167, km 15.3, Buena Vista, Bayamón, 5.2 mi (8.4 km) east of Plaza de Corozal.

DRAINAGE AREA.--181 mi² (469 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--February 1989 to current year. Prior to October 1994, published as Lago La Plata at Damsite.

GAGE.--Water-stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago La Plata first construction phase was completed in 1974 and the second construction phase to provide the spillway with bascule gates was completed in October 1989. The maximum storage is 37,000 ac-ft (45.6 hm³) and its purpose is the supply of water for domestic and industrial use. La Plata Dam is a concrete gravity structure located across the Río de la Plata, the dam has an overall length of 774 ft (236 m) and a maximum height of about 131 ft (40 m). The dam spillway is provided with 6 bascule gates. The spillway crest has a total clear length of 690 ft (210 m), an elevation of 155 ft (47 m). The Dam is owned and operated by Puerto Rico Aqueduct and Sewer Authority. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 170.90 ft (52.09 m), Sept. 10, 1996; minimum elevation, 107.95 ft (32.90 m), Feb. 21, 1995.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 166.90 ft (50.87 m), Feb. 16; minimum elevation, 128.95 ft (39.30 m), Sept. 30.

Capacity Table
(based on data from Puerto Rico Aqueduct and Sewer Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
98.43	2,760	164.05	28,550
131.24	11,360	170.61	33,160
154.60	22,720	175.52	37,040

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	166.30	165.87	166.12	165.81	166.69	166.61	165.08	160.87	159.13	151.70	142.88	137.55
2	A	165.86	165.81	165.92	166.64	166.62	165.00	160.65	159.07	151.37	142.55	137.23
3	166.29	165.88	166.05	166.00	166.69	166.69	165.69	160.51	159.02	151.02	142.19	136.88
4	165.90	165.87	166.22	166.03	166.62	166.72	165.78	160.29	158.85	150.67	141.86	136.53
5	165.98	165.94	165.88	166.06	166.74	166.64	165.73	160.07	158.67	150.31	141.50	136.12
6	166.06	165.94	165.61	166.06	166.70	166.66	165.65	159.84	158.43	149.96	141.14	135.71
7	166.14	165.93	165.69	166.03	166.61	166.67	165.56	159.62	158.10	149.60	140.78	135.39
8	166.18	165.94	165.75	165.99	166.69	166.70	165.43	159.39	157.85	149.29	140.46	134.95
9	166.22	166.00	165.78	165.94	166.56	166.68	165.28	159.14	157.62	148.98	140.09	134.98
10	166.28	166.10	165.84	165.89	166.63	166.63	165.12	158.93	157.37	148.65	139.77	134.81
11	166.36	166.34	166.07	165.86	166.68	166.57	164.97	158.79	157.13	148.31	139.52	134.44
12	165.84	166.00	165.68	165.82	166.75	166.51	164.80	158.58	156.89	147.96	139.20	134.08
13	165.90	165.89	165.99	165.83	166.58	166.44	164.62	158.36	156.62	147.59	138.88	133.82
14	165.92	165.70	166.30	165.78	166.67	166.37	164.44	158.14	156.32	147.21	138.55	133.56
15	165.93	165.95	165.86	165.82	166.73	166.30	164.24	157.90	156.04	146.85	138.23	133.23
16	165.94	166.09	165.97	165.81	166.71	166.23	164.04	157.69	155.75	146.49	137.83	132.83
17	165.93	166.24	165.74	165.77	166.56	166.16	163.87	157.48	155.46	146.12	137.70	132.43
18	165.88	165.81	165.85	165.75	166.60	166.12	163.71	157.34	155.18	145.84	137.43	132.05
19	165.90	166.01	165.93	165.80	166.64	166.04	163.53	157.11	155.06	145.76	137.09	131.60
20	165.99	166.28	165.97	165.95	166.70	165.93	163.32	156.87	154.81	145.55	136.75	131.15
21	166.01	166.32	166.03	166.73	166.78	165.80	163.13	156.62	154.53	145.41	136.40	130.78
22	166.01	166.05	166.04	166.65	166.60	165.68	162.89	156.36	154.26	145.57	136.15	130.67
23	166.01	166.40	166.06	166.65	166.69	165.57	162.67	156.37	154.01	145.46	137.53	130.44
24	165.98	165.79	166.10	166.64	166.72	165.43	162.43	158.47	153.74	145.20	137.95	130.38
25	165.93	165.99	166.12	166.58	166.61	165.29	162.19	159.43	153.47	144.96	139.09	130.13
26	166.10	166.30	166.20	166.75	166.67	165.17	161.96	159.65	153.21	144.65	139.16	129.86
27	165.97	165.82	165.76	166.68	166.66	165.03	161.73	159.61	152.91	144.33	138.94	129.93
28	165.89	166.18	165.91	166.78	166.63	164.96	161.50	159.47	152.61	144.00	138.62	129.70
29	165.95	165.71	165.68	166.73	---	165.18	161.28	159.41	152.33	143.66	138.44	129.36
30	165.72	165.84	166.09	166.72	---	165.27	161.08	159.27	152.03	143.42	138.16	128.95
31	165.79	---	165.60	166.64	---	165.16	---	159.16	---	143.19	137.87	---
MAX	---	166.40	166.30	166.78	166.78	166.72	165.78	160.87	159.13	151.70	142.88	137.55
MIN	---	165.70	165.60	165.75	166.56	164.96	161.08	156.36	152.03	143.19	136.15	128.95

A No gage-height record

RIO DE LA PLATA BASIN

50045010 RIO DE LA PLATA BELOW LA PLATA DAM, PR

LOCATION.--Lat 18°20'45", long 66°14'17", Hydrologic Unit 21010005, 2.8 mi (4.5 km) west of Road 167, km 15.3, Buena Vista, Bayamón, 5.0 mi (8.0 km) east of Plaza de Corozal, 3.0 mi (4.8 km) northeast of Plaza de Naranjito.

DRAINAGE AREA.--173 mi² (448 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 164 ft (30 m), from topographic map.

REMARKS.--Records poor. Regulation at all stages by Puerto Rico Aqueduct and Sewer Authority reservoir upstream from gage. Gage-height satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e8.4	e14	e64	e12	e5.0	e1.5	e.72	e.64	.28	.00	.32	.88
2	e8.0	e6.6	e45	e4.3	e11	e1.1	e.70	e.62	.22	.00	.31	.82
3	e8.2	e8.2	e23	e7.8	e3.3	e.90	e.78	e1.1	.25	.00	.29	.73
4	e10	e8.0	e10	e4.0	e3.5	e1.9	e.80	e1.0	.23	.00	.29	.73
5	e7.8	e6.6	e7.4	e2.2	e4.4	e3.1	e.82	e.74	.28	.01	.30	.73
6	e7.2	e5.8	e44	e2.3	e2.9	e4.1	e.80	e.69	.30	.04	.29	.73
7	e8.4	e7.2	e11	e1.8	e2.4	e2.1	e.76	e.64	.30	.07	.28	.99
8	e6.8	e6.2	e6.8	e1.7	e2.8	e2.1	e.78	e.58	.24	.09	.24	.97
9	e5.8	e5.0	e5.8	e1.6	e1.9	e1.7	e.76	e.52	.21	.03	.26	1.1
10	e5.3	e7.6	e5.4	e1.5	e3.5	e1.5	e.74	e.50	.25	.03	.32	1.1
11	e5.0	e7.4	e68	e1.5	e1.7	e1.3	e.74	e.52	.31	.02	.46	.93
12	e4.9	e50	e50	e1.4	e2.2	e1.3	e.80	e.54	.36	.02	.58	1.0
13	e4.8	e170	e25	e1.4	e2.5	e1.2	e.80	e.56	.40	.02	.65	1.6
14	e5.1	e38	e6.2	e1.3	e3.5	e1.2	e.78	e.61	.45	.02	.50	1.8
15	e5.5	e49	e31	e1.3	e1.7	e1.1	e.72	e.66	.53	.06	.45	1.6
16	e5.0	e10	e24	e1.3	e1.7	e1.1	e.70	e.92	.63	.11	.39	1.1
17	e4.8	e7.0	e42	e1.2	e4.5	e1.1	e.72	e.64	.71	.14	.41	1.0
18	e4.7	e23	e8.0	e1.3	e1.7	e1.2	e.76	e.42	.93	.18	.60	1.1
19	e4.5	e60	e6.2	e1.6	e1.5	e1.1	e.80	.34	1.5	.40	.49	1.2
20	e4.4	e16	e5.2	e1.9	e1.4	e1.1	e.82	.28	1.3	.42	.46	1.1
21	e4.7	e40	e5.8	e35	e6.6	e1.0	e.82	.35	.84	.34	.48	1.3
22	e4.4	e120	e5.2	e120	e5.0	e1.0	e.82	.35	.14	.30	.89	1.7
23	e6.3	e130	e4.9	e66	e4.0	e.98	e.82	.34	.02	.23	1.1	1.5
24	e4.9	e220	e15	e60	e2.9	e.92	e.70	2.6	.02	.19	1.7	1.4
25	e4.2	e100	e9.0	e30	e2.5	e.88	e.66	1.4	.01	.16	1.4	1.3
26	e8.0	e42	e25	e20	e2.9	e.84	e.62	.92	.01	.17	.82	1.3
27	e76	e49	e80	e9.8	e1.4	e.80	e.70	.53	.01	.16	.69	1.3
28	e32	e15	e13	e11	e2.8	e.88	e.72	.34	.01	.17	.63	1.3
29	e100	e26	e30	e8.2	---	e.96	e.66	.32	.00	.15	.60	1.4
30	e26	e68	e46	e6.2	---	e.82	e.64	.48	.00	.15	.91	1.5
31	e40	---	e10	e3.3	---	e.76	---	.29	---	.26	1.1	---
TOTAL	431.1	1315.6	731.9	422.9	91.2	41.54	22.46	20.44	10.74	3.94	18.21	35.21
MEAN	13.9	43.9	23.6	13.6	3.26	1.34	.75	.66	.36	.13	.59	1.17
MAX	100	220	80	120	11	4.1	.82	2.6	1.5	.42	1.7	1.8
MIN	4.2	5.0	4.9	1.2	1.4	.76	.62	.28	.00	.00	.24	.73
AC-FT	855	2610	1450	839	181	82	45	41	21	7.8	36	70
CFSM	.08	.25	.14	.08	.02	.01	.00	.00	.00	.00	.00	.01
IN.	.09	.28	.16	.09	.02	.01	.00	.00	.00	.00	.00	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1997, BY WATER YEAR (WY)

MEAN	187	74.8	39.8	242	37.2	17.8	34.7	123	43.0	72.7	29.8	1127
MAX	1107	225	161	1581	222	83.2	231	494	220	384	129	8046
(WY)	1991	1993	1993	1992	1991	1990	1993	1993	1993	1993	1996	1996
MIN	.048	.004	.000	.19	.14	.022	.011	.000	.002	.037	.020	.001
(WY)	1992	1995	1995	1990	1995	1995	1995	1994	1994	1994	1989	1991

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1989 - 1997	
ANNUAL TOTAL	258269.20		3145.24			
ANNUAL MEAN	706		8.62		170	
HIGHEST ANNUAL MEAN					714	1996
LOWEST ANNUAL MEAN					8.62	1997
HIGHEST DAILY MEAN	141000	Sep 10	220	Nov 24	141000	Sep 10 1996
LOWEST DAILY MEAN	.40	Jul 4	.00	Jun 29	.00	Jul 14 1989
ANNUAL SEVEN-DAY MINIMUM	.49	Jun 30	.00	Jun 28	.00	Jul 14 1989
INSTANTANEOUS PEAK FLOW			unknown	Nov 24	197000	Sep 10 1996
INSTANTANEOUS PEAK STAGE			unknown	Nov 24	42.26	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	512300		6240		122900	
ANNUAL RUNOFF (CFSM)	4.08		.050		.98	
ANNUAL RUNOFF (INCHES)	55.60		.68		13.34	
10 PERCENT EXCEEDS	116		24		159	
50 PERCENT EXCEEDS	3.8		1.2		1.0	
90 PERCENT EXCEEDS	.60		.23		.00	

e Estimated

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1990 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1989 to current year.

INSTRUMENTATION.-- Automatic sediment sampler since 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 4,390 mg/L September 10, 1996; Minimum daily mean, <.05 mg/L several years.

SEDIMENT LOADS: Maximum daily mean, 1,810,000 tons (1,640,,000 tonnes) September 10, 1996; Minimum daily mean, <0.01 ton (<0.01 tonne) several years.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 181 mg/L January 16, 1997; Minimum daily mean, 1 mg/L July 1, 1997.

SEDIMENT LOADS: Maximum daily mean, e14 tons (e13 tonnes) January 22, 1997; Minimum daily mean, <0.01 ton (<0.01 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	e8.4	13	e.30	e14	17	e.75	e64	19	e3.3
2	e8.0	13	e.29	e6.6	14	e.28	e45	18	e2.2
3	e8.2	14	e.30	e8.2	13	e.28	e23	16	e1.1
4	e10	14	e.37	e8.0	13	e.28	e10	15	e.46
5	e7.8	14	e.30	e6.6	13	e.24	e7.4	14	e.28
6	e7.2	13	e.26	e5.8	13	e.21	e44	15	e1.6
7	e8.4	13	e.29	e7.2	13	e.25	e11	17	e.65
8	e6.8	13	e.24	e6.2	13	e.22	e6.8	15	e.30
9	e5.8	12	e.20	e5.0	13	e.18	e5.8	14	e.22
10	e5.3	12	e.18	e7.6	13	e.25	e5.4	13	e.19
11	e5.0	12	e.16	e7.4	13	e.26	e68	16	e2.5
12	e4.9	12	e.16	e50	15	e1.8	e50	19	e2.6
13	e4.8	12	e.16	e170	20	e8.4	e25	16	e1.2
14	e5.1	12	e.16	e38	21	e2.9	e6.2	14	e.30
15	e5.5	12	e.18	e49	19	e2.4	e31	14	e1.0
16	e5.0	12	e.16	e10	16	e.59	e24	15	e1.0
17	e4.8	12	e.16	e7.0	14	e.28	e42	17	e1.8
18	e4.7	12	e.15	e23	14	e.81	e8.0	17	e.50
19	e4.5	12	e.15	e60	17	e2.6	e6.2	14	e.25
20	e4.4	12	e.14	e16	17	e.94	e5.2	13	e.19
21	e4.7	12	e.15	e40	16	e1.6	e5.8	13	e.19
22	e4.4	12	e.14	e120	18	e5.3	e5.2	12	e.18
23	e6.3	12	e.20	e130	20	e7.0	e4.9	12	e.16
24	e4.9	12	e.16	e220	23	e13	e15	13	e.47
25	e4.2	12	e.14	e100	23	e6.9	e9.0	15	e.38
26	e8.0	14	e.28	e42	20	e2.6	e25	17	e1.0
27	e76	18	e3.2	e49	18	e2.3	e80	19	e3.7
28	e32	18	e1.8	e15	16	e.79	e13	17	e.88
29	e100	19	e4.7	e26	16	e1.1	e30	15	e1.1
30	e26	18	e1.7	e68	19	e3.1	e46	17	e2.0
31	e40	17	e1.8	---	---	---	e10	17	e.62
TOTAL	431.1	---	18.58	1315.6	---	67.61	731.9	---	32.32

e Estimated

RIO DE LA PLATA BASIN

50045010 RIO DE LA PLATA BELOW LA PLATA DAM, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	e12	16	e.48	e5.0	12	e.15	e1.5	8	e.05
2	e4.3	14	e.19	e11	13	e.36	e1.1	8	e.03
3	e7.8	13	e.25	e3.3	14	e.15	e.90	7	e.02
4	e4.0	12	e.14	e3.5	13	e.12	e1.9	7	e.03
5	e2.2	11	e.07	e4.4	12	e.14	e3.1	7	e.05
6	e2.3	12	e.07	e2.9	12	e.10	e4.1	7	e.07
7	e1.8	16	e.08	e2.4	11	e.08	e2.1	8	e.06
8	e1.7	21	e.10	e2.8	11	e.08	e2.1	8	e.05
9	e1.6	28	e.12	e1.9	10	e.05	e1.7	8	e.04
10	e1.5	37	e.15	e3.5	10	e.09	e1.5	9	e.04
11	e1.5	50	e.20	e1.7	10	e.05	e1.3	9	e.03
12	e1.4	67	e.25	e2.2	10	e.06	e1.3	9	e.03
13	e1.4	89	e.34	e2.5	11	e.07	e1.2	9	e.03
14	e1.3	119	e.42	e3.5	11	e.10	e1.2	9	e.03
15	e1.3	159	e.56	e1.7	11	e.06	e1.1	9	e.03
16	e1.3	181	e.64	e1.7	11	e.05	e1.1	9	e.03
17	e1.2	103	e.34	e4.5	12	e.13	e1.1	9	e.03
18	e1.3	53	e.18	e1.7	12	e.06	e1.2	9	e.03
19	e1.6	27	e.12	e1.5	12	e.05	e1.1	9	e.03
20	e1.9	14	e.07	e1.4	13	e.05	e1.1	9	e.03
21	e35	17	e1.4	e6.6	13	e.20	e1.0	9	e.03
22	e120	45	e14	e5.0	13	e.18	e1.0	9	e.02
23	e66	68	e13	e4.0	12	e.13	e.98	9	e.02
24	e60	63	e10	e2.9	11	e.09	e.92	9	e.02
25	e30	59	e5.3	e2.5	11	e.07	e.88	9	e.02
26	e20	55	e3.2	e2.9	10	e.08	e.84	9	e.02
27	e9.8	50	e1.5	e1.4	9	e.04	e.80	9	e.02
28	e11	36	e1.1	e2.8	9	e.06	e.88	9	e.02
29	e8.2	26	e.60	---	---	---	e.96	9	e.02
30	e6.2	18	e.32	---	---	---	e.82	9	e.02
31	e3.3	13	e.13	---	---	---	e.76	9	e.02
TOTAL	422.9	---	55.32	91.2	---	2.85	41.54	---	0.97

e Estimated

50045010 RIO DE LA PLATA BELOW LA PLATA DAM, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	e.72	9	e.02	e.64	8	e.01	.28	27	.02
2	e.70	9	e.02	e.62	8	e.01	.22	29	.02
3	e.78	8	e.02	e1.1	8	e.02	.25	31	.02
4	e.80	8	e.02	e1.0	8	e.02	.23	29	.02
5	e.82	8	e.02	e.74	8	e.02	.28	15	.01
6	e.80	8	e.02	e.69	8	e.01	.30	9	.01
7	e.76	8	e.02	e.64	8	e.01	.30	14	.01
8	e.78	8	e.02	e.58	8	e.01	.24	20	.01
9	e.76	8	e.02	e.52	8	e.01	.21	16	.01
10	e.74	8	e.02	e.50	8	e.01	.25	11	.01
11	e.74	8	e.02	e.52	8	e.01	.31	7	.01
12	e.80	8	e.02	e.54	8	e.01	.36	4	<.01
13	e.80	8	e.02	e.56	8	e.01	.40	6	.01
14	e.78	8	e.02	e.61	8	e.01	.45	8	.01
15	e.72	8	e.02	e.66	17	e.03	.53	7	.01
16	e.70	8	e.01	e.92	23	e.05	.63	7	.01
17	e.72	8	e.01	e.64	23	e.05	.71	6	.01
18	e.76	8	e.02	e.42	14	e.02	.93	6	.01
19	e.80	8	e.02	.34	8	.01	1.5	5	.02
20	e.82	8	e.02	.28	14	.01	1.3	5	.02
21	e.82	8	e.02	.35	27	.03	.84	5	.01
22	e.82	8	e.02	.35	17	.02	.14	6	<.01
23	e.82	8	e.02	.34	9	.01	.02	8	<.01
24	e.70	8	e.02	2.6	13	.10	.02	11	<.01
25	e.66	8	e.01	1.4	10	.04	.01	14	<.01
26	e.62	8	e.01	.92	7	.02	.01	19	<.01
27	e.70	8	e.01	.53	5	.01	.01	25	<.01
28	e.72	8	e.01	.34	6	<.01	.01	31	<.01
29	e.66	8	e.01	.32	7	.01	.00	30	<.01
30	e.64	8	e.01	.48	13	.02	.00	29	<.01
31	---	---	---	.29	23	.02	---	---	---
TOTAL	22.46	---	0.52	20.44	---	0.62	10.74	---	0.26

e Estimated

RIO DE LA PLATA BASIN

50045010 RIO DE LA PLATA BELOW LA PLATA DAM, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	.00	<1	<.01	.32	12	.01	.88	20	.05
2	.00	26	<.01	.31	15	.01	.82	12	.03
3	.00	24	<.01	.29	19	.01	.73	7	.01
4	.00	23	<.01	.29	24	.02	.73	3	.01
5	.01	20	<.01	.30	29	.02	.73	2	<.01
6	.04	17	<.01	.29	31	.02	.73	1	<.01
7	.07	10	<.01	.28	31	.02	.99	4	.01
8	.09	6	<.01	.24	24	.02	.97	8	.02
9	.03	6	<.01	.26	18	.01	1.1	3	.01
10	.03	6	<.01	.32	13	.01	1.1	1	<.01
11	.02	3	<.01	.46	11	.01	.93	2	.01
12	.02	2	<.01	.58	16	.03	1.0	4	.01
13	.02	9	<.01	.65	22	.04	1.6	3	.01
14	.02	35	<.01	.50	16	.02	1.8	2	.01
15	.06	28	<.01	.45	10	.01	1.6	5	.02
16	.11	21	.01	.39	8	.01	1.1	9	.03
17	.14	39	.01	.41	6	.01	1.0	8	.02
18	.18	81	.04	.60	4	.01	1.1	6	.02
19	.40	75	.08	.49	2	<.01	1.2	8	.02
20	.42	61	.07	.46	3	<.01	1.1	8	.02
21	.34	72	.07	.48	5	.01	1.3	5	.02
22	.30	69	.06	.89	5	.01	1.7	4	.02
23	.23	24	.01	1.1	5	.01	1.5	6	.03
24	.19	8	<.01	1.7	4	.02	1.4	12	.05
25	.16	3	<.01	1.4	3	.01	1.3	14	.05
26	.17	1	<.01	.82	2	<.01	1.3	14	.05
27	.16	5	<.01	.69	2	<.01	1.3	12	.04
28	.17	19	.01	.63	9	.01	1.3	11	.04
29	.15	12	<.01	.60	34	.05	1.4	16	.06
30	.15	5	<.01	.91	17	.04	1.5	20	.08
31	.26	7	<.01	1.1	19	.05	---	---	---
TOTAL	3.94	---	0.36	18.21	---	0.50	35.21	---	0.75
YEAR	3145.24		180.66						

RIO DE LA PLATA BASIN

50045010 RIO DE LA PLATA BELOW LA PLATA DAM, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JAN 1997					
27...	1045	e9.8	52	e1.4	86
JUN					
30...	0815	<0.01	77	<0.01	99
JUL					
02...	0830	<0.01	66	<0.01	98
18...	1430	0.15	95	0.04	93
AUG					
29...	1400	0.60	48	0.08	90

50046000 RIO DE LA PLATA AT HIGHWAY 2 NEAR TOA ALTA, PR

LOCATION.--Lat 18°24'41", long 66°15'39", Hydrologic Unit 21010005, on left bank, at downstream side of bridge on Highway 2, 1.3 mi (2.1 km) downstream from Río Lajas, and 1.6 mi (2.6 km) northwest of Toa Alta, 11.3 mi (18.2 km) downstream from Puerto Rico Aqueduct and Sewer Authority reservoir.

DRAINAGE AREA.--208 mi² (539 km²), excludes 8.2 mi² (21.2 km²) upstream from Lago Carite, flow from which is diverted to Río Guamaní. Area at site used prior to September 25, 1984, 200 mi² (518 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1959 (measurement only), January 1960 to current year. Prior to October 1984, published as Río de la Plata at Toa Alta, PR; October 1984 to September 1988 published as 50046900.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 9.15 ft (2.789 m), above mean sea level. Prior to October, 1984, at site about 1.0 mi (1.6 km) upstream at mean sea level datum.

REMARKS.--Records poor. Regulation at all stages by Puerto Rico Aqueduct and Sewer Authority reservoir upstream from gage. Gage-height and precipitation satellite telemetry at station. Flow affected by bridge construction about 1.0 mi (1.6 km) upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate discharges and elevations of major floods, as pointed out by local residents are as follows: Sept. 13, 1928, 120,000 ft³/s (3,400 m³/s), gage height, 37.4 ft (11.40 m); June 16, 1943, 82,000 ft³/s (2,322 m³/s), gage height, 34.4 ft (10.48 m), at site 1.0 mi upstream and different datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e65	59	496	232	149	48	25	22	34	34	33	25
2	e60	50	305	82	366	48	25	21	35	32	20	18
3	e65	63	153	151	109	53	27	39	31	27	19	16
4	e80	63	71	108	112	58	27	37	31	25	18	13
5	e55	50	64	44	149	103	28	24	32	27	17	12
6	e56	45	350	44	96	149	28	24	31	34	17	11
7	e65	57	64	35	79	75	26	22	25	32	15	12
8	e50	47	55	33	95	75	27	20	26	27	15	12
9	e45	38	53	31	62	62	26	20	26	27	27	11
10	e40	59	50	30	121	50	26	21	28	27	45	12
11	e39	56	615	30	57	43	25	21	25	27	53	12
12	e38	605	403	28	e72	45	28	21	25	33	74	12
13	e37	1330	221	27	e74	43	27	21	24	35	62	61
14	e40	289	55	26	126	41	27	21	22	24	62	176
15	e43	379	263	26	56	40	25	22	22	22	51	68
16	e40	58	190	24	55	40	24	24	23	40	74	30
17	e36	52	336	23	e171	39	25	24	22	50	143	22
18	36	87	56	23	e55	41	26	21	e22	64	121	20
19	34	464	47	30	55	39	27	22	e80	41	48	20
20	34	120	45	32	51	38	28	22	49	31	33	20
21	36	230	47	1420	193	36	29	29	28	36	74	50
22	33	e963	46	2680	171	36	29	23	26	20	134	60
23	49	e1000	43	1240	149	34	29	23	54	18	89	44
24	34	1710	137	1130	97	32	24	e146	47	17	199	86
25	32	684	e76	682	82	30	23	e109	35	26	212	65
26	60	311	128	386	97	29	21	75	40	22	53	37
27	603	e382	779	178	50	27	24	57	55	18	35	31
28	243	112	116	200	106	28	25	35	47	18	28	27
29	801	142	221	159	---	33	23	28	41	17	24	36
30	196	532	438	146	---	29	22	28	39	19	23	60
31	327	---	199	94	---	25	---	29	---	38	26	---
TOTAL	3372	10037	6122	9374	3055	1469	776	1051	1025	908	1844	1079
MEAN	109	335	197	302	109	47.4	25.9	33.9	34.2	29.3	59.5	36.0
MAX	801	1710	779	2680	366	149	29	146	80	64	212	176
MIN	32	38	43	23	50	25	21	20	22	17	15	11
AC-FT	6690	19910	12140	18590	6060	2910	1540	2080	2030	1800	3660	2140
CFSM	.54	1.67	.99	1.51	.55	.24	.13	.17	.17	.15	.30	.18
IN.	.63	1.87	1.14	1.75	.57	.27	.14	.20	.19	.17	.34	.20

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997, BY WATER YEAR (WY)

MEAN	457	422	316	187	126	98.4	181	339	160	146	242	399
MAX	4813	2015	1352	929	409	468	723	1939	847	690	1677	3173
(WY)	1971	1985	1971	1992	1989	1969	1987	1985	1970	1961	1979	1996
MIN	18.8	18.4	14.8	16.9	16.0	8.31	5.07	7.63	11.4	13.2	16.5	19.2
(WY)	1995	1995	1995	1984	1983	1986	1984	1984	1977	1994	1976	1991

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1960 - 1997	
ANNUAL TOTAL	139193		40112			
ANNUAL MEAN	380		110		254	
HIGHEST ANNUAL MEAN					824	1971
LOWEST ANNUAL MEAN					31.5	1994
HIGHEST DAILY MEAN	68100	Sep 10	2680	Jan 22	68100	Sep 10 1996
LOWEST DAILY MEAN	13	May 15	11	Sep 6	2.7	Apr 17 1984
ANNUAL SEVEN-DAY MINIMUM	18	May 12	12	Sep 5	2.9	Apr 15 1984
INSTANTANEOUS PEAK FLOW			4350	Jan 22	Not determined	Sep 10 1996
INSTANTANEOUS PEAK STAGE			10.80	Jan 22	27.33	Sep 10 1996
INSTANTANEOUS LOW FLOW			11	Sep 6		
ANNUAL RUNOFF (AC-FT)	276100		79560		184100	
ANNUAL RUNOFF (CFSM)	1.90		.55		1.27	
ANNUAL RUNOFF (INCHES)	25.92		7.47		17.28	
10 PERCENT EXCEEDS	445		216		476	
50 PERCENT EXCEEDS	50		40		83	
90 PERCENT EXCEEDS	22		21		17	

e Estimated

50046000 RIO DE LA PLATA AT HWY 2 NR TOA ALTA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'41", long 66°15'39", at Highway 2, 1.3 mi (2.1 km) downstream from Rio Lajas, and 1.6 mi (2.6 km) northwest of Toa Alta, 11.3 mi (18.2 km) downstream from Puerto Rico Aqueduct and Sewer Authority reservoir.

DRAINAGE AREA.--208 mi² (539 km²), exclude 8.2 mi² (21.2 km²) upstream from Lago Carite, flow from which is diverted to Río Guamaní.

PERIOD OF RECORD.--Water years 1958 to current year

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
15...	1130	43	410	6.7	29.5	0.40	7.7	99	<10	K720	K64
FEB 1997											
20...	1305	51	500	7.0	25.0	1.8	7.4	86	<10	K1100	K140
MAY											
14...	1510	20	514	8.2	30.5	2.3	12.8	169	12	K740	K82
SEP											
08...	1130	13	566	7.6	30.0	0.50	6.4	85	<10	K150	K100

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
15...	160	47	9.5	18	0.6	3.5	160	0.8	16	25
FEB 1997										
20...	--	--	--	--	--	--	190	--	--	--
MAY										
14...	200	57	14	26	0.8	2.8	190	<0.5	18	38
SEP										
08...	170	42	9.8	21	0.6	2.1	200	--	12	19

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
15...	0.10	16	231	26.6	5	0.510	0.050	0.560	0.020	0.48
FEB 1997										
20...	--	--	--	--	1	0.770	0.060	0.830	0.130	0.35
MAY										
14...	0.12	18	288	15.9	3	0.360	0.030	0.390	0.010	0.44
SEP										
08...	0.10	19	218	7.65	2	0.490	0.010	0.500	0.050	0.31

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
15...	0.50	1.1	4.7	0.040	<1	<100	40	<1	<1	<10
FEB 1997										
20...	0.48	1.3	5.8	0.040	--	--	--	--	--	--
MAY										
14...	0.45	0.84	3.7	0.040	2	<100	50	<1	<1	<10
SEP										
08...	0.36	0.85	3.8	<0.020	--	--	--	--	--	--

K = non-ideal count

RIO DE LA PLATA BASIN

50046000 RIO DE LA PLATA AT HWY 2 NR TOA ALTA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
15...	210	<1	120	<0.10	<1	<1	<10	<0.010	1	<0.01
FEB 1997										
20...	--	--	--	--	--	--	--	--	--	--
MAY										
14...	140	<1	160	<0.10	<1	<1	<10	<0.010	<1	0.05
SEP										
08...	--	--	--	--	--	--	--	--	--	--

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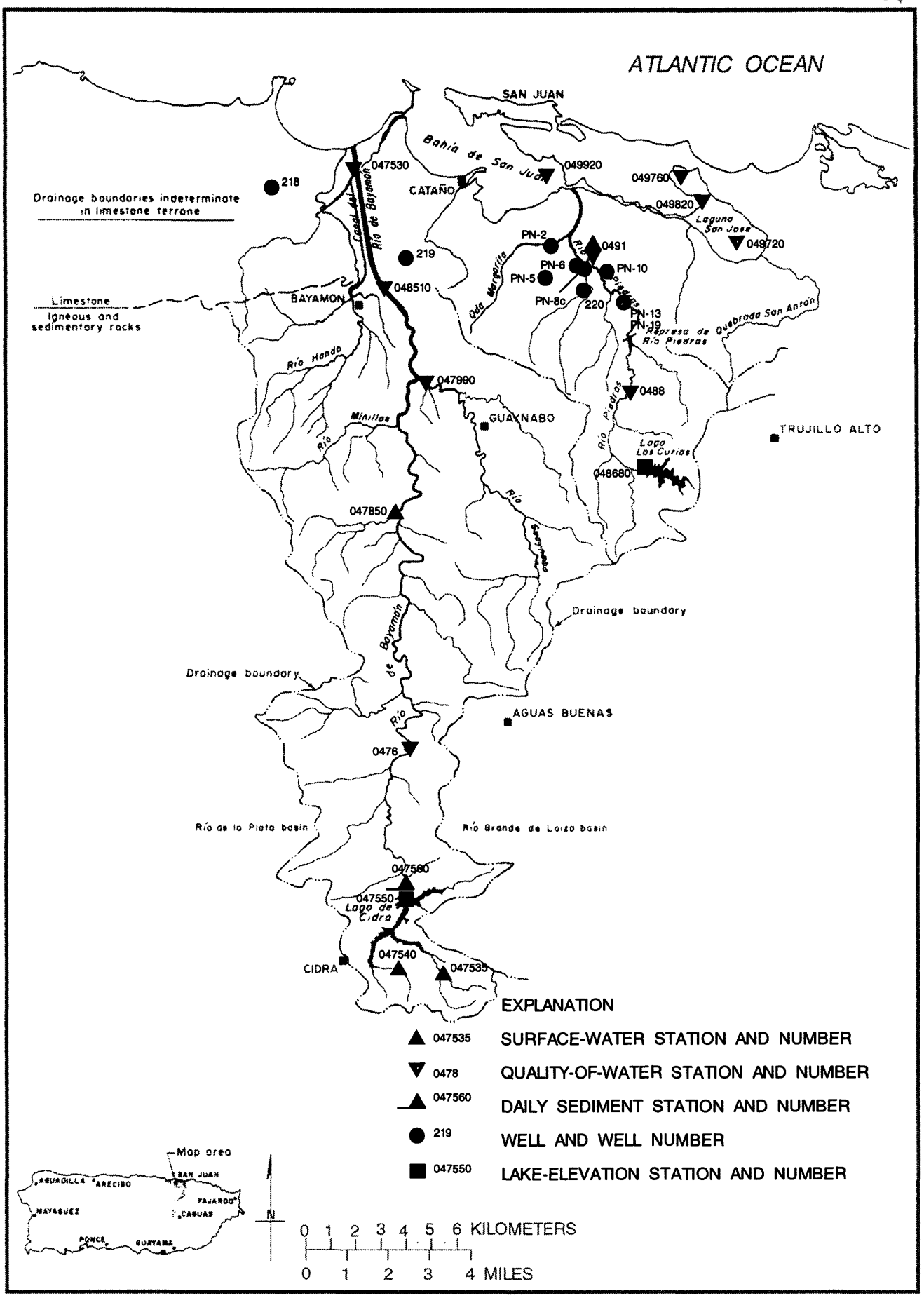

Figure 18.--Río Hondo to Río Puerto Nuevo basins.

50047530 RIO HONDO AT FLOOD CHANNEL NEAR CATAÑO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°26'13", long 66°09'36", at Río Hondo Channel, 800 ft (245 m) below junction with Río Hondo, 0.9 mi (1.5 km) downstream from bridge on de Diego Expressway and 1.1 mi (1.8 km) above mouth.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	COLIFORM, FECAL, 0.45 UM-MF (COLS./100 ML) (31616)	STREPTOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996										
14...	0800	380	7.2	25.0	73	4.2	50	27	K5600	450
MAR 1997										
07...	0930	17500	6.9	25.0	1.6	4.2	53	89	4100	500
JUN										
24...	1045	3690	7.7	30.5	43	2.9	38	36	K71000	4200
SEP										
09...	1330	39000	7.8	32.0	17	7.6	96	92	2100	K70

DATE	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
NOV 1996										
14...	310	49	45	360	9	16	130	<0.5	95	620
MAR 1997										
07...	--	--	--	--	--	--	150	--	--	--
JUN										
24...	360	39	63	553	13	26	66	<0.5	130	1000
SEP										
09...	4500	320	902	7500	49	290	170	--	1900	14000

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996									
14...	0.10	9.6	1270	72	0.530	0.080	0.600	0.460	0.70
MAR 1997									
07...	--	--	--	17	0.280	0.080	0.370	0.860	0.59
JUN									
24...	0.16	5.1	1860	39	0.247	0.043	0.290	0.400	0.90
SEP									
09...	0.52	1.8	24900	38	--	<0.010	0.020	0.030	1.2

DATE	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
NOV 1996										
14...	1.2	1.8	7.8	0.150	2	<100	180	<1	3	<10
MAR 1997										
07...	1.5	1.8	8.1	0.200	--	--	--	--	--	--
JUN										
24...	1.3	1.6	7.0	0.120	1	<100	290	<1	2	<10
SEP										
09...	1.2	1.2	5.4	0.070	--	--	--	--	--	--

K = non-ideal count
Discharge measurement values not available due to ponded conditions.

RIO HONDO BASIN

50047530 RIO HONDO AT FLOOD CHANNEL NEAR CATAÑO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
14...	400	3	140	<0.10	<1	<1	30	<0.010	2	0.08
MAR 1997										
07...	--	--	--	--	--	--	--	--	--	--
JUN										
24...	910	2	120	<0.10	<1	<1	<10	<0.010	1	0.12
SEP										
09...	--	--	--	--	--	--	--	--	--	--

RIO DE BAYAMON BASIN

50047535 RIO DE BAYAMON AT ARENAS, PR

LOCATION.--Lat 18°10'11", long 66°07'18", Hydrologic Unit 21010005, at left bank, 2.61 mi (4.20 km) southeast of plaza de Cidra, 0.56 mi (0.90 km) southwest from Escuela Segunda Unidad de Bayamón, and 2.70 mi (4.34 km) northeast from Central Cayey.

DRAINAGE AREA.--0.45 mi² (1.16 km²).

PERIOD OF RECORD.--July 1992 to September 1993, October 1995 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,378 ft (420 m), from topographic map.

REMARKS.--Records fair.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.28	.28	.62	.36	1.5	.25	.15	.07	.22	.03	.09	.22
2	.30	.31	.67	.27	.73	.23	.26	.07	.31	.03	.04	.31
3	.29	.24	.37	.23	.41	.35	.29	.07	.61	.02	.07	.18
4	.25	.25	.32	.22	.25	.31	.15	.06	.22	.02	.07	.16
5	.26	.24	.27	.19	.25	.28	.10	.06	.14	.04	.04	.15
6	.24	.23	.23	.16	.28	.21	.09	.06	.11	.38	.04	.15
7	.26	.26	.32	.15	.28	.16	.08	.06	.10	.08	.03	.24
8	.27	.24	.24	.14	.25	.29	.08	.06	.09	.04	.04	1.0
9	.30	.26	.20	.14	.52	.27	.08	.07	.09	.06	.02	.52
10	.33	.25	.20	.15	.32	.21	.07	.09	.09	.07	.05	.12
11	.29	.66	.70	.29	.29	.15	.11	.06	.10	.05	.06	.08
12	.26	1.5	.37	.22	.31	.11	.09	.08	.09	.03	.03	.32
13	.25	.81	.24	.18	.55	.12	.10	.07	.09	.03	.03	.14
14	.24	.41	.21	.15	.48	.09	.09	.06	.21	.03	.03	.17
15	.25	.28	.20	.18	.38	.12	.08	.07	.09	.02	.04	.11
16	.24	.21	.21	.19	.25	.13	.07	.10	.07	.39	.07	.10
17	.24	.19	.19	.16	.20	.11	.07	.32	.06	.16	.37	.09
18	.24	.23	.18	.16	.20	.12	.07	.09	.05	.16	.17	.11
19	.24	.21	.19	.19	.39	.12	.07	.07	.07	.14	.51	.09
20	.24	.35	.21	.27	.36	.12	.07	.06	.09	.29	.10	.07
21	.24	.30	.19	1.3	1.3	.12	.07	.08	.06	1.2	.06	.17
22	.25	.30	.18	3.2	.75	.12	.08	.06	.05	.60	4.8	.16
23	.24	.35	.17	1.8	1.5	.11	.07	.06	.28	.63	.66	.16
24	.24	.46	.17	2.1	.50	.12	.07	.14	.21	.50	14	.22
25	.24	.50	.21	1.4	.37	.12	.07	.08	.07	.23	1.8	.11
26	.36	.26	.18	.73	.34	.12	.07	.07	.09	.26	.33	.35
27	.40	.32	.18	.48	.27	.12	.06	.08	.06	.11	.15	.16
28	.38	.37	.24	.51	.25	.15	.06	.07	.04	.72	.11	.11
29	.79	.29	.29	.60	---	.25	.07	.22	.04	.27	.09	.10
30	.46	1.1	.84	.41	---	.22	.06	.32	.03	.12	.09	.09
31	.31	---	.69	.35	---	.15	---	.33	---	.09	.24	---
TOTAL	9.18	11.66	9.48	16.88	13.48	5.35	2.85	3.16	3.83	6.80	24.23	5.96
MEAN	.30	.39	.31	.54	.48	.17	.095	.10	.13	.22	.78	.20
MAX	.79	1.5	.84	3.2	1.5	.35	.29	.33	.61	1.2	14	1.0
MIN	.24	.19	.17	.14	.20	.09	.06	.06	.03	.02	.02	.07
AC-FT	18	23	19	33	27	11	5.7	6.3	7.6	13	48	12
CFSM	.66	.86	.68	1.21	1.07	.38	.21	.23	.28	.49	1.74	.44
IN.	.76	.96	.78	1.40	1.11	.44	.24	.26	.32	.56	2.00	.49

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1997, BY WATER YEAR (WY)

MEAN	.31	.78	.36	.60	.29	.14	.22	.75	.97	1.31	.96	2.20
MAX	.34	1.30	.63	.63	.48	.17	.45	2.02	1.79	2.12	1.87	6.38
(WY)	1996	1993	1993	1996	1997	1997	1993	1993	1996	1993	1996	1996
MIN	.30	.39	.16	.54	.16	.097	.095	.10	.13	.22	.46	.20
(WY)	1997	1997	1996	1997	1993	1993	1997	1997	1997	1997	1992	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1992 - 1997	
ANNUAL TOTAL	421.09		112.86			
ANNUAL MEAN	1.15		.31		.77	
HIGHEST ANNUAL MEAN					1.16	1996
LOWEST ANNUAL MEAN					.31	1997
HIGHEST DAILY MEAN	141	Sep 10	14	Aug 24	141	Sep 10 1996
LOWEST DAILY MEAN	.03	May 2	.02	Jul 3	.02	Jul 3 1997
ANNUAL SEVEN-DAY MINIMUM	.04	Apr 28	.03	Jun 28	.03	Jun 28 1997
INSTANTANEOUS PEAK FLOW			228	Aug 24	885	Sep 10 1996
INSTANTANEOUS PEAK STAGE			5.21	Aug 24	7.34	Sep 10 1996
INSTANTANEOUS LOW FLOW			.02	Jul 15	.02	Jul 15 1997
ANNUAL RUNOFF (AC-FT)	835		224		561	
ANNUAL RUNOFF (CFSM)	2.56		.69		1.72	
ANNUAL RUNOFF (INCHES)	34.81		9.33		23.36	
10 PERCENT EXCEEDS	1.5		.51		1.1	
50 PERCENT EXCEEDS	.24		.19		.18	
90 PERCENT EXCEEDS	.07		.06		.07	

RIO DE BAYAMON BASIN

50047540 RIO SABANA AT VISTA MONTE, PR

LOCATION.--Lat 18°10'28", long 66°08'38", Hydrologic Unit 21010005, at left bank, 1.2 mi (1.9 km) southeast of Plaza de Cidra, 1.2 mi (1.9 km) southwest from Escuela Segunda Unidad de Bayamón, and 0.4 mi (0.6 km) upstream from Lago de Cidra.

DRAINAGE AREA.--0.80 mi² (2.07 km²).

PERIOD OF RECORD.--August 1992 to September 1993, October 1995 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,345 ft (410 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	e.66	1.1	.86	2.0	.62	.47	.42	.32	.19	.19	.20
2	.93	e.72	1.1	.79	1.4	.64	.60	.42	.41	.19	.18	.22
3	.91	e.56	.93	.74	1.2	.72	.63	.42	.43	.19	.24	.19
4	.81	e.58	.95	.71	1.0	.66	.49	.42	.28	.21	.20	.19
5	.80	e.56	.87	.68	1.1	.70	.47	.41	.27	.21	.18	.19
6	.82	e.54	.84	.66	1.1	.64	.46	.41	.25	.42	.18	.19
7	.76	e.60	.83	.63	.97	.61	.44	.42	.24	.25	.18	.20
8	.69	e.56	.79	.64	.94	.76	.44	.47	.23	.24	.18	.83
9	.81	e.60	.78	.63	1.1	.60	.44	.46	.21	.25	.18	.26
10	.75	e.58	.75	.66	.96	.58	.44	.46	.21	.24	.25	.26
11	.67	e1.5	1.1	.66	.94	.56	.47	.44	.23	.28	.20	.30
12	.68	e3.5	.84	.62	.97	.56	.44	.47	.21	.24	.21	.32
13	.63	e2.7	.79	.63	1.1	.58	.45	.45	.22	.23	.19	.21
14	.60	e1.5	.79	.64	1.1	.58	.43	.43	.24	.23	.18	.26
15	.59	e1.0	.80	.64	1.0	.63	.43	.43	.20	.24	.19	.21
16	.60	e.72	.76	.64	.94	.57	.47	.43	.20	1.0	.20	.21
17	.60	e.64	.75	.62	.93	.56	.45	.77	.19	.27	.36	.19
18	.62	e.76	.72	.63	.91	.56	.44	.43	.20	.20	.23	.19
19	.63	e.78	.70	.68	1.1	.56	.43	.38	.24	.24	.29	.18
20	.64	1.0	.71	.70	1.0	.56	.44	.37	.19	.28	.20	.18
21	.61	1.3	.74	1.4	1.6	.55	.45	.35	.19	.55	.19	.26
22	.60	.99	.67	4.4	1.1	.56	.46	.34	.19	.29	1.9	.27
23	.60	1.0	.68	1.8	1.5	.56	.45	.39	.67	.44	.31	.33
24	.57	1.1	.72	1.9	.82	.55	.44	.38	.24	.26	6.6	.24
25	.55	1.1	.72	1.8	.73	.56	.43	.34	.21	.30	.53	.18
26	.73	.90	.72	1.3	.72	.55	.44	.33	.22	.25	.26	.21
27	.85	1.2	.73	1.1	.66	.56	.49	.40	.20	.21	.21	.19
28	.75	1.4	.85	1.1	.64	3.1	.48	.34	.19	.35	.19	.36
29	e1.8	.96	.78	1.1	---	.76	.48	.38	.19	.22	.18	.19
30	e1.1	1.6	1.1	1.1	---	.53	.43	.45	.19	.20	.19	.19
31	e.74	---	1.9	.99	---	.51	---	.42	---	.19	.20	---
TOTAL	23.44	31.48	26.51	31.45	29.53	21.04	13.88	13.03	7.46	8.86	14.97	7.40
MEAN	.76	1.05	.86	1.01	1.05	.68	.46	.42	.25	.29	.48	.25
MAX	1.8	3.5	1.9	4.4	2.0	3.1	.63	.77	.67	1.0	6.6	.83
MIN	.55	.45	.67	.62	.64	.51	.43	.33	.19	.19	.18	.18
AC-FT	46	62	53	62	59	42	28	26	15	18	30	15
CFSM	.95	1.31	1.07	1.27	1.32	.85	.58	.53	.31	.36	.60	.31
IN.	1.09	1.46	1.23	1.46	1.37	.98	.65	.61	.35	.41	.70	.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1997, BY WATER YEAR (WY)

MEAN	.79	1.22	.82	.86	.68	.41	.69	1.05	.78	1.82	1.19	4.79
MAX	.86	1.56	1.11	1.01	1.05	.68	1.23	2.26	1.21	3.02	2.15	16.7
(WY)	1993	1993	1993	1997	1997	1997	1993	1993	1996	1993	1996	1996
MIN	.76	1.05	.48	.72	.33	.15	.37	.42	.25	.29	.48	.25
(WY)	1997	1997	1996	1993	1993	1993	1996	1997	1997	1997	1997	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1992 - 1997	
ANNUAL TOTAL	834.37		229.05			
ANNUAL MEAN	2.28		.63		1.35	
HIGHEST ANNUAL MEAN					2.25	1996
LOWEST ANNUAL MEAN					.63	1997
HIGHEST DAILY MEAN	401	Sep 10	6.6	Aug 24	401	Sep 10 1996
LOWEST DAILY MEAN	.23	Apr 11	.18	Aug 2	.11	Mar 25 1993
ANNUAL SEVEN-DAY MINIMUM	.23	Apr 17	.19	Jun 27	.12	Jun 6 1993
INSTANTANEOUS PEAK FLOW			46	Aug 24	2380	Sep 10 1996
INSTANTANEOUS PEAK STAGE			2.41	Aug 24	12.02	Sep 10 1996
INSTANTANEOUS LOW FLOW			.16	Aug 7	.11	Mar 23 1993
ANNUAL RUNOFF (AC-FT)	1650		454		979	
ANNUAL RUNOFF (CFSM)	2.85		.78		1.69	
ANNUAL RUNOFF (INCHES)	38.80		10.65		22.96	
10 PERCENT EXCEEDS	1.6		1.1		1.3	
50 PERCENT EXCEEDS	.68		.55		.49	
90 PERCENT EXCEEDS	.34		.19		.19	

e Estimated

50047550 LAGO CIDRA AT DAMSITE NEAR CIDRA, PR

LOCATION.--Lat 18°11'57", long 66°08'29", Hydrologic Unit 21010005, at Lago de Cidra Dam on Río de Bayamón, 1.9 mi (3.0 km) northeast of Plaza de Cidra and 1.8 mi (2.9 km) northwest of Escuela Segunda Unidad de Bayamón.

DRAINAGE AREA.--8.26 mi² (21.39 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--January 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago de Cidra was completed in 1946. The maximum storage is 5,300 ac-ft (6.53 hm³) and provides supplemental water to metropolitan San Juan. The dam is a concrete gravity and earthfill structure approximately 541 ft (165 m) long between abutments with a maximum structural height of about 78.7 ft (24.0 m). The spillway portion of the dam, length 131 ft (40 m) and crest elevation 1,322 ft (403 m), is an ungated ogee crest located 131 ft (40 m) from the right abutment. This dam is owned by Puerto Rico Aqueduct and Sewer Authority. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 1,328.09 ft (404.80 m), Sep. 10, 1996; minimum elevation 1,295.86 ft (394.98 m), April 22,1995.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 1,322.06 ft (402.96 m), Oct.1; minimum elevation, 1,308.84 ft (398.93 m), Jan. 20,21.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
1,295	860	1,319	4,400
1,305	1,970	1,322	5,200
1,309	2,610	1,328	6,920
1,312	3,100		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1321.90	1318.09	1313.63	1309.85	1309.93	1310.04	1309.68	1309.94	1309.98	1309.90	1310.55	1313.08
2	1321.80	1317.91	1313.48	1309.84	1309.98	1310.01	1309.72	1309.93	1309.99	1309.89	1310.59	1313.12
3	1321.80	1317.74	1313.29	1309.75	1310.03	1309.99	1309.75	1309.92	1309.98	1309.90	1310.63	1313.16
4	1321.70	1317.54	1313.14	1309.68	1310.07	1309.97	1309.78	1309.85	1309.99	1309.89	1310.67	1313.19
5	1321.57	1317.36	1312.95	1309.60	1310.11	1309.94	1309.81	1309.76	1309.99	1309.82	1310.70	1313.22
6	1321.40	1317.17	1312.74	1309.48	1310.15	1309.90	1309.84	1309.70	1309.99	1309.77	1310.74	1313.24
7	1321.30	1317.01	1312.55	1309.36	1310.18	1309.87	1309.87	1309.65	1310.09	1309.72	1310.78	1313.27
8	1321.20	1316.83	1312.34	1309.26	1310.21	1309.84	1309.89	1309.60	1310.09	1309.72	1310.80	1313.29
9	1321.09	1316.64	1312.11	1309.23	1310.25	1309.81	1309.91	1309.55	1310.09	1309.73	1310.83	1313.32
10	1321.01	1316.44	1311.89	1309.19	1310.27	1309.77	1309.92	1309.52	1310.10	1309.74	1310.86	1313.34
11	1320.90	1316.33	1311.90	1309.18	1310.31	1309.73	1309.93	1309.48	1310.10	1309.75	1310.87	1313.34
12	1320.77	1316.34	1311.88	1309.17	1310.34	1309.69	1309.94	1309.45	1310.11	1309.76	1310.87	1313.31
13	1320.65	1316.31	1311.74	1309.16	1310.38	1309.68	1309.95	1309.46	1310.11	1309.78	1310.86	1313.29
14	1320.52	1316.18	1311.52	1309.07	1310.35	1309.68	1309.96	1309.49	1310.12	1309.79	1310.86	1313.26
15	1320.38	1316.01	1311.34	1309.05	1310.34	1309.69	1309.98	1309.52	1310.12	1309.81	1310.84	1313.25
16	1320.22	1315.83	1311.17	1308.99	1310.32	1309.67	1309.98	1309.56	1310.12	1309.84	1310.84	1313.22
17	1320.06	1315.65	1310.96	1308.94	1310.29	1309.64	1310.00	1309.60	1310.12	1309.87	1310.85	1313.20
18	1319.80	1315.47	1310.76	1308.90	1310.26	1309.63	1310.01	1309.63	1310.12	1309.91	1310.85	1313.17
19	1319.69	1315.26	1310.59	1308.86	1310.23	1309.62	1310.02	1309.66	1309.90	1309.93	1310.85	1313.10
20	1319.48	1315.09	1310.54	1308.84	1310.20	1309.50	1310.02	1309.69	1309.90	1309.98	1310.85	1313.11
21	1319.30	1314.97	1310.48	1308.97	1310.19	1309.47	1310.02	1309.72	1309.90	1310.03	1310.85	1313.08
22	1319.14	1314.81	1310.42	1309.16	1310.17	1309.47	1310.02	1309.76	1309.89	1310.08	1310.88	1313.06
23	1318.96	1314.63	1310.33	1309.29	1310.17	1309.47	1310.02	1309.79	1309.87	1310.13	1310.90	1313.03
24	1318.74	1314.49	1310.16	1309.39	1310.15	1309.47	1310.00	1309.82	1309.87	1310.18	1310.97	1313.01
25	1318.51	1314.34	1309.98	1309.50	1310.13	1309.49	1310.00	1309.85	1309.80	1310.23	1312.79	1312.98
26	1318.36	1314.17	1309.81	1309.58	1310.11	1309.51	1309.99	1309.88	1309.80	1310.28	1312.84	1312.96
27	1318.21	1314.05	1309.72	1309.65	1310.09	1309.52	1309.98	1309.90	1309.89	1310.33	1312.88	1312.93
28	1318.13	1314.01	1309.69	1309.71	1310.07	1309.55	1309.97	1309.93	1309.89	1310.38	1312.92	1312.91
29	1318.20	1313.80	1309.66	1309.77	---	1309.59	1309.96	1309.95	1309.89	1310.42	1312.96	1312.89
30	1318.29	1313.70	1309.68	1309.83	---	1309.62	1309.95	1309.96	1309.90	1310.47	1313.00	1312.85
31	1318.26	---	1309.77	1309.88	---	1309.65	---	1309.97	---	1310.50	1313.04	---
MAX	1321.90	1318.09	1313.63	1309.88	1310.38	1310.04	1310.02	1309.97	1310.12	1310.50	1313.04	1313.34
MIN	1318.13	1313.70	1309.66	1308.84	1309.93	1309.47	1309.68	1309.45	1309.80	1309.72	1310.55	1312.85

WTR YR 1997 MAX 1321.90 MIN 1308.84

RIO DE BAYAMON BASIN

50047560 RIO DE BAYAMON BELOW LAGO CIDRA, PR

LOCATION.--Lat 18°12'04", long 66°08'26", Hydrologic Unit 21010005, 0.2 mi (0.3 km) downstream of Lago Cidra Dam on right bank, 2.1 mi (3.4 km) northwest of Plaza de Cidra.

DRAINAGE AREA.--8.31 mi² (21.5 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,279 ft (390 m), from topographic map.

REMARKS.--Records poor. Regulation at all stages by Puerto Rico Aqueduct and Sewer Authority reservoir upstream from gage. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	26	33	17	13	15	8.3	4.7	3.3	3.8	7.1	8.7
2	18	26	30	19	12	17	7.9	7.1	8.5	4.1	7.3	10
3	18	26	29	19	12	17	7.9	7.2	9.6	6.7	7.3	14
4	19	26	29	19	11	16	7.8	7.2	6.6	6.7	7.8	14
5	22	26	28	e16	15	15	7.6	6.3	6.5	7.2	7.3	13
6	21	26	28	e15	20	15	7.6	5.5	6.5	7.7	7.2	11
7	21	25	27	e14	16	16	5.5	5.3	6.5	6.5	7.6	8.8
8	21	26	28	e13	10	16	4.3	5.2	6.8	4.0	7.5	10
9	21	26	28	e14	12	16	4.8	5.3	4.9	4.1	7.7	11
10	21	25	29	e14	13	16	5.0	5.1	3.1	4.3	8.1	11
11	21	25	19	e13	13	16	5.1	5.2	3.1	4.1	7.2	8.6
12	21	25	12	e13	13	16	5.2	3.7	3.0	4.2	7.1	7.0
13	21	22	18	e14	18	18	5.2	2.7	4.5	4.1	7.1	5.8
14	20	19	21	e12	24	19	5.1	2.7	5.3	4.2	8.7	5.8
15	22	22	20	e13	27	20	4.8	2.7	5.7	5.9	6.7	5.9
16	24	24	20	e12	27	18	4.4	2.7	4.8	8.8	7.2	7.2
17	23	23	21	e11	26	19	4.3	4.8	3.4	6.8	7.0	8.0
18	26	27	20	e12	21	16	6.0	6.0	3.3	6.8	7.1	8.0
19	29	30	20	e12	16	23	7.6	4.9	3.3	7.0	8.0	8.1
20	30	29	19	e11	13	16	7.4	3.0	5.2	7.3	7.2	8.2
21	26	29	19	e12	13	11	7.3	2.9	6.6	7.3	7.1	8.5
22	22	29	19	e12	14	10	5.7	2.9	6.7	7.3	7.8	8.7
23	25	28	20	6.4	14	10	5.3	4.5	4.3	7.6	7.1	8.5
24	29	28	22	5.8	21	8.6	5.4	5.6	3.3	6.7	8.1	8.1
25	29	24	22	5.4	23	7.8	5.3	5.7	3.4	7.4	7.5	8.0
26	29	19	21	4.9	20	8.6	5.3	5.8	3.6	6.9	8.5	8.1
27	29	28	21	6.9	17	9.3	5.1	5.7	3.7	7.2	8.4	8.5
28	24	34	21	9.1	15	9.2	4.0	4.1	3.7	7.5	7.1	8.2
29	17	33	21	7.2	---	9.4	3.2	3.1	3.8	7.0	8.7	8.0
30	16	33	18	10	---	8.7	3.2	3.3	3.8	7.0	8.4	8.2
31	20	---	16	13	---	9.0	---	3.3	---	7.1	8.8	---
TOTAL	703	789	699	375.7	469	441.6	171.6	144.2	146.8	193.3	235.7	266.9
MEAN	22.7	26.3	22.5	12.1	16.8	14.2	5.72	4.65	4.89	6.24	7.60	8.90
MAX	30	34	33	19	27	23	8.3	7.2	9.6	8.8	8.8	14
MIN	16	19	12	4.9	10	7.8	3.2	2.7	3.0	3.8	6.7	5.8
AC-FT	1390	1560	1390	745	930	876	340	286	291	383	468	529
CFSM	2.73	3.16	2.71	1.46	2.01	1.71	.69	.56	.59	.75	.91	1.07
IN.	3.14	3.53	3.13	1.68	2.10	1.97	.77	.64	.66	.86	1.05	1.19

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1997, BY WATER YEAR (WY)

MEAN	14.6	22.8	15.3	18.4	17.6	16.2	13.1	9.49	9.97	14.6	13.5	41.9
MAX	22.7	41.2	30.4	59.6	36.5	23.7	24.5	17.0	17.8	39.6	29.2	233
(WY)	1997	1992	1992	1992	1991	1992	1996	1996	1992	1993	1996	1996
MIN	3.74	8.85	4.36	5.45	7.24	11.4	5.72	4.13	3.47	1.56	1.18	1.64
(WY)	1995	1995	1994	1995	1994	1994	1997	1993	1994	1994	1995	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1991 - 1997	
ANNUAL TOTAL	14121.7		4635.8			
ANNUAL MEAN	38.6		12.7		17.0	
HIGHEST ANNUAL MEAN					36.1	1996
LOWEST ANNUAL MEAN					5.93	1994
HIGHEST DAILY MEAN	5420	Sep 10	34	Nov 28	5420	Sep 10 1996
LOWEST DAILY MEAN	3.4	Jul 24	2.7	May 13	.60	Aug 6 1992
ANNUAL SEVEN-DAY MINIMUM	4.1	Jun 8	3.5	May 11	.80	May 1 1995
INSTANTANEOUS PEAK FLOW			72	Aug 24	15000	Sep 10 1996
INSTANTANEOUS PEAK STAGE			9.74	Aug 24	27.34	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	28010		9200		12340	
ANNUAL RUNOFF (CFSM)	4.64		1.53		2.05	
ANNUAL RUNOFF (INCHES)	63.14		20.73		27.82	
10 PERCENT EXCEEDS	32		26		27	
50 PERCENT EXCEEDS	19		8.8		11	
90 PERCENT EXCEEDS	11		4.2		2.5	

e Estimated

50047560 RIO DE BAYAMON BELOW LAGO CIDRA , PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1991 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: November 1990 to current year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1990.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected by a local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 3,670 mg/L Jan. 05, 1992; Minimum daily mean, 3 mg/L November 27, 1993 and June 27-28, 1997.

SEDIMENT LOADS: Maximum daily mean, 27,700 tons (25,100 tonnes) September 10, 1996; Minimum daily mean, 0.02 ton (0.02 tonne) November 21, 1993.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 256 mg/L August 25, 1997; Minimum daily mean, 3 mg/L June 27-28, 1997.

SEDIMENT LOADS: Maximum daily mean, 13 tons (12 tonnes) several days; Minimum daily mean, 0.03 ton (0.03 tonne) June 28, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	18	206	9.7	26	149	11	33	32	2.9
2	18	219	11	26	134	9.3	30	31	2.6
3	18	233	11	26	116	8.2	29	30	2.3
4	19	244	13	26	101	7.1	29	30	2.4
5	22	223	13	26	101	7.1	28	27	2.1
6	21	197	11	26	105	7.4	28	24	1.8
7	21	177	10	25	109	7.5	27	24	1.8
8	21	178	10	26	103	7.2	28	24	1.9
9	21	184	11	26	94	6.6	28	26	2.0
10	21	169	9.6	25	86	5.9	29	28	2.2
11	21	142	7.9	25	79	5.3	19	34	1.7
12	21	161	9.2	25	72	4.8	12	41	1.3
13	21	180	10	22	66	3.8	18	44	2.1
14	20	182	10	19	60	3.1	21	25	1.5
15	22	180	11	22	55	3.2	20	11	.60
16	24	179	11	24	50	3.2	20	6	.36
17	23	174	11	23	45	2.8	21	6	.35
18	26	168	12	27	41	3.1	20	7	.38
19	29	163	13	30	38	3.1	20	8	.47
20	30	158	13	29	35	2.8	19	13	.67
21	26	153	11	29	26	2.1	19	21	1.1
22	22	148	8.8	29	22	1.8	19	35	1.8
23	25	143	9.7	28	21	1.6	20	36	1.9
24	29	139	11	28	23	1.8	22	31	1.8
25	29	134	10	24	23	1.5	22	28	1.7
26	29	130	10	19	23	1.2	21	24	1.4
27	29	126	9.7	28	26	2.0	21	23	1.3
28	24	122	7.9	34	34	3.1	21	21	1.2
29	17	120	5.4	33	30	2.7	21	20	1.2
30	16	128	5.5	33	31	2.8	18	18	.91
31	20	140	7.7	---	---	---	16	17	.73
TOTAL	703	---	314.1	789	---	133.1	699	---	46.47

50047560 RIO DE BAYAMON BELOW LAGO CIDRA , PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	17	19	.90	13	14	.49	15	12	.50
2	19	23	1.2	12	11	.35	17	12	.57
3	19	28	1.5	12	8	.28	17	15	.69
4	19	21	1.1	11	8	.23	16	14	.62
5	e16	15	e.79	15	8	.33	15	14	.62
6	e15	9	e.41	20	8	.48	15	18	.79
7	e14	7	e.26	16	10	.41	16	27	1.1
8	e13	7	e.26	10	12	.32	16	34	1.5
9	e14	9	e.33	12	17	.58	16	27	1.2
10	e14	11	e.43	13	34	1.2	16	19	.84
11	e13	14	e.50	13	86	3.0	16	15	.67
12	e13	16	e.57	13	194	6.9	16	23	1.0
13	e14	19	e.70	18	147	6.7	18	44	2.2
14	e12	23	e.79	24	78	5.0	19	91	4.6
15	e13	27	e.92	27	45	3.3	20	66	3.5
16	e12	38	e1.3	27	40	2.9	18	33	1.6
17	e11	56	e1.7	26	37	2.6	19	18	.92
18	e12	83	e2.6	21	35	2.0	16	13	.59
19	e12	124	e4.0	16	33	1.4	23	13	.86
20	e11	183	e5.7	13	32	1.1	16	10	.43
21	e12	249	e7.7	13	30	1.1	11	11	.34
22	e12	162	e3.6	14	17	.64	10	10	.28
23	6.4	87	1.5	14	9	.36	10	11	.31
24	5.8	47	.72	21	4	.24	8.6	11	.25
25	5.4	28	.41	23	5	.35	7.8	11	.24
26	4.9	41	.55	20	9	.50	8.6	12	.30
27	6.9	71	1.4	17	11	.52	9.3	12	.30
28	9.1	97	2.3	15	12	.49	9.2	11	.28
29	7.2	15	.33	---	---	---	9.4	13	.34
30	10	19	.70	---	---	---	8.7	9	.23
31	13	21	.77	---	---	---	9.0	10	.25
TOTAL	375.7	---	45.94	469	---	43.77	441.6	---	27.92

e Estimated

RIO DE BAYAMON BASIN

50047560 RIO DE BAYAMON BELOW LAGO CIDRA , PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	8.3	8	.19	4.7	6	.08	3.3	20	.18
2	7.9	8	.18	7.1	7	.15	8.5	8	.21
3	7.9	10	.22	7.2	9	.18	9.6	8	.21
4	7.8	15	.31	7.2	9	.18	6.6	9	.16
5	7.6	18	.37	6.3	9	.16	6.5	8	.14
6	7.6	15	.32	5.5	12	.18	6.5	8	.15
7	5.5	11	.17	5.3	15	.22	6.5	10	.19
8	4.3	11	.13	5.2	19	.27	6.8	12	.22
9	4.8	12	.16	5.3	16	.23	4.9	12	.16
10	5.0	15	.21	5.1	13	.18	3.1	9	.08
11	5.1	18	.25	5.2	10	.14	3.1	8	.07
12	5.2	16	.23	3.7	8	.08	3.0	6	.05
13	5.2	13	.19	2.7	8	.06	4.5	7	.09
14	5.1	12	.16	2.7	8	.07	5.3	7	.11
15	4.8	10	.13	2.7	6	.05	5.7	8	.12
16	4.4	10	.12	2.7	6	.05	4.8	8	.11
17	4.3	9	.11	4.8	6	.09	3.4	8	.08
18	6.0	10	.17	6.0	7	.12	3.3	9	.08
19	7.6	11	.23	4.9	5	.07	3.3	11	.10
20	7.4	11	.23	3.0	8	.07	5.2	12	.17
21	7.3	10	.20	2.9	12	.09	6.6	13	.23
22	5.7	10	.16	2.9	21	.17	6.7	8	.16
23	5.3	9	.13	4.5	36	.44	4.3	6	.07
24	5.4	8	.13	5.6	20	.30	3.3	5	.05
25	5.3	8	.12	5.7	18	.27	3.4	6	.06
26	5.3	7	.11	5.8	15	.23	3.6	6	.06
27	5.1	7	.09	5.7	10	.16	3.7	3	.04
28	4.0	6	.07	4.1	7	.08	3.7	3	.03
29	3.2	5	.05	3.1	10	.09	3.8	4	.04
30	3.2	6	.06	3.3	17	.15	3.8	4	.05
31	---	---	---	3.3	27	.23	---	---	---
TOTAL	171.6	---	5.20	144.2	---	4.84	146.8	---	3.47

RIO DE BAYAMON BASIN

50047560 RIO DE BAYAMON BELOW LAGO CIDRA , PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	3.8	7	.08	7.1	15	.28	8.7	19	.44
2	4.1	14	.16	7.3	16	.32	10	22	.61
3	6.7	36	.65	7.3	16	.33	14	25	.95
4	6.7	82	1.5	7.8	17	.36	14	30	1.1
5	7.2	51	.98	7.3	22	.43	13	37	1.2
6	7.7	21	.44	7.2	32	.61	11	44	1.3
7	6.5	9	.18	7.6	46	.93	8.8	33	.78
8	4.0	4	.05	7.5	48	.96	10	21	.60
9	4.1	4	.05	7.7	45	.94	11	14	.42
10	4.3	4	.05	8.1	43	.94	11	14	.41
11	4.1	3	.04	7.2	41	.79	8.6	16	.38
12	4.2	4	.05	7.1	38	.74	7.0	18	.35
13	4.1	4	.05	7.1	37	.70	5.8	17	.27
14	4.2	5	.06	8.7	40	.95	5.8	13	.21
15	5.9	5	.09	6.7	45	.83	5.9	13	.20
16	8.8	6	.13	7.2	49	.96	7.2	15	.31
17	6.8	8	.14	7.0	28	.52	8.0	21	.44
18	6.8	6	.12	7.1	13	.27	8.0	28	.61
19	7.0	7	.13	8.0	7	.16	8.1	28	.60
20	7.3	17	.35	7.2	8	.17	8.2	23	.51
21	7.3	58	1.1	7.1	16	.32	8.5	20	.46
22	7.3	176	3.5	7.8	34	.71	8.7	18	.44
23	7.6	82	1.7	7.1	69	1.3	8.5	16	.37
24	6.7	20	.36	8.1	140	3.1	8.1	13	.29
25	7.4	6	.13	7.5	256	5.3	8.0	11	.25
26	6.9	5	.11	8.5	134	3.2	8.1	11	.24
27	7.2	8	.17	8.4	43	.94	8.5	10	.24
28	7.5	13	.27	7.1	18	.35	8.2	16	.35
29	7.0	14	.28	8.7	19	.45	8.0	28	.61
30	7.0	14	.27	8.4	17	.38	8.2	47	1.1
31	7.1	16	.32	8.8	17	.41	---	---	---
TOTAL	193.3	---	13.51	235.7	---	28.65	266.9	---	16.04
YEAR	4635.8		683.01						

50047560 RIO DE BAYAMON BELOW LAGO CIDRA, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
SEP 1997							
21...	1626	8.6	671	15	80	84	88

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
SEP 1997							
21...	89	91	97	98	99	100	100

RIO DE BAYAMON BASIN

50047560 RIO DE BAYAMON BELOW LAGO CIDRA, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
10...	1507	22	191	11	100
FEB 1997					
12...	1608	13	243	8.5	58
MAR					
14...	1738	18	114	5.5	86
MAY					
28...	1100	3.2	57	0.49	97

RIO DE BAYAMON BASIN

50047600 RIO DE BAYAMON NEAR AGUAS BUENAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°14'39", long 66°08'39", at bridge on Highway 156, and 2.9 mi (4.7 km) west of Aguas Buenas plaza.

DRAINAGE AREA.--18.5 mi² (47.9 km²).

PERIOD OF RECORD.--Water years 1958-65, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
08...	1010	30	173	7.4	24.0	0.30	8.0	93	<10	K700	K1900
FEB 1997											
19...	0820	27	289	6.5	21.5	1.7	7.6	85	<10	590	K1300
MAY											
13...	1320	9.2	336	8.3	27.0	0.55	8.2	105	<10	K91	580
SEP											
09...	1305	14	299	8.2	28.0	0.89	7.8	103	<10	230	300

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
08...	75	18	7.4	8.2	0.4	2.2	100	0.5	8.2	12
FEB 1997										
19...	--	--	--	--	--	--	110	--	--	--
MAY										
13...	130	30	14	18	0.7	1.7	130	<0.5	11	22
SEP										
09...	99	23	10	14	0.6	2.5	110	--	6.6	15

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
08...	<0.10	18	134	10.8	52	0.720	0.030	0.750	0.020	0.25
FEB 1997										
19...	--	--	--	--	<1	0.750	<0.010	0.750	0.010	0.23
MAY										
13...	<0.10	29	203	5.06	<1	0.450	<0.010	0.460	0.020	0.20
SEP										
09...	<0.10	26	175	6.62	14	0.620	<0.010	0.630	0.020	0.21

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
08...	0.28	1.0	4.5	0.070	<1	<100	30	<1	3	<10
FEB 1997										
19...	0.24	0.99	4.4	0.030	--	--	--	--	--	--
MAY										
13...	0.22	0.68	3.0	0.030	<1	<100	30	<1	1	11
SEP										
09...	0.24	0.86	3.8	<0.020	--	--	--	--	--	--

K = non-ideal count

50047600 RIO DE BAYAMON NEAR AGUAS BUENAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
08...	2700	1	100	<0.10	<1	<1	10	<0.010	<1	<0.01
FEB 1997										
19...	--	--	--	--	--	--	--	--	--	--
MAY										
13...	100	<1	32	<0.10	<1	<1	<10	<0.010	<1	0.03
SEP										
09...	--	--	--	--	--	--	--	--	--	--

RIO DE BAYAMON BASIN

50047850 RIO BAYAMON NR BAYAMON, PR

LOCATION.--Lat 18°20'08", long 66°08'13", Hydrologic Unit 21010005, on left bank, at rock quarry near Highway 174, 1.3 mi (2.1 km) south of colonia Santa Rosa and 4.7 mi (7.6 km) south of Bayamón.

DRAINAGE AREA.--41.8 mi² (108.3 km²).

PERIOD OF RECORD.--September 1964 to October 1970, June 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 98 ft (30 m), from topographic map.

REMARKS.--Records fair. Diversion to the Guaynabo water treatment plant, for municipal supply, made upstream from station (at Represa de San Juan). Flow is regulated by storage and release of water at Lago de Cidra (capacity 5,220 acre-ft), 10.5 mi (16.9 km) upstream. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	35	79	e34	57	19	10	13	9.4	7.8	5.6	9.2
2	e24	22	68	e47	45	20	12	12	9.0	6.6	5.0	11
3	e48	28	48	e28	21	26	14	19	8.9	6.0	27	9.9
4	28	22	37	e28	25	23	13	14	8.0	5.9	37	9.8
5	22	22	29	e28	23	29	13	9.0	7.4	5.9	6.4	11
6	21	19	e24	e23	21	20	12	8.7	6.8	6.4	5.5	12
7	19	21	e22	e23	21	20	12	8.1	6.7	5.8	5.3	11
8	18	20	e21	e23	20	22	12	8.1	7.8	6.1	5.2	9.8
9	18	29	e21	e22	20	20	11	8.3	8.1	6.2	5.3	10
10	17	52	e22	e20	16	17	11	8.0	7.8	6.0	6.0	11
11	17	57	e25	e20	16	17	10	7.9	7.5	5.7	11	9.9
12	23	100	e22	e20	18	16	9.9	7.7	6.9	6.2	7.6	14
13	21	131	e21	e20	19	16	9.7	8.1	7.2	6.1	7.4	27
14	21	40	e20	e20	e21	15	9.5	8.1	6.9	5.6	9.6	42
15	18	23	e20	21	e17	13	9.3	8.0	7.2	5.5	14	14
16	18	19	e22	22	e17	13	9.5	8.7	e6.8	e5.9	9.9	11
17	18	50	e21	22	17	12	9.6	8.3	e6.5	e7.2	12	9.9
18	18	28	e21	24	e17	12	9.6	7.6	e6.5	e9.1	12	9.9
19	17	19	e20	33	e18	11	9.3	7.2	e17	13	7.7	9.8
20	17	20	e20	37	e18	11	9.4	8.5	e9.0	13	7.1	9.0
21	17	34	e21	248	e60	11	12	8.4	e7.2	7.5	7.2	11
22	17	170	e19	366	35	10	10	7.8	e6.9	e7.1	41	43
23	17	121	e20	184	22	9.9	9.6	14	e6.9	e7.5	13	28
24	17	139	e22	239	24	9.8	9.7	18	e7.2	e7.5	35	71
25	16	106	e22	163	24	10	10	13	e7.5	8.1	67	17
26	50	55	e98	60	21	9.8	9.0	13	e8.7	6.8	9.9	26
27	47	43	e36	29	20	9.4	9.9	10	7.1	6.7	9.1	14
28	59	54	e52	25	19	10	11	9.6	7.3	5.8	8.0	12
29	61	47	e78	27	---	24	12	9.3	7.2	5.7	7.5	12
30	48	115	e45	20	---	13	12	9.8	7.5	5.8	9.1	11
31	23	---	e36	17	---	11	---	9.6	---	7.3	9.9	---
TOTAL	798	1641	1032	1893	672	479.9	321.0	310.8	234.9	215.8	423.3	506.2
MEAN	25.7	54.7	33.3	61.1	24.0	15.5	10.7	10.0	7.83	6.96	13.7	16.9
MAX	61	170	98	366	60	29	14	19	17	13	67	71
MIN	16	19	19	17	16	9.4	9.0	7.2	6.5	5.5	5.0	9.0
AC-FT	1580	3250	2050	3750	1330	952	637	616	466	428	840	1000
CFSM	.62	1.31	.80	1.46	.57	.37	.26	.24	.19	.17	.33	.40
IN.	.71	1.46	.92	1.68	.60	.43	.29	.28	.21	.19	.38	.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1997, BY WATER YEAR (WY)

MEAN	30.2	43.9	41.2	36.4	21.9	17.7	21.0	39.6	18.9	21.4	40.4	60.3
MAX	129	174	263	159	75.3	52.9	72.7	131	60.8	46.6	137	360
(WY)	1991	1970	1966	1969	1989	1990	1971	1966	1970	1970	1970	1996
MIN	4.30	7.91	5.19	5.30	4.75	3.58	5.36	4.85	3.68	4.01	7.47	6.02
(WY)	1969	1965	1968	1968	1965	1965	1965	1994	1994	1994	1994	1967

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1964 - 1997	
ANNUAL TOTAL	19743.8		8527.9			
ANNUAL MEAN	53.9		23.4		32.8	
HIGHEST ANNUAL MEAN					59.7	1966
LOWEST ANNUAL MEAN					10.9	1994
HIGHEST DAILY MEAN	8640	Sep 10	366	Jan 22	8640	Sep 10 1996
LOWEST DAILY MEAN	7.8	Apr 2	5.0	Aug 2	2.2	Apr 19 1965
ANNUAL SEVEN-DAY MINIMUM	8.7	Mar 27	5.9	Jul 10	2.4	Apr 14 1965
INSTANTANEOUS PEAK FLOW			685	Jan 21	65000	Sep 10 1996
INSTANTANEOUS PEAK STAGE			5.95	Jan 21	29.07	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	39160		16920		23730	
ANNUAL RUNOFF (CFSM)	1.29		.56		.78	
ANNUAL RUNOFF (INCHES)	17.57		7.59		10.65	
10 PERCENT EXCEEDS	56		46		55	
50 PERCENT EXCEEDS	18		14		13	
90 PERCENT EXCEEDS	12		6.9		4.9	

e Estimated

RIO DE BAYAMON BASIN

50047990 RIO GUAYNABO NEAR BAYAMON, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°22'32", long 66°07'59", at bridge on Highway 833, 0.2 mi (0.3 km) upstream from Río de Bayamón, and 2.3 mi (3.7 km) southeast of Bayamon plaza.

DRAINAGE AREA.--73.2 mi² (189.6 km²).

PERIOD OF RECORD.--Water years 1958, 1964, 1971-73, 1976, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	COLIFORM, FECAL, 0.45 UM-MF (COLS./100 ML) (31616)	STREPTOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996										
17...	1200	428	7.3	27.5	6.0	3.7	47	23	52000	3400
MAR 1997										
07...	0815	463	6.6	23.5	4.5	4.5	52	11	34000	3500
MAY										
12...	1020	508	6.7	28.0	8.3	4.1	52	<10	K770	370
SEP										
08...	0815	540	6.9	27.5	5.8	1.7	22	<10	K60000	63000

DATE	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT 1996										
17...	160	41	13	27	0.9	3.3	180	2.1	11	31
MAR 1997										
07...	--	--	--	--	--	--	180	--	--	--
MAY										
12...	180	48	14	30	1	3.8	200	<0.5	12	38
SEP										
08...	160	41	13	23	0.8	2.5	240	--	15	24

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996									
17...	0.10	27	261	38	0.310	0.090	0.400	0.840	0.34
MAR 1997									
07...	--	--	--	22	0.760	0.080	0.840	0.250	0.37
MAY									
12...	0.19	32	299	10	0.650	0.110	0.750	0.260	0.34
SEP									
08...	0.20	27	248	12	0.110	0.043	0.150	1.50	0.88

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT 1996										
17...	1.2	1.6	7.0	0.190	1	<100	60	<1	1	<10
MAR 1997										
07...	0.62	1.5	6.5	0.200	--	--	--	--	--	--
MAY										
12...	0.59	1.3	6.0	0.230	2	<100	50	<1	<1	11
SEP										
08...	2.4	2.6	11	0.410	--	--	--	--	--	--

K = non-ideal count
Discharge measurement values not available due to ponded conditions.

RIO DE BAYAMON BASIN

50047990 RIO GUAYNABO NEAR BAYAMON, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
17...	1100	2	460	<0.10	<1	<1	20	<0.010	1	0.12
MAR 1997										
07...	--	--	--	--	--	--	--	--	--	--
MAY										
12...	670	2	310	<0.10	<1	<1	10	<0.010	<1	0.06
SEP										
08...	--	--	--	--	--	--	--	--	--	--

RIO DE BAYAMON BASIN

50048510 RIO DE BAYAMON AT FLOOD CHANNEL AT BAYAMON, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'29", long 66°09'04", at bridge on Highway 890, 1.0 mi (1.6 km) downstream from bridge on Highway 2, and 3.2 mi (5.1 km) above mouth.

DRAINAGE AREA.--71.9 mi² (186.2 km²).

PERIOD OF RECORD.--Water years 1974 to current year.

REMARKS.--Prior to 1979 sampling site was 0.8 mile (1.3 km) downstream but was changed because of flood channel construction.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
17...	0900	61	404	7.3	28.0	1.2	7.7	98	13	420	3100
MAR 1997											
07...	1115	18	453	7.2	29.0	5.1	7.2	93	11	K630	320
MAY											
12...	1215	9.5	468	7.1	29.5	17	8.0	105	<10	560	240
SEP											
05...	1035	12	491	7.2	29.5	5.7	6.3	82	<10	2300	120

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
17...	150	40	13	22	0.8	2.9	78	<0.5	13	30
MAR 1997										
07...	--	--	--	--	--	--	85	--	--	--
MAY										
12...	180	45	16	25	0.8	2.5	210	<0.5	14	33
SEP										
05...	180	49	15	26	0.8	2.6	220	--	15	31

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
17...	0.20	25	193	32.0	6	0.390	0.060	0.460	0.170	0.20
MAR 1997										
07...	--	--	--	--	<1	0.550	0.030	0.580	0.200	0.43
MAY										
12...	0.17	29	290	7.42	7	--	<0.010	<0.020	0.020	0.41
SEP										
05...	0.14	27	296	9.44	9	0.190	0.030	0.220	0.070	0.33

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
17...	0.37	0.83	3.7	0.060	<1	<100	40	<1	<1	<10
MAR 1997										
07...	0.63	1.2	5.4	0.130	--	--	--	--	--	--
MAY										
12...	0.43	0.43	1.9	0.030	1	<100	40	<1	1	<10
SEP										
05...	0.40	0.62	2.7	0.030	--	--	--	--	--	--

K = non-ideal count

RIO DE BAYAMON BASIN

50048510 RIO DE BAYAMON AT FLOOD CHANNEL AT BAYAMON, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
17...	230	<1	200	<0.10	<1	<1	<10	<0.010	<1	0.02
MAR 1997										
07...	--	--	--	--	--	--	--	--	--	--
MAY										
12...	1000	1	490	<0.10	<1	<1	<10	<0.010	<1	0.04
SEP										
05...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, I TOTAL (UG/L) (39388)
MAY 1997										
12...	1215	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)
MAY 1997									
12...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	PARA-THION, TOTAL (UG/L) (39540)	PCNS UNFILT RECOVER (UG/L) (39250)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	2, 4-DP TOTAL (UG/L) (82183)	SILVEX, TOTAL (UG/L) (39760)
MAY 1997									
12...	<0.010	<0.100	<0.100	<1.00	<0.010	0.040	<0.010	<0.010	<0.010

RIO PUERTO NUEVO BASIN

50048680 LAGO LAS CURIAS AT DAMSITE NEAR RIO PIEDRAS, PR

LOCATION.--Lat 18°24'23", long 66°03'05", Hydrologic Unit 21010005 at Lago Las Curias Dam on Río Piedras, 4.15 mi (6.67 km) south of University of Puerto Rico Tower, 1.6 mi (2.57 km) northwest from Escuela José F. Díaz and 0.8 mi (1.28 km) north of Escuela Cupey Alto.

DRAINAGE AREA.--0.97 mi² (2.51 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--April to September 1997.

GAGE.--Water stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago Las Curias was completed in 1946. The reservoir has a capacity of 1,135 ac-ft (1.40 hm³) at spillway crest elevation 315.78 ft (96.25 m) for water supply. The dam is earthfill and has a crest elevation of 327.3 ft (99.75 m). Masonry parapet walls continous from abutment on each side of the 25 ft (7.62 m) wide crest. The dam is about 82.0 ft (25.0 m) high and 984.2 ft (300.0 m) long. The morning-glory inlet conduit spillway in located along the left abutment of the dam and has an uncontrolled capacity of about 5,000 ft³/s (141.6 m³/s) at reservoir elevation 321.5 ft (98.0 m). This dam is operated by Puerto Rico Aqueduct and Sewer Authority.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 316.22 ft (96.38 m), May 21; minimum elevation, 315.48 ft (96.15 m), May 20.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
284.7	154	314.3	1,078
298.2	462	317.5	1,232
307.1	770		

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							315.86	315.65	315.79	315.63	315.79	315.81
2							315.87	315.63	315.77	315.61	315.77	315.84
3							315.87	315.63	315.77	315.60	315.76	315.82
4							315.86	315.64	315.75	315.59	315.75	315.81
5							315.85	315.63	315.74	315.58	315.73	315.81
6							315.83	315.61	315.72	315.58	315.72	315.81
7							315.82	A	A	315.57	315.70	315.79
8							315.81	315.60	A	315.57	315.72	315.79
9							315.80	A	315.69	315.57	315.70	315.78
10							315.79	315.58	315.67	315.55	315.76	315.77
11							315.80	A	315.70	315.57	315.75	315.75
12							315.80	A	315.69	315.56	315.78	315.78
13							315.79	A	315.67	315.54	315.90	315.95
14							315.78	A	315.66	315.52	315.86	315.87
15							315.77	315.53	315.64	315.52	315.82	315.84
16							315.76	315.53	315.63	315.54	315.83	315.83
17							315.74	315.52	315.61	315.52	315.86	315.82
18							315.74	315.51	315.60	315.54	315.82	315.80
19							315.73	315.49	315.60	315.55	315.81	315.79
20							315.74	315.77	315.59	315.82	315.81	315.79
21							315.73	315.93	315.58	315.81	315.90	315.79
22							315.72	315.84	315.56	315.80	315.91	315.82
23							315.72	315.82	315.58	315.78	315.85	315.85
24							315.71	315.85	315.62	315.77	315.91	315.85
25							315.69	315.84	315.61	315.78	315.85	315.84
26							315.68	315.82	315.56	315.78	315.83	315.87
27							315.69	315.82	A	315.77	315.82	315.85
28							315.68	315.81	A	315.80	315.80	315.84
29							315.67	315.80	A	315.78	315.80	315.88
30							315.66	315.79	315.64	315.85	315.79	315.84
31							---	315.79	---	315.81	315.82	---
MEAN							315.77	---	---	315.65	315.80	315.82
MAX							315.87	---	---	315.85	315.91	315.95
MIN							315.66	---	---	315.52	315.70	315.75

A No gage-height record

RIO PUERTO NUEVO BASIN

50048800 RIO PIEDRAS NEAR RIO PIEDRAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°22'15", long 66°03'40", at bridge on Winston Churchill Avenue in the El Señorial Housing area, 0.5 mi (0.8 km) west of Highway 176, and 2.5 mi (4.0 km) southwest of Río Piedras plaza.

DRAINAGE AREA.--8.17 mi² (20.9 km²).

PERIOD OF RECORD.--Water years 1972 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
15...	1100	9.9	446	7.1	28.0	2.0	3.9	49	21	52000	58000
FEB 1997											
18...	0800	11	404	6.8	22.5	3.2	6.3	71	10	5600	K18000
MAY											
27...	0845	6.6	473	7.1	25.0	3.9	6.3	77	<10	K150000	27000
SEP											
05...	0745	6.9	508	7.3	26.5	1.2	1.9	24	40	570000	460000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
15...	150	39	13	27	1	3.3	174	1.0	18	34
FEB 1997										
18...	--	--	--	--	--	--	180	--	--	--
MAY										
27...	170	42	13	28	1	3.0	180	<0.5	18	33
SEP										
05...	160	47	13	30	1	4.2	200	--	17	36

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
15...	0.20	32	271	7.22	10	0.700	0.120	0.820	2.30	0.77
FEB 1997										
18...	--	--	283	8.41	3	0.940	0.100	1.00	0.430	0.29
MAY										
27...	0.14	33	277	4.91	10	--	--	--	--	--
SEP										
05...	0.16	29	290	5.38	11	0.260	0.056	0.310	6.20	2.1

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
15...	3.1	3.9	17	0.400	2	200	50	<1	<1	10
FEB 1997										
18...	0.71	1.8	7.8	0.140	--	--	--	--	--	--
MAY										
27...	--	--	--	--	2	300	40	<1	<1	18
SEP										
05...	8.3	8.7	38	0.870	--	--	--	--	--	--

E = estimate
K = non-ideal count

50048800 RIO PIEDRAS NEAR RIO PIEDRAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
15...	390	<1	250	<0.10	<1	<1	20	<0.010	2	0.62
FEB 1997										
18...	--	--	--	--	--	--	--	--	--	--
MAY										
27...	370	<1	230	<0.10	<1	<1	<10	<0.010	<1	0.03
SEP										
05...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, I TOTAL (UG/L) (39388)
MAY 1997										
27...	0845	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	0.030	<0.010	<0.010

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)
MAY 1997									
27...	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	<0.010	<0.010	<0.010

DATE	PARA-THION, TOTAL (UG/L) (39540)	PCNS UNFILT RECOVER (UG/L) (39250)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	2, 4-DP TOTAL (UG/L) (82183)	SILVEX, TOTAL (UG/L) (39760)
MAY 1997									
27...	<0.010	<0.100	<0.100	<1.00	<0.010	0.010	<0.010	<0.010	<0.010

RIO PUERTO NUEVO BASIN

50049100 RIO PIEDRAS AT HATO REY, PR

LOCATION.--Lat 18°24'34", long 66°04'10", Hydrologic Unit 21010005, at bridge on Avenida Piñeiro near Expreso Las Américas (Luis A. Ferré), and 0.8 mi (1.3 km) southwest of Hato Rey.

DRAINAGE AREA.--15.4 mi² (39.9 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1970 to December 1987 (discharge measurements only), 1972 to December 1982 (maximum discharge only), January 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 16 ft (5 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Mean daily discharge affected by sewage discharges (approximately 2.0 ft³/s (0.06 m³/s)), 20 ft (6 m) upstream from gaging station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e100	18	68	44	278	27	21	18	51	16	31	18
2	e90	12	65	154	108	43	28	13	21	11	16	197
3	e90	35	33	83	54	45	31	35	16	11	29	25
4	e51	18	60	33	59	55	21	18	12	11	17	33
5	48	115	32	38	66	97	23	13	12	29	19	14
6	e57	22	28	18	35	24	17	29	12	48	18	16
7	e51	11	26	13	47	34	18	15	12	12	15	19
8	33	37	25	48	59	48	e17	13	12	25	122	18
9	32	16	23	16	109	28	e15	18	12	12	36	16
10	84	41	32	9.5	40	16	e15	14	11	11	57	15
11	33	11	106	90	41	15	e15	13	92	17	19	13
12	24	62	24	39	85	32	e16	12	21	19	109	18
13	86	612	18	22	68	18	e15	40	16	10	218	182
14	76	53	17	41	45	11	e15	31	16	10	152	110
15	29	50	16	19	22	10	e14	18	16	9.6	62	53
16	23	137	50	17	42	9.4	e15	40	14	80	70	64
17	19	166	14	11	33	10	e15	12	12	13	133	17
18	19	116	13	27	39	52	e14	9.5	12	48	59	17
19	18	22	12	27	43	e110	e15	9.5	17	80	15	17
20	12	21	12	18	22	e45	e15	203	16	518	13	14
21	28	13	40	232	103	e15	e14	284	11	150	161	26
22	14	461	20	311	65	e16	e13	78	10	73	396	39
23	17	194	15	203	22	e12	e15	26	125	35	112	109
24	13	206	104	199	112	e12	e18	83	87	28	172	50
25	17	82	9.7	68	91	e13	18	117	35	143	93	9.5
26	125	42	158	17	59	e16	18	38	16	30	35	86
27	47	68	175	11	31	n9.3	27	15	14	28	34	53
28	366	84	215	30	25	52	20	18	16	90	17	18
29	80	36	273	47	---	121	20	13	15	24	12	196
30	31	188	184	27	---	41	20	11	42	138	11	62
31	36	---	75	15	---	22	---	11	---	151	127	---
TOTAL	1749	2949	1942.7	1927.5	1803	1058.7	538	1268.0	774	1880.6	2380	1524.5
MEAN	56.4	98.3	62.7	62.2	64.4	34.2	17.9	40.9	25.8	60.7	76.8	50.8
MAX	366	612	273	311	278	121	31	284	125	518	396	197
MIN	12	11	9.7	9.5	22	9.3	13	9.5	10	9.6	11	9.5
AC-FT	3470	5850	3850	3820	3580	2100	1070	2520	1540	3730	4720	3020
CFSM	3.71	6.47	4.12	4.09	4.24	2.25	1.18	2.69	1.70	3.99	5.05	3.34
IN.	4.28	7.22	4.75	4.72	4.41	2.59	1.32	3.10	1.89	4.60	5.82	3.73

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 1997, BY WATER YEAR (WY)

MEAN	66.3	76.8	50.3	46.9	42.3	37.8	56.4	45.8	42.3	49.1	57.1	88.4
MAX	134	235	168	97.4	86.9	78.5	150	97.5	81.9	97.4	84.2	261
(WY)	1991	1993	1993	1993	1995	1972	1972	1992	1995	1993	1988	1996
MIN	16.6	23.9	18.8	12.9	10.8	11.5	13.6	4.12	20.0	12.8	20.2	26.3
(WY)	1992	1991	1992	1973	1992	1994	1995	1972	1994	1994	1993	1972

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1972 - 1997	
ANNUAL TOTAL	27238.8		19795.0			
ANNUAL MEAN	74.4		54.2		54.1	
HIGHEST ANNUAL MEAN					84.0	1993
LOWEST ANNUAL MEAN					28.7	1994
HIGHEST DAILY MEAN	4550	Sep 10	612	Nov 13	4550	Sep 10 1996
LOWEST DAILY MEAN	9.5	Apr 2	9.3	Mar 27	1.2	Jun 28 1972
ANNUAL SEVEN-DAY MINIMUM	12	Feb 27	12	Jun 4	1.2	Jul 5 1972
INSTANTANEOUS PEAK FLOW			6690	Nov 22	10500	Sep 10 1996
INSTANTANEOUS PEAK STAGE			18.66	Nov 22	22.11	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	54030		39260		39190	
ANNUAL RUNOFF (CFSM)	4.90		3.57		3.56	
ANNUAL RUNOFF (INCHES)	66.66		48.45		48.36	
10 PERCENT EXCEEDS	151		126		121	
50 PERCENT EXCEEDS	29		27		22	
90 PERCENT EXCEEDS	12		12		9.6	

e Estimated

50049100 RIO PIEDRAS AT HATO REY, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'34", long 66°04'10", at bridge on Avenida Piñiero at Expreso Las Américas, and 0.8 mi (1.3 km) southwest of Hato Rey.

DRAINAGE AREA.--15.4 mi² (39.9 km²).

PERIOD OF RECORD.--Water years 1971 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
30...	1045	22	390	6.5	27.5	2.8	5.2	65	11	230000	63000
FEB 1997											
18...	1200	22	414	6.7	24.5	3.7	5.7	68	17	27000	3800
MAY											
27...	1105	13	465	7.0	29.0	4.6	5.0	65	16	39000	4100
SEP											
08...	1155	16	485	7.1	30.0	2.9	4.2	55	12	K170000	23000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
30...	140	39	10	26	1	3.5	175	<0.5	15	28
FEB 1997										
18...	--	--	--	--	--	--	180	--	--	--
MAY										
27...	160	44	11	28	1	3.1	200	<0.5	18	33
SEP										
08...	170	47	12	29	1	3.4	200	--	23	29

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
30...	0.30	24	251	15.0	13	0.800	0.100	0.900	0.590	1.6
FEB 1997										
18...	--	--	--	--	1	0.780	0.120	0.900	1.50	0.49
MAY										
27...	0.15	27	285	10.4	13	0.840	<0.00	0.970	0.720	0.62
SEP										
08...	0.20	27	268	11.6	2	0.270	0.230	0.500	2.10	1.0

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
30...	1.6	1.6	0.62	0.200	<1	<100	40	<1	<1	<10
FEB 1997										
18...	2.0	2.9	13	0.310	--	--	--	--	--	--
MAY										
27...	1.3	2.3	10	0.170	<1	<100	20	<1	<1	<10
SEP										
08...	3.1	3.6	16	0.350	--	--	--	--	--	--

K = non-ideal count

50049100 RIO PIEDRAS AT HATO REY, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
30...	600	<1	80	<0.10	<1	<1	<10	<0.010	4	0.17
FEB 1997										
18...	--	--	--	--	--	--	--	--	--	--
MAY										
27...	370	<1	50	<0.10	<1	<1	<10	<0.010	1	0.11
SEP										
08...	--	--	--	--	--	--	--	--	--	--

RIO PUERTO NUEVO BASIN

50049820 LAGUNA SAN JOSE NO. 2 AT SAN JUAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°25'46", long 66°02'10", 0.2 mi (0.3 km) east of Caño de Martín Peña, and 650 ft (200 m) south of Isla Guachinango.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.45 UM-MF (COLS./100 ML) (31616)	STREPTOCOCCI FECAL, (COLS. PER 100 ML) (31679)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)
OCT 1996											
21...	1030	14900	8.3	30.0	11.0	4.5	58	2300	2100	57	17
MAR 1997											
06...	0945	16000	8.4	25.5	18.0	9.2	90	30000	540	95	13
JUN											
23...	1000	30000	8.7	29.5	15.0	9.0	117	4600	720	120	13
SEP											
09...	1000	24000	8.3	31.0	9.00	10.2	137	4500	4900	121	11

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 1996										
21...	--	<0.010	<0.020	0.040	1.6	1.6	1.6	7.2	0.230	9.8
MAR 1997										
06...	<0.010	0.020	<0.020	0.020	1.5	1.7	1.7	7.5	0.140	7.4
JUN										
23...	0.400	0.020	<0.020	0.050	1.3	1.5	1.5	6.0	0.290	8.2
SEP										
09...	0.020	0.024	0.050	0.080	2.2	2.3	2.4	10	0.360	13

RIO PUERTO NUEVO BASIN

50049920 BAHIA DE SAN JUAN NO. 5 AT SAN JUAN, PR

WATER-QUALITY RECORDS

LOCATION--Lat 18°26'37", long 66°05'11", 0.4 mi (0.6 km) west of Puente de la Constitución, and 0.5 mi (0.8 km) south from U.S. Naval Reservation.

DRAINAGE--Indeterminate.

PERIOD OF RECORD--Water years 1974 to present.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)
OCT 1996											
21...	1145	40000	7.9	30.5	23.0	2.4	31	570000	4300	39	17
MAR 1997											
06...	1100	32000	7.3	26.6	22.0	0.89	10	4500000	240000	160	30
JUN											
23...	1200	>50000	7.6	29.0	28.0	6.6	85	K91	230	160	24
SEP											
09...	1140	28000	7.6	33.0	13.0	9.8	73	2600	79000	170	32

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
OCT 1996										
21...	<0.010	<0.010	<0.020	1.40	0.83	2.2	2.3	10	0.280	7.2
MAR 1997										
06...	--	0.010	<0.020	8.70	1.8	10	10	46	1.30	13
JUN										
23...	0.310	0.170	<0.020	3.00	0.45	3.4	3.9	17	0.590	9.6
SEP										
09...	0.020	0.014	0.030	0.600	1.6	2.2	2.3	10	0.220	8.4

K = non-ideal count

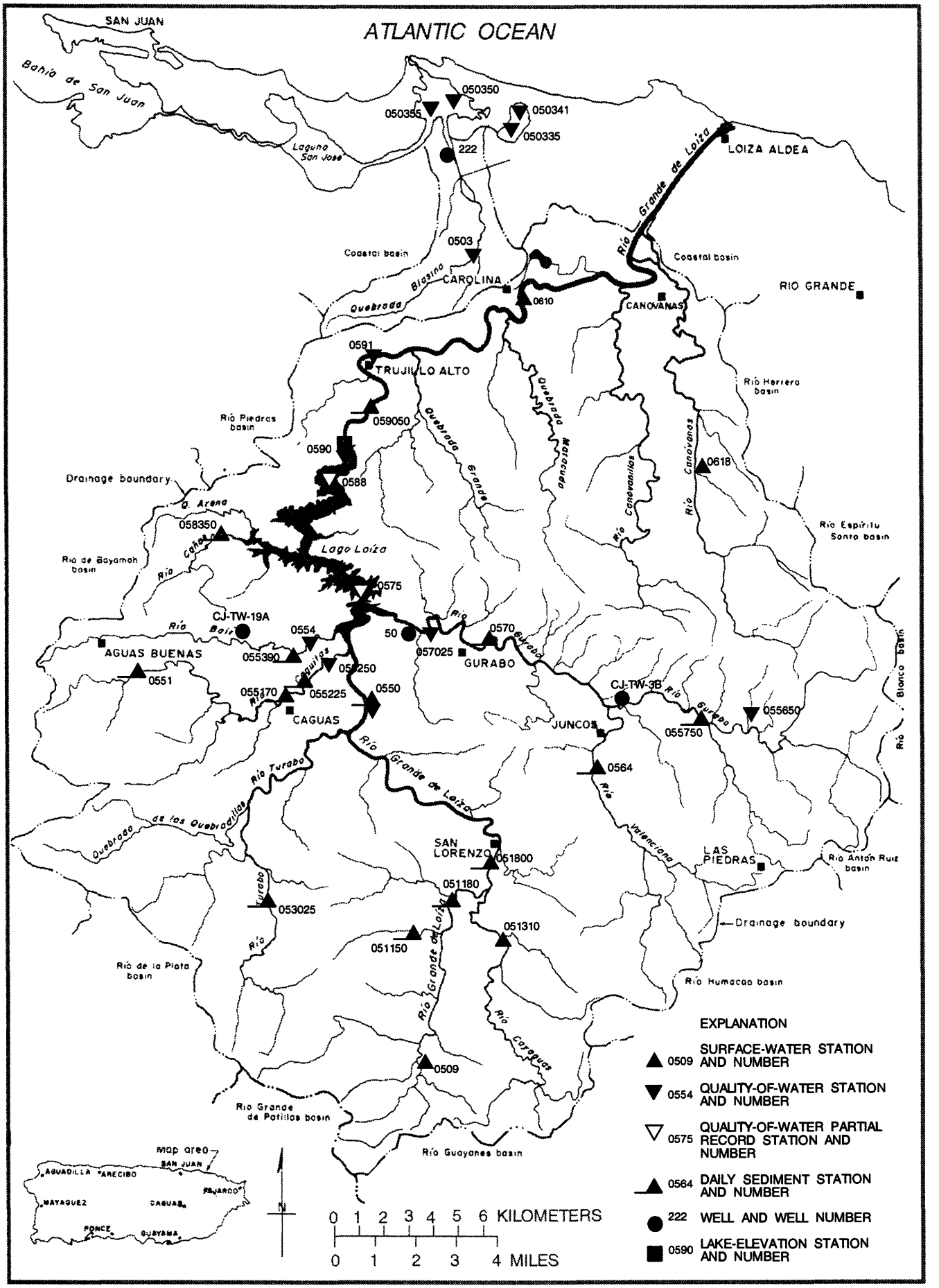

Figure 19.--Río Grande de Loíza basin.

RIO GRANDE DE LOIZA BASIN

50050300 QUEBRADA BLASINA NEAR CAROLINA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°23'27", long 65°58'28", at bridge on Highway 3, 1.4 mi (2.3 km) south of Valle Arriba Heights housing area, and 1.2 mi (1.9 km) west-southwest of Carolina plaza.

DRAINAGE AREA.--2.96 mi² (7.67 km²).

PERIOD OF RECORD.--Water years 1973 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
30...	1300	6.8	526	7.1	28.0	4.4	5.7	72	<10	27000	2700
FEB 1997											
19...	1300	7.6	495	6.5	24.5	2.2	5.9	70	13	49000	310000
JUN											
06...	1145	2.7	625	7.0	28.0	1.2	3.6	46	13	32000	71000
SEP											
10...	1200	4.2	505	7.3	28.5	3.2	5.4	70	<10	5500	K1600

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
30...	200	64	10	31	1	3.7	190	<0.5	17	37
FEB 1997										
19...	--	--	--	--	--	--	200	--	--	--
JUN										
06...	28	6.3	3.0	7.4	0.6	0.62	190	<0.5	2.0	9.6
SEP										
10...	160	49	8.0	29	0.8	4.5	210	--	34	33

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
30...	0.20	28	305	5.56	9	1.10	0.230	1.40	0.560	<0.20
FEB 1997										
19...	--	--	--	--	3	1.00	0.260	1.30	0.590	0.31
JUN										
06...	<0.10	17	160	1.17	<1	0.310	0.170	0.480	3.00	0.45
SEP										
10...	0.10	22	253	2.87	7	1.10	0.170	1.30	0.390	0.50

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
30...	0.73	2.1	9.2	0.120	<1	<100	60	<1	<1	<10
FEB 1997										
19...	0.90	2.2	9.7	0.200	--	--	--	--	--	--
JUN										
06...	3.4	3.9	17	0.590	1	<100	70	<1	<1	<10
SEP										
10...	0.89	2.2	9.5	0.200	--	--	--	--	--	--

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50050300 QUEBRADA BLASINA NEAR CAROLINA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
30...	420	<1	170	<0.10	<1	<1	20	<0.010	7	0.06
FEB 1997										
19...	--	--	--	--	--	--	--	--	--	--
JUN										
06...	470	<1	430	<0.10	<1	<1	<10	<0.010	<1	0.07
SEP										
10...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE LOIZA BASIN

50050900 RIO GRANDE DE LOIZA AT QUEBRADA ARENAS, PR

LOCATION.--Lat 18°07'10", long 65°59'22", Hydrologic Unit 21010005, at intersection of Highways 181 and 9990, 0.2 mi (0.3 km) upstream from confluence with Río Emajagua and about 7.1 mi (11.4 km) southwest of San Lorenzo.

DRAINAGE AREA.--6.00 mi² (15.54 km²).

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 640 ft (195 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	49	19	13	116	15	7.3	7.0	15	7.8	22	26
2	e30	31	18	12	100	15	333	6.9	42	7.5	19	26
3	e45	19	17	12	25	15	37	6.9	64	7.4	18	22
4	29	32	17	12	18	15	15	7.0	e24	7.5	18	21
5	26	23	17	12	29	14	12	6.8	e22	9.9	17	20
6	e26	25	16	11	28	14	11	6.6	e23	11	16	19
7	26	53	17	11	20	13	10	7.6	e20	8.8	16	18
8	e25	23	15	11	18	15	10	7.8	e18	9.8	17	19
9	33	41	15	11	29	13	9.8	7.3	e17	10	20	18
10	62	21	15	11	19	12	9.5	23	e16	8.3	69	17
11	39	59	26	111	25	12	9.4	12	e16	7.7	35	16
12	27	205	15	14	23	13	9.3	17	e16	8.2	29	16
13	24	128	14	11	41	14	9.7	14	e26	13	23	16
14	28	35	14	10	29	15	9.2	12	e20	8.0	20	18
15	40	27	14	9.7	22	19	8.8	13	e15	7.7	21	33
16	25	23	14	9.5	22	15	8.5	12	e11	14	27	17
17	21	21	13	9.3	18	12	8.5	17	e12	13	25	16
18	23	20	13	8.9	18	12	8.3	12	e12	9.9	110	21
19	22	39	12	9.0	17	11	8.2	9.8	e11	27	27	16
20	20	29	12	11	17	10	8.1	9.7	e12	47	21	15
21	19	44	12	19	25	9.9	8.1	9.6	11	145	21	71
22	19	48	12	71	22	9.7	8.0	9.4	9.8	35	352	169
23	18	35	12	14	36	9.1	7.9	8.5	11	48	46	48
24	18	e24	13	14	19	8.7	7.7	8.7	11	24	126	40
25	17	21	14	12	18	8.4	7.7	10	9.6	20	46	24
26	20	20	13	13	50	8.3	7.6	9.0	10	20	31	59
27	20	19	12	10	18	8.2	7.5	17	9.2	17	63	28
28	19	19	12	11	16	9.0	7.4	18	8.7	164	32	22
29	18	19	62	9.8	---	8.5	7.3	32	8.3	28	31	24
30	17	22	28	11	---	7.6	7.2	22	8.0	64	26	66
31	19	---	16	10	---	8.8	---	13	---	30	44	---
TOTAL	804	1174	519	514.2	838	370.2	619.0	372.6	508.6	838.5	1388	941
MEAN	25.9	39.1	16.7	16.6	29.9	11.9	20.6	12.0	17.0	27.0	44.8	31.4
MAX	62	205	62	111	116	19	333	32	64	164	352	169
MIN	17	19	12	8.9	16	7.6	7.2	6.6	8.0	7.4	16	15
AC-FT	1590	2330	1030	1020	1660	734	1230	739	1010	1660	2750	1870
CFSM	4.32	6.52	2.79	2.76	4.99	1.99	3.44	2.00	2.83	4.51	7.46	5.23
IN.	4.98	7.28	3.22	3.19	5.20	2.30	3.84	2.31	3.15	5.20	8.61	5.83

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1997, BY WATER YEAR (WY)

MEAN	39.6	44.4	25.0	19.4	19.0	13.8	13.7	30.3	38.7	37.6	33.9	46.9
MAX	123	122	55.2	56.1	38.0	34.4	27.1	77.5	122	92.3	90.0	202
(WY)	1986	1988	1988	1992	1982	1996	1985	1985	1979	1993	1979	1996
MIN	13.1	8.34	6.65	8.16	6.36	5.07	4.64	9.56	11.3	12.5	9.30	11.8
(WY)	1990	1990	1990	1990	1979	1979	1979	1988	1985	1986	1991	1981

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1978 - 1997	
ANNUAL TOTAL	19708		8887.1			
ANNUAL MEAN	53.8		24.3		30.2	
HIGHEST ANNUAL MEAN					54.1	1996
LOWEST ANNUAL MEAN					14.5	1990
HIGHEST DAILY MEAN	3740	Sep 10	352	Aug 22	3740	Sep 10 1996
LOWEST DAILY MEAN	10	May 28	6.6	May 6	3.1	May 7 1979
ANNUAL SEVEN-DAY MINIMUM	11	May 25	6.9	Apr 30	3.6	May 1 1979
INSTANTANEOUS PEAK FLOW			3620	Apr 2	44000	Sep 10 1996
INSTANTANEOUS PEAK STAGE			9.84	Apr 2	25.93	Sep 10 1996
INSTANTANEOUS LOW FLOW			6.3	May 5	2.8	May 5 1979
ANNUAL RUNOFF (AC-FT)	39090		17630		21880	
ANNUAL RUNOFF (CFSM)	8.97		4.06		5.03	
ANNUAL RUNOFF (INCHES)	122.19		55.10		68.39	
10 PERCENT EXCEEDS	98		41		50	
50 PERCENT EXCEEDS	24		17		15	
90 PERCENT EXCEEDS	13		8.3		7.1	

e Estimated

RIO GRANDE DE LOIZA BASIN

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR

LOCATION.--Lat 18°09'40", long 65°58'58", Hydrologic Unit 21010005, 0.1 mi (0.2 km) upstream from bridge on Highway 181, and 2.8 mi (4.5 km) southwest of San Lorenzo.

DRAINAGE AREA.--3.25 mi² (8.42 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 459 ft (140 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.7	9.4	6.2	4.0	16	3.6	2.3	1.8	2.7	1.6	1.9	6.6
2	16	13	5.6	3.8	17	3.6	24	1.6	4.6	1.3	1.4	6.0
3	7.1	7.5	4.9	3.7	9.2	3.8	13	1.4	7.3	1.1	1.6	3.8
4	6.3	6.7	4.7	3.7	5.8	3.8	4.0	1.3	4.3	1.1	2.6	3.0
5	6.2	6.7	4.3	3.6	9.7	3.6	3.1	1.3	3.8	2.2	2.0	2.5
6	6.2	6.6	4.5	3.5	7.5	3.3	2.6	1.4	4.0	12	1.7	2.2
7	6.6	17	9.1	3.3	6.3	3.1	2.4	1.4	3.5	3.9	1.4	2.1
8	6.7	18	5.2	3.3	5.1	3.2	2.4	1.8	3.1	1.9	1.7	5.3
9	13	14	4.4	3.2	14	3.4	2.3	2.0	3.0	2.0	1.7	3.5
10	25	9.9	4.4	3.1	5.5	3.2	2.2	3.7	2.7	1.3	2.6	2.1
11	15	18	28	9.0	6.9	2.9	2.2	3.0	2.7	1.2	3.9	1.7
12	12	44	12	3.8	9.6	2.9	2.2	3.3	2.7	1.1	2.6	2.9
13	10	34	8.9	3.4	11	2.9	2.8	2.3	4.3	1.2	2.3	2.4
14	9.2	20	7.5	3.0	9.9	2.9	2.2	2.2	3.4	1.1	1.8	7.1
15	9.3	16	7.2	3.0	6.3	4.1	2.0	3.3	2.6	1.1	1.6	11
16	9.4	14	6.9	3.0	5.0	3.4	1.9	3.2	1.9	2.2	2.5	3.6
17	8.5	14	5.7	2.8	4.4	3.0	2.0	12	2.0	2.5	2.5	2.8
18	8.2	12	5.1	2.6	4.0	3.2	2.0	3.1	2.0	2.4	5.1	11
19	8.5	17	4.9	3.0	3.9	3.0	2.0	2.5	1.9	1.9	4.1	4.0
20	8.6	14	4.8	4.6	3.9	2.7	1.9	2.8	2.0	9.7	2.6	3.3
21	7.8	12	4.6	12	4.8	2.6	1.9	2.6	1.9	34	4.9	12
22	7.9	10	4.5	24	4.7	2.6	1.9	2.1	2.0	18	39	17
23	7.9	12	4.4	6.4	11	2.5	1.8	1.9	2.6	5.6	12	23
24	7.3	11	4.6	4.4	4.4	2.5	2.1	1.9	2.7	4.3	e102	28
25	7.2	9.0	6.4	3.9	4.6	2.3	1.9	1.9	1.8	2.0	21	12
26	8.2	7.7	4.4	3.6	4.6	2.3	1.6	1.9	1.8	1.7	8.4	18
27	13	7.0	4.5	3.0	4.0	2.2	1.7	3.4	1.6	1.3	23	9.2
28	9.9	7.3	4.2	7.4	3.8	2.2	1.8	5.0	1.5	7.0	15	5.1
29	8.9	6.4	7.4	4.1	---	2.3	1.8	3.3	1.5	2.5	7.4	4.1
30	7.5	7.1	11	3.5	---	2.3	1.8	3.6	1.5	3.8	5.5	6.6
31	6.9	---	4.7	3.4	---	2.4	---	3.1	---	2.4	17	---
TOTAL	293.0	401.3	205.0	149.1	202.9	91.8	97.8	86.1	83.4	135.4	302.8	221.9
MEAN	9.45	13.4	6.61	4.81	7.25	2.96	3.26	2.78	2.78	4.37	9.77	7.40
MAX	25	44	28	24	17	4.1	24	12	7.3	34	102	28
MIN	6.2	6.4	4.2	2.6	3.8	2.2	1.6	1.3	1.5	1.1	1.4	1.7
AC-FT	581	796	407	296	402	182	194	171	165	269	601	440
CFSM	2.91	4.12	2.03	1.48	2.23	.91	1.00	.85	.86	1.34	3.01	2.28
IN.	3.35	4.59	2.35	1.71	2.32	1.05	1.12	.99	.95	1.55	3.47	2.54

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1997, BY WATER YEAR (WY)

MEAN	10.0	15.0	6.80	4.81	4.20	3.93	2.32	6.72	6.24	6.31	7.15	9.67
MAX	47.8	36.9	30.1	9.94	8.21	20.7	4.88	31.5	21.3	15.0	20.2	27.7
(WY)	1986	1985	1988	1992	1989	1989	1989	1985	1987	1993	1988	1996
MIN	2.75	2.49	1.49	1.74	1.32	1.64	.75	.62	2.12	2.02	1.95	1.36
(WY)	1993	1990	1990	1995	1985	1993	1994	1994	1994	1986	1994	1990

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1984 - 1997	
ANNUAL TOTAL	3797.7		2270.5			
ANNUAL MEAN	10.4		6.22		6.94	
HIGHEST ANNUAL MEAN					12.3	1988
LOWEST ANNUAL MEAN					2.50	1990
HIGHEST DAILY MEAN	326	Sep 10	102	Aug 24	457	Dec 7 1987
LOWEST DAILY MEAN	1.3	Apr 2	1.1	Jul 3	.33	May 20 1994
ANNUAL SEVEN-DAY MINIMUM	1.5	Mar 27	1.3	Jul 9	.37	Apr 26 1994
INSTANTANEOUS PEAK FLOW			1530	Aug 24	7610	Sep 10 1996
INSTANTANEOUS PEAK STAGE			8.76	Aug 24	14.64	Sep 10 1996
INSTANTANEOUS LOW FLOW			.96	Jul 15	.30	May 21 1994
ANNUAL RUNOFF (AC-FT)	7530		4500		5030	
ANNUAL RUNOFF (CFSM)	3.19		1.91		2.13	
ANNUAL RUNOFF (INCHES)	43.47		25.99		29.00	
10 PERCENT EXCEEDS	21		13		12	
50 PERCENT EXCEEDS	6.0		3.8		2.6	
90 PERCENT EXCEEDS	1.7		1.8		1.0	

e Estimated

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1985 to 1986 and water year 1989 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1984 to September 1986 and from October 1989 to current year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1989.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected by local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 7,300 mg/L Oct. 06, 1985; Minimum daily mean, <1 mg/L several days in 1996.

SEDIMENT LOADS: Maximum daily mean, 4,940 tons (4,480 tonnes) May 17, 1985; Minimum daily mean, <0.01 ton (<0.01 tonne) several days.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,260 mg/L August 24, 1997; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 1,270 tons (1,150 tonnes) August 24, 1997; Minimum daily mean, 0.01 ton (0.01 tonnes) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	8.7	8	.19	9.4	6	.15	6.2	7	.12
2	16	75	9.5	13	68	2.8	5.6	8	.12
3	7.1	32	.63	7.5	37	.74	4.9	16	.21
4	6.3	14	.25	6.7	35	.64	4.7	25	.32
5	6.2	13	.21	6.7	35	.63	4.3	13	.15
6	6.2	12	.21	6.6	35	.62	4.5	6	.07
7	6.6	12	.22	17	92	5.9	9.1	47	1.4
8	6.7	15	.26	18	112	7.3	5.2	13	.18
9	13	55	2.7	14	68	2.8	4.4	3	.04
10	25	124	8.5	9.9	25	.66	4.4	3	.04
11	15	17	.73	18	80	5.7	28	327	79
12	12	8	.25	44	247	35	12	5	.17
13	10	5	.15	34	149	16	8.9	2	.05
14	9.2	4	.10	20	33	1.9	7.5	2	.04
15	9.3	5	.12	16	11	.47	7.2	2	.04
16	9.4	5	.12	14	62	2.5	6.9	2	.04
17	8.5	4	.10	14	68	2.9	5.7	4	.06
18	8.2	4	.09	12	12	.39	5.1	8	.11
19	8.5	4	.09	17	78	4.1	4.9	11	.14
20	8.6	4	.09	14	35	1.4	4.8	12	.16
21	7.8	4	.09	12	20	.61	4.6	7	.09
22	7.9	4	.09	10	13	.35	4.5	4	.05
23	7.9	4	.09	12	12	.38	4.4	2	.03
24	7.3	4	.08	11	30	1.1	4.6	2	.03
25	7.2	4	.08	9.0	15	.39	6.4	10	.23
26	8.2	16	.49	7.7	7	.15	4.4	6	.07
27	13	79	3.3	7.0	5	.10	4.5	6	.07
28	9.9	43	1.3	7.3	6	.12	4.2	6	.07
29	8.9	27	.68	6.4	7	.12	7.4	28	.79
30	7.5	6	.13	7.1	7	.14	11	63	2.2
31	6.9	5	.09	---	---	---	4.7	17	.22
TOTAL	293.0	---	30.93	401.3	---	96.06	205.0	---	86.31

RIO GRANDE DE LOIZA BASIN

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	4.0	11	.12	16	82	6.2	3.6	3	.03
2	3.8	10	.11	17	100	7.4	3.6	2	.02
3	3.7	12	.12	9.2	17	.49	3.8	2	.03
4	3.7	14	.14	5.8	4	.07	3.8	6	.06
5	3.6	13	.13	9.7	49	3.2	3.6	13	.12
6	3.5	13	.12	7.5	43	1.0	3.3	13	.12
7	3.3	11	.10	6.3	28	.53	3.1	12	.10
8	3.3	5	.04	5.1	26	.36	3.2	12	.10
9	3.2	2	.02	14	81	4.9	3.4	11	.10
10	3.1	2	.02	5.5	43	.65	3.2	10	.09
11	9.0	62	2.4	6.9	30	.66	2.9	10	.08
12	3.8	10	.10	9.6	50	3.1	2.9	10	.08
13	3.4	3	.03	11	64	2.2	2.9	14	.11
14	3.0	5	.04	9.9	31	.91	2.9	19	.15
15	3.0	10	.09	6.3	24	.42	4.1	24	.28
16	3.0	5	.04	5.0	10	.13	3.4	10	.09
17	2.8	2	.02	4.4	4	.05	3.0	3	.03
18	2.6	2	.02	4.0	3	.03	3.2	3	.03
19	3.0	3	.02	3.9	2	.03	3.0	3	.02
20	4.6	3	.04	3.9	4	.04	2.7	2	.02
21	12	38	2.2	4.8	7	.09	2.6	2	.02
22	24	173	19	4.7	7	.09	2.6	4	.03
23	6.4	32	.61	11	48	2.2	2.5	6	.04
24	4.4	9	.10	4.4	10	.12	2.5	10	.06
25	3.9	8	.09	4.6	13	.16	2.3	11	.07
26	3.6	10	.10	4.6	18	.23	2.3	10	.06
27	3.0	12	.10	4.0	9	.10	2.2	9	.05
28	7.4	50	1.8	3.8	4	.04	2.2	42	.25
29	4.1	9	.11	---	---	---	2.3	33	.20
30	3.5	4	.04	---	---	---	2.3	21	.13
31	3.4	3	.03	---	---	---	2.4	14	.09
TOTAL	149.1	---	27.90	202.9	---	35.40	91.8	---	2.66

RIO GRANDE DE LOIZA BASIN

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	2.3	13	.08	1.8	7	.04	2.7	20	.14
2	24	134	29	1.6	2	.01	4.6	53	.75
3	13	86	4.4	1.4	2	.01	7.3	42	.91
4	4.0	37	.40	1.3	2	.01	4.3	9	.11
5	3.1	25	.22	1.3	2	.01	3.8	3	.04
6	2.6	17	.12	1.4	2	.01	4.0	2	.02
7	2.4	14	.09	1.4	2	.01	3.5	2	.02
8	2.4	21	.14	1.8	6	.03	3.1	2	.02
9	2.3	30	.18	2.0	12	.06	3.0	2	.02
10	2.2	20	.12	3.7	20	.22	2.7	2	.01
11	2.2	14	.08	3.0	10	.08	2.7	2	.01
12	2.2	13	.08	3.3	5	.05	2.7	2	.01
13	2.8	14	.10	2.3	3	.02	4.3	6	.09
14	2.2	15	.09	2.2	3	.02	3.4	2	.02
15	2.0	24	.13	3.3	11	.09	2.6	4	.03
16	1.9	33	.17	3.2	35	.31	1.9	8	.04
17	2.0	20	.10	12	78	4.3	2.0	9	.05
18	2.0	12	.06	3.1	11	.10	2.0	8	.04
19	2.0	13	.07	2.5	3	.02	1.9	6	.03
20	1.9	14	.07	2.8	3	.03	2.0	3	.02
21	1.9	16	.08	2.6	4	.03	1.9	2	.01
22	1.9	18	.09	2.1	3	.02	2.0	1	.01
23	1.8	16	.08	1.9	3	.01	2.6	13	.11
24	2.1	6	.03	1.9	3	.01	2.7	14	.11
25	1.9	2	.01	1.9	2	.01	1.8	3	.01
26	1.6	2	.01	1.9	1	.01	1.8	6	.03
27	1.7	2	.01	3.4	11	.27	1.6	14	.06
28	1.8	3	.01	5.0	36	.51	1.5	8	.03
29	1.8	8	.04	3.3	17	.16	1.5	4	.02
30	1.8	19	.09	3.6	32	.31	1.5	2	.01
31	---	---	---	3.1	27	.23	---	---	---
TOTAL	97.8	---	36.15	86.1	---	7.00	83.4	---	2.78

RIO GRANDE DE LOIZA BASIN

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	1.6	3	.01	1.9	6	.03	6.6	10	.19
2	1.3	4	.01	1.4	7	.03	6.0	9	.14
3	1.1	2	.01	1.6	9	.04	3.8	13	.13
4	1.1	3	.01	2.6	10	.07	3.0	8	.06
5	2.2	16	.10	2.0	3	.02	2.5	4	.03
6	12	75	3.1	1.7	1	.01	2.2	4	.02
7	3.9	17	.20	1.4	4	.01	2.1	3	.02
8	1.9	10	.05	1.7	10	.05	5.3	22	.75
9	2.0	25	.13	1.7	11	.05	3.5	29	.32
10	1.3	19	.07	2.6	9	.07	2.1	4	.02
11	1.2	11	.04	3.9	7	.08	1.7	3	.01
12	1.1	9	.03	2.6	3	.02	2.9	14	.17
13	1.2	7	.02	2.3	1	.01	2.4	12	.09
14	1.1	6	.02	1.8	1	.01	7.1	47	1.2
15	1.1	7	.02	1.6	1	.01	11	55	2.5
16	2.2	8	.04	2.5	1	.01	3.6	20	.20
17	2.5	4	.03	2.5	2	.01	2.8	16	.13
18	2.4	9	.09	5.1	12	.26	11	65	2.9
19	1.9	28	.15	4.1	7	.08	4.0	14	.16
20	9.7	118	3.8	2.6	7	.05	3.3	9	.08
21	34	189	19	4.9	26	.88	12	63	2.8
22	18	79	4.8	39	347	45	17	50	2.4
23	5.6	97	1.8	12	151	5.9	23	149	12
24	4.3	30	.56	e102	1260	e1270	28	105	11
25	2.0	10	.05	21	86	5.7	12	22	.79
26	1.7	7	.03	8.4	41	.95	18	93	6.4
27	1.3	6	.02	23	202	19	9.2	57	1.6
28	7.0	80	3.0	15	115	5.6	5.1	22	.30
29	2.5	5	.04	7.4	12	.24	4.1	14	.15
30	3.8	33	.39	5.5	8	.12	6.6	51	1.2
31	2.4	18	.12	17	87	5.1	---	---	---
TOTAL	135.4	---	37.74	302.8	---	1359.39	221.9	---	47.76
YEAR	2270.5		1770.08						

e Estimated

RIO GRANDE DE LOIZA BASIN

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
AUG 1997							
24...	1801	1070	11000	31700	23	28	33

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
AUG 1997							
24...	43	57	79	94	98	99	100

RIO GRANDE DE LOIZA BASIN

50051150 QUEBRADA BLANCA AT EL JAGUAL--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1996					
13...	1010	34	124	11	78
DEC					
11...	0501	203	8700	4770	72
JAN 1997					
11...	1030	18	143	6.9	98
22...	1040	22	147	8.7	90
JUN					
02...	1045	4.0	309	3.3	98
JUL					
28...	1130	19	412	21	100
AUG					
22...	1100	53	756	108	99
27...	1040	24	626	41	100

RIO GRANDE DE LOIZA BASIN

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR

LOCATION.--Lat 18°10'24", long 65°58'38", Hydrologic Unit 21010005, on left downstream side of bridge on Highway 181, 0.2 mi (0.3 km) upstream from Río Grande de Loíza, and 1.5 mi (2.4 km) southwest of San Lorenzo.

DRAINAGE AREA.--3.74 mi² (9.69 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 330 ft (100 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	4.2	3.6	2.7	21	2.2	1.8	.95	1.6	.51	.99	8.3
2	5.1	4.0	4.0	2.7	12	2.3	28	.90	2.5	.48	.85	5.4
3	4.8	3.6	3.3	2.6	6.4	2.6	12	.89	2.5	.48	.94	4.5
4	4.8	3.4	3.0	2.6	4.5	2.5	3.0	.91	1.5	.48	1.3	2.5
5	4.8	3.7	3.3	2.5	6.4	2.3	2.2	.85	1.3	.59	1.4	1.5
6	4.8	4.6	3.3	2.5	6.2	2.1	1.9	.79	1.3	1.2	1.5	1.4
7	5.0	6.3	3.9	2.5	5.0	2.1	1.9	.78	1.1	.74	.90	1.4
8	5.1	8.7	3.3	2.4	3.9	2.2	1.6	1.0	.88	.61	.87	38
9	6.1	4.2	2.8	2.3	17	2.0	1.6	1.4	.90	.62	.88	7.3
10	8.6	3.1	2.8	2.3	5.1	2.0	1.6	1.7	.78	.60	1.3	2.1
11	6.2	4.2	48	3.6	3.6	1.9	1.5	3.7	.78	.53	2.3	1.5
12	5.3	32	7.4	2.6	3.0	2.0	1.5	1.3	.70	.48	1.5	1.5
13	5.1	15	5.7	2.3	3.5	2.1	1.7	1.1	.98	.58	1.2	1.6
14	5.1	6.2	5.0	2.2	3.0	2.1	1.5	.94	.85	.55	1.1	1.4
15	5.0	5.0	4.1	2.3	2.4	2.3	1.4	.94	.66	.58	1.0	8.6
16	4.9	4.1	4.1	2.2	2.5	2.4	1.5	1.1	.56	.93	1.1	1.3
17	4.6	9.7	3.8	2.2	2.4	2.2	1.5	2.0	.50	.99	1.0	1.1
18	4.3	5.2	3.6	2.2	2.3	2.2	1.4	1.1	.52	.94	1.2	3.8
19	4.6	7.9	3.5	2.4	2.5	2.2	1.3	.90	.56	.91	1.3	1.3
20	4.6	5.8	3.4	3.8	2.4	2.0	1.3	.90	.60	1.0	1.0	1.0
21	4.3	5.0	3.4	13	3.2	2.0	1.3	1.1	.57	9.2	1.4	2.0
22	4.1	11	3.4	47	2.9	1.9	1.3	1.0	.53	8.0	40	1.6
23	3.8	5.6	3.3	7.7	5.9	1.8	1.2	1.0	.63	2.7	5.5	1.4
24	3.8	4.3	3.1	5.6	2.6	1.8	1.2	1.1	1.2	3.8	88	3.3
25	3.5	3.8	3.5	5.6	2.6	1.8	1.1	1.1	.66	1.6	37	1.1
26	3.5	3.3	3.1	4.5	2.6	1.8	1.1	1.1	.62	1.4	7.8	8.0
27	4.0	3.0	3.0	3.9	2.3	1.8	1.1	1.4	.59	1.2	14	1.3
28	4.6	3.7	2.8	4.2	2.2	1.9	.98	2.9	.55	2.3	12	.92
29	4.5	3.4	3.3	4.3	---	2.1	1.1	2.0	.53	1.5	6.0	e.97
30	3.9	3.9	14	3.8	---	2.0	1.0	2.6	.52	1.7	4.6	e1.1
31	3.8	---	3.7	3.5	---	1.8	---	1.6	---	1.2	19	---
TOTAL	148.0	187.9	168.5	154.0	139.4	64.4	81.58	41.05	27.47	48.40	258.93	117.19
MEAN	4.77	6.26	5.44	4.97	4.98	2.08	2.72	1.32	.92	1.56	8.35	3.91
MAX	8.6	32	48	47	21	2.6	28	3.7	2.5	9.2	88	38
MIN	3.5	3.0	2.8	2.2	2.2	1.8	.98	.78	.50	.48	.85	.92
AC-FT	294	373	334	305	276	128	162	81	54	96	514	232
CFSM	1.28	1.67	1.45	1.33	1.33	.56	.73	.35	.24	.42	2.23	1.04
IN.	1.47	1.87	1.68	1.53	1.39	.64	.81	.41	.27	.48	2.58	1.17

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1997, BY WATER YEAR (WY)

MEAN	8.68	12.1	5.11	4.93	3.32	3.02	2.41	6.20	6.53	5.68	6.20	15.8
MAX	36.2	33.4	22.8	23.4	10.3	17.4	6.60	35.8	17.5	20.5	14.5	76.5
(WY)	1986	1988	1988	1992	1984	1989	1985	1985	1996	1993	1996	1996
MIN	2.31	2.72	1.17	1.16	1.23	1.15	.66	.86	.92	1.45	1.51	1.88
(WY)	1987	1990	1990	1990	1990	1992	1995	1995	1997	1994	1994	1990

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1984 - 1997	
ANNUAL TOTAL	4668.25		1436.82			
ANNUAL MEAN	12.8		3.94		6.66	
HIGHEST ANNUAL MEAN					12.4	1996
LOWEST ANNUAL MEAN					3.19	1990
HIGHEST DAILY MEAN	1750	Sep 10	88	Aug 24	1750	Sep 10 1996
LOWEST DAILY MEAN	.93	May 5	.48	Jul 2	.29	Sep 12 1990
ANNUAL SEVEN-DAY MINIMUM	.99	May 1	.51	Jun 28	.41	May 19 1990
INSTANTANEOUS PEAK FLOW			962	Aug 24	15000	Sep 10 1996
INSTANTANEOUS PEAK STAGE			8.14	Aug 24	20.87	Sep 10 1996
INSTANTANEOUS LOW FLOW			.47	Jul 2	.26	May 30 1990
ANNUAL RUNOFF (AC-FT)	9260		2850		4830	
ANNUAL RUNOFF (CFSM)	3.41		1.05		1.78	
ANNUAL RUNOFF (INCHES)	46.43		14.29		24.20	
10 PERCENT EXCEEDS	14		6.2		10	
50 PERCENT EXCEEDS	3.3		2.3		2.0	
90 PERCENT EXCEEDS	1.2		.85		.92	

e Estimated

RIO GRANDE DE LOIZA BASIN

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Water years 1984 to 1986 and water years 1989 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1984 to September 1986 and from October 1989 to current year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1989.

REMARKS.-- Sediment samples were collected by local observer on a weekly basis. During high flow sediment samples were collected by local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 7,300 mg/L Oct. 06, 1985; Minimum daily mean, 1 mg/L several years.

SEDIMENT LOADS: Maximum daily mean, 33,000 tons (29,900 tonnes) Sep. 10, 1996; Minimum daily mean, <0.01 ton (<0.01 tonne) several years.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 502 mg/L August 24, 1997; Minimum daily mean, 1.0 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 475 tons (431 tonnes) August 24, 1997; Minimum daily mean, <0.01 ton (<0.01 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	5.4	5	.07	4.2	1	.01	3.6	8	.08
2	5.1	8	.11	4.0	1	.01	4.0	7	.08
3	4.8	12	.16	3.6	1	.01	3.3	5	.04
4	4.8	17	.22	3.4	1	.01	3.0	3	.02
5	4.8	16	.21	3.7	1	.01	3.3	2	.01
6	4.8	14	.19	4.6	7	.10	3.3	1	.01
7	5.0	11	.15	6.3	21	.41	3.9	2	.02
8	5.1	5	.06	8.7	51	2.7	3.3	4	.04
9	6.1	2	.04	4.2	13	.16	2.8	8	.06
10	8.6	11	.32	3.1	6	.05	2.8	9	.06
11	6.2	2	.04	4.2	8	.13	48	426	308
12	5.3	3	.04	32	223	31	7.4	7	.14
13	5.1	8	.11	15	124	5.3	5.7	3	.05
14	5.1	14	.19	6.2	53	.91	5.0	3	.04
15	5.0	4	.05	5.0	17	.23	4.1	3	.03
16	4.9	1	.01	4.1	13	.15	4.1	3	.04
17	4.6	1	.01	9.7	48	3.5	3.8	5	.05
18	4.3	1	.01	5.2	19	.27	3.6	7	.06
19	4.6	1	.01	7.9	32	.75	3.5	3	.03
20	4.6	1	.01	5.8	15	.24	3.4	1	.01
21	4.3	1	.01	5.0	10	.14	3.4	1	.01
22	4.1	1	.01	11	45	8.0	3.4	4	.03
23	3.8	1	.01	5.6	18	.28	3.3	10	.09
24	3.8	1	.01	4.3	17	.19	3.1	12	.10
25	3.5	1	.01	3.8	15	.15	3.5	13	.12
26	3.5	2	.01	3.3	13	.12	3.1	9	.08
27	4.0	2	.02	3.0	12	.09	3.0	6	.05
28	4.6	2	.02	3.7	10	.10	2.8	7	.05
29	4.5	1	.02	3.4	9	.08	3.3	8	.07
30	3.9	1	.01	3.9	9	.09	14	102	7.6
31	3.8	1	.01	---	---	---	3.7	27	.33
TOTAL	148.0	---	2.15	187.9	---	55.19	168.5	---	317.40

RIO GRANDE DE LOIZA BASIN

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR-Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	2.7	9	.06	21	127	20	2.2	6	.03
2	2.7	6	.05	12	49	2.2	2.3	15	.09
3	2.6	7	.05	6.4	48	.88	2.6	24	.16
4	2.6	9	.06	4.5	10	.12	2.5	7	.05
5	2.5	10	.07	6.4	19	1.2	2.3	3	.02
6	2.5	10	.07	6.2	22	.47	2.1	6	.03
7	2.5	10	.07	5.0	10	.13	2.1	7	.04
8	2.4	8	.05	3.9	10	.10	2.2	4	.02
9	2.3	6	.04	17	78	8.4	2.0	3	.01
10	2.3	5	.03	5.1	14	.20	2.0	3	.01
11	3.6	4	.04	3.6	11	.11	1.9	7	.04
12	2.6	2	.01	3.0	9	.08	2.0	17	.09
13	2.3	2	.01	3.5	6	.06	2.1	19	.10
14	2.2	9	.05	3.0	5	.04	2.1	19	.10
15	2.3	14	.09	2.4	7	.05	2.3	17	.10
16	2.2	11	.07	2.5	11	.08	2.4	15	.09
17	2.2	8	.05	2.4	15	.10	2.2	12	.07
18	2.2	8	.05	2.3	7	.04	2.2	5	.03
19	2.4	8	.05	2.5	4	.03	2.2	2	.01
20	3.8	13	.13	2.4	8	.05	2.0	2	.01
21	13	58	5.0	3.2	13	.12	2.0	2	.01
22	47	262	109	2.9	9	.07	1.9	2	.01
23	7.7	22	.46	5.9	26	.52	1.8	3	.01
24	5.6	10	.16	2.6	17	.12	1.8	3	.02
25	5.6	6	.09	2.6	8	.05	1.8	6	.03
26	4.5	3	.04	2.6	4	.03	1.8	10	.05
27	3.9	3	.03	2.3	3	.02	1.8	6	.03
28	4.2	10	.12	2.2	2	.01	1.9	2	.01
29	4.3	24	.28	---	---	---	2.1	2	.01
30	3.8	8	.08	---	---	---	2.0	2	.01
31	3.5	2	.02	---	---	---	1.8	2	.01
TOTAL	154.0	---	116.38	139.4	---	35.28	64.4	---	1.30

RIO GRANDE DE LOIZA BASIN

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR-Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	1.8	4	.02	.95	5	.01	1.6	5	.02
2	28	211	68	.90	8	.02	2.5	6	.04
3	12	298	12	.89	7	.02	2.5	5	.03
4	3.0	117	.96	.91	5	.01	1.5	4	.02
5	2.2	50	.30	.85	4	.01	1.3	6	.02
6	1.9	22	.11	.79	5	.01	1.3	7	.03
7	1.9	11	.06	.78	6	.01	1.1	5	.01
8	1.6	12	.05	1.0	5	.01	.88	3	.01
9	1.6	15	.06	1.4	5	.02	.90	2	<.01
10	1.6	21	.09	1.7	5	.02	.78	3	.01
11	1.5	27	.11	3.7	10	.16	.78	4	.01
12	1.5	19	.08	1.3	3	.01	.70	5	.01
13	1.7	13	.06	1.1	3	.01	.98	7	.02
14	1.5	9	.04	.94	5	.01	.85	6	.01
15	1.4	9	.04	.94	4	.01	.66	4	.01
16	1.5	8	.03	1.1	3	.01	.56	3	<.01
17	1.5	4	.02	2.0	17	.11	.50	5	.01
18	1.4	2	.01	1.1	21	.06	.52	8	.01
19	1.3	3	.01	.90	13	.03	.56	4	.01
20	1.3	6	.02	.90	5	.01	.60	1	<.01
21	1.3	8	.03	1.1	2	.01	.57	1	<.01
22	1.3	7	.02	1.0	2	.01	.53	1	<.01
23	1.2	5	.02	1.0	3	.01	.63	1	<.01
24	1.2	4	.01	1.1	3	.01	1.2	1	<.01
25	1.1	3	.01	1.1	4	.01	.66	1	<.01
26	1.1	4	.01	1.1	4	.01	.62	1	<.01
27	1.1	4	.01	1.4	5	.03	.59	1	<.01
28	.98	5	.01	2.9	6	.05	.55	1	<.01
29	1.1	3	.01	2.0	4	.02	.53	2	<.01
30	1.0	2	.01	2.6	4	.03	.52	2	<.01
31	---	---	---	1.6	5	.02	---	---	---
TOTAL	81.58	---	82.21	41.05	---	0.77	27.47	---	0.28

RIO GRANDE DE LOIZA BASIN

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR-Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	.51	3	<.01	.99	3	.01	8.3	6	.15
2	.48	4	<.01	.85	3	.01	5.4	2	.03
3	.48	3	<.01	.94	4	.01	4.5	1	.01
4	.48	3	<.01	1.3	4	.01	2.5	1	.01
5	.59	3	<.01	1.4	4	.01	1.5	2	.01
6	1.2	2	.01	1.5	3	.01	1.4	2	.01
7	.74	2	<.01	.90	3	.01	1.4	2	.01
8	.61	2	<.01	.87	2	<.01	38	254	121
9	.62	2	<.01	.88	2	.01	7.3	25	.71
10	.60	1	<.01	1.3	3	.01	2.1	7	.04
11	.53	1	<.01	2.3	4	.02	1.5	5	.02
12	.48	1	<.01	1.5	3	.01	1.5	4	.02
13	.58	1	<.01	1.2	3	.01	1.6	4	.02
14	.55	1	<.01	1.1	2	.01	1.4	4	.01
15	.58	2	<.01	1.0	2	.01	8.6	65	5.0
16	.93	4	.01	1.1	2	.01	1.3	9	.03
17	.99	5	.01	1.0	3	.01	1.1	4	.01
18	.94	11	.03	1.2	3	.01	3.8	11	.22
19	.91	10	.02	1.3	2	.01	1.3	5	.02
20	1.0	7	.02	1.0	1	<.01	1.0	4	.01
21	9.2	47	3.5	1.4	4	.03	2.0	10	.08
22	8.0	36	1.6	40	201	59	1.6	9	.04
23	2.7	8	.06	5.5	18	.32	1.4	5	.02
24	3.8	14	.20	88	502	475	3.3	18	.20
25	1.6	5	.02	37	93	18	1.1	5	.02
26	1.4	4	.02	7.8	14	.30	8.0	32	4.6
27	1.2	3	.01	14	49	3.0	1.3	6	.02
28	2.3	12	.09	12	57	2.2	.92	5	.01
29	1.5	9	.04	6.0	6	.10	e.97	5	e.01
30	1.7	4	.02	4.6	4	.05	e1.1	4	e.01
31	1.2	3	.01	19	88	6.8	---	---	---
TOTAL	48.40	---	5.67	258.93	---	564.99	117.19	---	132.35
YEAR	1436.82		1313.97						

e Estimated

RIO GRANDE DE LOIZA BASIN

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
DEC 1996							
11...	0529	382	7430	7660	25	35	49

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
DEC 1996							
11...	63	74	93	98	99	99	100

RIO GRANDE DE LOIZA BASIN

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1996					
13...	0950	20	190	10	99
DEC					
11...	0500	34	4050	372	89
11...	0614	40	3180	343	97
30...	1030	10	91	2.4	98
JAN 1997					
22...	1010	58	282	44	99
APR					
04...	1000	3.0	98	0.80	30
SEP					
08...	1626	117	1050	332	98
18...	1011	10	353	9.5	98

RIO GRANDE DE LOIZA BASIN

50051310 RIO CAYAGUAS AT CERRO GORDO, PR

LOCATION.--Lat 18°09'13", long 65°57'20", Hydrologic Unit 21010005, at downstream side of bridge on Highway 912, at Barrio Cerro Gordo, 2.8 mi (4.5 km) south of San Lorenzo.

DRAINAGE AREA.--10.2 mi² (26.4 km²).

PERIOD OF RECORD.--October 1977 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 490 ft (150 m), from topographic map. Prior to Oct. 1, 1983, at site 2,000 ft (610 m) downstream at different datum.

REMARKS.--Records poor. Sand removal at a commercial level is practiced at times during the year. This takes place about one hundred feet downstream from the low water control. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e60	61	28	16	162	21	26	13	22	15	14	33
2	e55	56	30	17	371	25	244	12	38	12	14	43
3	e67	41	30	18	124	27	182	11	41	9.7	16	31
4	64	73	36	17	63	29	32	12	16	12	23	28
5	61	43	33	19	60	26	19	9.3	16	13	21	27
6	52	54	39	17	91	23	16	8.4	14	24	19	29
7	56	185	59	17	45	24	17	10	14	11	18	29
8	48	56	42	20	39	25	16	12	11	11	26	37
9	55	61	43	21	84	20	e17	10	11	15	23	37
10	103	56	44	20	64	21	19	31	11	10	128	25
11	71	121	42	114	98	21	18	31	11	10	82	23
12	44	239	26	25	84	28	21	27	9.9	12	59	29
13	41	226	24	21	113	32	22	14	13	20	28	28
14	40	85	25	21	94	34	18	14	17	11	27	86
15	52	46	24	18	72	40	16	24	11	10	64	181
16	41	73	24	20	82	52	16	20	11	31	80	34
17	37	48	24	18	57	29	16	89	11	18	81	28
18	36	45	21	19	37	32	15	13	9.6	13	332	95
19	37	144	24	20	34	27	12	11	16	15	96	33
20	36	96	24	25	32	24	12	17	14	44	35	29
21	36	76	23	40	47	24	11	17	12	399	35	116
22	35	78	21	102	40	26	11	12	9.6	100	489	359
23	35	77	18	16	50	36	13	11	16	30	147	157
24	34	49	22	22	23	32	18	10	21	22	394	150
25	34	55	19	17	23	32	e14	11	13	12	151	28
26	41	39	18	25	50	28	12	13	17	14	32	207
27	39	44	14	21	19	30	10	29	13	11	158	60
28	36	50	17	22	16	26	e10	35	13	247	166	26
29	40	38	34	22	---	23	e12	23	13	39	30	34
30	38	37	75	23	---	24	e13	23	16	178	29	195
31	39	---	17	18	---	27	---	19	---	33	79	---
TOTAL	1463	2352	920	811	2074	868	878	591.7	461.1	1401.7	2896	2217
MEAN	47.2	78.4	29.7	26.2	74.1	28.0	29.3	19.1	15.4	45.2	93.4	73.9
MAX	103	239	75	114	371	52	244	89	41	399	489	359
MIN	34	37	14	16	16	20	10	8.4	9.6	9.7	14	23
AC-FT	2900	4670	1820	1610	4110	1720	1740	1170	915	2780	5740	4400
CFSM	4.63	7.69	2.91	2.56	7.26	2.75	2.87	1.87	1.51	4.43	9.16	7.25
IN.	5.34	8.58	3.36	2.96	7.56	3.17	3.20	2.16	1.68	5.11	10.56	8.09

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 1997, BY WATER YEAR (WY)

MEAN	58.9	69.1	44.5	30.0	29.3	22.2	20.4	43.3	45.4	44.0	48.8	68.7
MAX	176	196	163	50.0	74.1	45.4	46.0	155	140	118	202	298
(WY)	1986	1988	1988	1993	1997	1989	1985	1985	1979	1979	1979	1996
MIN	14.4	19.2	12.5	14.6	11.0	11.3	10.7	9.68	10.9	15.4	14.5	16.9
(WY)	1992	1982	1992	1990	1992	1992	1980	1990	1994	1994	1991	1980

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1977 - 1997	
ANNUAL TOTAL	24058		16933.5			
ANNUAL MEAN	65.7		46.4		43.8	
HIGHEST ANNUAL MEAN					89.7	1979
LOWEST ANNUAL MEAN					18.6	1990
HIGHEST DAILY MEAN	5120	Sep 10	489	Aug 22	5120	Sep 10 1996
LOWEST DAILY MEAN	13	May 29	8.4	May 6	7.1	Feb 4 1981
ANNUAL SEVEN-DAY MINIMUM	14	May 25	10	May 3	8.5	Jun 19 1994
INSTANTANEOUS PEAK FLOW			1690	Feb 2	13200	Aug 31 1979
INSTANTANEOUS PEAK STAGE			11.40	Feb 2	9.44	Aug 31 1979
ANNUAL RUNOFF (AC-FT)	47720		33590		31700	
ANNUAL RUNOFF (CFSM)	6.44		4.55		4.29	
ANNUAL RUNOFF (INCHES)	87.74		61.76		58.28	
10 PERCENT EXCEEDS	102		95		69	
50 PERCENT EXCEEDS	35		27		24	
90 PERCENT EXCEEDS	17		12		12	

e Estimated

RIO GRANDE DE LOIZA BASIN

50051800 RIO GRANDE DE LOIZA AT HWY 183 NEAR SAN LORENZO, PR

LOCATION.--Lat 18°11'09", long 65°57'42", Hydrologic Unit 21010005, at upstream side of bridge on Highway 183 by-pass, 0.4 mi (0.6 km) south from Plaza de San Lorenzo, 1.4 mi (2.2 km), southwest from Escuela Rafael Colón Garcia and 2.0 mi (3.2 km) northwest from Escuela Segunda Unidad de Carlos Zayas.

DRAINAGE AREA.--25.0 mi² (64.8 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 262 ft (80 m), from topographic map.

REMARKS.--Records fair except those for estimated discharges, which are poor. Water purification plant located about 0.2 mi (0.3 km) upstream from gage. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e200	141	102	72	271	55	42	27	60	23	68	98
2	e180	135	97	65	465	54	439	31	89	23	59	98
3	e170	94	89	64	152	58	252	28	167	21	58	87
4	e160	130	89	66	91	61	88	29	88	21	59	83
5	e150	91	87	61	93	55	72	25	66	32	55	79
6	e140	104	83	59	132	54	62	24	63	47	54	73
7	e130	274	106	57	84	54	56	26	54	32	49	71
8	e130	175	83	58	75	61	54	31	47	30	56	89
9	166	147	78	57	122	59	51	38	45	32	63	79
10	317	116	77	56	83	54	51	62	41	29	109	68
11	232	240	230	197	93	62	48	66	42	25	93	65
12	160	735	101	94	84	56	48	61	41	23	81	73
13	141	583	86	68	128	56	55	47	51	35	67	67
14	144	239	80	64	106	57	48	41	70	28	59	92
15	177	174	77	61	84	75	44	58	47	22	61	161
16	155	151	81	53	78	80	41	53	38	36	70	82
17	131	162	75	49	69	58	41	114	36	53	69	73
18	124	133	72	49	63	59	38	64	36	36	203	101
19	129	223	69	47	63	58	34	45	44	40	87	76
20	119	168	67	69	60	49	35	43	49	109	66	66
21	111	172	67	113	81	48	34	51	37	337	66	117
22	106	161	65	294	79	47	32	43	33	148	588	233
23	102	159	63	83	112	43	30	40	37	93	150	153
24	99	127	67	70	70	53	30	36	46	75	476	155
25	94	113	76	61	67	37	30	42	36	56	205	88
26	98	104	67	65	101	36	30	40	38	54	118	148
27	129	100	66	52	67	39	31	45	33	46	203	101
28	103	104	63	61	58	40	29	90	28	237	159	81
29	96	99	92	53	---	46	29	89	27	89	110	81
30	86	107	157	47	---	43	28	86	25	155	95	142
31	84	---	90	51	---	45	---	61	---	90	135	---
TOTAL	4363	5461	2702	2316	3031	1652	1902	1536	1514	2077	3791	2980
MEAN	141	182	87.2	74.7	108	53.3	63.4	49.5	50.5	67.0	122	99.3
MAX	317	735	230	294	465	80	439	114	167	337	588	233
MIN	84	91	63	47	58	36	28	24	25	21	49	65
AC-FT	8650	10830	5360	4590	6010	3280	3770	3050	3000	4120	7520	5910
CFSM	5.63	7.28	3.49	2.99	4.33	2.13	2.54	1.98	2.02	2.68	4.89	3.97
IN.	6.49	8.13	4.02	3.45	4.51	2.46	2.83	2.29	2.25	3.09	5.64	4.43

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1997, BY WATER YEAR (WY)

MEAN	122	131	89.3	101	72.4	49.9	36.4	63.4	116	101	108	200
MAX	266	223	110	192	108	76.5	63.4	186	290	208	196	631
(WY)	1991	1992	1993	1992	1997	1995	1997	1992	1992	1993	1996	1996
MIN	77.6	69.2	69.7	50.1	21.0	17.4	16.8	25.2	42.3	42.3	39.3	59.7
(WY)	1993	1996	1994	1995	1992	1992	1992	1995	1994	1994	1994	1990

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1990 - 1997	
ANNUAL TOTAL	60107		33325			
ANNUAL MEAN	164		91.3		102	
HIGHEST ANNUAL MEAN					154	1996
LOWEST ANNUAL MEAN					67.8	1994
HIGHEST DAILY MEAN	10000	Sep 10	735	Nov 12	10000	Sep 10 1996
LOWEST DAILY MEAN	22	May 30	21	Jul 3	6.3	Apr 29 1992
ANNUAL SEVEN-DAY MINIMUM	26	May 25	24	Jun 28	7.4	Apr 25 1992
INSTANTANEOUS PEAK FLOW			3420	Aug 24	56800	Sep 10 1996
INSTANTANEOUS PEAK STAGE			12.93	Aug 24	35.62	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	119200		66100		74220	
ANNUAL RUNOFF (CFSM)	6.57		3.65		4.10	
ANNUAL RUNOFF (INCHES)	89.44		49.59		55.68	
10 PERCENT EXCEEDS	269		160		173	
50 PERCENT EXCEEDS	100		68		61	
90 PERCENT EXCEEDS	44		34		24	

e Estimated

50051800 RIO GRANDE DE LOIZA AT HWY 183 NEAR SAN LORENZO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1990 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: February 1990 to current year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1990.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected by a local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,530 mg/L September 10, 1996; Minimum daily mean, 5 mg/L Several days.

SEDIMENT LOADS: Maximum daily mean, 80,600 tons (73,100 tonnes) September 10, 1996; Minimum daily mean, 0.20 ton (0.18 tonne) May 05, 1992.

EXTREMES FOR CURRENT YEAR 1997--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,650 mg/L August 22, 1997; Minimum daily mean, 8 mg/L April 17-18, 1997.

SEDIMENT LOADS: Maximum daily mean, 4,040 tons (3,665 tonnes) November 12, 1996; Minimum daily mean, 0.76 ton (0.69 tonne) April 18, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	e200	60	e32	141	217	82	102	82	22
2	e180	61	e31	135	107	39	97	117	31
3	e170	64	e30	94	62	16	89	156	37
4	e160	55	e24	130	100	39	89	184	44
5	e150	66	e28	91	77	19	87	131	31
6	e140	84	e33	104	61	17	83	87	19
7	e130	103	e38	274	435	728	106	86	25
8	e130	118	e41	175	179	89	83	85	19
9	166	150	70	147	135	61	78	78	16
10	317	432	453	116	97	32	77	73	15
11	232	285	186	240	323	472	230	179	207
12	160	159	69	735	1560	4040	101	54	15
13	141	99	38	583	780	1710	86	45	11
14	144	63	25	239	171	114	80	58	13
15	177	139	71	174	76	36	77	78	16
16	155	127	53	151	99	41	81	85	19
17	131	182	64	162	132	64	75	35	7.2
18	124	134	45	133	64	23	72	15	2.9
19	129	105	37	223	236	204	69	18	3.4
20	119	82	27	168	118	54	67	23	4.1
21	111	70	21	172	163	98	67	19	3.5
22	106	80	23	161	143	66	65	16	2.8
23	102	93	26	159	137	61	63	14	2.4
24	99	104	28	127	58	20	67	17	3.2
25	94	112	29	113	37	11	76	23	4.8
26	98	105	28	104	63	18	67	30	5.4
27	129	185	64	100	96	26	66	38	6.7
28	103	189	52	104	63	17	63	38	6.4
29	96	197	51	99	42	11	92	63	20
30	86	206	48	107	56	16	157	570	285
31	84	215	49	---	---	---	90	59	14
TOTAL	4363	---	1814	5461	---	8224	2702	---	911.8

e Estimated

RIO GRANDE DE LOIZA BASIN

50051800 RIO GRANDE DE LOIZA AT HWY 183 NEAR SAN LORENZO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	72	67	13	271	514	843	55	85	13
2	65	77	14	465	732	2250	54	90	13
3	64	70	12	152	117	53	58	91	14
4	66	60	11	91	54	13	61	82	14
5	61	44	7.3	93	52	20	55	78	12
6	59	31	5.0	132	217	78	54	99	14
7	57	26	4.0	84	176	39	54	113	17
8	58	42	6.7	75	135	28	61	84	14
9	57	64	9.8	122	133	47	59	60	9.4
10	56	60	8.9	83	79	18	54	50	7.4
11	197	1480	1130	93	89	23	62	82	14
12	94	1110	294	84	94	23	56	129	20
13	68	431	80	128	76	26	56	150	23
14	64	183	32	106	54	15	57	163	25
15	61	89	15	84	47	11	75	150	30
16	53	108	15	78	42	8.9	80	135	29
17	49	133	18	69	42	7.7	58	125	19
18	49	92	12	63	64	11	59	136	22
19	47	59	7.4	63	88	15	58	146	23
20	69	38	7.2	60	73	12	49	141	19
21	113	92	45	81	59	13	48	136	17
22	294	483	800	79	51	11	47	132	17
23	83	74	17	112	78	25	43	128	15
24	70	70	13	70	28	5.3	53	126	20
25	61	65	11	67	22	4.0	37	101	10
26	65	61	11	101	184	77	36	81	7.9
27	52	58	8.1	67	96	17	39	67	7.0
28	61	57	9.4	58	82	13	40	60	6.5
29	53	61	8.7	---	---	---	46	53	6.6
30	47	82	10	---	---	---	43	46	5.4
31	51	111	15	---	---	---	45	40	4.9
TOTAL	2316	---	2650.5	3031	---	3706.9	1652	---	469.1

RIO GRANDE DE LOIZA BASIN

50051800 RIO GRANDE DE LOIZA AT HWY 183 NEAR SAN LORENZO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	42	33	3.7	26	16	1.1	60	151	24
2	439	741	3170	30	22	1.8	89	136	32
3	252	321	364	27	31	2.3	167	139	66
4	88	78	19	29	43	3.3	88	67	16
5	72	41	8.0	25	56	3.7	66	42	7.5
6	62	22	3.7	24	55	3.5	63	33	5.5
7	56	12	1.9	26	54	3.8	54	41	6.0
8	54	10	1.5	31	61	5.1	47	55	7.0
9	51	9	1.3	38	76	7.8	45	69	8.4
10	51	10	1.3	62	129	22	41	67	7.4
11	48	10	1.3	66	229	40	42	62	6.9
12	48	12	1.5	61	339	56	41	33	3.7
13	55	14	2.1	47	251	32	51	66	11
14	48	15	2.0	41	167	19	70	42	8.1
15	44	12	1.5	58	101	16	47	48	6.1
16	41	10	1.1	53	62	8.9	38	47	4.7
17	37	8	.82	114	202	73	36	62	5.8
18	34	8	.76	64	285	49	36	87	7.8
19	32	18	1.6	45	271	33	44	127	15
20	33	42	3.8	43	258	30	49	174	23
21	32	68	5.8	51	246	34	37	104	11
22	30	30	2.5	43	234	27	33	47	4.2
23	29	13	.98	40	207	22	37	26	2.6
24	28	10	.73	36	120	12	46	39	4.8
25	29	9	.71	42	65	7.5	36	69	6.7
26	28	15	1.2	40	43	4.8	38	144	15
27	30	27	2.2	45	66	9.4	33	232	20
28	29	37	2.8	90	139	34	28	146	11
29	28	21	1.6	89	155	38	27	82	5.9
30	28	12	.93	86	173	40	25	51	3.4
31	---	---	---	61	164	27	---	---	---
TOTAL	1878	---	3610.33	1533	---	667.0	1514	---	356.5

RIO GRANDE DE LOIZA BASIN

50051800 RIO GRANDE DE LOIZA AT HWY 183 NEAR SAN LORENZO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	23	53	3.3	68	81	15	98	21	5.7
2	23	59	3.6	59	84	13	98	13	3.4
3	21	66	3.8	58	91	14	87	13	3.0
4	21	73	4.1	59	91	14	83	39	8.7
5	32	82	7.1	55	58	8.5	79	98	21
6	47	92	12	54	34	5.0	73	111	22
7	32	96	8.4	49	17	2.3	71	114	22
8	30	71	5.7	56	9	1.4	89	141	37
9	32	51	4.4	63	31	5.1	79	145	32
10	29	36	2.8	109	177	59	68	105	19
11	25	31	2.0	93	252	65	65	130	23
12	23	59	3.6	81	66	15	73	162	32
13	35	122	12	67	19	3.4	67	160	29
14	28	190	14	59	19	2.9	92	154	39
15	22	97	5.8	61	21	3.5	161	194	90
16	36	54	5.5	70	22	4.2	82	137	30
17	53	82	11	69	26	5.1	73	120	24
18	36	63	6.0	203	268	237	101	111	31
19	40	47	5.1	87	34	8.1	76	94	19
20	109	75	31	66	16	2.9	66	65	12
21	337	779	1100	66	31	5.7	117	93	38
22	148	346	187	588	1650	3910	233	286	235
23	93	93	25	150	157	66	153	145	72
24	75	54	11	476	852	3150	155	217	97
25	56	22	3.4	205	282	223	88	109	26
26	54	17	2.5	118	47	15	148	131	65
27	46	15	1.8	203	334	263	101	129	35
28	237	453	849	159	565	269	81	118	26
29	89	51	13	110	42	13	81	107	23
30	155	345	190	95	22	5.6	142	132	64
31	90	124	31	135	86	34	---	---	---
TOTAL	2077	---	2564.9	3791	---	8438.7	2980	---	1183.8
YEAR	33298		34597.53						

RIO GRANDE DE LOIZA BASIN

50051800 RIO GRANDE DE LOIZA AT HWY 183 NEAR SAN LORENZO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
NOV 1996							
12...	0800	1580	7010	29900	13	16	21
JAN 1997							
24...	1135	69	1320	246	41	51	61
FEB							
26...	0915	206	2590	1440	11	13	17
JUL							
21...	1010	776	4140	8680	34	39	48
28...	1000	625	4620	7800	34	40	50
AUG							
27...	1000	304	940	771	69	79	81

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
NOV 1996							
12...	30	48	72	94	99	100	100
JAN 1997							
24...	79	82	99	100	100	100	100
FEB							
26...	28	47	78	98	100	100	100
JUL							
21...	61	74	94	98	99	100	100
28...	64	79	93	98	100	100	100
AUG							
27...	88	90	97	99	99	100	100

RIO GRANDE DE LOIZA BASIN

50051800 RIO GRANDE DE LOIZA AT HWY 183 NEAR SAN LORENZO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1996					
12...	1445	526	900	1280	96
DEC					
30...	1250	134	853	308	94
JAN 1997					
11...	0940	340	3090	2840	93
MAR					
17...	1030	57	122	19	82
MAY					
12...	0950	83	379	85	99
JUL					
30...	1030	151	397	162	96
AUG					
25...	1030	189	142	72	98

RIO GRANDE DE LOIZA BASIN

50053025 RIO TURABO ABOVE BORINQUEN, PR

LOCATION.--Lat 18°09'35", long 66°02'26", Hydrologic Unit 21010005, on left bank at Highway 765, 1.2 mi (1.9 km) south of Villa Borinquen, 8.1 mi (13.0 km) upstream from Río Grande de Loíza.

DRAINAGE AREA.--7.14 mi² (18.49 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1990 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 492 ft (150 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	20	25	21	54	16	11	7.9	12	6.9	11	15
2	27	22	19	21	63	16	69	7.7	26	6.7	10	16
3	28	17	17	32	29	17	31	7.6	54	6.5	9.6	13
4	26	18	16	28	21	17	15	7.7	19	6.3	10	13
5	25	17	16	24	21	16	13	7.6	13	8.0	9.2	12
6	24	17	e17	23	20	16	12	7.6	12	14	8.7	12
7	24	28	24	22	20	15	11	7.7	11	8.0	8.3	12
8	25	27	17	22	18	16	11	8.6	9.9	7.6	8.6	29
9	29	21	16	21	28	16	11	7.9	9.7	9.1	9.0	15
10	58	17	15	21	20	15	10	14	9.2	7.8	13	12
11	29	49	115	49	23	14	11	9.0	9.9	7.2	11	11
12	23	137	32	26	22	14	10	11	9.2	6.8	10	12
13	22	90	26	23	38	14	11	8.7	12	7.3	9.6	11
14	22	38	23	21	28	13	10	8.0	19	6.6	8.6	14
15	23	26	22	21	23	17	9.7	12	9.7	6.5	8.8	14
16	21	22	21	20	22	21	9.4	11	8.6	17	11	11
17	19	28	19	20	19	15	9.2	33	8.1	12	9.8	11
18	19	22	18	20	18	15	9.1	11	8.8	9.0	25	14
19	20	25	17	21	19	15	8.8	8.5	12	13	13	11
20	19	24	17	31	18	13	8.6	8.5	9.8	36	9.4	10
21	18	44	17	60	27	13	8.5	9.2	8.5	90	9.9	29
22	17	28	16	94	24	12	8.4	7.8	7.8	26	166	35
23	17	24	16	27	27	12	8.1	7.6	9.0	20	25	26
24	16	22	17	26	19	12	8.1	7.8	11	14	102	27
25	15	19	17	23	20	11	8.2	7.9	8.5	11	45	16
26	21	18	16	21	24	11	7.8	7.2	8.3	10	24	19
27	31	17	17	17	18	11	8.3	11	7.6	9.4	22	15
28	23	21	16	26	17	13	8.4	13	7.3	43	18	13
29	18	18	26	19	---	13	8.3	24	7.1	15	16	13
30	17	26	44	17	---	12	8.1	17	7.1	19	15	13
31	17	---	22	17	---	11	---	12	---	14	17	---
TOTAL	721	902	716	834	700	442	373.0	329.5	365.1	473.7	673.5	474
MEAN	23.3	30.1	23.1	26.9	25.0	14.3	12.4	10.6	12.2	15.3	21.7	15.8
MAX	58	137	115	94	63	21	69	33	54	90	166	35
MIN	15	17	15	17	17	11	7.8	7.2	7.1	6.3	8.3	10
MED	22	22	17	22	22	14	9.5	8.5	9.7	9.4	11	13
AC-FT	1430	1790	1420	1650	1390	877	740	654	724	940	1340	940
CFSM	3.26	4.21	3.23	3.77	3.50	2.00	1.74	1.49	1.70	2.14	3.04	2.21
IN.	3.76	4.70	3.73	4.35	3.65	2.30	1.94	1.72	1.90	2.47	3.51	2.47

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1997, BY WATER YEAR (WY)

MEAN	23.9	23.6	17.6	22.6	17.1	12.0	8.77	14.6	27.0	23.8	21.7	43.8
MAX	48.2	37.9	23.1	47.5	25.0	18.8	12.4	31.9	67.9	54.6	41.4	123
(WY)	1991	1992	1991	1992	1997	1996	1997	1993	1996	1993	1996	1996
MIN	10.3	18.6	10.6	7.85	8.93	7.35	6.18	6.11	9.59	8.42	6.98	14.1
(WY)	1994	1996	1994	1990	1990	1993	1990	1994	1991	1995	1994	1990

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1990 - 1997	
ANNUAL TOTAL	14079.8		7003.8			
ANNUAL MEAN	38.5		19.2		22.2	
HIGHEST ANNUAL MEAN					38.1	1996
LOWEST ANNUAL MEAN					12.1	1994
HIGHEST DAILY MEAN	1940	Sep 10	166	Aug 22	1940	Sep 10 1996
LOWEST DAILY MEAN	7.2	May 31	6.3	Jul 4	3.3	Aug 17 1994
ANNUAL SEVEN-DAY MINIMUM	7.6	May 28	6.8	Jun 28	3.8	Aug 11 1994
INSTANTANEOUS PEAK FLOW			1020	Aug 24	15200	Sep 10 1996
INSTANTANEOUS PEAK STAGE			10.81	Aug 24	22.60	Sep 10 1996
INSTANTANEOUS LOW FLOW			2.6	Jul 17	2.6	Jul 17 1997
ANNUAL RUNOFF (AC-FT)	27930		13890		16090	
ANNUAL RUNOFF (CFSM)	5.39		2.69		3.11	
ANNUAL RUNOFF (INCHES)	73.36		36.49		42.26	
10 PERCENT EXCEEDS	68		28		34	
50 PERCENT EXCEEDS	17		16		11	
90 PERCENT EXCEEDS	9.1		8.1		5.9	

e Estimated

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1990 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: January 1990 to current year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1990.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediments samples were collected by local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 9,230 mg/L September 10, 1996; Minimum daily mean, 1 mg/L Several years.

SEDIMENT LOADS: Maximum daily mean, 80,900 tons (73,400 tonnes) September 10, 1996; Minimum daily mean, 0.01 ton (0.01 tonne) Several days.

EXTREMES FOR CURRENT YEAR 1997.
SEDIMENT CONCENTRATION: Maximum daily mean, 693 mg/L August 22, 1997; Minimum daily mean, 1 mg/L July 13-15, 1997.

SEDIMENT LOADS: Maximum daily mean, 732 tons (664 tonnes) August 22, 1997; Minimum daily mean, 0.02 ton (0.02 tonne) July 13-15, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	28	30	2.3	20	35	2.0	25	26	2.0
2	27	30	2.2	22	35	2.2	19	11	.55
3	28	30	2.2	17	25	1.1	17	9	.43
4	26	30	2.1	18	24	1.2	16	8	.36
5	25	30	2.0	17	24	1.1	16	8	.32
6	24	30	1.9	17	23	1.0	e17	8	e.35
7	24	30	2.0	28	67	9.1	24	21	1.6
8	25	30	2.0	27	53	5.8	17	9	.42
9	29	40	3.3	21	34	2.0	16	10	.44
10	58	162	39	17	25	1.2	15	12	.49
11	29	179	15	49	166	54	115	346	264
12	23	83	5.2	137	427	225	32	43	3.9
13	22	48	2.8	90	222	69	26	18	1.2
14	22	30	1.7	38	80	8.7	23	16	.96
15	23	18	1.1	26	68	4.7	22	18	1.0
16	21	15	.84	22	61	3.6	21	20	1.1
17	19	14	.73	28	71	7.5	19	22	1.1
18	19	13	.65	22	33	1.9	18	23	1.1
19	20	11	.58	25	68	4.8	17	23	1.1
20	19	8	.43	24	29	1.9	17	15	.70
21	18	7	.32	44	125	33	17	9	.41
22	17	5	.24	28	99	7.7	16	6	.24
23	17	4	.18	24	41	2.7	16	4	.19
24	16	3	.14	22	36	2.3	17	4	.17
25	15	3	.12	19	21	1.1	17	3	.15
26	21	19	3.6	18	17	.83	16	4	.17
27	31	57	9.1	17	15	.71	17	5	.24
28	23	74	6.0	21	22	1.3	16	7	.28
29	18	70	3.5	18	16	.79	26	40	4.7
30	17	33	1.5	26	38	2.9	44	103	22
31	17	24	1.2	---	---	---	22	27	1.6
TOTAL	721	---	113.93	902	---	461.13	716	---	313.27

e Estimated

RIO GRANDE DE LOIZA BASIN

50053025 RIO TURABO ABOVE BORINQUEN, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	21	25	1.4	54	135	39	16	13	.55
2	21	30	1.7	63	212	53	16	10	.45
3	32	55	5.5	29	154	13	17	9	.44
4	28	39	3.0	21	115	6.6	17	9	.41
5	24	29	1.9	21	115	6.4	16	8	.36
6	23	32	2.0	20	108	5.8	16	8	.34
7	22	35	2.1	20	58	3.0	15	7	.29
8	22	36	2.1	18	28	1.4	16	7	.30
9	21	37	2.1	28	36	3.4	16	7	.31
10	21	37	2.1	20	7	.35	15	7	.28
11	49	99	19	23	27	1.8	14	7	.26
12	26	41	2.9	22	23	1.6	14	8	.31
13	23	35	2.1	38	139	15	14	9	.35
14	21	28	1.6	28	116	8.9	13	12	.42
15	21	22	1.2	23	94	5.8	17	25	1.2
16	20	21	1.2	22	94	5.6	21	30	1.8
17	20	23	1.2	19	98	5.1	15	9	.39
18	20	25	1.3	18	100	5.0	15	13	.57
19	21	28	1.7	19	65	3.3	15	30	1.2
20	31	51	4.8	18	34	1.7	13	27	.98
21	60	201	65	27	26	2.0	13	24	.81
22	94	231	106	24	30	2.0	12	21	.68
23	27	42	3.1	27	39	3.0	12	18	.56
24	26	53	4.2	19	13	.68	12	13	.40
25	23	71	4.4	20	22	1.3	11	9	.28
26	21	47	2.7	24	35	2.6	11	6	.19
27	17	30	1.4	18	20	.96	11	6	.19
28	26	55	5.6	17	16	.73	13	6	.20
29	19	28	1.5	---	---	---	13	6	.21
30	17	25	1.1	---	---	---	12	6	.19
31	17	24	1.1	---	---	---	11	6	.18
TOTAL	834	---	257.0	700	---	199.02	442	---	15.10

RIO GRANDE DE LOIZA BASIN

50053025 RIO TURABO ABOVE BORINQUEN, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	11	6	.17	7.9	25	.54	12	16	.50
2	69	442	380	7.7	25	.53	26	47	4.9
3	31	103	12	7.6	20	.40	54	101	18
4	15	11	.47	7.7	14	.29	19	30	1.6
5	13	21	.72	7.6	10	.22	13	18	.65
6	12	26	.85	7.6	9	.19	12	14	.46
7	11	28	.87	7.7	9	.18	11	12	.35
8	11	30	.91	8.6	9	.22	9.9	11	.28
9	11	31	.90	7.9	10	.22	9.7	9	.24
10	10	32	.89	14	9	.35	9.2	9	.23
11	11	30	.86	9.0	3	.06	9.9	10	.27
12	10	13	.35	11	15	.49	9.2	11	.26
13	11	4	.13	8.7	8	.18	12	16	.58
14	10	1	.04	8.0	4	.09	19	31	2.1
15	9.7	1	.04	12	14	.48	9.7	12	.31
16	9.4	2	.05	11	14	.43	8.6	10	.22
17	9.2	4	.09	33	34	8.0	8.1	9	.20
18	9.1	7	.17	11	7	.19	8.8	9	.21
19	8.8	13	.31	8.5	6	.14	12	15	.54
20	8.6	23	.55	8.5	7	.18	9.8	12	.33
21	8.5	26	.59	9.2	11	.28	8.5	8	.18
22	8.4	26	.58	7.8	9	.19	7.8	8	.17
23	8.1	25	.55	7.6	8	.17	9.0	10	.26
24	8.1	25	.55	7.8	9	.18	11	57	1.7
25	8.2	25	.55	7.9	9	.18	8.5	15	.37
26	7.8	25	.52	7.2	8	.16	8.3	5	.10
27	8.3	24	.55	11	15	.78	7.6	9	.18
28	8.4	24	.55	13	29	1.1	7.3	13	.26
29	8.3	24	.54	24	41	3.8	7.1	18	.35
30	8.1	25	.54	17	25	1.2	7.1	25	.48
31	---	---	---	12	15	.47	---	---	---
TOTAL	373.0	---	405.89	329.5	---	21.89	365.1	---	36.28

RIO GRANDE DE LOIZA BASIN

50053025 RIO TURABO ABOVE BORINQUEN, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	6.9	33	.63	11	5	.15	15	10	.41
2	6.7	37	.68	10	4	.12	16	19	.86
3	6.5	40	.71	9.6	5	.12	13	5	.17
4	6.3	38	.65	10	5	.14	13	6	.22
5	8.0	10	.22	9.2	6	.14	12	9	.30
6	14	19	.80	8.7	6	.15	12	13	.43
7	8.0	10	.22	8.3	7	.16	12	15	.48
8	7.6	8	.17	8.6	8	.17	29	70	16
9	9.1	11	.27	9.0	8	.20	15	12	.54
10	7.8	7	.14	13	15	.64	12	7	.23
11	7.2	4	.07	11	15	.44	11	9	.26
12	6.8	2	.04	10	13	.35	12	11	.33
13	7.3	1	.02	9.6	12	.31	11	11	.33
14	6.6	1	.02	8.6	12	.28	14	19	.78
15	6.5	1	.02	8.8	13	.30	14	21	.86
16	17	27	3.1	11	13	.37	11	11	.34
17	12	21	.79	9.8	12	.32	11	6	.18
18	9.0	12	.29	25	43	5.2	14	16	.67
19	13	24	1.3	13	17	.63	11	21	.64
20	36	85	18	9.4	13	.32	10	15	.43
21	90	252	100	9.9	13	.37	29	58	10
22	26	41	3.5	166	693	732	35	57	5.7
23	20	43	2.4	25	38	2.8	26	41	3.1
24	14	45	1.7	102	329	309	27	67	5.0
25	11	38	1.1	45	95	14	16	36	1.6
26	10	27	.76	24	34	2.3	19	28	1.5
27	9.4	18	.46	22	30	1.8	15	22	.91
28	43	99	28	18	13	.64	13	15	.52
29	15	9	.37	16	10	.43	13	11	.38
30	19	28	1.6	15	10	.39	13	8	.28
31	14	13	.49	17	14	.70	---	---	---
TOTAL	473.7	---	168.52	673.5	---	1074.94	474	---	53.45
YEAR	7003.8		3120.42						

RIO GRANDE DE LOIZA BASIN

50053025 RIO TURABO ABOVE BORINQUEN,PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OD SUSPENDED-SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
AUG 1997							
22...	0445	482	9750	12700	22	26	43

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINNER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
AUG 1997							
22...	59	77	90	98	100	100	100

RIO GRANDE DE LOIZA BASIN

50053025 RIO TURABO ABOVE BORINQUEN,PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
12...	1505	22	73	4.3	97
APR 1997					
02...	1745	364	6940	6820	94
17...	1347	9.6	83	2.2	98
AUG					
22...	1546	201	77	42	99
25...	1300	38	75	7.7	98
SEP					
24...	1500	21	64	3.7	97

RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR

LOCATION.--Lat 18°14'33", long 66°00'34", Hydrologic Unit 21010005, on right bank 250 ft (76 m) upstream from bridge on Highway 189, 1.2 mi (1.9 km) downstream from Río Turabo, and 1.8 mi (2.9 km) east of Plaza de Caguas.

DRAINAGE AREA.--89.8 mi² (232.6 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1959 (low-flow measurement only), February to November 1959 (monthly measurements only), December 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 143.28 ft (43.672 m) above mean sea level.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e320	317	222	132	625	78	76	29	73	29	96	145
2	e309	349	216	106	782	78	823	30	85	25	76	126
3	e320	273	172	102	258	79	691	34	288	26	79	114
4	e300	293	165	107	124	97	158	34	178	23	75	95
5	e286	258	158	92	117	83	124	30	98	29	66	90
6	e278	279	147	89	225	80	103	28	79	59	64	86
7	e275	520	193	83	153	75	91	28	e66	75	52	88
8	e290	373	154	84	133	88	88	40	e56	38	56	295
9	e340	361	139	87	212	84	82	55	e54	42	62	179
10	e650	325	135	79	151	74	81	98	e52	49	129	87
11	e457	438	538	290	146	71	77	137	e54	35	157	69
12	363	1260	178	161	109	75	72	89	e53	29	103	85
13	326	1050	123	95	208	85	82	87	e65	42	87	99
14	326	345	115	87	152	87	78	74	e108	45	64	109
15	350	249	109	82	120	116	69	75	e54	30	62	239
16	331	210	116	84	98	136	63	80	e42	37	78	113
17	291	263	107	77	87	111	62	171	e37	110	82	79
18	280	215	101	72	81	98	61	117	36	58	315	113
19	289	336	99	71	84	113	58	57	38	63	154	103
20	275	285	97	114	82	88	55	44	69	146	88	67
21	264	296	97	e250	129	84	60	57	51	679	70	126
22	254	509	96	e400	120	79	50	48	38	471	1420	348
23	251	327	93	224	171	74	43	43	49	191	344	344
24	249	248	94	182	106	73	41	45	100	178	1200	236
25	240	222	130	168	95	75	40	43	55	120	613	116
26	265	191	104	128	140	63	40	39	45	93	199	225
27	355	180	102	99	102	67	40	45	46	87	274	177
28	285	208	103	105	83	71	33	118	36	444	292	120
29	294	194	129	112	---	89	30	114	32	199	156	97
30	274	234	405	86	---	82	30	162	29	246	126	205
31	242	---	212	86	---	75	---	102	---	146	195	---
TOTAL	9629	10608	4849	3934	4893	2628	3401	2153	2066	3844	6834	4375
MEAN	311	354	156	127	175	84.8	113	69.5	68.9	124	220	146
MAX	650	1260	538	400	782	136	823	171	288	679	1420	348
MIN	240	180	93	71	81	63	30	28	29	23	52	67
AC-FT	19100	21040	9620	7800	9710	5210	6750	4270	4100	7620	13560	8680
CFSM	3.46	3.94	1.74	1.41	1.95	.94	1.26	.77	.77	1.38	2.45	1.62
IN.	3.99	4.39	2.01	1.63	2.03	1.09	1.41	.89	.86	1.59	2.83	1.81

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997, BY WATER YEAR (WY)

MEAN	355	315	220	145	109	91.2	89.7	227	247	229	266	317
MAX	1910	1131	714	559	291	306	355	863	1283	660	949	1438
(WY)	1971	1988	1988	1992	1984	1989	1978	1985	1979	1961	1979	1960
MIN	44.2	64.9	33.6	45.3	35.6	23.2	30.6	33.7	34.1	21.8	51.4	37.4
(WY)	1968	1968	1968	1968	1968	1968	1995	1974	1975	1974	1994	1967

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1960 - 1997	
ANNUAL TOTAL	121761		59214			
ANNUAL MEAN	333		162		215	
HIGHEST ANNUAL MEAN					526	1979
LOWEST ANNUAL MEAN					82.3	1967
HIGHEST DAILY MEAN	20000	Sep 10	1420	Aug 22	25300	Sep 6 1960
LOWEST DAILY MEAN	30	May 31	23	Jul 4	11	Apr 8 1968
ANNUAL SEVEN-DAY MINIMUM	34	May 26	28	Jun 29	11	Apr 8 1968
INSTANTANEOUS PEAK FLOW			7780	Aug 24	83000	Sep 10 1996
INSTANTANEOUS PEAK STAGE			12.78	Aug 24	32.32	Sep 10 1996
INSTANTANEOUS LOW FLOW			18	Jul 5	17	Aug 18 1994
ANNUAL RUNOFF (AC-FT)	241500		117500		156000	
ANNUAL RUNOFF (CFSM)	3.70		1.81		2.40	
ANNUAL RUNOFF (INCHES)	50.44		24.53		32.58	
10 PERCENT EXCEEDS	555		325		360	
50 PERCENT EXCEEDS	151		102		106	
90 PERCENT EXCEEDS	57		43		39	

e Estimated

RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1959 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1983 to current year.

INSTRUMENTATION.-- USD-49 sediment sampler since October 1983. Automatic sediment sampler since 1984.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean,14,500 mg/L Nov 27, 1987; Minimum daily mean, 8 mg/L January 23, 1992.
SEDIMENT LOADS: Maximum daily mean, 396,000 tons (359,000 tonnes) September 10, 1996; Minimum daily mean, 0.65 tons (0.59 tonnes) May 25,1995.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,610 mg/L April 2, 1997 ; minimum daily mean, 11 mg/L April 27, 1997.
SEDIMENT LOADS: Maximum daily mean, 14,600 tons (13,300 tonnes) April 2, 1997; minimum daily 1.0 ton (0.90 tonnes) May 1-2,1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
20...	1015	378	248	6.9	25.5	80	6.2	74	<10	41000	25000
MAR 1997											
04...	0830	103	258	6.9	24.5	18	7.0	83	<10	K9100	750
MAY											
20...	0930	45	272	6.8	28.5	20	6.5	82	<10	560	K110
SEP											
04...	0950	95	239	6.9	29.5	6.5	6.4	84	<10	3900	240

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
20...	61	16	5.1	16	0.9	2.3	67	<0.5	9.2	14
MAR 1997										
04...	--	--	--	--	--	--	84	--	--	--
MAY										
20...	78	20	6.6	21	1	2.3	86	<0.5	16	21
SEP										
04...	69	18	5.9	18	1	2.3	85	--	10	18

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
20...	0.10	27	130	133	124	0.590	0.050	0.640	0.130	0.57
MAR 1997										
04...	--	--	--	--	25	0.410	0.020	0.430	0.070	0.24
MAY										
20...	0.15	32	171	20.7	31	0.470	0.040	0.520	0.010	0.33
SEP										
04...	0.11	32	156	40.1	15	0.360	0.040	0.400	0.140	0.28

K = non-ideal count

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
NOV 1996										
20...	0.70	1.3	5.9	0.160	<1	100	30	<1	<1	<10
MAR 1997										
04...	0.32	0.75	3.3	0.090	--	--	--	--	--	--
MAY										
20...	0.43	0.94	4.2	0.080	<1	100	30	<1	<1	<10
SEP										
04...	0.42	0.82	3.6	0.050	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L) (38260)
NOV 1996										
20...	4200	2	310	<0.10	<1	<1	20	<0.010	<1	<0.01
MAR 1997										
04...	--	--	--	--	--	--	--	--	--	--
MAY										
20...	870	3	230	<0.10	<1	<1	10	<0.010	<1	<0.01
SEP										
04...	--	--	--	--	--	--	--	--	--	--

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	e320	175	e151	317	312	286	222	99	62
2	e309	228	e194	349	323	310	216	218	129
3	e320	152	e129	273	117	87	172	98	46
4	e300	189	e158	293	230	197	165	44	20
5	e286	263	e208	258	159	111	158	41	18
6	e278	253	e193	279	237	183	147	48	19
7	e275	248	e185	520	488	912	193	141	80
8	e290	242	e185	373	409	426	154	52	22
9	e340	189	e160	361	408	408	139	46	17
10	e650	189	e261	325	362	327	135	53	19
11	e457	520	e688	438	420	693	538	513	1120
12	363	397	390	1260	1150	5160	178	254	130
13	326	359	316	1050	681	2390	123	97	33
14	326	362	319	345	304	281	115	42	13
15	350	388	371	249	136	93	109	19	5.6
16	331	264	237	210	126	73	116	18	5.7
17	291	376	295	263	186	193	107	22	6.4
18	280	356	270	215	250	147	101	23	6.4
19	289	173	134	336	313	334	99	24	6.3
20	275	75	56	285	287	225	97	23	5.9
21	264	105	75	296	269	281	97	21	5.6
22	254	166	114	509	499	936	96	20	5.3
23	251	216	147	327	327	294	93	19	4.8
24	249	262	176	248	180	121	94	20	5.0
25	240	268	174	222	184	110	130	130	47
26	265	293	214	191	205	106	104	118	33
27	355	389	378	180	211	103	102	110	30
28	285	196	154	208	101	55	103	118	33
29	294	331	265	194	40	21	129	141	55
30	274	121	92	234	179	129	405	389	445
31	242	70	46	---	---	---	212	237	139
TOTAL	9629	---	6735	10608	---	14992	4849	---	2567.0

e Estimated

RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	132	111	41	625	592	2120	78	91	19
2	106	35	9.9	782	730	3710	78	90	19
3	102	28	7.8	258	261	211	79	90	19
4	107	30	8.5	124	139	47	97	169	44
5	92	29	7.3	117	138	44	83	146	33
6	89	29	6.8	225	250	167	80	136	29
7	83	29	6.4	153	186	80	75	101	21
8	84	32	7.3	133	134	50	88	96	23
9	87	36	8.5	212	204	151	84	83	19
10	79	36	7.7	151	173	73	74	52	10
11	290	290	331	146	184	77	71	63	12
12	161	169	81	109	114	35	75	82	17
13	95	61	16	208	221	127	85	88	20
14	87	62	15	152	166	68	87	88	21
15	82	73	16	120	139	46	116	123	40
16	84	90	20	98	106	28	136	137	53
17	77	79	16	87	65	15	111	116	36
18	72	70	14	81	56	12	98	64	17
19	71	63	12	84	52	12	113	122	38
20	114	70	22	82	89	20	88	109	26
21	e250	113	e43	129	173	66	84	114	26
22	e400	357	e399	120	142	47	79	115	24
23	224	261	161	171	216	113	74	111	22
24	182	279	138	106	121	35	73	91	18
25	168	194	91	95	148	39	75	72	15
26	128	115	40	140	220	101	63	64	11
27	99	65	17	102	271	77	67	74	14
28	105	97	31	83	92	21	71	87	17
29	112	132	41	---	---	---	89	101	24
30	86	102	24	---	---	---	82	43	9.5
31	86	96	22	---	---	---	75	35	7.2
TOTAL	3934	---	1661.2	4893	---	7592	2628	---	703.7

e Estimated

RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	76	32	6.7	29	13	1.0	73	78	16
2	823	1610	14600	30	13	1.0	85	102	24
3	691	512	1440	34	38	3.5	288	353	283
4	158	191	83	34	37	3.5	178	194	99
5	124	93	32	30	37	3.0	98	81	22
6	103	37	11	28	39	2.9	79	76	16
7	91	26	6.3	28	30	2.2	e66	94	e16
8	88	20	4.8	40	34	3.8	e56	112	e18
9	82	20	4.4	55	58	10	e54	104	e15
10	81	21	4.5	98	113	33	e52	90	e13
11	77	19	3.9	137	133	50	e54	66	e9.4
12	72	16	3.2	89	97	24	e53	49	e7.0
13	82	15	3.2	87	76	18	e65	63	e10
14	78	17	3.6	74	54	11	e108	96	e22
15	69	22	4.0	75	74	15	e54	146	e30
16	63	19	3.3	80	89	19	e42	193	e25
17	62	16	2.6	171	213	137	e37	146	e16
18	61	16	2.6	117	189	65	36	99	9.6
19	58	17	2.7	57	63	9.9	38	48	5.0
20	55	18	2.8	44	40	4.7	69	59	11
21	60	16	2.5	57	65	10	51	41	5.6
22	50	13	1.7	48	89	11	38	38	3.9
23	43	14	1.6	43	70	8.1	49	50	8.2
24	41	15	1.7	45	48	5.8	100	95	26
25	40	14	1.5	43	40	4.6	55	51	7.7
26	40	12	1.3	39	43	4.6	45	47	5.8
27	40	11	1.1	45	58	7.3	46	51	6.3
28	33	15	1.3	118	142	48	36	39	3.7
29	30	22	1.8	114	157	49	32	35	3.1
30	30	18	1.5	162	173	76	29	33	2.6
31	---	---	---	102	113	31	---	---	---
TOTAL	3401	---	16240.6	2153	---	672.9	2066	---	739.9

e Estimated

RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	29	35	2.7	96	46	12	145	107	43
2	25	28	1.9	76	31	6.4	126	108	38
3	26	28	2.0	79	51	11	114	25	7.7
4	23	24	1.5	75	29	5.8	95	15	3.9
5	29	33	2.7	66	22	3.9	90	15	3.7
6	59	63	11	64	23	3.9	86	37	10
7	75	73	15	52	19	2.7	88	76	19
8	38	40	4.1	56	16	2.4	295	233	486
9	42	34	3.9	62	15	2.5	179	195	113
10	49	53	7.0	129	97	49	87	53	13
11	35	34	3.3	157	79	36	69	34	6.3
12	29	26	2.0	103	43	12	85	59	16
13	42	30	3.6	87	36	8.5	99	110	30
14	45	75	9.0	64	28	4.8	109	120	39
15	30	100	8.0	62	31	5.6	239	364	279
16	37	60	6.0	78	86	19	113	117	38
17	110	124	39	82	38	9.0	79	44	9.4
18	58	68	11	315	343	411	113	95	40
19	63	70	12	154	121	55	103	128	37
20	146	159	67	88	44	11	67	76	14
21	679	772	1910	70	22	4.1	126	137	57
22	471	475	729	1420	1080	6710	348	303	348
23	191	165	83	344	292	330	344	350	406
24	178	62	30	1200	569	7320	236	196	140
25	120	40	13	613	332	840	116	107	34
26	93	30	7.6	199	45	25	225	250	209
27	87	29	6.8	274	215	230	177	201	107
28	444	402	1010	292	441	375	120	135	47
29	199	230	131	156	175	74	97	55	14
30	246	217	174	126	144	49	205	192	153
31	146	143	57	195	208	120	---	---	---
TOTAL	3844	---	4364.1	6834	---	16748.6	4375	---	2761.0
YEAR	59214		75778.0						

RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
APR 1997							
02...	2015	4270	17000	196000	23	32	46
02...	2115	4510	6750	82200	28	33	49
JUL							
21...	1445	1050	2680	7600	60	72	80
AUG							
22...	0900	2210	2450	14600	45	54	62
22...	1700	3130	2830	23900	51	58	64

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP SIEVE DIA % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
APR 1997							
02...	65	82	95	99	100	100	100
02...	64	81	94	98	99	100	100
JUL							
21...	88	90	99	100	100	100	100
AUG							
22...	80	87	98	100	100	100	100
22...	77	86	99	100	100	100	100

RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
06...	1410	E278	248	E186	96
DEC					
12...	0653	193	300	156	90
30...	1205	443	267	319	90
APR 1997					
03...	0030	2850	1560	12000	98
03...	0330	1240	789	2640	100
03...	1630	75	325	66	98
JUN					
03...	1515	258	431	300	100
JUL					
22...	0215	1100	899	2670	100
28...	1630	902	882	2150	100
AUG					
25...	0315	1030	736	2050	100
28...	1515	225	593	360	100
SEP					
26...	1600	285	177	136	99

RIO GRANDE DE LOIZA BASIN

50055100 RIO CAGÜITAS NEAR AGUAS BUENAS, PR

LOCATION.--Lat 18°14'48", long 66°05'37", Hydrologic Unit 21010005, on right bank 450 ft (137 m) upstream from bridge on Highway 777, 1.0 mi (1.6 km) southeast from Aguas Buenas, 3.9 mi (6.3 km) northwest from Caguas, and 2.1 mi (3.4 km) southwest from Las Carolinas.

DRAINAGE AREA.--5.30 mi² (13.72 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1990 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 394 ft (120 m), from topographic map.

REMARKS.--Records fair. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.6	6.8	14	3.3	7.4	4.1	2.1	2.0	2.0	2.0	1.0	1.8
2	10	7.0	12	3.5	6.8	4.3	2.5	1.9	2.1	2.0	1.5	1.8
3	8.2	5.6	8.3	2.9	4.3	5.0	3.2	2.3	2.9	1.9	25	1.7
4	8.0	6.0	8.2	2.7	4.8	3.8	2.7	2.1	2.2	1.8	9.4	1.6
5	7.6	6.5	6.5	2.5	5.4	5.9	2.5	2.0	1.9	1.9	4.2	1.5
6	7.9	5.9	7.7	2.6	5.0	4.1	2.3	2.0	1.9	2.2	2.8	1.4
7	7.4	8.9	8.3	2.6	5.1	3.4	2.3	2.0	1.8	5.1	2.5	1.3
8	7.1	5.1	6.2	2.4	3.9	5.0	2.3	2.0	2.0	3.2	1.9	1.1
9	7.1	4.6	4.2	2.4	5.5	3.4	2.1	2.0	2.2	1.9	1.6	1.3
10	8.1	3.5	3.5	2.7	3.9	3.0	1.9	2.5	1.8	1.8	2.4	1.2
11	7.4	5.2	8.0	3.6	3.5	2.6	1.9	2.4	1.8	2.0	1.9	1.1
12	6.8	9.0	4.9	2.4	4.0	2.7	1.9	2.0	1.8	2.5	1.7	7.8
13	6.9	9.1	4.2	2.4	7.6	2.4	1.7	2.3	2.0	1.8	1.8	3.5
14	6.8	5.0	3.9	2.3	4.3	1.9	1.7	2.0	1.6	1.5	1.8	2.2
15	6.2	4.0	4.1	2.5	3.5	2.0	1.7	1.8	1.6	1.3	1.4	1.8
16	5.9	3.6	4.8	2.6	2.9	2.0	1.8	1.6	1.6	1.5	1.4	1.5
17	5.6	5.0	3.9	2.4	2.7	1.8	1.8	2.0	1.8	1.5	2.3	1.3
18	5.6	5.0	3.6	3.3	2.8	1.8	1.7	1.7	1.9	6.5	2.6	2.2
19	5.4	4.7	3.3	4.8	3.3	1.8	1.7	1.7	1.7	7.7	1.5	1.5
20	5.2	5.2	3.1	3.6	3.8	1.8	1.8	1.6	1.2	3.3	1.3	2.3
21	5.3	14	3.4	46	13	1.9	1.9	1.9	1.2	5.2	1.4	3.9
22	5.2	9.1	3.3	64	6.9	1.9	2.3	1.4	1.1	3.7	8.3	2.6
23	5.2	7.8	3.1	16	5.6	1.8	2.4	1.6	1.3	1.7	2.8	2.8
24	5.2	6.7	3.1	34	5.1	1.8	2.1	2.2	2.7	2.2	14	1.8
25	5.0	7.3	4.3	25	4.7	1.8	1.8	1.9	2.1	1.5	9.1	1.5
26	8.4	5.4	3.8	10	5.4	1.8	1.6	1.4	1.8	1.4	2.9	6.3
27	6.7	8.6	3.4	6.8	4.9	3.4	2.2	1.3	2.0	1.8	2.2	2.4
28	16	12	2.8	9.8	4.4	6.8	2.3	1.8	1.7	1.9	1.9	6.5
29	10	7.4	6.6	6.7	---	4.3	2.2	3.4	1.8	1.3	1.7	2.9
30	7.8	19	6.1	6.1	---	2.7	2.1	2.8	1.8	2.1	1.8	2.3
31	6.2	---	4.4	6.2	---	2.2	---	2.3	---	1.3	2.2	---
TOTAL	223.8	213.0	167.0	288.1	140.5	93.2	62.5	61.9	55.3	77.5	118.3	72.9
MEAN	7.22	7.10	5.39	9.29	5.02	3.01	2.08	2.00	1.84	2.50	3.82	2.43
MAX	16	19	14	64	13	6.8	3.2	3.4	2.9	7.7	25	7.8
MIN	5.0	3.5	2.8	2.3	2.7	1.8	1.6	1.3	1.1	1.3	1.0	1.1
AC-FT	444	422	331	571	279	185	124	123	110	154	235	145
CFSM	1.36	1.34	1.02	1.75	.95	.57	.39	.38	.35	.47	.72	.46
IN.	1.57	1.50	1.17	2.02	.99	.65	.44	.43	.39	.54	.83	.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1997, BY WATER YEAR (WY)

MEAN	7.93	7.21	6.43	8.54	4.81	4.56	4.58	5.35	4.23	5.92	6.09	12.9
MAX	20.9	12.3	13.4	16.7	8.00	8.87	13.1	18.0	8.05	18.6	11.2	52.9
(WY)	1991	1993	1993	1992	1991	1990	1993	1993	1993	1993	1993	1996
MIN	3.17	2.66	2.34	2.48	2.96	2.09	1.84	2.00	1.84	1.86	1.85	2.43
(WY)	1996	1995	1995	1995	1995	1996	1995	1997	1997	1994	1994	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1990 - 1997	
ANNUAL TOTAL	3361.5		1574.0			
ANNUAL MEAN	9.18		4.31		6.68	
HIGHEST ANNUAL MEAN					11.1	1993
LOWEST ANNUAL MEAN					4.31	1997
HIGHEST DAILY MEAN	1260	Sep 10	64	Jan 22	1260	Sep 10 1996
LOWEST DAILY MEAN	1.2	May 1	1.0	Aug 1	1.0	Aug 1 1997
ANNUAL SEVEN-DAY MINIMUM	1.2	Apr 30	1.3	Sep 5	1.2	Apr 30 1996
INSTANTANEOUS PEAK FLOW			217	Jan 21	4490	Sep 10 1996
INSTANTANEOUS PEAK STAGE			11.45	Jan 21	21.22	Sep 10 1996
INSTANTANEOUS LOW FLOW			.82	Jul 29	.82	Jul 29 1997
ANNUAL RUNOFF (AC-FT)	6670		3120		4840	
ANNUAL RUNOFF (CFSM)	1.73		.81		1.26	
ANNUAL RUNOFF (INCHES)	23.59		11.05		17.13	
10 PERCENT EXCEEDS	11		7.8		9.2	
50 PERCENT EXCEEDS	3.3		2.7		4.1	
90 PERCENT EXCEEDS	1.6		1.6		1.9	

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1990 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: February 1990 to current year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1990.

REMARKS:-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected by local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 5,300 mg/L September 10, 1996; Minimum daily mean, 1 mg/L July 16-17, 1997.

SEDIMENT LOADS: Maximum daily mean, 24,500 tons (22,200 tonnes) September 10, 1996; Minimum daily mean, 0.01 ton (0.01 tonne) July 16-17, 1997.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,580 mg/L August 03, 1997; Minimum daily mean, 1 mg/L July 16-17, 1997.

SEDIMENT LOADS: Maximum daily mean, 443 tons (401 tonnes) August 3, 1997; Minimum daily mean, <0.01 ton (<.01 tonne) July 16-17, 1997 .

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	9.6	53	1.4	6.8	37	.69	14	76	2.8
2	10	40	1.0	7.0	34	.64	12	42	1.3
3	8.2	30	.68	5.6	32	.48	8.3	32	.72
4	8.0	22	.48	6.0	30	.49	8.2	24	.54
5	7.6	17	.34	6.5	28	.49	6.5	16	.28
6	7.9	12	.27	5.9	25	.41	7.7	10	.21
7	7.4	9	.19	8.9	51	1.5	8.3	7	.16
8	7.1	7	.13	5.1	47	.66	6.2	12	.19
9	7.1	5	.10	4.6	45	.57	4.2	24	.27
10	8.1	5	.11	3.5	180	1.9	3.5	48	.47
11	7.4	5	.10	5.2	191	2.6	8.0	74	1.7
12	6.8	5	.09	9.0	142	3.4	4.9	27	.38
13	6.9	7	.13	9.1	107	2.7	4.2	7	.08
14	6.8	9	.16	5.0	85	1.2	3.9	6	.06
15	6.2	11	.18	4.0	70	.75	4.1	7	.08
16	5.9	7	.11	3.6	55	.53	4.8	8	.10
17	5.6	4	.06	5.0	100	1.6	3.9	13	.13
18	5.6	2	.03	5.0	164	2.2	3.6	20	.19
19	5.4	2	.03	4.7	131	1.7	3.3	34	.29
20	5.2	2	.03	5.2	80	1.1	3.1	82	.69
21	5.3	2	.03	14	587	87	3.4	222	2.1
22	5.2	3	.04	9.1	65	1.8	3.3	500	4.5
23	5.2	3	.05	7.8	98	2.0	3.1	224	1.9
24	5.2	4	.06	6.7	85	1.5	3.1	59	.49
25	5.0	6	.09	7.3	73	1.4	4.3	24	.31
26	8.4	78	2.6	5.4	53	.76	3.8	17	.20
27	6.7	59	1.1	8.6	94	4.5	3.4	34	.31
28	16	315	40	12	100	3.5	2.8	27	.20
29	10	49	1.9	7.4	53	1.0	6.6	63	1.7
30	7.8	72	1.6	19	259	18	6.1	53	.93
31	6.2	50	.83	---	---	---	4.4	36	.51
TOTAL	223.8	---	53.92	213.0	---	147.07	167.0	---	23.79

RIO GRANDE DE LOIZA BASIN

50055100 RIO CAGÜITAS NEAR AGUAS BUENAS , PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	3.3	31	.28	7.4	89	2.1	4.1	17	.19
2	3.5	26	.25	6.8	148	2.7	4.3	7	.08
3	2.9	12	.10	4.3	132	1.5	5.0	7	.09
4	2.7	7	.05	4.8	86	1.1	3.8	7	.07
5	2.5	7	.05	5.4	52	.74	5.9	8	.13
6	2.6	9	.07	5.0	31	.43	4.1	12	.13
7	2.6	12	.08	5.1	16	.21	3.4	20	.18
8	2.4	15	.10	3.9	9	.09	5.0	28	.39
9	2.4	19	.12	5.5	5	.07	3.4	18	.17
10	2.7	29	.28	3.9	6	.06	3.0	10	.08
11	3.6	188	1.8	3.5	9	.09	2.6	6	.04
12	2.4	166	1.1	4.0	14	.16	2.7	5	.04
13	2.4	147	.94	7.6	58	1.5	2.4	5	.03
14	2.3	130	.80	4.3	15	.17	1.9	5	.03
15	2.5	115	.79	3.5	10	.10	2.0	5	.03
16	2.6	111	.78	2.9	14	.11	2.0	5	.03
17	2.4	111	.70	2.7	22	.16	1.8	5	.02
18	3.3	120	1.9	2.8	33	.25	1.8	4	.02
19	4.8	47	.94	3.3	42	.37	1.8	4	.02
20	3.6	33	.37	3.8	52	.54	1.8	4	.02
21	46	736	240	13	133	5.6	1.9	7	.04
22	64	703	165	6.9	52	1.0	1.9	13	.07
23	16	157	7.9	5.6	18	.28	1.8	21	.10
24	34	370	56	5.1	7	.09	1.8	15	.07
25	25	178	15	4.7	12	.15	1.8	8	.04
26	10	94	2.6	5.4	32	.48	1.8	4	.02
27	6.8	73	1.3	4.9	75	.99	3.4	22	.78
28	9.8	114	5.2	4.4	45	.54	6.8	73	2.8
29	6.7	44	.82	---	---	---	4.3	46	.70
30	6.1	25	.42	---	---	---	2.7	14	.11
31	6.2	17	.28	---	---	---	2.2	9	.05
TOTAL	288.1	---	506.02	140.5	---	21.58	93.2	---	6.57

RIO GRANDE DE LOIZA BASIN

50055100 RIO CAGÜITAS NEAR AGUAS BUENAS , PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	2.1	7	.04	2.0	10	.05	2.0	8	.05
2	2.5	15	.15	1.9	10	.05	2.1	7	.04
3	3.2	28	.25	2.3	9	.06	2.9	6	.05
4	2.7	9	.06	2.1	9	.05	2.2	6	.03
5	2.5	4	.03	2.0	9	.05	1.9	5	.03
6	2.3	4	.03	2.0	9	.05	1.9	5	.03
7	2.3	4	.03	2.0	9	.05	1.8	5	.02
8	2.3	4	.03	2.0	9	.05	2.0	5	.02
9	2.1	5	.03	2.0	8	.04	2.2	4	.03
10	1.9	6	.03	2.5	8	.05	1.8	4	.02
11	1.9	8	.04	2.4	8	.05	1.8	4	.02
12	1.9	9	.04	2.0	11	.06	1.8	4	.02
13	1.7	9	.04	2.3	16	.10	2.0	4	.02
14	1.7	10	.05	2.0	22	.12	1.6	4	.02
15	1.7	10	.05	1.8	16	.08	1.6	3	.01
16	1.8	11	.05	1.6	9	.04	1.6	3	.01
17	1.8	9	.05	2.0	6	.03	1.8	3	.01
18	1.7	8	.04	1.7	8	.04	1.9	8	.08
19	1.7	8	.04	1.7	12	.05	1.7	9	.04
20	1.8	7	.03	1.6	18	.08	1.2	7	.02
21	1.9	5	.03	1.9	23	.11	1.2	5	.02
22	2.3	4	.03	1.4	27	.10	1.1	7	.02
23	2.4	3	.02	1.6	31	.14	1.3	9	.03
24	2.1	5	.03	2.2	19	.12	2.7	20	.24
25	1.8	7	.04	1.9	9	.05	2.1	23	.13
26	1.6	11	.05	1.4	5	.02	1.8	16	.08
27	2.2	11	.06	1.3	5	.02	2.0	11	.06
28	2.3	11	.07	1.8	7	.03	1.7	12	.06
29	2.2	10	.06	3.4	29	.57	1.8	16	.08
30	2.1	10	.06	2.8	25	.21	1.8	21	.11
31	---	---	---	2.3	11	.07	---	---	---
TOTAL	62.5	---	1.56	61.9	---	2.59	55.3	---	1.40

RIO GRANDE DE LOIZA BASIN

50055100 RIO CAGÜITAS NEAR AGUAS BUENAS , PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	2.0	27	.14	1.0	4	.01	1.8	12	.06
2	2.0	20	.10	1.5	4	.02	1.8	11	.05
3	1.9	12	.06	25	1580	443	1.7	10	.05
4	1.8	8	.04	9.4	324	10	1.6	11	.05
5	1.9	6	.03	4.2	35	.40	1.5	11	.04
6	2.2	5	.03	2.8	16	.12	1.4	12	.04
7	5.1	37	1.1	2.5	8	.05	1.3	10	.04
8	3.2	29	.28	1.9	7	.04	1.1	9	.03
9	1.9	17	.09	1.6	10	.04	1.3	8	.03
10	1.8	12	.06	2.4	19	.19	1.2	9	.03
11	2.0	9	.05	1.9	19	.10	1.1	10	.03
12	2.5	6	.04	1.7	15	.07	7.8	494	49
13	1.8	4	.02	1.8	14	.07	3.5	48	.61
14	1.5	3	.01	1.8	14	.07	2.2	91	.55
15	1.3	2	.01	1.4	13	.05	1.8	71	.34
16	1.5	1	<.01	1.4	13	.05	1.5	49	.20
17	1.5	1	<.01	2.3	19	.22	1.3	35	.12
18	6.5	75	4.3	2.6	30	.24	2.2	31	.18
19	7.7	634	52	1.5	15	.06	1.5	30	.12
20	3.3	35	.34	1.3	14	.05	2.3	29	.18
21	5.2	47	.79	1.4	16	.06	3.9	29	.31
22	3.7	26	.28	8.3	176	8.0	2.6	29	.20
23	1.7	22	.10	2.8	33	.25	2.8	29	.22
24	2.2	29	.16	14	620	79	1.8	26	.13
25	1.5	35	.14	9.1	448	14	1.5	18	.07
26	1.4	27	.10	2.9	84	.67	6.3	76	2.4
27	1.8	19	.09	2.2	58	.34	2.4	67	.44
28	1.9	13	.06	1.9	40	.21	6.5	241	20
29	1.3	9	.03	1.7	28	.13	2.9	144	1.2
30	2.1	6	.03	1.8	19	.09	2.3	95	.58
31	1.3	4	.01	2.2	14	.08	---	---	---
TOTAL	77.5	---	60.49	118.3	---	557.68	72.9	---	77.30
YEAR	1574.0		1459.97						

50055100 RIO CAGÜITAS NEAR AGUAS BUENAS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
NOV 1996							
21...	1700	92	7660	1900	29	37	52
AUG 1997							
03...	1745	167	19000	8570	28	33	46

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
NOV 1996							
21...	67	77	95	97	99	99	100
AUG 1997							
03...	60	73	91	97	99	99	100

50055100 RIO CAGÜITAS NEAR AGUAS BUENAS , PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
DEC 1996					
18...	1857	33	13200	1180	99
JAN 1997					
21...	2015	207	4040	2260	84
21...	2330	100	1130	305	91
22...	0545	74	1040	208	61
22...	1005	75	1260	255	93
22...	1405	59	647	103	93
22...	2120	105	1050	298	88
AUG					
04...	1030	9.3	316	7.9	95
22...	1536	10	522	14	99
24...	1945	57	2340	360	95
25...	1620	5.8	237	3.7	98
SEP					
15...	0600	2.2	78	0.46	98

RIO GRANDE DE LOIZA BASIN

50055170 RIO CAGÜITAS NEAR CAGUAS, PR

LOCATION.--Lat 18°13'59", long 66°02'53", Hydrologic Unit 21010005, on left bank, 0.9 mi (1.4 km) southwest from Plaza de Caguas, 0.6 mi (1.0 km) northeast from Escuela Bunker, and 1.2 mi (1.9 km) northwest from Escuela Antonio S. Pedreira.

DRAINAGE AREA.--8.27 mi² (21.42 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1992 to September 30, 1997. (discontinued)

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 216 ft (66 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e12	e11	20	10	18	9.2	7.7	5.5	9.6	6.9	8.1	5.8
2	e13	e11	20	13	11	9.1	10	5.6	8.5	6.7	7.0	6.7
3	e11	e8.6	14	9.7	10	9.3	10	6.2	9.2	6.0	43	6.5
4	e10	e9.4	13	8.8	11	9.5	8.4	6.7	8.5	6.1	26	6.3
5	e9.8	e10	11	8.3	11	9.8	8.2	6.8	7.5	6.6	11	5.6
6	e10	e9.0	10	8.6	14	9.0	8.2	6.7	7.5	8.6	9.0	6.4
7	e9.7	e14	9.6	8.1	15	8.5	8.2	6.9	7.5	12	7.6	7.1
8	e9.2	e7.6	8.5	8.2	13	11	8.5	7.2	6.9	12	7.0	7.5
9	e9.2	e7.0	8.5	8.0	16	9.2	8.3	6.9	7.5	9.1	6.3	8.3
10	e11	e6.0	8.5	8.5	12	8.6	8.0	7.2	6.9	8.2	8.1	6.9
11	e9.6	e9.2	13	10	11	8.2	8.2	7.5	6.3	7.5	8.6	5.4
12	e8.8	e14	11	7.9	11	8.6	7.3	6.7	6.0	6.6	6.5	14
13	e9.0	e14	8.5	7.8	15	8.4	6.4	6.7	7.1	6.9	5.7	14
14	e8.8	e8.0	8.5	7.4	11	7.8	6.0	7.0	7.5	6.0	5.5	10
15	e8.2	e5.8	8.6	7.2	9.7	8.0	6.0	8.2	6.9	5.4	5.5	8.9
16	e7.7	e5.6	9.2	7.4	8.9	8.2	6.1	8.4	6.3	6.5	5.5	8.2
17	e7.2	e7.6	8.6	7.0	8.5	8.3	6.1	7.9	6.5	6.7	5.8	6.9
18	e7.2	e7.6	7.8	7.7	8.7	8.5	6.0	7.0	8.5	8.9	7.5	8.1
19	e7.0	e7.0	7.7	12	9.5	8.0	5.6	6.3	7.8	14	5.9	7.6
20	e6.8	e7.8	7.8	10	9.3	7.7	5.3	5.8	7.7	16	5.2	6.4
21	e7.0	e23	7.5	77	18	7.2	5.8	6.2	7.2	17	5.5	9.0
22	e6.7	e17	7.5	141	13	7.2	6.3	6.6	6.6	16	29	9.3
23	e6.7	18	7.2	31	11	7.1	5.7	6.4	7.7	11	14	8.3
24	e6.7	15	7.0	64	10	6.9	5.6	7.4	9.9	10	33	6.5
25	e6.4	13	9.7	52	9.8	6.9	5.7	7.2	8.4	8.9	32	6.0
26	e12	9.9	8.2	21	11	6.8	5.5	7.2	7.5	8.0	12	34
27	e10	14	8.4	14	9.8	8.3	5.6	8.3	7.1	9.6	9.7	15
28	e22	21	8.3	15	9.2	14	5.6	11	6.5	13	8.2	14
29	e17	16	13	13	---	13	6.1	12	6.4	9.6	7.2	16
30	e12	38	13	10	---	9.7	5.5	15	6.5	9.4	6.3	10
31	e9.4	---	16	9.6	---	8.1	---	11	---	11	7.2	---
TOTAL	301.1	365.1	319.6	623.2	325.4	270.1	205.9	235.5	224.0	290.2	358.9	284.7
MEAN	9.71	12.2	10.3	20.1	11.6	8.71	6.86	7.60	7.47	9.36	11.6	9.49
MAX	22	38	20	141	18	14	10	15	9.9	17	43	34
MIN	6.4	5.6	7.0	7.0	8.5	6.8	5.3	5.5	6.0	5.4	5.2	5.4
AC-FT	597	724	634	1240	645	536	408	467	444	576	712	565
CFSM	1.17	1.47	1.25	2.43	1.41	1.05	.83	.92	.90	1.13	1.40	1.15
IN.	1.35	1.64	1.44	2.80	1.46	1.21	.93	1.06	1.01	1.31	1.61	1.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1997, BY WATER YEAR (WY)

MEAN	11.0	17.9	13.7	14.1	7.56	6.06	9.48	12.0	8.31	14.5	11.9	32.9
MAX	16.0	37.4	37.0	20.6	11.6	8.71	27.8	41.2	15.8	45.5	20.2	70.6
(WY)	1994	1993	1993	1996	1997	1997	1993	1993	1996	1993	1993	1996
MIN	7.35	5.14	4.17	1.90	2.45	1.75	1.16	2.31	1.71	2.65	4.63	9.49
(WY)	1996	1995	1995	1995	1995	1995	1995	1994	1994	1995	1995	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1992 - 1997	
ANNUAL TOTAL	6230.6		3803.7			
ANNUAL MEAN	17.0		10.4		13.6	
HIGHEST ANNUAL MEAN					24.5	1993
LOWEST ANNUAL MEAN					8.33	1994
HIGHEST DAILY MEAN	1320	Sep 10	141	Jan 22	1320	Sep 10 1996
LOWEST DAILY MEAN	2.4	May 5	5.2	Aug 20	.72	Apr 30 1995
ANNUAL SEVEN-DAY MINIMUM	3.1	Apr 30	5.6	Apr 26	.77	Apr 27 1995
INSTANTANEOUS PEAK FLOW			395	Jan 21	9040	Sep 10 1996
INSTANTANEOUS PEAK STAGE			19.07	Jan 21	31.60	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	12360		7540		9870	
ANNUAL RUNOFF (CFSM)	2.06		1.26		1.65	
ANNUAL RUNOFF (INCHES)	28.03		17.11		22.39	
10 PERCENT EXCEEDS	24		14		21	
50 PERCENT EXCEEDS	8.4		8.3		7.0	
90 PERCENT EXCEEDS	4.2		6.1		2.2	

e Estimated

50055170 RIO CAGÜITAS NEAR CAGUAS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1992 to 1997.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: June 1992 to current year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1992.

REMARKS.-- Sediment Samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected by local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 3,820 mg/L September 10, 1996; Minimum daily mean, 1 mg/L July 18-19, 1994.

SEDIMENT LOADS: Maximum daily mean,19,100 tons (17,300 tonnes) September 10, 1996; Minimum daily mean, e0.01 ton (e0.01 tonne) several days.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 699 mg/L January 22, 1997; Minimum daily mean, 7 mg/L March 4, 1997.

SEDIMENT LOADS: Maximum daily mean, 456 tons (413 tonnes) January 21, 1997; Minimum daily mean, 0.16 ton (0.14 tonne) May 22, September 21, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	e12	11	e.36	e11	40	e1.2	20	77	4.2
2	e13	11	e.40	e11	35	e1.0	20	64	3.4
3	e11	12	e.35	e8.6	31	e.72	14	83	3.3
4	e10	12	e.33	e9.4	29	e.74	13	110	3.8
5	e9.8	12	e.33	e10	30	e.81	11	59	1.8
6	e10	13	e.35	e9.0	31	e.75	10	29	.83
7	e9.7	13	e.34	e14	42	e1.6	9.6	29	.75
8	e9.2	14	e.34	e7.6	37	e.77	8.5	32	.74
9	e9.2	14	e.35	e7.0	29	e.55	8.5	40	.93
10	e11	14	e.43	e6.0	23	e.37	8.5	52	1.2
11	e9.6	15	e.38	e9.2	27	e.68	13	67	2.4
12	e8.8	15	e.36	e14	43	e1.6	11	80	2.2
13	e9.0	16	e.38	e14	36	e1.4	8.5	57	1.3
14	e8.8	16	e.38	e8.0	28	e.60	8.5	38	.86
15	e8.2	16	e.38	e5.8	23	e.37	8.6	29	.66
16	e7.7	17	e.35	e5.6	20	e.31	9.2	47	1.2
17	e7.2	17	e.34	e7.6	20	e.41	8.6	82	1.9
18	e7.2	18	e.35	e7.6	21	e.44	7.8	49	1.0
19	e7.0	18	e.35	e7.0	23	e.44	7.7	21	.44
20	e6.8	19	e.35	e7.8	25	e.53	7.8	24	.49
21	e7.0	19	e.37	e23	27	e1.6	7.5	30	.61
22	e6.7	20	e.36	e17	28	e1.4	7.5	37	.75
23	e6.7	21	e.37	18	29	1.4	7.2	42	.82
24	e6.7	21	e.38	15	48	2.0	7.0	31	.59
25	e6.4	22	e.38	13	68	2.3	9.7	34	.93
26	e12	25	e.80	9.9	72	1.9	8.2	43	.95
27	e10	31	e.83	14	52	2.3	8.4	66	1.5
28	e22	61	e3.6	21	98	5.7	8.3	47	1.1
29	e17	59	e2.7	16	59	2.5	13	53	2.2
30	e12	51	e1.7	38	119	16	13	48	1.8
31	e9.4	45	e1.1	---	---	---	16	94	5.3
TOTAL	301.1	---	19.79	365.1	---	52.39	319.6	---	49.95

e Estimated

RIO GRANDE DE LOIZA BASIN

50055170 RIO CAGÜITAS NEAR CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	10	134	3.6	18	57	3.9	9.2	45	1.1
2	13	113	4.5	11	34	1.0	9.1	36	.87
3	9.7	122	3.2	10	22	.61	9.3	15	.37
4	8.8	96	2.3	11	14	.40	9.5	7	.17
5	8.3	54	1.2	11	12	.38	9.8	16	.41
6	8.6	43	1.0	14	43	1.6	9.0	41	1.0
7	8.1	57	1.2	15	49	2.1	8.5	42	.95
8	8.2	59	1.3	13	58	2.1	11	32	.92
9	8.0	42	.92	16	233	12	9.2	18	.44
10	8.5	32	.78	12	103	3.5	8.6	10	.23
11	10	31	.84	11	26	.80	8.2	11	.23
12	7.9	32	.68	11	20	.60	8.6	12	.29
13	7.8	40	.85	15	43	1.8	8.4	15	.33
14	7.4	30	.59	11	26	.77	7.8	18	.37
15	7.2	20	.39	9.7	12	.32	8.0	27	.59
16	7.4	25	.50	8.9	12	.28	8.2	35	.76
17	7.0	33	.62	8.5	12	.28	8.3	21	.46
18	7.7	30	.67	8.7	13	.30	8.5	13	.31
19	12	42	1.4	9.5	13	.34	8.0	28	.61
20	10	31	.85	9.3	14	.34	7.7	63	1.3
21	77	588	456	18	51	3.1	7.2	34	.67
22	141	699	365	13	51	1.8	7.2	12	.23
23	31	96	8.3	11	43	1.3	7.1	11	.21
24	64	229	60	10	40	1.1	6.9	13	.24
25	52	160	28	9.8	34	.91	6.9	21	.40
26	21	80	4.5	11	30	.87	6.8	34	.62
27	14	59	2.3	9.8	37	.97	8.3	27	.62
28	15	58	2.6	9.2	47	1.2	14	88	3.5
29	13	27	.98	---	---	---	13	45	1.6
30	10	17	.47	---	---	---	9.7	24	.67
31	9.6	15	.40	---	---	---	8.1	24	.51
TOTAL	623.2	---	955.94	325.4	---	44.67	270.1	---	20.98

RIO GRANDE DE LOIZA BASIN

50055170 RIO CAGÜITAS NEAR CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	7.7	31	.65	5.5	84	1.2	9.6	24	.60
2	10	39	1.2	5.6	73	1.1	8.5	15	.35
3	10	42	1.2	6.2	35	.58	9.2	13	.32
4	8.4	20	.46	6.7	18	.32	8.5	13	.29
5	8.2	13	.29	6.8	34	.63	7.5	16	.34
6	8.2	24	.54	6.7	64	1.1	7.5	21	.41
7	8.2	41	.90	6.9	32	.59	7.5	19	.38
8	8.5	24	.55	7.2	18	.34	6.9	16	.30
9	8.3	14	.31	6.9	35	.65	7.5	12	.24
10	8.0	29	.62	7.2	68	1.3	6.9	10	.19
11	8.2	54	1.2	7.5	47	.95	6.3	11	.18
12	7.3	22	.44	6.7	26	.48	6.0	11	.18
13	6.4	12	.21	6.7	41	.75	7.1	12	.23
14	6.0	11	.18	7.0	74	1.4	7.5	13	.25
15	6.0	11	.18	8.2	77	1.7	6.9	12	.22
16	6.1	13	.21	8.4	72	1.6	6.3	11	.19
17	6.1	18	.30	7.9	67	1.4	6.5	11	.18
18	6.0	37	.60	7.0	63	1.2	8.5	21	.85
19	5.6	66	1.0	6.3	59	1.0	7.8	15	.32
20	5.3	42	.60	5.8	50	.77	7.7	12	.25
21	5.8	23	.35	6.2	18	.30	7.2	11	.21
22	6.3	13	.22	6.6	9	.16	6.6	10	.17
23	5.7	11	.18	6.4	16	.27	7.7	15	.35
24	5.6	12	.17	7.4	30	.58	9.9	32	.88
25	5.7	16	.24	7.2	52	1.0	8.4	11	.26
26	5.5	20	.29	7.2	63	1.2	7.5	18	.36
27	5.6	14	.20	8.3	35	.86	7.1	19	.37
28	5.6	12	.18	11	35	1.2	6.5	29	.50
29	6.1	32	.53	12	42	1.4	6.4	34	.58
30	5.5	77	1.1	15	30	1.3	6.5	21	.37
31	---	---	---	11	35	1.1	---	---	---
TOTAL	205.9	---	15.10	235.5	---	28.43	224.0	---	10.32

RIO GRANDE DE LOIZA BASIN

50055170 RIO CAGÜITAS NEAR CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	6.9	14	.26	8.1	26	.57	5.8	20	.31
2	6.7	13	.24	7.0	21	.40	6.7	12	.22
3	6.0	14	.22	43	150	63	6.5	13	.22
4	6.1	15	.25	26	86	7.5	6.3	13	.23
5	6.6	17	.29	11	29	.89	5.6	14	.21
6	8.6	16	.38	9.0	17	.40	6.4	22	.49
7	12	32	1.4	7.6	21	.43	7.1	26	.51
8	12	42	1.4	7.0	15	.29	7.5	26	.59
9	9.1	36	.90	6.3	12	.20	8.3	28	.65
10	8.2	22	.49	8.1	20	.53	6.9	24	.45
11	7.5	18	.37	8.6	23	.54	5.4	20	.30
12	6.6	15	.28	6.5	17	.30	14	48	2.4
13	6.9	13	.23	5.7	14	.21	14	51	2.2
14	6.0	12	.19	5.5	12	.18	10	35	.99
15	5.4	13	.19	5.5	12	.17	8.9	30	.74
16	6.5	32	.71	5.5	14	.20	8.2	27	.61
17	6.7	30	.54	5.8	16	.25	6.9	24	.46
18	8.9	31	.86	7.5	17	.34	8.1	27	.62
19	14	49	2.1	5.9	14	.22	7.6	26	.53
20	16	55	2.5	5.2	12	.17	6.4	21	.36
21	17	53	2.6	5.5	11	.16	9.0	30	.76
22	16	58	2.5	29	94	12	9.3	32	.81
23	11	39	1.1	14	43	1.9	8.3	27	.62
24	10	32	.89	33	111	27	6.5	21	.36
25	8.9	29	.71	32	95	10	6.0	19	.31
26	8.0	27	.59	12	38	1.3	34	103	17
27	9.6	33	.93	9.7	31	.84	15	52	2.2
28	13	48	2.0	8.2	28	.63	14	49	2.3
29	9.6	32	.84	7.2	23	.45	16	55	2.6
30	9.4	41	1.2	6.3	22	.38	10	33	.90
31	11	36	1.0	7.2	29	.60	---	---	---
TOTAL	290.2	---	28.16	358.9	---	132.05	284.7	---	40.95
YEAR	3803.7		1398.73						

RIO GRANDE DE LOIZA BASIN

50055170 RIO CAGÜITAS NEAR CAGUAS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
DEC 1996					
04...	1330	13	127	4.5	57
JAN 1997					
21...	2220	393	4520	4800	99
22...	0845	323	2730	2380	98
FEB					
09...	1405	17	367	17	99
MAR					
28...	0800	10	123	3.3	96

50055225 RIO CAGÜITAS AT VILLA BLANCA AT CAGUAS, PR

LOCATION.--Lat 18°14'55", long 66°01'40", Hydrologic Unit 21010005, on left bank, at C. 4 street Villa Blanca housing area at Caguas, 1.8 mi (2.9 km) upstream from Río Grande de Loíza, and 0.95 mi (1.53 km) northeast from Caguas Plaza.

DRAINAGE AREA.--11.71 mi² (30.33 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 164 ft (50 m), from topographic map.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station. Low-flow affected by pluvial discharge about 50 ft upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e42	e31	e23	21	46	20	e31	12	11	e9.4	e11	e12
2	e42	e29	e20	46	25	20	e77	13	10	e8.4	e9.7	e12
3	e36	e28	e17	26	23	23	30	12	12	e9.7	e121	e20
4	e36	e27	e23	22	23	24	22	12	12	e9.4	e61	e13
5	e35	e28	e22	20	25	28	19	e11	11	e12	e24	e12
6	e35	e28	e18	30	26	24	23	e11	13	e18	e17	e12
7	e34	e158	e18	e20	31	19	27	e9.7	14	e25	e19	e11
8	e31	e75	e18	e18	24	33	29	e14	15	e18	e17	e9.4
9	e31	e46	e17	e18	40	28	28	e15	17	e18	e14	e10
10	e35	e36	e18	e21	32	26	21	e20	15	e14	e26	e9.3
11	e33	e44	24	e29	31	22	27	e19	11	e13	e20	e8.9
12	e31	e41	18	e18	28	25	23	e15	12	e10	e12	85
13	e31	e37	19	e18	44	25	18	e18	14	e13	e13	70
14	e31	e27	19	e17	30	30	19	e15	10	e10	e13	20
15	e28	e21	18	e20	26	25	19	e14	13	e8.7	e14	21
16	e26	21	19	19	19	24	18	e15	18	e20	e13	14
17	e25	21	16	18	19	22	17	e14	21	e14	e20	13
18	e25	22	17	21	21	21	15	e13	e46	e15	e17	e21
19	e24	21	17	25	22	21	13	e13	e43	e21	e9.5	e15
20	e23	22	16	24	19	24	14	e14	e30	e30	e9.4	e22
21	e24	e45	18	80	45	23	14	14	e24	e53	e12	e38
22	e23	e36	19	157	23	27	14	14	e28	e38	189	e25
23	e23	e25	17	49	17	25	14	17	e38	e17	33	e28
24	e23	e23	19	75	18	24	13	15	e23	e24	166	e17
25	e22	e21	30	59	18	34	12	17	e16	e13	88	e15
26	e37	e20	19	34	30	28	12	14	e13	e12	27	e60
27	e30	e22	18	32	20	33	16	22	e11	e23	35	e23
28	e68	28	18	32	20	50	14	21	e9.5	e45	e15	e60
29	e45	25	24	30	---	71	14	20	e12	e11	e15	e28
30	e35	44	25	25	---	38	14	15	e11	e19	e12	e22
31	e28	---	35	25	---	35	---	18	---	e14	e29	---
TOTAL	992	1052	619	1049	745	872	627	466.7	533.5	565.6	1081.6	726.6
MEAN	32.0	35.1	20.0	33.8	26.6	28.1	20.9	15.1	17.8	18.2	34.9	24.2
MAX	68	158	35	157	46	71	77	22	46	53	189	85
MIN	22	20	16	17	17	19	12	9.7	9.5	8.4	9.4	8.9
MED	31	28	18	25	25	25	18	14	14	14	17	19
AC-FT	1970	2090	1230	2080	1480	1730	1240	926	1060	1120	2150	1440
CFSM	2.73	2.99	1.71	2.89	2.27	2.40	1.78	1.29	1.52	1.56	2.98	2.07
IN.	3.15	3.34	1.97	3.33	2.37	2.77	1.99	1.48	1.69	1.80	3.44	2.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1997, BY WATER YEAR (WY)

MEAN	24.8	33.9	22.2	38.0	18.9	14.8	16.5	24.2	22.6	29.7	33.0	85.5
MAX	32.0	56.8	58.4	120	26.6	28.1	39.8	59.8	45.6	74.6	58.0	364
(WY)	1997	1993	1993	1992	1997	1997	1993	1993	1996	1993	1995	1996
MIN	18.7	12.2	8.87	14.2	10.8	7.54	5.49	3.35	2.86	4.13	3.82	8.82
(WY)	1996	1995	1995	1995	1992	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1991 - 1997	
ANNUAL TOTAL	21075.2		9330.0			
ANNUAL MEAN	57.6		25.6		32.1	
HIGHEST ANNUAL MEAN					55.2	1996
LOWEST ANNUAL MEAN					11.9	1994
HIGHEST DAILY MEAN	8600	Sep 10	189	Aug 22	8600	Sep 10 1996
LOWEST DAILY MEAN	7.5	May 31	8.4	Jul 2	1.3	Jun 8 1994
ANNUAL SEVEN-DAY MINIMUM	8.3	May 28	9.9	Jun 28	1.4	Jun 8 1994
INSTANTANEOUS PEAK FLOW			1060	Aug 22	25000	Sep 10 1996
INSTANTANEOUS PEAK STAGE			11.37	Aug 22	23.89	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	41800		18510		23250	
ANNUAL RUNOFF (CFSM)	4.92		2.18		2.74	
ANNUAL RUNOFF (INCHES)	66.95		29.64		37.24	
10 PERCENT EXCEEDS	69		40		42	
50 PERCENT EXCEEDS	20		21		16	
90 PERCENT EXCEEDS	12		12		6.0	

e Estimated

50055225 RIO CAGÜITAS AT VILLA BLANCA AT CAGUAS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1991 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: December 1990 to current year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1991.

REMARKS.-- Sediment samples collected by local observer on a weekly basis. During high flow events sediments samples were collected by local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,5700 mg/L September 10, 1996; Minimum daily mean, 3 mg/L August 2, 1997.

SEDIMENT LOADS: Maximum daily mean, e34,700 tons (e31,500 tonnes) September 10, 1996; Minimum daily mean, e0.03 ton (e0.02 tonne) June 15, 1994.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 450 mg/L February 2, 1997; Minimum daily mean, 3 mg/L August 2, 1997.

SEDIMENT LOADS: Maximum daily mean, e388 tons (e352 tonnes) November 7 , 1996; Minimum daily mean, e0.08 ton (e0.07 tonne) August 2, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	e42	31	e3.5	e31	60	e5.0	e23	119	e7.5
2	e42	33	e3.7	e29	64	e5.0	e20	79	e4.4
3	e36	35	e3.4	e28	67	e5.2	e17	50	e2.3
4	e36	37	e3.6	e27	71	e5.2	e23	32	e2.0
5	e35	39	e3.7	e28	78	e5.9	e22	39	e2.2
6	e35	41	e3.9	e28	88	e6.6	e18	57	e2.9
7	e34	43	e4.0	e158	319	e388	e18	70	e3.5
8	e31	46	e3.8	e75	146	e30	e18	61	e3.0
9	e31	48	e4.0	e46	127	e16	e17	70	e3.2
10	e35	47	e4.4	e36	121	e12	e18	47	e2.2
11	e33	44	e4.0	e44	119	e17	24	93	6.1
12	e31	43	e3.6	e41	117	e13	18	93	4.6
13	e31	47	e3.9	e37	114	e11	19	86	4.3
14	e31	52	e4.4	e27	90	e6.6	19	79	4.0
15	e28	58	e4.4	e21	85	e4.9	18	73	3.5
16	e26	65	e4.6	21	84	e4.7	19	87	4.5
17	e25	73	e4.9	21	83	e4.7	16	75	3.3
18	e25	80	e5.4	22	83	e4.8	17	73	3.4
19	e24	65	e4.2	21	82	e4.6	17	139	6.5
20	e23	49	e3.1	22	81	e4.8	16	78	3.5
21	e24	38	e2.5	e45	108	e19	18	79	3.9
22	e23	41	e2.6	e36	82	e8.6	19	60	3.1
23	e23	48	e3.0	e25	74	e5.0	17	41	1.9
24	e23	53	e3.3	e23	46	e2.9	19	55	2.9
25	e22	47	e2.8	e21	41	e2.3	30	113	9.6
26	e37	40	e4.0	e20	40	e2.2	19	89	4.5
27	e30	34	e2.7	e22	59	e4.0	18	75	3.6
28	e68	80	e15	28	97	7.3	18	95	4.9
29	e45	48	e5.9	25	86	5.8	24	100	6.9
30	e35	43	e4.1	44	135	22	25	85	5.9
31	e28	51	e3.9	---	---	---	35	83	10
TOTAL	992	---	130.3	1052	---	634.1	619	---	134.1

e Estimated

50055225 RIO CAGÜITAS AT VILLA BLANCA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	21	86	4.8	46	299	46	20	90	4.8
2	46	119	21	25	450	31	20	84	4.6
3	26	64	4.6	23	406	26	23	145	8.9
4	22	25	1.5	23	380	23	24	144	9.3
5	20	20	1.1	25	360	24	28	117	8.9
6	30	63	7.5	26	306	22	24	100	6.5
7	e20	59	e3.0	31	128	11	19	86	4.3
8	e18	55	e2.7	24	96	6.2	33	106	9.8
9	e18	65	e3.2	40	68	7.5	28	86	6.4
10	e21	77	e4.4	32	21	1.8	26	67	4.8
11	e29	92	e7.2	31	55	4.8	22	54	3.2
12	e18	111	e5.4	28	34	2.5	25	70	4.9
13	e18	134	e6.5	44	108	14	25	99	6.6
14	e17	161	e7.4	30	93	7.8	30	84	6.7
15	e20	188	e10	26	33	2.3	25	50	3.4
16	19	146	7.5	19	29	1.5	24	41	2.6
17	18	99	4.7	19	39	2.0	22	34	2.0
18	21	81	4.8	21	50	2.9	21	28	1.6
19	25	89	6.0	22	75	4.5	21	23	1.3
20	24	93	6.1	19	80	4.2	24	20	1.3
21	80	166	62	45	87	11	23	21	1.3
22	157	271	144	23	61	3.8	27	23	1.7
23	49	125	17	17	61	2.7	25	25	1.7
24	75	161	39	18	60	2.9	24	24	1.6
25	59	159	27	18	60	2.9	34	75	7.6
26	34	106	9.7	30	130	11	28	32	2.4
27	32	78	6.7	20	130	6.9	33	76	7.1
28	32	84	7.5	20	107	5.9	50	120	17
29	30	106	8.6	---	---	---	71	150	32
30	25	93	6.2	---	---	---	38	103	11
31	25	90	6.1	---	---	---	35	110	10
TOTAL	1049	---	453.2	745	---	292.1	872	---	195.3

e Estimated

50055225 RIO CAGÜITAS AT VILLA BLANCA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	e31	103	e8.7	12	22	.73	11	97	2.8
2	e77	168	e77	13	30	1.2	10	91	2.5
3	30	131	11	12	17	.57	12	85	2.9
4	22	85	5.0	12	18	.57	12	73	2.3
5	19	57	2.9	e11	18	e.55	11	60	1.7
6	23	80	5.1	e11	19	e.54	13	53	1.9
7	27	83	6.3	e9.7	20	e.50	14	69	2.5
8	29	23	1.7	e14	65	e5.7	15	94	3.8
9	28	16	1.2	e15	102	e12	17	128	5.8
10	21	17	.95	e20	81	e4.3	15	155	6.3
11	27	55	4.5	e19	92	e10	11	184	5.5
12	23	73	4.6	e15	60	e2.6	12	211	6.8
13	18	40	1.9	e18	88	e11	14	187	6.9
14	19	23	1.2	e15	54	e6.8	10	155	4.3
15	19	27	1.3	e14	62	e2.8	13	128	4.5
16	18	37	1.8	e15	225	e155	18	98	4.7
17	17	47	2.1	e14	31	e18	21	72	4.5
18	15	38	1.5	e13	15	e2.8	e46	125	e19
19	13	28	.96	e13	13	e2.3	e43	115	e14
20	14	21	.79	e14	12	e1.3	e30	57	e4.9
21	14	19	.73	14	14	.51	e24	84	e5.7
22	14	18	.70	14	15	.59	e28	97	e6.9
23	14	18	.69	17	39	2.7	e38	108	e12
24	13	17	.62	15	67	2.8	e23	123	e7.6
25	12	16	.54	17	71	3.4	e16	119	e5.1
26	12	16	.49	14	24	.93	e13	110	e3.8
27	16	36	1.9	22	51	5.2	e11	101	e3.0
28	14	47	1.8	21	77	5.2	e9.5	91	e2.3
29	14	29	1.1	20	62	4.2	e12	81	e2.6
30	14	24	.91	15	57	2.3	e11	72	e2.1
31	---	---	---	18	75	4.1	---	---	---
TOTAL	627	---	149.98	466.7	---	271.19	533.5	---	158.7

e Estimated

RIO GRANDE DE LOIZA BASIN

50055225 RIO CAGÜITAS AT VILLA BLANCA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	e9.4	55	e1.4	e11	5	e.14	e12	45	e1.4
2	e8.4	38	e.86	e9.7	3	e.08	e12	37	e1.2
3	e9.7	40	e1.1	e121	358	e295	e20	66	e4.4
4	e9.4	42	e1.1	e61	158	e33	e13	82	e3.3
5	e12	38	e1.2	e24	84	e5.5	e12	62	e1.9
6	e18	71	e4.2	e17	65	e2.9	e12	52	e1.7
7	e25	70	e7.8	e19	67	e3.7	e11	66	e2.0
8	e18	85	e4.1	e17	100	e4.7	e9.4	87	e2.4
9	e18	105	e5.0	e14	64	e2.4	e10	91	e2.6
10	e14	99	e3.6	e26	86	e8.7	e9.3	50	e1.3
11	e13	89	e3.2	e20	142	e7.5	e8.9	32	e1.2
12	e10	53	e1.5	e12	138	e4.5	85	335	208
13	e13	29	e1.0	e13	135	e4.7	70	286	126
14	e10	15	e.42	e13	134	e4.8	20	81	4.5
15	e8.7	8	e.19	e14	135	e5.1	21	68	4.3
16	e20	34	e3.7	e13	138	e4.8	14	47	1.7
17	e14	63	e2.4	e20	162	e8.8	13	62	2.2
18	e15	70	e3.2	e17	195	e8.8	e21	71	e4.0
19	e21	82	e5.2	e9.5	222	e5.7	e15	40	e1.4
20	e30	82	e7.3	e9.4	134	e3.4	e22	40	e2.4
21	e53	124	e25	e12	67	e2.0	e38	39	e4.0
22	e38	90	e14	189	243	314	e25	38	e2.6
23	e17	35	e1.9	33	103	9.6	e28	38	e2.8
24	e24	72	e6.1	166	168	163	e17	49	e2.2
25	e13	25	e.94	88	199	55	e15	103	e4.2
26	e12	20	e.63	27	96	7.1	e60	80	e13
27	e23	76	e6.2	35	99	16	e23	50	e3.1
28	e45	124	e35	e15	66	e2.8	e60	50	e8.1
29	e11	41	e1.2	e15	68	e3.1	e28	56	e4.2
30	e19	62	e4.1	e12	43	e1.4	e22	61	e3.6
31	e14	26	e.93	e29	85	e8.5	---	---	---
TOTAL	565.6	---	154.47	1081.6	---	996.72	726.6	---	425.7
YEAR	9330.0		3995.86						

e Estimated

50055225 RIO CAGÜITAS AT VILLA BLANCA AT CAGUAS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
JUL 1997							
28...	1002	287	1760	1370	48	54	58
AUG							
22...	1315	872	1940	4570	41	50	56

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
JUL 1997							
28...	70	81	93	99	99	100	100
AUG							
22...	71	81	95	99	100	100	100

50055225 RIO CAGÜITAS AT VILLA BLANCA AT CAGUAS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1996					
10...	1431	30	122	9.9	96
FEB 1997					
03...	1528	26	398	28	99
AUG					
03...	1845	391	900	950	98
03...	2300	218	2500	1470	100
19...	1500	8.1	241	5.3	86
24...	1830	877	225	533	96
25...	0030	223	314	189	99
SEP					
13...	1645	304	1590	1300	99

50055250 RIO CAGÜITAS AT HIGHWAY 30 AT CAGUAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'11", long 66°01'26", at Highway 30 bridge, and 0.8 mi (1.3 km) east of Caguas plaza.

DRAINAGE AREA.--14.1 mi² (36.5 km²).

PERIOD OF RECORD.--Water years 1972 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
07...	0945	20	446	6.9	26.0	5.3	6.3	77	16	36000	4600
FEB 1997											
10...	0850	19	499	6.7	22.5	14	4.0	45	19	K170000	27000
MAY											
16...	1025	14	509	6.8	26.5	72	3.5	43	65	47000	77000
SEP											
02...	0755	9.8	514	6.9	27.0	5.9	3.9	49	<10	K8100	2900

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
07...	160	44	13	25	0.9	2.5	141	<0.5	43	34
FEB 1997										
10...	--	--	--	--	--	--	190	--	--	--
MAY										
16...	160	43	13	34	1	3.4	160	<0.5	52	36
SEP										
02...	160	44	13	31	1	3.0	180	--	39	39

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
07...	0.10	28	274	15.1	26	0.570	0.110	0.680	0.330	<0.20
FEB 1997										
10...	--	--	--	--	16	0.730	0.140	0.880	1.70	0.60
MAY										
16...	0.17	29	307	11.3	186	0.120	0.050	0.170	2.00	1.5
SEP										
02...	0.14	36	314	8.34	12	0.290	0.160	0.450	1.00	0.71

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
07...	0.50	1.2	5.2	0.140	<1	<100	60	<1	1	10
FEB 1997										
10...	2.3	3.1	14	0.370	--	--	--	--	--	--
MAY										
16...	3.4	3.6	16	0.600	<1	<100	40	<1	1	20
SEP										
02...	1.8	2.2	9.7	0.310	--	--	--	--	--	--

K = non-ideal count

50055250 RIO CAGÜITAS AT HIGHWAY 30 AT CAGUAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
07...	960	1	320	<0.10	<1	<1	10	<0.010	3	0.03
FEB 1997										
10...	--	--	--	--	--	--	--	--	--	--
MAY										
16...	780	1	210	<0.10	<1	<1	20	<0.010	2	<0.01
SEP										
02...	--	--	--	--	--	--	--	--	--	--

50055390 RIO BAIROA AT BAIROA, PR

LOCATION.--Lat 18°15'32", long 66°02'24", Hydrologic Unit 21010005, on left bank, in the Bairoa Housing Area, 1.6 mi (2.6 km) northwest of Plaza de Caguas, 4.1 mi (6.6 km) east of Plaza de Aguas Buenas, and 0.9 mi (1.4 km) northwest of Escuela Pepita Garriga.

DRAINAGE AREA.--5.08 mi² (13.15 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--November 1990 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 131 ft (40 m), from topographic map.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station. Mean daily discharge affected by domestic discharge from nearby station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e11	e7.0	e9.0	e7.4	e19	e5.6	e4.0	e4.0	e6.2	e3.7	e3.8	e4.8
2	e10	e8.0	e7.0	e8.0	e22	e5.6	e25	e3.9	e12	e3.4	e4.6	e5.2
3	e11	e6.2	e6.2	e11	e9.0	e6.0	e10	e3.9	e27	e3.3	e88	e4.1
4	e9.8	e6.4	e5.8	e9.2	e7.6	e6.0	e7.8	e3.9	e9.0	e3.3	e29	e4.1
5	e9.4	e6.2	e5.8	e8.4	e7.4	e5.8	e6.6	e3.8	e6.6	e3.3	e15	e3.8
6	e9.0	e6.2	e6.2	e8.0	e7.2	e5.8	e6.0	e3.8	e6.0	e3.2	e8.9	e3.8
7	e9.0	e10	e8.6	e7.8	e7.0	e5.4	e5.4	e3.9	e5.6	e3.3	e7.8	e3.8
8	e9.4	e9.6	e6.0	e7.6	e6.4	e5.8	e5.4	e4.4	e5.0	e3.8	e6.0	e9.2
9	e11	e7.2	e5.6	e7.4	e9.8	e5.8	e5.4	e4.0	e4.9	e3.7	e5.0	e4.5
10	e20	e6.0	e5.2	e7.4	e7.2	e5.4	e5.0	e7.0	e4.6	e3.5	e7.4	e3.8
11	e11	e25	e39	e17	e8.2	e4.9	e5.6	e4.6	e5.0	e3.3	e6.0	e3.5
12	e8.4	e47	e11	e9.0	e8.0	e5.0	e5.0	e5.6	e4.6	e3.4	e5.0	e3.8
13	e8.0	e30	e10	e8.0	e14	e4.9	e5.6	e4.5	e6.6	e3.5	e4.3	e3.5
14	e8.0	e12	e8.6	e7.4	e10	e4.6	e5.1	e4.1	e9.6	e3.3	4.1	e4.0
15	e8.2	e9.4	e7.6	e7.4	e8.2	e6.6	e4.9	e6.0	e6.0	e3.2	3.9	e3.5
16	e7.4	e8.2	e7.4	e7.0	e8.0	e7.2	e4.8	e5.8	e4.3	e3.5	3.9	e4.9
17	e7.0	e10	e7.0	e7.2	e7.0	e5.2	e5.0	e19	e4.1	e3.3	4.6	4.2
18	e7.0	e8.0	e6.6	e7.3	e6.2	e5.2	e4.8	e5.2	e4.5	e20	4.4	5.6
19	e7.2	e8.8	e6.2	e7.4	e6.6	e5.4	e4.8	e4.4	e4.3	e24	3.9	3.4
20	e6.6	e8.6	e6.0	e13	e6.4	e4.8	e4.6	e4.4	e4.3	e10	3.8	4.7
21	e6.4	e16	e6.0	e22	e9.2	e4.6	e4.8	e4.7	e4.1	e16	e10	10
22	e6.2	e10	e5.6	e32	e8.6	e4.3	e4.6	e4.0	e4.1	e12	e54	6.9
23	e6.0	e8.4	e5.8	e9.8	e9.2	e4.2	e4.5	e3.9	e4.1	e5.4	e8.1	5.0
24	e5.6	e7.4	e6.1	e9.4	e6.8	e4.2	e4.5	e4.0	e4.3	e6.8	e33	3.6
25	e5.4	e6.8	e6.0	e8.6	e7.2	e3.9	e4.5	e3.9	e4.1	e4.7	e12	3.3
26	e8.8	e6.4	e5.8	e7.6	e8.2	e3.9	e4.4	e3.7	e4.0	e4.4	e7.6	10
27	e11	e6.0	e6.0	e6.2	e6.4	e3.9	e4.7	e5.6	e4.0	e5.6	e6.8	6.7
28	e7.8	e7.4	e5.6	e9.0	e6.0	e4.7	e4.8	e6.6	e3.9	e5.8	e5.6	7.8
29	e6.4	e6.6	e10	e7.0	---	e4.7	e4.2	e12	e3.8	e4.1	e5.0	6.6
30	e6.2	e9.2	e15	e6.2	---	e4.3	e4.1	e8.0	e4.0	e6.4	e4.7	5.5
31	e6.4	---	e8.0	e6.0	---	e4.0	---	e6.2	---	e5.0	e5.4	---
TOTAL	264.6	324.0	254.7	296.7	246.8	157.7	175.9	168.8	180.6	188.2	371.6	153.6
MEAN	8.54	10.8	8.22	9.57	8.81	5.09	5.86	5.45	6.02	6.07	12.0	5.12
MAX	20	47	39	32	22	7.2	25	19	27	24	88	10
MIN	5.4	6.0	5.2	6.0	6.0	3.9	4.0	3.7	3.8	3.2	3.8	3.3
AC-FT	525	643	505	589	490	313	349	335	358	373	737	305
CFSM	1.68	2.13	1.62	1.88	1.74	1.00	1.15	1.07	1.19	1.20	2.36	1.01
IN.	1.94	2.37	1.87	2.17	1.81	1.15	1.29	1.24	1.32	1.38	2.72	1.12

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1997, BY WATER YEAR (WY)

MEAN	9.61	10.1	8.84	9.10	5.63	4.31	4.93	6.05	5.28	8.06	8.78	20.3
MAX	25.3	22.2	19.7	14.7	8.81	5.53	9.23	12.5	8.64	16.5	17.7	76.9
(WY)	1991	1993	1993	1996	1997	1996	1996	1993	1993	1991	1996	1996
MIN	4.30	5.71	4.63	4.12	3.42	2.87	2.61	2.91	2.72	4.35	4.09	4.50
(WY)	1992	1995	1992	1995	1994	1994	1992	1994	1995	1994	1991	1991

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1991 - 1997	
ANNUAL TOTAL	5356.9		2783.2			
ANNUAL MEAN	14.6		7.63		8.42	
HIGHEST ANNUAL MEAN					14.5	1996
LOWEST ANNUAL MEAN					4.52	1994
HIGHEST DAILY MEAN	1700	Sep 10	88	Aug 3	1700	Sep 10 1996
LOWEST DAILY MEAN	2.9	Jul 6	3.2	Jul 6	1.3	Jul 2 1995
ANNUAL SEVEN-DAY MINIMUM	3.1	Jul 1	3.4	Jul 1	1.6	Jun 30 1995
INSTANTANEOUS PEAK FLOW			260	Aug 3	6190	Sep 10 1996
INSTANTANEOUS PEAK STAGE			9.25	Aug 3	18.16	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	10630		5520		6100	
ANNUAL RUNOFF (CFSM)	2.88		1.50		1.66	
ANNUAL RUNOFF (INCHES)	39.23		20.38		22.51	
10 PERCENT EXCEEDS	19		11		12	
50 PERCENT EXCEEDS	6.1		6.0		4.6	
90 PERCENT EXCEEDS	3.5		3.9		2.8	

e Estimated

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1991 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1994 to current year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1991.

REMARKS:-- Sediment samples were collected by a local observer on a weekly. During high flows events sediment samples were collected and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 7,040 mg/L September 10, 1996; Minimum daily mean, 2 mg/L Several years.

SEDIMENT LOADS: Maximum daily mean, 37,900 tons (34,300 tonnes) September 10, 1996; Minimum daily mean, 0.02 ton (0.01 tonne) Several years.

EXTREME FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 336 mg/L January 24, 1997; Minimum daily mean, 3 mg/L Several days.

SEDIMENT LOADS: Maximum daily mean, 31 tons (28 tonnes) August 4, 1997; Minimum daily mean, 0.03 ton (0.03 tonne) Several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	e11	22	e.67	e7.0	45	e.82	e9.0	61	e1.5
2	e10	18	e.52	e8.0	44	e.90	e7.0	55	e1.2
3	e11	12	e.35	e6.2	45	e.86	e6.2	48	e.86
4	e9.8	14	e.40	e6.4	63	e1.1	e5.8	42	e.68
5	e9.4	18	e.47	e6.2	89	e1.5	e5.8	24	e.38
6	e9.0	12	e.30	e6.2	82	e1.4	e6.2	12	e.20
7	e9.0	7	e.17	e10	66	e1.4	e8.6	10	e.20
8	e9.4	4	e.11	e9.6	54	e1.4	e6.0	21	e.41
9	e11	3	e.09	e7.2	44	e.99	e5.6	13	e.21
10	e20	17	e.77	e6.0	36	e.63	e5.2	8	e.12
11	e11	24	e.99	e25	59	e2.5	e39	71	e4.9
12	e8.4	17	e.45	e47	182	e18	e11	28	e2.3
13	e8.0	13	e.28	e30	284	e29	e10	11	e.30
14	e8.0	11	e.25	e12	115	e6.6	e8.6	12	e.30
15	e8.2	11	e.23	e9.4	52	e1.5	e7.6	13	e.29
16	e7.4	10	e.22	e8.2	58	e1.4	e7.4	10	e.20
17	e7.0	17	e.34	e10	74	e1.8	e7.0	7	e.13
18	e7.0	34	e.63	e8.0	51	e1.3	e6.6	6	e.11
19	e7.2	39	e.76	e8.8	34	e.78	e6.2	6	e.10
20	e6.6	42	e.77	e8.6	37	e.87	e6.0	7	e.11
21	e6.4	54	e.94	e16	45	e1.5	e6.0	8	e.13
22	e6.2	71	e1.2	e10	56	e1.9	e5.6	9	e.14
23	e6.0	84	e1.4	e8.4	68	e1.7	e5.8	11	e.16
24	e5.6	94	e1.5	e7.4	75	e1.6	e6.1	12	e.20
25	e5.4	77	e1.1	e6.8	49	e.95	e6.0	14	e.23
26	e8.8	57	e1.1	e6.4	31	e.55	e5.8	17	e.26
27	e11	42	e1.1	e6.0	21	e.34	e6.0	19	e.31
28	e7.8	35	e.86	e7.4	30	e.55	e5.6	23	e.36
29	e6.4	44	e.83	e6.6	51	e.95	e10	49	e1.1
30	e6.2	53	e.90	e9.2	59	e1.2	e15	103	e3.5
31	e6.4	49	e.83	---	---	---	e8.0	82	e2.5
TOTAL	264.6	---	20.53	324.0	---	85.99	254.7	---	23.39

e Estimated

50055390 RIO BAIROA AT BAIROA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	e7.4	55	e1.2	e19	55	e1.7	e5.6	30	e.47
2	e8.0	37	e.77	e22	49	e2.7	e5.6	21	e.32
3	e11	25	e.63	e9.0	43	e1.7	e6.0	35	e.55
4	e9.2	17	e.46	e7.6	26	e.59	e6.0	62	e1.0
5	e8.4	12	e.29	e7.4	14	e.29	e5.8	75	e1.2
6	e8.0	9	e.20	e7.2	16	e.31	e5.8	79	e1.2
7	e7.8	7	e.15	e7.0	22	e.43	e5.4	74	e1.1
8	e7.6	7	e.14	e6.4	42	e.75	e5.8	67	e1.0
9	e7.4	7	e.14	e9.8	65	e1.4	e5.8	60	e.94
10	e7.4	7	e.14	e7.2	28	e.66	e5.4	51	e.77
11	e17	32	e1.2	e8.2	10	e.21	e4.9	30	e.41
12	e9.0	45	e1.6	e8.0	9	e.19	e5.0	16	e.22
13	e8.0	8	e.18	e14	10	e.29	e4.9	11	e.14
14	e7.4	5	e.10	e10	11	e.37	e4.6	8	e.10
15	e7.4	4	e.08	e8.2	13	e.33	e6.6	7	e.11
16	e7.0	5	e.09	e8.0	16	e.34	e7.2	8	e.14
17	e7.2	6	e.11	e7.0	18	e.36	e5.2	7	e.12
18	e7.3	7	e.13	e6.2	18	e.33	e5.2	6	e.09
19	e7.4	8	e.17	e6.6	20	e.35	e5.4	8	e.12
20	e13	13	e.35	e6.4	44	e.77	e4.8	11	e.15
21	e22	50	e2.5	e9.2	101	e2.1	e4.6	10	e.13
22	e32	196	e15	e8.6	64	e1.5	e4.3	8	e.09
23	e9.8	299	e15	e9.2	29	e.70	e4.2	6	e.07
24	e9.4	336	e8.7	e6.8	42	e.89	e4.2	7	e.08
25	e8.6	129	e3.2	e7.2	82	e1.5	e3.9	8	e.09
26	e7.6	34	e.74	e8.2	88	e1.8	e3.9	5	e.05
27	e6.2	43	e.79	e6.4	76	e1.5	e3.9	3	e.03
28	e9.0	75	e1.5	e6.0	50	e.83	e4.7	5	e.06
29	e7.0	73	e1.6	---	---	---	e4.7	15	e.19
30	e6.2	68	e1.2	---	---	---	e4.3	31	e.38
31	e6.0	61	e1.0	---	---	---	e4.0	27	e.30
TOTAL	296.7	---	59.36	246.8	---	24.89	157.7	---	11.62

e Estimated

RIO GRANDE DE LOIZA BASIN

50055390 RIO BAIROA AT BAIROA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	e4.0	23	e.25	e4.0	5	e.05	e6.2	14	e.24
2	e25	78	e3.0	e3.9	8	e.08	e12	13	e.30
3	e10	39	e2.1	e3.9	17	e.18	e27	28	e1.7
4	e7.8	10	e.23	e3.9	37	e.39	e9.0	83	e4.1
5	e6.6	9	e.18	e3.8	68	e.71	e6.6	19	e.41
6	e6.0	9	e.15	e3.8	111	e1.1	e6.0	15	e.25
7	e5.4	9	e.14	e3.9	83	e.86	e5.6	16	e.26
8	e5.4	10	e.14	e4.4	49	e.55	e5.0	19	e.26
9	e5.4	9	e.13	e4.0	38	e.43	e4.9	19	e.26
10	e5.0	8	e.12	e7.0	31	e.45	e4.6	19	e.25
11	e5.6	9	e.13	e4.6	28	e.42	e5.0	14	e.18
12	e5.0	10	e.14	e5.6	33	e.46	e4.6	9	e.12
13	e5.6	11	e.15	e4.5	41	e.55	e6.6	9	e.13
14	e5.1	10	e.14	e4.1	40	e.46	e9.6	10	e.21
15	e4.9	9	e.12	e6.0	38	e.51	e6.0	11	e.22
16	e4.8	14	e.19	e5.8	54	e.69	e4.3	12	e.16
17	e5.0	27	e.37	e19	89	e2.5	e4.1	10	e.12
18	e4.8	25	e.32	e5.2	53	e1.7	e4.5	9	e.11
19	e4.8	17	e.21	e4.4	51	e.65	e4.3	10	e.12
20	e4.6	11	e.14	e4.4	73	e.87	e4.3	12	e.13
21	e4.8	5	e.07	e4.7	50	e.61	e4.1	11	e.12
22	e4.6	3	e.03	e4.0	27	e.32	e4.1	9	e.10
23	e4.5	5	e.06	e3.9	23	e.24	e4.1	8	e.09
24	e4.5	13	e.16	e4.0	22	e.24	e4.3	7	e.09
25	e4.5	14	e.17	e3.9	22	e.23	e4.1	7	e.08
26	e4.4	12	e.14	e3.7	21	e.21	e4.0	9	e.10
27	e4.7	15	e.20	e5.6	20	e.25	e4.0	12	e.13
28	e4.8	18	e.23	e6.6	22	e.35	e3.9	11	e.11
29	e4.2	9	e.10	e12	23	e.57	e3.8	8	e.09
30	e4.1	6	e.07	e8.0	21	e.55	e4.0	19	e.26
31	---	---	---	e6.2	17	e.33	---	---	---
TOTAL	175.9	---	9.58	168.8	---	17.51	180.6	---	10.70

e Estimated

50055390 RIO BAIROA AT BAIROA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	e3.7	18	e.18	e3.8	78	e.93	e4.8	8	e.11
2	e3.4	10	e.09	e4.6	47	e.54	e5.2	6	e.09
3	e3.3	12	e.11	e88	208	e26	e4.1	5	e.06
4	e3.3	12	e.10	e29	174	e31	e4.1	5	e.05
5	e3.3	10	e.09	e15	25	e1.5	e3.8	4	e.04
6	e3.2	9	e.08	e8.9	6	e.20	e3.8	4	e.04
7	e3.3	8	e.07	e7.8	4	e.09	e3.8	3	e.03
8	e3.8	7	e.08	e6.0	4	e.08	e9.2	11	e.24
9	e3.7	10	e.10	e5.0	5	e.07	e4.5	23	e.44
10	e3.5	5	e.05	e7.4	7	e.11	e3.8	4	e.04
11	e3.3	5	e.05	e6.0	9	e.15	e3.5	13	e.12
12	e3.4	6	e.05	e5.0	13	e.19	e3.8	81	e.81
13	e3.5	7	e.06	e4.3	23	e.28	e3.5	88	e.86
14	e3.3	5	e.04	4.1	18	e.20	e4.0	56	e.57
15	e3.2	3	e.03	3.9	9	e.10	e3.5	37	e.37
16	e3.5	17	e.16	3.9	8	e.08	e4.9	29	e.36
17	e3.3	10	e.09	4.6	18	e.24	4.2	24	.27
18	e20	10	e.13	4.4	13	e.16	5.6	49	1.0
19	e24	54	e2.3	3.9	5	e.05	3.4	22	.21
20	e10	82	e3.8	3.8	4	e.04	4.7	27	.48
21	e16	26	e.87	e10	19	e.41	10	57	2.2
22	e12	17	e.64	e54	162	e14	6.9	36	.93
23	e5.4	13	e.28	e8.1	86	e8.4	5.0	31	.44
24	e6.8	9	e.15	e33	37	e2.7	3.6	11	.11
25	e4.7	7	e.10	e12	96	e6.1	3.3	9	.08
26	e4.4	7	e.09	e7.6	18	e.48	10	107	4.7
27	e5.6	10	e.13	e6.8	14	e.26	6.7	42	.77
28	e5.8	16	e.25	e5.6	17	e.28	7.8	46	1.3
29	e4.1	77	e.96	e5.0	15	e.22	6.6	24	.47
30	e6.4	319	e4.6	e4.7	12	e.16	5.5	10	.14
31	e5.0	203	e3.2	e5.4	10	e.13	---	---	---
TOTAL	188.2	---	18.93	371.6	---	95.15	153.6	---	17.33
YEAR	2783.2		394.98						

e Estimated

RIO GRANDE DE LOIZA BASIN

50055390 RIO BAIROA AT BAIROA, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
24...	1545	e5.6	99	e1.5	96
NOV					
13...	1640	e30	302	e25	98
JAN 1997					
28...	1633	e9.0	854	e21	99
FEB					
09...	1118	e9.8	81	e2.1	91
MAY					
06...	1610	e3.8	129	e1.3	99
JUL					
30...	1530	e6.4	458	e7.9	100
AUG					
04...	1245	e29	95	e7.4	96
SEP					
26...	1700	14	212	8.0	98

e Estimated

RIO GRANDE DE LOIZA BASIN

50055400 RIO BAIROA NEAR CAGUAS, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'28", long 66°02'13", at bridge on Highway 1, about 2.5 mi (4.0 km) upstream from Río Grande de Loíza, and 1.4 mi (2.3 km) north of Caguas plaza.

DRAINAGE AREA.--5.4 mi² (14.0 km²).

PERIOD OF RECORD.--Water years 1958, 1962-66, 1973-74, 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
07...	1200	--	386	7.0	25.5	4.5	8.4	101	<10	2700	7200
FEB 1997											
10...	1035	6.1	395	6.7	23.0	1.2	5.1	57	14	21000	2200
MAY											
20...	1100	3.1	482	7.0	26.0	20	2.8	34	11	K7100	670
SEP											
02...	0930	2.8	454	6.8	27.0	17	3.2	40	<10	K63000	2800

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
07...	150	36	14	23	0.8	3.8	142	<0.5	18	31
FEB 1997										
10...	--	--	--	--	--	--	180	--	--	--
MAY										
20...	160	39	16	26	0.9	4.4	190	<0.5	15	38
SEP										
02...	160	39	15	25	0.9	4.1	160	--	18	35

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
07...	0.20	27	238	--	20	1.20	0.050	1.30	0.200	0.62
FEB 1997										
10...	--	--	--	--	6	1.10	0.100	1.20	0.330	0.43
MAY										
20...	0.21	31	283	2.34	30	0.890	0.180	1.10	0.800	0.45
SEP										
02...	0.16	30	263	1.97	25	0.980	0.100	1.10	0.260	0.54

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
07...	0.83	2.1	9.4	0.340	2	<100	50	<1	2	10
FEB 1997										
10...	0.76	1.9	8.6	0.270	--	--	--	--	--	--
MAY										
20...	1.2	2.3	10	0.380	<1	<100	30	<1	1	10
SEP										
02...	0.80	1.9	8.3	0.310	--	--	--	--	--	--

K = non-ideal count

50055400 RIO BAIROA NEAR CAGUAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
07...	660	2	150	<0.10	<1	<1	20	<0.010	2	0.05
FEB 1997										
10...	--	--	--	--	--	--	--	--	--	--
MAY										
20...	510	2	130	<0.10	<1	<1	10	<0.010	1	0.03
SEP										
02...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE LOIZA BASIN

50055750 RIO GURABO BELOW EL MANGO, PR

LOCATION.--Lat 18°14'02", long 65°53'07", Hydrologic Unit 21010005, on left bank, 2.43 mi (3.91 km) northeast of Plaza de Juncos, 1.3 mi (2.1 km) southeast of Escuela La Placita and 0.35 mi (0.56 km) southwest of El Mango.

DRAINAGE AREA.--22.3 mi² (57.8 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1990 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 230 ft (70 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station. Low-flow is affected by sewage discharges from a water treatment plant, 0.60 mi (0.96 m) upstream from gaging station since 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	28	31	17	e270	11	9.5	4.6	7.2	5.6	14	e13
2	18	51	27	15	e210	11	53	4.6	10	5.4	10	e12
3	17	22	22	14	e56	15	39	4.4	23	4.8	14	e8.5
4	22	19	20	13	e16	19	10	4.1	12	4.5	14	e7.5
5	21	19	19	12	e21	17	8.0	4.2	8.7	4.3	10	e7.3
6	17	30	18	12	e52	13	7.8	4.3	7.2	4.8	7.6	6.7
7	25	414	17	12	e39	12	6.9	5.8	6.7	5.0	6.3	6.2
8	21	46	17	13	e24	12	6.7	16	6.3	4.9	6.3	6.1
9	22	40	16	14	e28	13	6.5	13	6.4	6.5	e9.3	7.1
10	41	26	16	12	e25	11	6.3	13	6.1	8.0	e32	5.7
11	31	132	38	12	e20	10	6.0	8.3	5.6	6.4	e12	5.0
12	19	506	27	11	e21	11	6.1	6.8	5.2	5.1	e11	6.1
13	17	231	18	10	e68	11	6.2	6.8	5.0	6.5	e20	6.9
14	16	43	16	10	e40	10	6.1	12	4.8	5.9	e13	8.3
15	15	30	15	9.8	e26	10	6.1	8.0	5.7	6.3	e8.0	27
16	15	32	16	9.5	e18	12	5.8	7.4	4.8	7.1	e32	9.5
17	14	47	16	9.1	e21	12	5.8	7.6	5.5	7.8	e13	6.3
18	13	45	15	8.8	e17	11	5.8	7.2	8.2	8.8	e70	8.0
19	13	70	14	8.8	e17	11	5.7	6.0	16	8.2	e18	5.8
20	13	43	14	13	e14	9.9	5.7	6.2	33	40	e10	4.7
21	12	40	14	23	e21	9.5	5.6	6.6	41	171	e46	7.9
22	12	57	14	e105	e23	9.6	5.5	5.8	49	95	e440	11
23	12	39	14	e32	e47	9.1	4.9	5.4	156	35	e46	18
24	12	60	13	e33	e17	8.8	4.8	5.1	216	23	e650	8.0
25	20	34	15	e20	e26	8.6	4.8	5.3	150	11	e70	5.8
26	49	21	14	e12	e28	8.6	4.9	5.0	56	18	e16	308
27	32	18	15	e9.7	e13	8.0	4.8	6.3	9.5	13	e11	39
28	37	19	16	e19	11	8.5	5.2	16	7.3	72	e19	14
29	51	18	29	e15	---	13	5.3	8.9	6.6	24	e14	18
30	19	39	46	e8.4	---	11	5.0	16	6.4	76	e7.0	46
31	15	---	27	e8.6	---	9.5	---	8.0	---	21	e38	---
TOTAL	661	2219	609	521.7	1189	346.1	263.8	238.7	885.2	714.9	1687.5	643.4
MEAN	21.3	74.0	19.6	16.8	42.5	11.2	8.79	7.70	29.5	23.1	54.4	21.4
MAX	51	506	46	105	270	19	53	16	216	171	650	308
MIN	12	18	13	8.4	11	8.0	4.8	4.1	4.8	4.3	6.3	4.7
AC-FT	1310	4400	1210	1030	2360	686	523	473	1760	1420	3350	1280
CFSM	.96	3.32	.88	.75	1.90	.50	.39	.35	1.32	1.03	2.44	.96
IN.	1.10	3.70	1.02	.87	1.98	.58	.44	.40	1.48	1.19	2.82	1.07

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1997, BY WATER YEAR (WY)

MEAN	43.7	66.7	29.8	38.8	32.3	12.1	8.62	26.7	48.9	48.9	35.8	77.1
MAX	161	109	59.0	103	66.7	18.1	11.0	123	117	147	54.4	189
(WY)	1991	1992	1991	1996	1995	1991	1993	1992	1992	1993	1997	1996
MIN	4.01	13.6	12.0	6.34	10.4	5.63	5.29	4.83	14.7	6.74	10.2	21.4
(WY)	1993	1996	1994	1995	1993	1993	1995	1990	1991	1994	1993	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1990 - 1997	
ANNUAL TOTAL	20769.5		9979.3			
ANNUAL MEAN	56.7		27.3		40.3	
HIGHEST ANNUAL MEAN					52.3	1992
LOWEST ANNUAL MEAN					22.0	1994
HIGHEST DAILY MEAN	4040	Sep 10	650	Aug 24	4040	Sep 10 1996
LOWEST DAILY MEAN	4.1	Aug 13	4.1	May 4	1.1	Oct 27 1992
ANNUAL SEVEN-DAY MINIMUM	5.1	May 24	4.5	Apr 30	1.4	Oct 22 1992
INSTANTANEOUS PEAK FLOW			3570	Nov 12	19100	Sep 10 1996
INSTANTANEOUS PEAK STAGE			15.79	Nov 12	24.12	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	41200		19790		29200	
ANNUAL RUNOFF (CFSM)	2.54		1.23		1.81	
ANNUAL RUNOFF (INCHES)	34.65		16.65		24.55	
10 PERCENT EXCEEDS	80		46		69	
50 PERCENT EXCEEDS	15		13		11	
90 PERCENT EXCEEDS	5.7		5.6		4.4	

e Estimated

50055750 RIO GURABO BELOW EL MANGO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water year 1990 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: March 1990 to current year.

INSTRUMENTATION.--USDH-48 sediment sampler and automatic sediment sampler since 1990.

REMARKS:-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected by a local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,490 mg/L September 10, 1996; Minimum daily mean, 2 mg/L May 5,1997.

SEDIMENT LOADS: Maximum daily mean, 17,900 tons (16,200 tonnes) September 10, 1996; Minimum daily mean, 0.05 ton (0.3 tonne) several days.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 775 mg/L November 07, 1996; Minimum daily mean, 2 mg/L May 5, 1997.

SEDIMENT LOADS: Maximum daily mean, 1,880 tons (1,710 tonnes) January 22, 1997; Minimum daily mean, 0.90 ton (0.82 tonne) May 5, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	20	88	137	28	47	75	31	60	73
2	18	85	144	51	92	37	27	45	64
3	17	83	149	22	41	16	22	41	40
4	22	91	148	19	34	29	20	38	21
5	21	105	157	19	35	14	19	35	41
6	17	109	85	30	58	39	18	34	37
7	25	110	125	414	775	720	17	33	50
8	21	111	45	46	91	91	17	32	25
9	22	112	35	40	72	38	16	31	40
10	41	117	27	26	54	40	16	30	40
11	31	98	17	132	251	208	38	67	75
12	19	58	9.1	506	640	423	27	49	28
13	17	47	13	231	436	476	18	36	11
14	16	45	17	43	83	77	16	30	29
15	15	43	47	30	51	27	15	28	28
16	15	42	63	32	57	48	16	27	37
17	14	40	40	47	89	39	16	27	23
18	13	42	58	45	87	158	15	26	16
19	13	86	35	70	125	287	14	26	14
20	13	172	72	43	91	202	14	25	13
21	12	247	376	40	72	92	14	25	14
22	12	313	425	57	103	181	14	25	14
23	12	238	368	39	74	116	14	26	19
24	12	167	219	60	122	76	13	26	18
25	20	126	163	34	61	73	15	26	11
26	49	141	65	21	39	45	14	26	31
27	32	74	50	18	33	37	15	27	31
28	37	107	23	19	33	17	16	28	14
29	51	135	38	18	33	28	29	52	21
30	19	59	85	39	69	35	46	83	84
31	15	35	52	---	---	---	27	51	31
TOTAL	661	---	3287.1	2219	---	3744	609	---	993

50055750 RIO GURABO BELOW EL MANGO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	17	31	12	e270	299	e113	11	8	2.8
2	15	26	11	e210	306	e174	11	8	2.0
3	14	25	11	e56	58	e41	15	17	13
4	13	23	23	e16	31	e28	19	69	60
5	12	22	12	e21	35	e36	17	36	26
6	12	21	11	e52	71	e68	13	16	11
7	12	20	8.4	e39	56	e38	12	11	11
8	13	24	17	e24	42	e22	12	24	8.3
9	14	26	8.8	e28	39	e19	13	25	5.7
10	12	22	5.2	e25	37	e39	11	7	4.5
11	12	21	18	e20	36	e37	10	8	7.9
12	11	20	7.0	e21	36	e40	11	14	11
13	10	19	11	e68	83	e78	11	8	6.7
14	10	18	22	e40	58	e50	10	8	7.4
15	9.8	17	19	e26	44	e21	10	12	7.5
16	9.5	17	15	e18	39	e31	12	15	13
17	9.1	16	14	e21	35	e22	12	11	9.2
18	8.8	16	10	e17	31	e18	11	7	4.8
19	8.8	17	11	e17	28	e19	11	7	5.6
20	13	24	17	e14	26	e22	9.9	8	5.8
21	23	41	101	e21	31	e31	9.5	10	5.3
22	e105	205	e1880	e23	37	e30	9.6	11	2.9
23	e32	58	e163	e47	56	e27	9.1	10	6.2
24	e33	58	e106	e17	24	e17	8.8	12	8.7
25	e20	37	e67	e26	16	e10	8.6	16	13
26	e12	21	e29	e28	10	e9.6	8.6	21	19
27	e9.7	19	e28	e13	9	e8.5	8.0	19	18
28	e19	37	e53	11	8	7.1	8.5	16	7.8
29	e15	24	e29	---	---	---	13	19	7.6
30	e8.4	20	e23	---	---	---	11	26	14
31	e8.6	16	e19	---	---	---	9.5	24	17
TOTAL	521.7	---	2761.4	1189	---	1056.2	346.1	---	342.7

e Estimated

50055750 RIO GURABO BELOW EL MANGO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	9.5	25	17	4.6	6	4.5	7.2	21	2.0
2	53	99	68	4.6	5	4.2	10	37	3.4
3	39	111	37	4.4	4	2.3	23	42	11
4	10	27	20	4.1	3	1.2	12	25	21
5	8.0	13	7.6	4.2	2	.90	8.7	32	24
6	7.8	11	4.1	4.3	4	2.3	7.2	48	35
7	6.9	11	2.0	5.8	8	5.5	6.7	30	14
8	6.7	10	6.3	16	28	16	6.3	15	2.9
9	6.5	9	7.1	13	23	6.9	6.4	18	6.6
10	6.3	8	7.4	13	25	18	6.1	24	3.3
11	6.0	7	6.6	8.3	11	6.2	5.6	17	7.1
12	6.1	8	3.0	6.8	9	6.0	5.2	11	2.3
13	6.2	10	1.9	6.8	8	7.4	5.0	11	1.2
14	6.1	14	2.4	12	17	8.6	4.8	12	1.1
15	6.1	21	12	8.0	11	9.3	5.7	12	1.0
16	5.8	15	13	7.4	10	6.8	4.8	13	1.6
17	5.8	8	6.7	7.6	10	2.7	5.5	13	2.6
18	5.8	7	7.4	7.2	9	6.2	8.2	12	2.0
19	5.7	10	3.6	6.0	8	6.9	16	27	2.4
20	5.7	14	3.3	6.2	10	4.1	33	40	3.5
21	5.6	18	6.6	6.6	11	2.8	41	26	2.0
22	5.5	17	6.3	5.8	10	2.1	49	45	6.4
23	4.9	16	14	5.4	10	3.4	156	289	174
24	4.8	18	15	5.1	9	4.2	216	168	41
25	4.8	22	10	5.3	9	4.4	150	36	3.7
26	4.9	22	4.0	5.0	9	6.5	56	24	2.4
27	4.8	20	19	6.3	11	7.5	9.5	28	2.3
28	5.2	12	8.0	16	35	7.2	7.3	34	2.8
29	5.3	6	3.3	8.9	16	6.1	6.6	29	2.6
30	5.0	5	4.2	16	29	8.9	6.4	24	2.4
31	---	---	---	8.0	13	2.2	---	---	---
TOTAL	263.8	---	326.8	238.7	---	181.30	885.2	---	387.6

50055750 RIO GURABO BELOW EL MANGO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
	JULY			AUGUST			SEPTEMBER		
1	5.6	20	10	14	43	26	e13	22	e4.9
2	5.4	17	12	10	28	9.1	e12	98	e74
3	4.8	18	9.3	14	25	6.6	e8.5	27	e35
4	4.5	20	3.8	14	23	2.6	e7.5	32	e29
5	4.3	23	2.5	10	22	2.2	e7.3	22	e14
6	4.8	26	2.6	7.6	21	3.7	6.7	15	9.7
7	5.0	32	3.1	6.3	29	6.0	6.2	14	3.8
8	4.9	38	7.7	6.3	43	11	6.1	14	10
9	6.5	29	5.8	e9.3	47	e8.8	7.1	18	17
10	8.0	21	2.1	e32	45	e8.5	5.7	24	14
11	6.4	20	4.4	e12	24	e4.2	5.0	21	12
12	5.1	19	2.9	e11	218	e154	6.1	18	5.2
13	6.5	20	2.0	e20	29	e15	6.9	14	2.5
14	5.9	21	2.0	e13	55	e50	8.3	20	2.6
15	6.3	18	5.9	e8.0	57	e90	27	50	6.5
16	7.1	15	2.9	e32	48	e36	9.5	16	6.6
17	7.8	17	2.5	e13	54	e34	6.3	13	3.2
18	8.8	39	8.5	e70	27	e15	8.0	15	3.7
19	8.2	16	4.4	e18	12	e5.5	5.8	16	3.7
20	40	75	13	e10	23	e22	4.7	22	2.8
21	171	147	41	e46	49	e17	7.9	30	6.7
22	95	171	51	e440	206	e167	11	21	2.3
23	35	116	25	e46	76	e51	18	36	3.7
24	23	97	35	e650	360	e88	8.0	30	5.3
25	11	39	12	e70	130	e90	5.8	30	3.8
26	18	34	3.9	e16	43	e24	308	473	47
27	13	27	2.8	e11	13	e10	39	73	9.5
28	72	113	54	e19	13	e11	14	37	12
29	24	37	29	e14	15	e6.0	18	36	48
30	76	147	76	e7.0	14	e3.8	46	77	50
31	21	40	28	e38	207	e26	---	---	---
TOTAL	714.9	---	465.1	1687.5	---	1004.0	643.4	---	448.5
YEAR	9979.3		14997.70						

e Estimated

50055750 RIO GURABO BELOW EL MANGO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
NOV 1996							
07...	0336	1470	5600	22200	32	41	51
AUG 1997							
12...	2215	e11	1698	e50	70	74	76
31...	1507	e38	2560	e262	66	68	73
SEP							
02...	1651	e12	1810	e58	60	67	72

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
NOV 1996							
07...	65	78	93	98	99	100	100
AUG 1997							
12...	--	86	98	99	100	100	100
31...	80	84	99	100	100	100	100
SEP							
02...	78	86	98	99	100	100	100

e = estimate

RIO GRANDE DE LOIZA BASIN

50055750 RIO GURABO BELOW EL MANGO--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
24...	1801	12	2200	71	14
NOV					
07...	1245	1234	1270	4230	94
07...	1445	361	1260	1230	99
MAR 1997					
20...	1830	9.6	109	2.8	98
JUN					
30...	1200	6.3	229	3.9	76
JUL					
24...	1200	56	2010	304	99

RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR

LOCATION.--Lat 18°12'58", long 65°55'34", Hydrologic Unit 21010005, on left bank at Highway 919, 0.5 mi (0.8 km) upstream from Quebrada Don Víctor, 1.7 mi (2.7 km) upstream from Río Gurabo and 1.0 mi (1.6 km) south of Juncos.

DRAINAGE AREA.--16.4 mi² (42.5 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1971 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 320 ft (98 m), from topographic map.

REMARKS.--Records poor. Minor diversion from public water supply tank, 0.5 mi upstream, during low flow. Gage-height and precipitation satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate discharges (no stages were recorded) of major floods are as follows: Sept. 6, 1960, 37,100 ft³/s (1,050 m³/s), Oct. 9, 1970, 18,200 ft³/s (515 m³/s).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	e34	24	16	217	e9.0	9.2	5.1	20	4.9	17	27
2	38	e68	22	14	174	e9.0	271	5.1	25	4.7	12	26
3	36	e30	18	13	46	e13	90	4.4	37	4.0	14	19
4	34	e25	18	12	23	e16	24	5.2	20	4.0	11	14
5	37	e25	17	13	27	e14	18	5.8	15	4.9	9.3	12
6	31	e110	16	11	43	e11	15	4.6	11	20	8.7	10
7	44	308	27	10	32	e9.8	15	4.8	8.4	6.7	7.7	11
8	32	68	16	10	19	12	14	5.5	8.0	5.4	10	69
9	e34	49	15	10	23	9.0	13	15	8.0	7.4	12	26
10	e65	49	14	10	20	8.3	13	33	6.9	5.8	40	12
11	e44	161	e16	e19	16	8.4	11	39	8.3	5.0	15	11
12	e25	543	e12	9.6	17	8.9	12	24	6.1	4.8	14	24
13	e23	203	12	8.8	55	8.9	10	18	9.9	16	26	15
14	e22	65	12	8.9	32	8.1	10	13	5.6	7.9	16	39
15	e20	58	11	8.8	22	7.9	8.5	27	5.0	7.1	10	72
16	e20	40	13	8.2	15	17	7.8	20	4.4	9.1	41	20
17	e19	59	17	7.6	17	11	8.1	14	4.3	12	17	15
18	e17	54	16	7.5	14	9.7	7.7	9.3	3.9	24	87	17
19	e17	311	16	7.8	14	10	7.1	7.8	8.2	15	22	12
20	e17	91	16	13	11	8.6	7.0	7.3	7.9	25	12	10
21	e16	97	15	21	17	7.9	7.6	12	4.9	498	e62	44
22	e16	60	14	128	19	7.6	7.6	7.4	4.4	160	e900	25
23	e16	52	14	17	38	7.5	5.8	7.0	50	26	57	37
24	e16	51	13	26	14	7.7	5.7	6.5	48	60	795	69
25	e30	36	31	12	21	7.3	5.8	6.7	12	17	125	19
26	e65	29	13	12	22	7.6	5.5	6.4	11	12	34	146
27	e42	24	13	9.8	e17	8.5	5.6	29	7.8	19	23	34
28	e50	28	13	15	e9.0	8.1	6.6	37	5.8	100	40	18
29	e68	29	21	8.8	---	17	6.3	24	5.0	23	31	16
30	e25	32	63	6.7	---	12	6.1	16	4.8	68	15	62
31	e20	---	37	6.9	---	9.7	---	26	---	18	81	---
TOTAL	977	2789	575	481.4	994.0	310.5	634.0	445.9	376.6	1194.7	2564.7	931
MEAN	31.5	93.0	18.5	15.5	35.5	10.0	21.1	14.4	12.6	38.5	82.7	31.0
MAX	68	543	63	128	217	17	271	39	50	498	900	146
MIN	16	24	11	6.7	9.0	7.3	5.5	4.4	3.9	4.0	7.7	10
AC-FT	1940	5530	1140	955	1970	616	1260	884	747	2370	5090	1850
CFSM	1.92	5.67	1.13	.95	2.16	.61	1.29	.88	.77	2.35	5.04	1.89
IN.	2.22	6.33	1.30	1.09	2.25	.70	1.44	1.01	.85	2.71	5.82	2.11

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1997, BY WATER YEAR (WY)

MEAN	71.6	87.1	52.8	24.6	19.5	18.5	15.2	47.3	51.6	47.8	61.7	83.6
MAX	293	461	550	77.0	47.9	39.7	41.7	268	188	163	231	255
(WY)	1986	1988	1988	1992	1984	1973	1985	1985	1979	1981	1979	1979
MIN	19.9	16.8	11.0	11.4	7.21	7.01	5.17	5.02	4.95	4.61	4.71	10.8
(WY)	1993	1996	1990	1976	1974	1977	1995	1990	1994	1994	1994	1987

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1971 - 1997	
ANNUAL TOTAL	24930.9		12273.8			
ANNUAL MEAN	68.1		33.6		48.6	
HIGHEST ANNUAL MEAN					121	1988
LOWEST ANNUAL MEAN					17.1	1990
HIGHEST DAILY MEAN	5000	Sep 10	900	Aug 22	9100	Dec 8 1987
LOWEST DAILY MEAN	4.1	May 28	3.9	Jun 18	1.4	Jul 15 1994
ANNUAL SEVEN-DAY MINIMUM	5.5	May 22	4.6	Jun 29	1.7	Jul 10 1994
INSTANTANEOUS PEAK FLOW			6290	Aug 24	40000	Dec 8 1987
INSTANTANEOUS PEAK STAGE			12.37	Aug 24	25.63	Dec 8 1987
ANNUAL RUNOFF (AC-FT)	49450		24350		35230	
ANNUAL RUNOFF (CFSM)	4.15		2.05		2.97	
ANNUAL RUNOFF (INCHES)	56.55		27.84		40.29	
10 PERCENT EXCEEDS	116		60		71	
50 PERCENT EXCEEDS	27		15		18	
90 PERCENT EXCEEDS	11		6.5		6.9	

e Estimated

RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1983 to 1986 and water year 1989 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1994 to current year.

INSTRUMENTATION.-- Automatic sediment sampler since 1984.

REMARKS:-- Sediment samples ware collected by a local observer on a weekly basis. During high flow events sediment samples were collected by a local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 8,340 mg/L September 10, 1996; Minimum daily mean, 1 mg/L several years.

SEDIMENT LOADS: Maximum daily mean, 263,000 tons (238,000 tonnes) September 10, 1996; Minimum daily mean, 0.01 ton (0.01 tonne) several days.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,300 mg/L February 1, 1997; Minimum daily mean, 5 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 6,930 tons (6,290 tonnes) August 24, 1997; Minimum daily mean, 0.06 tons (0.05 tonne) May 3, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	38	36	3.7	e34	48	e3.5	24	120	7.8
2	38	36	3.6	e68	170	e25	22	98	5.8
3	36	35	3.5	e30	225	e30	18	93	4.7
4	34	32	3.0	e25	140	e10	18	89	4.2
5	37	56	6.1	e25	128	e8.6	17	84	3.9
6	31	37	3.1	e110	488	e393	16	80	3.5
7	44	152	21	308	1120	1560	27	139	12
8	32	157	13	68	722	137	16	77	3.4
9	e34	72	e9.5	49	214	29	15	70	2.8
10	e65	24	e4.2	49	160	25	14	63	2.4
11	e44	18	e2.1	161	649	386	e16	58	e2.5
12	e25	18	e1.6	543	1040	2810	e12	53	e1.9
13	e23	18	e1.2	203	664	464	12	48	1.6
14	e22	17	e1.1	65	307	55	12	44	1.4
15	e20	18	e1.0	58	304	50	11	40	1.2
16	e20	21	e1.1	40	179	20	13	35	1.3
17	e19	24	e1.2	59	272	57	17	20	.89
18	e17	28	e1.3	54	142	22	16	14	.61
19	e17	33	e1.5	311	896	978	16	28	1.2
20	e17	39	e1.8	91	480	127	16	58	2.5
21	e16	45	e1.9	97	425	126	15	95	3.9
22	e16	53	e2.3	60	170	29	14	78	3.0
23	e16	62	e2.7	52	39	5.6	14	59	2.2
24	e16	72	e3.1	51	131	22	13	44	1.6
25	e30	109	e6.8	36	145	14	31	111	11
26	e65	222	e39	29	76	5.9	13	70	2.5
27	e42	58	e8.7	24	74	4.8	13	74	2.6
28	e50	134	e17	28	118	9.4	13	78	2.9
29	e68	286	e46	29	131	11	21	104	6.6
30	e25	98	e14	32	103	11	63	1230	290
31	e20	34	e1.8	---	---	---	37	192	26
TOTAL	977	---	227.9	2789	---	7428.8	575	---	417.90

e Estimated

RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	16	67	2.9	217	1300	2010	e9.0	10	e.25
2	14	28	1.1	174	598	577	e9.0	9	e.23
3	13	15	.53	46	220	29	e13	10	e.29
4	12	14	.47	23	125	7.9	e16	13	e.51
5	13	27	.93	27	114	18	e14	17	e.67
6	11	17	.52	43	233	44	e11	17	e.48
7	10	15	.41	32	184	21	e9.8	17	e.42
8	10	14	.38	19	267	14	12	48	1.8
9	10	13	.35	23	110	7.2	9.0	43	1.1
10	10	12	.33	20	82	4.4	8.3	30	.68
11	e19	83	e4.4	16	68	2.9	8.4	21	.47
12	9.6	55	1.4	17	97	5.6	8.9	17	.40
13	8.8	42	1.0	55	250	42	8.9	15	.37
14	8.9	28	.67	32	160	14	8.1	17	.36
15	8.8	24	.56	22	103	6.3	7.9	18	.38
16	8.2	42	.92	15	74	3.0	17	58	3.6
17	7.6	59	1.2	17	89	4.2	11	16	.47
18	7.5	41	.83	14	90	3.4	9.7	12	.32
19	7.8	28	.58	14	76	3.0	10	12	.32
20	13	19	.65	11	53	1.6	8.6	11	.26
21	21	81	8.4	17	85	4.5	7.9	11	.23
22	128	612	410	19	96	5.2	7.6	10	.21
23	17	131	6.3	38	218	32	7.5	10	.20
24	26	126	12	14	90	3.6	7.7	9	.19
25	12	63	2.1	21	110	7.2	7.3	9	.19
26	12	55	1.7	22	96	6.7	7.6	11	.23
27	9.8	47	1.3	e17	93	6.1	8.5	13	.30
28	15	69	3.2	e9.0	28	.68	8.1	13	.28
29	8.8	46	1.1	---	---	---	17	62	4.9
30	6.7	37	.67	---	---	---	12	58	1.9
31	6.9	37	.68	---	---	---	9.7	27	.70
TOTAL	481.4	---	467.58	994.0	---	2884.48	310.5	---	22.71

e Estimated

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	9.2	15	.36	5.1	5	.07	20	104	7.2
2	271	353	1360	5.1	5	.07	25	175	13
3	90	85	56	4.4	5	.06	37	101	11
4	24	15	.99	5.2	20	.35	20	94	5.5
5	18	14	.69	5.8	15	.24	15	54	2.4
6	15	13	.54	4.6	13	.16	11	70	2.0
7	15	13	.50	4.8	13	.17	8.4	54	1.2
8	14	12	.44	5.5	13	.19	8.0	36	.79
9	13	9	.34	15	62	3.9	8.0	27	.58
10	13	8	.27	33	163	18	6.9	21	.40
11	11	7	.21	39	184	34	8.3	36	.95
12	12	7	.22	24	127	9.3	6.1	31	.52
13	10	9	.25	18	117	6.2	9.9	48	1.4
14	10	12	.33	13	72	2.8	5.6	24	.37
15	8.5	11	.25	27	71	6.0	5.0	13	.17
16	7.8	10	.21	20	55	3.3	4.4	7	.09
17	8.1	40	.91	14	31	1.2	4.3	6	.08
18	7.7	45	.94	9.3	34	.85	3.9	7	.07
19	7.1	38	.72	7.8	52	1.1	8.2	28	.86
20	7.0	31	.60	7.3	43	.88	7.9	36	.77
21	7.6	26	.54	12	37	1.3	4.9	25	.33
22	7.6	23	.47	7.4	15	.30	4.4	21	.24
23	5.8	18	.28	7.0	9	.17	50	375	142
24	5.7	10	.16	6.5	9	.16	48	213	39
25	5.8	7	.10	6.7	10	.17	12	40	1.3
26	5.5	8	.12	6.4	10	.17	11	18	.53
27	5.6	11	.16	29	154	83	7.8	15	.31
28	6.6	11	.20	37	308	64	5.8	13	.20
29	6.3	7	.12	24	106	9.2	5.0	11	.14
30	6.1	5	.08	16	84	3.8	4.8	9	.12
31	---	---	---	26	125	14	---	---	---
TOTAL	634.0	---	1427.00	445.9	---	265.11	376.6	---	233.52

RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	4.9	8	.11	17	98	4.8	27	105	8.6
2	4.7	8	.10	12	59	1.8	26	95	12
3	4.0	8	.09	14	74	3.0	19	106	5.7
4	4.0	8	.09	11	39	1.2	14	36	1.3
5	4.9	21	.29	9.3	23	.58	12	11	.33
6	20	88	6.5	8.7	20	.47	10	8	.22
7	6.7	50	.93	7.7	18	.38	11	8	.23
8	5.4	32	.46	10	44	1.2	69	360	307
9	7.4	38	.83	12	61	2.1	26	131	12
10	5.8	33	.51	40	200	26	12	17	.54
11	5.0	28	.38	15	54	2.3	11	15	.43
12	4.8	23	.30	14	34	3.6	24	105	13
13	16	78	4.3	26	137	14	15	92	4.2
14	7.9	29	.63	16	109	5.4	39	198	33
15	7.1	24	.46	10	109	3.0	72	220	64
16	9.1	22	.54	41	232	44	20	17	.94
17	12	21	.68	17	111	5.8	15	15	.59
18	24	259	36	87	295	93	17	103	5.3
19	15	313	13	22	69	4.1	12	138	4.5
20	25	97	9.2	12	48	1.5	10	86	2.3
21	498	1140	5020	e62	61	e6.4	44	281	51
22	160	329	236	e900	630	e937	25	140	10
23	26	93	6.8	57	339	58	37	139	17
24	60	223	62	795	1030	6930	69	298	77
25	17	51	2.4	125	414	188	19	105	5.6
26	12	42	1.4	34	90	8.1	146	372	281
27	19	89	5.0	23	96	5.9	34	158	16
28	100	346	182	40	126	21	18	54	2.7
29	23	123	8.5	31	211	23	16	43	1.8
30	68	284	78	15	303	12	62	261	72
31	18	91	4.4	81	392	111	---	---	---
TOTAL	1194.7	---	5681.90	2564.7	---	8518.63	931	---	1010.28
YEAR	12273.8		28585.81						

e Estimated

RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
NOV 1996							
07...	1400	1270	4510	15500	27	42	58
12...	1600	195	2570	1350	47	52	78
19...	0545	658	1850	3280	51	55	66
DEC							
30...	0630	39	6600	695	49	57	67
JAN 1997							
22...	0710	284	2270	1740	39	46	59
FEB							
01...	1215	1170	9020	28500	27	33	39
MAY							
27...	2245	231	2200	1370	68	74	82
JUL							
21...	1145	405	1530	1670	69	76	80
30...	0734	95	917	235	79	85	88
AUG							
22...	1900	331	1490	1330	53	62	71
SEP							
26...	1325	370	928	927	73	81	86

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
NOV 1996							
07...	65	74	86	96	98	99	100
12...	79	88	99	100	100	100	100
19...	77	83	94	98	99	100	100
DEC							
30...	79	86	99	100	100	100	100
JAN 1997							
22...	68	76	89	96	99	100	100
FEB							
01...	50	64	83	93	98	100	100
MAY							
27...	88	90	99	99	100	100	100
JUL							
21...	88	89	99	99	100	100	100
30...	91	93	99	99	100	100	100
AUG							
22...	82	85	96	98	99	100	100
SEP							
26...	89	93	99	100	100	100	100

RIO GRANDE DE LOIZA BASIN

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1996					
06...	1700	678	1970	3610	91
11...	0100	278	646	485	96
13...	0545	367	3860	3830	94
13...	0815	387	1080	1130	95
19...	0230	492	1290	1710	92
DEC					
21...	0740	15	105	4.3	97
JAN 1997					
22...	0610	161	1820	791	94
22...	0730	434	2820	3300	94
FEB					
08...	1720	18	291	14	98
JUN					
02...	0745	19	232	12	99
JUL					
19...	0715	13	524	18	99
24...	1145	220	658	391	93
AUG					
30...	1548	14	313	12	99
SEP					
08...	2030	218	1030	606	95
21...	1740	61	1050	173	99

RIO GRANDE DE LOIZA BASIN

50057000 RIO GURABO AT GURABO, PR

LOCATION.--Lat 18°15'30", long 65°58'05", Hydrologic Unit 21010005, on left bank, at bridge on Highway 181, 0.3 mi (0.5 km) east of Gurabo, and 4.5 mi (7.6 km) upstream from Río Grande de Loíza.

DRAINAGE AREA.--60.2 mi² (155.9 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1958 (occasional low-flow measurements only), January to September 1959 (monthly measurements only), October 1959 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 131.58 ft (40.106 m) above mean sea level. Prior to Oct. 1, 1989 datum 5.0 ft (1.5 m) higher.

REMARKS.--Records fair. Gage-height and precipitation satellite telemetry at station. Low flow affected by diversions for water supply about, 400 ft (121 m) upstream from station by PRASA.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	74	88	46	613	26	19	10	23	13	27	51
2	73	135	67	34	208	24	65	9.7	22	12	20	55
3	68	66	50	32	99	28	224	9.7	38	11	24	48
4	74	54	44	26	39	35	32	9.8	28	11	21	24
5	72	46	41	24	48	31	22	10	24	11	21	20
6	63	134	35	26	68	30	18	10	18	13	16	18
7	81	804	41	22	64	24	16	9.9	17	21	14	17
8	76	167	33	25	65	24	15	16	15	14	13	25
9	93	101	29	29	54	26	14	20	14	18	21	35
10	153	82	28	24	62	24	14	31	14	20	183	15
11	113	344	83	32	50	22	14	29	15	18	72	12
12	71	1390	62	22	50	21	13	24	16	15	59	17
13	60	654	34	21	91	22	13	16	15	17	230	23
14	56	148	28	19	67	22	12	20	15	23	80	25
15	53	93	26	20	60	21	11	24	13	18	43	64
16	50	82	29	19	47	22	11	21	14	18	39	31
17	45	109	28	19	44	26	11	22	12	24	52	18
18	43	147	25	17	43	24	11	18	11	21	105	19
19	40	332	24	17	42	25	11	15	12	32	46	16
20	40	158	22	30	45	21	11	13	17	33	28	13
21	36	139	24	64	48	20	10	16	17	315	22	19
22	89	379	24	365	57	19	11	13	13	377	905	32
23	48	179	23	94	52	18	11	12	25	55	170	44
24	38	154	23	100	37	17	9.6	11	126	59	782	43
25	33	120	33	77	35	17	9.6	11	37	34	302	22
26	107	67	27	31	37	17	9.1	12	23	25	62	401
27	104	53	24	22	36	17	10	12	22	28	44	78
28	94	60	37	24	25	16	11	43	18	106	44	32
29	165	62	48	43	---	18	11	21	15	55	33	23
30	67	77	132	25	---	30	11	26	14	95	27	79
31	47	---	83	20	---	22	---	20	---	39	73	---
TOTAL	2230	6410	1295	1369	2186	709	660.3	535.1	663	1551	3578	1319
MEAN	71.9	214	41.8	44.2	78.1	22.9	22.0	17.3	22.1	50.0	115	44.0
MAX	165	1390	132	365	613	35	224	43	126	377	905	401
MIN	33	46	22	17	25	16	9.1	9.7	11	11	13	12
AC-FT	4420	12710	2570	2720	4340	1410	1310	1060	1320	3080	7100	2620
CFSM	1.19	3.55	.69	.73	1.30	.38	.37	.29	.37	.83	1.92	.73
IN.	1.38	3.96	.80	.85	1.35	.44	.41	.33	.41	.96	2.21	.82

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 1997, BY WATER YEAR (WY)

MEAN	212	211	148	61.5	47.2	38.6	41.3	141	130	114	163	235
MAX	1414	1045	863	204	131	97.5	108	746	468	376	610	1225
(WY)	1971	1988	1988	1992	1989	1985	1978	1985	1970	1993	1979	1960
MIN	16.0	23.7	10.7	16.4	12.6	11.2	13.1	12.7	16.8	20.7	24.8	8.76
(WY)	1968	1996	1968	1968	1968	1965	1995	1990	1972	1994	1967	1967

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1960 - 1997	
ANNUAL TOTAL	64679.7		22505.4			
ANNUAL MEAN	177		61.7		129	
HIGHEST ANNUAL MEAN					286	1979
LOWEST ANNUAL MEAN					42.2	1967
HIGHEST DAILY MEAN	26200	Sep 10	1390	Nov 12	26200	Sep 10 1996
LOWEST DAILY MEAN	3.7	May 27	9.1	Apr 26	3.7	May 27 1996
ANNUAL SEVEN-DAY MINIMUM	5.2	May 25	9.9	May 1	5.2	May 25 1996
INSTANTANEOUS PEAK FLOW			6290	Nov 12	62100	Sep 10 1996
INSTANTANEOUS PEAK STAGE			17.42	Nov 12	31.44	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	128300		44640		93230	
ANNUAL RUNOFF (CFSM)	2.94		1.02		2.14	
ANNUAL RUNOFF (INCHES)	39.97		13.91		29.04	
10 PERCENT EXCEEDS	210		106		202	
50 PERCENT EXCEEDS	36		27		47	
90 PERCENT EXCEEDS	11		12		16	

50057000 RIO GURABO AT GURABO--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Water years 1985 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1983 to current year.

INSTRUMENTATION.-- USDH-48 and USD-77 sediment sampler, since 1984. Automatic sediment sampler, since 1984.

REMARKS:-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediments samples were collected by local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 9,220 mg/L Nov 27, 1987; Minimum daily mean, 3 mg/L August 09, 1994.
SEDIMENT LOADS: Maximum daily mean, 686,000 tons (622,340 tonnes) Nov 27, 1987; Minimum daily mean, 0.08 tons (0.07 tonne) August 09, 1994.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,090 mg/L January 22, 1997; minimum daily mean, 4 mg/L December 10, 1996.
SEDIMENT LOADS: Maximum daily mean, 4,790 tons (4,350 tonnes) November 12, 1996; minimum daily 0.22 tons (0.20 tonne) April 16, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	78	42	8.8	74	155	28	88	41	10
2	73	34	6.6	135	121	47	67	26	4.8
3	68	12	2.1	66	102	19	50	22	3.0
4	74	9	1.9	54	41	6.0	44	18	2.2
5	72	10	2.0	46	28	3.5	41	13	1.5
6	63	12	2.1	134	104	54	35	9	.87
7	81	12	2.6	804	578	1810	41	22	2.7
8	76	10	2.0	167	148	73	33	16	1.5
9	93	15	3.8	101	87	26	29	7	.56
10	153	35	15	82	75	18	28	4	.31
11	113	102	32	344	276	515	83	57	16
12	71	88	17	1390	782	4790	62	34	5.9
13	60	80	13	654	555	1290	34	26	2.4
14	56	55	8.3	148	123	51	28	23	1.7
15	53	35	5.1	93	53	13	26	20	1.4
16	50	23	3.1	82	53	12	29	18	1.4
17	45	20	2.4	109	70	35	28	16	1.2
18	43	18	2.1	147	131	55	25	11	.77
19	40	15	1.6	332	397	442	24	8	.51
20	40	12	1.3	158	150	65	22	7	.41
21	36	11	1.1	139	126	52	24	6	.40
22	89	125	51	379	213	380	24	6	.38
23	48	289	38	179	150	75	23	6	.35
24	38	162	17	154	117	52	23	5	.32
25	33	79	7.1	120	101	34	33	16	1.7
26	107	94	29	67	52	9.6	27	23	1.7
27	104	88	25	53	29	4.1	24	21	1.4
28	94	79	23	60	39	6.6	37	32	3.3
29	165	144	67	62	26	4.5	48	42	5.8
30	67	85	16	77	54	14	132	87	38
31	47	47	6.1	---	---	---	83	69	16
TOTAL	2230	---	413.1	6410	---	9984.3	1295	---	128.48

RIO GRANDE DE LOIZA BASIN

50057000 RIO GURABO AT GURABO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	46	39	4.9	613	343	1500	26	9	.60
2	34	24	2.2	208	180	138	24	8	.52
3	32	16	1.3	99	133	37	28	7	.53
4	26	11	.78	39	33	3.5	35	6	.59
5	24	12	.80	48	35	4.8	31	7	.59
6	26	19	1.4	68	58	11	30	9	.70
7	22	11	.65	64	68	13	24	11	.68
8	25	18	1.2	65	74	14	24	13	.86
9	29	11	.86	54	76	11	26	16	1.1
10	24	10	.62	62	65	11	24	18	1.2
11	32	11	.96	50	21	2.8	22	13	.74
12	22	9	.56	50	17	2.3	21	8	.46
13	21	12	.74	91	22	5.5	22	10	.61
14	19	16	.85	67	31	5.5	22	17	.99
15	20	10	.54	60	41	6.5	21	32	1.8
16	19	9	.46	47	54	6.9	22	54	3.3
17	19	9	.45	44	59	7.0	26	50	3.5
18	17	10	.46	43	30	3.4	24	42	2.7
19	17	11	.54	42	14	1.6	25	26	1.8
20	30	14	1.2	45	10	1.2	21	15	.84
21	64	32	7.2	48	16	2.6	20	11	.58
22	365	1090	2040	57	48	7.4	19	9	.44
23	94	84	22	52	37	5.2	18	7	.35
24	100	77	22	37	31	3.1	17	7	.34
25	77	62	14	35	23	2.2	17	8	.36
26	31	30	2.5	37	23	2.4	17	8	.39
27	22	19	1.1	36	13	1.3	17	9	.40
28	24	20	1.8	25	9	.64	16	10	.42
29	43	36	4.8	---	---	---	18	13	.65
30	25	17	1.1	---	---	---	30	57	4.6
31	20	18	.98	---	---	---	22	27	1.6
TOTAL	1369	---	2138.95	2186	---	1810.84	709	---	34.24

50057000 RIO GURABO AT GURABO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	19	20	1.0	10	13	.37	23	40	2.5
2	65	47	92	9.7	16	.41	22	21	1.3
3	224	359	320	9.7	19	.51	38	21	2.2
4	32	167	15	9.8	24	.63	28	26	2.0
5	22	108	6.5	10	34	.92	24	28	1.8
6	18	69	3.3	10	48	1.3	18	27	1.4
7	16	44	1.8	9.9	38	1.0	17	24	1.1
8	15	27	1.1	16	28	1.2	15	22	.92
9	14	16	.59	20	19	1.0	14	22	.84
10	14	9	.35	31	25	2.2	14	24	.87
11	14	14	.51	29	22	1.9	15	34	1.4
12	13	26	.88	24	21	1.4	16	50	2.1
13	13	41	1.4	16	17	.77	15	51	2.1
14	12	20	.67	20	16	.89	15	46	1.9
15	11	8	.23	24	17	1.2	13	42	1.5
16	11	7	.22	21	20	1.2	14	41	1.5
17	11	9	.26	22	14	.83	12	46	1.5
18	11	14	.41	18	10	.52	11	49	1.5
19	11	24	.71	15	10	.38	12	29	.89
20	11	37	1.1	13	9	.32	17	15	.65
21	10	25	.68	16	13	.55	17	17	.75
22	11	14	.40	13	10	.37	13	25	.88
23	11	12	.34	12	9	.28	25	38	5.2
24	9.6	12	.31	11	9	.26	126	209	73
25	9.6	12	.32	11	9	.28	37	148	15
26	9.1	13	.31	12	11	.35	23	69	4.4
27	10	17	.50	12	13	.40	22	82	4.9
28	11	12	.36	43	34	4.6	18	47	2.3
29	11	13	.37	21	18	1.1	15	21	.87
30	11	13	.37	26	22	1.6	14	15	.56
31	---	---	---	20	18	.95	---	---	---
TOTAL	660.3	---	451.99	535.1	---	29.69	663	---	137.83

RIO GRANDE DE LOIZA BASIN

50057000 RIO GURABO AT GURABO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	13	13	.44	27	69	5.1	51	129	20
2	12	12	.41	20	38	2.2	55	64	22
3	11	13	.39	24	25	1.7	48	125	19
4	11	12	.37	21	14	.81	24	26	1.6
5	11	11	.32	21	11	.62	20	19	1.0
6	13	12	.46	16	9	.41	18	16	.77
7	21	17	.93	14	9	.36	17	14	.65
8	14	14	.50	13	10	.36	25	23	4.3
9	18	12	.58	21	16	1.4	35	110	11
10	20	11	.60	183	223	141	15	71	2.8
11	18	10	.51	72	243	54	12	31	1.0
12	15	10	.41	59	48	39	17	20	1.1
13	17	13	.66	230	229	162	23	19	1.2
14	23	19	1.2	80	219	47	25	21	1.6
15	18	11	.54	43	132	16	64	57	11
16	18	11	.55	39	38	4.7	31	62	5.3
17	24	27	1.8	52	58	8.6	18	52	2.6
18	21	19	1.1	105	102	37	19	29	1.5
19	32	27	2.4	46	106	13	16	15	.65
20	33	30	3.0	28	79	5.9	13	13	.46
21	315	234	463	22	56	3.4	19	17	1.0
22	377	144	339	905	608	3530	32	23	2.1
23	55	53	7.9	170	137	76	44	37	4.8
24	59	51	9.8	782	602	3290	43	39	5.2
25	34	45	4.1	302	408	456	22	20	1.2
26	25	39	2.7	62	294	48	401	496	1340
27	28	30	2.3	44	150	18	78	184	36
28	106	83	42	44	32	3.9	32	29	2.5
29	55	50	8.3	33	27	2.6	23	19	1.2
30	95	108	34	27	23	1.7	79	64	18
31	39	97	10	73	86	29	---	---	---
TOTAL	1551	---	940.27	3578	---	7999.76	1319	---	1521.53
YEAR	22505.4		25590.98						

RIO GRANDE DE LOIZA BASIN

50057000 RIO GURABO AT GURABO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
NOV 1996							
07...	0655	2120	4450	25500	35	41	52
AUG 1997							
22...	1515	2580	2860	19900	35	44	55
22...	1705	3170	2050	17500	45	54	64
SEP							
26...	1905	375	2560	2590	34	40	48

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
NOV 1996							
07...	63	73	87	97	99	100	100
AUG 1997							
22...	69	80	91	97	99	100	100
22...	74	81	92	96	99	100	100
SEP							
26...	60	69	83	95	99	99	100

RIO GRANDE DE LOIZA BASIN

50057000 RIO GURABO AT GURABO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
22...	1737	589	443	704	99
JAN 1997					
22...	1535	340	2960	2720	100
APR					
03...	1600	77	240	50	99
JUN					
18...	1545	12	53	1.7	98
AUG					
22...	1725	3180	1600	13700	94
22...	1930	2240	887	5360	97
24...	2045	3950	1430	15200	92
SEP					
26...	1222	843	1010	2300	87
26...	1530	1190	1010	3240	97

RIO GRANDE DE LOIZA BASIN

50057025 RIO GURABO NEAR GURABO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'56", long 65°59'04", at bridge on Highway 941, 1.2 mi (1.9 km) west-northwest from gaging station 50057000, and 1.0 mi (1.6 km) northwest of Gurabo plaza.

DRAINAGE AREA.--62.8 mi² (162.7 km²).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
09...	1300	E65	387	7.4	30.0	1.6	8.2	106	<10	3300	420
FEB 1997											
20...	0800	E44	490	6.6	24.5	2.7	2.8	33	<10	41000	280
MAY											
16...	0830	29	323	6.5	27.0	12	3.8	48	12	2000	160
AUG											
28...	1105	E44	287	6.6	30.0	17	2.3	30	14	2900	510

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
09...	130	32	13	30	1	4.1	140	<0.5	18	33
FEB 1997										
20...	--	--	--	--	--	--	160	--	--	--
MAY										
16...	92	21	9.2	25	1	3.6	100	<0.5	15	27
AUG										
28...	83	20	8.0	20	1	4.5	98	--	14	21

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
09...	0.10	30	244	E42.8	8	1.10	0.040	1.10	0.240	0.49
FEB 1997										
20...	--	--	--	--	7	1.10	0.060	1.10	0.430	0.40
MAY										
16...	0.15	31	192	14.8	23	0.730	0.120	0.850	0.270	0.53
AUG										
28...	0.15	27	174	E20.6	36	0.660	0.062	0.720	0.120	0.72

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
09...	--	1.9	0.73	0.230	<1	<100	50	<1	<1	<10
FEB 1997										
20...	0.82	1.9	8.6	0.200	--	--	--	--	--	--
MAY										
16...	0.80	1.6	7.3	0.200	<1	<100	<10	<1	<1	<10
AUG										
28...	0.84	1.6	6.9	0.520	--	--	--	--	--	--

K = non-ideal count
E = Estimated near station 50057000

RIO GRANDE DE LOIZA BASIN

50057025 RIO GURABO NEAR GURABO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
09...	370	<1	350	<0.10	<1	<1	<10	<0.010	<1	0.02
FEB 1997										
20...	--	--	--	--	--	--	--	--	--	--
MAY										
16...	220	<1	190	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
28...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE LOIZA BASIN

50058350 RIO CAÑAS AT RIO CAÑAS, PR

LOCATION.--Lat 18°17'41", long 66°02'44", Hydrologic Unit 21010005, at right bank, off road 798, upstream side of bridge on Highway 52, 0.5 mi (0.8 km) northeast from Escuela Segunda Unidad de Francisco Valdés, and 0.8 mi (1.3 km) north of La Barra.

DRAINAGE AREA.--7.53 mi² (19.50 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1990 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 164 ft (50 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	11	15	13	30	8.2	6.3	3.6	2.8	4.7	3.5	4.9
2	18	8.6	13	18	16	8.5	7.0	3.4	2.7	3.7	3.4	5.3
3	9.5	13	11	12	11	11	6.9	4.2	3.1	3.6	3.7	3.3
4	9.1	9.5	11	12	e12	8.9	6.2	3.8	2.7	3.5	3.7	3.1
5	8.8	11	10	12	e13	11	5.8	3.5	2.7	3.5	3.4	3.2
6	8.7	9.2	9.4	10	e12	8.5	5.5	3.4	2.8	3.5	3.2	3.4
7	8.6	13	8.8	10	e13	8.8	5.2	3.3	2.7	3.5	3.2	2.9
8	8.3	8.9	8.4	9.8	e9.4	9.2	5.1	3.3	2.7	3.5	3.2	2.6
9	8.2	7.6	8.3	9.3	e14	8.7	5.0	3.4	2.7	3.3	3.2	2.7
10	8.1	11	8.4	8.5	e9.0	7.6	4.9	3.4	2.6	3.3	8.3	2.8
11	8.2	19	10	8.7	e9.4	7.3	4.6	3.4	2.6	3.3	10	2.7
12	9.6	38	8.7	8.7	9.5	7.7	4.6	3.6	2.7	3.4	3.6	6.0
13	8.6	29	8.4	8.8	9.8	7.7	4.6	4.1	2.5	3.3	29	7.5
14	7.9	12	8.0	8.5	10	7.6	4.4	3.5	2.4	3.2	59	10
15	7.4	9.4	8.0	8.3	9.0	7.7	4.5	3.4	2.4	3.1	9.9	4.9
16	7.4	8.4	8.4	8.6	8.6	7.7	4.4	3.8	2.4	3.2	5.4	4.6
17	7.3	18	8.1	8.6	8.5	7.3	4.3	3.6	2.4	3.2	5.2	2.9
18	7.3	9.2	8.0	9.0	9.0	8.1	4.3	3.3	2.4	4.4	4.7	2.7
19	7.4	7.4	7.8	9.0	9.2	7.1	4.2	3.1	10	6.4	4.1	2.6
20	7.4	6.9	7.8	8.9	9.4	6.8	4.2	3.1	3.2	4.6	3.9	2.9
21	7.3	18	8.0	49	14	6.8	4.2	5.3	2.8	5.1	3.8	2.9
22	7.2	65	7.6	42	10	6.9	4.1	3.3	2.7	4.4	e382	4.7
23	7.0	17	7.7	27	8.9	7.0	4.0	4.4	2.8	4.0	7.6	3.5
24	6.7	15	8.6	41	8.8	7.3	3.9	4.4	3.4	3.8	7.7	7.9
25	6.7	11	8.7	21	8.9	7.3	3.8	3.3	2.7	4.6	6.1	3.4
26	24	9.2	38	14	8.7	7.7	3.7	3.2	2.9	3.8	3.7	10
27	9.4	11	14	12	8.4	7.8	3.8	3.3	2.4	3.6	4.9	3.8
28	46	10	18	12	8.3	10	3.8	3.8	2.3	4.1	3.5	3.9
29	11	10	30	12	---	7.5	3.7	3.2	2.3	3.7	3.2	3.2
30	9.7	21	19	11	---	6.9	3.6	3.2	13	3.6	6.2	3.2
31	9.5	---	14	10	---	6.4	---	3.1	---	3.6	3.8	---
TOTAL	330.3	447.3	360.1	452.7	307.8	247.0	140.6	110.7	97.8	118.5	606.1	127.5
MEAN	10.7	14.9	11.6	14.6	11.0	7.97	4.69	3.57	3.26	3.82	19.6	4.25
MAX	46	65	38	49	30	11	7.0	5.3	13	6.4	382	10
MIN	6.7	6.9	7.6	8.3	8.3	6.4	3.6	3.1	2.3	3.1	3.2	2.6
AC-FT	655	887	714	898	611	490	279	220	194	235	1200	253
CFSM	1.41	1.98	1.54	1.94	1.46	1.06	.62	.47	.43	.51	2.60	.56
IN.	1.63	2.21	1.78	2.24	1.52	1.22	.69	.55	.48	.59	2.99	.63

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1997, BY WATER YEAR (WY)

MEAN	15.1	14.0	11.7	11.7	9.96	5.26	5.57	8.69	7.60	8.67	15.6	22.4
MAX	39.4	36.2	29.9	24.5	18.8	7.97	11.1	19.5	20.0	24.9	36.8	81.6
(WY)	1991	1993	1993	1992	1995	1997	1993	1992	1993	1993	1996	1996
MIN	4.60	7.18	5.55	4.48	4.29	2.48	3.24	2.50	1.78	3.40	4.36	4.25
(WY)	1992	1991	1994	1994	1994	1994	1995	1994	1994	1990	1990	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1990 - 1997	
ANNUAL TOTAL	6450.7		3346.4			
ANNUAL MEAN	17.6		9.17		11.9	
HIGHEST ANNUAL MEAN					17.7	1996
LOWEST ANNUAL MEAN					5.77	1994
HIGHEST DAILY MEAN	1670	Sep 10	382	Aug 22	1670	Sep 10 1996
LOWEST DAILY MEAN	2.1	Apr 19	2.3	Jun 28	1.1	Jun 8 1994
ANNUAL SEVEN-DAY MINIMUM	3.3	Mar 27	2.5	Jun 12	1.2	Jun 8 1994
INSTANTANEOUS PEAK FLOW			2330	Aug 22	7500	Sep 10 1996
INSTANTANEOUS PEAK STAGE			17.88	Aug 22	24.60	Sep 10 1996
INSTANTANEOUS LOW FLOW			2.3	Jun 27	1.0	Jun 21 1994
ANNUAL RUNOFF (AC-FT)	12790		6640		8600	
ANNUAL RUNOFF (CFSM)	2.34		1.22		1.58	
ANNUAL RUNOFF (INCHES)	31.87		16.53		21.42	
10 PERCENT EXCEEDS	24		13		18	
50 PERCENT EXCEEDS	7.4		7.3		5.1	
90 PERCENT EXCEEDS	3.7		3.1		2.6	

e Estimated

50058350 RIO CAÑAS AT RIO CAÑAS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1990 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1994 to current year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1990.

REMARKS:-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected by local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 12,9000 mg/L September 10, 1996; Minimum daily mean, 1 mg/L September 11,1991 and 1996 several days.

SEDIMENT LOADS: Maximum daily mean, 95,000 tons (86,200 tonnes) September 10, 1996; Minimum daily mean, 0.01 ton (0.01 tonne) January 08, 1995.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,220 mg/L January 21, 1997; Minimum daily mean, 3 mg/L May 3, 1997.

SEDIMENT LOADS: Maximum daily mean,e3,030 tons (e2,750 tonnes) August 22, 1997; Minimum daily mean, 0.03 ton (0.03 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	20	61	3.2	11	234	9.7	15	240	13
2	18	37	1.6	8.6	47	1.1	13	197	6.8
3	9.5	21	.57	13	268	20	11	176	5.1
4	9.1	19	.47	9.5	51	1.3	11	161	4.6
5	8.8	19	.46	11	257	11	10	157	4.3
6	8.7	17	.40	9.2	52	1.3	9.4	155	4.0
7	8.6	19	.44	13	286	24	8.8	126	3.0
8	8.3	22	.49	8.9	52	1.3	8.4	63	1.4
9	8.2	14	.31	7.6	46	.93	8.3	56	1.2
10	8.1	7	.16	11	181	9.8	8.4	59	1.3
11	8.2	7	.16	19	576	97	10	82	2.3
12	9.6	76	4.3	38	1680	425	8.7	88	2.1
13	8.6	62	1.5	29	942	116	8.4	40	.92
14	7.9	30	.65	12	139	4.9	8.0	17	.38
15	7.4	19	.38	9.4	40	1.0	8.0	8	.17
16	7.4	18	.35	8.4	23	.52	8.4	7	.16
17	7.3	20	.39	18	596	83	8.1	8	.18
18	7.3	23	.46	9.2	57	1.5	8.0	6	.14
19	7.4	17	.34	7.4	31	.61	7.8	4	.09
20	7.4	11	.22	6.9	30	.55	7.8	4	.09
21	7.3	9	.18	18	1260	203	8.0	4	.10
22	7.2	8	.15	65	1740	1470	7.6	5	.10
23	7.0	12	.23	17	305	15	7.7	5	.10
24	6.7	23	.41	15	201	8.8	8.6	42	1.2
25	6.7	26	.47	11	70	2.1	8.7	153	4.4
26	24	707	109	9.2	29	.72	38	1090	549
27	9.4	116	3.5	11	98	4.5	14	591	41
28	46	1690	584	10	90	3.3	18	656	61
29	11	97	3.0	10	84	2.6	30	1190	171
30	9.7	31	.81	21	451	43	19	451	30
31	9.5	61	1.7	---	---	---	14	146	5.7
TOTAL	330.3	---	720.30	447.3	---	2563.53	360.1	---	914.83

RIO GRANDE DE LOIZA BASIN

50058350 RIO CAÑAS AT RIO CAÑAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	13	57	1.9	30	834	254	8.2	12	.27
2	18	337	26	16	293	26	8.5	14	.32
3	12	103	3.4	11	40	1.2	11	108	3.5
4	12	27	.85	e12	32	e.85	8.9	23	.57
5	12	83	3.3	e13	49	e1.6	11	108	3.7
6	10	97	2.7	e12	40	e1.4	8.5	73	1.7
7	10	35	.95	e13	25	e.89	8.8	22	.52
8	9.8	16	.44	e9.4	33	e.98	9.2	16	.40
9	9.3	8	.21	e14	66	e2.1	8.7	13	.31
10	8.5	6	.14	e9.0	36	e1.1	7.6	12	.24
11	8.7	5	.13	e9.4	17	e.42	7.3	15	.29
12	8.7	5	.11	9.5	12	.31	7.7	20	.41
13	8.8	4	.10	9.8	10	.27	7.7	21	.44
14	8.5	6	.13	10	56	1.7	7.6	20	.41
15	8.3	7	.16	9.0	92	2.2	7.7	10	.20
16	8.6	6	.14	8.6	84	2.0	7.7	5	.10
17	8.6	5	.13	8.5	77	1.8	7.3	7	.13
18	9.0	36	.90	9.0	70	1.7	8.1	46	1.1
19	9.0	51	1.2	9.2	63	1.6	7.1	23	.44
20	8.9	57	1.4	9.4	57	1.5	6.8	7	.13
21	49	2220	467	14	246	11	6.8	5	.09
22	42	1480	245	10	126	3.5	6.9	5	.09
23	27	629	97	8.9	84	2.0	7.0	5	.10
24	41	1170	155	8.8	48	1.1	7.3	7	.13
25	21	146	8.7	8.9	26	.63	7.3	9	.17
26	14	55	2.1	8.7	16	.37	7.7	11	.22
27	12	51	1.6	8.4	10	.23	7.8	12	.26
28	12	59	1.9	8.3	10	.23	10	239	13
29	12	33	1.0	---	---	---	7.5	65	1.4
30	11	15	.42	---	---	---	6.9	9	.17
31	10	12	.34	---	---	---	6.4	8	.15
TOTAL	452.7	---	1024.35	307.8	---	322.68	247.0	---	30.96

e Estimated

RIO GRANDE DE LOIZA BASIN

50058350 RIO CAÑAS AT RIO CAÑAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	6.3	9	.15	3.6	17	.17	2.8	19	.14
2	7.0	27	.78	3.4	18	.17	2.7	14	.10
3	6.9	33	.69	4.2	25	.32	3.1	11	.09
4	6.2	7	.12	3.8	18	.18	2.7	18	.13
5	5.8	7	.11	3.5	9	.08	2.7	32	.23
6	5.5	7	.11	3.4	5	.04	2.8	25	.19
7	5.2	9	.13	3.3	7	.06	2.7	16	.12
8	5.1	12	.17	3.3	11	.10	2.7	11	.08
9	5.0	11	.14	3.4	10	.09	2.7	9	.06
10	4.9	9	.11	3.4	7	.07	2.6	7	.05
11	4.6	9	.11	3.4	6	.05	2.6	11	.08
12	4.6	10	.13	3.6	6	.06	2.7	17	.12
13	4.6	11	.14	4.1	13	.17	2.5	16	.11
14	4.4	9	.11	3.5	7	.06	2.4	13	.09
15	4.5	7	.08	3.4	4	.03	2.4	11	.07
16	4.4	6	.07	3.8	3	.03	2.4	9	.06
17	4.3	6	.07	3.6	4	.04	2.4	9	.06
18	4.3	6	.07	3.3	4	.04	2.4	9	.06
19	4.2	7	.07	3.1	4	.03	10	341	56
20	4.2	7	.08	3.1	4	.03	3.2	37	.32
21	4.2	10	.12	5.3	26	.59	2.8	28	.21
22	4.1	15	.17	3.3	14	.13	2.7	23	.17
23	4.0	14	.15	4.4	64	2.0	2.8	19	.15
24	3.9	12	.13	4.4	45	1.1	3.4	23	.26
25	3.8	14	.14	3.3	23	.21	2.7	14	.10
26	3.7	19	.19	3.2	18	.16	2.9	18	.15
27	3.8	24	.25	3.3	20	.18	2.4	17	.11
28	3.8	20	.20	3.8	23	.23	2.3	14	.09
29	3.7	15	.15	3.2	23	.20	2.3	12	.08
30	3.6	16	.15	3.2	22	.19	13	273	54
31	---	---	---	3.1	20	.17	---	---	---
TOTAL	140.6	---	5.09	110.7	---	6.98	97.8	---	113.48

RIO GRANDE DE LOIZA BASIN

50058350 RIO CAÑAS AT RIO CAÑAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	4.7	38	.49	3.5	25	.24	4.9	73	1.2
2	3.7	25	.25	3.4	23	.22	5.3	124	2.7
3	3.6	19	.19	3.7	19	.19	3.3	101	.91
4	3.5	15	.14	3.7	14	.14	3.1	36	.30
5	3.5	12	.12	3.4	8	.08	3.2	18	.16
6	3.5	10	.09	3.2	5	.04	3.4	13	.12
7	3.5	8	.08	3.2	4	.04	2.9	10	.08
8	3.5	7	.07	3.2	5	.04	2.6	8	.06
9	3.3	6	.06	3.2	5	.04	2.7	9	.06
10	3.3	6	.06	8.3	260	17	2.8	10	.07
11	3.3	8	.07	10	436	33	2.7	10	.07
12	3.4	24	.23	3.6	23	.22	6.0	208	6.3
13	3.3	61	.55	29	1530	398	7.5	159	14
14	3.2	22	.19	59	1150	785	10	306	15
15	3.1	6	.05	9.9	87	3.6	4.9	78	1.2
16	3.2	5	.05	5.4	16	.23	4.6	72	1.0
17	3.2	7	.06	5.2	11	.15	2.9	28	.22
18	4.4	20	.30	4.7	12	.15	2.7	25	.19
19	6.4	103	4.3	4.1	15	.16	2.6	32	.23
20	4.6	31	.39	3.9	17	.18	2.9	27	.21
21	5.1	68	1.2	3.8	20	.21	2.9	20	.16
22	4.4	19	.23	e382	1420	e3030	4.7	154	2.8
23	4.0	13	.14	7.6	81	1.8	3.5	28	.29
24	3.8	12	.13	7.7	129	3.8	7.9	522	32
25	4.6	13	.16	6.1	66	1.3	3.4	21	.20
26	3.8	13	.13	3.7	15	.15	10	504	60
27	3.6	13	.13	4.9	80	2.3	3.8	22	.22
28	4.1	27	.33	3.5	14	.13	3.9	23	.25
29	3.7	15	.15	3.2	12	.10	3.2	20	.17
30	3.6	10	.10	6.2	72	2.3	3.2	17	.15
31	3.6	15	.15	3.8	25	.26	---	---	---
TOTAL	118.5	---	10.59	606.1	---	4281.07	127.5	---	140.32
YEAR	3346.4		10134.18						

e Estimated

RIO GRANDE DE LOIZA BASIN

50058350 RIO CAÑAS AT CAÑAS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
DEC 1996							
28...	1630	34	3040	279	41	52	65
AUG 1997							
22...	1245	2140	8672	50200	30	39	47
22...	1820	31	1110	93	60	69	70
SEP							
24...	1630	13	3380	119	59	68	76

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
DEC 1996							
28...	75	86	94	98	100	100	100
AUG 1997							
22...	57	65	77	85	96	99	100
22...	81	83	95	97	99	100	100
SEP							
24...	83	88	99	100	100	100	100

RIO GRANDE DE LOIZA BASIN

50058350 RIO CAÑAS AT CAÑAS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
28...	0944	11	510	15	77
NOV					
22...	1400	1200	16600	53800	71
24...	1005	17	532	24	99
DEC					
26...	2145	327	6870	6060	79
JAN 1997					
22...	1630	29	470	37	95
FEB					
21...	1530	17	485	22	96
JUL					
21...	1100	8.5	663	15	98
AUG					
11...	1615	15	1710	69	99
13...	1745	204	14900	8210	95
22...	1500	1300	5650	19900	83
SEP					
12...	1630	12	2380	77	100

RIO GRANDE DE LOIZA BASIN

50059000 LAGO LOIZA AT DAMSITE NEAR TRUJILLO ALTO, PR

LOCATION.--Lat 18°19'49", long 66°01'00", Hydrologic Unit 21010005, at pumpsite at damsite, and 1.9 mi (3.1 km) south of Trujillo Alto plaza.

DRANAIGE AREA.--208 mi² (539 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--December 1987 to current year. Prior to October 1994, published as Lago Loiza at Damsite.

GAGE.--Water-stage recorder. Datum of gage is mean sea level.

REMARKS.--Lake is formed by Loíza Dam, a concrete structure completed in 1954. Useable capacity of impoundment is 30,000 acre-ft (37.0 hm³). Out flow from lake is controlled by five slide gates in powerplant and pump intake structure, four sluice gates, and concrete spillway with eight radial gates. Lake is used for municipal water supply and intermittent power generation. Gage-height satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 147.42 ft (44.93 m), Sept. 18, 1989; minimum elevation, 108.52 ft (33.08 m), July 18, 1994.

EXTREMES FOR CURRENT YEAR.--Maximum elevation 135.44 ft (41.82 m), Feb. 02; minimum elevation, 112.76 ft (34.37 m), July 17.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents in acre-feet	Elevation, in feet	Contents in acre-feet
98.4	5,000	128.6	18,000
111.5	8,900	137.8	26,000
120.4	13,000	147.6	35,000

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	134.46	134.92	134.68	134.76	134.26	134.82	131.62	128.56	123.20	117.51	127.11	134.31
2	A	134.80	133.80	134.98	134.38	134.76	133.42	128.20	123.02	117.15	127.05	134.42
3	134.60	135.00	134.00	135.02	134.98	134.74	135.10	127.94	123.38	116.75	127.47	134.48
4	134.96	134.68	134.16	135.04	134.96	134.74	134.92	127.56	123.74	116.31	127.48	134.41
5	134.34	134.84	134.28	135.00	134.78	134.74	134.84	127.19	123.64	115.90	127.31	134.32
6	134.62	134.55	134.40	135.00	134.82	134.68	134.70	126.80	123.44	115.63	127.09	132.90
7	134.88	134.82	134.56	134.96	135.08	134.56	134.54	126.41	123.07	115.67	126.82	132.79
8	134.56	134.90	134.64	134.92	134.66	134.56	134.36	126.10	122.75	115.44	126.56	133.18
9	134.90	134.92	134.70	134.88	135.00	134.48	134.14	125.84	122.38	115.22	126.33	133.39
10	A	134.46	134.74	134.80	134.86	134.32	133.94	125.78	122.00	114.93	127.23	133.25
11	135.12	134.54	134.48	135.14	135.00	134.18	133.76	125.84	121.58	114.63	127.69	133.07
12	134.72	134.52	134.74	134.46	134.72	134.06	133.56	125.76	121.20	114.18	127.66	133.30
13	134.20	A	134.82	134.42	135.00	133.96	133.38	125.70	120.78	113.86	129.10	133.51
14	134.42	A	134.86	134.34	135.04	133.84	133.18	A	120.52	113.57	129.93	133.63
15	134.64	134.40	134.88	134.26	134.70	133.76	132.96	A	120.18	113.14	129.92	134.15
16	134.82	134.86	133.96	134.20	134.76	133.72	132.74	A	119.84	112.76	129.87	134.22
17	134.92	134.76	133.96	134.06	134.78	133.68	132.48	A	119.36	113.02	129.98	134.12
18	134.56	134.04	133.92	133.96	134.78	133.64	132.26	A	118.87	113.04	130.78	134.10
19	134.66	134.10	133.88	133.88	134.82	133.52	132.04	A	118.80	113.20	130.86	134.05
20	134.76	134.90	133.84	133.96	134.84	133.40	132.02	124.70	118.60	113.94	130.68	133.94
21	134.80	134.20	133.84	134.96	135.10	133.24	131.74	124.86	118.40	118.82	130.55	134.01
22	134.61	133.27	133.82	134.62	134.88	133.08	131.44	124.58	118.16	123.42	134.60	134.58
23	134.70	134.24	133.76	134.88	135.10	132.90	131.16	124.32	118.02	123.84	134.37	134.73
24	134.76	133.60	133.72	134.28	134.96	132.72	130.86	124.02	118.86	124.24	134.17	134.72
25	134.80	134.18	133.78	134.92	134.97	132.52	130.56	123.66	118.78	124.35	134.62	134.79
26	134.30	134.50	134.28	135.12	135.10	132.36	130.24	123.30	118.64	124.22	134.23	134.45
27	134.80	134.78	134.30	135.18	134.96	132.18	129.94	122.96	118.48	124.15	134.72	134.57
28	134.76	134.18	134.52	134.96	134.86	132.06	129.58	123.14	118.23	125.82	134.61	134.70
29	134.33	134.50	134.88	135.12	---	132.02	129.26	123.12	117.99	126.27	134.66	134.74
30	134.54	134.20	134.80	135.16	---	131.92	128.92	123.34	117.83	127.02	134.72	134.53
31	134.64	---	134.63	135.18	---	131.78	---	123.34	---	127.14	134.14	---
MAX	135.12	135.00	134.88	135.18	135.10	134.82	135.10	128.56	123.74	127.14	134.72	134.79
MIN	134.20	133.27	133.72	133.88	134.26	131.78	128.92	122.96	117.83	112.76	126.33	132.79

CAL YR 1996 MAX 135.12 MIN 130.07
WTR YR 1997 MAX 135.18 MIN 112.76

A No gage-height record

RIO GRANDE DE LOIZA BASIN

50059000 LAGO LOIZA AT DAMSITE, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°19'49", long 66°01'00", at pumphouse at damsite, and 1.9 mi (3.1 km) south of Trujillo Alto plaza.

DRAINAGE AREA.--208 mi² (539 km²).

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	COLIFORM, FECAL, 0.45 UM-MF (COLS./100 ML) (31616)	STREPTOCOCCI FECAL, (COLS. PER 100 ML) (31679)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)
OCT 1996										
24...	1100	240	6.7	27.0	2.3	29	<10	50	220	100
FEB 1997										
20...	1130	256	6.7	27.5	3.0	38	<10	K69	K31	100
JUN										
04...	1025	389	6.7	29.0	0.2	3	<10	K19	40	150
SEP										
02...	1100	196	6.7	30.5	0.5	7	15	84	83	66

DATE	SULFIDE TOTAL (MG/L AS S) (00745)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)
OCT 1996										
24...	<0.5	4	0.360	0.030	0.400	0.120	0.53	0.66	1.1	4.7
FEB 1997										
20...	--	1	0.570	<0.010	0.580	0.030	0.34	0.36	0.94	4.2
JUN										
04...	<0.5	<1	0.070	0.120	0.190	0.440	0.60	1.0	1.2	5.4
SEP										
02...	--	3	0.230	<0.010	0.240	0.150	0.70	0.86	1.1	4.9

DATE	PHOSPHORUS TOTAL (MG/L AS P) (00665)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L) (38260)
OCT 1996									
24...	0.040	30	<10	90	120	<10	<0.010	1	<0.01
FEB 1997									
20...	0.040	--	--	--	--	--	--	--	--
JUN									
04...	0.040	60	24	110	240	10	<0.010	<1	0.06
SEP									
02...	0.140	--	--	--	--	--	--	--	--

K= non-ideal count

RIO GRANDE DE LOIZA BASIN

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR

LOCATION.--Lat 18°20'33", long 66°00'20", Hydrologic Unit 21010005, on left bank of Highway 175, 1.1 mi (1.8 km) downstream of Lago Loíza Dam.

DRAINAGE AREA.--209 mi² (541 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1986 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 32 ft (10 m), from topographic map.

REMARKS.--Records poor. Flow regulated by Lago Loíza Dam. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	1.6	8.5	e5.6	e5.2	e5.2	e3.9	4.0	4.2	2.2	2.4	e17
2	e43	180	352	e5.6	e5.2	e5.2	e3.9	3.9	4.2	2.1	2.1	113
3	e175	2.6	7.1	e5.4	e5.2	e5.2	e4.1	3.9	4.4	2.2	2.2	e11
4	26	143	7.0	e5.2	e5.4	e5.2	e4.0	3.9	5.2	2.3	2.4	e11
5	278	3.1	6.8	e5.0	e5.4	e5.4	e3.8	3.9	5.0	2.5	2.3	e10
6	e21	178	6.8	e5.0	e5.4	e5.4	e3.7	3.7	4.5	2.7	2.5	e394
7	21	805	6.4	e5.0	e5.2	e5.4	e3.6	3.8	4.5	2.7	2.7	e81
8	178	151	6.2	e4.9	e5.2	e5.4	e3.6	3.7	4.3	3.5	2.8	e15
9	17	e124	6.2	e5.2	e5.2	e5.2	e3.5	3.7	4.5	2.9	3.0	e14
10	223	258	6.0	e4.9	e5.4	e5.4	e3.4	3.7	4.5	2.8	3.2	e14
11	157	460	351	e5.0	e5.4	e5.4	e3.4	3.6	4.9	2.6	3.7	e14
12	196	2050	e6.0	e4.8	e5.0	e5.4	e3.3	3.5	4.6	2.4	3.2	e9.4
13	220	1190	e5.4	e4.9	e5.2	e5.0	e3.3	3.6	4.3	2.2	e21	15
14	5.2	293	e5.4	e5.0	e5.0	e5.4	e3.2	3.6	4.0	1.9	6.1	19
15	e4.3	252	e6.3	e5.0	e5.2	e5.8	e3.2	4.1	3.9	1.8	3.6	11
16	e3.9	5.0	e6.0	e5.2	e5.2	e5.6	e4.4	3.9	3.8	2.6	3.4	8.1
17	e3.6	308	e5.6	e5.2	e5.0	e5.8	e3.2	3.8	3.6	5.5	4.6	8.1
18	e200	413	e5.8	e5.2	e5.0	e5.4	e3.4	3.9	e3.5	4.9	4.1	9.4
19	e6.0	387	e5.7	e5.0	e5.0	e5.4	e3.4	4.0	3.4	5.0	3.0	10
20	e5.0	5.9	e5.6	e4.9	e5.2	e5.4	e3.7	4.8	2.9	11	2.9	9.4
21	e4.5	430	e5.6	e4.8	e5.0	e5.4	e3.5	6.3	e2.9	7.7	4.8	9.5
22	e170	1460	e5.9	e4.8	e5.2	e5.6	e3.5	5.1	2.9	4.4	1140	8.9
23	e6.0	106	e5.6	e4.8	e5.0	e5.8	e3.9	4.3	3.4	3.3	528	172
24	e5.0	389	e5.6	e4.8	e4.9	e5.6	e4.6	4.3	3.6	3.2	1750	173
25	e4.0	7.2	e5.5	e5.0	e5.2	e5.2	e5.3	4.2	3.8	3.5	e645	9.0
26	e350	e6.1	e5.8	e5.4	e5.2	e4.9	e4.1	4.0	3.3	3.0	262	659
27	e20	6.0	e6.4	e5.4	e5.2	e4.6	e3.9	3.9	3.3	2.6	11	158
28	e250	264	e5.8	e5.4	e5.4	e4.2	e7.6	4.0	2.6	3.1	e222	6.5
29	e300	8.9	e7.0	e5.2	---	e4.1	4.7	3.8	2.5	2.5	e13	6.7
30	e2.2	295	e6.4	e5.0	---	e4.1	4.0	4.0	2.4	2.9	e9.1	184
31	1.9	---	e5.8	e5.2	---	e3.9	---	4.1	---	3.5	297	---
TOTAL	2941.6	10182.4	881.2	157.8	145.1	161.0	117.1	125.0	114.9	105.5	4963.1	2180.0
MEAN	94.9	339	28.4	5.09	5.18	5.19	3.90	4.03	3.83	3.40	160	72.7
MAX	350	2050	352	5.6	5.4	5.8	7.6	6.3	5.2	11	1750	659
MIN	1.9	1.6	5.4	4.8	4.9	3.9	3.2	3.5	2.4	1.8	2.1	6.5
AC-FT	5830	20200	1750	313	288	319	232	248	228	209	9840	4320
CFSM	.45	1.62	.14	.02	.02	.02	.02	.02	.02	.02	.77	.35
IN.	.52	1.81	.16	.03	.03	.03	.02	.02	.02	.02	.88	.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1997, BY WATER YEAR (WY)

MEAN	222	495	340	151	69.1	44.9	29.3	85.2	171	160	198	726
MAX	842	2732	2603	733	242	299	112	367	784	672	718	4255
(WY)	1991	1988	1988	1992	1989	1989	1987	1992	1987	1993	1988	1996
MIN	44.7	37.6	17.2	2.49	4.52	5.19	1.20	1.03	1.96	1.62	2.21	29.7
(WY)	1992	1996	1994	1995	1990	1997	1995	1995	1994	1994	1994	1990

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1987 - 1997	
ANNUAL TOTAL	184152.7		22074.7			
ANNUAL MEAN	503		60.5		224	
HIGHEST ANNUAL MEAN					652	1988
LOWEST ANNUAL MEAN					37.8	1994
HIGHEST DAILY MEAN	110000	Sep 10	2050	Nov 12	110000	Sep 10 1996
LOWEST DAILY MEAN	1.2	Jun 5	1.6	Nov 1	.42	May 13 1995
ANNUAL SEVEN-DAY MINIMUM	1.3	Jun 1	2.3	Jun 29	.49	Aug 11 1994
INSTANTANEOUS PEAK FLOW			18100	Aug 22	223000	Sep 10 1996
INSTANTANEOUS PEAK STAGE			18.56	Aug 22	49.31	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	365300		43790		162400	
ANNUAL RUNOFF (CFSM)	2.41		.29		1.07	
ANNUAL RUNOFF (INCHES)	32.78		3.93		14.58	
10 PERCENT EXCEEDS	461		179		368	
50 PERCENT EXCEEDS	5.8		5.2		7.9	
90 PERCENT EXCEEDS	2.4		2.9		2.3	

e Estimated

RIO GRANDE DE LOIZA BASIN

50059050 RIO GRANDE DE LOIZA BELOW DAM SITE LOIZA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Water years 1987 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: December 1986 to current year.

INSTRUMENTATION.-- Automatic sediment sampler, since 1987.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 4,290 mg/L September 10, 1996; Minimum daily mean, 1 mg/L several years.
SEDIMENT LOADS: Maximum daily mean, 1,500,000 tons (1,360,000 tonnes) September 10, 1996; Minimum daily mean, <0.01 tons (<0.01 tonne) several years.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 328 mg/L September 3, 1997; minimum daily mean, 9 mg/L February 26-28, 1997.
SEDIMENT LOADS: Maximum daily mean, 1,530 tons (1,390 tonnes) August 24, 1997; minimum daily 0.06 tons (0.05 tonne) July 12-13, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	45	46	5.6	1.6	18	.08	8.5	28	.65
2	e43	45	e5.1	180	28	51	352	47	117
3	e175	49	e50	2.6	21	.15	7.1	27	.51
4	26	40	2.8	143	32	41	7.0	27	.50
5	278	51	92	3.1	22	.19	6.8	26	.49
6	e21	37	e2.1	178	30	40	6.8	26	.48
7	21	36	2.0	805	52	250	6.4	26	.45
8	178	46	52	151	19	40	6.2	26	.43
9	17	36	1.6	e124	28	e33	6.2	25	.42
10	223	45	67	258	34	70	6.0	25	.41
11	157	37	46	460	42	149	351	40	96
12	196	39	57	2050	124	1160	e6.0	25	e.40
13	220	40	81	1190	75	379	e5.4	26	e.39
14	5.2	26	.37	293	42	97	e5.4	27	e.40
15	e4.3	23	e.27	252	38	76	e6.3	29	e.45
16	e3.9	22	e.23	5.0	25	.34	e6.0	30	e.49
17	e3.6	22	e.22	308	38	74	e5.6	30	e.47
18	e200	23	e.25	413	49	134	e5.8	30	e.46
19	e6.0	24	e.34	387	52	116	e5.7	29	e.46
20	e5.0	24	e.36	5.9	26	.42	e5.6	29	e.45
21	e4.5	23	e.30	430	42	120	e5.6	29	e.44
22	e170	43	e7.2	1460	86	654	e5.9	29	e.45
23	e6.0	16	e3.8	106	30	22	e5.6	29	e.45
24	e5.0	10	e.15	389	43	118	e5.6	29	e.43
25	e4.0	17	e.20	7.2	31	.60	e5.5	28	e.43
26	e350	48	e15	e6.1	28	.47	e5.8	28	e.43
27	e20	58	e21	6.0	26	.42	e6.4	28	e.46
28	e250	45	e12	264	43	78	e5.8	28	e.46
29	e300	69	e52	8.9	30	.71	e7.0	28	e.48
30	e2.2	35	e6.5	295	42	79	e6.4	28	e.50
31	1.9	18	.09	---	---	---	e5.8	28	e.45
TOTAL	2941.6	---	584.48	10182.4	---	3784.38	881.2	---	226.29

e Estimated

RIO GRANDE DE LOIZA BASIN

50059050 RIO GRANDE DE LOIZA BELOW DAM SITE LOIZA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	e5.6	27	e.42	e5.2	19	e.27	e5.2	10	e.14
2	e5.6	27	e.41	e5.2	19	e.26	e5.2	10	e.15
3	e5.4	27	e.40	e5.2	18	e.26	e5.2	11	e.16
4	e5.2	27	e.38	e5.4	18	e.25	e5.2	12	e.17
5	e5.0	27	e.37	e5.4	17	e.25	e5.4	13	e.19
6	e5.0	27	e.36	e5.4	17	e.25	e5.4	14	e.20
7	e5.0	26	e.36	e5.2	16	e.23	e5.4	15	e.22
8	e4.9	26	e.35	e5.2	16	e.22	e5.4	16	e.23
9	e5.2	26	e.36	e5.2	15	e.22	e5.2	17	e.25
10	e4.9	26	e.35	e5.4	15	e.22	e5.4	19	e.27
11	e5.0	26	e.34	e5.4	15	e.21	e5.4	20	e.29
12	e4.8	26	e.34	e5.0	14	e.20	e5.4	22	e.31
13	e4.9	26	e.33	e5.2	14	e.19	e5.0	23	e.32
14	e5.0	25	e.34	e5.0	13	e.18	e5.4	24	e.33
15	e5.0	25	e.34	e5.2	13	e.18	e5.8	24	e.37
16	e5.2	25	e.34	e5.2	13	e.18	e5.6	25	e.38
17	e5.2	25	e.35	e5.0	12	e.17	e5.8	25	e.39
18	e5.2	25	e.35	e5.0	12	e.16	e5.4	26	e.39
19	e5.0	25	e.34	e5.0	12	e.16	e5.4	27	e.39
20	e4.9	24	e.33	e5.2	11	e.16	e5.4	27	e.40
21	e4.8	24	e.32	e5.0	11	e.15	e5.4	28	e.41
22	e4.8	24	e.31	e5.2	11	e.15	e5.6	28	e.42
23	e4.8	24	e.31	e5.0	10	e.14	e5.8	29	e.45
24	e4.8	43	e.55	e4.9	10	e.13	e5.6	30	e.46
25	e5.0	24	e.31	e5.2	10	e.13	e5.2	31	e.44
26	e5.4	23	e.32	e5.2	9	e.13	e4.9	31	e.43
27	e5.4	22	e.33	e5.2	9	e.13	e4.6	32	e.41
28	e5.4	22	e.32	e5.4	9	e.13	e4.2	31	e.37
29	e5.2	21	e.30	---	---	---	e4.1	31	e.35
30	e5.0	21	e.28	---	---	---	e4.1	30	e.34
31	e5.2	20	e.28	---	---	---	e3.9	30	e.32
TOTAL	157.8	---	10.79	145.1	---	5.31	161.0	---	9.95

e Estimated

RIO GRANDE DE LOIZA BASIN

50059050 RIO GRANDE DE LOIZA BELOW DAM SITE LOIZA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	e3.9	29	e.31	4.0	21	.23	4.2	118	1.4
2	e3.9	29	e.31	3.9	20	.21	4.2	118	1.3
3	e4.1	28	e.31	3.9	19	.20	4.4	118	1.4
4	e4.0	28	e.31	3.9	18	.19	5.2	118	1.7
5	e3.8	28	e.29	3.9	18	.19	5.0	117	1.6
6	e3.7	27	e.27	3.7	17	.17	4.5	112	1.4
7	e3.6	27	e.26	3.8	16	.17	4.5	106	1.3
8	e3.6	26	e.25	3.7	16	.16	4.3	101	1.2
9	e3.5	26	e.25	3.7	15	.15	4.5	96	1.2
10	e3.4	25	e.24	3.7	14	.14	4.5	91	1.1
11	e3.4	25	e.23	3.6	14	.13	4.9	87	1.2
12	e3.3	24	e.22	3.5	13	.12	4.6	83	1.0
13	e3.3	24	e.22	3.6	13	.12	4.3	79	.92
14	e3.2	24	e.21	3.6	12	.12	4.0	80	.86
15	e3.2	23	e.20	4.1	12	.13	3.9	81	.85
16	e4.4	23	e.27	3.9	11	.12	3.8	82	.83
17	e3.2	23	e.20	3.8	13	.13	3.6	83	.81
18	e3.4	23	e.21	3.9	15	.15	e3.5	84	e.79
19	e3.4	23	e.21	4.0	17	.18	3.4	84	.76
20	e3.7	23	e.23	4.8	20	.25	2.9	77	.61
21	e3.5	24	e.22	6.3	45	.94	e2.9	70	e.55
22	e3.5	24	e.22	5.1	85	1.2	2.9	64	.50
23	e3.9	24	e.25	4.3	87	1.0	3.4	58	.53
24	e4.6	24	e.30	4.3	92	1.1	3.6	53	.52
25	e5.3	24	e.35	4.2	96	1.1	3.8	48	.50
26	e4.1	24	e.26	4.0	101	1.1	3.3	44	.39
27	e3.9	23	e.24	3.9	107	1.1	3.3	24	.22
28	e7.6	26	e.57	4.0	112	1.2	2.6	12	.09
29	4.7	23	.30	3.8	117	1.2	2.5	13	.09
30	4.0	22	.24	4.0	118	1.3	2.4	13	.09
31	---	---	---	4.1	118	1.3	---	---	---
TOTAL	117.1	---	7.95	125.0	---	15.80	114.9	---	25.71

e Estimated

RIO GRANDE DE LOIZA BASIN

50059050 RIO GRANDE DE LOIZA BELOW DAM SITE LOIZA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	2.2	14	.08	2.4	63	.41	e17	34	1.6
2	2.1	14	.08	2.1	59	.34	113	288	108
3	2.2	15	.09	2.2	55	.33	e11	328	9.9
4	2.3	15	.09	2.4	52	.33	e11	147	4.2
5	2.5	16	.11	2.3	48	.30	e10	73	2.0
6	2.7	16	.12	2.5	45	.31	e394	42	e65
7	2.7	17	.12	2.7	42	.31	e81	39	e8.0
8	3.5	17	.16	2.8	39	.30	e15	37	e1.5
9	2.9	18	.14	3.0	34	.28	e14	36	e1.4
10	2.8	18	.14	3.2	30	.25	e14	34	e1.3
11	2.6	12	.09	3.7	26	.26	e14	33	e1.2
12	2.4	10	.06	3.2	23	.20	e9.4	32	e.83
13	2.2	11	.06	e21	33	e3.1	15	40	2.6
14	1.9	13	.07	6.1	27	.46	19	175	9.2
15	1.8	15	.07	3.6	26	.25	11	136	4.2
16	2.6	20	.14	3.4	24	.22	8.1	111	2.4
17	5.5	25	.38	4.6	24	.30	8.1	91	2.0
18	4.9	26	.34	4.1	24	.26	9.4	75	1.9
19	5.0	25	.34	3.0	22	.18	10	61	1.7
20	11	29	.91	2.9	21	.17	9.4	50	1.3
21	7.7	27	.57	4.8	23	.33	9.5	41	1.1
22	4.4	26	.30	1140	62	1120	8.9	34	.82
23	3.3	24	.22	528	51	165	172	58	87
24	3.2	23	.20	1750	85	1530	173	40	31
25	3.5	22	.21	e645	91	e253	9.0	37	.90
26	3.0	21	.17	262	230	1020	659	39	147
27	2.6	21	.14	11	36	1.1	158	29	10
28	3.1	20	.16	e222	47	e58	6.5	27	.47
29	2.5	19	.13	e13	31	e1.1	6.7	26	.47
30	2.9	38	.39	e9.1	29	e.72	184	31	34
31	3.5	74	.71	297	68	250	---	---	---
TOTAL	105.5	---	6.79	4963.1	---	4407.81	2180.0	---	542.99
YEAR	22074.7		9628.25						

e Estimated

RIO GRANDE DE LOIZA BASIN

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE LOIZA, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
AUG 1997							
26...	1011	1780	13800	66300	13	16	19
SEP							
23...	0734	1630	807	3550	65	72	74

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
AUG 1997							
26...	31	51	83	94	98	99	100
SEP							
23...	78	86	94	97	98	99	99

RIO GRANDE DE LOIZA BASIN

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE LOIZA, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JUN 1997					
13...	0845	4.5	79	0.96	99
SEP					
03...	1014	11	305	9.1	89
24...	1402	2400	74	480	92
26...	1412	4930	98	1300	92

RIO GRANDE DE LOIZA BASIN

50059100 RIO GRANDE DE LOIZA BELOW TRUJILLO ALTO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°21'35", long 66°00'15", 100 ft (30 m) downstream of Highway 181 bridge, 0.4 mi (0.6 km) northwest of Trujillo Alto plaza, and 2.2 mi (3.5 km) northeast of Lago Loíza Reservoir.

DRAINAGE AREA.--213 mi² (552 km²).

PERIOD OF RECORD.--Water years 1981 to current year.

REMARKS: Flow controlled by Lago Loiza reservoir.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
24...	1200	55	380	6.8	27.5	0.60	6.5	81	11	2800	K110
FEB 1997											
20...	1040	29	354	6.5	24.5	3.7	8.4	99	<10	290	240
JUN											
04...	0900	4.0	540	7.3	29.0	2.6	7.6	99	13	K160	70
SEP											
04...	1205	14	336	7.4	31.5	7.5	7.8	106	14	3900	K190

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
24...	130	33	12	25	0.9	2.8	107	<0.5	17	27
FEB 1997										
20...	--	--	--	--	--	--	150	--	--	--
JUN										
04...	190	45	18	39	1	2.8	230	<0.5	23	41
SEP										
04...	110	28	11	22	0.9	2.9	150	--	15	22

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
24...	0.10	29	210	31.0	1	0.690	0.010	0.700	0.020	0.39
FEB 1997										
20...	--	--	--	--	<1	0.830	0.010	0.840	0.030	0.28
JUN										
04...	0.14	32	339	3.66	12	0.160	<0.010	0.170	0.030	0.61
SEP										
04...	0.13	24	214	8.20	15	0.600	0.031	0.630	0.020	0.58

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
24...	0.42	1.1	4.9	0.060	<1	<100	40	<1	<1	<10
FEB 1997										
20...	0.31	1.2	5.1	0.050	--	--	--	--	--	--
JUN										
04...	0.64	0.81	3.6	0.100	<1	<100	70	<1	1	24
SEP										
04...	0.60	1.2	5.4	0.080	--	--	--	--	--	--

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50059100 RIO GRANDE DE LOIZA BELOW TRUJILLO ALTO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
24...	100	2	40	<0.10	<1	<1	10	<0.010	1	0.02
FEB 1997										
20...	--	--	--	--	--	--	--	--	--	--
JUN										
04...	300	<1	160	0.22	<1	<1	10	<0.010	<1	0.06
SEP										
04...	--	--	--	--	--	--	--	--	--	--

50061800 RIO CANOVANAS NEAR CAMPO RICO, PR

LOCATION.--Lat 18°19'08", long 65°53'21", Hydrologic Unit 21010005, at upstream side of bridge, on paved secondary road, 0.4 mi (0.6 km) northeast of junction of Highways 185 and 186, 1.5 mi (2.4 km) south of Campo Rico, and 4.4 mi (7.1 km) south of Loíza.

DRAINAGE AREA.--9.84 mi² (25.48 km²).

PERIOD OF RECORD.--March 1967 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 225 ft (68 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	17	60	24	109	20	13	7.7	6.9	3.9	15	13
2	18	27	46	22	40	20	17	7.7	7.4	3.9	13	11
3	25	15	38	19	31	23	32	7.7	19	4.0	12	9.0
4	18	14	36	18	31	28	17	7.6	12	3.9	18	7.6
5	15	20	33	20	39	31	15	7.7	7.6	4.4	17	7.4
6	54	27	30	17	32	22	14	7.3	6.8	4.4	12	7.7
7	27	117	28	17	24	18	13	9.1	6.3	4.2	9.8	9.0
8	20	38	26	20	23	29	11	21	5.4	4.3	9.0	9.5
9	16	23	24	18	33	23	12	16	5.5	7.5	13	15
10	17	19	23	15	27	18	11	14	5.1	13	26	12
11	22	25	229	15	24	17	12	10	5.2	11	18	11
12	14	262	62	13	26	16	11	9.1	5.2	9.7	12	14
13	13	107	36	13	47	16	11	9.6	5.0	9.0	13	17
14	12	44	30	12	28	15	11	16	4.9	8.3	14	35
15	11	34	34	12	23	16	10	9.6	4.5	8.8	11	20
16	11	26	34	11	21	16	10	8.2	4.1	10	11	17
17	11	67	28	10	18	15	9.4	8.4	4.0	11	23	14
18	10	64	24	10	18	15	9.3	8.1	4.0	10	58	13
19	9.5	39	22	10	29	14	9.1	7.2	3.9	9.8	21	13
20	10	33	21	25	25	13	14	6.7	4.2	21	14	12
21	10	40	22	89	64	14	9.6	7.1	4.2	43	12	15
22	10	364	20	165	56	13	9.1	8.1	3.8	28	262	21
23	11	68	19	87	30	13	8.6	7.3	5.5	29	42	18
24	9.8	180	18	137	28	13	8.4	6.9	9.3	17	22	18
25	11	71	18	76	28	13	8.5	7.0	6.1	13	28	12
26	e120	47	27	43	25	13	8.2	6.4	4.6	12	14	45
27	e36	40	25	35	22	14	8.5	8.0	4.3	13	14	27
28	e68	70	57	37	20	16	8.7	24	4.3	20	14	18
29	35	50	61	34	---	20	8.0	13	4.0	17	12	17
30	21	87	44	29	---	17	7.6	21	4.0	13	13	18
31	15	---	30	45	---	15	---	9.2	---	18	13	---
TOTAL	698.3	2035	1205	1098	921	546	347.0	316.7	177.1	385.1	785.8	476.2
MEAN	22.5	67.8	38.9	35.4	32.9	17.6	11.6	10.2	5.90	12.4	25.3	15.9
MAX	120	364	229	165	109	31	32	24	19	43	262	45
MIN	9.5	14	18	10	18	13	7.6	6.4	3.8	3.9	9.0	7.4
AC-FT	1390	4040	2390	2180	1830	1080	688	628	351	764	1560	945
CFSM	2.29	6.89	3.95	3.60	3.34	1.79	1.18	1.04	.60	1.26	2.58	1.61
IN.	2.64	7.69	4.56	4.15	3.48	2.06	1.31	1.20	.67	1.46	2.97	1.80

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1997, BY WATER YEAR (WY)

MEAN	40.6	44.9	32.6	25.2	19.7	14.1	15.0	27.6	18.0	19.1	25.4	38.1
MAX	273	125	116	62.4	48.4	36.2	53.2	93.2	63.7	63.7	137	196
(WY)	1971	1985	1971	1969	1988	1969	1971	1969	1970	1979	1979	1996
MIN	6.74	6.66	5.82	6.66	4.04	3.54	4.36	4.28	2.80	3.72	5.69	5.20
(WY)	1968	1981	1968	1977	1977	1977	1994	1974	1974	1974	1991	1967

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1967 - 1997	
ANNUAL TOTAL	15118.5		8991.2			
ANNUAL MEAN	41.3		24.6		27.0	
HIGHEST ANNUAL MEAN					58.0	1971
LOWEST ANNUAL MEAN					10.5	1994
HIGHEST DAILY MEAN	4230	Sep 10	364	Nov 22	4230	Sep 10 1996
LOWEST DAILY MEAN	5.4	Apr 3	3.8	Jun 22	.80	Jul 24 1977
ANNUAL SEVEN-DAY MINIMUM	6.0	Mar 28	4.0	Jun 28	1.5	Jul 18 1977
INSTANTANEOUS PEAK FLOW			4010	Nov 22	15000	Sep 13 1982
INSTANTANEOUS PEAK STAGE			9.71	Nov 22	13.10	Sep 13 1982
INSTANTANEOUS LOW FLOW					.80	Jul 24 1977
ANNUAL RUNOFF (AC-FT)	29990		17830		19540	
ANNUAL RUNOFF (CFSM)	4.20		2.50		2.74	
ANNUAL RUNOFF (INCHES)	57.16		33.99		37.25	
10 PERCENT EXCEEDS	60		44		43	
50 PERCENT EXCEEDS	14		15		12	
90 PERCENT EXCEEDS	6.6		7.0		5.1	

e Estimated

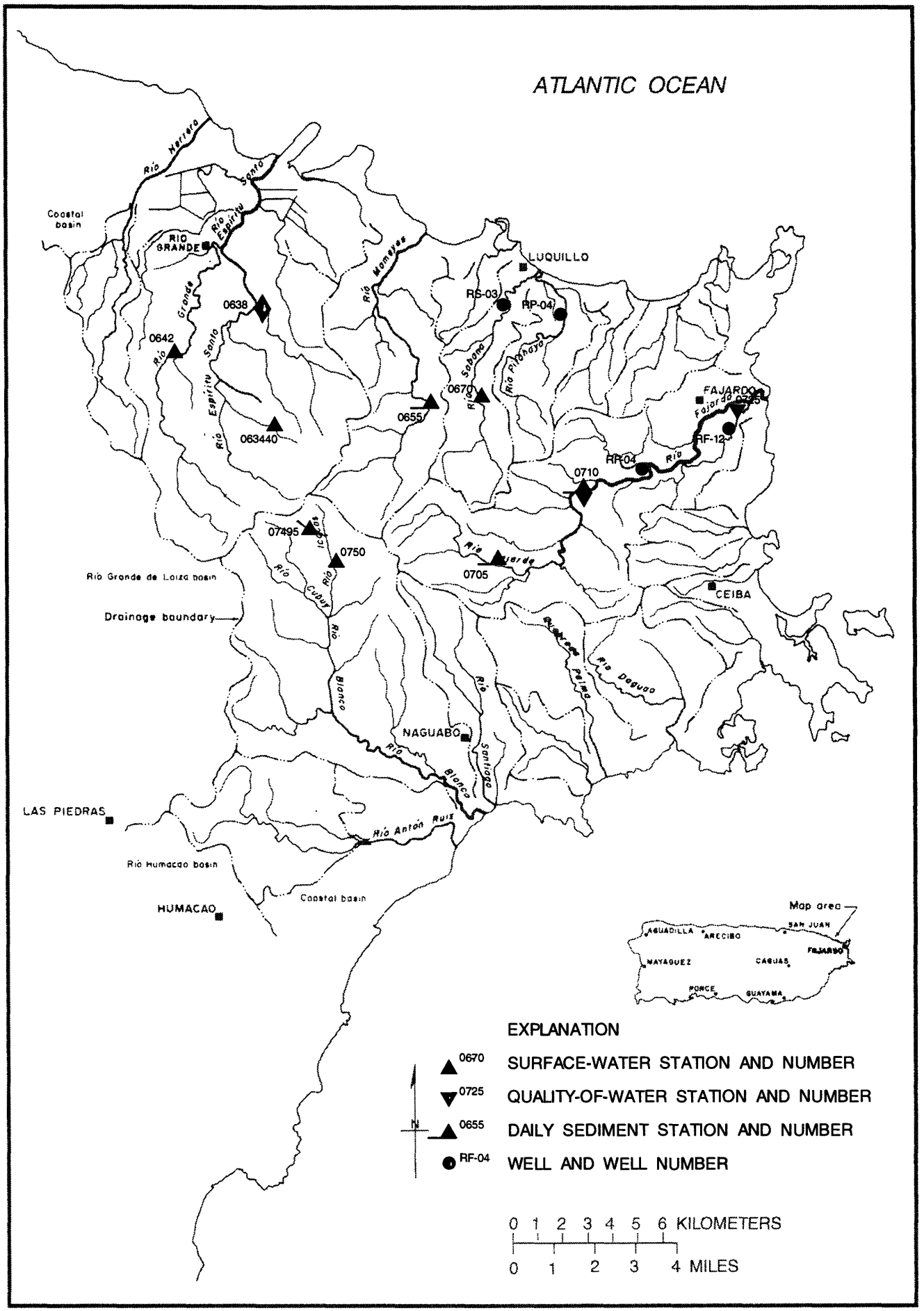

Figure 20.--Northeastern river basins the Río Herrera to Río Antón Ruíz basins.

RIO ESPIRITU SANTO BASIN

50063440 QUEBRADA SONADORA NEAR EL VERDE, PR

LOCATION.--Lat 18°19'24", long 65°49'03", Hydrologic Unit 21010005, in Caribbean National Forest, at El Yunque, 0.6 mi (1.0 km) upstream from Río Espíritu Santo, 0.2 mi (0.3 km) upstream from Highway 186, and about 1.2 mi (1.9 km) south of El Verde.

DRAINAGE AREA.--1.01 mi² (2.62 km²).

PERIOD OF RECORD.--March 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,230 ft (375 m), from topographic map.

REMARKS.--Records poor.

REVISIONS.--The maximum discharges for some water years have been revised as shown in the following tables. They supersede figures published in the reports for 1984-1986, 1988, 1989, and 1992-1995.

Water Year	Date	Discharge (ft³/s)	Gage-height (ft)	Water Year	Date	Discharge (ft³/s)	Gage-height (ft)
1984	Dec. 2, 1983	1,260	8.60	1992	May 1, 1992	993	8.14
1985	May 14, 1985	1,820	9.36	1993	Sept. 15, 1993	688	7.56
1986	Aug. 24, 1986	1,790	9.32	1994	Oct. 22, 1993	537	7.20
1988	Dec. 7, 1987	1,870	9.42	1995	Oct. 20, 1994	685	7.56
1989	Sept. 18, 1989	1,340	8.72				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.6	.25	e1.6	3.7	.68	.29	e1.1	1.1	.78	11	.45
2	1.6	e19	1.2	e1.6	2.2	.65	.19	e.92	4.2	.69	4.9	.32
3	1.5	e19	.65	e1.6	10	.73	.13	e.90	1.5	.95	25	.28
4	1.1	e8.0	.44	e1.6	8.8	.74	55	e.80	14	.62	16	.36
5	6.9	e7.8	.49	e2.0	5.3	17	4.1	e2.5	5.3	.51	12	2.4
6	9.5	e26	.18	e3.7	25	4.7	.91	e9.8	14	.52	6.9	1.2
7	5.0	e4.8	.13	e15	12	4.3	.63	e5.2	9.3	1.4	2.0	.51
8	9.6	e4.5	5.9	e14	3.0	5.2	.52	e7.8	3.1	75	1.6	10
9	4.7	e2.4	3.7	e2.1	2.6	9.4	.45	e4.6	1.1	11	3.2	61
10	8.3	e2.4	.89	e1.4	1.8	1.9	.40	e2.2	1.1	4.5	1.2	e425
11	2.0	e2.0	1.3	e2.7	1.4	6.4	.37	e2.1	20	1.6	.94	e29
12	1.5	e2.0	15	e14	1.1	2.5	19	e12	26	14	1.2	e2.7
13	7.9	e3.0	14	e2.5	1.0	1.3	4.6	e3.5	11	10	36	2.2
14	1.9	e2.1	1.3	e45	1.1	1.0	4.5	e2.2	20	e44	52	2.9
15	.89	e1.9	1.8	e24	.95	.97	16	e1.7	46	e10	9.4	21
16	7.2	e2.2	37	e21	1.1	1.9	10	1.3	31	e3.9	20	e20
17	2.6	e2.1	e60	e5.2	1.0	1.2	1.4	1.1	5.7	e3.2	5.2	e1.4
18	3.7	e1.7	e120	e8.0	.95	.99	1.0	.88	8.3	e3.0	2.1	e2.3
19	6.1	e1.9	e25	e20	1.4	.82	.70	.81	3.7	e2.5	2.0	e2.4
20	1.4	e1.2	e3.5	e50	1.2	.63	.72	.93	2.0	e12	1.2	e4.2
21	.89	e1.2	e3.1	e14	.99	.50	e.99	1.3	3.9	e2.3	.97	e12
22	1.1	e1.0	e2.5	e10	.93	.40	e1.4	1.9	13	e1.6	.80	e1.6
23	27	e1.0	e2.1	e6.8	.90	.34	e26	2.9	2.9	1.3	26	e1.5
24	20	e3.9	e1.8	e10	15	.28	e1.5	5.4	1.4	1.7	13	e1.5
25	3.1	e1.5	e1.9	e5.0	3.0	.21	e1.5	.94	1.2	15	2.2	e1.4
26	2.6	e1.5	e1.7	e3.1	1.3	.35	e1.8	.66	1.1	12	1.3	e2.0
27	1.3	e.93	e1.9	e6.0	1.0	1.8	e1.4	.56	1.5	1.7	1.2	e6.8
28	.96	e1.5	e4.0	e37	.85	6.8	e2.1	.45	7.1	3.4	2.7	e29
29	.85	3.2	e2.0	e9.0	.76	5.0	e5.6	.41	1.2	2.4	1.1	e7.6
30	.71	1.1	e1.9	3.2	---	.67	e1.6	.36	.88	1.2	.76	e3.5
31	1.1	---	e1.8	4.2	---	.42	---	.59	---	2.3	.65	---
TOTAL	144.50	132.43	317.43	345.3	110.33	79.78	164.80	77.81	262.58	245.07	264.52	656.52
MEAN	4.66	4.41	10.2	11.1	3.80	2.57	5.49	2.51	8.75	7.91	8.53	21.9
MAX	27	26	120	50	25	17	55	12	46	75	52	425
MIN	.71	.93	.13	1.4	.76	.21	.13	.36	.88	.51	.65	.28
AC-FT	287	263	630	685	219	158	327	154	521	486	525	1300
CFSM	4.62	4.37	10.1	11.0	3.77	2.55	5.44	2.49	8.67	7.83	8.45	21.7
IN.	5.32	4.88	11.69	12.72	4.06	2.94	6.07	2.87	9.67	9.03	9.74	24.18

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1996, BY WATER YEAR (WY)

MEAN	5.69	9.37	8.11	6.85	6.14	4.82	4.80	7.81	6.06	6.62	6.73	7.28
MAX	16.8	19.8	20.9	11.1	11.9	14.3	9.76	14.3	13.7	12.7	14.2	21.9
(WY)	1986	1985	1988	1996	1988	1990	1987	1992	1987	1983	1988	1996
MIN	.22	2.47	.92	3.42	1.56	1.53	1.09	2.51	.98	2.33	.50	2.45
(WY)	1993	1991	1990	1985	1992	1993	1984	1996	1985	1991	1993	1986

SUMMARY STATISTICS	FOR 1995 CALENDAR YEAR		FOR 1996 WATER YEAR		WATER YEARS 1983 - 1996	
ANNUAL TOTAL	2467.03		2801.07			
ANNUAL MEAN	6.76		7.65		6.63	
HIGHEST ANNUAL MEAN					9.32	1988
LOWEST ANNUAL MEAN					3.91	1994
HIGHEST DAILY MEAN	120	Dec 18	425	Sep 10	425	Sep 10 1996
LOWEST DAILY MEAN	.11	Feb 14	.13	Dec 7	.00	Aug 14 1993
ANNUAL SEVEN-DAY MINIMUM	.21	Apr 27	.39	Mar 20	.01	Mar 31 1994
INSTANTANEOUS PEAK FLOW			4020	Sep 10	4020	Sep 10 1996
INSTANTANEOUS PEAK STAGE			11.35	Sep 10	11.35	Sep 10 1996
INSTANTANEOUS LOW FLOW			.06	Dec 7	.00	Aug 13 1993
ANNUAL RUNOFF (AC-FT)	4890		5560		4800	
ANNUAL RUNOFF (CFSM)	6.69		7.58		6.56	
ANNUAL RUNOFF (INCHES)	90.86		103.17		89.15	
10 PERCENT EXCEEDS	17		19		17	
50 PERCENT EXCEEDS	2.2		2.0		2.6	
90 PERCENT EXCEEDS	.44		.65		.43	

e Estimated

RIO ESPIRITU SANTO BASIN

50063440 QUEBRADA SONADORA NEAR EL VERDE, PR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	5.6	e5.0	e2.5	e20	1.7	.68	.32	e4.3	.78	e3.0	e1.9
2	2.3	12	e4.5	e2.8	e5.0	3.1	2.1	.32	e35	.69	e1.2	e2.5
3	4.6	3.1	e2.4	e1.9	e4.1	6.8	2.7	.31	e25	.65	e5.8	e2.3
4	1.8	3.3	e2.4	e1.4	e3.9	6.3	2.6	.31	e1.0	.65	e11	e1.9
5	1.4	17	e2.2	e2.2	e12	13	4.3	.31	e.89	.72	e1.7	e1.6
6	1.2	3.9	e2.0	e1.9	e10	2.8	1.1	.31	e.86	1.3	e1.2	e1.3
7	1.8	44	e1.8	e1.7	e3.0	1.9	.88	19	e.80	1.5	1.1	e1.5
8	1.5	4.0	e1.6	e1.4	e2.8	11	.84	e24	e.77	1.5	1.0	e1.4
9	1.2	11	e1.5	e1.7	e15	8.0	.79	e16	e.74	2.6	2.4	e3.6
10	3.9	2.4	e1.7	e1.3	e3.3	1.9	.76	2.2	e.71	2.3	18	e2.3
11	1.6	24	e40	e1.2	e2.7	1.5	.78	11	e.70	1.0	1.6	e1.3
12	1.4	e64	e8.0	e1.1	e5.2	2.5	.77	3.1	e.68	.90	5.1	e1.7
13	3.1	e15	e2.7	e1.0	e20	2.6	.77	9.9	e1.1	4.0	2.4	e4.0
14	2.2	e7.0	e2.0	e.98	e3.4	1.7	.64	2.5	e3.2	1.8	1.2	e10
15	1.3	e4.5	e2.4	e.90	e2.4	2.7	.50	1.2	e.90	1.3	1.1	e3.5
16	1.1	e2.9	e10	e.82	e2.0	3.1	.48	2.9	e.73	8.3	7.6	e2.0
17	.99	e16	e2.5	.77	e1.8	e1.3	.46	3.6	e.70	3.6	14	e1.4
18	.94	e6.2	e1.6	.73	e1.8	e1.1	.50	1.4	e.73	1.5	16	e1.5
19	.89	e4.0	1.5	5.3	e10	e1.2	.67	1.0	e1.6	8.4	1.9	e1.5
20	.84	e2.8	1.4	11	e4.0	e1.1	.79	1.1	e4.3	18	1.4	e1.3
21	.80	e2.9	1.4	e36	e29	e1.0	.51	e2.2	e4.7	e23	1.2	e4.5
22	.77	e34	1.9	e46	e10	e.98	.43	e1.0	e1.4	e5.6	e37	e7.0
23	.98	e5.0	1.5	e36	e3.1	e.92	.41	e.88	e16	e13	e7.4	e5.6
24	1.1	e52	3.8	e41	e3.1	e.88	.38	e.93	e6.4	e1.7	e6.8	4.8
25	2.3	e7.2	1.8	e9.0	e2.8	e.85	.36	e.82	e2.7	e1.7	e6.4	11
26	36	e3.3	e4.1	e7.8	e3.2	.83	.35	e.76	1.7	e2.1	e4.3	e16
27	4.6	e2.5	e6.2	e3.4	e2.2	.80	.37	e1.1	1.1	e1.2	e4.9	e3.8
28	22	e17	e10	e6.4	e1.7	.78	.36	e1.7	.89	e1.5	e3.3	e2.3
29	13	e4.0	e24	e5.2	---	1.0	.33	e11	.83	e1.4	e2.1	e2.0
30	1.6	e30	e7.4	e3.9	---	.89	.33	e3.0	.80	e2.0	e1.9	e2.1
31	1.5	---	e4.1	e4.8	---	.72	---	e2.0	---	e11	e1.9	---
TOTAL	120.41	410.6	163.4	242.10	187.5	84.95	26.94	126.17	121.23	125.69	175.9	107.6
MEAN	3.88	13.7	5.27	7.81	6.70	2.74	.90	4.07	4.04	4.05	5.67	3.59
MAX	36	64	40	46	29	13	4.3	24	35	23	37	16
MIN	.77	2.4	1.4	.73	1.7	.72	.33	.31	.68	.65	1.0	1.3
AC-FT	239	814	324	480	372	168	53	250	240	249	349	213
CFSM	3.85	13.6	5.22	7.73	6.63	2.71	.89	4.03	4.00	4.01	5.62	3.55
IN.	4.43	15.12	6.02	8.92	6.91	3.13	.99	4.65	4.47	4.63	6.48	3.96

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1997, BY WATER YEAR (WY)

MEAN	5.56	9.68	7.90	6.92	6.18	4.67	4.54	7.56	5.93	6.45	6.66	7.04
MAX	16.8	19.8	20.9	11.1	11.9	14.3	9.76	14.3	13.7	12.7	14.2	21.9
(WY)	1986	1985	1988	1996	1988	1990	1987	1992	1987	1983	1988	1996
MIN	.22	2.47	.92	3.42	1.56	1.53	.90	2.51	.98	2.33	.50	2.45
(WY)	1993	1991	1990	1985	1992	1993	1997	1996	1985	1991	1993	1986

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1983 - 1997	
ANNUAL TOTAL	2901.12		1892.49			
ANNUAL MEAN	7.93		5.18		6.52	
HIGHEST ANNUAL MEAN					9.32	1988
LOWEST ANNUAL MEAN					3.91	1994
HIGHEST DAILY MEAN	425	Sep 10	64	Nov 12	425	Sep 10 1996
LOWEST DAILY MEAN	.13	Apr 3	.31	May 3	.00	Aug 14 1993
ANNUAL SEVEN-DAY MINIMUM	.39	Mar 20	.32	Apr 30	.01	Mar 31 1994
INSTANTANEOUS PEAK FLOW			614	Jul 21	4020	Sep 10 1996
INSTANTANEOUS PEAK STAGE			7.39	Jul 21	11.35	Sep 10 1996
INSTANTANEOUS LOW FLOW			.31	May 1	.00	Aug 13 1993
ANNUAL RUNOFF (AC-FT)	5750		3750		4730	
ANNUAL RUNOFF (CFSM)	7.85		5.13		6.46	
ANNUAL RUNOFF (INCHES)	106.85		69.70		87.77	
10 PERCENT EXCEEDS	20		13		16	
50 PERCENT EXCEEDS	2.3		2.0		2.6	
90 PERCENT EXCEEDS	.71		.75		.46	

e Estimated

RIO ESPIRITU SANTO BASIN

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR

LOCATION.--Lat 18°21'37", long 65°48'49", Hydrologic Unit 21010005, at downstream side of bridge on Highway 966, 0.1 mi (0.2 km) upstream from Quebrada Jiménez, and 1.9 mi (3.1 km) southeast of Río Grande.

DRAINAGE AREA.--8.62 mi² (22.33 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1959 to April 1963 (annual low-flow and occasional measurements only), August 1966 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 40 ft (12 m), from topographic map.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49	61	85	63	270	27	20	18	51	12	36	39
2	54	124	79	86	142	36	19	17	410	12	30	48
3	77	48	42	e60	82	55	56	17	102	12	29	34
4	51	76	42	e45	85	65	33	20	24	13	48	48
5	38	163	48	e70	111	102	56	21	15	15	28	30
6	34	84	47	e60	88	49	26	19	13	20	21	23
7	34	400	41	e52	61	35	23	141	12	22	20	24
8	34	92	37	e45	50	87	22	186	12	26	20	28
9	26	86	35	e52	213	83	21	93	11	30	41	97
10	45	60	35	e42	60	39	20	53	11	33	148	38
11	37	146	212	e38	54	32	19	77	12	23	44	24
12	29	694	88	e34	121	35	18	76	12	22	55	33
13	41	383	43	e32	153	35	18	66	13	26	59	197
14	38	122	39	e31	57	30	18	49	33	34	32	259
15	26	67	41	e29	46	37	15	19	14	25	30	223
16	23	48	98	e29	40	41	14	32	12	58	75	61
17	20	168	49	28	36	36	14	63	11	55	102	38
18	19	121	36	26	36	35	14	34	11	31	236	93
19	18	226	29	30	62	34	16	25	12	66	88	55
20	18	57	28	104	37	31	26	22	19	197	73	31
21	19	41	28	377	252	29	16	41	19	330	71	e80
22	18	310	30	499	208	28	16	24	14	105	923	e128
23	19	85	30	405	47	25	20	22	75	112	103	e82
24	25	656	49	500	53	21	20	26	69	38	140	e61
25	30	102	48	156	44	20	19	21	51	62	105	e48
26	206	59	110	148	56	21	17	22	32	50	49	e350
27	69	43	145	60	35	21	18	26	20	33	35	e100
28	138	156	222	91	28	21	20	56	14	37	27	e48
29	e120	73	347	113	---	24	20	72	12	33	23	e42
30	e32	278	124	59	---	23	19	65	12	66	24	e45
31	e27	---	90	66	---	21	---	32	---	86	31	---
TOTAL	1414	5029	2377	3430	2527	1178	653	1455	1128	1684	2746	2407
MEAN	45.6	168	76.7	111	90.3	38.0	21.8	46.9	37.6	54.3	88.6	80.2
MAX	206	694	347	500	270	102	56	186	410	330	923	350
MIN	18	41	28	26	28	20	14	17	11	12	20	23
AC-FT	2800	9980	4710	6800	5010	2340	1300	2890	2240	3340	5450	4770
CFSM	5.29	19.4	8.90	12.8	10.5	4.41	2.53	5.44	4.36	6.30	10.3	9.31
IN.	6.10	21.70	10.26	14.80	10.91	5.08	2.82	6.28	4.87	7.27	11.85	10.39

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997, BY WATER YEAR (WY)

MEAN	59.7	85.7	72.3	55.1	51.2	38.6	43.1	66.1	45.8	52.2	60.4	59.6
MAX	202	196	179	119	117	153	119	185	120	114	123	191
(WY)	1971	1985	1971	1969	1982	1990	1981	1979	1970	1983	1988	1989
MIN	12.3	29.1	16.8	18.5	10.8	9.53	6.27	14.9	10.0	11.1	18.5	17.7
(WY)	1969	1982	1994	1977	1983	1996	1984	1973	1975	1975	1994	1971

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1966 - 1997	
ANNUAL TOTAL	27444.4		26028			
ANNUAL MEAN	75.0		71.3		57.6	
HIGHEST ANNUAL MEAN					98.6	1979
LOWEST ANNUAL MEAN					21.6	1994
HIGHEST DAILY MEAN	2000	Sep 10	923	Aug 22	2600	Dec 7 1987
LOWEST DAILY MEAN	3.6	Apr 2	11	Jun 9	3.6	Apr 2 1996
ANNUAL SEVEN-DAY MINIMUM	5.5	Mar 20	12	Jun 6	4.4	Jun 30 1975
INSTANTANEOUS PEAK FLOW			4700	Aug 22	21200	Aug 13 1990
INSTANTANEOUS PEAK STAGE			8.33	Aug 22	16.62	Aug 13 1990
ANNUAL RUNOFF (AC-FT)	54440		51630		41710	
ANNUAL RUNOFF (CFSM)	8.70		8.27		6.68	
ANNUAL RUNOFF (INCHES)	118.44		112.33		90.74	
10 PERCENT EXCEEDS	161		147		123	
50 PERCENT EXCEEDS	37		39		26	
90 PERCENT EXCEEDS	10		18		10	

e Estimated

RIO ESPIRITU SANTO BASIN

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958, 1961-66, 1968 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
31...	1200	26	116	6.2	26.5	2.0	6.7	85	<10	4300	290
FEB 1997											
19...	0900	47	107	6.5	21.5	3.2	8.6	96	<10	2600	K1700
JUN											
06...	0940	13	92	6.8	26.5	2.8	7.8	97	<10	330	510
SEP											
10...	1020	27	68	6.5	25.0	2.6	7.7	94	<10	K1500	2200

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
31...	35	7.9	3.7	7.9	0.6	0.50	39	<0.5	1.8	9.1
FEB 1997										
19...	--	--	--	--	--	--	34	--	--	--
JUN										
06...	210	66	11	38	1	3.5	31	<0.5	11	50
SEP										
10...	44	9.5	4.9	9.6	0.6	5.5	20	--	1.9	15

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
31...	<0.10	19	71	4.98	1	0.080	0.020	1.00	0.040	0.36
FEB 1997										
19...	--	--	--	--	<1	0.090	<0.010	0.090	0.010	<0.20
JUN										
06...	0.13	38	236	8.41	7	0.040	<0.010	0.050	0.020	<0.20
SEP										
10...	<0.10	23	100	7.29	7	0.090	<0.010	0.090	0.020	0.23

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
31...	0.40	0.28	1.3	0.040	<1	<100	20	<1	<1	<10
FEB 1997										
19...	<0.20	0.22	0.97	<0.020	--	--	--	--	--	--
JUN										
06...	<0.20	0.22	0.97	<0.020	<1	<100	20	<1	<1	<10
SEP										
10...	0.24	0.33	1.5	<0.020	--	--	--	--	--	--

K = non-ideal count

RIO ESPIRITU SANTO BASIN

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958, 1961-66, 1968 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
31...	260	<1	10	<0.10	<1	<1	<10	<0.010	3	<0.02
FEB 1997										
19...	--	--	--	--	--	--	--	--	--	--
JUN										
06...	120	<1	10	<0.10	<1	<1	<10	<0.010	<1	<0.02
SEP										
10...	--	--	--	--	--	--	--	--	--	--

RIO ESPIRITU SANTO BASIN

50064200 RIO GRANDE NEAR EL VERDE, PR

LOCATION.--Lat 18°20'42", long 65°50'30", Hydrologic Unit 21010005, on left bank 250 ft (7.6 m) upstream side of bridge at Hwy 960, 0.05 mi (0.08 km) southwest of junction of Highways 956 and 960, 1.1 mi (1.8 km) west of El Verde, and 2.7 mi (4.3 km) south of Río Grande.

DRAINAGE AREA.--7.31 mi² (18.93 km²).

PERIOD OF RECORD.--May 1967 to December 1970, January 1972 to September 1982, August 1990 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 131 ft (40 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, wich are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	26	e42	23	96	15	6.0	3.9	20	5.2	26	21
2	13	62	e38	25	41	21	13	4.5	106	5.0	18	26
3	25	17	e20	17	35	28	35	4.1	72	4.6	30	25
4	14	21	e20	13	34	38	11	3.9	27	4.5	56	21
5	9.6	49	19	20	58	55	21	3.6	14	5.4	25	17
6	12	36	17	17	47	23	10	4.1	13	7.1	18	16
7	23	140	15	15	25	17	8.1	57	11	5.8	17	17
8	15	38	14	13	24	44	7.7	67	8.9	7.2	16	16
9	11	20	13	15	71	31	7.4	46	8.4	7.7	53	39
10	33	14	14	12	28	18	7.1	25	7.3	7.8	95	27
11	20	44	185	11	23	14	7.4	21	7.0	5.3	30	15
12	8.6	e292	68	9.9	44	13	7.7	21	6.8	4.9	25	20
13	10	138	23	9.2	95	14	7.2	26	6.9	4.6	48	62
14	7.7	64	17	8.8	28	12	7.0	29	12	5.4	22	106
15	6.8	41	20	8.2	20	12	6.5	11	7.4	10	20	41
16	6.2	26	48	7.4	17	13	6.0	9.8	6.6	11	49	25
17	5.5	72	24	6.8	15	10	5.8	28	5.6	17	112	18
18	5.0	56	15	6.9	15	8.5	5.6	15	e5.6	14	162	19
19	5.0	37	13	7.7	49	8.7	6.7	8.5	12	20	39	19
20	4.5	25	12	34	34	8.2	15	8.0	10	102	27	17
21	4.3	26	14	170	137	8.2	6.3	9.0	e7.5	129	24	53
22	4.1	155	16	213	76	7.7	5.1	7.8	5.6	51	348	67
23	5.4	42	13	163	26	7.2	4.7	7.4	44	75	69	53
24	4.7	237	16	192	26	6.8	4.7	7.5	43	26	66	41
25	36	62	19	77	24	6.9	4.7	7.2	e22	26	62	19
26	140	e28	37	65	27	7.5	4.7	6.7	26	31	42	152
27	41	e21	55	29	18	7.3	5.0	42	11	19	48	36
28	77	e76	94	53	15	6.6	4.9	43	7.6	23	29	22
29	49	e35	134	43	---	7.5	4.2	29	6.4	21	22	19
30	13	e140	68	33	---	7.2	4.0	40	5.8	32	19	20
31	8.6	---	37	41	---	6.0	---	16	---	60	20	---
TOTAL	630.0	2040	1140	1358.9	1148	482.3	249.5	612.0	546.4	747.5	1637	1049
MEAN	20.3	68.0	36.8	43.8	41.0	15.6	8.32	19.7	18.2	24.1	52.8	35.0
MAX	140	292	185	213	137	55	35	67	106	129	348	152
MIN	4.1	14	12	6.8	15	6.0	4.0	3.6	5.6	4.5	16	15
AC-FT	1250	4050	2260	2700	2280	957	495	1210	1080	1480	3250	2080
CFSM	2.78	9.30	5.03	6.00	5.61	2.13	1.14	2.70	2.49	3.30	7.22	4.78
IN.	3.21	10.38	5.80	6.92	5.84	2.45	1.27	3.11	2.78	3.80	8.33	5.34

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1997, BY WATER YEAR (WY)

MEAN	55.7	67.7	47.0	43.0	31.0	20.7	26.8	50.6	30.8	36.7	42.7	48.6
MAX	392	172	140	151	76.4	54.4	119	203	86.5	109	90.0	153
(WY)	1971	1970	1971	1969	1969	1969	1978	1969	1968	1969	1968	1975
MIN	8.45	14.3	13.8	10.1	5.80	4.50	6.29	10.2	6.22	8.66	7.39	12.4
(WY)	1969	1981	1968	1977	1977	1977	1995	1974	1975	1994	1991	1967

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1967 - 1997	
ANNUAL TOTAL	13344.8		11640.6			
ANNUAL MEAN	36.5		31.9		40.1	
HIGHEST ANNUAL MEAN					87.1	1969
LOWEST ANNUAL MEAN					17.3	1994
HIGHEST DAILY MEAN	1100	Sep 10	348	Aug 22	3470	May 21 1969
LOWEST DAILY MEAN	4.1	Oct 22	3.6	May 5	2.2	Aug 15 1991
ANNUAL SEVEN-DAY MINIMUM	4.7	Oct 18	4.0	Apr 30	2.5	Aug 10 1991
INSTANTANEOUS PEAK FLOW			3100	Nov 12	17400	Sep 16 1975
INSTANTANEOUS PEAK STAGE			11.73	Nov 12	15.50	Sep 16 1975
INSTANTANEOUS LOW FLOW			3.4	May 5	1.6	Mar 13 1977
ANNUAL RUNOFF (AC-FT)	26470		23090		29040	
ANNUAL RUNOFF (CFSM)	4.99		4.36		5.48	
ANNUAL RUNOFF (INCHES)	67.91		59.24		74.51	
10 PERCENT EXCEEDS	72		68		78	
50 PERCENT EXCEEDS	18		19		17	
90 PERCENT EXCEEDS	6.2		5.7		6.6	

e Estimated

RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA, PR

LOCATION.--Lat 18°19'46", long 65°45'04", Hydrologic Unit 21010005, on left bank, at bridge on Highway 988, 1.4 mi (2.3 km) west of Sabana, 2.0 mi (3.2 km) downstream from Río de la Mina, and 3.2 mi (5.1 km) southeast of Mameyes.

DRAINAGE AREA.--6.88 mi² (17.82 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1967 to December 1973, June 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 275 ft (84 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	44	e90	30	e100	29	e29	e20	56	21	28	53
2	e36	e57	e60	41	e54	33	e49	e19	225	19	29	40
3	e49	39	e41	33	e74	e40	e39	e18	93	19	39	34
4	e43	42	e39	30	e60	e35	e76	e18	45	18	55	47
5	e69	87	e34	40	e70	e50	e80	e17	35	20	35	30
6	e36	50	e32	37	e56	34	e37	e17	30	21	33	27
7	e31	362	e32	32	e54	31	e34	e82	26	19	33	26
8	e19	64	e29	34	e45	e44	e33	131	23	23	35	27
9	22	e47	e27	29	e80	e41	e30	50	20	28	40	62
10	e78	e35	e30	27	e48	32	e29	34	18	24	109	34
11	e26	131	42	26	e48	e28	e30	72	18	19	36	26
12	19	e326	29	25	e78	e33	e29	46	17	20	37	31
13	29	e286	23	24	e86	e32	e43	91	23	59	37	95
14	25	e83	23	23	e47	e28	e30	44	34	33	28	101
15	22	e70	25	23	e40	29	e29	29	18	24	29	135
16	29	e56	39	22	34	29	e29	36	16	44	63	41
17	e28	e100	25	e26	34	25	e31	55	16	34	63	32
18	26	e58	22	21	33	28	e31	38	e29	24	70	54
19	e25	109	21	21	45	26	e38	30	32	42	36	32
20	e23	e47	20	35	36	e26	e30	31	67	63	33	29
21	e22	e54	21	e90	e70	e30	e28	45	e54	213	30	43
22	e23	e62	21	e180	e50	e27	e27	29	27	71	373	76
23	e23	e50	20	e130	35	e26	e25	50	86	86	59	64
24	e23	e280	23	e140	36	e26	e21	52	60	32	66	46
25	e26	e62	23	e60	36	e28	e21	e37	42	47	58	162
26	91	e50	29	e66	36	e30	e21	e94	46	38	41	401
27	30	e52	42	e37	32	e45	e26	e119	31	25	41	60
28	163	e66	46	e56	30	e48	e22	e44	27	33	35	47
29	108	e60	67	e50	---	e60	e21	54	25	24	30	47
30	21	e200	44	e40	---	e32	e21	42	22	68	29	45
31	32	---	41	e42	---	e31	---	44	---	47	41	---
TOTAL	1229	3029	1060	1470	1447	1036	989	1488	1261	1258	1671	1947
MEAN	39.6	101	34.2	47.4	51.7	33.4	33.0	48.0	42.0	40.6	53.9	64.9
MAX	163	362	90	180	100	60	80	131	225	213	373	401
MIN	19	35	20	21	30	25	21	17	16	18	28	26
AC-FT	2440	6010	2100	2920	2870	2050	1960	2950	2500	2500	3310	3860
CFSM	5.76	14.7	4.97	6.89	7.51	4.86	4.79	6.98	6.11	5.90	7.83	9.43
IN.	6.65	16.38	5.73	7.95	7.82	5.60	5.35	8.05	6.82	6.80	9.04	10.53

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1997, BY WATER YEAR (WY)

MEAN	63.5	80.3	58.7	54.4	42.3	37.2	39.8	64.3	54.9	49.7	52.6	60.3
MAX	240	191	164	105	68.0	79.7	83.1	147	112	93.4	81.4	166
(WY)	1971	1985	1971	1969	1988	1990	1973	1970	1970	1969	1988	1989
MIN	20.3	36.3	16.6	25.0	21.7	18.1	14.5	18.7	12.4	20.3	20.4	26.6
(WY)	1969	1974	1990	1985	1968	1968	1984	1973	1985	1994	1994	1986

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1967 - 1997	
ANNUAL TOTAL	21383		17885			
ANNUAL MEAN	58.4		49.0		55.4	
HIGHEST ANNUAL MEAN					78.0	1971
LOWEST ANNUAL MEAN					33.1	1994
HIGHEST DAILY MEAN	2140	Sep 10	401	Sep 26	2780	Sep 18 1989
LOWEST DAILY MEAN	12	May 28	16	Jun 16	6.9	Apr 20 1970
ANNUAL SEVEN-DAY MINIMUM	15	May 25	19	Apr 30	9.4	Jun 12 1985
INSTANTANEOUS PEAK FLOW			11400	Sep 26	20500	Sep 18 1989
INSTANTANEOUS PEAK STAGE			10.65	Sep 26	13.19	Sep 18 1989
INSTANTANEOUS LOW FLOW					5.1	Apr 8 1970
ANNUAL RUNOFF (AC-FT)	42410		35470		40140	
ANNUAL RUNOFF (CFSM)	8.49		7.12		8.05	
ANNUAL RUNOFF (INCHES)	115.62		96.70		109.43	
10 PERCENT EXCEEDS	92		82		100	
50 PERCENT EXCEEDS	31		35		33	
90 PERCENT EXCEEDS	17		21		16	

e Estimated

RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA,PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Water years 1992 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1992 to current year.

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler, since 1993.

REMARKS:-- Sediment samples were collected by a local observer on a weekly basis and during high flow events.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 484 mg/L September 10, 1996; Minimum daily mean, 1 mg/L several years.
SEDIMENT LOADS: Maximum daily mean, e4,290 tons (e3,891 tonnes) September 10, 1996; Minimum daily mean, 0.03 tons (0.02 tonne) October 05, 1994.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 162 mg/L November 7,1996 - September 26, 1997; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 938 tons (851 tonnes) September 26, 1997; Minimum daily mean, 0.04 tons (0.04 tonne) May 4-6, 1997.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	32	11	.99	44	16	2.4	e90	40	e16
2	e36	10	e.98	e57	17	e3.3	e60	17	e3.5
3	e49	16	e3.2	39	13	2.5	e41	11	e1.5
4	e43	12	e1.7	42	13	1.7	e39	8	e.90
5	e69	23	e5.5	87	27	10	e34	4	e.36
6	e36	15	e1.5	50	15	2.3	e32	1	e.12
7	e31	11	e.99	362	162	285	e32	1	e.13
8	e19	6	e.32	64	24	4.5	e29	2	e.19
9	22	7	.47	e47	16	2.1	e27	4	e.28
10	e78	30	e11	e35	10	.99	e30	6	e.41
11	e26	9	e.72	131	44	20	42	15	1.9
12	19	7	.34	e326	115	e176	29	10	.74
13	29	9	1.1	e286	84	e162	23	8	.51
14	25	7	.56	e83	19	e4.5	23	7	.43
15	22	7	.46	e70	9	e2.0	25	8	.57
16	29	4	.31	e56	5	e.91	39	12	1.4
17	e28	5	e.35	e100	14	e3.2	25	7	.46
18	26	12	.84	e58	12	e2.1	22	4	.23
19	e25	11	e.72	109	39	20	21	2	.13
20	e23	7	e.42	e47	32	e5.9	20	2	.12
21	e22	4	e.27	e54	20	e2.7	21	2	.13
22	e23	4	e.21	e62	17	e2.7	21	3	.15
23	e23	10	e.62	e50	17	e2.6	20	3	.16
24	e23	15	e.94	e280	42	e19	23	6	.36
25	e26	21	e1.5	e62	44	e20	23	10	.65
26	91	30	9.4	e50	15	e2.2	29	10	.91
27	30	9	.82	e52	10	e1.4	42	24	3.1
28	163	109	264	e66	9	e1.5	46	15	2.3
29	108	52	41	e60	16	e2.7	67	20	4.4
30	21	18	1.0	e200	38	e14	44	13	1.5
31	32	12	1.1	---	---	---	41	14	1.6
TOTAL	1229	---	353.33	3029	---	780.20	1060	---	45.14

e Estimated

RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA,PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	30	15	1.2	e100	35	e7.0	29	4	.35
2	41	14	1.6	e54	40	e8.2	33	13	1.3
3	33	7	.58	e74	18	e3.1	e40	11	e1.1
4	30	6	.47	e60	19	e3.5	e35	12	e1.2
5	40	13	1.4	e70	17	e3.0	e50	13	e1.4
6	37	12	1.2	e56	14	e2.4	34	11	1.0
7	32	11	.92	e54	12	e1.7	31	9	.80
8	34	12	1.1	e45	14	e1.8	e44	14	e1.8
9	29	17	1.3	e80	17	e2.8	e41	13	e1.4
10	27	21	1.5	e48	16	e2.7	32	10	.82
11	26	16	1.1	e48	15	e1.9	e28	9	e.64
12	25	10	.68	e78	19	e3.3	e33	8	e.72
13	24	6	.42	e86	24	e5.2	e32	8	e.66
14	23	4	.27	e47	20	e3.6	e28	7	e.56
15	23	3	.20	e40	17	e2.0	29	11	.85
16	22	5	.30	34	14	1.3	29	15	1.2
17	e26	9	e.50	34	8	.73	25	9	.62
18	21	14	.78	33	5	.42	28	5	.37
19	21	11	.61	45	12	1.6	26	4	.29
20	35	11	1.1	36	7	.69	e26	5	e.32
21	e90	55	e8.1	e70	21	e3.9	e30	5	e.37
22	e180	41	e14	e50	15	e2.0	e27	5	e.40
23	e130	48	e20	35	9	.88	e26	6	e.40
24	e140	66	e24	36	6	.61	e26	6	e.38
25	e60	30	e7.9	36	4	.42	e28	5	e.33
26	e66	18	e3.1	36	4	.41	e30	4	e.31
27	e37	17	e2.3	32	5	.39	e45	4	e.46
28	e56	18	e2.2	30	5	.39	e48	15	e1.8
29	e50	19	e2.7	---	---	---	e60	17	e2.5
30	e40	14	e1.6	---	---	---	e32	20	e2.5
31	e42	12	e1.2	---	---	---	e31	7	e.61
TOTAL	1470	---	104.33	1447	---	65.94	1036	---	27.46

e Estimated

RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA,PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	e29	4	e.31	e20	10	e.45	56	13	2.1
2	e49	9	e.94	e19	10	e.43	225	88	218
3	e39	13	e1.6	e18	4	e.15	93	30	8.1
4	e76	17	e2.7	e18	1	e.04	45	12	1.5
5	e80	16	e3.4	e17	1	e.04	35	5	.51
6	e37	5	e.81	e17	1	e.04	30	2	.20
7	e34	2	e.23	e82	28	e37	26	2	.14
8	e33	1	e.11	131	43	37	23	2	.12
9	e30	2	e.18	50	16	2.2	20	2	.11
10	e29	6	e.45	34	13	1.2	18	2	.10
11	e30	14	e1.1	72	21	7.6	18	2	.10
12	e29	12	e.92	46	13	2.0	17	2	.09
13	e43	23	e2.2	91	29	14	23	3	.25
14	e30	10	e.99	44	14	1.8	34	10	1.0
15	e29	6	e.47	29	10	.75	18	2	.12
16	e29	4	e.29	36	7	.72	16	2	.09
17	e31	3	e.22	55	15	2.6	16	3	.14
18	e31	2	e.18	38	4	.40	e29	9	e.79
19	e38	3	e.29	30	6	.49	32	4	.34
20	e30	5	e.48	31	16	1.4	67	19	6.6
21	e28	7	e.57	45	14	1.9	e54	17	e3.4
22	e27	6	e.42	29	9	.71	27	9	.66
23	e25	4	e.31	50	29	6.7	86	26	12
24	e21	7	e.41	52	15	2.3	60	18	3.1
25	e21	13	e.63	e37	7	e.96	42	13	1.5
26	e21	23	e1.1	e94	19	e4.0	46	15	1.9
27	e26	17	e.90	e119	17	e4.9	31	9	.79
28	e22	14	e.71	e44	20	e3.4	27	6	.46
29	e21	12	e.56	54	17	3.4	25	4	.26
30	e21	10	e.47	42	14	1.7	22	2	.14
31	---	---	---	44	14	1.7	---	---	---
TOTAL	989	---	23.95	1488	---	141.98	1261	---	264.61

e Estimated

RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA,PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	21	2	.11	28	4	.32	53	17	4.6
2	19	2	.11	29	6	.47	40	8	.90
3	19	3	.14	39	12	1.3	34	3	.28
4	18	5	.24	55	10	1.8	47	14	1.9
5	20	8	.42	35	2	.19	30	11	.92
6	21	6	.32	33	2	.18	27	10	.76
7	19	2	.11	33	2	.18	26	9	.65
8	23	7	.45	35	2	.19	27	9	.63
9	28	5	.38	40	4	.48	62	19	6.5
10	24	2	.10	109	36	15	34	11	1.0
11	19	3	.14	36	7	.68	26	9	.61
12	20	5	.26	37	5	.74	31	10	.85
13	59	16	4.1	37	10	1.0	95	36	36
14	33	10	.96	28	5	.37	101	38	26
15	24	3	.28	29	2	.19	135	42	19
16	44	14	1.7	63	17	4.9	41	12	1.3
17	34	4	.40	63	17	3.1	32	5	.43
18	24	2	.13	70	22	4.9	54	16	2.6
19	42	8	1.4	36	7	.71	32	11	.92
20	63	20	4.9	33	3	.25	29	9	.72
21	213	93	214	30	2	.19	43	12	1.4
22	71	23	5.7	373	123	307	76	22	7.7
23	86	20	9.0	59	19	3.1	64	20	4.6
24	32	4	.34	66	20	5.1	46	7	1.2
25	47	12	2.0	58	18	3.0	162	59	118
26	38	12	1.2	41	13	1.4	401	162	938
27	25	8	.54	41	12	1.4	60	9	1.7
28	33	20	2.3	35	11	1.0	47	6	.74
29	24	5	.33	30	10	.79	47	9	1.1
30	68	17	7.0	29	9	.68	45	9	1.4
31	47	14	1.9	41	20	2.8	---	---	---
TOTAL	1258	---	260.96	1671	---	363.41	1947	---	1182.41
YEAR	17885		3613.72						

RIO MAMEYES BASIN

50065500 RIO MAMEYES NR SABANA, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
OCT 1996							
28...	2300	1250	1240	4180	38	42	51
NOV							
13...	0150	1370	938	3470	31	43	58
JUL 1997							
21...	0700	1490	1050	4240	21	31	43
AUG							
22...	1235	2760	683	5090	26	32	43
SEP							
13...	2350	799	591	1274	24	34	48
26...	1030	5920	2201	35200	20	25	33

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
OCT 1996							
28...	71	83	97	98	99	100	100
NOV							
13...	71	83	95	98	99	100	100
JUL 1997							
21...	59	72	88	93	98	99	100
AUG							
22...	58	71	88	93	98	99	99
SEP 1997							
13...	65	79	90	95	98	99	100
26...	47	62	81	87	95	98	99

RIO MAMEYES BASIN

50065500 RIO MAMEYES NEAR SABANA, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
10...	1656	234	240	152	89
NOV					
07...	0240	1060	1120	3200	94
07...	0300	965	600	1560	92
07...	1445	811	454	994	92
13...	0225	1150	591	1830	95
22...	1558	62	233	39	93
MAY 1997					
23...	1540	62	61	10	97
JUN					
02...	1630	1830	815	4030	78
02...	1655	1570	546	2310	83
JUL					
21...	0640	1750	1140	5390	76
21...	0725	1030	533	1480	87
AUG					
22...	1255	1740	443	2070	92
22...	1325	873	262	617	92
22...	1545	1060	168	481	87
22...	1623	861	201	467	93
31...	1255	54	36	5.2	94
SEP 1997					
13...	2350	799	591	1270	90
25...	1516	1310	811	2870	92
26...	0836	990	470	1260	90

RIO SABANA BASIN

50067000 RIO SABANA AT SABANA, PR

LOCATION.--Lat 18°19'52", long 65°43'52", Hydrologic Unit 21010005, on right bank along Highway 988, 0.3 mi (0.5 km) north of junction of Highways 988 and 983 in Sabana, and 3.3 mi (5.3 km) south of Luquillo.

DRAINAGE AREA.--3.96 mi² (10.26 km²).

PERIOD OF RECORD.--October 1979 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 260 ft (80 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Low-flow affected by Puerto Rico Aqueduct and Sewer Authority Water Intake 1.0 mi (1.6 km) upstream, and purification plant 0.2 mi (0.32 km). Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	28	34	16	125	7.2	6.6	4.7	5.4	1.6	6.5	34
2	18	30	31	16	73	8.0	21	4.4	4.4	1.9	6.0	14
3	16	28	25	14	19	12	23	4.4	10	2.0	8.1	7.9
4	32	29	22	16	38	14	12	4.0	4.8	2.1	5.7	9.6
5	37	50	19	42	35	19	9.4	3.9	3.0	2.1	4.5	7.0
6	20	41	19	23	15	12	6.3	4.1	2.3	2.5	3.8	6.4
7	37	350	18	16	14	11	5.5	4.8	e2.1	2.5	3.9	6.6
8	20	42	17	33	11	18	5.2	13	e2.6	3.3	3.7	5.9
9	18	31	16	18	38	19	5.1	6.8	e2.1	4.2	4.6	17
10	38	16	16	14	12	17	4.8	4.7	e1.8	5.6	12	9.3
11	23	18	18	14	15	15	4.6	22	e1.7	4.0	5.1	5.0
12	17	90	16	13	25	16	4.9	13	e3.7	3.8	4.1	9.1
13	19	147	15	12	20	15	4.4	16	e5.1	93	3.1	23
14	21	30	14	11	10	13	4.5	8.2	e3.7	24	3.0	45
15	20	17	16	10	8.7	12	4.1	3.9	e1.9	4.9	3.4	63
16	18	12	43	11	8.3	12	3.7	3.6	e1.7	6.6	4.1	13
17	16	12	17	11	8.8	11	3.9	4.5	e1.8	5.0	7.9	8.0
18	17	20	13	11	8.7	13	4.4	3.8	e3.6	3.6	8.4	11
19	18	56	13	10	13	11	4.5	2.7	e4.0	4.0	4.3	7.4
20	16	20	12	13	11	11	5.3	3.0	e9.4	7.4	3.2	6.7
21	15	59	13	32	52	12	5.5	3.4	e2.7	166	3.5	8.8
22	15	87	13	130	28	9.6	5.5	2.9	e1.8	54	124	30
23	18	43	12	92	11	8.6	4.4	6.4	e9.0	34	11	16
24	15	180	12	105	9.6	8.0	4.3	17	e5.0	9.3	22	15
25	14	32	12	32	8.9	8.1	4.2	9.6	e2.0	14	17	166
26	21	22	12	15	8.1	8.4	4.1	147	3.6	12	6.2	e400
27	17	20	26	11	7.7	8.3	4.9	124	2.8	6.3	7.8	e21
28	69	34	31	13	17	14	5.1	18	3.0	10	6.6	e9.2
29	79	25	125	15	---	13	4.4	8.4	2.2	6.1	11	e8.0
30	21	84	40	13	---	9.3	4.6	6.0	2.1	27	9.2	e52
31	19	---	24	29	---	8.0	---	7.4	---	20	29	---
TOTAL	744	1653	714	811	650.8	373.5	190.2	485.6	109.3	542.8	352.7	1034.9
MEAN	24.0	55.1	23.0	26.2	23.2	12.0	6.34	15.7	3.64	17.5	11.4	34.5
MAX	79	350	125	130	125	19	23	147	10	166	124	400
MIN	14	12	12	10	7.7	7.2	3.7	2.7	1.7	1.6	3.0	5.0
AC-FT	1480	3280	1420	1610	1290	741	377	963	217	1080	700	2050
CFSM	6.06	13.9	5.82	6.61	5.87	3.04	1.60	3.96	.92	4.42	2.87	8.71
IN.	6.99	15.53	6.71	7.62	6.11	3.51	1.79	4.56	1.03	5.10	3.31	9.72

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1997, BY WATER YEAR (WY)

MEAN	22.4	32.6	25.1	15.6	13.0	11.3	11.3	31.2	20.4	16.8	17.9	23.9
MAX	66.4	79.7	64.1	48.5	23.2	36.0	33.5	63.9	50.6	36.0	39.9	74.2
(WY)	1986	1988	1982	1996	1997	1987	1990	1982	1987	1996	1995	1996
MIN	6.48	8.15	3.92	6.12	2.94	2.71	2.20	4.65	3.64	5.84	3.09	7.23
(WY)	1983	1981	1990	1986	1983	1994	1984	1994	1997	1986	1994	1987

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1980 - 1997	
ANNUAL TOTAL	11581.2		7661.8			
ANNUAL MEAN	31.6		21.0		20.2	
HIGHEST ANNUAL MEAN					31.9	1996
LOWEST ANNUAL MEAN					7.85	1994
HIGHEST DAILY MEAN	1100	Sep 10	400	Sep 26	1100	Sep 10 1996
LOWEST DAILY MEAN	2.2	May 29	1.6	Jul 1	.96	Apr 10 1983
ANNUAL SEVEN-DAY MINIMUM	2.8	Mar 20	2.0	Jun 29	1.0	Apr 6 1983
INSTANTANEOUS PEAK FLOW			2960	Sep 26	9600	Jan 5 1992
INSTANTANEOUS PEAK STAGE			14.15	Sep 26	19.74	Jan 5 1992
INSTANTANEOUS LOW FLOW					.86	Apr 17 1983
ANNUAL RUNOFF (AC-FT)	22970		15200		14600	
ANNUAL RUNOFF (CFSM)	7.99		5.30		5.09	
ANNUAL RUNOFF (INCHES)	108.79		71.97		69.17	
10 PERCENT EXCEEDS	59		38		38	
50 PERCENT EXCEEDS	18		12		8.8	
90 PERCENT EXCEEDS	3.9		3.6		2.7	

e Estimated

RIO FAJARDO BASIN

50070500 RIO FAJARDO ABOVE FAJARDO, PR

LOCATION.--Lat 18°16'21", long 65°43'18", Hydrologic Unit 21010005, on right bank, 4.1 mi (6.6 km) from Plaza de Naguabo, 0.5 mi (0.8 km) northeast from Escuela Sonadora, 1.5 mi (2.4 km) southwest of Colonia Paraíso, and 2.5 mi (4.0 km) norht from Escuela Segunda Unidad Mariana.

DRAINAGE AREA.--3.69 mi² (9.56 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct. 1, 1995 to Nov. 8, 1995 (estimated discharge). Nov. 9, 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 328 ft (100 m) above mean sea level, from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e7.2	e11	7.9	13	18	10	9.7	13	26	26	e13	e29
2	e12	e25	7.6	13	18	9.9	9.5	12	48	25	e17	e13
3	e9.2	e54	7.7	14	18	10	9.2	11	19	32	e21	e10
4	e17	e32	7.5	15	20	11	13	11	71	25	e24	e24
5	e19	e45	7.1	13	17	33	18	10	53	25	e15	e64
6	e11	e110	8.0	26	19	15	11	11	74	26	e13	e27
7	e9.4	e28	7.2	16	29	14	9.5	72	44	25	e12	e15
8	e20	e23	8.3	56	17	14	9.2	69	23	332	e10	e35
9	e20	e19	11	18	29	16	9.2	42	23	65	e17	e400
10	e19	e17	16	14	18	15	9.0	31	21	32	e16	e1700
11	e18	e14	13	113	18	14	8.9	19	46	26	e11	e260
12	e17	e12	17	59	15	12	39	18	155	38	e15	e90
13	e170	e30	58	56	28	11	19	332	31	35	e50	e98
14	e39	e14	57	453	16	10	11	42	43	229	e220	e130
15	e32	e11	18	106	20	12	12	22	128	66	e90	e140
16	e16	e21	25	40	17	15	12	16	105	29	e180	e92
17	e17	e14	107	27	15	11	9.8	15	52	24	e76	e40
18	e11	e10	172	34	14	12	16	13	57	21	e41	e46
19	e11	e9.2	60	45	21	11	16	12	e55	e17	e34	e41
20	e9.0	e8.5	68	75	14	10	10	11	e43	e36	e20	54
21	e8.5	8.5	25	37	13	10	9.6	13	e43	e25	e17	49
22	e7.3	8.3	21	27	13	9.8	12	14	e47	e19	e15	32
23	e25	8.0	19	21	11	9.7	25	17	e46	e16	e28	32
24	e47	8.8	18	23	45	9.7	18	15	e35	e15	e120	29
25	e60	9.1	17	26	15	9.7	12	11	e30	e16	e90	27
26	e42	13	15	23	13	9.8	12	10	e26	e28	e33	25
27	e13	8.3	15	49	12	9.8	12	11	44	e14	e17	26
28	e11	8.9	24	71	12	15	23	10	62	e13	e19	29
29	e9.0	11	15	27	11	15	16	11	31	e14	e15	25
30	e7.4	10	14	19	---	13	19	19	28	e11	e14	35
31	e9.4	---	13	18	---	12	---	24	---	e10	e12	---
TOTAL	723.4	601.6	879.3	1547	526	389.4	419.6	937	1509	1315	1275	3617
MEAN	23.3	20.1	28.4	49.9	18.1	12.6	14.0	30.2	50.3	42.4	41.1	121
MAX	170	110	172	453	45	33	39	332	155	332	220	1700
MIN	7.2	8.0	7.1	13	11	9.7	8.9	10	19	10	10	10
AC-FT	1430	1190	1740	3070	1040	772	832	1860	2990	2610	2530	7170
CFSM	6.32	5.43	7.69	13.5	4.92	3.40	3.79	8.19	13.6	11.5	11.1	32.7
IN.	7.29	6.06	8.86	15.60	5.30	3.93	4.23	9.45	15.21	13.26	12.85	36.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1996, BY WATER YEAR (WY)

MEAN	23.3	20.1	28.4	49.9	18.1	12.6	14.0	30.2	50.3	42.4	41.1	121
MAX	23.3	20.1	28.4	49.9	18.1	12.6	14.0	30.2	50.3	42.4	41.1	121
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996
MIN	23.3	20.1	28.4	49.9	18.1	12.6	14.0	30.2	50.3	42.4	41.1	121
(WY)	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996

SUMMARY STATISTICS	FOR 1996 WATER YEAR	
ANNUAL TOTAL	13739.3	
ANNUAL MEAN	37.5	
HIGHEST DAILY MEAN	1700	Sep 10
LOWEST DAILY MEAN	7.1	Dec 5
ANNUAL SEVEN-DAY MINIMUM	7.6	Dec 1
INSTANTANEOUS PEAK FLOW	5110	Sep 10
INSTANTANEOUS PEAK STAGE	10.72	Sep 10
INSTANTANEOUS LOW FLOW	7.0	Dec 7
ANNUAL RUNOFF (AC-FT)	27250	
ANNUAL RUNOFF (CFSM)	10.2	
ANNUAL RUNOFF (INCHES)	138.51	
10 PERCENT EXCEEDS	64	
50 PERCENT EXCEEDS	18	
90 PERCENT EXCEEDS	9.7	

e Estimated

RIO FAJARDO BASIN

50070500 RIO FAJARDO ABOVE FAJARDO, PR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	23	39	21	e200	16	10	7.4	15	8.4	13	28
2	24	22	22	17	e28	18	35	7.3	e50	8.2	13	16
3	19	28	17	16	e68	23	18	7.3	e18	8.0	13	15
4	19	23	15	24	e29	21	16	7.6	12	8.0	17	13
5	26	20	14	40	e31	27	19	7.7	11	7.9	13	12
6	19	19	15	19	e18	16	11	7.8	9.7	7.6	12	12
7	24	164	15	19	e19	16	10	21	9.4	7.9	12	11
8	17	32	15	49	e14	24	10	26	10	9.1	12	19
9	17	67	15	20	e43	19	9.6	11	9.0	8.9	15	17
10	36	39	16	15	e17	15	9.4	10	8.7	8.1	45	13
11	16	69	45	14	e15	15	9.0	13	8.7	7.8	14	12
12	14	172	14	18	e82	15	8.6	11	8.5	8.6	13	14
13	13	87	14	14	e58	15	8.7	28	11	11	14	21
14	13	72	14	14	e27	13	8.5	13	10	9.1	16	22
15	15	33	18	14	e16	13	8.2	10	8.1	8.1	16	36
16	11	27	45	13	15	13	7.7	10	7.5	9.4	31	16
17	11	43	16	14	16	12	7.7	14	8.0	9.6	23	14
18	17	31	14	14	16	11	7.4	10	e10	9.7	24	17
19	19	79	13	17	23	11	7.6	9.5	12	12	15	14
20	18	33	13	42	21	10	7.7	11	e20	17	14	14
21	15	99	14	89	47	13	7.0	13	e11	99	13	20
22	14	35	14	216	28	9.9	7.0	10	8.6	29	61	20
23	17	24	13	135	19	9.8	7.0	10	18	29	20	21
24	15	191	15	153	18	9.5	7.3	10	12	15	25	17
25	14	20	17	e33	19	9.5	7.3	9.8	9.7	15	20	34
26	27	15	17	e28	19	9.5	7.3	27	15	19	18	e430
27	19	20	53	e20	18	9.8	7.7	22	9.4	13	16	e19
28	56	42	68	e28	16	19	7.6	14	8.6	17	15	16
29	50	26	114	e27	---	16	7.6	15	8.4	13	14	15
30	17	82	57	e19	---	11	7.6	13	8.4	18	13	28
31	16	---	38	e23	---	11	---	14	---	16	19	---
TOTAL	631	1637	809	1185	940	451.0	302.5	400.4	365.7	467.4	579	956
MEAN	20.4	54.6	26.1	38.2	33.6	14.5	10.1	12.9	12.2	15.1	18.7	31.9
MAX	56	191	114	216	200	27	35	28	50	99	61	430
MIN	11	15	13	13	14	9.5	7.0	7.3	7.5	7.6	12	11
AC-FT	1250	3250	1600	2350	1860	895	600	794	725	927	1150	1900
CFSM	5.52	14.8	7.07	10.4	9.10	3.94	2.73	3.50	3.30	4.09	5.06	8.64
IN.	6.36	16.50	8.16	11.95	9.48	4.55	3.05	4.04	3.69	4.71	5.84	9.64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 1997, BY WATER YEAR (WY)

MEAN	21.8	37.3	27.2	44.1	25.7	13.6	12.0	21.6	31.2	28.7	29.9	76.2
MAX	23.3	54.6	28.4	49.9	33.6	14.5	14.0	30.2	50.3	42.4	41.1	121
(WY)	1996	1997	1996	1996	1997	1997	1996	1996	1996	1996	1996	1996
MIN	20.4	20.1	26.1	38.2	18.1	12.6	10.1	12.9	12.2	15.1	18.7	31.9
(WY)	1997	1996	1997	1997	1996	1996	1997	1997	1997	1997	1997	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1996 - 1997	
ANNUAL TOTAL	14612.0		8724.0			
ANNUAL MEAN	39.9		23.9		30.7	
HIGHEST ANNUAL MEAN					37.5	1996
LOWEST ANNUAL MEAN					23.9	1997
HIGHEST DAILY MEAN	1700	Sep 10	430	Sep 26	1700	Sep 10 1996
LOWEST DAILY MEAN	8.9	Apr 11	7.0	Apr 21	7.0	Apr 21 1997
ANNUAL SEVEN-DAY MINIMUM	9.8	Mar 21	7.2	Apr 20	7.2	Apr 20 1997
INSTANTANEOUS PEAK FLOW			1580	Sep 26	5110	Sep 10 1996
INSTANTANEOUS PEAK STAGE			6.49	Sep 26	10.72	Sep 10 1996
INSTANTANEOUS LOW FLOW			7.0	Apr 20	7.0	Dec 7 1995
ANNUAL RUNOFF (AC-FT)	28980		17300		22260	
ANNUAL RUNOFF (CFSM)	10.8		6.48		8.33	
ANNUAL RUNOFF (INCHES)	147.31		87.95		113.15	
10 PERCENT EXCEEDS	71		42		54	
50 PERCENT EXCEEDS	19		15		16	
90 PERCENT EXCEEDS	11		8.4		9.1	

e Estimated

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1996 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1995 to current year .

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1995.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 477 mg/L September 26, 1997; Minimum daily mean, 1 mg/L several days, 1996-97.
SEDIMENT LOADS: Maximum daily mean, 1,540 tons (1,4000 tonnes) January 14, 1996; Minimum daily mean, 0.01 tons (0.01 tonnes)several days, 1996-97.

EXTREMES FOR WATER YEARS 1996-1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 366 mg/L May 13, 1996; minimum daily mean, 1 mg/L several days.
SEDIMENT LOADS: Maximum daily mean, 1,540 tons (1,400 tonnes) January 14, 1996; minimum daily mean 0.02 tons (0.02 tonnes) several days.

SEDIMENT CONCENTRATION: Maximum daily mean, 477 mg/L September 26, 1997; minimum daily mean, 1 mg/L several days.
SEDIMENT LOADS: Maximum daily mean, 719 tons (652 tonnes) September 26, 1997; minimum daily mean 0.02 tons (0.02 tonnes) Jseveral days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	e7.2	2	e.04	e11	3	e.07	7.9	1	.03
2	e12	1	e.04	e25	4	e.19	7.6	1	.03
3	e9.2	2	e.05	e54	9	e.98	7.7	1	.03
4	e17	3	e.12	e32	8	e.88	7.5	1	.03
5	e19	3	e.14	e45	10	e1.0	7.1	2	.03
6	e11	1	e.06	e110	20	e3.7	8.0	2	.04
7	e9.4	2	e.06	e28	5	e.83	7.2	2	.03
8	e20	4	e.15	e23	4	e.26	8.3	2	.04
9	e20	4	e.19	e19	3	e.18	11	2	.06
10	e19	3	e.18	e17	3	e.14	16	3	.14
11	e18	3	e.16	e14	2	e.10	13	2	.08
12	e17	3	e.14	e12	2	e.08	17	3	.26
13	e170	25	e4.5	e30	4	e.19	58	24	6.6
14	e39	8	e1.9	e14	2	e.11	57	9	1.8
15	e32	5	e.46	e11	2	e.07	18	4	.20
16	e16	3	e.19	e21	3	e.12	25	3	.27
17	e17	3	e.12	e14	1	e.07	107	43	64
18	e11	2	e.08	e10	1	e.03	172	59	47
19	e11	2	e.05	e9.2	1	e.03	60	17	3.9
20	e9.0	1	e.04	e8.5	1	e.02	68	25	12
21	e8.5	1	e.03	8.5	1	.02	25	1	.08
22	e7.3	1	e.02	8.3	1	.02	21	1	.06
23	e25	3	e.12	8.0	1	.02	19	1	.05
24	e47	11	e1.0	8.8	1	.02	18	1	.05
25	e60	14	e2.0	9.1	1	.03	17	1	.05
26	e42	5	e.71	13	2	.10	15	1	.04
27	e13	2	e.12	8.3	1	.02	15	1	.04
28	e11	1	e.04	8.9	1	.03	24	6	.46
29	e9.0	1	e.03	11	1	.04	15	6	.25
30	e7.4	1	e.02	10	1	.03	14	11	.42
31	e9.4	1	e.03	---	---	---	13	3	.12
TOTAL	723.4	---	12.79	601.6	---	9.38	879.3	---	138.19

e Estimated

RIO FAJARDO BASIN

50070500 RIO FAJARDO ABOVE FAJARDO, P.R.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	13	1	.04	18	26	1.2	10	9	.25
2	13	1	.04	18	11	.54	9.9	5	.14
3	14	1	.05	18	5	.24	10	3	.09
4	15	2	.10	20	3	.20	11	2	.06
5	13	2	.07	17	2	.07	33	9	.97
6	26	7	.65	19	3	.15	15	4	.15
7	16	4	.66	29	7	.71	14	2	.07
8	56	24	7.4	17	2	.10	14	3	.18
9	18	2	.12	29	7	.79	16	8	.41
10	14	1	.05	18	4	.22	15	2	.10
11	113	42	28	18	2	.10	14	1	.05
12	59	16	3.5	15	2	.09	12	3	.09
13	56	18	4.7	28	9	1.9	11	4	.12
14	453	282	1540	16	5	.22	10	3	.07
15	106	28	11	20	5	.29	12	2	.05
16	40	2	.25	17	3	.15	15	1	.04
17	27	2	.15	15	12	.48	11	1	.03
18	34	5	.57	14	17	.64	12	2	.05
19	45	10	1.6	21	8	.53	11	8	.23
20	75	23	6.7	14	8	.29	10	18	.49
21	37	8	.90	13	7	.24	10	6	.16
22	27	2	.15	13	4	.13	9.8	2	.06
23	21	1	.07	11	2	.06	9.7	2	.05
24	23	1	.06	45	13	4.4	9.7	2	.05
25	26	5	.39	15	5	.19	9.7	2	.06
26	23	2	.14	13	4	.14	9.8	4	.10
27	49	14	2.2	12	10	.32	9.8	5	.14
28	71	19	4.1	12	18	.55	15	5	.25
29	27	29	2.1	11	13	.40	15	4	.18
30	19	33	1.8	---	---	---	13	3	.12
31	18	33	1.6	---	---	---	12	2	.08
TOTAL	1547	---	1619.16	526	---	15.34	389.4	---	4.89

RIO FAJARDO BASIN

50070500 RIO FAJARDO ABOVE FAJARDO, P.R.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	9.7	1	.03	13	1	.04	26	9	2.1
2	9.5	2	.04	12	1	.03	48	14	5.6
3	9.2	2	.04	11	1	.03	19	4	.23
4	13	2	.11	11	1	.03	71	24	16
5	18	4	.22	10	1	.03	53	18	13
6	11	2	.06	11	1	.03	74	27	16
7	9.5	1	.03	72	30	28	44	4	.77
8	9.2	1	.03	69	30	29	23	1	.06
9	9.2	2	.04	42	2	.30	23	3	.23
10	9.0	2	.05	31	6	.57	21	1	.07
11	8.9	1	.03	19	1	.06	46	12	4.3
12	39	9	1.4	18	1	.05	155	43	39
13	19	4	.25	332	366	1500	31	3	.22
14	11	2	.05	42	12	1.7	43	10	4.0
15	12	1	.03	22	2	.12	128	53	41
16	12	1	.03	16	1	.06	105	41	19
17	9.8	1	.03	15	1	.04	52	8	1.1
18	16	3	.20	13	1	.03	57	13	2.4
19	16	2	.09	12	1	.03	e55	2	e.33
20	10	1	.03	11	1	.03	e43	2	e.19
21	9.6	1	.03	13	2	.06	e43	1	e.14
22	12	1	.05	14	2	.07	e47	1	e.12
23	25	5	.54	17	3	.14	e46	1	e.13
24	18	3	.19	15	1	.05	e35	1	e.11
25	12	2	.06	11	1	.03	e30	1	e.09
26	12	1	.04	10	1	.03	e26	1	e.08
27	12	1	.04	11	1	.03	44	5	.66
28	23	5	.59	10	1	.03	62	17	5.0
29	16	1	.06	11	1	.03	31	3	.26
30	19	1	.05	19	4	.51	28	2	.15
31	---	---	---	24	4	.27	---	---	---
TOTAL	419.6	---	4.44	937	---	1561.43	1509	---	172.34

e Estimated

RIO FAJARDO BASIN

50070500 RIO FAJARDO ABOVE FAJARDO, P.R.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	26	2	.14	e13	2	e.06	e29	4	e.21
2	25	2	.14	e17	2	e.08	e13	4	e.21
3	32	2	.17	e21	2	e.10	e10	4	e.13
4	25	2	.14	e24	2	e.12	e24	5	e.21
5	25	3	.18	e15	2	e.10	e64	11	e1.4
6	26	4	.26	e13	2	e.08	e27	8	e1.0
7	25	5	.34	e12	2	e.07	e15	5	e.27
8	332	219	639	e10	2	e.06	e35	5	e.35
9	65	13	3.4	e17	2	e.07	e400	8	e3.3
10	32	2	.19	e16	2	e.07	e1700	48	e167
11	26	1	.08	e11	1	e.05	e260	40	e86
12	38	9	1.9	e15	1	e.04	e90	3	e1.3
13	35	25	2.4	e50	2	e.17	e98	3	e.64
14	229	141	227	e220	8	e2.2	e130	7	e2.2
15	66	22	5.1	e90	4	e1.6	e140	8	e2.7
16	29	3	.23	e180	2	e.80	e92	6	e1.9
17	24	1	.09	e76	2	e.65	e40	5	e.82
18	21	2	.10	e41	2	e.30	e46	4	e.44
19	e17	2	e.07	e34	2	e.20	e41	2	e.28
20	e36	1	e.07	e20	2	e.14	54	15	2.9
21	e25	1	e.08	e17	2	e.10	49	12	2.1
22	e19	1	e.06	e15	2	e.09	32	5	.48
23	e16	2	e.08	e28	11	e.58	32	3	.29
24	e15	3	e.14	e120	2	e.36	29	3	.20
25	e16	3	e.13	e90	1	e.34	27	2	.15
26	e28	2	e.12	e33	1	e.15	25	2	.11
27	e14	2	e.09	e17	1	e.06	26	1	.09
28	e13	1	e.05	e19	1	e.05	29	1	.08
29	e14	1	e.04	e15	2	e.08	25	1	.07
30	e11	1	e.04	e14	3	e.13	35	9	.98
31	e10	2	e.05	e12	4	e.14	---	---	---
TOTAL	1315	---	881.88	1275	---	9.04	3617	---	277.81
YEAR	13739.3		4706.69						

e Estimated

50070500 RIO FAJARDO ABOVE FAJARDO, P.R.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	23	19	1.2	23	9	.55	39	14	2.9
2	24	20	1.3	22	12	.74	22	7	.49
3	19	16	.85	28	13	1.1	17	2	.09
4	19	8	.42	23	9	.55	15	2	.08
5	26	9	.92	20	6	.33	14	4	.15
6	19	10	.55	19	4	.21	15	7	.30
7	24	8	.56	164	108	101	15	7	.28
8	17	9	.42	32	8	.75	15	5	.19
9	17	10	.44	67	27	7.1	15	3	.13
10	36	10	1.1	39	14	2.1	16	3	.12
11	16	6	.26	69	24	5.4	45	19	2.8
12	14	2	.06	172	74	45	14	4	.16
13	13	1	.05	87	48	15	14	2	.06
14	13	2	.08	72	3	.58	14	1	.04
15	15	3	.14	33	2	.18	18	4	.62
16	11	2	.07	27	3	.27	45	18	2.8
17	11	1	.04	43	14	4.3	16	3	.14
18	17	12	1.7	31	16	2.0	14	1	.04
19	19	64	3.4	79	21	7.7	13	1	.04
20	18	14	.68	33	16	2.2	13	1	.04
21	15	2	.07	99	67	55	14	1	.04
22	14	1	.04	35	10	1.8	14	3	.10
23	17	1	.05	24	7	2.0	13	6	.23
24	15	1	.04	191	122	111	15	4	.16
25	14	1	.04	20	7	.47	17	2	.09
26	27	6	.56	15	4	.18	17	3	.17
27	19	5	.25	20	5	.25	53	17	2.9
28	56	30	27	42	14	2.7	68	11	4.7
29	50	19	5.8	26	8	.58	114	33	19
30	17	2	.09	82	17	6.4	57	22	4.0
31	16	1	.06	---	---	---	38	12	1.4
TOTAL	631	---	48.24	1637	---	377.44	809	---	44.26

RIO FAJARDO BASIN

50070500 RIO FAJARDO ABOVE FAJARDO, P.R.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	21	9	.52	e200	14	e5.5	16	2	.10
2	17	3	.15	e28	35	e11	18	3	.14
3	16	2	.10	e68	7	e.91	23	5	.30
4	24	10	1.4	e29	13	e1.7	21	5	.33
5	40	17	2.4	e31	5	e.43	27	8	.77
6	19	4	.19	e18	2	e.16	16	5	.21
7	19	3	.15	e19	2	e.12	16	3	.12
8	49	17	4.4	e14	4	e.19	24	6	.45
9	20	4	.21	e43	26	e1.8	19	5	.28
10	15	3	.11	e17	8	e.68	15	2	.09
11	14	4	.14	e15	3	e.11	15	2	.08
12	18	5	.23	e82	4	e.51	15	2	.08
13	14	2	.08	e58	7	e1.3	15	2	.08
14	14	1	.04	e27	5	e.57	13	2	.07
15	14	1	.05	e16	3	e.17	13	2	.07
16	13	2	.08	15	3	.14	13	2	.09
17	14	3	.13	16	4	.16	12	3	.10
18	14	4	.16	16	3	.15	11	4	.13
19	17	11	.69	23	6	.42	11	5	.15
20	42	17	2.6	21	5	.29	10	3	.08
21	89	58	17	47	17	3.0	13	3	.11
22	216	129	200	28	29	2.3	9.9	1	.04
23	135	67	28	19	10	.49	9.8	1	.03
24	153	48	22	18	3	.17	9.5	2	.04
25	e33	43	e16	19	4	.18	9.5	2	.06
26	e28	9	e1.4	19	4	.20	9.5	3	.07
27	e20	2	e.16	18	3	.16	9.8	2	.07
28	e28	2	e.16	16	3	.12	19	7	.56
29	e27	3	e.21	---	---	---	16	10	.48
30	e19	3	e.16	---	---	---	11	4	.14
31	e23	2	e.13	---	---	---	11	2	.06
TOTAL	1185	---	299.05	940	---	32.93	451.0	---	5.38

e Estimated

RIO FAJARDO BASIN

50070500 RIO FAJARDO ABOVE FAJARDO, P.R.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	10	1	.04	7.4	2	.04	15	4	.15
2	35	72	26	7.3	3	.06	e50	31	e13
3	18	10	.53	7.3	4	.08	e18	3	e.16
4	16	5	.23	7.6	5	.09	12	1	.04
5	19	6	.32	7.7	4	.09	11	1	.03
6	11	5	.15	7.8	3	.07	9.7	1	.03
7	10	4	.11	21	9	1.6	9.4	1	.03
8	10	3	.08	26	9	.87	10	2	.04
9	9.6	2	.05	11	4	.12	9.0	2	.04
10	9.4	2	.04	10	2	.06	8.7	1	.03
11	9.0	1	.04	13	3	.15	8.7	1	.03
12	8.6	1	.03	11	6	.18	8.5	4	.10
13	8.7	1	.03	28	16	1.7	11	8	.23
14	8.5	1	.02	13	23	.78	10	4	.11
15	8.2	1	.02	10	13	.36	8.1	2	.04
16	7.7	1	.02	10	3	.09	7.5	1	.02
17	7.7	1	.02	14	3	.11	8.0	1	.02
18	7.4	1	.03	10	3	.08	e10	1	e.03
19	7.6	2	.04	9.5	2	.06	12	2	.05
20	7.7	2	.03	11	3	.08	e20	17	e2.2
21	7.0	1	.02	13	4	.13	e11	2	e.05
22	7.0	2	.04	10	3	.08	8.6	1	.03
23	7.0	11	.22	10	3	.08	18	13	1.1
24	7.3	31	.61	10	3	.08	12	7	.26
25	7.3	18	.35	9.8	2	.06	9.7	1	.03
26	7.3	9	.18	27	14	2.9	15	4	.16
27	7.7	4	.08	22	5	.83	9.4	3	.07
28	7.6	2	.04	14	5	.18	8.6	2	.04
29	7.6	1	.03	15	5	.19	8.4	1	.03
30	7.6	1	.02	13	3	.09	8.4	1	.03
31	---	---	---	14	2	.10	---	---	---
TOTAL	302.5	---	29.42	400.4	---	11.39	365.7	---	18.18

e Estimated

RIO FAJARDO BASIN

50070500 RIO FAJARDO ABOVE FAJARDO, P.R.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	8.4	2	.04	13	1	.05	28	23	4.4
2	8.2	2	.04	13	1	.05	16	5	.22
3	8.0	1	.03	13	4	.13	15	2	.09
4	8.0	1	.02	17	6	.27	13	3	.09
5	7.9	1	.02	13	2	.08	12	2	.05
6	7.6	1	.02	12	1	.04	12	1	.03
7	7.9	1	.03	12	1	.04	11	1	.03
8	9.1	2	.05	12	2	.05	19	6	.74
9	8.9	3	.08	15	6	.34	17	8	.41
10	8.1	4	.09	45	16	2.6	13	4	.13
11	7.8	5	.10	14	2	.06	12	2	.05
12	8.6	5	.12	13	4	.16	14	2	.09
13	11	5	.15	14	9	.32	21	7	.45
14	9.1	3	.07	16	6	.25	22	9	.64
15	8.1	2	.03	16	4	.16	36	9	1.1
16	9.4	1	.03	31	10	1.5	16	2	.10
17	9.6	2	.05	23	12	.87	14	1	.05
18	9.7	3	.08	24	10	.62	17	3	.14
19	12	4	.12	15	4	.14	14	2	.08
20	17	5	.33	14	1	.05	14	2	.07
21	99	29	22	13	3	.10	20	3	.19
22	29	11	1.2	61	28	8.1	20	4	.28
23	29	6	.76	20	5	.26	21	5	.29
24	15	2	.06	25	6	.58	17	2	.08
25	15	2	.10	20	5	.32	34	27	6.9
26	19	6	.30	18	2	.10	e430	477	e719
27	13	5	.19	16	10	.46	e19	7	e.40
28	17	6	.26	15	9	.34	16	2	.08
29	13	4	.13	14	6	.23	15	1	.05
30	18	5	.32	13	3	.12	28	14	1.8
31	16	2	.13	19	6	.32	---	---	---
TOTAL	467.4	---	26.95	579	---	18.71	956	---	738.03
YEAR	8724.0		1649.98						

e Estimated

RIO FAJARDO BASIN

50070500 RIO FAJARDO ABOVE FAJARDO, P.R.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
SEP 1997							
26...	0745	908	3510	8610	22	26	34

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
SEP 1997							
26...	46	56	67	82	91	94	97

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
28...	2245	436	337	397	94
NOV					
07...	1700	161	42	18	96
DEC					
29...	1700	128	28	9.7	79
FEB 1997					
09...	0700	e14	43	e1.6	97
MAR					
28...	1800	22	27	1.6	99
MAY					
08...	0600	57	37	5.7	93
JUN					
20...	0600	43	119	14	93
SEP					
25...	1720	77	49	10	95
26...	0759	1530	4670	19400	68

e Estimated

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR

LOCATION.--Lat 18°17'56", long 65°41'42", Hydrologic Unit 21010005, on left bank off Highway 976, 0.1 mi (0.2 km) upstream from Highway 977 bridge, 0.3 mi (0.5 km) downstream from Quebrada Peñón, 1.1 mi (1.8 km) northeast of Colonia Paraíso, and 3.3 mi (5.3 km) southwest of Fajardo.

DRAINAGE AREA.--14.9 mi² (38.6 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1960-61 (occasional low and peak-flow measurements only), March 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is 137.60 ft (41.940 m) above mean sea level. Due to flood damage, gage datum has had changes as follows: Mar. 24, 1961 to May 5, 1969, 138.95 ft (42.352 m); May 6, 1969 to Mar. 16, 1972, 135.05 ft (41.163 m); Mar. 17, 1972 to Mar 25, 1975, 138.60 ft (42.245 m).

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Low flow affected by diversions for water supply about 400 m upstream from gaging station (estimated mean daily discharges is 9.0 ft³/s (0.255 m³/s). Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	51	104	40	359	26	18	19	26	8.0	23	219
2	136	50	72	31	52	32	224	20	207	7.8	19	49
3	11	51	43	27	125	46	126	20	31	7.6	17	28
4	18	70	35	30	53	45	54	19	22	7.1	28	21
5	28	41	30	93	57	61	77	19	14	6.9	18	17
6	41	36	28	47	33	31	35	18	11	6.6	14	15
7	54	685	26	35	35	27	30	77	10	6.5	13	14
8	19	68	23	152	26	55	27	89	12	9.9	15	29
9	26	161	22	45	79	41	26	22	9.8	9.4	17	37
10	105	156	21	25	31	27	24	17	8.4	8.4	190	18
11	30	246	128	21	29	24	24	25	8.2	7.8	27	11
12	13	570	45	27	153	25	24	26	8.0	8.0	18	14
13	12	314	23	17	107	26	23	80	12	15	18	34
14	16	187	29	14	49	22	22	30	15	13	24	38
15	28	86	27	13	41	23	20	15	8.8	8.1	22	194
16	12	66	82	12	35	26	19	14	7.2	9.8	66	30
17	9.3	83	25	11	33	23	18	23	7.5	12	78	20
18	26	170	19	11	35	22	18	15	17	10	52	21
19	49	281	16	9.9	55	20	17	13	19	12	21	15
20	11	117	15	48	42	20	20	12	64	40	15	14
21	11	407	15	123	162	31	17	24	19	e363	13	28
22	8.2	127	14	410	116	19	17	12	10	102	e310	30
23	16	88	13	215	39	18	17	11	61	132	44	33
24	12	489	14	205	38	18	17	12	29	34	77	29
25	8.8	119	17	78	42	18	16	13	14	30	56	185
26	47	64	14	52	36	17	15	90	25	43	26	771
27	44	50	73	37	34	17	17	88	13	23	22	42
28	81	110	151	51	30	37	18	36	10	37	21	18
29	239	89	348	50	---	70	16	23	8.8	21	42	16
30	30	255	221	36	---	26	16	22	8.1	31	20	102
31	24	---	86	43	---	21	---	23	---	47	66	---
TOTAL	1187.3	5287	1779	2008.9	1926	914	1012	927	715.8	1076.9	1392	2092
MEAN	38.3	176	57.4	64.8	68.8	29.5	33.7	29.9	23.9	34.7	44.9	69.7
MAX	239	685	348	410	359	70	224	90	207	363	310	771
MIN	8.2	36	13	9.9	26	17	15	11	7.2	6.5	13	11
AC-FT	2360	10490	3530	3980	3820	1810	2010	1840	1420	2140	2760	4150
CFSM	2.57	11.8	3.85	4.35	4.62	1.98	2.26	2.01	1.60	2.33	3.01	4.68
IN.	2.96	13.20	4.44	5.02	4.81	2.28	2.53	2.31	1.79	2.69	3.48	5.22

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1997, BY WATER YEAR (WY)

MEAN	91.0	105	79.6	47.8	38.8	35.0	43.4	90.0	59.2	50.6	56.0	87.9
MAX	260	295	237	150	80.4	109	129	399	166	132	159	421
(WY)	1971	1975	1976	1996	1982	1987	1963	1979	1962	1969	1979	1989
MIN	19.1	26.0	14.9	15.4	10.8	9.70	4.02	17.7	10.0	11.4	9.70	18.9
(WY)	1969	1994	1990	1977	1983	1977	1984	1973	1985	1994	1994	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1961 - 1997	
ANNUAL TOTAL	29142.5		20317.9			
ANNUAL MEAN	79.6		55.7		65.7	
HIGHEST ANNUAL MEAN					140	1979
LOWEST ANNUAL MEAN					19.0	1994
HIGHEST DAILY MEAN	2610	Sep 10	771	Sep 26	8800	Sep 18 1989
LOWEST DAILY MEAN	4.6	May 29	6.5	Jul 7	1.0	May 6 1984
ANNUAL SEVEN-DAY MINIMUM	7.4	May 24	7.2	Jul 1	1.5	Apr 18 1984
INSTANTANEOUS PEAK FLOW			6270	Sep 26	21700	Sep 18 1989
INSTANTANEOUS PEAK STAGE			9.57	Sep 26	20.00	Sep 18 1989
INSTANTANEOUS LOW FLOW					.86	May 3 1984
ANNUAL RUNOFF (AC-FT)	57800		40300		47610	
ANNUAL RUNOFF (CFSM)	5.34		3.74		4.41	
ANNUAL RUNOFF (INCHES)	72.76		50.73		59.93	
10 PERCENT EXCEEDS	169		126		128	
50 PERCENT EXCEEDS	34		26		32	
90 PERCENT EXCEEDS	9.6		11		10	

e Estimated

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1982 to September 1986 and October 1995 to current year .

INSTRUMENTATION.-- USDH-48 sediment sampler and automatic sediment sampler since 1995.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,210 mg/L October 6, 1985; Minimum daily mean, 1 mg/L several days, 1996-97.
SEDIMENT LOADS: Maximum daily mean, 22,100 tons (20,000 tonnes) October 6, 1985; Minimum daily mean, 0.01 tons (0.01 tonnes) May 06,1996.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 620 mg/L September 26, 1997; minimum daily mean, 1 mg/L several days.
SEDIMENT LOADS: Maximum daily mean, 4,050 tons (3,670 tonnes) September 26, 1997; minimum daily mean 0.02 tons (0.02 tonnes) July 10-12, 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
31...	0930	28	120	6.9	26.5	1.3	8.4	104	<10	53000	390
FEB 1997											
13...	0930	148	81	6.4	23.0	17	8.3	95	<10	2000	3800
JUN											
10...	0905	8.4	124	6.6	27.0	0.25	7.1	87	<10	30	110
SEP											
11...	0905	11	119	6.5	26.5	1.2	7.9	99	<10	130	200

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
31...	33	7.5	3.5	11	0.8	1.0	41	<0.5	5.0	15
FEB 1997										
13...	--	--	--	--	--	--	30	--	--	--
JUN										
10...	33	7.4	3.5	11	0.9	1.0	46	<0.5	3.4	13
SEP										
11...	32	6.9	3.5	13	0.9	1.0	39	--	3.6	14

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
31...	<0.10	27	95	7.15	<1	0.240	<0.010	0.240	0.010	<0.20
FEB 1997										
13...	--	--	--	--	14	0.160	<0.010	0.160	<0.010	0.26
JUN										
10...	<0.10	26	93	2.12	<1	0.380	0.020	0.400	0.450	0.05
SEP										
11...	0.20	27	101	3.00	2	0.130	<0.010	0.140	0.030	0.21

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
31...	270	<1	<10	<0.10	<1	<1	<10	<0.010	<1	<0.02
FEB 1997										
13...	--	--	--	--	--	--	--	--	--	--
JUN										
10...	90	<1	11	<0.10	<1	<1	<10	<0.010	<1	<0.02
SEP										
11...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, I TOTAL (UG/L) (39388)
JUN 1997										
10...	0905	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)
JUN 1997									
10...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	PARA-THION, TOTAL (UG/L) (39540)	PCNS UNFILT RECOVER (UG/L) (39250)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	2, 4-DP TOTAL (UG/L) (82183)	SILVEX, TOTAL (UG/L) (39760)
JUN 1997									
10...	<0.010	<0.100	<0.100	<1.00	<0.010	<0.010	<0.010	<0.010	<0.010

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	22	8	.52	51	16	3.4	104	35	17
2	136	84	103	50	25	3.5	72	54	11
3	11	7	.21	51	30	10	43	27	3.2
4	18	13	.68	70	28	8.5	35	10	.96
5	28	10	1.1	41	14	2.6	30	4	.32
6	41	27	5.3	36	13	1.6	28	5	.35
7	54	22	5.2	685	511	1410	26	7	.51
8	19	7	.37	68	25	5.1	23	9	.56
9	26	10	.88	161	72	46	22	10	.58
10	105	50	24	156	84	64	21	9	.53
11	30	21	2.2	246	159	184	128	54	28
12	13	16	.54	570	425	770	45	18	2.5
13	12	12	.39	314	126	186	23	5	.34
14	16	9	.41	187	80	72	29	10	.81
15	28	34	2.9	86	28	8.8	27	8	.77
16	12	33	1.0	66	23	4.4	82	37	10
17	9.3	14	.34	83	42	28	25	7	.51
18	26	18	12	170	104	70	19	5	.24
19	49	39	9.0	281	111	150	16	4	.19
20	11	15	.44	117	67	34	15	4	.17
21	11	14	.40	407	258	696	15	4	.16
22	8.2	17	.37	127	67	36	14	4	.16
23	16	11	.44	88	17	4.3	13	5	.17
24	12	6	.19	489	350	625	14	5	.19
25	8.8	3	.07	119	12	5.5	17	5	.23
26	47	15	4.0	64	3	.57	14	5	.20
27	44	18	3.3	50	6	.85	73	23	6.4
28	81	57	83	110	64	28	151	113	130
29	239	161	212	89	25	7.2	348	202	274
30	30	6	.56	255	134	128	221	211	134
31	24	8	.58	---	---	---	86	106	25
TOTAL	1187.3	---	475.39	5287	---	4593.32	1779	---	649.05

RIO FAJARDO BASIN

50071000 RIO FAJARDO NR FAJARDO, P.R.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	40	91	9.8	359	259	963	26	3	.19
2	31	82	6.8	52	18	2.5	32	9	.95
3	27	77	5.5	125	67	88	46	19	2.5
4	30	75	6.6	53	20	9.3	45	16	2.1
5	93	45	14	57	9	2.0	61	32	8.7
6	47	81	11	33	2	.22	31	17	1.4
7	35	18	1.9	35	7	.74	27	22	1.7
8	152	33	20	26	12	.83	55	21	3.7
9	45	16	2.1	79	34	19	41	19	2.2
10	25	7	.45	31	9	.77	27	15	1.1
11	21	6	.34	29	3	.21	24	12	.81
12	27	6	.55	153	87	122	25	10	.70
13	17	3	.14	107	29	12	26	9	.62
14	14	3	.12	49	4	.47	22	7	.43
15	13	3	.12	41	6	.66	23	6	.37
16	12	4	.13	35	4	.39	26	5	.36
17	11	4	.11	33	2	.20	23	4	.26
18	11	3	.09	35	2	.19	22	5	.29
19	9.9	3	.08	55	56	12	20	6	.31
20	48	28	5.5	42	13	1.5	20	6	.33
21	123	71	51	162	144	109	31	10	.90
22	410	261	929	116	68	46	19	8	.40
23	215	143	127	39	38	3.9	18	9	.44
24	205	119	93	38	37	3.8	18	9	.44
25	78	41	10	42	38	4.3	18	8	.39
26	52	5	.75	36	37	3.6	17	4	.18
27	37	3	.34	34	34	3.0	17	7	.31
28	51	11	1.7	30	11	.93	37	16	3.2
29	50	15	2.1	---	---	---	70	34	11
30	36	4	.34	---	---	---	26	14	.97
31	43	8	1.6	---	---	---	21	11	.63
TOTAL	2008.9	---	1302.16	1926	---	1410.51	914	---	47.88

RIO FAJARDO BASIN

50071000 RIO FAJARDO NR FAJARDO, P.R.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	18	9	.47	19	5	.27	26	5	.40
2	224	156	403	20	10	.53	207	118	362
3	126	77	64	20	8	.40	31	9	.86
4	54	19	3.3	19	4	.23	22	8	.50
5	77	28	6.8	19	4	.23	14	3	.10
6	35	4	.35	18	5	.24	11	2	.07
7	30	4	.34	77	44	40	10	3	.07
8	27	9	.64	89	42	23	12	3	.10
9	26	9	.60	22	9	.55	9.8	3	.09
10	24	7	.47	17	4	.21	8.4	4	.09
11	24	6	.38	25	9	.97	8.2	3	.07
12	24	6	.35	26	14	1.0	8.0	2	.05
13	23	10	.59	80	48	33	12	3	.15
14	22	17	.99	30	10	.95	15	4	.21
15	20	18	.99	15	5	.21	8.8	3	.07
16	19	16	.85	14	4	.15	7.2	4	.09
17	18	9	.44	23	8	.61	7.5	4	.08
18	18	5	.23	15	8	.34	17	5	.29
19	17	5	.26	13	3	.12	19	9	.45
20	20	7	.40	12	2	.06	64	38	33
21	17	8	.35	24	8	.56	19	7	.43
22	17	7	.32	12	3	.09	10	2	.07
23	17	7	.33	11	2	.06	61	38	33
24	17	7	.32	12	4	.14	29	8	.90
25	16	6	.25	13	4	.13	14	2	.08
26	15	4	.17	90	53	63	25	5	.43
27	17	3	.14	88	52	47	13	1	.05
28	18	2	.11	36	11	1.6	10	2	.05
29	16	2	.10	23	6	.50	8.8	2	.04
30	16	3	.13	22	4	.27	8.1	1	.03
31	---	---	---	23	5	.40	---	---	---
TOTAL	1012	---	487.67	927	---	216.82	715.8	---	433.82

RIO FAJARDO BASIN

50071000 RIO FAJARDO NR FAJARDO, P.R.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	8.0	2	.05	23	4	.23	219	139	232
2	7.8	6	.13	19	3	.13	49	133	19
3	7.6	4	.09	17	2	.09	28	109	8.3
4	7.1	2	.04	28	6	.57	21	111	6.3
5	6.9	2	.04	18	3	.15	17	110	5.1
6	6.6	2	.04	14	4	.14	15	35	1.4
7	6.5	2	.04	13	7	.23	14	7	.26
8	9.9	2	.05	15	4	.18	29	13	5.3
9	9.4	1	.04	17	3	.14	37	47	5.6
10	8.4	1	.02	190	119	108	18	35	1.8
11	7.8	1	.02	27	7	.53	11	26	.79
12	8.0	1	.02	18	2	.12	14	8	.31
13	15	4	.27	18	1	.06	34	12	1.1
14	13	5	.18	24	7	.47	38	17	2.5
15	8.1	6	.13	22	5	.30	194	151	164
16	9.8	12	.32	66	31	24	30	93	7.6
17	12	7	.24	78	32	17	20	93	4.9
18	10	3	.10	52	19	4.4	21	96	5.4
19	12	3	.11	21	6	.37	15	95	3.8
20	40	17	3.3	15	5	.22	14	31	1.1
21	e363	245	e1100	13	6	.20	28	6	.40
22	102	40	17	e310	43	e63	30	8	.94
23	132	85	63	44	27	3.9	33	11	1.3
24	34	25	2.4	77	60	35	29	11	.94
25	30	14	1.1	56	71	13	185	133	272
26	43	10	1.3	26	45	3.5	771	620	4050
27	23	6	.37	22	89	5.4	42	9	1.4
28	37	12	1.5	21	96	6.2	18	4	.17
29	21	9	.53	42	75	11	16	3	.14
30	31	14	1.9	20	94	5.2	102	56	53
31	47	26	5.2	66	57	13	---	---	---
TOTAL	1076.9	---	1199.53	1392	---	316.73	2092	---	4856.85
YEAR	20317.9		15989.73						

e Estimated

RIO FAJARDO BASIN

50071000 RIO FAJARDO NR FAJARDO, P.R.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
SEP 1997							
01...	1800	1010	969	2640	54	62	71
26...	0820	1480	5580	2230	21	23	32

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
SEP 1997							
01...	83	89	95	99	99	100	100
26...	45	63	76	91	97	99	99

RIO FAJARDO BASIN

50071000 --RIO FAJARDO NR FAJARDO, P.R.--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 1996					
13...	1140	212	46	26	88
21...	1000	893	387	933	97
21...	1150	505	241	328	97
21...	1540	234	262	165	97
DEC					
29...	1400	878	78	185	93
JAN 1997					
08...	1355	465	72	90	98
FEB					
01...	1130	2830	2460	18800	96
19...	1610	93	434	109	94
JUL					
21...	0652	614	1500	2490	90
AUG					
22...	1440	1400	83	314	95
SEP					
01...	1610	115	445	141	98
26...	0822	1760	5240	24800	90

RIO FAJARDO BASIN

50072500 RIO FAJARDO BELOW FAJARDO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°19'35", long 65°38'47", 1.2 mi (1.9 km) southwest of Playa de Fajardo, and 0.5 mi (0.8 km) east of Fajardo plaza.

DRAINAGE AREA.--23.4 mi² (60.6 km²).

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
13...	1125	E250	120	6.2	25.0	79	7.3	86	21	3800	3600
FEB 1997											
13...	1115	E175	103	6.3	23.5	17	8.2	98	<10	2500	4100
JUN											
10...	1105	8.8	143	6.6	30.0	0.47	7.4	98	<10	220	K140
SEP											
11...	1035	13	132	6.3	30.0	0.70	6.8	90	23	440	280

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
13...	24	5.6	2.5	8.3	0.7	1.9	21	<0.5	5.3	11
FEB 1997										
13...	--	--	--	--	--	--	31	--	--	--
JUN										
10...	37	8.2	4.1	13	0.9	1.1	56	<0.5	3.9	15
SEP										
11...	36	7.7	4.0	14	1.0	1.3	44	--	4.8	16

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
13...	<0.10	17	64	43	44	0.320	0.020	0.340	0.040	0.60
FEB 1997										
13...	--	--	--	--	12	0.180	0.010	0.190	0.070	0.97
JUN										
10...	<0.10	23	101	2.40	<1	<0.010	<0.010	<0.020	0.030	<0.20
SEP										
11...	0.10	25	113	3.96	2	0.030	<0.010	0.030	0.050	<0.20

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
13...	0.63	0.97	4.3	0.090	<1	<100	20	<1	<1	<10
FEB 1997										
13...	1.0	1.2	5.4	0.040	--	--	--	--	--	--
JUN										
10...	<0.20	<0.20	0.56	<0.020	<1	<100	30	<1	<1	<10
SEP										
11...	0.23	0.26	1.1	<0.020	--	--	--	--	--	--

E = estimated
K = non-ideal count

RIO FAJARDO BASIN

50072500 RIO FAJARDO BELOW FAJARDO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
13...	2300	<1	70	<0.10	<1	<1	10	<0.010	<1	<0.01
FEB 1997										
13...	--	--	--	--	--	--	--	--	--	--
JUN										
10...	170	<1	18	<0.10	<1	<1	<10	<0.010	<1	<0.01
SEP										
11...	--	--	--	--	--	--	--	--	--	--

50074950 QUEBRADA GUABA NEAR NAGUABO, PR

LOCATION.--Lat 18°17'02", long 65°47'20", Hydrologic Unit 21010005, on right bank, off Highway 191 at El Yunque Caribbean National Forest, 4.8 mi (7.7 km) southeast of Campamento Eliza Colberg, 1.3 mi (2.1 km) southeast of Mt. Britton, 2.0 mi (3.2 km) northwest of Pico del Este and 7.3 mi (11.7 km) southeast of Río Grande Plaza.

DRAINAGE AREA.--0.05 mi^2 (0.13 km^2).

PERIOD OF RECORD.--June 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,100 ft (640 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	.43	.61	.49	.86	.31	.16	.09	.37	.14	.18	.39
2	.24	.44	.56	.55	.41	.34	.25	.09	5.3	.15	.14	.37
3	.35	.29	.56	.47	.52	.39	.22	.09	.51	.14	.28	.29
4	.22	.25	.58	.44	.57	.34	.58	.10	.33	.13	.40	.23
5	.21	.25	.52	.49	.56	.41	.54	.08	.23	.13	.18	.21
6	e.25	.27	.50	.43	.40	.30	.29	.09	.21	.13	.16	.22
7	e.30	1.7	.45	.39	.41	.30	.27	.77	.22	.13	.20	.22
8	e.21	.34	.47	.44	.35	.51	.26	1.1	.22	.15	.21	.30
9	e.26	.29	.43	.38	.60	.43	.27	.55	.20	.22	.71	.31
10	e.60	.27	.42	.37	.33	.36	.25	.47	.18	.14	.92	.23
11	e.26	.47	1.1	.38	.34	.34	.26	.59	.15	.13	.32	.22
12	e.22	2.7	.57	.38	.58	.36	.21	.45	.14	.13	.34	.26
13	e.25	.84	.46	.37	.74	.34	.25	.68	.34	.20	.31	.77
14	e.22	.56	.42	.34	.36	.31	.22	.43	.19	.26	.25	.41
15	e.26	.44	.44	.36	.33	.34	.21	.33	.15	.23	.28	.51
16	.30	.39	.56	.36	.34	.29	.20	.38	.13	.27	.73	.28
17	.29	.50	.44	.36	.33	.25	.21	.76	.18	.22	.55	.23
18	.29	.38	.43	.34	.37	.27	.18	.33	.32	.18	.71	.28
19	.30	.46	.40	.41	.46	.24	.20	.23	.26	.30	.28	.22
20	.24	.38	.43	.69	.56	.25	.19	.26	.25	.51	.24	.26
21	.24	.32	.41	2.1	1.0	.21	.16	.31	.18	1.3	.25	.48
22	.22	.40	.38	2.5	.39	.21	.15	.32	.16	.25	2.6	.47
23	.28	.34	.37	1.8	.32	.18	.14	.28	.43	.52	.44	.39
24	.23	2.0	.45	1.9	.32	.19	.12	.27	.27	.22	.52	.32
25	.63	.57	.47	.83	.37	.18	.12	.22	.22	.24	.41	.76
26	.82	.45	.56	.74	.48	.19	.12	.34	.31	.30	.36	1.4
27	.32	.42	.68	.49	.36	.18	.17	.48	.18	.20	.33	.50
28	.81	.52	.86	.59	.32	.24	.12	.32	.15	.22	.29	.43
29	.43	.39	1.3	.48	---	.34	.11	.50	.15	.16	.28	.44
30	.26	1.2	.63	.52	---	.17	.11	.30	.14	.50	.30	.44
31	.22	---	.63	.51	---	.17	---	.29	---	.25	.35	---
TOTAL	10.02	18.26	17.09	20.90	12.98	8.94	6.54	11.50	12.07	8.05	13.52	11.84
MEAN	.32	.61	.55	.67	.46	.29	.22	.37	.40	.26	.44	.39
MAX	.82	2.7	1.3	2.5	1.0	.51	.58	1.1	5.3	1.3	2.6	1.4
MIN	.21	.25	.37	.34	.32	.17	.11	.08	.13	.13	.14	.21
AC-FT	20	36	34	41	26	18	13	23	24	16	27	23
CFSM	2.69	5.07	4.59	5.62	3.86	2.40	1.82	3.09	3.35	2.16	3.63	3.29
IN.	3.11	5.66	5.30	6.48	4.02	2.77	2.03	3.57	3.74	2.50	4.19	3.67

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1997, BY WATER YEAR (WY)

MEAN	.33	.49	.40	.47	.44	.28	.28	.39	.38	.53	.37	.58
MAX	.41	.76	.61	.67	.60	.30	.33	.61	.50	1.18	.56	1.42
(WY)	1994	1993	1993	1997	1994	1995	1994	1993	1996	1992	1992	1996
MIN	.25	.32	.22	.28	.32	.23	.21	.32	.32	.22	.19	.34
(WY)	1993	1995	1994	1994	1993	1994	1995	1996	1993	1994	1993	1993

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1992 - 1997	
ANNUAL TOTAL	193.42		151.71			
ANNUAL MEAN	.53		.42		.40	
HIGHEST ANNUAL MEAN					.49	1996
LOWEST ANNUAL MEAN					.32	1994
HIGHEST DAILY MEAN	23	Sep 10	5.3	Jun 2	23	Sep 10 1996
LOWEST DAILY MEAN	.10	Apr 10	.08	May 5	.08	May 5 1997
ANNUAL SEVEN-DAY MINIMUM	.13	May 24	.09	Apr 30	.09	Apr 30 1997
INSTANTANEOUS PEAK FLOW			92	Jun 2	102	Sep 10 1996
INSTANTANEOUS PEAK STAGE			10.58	Jun 2	10.74	Sep 10 1996
INSTANTANEOUS LOW FLOW			.05	May 1	.05	May 1 1997
ANNUAL RUNOFF (AC-FT)	384		301		290	
ANNUAL RUNOFF (CFSM)	4.40		3.46		3.34	
ANNUAL RUNOFF (INCHES)	59.96		47.03		45.37	
10 PERCENT EXCEEDS	.74		.63		.70	
50 PERCENT EXCEEDS	.33		.33		.28	
90 PERCENT EXCEEDS	.17		.16		.16	

e Estimated

50075000 RIO ICACOS NEAR NAGUABO, PR

LOCATION.--Lat 18°16'38", long 65°47'09", Hydrologic Unit 21010005, in Caribbean National Forest, at Highway 191, at El Yunque, 1.6 mi (2.6 km) upstream from confluence with Río Cubuy, 2.8 mi (4.5 km) north of Florida, and 5.3 mi (8.5 km) northwest of Naguabo Plaza.

DRAINAGE AREA.--1.26 mi² (3.26 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1945 to March 1953 (operated by Puerto Rico Water Resources Authority), annual maximum, water years 1953-62, annual low-flow measurements 1962-66, October 1979 to current year.

GAGE.--Water-stage recorder, crest-stage gage and sharp-crested weir. Elevation of gage is 2,020 ft (616 m), from topographic map.

REMARKS.--Records fair. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	23	49	19	55	13	9.0	5.5	15	3.5	4.3	13
2	16	25	26	25	29	15	14	5.1	172	3.4	4.1	9.1
3	23	19	17	19	40	20	12	4.8	19	3.2	14	7.7
4	16	14	17	19	39	17	24	4.7	9.6	3.2	20	6.9
5	13	16	15	22	40	26	25	4.5	7.6	3.6	6.0	5.3
6	12	18	14	18	31	12	10	4.5	7.3	3.1	4.9	5.2
7	15	97	14	16	30	11	9.0	46	6.4	2.9	6.2	5.0
8	11	20	13	19	25	25	9.0	37	7.7	3.9	6.0	11
9	15	16	12	17	47	16	8.2	11	6.5	3.8	17	13
10	30	16	13	15	26	11	8.0	7.6	6.4	2.9	50	5.8
11	13	43	56	16	26	9.6	8.2	17	6.4	2.7	21	5.1
12	11	124	21	15	43	11	8.0	9.3	6.1	2.9	26	7.5
13	12	56	13	14	47	10	11	21	17	6.1	26	32
14	11	41	13	14	26	9.3	8.0	10	9.9	5.3	21	22
15	14	31	14	13	24	12	7.9	7.2	6.0	6.2	24	24
16	10	30	21	13	23	11	8.0	9.3	5.7	7.6	46	8.2
17	10	38	12	13	22	8.8	8.6	20	7.3	5.7	38	6.4
18	10	32	11	13	23	9.0	8.4	10	13	3.8	44	9.4
19	10	36	10	19	32	8.2	11	8.6	11	12	22	5.7
20	10	32	10	28	33	8.2	8.4	10	20	23	19	6.5
21	10	28	10	72	64	9.0	7.9	11	11	69	18	18
22	8.7	33	9.7	92	31	8.0	7.2	8.7	6.9	12	114	21
23	12	29	8.0	74	24	8.1	6.7	8.0	23	23	14	18
24	9.2	113	12	74	24	8.0	5.7	8.8	9.6	3.7	19	8.4
25	27	36	16	33	25	8.8	5.7	8.0	6.8	5.6	11	29
26	44	29	22	36	30	9.4	5.7	15	16	7.5	8.7	75
27	15	30	29	22	21	9.8	7.2	19	5.3	3.3	6.9	10
28	39	39	40	31	17	14	5.9	8.2	4.2	4.7	6.0	10
29	25	34	61	27	---	19	5.7	22	3.6	3.2	5.7	13
30	11	83	32	25	---	10	5.7	9.1	3.5	23	5.4	11
31	10	---	31	28	---	9.7	---	11	---	8.6	9.2	---
TOTAL	487.9	1181	641.7	861	897	376.9	279.1	381.9	449.8	272.4	637.4	422.2
MEAN	15.7	39.4	20.7	27.8	32.0	12.2	9.30	12.3	15.0	8.79	20.6	14.1
MAX	44	124	61	92	64	26	25	46	172	69	114	75
MIN	8.7	14	8.0	13	17	8.0	5.7	4.5	3.5	2.7	4.1	5.0
AC-FT	968	2340	1270	1710	1780	748	554	757	892	540	1260	837
CFSM	12.5	31.2	16.4	22.0	25.4	9.65	7.38	9.78	11.9	6.97	16.3	11.2
IN.	14.40	34.87	18.95	25.42	26.48	11.13	8.24	11.28	13.28	8.04	18.82	12.46

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1997, BY WATER YEAR (WY)

MEAN	15.3	19.1	15.6	14.0	14.4	10.5	12.1	16.5	12.7	13.8	14.7	18.0
MAX	32.1	46.9	31.3	28.4	44.0	26.2	34.4	26.6	23.7	39.0	24.5	51.7
(WY)	1986	1951	1988	1996	1950	1949	1950	1948	1996	1952	1945	1996
MIN	4.78	8.03	4.99	6.65	4.86	3.90	4.77	6.84	5.19	7.21	5.91	7.03
(WY)	1993	1948	1990	1994	1983	1951	1984	1994	1985	1994	1993	1986

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1945 - 1997	
ANNUAL TOTAL	8296.6		6888.3			
ANNUAL MEAN	22.7		18.9		14.7	
HIGHEST ANNUAL MEAN					21.1	1952
LOWEST ANNUAL MEAN					8.00	1994
HIGHEST DAILY MEAN	737	Sep 10	172	Jun 2	737	Sep 10 1996
LOWEST DAILY MEAN	3.2	Apr 10	2.7	Jul 11	1.5	Mar 22 1946
ANNUAL SEVEN-DAY MINIMUM	4.4	Apr 5	3.2	Jul 6	2.0	Apr 7 1946
INSTANTANEOUS PEAK FLOW			1110	Jun 2	2860	Apr 21 1983
INSTANTANEOUS PEAK STAGE			6.42	Jun 2	8.96	Apr 21 1983
INSTANTANEOUS LOW FLOW			2.5	Jul 6	2.5	Jul 6 1997
ANNUAL RUNOFF (AC-FT)	16460		13660		10650	
ANNUAL RUNOFF (CFSM)	18.0		15.0		11.7	
ANNUAL RUNOFF (INCHES)	244.95		203.37		158.48	
10 PERCENT EXCEEDS	37		37		29	
50 PERCENT EXCEEDS	15		13		8.4	
90 PERCENT EXCEEDS	6.5		5.6		4.6	

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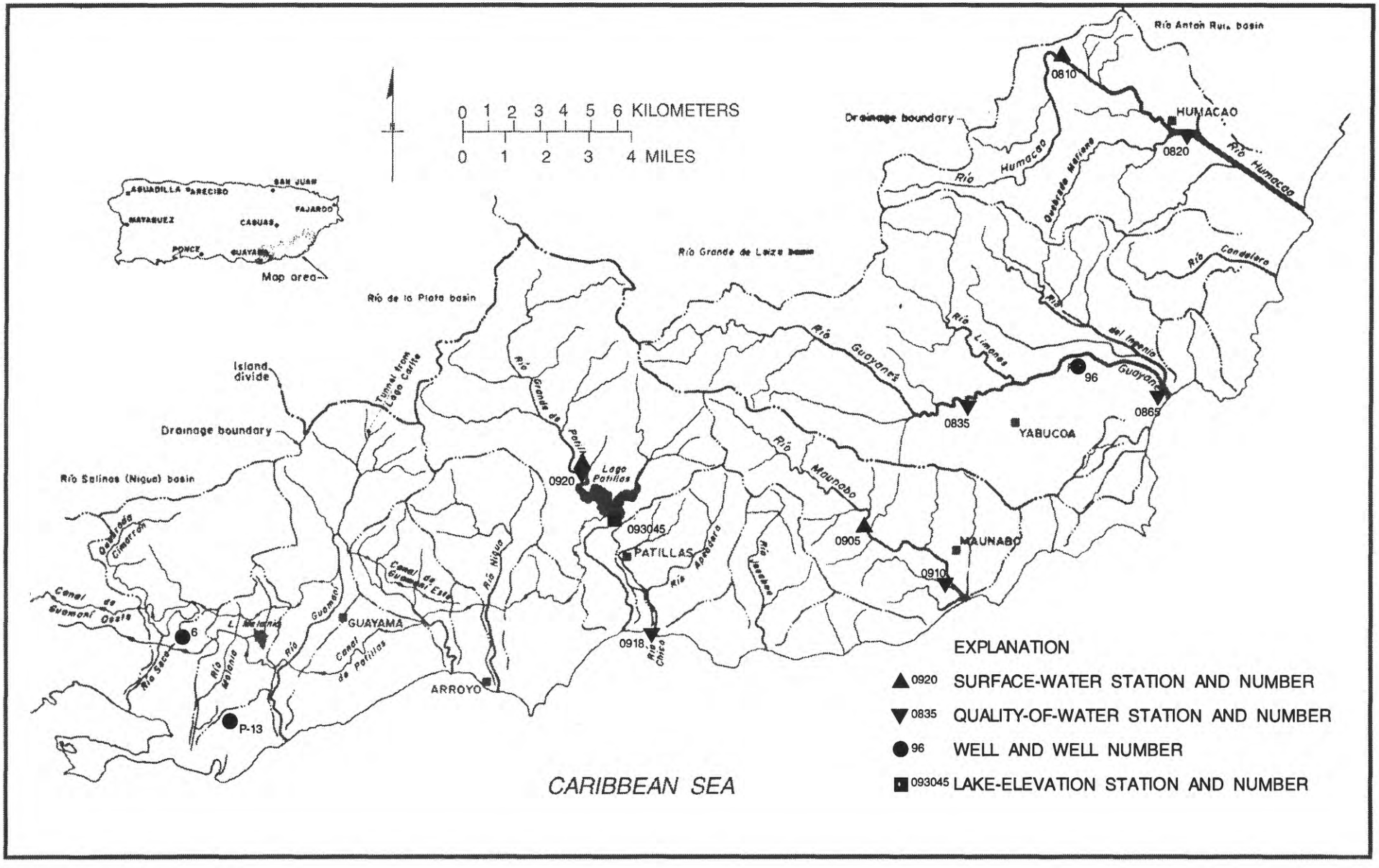

Figure 21.--Southeastern river basins the Río Humacao to Río Seco basins.

RIO HUMACAO BASIN

50081000 RIO HUMACAO AT LAS PIEDRAS, PR

LOCATION.--Lat 18°10'27", long 65°52'11", Hydrologic unit 21010005, on left bank at downstream side of bridge on Highway 921, 0.6 mi (1.0 km) southeast of junction with Highway 30, 0.8 mi (1.3 km) downstream from Quebrada Blanca and 0.8 mi (1.3 km) south of Las Piedras.

DRAINAGE AREA.--6.65 mi² (17.22 km²).

PERIOD OF RECORD.--September 1958 to December 1967 (monthly discharge measurements), July 1974 to September 1977, October 1987 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 260 ft (79 m), from topographic map. Prior to July 1974, crest-stage gage at different datum. July 1974 to September 1977 at site 90 ft (27 m) upstream at present datum.

REMARKS.--Records fair except those for estimated daily discharges, and above 1,000 ft³/s (28.3 m³/s), which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	22	25	17	42	16	13	9.1	12	7.2	14	17
2	e33	22	24	17	55	16	78	8.9	14	6.8	13	17
3	e31	22	24	17	21	16	41	8.6	16	6.9	14	15
4	31	35	23	16	16	18	17	8.6	12	6.4	13	15
5	30	21	23	16	29	16	16	9.0	12	7.4	12	14
6	e29	27	22	16	27	16	15	8.5	e11	13	12	14
7	35	181	27	16	20	15	14	8.2	e9.8	7.8	12	13
8	28	38	23	16	17	16	14	8.5	e9.0	7.9	13	20
9	35	27	22	16	19	16	13	11	e9.5	10	14	14
10	55	25	22	16	16	15	13	16	e9.0	7.5	17	13
11	35	48	e24	17	17	15	13	27	e9.0	7.0	14	12
12	29	120	e21	15	24	16	13	15	e8.5	7.0	14	14
13	27	93	e21	15	28	16	13	13	e8.5	12	13	13
14	28	51	e20	15	23	15	12	11	e14	7.0	13	23
15	27	44	e22	15	20	15	12	15	e8.6	6.3	15	19
16	26	35	e21	15	21	19	12	13	e8.6	9.7	18	14
17	25	31	e19	14	19	16	12	12	e8.0	8.7	14	13
18	24	28	e19	14	18	17	11	10	e7.6	9.2	98	15
19	24	105	e19	14	18	16	11	9.6	14	9.3	24	13
20	23	37	19	15	17	15	11	11	11	10	16	12
21	23	79	19	15	21	14	11	12	8.2	261	25	21
22	22	35	18	37	21	14	10	9.8	7.2	e65	71	19
23	22	e33	18	18	21	14	10	9.3	13	19	25	21
24	21	30	18	17	17	13	10	9.1	13	23	138	51
25	21	28	19	15	19	13	9.8	9.8	8.9	15	41	18
26	25	27	18	17	23	13	9.6	9.2	11	13	20	73
27	26	26	18	14	17	14	9.8	29	8.5	13	18	22
28	e24	26	18	15	16	13	9.7	17	7.7	23	39	18
29	26	26	21	15	---	14	9.7	19	7.4	13	24	19
30	22	26	27	14	---	14	9.5	12	7.2	50	17	25
31	21	---	19	15	---	14	---	16	---	17	29	---
TOTAL	861	1348	653	504	622	470	453.1	385.2	304.2	679.1	820	587
MEAN	27.8	44.9	21.1	16.3	22.2	15.2	15.1	12.4	10.1	21.9	26.5	19.6
MAX	55	181	27	37	55	19	78	29	16	261	138	73
MIN	21	21	18	14	16	13	9.5	8.2	7.2	6.3	12	12
AC-FT	1710	2670	1300	1000	1230	932	899	764	603	1350	1630	1160
CFSM	4.18	6.76	3.17	2.44	3.34	2.28	2.27	1.87	1.52	3.29	3.98	2.94
IN.	4.82	7.54	3.65	2.82	3.48	2.63	2.53	2.15	1.70	3.80	4.59	3.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 1997, BY WATER YEAR (WY)

MEAN	28.5	36.9	30.0	18.9	15.8	11.6	9.61	13.9	17.5	19.7	20.0	36.4
MAX	74.9	126	112	34.1	22.2	16.4	15.1	42.2	41.1	38.1	34.7	121
(WY)	1975	1988	1988	1992	1997	1989	1997	1992	1996	1993	1996	1996
MIN	12.8	13.4	11.5	10.5	11.0	8.87	5.88	7.26	5.91	7.95	9.45	10.0
(WY)	1995	1996	1992	1995	1977	1996	1977	1990	1977	1990	1974	1990

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1974 - 1997	
ANNUAL TOTAL	11642.0		7686.6			
ANNUAL MEAN	31.8		21.1		21.7	
HIGHEST ANNUAL MEAN					37.6	1988
LOWEST ANNUAL MEAN					12.1	1990
HIGHEST DAILY MEAN	2010	Sep 10	261	Jul 21	2010	Sep 10 1996
LOWEST DAILY MEAN	6.2	May 5	6.3	Jul 15	2.2	Jul 15 1974
ANNUAL SEVEN-DAY MINIMUM	6.8	May 1	7.0	Jun 29	2.8	Jul 19 1974
INSTANTANEOUS PEAK FLOW			1890	Jul 21	20800	Sep 6 1960
INSTANTANEOUS PEAK STAGE			6.10	Jul 21	34.40	Sep 6 1960
INSTANTANEOUS LOW FLOW			5.5	Jul 4		
ANNUAL RUNOFF (AC-FT)	23090		15250		15730	
ANNUAL RUNOFF (CFSM)	4.78		3.17		3.27	
ANNUAL RUNOFF (INCHES)	65.13		43.00		44.37	
10 PERCENT EXCEEDS	53		31		32	
50 PERCENT EXCEEDS	18		16		13	
90 PERCENT EXCEEDS	7.8		9.1		7.1	

e Estimated

RIO HUMACAO BASIN

50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°08'49", long 65°49'37", at bridge on Highway 3,300 ft (91 m) downstream from Quebrada Mariana, and 0.4 mi (0.6 km) south of Humacao.

DRAINAGE AREA.--17.3 mi² (44.8 km²).

PERIOD OF RECORD.--Water years 1958-66, 1969 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
18...	1050	34	302	7.0	29.5	6.2	7.4	96	<10	5700	450
FEB 1997											
24...	1115	22	475	6.7	26.5	5.5	6.6	81	12	3400	2800
MAY											
22...	0835	11	368	6.8	26.0	6.0	6.9	85	<10	21000	4100
AUG											
28...	1000	150	147	6.9	26.5	320	7.1	88	20	55000	55000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
18...	93	26	6.9	24	1	2.2	93	<0.5	9.3	29
FEB 1997										
24...	--	--	--	--	--	--	120	--	--	--
MAY										
22...	110	32	7.5	29	1	2.4	110	<0.5	11	42
AUG										
28...	38	10	2.9	11	0.8	3.0	43	--	4.7	13

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
18...	0.10	38	191	17.8	18	0.600	<0.010	0.600	0.020	0.33
FEB 1997										
24...	--	--	--	--	16	0.630	0.020	0.650	0.230	0.29
MAY										
22...	0.10	39	229	6.91	8	0.420	0.020	0.440	0.060	0.30
AUG										
28...	0.10	20	91	36.9	556	0.390	0.018	0.410	0.040	2.2

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
18...	0.35	0.95	4.2	0.060	<1	<100	30	<1	<1	<10
FEB 1997										
24...	0.53	1.2	5.2	0.070	--	--	--	--	--	--
MAY										
22...	0.36	0.79	3.5	0.040	<1	<100	30	<1	<1	<10
AUG										
28...	2.3	2.7	12	0.500	--	--	--	--	--	--

K = non-ideal count

50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
18...	830	<1	120	<0.10	<1	<1	<10	<0.010	3	<0.01
FEB 1997										
24...	--	--	--	--	--	--	--	--	--	--
MAY										
22...	400	<1	70	<0.10	<1	<1	<10	<0.010	<1	0.02
AUG										
28...	--	--	--	--	--	--	--	--	--	--

RIO GUAYANES BASIN

50083500 RIO GUAYANES AT YABUCOA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°03'33", long 65°54'03", at bridge on Highway 182, 1.4 mi (2.2 km) west-northwest of Yabucoa plaza.

DRAINAGE AREA.--17.2 mi² (44.6 km²).

PERIOD OF RECORD.--Water years 1958-62, 1968-70, 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
10...	0930	62	175	6.6	25.0	34	7.2	85	<10	2700	3400
FEB 1997											
21...	1030	65	212	6.6	22.0	54	8.6	96	17	49000	31000
MAY											
19...	1115	20	210	6.6	26.5	47	7.0	86	12	2500	4100
AUG											
22...	1045	E350	74	6.6	25.5	52	7.2	88	20	32000	61000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
10...	51	13	4.5	14	0.9	1.7	57	1.8	4.4	15
FEB 1997										
21...	--	--	--	--	--	--	66	--	--	--
MAY										
19...	66	17	5.5	17	0.9	1.8	84	<0.5	5.2	16
AUG										
22...	44	11	3.9	14	0.9	1.6	20	--	3.6	12

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
10...	0.10	35	123	21	48	0.520	<0.010	0.530	0.330	<0.20
FEB 1997										
21...	--	--	--	--	27	0.450	0.010	0.460	0.040	0.61
MAY										
19...	0.12	38	151	8.02	92	0.260	<0.010	0.270	0.030	0.44
AUG										
22...	0.10	33	107	E101	88	0.220	0.059	0.280	0.070	2.1

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
10...	0.22	0.75	3.3	0.050	<1	<100	30	<1	<1	<10
FEB 1997										
21...	0.65	1.1	4.9	0.100	--	--	--	--	--	--
MAY										
19...	0.47	0.74	3.3	0.080	<1	<100	50	<1	<1	<10
AUG										
22...	2.2	2.5	11	0.270	--	--	--	--	--	--

K = non-ideal count
E = estimated

RIO GUAYANES BASIN

50083500 RIO GUAYANES AT YABUCOA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
10...	2600	<1	160	<0.10	<1	<1	<10	<0.010	<1	<0.01
FEB 1997										
21...	--	--	--	--	--	--	--	--	--	--
MAY										
19...	800	<1	120	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
22...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, I TOTAL (UG/L) (39388)
MAY 1997										
19...	1115	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)
MAY 1997									
19...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	PARA-THION, TOTAL (UG/L) (39540)	PCNS UNFILT RECOVER (UG/L) (39250)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	2, 4-DP TOTAL (UG/L) (82183)	SILVEX, TOTAL (UG/L) (39760)
MAY 1997									
19...	<0.010	<0.100	<0.100	<1.00	<0.010	<0.010	<0.010	<0.010	<0.010

RIO GUAYANES BASIN

50086500 RIO GUAYANES ABOVE MOUTH AT PLAYA DE GUAYANES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°03'45", long 65°49'42", at old railroad crossing, 0.2 mi (0.3 km) from mouth, 0.4 mi (0.6 km) west of Playa de Guayanés, and 3.5 mi (5.6 km) northeast of Yabucoa plaza.

DRAINAGE AREA.--34.0 mi² (88.1 km²).

PERIOD OF RECORD.--Water years 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
10...	1100	110	184	6.8	26.5	54	7.2	88	<10	2200	4100
FEB 1997											
24...	0915	--	450	6.7	25.0	17	5.0	59	17	5200	4400
MAY											
22...	1000	--	209	6.8	26.0	18	6.4	78	<10	K900	600
AUG											
28...	0835	300	232	6.7	28.0	59	4.2	54	16	22000	53000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
10...	53	14	4.5	15	0.9	1.9	62	<0.5	6.4	18
FEB 1997										
24...	--	--	--	--	--	--	110	--	--	--
MAY										
22...	59	15	4.9	18	1	2.2	82	<0.5	5.3	18
AUG										
28...	58	15	5.1	19	1	3.2	79	--	3.8	19

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
10...	0.10	36	131	39	92	0.610	0.010	0.620	0.040	<0.20
FEB 1997										
24...	--	--	--	--	22	<0.230	0.010	0.240	0.050	0.41
MAY										
22...	0.12	38	151	--	25	0.270	<0.010	0.270	0.040	0.27
AUG										
28...	0.15	32	144	117	58	0.230	0.015	0.250	0.050	0.72

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
10...	0.23	0.85	3.8	0.080	<1	<100	20	<1	<1	<10
FEB 1997										
24...	0.46	0.71	3.1	0.070	--	--	--	--	--	--
MAY										
22...	0.31	0.58	2.6	0.040	<1	<100	<10	<1	<1	<10
AUG										
28...	0.77	1.0	4.5	0.200	--	--	--	--	--	--

K = non-ideal count

50086500 RIO GUAYANES ABOVE MOUTH AT PLAYA DE GUAYANES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
10...	3500	1	180	<0.10	<1	<1	10	<0.010	<1	<0.01
FEB 1997										
24...	--	--	--	--	--	--	--	--	--	--
MAY										
22...	2900	<1	120	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
28...	--	--	--	--	--	--	--	--	--	--

RIO MAUNABO BASIN

50090500 RIO MAUNABO AT LIZAS, PR

LOCATION.--Lat 18°01'38", long 65°56'24", Hydrologic Unit 21010005, on right bank, off Highway 759 at Lizas, about 1.0 mi (1.6 km) downstream from Quebrada Coroco, and about 3.0 mi (4.8 km) northwest of Maunabo.

DRAINAGE AREA.--5.38 mi² (13.93 km²).

PERIOD OF RECORD.--February 1971 to January 1985, February 1991 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 230 ft (70 m), from topographic map.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	23	11	8.9	54	9.4	8.0	5.8	11	4.1	7.6	13
2	e35	22	10	8.6	27	e9.7	40	5.2	e10	3.7	e7.1	12
3	e34	e18	e9.4	9.0	21	e11	25	4.8	15	3.5	e8.2	9.8
4	31	24	e8.2	9.0	13	e14	11	5.0	9.0	3.3	11	10
5	31	18	8.1	8.8	e56	13	8.7	5.0	8.3	3.9	8.1	8.9
6	e29	e17	8.4	8.6	36	e9.7	7.6	5.2	8.3	4.1	7.7	8.6
7	47	23	e9.5	e8.8	15	e8.0	7.4	8.0	e7.7	3.7	7.0	8.2
8	29	e17	e8.3	e9.2	11	e9.8	7.2	6.6	e6.5	3.8	6.6	8.1
9	28	e39	8.3	e9.6	14	7.9	7.1	9.0	e6.0	4.0	14	7.9
10	e33	22	e9.4	9.5	10	7.1	7.0	7.9	e5.8	4.2	14	7.9
11	e28	56	e9.2	17	11	6.9	6.8	6.2	e6.2	4.1	e10	7.7
12	25	156	8.3	11	10	9.1	6.8	7.0	e6.0	4.5	e8.9	7.6
13	23	48	8.2	e9.9	33	9.2	7.3	7.2	e8.0	6.6	20	7.6
14	24	43	8.3	8.9	21	7.4	6.8	6.3	e12	4.3	8.4	8.3
15	26	28	8.6	8.3	13	e8.4	6.4	6.1	e7.0	4.4	8.5	79
16	22	22	8.5	8.4	12	18	6.1	6.4	e6.3	4.8	9.3	12
17	e21	18	8.2	e8.5	10	10	6.0	6.8	e5.8	5.2	16	9.5
18	e31	17	8.0	8.0	9.5	21	6.1	6.8	e5.5	11	93	8.5
19	e30	28	7.8	7.7	12	11	5.6	5.4	e6.1	21	14	7.7
20	22	30	8.1	8.0	11	7.9	5.5	5.4	e5.9	31	9.7	7.5
21	20	18	8.1	8.4	38	7.0	5.5	5.6	e5.1	88	8.7	35
22	19	15	7.7	30	21	6.2	5.4	5.0	4.7	18	63	22
23	18	16	7.7	e12	13	5.8	5.3	5.0	4.9	e30	26	19
24	18	e15	11	9.5	14	5.8	5.1	5.5	4.4	e18	16	21
25	17	e14	12	8.3	11	6.2	5.0	6.7	3.8	15	15	12
26	34	e13	9.7	12	19	6.2	5.4	6.9	4.2	22	11	113
27	25	13	9.7	8.0	12	6.1	5.2	7.0	3.8	13	28	15
28	45	12	9.3	e21	9.0	6.5	5.3	8.0	3.6	74	28	13
29	22	e12	14	12	---	6.8	5.2	27	3.5	e17	15	15
30	19	13	e12	11	---	6.7	5.8	13	4.6	e12	13	17
31	18	---	9.2	10	---	8.7	---	11	---	8.7	21	---
TOTAL	840	810	284.2	327.9	536.5	280.5	245.6	226.8	199.0	450.9	533.8	531.8
MEAN	27.1	27.0	9.17	10.6	19.2	9.05	8.19	7.32	6.63	14.5	17.2	17.7
MAX	47	156	14	30	56	21	40	27	15	88	93	113
MIN	17	12	7.7	7.7	9.0	5.8	5.0	4.8	3.5	3.3	6.6	7.5
AC-FT	1670	1610	564	650	1060	556	487	450	395	894	1060	1050
CFSM	5.04	5.02	1.70	1.97	3.56	1.68	1.52	1.36	1.23	2.70	3.20	3.29
IN.	5.81	5.60	1.97	2.27	3.71	1.94	1.70	1.57	1.38	3.12	3.69	3.68

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1997, BY WATER YEAR (WY)

MEAN	26.7	31.1	17.7	13.0	12.5	9.80	7.21	12.7	17.9	17.6	22.7	28.6
MAX	52.6	88.9	35.2	27.1	24.5	18.9	10.8	25.1	47.1	40.2	131	94.6
(WY)	1979	1978	1978	1992	1982	1976	1976	1979	1979	1993	1979	1996
MIN	10.4	7.46	8.74	7.79	6.10	4.32	3.92	5.13	4.40	3.70	6.18	7.99
(WY)	1994	1982	1994	1981	1979	1979	1979	1974	1974	1974	1974	1980

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1971 - 1997	
ANNUAL TOTAL	10006.9		5267.0			
ANNUAL MEAN	27.3		14.4		18.2	
HIGHEST ANNUAL MEAN					36.7	1979
LOWEST ANNUAL MEAN					10.8	1994
HIGHEST DAILY MEAN	1280	Sep 10	156	Nov 12	2480	Aug 31 1979
LOWEST DAILY MEAN	5.7	May 30	3.3	Jul 4	2.2	Jul 16 1974
ANNUAL SEVEN-DAY MINIMUM	6.5	May 24	3.7	Jul 2	2.8	Jul 11 1974
INSTANTANEOUS PEAK FLOW			1080	Sep 26	9950	Sep 20 1994
INSTANTANEOUS PEAK STAGE			7.97	Sep 26	17.46	Sep 20 1994
ANNUAL RUNOFF (AC-FT)	19850		10450		13200	
ANNUAL RUNOFF (CFSM)	5.08		2.68		3.39	
ANNUAL RUNOFF (INCHES)	69.19		36.42		46.02	
10 PERCENT EXCEEDS	47		28		33	
50 PERCENT EXCEEDS	17		9.3		11	
90 PERCENT EXCEEDS	8.1		5.2		5.2	

e Estimated

RIO MAUNABO BASIN

50091000 RIO MAUNABO AT MAUNABO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'24", long 65°54'19", at bridge on Highway 3, 0.4 mi (0.6 km) southwest of Maunabo plaza, and 1.3 mi (2.1 km) upstream from mouth.

DRAINAGE AREA.--12.4 mi² (32.1 km²).

PERIOD OF RECORD.--Water years 1958-66, 1975 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
18...	0900	24	270	6.9	25.0	5.5	7.3	87	<10	2000	800
FEB 1997											
21...	0900	--	210	6.7	22.5	240	6.8	77	55	210000	220000
MAY											
19...	0850	7.7	273	6.8	25.5	2.2	7.5	91	<10	K1800	870
AUG											
22...	0900	75	172	6.6	26.0	2.8	7.9	97	<10	46000	69000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
18...	86	22	7.6	20	0.9	1.5	92	<0.5	9.0	20
FEB 1997										
21...	--	--	--	--	--	--	85	--	--	--
MAY										
19...	89	22	8.1	21	1	1.3	100	<0.5	13	26
AUG										
22...	73	18	6.8	19	1	1.5	66	--	10	20

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
18...	0.10	37	172	11.1	46	0.470	<0.010	0.480	0.020	0.41
FEB 1997										
21...	--	--	--	--	810	0.360	0.020	0.380	0.060	2.7
MAY										
19...	0.14	39	191	3.99	6	0.150	<0.010	0.160	0.020	<0.20
AUG										
22...	0.10	36	154	31.2	19	0.220	0.028	0.250	0.040	1.0

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
18...	0.43	0.91	4.0	0.070	<1	<100	30	<1	<1	<10
FEB 1997										
21...	2.7	3.1	14	0.610	--	--	--	--	--	--
MAY										
19...	0.20	0.36	1.6	<0.020	<1	<100	<10	<1	<1	<10
AUG										
22...	1.1	1.3	5.8	0.130	--	--	--	--	--	--

K = non-ideal count

RIO MAUNABO BASIN

50091000 RIO MAUNABO AT MAUNABO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
18...	2000	<1	150	<0.10	<1	<1	10	<0.010	<1	<0.01
FEB 1997										
21...	--	--	--	--	--	--	--	--	--	--
MAY										
19...	730	<1	60	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
22...	--	--	--	--	--	--	--	--	--	--

RIO CHICO BASIN

50091800 RIO CHICO AT PROVIDENCIA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 17°59'16", long 66°00'18", at flat low bridge 200 ft (61 m) south of Highway 3, 0.5 mi (0.8 km) above mouth, and 1.5 mi (2.4 km) southeast of Patillas plaza.

DRAINAGE AREA.--4.9 mi² (12.8 km²).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
29...	0850	4.0	374	7.3	27.0	3.4	6.7	82	18	K7200	2000
FEB 1997											
12...	0850	2.4	434	7.0	24.5	3.0	6.0	71	37	K930	700
MAY											
13...	0920	2.7	513	6.9	28.0	74	0.9	12	320	K600000	780000
AUG											
25...	0905	3.8	365	7.0	27.5	3.6	5.7	72	24	K730	570

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
29...	97	24	9.0	36	2	4.4	100	<0.5	17	34
FEB 1997										
12...	--	--	--	--	--	--	170	--	--	--
MAY										
13...	83	20	7.9	38	2	5.9	180	<0.5	15	42
AUG										
25...	100	25	10	36	2	2.8	110	--	19	28

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
29...	0.20	29	214	2.29	48	3.40	0.090	3.50	0.150	1.0
FEB 1997										
12...	--	--	--	--	9	0.220	0.160	0.380	13.0	0.0
MAY										
13...	0.12	25	262	1.94	180	0.00	0.020	0.020	20.0	16
AUG										
25...	0.20	30	207	2.12	18	3.00	0.170	3.10	0.730	0.92

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
29...	1.2	4.6	21	1.10	<1	<100	70	<1	<1	<10
FEB 1997										
12...	13	13	59	1.40	--	--	--	--	--	--
MAY										
13...	36	36	160	5.90	<1	<100	80	<1	3	69
AUG										
25...	1.6	4.8	21	1.00	--	--	--	--	--	--

K = non-ideal count

RIO CHICO BASIN

50091800 RIO CHICO AT PROVIDENCIA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
29...	1600	1	90	<0.10	<1	<1	10	<0.010	<1	0.04
FEB 1997										
12...	--	--	--	--	--	--	--	--	--	--
MAY										
13...	3900	8	170	<0.10	<1	3	250	<0.010	9	4.8
AUG										
25...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE PATILLAS BASIN

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR

LOCATION.--Lat 18°02'04", long 66°01'58", Hydrologic Unit 21010004, on left bank, at foot bridge, off Highway 184, 1.2 mi (1.9 km) upstream from Lago Patillas Dam and 2.2 mi (3.5 km) northwest of Patillas.

DRAINAGE AREA.--18.3 mi² (47.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1959 to October 1965 (annual low-flow and occasional measurements only), January 1966 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 235 ft (72 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e62	59	34	22	104	27	17	14	26	10	e35	28
2	e60	53	33	21	55	26	145	14	40	10	e30	28
3	e62	41	30	20	40	27	60	14	253	11	e32	25
4	e58	68	31	19	28	27	20	13	33	13	e29	22
5	e54	42	28	18	30	24	17	13	24	19	e26	20
6	e54	46	26	18	43	23	16	13	21	18	e25	18
7	e52	42	27	18	28	23	15	15	20	17	e21	18
8	e56	42	26	18	27	25	15	17	24	18	e23	17
9	e66	42	26	18	31	23	15	19	21	19	e25	17
10	e120	37	25	18	29	22	14	25	15	15	e56	16
11	e75	160	49	72	29	20	14	18	15	12	e64	15
12	e60	333	30	27	28	21	14	19	15	12	e40	16
13	e50	210	26	21	86	24	16	26	16	20	e35	16
14	e48	84	25	19	54	22	14	25	21	19	e26	23
15	e50	62	25	19	39	28	14	29	14	19	e24	73
16	e43	52	24	18	34	31	13	36	12	30	e31	24
17	e39	47	23	18	30	24	13	44	11	43	e33	19
18	42	44	23	17	28	25	13	34	11	24	e163	19
19	83	45	22	17	29	22	13	28	14	50	e57	18
20	69	46	22	20	26	20	13	24	26	95	e35	16
21	45	55	22	28	42	20	14	22	18	231	e28	94
22	38	51	21	118	38	19	13	20	16	53	e580	198
23	35	50	21	28	41	17	13	26	15	47	102	111
24	33	42	22	25	33	16	13	26	15	33	134	60
25	32	37	24	24	29	15	14	27	14	26	75	41
26	35	35	22	26	76	15	14	25	14	26	38	78
27	36	34	21	21	35	15	14	40	13	29	46	57
28	36	35	20	22	29	15	14	33	13	178	39	36
29	35	33	37	21	---	18	14	43	13	48	42	34
30	33	37	68	21	---	16	14	66	11	39	33	49
31	48	---	24	22	---	18	---	25	---	46	36	---
TOTAL	1609	1964	857	794	1121	668	608	793	774	1230	1963	1206
MEAN	51.9	65.5	27.6	25.6	40.0	21.5	20.3	25.6	25.8	39.7	63.3	40.2
MAX	120	333	68	118	104	31	145	66	253	231	580	198
MIN	32	33	20	17	26	15	13	13	11	10	21	15
AC-FT	3190	3900	1700	1570	2220	1320	1210	1570	1540	2440	3890	2390
CFSM	2.84	3.58	1.51	1.40	2.19	1.18	1.11	1.40	1.41	2.17	3.46	2.20
IN.	3.27	3.99	1.74	1.61	2.28	1.36	1.24	1.61	1.57	2.50	3.99	2.45

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997, BY WATER YEAR (WY)

MEAN	95.9	89.0	50.2	34.3	28.7	24.5	21.7	50.5	64.3	64.4	69.5	87.7
MAX	593	393	152	125	94.6	45.5	43.4	172	200	164	231	314
(WY)	1971	1978	1971	1992	1982	1996	1976	1969	1979	1979	1979	1979
MIN	14.4	16.1	8.63	14.0	7.09	6.74	9.98	10.3	13.1	14.1	17.2	12.1
(WY)	1968	1968	1968	1973	1973	1968	1968	1974	1974	1974	1994	1967

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1966 - 1997	
ANNUAL TOTAL	22945		13587			
ANNUAL MEAN	62.7		37.2		56.2	
HIGHEST ANNUAL MEAN					117	1979
LOWEST ANNUAL MEAN					19.8	1994
HIGHEST DAILY MEAN	1770	Sep 10	580	Aug 22	4780	Sep 16 1975
LOWEST DAILY MEAN	18	Apr 20	10	Jul 1	4.8	May 9 1968
ANNUAL SEVEN-DAY MINIMUM	19	May 2	12	Jun 27	5.0	Apr 10 1968
INSTANTANEOUS PEAK FLOW			2410	Aug 22	30900	Jan 5 1992
INSTANTANEOUS PEAK STAGE			9.06	Aug 22	unknown	Jan 5 1992
INSTANTANEOUS LOW FLOW			9.8	Jul 1	4.6	May 13 1968
ANNUAL RUNOFF (AC-FT)	45510		26950		40730	
ANNUAL RUNOFF (CFSM)	3.43		2.03		3.07	
ANNUAL RUNOFF (INCHES)	46.64		27.62		41.74	
10 PERCENT EXCEEDS	113		61		96	
50 PERCENT EXCEEDS	36		26		28	
90 PERCENT EXCEEDS	22		14		12	

e Estimated

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
29...	1025	37	177	7.4	24.5	8.6	7.7	90	<10	2100	620
FEB 1997											
12...	1110	26	154	6.7	23.5	0.70	7.7	89	<10	K660	3100
MAY											
13...	1135	27	174	6.9	26.5	41	6.8	85	<10	K8200	5900
AUG											
25...	1110	64	115	6.8	26.5	46	7.5	94	<10	K1700	620

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
29...	53	13	5.1	14	0.8	0.90	56	<0.5	11	12
FEB 1997										
12...	--	--	--	--	--	--	56	--	--	--
MAY										
13...	55	13	5.3	13	0.8	0.79	67	<0.5	12	12
AUG										
25...	48	11	4.9	14	0.9	0.60	34	--	11	12

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
29...	0.10	25	115	11.4	20	0.150	<0.010	0.150	0.020	<0.20
FEB 1997										
12...	--	--	--	--	2	0.030	<0.010	0.030	<0.010	<0.20
MAY										
13...	<0.10	21	118	8.60	39	0.030	0.010	0.040	0.020	<0.20
AUG										
25...	<0.10	24	120	21.0	26	0.180	<0.010	0.180	0.020	<0.20

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
29...	<0.20	0.32	1.4	<0.020	<1	<100	30	<1	<1	<10
FEB 1997										
12...	<0.20	<0.20	0.45	<0.020	--	--	--	--	--	--
MAY										
13...	<0.20	0.22	0.97	<0.020	<1	<100	30	<1	<1	<10
AUG										
25...	<0.20	0.33	1.5	<0.020	--	--	--	--	--	--

K = non-ideal count

RIO GRANDE DE PATILLAS BASIN

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
29...	910	<1	100	<0.10	<1	<1	<10	<0.010	<1	<0.01
FEB 1997										
12...	--	--	--	--	--	--	--	--	--	--
MAY										
13...	1500	<1	110	<0.10	<1	<1	10	<0.010	<1	<0.01
AUG										
25...	--	--	--	--	--	--	--	--	--	--

50093045 LAGO PATILLAS AT DAMSITE NEAR PATILLAS, PR

LOCATION.--Lat 18°01'15", long 66°01'19", Hydrologic Unit 21010004, on right bank, in a concrete tower at Damsite, 1.05 mi (1.69 km) northeast from Patillas plaza, 0.45 mi (0.72 km) northeast from Escuela Segunda Unidad de Real and 2.30 mi (3.70 km) from Escuela Segunda Unidad de Jesús María Rodríguez.

DRAINAGE AREA.--25.2 mi² (65.3 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--March 1995 to current year.

GAGE.--Water stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago Patillas was completed in 1914. The dam is a semihydraulic earthfill structure about 147 ft (45 m) height, a top width of 15 ft (4.6 m), maximum pool elevation of 230 ft (70.1 m), a base width of 625 ft (190 m), a crest lenght of 1,067 ft (325 m) and has maximum pool storage of 17,073 ac-ft (21.05 hm³). The Patillas Dam is owned by the Puerto Rico Electric Power Authority (P.R.E.P.A) and its primary purpose is for irrigation of lands served by the Patillas irrigation canal. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 225.92 ft (68.86 m) Sept. 10, 1996; minimum elevation, 211.19 ft (64.37 m), May 29, 1995, July 19, 1997.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximun elevation, 222.22 ft (67.73 m), Nov. 12; minimum elevation, 211.19 ft (64.37 m), July 19.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
143	0	200	7,752
190	5,492	225	15,005
		230	16,773

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	221.41	221.97	220.83	220.34	220.80	221.61	219.62	217.58	215.25	213.11	214.80	221.69
2	A	221.79	220.91	220.32	221.06	221.50	220.43	217.47	215.31	212.98	214.77	221.62
3	221.90	221.56	220.95	220.28	221.24	221.44	220.64	217.30	215.82	212.79	214.73	221.49
4	221.77	221.63	220.92	220.26	221.31	221.39	220.65	217.15	215.99	212.66	214.73	221.41
5	221.76	221.56	220.86	220.23	221.61	221.35	220.61	216.99	215.94	212.56	214.69	221.56
6	221.90	221.49	220.81	220.19	221.81	221.29	220.53	216.88	215.85	212.50	214.59	A
7	221.84	221.44	220.80	220.13	221.87	221.26	220.45	216.74	A	212.34	214.51	A
8	221.73	221.42	220.78	220.06	221.85	221.25	220.40	216.67	A	212.24	214.44	A
9	220.92	221.51	220.76	219.97	221.90	221.21	220.31	216.56	A	212.14	214.43	A
10	220.98	221.47	220.72	219.79	221.86	221.10	220.23	216.49	A	212.00	214.60	A
11	220.79	222.05	220.81	220.11	221.81	221.01	220.12	216.39	A	211.83	214.73	A
12	220.54	221.98	220.78	220.11	221.77	220.94	220.04	216.29	A	211.66	214.77	A
13	220.27	220.88	220.71	220.03	221.85	220.83	219.98	216.24	A	211.52	214.81	A
14	221.03	220.69	220.67	219.97	221.08	220.83	219.85	216.12	A	211.36	214.77	A
15	221.29	220.45	220.64	219.93	220.84	220.89	219.73	216.03	A	211.30	214.73	A
16	221.45	220.17	220.61	219.86	220.86	220.98	219.61	215.97	A	211.30	214.78	A
17	221.53	219.92	220.45	219.75	220.86	220.65	219.50	215.93	214.54	211.30	214.98	A
18	221.77	219.66	220.42	219.69	220.88	220.87	219.38	215.86	214.35	211.26	215.94	A
19	221.98	219.45	220.37	219.59	220.96	220.83	219.24	215.70	214.28	211.32	216.01	A
20	221.99	219.25	220.33	219.56	220.98	220.72	219.10	215.59	214.34	211.79	215.99	A
21	221.87	219.26	220.31	219.55	221.29	220.62	218.99	215.43	214.31	212.84	215.93	A
22	221.70	219.47	220.29	220.15	221.42	220.49	218.86	215.26	214.22	213.04	219.77	A
23	221.60	219.75	220.23	220.20	221.57	220.42	218.72	215.08	214.07	213.25	220.34	A
24	221.51	219.97	220.23	220.22	221.61	220.31	218.54	214.98	213.92	213.37	220.91	A
25	221.48	220.11	220.23	220.26	221.61	220.15	218.43	214.88	213.83	213.42	221.22	A
26	221.56	220.21	A	220.30	221.95	220.10	218.27	214.69	213.67	213.52	221.34	A
27	221.62	220.31	220.15	220.23	221.87	219.98	218.14	214.85	213.59	213.54	221.62	A
28	221.85	220.44	220.05	220.28	221.74	219.94	218.05	214.86	213.47	214.47	221.75	A
29	221.91	220.55	220.15	220.23	---	219.84	217.88	214.97	213.35	214.60	221.83	A
30	221.92	220.72	220.38	220.20	---	219.75	217.71	215.24	213.21	214.69	221.78	A
31	222.02	---	220.37	220.20	---	219.69	---	215.26	---	214.80	221.79	---
MAX	222.02	222.05	220.95	220.34	221.95	221.61	220.65	217.58	215.99	214.80	221.83	221.69
MIN	220.27	219.25	220.05	219.55	220.80	219.69	217.71	214.69	213.21	211.26	214.43	221.41

CAL YR 1996 MAX 223.60 MIN 216.02
WTR YR 1997 MAX 222.05 MIN 211.26

A No gage-height record

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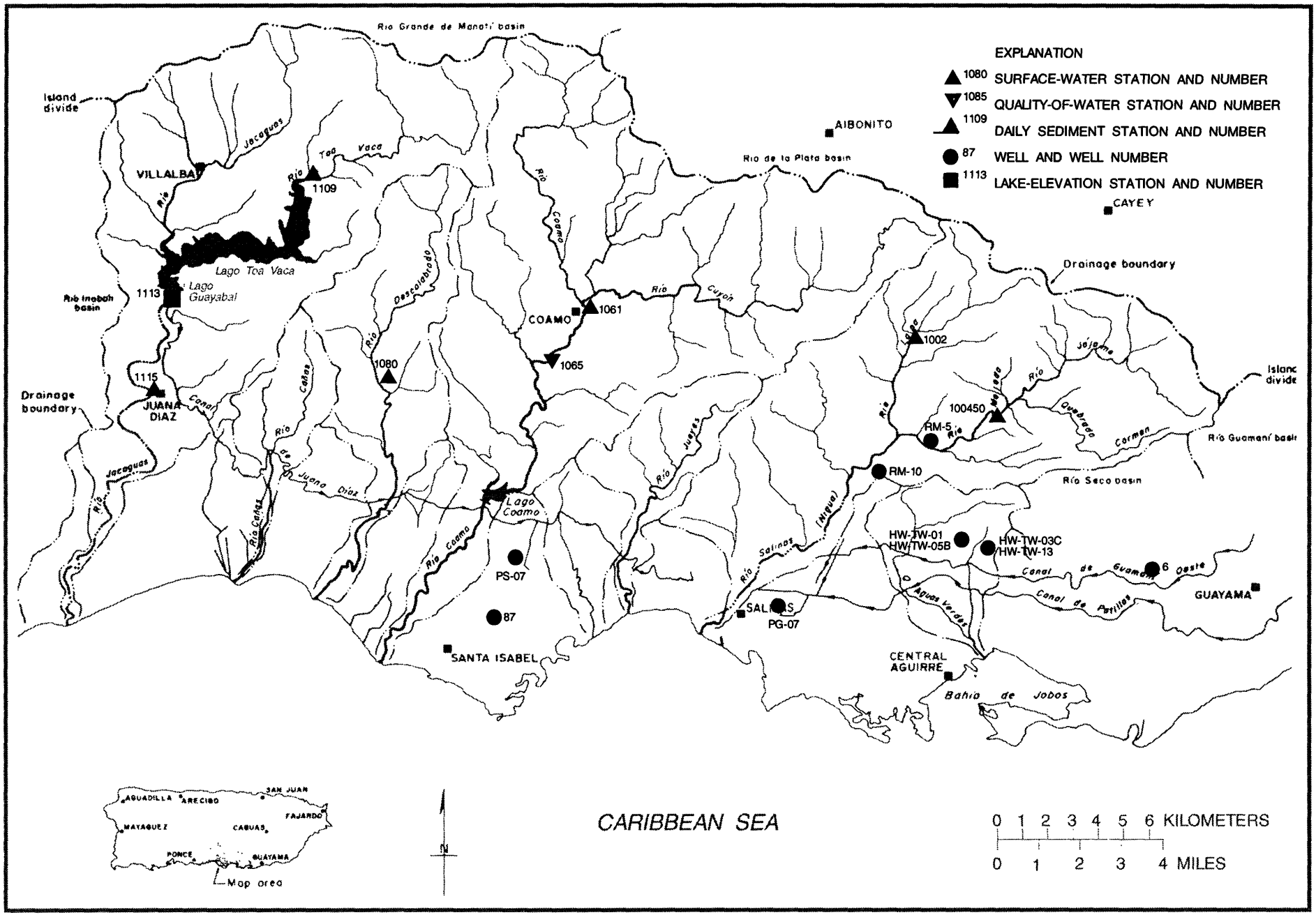

Figure 22.--South coast river basins the Río Salinas to Río Jacaguas basins.

RIO SALINAS BASIN

50100200 RIO LAPA NEAR RABO DEL BUEY, PR

LOCATION.--Lat 18°03'36", long 66°14'28", Hydrologic Unit 21010004, on left bank, at bridge on Highway 1, Km 9.7, 1.5 mi (2.4 km) north of Rabo del Buey, and 4.4 mi (7.1 km) northeast of Salinas Plaza.

DRAINAGE AREA.--9.92 mi² (25.69 km²).

PERIOD OF RECORD.--1953-63 (annual low-flow measurements only), September 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 394 ft (120 m), from topographic map.

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.1	1.2	e2.8	e1.3	e1.0	e.82	e.45	.23	.08	.03	.08	.17
2	4.1	1.1	e2.5	e1.1	e1.3	e.70	e.46	.23	.09	.03	.07	.16
3	3.8	.89	e2.5	e1.1	e.80	e.52	e1.2	.23	.09	.03	.08	.13
4	3.8	.80	e2.5	e.96	e.58	e.70	e.80	.23	.08	.02	.08	.09
5	3.8	.59	e2.5	e.86	e.50	e.70	e.52	.23	.09	.02	.07	.08
6	6.3	.66	e2.5	e.94	e.68	e.66	e.45	.20	.09	.02	.07	.07
7	4.8	.51	e2.7	e.96	e.56	e.54	e.33	.18	.09	.02	.07	.05
8	4.7	.32	e2.3	e.78	e.50	e.52	e.31	.37	.09	.02	.07	.03
9	5.1	.37	e1.9	e.82	e.50	e.60	.33	.24	.08	.02	.07	.03
10	5.7	.49	e1.8	e.86	e.54	e.60	.33	.32	.08	.02	.08	.02
11	6.1	6.5	e5.4	e1.3	e.56	e.37	.33	.20	.08	.02	.13	.01
12	6.1	e6.7	e3.0	e1.8	e.50	e.30	.33	.36	.08	.02	.15	.02
13	6.2	e5.4	e2.4	e1.1	e2.0	e.28	.34	.23	.08	.02	.20	.02
14	7.0	e3.6	e2.2	e.96	e1.8	e.35	.41	.20	.07	.02	.17	.01
15	7.6	e2.8	e2.1	e.86	e1.2	e.30	.43	.16	.07	.03	.13	.01
16	7.8	e2.1	e1.7	e.86	e.76	e.45	.44	.21	.07	.03	.14	.00
17	7.9	e2.4	e1.5	e.86	e.62	e.66	.57	.14	.06	.04	.19	.00
18	8.1	e2.2	e1.3	e.78	e.58	e.50	.56	.13	.06	.03	.18	.00
19	8.9	e2.1	e1.2	e.82	e.56	e1.0	.56	.11	.06	.03	.14	.00
20	9.4	e2.5	e1.1	e.78	e.56	e1.1	.55	.08	.06	.05	.12	.00
21	9.2	e6.0	e1.1	e.78	e.88	e1.1	.87	.07	.05	.05	.17	.00
22	8.7	e4.0	e1.3	e3.6	e1.4	e1.2	.52	.09	.05	.05	1.2	.00
23	7.6	e3.6	e1.2	e1.8	e1.1	e1.0	.33	.09	.05	.05	.62	.00
24	5.5	e3.2	e1.2	e.86	e.80	e1.2	.32	.09	.04	.06	.34	.00
25	3.6	e2.7	e1.2	e.70	e1.3	e.84	.28	.09	.04	.06	.31	.00
26	3.3	e2.0	e1.1	e.60	e5.4	e.68	.26	.09	.04	.06	.21	.60
27	4.3	e1.8	e1.2	e.47	e4.8	e.84	.26	.09	.04	.06	.24	.03
28	2.8	e2.0	e1.1	e.40	e1.0	e.74	.23	.09	.03	.07	.26	.01
29	2.0	e2.2	e1.1	e.40	---	e1.0	.22	.09	.03	.07	.21	.01
30	1.2	e2.4	e2.4	e.40	---	e.90	.23	.08	.03	.07	.18	.01
31	.95	---	e2.0	e.40	---	e.74	---	.09	---	.08	.17	---
TOTAL	171.45	73.13	60.8	30.21	32.78	21.91	13.22	5.24	1.95	1.20	6.20	1.56
MEAN	5.53	2.44	1.96	.97	1.17	.71	.44	.17	.065	.039	.20	.052
MAX	9.4	6.7	5.4	3.6	5.4	1.2	1.2	.37	.09	.08	1.2	.60
MIN	.95	.32	1.1	.40	.50	.28	.22	.07	.03	.02	.07	.00
AC-FT	340	145	121	60	65	43	26	10	3.9	2.4	12	3.1
CFSM	.55	.24	.20	.10	.12	.07	.04	.02	.01	.00	.02	.01
IN.	.64	.27	.23	.11	.12	.08	.05	.02	.01	.00	.02	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1997, BY WATER YEAR (WY)

MEAN	13.5	5.31	2.06	8.86	2.75	.94	1.03	4.68	2.32	1.92	2.36	17.9
MAX	76.1	28.4	6.09	68.8	12.4	2.08	3.07	36.6	10.4	7.80	6.06	81.2
(WY)	1991	1991	1991	1992	1991	1992	1992	1992	1993	1993	1990	1996
MIN	1.46	1.07	.75	.47	.49	.44	.28	.086	.036	.009	.001	.052
(WY)	1992	1994	1995	1994	1990	1990	1990	1994	1994	1994	1994	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1988 - 1997	
ANNUAL TOTAL	3176.39		419.65			
ANNUAL MEAN	8.68		1.15		5.31	
HIGHEST ANNUAL MEAN					11.2	1991
LOWEST ANNUAL MEAN					.57	1994
HIGHEST DAILY MEAN	1900	Sep 10	9.4	Oct 20	1900	Sep 10 1996
LOWEST DAILY MEAN	.03	May 25	.00	Sep 16	.00	Jun 24 1994
ANNUAL SEVEN-DAY MINIMUM	.05	May 29	.00	Sep 16	.00	Jul 21 1994
INSTANTANEOUS PEAK FLOW			unknown	Nov 11	18100	Sep 10 1996
INSTANTANEOUS PEAK STAGE			unknown	Nov 11	18.65	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	6300		832		3850	
ANNUAL RUNOFF (CFSM)	.87		.11		.53	
ANNUAL RUNOFF (INCHES)	11.82		1.56		7.22	
10 PERCENT EXCEEDS	7.6		3.6		5.4	
50 PERCENT EXCEEDS	1.1		.46		1.0	
90 PERCENT EXCEEDS	.12		.03		.10	

e Estimated

50100450 RIO MAJADA AT LA PLENA, PR

LOCATION.--Lat 18°02'40", long 66°12'27", Hydrologic Unit 21010004, on right bank, upstream side of bridge on Hwy 712, about 0.3 mi (0.5 km) southwest of La Plena.

DRAINAGE AREA.--16.7 mi² (43.3 km²).

PERIOD OF RECORD.--January 1973 to April 1979 (montly measurements only), September 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 410 ft (125 m), from topographic map.

REMARKS.-Records fair except those for estimated daily discharges, which are poor. Some regulation at low flow upstream from station by local residents for agricultural purposes.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	5.4	2.2	.76	.59	1.5	.86	.47	.33	.04	e.01	e.02
2	13	6.0	2.0	.64	.76	1.3	.88	.58	.21	.03	e.01	e.02
3	12	5.1	2.0	.63	.48	.96	2.2	.52	.23	.02	e.01	e.02
4	11	4.9	2.0	.58	.35	1.3	1.5	.49	.30	.02	e.01	e.01
5	9.8	4.3	2.0	.52	.30	1.3	1.0	.87	.47	.02	e.01	e.01
6	11	4.4	2.0	.56	.41	1.2	.85	.53	.30	.01	e.01	e.01
7	8.4	4.9	2.1	.51	.33	1.0	.62	.66	.27	.01	e.01	e.01
8	7.4	4.3	1.8	.47	.30	.96	.57	1.4	.17	.01	e.01	e.01
9	6.4	4.2	1.5	.49	.30	1.1	.54	.99	.17	.02	e.01	e.01
10	7.9	3.0	1.4	.52	.32	1.1	.66	1.0	.09	.01	e.01	e.00
11	10	14	4.3	.77	.33	.70	.52	1.1	.10	.03	e.02	e.00
12	7.1	22	2.4	1.1	.30	.54	.52	1.2	.06	e.01	e.02	e.01
13	6.0	8.2	1.6	.63	1.2	.52	.61	1.1	.06	e.01	e.03	e.01
14	6.3	3.5	1.3	.58	1.1	.63	.57	1.2	.05	e.01	e.02	e.00
15	6.0	2.8	1.2	.52	.55	.55	.64	1.3	.06	e.02	e.02	e.00
16	6.2	2.1	1.0	.52	.46	.82	1.2	1.2	.06	e.02	e.02	e.00
17	6.1	2.4	.86	.52	.36	1.2	.85	1.7	.04	e.02	e.03	e.00
18	8.0	2.2	.78	.47	.35	.90	.66	1.1	.02	e.01	e.03	e.00
19	9.9	2.1	.71	.49	.34	1.8	.37	.62	.04	e.00	e.02	e.00
20	6.4	2.7	.67	.47	.34	2.0	.29	.38	.04	e.00	e.02	e.00
21	5.9	7.0	.67	.47	.55	2.1	.29	.30	.05	e.00	e.02	e.00
22	5.5	5.1	.74	2.2	.84	2.2	.32	.39	.04	e.00	e.17	e.00
23	4.6	3.3	.73	1.1	.69	1.9	.29	.31	.02	e.00	e.08	e.00
24	4.4	2.9	.71	.51	.48	2.3	.29	.38	.05	e.00	e.05	e.00
25	4.0	2.4	.71	.42	.80	1.6	.29	.58	.06	e.00	e.04	e.00
26	5.0	1.6	.66	.36	3.3	1.3	.35	.54	.06	e.00	e.03	e.09
27	8.0	1.4	.70	.28	2.9	1.6	.32	.33	.05	e.00	e.04	e.00
28	6.8	1.6	.69	.24	1.9	1.4	.31	.33	.05	e.01	e.04	e.00
29	6.4	1.7	.68	.24	---	1.9	.32	.30	.04	e.01	e.03	e.00
30	6.5	1.9	1.4	.24	---	1.7	.38	.28	.05	e.01	e.03	e.00
31	6.0	---	1.2	.24	---	1.4	---	.35	---	e.01	e.02	---
TOTAL	238.0	137.4	42.71	18.05	20.93	40.78	19.07	22.50	3.54	0.36	0.88	0.23
MEAN	7.68	4.58	1.38	.58	.75	1.32	.64	.73	.12	.012	.028	.008
MAX	16	22	4.3	2.2	3.3	2.3	2.2	1.7	.47	.04	.17	.09
MIN	4.0	1.4	.66	.24	.30	.52	.29	.28	.02	.00	.01	.00
AC-FT	472	273	85	36	42	81	38	45	7.0	.7	1.7	.5
CFSM	.46	.27	.08	.03	.04	.08	.04	.04	.01	.00	.00	.00
IN.	.53	.31	.10	.04	.05	.09	.04	.05	.01	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1997, BY WATER YEAR (WY)

MEAN	12.5	6.53	3.24	9.74	3.07	1.92	1.43	3.78	3.18	3.21	2.17	19.9
MAX	76.4	25.2	9.67	68.8	12.1	3.92	3.69	25.5	12.1	12.9	7.74	109
(WY)	1991	1991	1991	1992	1991	1991	1992	1992	1992	1993	1992	1996
MIN	1.43	1.53	.62	.37	.63	.59	.30	.21	.042	.012	.010	.008
(WY)	1992	1994	1995	1995	1990	1990	1995	1994	1994	1997	1994	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1973 - 1997	
ANNUAL TOTAL	4464.33		544.45			
ANNUAL MEAN	12.2		1.49		5.90	
HIGHEST ANNUAL MEAN					12.1	1992
LOWEST ANNUAL MEAN					.81	1994
HIGHEST DAILY MEAN	2270	Sep 10	22	Nov 12	2270	Sep 10 1996
LOWEST DAILY MEAN	.51	May 22	.00	Jul 19	.00	Oct 3 1994
ANNUAL SEVEN-DAY MINIMUM	.69	May 6	.00	Jul 19	.00	Oct 8 1994
INSTANTANEOUS PEAK FLOW			47	Nov 11	17700	Sep 10 1996
INSTANTANEOUS PEAK STAGE			3.51	Nov 11	19.69	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	8850		1080		4270	
ANNUAL RUNOFF (CFSM)	.73		.089		.35	
ANNUAL RUNOFF (INCHES)	9.94		1.21		4.80	
10 PERCENT EXCEEDS	10		4.9		7.8	
50 PERCENT EXCEEDS	2.4		.52		1.6	
90 PERCENT EXCEEDS	.86		.01		.15	

e Estimated

RIO COAMO BASIN

50106100 RIO COAMO AT COAMO, PR

LOCATION.--Lat 18°05'00", long 66°21'16", Hydrologic Unit 21010004, on Highway 14 bridge, 0.8 mi (1.3 km) northeast from Parque Atlético, 1.2 mi (1.9 km) southeast from (W.C.P.R.) Antena de Radio.

DRAINAGE AREA.--3.5 mi² (112.7 km²).

PERIOD OF RECORD.--January 1987 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 335 ft (110 m), from topographic map.

REMARKS.--Records poor. Low flow is affected by domestic discharges about 200 ft (65.6 m), upstream from gaging station. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	19	14	13	7.8	5.4	5.3	3.1	3.7	2.5	2.0	1.8
2	19	20	12	20	10	5.8	18	3.0	3.5	2.1	2.1	1.7
3	28	21	14	16	8.4	5.4	15	3.3	3.4	2.2	2.8	1.5
4	27	23	16	16	7.6	5.5	6.5	3.2	2.7	2.1	2.7	1.5
5	22	22	17	12	7.3	5.0	5.5	3.5	2.5	2.2	1.7	1.5
6	47	21	16	12	7.3	4.9	5.2	3.1	2.5	2.2	2.0	1.5
7	34	21	15	10	7.2	5.1	5.1	2.9	2.9	1.9	1.8	1.5
8	27	18	15	10	7.1	5.1	5.1	2.7	3.4	2.1	1.9	1.5
9	27	25	14	9.9	7.2	5.2	4.6	3.0	3.4	2.6	5.1	1.5
10	29	37	14	9.3	7.2	5.0	4.6	3.1	3.8	2.5	3.8	1.5
11	30	30	15	8.7	6.9	4.6	4.5	3.0	4.5	1.9	2.4	1.5
12	25	25	15	9.3	6.7	4.6	4.1	3.2	4.0	1.9	2.2	1.4
13	26	21	12	7.7	6.9	4.7	4.1	2.8	3.2	1.9	79	1.4
14	24	18	13	6.8	6.6	4.5	3.7	2.8	2.8	1.9	4.3	1.5
15	22	16	15	7.7	5.8	4.8	3.5	2.9	2.5	2.0	2.2	1.7
16	24	18	14	7.7	5.9	4.6	3.6	3.1	2.8	2.1	2.0	1.4
17	36	66	13	7.2	6.3	4.8	3.4	3.9	2.1	2.0	2.0	1.4
18	35	49	11	6.8	5.8	4.7	3.7	4.4	2.2	2.4	1.8	1.4
19	47	45	11	6.5	5.9	5.1	3.7	4.0	2.6	2.8	1.7	1.4
20	34	61	11	7.9	6.1	4.4	4.0	3.5	2.5	5.1	1.7	1.4
21	38	112	11	7.7	5.8	4.2	4.0	3.2	2.9	4.2	1.6	1.4
22	31	51	11	15	6.1	3.9	3.7	3.8	2.7	3.3	1.8	1.4
23	28	58	11	14	6.3	3.9	3.8	3.5	2.6	3.1	1.8	1.5
24	25	51	10	11	5.8	4.7	3.6	3.3	2.9	2.8	2.2	1.6
25	23	34	10	10	5.4	3.8	3.7	3.2	2.3	3.0	2.1	1.5
26	24	25	10	9.6	6.0	3.6	3.8	3.9	2.2	2.5	1.7	1.7
27	27	18	10	8.6	6.0	5.3	3.5	4.6	2.3	2.8	1.6	1.6
28	29	17	11	8.1	5.3	13	3.4	4.1	2.9	2.9	1.8	2.1
29	28	15	13	7.7	---	e8.8	3.1	3.9	2.5	2.8	1.7	19
30	37	14	35	7.0	---	6.5	3.0	3.5	2.7	2.5	1.7	7.5
31	22	---	13	7.3	---	5.6	---	3.3	---	1.9	1.6	---
TOTAL	896	971	422	310.5	186.7	162.5	148.8	104.8	87.0	78.2	144.8	69.3
MEAN	28.9	32.4	13.6	10.0	6.67	5.24	4.96	3.38	2.90	2.52	4.67	2.31
MAX	47	112	35	20	10	13	18	4.6	4.5	5.1	79	19
MIN	19	14	10	6.5	5.3	3.6	3.0	2.7	2.1	1.9	1.6	1.4
AC-FT	1780	1930	837	616	370	322	295	208	173	155	287	137
CFSM	.66	.74	.31	.23	.15	.12	.11	.08	.07	.06	.11	.05
IN.	.77	.83	.36	.27	.16	.14	.13	.09	.07	.07	.12	.06

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1997, BY WATER YEAR (WY)

MEAN	55.5	27.2	17.7	18.4	9.26	5.86	10.5	15.8	14.2	7.27	8.75	28.8
MAX	274	62.9	83.8	79.0	17.0	9.79	27.6	69.6	76.1	15.5	23.3	92.8
(WY)	1991	1988	1988	1992	1988	1988	1987	1992	1987	1988	1990	1996
MIN	10.3	4.91	3.72	2.71	3.17	3.09	2.49	1.66	1.99	.78	1.28	1.61
(WY)	1989	1995	1989	1995	1989	1987	1995	1989	1989	1989	1994	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1987 - 1997	
ANNUAL TOTAL	7560.1		3581.6			
ANNUAL MEAN	20.7		9.81		17.7	
HIGHEST ANNUAL MEAN					36.8	1991
LOWEST ANNUAL MEAN					4.52	1994
HIGHEST DAILY MEAN	1440	Sep 10	112	Nov 21	1580	Jan 5 1992
LOWEST DAILY MEAN	1.3	Jul 6	1.4	Sep 12	.67	Aug 2 1989
ANNUAL SEVEN-DAY MINIMUM	1.6	Jun 30	1.4	Sep 16	.70	Jul 27 1989
INSTANTANEOUS PEAK FLOW			977	Nov 21	51600	Jan 8 1992
INSTANTANEOUS PEAK STAGE			7.18	Nov 21	25.67	Jan 8 1992
ANNUAL RUNOFF (AC-FT)	15000		7100		12850	
ANNUAL RUNOFF (CFSM)	.47		.23		.41	
ANNUAL RUNOFF (INCHES)	6.47		3.06		5.54	
10 PERCENT EXCEEDS	35		25		33	
50 PERCENT EXCEEDS	8.5		4.7		6.8	
90 PERCENT EXCEEDS	4.1		1.8		2.1	

e Estimated

50106500 RIO COAMO NEAR COAMO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°03'52", long 66°22'10", Hydrologic Unit 21010004, on Highway 153 bridge, 0.4 mi (0.6 km) above Río de la Mina, and 1.8 mi (2.9 km) south of Coamo plaza.

DRAINAGE AREA.--46.0 mi² (119.1 km²).

PERIOD OF RECORD.--Water years 1978 to current year.

WATER-QUALITY RECORDS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
24...	1035	19	564	8.2	28.0	0.70	8.5	106	<10	K730	K91
FEB 1997											
26...	0915	8.4	620	7.3	25.0	0.30	8.8	104	<10	3100	K170
MAY											
21...	0905	4.4	612	7.2	27.0	1.5	8.4	104	<10	K140	K110
SEP											
03...	1145	2.2	607	7.5	33.0	1.5	8.0	113	<10	370	K1800

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
24...	240	63	19	31	0.9	2.9	200	<0.5	36	37
FEB 1997										
26...	--	--	--	--	--	--	250	--	--	--
MAY										
21...	200	70	6.8	14	0.4	1.4	230	<0.5	7.9	25
SEP										
03...	230	59	20	35	1	2.7	250	--	33	39

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
24...	0.20	31	340	17.4	3	2.30	0.010	2.30	0.020	0.43
FEB 1997										
26...	--	--	--	--	<1	2.00	0.010	2.00	0.020	0.24
MAY										
21...	<0.10	6.2	269	3.19	2	0.830	0.020	0.030	0.030	<0.20
SEP										
03...	0.18	36	374	2.26	4	0.960	0.020	0.980	0.040	0.20

DATE	NITRO-GEN,AN-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
24...	0.45	2.8	12	0.150	<1	<100	70	<1	<1	20
FEB 1997										
26...	0.26	2.3	10	0.100	--	--	--	--	--	--
MAY										
21...	<0.20	1.0	4.6	0.080	<1	<100	20	<1	<1	<10
SEP										
03...	0.24	1.2	5.4	0.160	--	--	--	--	--	--

K = non-ideal count

50106500 RIO COAMO NEAR COAMO, PR--Continued

WATER-QUALITY RECORDS, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
24...	170	5	20	<0.10	<1	<1	<10	<0.010	9	<0.01
FEB 1997										
26...	--	--	--	--	--	--	--	--	--	--
MAY										
21...	110	<1	30	<0.10	<1	<1	<10	<0.010	3	<0.01
SEP										
03...	--	--	--	--	--	--	--	--	--	--

RIO DESCALABRADO BASIN

50108000 RIO DESCALABRADO NEAR LOS LLANOS, PR

LOCATION.--Lat 18°03'08", long 66°25'34", Hydrologic Unit 21010004, at bridge on Highway 14, 1.5 mi (2.4 km) west of Los Llanos, and 5.3 mi (8.5 km) east of Juana Díaz.

DRAINAGE AREA.--12.9 mi² (33.4 km²).

PERIOD OF RECORD.--1959-65 (annual low-flow measurements only), 1965 (annual maximum discharge), January 1966 to June 1969, July to December 1969 (maximum discharge only), February 1984 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 220 ft (67 m), from topographic map.

REMARKS.--Records poor. Some regulation at low flow by local resident upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e11	e7.0	8.4	4.5	2.4	1.1	.68	.36	.18	.13	1.2	e.15
2	e10	e6.2	8.1	8.6	2.3	1.0	.55	.32	.15	.14	2.7	e.14
3	e9.2	e5.8	7.6	13	2.2	.95	.47	.32	.16	.16	1.5	e.12
4	9.2	e5.4	7.5	7.4	2.2	.95	.56	.31	.15	.18	1.8	e.12
5	8.8	e5.0	7.3	3.7	2.1	.88	.56	.31	.15	.32	2.3	e.12
6	8.1	e4.7	6.6	3.5	1.9	.83	.56	.32	.15	.16	2.6	e.12
7	7.6	4.5	6.3	3.2	2.1	.87	.53	.30	.16	.30	3.8	e.12
8	7.2	4.2	6.6	4.4	1.9	.85	.58	.30	.15	.17	1.5	e.12
9	6.3	30	6.7	5.8	1.8	.83	.49	.31	.13	.14	2.3	e.12
10	6.1	16	6.3	3.2	1.8	.73	.56	.26	.14	.31	.33	e.12
11	5.9	8.9	6.3	4.9	1.9	.69	.57	.28	.14	.34	e.30	e.12
12	4.7	8.8	5.8	3.8	1.8	.73	.53	.28	.15	.25	e.18	e.25
13	4.3	6.8	5.7	3.4	1.6	.73	.54	.28	.12	.38	e6.4	.40
14	3.9	5.2	6.3	3.6	1.5	.77	.51	.29	.13	.18	e.35	.57
15	3.7	5.4	11	3.4	1.7	.77	.49	.29	.13	.57	e.18	.43
16	3.3	19	11	3.3	1.7	1.2	.51	.24	.13	.20	e.16	1.3
17	3.1	e97	5.5	3.5	1.6	1.3	.47	.25	.13	1.2	e.16	.47
18	3.1	e18	4.9	3.5	1.6	.86	.48	.24	.14	.28	e.15	.14
19	36	13	4.1	3.3	1.5	.56	.51	.25	.12	.15	e.14	.13
20	23	22	3.9	3.1	1.6	.55	.52	.25	.14	.15	e.14	.11
21	53	e71	4.2	3.1	1.4	.57	.52	.21	.15	.15	e.13	.23
22	73	e19	4.0	4.5	1.4	.52	.46	.17	.18	.15	e.15	.85
23	22	e106	3.7	3.1	1.4	.54	.47	.17	.25	.21	e.15	.25
24	12	e46	3.5	2.9	1.5	.57	.51	.19	.38	.24	e.18	.17
25	9.4	13	3.4	2.6	1.3	.62	.47	.19	.77	.24	e.17	.19
26	7.9	10	3.1	2.8	1.1	.55	.49	.18	.15	.39	e.14	.57
27	7.6	9.4	3.0	2.4	1.2	.46	.45	.17	.43	.68	e.13	.45
28	10	8.4	4.8	2.6	1.2	.35	.44	.18	.39	.30	e.15	3.8
29	9.5	8.0	5.5	2.5	---	.42	.45	.16	.30	.85	e.14	98
30	14	7.7	5.5	2.3	---	.60	.40	.17	.14	.50	e.14	20
31	e10	---	5.1	2.7	---	.62	---	.16	---	.52	e.13	---
TOTAL	402.9	591.4	181.7	124.6	47.7	22.97	15.33	7.71	5.99	9.94	29.80	129.68
MEAN	13.0	19.7	5.86	4.02	1.70	.74	.51	.25	.20	.32	.96	4.32
MAX	73	106	11	13	2.4	1.3	.68	.36	.77	1.2	6.4	98
MIN	3.1	4.2	3.0	2.3	1.1	.35	.40	.16	.12	.13	.13	.11
AC-FT	799	1170	360	247	95	46	30	15	12	20	59	257
CFSM	1.01	1.53	.45	.31	.13	.06	.04	.02	.02	.02	.07	.34
IN.	1.16	1.71	.52	.36	.14	.07	.04	.02	.02	.03	.09	.37

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1997, BY WATER YEAR (WY)

MEAN	26.6	14.8	5.02	4.84	3.64	1.97	4.22	14.8	4.98	2.69	3.98	34.8
MAX	117	41.0	24.5	36.4	23.9	8.93	18.8	62.2	25.2	10.5	13.1	395
(WY)	1986	1985	1988	1992	1995	1996	1985	1985	1987	1991	1996	1996
MIN	2.02	1.04	.19	.057	.020	.012	.000	.032	.000	.000	.19	.063
(WY)	1968	1995	1968	1968	1968	1968	1968	1968	1967	1967	1990	1967

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1966 - 1997	
ANNUAL TOTAL	15617.79		1569.72			
ANNUAL MEAN	42.7		4.30		10.8	
HIGHEST ANNUAL MEAN					41.7	1996
LOWEST ANNUAL MEAN					1.69	1994
HIGHEST DAILY MEAN	10000	Sep 10	106	Nov 23	10000	Sep 10 1996
LOWEST DAILY MEAN	.34	Jan 24	.11	Sep 20	.00	Jun 22 1966
ANNUAL SEVEN-DAY MINIMUM	.38	Jan 22	.12	Sep 3	.00	Jun 22 1966
INSTANTANEOUS PEAK FLOW			1530	Sep 29	30000	Oct 7 1985
INSTANTANEOUS PEAK STAGE			7.77	Jul 22	24.37	Oct 7 1985
ANNUAL RUNOFF (AC-FT)	30980		3110		7830	
ANNUAL RUNOFF (CFSM)	3.31		.33		.84	
ANNUAL RUNOFF (INCHES)	45.04		4.53		11.38	
10 PERCENT EXCEEDS	27		8.8		14	
50 PERCENT EXCEEDS	4.0		.77		1.3	
90 PERCENT EXCEEDS	.65		.15		.05	

e Estimated

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR

LOCATION.--Lat 18°07'37", long 66°27'24", Hydrologic Unit 21010004, on right bank, off a dirt road about 0.3 mi (0.5 km) from road 553, 2.4 mi (3.9 km) southeast from Villalba plaza, and 0.2 mi (0.3 km) downstream from confluence with Quebrada Limón.

DRAINAGE AREA.--7.64 mi² (19.79 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1989 to current year.

GAGE.--Water stage recorder. Elevation of gage is 525 ft (160 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e16	18	19	7.0	5.6	3.0	2.4	1.2	1.7	1.7	1.3	1.9
2	e14	18	17	10	5.3	3.0	2.6	1.2	1.6	1.2	1.3	28
3	e21	17	17	8.9	4.7	2.9	2.6	1.2	1.6	1.1	1.3	15
4	e22	17	17	11	4.5	3.0	2.3	1.2	1.5	1.1	1.3	3.7
5	19	17	16	7.0	4.5	3.0	2.2	1.2	1.4	.95	1.5	4.9
6	24	16	15	6.3	4.3	2.9	2.0	1.1	1.5	.82	1.5	2.0
7	26	16	14	6.6	4.4	2.9	1.9	1.1	1.6	.76	1.5	1.7
8	21	16	13	6.5	4.4	2.9	2.0	1.1	1.2	.92	1.8	1.4
9	18	33	13	6.3	4.2	2.8	2.1	1.2	1.3	.98	36	1.2
10	18	24	13	6.4	4.1	2.9	2.0	1.5	1.2	1.1	9.9	1.2
11	17	41	17	6.8	4.0	2.7	1.8	1.4	1.3	1.2	2.6	1.1
12	n16	29	13	7.1	3.8	2.6	1.8	1.1	1.3	1.4	2.2	1.1
13	15	21	12	7.3	3.8	2.6	1.8	1.1	1.3	1.3	17	1.4
14	16	17	11	20	3.7	2.6	1.9	1.1	1.3	1.3	7.5	1.5
15	15	16	11	12	3.5	2.6	1.9	1.1	1.2	1.4	2.7	1.4
16	13	24	9.9	6.8	3.6	2.6	1.7	.98	.96	1.4	1.8	1.4
17	13	54	9.0	6.2	3.3	2.5	1.7	1.1	1.5	1.9	1.7	1.3
18	14	57	8.6	7.1	3.3	2.4	1.7	1.1	1.4	2.0	1.6	1.3
19	28	44	8.5	7.1	3.4	2.6	1.6	1.0	1.2	2.1	1.5	1.2
20	17	47	8.0	7.1	3.3	2.5	1.7	.91	1.2	3.5	1.4	1.0
21	53	69	7.6	7.2	3.0	2.4	1.6	1.1	1.1	1.5	1.5	1.1
22	40	46	7.3	11	3.3	2.4	1.8	1.4	1.1	.74	1.6	1.4
23	39	79	7.0	12	3.1	2.5	1.9	1.0	1.0	.63	1.6	1.3
24	28	73	6.8	9.1	3.0	2.5	1.7	1.0	1.1	.60	1.9	1.2
25	23	39	6.8	8.6	3.0	2.4	1.5	1.2	1.0	.57	2.7	1.2
26	21	29	6.6	7.2	3.1	2.4	1.3	2.3	.98	.57	1.8	1.9
27	21	25	6.8	6.3	3.1	2.6	1.4	4.5	.97	.64	2.1	1.5
28	20	21	6.8	5.7	3.0	2.8	1.3	3.4	1.1	.73	7.0	2.1
29	21	20	9.3	5.5	---	4.2	1.4	1.8	1.9	.81	3.8	79
30	30	19	7.8	5.2	---	3.2	1.3	1.7	1.7	.95	2.1	29
31	21	---	7.0	5.2	---	2.5	---	1.6	---	1.2	1.8	---
TOTAL	680	962	341.8	246.5	106.3	84.9	54.9	43.89	39.21	37.07	125.3	193.4
MEAN	21.9	32.1	11.0	7.95	3.80	2.74	1.83	1.42	1.31	1.20	4.04	6.45
MAX	53	79	19	20	5.6	4.2	2.6	4.5	1.9	3.5	36	79
MIN	13	16	6.6	5.2	3.0	2.4	1.3	.91	.96	.57	1.3	1.0
AC-FT	1350	1910	678	489	211	168	109	87	78	74	249	384
CFSM	1.54	2.26	.78	.56	.27	.19	.13	.10	.09	.08	.28	.45
IN.	1.78	2.52	.90	.65	.28	.22	.14	.11	.10	.10	.33	.51

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1997, BY WATER YEAR (WY)

MEAN	42.2	17.1	6.98	9.97	5.45	3.49	7.94	19.5	10.2	6.69	6.91	32.6
MAX	109	40.1	12.4	43.1	12.6	5.01	26.3	76.1	35.4	14.4	11.9	94.6
(WY)	1991	1991	1993	1992	1996	1996	1993	1995	1992	1992	1989	1996
MIN	4.61	2.19	1.42	1.79	2.38	1.67	1.46	1.42	1.23	.71	2.74	3.21
(WY)	1992	1992	1992	1995	1990	1990	1990	1997	1990	1990	1990	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1989 - 1997		
ANNUAL TOTAL	6940.7		2915.27				
ANNUAL MEAN	19.0		7.99		14.2		
HIGHEST ANNUAL MEAN					20.3		1996
LOWEST ANNUAL MEAN					4.02		1994
HIGHEST DAILY MEAN	2050	Sep 10	79	Nov 23	2050	Sep 10	1996
LOWEST DAILY MEAN	2.2	Aug 9	.57	Jul 25	.45	Aug 7	1990
ANNUAL SEVEN-DAY MINIMUM	2.7	Aug 4	.64	Jul 22	.61	Jul 9	1990
INSTANTANEOUS PEAK FLOW			821	Sep 29	15000	Sep 10	1996
INSTANTANEOUS PEAK STAGE			6.19	Sep 29	18.65	Sep 10	1996
INSTANTANEOUS LOW FLOW			.42	Jul 14	.42	Jul 14	1997
ANNUAL RUNOFF (AC-FT)	13770		5780		10290		
ANNUAL RUNOFF (CFSM)	1.34		.56		1.00		
ANNUAL RUNOFF (INCHES)	18.18		7.64		13.59		
10 PERCENT EXCEEDS	29		21		31		
50 PERCENT EXCEEDS	7.4		2.6		4.1		
90 PERCENT EXCEEDS	3.3		1.1		1.3		

e Estimated

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1988 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: April 1988 to current year.

INSTRUMENTATION.-- USDH-48 and automatic sediment sampler since 1988.

REMARKS.-- Sediment samples were collected by a local observer on a weekly basis. During high flow events sediment samples were collected by a local observer and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 10,200 mg/L September 10, 1996; Minimum daily mean, 1 mg/L several years.

SEDIMENT LOADS: Maximum daily mean, 75,700 tons (68,600 tonnes) September 10, 1996; Minimum daily mean, <0.01 ton (<0.01 tonne) several years.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,810 mg/L September 29, 1997; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 1,550 tons (1,406 tonnes) September 29, 1997; Minimum daily mean, 0.01 ton (0.01 tonne) several days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	e16	16	e1.2	18	27	1.3	19	18	.88
2	e14	17	e1.3	18	19	.89	17	33	1.5
3	e21	21	e1.5	17	20	.91	17	40	1.8
4	e22	27	e1.6	17	21	.95	17	44	2.0
5	19	34	1.7	17	23	1.1	16	53	2.3
6	24	113	9.1	16	26	1.1	15	64	2.6
7	26	136	10	16	22	.96	14	58	2.3
8	21	23	1.3	16	18	.77	13	48	1.7
9	18	5	.22	33	345	69	13	40	1.4
10	18	6	.28	24	183	12	13	33	1.1
11	17	11	.52	41	518	107	17	81	4.2
12	16	12	.51	29	251	21	13	77	2.8
13	15	11	.44	21	136	7.6	12	55	1.8
14	16	10	.43	17	120	5.6	11	42	1.3
15	15	11	.44	16	106	4.5	11	33	.95
16	13	13	.49	24	206	19	9.9	26	.69
17	13	25	.88	54	941	323	9.0	26	.63
18	14	59	2.4	57	855	153	8.6	28	.64
19	28	281	43	44	1030	125	8.5	19	.44
20	17	102	4.9	47	689	87	8.0	12	.26
21	53	720	252	69	1060	461	7.6	8	.17
22	40	538	134	46	581	79	7.3	6	.11
23	39	193	22	79	1330	520	7.0	15	.30
24	28	50	3.8	73	686	175	6.8	19	.34
25	23	22	1.4	39	9	1.1	6.8	19	.35
26	21	20	1.2	29	6	.43	6.6	11	.19
27	21	24	1.4	25	16	1.1	6.8	5	.09
28	20	27	1.5	21	12	.72	6.8	8	.15
29	21	25	1.4	20	6	.33	9.3	18	.45
30	30	212	36	19	9	.46	7.8	36	.77
31	21	100	5.9	---	---	---	7.0	40	.76
TOTAL	680	---	542.81	962	---	2180.82	341.8	---	34.97

e Estimated

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	7.0	39	.72	5.6	28	.42	3.0	3	.02
2	10	54	1.8	5.3	24	.35	3.0	1	.01
3	8.9	49	1.2	4.7	21	.26	2.9	1	.01
4	11	80	2.3	4.5	16	.19	3.0	1	.01
5	7.0	79	1.5	4.5	12	.15	3.0	1	.01
6	6.3	75	1.3	4.3	10	.11	2.9	2	.01
7	6.6	55	.95	4.4	11	.13	2.9	4	.03
8	6.5	38	.65	4.4	14	.16	2.9	8	.06
9	6.3	35	.60	4.2	17	.20	2.8	10	.08
10	6.4	37	.63	4.1	22	.24	2.9	12	.09
11	6.8	37	.67	4.0	28	.30	2.7	13	.09
12	7.1	36	.69	3.8	34	.35	2.6	7	.05
13	7.3	36	.70	3.8	38	.39	2.6	3	.02
14	20	141	11	3.7	41	.41	2.6	1	.01
15	12	56	2.7	3.5	44	.45	2.6	2	.02
16	6.8	10	.22	3.6	47	.46	2.6	7	.05
17	6.2	14	.26	3.3	51	.45	2.5	17	.11
18	7.1	22	.42	3.3	53	.47	2.4	14	.09
19	7.1	21	.39	3.4	39	.35	2.6	8	.05
20	7.1	19	.37	3.3	26	.25	2.5	5	.03
21	7.2	20	.39	3.0	18	.16	2.4	5	.03
22	11	21	.62	3.3	21	.19	2.4	7	.04
23	12	11	.37	3.1	29	.24	2.5	8	.05
24	9.1	5	.12	3.0	38	.31	2.5	5	.03
25	8.6	4	.09	3.0	23	.19	2.4	2	.02
26	7.2	4	.08	3.1	17	.14	2.4	1	.01
27	6.3	4	.07	3.1	15	.12	2.6	2	.01
28	5.7	8	.12	3.0	7	.05	2.8	4	.03
29	5.5	16	.24	---	---	---	4.2	13	.19
30	5.2	24	.33	---	---	---	3.2	17	.15
31	5.2	30	.42	---	---	---	2.5	11	.08
TOTAL	246.5	---	31.92	106.3	---	7.49	84.9	---	1.49

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (NG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	2.4	8	.05	1.2	8	.03	1.7	4	.02
2	2.6	11	.08	1.2	9	.03	1.6	3	.01
3	2.6	20	.14	1.2	12	.04	1.6	3	.01
4	2.3	35	.22	1.2	15	.05	1.5	3	.01
5	2.2	34	.20	1.2	13	.04	1.4	4	.01
6	2.0	27	.14	1.1	10	.03	1.5	4	.01
7	1.9	22	.12	1.1	8	.03	1.6	4	.01
8	2.0	27	.15	1.1	8	.02	1.2	3	.01
9	2.1	37	.20	1.2	8	.03	1.3	3	.01
10	2.0	48	.27	1.5	8	.03	1.2	3	.01
11	1.8	50	.24	1.4	8	.03	1.3	4	.01
12	1.8	47	.23	1.1	8	.03	1.3	4	.01
13	1.8	45	.22	1.1	8	.03	1.3	5	.02
14	1.9	47	.24	1.1	8	.03	1.3	7	.02
15	1.9	51	.26	1.1	8	.02	1.2	8	.03
16	1.7	55	.25	.98	8	.02	.96	5	.01
17	1.7	49	.22	1.1	8	.02	1.5	2	.01
18	1.7	41	.19	1.1	8	.02	1.4	1	<.01
19	1.6	34	.15	1.0	8	.02	1.2	1	<.01
20	1.7	32	.14	.91	8	.02	1.2	1	<.01
21	1.6	31	.13	1.1	8	.02	1.1	2	<.01
22	1.8	29	.14	1.4	8	.03	1.1	2	.01
23	1.9	23	.12	1.0	8	.02	1.0	3	.01
24	1.7	17	.08	1.0	8	.02	1.1	3	.01
25	1.5	13	.05	1.2	8	.03	1.0	3	.01
26	1.3	18	.06	2.3	12	.17	.98	3	.01
27	1.4	30	.11	4.5	33	1.9	.97	2	<.01
28	1.3	47	.17	3.4	19	.25	1.1	2	.01
29	1.4	32	.12	1.8	6	.03	1.9	2	.01
30	1.3	16	.05	1.7	4	.02	1.7	2	.01
31	---	---	---	1.6	4	.02	---	---	---
TOTAL	54.9	---	4.74	43.89	---	3.08	39.21	---	0.30

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	1.7	2	.01	1.3	6	.02	1.9	5	.03
2	1.2	2	.01	1.3	6	.02	28	534	163
3	1.1	3	.01	1.3	6	.02	15	103	6.3
4	1.1	3	.01	1.3	6	.02	3.7	26	.26
5	.95	3	.01	1.5	6	.03	4.9	59	2.1
6	.82	3	.01	1.5	17	.07	2.0	101	.56
7	.76	5	.01	1.5	50	.20	1.7	90	.41
8	.92	10	.03	1.8	39	.26	1.4	81	.31
9	.98	20	.05	36	557	200	1.2	72	.24
10	1.1	30	.09	9.9	58	2.7	1.2	65	.20
11	1.2	40	.13	2.6	14	.10	1.1	56	.16
12	1.4	52	.19	2.2	11	.06	1.1	49	.15
13	1.3	29	.10	17	142	22	1.4	42	.16
14	1.3	12	.04	7.5	21	.40	1.5	41	.16
15	1.4	5	.02	2.7	12	.08	1.4	40	.15
16	1.4	5	.02	1.8	12	.06	1.4	40	.15
17	1.9	6	.03	1.7	13	.06	1.3	43	.16
18	2.0	7	.04	1.6	9	.04	1.3	48	.16
19	2.1	8	.04	1.5	6	.03	1.2	53	.17
20	3.5	23	.65	1.4	4	.02	1.0	54	.15
21	1.5	5	.02	1.5	4	.02	1.1	55	.16
22	.74	4	.01	1.6	5	.02	1.4	54	.21
23	.63	5	.01	1.6	5	.02	1.3	47	.17
24	.60	7	.01	1.9	5	.03	1.2	40	.13
25	.57	7	.01	2.7	6	.04	1.2	33	.11
26	.57	7	.01	1.8	6	.03	1.9	28	.14
27	.64	7	.01	2.1	10	.06	1.5	23	.09
28	.73	7	.01	7.0	94	14	2.1	19	.11
29	.81	7	.01	3.8	16	.20	79	1810	1550
30	.95	7	.02	2.1	7	.04	29	235	22
31	1.2	7	.02	1.8	6	.03	---	---	---
TOTAL	37.07	---	1.64	125.3	---	240.68	193.4	---	1748.10
YEAR	2915.27		4798.04						

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
NOV 1996							
21...	1445	392	16400	17300	12	15	21
21...	1455	392	5860	6200	23	30	40
21...	1520	247	3290	2190	28	37	49
SEP 1997							
29...	1510	418	36600	41300	7	10	15
29...	1545	821	6328	14000	30	41	51

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
NOV 1996							
21...	27	34	46	74	95	99	100
21...	52	61	77	92	98	100	100
21...	63	76	90	97	99	100	100
SEP 1997							
29...	22	31	50	68	92	98	99
29...	69	82	93	98	99	100	100

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
21...	1521	594	112	180	99
NOV					
21...	1450	392	7820	8300	72
JAN 1997					
06...	1420	6.5	77	1.4	98
MAR					
29...	1630	3.2	8	0.10	53
AUG					
09...	1700	224	4120	2490	99
SEP					
29...	1600	427	6170	7110	94

50111300 LAGO GUAYABAL AT DAMSITE NEAR JUANA DIAZ, PR

LOCATION.--Lat 18°05'17", long 66°30'09", Hydrologic Unit 21010004, at Damsite, 2.30 mi (3.70 km) northeast from Juana Díaz plaza, 0.70 mi (1.13 km) northeast from Escuela Salvador Bousquets and 2.45 mi (3.94 km) southeast from Escuela Zoilo Gracia.

DRAINAGE AREA.--21.0 mi² (54.4 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--April 1995 to current year.

GAGE.--Water stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago Guayabal was completed in 1913. The dam is a reinforced concrete, flatslab and buttress-type structure about 130 ft (40 m) height, a net crest lenght at the right side of the dam of 693 ft (211 m) and a crest elevation of 331 ft (101 m). It has a maximum storage capacity of 7,600 acre-feet (9.37 hm³). The Guayabal Dam is owned by the Puerto Rico Electric Power Authority (P.R.E.P.A) and its primary purpose is for irrigation of lands served by the Juana Diaz Canal. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 341.55 ft (104.10 m), Sept. 10, 1996; minimum elevation, 325.99 ft (99.36 m), Sept. 29, 1997.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 341.39 ft (104.06 m), Nov. 22, 23; minimum elevation, 325.99 ft (99.36 m), Sept. 29.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
305	366	330	3,885
321	2,010	341	7,360

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	340.85	340.82	340.83	340.57	340.81	340.65	339.39	337.33	335.49	333.09	330.48	328.89
2	A	340.72	340.76	340.96	340.87	340.56	339.47	337.32	335.69	332.93	330.13	329.80
3	340.90	340.65	340.76	340.91	340.86	340.65	339.42	337.17	335.98	332.77	329.81	329.96
4	340.85	340.71	340.70	340.78	340.88	340.68	339.42	337.00	A	332.54	329.58	329.88
5	340.71	340.71	340.66	340.69	340.89	340.72	339.24	337.03	A	332.30	329.31	329.91
6	A	340.70	340.65	340.63	340.88	340.71	339.09	337.01	A	332.06	328.79	330.02
7	340.81	340.72	340.55	340.69	340.88	340.63	339.08	336.95	336.45	331.97	328.55	330.11
8	340.86	340.73	340.48	340.75	340.77	340.46	339.03	336.89	336.43	331.85	A	330.26
9	340.85	340.76	340.53	340.83	340.72	340.32	338.97	336.83	336.36	331.72	328.42	330.21
10	340.86	340.91	340.56	340.85	340.81	340.33	338.91	336.69	336.26	331.57	328.49	330.06
11	340.85	340.98	340.67	340.73	340.89	340.32	338.85	336.53	336.16	331.38	328.45	329.89
12	340.71	340.92	340.76	340.63	340.91	340.32	338.68	336.53	336.02	331.12	328.33	329.74
13	340.65	340.91	340.83	340.76	340.89	340.32	338.52	336.44	335.85	330.86	328.72	329.51
14	340.76	340.87	340.72	341.01	340.85	340.31	338.55	336.39	335.58	330.79	329.44	329.27
15	340.80	340.88	340.67	340.92	340.72	340.16	338.58	336.34	335.29	330.67	329.69	329.16
16	340.82	340.78	340.73	340.85	340.65	340.08	338.58	336.31	335.18	330.54	329.54	328.94
17	340.83	341.02	340.72	340.81	340.60	340.04	338.58	336.11	335.07	330.42	329.38	328.71
18	340.80	341.04	340.71	340.70	340.67	340.04	338.54	335.91	334.93	330.39	329.38	328.41
19	340.87	340.91	340.73	340.63	340.73	340.00	338.37	335.87	A	330.27	329.22	328.17
20	340.89	341.00	340.72	340.62	340.73	339.98	338.20	335.86	A	330.57	329.23	327.84
21	340.91	340.85	340.62	340.71	340.77	339.98	338.13	335.89	334.52	330.82	329.30	327.53
22	340.85	340.91	340.55	340.84	340.65	339.81	338.13	335.93	A	330.95	329.27	327.34
23	340.80	340.82	340.59	340.89	340.56	339.67	337.97	335.87	A	331.06	329.01	327.09
24	340.82	341.07	340.65	340.96	340.63	339.69	337.82	335.69	334.20	331.15	328.81	326.83
25	340.82	341.02	340.64	340.97	340.68	339.66	337.65	335.52	334.04	331.15	328.80	326.64
26	340.71	340.99	340.66	340.82	340.73	339.64	337.50	335.50	333.89	331.15	328.60	326.46
27	340.68	340.96	340.65	340.91	340.76	339.60	337.34	335.60	333.73	331.17	328.67	326.22
28	340.78	340.88	340.54	340.94	340.78	339.50	337.37	335.76	333.52	331.24	329.09	326.09
29	340.82	340.95	340.48	340.93	---	339.39	337.37	335.80	333.31	331.02	329.37	328.66
30	340.96	340.87	340.56	340.93	---	339.31	337.34	335.83	333.25	330.85	329.23	328.88
31	340.84	---	340.65	340.88	---	339.33	---	335.66	---	330.62	329.05	---
MAX	340.96	341.07	340.83	341.01	340.91	340.72	339.47	337.33	336.45	333.09	330.48	330.26
MIN	340.65	340.65	340.48	340.57	340.56	339.31	337.34	335.50	333.25	330.27	328.33	326.09

CAL YR 1996 MAX 341.10 MIN 339.38
WTR YR 1997 MAX 341.07 MIN 326.09

A No gage-height record

RIO JACAGUAS BASIN

50111500 RIO JACAGUAS AT JUANA DIAZ, PR

LOCATION.--Lat 18°03'16", long 66°30'40", Hydrologic Unit 21010004, on Highway 14 bridge, 0.4 mi (0.6 km) west of Juana Díaz plaza, and 4.0 mi (6.4 km) downstream from Lago Guayabal.

DRAINAGE AREA.--49.8 mi² (129.0 km²).

PERIOD OF RECORD.--March 1984 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 131 ft (40 m), from topographic map.

REMARKS.--Records poor. Flow regulation from Lago Guayabal. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	e18	e33	e27	e23	12	5.4	e3.2	e4.3	e1.4	e1.3	.51
2	e38	e17	e33	e25	e20	8.4	6.2	e3.2	e4.3	e1.1	e1.3	.46
3	e57	e17	e33	e30	e19	8.0	e5.0	e3.2	e3.9	e.90	e1.3	.37
4	59	e17	e31	e19	e19	7.7	e4.8	e3.2	e3.8	e.90	e1.3	.43
5	43	e15	e29	e18	e18	7.8	e4.3	e3.0	e4.0	e.86	e1.5	.43
6	e27	e15	e27	e19	e19	e8.8	e4.1	e3.0	e4.3	e.80	e1.5	.70
7	25	e15	e25	e18	e19	e9.1	e4.2	e3.0	e3.2	e.94	e1.8	e.94
8	38	e32	e25	e18	e18	e8.3	e4.5	e3.2	e3.5	e1.0	e37	e.98
9	47	e28	e25	e18	e17	8.3	e4.2	e4.0	e3.2	e1.1	e9.0	e1.0
10	e45	e45	e32	e19	e16	8.1	e3.5	e3.7	e3.5	e1.2	e2.7	.95
11	e47	e35	e25	e20	e15	7.6	e3.5	e2.9	e3.5	e1.4	e2.3	.81
12	35	e27	e23	e20	e15	7.4	e3.5	e2.9	e3.5	e1.3	e17	.70
13	21	e21	e23	e74	e14	7.4	e3.7	e2.9	e3.5	e1.3	e8.0	e.82
14	19	e20	e23	e43	e13	7.4	e3.7	e2.9	e2.7	e1.4	e3.8	e.78
15	25	e27	e22	e26	e13	7.4	e3.4	e2.6	e2.3	e1.4	1.9	e.78
16	31	e80	e22	e25	e12	7.4	e3.3	e2.9	e3.4	e2.0	1.4	e.76
17	34	e84	e22	e31	e11	6.6	e3.3	e2.9	e2.6	e2.1	1.1	.64
18	33	e66	e21	e31	e12	7.1	e3.2	e2.7	e2.2	e2.1	1.1	.58
19	51	e70	e20	e31	e10	e7.3	e3.3	e2.5	e2.2	e3.5	.87	.56
20	e81	e100	e19	e31	e9.2	e6.6	e3.2	e3.0	e2.0	e1.5	.83	.50
21	71	e70	e18	e48	e10	e6.6	e3.5	e3.7	e2.0	e.76	.94	.51
22	55	e120	e18	e51	e9.4	e7.0	e4.1	e2.6	e1.6	e.66	1.0	.74
23	39	e110	e18	e39	e9.2	e7.0	e3.6	e2.6	e1.7	e.62	1.0	.81
24	31	e80	e18	e38	e9.2	e6.6	e3.3	e3.2	e1.4	e.60	.85	.62
25	30	e54	e17	e31	e9.4	e6.6	e3.0	e8.6	e1.3	e.60	.69	.38
26	28	e49	e18	e27	e9.4	6.2	e3.4	e10	e1.3	e.68	.82	.55
27	20	e40	e18	e25	8.4	6.2	e3.2	e8.8	e1.4	e.76	1.1	.82
28	19	e38	e23	e24	10	6.1	e3.7	e4.8	e2.0	e.86	.89	.68
29	e28	e36	e20	e23	---	6.2	e3.4	e4.5	e1.9	e1.0	.90	1.2
30	e20	e36	e18	e23	---	6.4	e3.2	e4.3	e1.9	e1.2	.84	2.9
31	e18	---	e18	e24	---	5.7	---	e4.5	---	e1.3	.68	---
TOTAL	1169	1382	717	896	387.2	229.3	114.7	118.5	82.4	37.24	106.71	22.91
MEAN	37.7	46.1	23.1	28.9	13.8	7.40	3.82	3.82	2.75	1.20	3.44	.76
MAX	81	120	33	74	23	12	6.2	10	4.3	3.5	37	2.9
MIN	18	15	17	18	8.4	5.7	3.0	2.5	1.3	.60	.68	.37
AC-FT	2320	2740	1420	1780	768	455	228	235	163	74	212	45
CFSM	.76	.93	.46	.58	.28	.15	.08	.08	.06	.02	.07	.02
IN.	.87	1.03	.54	.67	.29	.17	.09	.09	.06	.03	.08	.02

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1997, BY WATER YEAR (WY)

MEAN	117	86.0	34.5	24.7	8.88	5.16	10.9	65.5	38.3	21.9	19.1	40.0
MAX	445	287	151	144	16.9	8.60	34.7	215	198	82.4	41.1	164
(WY)	1986	1988	1988	1992	1991	1996	1992	1985	1987	1987	1985	1985
MIN	4.31	7.57	7.31	3.77	1.98	1.95	1.84	1.46	.93	1.04	1.59	.76
(WY)	1995	1995	1995	1995	1994	1994	1994	1994	1994	1994	1994	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1984 - 1997	
ANNUAL TOTAL	13219.7		5262.96			
ANNUAL MEAN	36.1		14.4		40.3	
HIGHEST ANNUAL MEAN					80.9	1986
LOWEST ANNUAL MEAN					6.23	1994
HIGHEST DAILY MEAN	1100	Sep 10	120	Nov 22	4530	Nov 27 1987
LOWEST DAILY MEAN	2.0	Feb 4	.37	Sep 3	.24	Jan 3 1992
ANNUAL SEVEN-DAY MINIMUM	2.2	Jan 30	.51	Aug 31	.51	Aug 31 1997
INSTANTANEOUS PEAK FLOW			7210	Nov 21	40000	Oct 7 1985
INSTANTANEOUS PEAK STAGE			15.29	Nov 21	29.42	Oct 7 1985
ANNUAL RUNOFF (AC-FT)	26220		10440		29210	
ANNUAL RUNOFF (CFSM)	.73		.29		.81	
ANNUAL RUNOFF (INCHES)	9.87		3.93		11.00	
10 PERCENT EXCEEDS	77		36		87	
50 PERCENT EXCEEDS	21		6.6		8.1	
90 PERCENT EXCEEDS	4.2		.84		2.3	

e Estimated

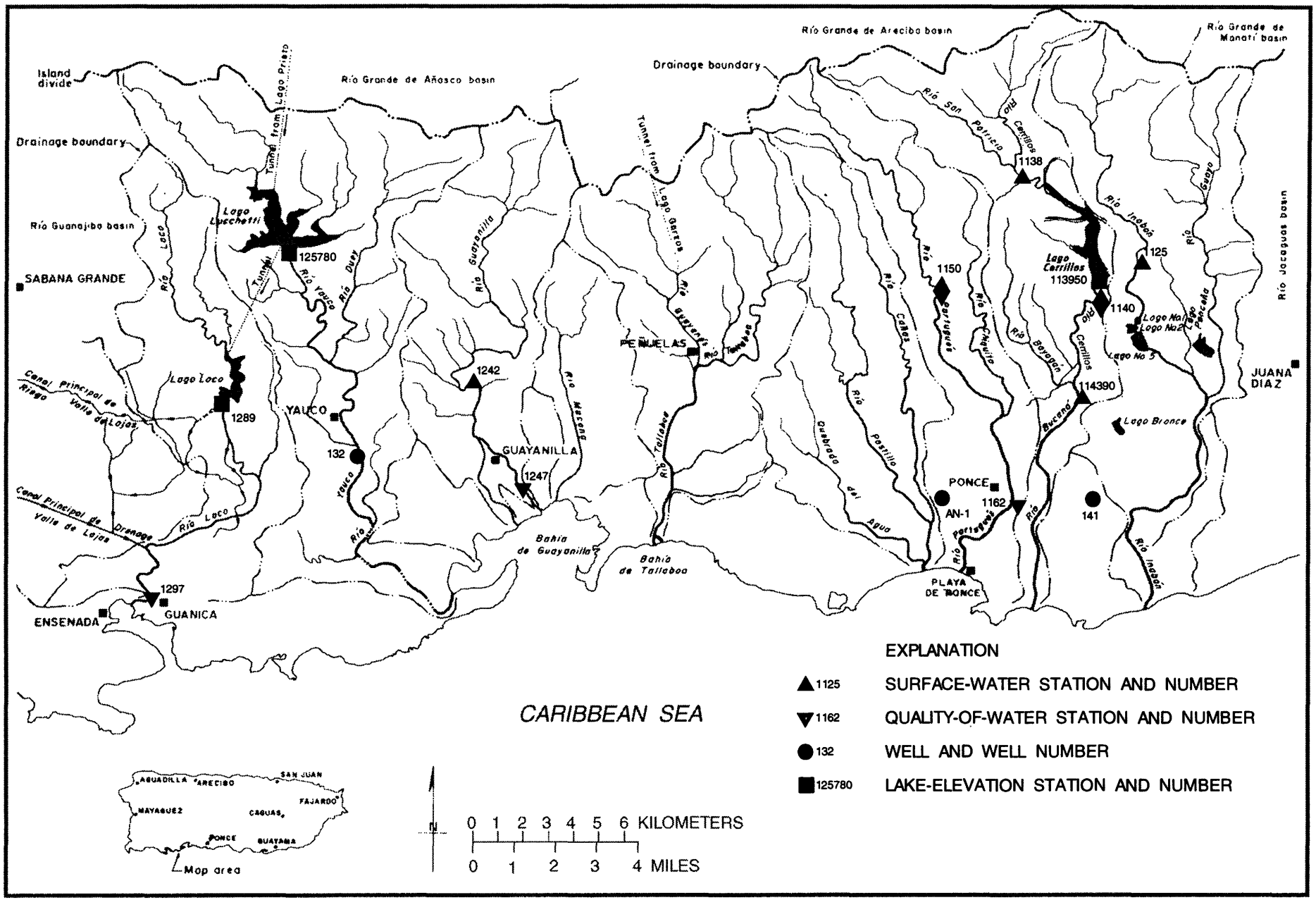

Figure 23.--South coast river basins the Río Inabón to Río Loco basins.

RIO INABON BASIN

50112500 RIO INABON AT REAL ABAJO, PR

LOCATION.--Lat 18°05'10", long 66°33'46", Hydrologic Unit 21010004, at bridge on private road, off Highway 511 at Hacienda La Concordia, 0.4 mi (0.6 km) upstream from diversion canal, 0.5 mi (0.8 km) north of Real Abajo, and 6.1 mi (9.8 km) northeast of Plaza Degetau in Ponce.

DRAINAGE AREA.--9.70 mi² (25.12 km²).

PERIOD OF RECORD.--1962-63 (annual low-flow measurements only), February to June 1964 (monthly measurements only), July 1964 to July 1970, April 1971 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 410 ft (125 m), from topographic map. Prior to April 1971 non-recording gage and crest-stage gage at different datum.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	17	13	9.4	8.0	4.7	4.2	2.7	3.4	2.3	3.5	6.8
2	31	15	12	28	15	4.7	4.4	2.8	3.4	2.6	3.4	e18
3	32	14	11	16	11	5.2	3.7	7.2	3.3	2.8	7.7	e14
4	26	13	11	11	7.5	4.9	3.4	5.9	3.3	3.3	7.8	11
5	23	12	9.7	9.3	7.1	4.6	3.1	2.9	3.4	4.0	3.7	5.6
6	21	13	8.9	9.7	6.8	4.9	2.7	e2.9	3.4	3.5	3.0	4.8
7	21	12	8.9	8.9	6.2	4.8	2.9	e3.0	2.9	3.7	2.8	4.1
8	21	12	8.7	22	6.1	4.4	2.8	e3.0	2.9	6.0	e19	3.6
9	21	14	8.6	14	6.1	4.3	2.8	2.4	3.4	5.8	e15	3.1
10	20	12	8.6	9.9	6.6	4.1	2.7	7.0	3.5	3.9	e13	2.8
11	21	12	12	8.8	6.5	4.0	2.8	2.9	3.4	e4.2	e7.8	3.0
12	20	16	9.3	8.4	6.3	4.2	2.7	2.5	3.3	e4.7	e8.8	4.5
13	19	13	8.5	16	5.7	4.2	2.6	2.3	3.1	e4.9	e13	5.9
14	20	11	8.8	16	4.9	e4.1	2.8	2.4	3.0	3.8	e38	4.3
15	22	10	10	14	4.8	e4.0	2.8	2.0	2.7	3.2	e25	5.1
16	21	11	9.5	9.0	4.5	e3.9	2.7	1.9	2.7	3.0	e23	4.0
17	20	21	9.2	7.6	4.6	e3.8	2.6	2.0	2.9	2.8	15	3.3
18	21	e40	8.9	8.2	4.6	e4.0	2.7	1.9	2.8	3.9	15	2.9
19	34	23	8.8	9.1	5.2	e8.8	2.7	2.0	4.6	5.3	12	2.6
20	27	19	9.7	10	4.5	e5.0	2.7	2.0	6.3	8.6	11	2.2
21	45	e86	11	12	5.0	e3.7	3.0	2.6	3.6	11	8.7	2.6
22	33	37	10	14	5.0	e3.3	2.5	2.2	3.1	6.7	7.9	3.5
23	23	e107	8.9	10	4.2	e3.2	2.3	1.9	3.5	4.6	10	3.5
24	20	103	8.5	8.1	4.2	e3.1	2.5	1.8	3.2	3.8	e11	e4.3
25	17	41	8.9	7.8	4.3	e3.0	2.9	1.7	2.2	3.4	7.7	e3.0
26	16	29	10	7.6	4.6	e3.4	2.7	4.8	2.2	3.4	5.2	3.6
27	15	22	12	7.7	4.5	e7.0	2.6	26	2.6	3.6	5.8	2.7
28	17	19	12	7.6	4.5	e6.0	2.2	16	3.0	3.5	e38	4.9
29	16	16	12	7.5	---	e5.0	2.1	5.3	2.9	3.3	e17	e29
30	19	15	11	7.3	---	e4.0	2.3	4.0	3.6	3.3	e13	e16
31	19	---	10	7.0	---	e3.5	---	3.6	---	3.5	7.4	---
TOTAL	724	785	309.4	341.9	168.3	137.8	84.9	131.6	97.6	132.4	379.2	184.7
MEAN	23.4	26.2	9.98	11.0	6.01	4.45	2.83	4.25	3.25	4.27	12.2	6.16
MAX	45	107	13	28	15	8.8	4.4	26	6.3	11	38	29
MIN	15	10	8.5	7.0	4.2	3.0	2.1	1.7	2.2	2.3	2.8	2.2
AC-FT	1440	1560	614	678	334	273	168	261	194	263	752	366
CFSM	2.41	2.70	1.03	1.14	.62	.46	.29	.44	.34	.44	1.26	.63
IN.	2.78	3.01	1.19	1.31	.65	.53	.33	.50	.37	.51	1.45	.71

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1997, BY WATER YEAR (WY)

MEAN	45.2	33.2	12.2	8.60	5.75	5.73	8.06	19.2	15.7	11.7	16.9	32.9
MAX	148	77.9	26.5	45.5	13.1	16.4	19.2	76.7	49.8	32.7	46.1	119
(WY)	1986	1978	1966	1992	1996	1972	1992	1969	1969	1979	1979	1975
MIN	14.5	8.32	4.43	4.11	3.05	1.85	2.76	1.94	2.75	1.77	4.47	6.16
(WY)	1994	1977	1977	1989	1977	1977	1975	1967	1967	1990	1974	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1964 - 1997	
ANNUAL TOTAL	7499.9		3476.8			
ANNUAL MEAN	20.5		9.53		17.8	
HIGHEST ANNUAL MEAN					30.9	1969
LOWEST ANNUAL MEAN					7.44	1994
HIGHEST DAILY MEAN	754	Sep 10	107	Nov 23	2500	Sep 16 1975
LOWEST DAILY MEAN	4.1	Feb 4	1.7	May 25	.80	Jul 23 1977
ANNUAL SEVEN-DAY MINIMUM	4.4	Jan 31	2.0	May 14	1.1	Mar 31 1977
INSTANTANEOUS PEAK FLOW			1270	Nov 23	19000	Oct 7 1985
INSTANTANEOUS PEAK STAGE			12.55	Nov 23	25.30	Oct 7 1985
ANNUAL RUNOFF (AC-FT)	14880		6900		12890	
ANNUAL RUNOFF (CFSM)	2.11		.98		1.83	
ANNUAL RUNOFF (INCHES)	28.76		13.33		24.92	
10 PERCENT EXCEEDS	34		20		39	
50 PERCENT EXCEEDS	11		5.6		8.9	
90 PERCENT EXCEEDS	6.2		2.7		3.2	

e Estimated

RIO BUCANA BASIN

50113800 RIO CERRILLOS ABOVE LAGO CERRILLOS NEAR PONCE, PR

LOCATION.--Lat 18°07'01", long 66°36'17", Hydrologic Unit 21010004, on right bank, 0.3 mi (0.5 km) downstream from confluence with Río San Patricio, 0.1 mi (0.2 km) southwest of Hwy 139 and 2.4 mi (3.7 km) northwest of Mayagüez.

DRAINAGE AREA.-- 15.4 mi² (39.9 km²).

PERIOD OF RECORD.--December 1988 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 720 ft (210 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85	28	33	13	12	7.2	6.6	3.9	4.1	3.5	4.3	43
2	67	25	31	35	16	7.2	7.0	3.9	4.1	3.4	4.1	60
3	72	24	29	24	12	7.2	8.2	7.8	4.0	3.3	24	37
4	56	23	28	19	11	7.3	6.6	5.0	4.0	3.3	11	16
5	47	22	27	17	11	7.1	6.2	4.1	4.0	3.2	6.1	11
6	40	27	26	16	11	7.0	5.9	5.9	4.0	3.1	5.4	9.7
7	36	24	26	14	10	6.9	5.7	5.4	3.8	3.4	5.1	8.4
8	33	23	25	15	10	6.9	5.9	4.3	3.7	23	7.4	7.6
9	32	34	24	16	10	6.8	5.5	8.2	3.6	8.9	21	7.1
10	31	31	24	15	10	6.8	4.8	8.4	3.6	4.9	20	6.7
11	29	28	30	14	11	6.5	4.9	5.6	3.5	4.2	14	6.4
12	30	42	23	13	11	6.3	4.8	4.9	3.5	19	15	11
13	29	32	22	19	9.6	6.3	4.7	4.6	3.4	8.9	e23	8.7
14	28	24	21	18	9.2	6.2	4.7	4.6	3.4	5.2	e34	6.7
15	36	22	21	15	9.2	6.3	4.6	4.2	3.3	4.6	e31	6.6
16	29	22	20	14	8.9	6.4	4.6	4.3	3.2	4.5	e13	6.3
17	26	77	19	13	8.7	6.2	4.5	4.5	3.2	4.4	e9.7	6.4
18	27	84	18	13	8.7	6.7	4.5	4.1	3.5	5.0	e8.2	6.0
19	44	56	17	13	8.8	10	4.4	3.9	12	5.3	e7.3	5.8
20	55	47	17	15	8.6	6.2	4.4	3.9	6.3	11	6.9	5.4
21	80	162	17	26	8.5	5.9	4.4	4.2	4.2	15	7.6	5.7
22	62	90	16	23	8.1	5.7	4.6	4.0	4.1	10	24	7.7
23	41	241	16	17	7.9	5.5	4.5	3.9	4.8	6.4	18	6.8
24	34	141	15	15	7.7	5.5	4.3	4.0	4.5	5.2	19	30
25	31	74	15	14	7.8	5.6	4.1	3.9	3.7	4.7	13	13
26	29	57	15	13	7.7	5.5	4.1	4.1	3.5	4.4	8.7	9.8
27	29	47	15	13	7.7	9.9	4.0	12	3.8	4.3	10	7.7
28	36	42	16	13	7.4	9.2	4.0	10	4.0	4.3	22	8.7
29	31	38	15	12	---	8.3	3.9	4.9	3.6	4.2	19	16
30	28	36	14	11	---	7.7	3.9	4.3	3.7	4.0	14	12
31	34	---	14	11	---	6.4	---	4.1	---	4.1	10	---
TOTAL	1267	1623	649	499	269.5	212.7	150.3	160.9	124.1	198.7	435.8	393.2
MEAN	40.9	54.1	20.9	16.1	9.63	6.86	5.01	5.19	4.14	6.41	14.1	13.1
MAX	85	241	33	35	16	10	8.2	12	12	23	34	60
MIN	26	22	14	11	7.4	5.5	3.9	3.9	3.2	3.1	4.1	5.4
AC-FT	2510	3220	1290	990	535	422	298	319	246	394	864	780
CFSM	3.43	4.55	1.76	1.35	.81	.58	.42	.44	.35	.54	1.18	1.10
IN.	3.96	5.07	2.03	1.56	.84	.66	.47	.50	.39	.62	1.36	1.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 1997, BY WATER YEAR (WY)

MEAN	65.5	33.5	15.7	16.7	12.2	11.1	13.7	24.0	22.6	14.6	28.2	55.2
MAX	154	59.3	26.2	59.0	26.1	27.5	24.3	68.2	46.4	26.7	53.1	126
(WY)	1991	1993	1993	1992	1996	1989	1989	1993	1996	1991	1991	1996
MIN	24.6	9.77	8.10	6.59	6.34	4.77	5.01	4.58	4.14	3.37	11.3	13.1
(WY)	1992	1994	1995	1995	1990	1990	1997	1990	1997	1994	1994	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1989 - 1997	
ANNUAL TOTAL	13792.8		5983.2			
ANNUAL MEAN	37.7		16.4		25.7	
HIGHEST ANNUAL MEAN					35.7	1993
LOWEST ANNUAL MEAN					9.94	1994
HIGHEST DAILY MEAN	1580	Sep 10	241	Nov 23	1580	Sep 10 1996
LOWEST DAILY MEAN	6.6	May 8	3.1	Jul 6	3.0	Jul 6 1994
ANNUAL SEVEN-DAY MINIMUM	6.9	May 6	3.3	Jul 1	3.2	Jul 27 1994
INSTANTANEOUS PEAK FLOW			2120	Nov 23	10600	Sep 10 1996
INSTANTANEOUS PEAK STAGE			5.72	Nov 23	10.62	Sep 10 1996
INSTANTANEOUS LOW FLOW			3.0	Jul 6		
ANNUAL RUNOFF (AC-FT)	27360		11870		18580	
ANNUAL RUNOFF (CFSM)	3.17		1.38		2.16	
ANNUAL RUNOFF (INCHES)	43.12		18.70		29.29	
10 PERCENT EXCEEDS	73		34		56	
50 PERCENT EXCEEDS	22		8.9		13	
90 PERCENT EXCEEDS	8.7		4.0		4.7	

e Estimated

RIO BUCANA BASIN

50113950 LAGO CERRILLOS AT DAMSITE NEAR PONCE, PR

LOCATION.--Lat 18°04'41", long 66°34'38", Hydrologic Unit 21010004, on left bank west from intake house of dam, 0.7 mi (1.1 km) southwest from Iglesia San Mateo at Real Abajo, 3.2 mi (5.1 km) northeast from Hospital de Distrito de Ponce, and 2.2 mi (3.5 km) northwest from Escuela Yuca.

DRAINAGE AREA.--17.4 mi² (45.1 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--October 1992 to current year .

REVISED RECORDS.--WDR PR-94-1: 1993,1994.

GAGE.--Water-stage recorder. Datum of gage is mean sea level.

REMARKS.--Lake is formed by Cerrillos Dam, a rockfilled ungated structure completed in 1992. Elevation of crest is 611 ft (186 m) above mean sea level, with a structural height of 323 ft (98 m) and a lenght of 1,555 ft (474 m). The dam has a capacity of approximately 47,900 ac-ft (59.1 hm³). The dam is operated by U.S. Army Corps of Engineers and its purpose is for flood control, water supply, power generation, and recreation. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 580.83 ft (177.04 m), Nov. 24, 1996; Minimum elevation, 416.63 ft (126.99 m), Oct. 1, 1992, (Revised).

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 580.83 ft (177.04 m), Nov. 24; minimum elevation, 558.76 ft (170.31 m), Sept. 29.

Capacity Table

(based on data from U.S. Army Corps of Engineers)

Elevation , in feet	Contents in acre-feet	Elevation, in feet	Contents in acre-feet
328	0	525	16,990
426	3,206	558	25,786
492	10,621	590	37,509

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	574.37	572.66	577.78	578.10	578.11	578.44	576.02	575.68	575.66	571.48	566.99	A
2	A	572.75	577.78	578.26	578.22	578.44	576.03	575.66	575.65	571.32	566.73	563.29
3	573.47	572.83	577.91	578.21	578.26	578.44	576.04	575.70	575.65	571.16	566.78	563.24
4	573.40	572.89	578.02	578.16	578.29	578.46	576.04	575.68	575.64	571.01	566.65	563.12
5	573.29	572.95	578.11	578.06	578.30	578.45	576.04	575.67	575.48	570.84	566.46	562.96
6	573.15	573.05	578.11	577.96	578.32	578.45	576.01	575.68	575.36	570.67	566.25	562.79
7	572.99	573.11	578.08	577.96	578.33	578.44	575.99	575.66	575.13	570.50	566.12	562.61
8	572.80	573.23	577.98	578.07	578.33	578.43	576.00	575.64	574.95	570.46	565.96	562.43
9	572.67	573.37	577.91	578.11	578.35	578.42	575.98	575.65	574.81	570.36	565.85	562.24
10	572.63	573.46	577.95	578.17	578.36	578.41	575.98	575.69	574.65	570.21	565.81	562.05
11	572.55	573.59	578.06	578.21	578.38	578.35	575.98	575.69	574.50	570.09	565.67	561.85
12	572.62	573.86	578.13	578.24	578.40	578.32	575.96	575.68	574.33	570.01	565.54	561.69
13	572.67	574.01	578.20	578.30	578.41	578.33	575.94	575.67	574.15	569.89	565.44	561.51
14	572.59	574.10	578.28	578.37	578.42	578.33	575.93	575.68	574.00	569.76	565.67	561.31
15	573.20	574.16	578.37	578.41	578.42	578.33	575.92	575.66	573.85	569.61	565.67	561.11
16	573.30	574.22	578.36	578.45	578.43	578.33	575.90	575.63	573.65	569.56	565.50	560.89
17	573.39	574.81	578.28	578.38	578.43	578.33	575.89	575.63	573.52	569.39	565.26	560.69
18	573.39	575.24	578.17	578.25	578.43	578.38	575.88	575.61	573.36	569.24	565.00	560.48
19	573.36	575.48	578.08	578.11	578.43	578.42	575.87	575.55	573.25	569.10	A	560.29
20	573.34	575.81	577.98	578.07	578.43	578.41	575.86	575.53	573.11	569.06	564.72	560.06
21	573.29	577.66	577.98	578.17	578.43	575.95	575.85	575.56	572.96	569.00	564.52	559.83
22	572.35	578.00	578.04	578.28	578.44	575.85	575.84	575.51	572.82	568.90	564.35	559.67
23	571.63	580.39	578.07	578.33	578.44	575.85	575.82	575.51	572.69	568.73	564.19	559.47
24	571.77	580.05	578.11	578.37	578.44	575.85	575.81	575.50	572.53	568.55	564.10	559.43
25	571.87	578.60	578.17	578.38	578.44	575.89	575.78	575.49	572.38	568.33	563.95	559.25
26	572.00	578.42	578.20	578.43	578.45	575.83	575.76	575.52	572.22	568.12	563.75	559.06
27	572.08	578.34	578.26	578.35	578.45	575.90	575.74	575.63	572.04	567.95	563.60	558.87
28	572.22	578.23	578.32	578.22	578.45	575.93	575.72	575.69	571.90	567.76	563.50	558.84
29	572.33	578.09	578.39	578.07	---	575.95	575.69	575.69	571.73	567.56	563.41	558.98
30	572.44	577.95	578.33	578.05	---	576.01	575.70	575.68	571.63	567.34	563.26	558.88
31	572.56	---	578.24	578.06	---	576.01	---	575.67	---	567.12	562.93	---
MAX	574.37	580.39	578.39	578.45	578.45	578.46	576.04	575.70	575.66	571.48	566.99	563.29
MIN	571.63	572.66	577.78	577.96	578.11	575.83	575.69	575.49	571.63	567.12	562.93	558.84

CAL YR 1996 MAX 580.39 MIN 541.26
WTR YR 1997 MAX 580.39 MIN 558.84

A No gage-height record

50114000 RIO CERRILLOS NEAR PONCE, PR

LOCATION.--Lat 18°04'15", long 66°34'51", Hydrologic Unit 21010004, on right bank off Highway 139, 0.8 mi (1.3 km) below Lago Cerrillos Dam, 2.3 mi (3.7 km) upstream from Quebrada Ausubo and 4.6 mi (7.4 km) northeast of Plaza Degetau in Ponce.

DRAINAGE AREA.--17.8 mi² (46.1 km²), excludes 17.4 mi² (45.1 km²) upstream from Lago Cerrillos Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to April 1964 (monthly measurements only), May 1964 to June 1985, July 1985 to April 1991 (semi-monthly measurements only), May 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 253.10 ft (77.145 m), above mean sea level. Prior to March 22, 1977 at site 0.15 mi (0.24 km) upstream and datum 9.90 ft (3.018 m) higher.

REMARKS.--Records poor. Flow regulated by Lago Cerrillos Dam since May 1991. Gage-height and precipitation satellite telemetry at station. Prior to June 1985 some low-flow regulation by construction upstrream. Maximum discharge prior to regulation, 22,400 ft³/s (6.34 m³/s), Sept. 16, 1975, gage-height, 11.2 ft (3.414 m), site and datum then in use from floodmarks, from rating curve extended above 150 ft³/s (4.25 m³/s), on basis of slope-area measurements of peak flow; minimum discharge prior to regulation, 2.2 ft³/s (0.062 m³/s), May 28, 1967.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	145	13	74	43	5.6	5.6	7.2	6.7	5.4	4.9	5.9	5.9
2	239	13	28	43	5.7	5.5	7.1	6.6	5.2	6.3	5.5	5.9
3	131	9.8	4.5	43	5.7	5.5	6.9	6.9	4.9	5.0	8.8	5.9
4	80	5.0	4.6	43	5.7	6.3	6.7	7.2	6.1	5.1	5.7	8.1
5	80	4.8	4.7	43	5.7	5.5	6.3	7.2	4.9	5.1	5.3	5.8
6	80	5.0	23	43	5.5	5.6	6.1	7.2	4.9	5.2	5.3	5.5
7	80	5.3	40	18	5.5	5.5	5.9	7.5	4.9	5.1	5.1	5.2
8	93	6.3	41	4.9	5.5	5.5	5.6	7.5	4.9	5.2	4.8	4.7
9	69	5.4	41	4.9	5.5	5.5	5.6	7.5	4.8	5.2	4.8	4.5
10	35	5.3	16	5.0	5.5	5.5	5.7	7.5	4.8	5.2	6.4	4.1
11	18	5.7	4.3	5.2	5.5	5.5	5.9	7.5	4.8	5.6	5.0	3.9
12	5.1	6.2	4.1	5.0	5.5	5.5	5.8	7.5	4.8	5.3	4.6	4.1
13	5.2	5.5	4.1	5.1	5.5	5.5	5.6	7.5	4.7	5.4	4.6	4.0
14	5.1	5.3	4.1	5.0	5.5	7.0	5.8	7.5	4.8	5.5	4.7	3.9
15	5.0	5.3	4.0	5.1	5.5	5.7	6.0	7.4	4.7	5.6	4.6	4.0
16	17	5.6	23	5.1	5.5	5.8	6.0	7.3	4.7	5.9	4.7	3.8
17	25	5.5	37	30	5.5	5.7	5.9	7.4	4.7	5.9	5.0	3.9
18	38	5.5	37	43	5.5	6.3	6.0	7.3	4.8	5.9	5.1	3.9
19	80	6.0	37	43	5.5	5.7	6.0	7.3	4.9	5.8	5.1	3.9
20	80	6.0	37	28	5.6	5.5	6.1	7.4	4.9	6.1	5.1	3.9
21	185	5.9	15	5.1	5.7	329	6.1	7.5	4.9	6.1	5.1	3.9
22	291	65	3.9	4.9	5.7	40	6.1	8.6	4.8	6.0	5.2	3.9
23	185	197	3.9	4.7	5.7	8.5	6.0	7.3	4.9	5.9	5.3	3.9
24	6.0	319	3.8	4.7	5.7	7.9	6.4	7.1	4.9	5.9	5.3	3.9
25	5.3	354	3.8	4.7	5.7	7.6	6.5	7.0	4.9	5.9	5.3	4.0
26	5.3	114	3.8	4.7	5.7	7.6	6.7	6.7	4.9	5.9	5.3	4.0
27	5.3	76	3.8	27	5.7	7.7	7.1	6.6	4.9	6.0	5.6	4.1
28	5.5	74	3.7	48	5.7	8.0	7.4	6.3	4.9	6.0	5.7	4.1
29	8.7	74	3.7	51	---	7.8	6.9	6.0	4.9	6.0	5.7	4.5
30	12	74	21	22	---	8.2	6.7	5.8	4.9	6.1	5.7	4.3
31	13	---	43	5.7	---	7.7	---	5.7	---	8.0	5.7	---
TOTAL	2032.5	1482.4	577.8	647.8	156.6	554.2	188.1	220.5	147.5	177.1	166.0	135.5
MEAN	65.6	49.4	18.6	20.9	5.59	17.9	6.27	7.11	4.92	5.71	5.35	4.52
MAX	291	354	74	51	5.7	329	7.4	8.6	6.1	8.0	8.8	8.1
MIN	5.0	4.8	3.7	4.7	5.5	5.5	5.6	5.7	4.7	4.9	4.6	3.8
AC-FT	4030	2940	1150	1280	311	1100	373	437	293	351	329	269
CFSM	3.68	2.78	1.05	1.17	.31	1.00	.35	.40	.28	.32	.30	.25
IN.	4.25	3.10	1.21	1.35	.33	1.16	.39	.46	.31	.37	.35	.28

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1997, BY WATER YEAR (WY)

MEAN	70.8	54.3	21.8	14.9	9.64	10.1	15.4	37.3	26.3	23.5	31.6	59.7
MAX	202	124	49.1	74.2	20.0	20.3	106	221	88.9	71.1	82.4	256
(WY)	1971	1978	1966	1992	1969	1969	1985	1985	1969	1968	1968	1975
MIN	4.93	5.21	4.81	4.52	4.37	5.07	4.93	4.14	3.69	4.75	5.26	4.52
(WY)	1996	1996	1995	1993	1993	1995	1979	1967	1995	1995	1995	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1964 - 1997	
ANNUAL TOTAL	8518.8		6486.0			
ANNUAL MEAN	23.3		17.8		30.7	
HIGHEST ANNUAL MEAN					53.9	1969
LOWEST ANNUAL MEAN					5.35	1995
HIGHEST DAILY MEAN	536	Sep 11	354	Nov 25	11500	Oct 7 1985
LOWEST DAILY MEAN	3.5	Jul 27	3.7	Dec 28	.64	Aug 19 1992
ANNUAL SEVEN-DAY MINIMUM	3.8	Dec 23	3.8	Dec 23	1.7	Aug 24 1992
INSTANTANEOUS PEAK FLOW			1250	Mar 21	1320	Sep 10 1996
INSTANTANEOUS PEAK STAGE			7.55	Mar 21	7.74	Sep 10 1996
ANNUAL RUNOFF (AC-FT)	16900		12860		22270	
ANNUAL RUNOFF (CFSM)	1.31		1.00		1.73	
ANNUAL RUNOFF (INCHES)	17.80		13.56		23.47	
10 PERCENT EXCEEDS	64		42		73	
50 PERCENT EXCEEDS	5.7		5.7		14	
90 PERCENT EXCEEDS	4.4		4.6		5.0	

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

WATER-QUALITY RECORDS

Location.--Lat 18°04'15", long 66°34'51", Hydrologic unit 21010004, on right bank off Highway 139, 2.3 mi (3.7 km) upstream from Quebrada Ausubo and 4.6 mi (7.4 km) northeast of Plaza Degetau in Ponce.

DRAINAGE AREA.--17.8 mi² (46.1 km²)

PERIOD OF RECORD.--Water years 1964 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
16...	0945	5.0	372	8.0	26.0	0.50	8.5	103	<10	K90	310
FEB 1997											
28...	1015	6.6	321	7.2	24.0	0.70	8.6	100	<10	K10	70
JUN											
03...	1040	5.7	324	7.2	26.0	0.47	7.7	95	<10	K64	K73
SEP											
03...	0940	5.8	347	7.2	25.5	0.45	8.2	101	<10	350	330

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
16...	150	51	5.8	17	0.6	1.0	150	<0.5	39	7.4
FEB 1997										
28...	--	--	--	--	--	--	140	--	--	--
JUN										
03...	130	42	6.0	15	0.6	1.1	150	<0.5	24	7.5
SEP										
03...	140	46	5.2	15	0.5	0.73	170	--	26	7.8

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
16...	0.30	25	236	3.19	1	0.200	<0.010	0.210	0.020	<0.20
FEB 1997										
28...	--	--	--	--	5	0.060	<0.010	0.070	0.010	<0.20
JUN										
03...	0.26	24	200	3.08	4	0.030	<0.010	0.030	0.020	<0.20
SEP										
03...	0.22	24	227	3.53	2	0.040	<0.010	0.040	0.020	<0.20

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
16...	<0.02	0.24	1.1	<0.020	<1	<100	30	<1	<1	<10
FEB 1997										
28...	<0.20	<0.20	0.45	0.050	--	--	--	--	--	--
JUN										
03...	<0.20	<0.20	0.48	<0.020	<1	<100	30	<1	<1	<10
SEP										
03...	<0.20	<0.20	0.84	0.220	--	--	--	--	--	--

K = non-ideal count

RIO BUCANA BASIN

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
16...	80	<1	40	<0.10	<1	<1	10	<0.010	<1	<0.01
FEB 1997										
28...	--	--	--	--	--	--	--	--	--	--
JUN										
03...	50	<1	18	<0.10	<1	<1	<10	<0.010	<1	<0.01
SEP										
03...	--	--	--	--	--	--	--	--	--	--

RIO BUCANA BASIN

50114390 RIO BUCANA AT HWY 14 BRIDGE NEAR PONCE, PR

LOCATION.--Lat 18°02'29", long 66°34'58", Hydrologic Unit 21010004, on left bank, 200 ft (61 m) upstream from bridge on Highway 14 and 4.0 mi (6.4 km) downstream from Lago Cerrillos Dam, 2.8 mi (4.5 km) northeast of Degetau Plaza in Ponce.

DRAINAGE AREA.--24.9 mi² (64.5 km²).

PERIOD OF RECORD.--October 1985 to September 1986 (maximum only), published as "Río Bucaná Floodway Channel at Highway 14 bridge", October 1986 to July 1987 (maximum only), August 1987 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 116.40 ft (35.500 m) above mean sea level. Prior to Oct. 1, 1986, crest-stage gage located at Highway 14 bridge, at elevation of mean sea level.

REMARKS.--Records poor. Flow regulated by Lago Cerrillos Dam 0.4 mi upstream. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	7.4	71	38	6.5	6.7	5.6	5.0	5.2	5.5	5.5	6.7
2	314	7.2	54	39	6.3	6.6	7.2	4.9	5.0	6.5	4.9	7.3
3	155	6.9	15	41	6.3	6.6	6.6	5.0	5.0	5.7	33	6.7
4	73	7.0	14	41	6.0	7.5	6.0	4.9	5.1	5.1	9.8	7.6
5	70	6.8	13	41	5.8	7.1	5.6	4.7	9.4	5.0	6.7	7.3
6	66	6.9	21	41	5.7	6.6	5.6	4.6	5.3	5.2	6.3	6.6
7	63	7.5	41	28	5.9	6.6	5.6	4.6	5.2	5.8	6.1	6.0
8	62	8.4	42	8.1	6.0	6.6	5.6	4.6	5.2	4.8	5.9	5.8
9	76	11	42	7.6	6.1	6.8	5.6	4.6	5.3	4.6	5.6	5.8
10	32	8.9	30	7.0	6.1	7.2	5.4	4.6	5.4	4.7	21	5.5
11	24	8.9	11	8.2	6.1	7.0	5.4	4.6	5.4	4.8	11	5.2
12	9.0	20	11	7.6	6.5	7.1	5.4	4.6	5.4	5.2	8.0	5.0
13	8.0	12	10	7.3	6.8	7.0	5.3	4.4	5.2	4.7	7.9	5.0
14	7.5	5.4	13	7.3	6.8	7.6	5.0	4.4	5.2	4.8	12	4.9
15	7.3	4.6	13	7.2	6.6	7.2	5.1	4.4	5.2	4.7	9.6	5.1
16	7.2	4.6	22	7.0	6.3	6.6	5.2	4.2	4.9	5.6	8.0	5.0
17	6.8	5.6	44	18	6.3	6.6	5.2	4.4	5.0	5.4	8.3	4.6
18	9.9	6.1	45	34	6.2	7.1	5.2	4.3	5.1	5.2	8.4	4.6
19	61	5.0	42	35	6.1	7.6	5.2	4.4	5.3	5.4	7.8	4.7
20	61	7.5	42	31	6.0	6.8	5.2	4.4	5.3	7.9	7.6	4.4
21	148	14	30	7.8	6.5	664	5.2	4.4	5.3	8.8	7.6	4.4
22	433	25	10	7.7	6.7	60	5.2	5.1	5.2	9.2	7.8	5.9
23	447	392	9.3	6.9	6.8	8.8	5.2	5.7	5.0	7.9	7.7	5.9
24	24	608	8.5	6.6	6.9	5.4	5.0	5.2	5.0	7.9	7.5	5.2
25	9.6	750	8.7	6.6	6.8	4.8	5.0	5.1	5.0	7.5	7.6	5.3
26	9.0	159	8.4	6.6	6.6	4.4	5.0	5.2	5.1	6.8	7.2	6.6
27	8.7	90	8.1	15	6.6	5.2	5.0	5.2	5.3	6.7	7.0	5.9
28	8.7	80	7.9	36	6.6	7.2	5.0	5.6	4.8	6.2	6.8	5.3
29	8.2	76	7.9	36	---	6.4	5.0	5.1	4.7	5.8	6.8	5.5
30	7.6	69	15	25	---	5.9	5.0	5.1	5.0	6.0	6.5	6.1
31	7.5	---	38	6.9	---	6.5	---	5.0	---	6.6	6.3	---
TOTAL	2302.0	2420.7	747.8	615.4	177.9	917.5	161.6	148.3	158.5	186.0	272.2	169.9
MEAN	74.3	80.7	24.1	19.9	6.35	29.6	5.39	4.78	5.28	6.00	8.78	5.66
MAX	447	750	71	41	6.9	664	7.2	5.7	9.4	9.2	33	7.6
MIN	6.8	4.6	7.9	6.6	5.7	4.4	5.0	4.2	4.7	4.6	4.9	4.4
AC-FT	4570	4800	1480	1220	353	1820	321	294	314	369	540	337
CFSM	2.98	3.24	.97	.80	.26	1.19	.22	.19	.21	.24	.35	.23
IN.	3.44	3.62	1.12	.92	.27	1.37	.24	.22	.24	.28	.41	.25

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1987 - 1997, BY WATER YEAR (WY)

MEAN	122	61.0	17.0	43.9	10.1	14.4	13.9	24.2	23.8	17.5	40.8	73.7
MAX	527	222	49.1	337	19.3	48.0	42.5	94.9	80.5	51.4	169	265
(WY)	1991	1988	1988	1992	1995	1989	1992	1992	1989	1991	1988	1989
MIN	6.34	5.09	5.03	4.51	4.10	4.49	4.74	4.29	4.90	4.37	4.06	5.66
(WY)	1996	1994	1996	1994	1994	1994	1994	1994	1994	1994	1994	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1987 - 1997	
ANNUAL TOTAL	12696.8		8277.8			
ANNUAL MEAN	34.7		22.7		39.2	
HIGHEST ANNUAL MEAN					78.0	1991
LOWEST ANNUAL MEAN					7.43	1994
HIGHEST DAILY MEAN	1430	Sep 11	750	Nov 25	4340	Jan 6 1992
LOWEST DAILY MEAN	2.8	Jul 27	4.2	May 16	2.5	Sep 28 1992
ANNUAL SEVEN-DAY MINIMUM	3.4	Jul 21	4.4	May 13	2.8	Sep 23 1992
INSTANTANEOUS PEAK FLOW			3170	Mar 21	17400	Oct 7 1995
INSTANTANEOUS PEAK STAGE			12.68	Mar 21	13.48	Oct 7 1995
ANNUAL RUNOFF (AC-FT)	25180		16420		28420	
ANNUAL RUNOFF (CFSM)	1.39		.91		1.58	
ANNUAL RUNOFF (INCHES)	18.97		12.37		21.41	
10 PERCENT EXCEEDS	53		41		68	
50 PERCENT EXCEEDS	7.1		6.6		9.0	
90 PERCENT EXCEEDS	4.5		4.9		4.6	

RIO PORTUGUES BASIN

50115000 RIO PORTUGUES NEAR PONCE, PR

LOCATION.--Lat 18°04'45", long 66°38'01", Hydrologic Unit 21010004, on right bank 30 ft (9 m) upstream from bridge on Highway 504, 0.2 mi (0.3 km) upstream from small unnamed tributary, 4.4 mi (7.1 km) upstream from Río Chiquito, and 4.7 mi (7.6 km) north of Plaza Degetau in Ponce.

DRAINAGE AREA.--8.82 mi² (22.84 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to June 1964 (monthly measurements only), July 1964 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 470 ft (143 m), from topographic map. Prior to Dec. 4, 1964, non-recording gage at same site and datum.

REMARKS.--Records poor. Some low-flow regulation due to unknown activity upstream. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e26	8.1	14	e12	e6.3	e4.0	e2.8	e2.2	e2.5	e1.5	e1.5	61
2	e21	7.4	14	e26	e8.6	e3.9	e3.1	e3.1	e2.4	e1.5	e1.5	e24
3	e18	7.2	13	e14	e7.6	e4.1	e3.8	e3.1	e2.4	e1.4	e4.0	e13
4	e16	7.0	13	e10	e6.6	e4.2	e3.7	e2.9	e2.2	e1.4	e3.5	e5.0
5	e17	6.7	13	e15	e6.6	e4.3	e3.7	e1.8	e2.1	e1.4	e2.2	e3.5
6	e17	7.2	13	e10	e6.4	e4.0	e2.8	e1.6	e2.0	e1.3	e1.9	e2.7
7	e18	7.7	13	e9.0	e5.8	e4.0	e2.7	e1.7	e2.0	e1.5	e1.8	e2.3
8	e15	e7.1	13	e10	e5.2	e3.9	e2.8	e1.7	e2.0	e10	e2.9	e2.0
9	e14	e11	12	e8.0	e5.2	e3.9	e2.7	e2.3	e1.9	e3.5	e7.4	e1.9
10	e14	13	12	e8.5	e5.0	e3.7	e2.5	e2.7	e1.9	e2.1	e7.0	e2.6
11	e13	9.6	14	e9.2	e4.6	e3.6	e2.0	e3.0	e1.7	e1.8	e5.0	e2.1
12	e13	e53	12	e10	e4.7	e3.8	e2.1	e2.0	e1.7	e8.0	e5.4	e3.5
13	e13	41	12	e10	e4.5	e4.1	e2.1	e1.9	e1.7	e3.5	e13	e2.4
14	e13	20	12	e8.0	e4.6	e4.1	e2.1	e2.0	e1.7	e2.2	e4.3	e1.7
15	e14	17	12	e7.6	e4.7	e4.7	e2.8	e1.8	e1.6	e2.2	e5.0	e1.7
16	e13	13	12	e6.7	e4.7	e4.4	e3.9	e2.1	e1.6	e1.9	e2.2	e1.6
17	12	46	11	e6.4	e4.7	e4.5	e3.6	e2.0	e1.6	e1.9	e1.7	e5.0
18	12	33	11	e6.2	e4.6	e5.0	e3.6	e1.9	e3.0	e2.2	e1.5	e4.9
19	10	15	10	e6.2	e4.6	8.8	e3.4	e1.9	e5.8	e2.3	e6.0	e4.0
20	17	12	9.4	e6.8	e5.0	e5.9	e2.6	e2.1	e2.8	e4.0	e15	e2.2
21	24	67	9.4	e9.2	e4.9	e4.0	e2.6	e2.3	e2.1	e5.3	e28	e2.3
22	21	13	9.9	e9.4	e4.8	e3.7	e2.9	e2.5	e2.0	e3.5	e26	e3.0
23	15	180	8.4	e7.6	e4.7	e3.5	e2.9	e2.4	e2.3	e2.3	e13	e2.7
24	10	110	10	e6.8	e4.6	e3.5	e2.1	e2.3	e2.1	e1.9	e6.0	e11
25	9.3	31	10	e6.6	e4.5	e3.6	e2.0	e2.4	e1.7	e1.7	e3.5	e5.0
26	8.3	21	10	e6.5	e4.6	e3.5	e1.9	e3.5	e1.8	e1.6	e2.3	e3.8
27	7.9	17	11	e6.4	e4.7	4.6	e1.8	e4.5	e1.7	e1.5	e2.8	e3.0
28	8.0	16	11	e6.5	e4.6	e5.0	e2.0	e3.3	e1.9	e1.5	e8.0	e3.4
29	8.3	15	8.8	e6.2	---	e3.8	e1.9	e2.4	e1.8	e1.5	e6.0	e6.0
30	7.9	15	7.6	e6.4	---	e3.2	e2.0	e2.3	e1.8	e1.4	e3.5	e4.7
31	8.5	---	8.2	e6.4	---	e3.0	---	e2.2	---	e1.4	e2.6	---
TOTAL	434.2	827.0	349.7	277.6	147.4	130.3	80.9	73.9	63.8	79.2	194.5	192.0
MEAN	14.0	27.6	11.3	8.95	5.26	4.20	2.70	2.38	2.13	2.55	6.27	6.40
MAX	26	180	14	26	8.6	8.8	3.9	4.5	5.8	10	28	61
MIN	7.9	6.7	7.6	6.2	4.5	3.0	1.8	1.6	1.6	1.3	1.5	1.6
AC-FT	861	1640	694	551	292	258	160	147	127	157	386	381
CFSM	1.59	3.13	1.28	1.02	.60	.48	.31	.27	.24	.29	.71	.73
IN.	1.83	3.49	1.47	1.17	.62	.55	.34	.31	.27	.33	.82	.81

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1997, BY WATER YEAR (WY)

MEAN	45.0	31.3	12.0	8.74	6.48	5.67	7.36	19.2	15.1	15.3	21.2	35.9
MAX	120	80.1	27.3	45.5	14.6	13.4	27.1	72.9	48.3	65.5	87.5	132
(WY)	1986	1988	1988	1992	1996	1976	1983	1985	1979	1996	1979	1975
MIN	11.9	5.82	2.71	3.65	2.62	2.08	2.45	1.65	2.13	1.49	4.20	6.40
(WY)	1992	1994	1992	1989	1989	1977	1974	1973	1997	1994	1972	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1964 - 1997		
ANNUAL TOTAL	11280.6		2850.5				
ANNUAL MEAN	30.8		7.81		18.7		
HIGHEST ANNUAL MEAN					38.0		1979
LOWEST ANNUAL MEAN					7.04		1994
HIGHEST DAILY MEAN	1470	Sep 10	180	Nov 23	2440	Sep 16	1975
LOWEST DAILY MEAN	3.0	May 14	1.3	Jul 6	.61	Jul 29	1994
ANNUAL SEVEN-DAY MINIMUM	3.7	Mar 24	1.4	Jul 1	1.0	Jul 9	1994
INSTANTANEOUS PEAK FLOW			1530	Nov 23	21000	Oct 7	1985
INSTANTANEOUS PEAK STAGE			7.87	Nov 23	20.20	Oct 7	1985
ANNUAL RUNOFF (AC-FT)	22380		5650		13540		
ANNUAL RUNOFF (CFSM)	3.49		.89		2.12		
ANNUAL RUNOFF (INCHES)	47.58		12.02		28.80		
10 PERCENT EXCEEDS	49		14		39		
50 PERCENT EXCEEDS	11		4.6		8.0		
90 PERCENT EXCEEDS	4.4		1.8		2.9		

e Estimated

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
16...	1200	15	312	7.9	25.5	1.5	8.3	101	<10	430	410
FEB 1997											
27...	1005	4.7	332	7.1	21.5	40	9.1	103	<10	210	450
JUN											
05...	1005	2.1	344	7.5	26.0	20	7.5	93	<10	K680	2400
SEP											
09...	1010	2.7	392	7.5	26.5	8.7	7.2	91	<10	2000	3300

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
16...	130	41	7.8	11	0.4	1.4	150	2.4	8.9	8.6
FEB 1997										
27...	--	--	--	--	--	--	190	--	--	--
JUN										
05...	150	45	9.3	13	0.5	1.8	180	<0.5	9.7	10
SEP										
09...	200	53	16	34	1.0	4.0	220	--	8.3	8.4

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
16...	<0.10	21	190	7.48	7	0.950	<0.010	0.960	<0.010	<0.20
FEB 1997										
27...	--	--	--	--	44	0.700	0.010	0.720	0.030	<0.20
JUN										
05...	0.11	21	218	1.22	18	0.380	<0.010	0.380	0.030	0.27
SEP										
09...	0.20	31	241	1.76	4	1.10	<0.010	1.10	0.040	0.36

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
OCT 1996										
16...	<0.20	0.97	4.3	<0.020	<1	<100	20	<1	<1	<10
FEB 1997										
27...	<0.20	0.89	3.9	0.020	--	--	--	--	--	--
JUN										
05...	0.30	0.68	3.0	<0.020	<1	<100	20	<1	<1	28
SEP										
09...	0.40	1.5	6.5	0.110	--	--	--	--	--	--

K = non-ideal count

RIO PORTUGUES BASIN

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
OCT 1996										
16...	220	<1	20	<0.10	<1	<1	<10	<0.010	<1	<0.01
FEB 1997										
27...	--	--	--	--	--	--	--	--	--	--
JUN										
05...	790	<1	48	<0.10	<1	<1	20	<0.010	<1	0.01
SEP										
09...	--	--	--	--	--	--	--	--	--	--

RIO PORTUGUES BASIN

50116200 RIO PORTUGUES AT PONCE, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'20", long 66°36'28", 1,300 ft (400 m) south of Las Americas Avenue Bridge, 1.2 mi (1.9 km) south of CSC 50115900, 0.8 mi (1.3 km) west of Highways 1 and 2 junction, and 0.7 mi (1.1 km) southeast of Ponce.

DRAINAGE AREA.--18.9 mi² (49.0 km²).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
OCT 1996											
24...	0845	30	340	7.0	23.5	98	8.1	93	<10	K16000	K18000
FEB 1997											
26...	1115	4.5	600	7.2	25.0	4.5	7.2	86	<10	2200	370
MAY											
21...	1045	1.2	588	7.8	31.0	2.0	10.9	146	15	2600	K140
SEP											
09...	1215	4.0	469	7.7	34.0	10	8.2	116	<10	K1700	560

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 1996										
24...	130	39	9.0	14	0.5	2.5	120	<0.5	18	14
FEB 1997										
26...	--	--	--	--	--	--	170	--	--	--
MAY										
21...	180	48	13	54	2	1.5	150	<0.5	85	51
SEP										
09...	180	61	6.7	18	0.6	0.90	120	--	45	7.0

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT 1996										
24...	0.10	18	187	15.2	204	--	<0.020	--	0.050	0.60
FEB 1997										
26...	--	--	--	--	10	0.080	<0.010	0.080	0.030	0.28
MAY										
21...	0.18	19	363	1.14	8	0.060	0.060	0.120	0.090	0.86
SEP										
09...	0.20	22	257	2.78	22	0.210	0.050	0.260	0.070	0.50

K = non-ideal count

RIO PORTUGUES BASIN

50116200 RIO PORTUGUES AT PONCE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
OCT 1996										
24...	0.64	0.64	2.9	0.180	<1	<100	50	<1	4	<10
FEB 1997										
26...	0.31	0.40	1.8	<0.020	--	--	--	--	--	--
MAY										
21...	0.95	1.1	4.7	0.130	<1	<100	30	<1	<1	<10
SEP										
09...	0.56	0.82	3.6	0.040	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L) (38260)
OCT 1996										
24...	7700	2	300	<0.10	<1	<1	20	<0.010	2	<0.01
FEB 1997										
26...	--	--	--	--	--	--	--	--	--	--
MAY										
21...	2400	<1	240	<0.10	<1	<1	<10	<0.010	<1	<0.01
SEP										
09...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLORDANE, TECHNICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DIAZINON, TOTAL (UG/L) (39570)	DIELDRIN TOTAL (UG/L) (39380)	ENDOSULFAN, I TOTAL (UG/L) (39388)
JUN 1997										
05...	1125	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	0.010	<0.010	<0.010

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTACHLOR, TOTAL (UG/L) (39410)	HEPTACHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALATHION, TOTAL (UG/L) (39530)	METHOXYCHLOR, TOTAL (UG/L) (39480)	METHYL PARATHION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)
JUN 1997									
05...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	PARATHION, TOTAL (UG/L) (39540)	PCNS UNFILT RECOVER (UG/L) (39250)	PERTHANE TOTAL (UG/L) (39034)	TOXAPHENE, TOTAL (UG/L) (39400)	TOTAL TRITHION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	2, 4-DP TOTAL (UG/L) (82183)	SILVEX, TOTAL (UG/L) (39760)
JUN 1997									
05...	<0.010	<0.100	<0.100	<1.00	<0.010	0.120	<0.010	<0.010	<0.010

RIO GUAYANILLA BASIN

50124200 RIO GUAYANILLA NEAR GUAYANILLA, PR

LOCATION.--Lat 18°02'40", long 66°47'53", Hydrologic Unit 21010004, on left bank, 0.7 mi (1.1 km) north of junction of Highways 2 and 132, 0.6 mi (1.0 km) downstream from Quebrada Consejo, 1.8 mi (2.9 km) north-northwest from Plaza de Guayanilla.

DRAINAGE AREA.--18.9 mi² (49.0 km²).

PERIOD OF RECORD.--March 1981 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 80 ft (24 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	40	e23	e21	e8.0	e4.2	e11	e3.0	e3.6	1.7	3.1	5.3
2	e38	28	e21	e21	e9.5	e4.0	e5.5	e3.2	e2.7	1.6	2.5	9.2
3	e29	22	e20	e56	e9.5	e4.0	e4.8	e3.3	e2.1	1.5	23	7.3
4	28	19	e20	e36	e11	e4.2	e4.4	e3.3	e2.0	1.6	14	6.1
5	26	16	e19	e45	e22	e4.0	e4.2	e2.8	e1.9	1.7	5.7	4.1
6	e24	15	e18	e26	e15	e4.0	e3.6	e2.6	e1.8	1.7	4.5	3.4
7	23	30	e18	e32	e19	e4.0	e3.2	e2.5	e1.7	3.8	3.9	3.2
8	25	16	e18	e25	e12	e4.0	e3.1	e2.4	e1.7	4.4	3.5	2.9
9	22	45	e17	e26	e9.5	e4.2	e3.0	e2.3	e1.7	2.2	3.4	3.2
10	20	34	e17	e24	e8.0	e4.0	e2.8	e2.3	e1.6	1.9	3.3	2.8
11	19	30	e18	e19	e7.5	e3.8	e2.8	e2.1	e1.6	1.9	4.7	2.8
12	17	69	e17	e16	e6.5	e3.6	e2.8	e2.1	e1.6	2.0	3.3	3.5
13	16	52	e16	e15	e6.5	e3.6	e2.7	e1.9	e1.6	2.1	3.9	4.5
14	16	27	e16	e25	e6.0	e3.6	e2.7	e1.8	e1.6	2.0	3.5	3.0
15	15	19	e15	e15	e6.0	e3.6	e2.7	e1.7	e1.6	1.9	3.7	2.9
16	16	17	e14	e14	e5.5	e3.4	e2.6	e1.7	e1.5	1.9	3.1	2.5
17	14	64	e14	e12	e5.5	e3.4	e2.5	e1.7	e1.6	2.2	e3.2	2.3
18	13	112	e13	e12	e5.5	e4.0	e2.4	e1.7	e9.0	2.4	e3.4	2.2
19	36	67	e13	e11	e5.0	e4.2	e2.4	e1.7	e8.5	2.8	3.5	2.2
20	42	51	e12	e11	e5.0	e4.0	e2.3	e1.7	3.7	2.9	3.0	2.0
21	74	54	e12	e10	e4.8	e3.6	e2.3	e1.9	2.1	5.6	2.7	2.1
22	106	62	e12	e18	e5.0	e3.2	e3.5	e2.3	1.9	e6.1	2.9	3.4
23	107	77	e11	e14	e4.8	e3.0	e2.8	e3.4	e1.8	e5.0	e3.0	2.7
24	66	52	e11	e11	e4.5	e2.9	e2.6	e5.0	1.7	e4.0	e3.2	2.3
25	48	e42	e12	e9.5	e4.3	e2.8	e2.5	e8.0	1.7	e3.7	4.5	2.6
26	35	e38	e14	e9.0	e4.4	e2.8	e2.4	e7.3	1.8	3.4	3.2	2.8
27	168	e34	e12	e9.5	e4.4	e4.0	e2.5	e7.8	1.7	3.3	2.9	2.5
28	67	e32	e12	e8.5	e4.3	e7.0	e2.5	e4.6	1.6	3.0	2.9	3.6
29	161	e29	e13	e8.5	---	e10	e3.2	e3.2	1.6	2.8	2.8	6.2
30	120	e25	e12	e8.0	---	e12	e3.0	e2.6	1.6	2.8	14	e5.1
31	50	---	e19	e8.0	---	e7.5	---	e2.5	---	5.2	15	---
TOTAL	1489	1218	479	576.0	219.0	136.6	98.8	94.4	70.6	89.1	159.3	108.7
MEAN	48.0	40.6	15.5	18.6	7.82	4.41	3.29	3.05	2.35	2.87	5.14	3.62
MAX	168	112	23	56	22	12	11	8.0	9.0	6.1	23	9.2
MIN	13	15	11	8.0	4.3	2.8	2.3	1.7	1.5	1.5	2.5	2.0
AC-FT	2950	2420	950	1140	434	271	196	187	140	177	316	216
CFSM	2.54	2.15	.82	.98	.41	.23	.17	.16	.12	.15	.27	.19
IN.	2.93	2.40	.94	1.13	.43	.27	.19	.19	.14	.18	.31	.21

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 1997, BY WATER YEAR (WY)

MEAN	59.4	47.5	18.2	10.6	7.48	6.14	9.83	25.6	14.1	11.8	17.0	39.3
MAX	167	110	41.9	27.5	11.6	13.2	26.6	80.4	41.0	25.9	48.5	102
(WY)	1986	1988	1988	1992	1996	1989	1983	1985	1987	1986	1988	1981
MIN	16.0	17.0	6.72	4.21	3.10	2.85	2.76	2.33	2.35	2.45	5.14	3.62
(WY)	1983	1994	1994	1994	1990	1981	1995	1994	1997	1994	1997	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1981 - 1997	
ANNUAL TOTAL	8879.3		4738.5			
ANNUAL MEAN	24.3		13.0		21.9	
HIGHEST ANNUAL MEAN					33.1	1986
LOWEST ANNUAL MEAN					8.94	1994
HIGHEST DAILY MEAN	922	Sep 10	168	Oct 27	1500	Oct 7 1985
LOWEST DAILY MEAN	2.8	May 7	1.5	Jun 16	.77	Jul 30 1994
ANNUAL SEVEN-DAY MINIMUM	3.5	May 12	1.6	Jun 10	1.1	Sep 4 1994
INSTANTANEOUS PEAK FLOW			1500	Oct 27	14700	Sep 12 1982
INSTANTANEOUS PEAK STAGE			10.71	Oct 27	20.40	Sep 12 1982
ANNUAL RUNOFF (AC-FT)	17610		9400		15860	
ANNUAL RUNOFF (CFSM)	1.28		.69		1.16	
ANNUAL RUNOFF (INCHES)	17.48		9.33		15.74	
10 PERCENT EXCEEDS	52		31		48	
50 PERCENT EXCEEDS	12		4.4		9.5	
90 PERCENT EXCEEDS	5.1		1.9		3.2	

e Estimated

RIO GUAYANILLA BASIN

50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°00'40", long 66°46'49", at dirt road bridge, 0.7 mi (1.1 km) from mouth, 0.9 mi (1.4 km) east of Central Rufina and 0.9 mi (1.4 km) southeast of Guayanilla.

DRAINAGE AREA.--22.8 mi² (59.1 km²).

PERIOD OF RECORD.--Water years 1960-65, 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
01...	1020	56	418	7.8	24.0	6.5	8.1	94	<10	4100	3000
MAR 1997											
06...	1030	3.0	580	7.4	25.5	7.8	6.4	77	12	460	210
MAY											
28...	0945	2.0	521	7.1	26.5	4.5	5.9	74	<10	K16000	27000
AUG											
20...	1115	1.1	940	7.0	30.0	1.6	4.6	61	11	3800	3700

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
01...	180	49	14	12	0.4	2.5	150	<0.5	40	17
MAR 1997										
06...	--	--	--	--	--	--	130	--	--	--
MAY										
28...	170	42	15	21	0.7	2.4	160	<0.5	41	20
AUG										
20...	170	28	25	13	14	3.8	210	--	27	19

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
01...	<0.10	19	243	36.5	22	2.30	<0.010	2.30	0.030	0.32
MAR 1997										
06...	--	--	--	--	<1	8.10	0.040	8.10	0.080	0.79
MAY										
28...	0.10	19	238	1.28	20	3.50	0.040	3.50	0.060	0.66
AUG										
20...	0.10	28	234	0.69	<1	20.0	0.070	20.0	0.060	0.90

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
01...	0.35	2.7	12	0.130	<1	<100	30	<1	1	<10
MAR 1997										
06...	0.86	9.0	40	1.00	--	--	--	--	--	--
MAY										
28...	0.72	4.2	19	0.610	2	100	70	<1	1	<10
AUG										
20...	0.97	21	95	2.50	--	--	--	--	--	--

K = non-ideal count

50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR--Continue

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
01...	1100	1	60	<0.10	<1	<1	<10	<0.010	<1	<0.01
MAR 1997										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
28...	560	<1	48	<0.10	<1	<1	<10	<0.010	1	0.03
AUG										
20...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, I TOTAL (UG/L) (39388)
MAY 1997										
28...	0945	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)
MAY 1997									
28...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	PARA-THION, TOTAL (UG/L) (39540)	PCNS UNFILT RECOVER (UG/L) (39250)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	2, 4-DP TOTAL (UG/L) (82183)	SILVEX, TOTAL (UG/L) (39760)
MAY 1997									
28...	<0.010	<0.100	<0.100	<1.00	<0.010	<0.010	<0.010	<0.010	<0.010

50125780 LAGO LUCCHETTI AT DAMSITE NEAR YAUCO, PR

LOCATION.--Lat 18°05'37", long 66°51'54, Hydrologic Unit 21010004, at Antonio Lucchetti Dam on Río Yauco, 3.9 mi (6.3 km) north of Yauco.

DRAINAGE AREA.--17.4 mi² (45.1 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--December 1989 to current year. Prior to October 1994, published as Lago Lucchetti at Damsite.

GAGE.--Water-stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago Lucchetti was completed in 1952. The dam is on Río Yauco and is a unit of the Southwestern Puerto Rico Project. It provides 16,500 acre-feet (20.3 hm³) of usable storage for power generation and irrigation. The dam is a concrete gravity structure with a total length of 591 ft (180 m), a maximum height of 178 ft (54 m), and a maximum width at the base of 150 ft (46 m). An ungated, overflow tupe spillway with a clear length of 171 ft (52 m), and a maximum capacity of 62,800 ft³/s (1,778 m³/s) at a design head of 20 ft (6 m). The dam is owned by Puerto Rico Electric Power Authority. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 572.19 ft (174.40 m), May 27, 1993; minimum elevation, 512.09 ft (156.08 m), Sept. 9, 1994.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 570.08 ft (173.76 m), Nov. 4, minimum elevation, 524.29 ft (159.80 m), Aug. 21.

Capacity Table
(based on data from Puerto Rico Water Resources Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
512	1,505	540	5,165
520	2,385	550	7,020
525	2,965	561	9,600
527	3,255	563	10,125
530	3,695	571	12,125
532	3,975	573	12,645

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	566.68	569.14	562.33	560.30	556.95	562.17	560.77	558.03	559.34	551.69	534.42	526.28
2	A	569.58	562.46	560.45	556.87	562.13	561.46	558.85	559.87	551.52	A	526.98
3	563.93	570.00	562.19	560.55	556.86	562.05	561.65	558.99	560.37	549.30	535.68	528.97
4	562.64	569.06	561.36	560.63	558.21	561.97	561.59	558.93	561.29	546.95	535.82	530.08
5	561.15	569.27	560.81	561.04	558.93	561.89	561.56	559.07	561.44	546.88	533.50	532.09
6	A	567.82	559.98	561.38	559.22	561.36	561.47	558.08	561.47	546.79	533.08	534.52
7	559.05	566.87	559.13	561.25	559.48	560.72	561.41	558.46	A	545.30	532.71	534.46
8	557.48	565.58	559.24	560.12	559.47	560.69	560.80	558.76	A	544.46	532.70	536.07
9	555.76	565.36	559.33	559.77	559.46	560.64	A	558.57	A	544.37	532.65	536.29
10	553.96	567.37	559.24	560.67	559.44	560.15	A	559.37	A	543.55	532.76	538.48
11	551.76	567.44	559.36	561.07	559.41	559.98	560.95	559.52	A	543.16	532.74	539.73
12	549.90	567.95	559.52	561.29	559.37	A	561.01	560.17	A	543.08	531.01	540.27
13	549.56	568.25	559.59	561.69	559.64	A	560.95	560.26	A	543.01	531.18	540.23
14	547.72	566.68	559.88	561.13	560.26	559.44	560.88	560.44	A	541.59	529.76	540.22
15	547.80	564.63	560.04	560.39	560.30	559.37	560.73	561.07	A	539.74	527.78	538.00
16	547.79	564.68	559.42	560.33	561.58	559.40	560.55	560.51	A	539.69	527.76	537.96
17	548.28	565.68	559.52	560.33	561.66	559.43	560.67	560.44	559.65	539.60	527.75	536.24
18	548.14	566.52	559.69	560.13	561.71	A	560.07	560.76	A	537.77	527.39	536.17
19	548.32	566.60	559.51	560.13	562.80	558.12	560.57	561.11	559.25	537.78	527.61	534.62
20	548.48	565.69	559.70	559.59	563.67	A	560.74	561.07	558.92	537.75	524.30	534.53
21	550.54	564.85	560.01	559.49	563.58	A	560.87	561.01	557.99	537.83	527.12	534.44
22	553.97	563.78	560.74	559.45	563.54	559.07	561.09	561.05	557.91	537.81	528.64	531.60
23	555.16	563.58	561.43	559.48	563.55	560.44	560.49	560.42	557.15	537.73	528.81	530.53
24	556.85	562.91	561.60	558.92	563.52	560.58	560.60	559.56	556.01	536.40	528.92	528.44
25	557.42	562.63	561.63	558.92	563.44	560.70	559.91	559.50	555.93	535.06	525.73	528.43
26	559.57	562.11	561.61	558.61	562.67	A	559.84	559.45	554.43	534.97	526.17	528.37
27	562.30	562.15	A	556.95	562.68	560.66	559.82	559.79	554.02	534.87	527.90	528.30
28	566.08	562.37	561.06	557.00	562.21	560.69	559.76	560.22	553.94	534.76	527.89	528.26
29	566.39	561.67	561.07	557.00	---	560.67	558.85	559.50	553.85	534.64	524.84	528.76
30	567.51	562.17	560.22	557.01	---	560.77	558.98	559.44	552.67	A	525.30	529.98
31	568.00	---	560.28	556.96	---	559.84	---	559.38	---	534.79	525.84	---
MAX	568.00	570.00	562.46	561.69	563.67	562.17	561.65	561.11	561.47	551.69	535.82	540.27
MIN	547.72	561.67	559.13	556.95	556.86	558.12	558.85	558.03	552.67	534.64	524.30	526.28

CAL YR 1996 MAX 570.83 MIN 547.72
WTR YR 1997 MAX 570.00 MIN 524.30

A No gage-height record

RIO LOCO BASIN

50128900 LAGO LOCO AT DAMSITE NEAR YAUCO, PR

LOCATION.--Lat 18°02'41", long 66°53'16", Hydrologic Unit 21010004, at Damsite, 2.60 mi (4.18 km) northwest from Yauco plaza, 0.45 mi (0.72 km) northeast from Escuela Rio Cañas and 0.95 mi (1.53 km) northwest from Escuela Susua Alta.

DRAINAGE AREA.--8.40 mi² (21.8 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--May 1995 to current year.

GAGE.--Water stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago Loco was completed in 1951. The dam is a concrete gravity structure with a total lenght of 600 ft (183 m), maximum structural height of 72 ft (21.9 m), the ungated overflow spillway is 150 ft (47.7 m) long with crest at elevation of 230 ft (70.1 m). It has a normal storage capacity of 1,950 acre-feet (2.40 hm³) as for May 4, 1979. The Loco Dam is owned by the Puerto Rico Electric Power Authority (P.R.E.P.A) and its part of the Southwestern Puerto Rico Project which was developed for electric power generation and irrigation of the lands in the Lajas Valley, some of the Project waters are used for water supply in the Lajas area. The maximum drawdown of the Dam is from 230 ft (70.1 m) to 220 ft (67.1 m) and the Capacity Table provided by P.R.E.P.A includes only that portion of the storage for the dam. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 231.95 ft (70.7 m), Nov. 18, 1997; minimum elevation, 217.77 ft (66.4 m), June 10, 1997.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 231.95 ft (70.7 m), Nov. 18; minimum elevationm, 217.77 ft (66.4 m), June 10.

Capacity Table
(based on data from Puerto Rico Electric Power Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
220	0	230	639
225	299	232	787

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	230.45	230.24	A	A	229.22	A	A	226.22	A	226.36	226.75	A
2	A	230.48	230.32	230.25	229.81	A	A	227.65	223.68	222.62	226.51	228.98
3	230.28	230.20	230.38	230.71	229.52	A	A	227.01	224.80	229.07	226.52	226.69
4	230.41	230.50	230.34	230.16	229.17	A	A	225.69	226.82	229.89	A	229.91
5	230.42	230.13	230.48	A	228.74	A	A	224.52	223.71	228.88	230.16	229.13
6	230.88	231.05	230.67	A	230.12	A	A	226.06	223.39	227.80	229.72	A
7	230.34	230.50	A	A	229.75	A	A	A	224.09	229.47	A	A
8	230.36	230.41	A	A	229.49	A	226.03	226.13	223.22	229.11	227.58	229.45
9	230.33	A	230.19	229.99	229.23	A	228.81	227.25	219.32	226.60	227.32	230.31
10	230.39	A	230.40	229.86	229.90	A	A	230.53	217.77	226.21	227.05	228.02
11	230.95	A	230.34	A	229.83	A	A	230.23	219.75	226.11	225.42	226.81
12	230.33	230.67	229.85	A	230.00	A	A	230.03	221.08	225.87	226.76	225.48
13	230.34	A	A	A	229.55	A	A	227.92	222.05	225.52	223.43	224.98
14	230.25	A	A	A	229.25	A	A	228.25	222.77	227.49	223.76	224.10
15	229.34	A	A	A	228.96	A	A	229.77	223.96	229.50	227.14	228.76
16	228.02	A	A	A	228.63	A	A	229.79	224.28	227.42	226.78	226.27
17	226.17	A	229.59	A	229.11	A	A	228.68	224.29	224.65	226.43	228.48
18	225.96	A	A	A	229.14	A	A	229.78	224.06	228.93	228.72	226.15
19	226.17	A	A	A	228.09	A	A	229.39	223.71	228.63	226.15	228.82
20	225.96	A	A	A	227.08	A	A	226.54	223.88	228.33	229.70	228.45
21	230.32	A	A	A	230.32	A	226.84	227.18	227.16	228.15	227.26	227.96
22	230.70	231.03	A	A	229.92	A	225.55	226.68	226.51	226.92	A	230.80
23	230.93	A	229.49	A	230.41	A	227.53	226.80	227.36	A	225.62	229.90
24	230.37	230.75	A	A	230.01	229.11	225.19	228.86	228.12	227.15	A	229.92
25	230.30	A	A	A	230.24	227.57	228.84	227.52	224.89	229.87	230.00	227.20
26	230.35	230.39	A	A	230.34	226.44	228.01	226.01	227.32	229.49	229.14	225.40
27	A	A	A	A	230.28	A	A	225.54	226.58	229.14	226.91	224.61
28	230.34	230.09	230.20	A	A	A	224.91	225.19	225.46	228.78	224.99	223.76
29	A	230.40	A	A	---	A	226.42	225.27	224.24	226.99	229.63	228.91
30	A	230.06	A	229.63	---	A	224.67	223.25	225.98	223.96	A	227.19
31	230.53	---	A	229.51	---	A	---	222.41	---	222.69	A	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

A No gage-height record

50129700 RIO LOCO AT GUANICA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 17°58'33", long 66°54'52", 0.6 mi (1.0 km) northwest of Guánica and 1.2 mi (1.9 km) northeast of Ensenada.

DRAINAGE AREA.--Indeterminate.

PERIOD OF RECORD.--Water years 1975 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	COLIFORM, FECAL, 0.45 UM-MF (COLS./100 ML) (31616)	STREPTOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996										
01...	0900	298	6.7	27.0	19	4.0	49	<10	510	K1900
MAR 1997										
05...	1010	1010	7.1	25.5	3.9	4.5	55	11	K880	710
MAY										
28...	1100	28000	7.1	30.0	2.9	5.4	79	50	3300	670
AUG										
20...	1000	33000	7.0	31.0	4.9	5.9	88	<10	K100	490

DATE	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
NOV 1996										
01...	110	26	12	12	0.5	2.9	110	<0.5	16	17
MAR 1997										
05...	--	--	--	--	--	--	130	--	--	--
MAY										
28...	2900	210	573	4520	37	170	260	<0.5	1300	8600
AUG										
20...	680	90	110	855	0.4	38	210	--	110	180

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996									
01...	<0.10	22	174	14	1.20	<0.010	1.20	0.050	0.34
MAR 1997									
05...	--	--	--	11	0.710	0.010	0.720	0.060	0.30
MAY									
28...	0.47	12	15600	34	0.180	0.010	0.190	0.040	0.43
AUG									
20...	0.20	68	1570	40	0.010	<0.010	<0.020	0.030	0.25

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
NOV 1996										
01...	0.38	1.5	6.9	0.060	<1	<100	40	<1	3	<10
MAR 1997										
05...	0.36	1.1	4.8	0.070	--	--	--	--	--	--
MAY										
28...	0.48	0.66	2.9	0.120	1	200	2200	<10	4	32
AUG										
20...	0.30	0.40	1.8	0.100	--	--	--	--	--	--

K = Non-ideal count

RIO LOCO BASIN

50129700 RIO LOCO AT GUANICA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
01...	830	<1	40	<0.10	<1	<1	<10	<0.010	1	<0.01
MAR 1997										
05...	--	--	--	--	--	--	--	--	--	--
MAY										
28...	260	<10	240	<0.10	<1	<1	<10	<0.010	<1	0.06
AUG										
20...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, I TOTAL (UG/L) (39388)
MAY 1997										
28...	1100	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)
MAY 1997									
28...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	PARA-THION, TOTAL (UG/L) (39540)	PCNS UNFILT RECOVER (UG/L) (39250)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	2, 4-DP TOTAL (UG/L) (82183)	SILVEX, TOTAL (UG/L) (39760)
MAY 1997									
28...	<0.010	<0.100	<0.100	<1.00	<0.010	<0.010	<0.010	<0.010	<0.010

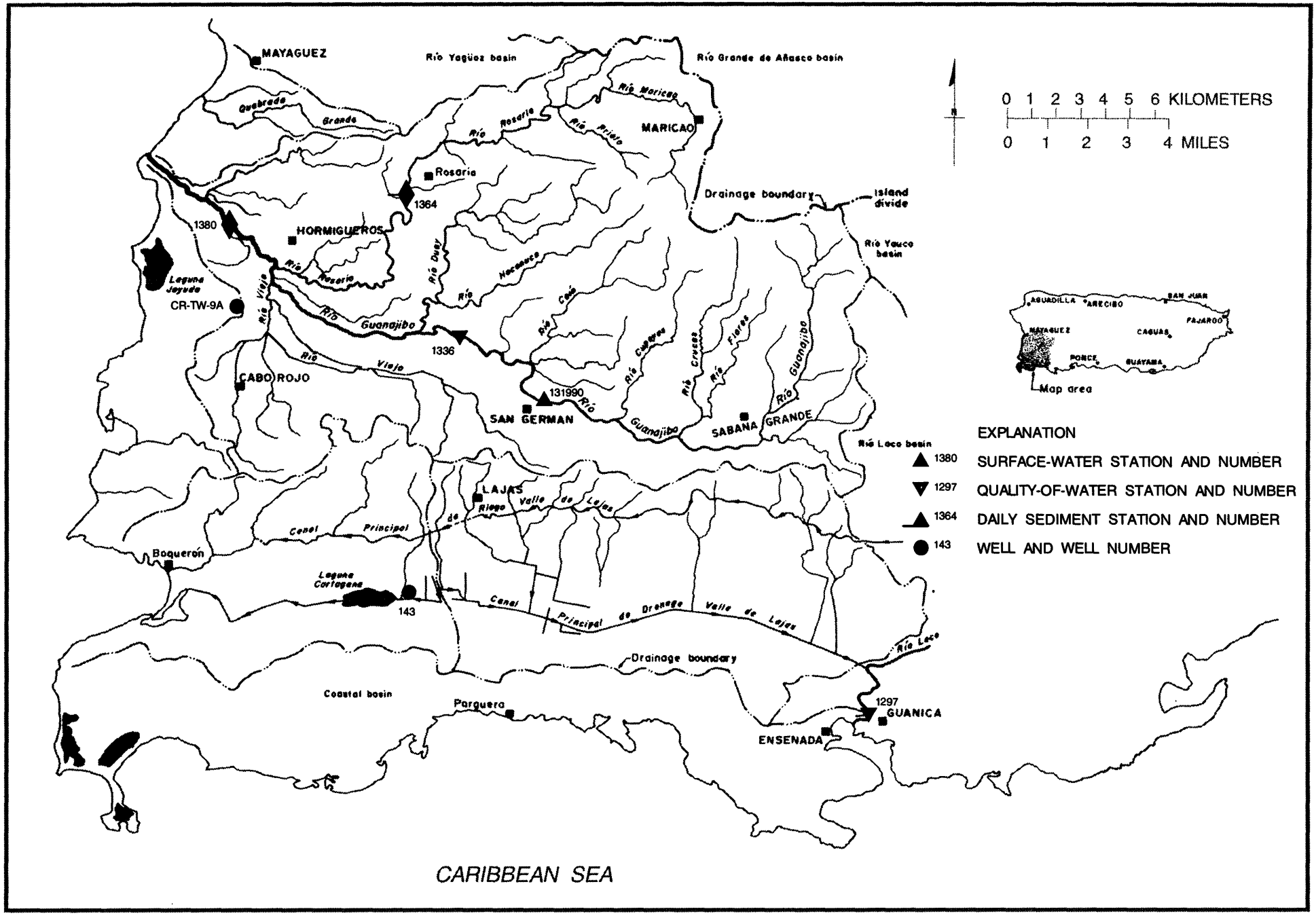

Figure 24.--Río Guanajibo basin.

50131990 RIO GUANAJIBO AT HWY 119 AT SAN GERMAN, PR

LOCATION.--Lat 18°05'06", long 67°02'02", Hydrologic Unit 21010003, on left bank, at bridge on Hwy 119, 0.6 mi (1.0 km) southwest of junction of Highways 119 and 2, 0.2 mi (0.3 km) northeast of junction of Highways 119 and 102, 0.7 mi (1.1 km) east from public Plaza of San Germán.

DRAINAGE AREA.--34.6 mi² (89.6 km²).

PERIOD OF RECORD.--April 1991 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 148 ft (45 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	147	48	31	19	9.7	14	e6.6	5.6	6.3	8.2	11
2	187	60	48	286	23	9.5	13	e61	4.1	4.9	6.7	29
3	125	42	43	122	24	9.6	11	e45	4.8	4.4	26	15
4	54	42	36	95	33	9.5	11	e12	4.3	4.3	38	35
5	42	34	35	122	48	9.0	9.1	e9.0	4.0	4.0	16	16
6	36	32	36	88	27	9.0	8.1	e6.8	4.7	4.1	9.0	12
7	33	73	37	110	22	8.9	8.3	e5.4	4.5	4.8	7.3	8.7
8	30	241	33	48	20	9.3	7.8	e7.8	3.4	15	6.3	7.1
9	28	152	32	42	18	9.2	7.4	e7.3	3.3	6.3	5.8	7.2
10	26	98	29	37	17	9.0	7.1	e7.2	3.1	4.9	10	6.3
11	25	68	31	33	16	8.3	7.2	e7.0	3.5	4.9	33	5.3
12	23	519	25	31	14	7.8	6.8	e6.0	3.4	5.0	12	6.4
13	23	248	24	35	14	7.9	7.3	e5.0	4.7	6.9	8.8	8.4
14	23	91	23	42	13	8.0	6.4	4.4	4.4	5.8	77	5.5
15	21	63	24	27	13	8.1	5.9	4.4	4.4	4.3	69	5.3
16	20	54	23	25	12	8.1	7.0	4.9	4.5	5.5	20	4.6
17	19	100	21	23	12	8.0	e6.2	4.8	4.0	4.8	12	4.1
18	19	269	19	21	11	11	e5.6	4.8	8.5	4.6	9.5	3.6
19	20	124	19	22	12	8.7	e5.5	4.5	18	14	18	4.4
20	22	95	18	19	11	8.6	e5.5	4.8	9.5	16	10	3.9
21	79	414	18	19	11	8.2	e10	5.0	6.3	8.6	8.7	4.1
22	159	151	17	24	11	8.0	e12	8.8	5.5	13	7.1	4.5
23	186	174	16	22	11	7.6	e5.9	5.7	4.7	7.7	9.3	9.1
24	121	125	16	20	10	7.3	e5.1	11	4.2	5.8	21	5.1
25	47	100	16	19	10	7.1	e6.0	12	4.8	4.7	22	6.0
26	27	75	17	21	9.9	7.5	e6.2	5.7	4.8	4.6	8.6	5.6
27	198	60	16	19	9.6	12	e7.2	5.0	4.9	4.4	7.0	4.4
28	412	55	20	18	9.5	14	e8.6	5.5	4.4	3.7	5.7	4.1
29	187	54	19	17	---	52	e6.7	4.8	4.5	3.8	6.3	76
30	88	50	25	16	---	21	e5.9	4.5	4.2	8.7	11	17
31	197	---	70	17	---	14	---	4.8	---	24	32	---
TOTAL	2560	3810	854	1471	461.0	335.9	233.8	291.5	155.0	219.8	541.3	334.7
MEAN	82.6	127	27.5	47.5	16.5	10.8	7.79	9.40	5.17	7.09	17.5	11.2
MAX	412	519	70	286	48	52	14	61	18	24	77	76
MIN	19	32	16	16	9.5	7.1	5.1	4.4	3.1	3.7	5.7	3.6
MED	36	93	24	25	13	8.9	7.1	5.7	4.5	4.9	10	6.2
AC-FT	5080	7560	1690	2920	914	666	464	578	307	436	1070	664
CFSM	2.39	3.67	.80	1.37	.48	.31	.23	.27	.15	.20	.50	.32
IN.	2.75	4.10	.92	1.58	.50	.36	.25	.31	.17	.24	.58	.36

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1997, BY WATER YEAR (WY)

MEAN	89.0	72.2	25.4	24.6	18.7	11.6	21.5	40.2	18.6	17.9	39.5	55.1
MAX	205	127	52.2	47.5	36.5	25.8	55.9	72.0	46.3	37.6	109	119
(WY)	1993	1997	1993	1997	1995	1995	1996	1995	1993	1995	1995	1995
MIN	20.4	15.8	8.21	9.87	4.32	3.52	7.79	5.11	3.91	6.68	17.2	11.2
(WY)	1992	1992	1992	1996	1992	1992	1997	1994	1994	1994	1994	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1991 - 1997	
ANNUAL TOTAL	18722.2		11268.0			
ANNUAL MEAN	51.2		30.9		37.4	
HIGHEST ANNUAL MEAN					58.6	1995
LOWEST ANNUAL MEAN					16.6	1994
HIGHEST DAILY MEAN	659	Sep 10	519	Nov 12	913	Sep 16 1995
LOWEST DAILY MEAN	4.9	Feb 17	3.1	Jun 10	1.5	May 9 1992
ANNUAL SEVEN-DAY MINIMUM	6.2	Mar 23	3.7	Jun 8	1.8	May 6 1992
INSTANTANEOUS PEAK FLOW			2540	Jan 2	6610	Jan 6 1992
INSTANTANEOUS PEAK STAGE			9.99	Jan 2	13.23	Jan 6 1992
ANNUAL RUNOFF (AC-FT)	37140		22350		27120	
ANNUAL RUNOFF (CFSM)	1.48		.89		1.08	
ANNUAL RUNOFF (INCHES)	20.13		12.11		14.70	
10 PERCENT EXCEEDS	130		75		85	
50 PERCENT EXCEEDS	22		11		15	
90 PERCENT EXCEEDS	7.5		4.5		4.8	

e Estimated

50133600 RIO GUANAJIBO NEAR SAN GERMAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°07'18", long 67°03'56", at bridge on Highway 347, 2.2 mi (3.5 km) northwest of San Germán.

DRAINAGE AREA.--45.5 mi² (117.8 km²).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER QUALITY DATA, WATER YEARS OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
12...	1100	76	369	6.6	24.5	3.5	7.3	86	<10	K2200	320
MAR 1997											
05...	1130	25	705	6.9	24.5	0.60	4.8	57	13	K73	K140
MAY											
28...	1310	8.6	835	7.3	29.0	5.6	4.5	59	39	2700	510
AUG											
19...	1100	20	617	6.9	27.0	4.4	4.2	52	15	400	270

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
12...	180	19	32	13	0.4	2.6	160	<0.5	16	16
MAR 1997										
05...	--	--	--	--	--	--	300	--	--	--
MAY										
28...	280	26	52	132	3	12	280	<0.5	64	80
AUG										
19...	200	21	36	42	1	6.0	240	--	43	39

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
12...	<0.10	35	230	47.2	14	1.10	0.060	1.20	0.190	0.28
MAR 1997										
05...	--	--	--	--	3	1.90	0.190	2.10	0.750	0.71
MAY										
28...	0.63	37	571	13.3	6	1.20	0.150	1.40	1.50	0.86
AUG										
19...	0.31	35	367	19.8	<1	1.60	0.160	1.80	1.20	0.81

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
12...	0.46	1.7	7.3	0.200	<1	<100	70	<1	12	<10
MAR 1997										
05...	1.5	3.6	16	0.550	--	--	--	--	--	--
MAY										
28...	2.4	3.8	17	0.940	<1	100	400	<1	2	12
AUG										
19...	2.0	3.7	17	0.630	--	--	--	--	--	--

K = non-ideal count

50133600 RIO GUANAJIBO NEAR SAN GERMAN, PR--Continued

WATER QUALITY DATA, WATER YEARS OCTOBER 1996 SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
12...	460	2	40	<0.10	<1	<1	<10	<0.010	<1	<0.01
MAR 1997										
05...	--	--	--	--	--	--	--	--	--	--
MAY										
28...	280	6	130	<0.10	<1	<1	20	<0.010	<1	0.08
AUG										
19...	--	--	--	--	--	--	--	--	--	--

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR

LOCATION.--Lat 18°09'36", long 67°05'08", Hydrologic Unit 21010003, at bridge on Highway 348, 0.5 mi (0.8 km) southwest of Rosario plaza.

DRAINAGE AREA.--18.3 mi² (47.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 50.0 ft (15.2 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	120	52	32	26	18	29	11	10	25	16	58
2	67	100	48	35	35	18	17	14	9.3	19	18	56
3	131	85	47	71	27	18	16	20	9.1	17	50	58
4	97	76	45	66	27	18	15	14	9.1	15	47	49
5	74	81	44	57	24	18	13	11	8.8	20	25	39
6	69	75	42	40	52	18	13	14	8.5	35	19	37
7	62	76	41	40	45	18	13	11	8.6	33	17	33
8	61	72	40	37	26	18	13	9.7	8.8	136	24	30
9	59	123	38	53	25	17	12	10	8.9	53	39	35
10	60	137	37	47	24	17	12	13	8.7	27	71	28
11	51	106	44	37	25	17	12	9.6	8.9	20	101	26
12	51	147	38	34	22	17	12	9.4	9.1	18	65	32
13	49	125	36	33	21	17	12	8.8	9.1	23	122	29
14	69	91	35	36	21	17	12	8.4	10	19	112	41
15	51	78	35	34	20	16	11	8.3	10	17	127	31
16	46	72	35	32	20	16	11	8.7	11	16	90	24
17	43	109	34	31	20	16	11	9.0	12	14	59	22
18	44	108	34	31	19	16	11	9.2	19	39	66	22
19	45	85	34	31	19	16	11	9.5	73	31	60	22
20	47	88	33	36	19	19	11	9.4	32	28	49	24
21	122	99	33	50	19	16	12	10	37	23	41	36
22	80	87	33	103	19	15	14	15	83	21	37	47
23	57	79	33	52	18	15	19	18	38	20	47	44
24	50	72	35	35	18	15	14	34	21	16	53	79
25	47	66	35	29	18	14	12	43	127	32	40	46
26	44	62	40	27	19	15	12	45	72	29	33	31
27	71	58	34	26	19	15	14	25	38	18	30	27
28	74	57	33	25	18	20	12	17	26	16	32	26
29	178	55	35	23	---	21	11	12	30	15	131	258
30	130	53	35	23	---	21	11	11	29	15	82	163
31	86	---	34	25	---	24	---	10	---	17	65	---
TOTAL	2190	2642	1172	1231	665	536	398	458.0	784.9	827	1768	1453
MEAN	70.6	88.1	37.8	39.7	23.8	17.3	13.3	14.8	26.2	26.7	57.0	48.4
MAX	178	147	52	103	52	24	29	45	127	136	131	258
MIN	43	53	33	23	18	14	11	8.3	8.5	14	16	22
AC-FT	4340	5240	2320	2440	1320	1060	789	908	1560	1640	3510	2880
CFSM	3.86	4.81	2.07	2.17	1.30	.94	.72	.81	1.43	1.46	3.12	2.65
IN.	4.45	5.37	2.38	2.50	1.35	1.09	.81	.93	1.60	1.68	3.59	2.95

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1997, BY WATER YEAR (WY)

MEAN	102	70.8	32.3	23.1	19.7	22.0	24.2	44.5	42.8	41.9	60.1	88.2
MAX	206	117	53.7	39.7	37.8	77.0	57.7	122	91.1	75.2	102	157
(WY)	1986	1990	1995	1997	1995	1989	1989	1993	1993	1989	1989	1993
MIN	33.2	16.1	9.92	15.1	8.55	10.1	11.9	14.8	12.0	23.2	25.1	32.7
(WY)	1992	1992	1992	1994	1992	1992	1991	1997	1992	1990	1991	1986

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1986 - 1997	
ANNUAL TOTAL	18040.8		14124.9			
ANNUAL MEAN	49.3		38.7		47.8	
HIGHEST ANNUAL MEAN					70.6	1993
LOWEST ANNUAL MEAN					30.8	1992
HIGHEST DAILY MEAN	262	May 19	258	Sep 29	1550	Oct 7 1985
LOWEST DAILY MEAN	8.6	Mar 25	8.3	May 15	3.9	May 9 1992
ANNUAL SEVEN-DAY MINIMUM	9.3	Mar 23	8.7	Jun 5	4.2	May 6 1992
INSTANTANEOUS PEAK FLOW			4340	Sep 29	7480	Aug 24 1988
INSTANTANEOUS PEAK STAGE			11.40	Sep 29	13.64	Aug 24 1988
INSTANTANEOUS LOW FLOW			8.2	May 14	3.7	May 9 1992
ANNUAL RUNOFF (AC-FT)	35780		28020		34600	
ANNUAL RUNOFF (CFSM)	2.69		2.11		2.61	
ANNUAL RUNOFF (INCHES)	36.67		28.71		35.46	
10 PERCENT EXCEEDS	107		79		110	
50 PERCENT EXCEEDS	38		30		28	
90 PERCENT EXCEEDS	15		11		11	

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1979 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1985 to current year.

INSTRUMENTATION.--US D-49 sediment sampler since October 1985. Automatic sediment sampler since 1986.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 8,150 mg/L October 7, 1985; Minimum daily mean, 1.0 mg/L several days.
SEDIMENT LOADS: Maximum daily, 74,700 tons (67,800 tonnes) October 7, 1985; Minimum daily, 0.05 ton (0.04 Tonne) several days.

EXTREMES FOR CURRENT YEAR 1997.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 685 mg/L October 29, 1996; Minimum daily mean, 4.0 mg/L April 20, 1997.
SEDIMENT LOADS: Maximum daily, 1,950 tons (1,770 tonnes) September 29, 1997; Minimum daily 0.12 ton (0.11 tonne) April 20, 1997.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
12...	1235	72	273	6.7	23.5	3.7	7.9	92	12	3900	810
MAR 1997											
05...	1245	17	275	7.3	23.5	0.50	9.8	114	<10	60	440
MAY											
29...	0950	13	277	7.2	24.5	3.5	7.7	93	<10	240	660
AUG											
19...	1300	57	250	7.1	26.0	38	7.4	91	<10	K6700	960

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
12...	120	19	18	6.0	0.2	1.5	120	<0.5	6.2	6.5
MAR 1997										
05...	--	--	--	--	--	--	150	--	--	--
MAY										
29...	120	24	14	7.8	0.3	1.7	140	<0.5	7.6	8.9
AUG										
19...	110	19	16	7.0	0.3	1.7	120	--	7.0	7.2

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
12...	<0.10	32	161	31.5	11	0.980	<0.010	0.990	<0.010	<0.20
MAR 1997										
05...	--	--	--	--	4	0.630	<0.010	0.640	0.020	<0.20
MAY										
29...	0.10	27	149	5.23	13	0.700	<0.010	0.710	0.040	<0.20
AUG										
19...	<0.10	28	158	24.3	33	0.980	<0.010	0.980	0.020	<0.20

K = non-ideal count

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

WATER QUALITY DATA, WATER YEARS OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
NOV 1996										
12...	<0.20	1.2	5.2	0.040	<1	<100	20	<1	11	<10
MAR 1997										
05...	<0.20	0.73	3.2	0.070	--	--	--	--	--	--
MAY										
29...	0.23	0.94	4.2	0.090	<1	<100	30	<1	3	<10
AUG										
19...	0.22	1.2	5.3	0.050	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L) (38260)
NOV 1996										
12...	360	<1	20	<0.10	<1	<1	<10	<0.010	3	<0.01
MAR 1997										
05...	--	--	--	--	--	--	--	--	--	--
MAY										
29...	220	<1	21	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
19...	--	--	--	--	--	--	--	--	--	--

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR-- Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	75	31	6.3	120	244	145	52	10	1.5
2	67	14	2.5	100	107	31	48	7	.97
3	131	316	325	85	74	19	47	7	.82
4	97	99	27	76	72	15	45	6	.74
5	74	46	9.2	81	112	30	44	6	.66
6	69	29	5.4	75	37	7.8	42	5	.58
7	62	18	3.0	76	34	8.6	41	5	.57
8	61	14	2.2	72	31	6.3	40	5	.59
9	59	11	1.8	123	300	239	38	6	.59
10	60	9	1.5	137	326	217	37	6	.59
11	51	8	1.0	106	117	36	44	19	2.4
12	51	6	.88	147	453	347	38	16	1.7
13	49	6	.79	125	150	56	36	11	1.1
14	69	68	37	91	35	8.8	35	10	.91
15	51	24	3.3	78	20	4.3	35	10	.93
16	46	10	1.2	72	14	2.6	35	11	.99
17	43	9	.99	109	126	68	34	8	.76
18	44	9	1.1	108	89	28	34	6	.52
19	45	14	1.9	85	39	9.0	34	7	.60
20	47	29	3.7	88	75	23	33	9	.80
21	122	323	332	99	66	18	33	10	.89
22	80	120	28	87	17	4.1	33	10	.89
23	57	93	14	79	13	2.8	33	10	.90
24	50	60	8.1	72	10	1.9	35	10	.94
25	47	28	3.5	66	8	1.4	35	11	1.0
26	44	12	1.4	62	10	1.7	40	17	1.9
27	71	60	23	58	9	1.4	34	12	1.1
28	74	131	26	57	8	1.2	33	10	.93
29	178	685	1050	55	7	1.1	35	9	.89
30	130	311	176	53	12	1.7	35	9	.82
31	86	60	14	---	---	---	34	8	.74
TOTAL	2190	---	2111.76	2642	---	1336.7	1172	---	29.32

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR-- Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	32	8	.66	26	9	.65	18	8	.37
2	35	10	1.1	35	15	1.8	18	6	.31
3	71	71	25	27	17	1.3	18	6	.29
4	66	67	13	27	17	1.3	18	6	.30
5	57	46	7.1	24	17	1.1	18	6	.28
6	40	41	4.5	52	110	68	18	6	.29
7	40	36	3.9	45	41	6.0	18	6	.30
8	37	25	2.5	26	27	1.9	18	7	.34
9	53	35	6.0	25	23	1.6	17	9	.43
10	47	32	4.1	24	20	1.3	17	13	.57
11	37	17	1.7	25	32	2.2	17	11	.51
12	34	13	1.2	22	29	1.7	17	9	.40
13	33	11	.99	21	24	1.4	17	11	.48
14	36	10	.93	21	16	.88	17	15	.69
15	34	8	.76	20	9	.51	16	14	.64
16	32	9	.75	20	7	.38	16	12	.50
17	31	10	.82	20	6	.33	16	12	.52
18	31	9	.77	19	7	.35	16	12	.53
19	31	11	.92	19	8	.40	16	9	.41
20	36	14	1.4	19	7	.34	19	9	.48
21	50	18	3.2	19	5	.27	16	8	.34
22	103	161	57	19	5	.26	15	7	.27
23	52	74	11	18	5	.24	15	6	.23
24	35	43	4.2	18	5	.25	15	6	.25
25	29	28	2.2	18	8	.39	14	7	.27
26	27	19	1.4	19	14	.71	15	8	.32
27	26	13	.93	19	13	.66	15	8	.31
28	25	10	.64	18	9	.47	20	12	.68
29	23	9	.54	---	---	---	21	12	.67
30	23	8	.51	---	---	---	21	12	.66
31	25	8	.58	---	---	---	24	15	1.0
TOTAL	1231	---	160.30	665	---	96.69	536	---	13.64

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR-- Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	29	19	1.6	11	16	.47	10	9	.25
2	17	10	.49	14	11	.48	9.3	9	.22
3	16	13	.55	20	12	.69	9.1	9	.21
4	15	20	.78	14	9	.35	9.1	8	.20
5	13	23	.83	11	8	.24	8.8	8	.19
6	13	26	.94	14	15	.56	8.5	9	.21
7	13	19	.70	11	15	.44	8.6	11	.24
8	13	11	.40	9.7	15	.39	8.8	10	.25
9	12	7	.22	10	7	.21	8.9	10	.23
10	12	6	.18	13	7	.27	8.7	9	.22
11	12	5	.17	9.6	7	.17	8.9	11	.26
12	12	5	.17	9.4	9	.23	9.1	13	.32
13	12	6	.18	8.8	8	.19	9.1	11	.26
14	12	7	.22	8.4	6	.15	10	8	.20
15	11	6	.19	8.3	7	.16	10	7	.18
16	11	5	.14	8.7	9	.20	11	6	.18
17	11	6	.18	9.0	9	.22	12	7	.27
18	11	9	.29	9.2	9	.23	19	11	.58
19	11	6	.18	9.5	10	.26	73	181	97
20	11	4	.12	9.4	10	.27	32	21	2.1
21	12	8	.25	10	8	.22	37	40	13
22	14	9	.34	15	11	.49	83	320	335
23	19	9	.50	18	10	.51	38	109	12
24	14	9	.32	34	24	2.3	21	109	7.6
25	12	11	.36	43	37	5.2	127	589	903
26	12	11	.38	45	78	13	72	101	22
27	14	8	.29	25	72	5.1	38	83	8.9
28	12	5	.16	17	38	1.8	26	25	1.8
29	11	6	.19	12	22	.72	30	20	1.7
30	11	10	.30	11	13	.36	29	22	1.8
31	---	---	---	10	10	.28	---	---	---
TOTAL	398	---	11.62	458.0	---	36.16	784.9	---	1410.37

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR-- Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	25	20	1.4	16	9	.39	58	50	14
2	19	12	.60	18	50	3.9	56	49	7.4
3	17	7	.34	50	111	55	58	38	7.0
4	15	8	.32	47	61	8.8	49	26	3.5
5	20	10	.60	25	18	1.2	39	20	2.2
6	35	21	2.1	19	8	.40	37	14	1.5
7	33	11	1.1	17	8	.38	33	10	.88
8	136	429	712	24	15	2.2	30	10	.82
9	53	35	6.0	39	52	6.6	35	12	1.2
10	27	11	.83	71	105	39	28	7	.51
11	20	9	.51	101	180	105	26	5	.38
12	18	10	.50	65	40	7.5	32	12	1.2
13	23	12	.80	122	320	229	29	13	1.1
14	19	8	.43	112	101	32	41	26	3.2
15	17	5	.24	127	302	246	31	15	1.3
16	16	6	.27	90	78	23	24	9	.58
17	14	7	.27	59	38	6.4	22	9	.53
18	39	51	12	66	68	19	22	8	.48
19	31	22	2.0	60	39	6.5	22	7	.43
20	28	15	1.1	49	27	3.8	24	8	.51
21	23	8	.51	41	36	3.9	36	17	1.8
22	21	7	.40	37	30	3.0	47	39	7.3
23	20	7	.37	47	54	12	44	48	12
24	16	7	.31	53	113	16	79	88	30
25	32	18	3.0	40	48	5.3	46	22	2.9
26	29	24	2.0	33	24	2.2	31	13	1.1
27	18	16	.79	30	20	1.6	27	14	1.0
28	16	14	.61	32	19	1.7	26	14	1.0
29	15	12	.50	131	435	767	258	286	1950
30	15	11	.42	82	101	25	163	222	225
31	17	9	.43	65	40	7.4	---	---	---
TOTAL	827	---	752.75	1768	---	1641.17	1453	---	2280.82
YEAR	14124.9		9881.30						

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70326)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70327)	SED. SUSP. FALL DIAM. % FINER THAN .008 MM (70328)
AUG 1997							
11...	1810	318	1200	1030	47	57	65

DATE	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70329)	SED. SUSP. FALL DIAM. % FINER THAN .031 MM (70330)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM (70332)	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM (70333)	SED. SUSP. SIEVE DIAM. % FINER THAN .500 MM (70334)	SED. SUSP. SIEVE DIAM. % FINER THAN 1.00 MM (70335)
AUG 1997							
11...	78	86	94	98	99	100	100

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 1996					
22...	1253	62	103	17	94
DEC					
23...	1410	34	759	70	37
JAN 1997					
09...	1749	42	105	12	96
JUN					
19...	1440	61	147	24	98
JUL					
18...	1449	22	88	5.2	91

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR

LOCATION.--Lat 18°08'36", long 67°08'57", Hydrologic Unit 21010003, at bridge on Highway 100, 1.4 mi (2.3 km) west of Hormigueros, and 2.0 mi (3.2 km) downstream from Río Rosario.

DRAINAGE AREA.--120 mi² (311 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Annual low-flow measurements 1959, monthly measurements April 1959 to November 1967, January 1973 to current year.

GAGE.--Water-stage recorder. Datum of gage is at mean sea level. Previous to Nov. 7, 1980, at site 0.3 mi (0.5 km) upstream at datum 7.36 ft (2.243 m) higher.

REMARKS.--Records fair. Gage-height and precipitation satellite telemetry at station. Daily discharges affected by sewage treatment plant about 2.1 mi (3.4 km) upstream from gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	228	479	127	118	64	34	93	14	25	48	40	95
2	348	365	116	117	77	33	44	16	17	31	48	111
3	520	224	111	312	77	32	40	91	14	26	92	132
4	386	227	108	202	89	33	36	35	14	22	137	191
5	235	327	106	250	176	32	34	23	13	21	68	92
6	180	263	102	142	123	33	29	23	12	21	44	77
7	144	229	102	181	154	33	26	22	12	30	34	62
8	118	549	101	142	88	32	25	20	12	138	46	55
9	106	910	99	147	74	33	24	23	12	152	71	61
10	94	733	96	135	65	32	24	24	11	50	99	51
11	90	467	99	105	61	30	23	19	11	34	181	45
12	85	641	94	90	54	30	23	18	11	29	129	45
13	79	1060	90	80	52	30	23	16	11	35	472	51
14	91	640	86	138	49	30	21	15	11	27	582	51
15	96	442	83	82	47	29	20	14	11	24	437	56
16	73	370	81	75	44	28	20	14	10	23	265	41
17	63	463	76	68	43	28	19	14	11	23	126	37
18	63	673	74	64	42	30	18	14	68	31	104	36
19	60	473	70	60	41	29	18	14	122	58	139	34
20	76	411	67	61	40	29	18	14	110	75	93	33
21	193	467	65	58	39	26	26	15	59	43	80	41
22	260	559	65	145	40	23	32	17	103	37	67	51
23	308	449	61	109	39	22	31	27	131	31	65	57
24	191	360	62	86	36	21	27	37	44	25	98	95
25	171	311	66	76	35	20	21	54	83	23	91	71
26	90	249	78	74	36	20	18	50	149	53	63	47
27	244	216	66	77	36	27	23	54	70	26	53	41
28	702	188	67	70	35	51	24	27	39	22	47	39
29	537	160	70	69	---	75	19	20	39	19	95	168
30	499	140	67	65	---	100	16	18	37	26	194	390
31	599	---	108	65	---	59	---	17	---	61	208	---
TOTAL	6929	13045	2663	3463	1756	1064	815	779	1272	1264	4268	2356
MEAN	224	435	85.9	112	62.7	34.3	27.2	25.1	42.4	40.8	138	78.5
MAX	702	1060	127	312	176	100	93	91	149	152	582	390
MIN	60	140	61	58	35	20	16	14	10	19	34	33
AC-FT	13740	25870	5280	6870	3480	2110	1620	1550	2520	2510	8470	4670
CFSM	1.86	3.62	.72	.93	.52	.29	.23	.21	.35	.34	1.15	.65
IN.	2.15	4.04	.83	1.07	.54	.33	.25	.24	.39	.39	1.32	.73

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 1997, BY WATER YEAR (WY)

MEAN	461	409	127	60.8	51.4	46.5	69.6	168	105	98.5	217	448
MAX	1254	1518	422	112	119	244	316	636	504	240	757	2075
(WY)	1986	1978	1976	1997	1996	1989	1989	1980	1979	1984	1988	1975
MIN	97.5	42.7	15.4	13.8	13.9	10.6	16.1	12.7	9.23	26.4	42.3	78.5
(WY)	1992	1992	1992	1973	1977	1977	1977	1977	1977	1976	1976	1997

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1973 - 1997	
ANNUAL TOTAL	56761		39674			
ANNUAL MEAN	155		109		190	
HIGHEST ANNUAL MEAN					402	1979
LOWEST ANNUAL MEAN					69.6	1994
HIGHEST DAILY MEAN	1260	May 20	1060	Nov 13	35000	Sep 16 1975
LOWEST DAILY MEAN	27	Mar 29	10	Jun 16	5.0	Jun 18 1977
ANNUAL SEVEN-DAY MINIMUM	28	Mar 24	11	Jun 10	5.5	Jun 17 1977
INSTANTANEOUS PEAK FLOW			1700	Nov 9	128000	Sep 16 1975
INSTANTANEOUS PEAK STAGE			18.90	Nov 9	28.50	Sep 16 1975
INSTANTANEOUS LOW FLOW					4.6	Jun 22 1977
ANNUAL RUNOFF (AC-FT)	112600		78690		138000	
ANNUAL RUNOFF (CFSM)	1.29		.91		1.59	
ANNUAL RUNOFF (INCHES)	17.60		12.30		21.56	
10 PERCENT EXCEEDS	373		261		414	
50 PERCENT EXCEEDS	90		61		76	
90 PERCENT EXCEEDS	40		19		21	

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1958 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
14...	0740	608	314	7.1	23.5	60	5.8	67	18	K6500	7700
MAR 1997											
06...	0835	32	450	7.0	22.5	72	6.7	77	<10	300	400
MAY											
30...	0945	17	474	6.9	27.0	14	6.5	82	<10	290	K1600
AUG											
20...	0820	91	400	6.9	26.0	10	5.7	70	12	480	4100

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
14...	130	19	20	6.8	0.3	2.7	130	<0.5	12	9.2
MAR 1997										
06...	--	--	--	--	--	--	260	--	--	--
MAY										
30...	210	30	32	16	0.5	2.4	220	<0.5	18	18
AUG										
20...	170	26	25	14	0.5	2.9	180	--	19	16

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
14...	<0.10	27	175	287	88	0.720	0.020	0.740	0.040	0.56
MAR 1997										
06...	--	--	--	--	28	0.880	<0.010	0.890	0.030	0.35
MAY										
30...	0.10	19	255	11.7	21	0.460	<0.010	0.470	0.030	0.21
AUG										
20...	0.10	31	242	59.6	7	0.960	0.020	0.980	0.040	0.39

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
14...	0.60	1.3	5.9	0.260	<1	100	30	<1	22	<10
MAR 1997										
06...	0.37	1.3	5.6	0.290	--	--	--	--	--	--
MAY										
30...	0.24	0.71	3.1	0.280	<1	<100	70	<1	2	<10
AUG										
20...	0.43	1.4	6.3	0.260	--	--	--	--	--	--

K = non-ideal count

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
14...	3600	1	180	<0.10	<1	<1	<10	<0.010	<1	<0.01
MAR 1997										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
30...	330	1	61	<0.10	<1	<1	<10	<0.010	<1	0.03
AUG										
20...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, I TOTAL (UG/L) (39388)
MAY 1997										
30...	0945	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)
MAY 1997									
30...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	PARA-THION, TOTAL (UG/L) (39540)	PCNS UNFILT RECOVER (UG/L) (39250)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	2, 4-DP TOTAL (UG/L) (82183)	SILVEX, TOTAL (UG/L) (39760)
MAY 1997									
30...	<0.010	<0.100	<0.100	<1.00	<0.010	0.010	<0.010	<0.010	<0.010

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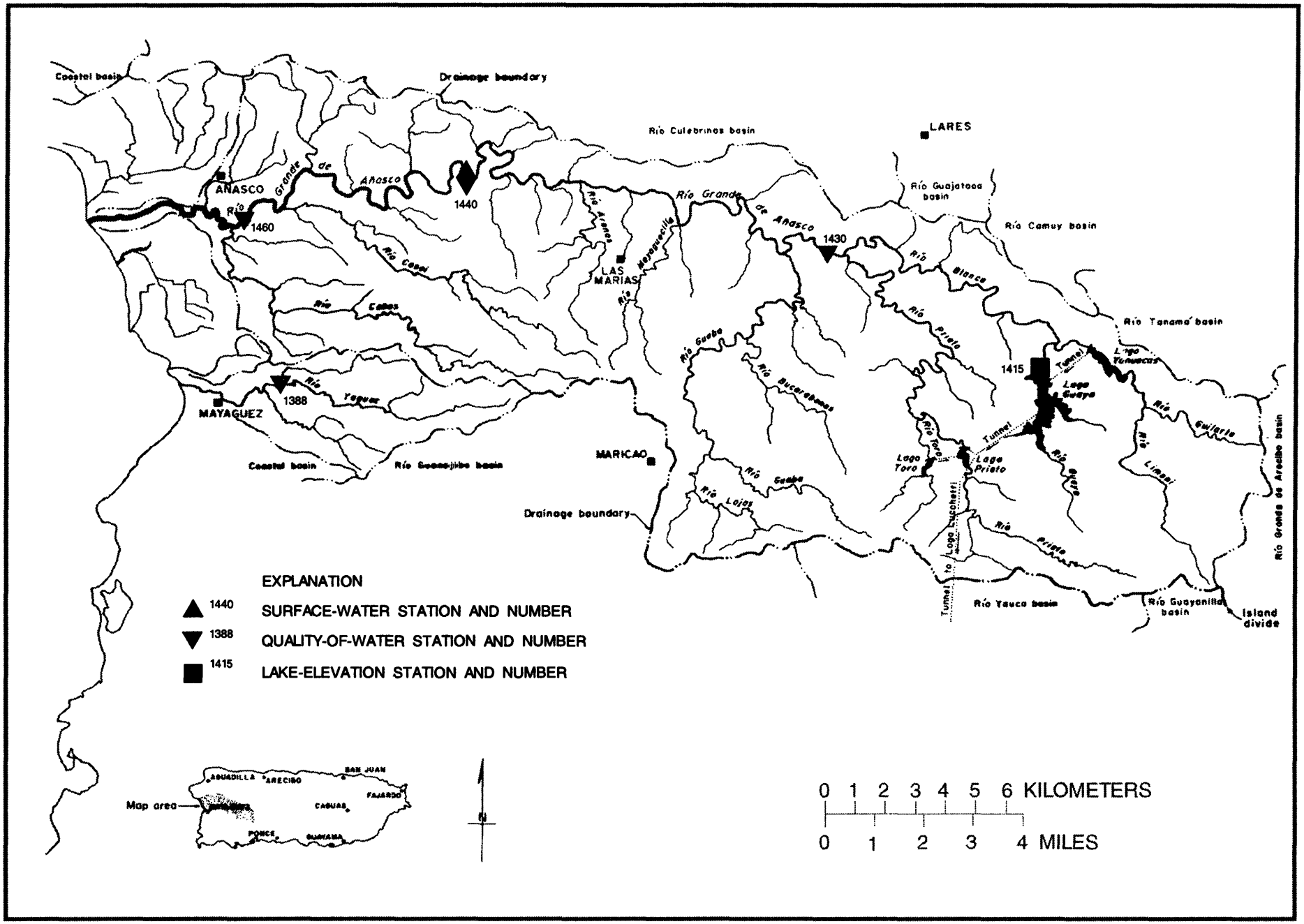

Figure 25.--Río Yagüez and Río Grande de Añasco basins.

RIO YAGÜEZ BASIN

50138800 RIO YAGÜEZ NEAR MAYAGÜEZ, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°12'31", long 67°07'07", at steel-truss bridge on unnumbered paved road about 800 ft (244 m) south of Highway 106, 1.8 mi (2.9 km) west of Highways 106 and 352 junction, and 1.4 mi (2.3 km) east-northeast from Mayagüez plaza.

DRAINAGE AREA.--6.7 mi² (17.3 km²).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UMITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
12...	1430	--	210	6.6	25.0	180	8.0	96	37	230000	250000
MAR 1997											
05...	1435	4.6	310	7.1	23.5	0.70	8.9	105	<10	1800	3400
MAY											
29...	1145	1.6	304	7.0	25.5	0.60	7.6	93	<10	270	880
AUG											
19...	1445	7.6	270	7.0	27.0	5.7	7.8	98	<10	580	600

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
12...	80	21	6.7	7.1	0.3	3.6	85	<0.5	5.1	7.3
MAR 1997										
05...	--	--	--	--	--	--	190	--	--	--
MAY										
29...	130	34	12	12	0.5	2.7	150	<0.5	8.3	11.0
AUG										
19...	110	27	9.0	9.6	0.4	2.9	130	--	7.2	9.8

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
12...	<0.10	21	123	--	324	1.30	0.020	1.30	0.080	1.9
MAR 1997										
05...	--	--	--	--	6	0.620	<0.010	0.630	0.020	0.21
MAY										
29...	0.10	29	193	0.83	9	0.640	0.010	0.650	0.040	<0.20
AUG										
19...	<0.10	28	172	3.52	1	0.920	<0.010	0.920	0.020	<0.20

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
12...	2.0	3.3	15	0.410	<1	<100	30	<1	10	10
MAR 1997										
05...	0.23	0.86	3.8	0.080	--	--	--	--	--	--
MAY										
29...	<0.20	0.78	3.4	0.060	<1	100	50	<1	<1	<10
AUG										
19...	<0.20	1.0	4.5	0.030	--	--	--	--	--	--

K = non-ideal count

50138800 RIO YAGÜEZ NEAR MAYAGÜEZ, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
12...	7100	8	490	<0.10	<1	<1	50	<0.010	<1	<0.01
MAR 1997										
05...	--	--	--	--	--	--	--	--	--	--
MAY										
29...	300	<1	23	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
19...	--	--	--	--	--	--	--	--	--	--

50141500 LAGO GUAYO AT DAMSITE NEAR CASTAÑER, PR

LOCATION.--Lat 18°12'46", long 66°50'06", Hydrologic Unit 21010003, at Guayo Dam on Río Guayo, 1.1 mi (1.8 km) southwest of Lago Yahuecas, 2.6 mi (4.2 km) southwest of Lago Prieto, 2.1 mi (3.4 km) north of Castañer, and 6.0 mi (9.6 km) west of Adjuntas.

DRAINAGE AREA.--9.60 mi² (24.86 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--April 1980 to January 1985, June 1989 to current year. Prior to October 1994, published as Lago Guayo near Castañer.

GAGE.--Water-stage recorder. Datum of gage is mean sea level.

REMARKS.--Lago Guayo was completed in 1956. The dam is on Río Guayo and is the largest in the southwestern Puerto Rico project. The maximum storage is 17,400 ac-ft (21.5 hm³) for power and irrigation. The dam is a concrete gravity structure with a total length of 555 ft (169 m), a maximum structural height of 190 ft (58 m), and a maximum width at the base of 145 ft (44 m). The ungated overflow spillway with a crest elevation of 60.00 ft (18.29 m) and a crest length of 220 ft (67 m) was designed to pass a maximum flood of 30,200 ft³/s (855 m³/s) at a reservoir elevation of 70.00 ft (21.34 m). Timber flashboards that were added to increase storage capacity were subsequently removed and their use discontinued. Gage-height and precipitation satellite telemetry at station.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation, 1462.43 ft (445.75 m), May 27, 1980; minimum elevation recorded, 1415.43 ft (431.42 m), June 2, 1990, but may have been less during period of no gage-height record June 2-5, 1990.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 1460.84 ft (445.26 m), Nov. 21; minimum elevation recorded 1425.63 ft (434.53 m), Jun. 5.

Capacity Table
(based on data from Puerto Rico Water Resources Authority)

Elevation, in feet	Contents, in acre-feet	Elevation, in feet	Contents, in acre-feet
1415	3,960	1460	13,550
1449	10,660	1465	15,000

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY OBSERVATION AT 2400 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1444.75	1451.72	1459.50	1455.41	1456.23	1448.42	1440.66	1438.28	1431.74	1431.93	1437.83	1443.68
2	A	1451.83	1458.56	1455.44	1456.53	1448.60	1440.20	1441.05	A	1432.18	1437.97	1444.93
3	1445.69	1452.56	1457.96	1455.04	1456.76	1447.68	1439.95	1441.87	A	1432.35	1439.00	1444.47
4	1446.04	1452.75	1457.73	1455.31	1455.92	1446.89	1440.25	1442.24	A	1432.53	1439.61	1442.91
5	1446.51	1453.23	1457.14	1455.25	1455.53	1446.58	1440.50	1442.01	1425.75	1432.68	1439.31	1442.20
6	A	1453.46	1457.20	1455.39	1455.06	1445.80	1440.76	A	A	1432.84	1438.77	1441.10
7	1447.36	1453.44	A	1455.04	1455.08	1445.08	1441.02	1441.42	A	1432.99	1438.94	1441.36
8	1447.79	1453.86	1456.73	1455.27	1455.32	1445.28	1441.28	1440.54	A	1433.32	1438.92	1439.85
9	1448.20	1454.38	1456.94	A	1455.53	1445.45	1441.22	1440.30	A	1433.67	1439.07	1438.08
10	1448.58	1455.67	1455.95	1454.93	1455.50	1445.08	1440.71	1438.37	A	1433.85	1439.46	1436.67
11	1448.94	1456.27	1455.80	1453.96	1455.62	1444.53	1440.65	1438.05	A	1434.02	1439.70	1435.51
12	1449.31	1457.70	A	A	1455.57	1444.00	1440.57	1436.37	A	1434.26	1439.90	1435.44
13	1450.30	1457.09	A	1452.39	1455.48	1443.40	1440.80	1436.21	A	1434.45	1440.57	1435.90
14	1450.73	1457.00	A	1451.69	1455.09	1441.94	1441.03	1435.17	A	1434.61	1441.07	1436.46
15	1450.88	1457.47	A	1451.08	1455.22	1441.47	1440.66	1433.33	A	1434.78	1441.52	1436.88
16	1451.12	1457.69	1457.32	1450.59	1454.22	1440.95	A	1433.42	A	1434.89	1441.79	1437.13
17	1452.02	1458.97	1457.58	1450.83	1454.13	1440.25	A	1433.63	1426.06	1435.04	1442.00	1437.35
18	1452.44	1459.49	1457.43	1450.95	1454.07	1440.20	1439.79	1432.60	A	1435.58	1441.43	1437.54
19	1453.37	1459.46	A	1451.25	1453.19	1441.31	1439.09	1431.49	1426.65	1436.02	1441.51	1437.73
20	1453.93	1460.18	1457.87	1451.60	1452.51	1440.85	1438.72	1431.61	1426.95	1436.45	1441.67	1437.91
21	1453.26	1460.57	1457.75	1452.42	1451.35	1440.50	1438.46	A	1427.18	1436.92	1440.47	1438.13
22	1453.81	1460.35	1457.42	A	1451.53	1440.02	1438.18	1430.15	1427.93	1437.22	1439.86	1438.36
23	1452.46	1459.66	1457.10	1454.13	1451.30	1437.89	A	1430.82	1428.56	1437.46	1440.28	1438.58
24	1452.20	1459.41	1457.01	1454.46	1450.76	1437.90	1437.94	1431.27	1429.18	1437.66	1440.70	1438.90
25	1452.43	1459.08	1457.28	1454.73	1450.27	1437.97	1437.57	1431.62	1429.51	1437.88	1440.91	1439.17
26	1451.08	1458.95	1456.49	1454.99	1449.75	1438.25	1437.76	1431.94	1429.76	1438.08	1440.50	1439.35
27	1450.52	1458.45	1455.69	1455.23	1448.66	1438.70	1437.97	1431.40	1429.99	1438.24	1439.78	1439.68
28	1450.98	1459.02	1455.86	1455.44	1448.23	1439.49	1438.15	1430.71	1430.34	1438.40	1439.77	1439.92
29	1451.76	1459.02	1455.90	1455.56	---	1440.69	1438.33	1431.04	1430.87	1438.52	1440.00	1440.01
30	1451.52	1459.29	1455.58	1455.78	---	1441.35	---	1431.32	1431.69	1438.29	1441.33	1440.67
31	1451.51	---	1455.41	1456.00	---	1442.02	---	1431.59	---	1438.61	1441.84	---
MAX	1453.93	1460.57	1459.50	1456.00	1456.76	1448.60	1441.28	1442.24	1431.74	1438.61	1442.00	1444.93
MIN	1444.75	1451.72	1455.41	1450.59	1448.23	1437.89	1437.57	1430.15	1425.75	1431.93	1437.83	1435.44

CAL YR 1996 MAX 1460.75 MIN 1439.10
WTR YR 1997 MAX 1460.57 MIN 1425.75

A No gage-height record

50143000 RIO GRANDE DE AÑASCO NEAR LARES, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°15'26", long 66°55'00", at bridge on Highway 124, 0.7 mi (1.1 km) downstream from confluence of Río Blanco and Río Prieto, and 3.7 mi (6.0 km) southwest of Lares plaza.

DRAINAGE AREA.--26.3 mi² (68.1 km²) this does not include 36.2 mi² (93.8 km²) which contributes only during high floods, and 3.5 mi² (9.1 km²) which contributes only part of its storm runoff.

PERIOD OF RECORD.--Water years 1959-68, 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
13...	0905	277	336	5.5	22.5	210	8.1	93	16	21000	49000
FEB 1997											
11...	0945	60	292	7.4	21.0	0.50	9.5	106	<10	K80	300
JUN											
09...	1340	18	291	8.7	33.5	1.1	10.1	135	<10	K10	K60
AUG											
27...	1050	26	299	8.3	28.0	5.3	8.1	106	<10	K100	220

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
13...	63	17	4.9	6.6	0.4	2.9	55	<0.5	9.7	6.2
FEB 1997										
11...	--	--	--	--	--	--	110	--	--	--
JUN										
09...	120	32	9.3	13	0.5	1.7	110	<0.5	25	11
AUG										
27...	120	32	10	12	0.5	1.9	110	--	20	8.9

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
13...	<0.10	21	101	75.7	216	1.70	0.020	1.70	0.030	0.91
FEB 1997										
11...	--	--	--	--	3	1.20	<0.010	1.20	0.010	0.23
JUN										
09...	0.12	33	192	9.10	<1	0.300	<0.010	0.310	0.030	<0.20
AUG										
27...	0.11	32	184	12.7	8	0.710	0.012	0.730	0.030	0.27

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	HARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
13...	0.94	2.6	12	0.240	<1	<100	20	<1	4	10
FEB 1997										
11...	0.25	1.4	6.4	0.030	--	--	--	--	--	--
JUN										
09...	<0.20	0.50	2.2	<0.020	<1	<100	30	<1	<1	<10
AUG										
27...	0.30	1.0	4.5	0.050	--	--	--	--	--	--

K = non-ideal count

50143000 RIO GRANDE DE AÑASCO NEAR LARES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
13...	6100	3	300	<0.10	<1	<1	20	<0.010	2	0.02
FEB 1997										
11...	--	--	--	--	--	--	--	--	--	--
JUN										
09...	110	<1	17	<0.10	<1	<1	20	<0.010	3	0.04
AUG										
27...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR

LOCATION.--Lat 18°17'05", long 67°03'05", Hydrologic Unit 21010003, on left bank, at downstream side of bridge on Highway 108, 0.4 mi (0.6 km) downstream from Quebrada La Zumbadora, 4.4 mi (7.1 km) northwest of Las Marías, 5.4 mi (8.7 km) southwest of San Sebastián.

DRAINAGE AREA.--94.3 mi² (244.2 km²), does not include 36.2 mi² (93.8 km²) which contributes only during high floods, and 3.5 mi² (9.1 km²) which contributes only part of its storm runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1963 to current year.

GAGE.--Water-stage recorder. Datum of gage is 103.72 ft (31.614 m) above mean sea level (Puerto Rico Department of Public Works bench mark). Previous to Oct. 30, 1975, at site 600 ft (180 m) upstream at same datum.

REMARKS.--Records fair except those for estimated daily dischages, which are poor. Transbasin diversion (except during floods) to Río Yauco basin for hydroelectric power and irrigation above Lago Guayo, Yahuecas, and Prieto, combined useable storage 17,300 acre-ft (21.3 hm³). Limited storm runoff is contributed to basin by 3.5 mi² (9.1 km²) above Río Toro Diversion dam. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	626	518	e314	164	193	136	117	68	171	299	97	1030
2	407	429	e294	165	215	133	97	70	94	135	88	1230
3	564	491	e287	300	217	131	92	187	80	102	88	329
4	497	423	e279	375	189	133	88	94	73	91	221	250
5	389	339	e273	301	214	131	86	74	68	97	115	237
6	433	331	e266	296	204	130	83	89	66	81	96	238
7	359	334	e271	332	410	129	81	72	89	79	90	193
8	353	347	e262	239	211	130	81	85	76	153	141	180
9	347	366	e253	229	209	126	81	117	65	194	280	175
10	301	701	e253	240	184	123	79	112	63	102	361	164
11	351	735	e278	205	203	121	76	126	60	86	418	175
12	817	1130	e248	196	188	119	74	85	60	89	278	154
13	1700	905	e231	445	172	122	78	63	59	154	1100	155
14	2250	466	e224	596	167	119	73	58	60	379	1300	224
15	773	335	e220	248	164	117	72	60	57	261	640	177
16	475	675	e211	207	161	117	72	61	57	167	493	148
17	674	917	e206	190	158	118	71	60	56	125	256	157
18	571	e1440	e202	183	156	122	69	59	71	106	209	140
19	383	e392	e193	178	154	134	68	58	134	156	199	132
20	421	e363	186	249	154	169	67	57	163	159	329	240
21	792	e523	184	343	156	114	67	72	134	121	218	166
22	626	e514	184	1020	155	106	73	102	140	109	169	165
23	391	e371	179	393	149	100	114	169	118	103	442	181
24	334	e381	177	293	145	96	76	335	147	96	415	649
25	309	e375	177	250	144	93	69	310	164	92	229	456
26	291	e360	185	225	140	90	67	385	139	127	175	205
27	310	e347	170	212	140	89	67	250	168	116	188	168
28	552	e335	167	201	138	124	66	126	234	97	630	159
29	577	e324	167	194	---	194	68	94	283	120	615	788
30	903	e313	166	188	---	240	67	107	345	97	496	485
31	1100	---	164	205	---	141	---	138	---	98	405	---
TOTAL	18876	15480	6871	8862	5090	3947	2339	3743	3494	4191	10781	9150
MEAN	609	516	222	286	182	127	78.0	121	116	135	348	305
MAX	2250	1440	314	1020	410	240	117	385	345	379	1300	1230
MIN	291	313	164	164	138	89	66	57	56	79	88	132
AC-FT	37440	30700	13630	17580	10100	7830	4640	7420	6930	8310	21380	18150
CFSM	6.46	5.47	2.35	3.03	1.93	1.35	.83	1.28	1.24	1.43	3.69	3.23
IN.	7.45	6.11	2.71	3.50	2.01	1.56	.92	1.48	1.38	1.65	4.25	3.61

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1997, BY WATER YEAR (WY)

MEAN	665	435	225	143	116	105	144	371	288	267	359	611
MAX	1467	746	482	286	345	271	313	1084	815	657	936	1422
(WY)	1993	1982	1966	1997	1996	1972	1971	1986	1979	1979	1979	1984
MIN	344	197	103	83.6	62.3	54.4	49.3	63.7	71.2	111	152	206
(WY)	1983	1994	1992	1965	1992	1965	1968	1967	1977	1990	1967	1983

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1963 - 1997	
ANNUAL TOTAL	159141		92824			
ANNUAL MEAN	435		254		310	
HIGHEST ANNUAL MEAN					460	1979
LOWEST ANNUAL MEAN					189	1967
HIGHEST DAILY MEAN	15700	Sep 10	2250	Oct 14	19400	Sep 16 1975
LOWEST DAILY MEAN	87	Mar 27	56	Jun 17	32	Apr 18 1965
ANNUAL SEVEN-DAY MINIMUM	88	Mar 24	58	Jun 11	35	Apr 14 1965
INSTANTANEOUS PEAK FLOW			9710	Oct 14	140000	Sep 16 1975
INSTANTANEOUS PEAK STAGE			9.21	Oct 14	33.90	Sep 16 1975
INSTANTANEOUS LOW FLOW			52	Jun 17	31	Apr 19 1965
ANNUAL RUNOFF (AC-FT)	315700		184100		224900	
ANNUAL RUNOFF (CFSM)	4.61		2.70		3.29	
ANNUAL RUNOFF (INCHES)	62.78		36.62		44.73	
10 PERCENT EXCEEDS	828		496		654	
50 PERCENT EXCEEDS	225		175		185	
90 PERCENT EXCEEDS	108		72		74	

e Estimated

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
13...	1345	E580	377	6.8	24.0	180	7.8	91	15	K17000	28000
FEB 1997											
27...	1100	140	258	7.4	23.5	0.70	9.6	109	<10	330	K10
MAY											
21...	1145	76	247	8.5	28.0	1.2	10.6	136	<10	K10	K45
AUG											
20...	1150	167	245	7.8	28.0	4.7	7.8	99	<10	240	K130

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
13...	69	18	5.9	6.0	0.3	2.3	75	<0.5	7.3	7.2
FEB 1997										
27...	--	--	--	--	--	--	110	--	--	--
MAY										
21...	120	30	10	11	0.4	2.0	110	<0.5	11	9.6
AUG										
20...	100	26	8.7	9.8	0.4	2.0	77	--	10	7.5

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
13...	<0.10	23	115	E180	212	1.60	0.020	1.60	0.020	0.72
FEB 1997										
27...	--	--	--	--	<1	0.450	<0.010	0.460	0.010	<0.20
MAY										
21...	0.11	32	172	35.3	8	0.130	<0.010	0.140	0.080	0.72
AUG										
20...	0.10	28	151	68.1	17	0.940	<0.010	0.950	0.050	0.21

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
13...	0.75	2.4	11	0.230	<1	<100	20	<1	9	10
FEB 1997										
27...	<0.20	0.57	2.5	<0.020	--	--	--	--	--	--
MAY										
21...	0.79	0.93	4.1	<0.020	<1	<100	<10	<1	2	<10
AUG										
20...	0.26	1.2	5.3	0.030	--	--	--	--	--	--

E = estimated
K = non-ideal count

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
13...	8400	3	370	<0.10	<1	<1	20	<0.010	9	<0.01
FEB 1997										
27...	--	--	--	--	--	--	--	--	--	--
MAY										
21...	5100	2	160	<0.10	<1	<1	<10	<0.010	6	<0.01
AUG										
20...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE AÑASCO BASIN

50146000 RIO GRANDE DE AÑASCO NEAR AÑASCO, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°16'00", long 67°08'05", at bridge on Highway 430, 0.2 mi (0.3 km) south of Highway 109 at El Espino and 1.4 mi (2.3 km) east-southeast from Añasco plaza.

DRAINAGE AREA.--139 mi² (360 km²) this does not include 39.7 mi² (102.8 km²), flow is diverted to south coast.

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
13...	1530	--	280	6.5	24.0	290	8.1	94	11	K7800	42000
MAR 1997											
05...	1145	177	260	7.8	25.0	0.80	8.9	104	<10	K80	K27
MAY											
21...	0835	79	253	7.7	26.5	6.6	6.4	79	<10	K180	200
AUG											
20...	1445	234	245	7.6	29.0	8.0	7.2	93	<10	450	380

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
13...	70	18	6.1	6.5	0.3	2.4	69	<0.5	7.6	5.8
MAR 1997										
05...	--	--	--	--	--	--	110	--	--	--
MAY										
21...	110	28	9.1	9.8	0.4	1.5	110	<0.5	10	8.0
AUG										
20...	63	17	4.9	6.4	0.4	2.8	100	--	8.5	6.2

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
13...	<0.10	23	111	--	368	1.50	0.020	1.60	0.030	1.1
MAR 1997										
05...	--	--	--	--	<1	0.240	0.010	0.250	0.020	<0.20
MAY										
21...	<0.10	31	164	34.7	5	0.060	<0.010	0.070	0.030	<0.20
AUG										
20...	<0.10	18	99	62.5	28	0.850	<0.010	0.860	0.030	<0.20

DATE	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
13...	1.1	2.7	12	0.320	<1	<100	20	<1	12	20
MAR 1997										
05...	<0.20	0.36	1.6	0.060	--	--	--	--	--	--
MAY										
21...	<0.20	<0.20	0.75	<0.020	<1	<100	<10	<1	<1	<10
AUG										
20...	<0.20	1.0	4.6	0.040	--	--	--	--	--	--

K = non-ideal count

50146000 RIO GRANDE DE AÑASCO NEAR AÑASCO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
13...	11000	4	610	<0.10	<1	<1	30	<0.010	<1	<0.01
MAR 1997										
05...	--	--	--	--	--	--	--	--	--	--
MAY										
21...	3800	<1	290	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
20...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, I TOTAL (UG/L) (39388)
MAY 1997										
21...	0835	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)
MAY 1997									
21...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	PARA-THION, TOTAL (UG/L) (39540)	PCNS UNFILT RECOVER (UG/L) (39250)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	2, 4-DP TOTAL (UG/L) (82183)	SILVEX, TOTAL (UG/L) (39760)
MAY 1997									
21...	<0.010	<0.100	<0.100	<1.00	<0.010	<0.010	<0.010	<0.010	<0.010

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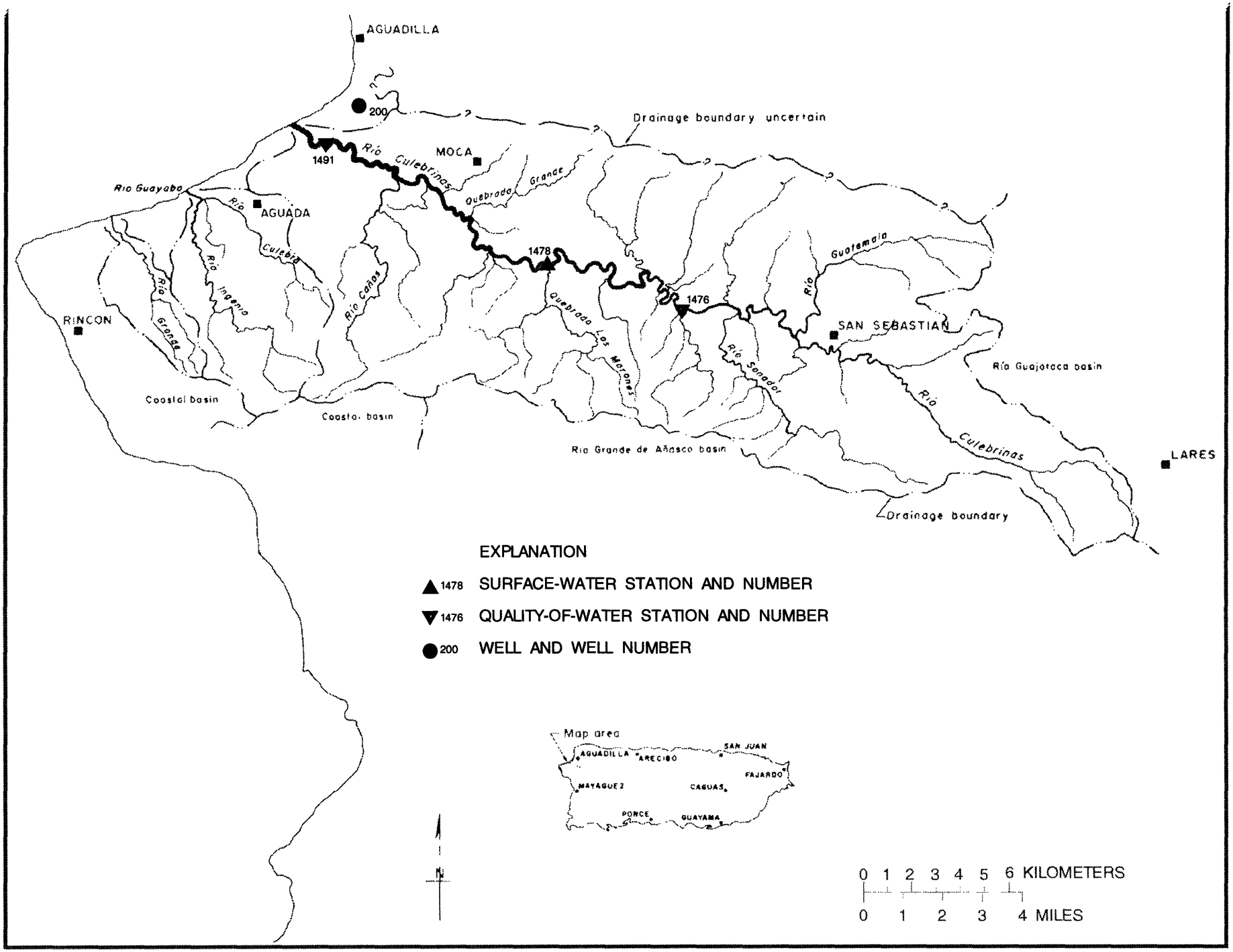


Figure 26.--Río Culebrinas basin.

50147600 RIO CULEBRINAS NEAR SAN SEBASTIAN, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°20'51", long 67°02'40", at bridge on Highway 423, 1.3 mi (2.1 km) south of Quebrada El Salto Bridge on Highway 111, and 2.1 mi (3.4 km) west of Central La Plata.

DRAINAGE AREA.--58.2 mi² (150.7 km²).

PERIOD OF RECORD.--Water years 1979 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996											
13...	1125	94	394	6.9	24.5	15	8.5	100	<10	K8500	2200
MAR 1997											
06...	1000	39	296	7.0	24.0	1.2	7.6	88	<10	500	K120
MAY											
22...	0850	42	307	7.7	25.0	5.1	7.3	88	<10	K680	350
AUG											
21...	1030	257	302	7.9	25.0	21	8.0	96	<10	6000	K16000

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV 1996										
13...	93	29	4.9	10	0.5	2.8	110	<0.5	7.3	9.5
MAR 1997										
06...	--	--	--	--	--	--	120	--	--	--
MAY										
22...	130	42	5.6	15	0.6	2.8	110	<0.5	15	14
AUG										
21...	130	44	4.3	8.2	0.3	3.7	130	--	13	7.9

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996										
13...	<0.10	37	166	42.4	25	1.40	0.020	1.40	0.030	0.30
MAR 1997										
06...	--	--	--	--	3	1.20	0.020	1.20	0.030	0.21
MAY										
22...	0.11	31	191	21.4	10	0.980	0.030	1.00	0.050	0.27
AUG										
21...	0.20	16	176	122	33	1.00	0.022	1.00	0.050	0.78

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOV-ERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)
NOV 1996										
13...	0.33	1.7	7.6	0.060	<1	<100	20	<1	<1	<10
MAR 1997										
06...	0.25	1.4	6.3	0.120	--	--	--	--	--	--
MAY										
22...	0.31	1.3	5.8	0.090	<1	<100	<10	<1	<1	<10
AUG										
21...	0.83	1.9	8.3	0.090	--	--	--	--	--	--

K = non-ideal count

50147600 RIO CULEBRINAS NEAR SAN SEBASTIAN, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
13...	610	2	30	<0.10	<1	<1	<10	<0.010	2	<0.01
MAR 1997										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
22...	210	<1	20	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
21...	--	--	--	--	--	--	--	--	--	--

RIO CULEBRINAS BASIN

50147800 RIO CULEBRINAS AT HIGHWAY 404 NEAR MOCA, PR

LOCATION.--Lat 18°21'42", long 67°05'33", Hydrologic Unit 21010003, on right bank, at bridge on Highway 404, 0.3 mi (0.5 km) downstream from Quebrada Yagruma, and 2.8 mi (4.5 km) southeast of Moca.

DRAINAGE AREA.--71.2 mi² (184.4 km²).

PERIOD OF RECORD.--July 1967 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 45 ft (14 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	201	177	135	81	276	58	49	38	204	84	276	450
2	171	141	126	81	178	55	53	37	157	80	132	583
3	319	134	123	151	162	55	48	37	126	53	105	284
4	225	128	125	143	149	53	46	36	99	48	217	273
5	294	123	122	90	139	52	45	38	86	58	148	209
6	214	120	119	83	131	51	42	37	78	45	102	180
7	297	117	131	79	159	50	41	38	75	41	92	166
8	192	115	139	116	123	49	41	39	76	41	113	157
9	176	113	117	129	181	47	41	122	65	44	276	157
10	168	269	115	75	133	49	40	90	61	39	222	139
11	171	164	154	72	114	50	41	458	73	38	141	142
12	193	117	129	82	99	49	41	204	72	53	135	134
13	1770	120	113	113	85	49	41	91	63	173	568	125
14	1290	108	103	212	80	49	41	89	64	457	293	131
15	1210	521	100	84	78	50	40	96	e60	539	196	126
16	365	461	99	72	75	51	39	74	e57	359	327	126
17	1330	362	103	67	73	52	39	71	53	127	210	141
18	537	537	99	65	72	55	38	71	51	73	134	133
19	256	271	98	69	71	57	38	66	51	63	208	119
20	222	178	96	197	69	61	37	68	58	65	982	114
21	1600	262	97	792	68	56	37	80	52	64	708	113
22	265	478	100	11000	69	54	39	76	49	56	260	117
23	212	250	95	458	66	52	42	89	47	59	244	114
24	192	175	93	338	64	52	38	1310	48	54	358	285
25	176	158	92	281	64	51	38	834	48	49	228	413
26	168	148	90	244	62	50	39	342	46	186	164	168
27	210	141	88	221	61	49	39	333	50	142	795	162
28	301	137	86	208	60	52	38	270	56	163	3540	150
29	191	134	86	197	---	80	39	285	70	495	709	116
30	464	139	85	188	---	81	38	238	97	122	320	114
31	247	---	84	449	---	51	---	221	---	739	502	---
TOTAL	13627	6298	3342	16437	2961	1670	1228	5878	2192	4609	12705	5641
MEAN	440	210	108	530	106	53.9	40.9	190	73.1	149	410	188
MAX	1770	537	154	11000	276	81	53	1310	204	739	3540	583
MIN	168	108	84	65	60	47	37	36	46	38	92	113
AC-FT	27030	12490	6630	32600	5870	3310	2440	11660	4350	9140	25200	11190
CFSM	6.17	2.95	1.51	7.45	1.49	.76	.57	2.66	1.03	2.09	5.76	2.64
IN.	7.12	3.29	1.75	8.59	1.55	.87	.64	3.07	1.15	2.41	6.64	2.95

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 1997, BY WATER YEAR (WY)

MEAN	625	325	144	92.2	80.9	70.6	131	464	381	293	334	503
MAX	1086	799	424	530	371	319	621	2054	769	847	831	1350
(WY)	1973	1982	1982	1997	1996	1981	1986	1986	1984	1979	1979	1978
MIN	231	108	72.1	51.2	37.0	30.4	26.4	96.7	73.1	66.7	119	145
(WY)	1968	1979	1992	1979	1992	1979	1970	1973	1997	1994	1970	1986

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1967 - 1997	
ANNUAL TOTAL	106396		76588			
ANNUAL MEAN	291		210		289	
HIGHEST ANNUAL MEAN					457	1986
LOWEST ANNUAL MEAN					179	1977
HIGHEST DAILY MEAN	3750	Aug 19	11000	Jan 22	13300	Oct 21 1972
LOWEST DAILY MEAN	42	May 5	36	May 4	19	Apr 16 1979
ANNUAL SEVEN-DAY MINIMUM	49	Apr 29	37	Apr 30	20	Apr 13 1979
INSTANTANEOUS PEAK FLOW			31300	Jan 22	69000	Sep 16 1975
INSTANTANEOUS PEAK STAGE			29.27	Jan 22	36.60	Sep 16 1975
INSTANTANEOUS LOW FLOW			36	Apr 20	16	Apr 17 1979
ANNUAL RUNOFF (AC-FT)	211000		151900		209300	
ANNUAL RUNOFF (CFSM)	4.08		2.95		4.06	
ANNUAL RUNOFF (INCHES)	55.59		40.02		55.13	
10 PERCENT EXCEEDS	551		348		596	
50 PERCENT EXCEEDS	151		113		134	
90 PERCENT EXCEEDS	63		42		43	

e Estimated

RIO CULEBRINAS BASIN

50149100 RIO CULEBRINAS NEAR AGUADA, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'03", long 67°09'40", at bridge on Highway 2, and 2.3 mi (3.7 km) northeast of Aguada plaza.

DRAINAGE AREA.--97.0 mi² (251.2 km²).

PERIOD OF RECORD.--Water years 1958, 1970 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	COLIFORM, FECAL, 0.45 UM-MF (COLS./100 ML) (31616)	STREPTOCOCCI FECAL, (COLS. PER 100 ML) (31679)
NOV 1996										
15...	0900	294	6.9	26.0	15	6.9	83	<10	K2000	K1000
MAR 1997										
05...	1345	328	7.6	26.0	2.2	6.5	77	14	2300	>100000
MAY										
22...	0645	346	7.6	26.0	22	6.0	73	<10	K1100	K1100
AUG										
20...	1630	314	7.7	28.0	5.	6.3	80	<10	20000	9300

DATE	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFIDE TOTAL (MG/L AS S) (00745)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
NOV 1996										
15...	120	39	5.8	12	0.5	2.3	120	<0.5	7.2	12
MAR 1997										
05...	--	--	--	--	--	--	140	--	--	--
MAY										
22...	140	47	5.8	14	0.5	2.6	130	<0.5	14	15
AUG										
20...	100	33	5.4	6.7	0.3	3.6	140	--	16	7.8

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
NOV 1996									
15...	<0.10	32	182	30	1.00	0.020	1.00	0.040	<0.20
MAR 1997									
05...	--	--	--	8	0.320	0.010	0.330	0.040	0.69
MAY									
22...	0.10	32	208	33	0.480	0.010	0.490	0.060	0.23
AUG									
20...	<0.10	13	151	13	0.780	0.022	0.800	0.050	0.97

DATE	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	ARSENIC TOTAL (UG/L AS AS) (01002)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BORON, TOTAL RECOVERABLE (UG/L AS B) (01022)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)
NOV 1996										
15...	0.24	1.3	5.6	0.050	<1	<100	20	<1	<1	<10
MAR 1997										
05...	0.72	1.1	4.7	0.120	--	--	--	--	--	--
MAY										
22...	0.29	0.78	3.5	0.040	<1	<100	<10	<1	<1	<10
AUG										
20...	1.0	8.1	8.1	0.140	--	--	--	--	--	--

K = non-ideal count

50149100 RIO CULEBRINAS NEAR AGUADA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

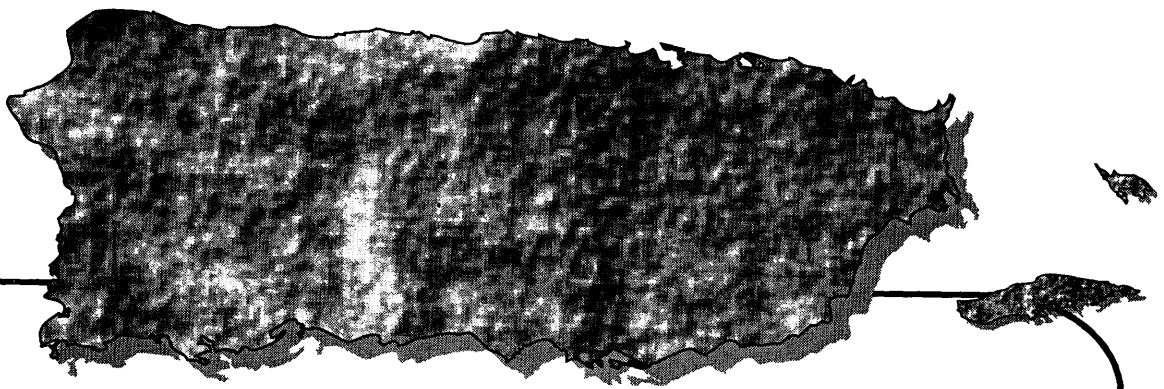
DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L) (38260)
NOV 1996										
15...	830	<1	70	<0.10	<1	<1	<10	<0.010	<1	<0.01
MAR 1997										
05...	--	--	--	--	--	--	--	--	--	--
MAY										
22...	270	<1	30	<0.10	<1	<1	<10	<0.010	<1	<0.01
AUG										
20...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, I TOTAL (UG/L) (39388)
MAY 1997										
22...	0645	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)
MAY 1997									
22...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

DATE	PARA-THION, TOTAL (UG/L) (39540)	PCNS UNFILT RECOVER (UG/L) (39250)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	2, 4-DP TOTAL (UG/L) (82183)	SILVEX, TOTAL (UG/L) (39760)
MAY 1997									
22...	<0.010	<0.100	<0.100	<1.00	<0.010	0.040	<0.010	<0.010	<0.010



Discharge at Partial-Record Stations in Puerto Rico

DISCHARGE AT PARTIAL-RECORD STATIONS

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are useable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Low-flow partial-record stations

Measurements of streamflow in the areas covered by this report made at low-flow partial-record stations are given in the following table. These measurements were made during periods of base flow when streamflow is primarily from ground-water storage. These measurements, when correlated with the simultaneous discharge of nearby stream when continuous records are available, will give a picture of the low-flow potentiality of stream.

Discharge measurements made at low-flow partial-records stations during water year 1997

PUBLICATION RECORD

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM-FLOW cfs (cms)
		Río Guajataca basin				
50010520	Río Guajataca above sewage plant at Lares, PR	Lat 18°18'13", long 66°52'34", Hydrologic Unit 21010001, at barrio Pueblo, 0.5 mi (0.8 km) downstream from Highway 111, 1.5 mi (2.4 km) northwest from Cerro Palma, and 0.5 mi (0.8 km) north of Lares plaza.	5.40 (14.0)	3/18/97	1205	5.25 (0.149)
				4/16/97	0915	3.58 (0.101)
		Río Camuy basin				
50013000	Río Camuy near Lares, PR	Lat 18°17'49", long 66°49'31", Hydrologic Unit 21010001, at bridge on Highway 111, 1.1 mi (1.8 km) upstream from Río Criminales, 1.8 mi (2.9 km) downstream from Río Angeles and Río Piedras confluence, and 3.5 mi (5.6 km) east of Lares.	7.62 (19.7)	3/18/97	0940	11.6 (0.328)
				4/16/97	1015	9.06 (0.257)
50014000	Río Criminales near Lares, PR	Lat 18°17'57", long 66°49'22", Hydrologic Unit 21010001, at bridge on Highway 111, 0.7 mi (1.1 km) upstream from Río Camuy, and 3.7 mi (5.6 km) east of Lares.	4.68 (12.1)	3/18/97	1025	7.20 (0.204)
				4/16/97	1100	5.70 (0.161)
50014500	Río Camuy off Highway 129 near Lares, PR	Lat 18°19'01", long 66°49'38", Hydrologic Unit 21010002, at barrio Callejones, 1.1 mi (1.8 km) downstream from Río Criminales, 1.9 mi (3.1 km) east from Cueva Pajita, and 4.0 mi (6.4 km) northeast from Lares.	13.6 (35.2)	3/18/97	0840	17.9 (0.507)
				4/16/97	1200	11.4 (0.323)
		Río Grande de Arecibo basin				
50020150	Río Vacas near Adjuntas, PR	Lat 18°10'29", long 66°44'16", Hydrologic Unit 21010001, at barrio Garzas on Highway 522, 0.6 mi (1.0 km) upstream from Highway 135, 2.2 mi (3.5 km) north of Lago Garzas, and 1.2 mi (1.9 km) northwest of Adjuntas plasa.	3.10 (8.03)	3/24/97	1255	3.99 (0.113)
				4/21/97	1155	3.55 (0.100)
50020295	Río Cidra at Adjuntas, PR	Lat 18°09'58", long 66°43'37", Hydrologic Unit 21010001, at Adjuntas, 0.1 mi (0.2 km) downstream from Highway 10, 1.9 mi (3.1 km) northeast of Lago Garzas, and 0.3 mi (0.5 km) northwest of Adjuntas plaza.	6.67 (17.3)	3/24/97	1345	5.39 (0.153)
				4/21/97	1245	4.17 (0.118)
50020500	Río Grande de Arecibo near Adjuntas, PR	Lat 18°10'54", long 66°44'12", Hydrologic Unit 21010001, at bridge on Highway 135, 1.0 mi (1.6 km) upstream from Lago Adjuntas, and 1.5 mi (2.4 km) northwest of Adjuntas plaza.	12.7 (32.9)	3/24/97	1200	11.0 (0.312)
				4/21/97	1055	9.46 (0.268)
50021000	Río Pellejas at Central Pellejas, PR	Lat 18°12'07", long 66°42'16", Hydrologic Unit 21010001, at barrio Pellejas near Highway 524, 0.1 mi (0.2 km) upstream from unnamed tributary and diversion tunnel, 1.0 mi (1.6 km) upstream from Lago Pellejas, and 2.9 mi (4.7 km) northeast of Adjuntas plaza.	5.46 (14.1)	3/25/97	0925	6.42 (0.182)
				4/21/97	0945	5.11 (0.145)

DISCHARGE AT PARTIAL-RECORD STATIONS

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS cfs (cms)
		Río Grande de Arecibo basin				
50021800	Río Guaónica near Utuado, PR	Lat 18°15'18", long 66°43'47", Hydrologic Unit 21010001, at barrio Guaónica 50 ft (15 m) off Highway 603, 0.5 mi (0.8 km) upstream from Río Grande de Arecibo, 0.4 mi (0.6 km) downstream from Río Roncador, and 2.2 mi (3.5 km) southwest of Utuado plaza.	6.10 (15.8)	3/24/97 4/18/97	0905 0800	9.18 (0.260) 8.08 (0.229)
50021900	Quebrada Arenas near Utuado, PR	Lat 18°15'40", long 66°43'19", Hydrologic Unit 21010001, at barrio Arenas on Highway 10, 200 ft (61 m) upstream from Río Grande de Arecibo, and 1.5 mi (2.4 km) southwest of Utuado plaza.	2.59 (6.71)	3/24/97 4/18/97	0950 0850	3.03 (0.086) 1.97 (0.056)
50021905	Río Grande de Arecibo near Utuado, PR	Lat 18°15'46", long 66°43'15", Hydrologic Unit 21010001, at barrio Arenas, 200 ft (61 m) off Highway 10, 0.1 mi (0.2 km) downstream from Quebrada Arenas, 1.7 mi (2.7 km) upstream from Río Viví, and 1.4 (2.2 km) southwest from Utuado plaza.	39.9 (103)	3/24/97 4/18/97	1025 0925	20.3 (0.575) 17.7 (0.501)
50023000	Río Viví near Central Pellejas , PR	Lat 18°12'52", long 66°40'25", Hydrologic Unit 21010001, at barrio Viví Arriba on Highway 605, 2.0 mi (3.2 km) upstream from Lago Viví, 2.1 mi (3.4 km) northeast from Lago Pellejas, and 1.3 mi (2.1 km) northwest from Cerro Prieto.	5.66 (14.6)	3/25/97 4/22/97	1055 0900	5.22 (0.148) 4.36 (0.123)
50024995	Río Caguana on Highway 10 near Utuado, PR	Lat 18°18'09", long 66°42'20" Hydrologic Unit 21010001, at barrio Sabana Grande, 3.4 mi (5.5 km) southwest of Lago Dos Bocas spillway, 2.2 mi (3.5 km) northeast from Parcelas Cayuco, and 2.4 mi (3.9 km) north of Utuado plaza.	4.49 (11.3)	3/25/97 4/21/97 6/12/97 6/19/97	0810 1400 1105 0855	5.57 (0.158) 3.94 (0.112) 3.32 (0.094) 2.93 (0.083)
50025165	Río Caricaboa at Jayuya, PR	Lat 18°13'10", long 66°35'12", Hydrologic Unit 21010001, at barrio Veguitas on Highway 144, 0.4 mi (0.6 km) upstream from Río Grande de Jayuya, 1.6 mi (2.6 km) northwest of Hacienda Gripiñas, and 0.5 mi (0.8 km) east of Jayuya plaza.	4.22 (10.9)	3/25/97 4/22/97	1445 1305	2.30 (0.065) 1.58 (0.045)
50025175	Río Grande de Jayuya at Jayuya, PR	Lat 18°13'01", long 66°36'28", Hydrologic Unit 21010001, 1.5 mi (2.4 km) downstream from Río Caricaboa, 1.4 (2.2 km) upstream from Río Zamas, 1.0 mi (1.6 km) southwest from Jayuya plaza.	18.8 (48.7)	3/25/97 4/22/97	1355 1210	13.9 (0.394) 8.14 (0.230)
50025600	Río Jauca near Jayuya, PR	Lat 18°11'16", long 66°38'25", Hydrologic Unit 21010001, at barrio Jauca on Highway 140, 1.7 mi (2.7 km) southeast from Cerro Prieto, 4.6 mi (7.4 km) southeast from Lago Pellejas, and 3.8 mi (6.1 km) southwest of Jayuya.	4.44 (11.5)	3/25/97 4/22/97	1305 1100	3.19 (0.090) 2.23 (0.063)
50025900	Río Jauca at mouth near Jayuya, PR	Lat 18°13'08", long 66°38'35", Hydrologic Unit 21010001, at barrio Paso Palma on Highway 140, 0.2 mi (0.3 km) upstream from Río Grande de Jayuya, 2.5 mi (4.0 km) southeast from Lago Viví, and 2.0 mi (3.2 km) south of Lago Caonillas.	7.14 (18.5)	3/25/97 4/22/97	1205 1005	3.94 (0.112) 3.81 (0.108)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS cfs (cms)
		Río Grande de Arecibo basin				
50026050	Río Caonillas above Lago Caonillas, PR	Lat 18°14'26", long 66°38'22", Hydrologic Unit 21010001, at barrio Caonillas Arriba, 300 feet (91 m) off Highway 531, 700 ft (213 m) upstream from Lago Caonillas, and 3.3 mi (5.3 km) northwest of Jayuya plaza.	40.4 (105)	4/01/97	0855	25.0 (0.708)
				4/30/97	0810	13.1 (0.371)
50026250	Río Limón on Highway 613 near Tetuán, PR	Lat 18°16'57", long 66°35'52", Hydrologic Unit 21010001, at barrio Tetuán on Highway 613, 0.4 mi (0.6 km) upstream from Río Naranjito, 1.3 mi (2.1 km) northwest from Cerro Magoyo, and 1.3 (2.1 km) from Escuela Segunda Unidad de Mameyes.	5.55	4/01/97	1010	10.1
				4/30/97	0930	6.37 (0.180)
				6/19/97	1030	5.15 (0.146)
50026350	Río Limón above confluence with Río Yunes, PR	Lat 18°19'26", long 66°36'42", Hydrologic Unit 21010001, 3.4 mi (5.5 km) upstream from Lago Caonillas, 100 ft (30 m) upstream from Río Yunes, and 4.0 mi (6.4 km) southwest of Florida plaza.	16.7 (43.2)	4/01/97	1235	20.8 (0.589)
				4/30/97	1335	14.2 (0.402)
				6/12/97	1135	12.6 (0.357)
		Río Grande de Arecibo basin				
50026925	Río Yunes at Frontón, PR	Lat 18°18'11", long 66°34'09", Hydrologic Unit 21010001, at barrio Frontón, 0.9 mi (1.4 km) southwest from Escuela Segunda Unidad de Fronton, 2.9 mi (4.7 km) northeast fron Cerro Magoyo, and 4.2 mi (6.8 km) of Florida Plaza.	9.63 (24.9)	4/01/97	1405	12.8 (0.362)
				4/30/97	1035	5.75 (0.163)
				6/19/97	12.20	8.91 (2.52)
50026950	Río Yunes at mouth near Mameyes Abajo, PR	Lat 18°19'30", long 66°36'39", Hydrologic Unit 21010001, 3.4 mi (5.5 km) upstream from Lago Caonillas, 100 ft (30 m) upstream from Río Limón, 1.5 mi (2.4 km) northwest from Hacienda Piedra Gorda, and 4.0 mi (6.4 km) southwest of Florida plaza.	13.5 (35.0)	4/01/97	1150	15.1 (0.428)
				4/30/97	1210	7.61 (0.216)
				6/12/97	1230	8.41 (0.238)
50027900	Río Tanamá near Caguana, PR	Lat 18°15'42", long 66°46'55", Hydrologic Unit 21010001, near barrio Caguana, 4.4 mi (7.1 km) upstream from Highway 111, 2.5 mi (4.0 km) south of Parque Ceremonial Indígena Caguana, and 2.1 mi (3.4 km) southeast of comunidad Angeles.	10.8 (30.0)	3/17/97	1235	15.3 (0.433)
				4/15/97	1205	12.3 (0.348)
50028100	Río Tanamá above Observatorio de Arecibo, PR	Lat 18°20'22", long 66°45'25", Hydrologic Unit 21010002, at barrio Esperanza, 0.5 mi (0.8 km) southwest from the Observatorio de Arecibo, 3.2 mi (5.1 km) southeast of comunidad Bayaney, and 3.2 mi (5.1 km) northeast of Parque Ceremonial Indígena Caguana.	Indeter-minate	3/17/97	1015	38.2 (1.082)
				4/15/97	0805	31.1 (0.881)
50028200	Río Tanamá at Esperanza, PR	Lat 18°22'45", long 66°44'02", Hydrologic Unit 21010002, at barrio Esperanza, 0.9 mi (1.4 km) upstream from Highway 623, 200 ft upstream of AAA intake, 3.2 mi (5.1 km) west from Río Grande de Arecibo, and 6.7 mi (11 km) southwest from Arecibo plaza.	Indeter-minate	3/17/97	0855	63.3 (1.793)
				4/15/97	0635	55.6 (1.574)
		Río Grande de Manatí basin				
50029800	Río Grande de Manatí near Barranquitas, PR	Lat 18°14'00", long 66°18'53", Hydrologic Unit 21010001, at barrio Barrancas, 300 ft (91 m) east of Highway 771, 2.4 mi (3.9 km) northeast from Cerro La Torrecilla, 0.7 mi (1.1 km) southwest of Cerro El Farallón, and 3.1 mi (5.0 km) from Barranquitas plaza.	3.81 (9.87)	3/20/97	1315	3.79 (0.107)
				5/01/97	0745	6.38 (0.181)
				6/11/97	1100	2.81 (0.080)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS cfs (cms)
		Río Grande de Manatí basin				
50029900	Río Grande de Manatí near Corozal, PR	Lat 18°16'48", long 66°20'03", Hydrologic Unit 21010001, at barrio Negros on Highway 568, 0.2 mi (0.3 km) upstream from Highway 568, 1.7 mi (2.7 km) northeast of El Salto Grande, and 4.4 mi (7.1 km) southwest of Corozal plaza.	13.2 (34.2)	3/20/97	1210	18.0 (0.510)
				5/01/97	1015	5.46 (0.155)
				6/11/97	0920	9.22 (0.261)
50030250	Río Botijas near Carro, PR	Lat 18°11'45", long 66°21'09", Hydrologic Unit 21010001, at barrio Palo Hincado, 200 ft (61 m) upstream from Highway 156, 100 ft (30 m) upstream from pumping station intake, 1.4 mi (2.2 km) southwest from Cerro La Torrecilla, and 3.1 mi (5.0 km) west of Barranquitas plaza.	3.82 (9.89)	3/21/97	1000	2.46 (0.070)
				5/01/97	0845	1.69 (0.048)
50030300	Río Botijas near Botijas, PR	Lat 18°14'15", long 66°22'36", Hydrologic Unit 21010001, at barrio Botijas on Highway 548, 0.5 mi (0.8 km) upstream from Río Orocovis, 0.8 mi (1.3 km) north from Highway 156, and 1.1 mi (1.8 km) northeast of Orocovis plaza.	12.5 (32.4)	3/21/97	0845	8.93 (0.253)
				5/01/97	1135	7.70 (0.218)
50030600	Río Orocovis at Orocovis, PR	Lat 18°13'58", long 66°23'23", Hydrologic Unit 21010001, at Orocovis, 0.5 mi (0.8 km) downstream from Quebrada Los Saltos, 1.3 mi (21 km) upstream from Río Botijas, and 0.3 mi (0.5 km) northeast of Orocovis plaza.	8.78 (22.7)	3/21/97	0750	7.05 (0.200)
				5/01/97	1205	4.50 (0.127)
50031500	Río Sana Muerto near Orocovis, PR	Lat 18°16'14", long 66°24'47", Hydrologic Unit 21010001, at barrio Pesas, 2.5 mi (4.0 km) southwest from Cerro Magueyes, 2.5 mi (4.0 km) upstream from Río Grande de Manatí, and 4.0 mi (6.4 km) south of Morovis plaza.	3.68 (9.53)	3/26/97	1140	3.79 (0.107)
				4/28/97	1230	2.96 (0.084)
50032050	Quebrada Riachuelo at mouth, PR	Lat 18°18'18", long 66°26'15". Hydrologic Unit 21010001, at barrio San Lorenzo, 50 ft (15 m) off Highway 567, 0.2 (0.3 km) upstream from Río Grande de Manatí, 1.0 mi (1.6 km) north from Cerro Avispa, and 2.5 mi (4.0 km) southwest of Morovis plaza.	1.69 (4.38)	3/20/97	1035	1.82 (0.052)
				5/02/97	0830	0.90 (0.025)
50032100	Quebrada Grande near Morovis, PR	Lat 18°18'45", long 66°26'40", Hydrologic Unit 21010001, at barrio San Lorenzo, 50 ft (15 m) off Highway 567, 0.6 mi (1.0 km) upstream from Río Grande de Manatí, 2.3 mi (3.7 km) southeast from Ciales, and 2.6 (4.2 km) southwest from Morovis plaza.	2.63 (6.81)	3/20/97	1000	2.87 (0.081)
				5/02/97	0900	2.10 (0.059)
50032400	Río Toro Negro on Highway 157 at Cacaos, PR	Lat 18°13'57", long 66°30'46", Hydrologic Unit 21010001, at barrio Cacaos on Highway 157, 0.5 mi (0.8 km) upstream from Quebrada Palma, 2.2 mi (3.5 km) northeast of Los Tres Picachos, and 5.3 mi (8.5 km) northeast of Jayuya plaza.	11.8 (30.6)	3/26/97	0955	7.01 (0.198)
				4/28/97	0700	4.59 (0.130)
50032700	Río Matrullas at mouth, PR	Lat 18°15'29", long 66°30'04", Hydrologic Unit 21010001 at barrio Cacaos, 100 ft (30 m) upstream from Río Toro Negro, 0.8 mi (1.3 km) east from Cerro Vista Alegre, and 2.6 mi (4.2 km) south from Cerro Gordo.	3.66 (9.48)	3/26/97	0850	3.58 (0.101)
				4/28/97	0820	3.31 (0.094)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS cfs (cms)
		Río Grande de Manatí basin				
50033000	Río Toro Negro near Ciales, PR	Lat 18°17'20", long 66°29'06", Hydrologic Unit 21010001, at barrio Toro Negro on Highway 615, 0.6 mi (1.0 km) south from Escuela Segunda Unidad de Pesas, 2.3 mi (3.7 km) northwest from Cerro Cedro, and 3.7 mi (6.0 km) southwest from Ciales plaza.	25.2 (65.3)	3/26/97 4/28/97	0745 0935	16.5 (0.467) 11.5 (0.326)
50033500	Río Bauta near Divisoria, PR	Lat 18°11'45", long 66°26'30", Hydrologic Unit 21010001, at barrio Bauta Abajo, 2.6 mi (4.2 km) southeast from Lago Matrullas, 1.9 mi (3.1 km) northeast from Cerro El Malo, 4.0 mi (6.4 km) southwest of Orocovis plaza.	8.60 (22.3)	4/04/97 4/29/97	0815 0830	5.16 (0.146) 3.09 (0.088)
50034500	Río Bauta at Pozas, PR	Lat 18°17'47", long 66°27'35", Hydrologic Unit 21010001, at barrio Pozas, 100 ft (30 m) upstream from Río Toro Negro, 4.0 mi (6.4 km) southwest of Morovis, and 2.9 mi (4.7 km) southeast of Ciales plaza.	28.2 (73.0)	4/03/97 4/29/97	0940 1000	25.5 (0.722) 11.4 (0.323)
50035600	Río Cialitos at Cialitos, PR	Lat 18°14'29", long 66°31'30", Hydrologic Unit 21010001, at barrio Cialitos, 0.3 mi (0.5 km) north of Highways 149 and 566 intersection, 2.0 mi (3.2 km) northeast from Los Tres Picachos, and 4.7 mi (7.6 km) northeast of Jayuya plaza.	3.18 (8.24)	4/03/97 4/29/97	1220 1115	5.27 (0.149) 2.86 (0.084)
50035700	Río Cialitos on Highway 614 near Ciales, PR	Lat 18°17'13", long 66°30'53", Hydrologic Unit 21010001, at barrio Pesas on Highway 614, 1.0 mi (1.6 km) southwest from Cerro Gordo, 1.8 mi (2.9 km) north of Cerro Vista Alegre, and 6.4 mi (10 km) southeast of Florida plaza.	6.66 (17.2)	4/03/97 4/29/97	1225 1200	9.40 (0.266) 5.50 (0.156)
50035950	Río Cialitos on Highway 649 at Ciales, PR	Lat 18°20'18", long 66°28'28", Hydrologic Unit 21010001, at Ciales, 100 ft (30 m) upstream from bridge on Highway 649, 0.7 mi (1.1 km) upstream from Río Grande de Manatí, and 0.4 mi (0.6 km) west of Ciales plaza.	17.0 (44.0)	4/03/97 4/29/97	0830 1305	19.0 (0.538) 7.82 (0.348)
50037200	Río Grande de Manatí near Manatí, PR	Lat 18°24'52", long 66°29'37", Hydrologic Unit 21010002, at barrio Río Arriba Poniente, 100 ft (30 m) off Highway 149, 1.2 mi (1.9 km) southwest of comunidad Sabana Seca, 5.1 mi (8.2 km) upstream from Highway 2, and 1.0 mi (1.6 km) south of Manatí plaza.	Indeterminate	4/02/97 5/02/97	0845 1035	134 (3.795) 66.5 (1.883)
		Río Cibuco basin				
50038295	Río de Los Negros at mouth at Corozal, PR	Lat 18°20'29", long 66°19'08", Hydrologic Unit 21010001, at Corozal, 100 ft (30 m) upstream from Río Corozal, 0.3 mi (0.5 km) upstream from Highway 159, and 0.1 mi (0.2 km) southwest of Corozal plaza.	4.04 (10.5)	3/06/97 4/14/97	1125 0920	5.51 (0.156) 2.27 (0.064)
50038302	Río Corozal above sewage plant at Corozal, PR	Lat 18°20'52", long 66°19'43", Hydrologic Unit 21010001, at barrio Cibuco, 0.8 mi (1.3 km) upstream from Río Cibuco, 0.7 mi (1.1 km) downstream from Highway 159, and 0.8 mi (1.3 km) northwest of Corozal plaza.	9.75 (25.2)	3/06/97 4/14/97	1015 1015	14.0 (0.396) 7.52 (0.213)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS cfs (cms)
		Río Cibuco basin				
50038317	Río Cibuco at Cibuco, PR	Lat 18°20'54", long 66°20'09", Hydrologic Unit 21010001, at barrio Cibuco, 0.3 mi (0.5 km) upstream from Río Corozal, 1.8 mi (2.9 km) southeast from Escuela Cienegueta, and 1.3 mi (2.1 km) northwest of Corozal plaza.	5.05 (13.1)	3/10/97 4/14/97	0950 1245	7.71 (0.218) 4.28 (0.121)
50038345	Río Mavillla on Highway 164 near Corozal, PR	Lat 18°19'07", long 66°17'21", Hydrologic Unit 21010001, at barrio Palmarejo on Highway 164, 0.6 mi (1.0 km) southwest from Escuela Segunda Unidad de Palmarejo, 1.3 mi (2.1 km) downstream from Quebrada La Jacinta, and 2.5 mi (4.0 km) southeast of Corozal plaza.	7.78 (20.2)	3/10/97 4/14/97	0825 1340	14.0 (0.396) 8.56 (0.242)
50038375	Río Mavilla on Highway 821 near Maricao, PR	Lat 18°22'11", long 66°20'02", Hydrologic Unit 21010002, at barrio Abras on Highway 821, 1.4 mi (2.2 km) upstream from Río Cibuco, 1.3 mi (2.1 km) southwest from Cerro Santa Bárbara, and 2.2 mi (3.5 km) northwest of Corozal plaza.	16.5 (42.7)	3/06/97 4/14/97	0810 0830	27.3 (0.773) 14.3 (0.405)
50038420	Río Cibuco on Highway 620 near Vega Alta, PR	Lat 18°24'08", long 66°20'39", Hydrologic Unit 21010001, at barrio Candelaria on Highway 620, 3.6 mi (5.8 km) downstream from Río Mavilla, 6.2 mi (10 km) northwest from Toa Alta, and 1.2 mi (1.9 km) southwest of Vega Alta plaza.	38.8 (100)	3/11/97 4/11/97	0855 1030	52.9 (1.498) 32.4 (0.918)
50038550	Río Unibón above sewage plant at Unibón, PR	Lat 18°20'00", long 66°22'18", Hydrologic Unit 21010001, at barrio Unibón, 0.7 mi (1.1 km) upstream from Río Las Carreras, 2.5 mi (4.0 km) northeast from Morovis, and 3.6 mi (5.8 km) southwest of Corozal plaza.	1.63 (4.22)	3/10/97 4/11/97	1115 0615	2.28 (0.064) 1.32 (0.037)
50038590	Río Las Carreras at Unibón near Morovis, PR	Lat 18°19'36", long 66°22'47", Hydrologic Unit 21010001, at barrio Unibón, 1.3 mi (2.1 km) upstream from Highway 159, 2.8 mi (4.5 km) northeast of Cerro Quirós, and 1.9 mi (3.1 km) east of Morovis plaza.	2.65 (6.86)	3/10/97 4/11/97	1210 0705	3.67 (0.104) 2.07 (0.059)
50038650	Río Unibón off Highway 160 near Almirante Sur, PR	Lat 18°21'05", long 66°23'12", Hydrologic Unit 21010002, at barrio Almirante Sur, 0.4 mi (0.6 km) downstream from Quebrada Monte Llano, 1.9 mi (3.1 km) upstream from Río Morovis, and 2.2 mi (3.5 km) northeast of Morovis plaza.	7.52 (19.5)	3/11/97 4/08/97	1115 1045	7.12 (0.202) 4.10 (0.116)
50038718	Río Morovis above sewage plant near Morovis, PR	Lat 18°20'12", long 66°25'15", Hydrologic Unit 21010002, at barrio Morovis Norte, 0.3 mi (0.5 km) upstream of Highway 155, 3.1 mi (5.0 km) east of Ciales, and 1.0 mi (1.6 km) northwest of Morovis plaza.	2.72 (7.04)	3/11/97 4/08/97	1225 1155	3.45 (0.098) 2.08 (0.059)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS cfs (cms)
		Río Cibuco basin				
50038750	Quebrada Grande de Morovis on Highway 634 near Morovis, PR	Lat 18°21'33", long 66°24'39", Hydrologic Unit 21010002, at barrio Franquez, 0.8 mi (1.3 km) upstream from Río Morovis, 4.1 mi (6.6 km) northeast from Ciales, and 2.2 mi (3.5 km) north of Morovis plaza.	7.41 (19.2)	3/11/97 4/08/97	1315 1250	1.62 (0.046) 0.71 (0.020)
50038895	Río Indio on Highway 22 at Río Abajo, PR	Lat 18°25'47", long 66°22'55", Hydrologic Unit 21010002, at barrio Río Abajo on Highway 22, 1.2 mi (1.9 km) south from Highway 2, 7.2 mi (12 km) east of Manatí, and 3.6 mi (5.8 km) northwest of Vega Alta plaza.	Indeter-minate	3/11/97 4/14/97	1005 0850	25.3 (0.716) 17.8 (0.504)
		Río de La Plata basin				
50040500	Río de La Plata on Highway 738 near Cayey, PR	Lat 18°07'25", long 66°07'56", Hydrologic Unit 21010005, at barrio Monte Llano on Highway 738, 100 ft (30 m) upstream from pumping station intake, 0.5 mi (0.8 km) southwest of Central Cayey, and 2.6 mi (4.2 km) northeast of Cayey plaza.	13.4 (34.7)	3/13/97 6/10/97	1430 1015	5.79 (0.164) 16.4 (0.464)
50040590	Río Guavate on Highway 52 near Cayey, PR	Lat 18°07'51", long 66°07'04", Hydrologic Unit 21010005, at barrio Vegas, 1.2 mi (1.9 km) upstream from Río de La Plata, 2.9 mi (4.7 km) southwest from Cerro Las Piñas, and 4.3 mi (6.9 km) southeast of Cidra plaza.	6.62 (17.1)	3/14/97 4/24/97	1040 1240	5.51 (0.156) 3.84 (0.109)
50040700	Quebrada Beatriz on Highway 1 near Cayey, PR	Lat 18°08'30", long 66°06'57", Hydrologic Unit 21010005, at barrio Beatriz on Highway 1, 2.2 mi (3.5 km) upstream from Río de La Plata, 2.5 mi (4.0 km) southwest from Cerro Las Piñas, and 3.9 mi (6.3 km) southeast of Cidra plaza.	3.42 (8.86)	3/13/97 4/24/97	0955 1015	2.83 (0.080) 2.12 (0.060)
50041020	Quebrada Santo Domingo at Cayey, PR	Lat 18°06'22", long 66°09'55", Hydrologic Unit 21010005, at Cayey on Highway 1, 3.2 mi (5.1 km) northeast from Cerro Planada, 1.7 mi (2.7 km) north-east from Monte El Gato, and 0.5 mi (0.8 km) southeast of Cayey plaza.	0.84 (2.18)	3/13/97 4/24/97	1115 1200	0.93 (0.026) 0.33 (0.009)
50042800	Río Matón on Highway 14 at Matón Abajo, PR	Lat 18°08'29", long 66°12'40", Hydrologic Unit 21010005, at barrio Matón Abajo on Highway 14, 250 ft (76 m) upstream of Río de La Plata, 1.0 mi (1.6 km) south of Cerro Plana, and 4.1 mi (6.6 km) southwest of Cidra plaza.	6.63 (17.2)	3/13/97 4/25/97	1220 1000	2.95 (0.084) 1.52 (0.043)
50043010	Quebrada Honda at mouth at Proyecto La Plata, PR	Lat 18°09'36", long 66°13'48", Hydrologic Unit 21010005, at barrio Plata, 100 ft (30 m) upstream from Río de La Plata, 1.3 mi (2.1 km) northwest from Cerro Plana, 0.9 mi (1.4 km) from Cerro Amoldadero, and 4.7 mi (7.6 km) southwest of Cidra plaza.	2.66 (6.89)	3/13/97 4/25/97	1315 1050	1.19 (0.034) 0.69 (0.020)
50043197	Río Usabón on Highway 162 near Barranquitas, PR	Lat 18°09'41", long 66°18'26", Hydrologic Unit 21010005, at barrio Helechal on Highway 162, 2.1 mi (3.4 km) northeast from Cerro Pulguillas, 3.0 mi (4.8 km) northwest from Aibonito, and 1.8 mi (2.9 km) south of Barranquitas plaza.	8.56 (22.2)	3/12/97 4/10/97 6/10/97	1025 1045 0735	1.21 (0.034) 1.42 (0.040) 1.02 (0.029)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS cfs (cms)
		Río de La Plata basin				
50043450	Río Aibonito at Llanos near Aibonito, PR	Lat 18°09'19", long 66°17'07", Hydrologic Unit 21010005, at barrio Llanos, 2.1 mi (3.4 km) southeast from Cañón de San Cristóbal, 2.7 mi (4.3 km) southeast from Barranquitas, and 1.5 mi (2.4 km) northwest of Aibonito plaza.	6.48 (16.8)	2/12/97	1115	2.92 (0.083)
				4/10/97	1145	2.71 (0.077)
				6/10/97	0830	1.87 (0.053)
50043475	Río Barranquitas at Barranquitas, PR	Lat 18°11'19", long 66°18'15", Hydrologic Unit 21010005, at Barranquitas, 0.1 mi (0.2 km) upstream from Highway 156, 2.1 mi (3.4 km) southeast from Cerro La Torrecilla, 1.6 mi (2.6 km) northwest from Cañón de San Cristóbal, and 0.2 mi (0.3 km) east of Barrranquitas.	3.75 (9.71)	3/12/97	0935	2.55 (0.072)
				4/10/97	0955	1.93 (0.055)
				6/11/97	1145	1.49 (0.042)
50043575	Río Hondo on Highway 776 at Río Hondo, PR	Lat 18°13'18", long 66°15'07" Hydrologic Unit 21010005, at barrio Río Hondo on Highway 776, 0.4 mi (0.6 km) north of Escuela Segunda Unidad de Río Hondo, 4.3 mi (6.9 km) northeast of Barranquitas, and 4.4 mi (7.1 km) northeast of Cañón de San Cristóbal.	9.07 (23.5)	3/12/97	0830	7.76 (0.220)
				4/10/97	0900	6.71 (0.190)
				6/11/97	1245	5.81 (0.164)
50043850	Río Arroyata on Highway 171 at Cidra, PR	Lat 18°10'16", long 66°09'44", Hydrologic Unit 21010005, at barrio Sud on Highway 171, 0.8 mi (1.3 km) southwest from Lago Cidra, 2.8 mi (4.5 km) northeast from Cerro Gordo, and 0.5 mi (0.8 km) south of Cidra plaza.	0.70 (1.81)	3/14/97	1320	0.18 (0.005)
				4/25/97	1140	0.18 (0.005)
50043950	Río Arroyata on Highway 775 near Cidra, PR	Lat 18°12'04", long 66°12'34", Hydrologic Unit 21010004, at barrio Vega Redonda on Highway 775, 1.5 mi (2.4 km) of Cerro Almirante, 1.6 mi (2.6 km) north of Cerro Viento Caliente, and 1.8 mi (2.9 km) southeast of Comerío plaza.	9.42 (24.4)	3/14/97	1400	1.50 (0.042)
				4/25/97	1220	1.29 (0.036)
50043998	Río Arroyata at mouth near Comerío, PR	Lat 18°14'26", long 66°12'32", Hydrologic Unit 21010005, at barrio Naranjo on Highway 156, 150 ft (46 m) upstream from Río de La Plata, 1.6 mi (2.6 km) southwest from Cerro La Tiza, 1.8 mi (2.9 km) northeast of Comerío plaza.	16.2 (42.0)	3/14/97	1450	6.44 (0.182)
				4/25/97	1330	3.73 (0.106)
50044300	Río Cuesta Arriba on Highway 816 at Nuevo, PR	Lat 18°17'56", long 66°12'24", Hydrologic Unit 21010005, at barrio Nuevo on Highway 816, 0.3 mi (0.5 km) upstream from Río de La Plata, 1.3 mi (2.1 km) northeast of Cerro Avispa, and 2.6 mi (4.2 km) southeast of Naranjito plaza.	5.51 (14.3)	3/11/97	1300	7.02 (0.199)
				4/22/97	1035	3.72 (0.105)
50044775	Río Guadiana above sewage plant at Naranjito, PR	Lat 18°18'08", long 66°14'18", Hydrologic Unit 21010005, at barrio Guadiana, 0.2 mi (0.3 km) upstream from Quebrada Anones, 1.7 mi (2.7 km) from Cerro Avispa, and 0.6 mi (1.0 km) east of Naranjito plaza.	5.42 (14.2)	3/13/97	1000	6.56 (0.186)
				4/09/97	1215	4.22 (0.120)
50044975	Río Cañas at Achiote near Naranjito, PR	Lat 18°19'21", long 66°15'14", Hydrologic Unit 21010005, at barrio Achiote, 1.7 mi (2.7 km) upstream from Lago La Plata, 1.5 mi (2.4 km) northwest from Naranjito plaza, and 4.5 mi (7.2 km) southeast of Corozal plaza.	3.14 (8.13)	3/13/97	0910	2.67 (0.076)
				4/09/97	1340	1.59 (0.045)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS cfs (cms)
		Río de La Plata basin				
50045100	Quebrada Cruz on Highway 824 near Toa Alta, PR	Lat 18°21'26", long 66°14'50", Hydrologic Unit 21010005, at barrio Quebrada Cruz on Highway 824, 0.3 mi (0.5 km) upstream from Río de La Plata, 1.1 mi (1.8 km) northwest from Lago La Plata spillway, and 3.7 mi (6.0 km) north of Naranjito plaza.	2.13 (5.52)	3/13/97 4/09/97	1105 0730	2.55 (0.072) 1.61 (0.046)
50045400	Río Bucarabones near Toa Alta, PR	Lat 18°21'49", long 66°12'54", Hydrologic unit 21010005, at barrio Ortiz, 4.7 mi (7.6 km) northeast from Naranjito, 3.1 mi (5.0 km) northwest from Cerro Gordo Arriba, and 2.8 mi (4.5 km) southeast of Toa Alta plaza.	1.23 (3.19)	3/13/97 4/09/97	1300 0950	1.92 (0.054) 1.61 (0.046)
50045800	Río Lajas at Toa Alta, PR	Lat 18°23'39", long 66°15'16", Hydrologic Unit 21010005, at Toa Alta on Highway 165, 0.2 mi (0.3 km) upstream from Río de La Plata, 1.8 mi (2.9 km) downstream of Quebrada Arenas, and 0.3 mi (0.5 km) northwest of Toa Alta plaza.	8.60 (22.3)	3/13/97 4/09/97	1150 0830	8.68 (0.246) 4.52 (0.128)
		Río Bayamón basin				
50047475	Quebrada Cerro Gordo at La Aldea at Bayamón, PR	Lat 18°22'38", long 66°10'31", Hydrologic Unit 21010005, at barrio Cerro Gordo on Highway 840, 1.2 mi (1.9 km) upstream of Río Hondo, 4.9 mi (7.9 km), southeast from Toa Alta, and 2.0 mi (3.2 km) southwest of Bayamón plaza.	2.15 (5.57)	3/10/97 4/21/97	1145 1155	1.51 (0.043) 1.21 (0.034)
50047520	Río Hondo II at Sabana Seca, PR	Lat 18°25'24", long 66°11'07" Hydrologic Unit 21010005, at barrio Sabana Seca, 1.2 mi (1.9 km) northwest from Puerto Rico National Cemetery, 4.7 mi (7.6 km) northeast of Toa Alta, and 2.5 mi (4.0 km) northwest of Bayamón plaza.	2.59 (6.71)	3/10/97 4/21/97	1030 1100	1.77 (0.050) 0.68 (0.019)
50047598	Quebrada Vicente at mouth, PR	Lat 18°14'36", long 66°08'41', Hydrologic Unit 21010005, at barrio Bayamoncito off Highway 156, 100 ft (30 m) upstream from Río Bayamón, 1.2 mi (1.9 km) northeast from Cerro Santa Bárbara, and 4.6 mi (7.4 km) northeast of Cidra plaza.	2.21 (5.72)	3/11/97 4/22/97	0820 0700	2.30 (0.065) 1.62 (0.046)
50047600	Río Bayamón near Aguas Buenas, PR	Lat 18°14'39", long 66°08'39", Hydrologic Unit 21010005, at barrio Bayamoncito on Highway 156, 1.3 mi (2.1 km) southwest from Cerro Santa Bárbara, 2.7 mi (4.3 km) east from Cerro La Tiza, and 4.7 mi (7.6 km) northeast of Cidra plaza.	10.2 (26.4)	3/11/97 4/22/97	0855 0730	21.3 (0.603) 18.9 (0.535)
50047750	Quebrada Grande near Aguas Buenas, PR	Lat 18°16'02", long 66°08'33", Hydrologic Unit 21010005, at barrio Juan Asencio, 0.2 mi (0.3 km) upstream from Río Bayamón, 0.7 mi (1.1 km) southeast from Cerro Mula, 1.0 mi (1.6 km) southwest from Cerro del Chícharo, and 2.6 mi (4.2 km) northwest of Aguas Buenas plaza.	4.08 (10.6)	3/11/97 4/22/97	1000 0845	5.41 (0.153) 3.81 (0.108)
50047810	Quebrada Sonadora at Sonadora, PR	Lat 18°17'47", long 66°07'58", Hydrologic Unit 21010005, at barrio Sonadora, 0.7 mi (1.1 km) upstream from Río Bayamón, 1.4 mi (2.2 km) northeast from Cerro La Pena, 1.2 mi (1.9 km) north from Cerro del Chícharo, and 3.2 mi (5.1 km) northwest of Aguas Buenas plaza.	2.60 (6.73)	2/12/97 4/22/97	1240 0930	4.23 (0.120) 3.03 (0.086)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS cfs (cms)
		Río Bayamón basin				
50047840	Quebrada Santa Olaya on Highway 174 near Bayamón, PR	Lat 18°19'46", long 66°08'35", Hydrologic Unit 21010005, at barrio Guaraguao Abajo on Highway 174, 0.1 mi (0.2 km) upstream from Río Bayamón, 1.2 mi (1.9 km) northeast of Cerro de Vergara, and 2.9 mi (4.7 km) southwest of Guaynabo plaza.	4.10 (10.6)	3/11/97 4/23/97	1100 0700	5.41 (0.153) 2.15 (0.061)
50047860	Río Minillas on Highway 174 near Minillas, PR	Lat 18°21'34", long 66°08'38", Hydrologic Unit 21010005, at barrio Minillas on Highway 174, 0.1 mi (0.2 km) upstream from Río Bayamón, 2.1 mi (3.4 km) northeast from Cerro Gordo Arriba, and 2.9 mi (4.7 km) southeast of Bayamón plaza.	4.80 (12.4)	3/11/97 4/23/97	1155 0900	5.87 (0.166) 3.31 (0.094)
50047870	Río Bayamón near Minillas, PR	Lat 18°21'53", long 66°08'30", Hydrologic Unit 21010005, at barrio Minillas, 1.3 mi (2.1 km) upstream from Río Guaynabo, 2.4 mi (3.9 km) northeast from Cerro Gordo Arriba, and 2.6 mi (4.2 km) southeast of Bayamón plaza.	40.8 (106)	3/10/97 4/23/97	1250 0945	29.0 (0.821) 13.8 (0.396)
50047895	Río Guaynabo at Highway 836 near Guaynabo, PR	Lat 18°20'05", long 66°06'10", Hydrologic Unit 21010005, at barrio Mamey on Highway 836, 0.6 mi (1.0 km) southwest of Cerro Magueyes, 3.7 mi (6.0 km) from Cerro Marquesa, and 1.8 mi (2.9 km) southeast of Guaynabo plaza.	8.44 (21.9)	3/12/97 4/23/97	1005 1050	8.91 (0.252) 4.81 (0.136)
50047953	Río Guaynabo below Guaynabo, PR	Lat 18°22'00", long 66°07'09", Hydrologic Unit 21010005, at barrio Santa Rosa, 0.4 mi (0.6 km) upstream from Quebrada Frailes, 3.1 mi (5.0 km) northwest from Cerro Magueyes, and 0.7 mi (1.1 km) northwest from Guaynabo plaza.	12.8 (33.2)	3/12/97 4/22/97	1055 1200	14.2 (0.402) 7.91 (0.224)
50047970	Quebrada Frailes on Highway 169 at Guaynabo, PR	Lat 18°22'07", long 66°06'42", Hydrologic Unit 21010005, at Guaynabo on Highway 169, 1.9 mi (3.1 km) northwest from Cerro Magueyes, 1.2 mi (1.9 km) upstream from Río Guaynabo, and 0.6 mi (1.0 km) north from Guaynabo plaza.	3.48 (9.01)	3/12/97 4/22/97	1135 1245	6.26 (0.177) 4.85 (0.137)
		Río Piedras basin				
50048750	Quebrada Las Curías Tributary near Caimito, PR	Lat 18°20'19", long 66°03'33", Hydrologic Unit 21010005, at barrio Caimito, 0.7 mi (1.1 km) upstream from Quebrada Las Curías, 0.7 mi (1.1 km) southwest from Aljibe Las Curías, and 2.9 mi (4.7 km) northwest of Lago Carraizo spillway.	1.73 (4.48)	3/10/97 4/21/97	1635 1520	2.20 (0.062) 1.27 (0.036)
50048760	Quebrada Los Guanos near Río Piedras, PR	Lat 18°21'24", long 66°03'20", Hydrologic Unit 21010005, at barrio Cupey, 0.8 mi (1.3 km) upstream from Río Piedras, 3.2 mi (5.1 km) northwest from Lago Carraizo spillway, and 3.1 mi (5.0 km) west of Trujillo Alto plaza.	0.76 (1.97)	3/10/97 4/21/97	1605 1445	2.20 (0.062) 0.60 (0.017)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS cfs (cms)
		Río Culebrinas basin				
50146700	Río Culebrinas at Perchas No. 1, PR	Lat 18°18'09", long 66°56'49", Hydrologic Unit 21010003, at barrio Perchas No. 1, 1.4 mi (2.2 km) upstream of Quebrada Lajas, 1.2 mi (1.9 km) downstream from Quebrada Grande, and 3.8 mi (6.1 km) southeast of San Sebastián plaza.	6.82 (17.7)	3/19/97 5/17/97	0715 0655	9.75 (0.276) 7.86 (0.222)
50147000	Río Culebrinas at San Sebastián, PR	Lat 18°20'08", long 66°59'46", Hydrologic Unit 21010003, at San Sebastián on Highway 109, 0.9 mi (1.4 km) upstream from Río Guatemala, 200 ft (61 m) upstream from sewage plant discharge point, and 0.4 mi (0.6 km) southwest from San Sebastián plaza.	16.7 (43.2)	3/19/97 4/17/97	0805 0800	10.0 (0.283) 7.23 (0.205)
50147200	Río Guatemala at San Sebastián, PR	Lat 18°20'42', long 67°00'00", Hydrologic Unit 21010003, at San Sebastián on Highway 111, 1.2 mi (1.9 km) upstream from Río Culebrinas, 0.9 mi (1.4 km) southeast of Central La Plata, and 0.7 mi (1.1 km) northeast of San Sebastián plaza.	10.3 (26.7)	3/19/97 4/17/97	1030 1015	1.67 (0.047) 1.02 (0.029)
50147400	Río Sonador near San Sebastián, PR	Lat 18°18'49", long 67°00'29", Hydrologic Unit 21010003, at barrio Culebrinas on Highway 109, 1.3 mi (2.1 km) northeast from Cerro Yaitini, 2.1 mi (3.4 km) northeast from Cerro Cascajillo, and 2.0 mi (3.2 km) southwest from San Sebastián plaza.	6.09 (15.8)	3/19/97 4/17/96	0930 0920	7.39 (0.209 5.74 (0.162)
50147796	Quebrada Los Morones near Moca, PR	Lat 18°21'24", long 67°05'23", Hydrologic Unit 21010003, at barrio Cerro Gordo, 0.6 mi (1.0 km) upstream from Río Culebrinas, 3.6 mi (5.8 km) northwest from Cerro Pichón, 2.8 mi (4.5 km) northeast from Cerro Pelao, and 5.1 mi (8.2 km) northwest of Cental La Plata.	7.18 (18.6)	3/19/97 4/17/97	1140 1110	12.9 (0.365) 11.6 (0.328)
50147997	Quebrada Grande near Moca, PR	Lat 18°22'50", long 67°06'49", Hydroloigc unit 21010003, at barrio Cruz, 0.2 mi (0.3 km) upstream from Río Culebrinas, 2.6 mi (4.2 km) southwest from Monte El Ojo, and 1.0 mi (1.6 km) south of Moca plaza.	4.72 (12.2)	3/19/97 4/17/97	1335 1255	0.64 (0.018) 0.10 (0.003)
50148500	Río Caño near Aguada, PR	Lat 18°22'19", long 67°09'06", Hydrologic Unit 21010003, at barrio Naranjo on Highway 417, 2.4 mi (3.9 km) northwest from Cerro Gordo, 4.5 mi (7.2 km) northeast of Cerro Canta Gallo, and 6.1 mi (9.8 km) north of Añasco plaza.	5.14 (13.3)	3/19/97 4/17/97	1415 1330	4.73 (0.134) 3.05 (0.086)

Water-Quality at Partial-Record Stations in Puerto Rico

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

Water-quality partial-record stations are particular sites where chemical-quality, biological and or sediment data are collected systematically over a period of years for use in hydrological analysis. The data are collected usually less than quarterly.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	TEMPERATURE WATER (DEG C) (00010)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.45 UM-MF (COLS./100 ML) (31616)
RIO GUAJATACA BASIN									
50010720	LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS,PR (LAT 18°22'05"N LONG 66°54'36"W)								
NOV 1996									
26...	0845	1.00	25.5	323	8.6	37.0	5.1	62	K16
26...	0840	24.0	25.0	386	8.1	--	4.8	58	--
APR 1997									
02...	0900	1.00	27.0	283	7.9	64.0	9.1	117	K4
02...	0905	9.00	26.5	291	7.5	--	6.8	87	--
JUL									
11...	0900	1.00	29.0	297	8.6	30.0	7.8	102	42
11...	0905	6.00	28.5	317	8.5	--	7.0	92	--
RIO GRANDE DE ARECIBO BASIN									
50025110	LAGO DOS BOCAS NO.3 AT WEST BRANCH NR UTUADO,PR (LAT 18°19'15"N LONG 66°40'11"W)								
DEC 1996									
12...	0915	1.00	24.5	254	7.6	20.0	4.7	56	190
12...	0910	15.0	24.0	268	7.4	--	5.2	62	--
MAR 1997									
21...	1020	1.00	26.5	256	7.8	38.0	8.5	105	64
21...	1025	9.00	25.5	259	7.3	--	5.5	68	--
JUL									
15...	0815	1.00	29.0	264	8.4	24.0	6.4	83	400
15...	0820	9.00	27.0	270	8.3	--	5.2	67	--
RIO DE LA PLATA BASIN									
50039900	LAGO CARITE NO.3 ON RIO DE LA PLATA NR CAYEY,PR (LAT 18°05'04"N LONG 66°06'03"W)								
DEC 1996									
11...	0930	1.00	22.5	100	6.6	11.0	5.4	65	K5
11...	0925	15.0	21.5	102	6.5	--	6.8	82	--
MAR 1997									
25...	0950	1.00	24.0	110	7.7	21.0	8.4	106	K4
25...	0945	18.0	22.0	122	6.9	--	5.9	75	--
JUL									
08...	1000	1.00	27.5	125	7.9	24.0	7.3	99	42
08...	1005	9.00	26.5	128	7.5	--	7.2	97	--
50044400	LAGO LA PLATA NO.5 NR MOUTH NR NARANJITO, PR (LAT 18°19'33'N LONG 66°12'28"W)								
NOV 1996									
21...	1030	1.00	26.0	336	8.8	22.8	9.5	115	53
21...	1035	24.0	25.0	312	7.9	--	5.9	71	--
MAR 1997									
24...	1015	1.00	27.0	351	7.4	27.0	11.8	147	56
24...	1020	24.0	24.0	386	6.5	--	0.2	2	--
AUG									
25...	1020	3.00	29.5	445	7.0	25.0	6.4	84	K9
25...	1025	15.0	26.5	348	7.1	--	6.0	78	--
RIO DE BAYAMON BASIN									
50047537	LAGO DE CIDRA NR RIO BAYAMON MOUTH (LAT 18°11'02"N LONG 66°08'06"W)								
DEC 1996									
03...	1015	1.00	24.5	189	6.9	25.0	5.0	62	46
03...	1020	18.0	24.0	190	6.8	--	4.6	56	--
MAR 1997									
26...	0945	1.00	25.5	267	8.0	21.0	9.6	121	8
26...	0940	12.0	24.5	276	6.8	--	9.6	44	--
JUL									
09...	1030	1.00	28.5	262	8.0	24.0	7.6	103	K15
09...	1035	6.00	28.5	263	7.7	--	6.6	89	--
RIO GRANDE DE LOIZA BASIN									
50057500	LAGO LOIZA NO.4 NR MOUTH NR CAGUAS, PR (LAT 18°16'51"N LONG 66°00'35"W)								
DEC 1996									
02...	0810	1.00	25.5	332	7.3	13.0	6.8	82	580
02...	0805	37.0	25.0	333	6.8	--	4.6	56	--
MAR 1997									
20...	1135	1.00	27.0	371	7.5	18.0	6.9	84	54
20...	1130	24.0	25.0	388	7.0	--	0.2	2	--
AUG									
14...	1030	1.00	29.5	198	7.4	4.80	5.3	69	4600
14...	1035	13.5	27.5	292	7.1	--	3.3	43	--

K = non-ideal count

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
RIO GUAJATACA BASIN--Continued									
50010720 LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS,PR (LAT 18°22'05"N LONG 66°54'36"W)									
NOV 1996									
26...	31	62	<1	--	<0.010	<0.020	0.020	0.65	0.67
26...	--	58	--	--	--	--	--	--	--
APR 1997									
02...	K4	120	<1	0.040	<0.010	0.040	0.020	0.39	0.41
02...	--	120	--	--	--	--	--	--	--
JUL									
11...	42	120	4	--	<0.010	0.230	0.100	0.51	0.61
11...	--	130	--	--	--	--	--	--	--
RIO GRANDE DE ARECIBO BASIN--Continued									
50025110 LAGO DOS BOCAS NO.3 AT WEST BRANCH NR UTUADO,PR (LAT 18°19'15"N LONG 66°40'11"W)									
DEC 1996									
12...	310	75	2	0.760	0.010	0.780	0.070	0.52	0.60
12...	--	75	--	--	--	--	--	--	--
MAR 1997									
21...	28	82	7	0.720	0.060	0.780	0.030	0.77	0.80
21...	--	82	--	--	--	--	--	--	--
JUL									
15...	200	90	1	0.228	0.022	0.250	0.060	0.68	0.74
15...	--	88	--	--	--	--	--	--	--
RIO DE LA PLATA BASIN--Continued									
50039900 LAGO CARITE NO.3 ON RIO DE LA PLATA NR CAYEY,PR (LAT 18°05'04"N LONG 66°06'03"W)									
DEC 1996									
11...	360	29	10	0.050	0.020	0.070	0.060	0.31	0.37
11...	--	34	--	--	--	--	--	--	--
MAR 1997									
25...	K27	34	<1	0.120	<0.010	0.120	0.040	0.67	0.71
25...	--	39	--	--	--	--	--	--	--
JUL									
08...	K8	40	3	0.130	<0.010	0.130	0.010	0.28	0.29
08...	--	39	--	--	--	--	--	--	--
50044400 LAGO LA PLATA NO.5 NR MOUTH NR NARANJITO, PR (LAT 18°19'33"N LONG 66°12'28"W)									
NOV 1996									
21...	K14	120	<1	0.390	0.040	0.430	0.020	0.59	0.61
21...	--	110	--	--	--	--	--	--	--
MAR 1997									
24...	44	140	8	--	<0.010	<0.020	0.010	0.94	0.95
24...	--	170	--	--	--	--	--	--	--
AUG									
25...	K6	150	9	0.530	0.078	0.610	0.180	0.60	0.78
25...	--	120	--	--	--	--	--	--	--
RIO DE BAYAMON BASIN--Continued									
50047537 LAGO DE CIDRA NR RIO BAYAMON MOUTH (LAT 18°11'02"N LONG 66°08'06"W)									
DEC 1996									
03...	33	52	5	0.150	0.010	0.170	0.230	0.64	0.87
03...	--	25	--	--	--	--	--	--	--
MAR 1997									
26...	140	92	3	0.120	0.020	0.140	0.050	0.66	0.71
26...	--	94	--	--	--	--	--	--	--
JUL									
09...	K3	90	8	0.100	0.011	0.110	0.120	0.70	0.82
09...	--	88	--	--	--	--	--	--	--
RIO GRANDE DE LOIZA BASIN--Continued									
50057500 LAGO LOIZA NO.4 NR MOUTH NR CAGUAS, PR (LAT 18°16'51"N LONG 66°00'35"W)									
DEC 1996									
02...	330	100	17	0.830	0.140	0.970	0.480	0.77	1.3
02...	--	110	--	--	--	--	--	--	--
MAR 1997									
20...	28	110	<1	1.20	0.020	1.20	0.810	0.97	1.8
20...	--	130	--	--	--	--	--	--	--
AUG									
14...	2300	77	30	0.850	0.110	0.970	0.640	1.0	1.7
14...	--	69	--	--	--	--	--	--	--

K = non-ideal count

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, NITRATE TOTAL (MG/L AS NO3) (71850)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L) (70954)	PLANK-TON BIOMASS ASH WT (MG/L) (81353)	PLANK-TON BIOMASS DRY WT (MG/L) (81354)
RIO GUAJATACA BASIN--Continued								
50010720 LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS,PR (LAT 18°22'05"N LONG 66°54'36"W)								
NOV 1996								
26...	0.67	--	3.0	<0.020	5.10	0.200	540	550
26...	--	--	--	--	--	--	--	--
APR 1997								
02...	0.45	--	2.0	<0.020	1.10	0.890	270	270
02...	--	--	--	--	--	--	--	--
JUL								
11...	0.84	--	3.7	0.050	8.60	0.190	260	270
11...	--	--	--	--	--	--	--	--
RIO GRANDE DE ARECIBO BASIN--Continued								
50025110 LAGO DOS BOCAS NO.3 AT WEST BRANCH NR UTUADO,PR (LAT 18°19'15"N LONG 66°40'11"W)								
DEC 1996								
12...	1.4	3.4	6.1	0.030	4.40	0.200	550	560
12...	--	--	--	--	--	--	--	--
MAR 1997								
21...	1.6	3.2	7.0	0.050	24.0	0.630	560	570
21...	--	--	--	--	--	--	--	--
JUL								
15...	0.99	--	4.4	0.090	18.0	<0.100	260	270
15...	--	--	--	--	--	--	--	--
RIO DE LA PLATA BASIN--Continued								
50039900 LAGO CARITE NO.3 ON RIO DE LA PLATA NR CAYEY,PR (LAT 18°05'04"N LONG 66°06'03"W)								
DEC 1996								
11...	0.44	0.24	1.9	<0.020	0.200	<0.100	550	560
11...	--	--	--	--	--	--	--	--
MAR 1997								
25...	0.83	0.52	3.7	<0.020	1.40	<0.100	550	550
25...	--	--	--	--	--	--	--	--
JUL								
08...	0.42	0.56	1.9	<0.020	3.30	0.540	490	500
08...	--	--	--	--	--	--	--	--
50044400 LAGO LA PLATA NO.5 NR MOUTH NR NARANJITO, PR (LAT 18°19'33"N LONG 66°12'28"W)								
NOV 1996								
21...	1.0	1.7	4.6	0.060	2.10	0.200	270	270
21...	--	--	--	--	--	--	--	--
MAR 1997								
24...	0.95	--	4.2	0.050	16.0	0.700	450	460
24...	--	--	--	--	--	--	--	--
AUG								
25...	1.4	2.3	6.1	0.060	10.0	0.880	310	320
25...	--	--	--	--	--	--	--	--
RIO DE BAYAMON BASIN--Continued								
50047537 LAGO DE CIDRA NR RIO BAYAMON MOUTH (LAT 18°11'02"N LONG 66°08'06"W)								
DEC 1996								
03...	1.0	0.68	4.6	0.060	6.20	1.00	270	280
03...	--	--	--	--	--	--	--	--
MAR 1997								
26...	0.85	0.53	3.8	0.020	12.0	1.08	540	550
26...	--	--	--	--	--	--	--	--
JUL								
09...	0.93	0.44	4.1	0.030	18.0	2.90	300	320
09...	--	--	--	--	--	--	--	--
RIO GRANDE DE LOIZA BASIN--Continued								
50057500 LAGO LOIZA NO.4 NR MOUTH NR CAGUAS, PR (LAT 18°16'51"N LONG 66°00'35"W)								
DEC 1996								
02...	2.2	3.7	9.9	0.130	7.30	0.500	550	560
02...	--	--	--	--	--	--	--	--
MAR 1997								
20...	3.0	5.2	13	0.210	15.0	0.650	540	550
20...	--	--	--	--	--	--	--	--
AUG								
14...	2.6	3.8	12	0.500	1.60	0.780	1280	1300
14...	--	--	--	--	--	--	--	--

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAMPLING DEPTH (FEET) (00003)	TEMPERATURE WATER (DEG C) (00010)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TRANSPARENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.45 UM-MF (COLS./100 ML) (31616)	STREPTOCOCCI FECAL, (COLS. PER 100 ML) (31679)
RIO GUAJATACA BASIN										
50010790	LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18°23'56"N LONG 66°55'23"W)									
NOV 1996										
26...	0915	1.00	26.0	329	7.1	46.0	5.1	62	K9	K11
26...	0905	87.0	24.5	383	6.7	--	0.5	6	--	--
APR 1997										
02...	0930	1.00	27.0	271	8.0	90.0	9.3	119	K4	K6
02...	0935	66.0	24.0	330	6.8	--	0.2	2	--	--
JUL										
11...	0945	1.00	29.0	272	8.9	65.0	8.1	106	K16	<2
11...	0950	63.0	24.5	352	7.5	--	0	0	--	--
RIO GRANDE DE ARECIBO BASIN										
50020050	LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18°08'21"N LONG 66°44'35"W)									
NOV 1996										
25...	1125	1.00	21.0	163	7.5	30.0	4.2	51	62	K180
25...	1110	80.0	20.0	170	6.0	--	0.2	3	--	--
APR 1997										
01...	1115	1.00	23.0	164	7.8	62.4	9.0	113	K5	K4
01...	1125	69.0	20.0	170	6.5	--	0.5	6	--	--
JUL										
10...	1130	1.00	25.0	187	7.7	48.0	4.9	63	K42	K13
10...	1135	63.0	20.5	190	7.2	--	0.2	2	--	--
50027090	LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18°20'09"N LONG 66°40'04"W)									
DEC 1996										
12...	0950	1.00	24.5	230	7.6	23.0	3.6	43	77	140
12...	1000	62.0	23.5	255	6.9	--	3.5	42	--	--
MAR 1997										
21...	1100	1.00	26.5	241	8.4	50.0	9.7	121	88	K14
21...	1105	66.0	24.0	243	7.0	--	0.2	2	--	--
JUL										
15...	0840	1.00	29.0	259	8.5	72.0	6.6	85	K5	K8
15...	0845	75.0	26.5	269	7.5	--	0	0	--	--
RIO DE LA PLATA BASIN										
50039950	LAGO CARITE NO.1 NR DAM NR CAYEY, P.R. (LAT 18°04'39"N LONG 66°06'19"W)									
DEC 1996										
11...	0955	1.00	22.5	61	6.4	10.0	5.6	68	K5	120
11...	0945	54.0	22.5	98	5.7	--	0.0	0	--	--
MAR 1997										
25...	1010	1.0	24.0	109	7.6	19.0	8.4	106	K8	50
25...	1005	66.0	21.5	117	6.6	--	1.8	23	--	--
JUL										
08...	1020	1.00	28.0	124	8.1	50.0	7.5	102	K9	K2
08...	1025	57.0	21.5	147	6.8	--	0	0	--	--

K = non-ideal count

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
RIO GUAJATACA BASIN--Continued									
50010790 LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18°23'56"N LONG 66°55'23"W)									
NOV 1996									
26...	130	47	3.2	5.6	0.2	2.6	150	7.7	7.2
26...	110	39	3.1	5.3	0.2	2.3	120	7.4	7.6
APR 1997									
02...	120	42	4.0	5.6	0.2	2.0	110	8.2	8.9
02...	140	50	3.5	5.2	0.2	2.0	160	6.2	8.5
JUL									
11...	120	40	3.7	6.3	0.3	2.2	110	9.1	9.7
11...	150	55	3.5	5.6	0.2	2.2	160	1.6	8.6
RIO GRANDE DE ARECIBO BASIN--Continued									
50020050 LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18°08'21"N LONG 66°44'35"W)									
NOV 1996									
25...	46	13	3.4	5.5	0.4	2.3	64	3.0	5.2
25...	46	13	3.3	5.0	0.3	1.8	52	2.7	5.0
APR 1997									
01...	66	18	4.9	6.1	0.3	1.3	67	4.2	7.1
01...	65	18	4.8	5.8	0.3	1.4	70	3.1	6.1
JUL									
10...	67	19	4.8	6.0	0.3	1.5	80	0.91	5.9
10...	75	21	5.4	6.6	0.3	1.3	84	2.70	6.6
50027090 LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18°20'09"N LONG 66°40'04"W)									
DEC 1996									
12...	74	20	5.9	8.9	0.4	2.2	66	12	9.7
12...	70	19	5.5	8.6	0.4	2.2	67	10	10
MAR 1997									
21...	79	21	6.5	13	0.6	2.1	80	17	12
21...	85	23	6.7	11	0.5	2.1	79	16	12
JUL									
15...	94	25	7.2	12	0.5	2.5	89	18	13
15...	90	25	6.8	12	0.5	2.5	90	17	12
RIO DE LA PLATA BASIN--Continued									
50039950 LAGO CARITE NO.1 NR DAM NR CAYEY, P.R. (LAT 18°04'39"N LONG 66°06'19"W)									
DEC 1996									
11...	21	4.2	2.6	4.4	0.4	0.90	28	2.2	5.4
11...	27	5.2	3.3	7.0	0.6	1.0	30	2.8	7.8
MAR 1997									
25...	33	6.8	4.0	6.9	0.5	1.0	36	2.9	8.6
25...	31	6.4	3.6	7.1	0.6	0.80	33	2.8	8.6
JUL									
08...	38	7.9	4.3	8.8	0.6	0.80	41	2.4	10
08...	37	7.8	4.3	8.1	0.6	0.97	52	1.4	9.0

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

MISCELLANEOUS STATION ANALYSES

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
				RIO GUAJATACA BASIN--Continued					
50010790	LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18°23'56"N LONG 66°55'23"W)								
NOV 1996									
26...	<0.10	0.90	138	<1	--	<0.010	<0.020	<0.010	0.39
26...	<0.10	5.5	169	--	--	--	--	--	--
APR 1997									
02...	0.11	1.2	138	5	--	<0.010	<0.020	0.010	0.69
02...	0.10	6.2	178	--	--	--	--	--	--
JUL									
11...	<0.10	4.5	142	3	--	<0.010	<0.020	0.080	0.39
11...	<0.10	6.9	180	--	--	--	--	--	--
				RIO GRANDE DE ARECIBO BASIN--Continued					
50020050	LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18°08'21"N LONG 66°44'35"W)								
NOV 1996									
25...	<0.10	15	77	<1	0.030	<0.010	0.040	0.110	0.38
25...	<0.10	16	87	--	--	--	--	--	--
APR 1997									
01...	<0.10	17	100	<1	<0.010	<0.010	<0.020	<0.010	0.26
01...	<0.10	19	100	--	--	--	--	--	--
JUL									
10...	<0.10	19	105	3	--	<0.010	<0.020	0.020	0.36
10...	<0.10	18	108	--	--	--	--	--	--
50027090	LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18°20'09"N LONG 66°40'04"W)								
DEC 1996									
12...	0.10	22	120	<1	0.580	<0.010	0.590	0.070	0.39
12...	<0.10	22	117	--	--	--	--	--	--
MAR 1997									
21...	0.13	21	141	7	0.520	0.050	0.570	0.010	0.36
21...	0.10	21	139	--	--	--	--	--	--
JUL									
15...	0.12	21	153	--	0.090	0.010	0.100	0.030	0.39
15...	0.11	20	148	--	--	--	--	--	--
				RIO DE LA PLATA BASIN--Continued					
50039950	LAGO CARITE NO.1 NR DAM NR CAYEY, P.R. (LAT 18°04'39"N LONG 66°06'19"W)								
DEC 1996									
11...	<0.10	15	60	10	0.050	0.020	0.060	0.050	0.27
11...	<0.10	8.7	45	--	--	--	--	--	--
MAR 1997									
25...	<0.10	15	64	<1	0.120	<0.010	0.120	<0.010	0.29
25...	<0.10	16	68	--	--	--	--	--	--
JUL									
08...	<0.10	17	76	5	0.130	<0.010	0.130	<0.010	0.25
08...	<0.10	18	77	--	--	--	--	--	--

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, NITRATE TOTAL (MG/L AS NO3) (71850)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)	PLANKTON BIOMASS ASH WT (MG/L) (81353)	PLANKTON BIOMASS DRY WT (MG/L) (81354)
				RIO GUAJATACA BASIN--Continued					
50010790	LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18°23'56"N LONG 66°55'23"W)								
NOV 1996									
26...	0.40	0.40	--	1.8	<0.020	0.700	<0.100	530	540
26...	--	--	--	--	--	--	--	--	--
APR 1997									
02...	0.70	0.70	--	3.1	<0.020	4.50	0.120	270	280
02...	--	--	--	--	--	--	--	--	--
JUL									
11...	0.47	0.47	--	2.1	0.040	2.00	0.100	260	260
11...	--	--	--	--	--	--	--	--	--
				RIO GRANDE DE ARECIBO BASIN--Continued					
50020050	LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18°08'21"N LONG 66°44'35"W)								
NOV 1996									
25...	0.49	0.53	--	2.3	<0.020	2.30	0.300	540	550
25...	--	--	--	--	--	--	--	--	--
APR 1997									
01...	0.27	0.27	--	1.2	--	1.70	0.130	450	460
01...	--	--	--	--	--	--	--	--	--
JUL									
10...	0.38	0.38	--	1.7	0.050	3.30	0.110	250	260
10...	--	--	--	--	--	--	--	--	--
50027090	LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18°20'09"N LONG 66°40'04"W)								
DEC 1996									
12...	0.46	1.0	2.6	4.6	0.020	4.00	0.300	390	400
12...	--	--	--	--	--	--	--	--	--
MAR 1997									
21...	0.38	0.94	2.3	4.2	<0.020	0.980	<0.100	270	270
21...	--	--	--	--	--	--	--	--	--
JUL									
15...	0.42	0.52	--	2.3	0.030	--	--	260	260
15...	--	--	--	--	--	--	--	--	--
				RIO DE LA PLATA BASIN--Continued					
50039950	LAGO CARITE NO.1 NR DAM NR CAYEY, P.R. (LAT 18°04'39"N LONG 66°06'19"W)								
DEC 1996									
11...	0.32	0.38	--	1.7	<0.020	<0.100	0.100	560	570
11...	--	--	--	--	--	--	--	--	--
MAR 1997									
25...	0.30	0.42	0.54	1.9	<0.020	1.40	<0.100	540	550
25...	--	--	--	--	--	--	--	--	--
JUL									
08...	0.26	0.39	0.57	1.7	0.310	2.10	0.100	450	450
08...	--	--	--	--	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	TEMPER-ATURE WATER (DEG C) (00010)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TRANS-PAR-ENCY (SECCHI DISK) (IN) (00077)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.45 UM-MF (COLS./ 100 ML) (31616)	STREP-TOCOCCI FECAL, (COLS. PER 100 ML) (31679)
RIO DE LA PLATA BASIN--Continued										
50044950 LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18°20'18"N LONG 66°14'01"W)										
NOV 1996										
21...	1130	1.00	27.0	158	7.7	61.2	6.0	74	44	28
21...	1140	69.0	24.0	329	6.4	--	0.0	0	--	--
MAR 1997										
24...	0930	1.00	26.5	350	7.6	69.0	7.1	88	52	26
24...	0945	72.0	23.0	319	7.2	--	0.3	4	--	--
AUG										
25...	0925	1.00	29.5	423	7.3	48.0	4.5	59	K22	K27
25...	0945	45.0	24.5	404	6.2	--	0.0	0	--	--
RIO DE BAYAMON BASIN--Continued										
50047549 LAGO DE CIDRA NR DAM (LAT 18°11'52"N LONG 66°08'24"W)										
DEC 1996										
03...	0930	1.00	24.0	165	6.7	34.0	2.6	32	27	K7
03...	0945	44.0	22.5	190	6.0	--	0.0	0	--	--
MAR 1997										
26...	0920	1.00	25.5	260	7.8	25.0	8.8	111	K6	74
26...	0915	39.0	22.5	253	6.5	--	0.2	2	--	--
JUL										
09...	0950	1.00	28.5	261	7.9	37.0	6.6	89	K26	K9
09...	1000	42.0	23.0	297	7.0	--	0	0	--	--
RIO GRANDE DE LOIZA BASIN--Continued										
50058800 LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18°19'29"N LONG 66°00'47"W)										
DEC 1996										
02...	0845	1.00	25.5	260	7.1	15.0	1.7	20	480	120
02...	0835	32.0	25.5	250	6.9	--	1.6	19	--	--
MAR 1997										
20...	0920	1.00	25.5	333	7.6	46.0	0.4	5	44	21
20...	0915	21.0	25.0	318	7.5	--	0.1	1	--	--
AUG										
14...	1000	1.00	29.5	278	6.4	49.2	2.2	29	210	270
14...	1005	20.0	29.0	279	6.6	--	0.3	4	--	--

K = non-ideal count

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3 (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
RIO DE LA PLATA BASIN--Continued									
50044950 LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18°20'18"N LONG 66°14'01"W)									
NOV 1996									
21...	110	26	11	17	0.7	2.9	110	12	20
21...	60	15	5.5	8.0	0.4	1.9	64	6.9	11
MAR 1997									
24...	120	29	12	19	0.7	2.5	130	13	22
24...	110	27	11	16	0.7	2.8	120	13	20
AUG									
25...	150	37	15	23	0.8	2.5	150	15	27
25...	160	38	16	26	0.9	2.8	160	12	34
RIO DE BAYAMON BASIN--continued									
50047549 LAGO DE CIDRA NR DAM (LAT 18°11'52"N LONG 66°08'24"W)									
DEC 1996									
03...	48	10	5.6	11	0.7	2.8	59	5.7	12
03...	20	4.3	2.3	4.0	0.4	2.3	57	3.8	5.0
MAR 1997									
26...	67	15	7.2	14	0.7	3.1	94	4.6	14
26...	78	17	8.4	19	0.9	2.6	88	9.5	17
JUL									
09...	77	16	9.0	21	1	2.1	95	6.1	19
09...	76	17	8.2	19	0.9	2.6	110	0.29	18
RIO GRANDE DE LOIZA BASIN--continued									
50058800 LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18°19'29"N LONG 66°00'47"W)									
DEC 1996									
02...	73	18	6.9	16	0.8	3.4	77	11	16
02...	78	19	7.4	17	0.8	3.6	77	12	17
MAR 1997									
20...	97	24	8.9	26	1	2.3	110	15	24
20...	97	24	9.0	25	1	2.3	110	16	26
AUG									
14...	77	19	6.9	20	1	3.7	80	14	22
14...	79	20	7.1	20	1	3.7	83	14	23

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)
RIO DE LA PLATA BASIN--Continued									
50044950 LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18°20'18"N LONG 66°14'01"W)									
NOV 1996									
21...	0.10	16	171	<1	--	<0.010	<0.020	0.010	0.28
21...	0.10	15	102	--	--	--	--	--	--
MAR 1997									
24...	0.17	18	194	5	--	<0.010	<0.020	<0.010	0.35
24...	0.10	18	180	--	--	--	--	--	--
AUG									
25...	0.14	19	228	1	<0.010	<0.010	<0.020	0.020	0.30
25...	0.14	21	246	--	--	--	--	--	--
RIO DE BAYAMON BASIN--continued									
50047549 LAGO DE CIDRA NR DAM (LAT 18°11'52"N LONG 66°08'24"W)									
DEC 1996									
03...	<0.10	12	94	10	0.070	0.010	0.080	0.320	0.38
03...	<0.10	6.6	62	--	--	--	--	--	--
MAR 1997									
26...	0.12	17	144	2	0.090	0.010	0.110	0.030	0.48
26...	0.10	17	131	--	--	--	--	--	--
JUL									
09...	0.10	19	150	3	0.060	<0.010	0.060	0.090	0.45
09...	0.10	21	149	--	--	--	--	--	--
RIO GRANDE DE LOIZA BASIN--continued									
50058800 LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18°19'29"N LONG 66°00'47"W)									
DEC 1996									
02...	0.10	23	145	31	1.10	<0.020	1.10	0.030	0.52
02...	0.10	21	139	--	--	--	--	--	--
MAR 1997									
20...	0.14	28	197	<1	0.250	0.040	0.290	0.080	0.56
20...	0.10	27	193	--	--	--	--	--	--
AUG									
14...	0.14	24	159	<1	0.230	0.058	0.290	0.160	0.95
14...	0.14	25	163	--	--	--	--	--	--

MISCELLANEOUS STATION ANALYSES

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, NITRATE TOTAL (MG/L AS NO3) (71850)	NITROGEN, TOTAL (MG/L AS NO3) (71887)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70953)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L) (70954)	PLANKTON BIOMASS ASH WT (MG/L) (81353)	PLANKTON BIOMASS DRY WT (MG/L) (81354)
RIO DE LA PLATA BASIN--Continued									
50044950 LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18°20'18"N LONG 66°14'01"W)									
NOV 1996									
21...	0.29	0.30	--	1.3	0.040	21.0	2.00	300	310
21...	--	--	--	--	--	--	--	--	--
MAR 1997									
24...	0.36	0.36	--	1.6	<0.020	2.40	0.110	270	270
24...	--	--	--	--	--	--	--	--	--
AUG									
25...	0.31	0.32	--	1.4	<0.020	2.40	0.170	270	270
25...	--	--	--	--	--	--	--	--	--
RIO DE BAYAMON BASIN--continued									
50047549 LAGO DE CIDRA NR DAM (LAT 18°11'52"N LONG 66°08'24"W)									
DEC 1996									
03...	0.71	0.79	0.31	3.5	0.030	1.20	0.300	270	280
03...	--	--	--	--	--	--	--	--	--
MAR 1997									
26...	0.51	0.61	0.41	2.7	<0.020	7.20	0.470	540	550
26...	--	--	--	--	--	--	--	--	--
JUL									
09...	0.54	0.60	0.25	2.7	<0.020	4.30	0.330	270	280
09...	--	--	--	--	--	--	--	--	--
RIO GRANDE DE LOIZA BASIN--continued									
50058800 LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18°19'29"N LONG 66°00'47"W)									
DEC 1996									
02...	0.55	1.7	4.9	7.4	0.130	2.20	<0.100	700	720
02...	--	--	--	--	--	--	--	--	--
MAR 1997									
20...	0.63	0.92	1.1	4.1	0.060	3.20	0.400	550	560
20...	--	--	--	--	--	--	--	--	--
AUG									
14...	1.1	1.4	1.0	6.2	0.070	2.30	0.480	270	270
14...	--	--	--	--	--	--	--	--	--

MISCELLANEOUS STATION ANALYSES

PESTICIDE ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL RECORDS STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 SEPTEMBER 1997

DATE	TIME	PCB, TOTAL (UG/L) (39516)	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, I TOTAL (UG/L) (39388)
RIO GUAJATACA BASIN--CONTINUED										
50010790	LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18°23'56"N LONG 066°55'23"W)									
JUL 1997 11...	0945	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
RIO GRANDE DE ARECIBO BASIN--CONTINUED										
50020050	LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18°08'21"N LONG 066°44'35"W)									
JUL 1997 10...	1130	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
50027090	LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18°20'09"N LONG 066°40'04"W)									
JUL 1997 15...	0840	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
RIO DE LA PLATA BASIN--CONTINUED										
50039950	LAGO CARITE NO.1 NR DAM NR CAYEY, P.R. (LAT 18°04'39"N LONG 066°06'19"W)									
JUL 1997 08...	1020	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
50044950	LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18°20'18"N LONG 066°14'01"W)									
AUG 1997 25...	0925	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
RIO DE BAYAMON BASIN--CONTINUED										
50047549	LAGO DE CIDRA NR DAM (LAT 18°11'52"N LONG 066°08'24"W)									
JUL 1997 09...	0950	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
RIO GRANDE DE LOIZA BASIN--CONTINUED										
50058800	LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18°19'29"N LONG 066°00'47"W)									
AUG 1997 14...	1000	<0.100	<0.010	<0.100	<0.010	<0.010	<0.010	0.020	<0.010	<0.010

MISCELLANEOUS STATION ANALYSES

PESTICIDE ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL RECORDS STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 SEPTEMBER 1997

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	MIREX, TOTAL (UG/L) (39755)
RIO GUAJATACA BASIN--CONTINUED									
50010790 LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18°23'56"N LONG 066°55'23"W)									
JUL 1997 11...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
RIO GRANDE DE ARECIBO BASIN--CONTINUED									
50020050 LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18°08'21"N LONG 066°44'35"W)									
JUL 1997 10...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
50027090 LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18°20'09"N LONG 066°40' 04"W)									
JUL 1997 15...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
RIO DE LA PLATA BASIN--CONTINUED									
50039950 LAGO CARITE NO.1 NR DAM NR CAYEY, P.R. (LAT 18°04'39"N LONG 066°06'19"W)									
JUL 1997 08...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
50044950 LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18°20'18"N LONG 066°14'01"W)									
AUG 25...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
RIO DE BAYAMON BASIN--CONTINUED									
50047549 LAGO DE CIDRA NR DAM (LAT 18°11'52"N LONG 066°08'24"W)									
JUL 1997 09...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
RIO GRANDE DE LOIZA BASIN--CONTINUED									
50058800 LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18°19'29"N LONG 066°00'47"W)									
AUG 1997 14...	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

MISCELLANEOUS STATION ANALYSES

PESTICIDE ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL RECORDS STATIONS

WATER-QUALITY DATA, WATER YEAR OCTOBER 1996 SEPTEMBER 1997

DATE	PARA-THION, TOTAL (UG/L) (39540)	PCNS UNFILT RECOVER (UG/L) (39250)	PER-THANE TOTAL (UG/L) (39034)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	2, 4-DP TOTAL (UG/L) (82183)	SILVEX, TOTAL (UG/L) (39760)
RIO GUAJATACA BASIN--CONTINUED									
50010790 LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18°23'56"N LONG 066°55'23"W)									
JUL 1997 11...	<0.010	<0.100	<0.100	<1.00	<0.010	0.031	<0.010	<0.010	<0.010
RIO GRANDE DE ARECIBO BASIN--CONTINUED									
50020050 LAGO GARZAS NO.1 NR DAM NR ADJUNTAS,PR (LAT 18°08'21"N LONG 066°44'35"W)									
JUL 1997 10...	<0.010	<0.100	<0.100	<1.00	<0.010	0.031	<0.010	<0.010	<0.010
50027090 LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18°20'09"N LONG 066°40'04"W)									
JUL 1997 15...	<0.010	<0.100	<0.100	<1.00	<0.010	0.036	<0.010	<0.010	<0.010
RIO DE LA PLATA BASIN--CONTINUED									
50039950 LAGO CARITE NO.1 NR DAM NR CAYEY, P.R. (LAT 18°04'39"N LONG 066°06'19"W)									
JUL 1997 08...	<0.010	<0.100	<0.100	<1.00	<0.010	<0.010	<0.010	<0.010	<0.010
50044950 LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18°20'18"N LONG 066°14'01"W)									
AUG 1997 25...	<0.010	<0.100	<0.100	<1.00	<0.010	<0.010	<0.010	<0.010	<0.010
RIO DE BAYAMON BASIN--CONTINUED									
50047549 LAGO DE CIDRA NR DAM (LAT 18°11'52"N LONG 066°08'24"W)									
JUL 1997 09...	<0.010	<0.100	<0.100	<1.00	<0.010	<0.010	<0.010	<0.010	<0.010
RIO GRANDE DE LOIZA BASIN--CONTINUED									
50058800 LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, PR (LAT 18°19'29"N LONG 066°00'47"W)									
AUG 1997 14...	<0.010	<0.100	<0.100	<1.00	<0.010	0.025	<0.010	<0.010	<0.010

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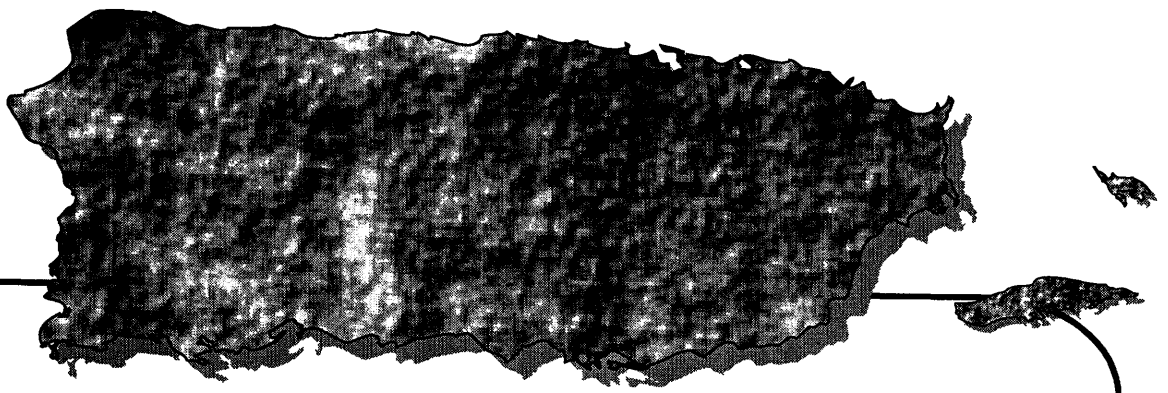


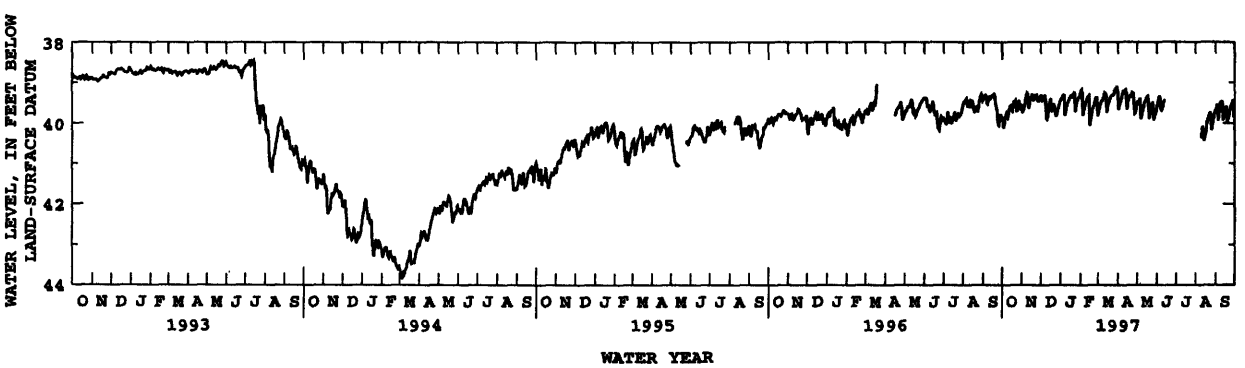
Ground-Water Records for Puerto Rico

182422067015100. Local number, 165.
LOCATION.--Lat 18°24'22", long 67°01'51", Hydrologic Unit 21010003, 5.60 mi northeast of Moca plaza, 4.70 mi southeast of Aguadilla U.S. Naval Reservation radio antenna, and 1.63 mi northwest of La Virgen del Rosario Church. Owner: P.R. Aqueduct and Sewer Authority, Name: Saltos # 1 (Mateo Pérez).
AQUIFER.--Cibao Formation. Aguada Limestone.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 16 in (0.40 m), cased 16 in (0.40 m) 0-40 ft (0-12.2 m), cased 12 in (0.30 m) 40-200 ft (12.2-61.0 m). Depth 200 ft (61.0 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 689 ft (210 m) above mean sea level.
Measuring point: Hole on pump base, 0.50 ft (0.15 m) above land-surface datum. Prior to October 6, 1988, hole on top of pipe on top of pump base, 0.80 ft (0.24 m) above land-surface datum. Prior to November 1985, hole on top of pump base, 1.00 ft (0.30 m) above land-surface datum.
REMARKS.--Recording observation well. Formerly published as 182421067015000.
PERIOD OF RECORD.--January 1982 to March 1985, November 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 38.36 ft (11.7 m) below land-surface datum, July 12, 1993; lowest water level measured, 70.60 ft (21.52 m) below land-surface datum, June 18, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39.95	39.49	39.32	39.43	39.24	39.91	39.06	39.48	39.62	---	---	39.69
2	39.81	39.80	39.28	39.41	39.21	39.75	39.72	39.49	39.50	---	---	39.67
3	39.96	39.70	39.46	39.38	39.19	39.66	39.60	39.50	39.46	---	---	39.64
4	40.17	39.67	39.44	39.36	39.16	39.60	39.55	39.46	39.35	---	---	39.43
5	40.08	39.63	39.44	39.30	39.88	39.54	39.48	39.41	39.34	---	---	40.02
6	39.92	39.54	39.38	39.31	39.75	39.45	39.44	39.36	39.35	---	---	39.87
7	39.82	39.43	39.30	39.31	39.66	39.45	39.35	39.97	39.60	---	---	39.70
8	39.79	39.32	39.30	39.88	39.60	39.45	39.27	39.83	39.70	---	40.50	39.54
9	39.74	39.26	39.56	39.75	39.48	39.42	39.21	39.78	39.67	---	40.39	39.48
10	39.95	39.25	39.82	39.63	39.47	39.33	39.23	39.70	39.63	---	40.33	39.48
11	39.79	39.33	39.98	39.54	39.42	39.26	39.28	39.64	39.49	---	40.26	39.48
12	39.73	39.70	39.85	39.50	39.37	39.24	39.22	39.50	39.45	---	40.12	39.48
13	39.63	39.58	39.73	39.48	39.37	39.29	39.18	39.47	39.44	---	40.06	39.99
14	39.58	39.41	39.60	39.43	39.34	39.28	39.18	39.46	39.43	---	40.52	39.87
15	39.59	39.36	39.50	39.39	39.32	39.84	39.77	39.41	---	---	40.37	39.82
16	39.56	39.37	39.41	39.35	40.17	39.64	39.57	39.36	---	---	40.31	39.77
17	39.78	39.32	39.38	39.34	39.98	39.53	39.42	39.34	---	---	40.26	39.70
18	39.62	39.23	39.75	39.31	39.91	39.50	39.35	39.32	---	---	40.13	39.58
19	39.47	39.48	39.72	39.33	39.80	39.44	39.34	39.47	---	---	40.02	39.59
20	39.50	39.42	39.61	39.38	39.69	39.38	39.33	39.99	---	---	39.90	40.03
21	39.49	39.38	39.55	39.32	39.63	39.35	39.36	39.80	---	---	39.90	39.92
22	39.45	39.32	39.50	39.23	39.58	39.32	39.31	39.71	---	---	39.81	39.84
23	39.44	39.32	39.76	39.23	39.58	39.31	39.25	39.70	---	---	39.79	39.75
24	39.76	39.39	39.66	39.81	39.49	39.31	39.24	39.59	---	---	39.72	39.63
25	39.69	39.38	39.87	39.64	39.37	39.30	39.28	39.50	---	---	39.79	39.61
26	39.64	39.30	39.82	39.49	39.41	39.29	39.40	39.45	---	---	40.24	39.55
27	39.49	39.51	39.75	39.45	39.41	39.21	39.74	40.00	---	---	40.10	39.55
28	39.39	39.44	39.67	39.40	39.38	39.16	39.80	39.86	---	---	40.03	39.48
29	39.69	39.41	39.58	39.37	---	39.17	39.70	39.81	---	---	39.90	39.38
30	39.62	39.40	39.55	39.37	---	39.14	39.59	39.78	---	---	39.81	39.93
31	39.57	---	39.45	39.32	---	39.11	---	39.72	---	---	39.72	---
MEAN	39.70	39.44	39.58	39.43	39.53	39.41	39.41	39.61	39.50	---	40.08	39.68

WTR YR 1997 MEAN 39.57 HIGHEST 38.96 APR. 1, 1997 LOWEST 40.52 AUG. 14, 1997

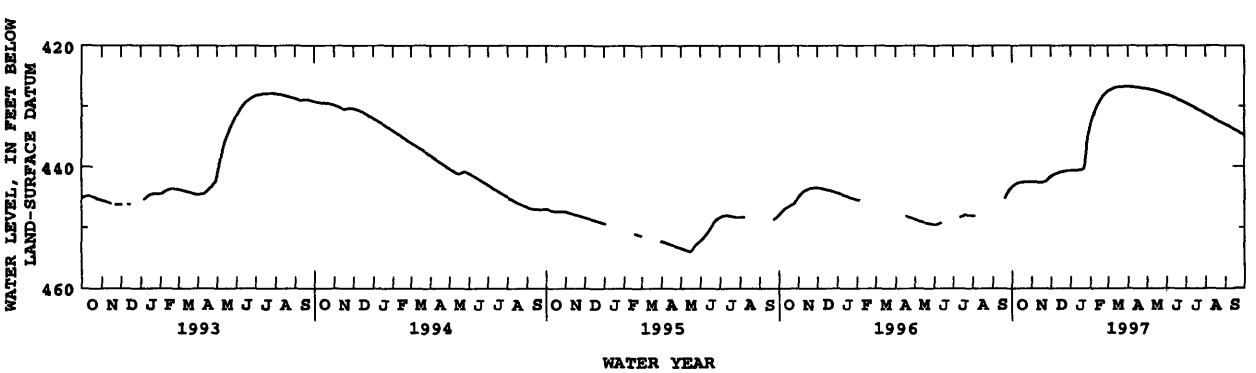


182647066552400. Local number, 202.
LOCATION.--Lat 18°26'47", long 66°55'24", Hydrologic Unit 21010002, 2.22 mi southeast of Quebradillas plaza, 1.29 mi north of Escuela José de Diego, and 1.99 mi northwest of El Calvario Church. Owner: P.R. Aqueduct and Sewer Authority, Name: Carmelo Barreto García well.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 20 in (0.51 m), cased 20 in (0.51 m) 0-296 ft (0-90.2 m), diameter 13 in (0.33 m), cased 13 in (0.33 m) 0-550 ft (0-167.6 m), perforated 270-529 ft (82.3-161.2 m). Depth 550 ft (167.6 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 475 ft (145 m) above mean sea level, from topographic map. Measuring point: Hole on side of casing, 1.50 ft (0.46 m) above land-surface datum. Prior July 25, 1986, top of shelter floor, 3.30 ft (1.00 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--November 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 409.17 ft (124.71 m) below land-surface datum, Sept. 25, 1986; lowest water level recorded, 453.96 ft (138.37 m) below land-surface datum, May 14, 15, 16, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	443.39	442.49	441.67	440.65	433.45	427.59	426.75	427.10	428.10	429.46	431.30	433.01
2	443.29	442.49	441.58	440.65	433.07	427.50	426.81	427.16	428.12	429.50	431.34	433.08
3	443.18	442.48	441.51	440.67	432.69	427.44	426.84	427.20	428.16	429.57	431.40	433.09
4	443.13	442.50	441.46	440.67	432.33	427.38	426.86	427.19	428.15	429.62	431.44	433.13
5	443.05	442.52	441.41	440.63	431.99	427.32	426.85	427.19	428.21	429.70	431.51	433.19
6	442.95	442.50	441.32	440.65	431.66	427.25	426.86	427.24	428.27	429.76	431.58	433.24
7	442.89	442.50	441.25	440.65	431.35	427.21	426.84	427.25	428.30	429.80	431.61	433.27
8	442.84	442.47	441.21	440.66	431.07	427.18	426.82	427.28	428.34	429.83	431.65	433.33
9	442.77	442.47	441.18	440.63	430.77	427.14	426.82	427.30	428.42	429.88	431.75	433.42
10	442.73	442.52	441.16	440.62	430.50	427.07	426.88	427.32	428.46	429.97	431.80	433.50
11	442.67	442.57	441.11	440.59	430.25	427.01	426.93	427.36	428.48	430.04	431.85	433.57
12	442.68	442.62	441.07	440.60	430.00	426.99	426.90	427.36	428.54	430.07	431.90	433.63
13	442.63	442.62	441.01	440.61	429.82	427.00	426.91	427.40	428.60	430.10	431.97	433.71
14	442.62	442.57	440.96	440.57	429.62	426.95	426.91	427.45	428.65	430.21	432.04	433.77
15	442.61	442.56	440.92	440.57	429.41	426.92	426.91	427.46	428.68	430.27	432.12	433.84
16	442.59	442.61	440.91	440.56	429.22	426.87	426.90	427.47	428.73	430.32	432.18	433.90
17	442.54	442.60	440.87	440.57	429.05	426.89	426.86	427.53	428.77	430.39	432.25	433.92
18	442.50	442.58	440.88	440.53	428.90	426.88	426.88	427.56	428.84	430.42	432.27	433.99
19	442.50	442.58	440.86	440.53	428.74	426.84	426.92	427.60	428.89	430.48	432.32	434.04
20	442.55	442.55	440.82	440.52	428.56	426.82	426.93	427.63	428.91	430.56	432.38	434.09
21	442.54	442.52	440.79	440.45	428.42	426.82	426.97	427.65	428.95	430.63	432.44	434.18
22	442.51	442.48	440.79	440.39	428.30	426.82	426.96	427.69	429.01	430.68	432.55	434.24
23	442.52	442.47	440.78	440.20	428.21	426.82	426.98	427.76	429.06	430.74	432.54	434.30
24	442.52	442.45	440.74	439.50	428.07	426.84	427.01	427.79	429.10	430.82	432.58	434.35
25	442.52	442.34	440.74	438.17	427.92	426.84	427.04	427.83	429.15	430.85	432.64	434.41
26	442.53	442.20	440.70	436.82	427.87	426.84	427.05	427.86	429.21	430.88	432.67	434.50
27	442.49	442.06	440.67	435.85	427.79	426.79	427.08	427.88	429.26	430.96	432.74	434.55
28	442.46	441.95	440.66	435.21	427.69	426.79	427.09	427.93	429.30	431.05	432.79	434.59
29	442.47	441.87	440.66	434.73	---	426.81	427.08	427.98	429.41	431.12	432.84	434.62
30	442.48	441.79	440.67	434.32	---	426.79	427.10	428.04	429.43	431.18	432.88	434.68
31	442.48	---	440.65	433.87	---	426.77	---	428.08	---	431.27	432.93	---
MEAN	442.70	442.43	441.00	439.41	429.88	427.01	426.92	427.53	428.72	430.33	432.14	433.84

WTR YR 1997 MEAN 433.53 HIGHEST 426.71 APR. 1, 1997 LOWEST 443.46 OCT. 1, 1996



182737066370900. Local number, 204.
LOCATION.--Lat 18°27'37", long 66°37'09", Hydrologic Unit 21010002, 5.26 mi west of Barceloneta plaza, 1.58 mi north of Hwy 2 km 63.7, and 3.67 mi southwest of Escuela Agustín Balseiro. Owner: Sucesión Marquez, Name: Gilberto Rivera well.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Abandoned unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 48.0 ft (14.63 m) above mean sea level.
Measuring point: Air hole on pump base, 0.50 ft (0.15 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 50.00 ft (15.24 m) below land-surface datum, May 14, 1986; lowest water level recorded, 53.10 ft (16.2 m) below land-surface datum, Jan. 29, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1995 TO SEPTEMBER 1996
INSTANTANEOUS OBSERVATION AT 1200

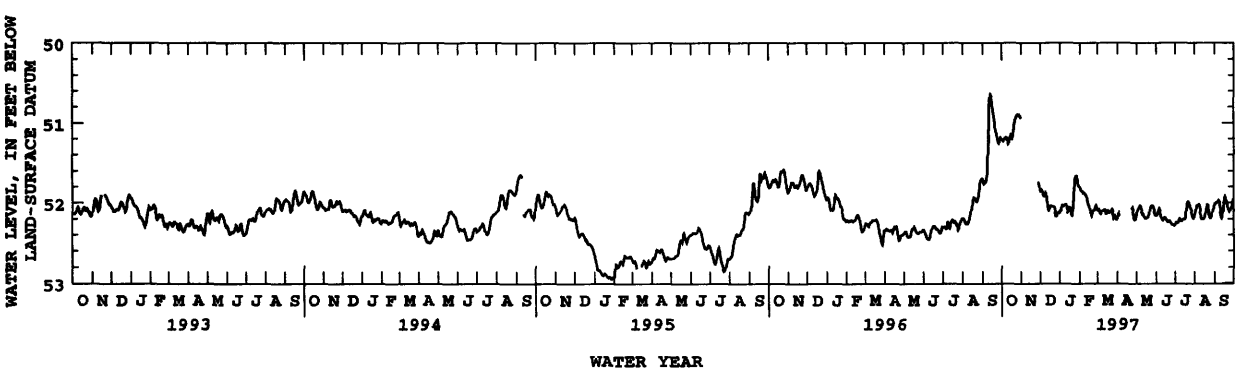
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51.79	51.87	51.80	51.96	52.23	52.30	52.34	52.38	52.33	52.31	52.19	51.70
2	51.81	51.86	51.80	51.94	52.22	52.26	52.35	52.38	52.34	52.31	52.19	51.71
3	51.81	51.84	51.78	51.93	52.21	52.25	52.34	52.36	52.36	52.30	52.19	51.75
4	51.80	51.82	51.77	51.95	52.23	52.26	52.32	52.35	52.39	52.30	52.21	51.78
5	51.78	51.79	51.75	51.99	52.24	52.27	52.33	52.36	52.40	52.30	52.23	51.74
6	51.76	51.75	51.76	52.06	52.23	52.27	52.34	52.40	52.44	52.31	52.27	51.74
7	51.74	51.74	51.77	52.09	52.22	52.30	52.35	52.42	52.45	52.34	52.25	51.74
8	51.72	51.75	51.78	52.09	52.22	52.29	52.34	52.43	52.45	52.30	52.25	51.67
9	51.71	51.74	51.81	52.08	52.21	52.26	52.36	52.43	52.46	52.22	52.27	51.63
10	51.73	51.76	51.85	52.08	52.22	52.24	52.35	52.41	52.45	52.24	52.25	51.44
11	51.73	51.80	51.87	52.10	52.24	52.25	52.35	52.43	52.43	52.29	52.23	50.97
12	51.71	51.81	51.92	52.05	52.23	52.24	52.33	52.41	52.40	52.34	52.20	50.70
13	51.71	51.80	51.91	51.98	52.22	52.22	52.37	52.36	52.34	52.30	52.16	50.64
14	51.73	51.78	51.90	51.90	52.22	52.21	52.37	52.33	52.34	52.24	52.10	50.65
15	51.76	51.78	51.87	51.90	52.22	52.22	52.33	52.32	52.32	52.23	52.08	50.68
16	51.79	51.81	51.87	51.93	52.19	52.22	52.30	52.33	52.30	52.22	52.04	50.76
17	51.81	51.81	51.83	51.95	52.17	52.22	52.31	52.30	52.29	52.21	51.98	50.82
18	51.79	51.79	51.78	51.95	52.16	52.22	52.32	52.30	52.29	52.24	51.93	50.87
19	51.74	51.76	51.63	51.94	52.14	52.20	52.29	52.33	52.29	52.24	51.94	50.93
20	51.64	51.74	51.60	51.97	52.16	52.22	52.31	52.35	52.31	52.22	51.94	50.98
21	51.60	51.72	51.60	51.99	52.20	52.23	52.35	52.37	52.33	52.24	51.96	51.11
22	51.62	51.66	51.63	52.05	52.21	52.26	52.42	52.37	52.33	52.28	51.97	51.10
23	51.61	51.65	51.67	52.05	52.25	52.32	52.46	52.38	52.32	52.27	52.00	51.14
24	51.61	51.65	51.71	52.05	52.31	52.36	52.48	52.38	52.34	52.26	51.97	51.18
25	51.59	51.66	51.75	52.09	52.36	52.41	52.44	52.38	52.36	52.32	51.94	51.22
26	51.59	51.70	51.78	52.14	52.36	52.42	52.42	52.36	52.38	52.35	51.91	51.26
27	51.63	51.74	51.83	52.19	52.35	52.49	52.40	52.36	52.38	52.29	51.86	51.25
28	51.72	51.78	51.86	52.21	52.34	52.53	52.40	52.36	52.38	52.26	51.76	51.22
29	51.76	51.85	51.90	52.20	52.32	52.52	52.40	52.36	52.35	52.24	51.74	51.19
30	51.81	51.85	51.92	52.20	---	52.44	52.39	52.36	52.30	52.22	51.71	51.18
31	51.87	---	51.95	52.23	---	52.36	---	52.34	---	52.20	51.70	---
MEAN	51.72	51.77	51.80	52.04	52.24	52.30	52.36	52.37	52.36	52.27	52.05	51.22

WTR YR 1996 MEAN 52.04 HIGHEST 50.63 SEPT. 12, 13, 1996 LOWEST 52.58 MAR. 28, 29, 1996

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51.22	50.97	51.84	52.11	51.80	52.09	52.21	52.17	52.16	52.29	52.17	52.02
2	51.20	---	51.87	52.13	51.82	52.10	52.18	52.11	52.16	52.26	52.13	52.00
3	51.22	---	51.84	52.08	51.85	52.09	52.15	52.08	52.15	52.25	52.09	52.01
4	51.23	---	51.84	52.03	51.85	52.08	52.12	52.07	52.10	52.24	52.04	52.00
5	51.19	---	51.87	52.04	51.85	52.12	52.21	52.06	52.07	52.25	52.03	51.99
6	51.20	---	51.91	52.05	51.88	52.14	---	52.05	52.07	52.25	52.04	51.99
7	51.20	---	51.92	52.03	51.88	52.13	---	52.02	52.11	52.24	52.02	51.98
8	51.19	---	51.91	52.03	51.87	52.09	---	52.06	52.16	52.20	52.02	51.96
9	51.17	---	51.87	52.02	51.89	52.11	---	52.09	52.18	52.20	52.04	52.00
10	51.20	---	51.88	52.02	51.90	52.09	---	52.14	52.20	52.21	52.10	52.08
11	51.25	---	51.91	52.02	51.91	52.09	---	52.14	52.22	52.23	52.17	52.15
12	51.27	---	51.99	52.06	51.93	52.08	---	52.13	52.22	52.23	52.20	52.20
13	51.22	---	52.07	52.09	51.97	52.09	---	52.17	52.20	52.22	52.21	52.18
14	51.20	---	52.11	52.15	52.02	52.13	---	52.18	52.18	52.20	52.20	52.15
15	51.15	---	52.08	52.07	52.03	52.14	---	52.19	52.19	52.21	52.20	52.07
16	51.16	---	52.05	52.05	52.06	52.13	---	52.20	52.18	52.21	52.20	51.97
17	51.18	---	52.04	52.07	52.08	52.10	---	52.19	52.20	52.21	52.18	51.93
18	51.20	---	52.03	52.07	52.10	52.10	---	52.18	52.22	52.17	52.15	51.92
19	51.13	---	52.04	52.11	52.11	52.12	---	52.19	52.24	52.07	52.08	51.97
20	51.08	---	52.05	52.17	52.16	52.13	---	52.17	52.24	52.00	52.04	51.99
21	51.01	---	52.05	52.17	52.16	52.12	---	52.15	52.23	51.98	52.01	52.02
22	50.96	---	52.05	51.99	52.10	52.11	52.06	52.09	52.22	51.99	52.05	52.09
23	50.96	---	52.05	51.85	52.09	52.09	52.07	52.05	52.23	52.00	52.13	52.08
24	50.92	---	52.07	51.76	52.10	52.07	52.07	52.04	52.24	52.04	52.16	52.11
25	50.91	---	52.15	51.67	52.07	52.11	52.05	52.03	52.26	52.06	52.18	52.11
26	50.90	---	52.18	51.67	52.03	52.19	52.13	52.04	52.27	52.08	52.20	52.07
27	50.89	---	52.16	51.66	52.04	52.20	52.19	52.04	52.27	52.09	52.18	52.09
28	50.93	51.69	52.17	51.67	52.08	52.17	52.21	52.07	52.28	52.15	52.15	52.05
29	50.89	51.79	52.10	51.76	---	52.16	52.22	52.11	52.27	52.18	52.10	52.02
30	50.91	51.79	52.14	51.79	---	52.20	52.20	52.15	52.28	52.20	52.09	51.97
31	50.92	---	52.11	51.80	---	52.21	---	52.16	---	52.19	52.04	---
MEAN	51.10	51.56	52.01	51.97	51.99	52.12	52.15	52.11	52.20	52.16	52.12	52.04

WTR YR 1997 MEAN 51.98 HIGHEST 50.83 OCT. 29, 1996 LOWEST 52.34 JUNE 23, 1997

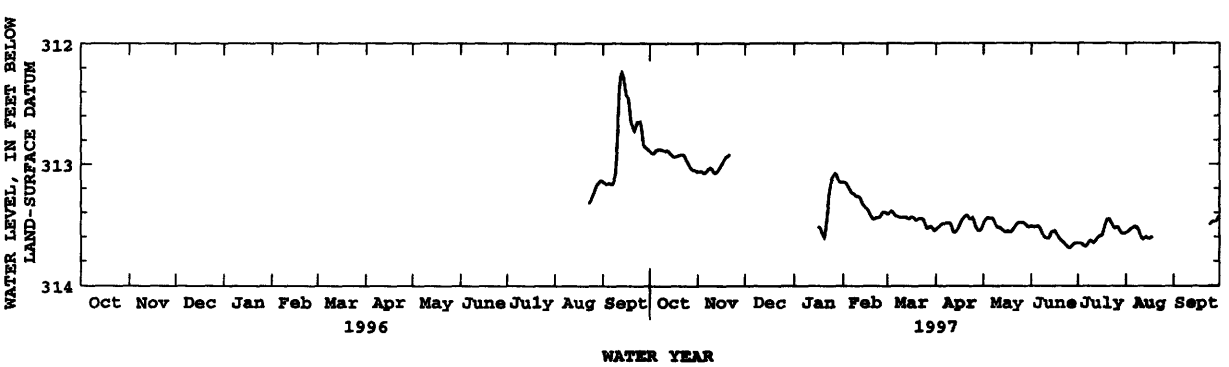


182616066364100. Local number, EN-1.
LOCATION.--Lat 18°26'16", long 66°36'41", Hydrologic Unit 21010002, 3.00 west of the intersection of Hwy 140 with Hwy 2 (Cruce Davila), 0.32 mi southwest of Hwy 22, 0.15 mi north of Hwy 2, and 0.22 mi northeast of the intersection of Hwy 2 with Hwy 639. Owner: P.R. Aqueduct and Sewer Authority, Name: Encantada 1.
AQUIFER.--Tertiary Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 312 ft (95.0 m) above mean sea level, from topographic map. Measuring point: Shelter floor 3.40 ft (1.04 m) above land-surface datum.
REMARKS.--Recording observation well. Automatic Digital Recorder (ADR) installed on Aug. 23, 1996, changed to an Electronic Data Logger (EDL) on January 13, 1997.
PERIOD OF RECORD.--August 23, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 312.23 ft (95.17 m) below land-surface datum, Sept. 13, 14, 1996; lowest water level recorded, 313.74 ft (95.63 m) below land-surface datum, July 5, 6, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	312.88	313.06	---	---	313.15	313.40	313.55	313.52	313.51	313.65	313.57	---
2	312.90	313.07	---	---	313.15	313.42	313.53	313.47	313.51	313.65	313.56	---
3	312.91	313.06	---	---	313.15	313.39	313.52	313.46	313.52	313.65	313.56	---
4	312.91	313.06	---	---	313.17	313.39	313.51	313.44	313.52	313.65	313.54	---
5	312.89	313.07	---	---	313.19	313.39	313.49	313.44	313.51	313.67	313.53	---
6	312.88	313.08	---	---	313.22	313.42	313.49	313.46	313.51	313.68	313.53	---
7	312.88	313.06	---	---	313.24	313.43	313.49	313.43	313.52	313.68	313.51	---
8	312.87	313.05	---	---	313.24	313.43	313.49	313.46	313.56	313.65	313.51	---
9	312.88	313.03	---	---	313.25	313.44	313.48	313.48	313.58	313.63	313.53	---
10	312.88	313.03	---	---	313.27	313.44	313.49	313.51	313.61	313.63	313.54	---
11	312.89	313.05	---	---	313.26	313.44	313.49	313.53	313.61	313.65	313.60	---
12	312.89	313.08	---	---	313.27	313.44	313.55	313.51	313.61	313.65	313.62	---
13	312.88	313.07	---	---	313.29	313.43	313.57	313.54	313.61	313.62	313.62	---
14	312.90	313.06	---	---	313.34	313.44	313.56	313.54	313.56	313.61	313.60	---
15	312.92	313.04	---	---	313.34	313.46	313.54	313.55	313.56	313.59	313.60	---
16	312.93	313.01	---	313.52	313.37	313.44	313.52	313.57	313.55	313.59	313.62	---
17	312.94	313.00	---	313.52	313.37	313.43	313.47	313.55	313.55	313.59	313.61	---
18	312.94	312.97	---	313.52	313.40	313.44	313.46	313.55	313.58	313.56	313.61	---
19	312.93	312.94	---	313.55	313.43	313.45	313.43	313.57	313.61	313.50	313.58	---
20	312.93	312.94	---	313.61	313.44	313.47	313.43	313.55	313.62	313.46	---	---
21	312.92	312.93	---	313.60	313.47	313.45	313.41	313.54	313.64	313.44	---	---
22	312.92	312.91	---	313.51	313.44	313.45	313.44	313.51	313.64	313.46	---	---
23	312.92	---	---	313.33	313.44	313.45	313.46	313.50	313.66	313.48	---	---
24	312.93	---	---	313.20	313.44	313.45	313.44	313.48	313.67	313.51	---	313.50
25	312.98	---	---	313.14	313.44	313.47	313.44	313.48	313.68	313.53	---	313.50
26	312.98	---	---	313.10	313.40	313.52	313.49	313.48	313.70	313.53	---	313.47
27	313.02	---	---	313.09	313.39	313.54	313.53	313.48	313.68	313.51	---	313.47
28	313.03	---	---	313.07	313.40	313.52	313.54	313.48	313.67	313.53	---	313.47
29	313.05	---	---	313.11	---	313.51	313.56	313.50	313.65	313.56	---	313.47
30	313.05	---	---	313.15	---	313.52	313.54	313.51	313.65	313.57	---	313.44
31	313.05	---	---	313.15	---	313.55	---	313.53	---	313.58	---	---
MEAN	312.93	313.03	---	313.32	313.32	313.45	313.50	313.50	313.60	313.58	313.57	313.47

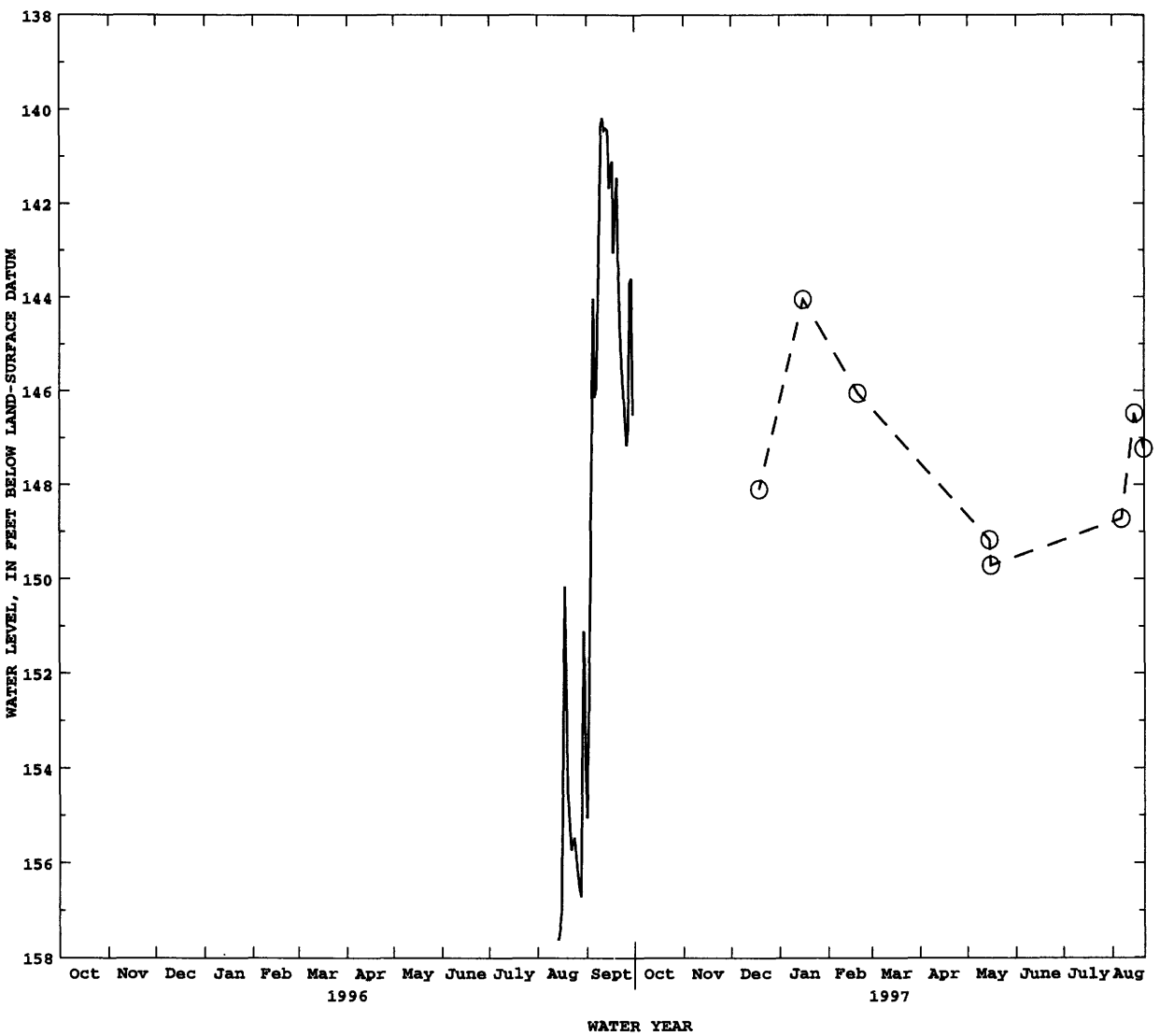
WTR YR 1997 MEAN 313.39 HIGHEST 312.86 OCT 1, 1996 LOWEST 313.74 JUNE 5, 6, 1997



182209066340600. Local number, FL-1.
LOCATION.--Lat 18°22'09", long 66°34'06", Hydrologic Unit 21010002, 0.20 north of the intersection of Hwy 140 with Hwy 642, 1.15 mi south of the intersection of Hwy 140 with Hwy 641, and approximately 100 ft west of Hwy 140. Owner: P.R. Aqueduct and Sewer Authority, Name: Florida 1.
AQUIFER.--Cibao Formation.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 12 in (0.30 m), Depth 200 ft (61.0 m).
INSTRUMENTATION.--Prior to December 19, 1998, pressure transducer with data logger set at 60-minute interval.
DATUM.--Elevation of land-surface datum is about 607.0 ft (185.0 m) above mean sea level from topographic map. Measuring point: Shelter floor 4.00 ft (1.22 m) above land-surface datum.
REMARKS.--Observation well. prior to December 19' 1996, recording observation well.
PERIOD OF RECORD.--August 12, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 139.90 ft (42.64 m) below land-surface datum, Sept. 20, 1996; lowest water level recorded, 157.63 ft (48.04 m) below land-surface datum, Aug. 14, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION

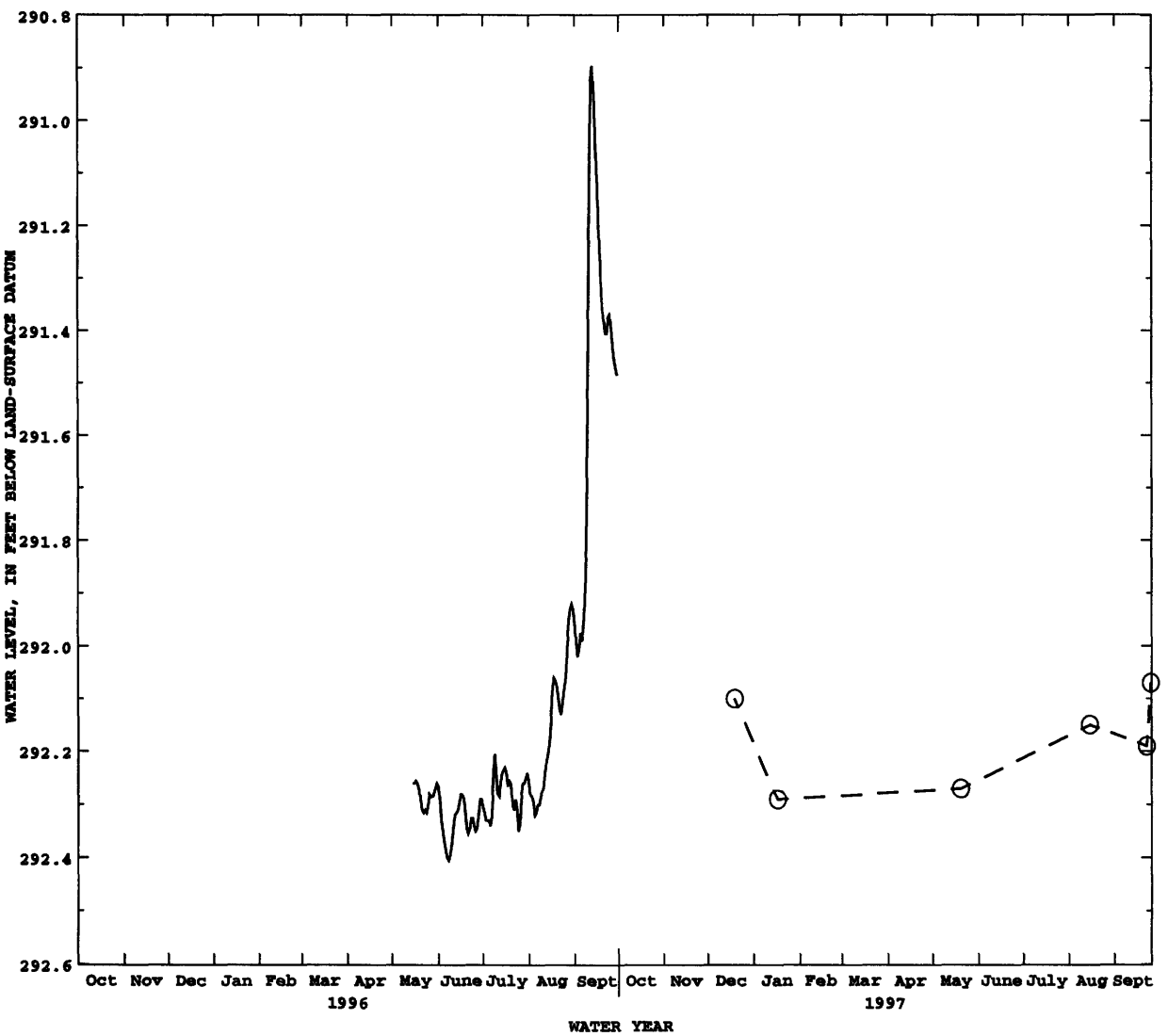
Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 19	148.09	Feb. 20	146.05	May 16	149.71	Aug. 15	146.48
Jan. 16	144.05	May 15	149.17	Aug. 7	148.72	Aug. 21	147.23



182626066345100. Local number, TI-1.
LOCATION.--Lat 18°26'26", long 66°34'51", Hydrologic Unit 21010002, 1.45 mi south of Hwy 682, 1.15 mi northwest of the intersection of Hwy 140 with Hwy 2 (Cruce Dávila), 0.48 mi north of Hwy 2, and approximately 100 feet south of Hwy 22. Owner: P.R. Aqueduct and Sewer Authority, Name: Tiburones 1.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 12 in (0.30 m). Depth 320 ft (97.5 m).
INSTRUMENTATION.--Prior to December 19, 1996, pressure transducer with data logger--60-minute interval.
DATUM.--Elevation of land-surface datum is about 295 ft (89.9 m) above mean sea level, from topographic map.
Measuring point: Top of 4 in (0.10 m) PVC cap, above shelter floor, 3.40 ft (1.04 m) above land-surface datum.
REMARKS.--Observation well. Prior to December 19, 1996, recording observation well.
PERIOD OF RECORD.--May 14, 1996 to current year..
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 290.88 ft (88.66 m) below land-surface datum, Sept. 13, 14, 1996; lowest water level measured, 292.79 ft (89.24 m) below land-surface datum, Jan. 17, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 19	292.10	May 20	292.27	Sept. 23	292.19	Sept. 26	292.07
Jan. 17	292.79	Aug. 15	292.15				



182549066304300. Local number 166.

LOCATION.--Lat 18°25'49", long 66°30'43", Hydrologic Unit 21010002, 0.95 mi east of the Rio Grande de Manatí Hwy 2 bridge, 0.40 mi southwest of Central Monserrate, 1.07 mi east of the intersection of Hwy 666 with Hwy 2, 1.20 mi west of the intersection of Hwy 685 with Hwy 2, 0.01 mi north of Hwy 2. Owner: Puerto Rico Aqueduct and Sewer Authority, Name: Manatí 3.

AQUIFER.--Alluvial deposits.

WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), cased 0-100 ft (0-39.49 m), diameter 14 in (0.36 m), cased 0-140 ft (0-42.68 m), slotted 80-90 ft (24.39-27.44 m), and 130-140 ft (39.63-42.68 m). Depth 140 ft (42.68 m).

INSTRUMENTATION.--Digital water level recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is about 29.50 ft (9.0 m) above mean-sea level, from topographic map. Measuring point: A hole in the side of the 20 in (0.51 m) diameter well casing, 1.65 ft (0.50 m) above land-surface datum. Prior May 31, 1996, top of 14 in (0.36 m) casing, 0.80 ft (0.24 m) above land-surface datum.

REMARKS.--Recording observation well. Automated Digital Recorder (ADR) installed on May 31, 1996. Formerly published as 182542066305200.

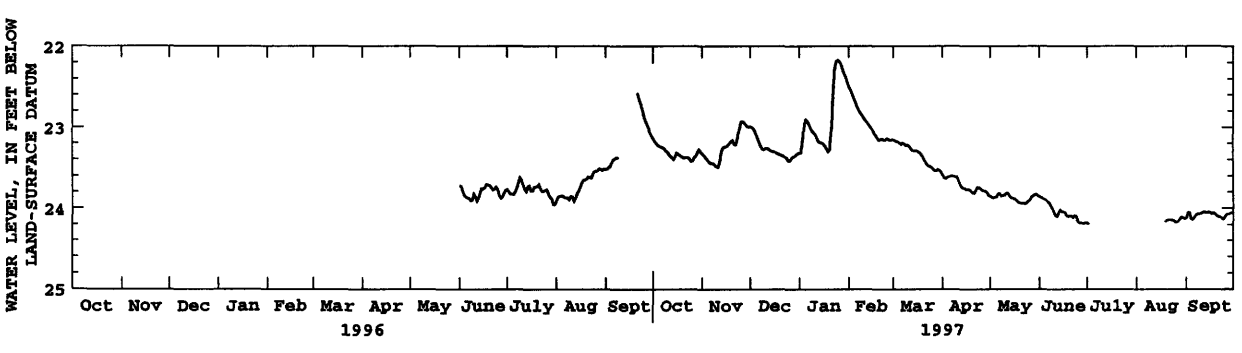
PERIOD OF RECORD.--January 1982 to December 1984, discontinued, May 31, 1996 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 22.11 ft (6.74 m) below land-surface datum, Jan. 25, 1997; lowest water level measured, 26.36 ft (8.04 m) below land-surface datum, Feb. 3, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.12	23.32	23.00	23.32	22.49	23.15	23.57	23.86	23.85	24.17	---	24.13
2	23.16	23.34	22.99	23.32	22.52	23.16	23.61	23.84	23.87	24.19	---	24.12
3	23.18	23.36	23.02	23.32	22.57	23.17	23.65	23.89	23.87	24.21	---	23.99
4	23.22	23.39	23.04	23.02	22.62	23.18	23.63	23.86	23.89	---	---	24.12
5	23.23	23.41	23.08	22.91	22.67	23.18	23.61	23.87	23.89	---	---	24.14
6	23.24	23.44	23.13	22.91	22.72	23.21	23.62	23.86	23.91	---	---	24.14
7	23.25	23.45	23.19	22.95	22.78	23.22	23.60	23.79	23.92	---	---	24.10
8	23.25	23.45	23.23	23.00	22.80	23.17	23.60	23.85	23.95	---	---	24.07
9	23.28	23.45	23.27	23.04	22.84	23.25	23.62	23.85	23.98	---	---	24.08
10	23.30	23.49	23.29	23.06	22.86	23.21	23.61	23.84	24.03	---	---	24.06
11	23.31	23.49	23.26	23.08	22.90	23.23	23.62	23.84	24.07	---	---	24.08
12	23.36	23.50	23.26	23.10	22.92	23.24	23.69	23.80	24.12	---	---	24.04
13	23.36	23.36	23.27	23.17	22.95	23.29	23.73	23.83	24.09	---	---	24.05
14	23.39	23.26	23.29	23.19	22.98	23.29	23.75	23.86	24.03	---	---	24.06
15	23.41	23.25	23.30	23.19	23.01	23.29	23.76	23.88	24.02	---	---	24.06
16	23.32	23.24	23.30	23.20	23.03	23.29	23.76	23.88	24.07	---	---	24.04
17	23.32	23.24	23.31	23.22	23.07	23.30	23.79	23.89	24.03	---	---	24.07
18	23.35	23.22	23.32	23.25	23.09	23.32	23.75	23.90	24.08	---	---	24.07
19	23.35	23.19	23.33	23.29	23.11	23.33	23.79	23.93	24.11	---	24.19	24.05
20	23.38	23.17	23.34	23.32	23.16	23.38	23.80	23.94	24.10	---	24.15	24.09
21	23.38	23.16	23.35	23.24	23.17	23.41	23.83	23.94	24.09	---	24.14	24.10
22	23.38	23.27	23.35	22.78	23.14	23.45	23.81	23.94	24.10	---	24.15	24.11
23	23.37	23.17	23.37	22.38	23.15	23.48	23.75	23.95	24.13	---	24.14	24.11
24	23.38	23.11	23.37	22.21	23.17	23.48	23.74	23.95	24.06	---	24.15	24.13
25	23.41	22.95	23.40	22.17	23.15	23.49	23.76	23.92	24.14	---	24.15	24.14
26	23.44	22.92	23.44	22.17	23.13	23.51	23.77	23.91	24.17	---	24.18	24.09
27	23.39	22.94	23.39	22.20	23.17	23.53	23.79	23.89	24.19	---	24.17	24.07
28	23.36	22.95	23.38	22.24	23.16	23.55	23.79	23.84	24.18	---	24.16	24.07
29	23.36	22.99	23.36	22.32	---	23.53	23.79	23.86	24.19	---	24.11	24.07
30	23.27	23.00	23.36	22.36	---	23.52	23.83	23.81	24.19	---	24.11	24.05
31	23.29	---	23.33	22.41	---	23.55	---	23.85	---	---	24.13	---
MEAN	23.32	23.25	23.27	22.88	22.94	23.33	23.71	23.87	24.04	24.19	24.15	24.08

WTR YR 1997 MEAN 23.51 HIGHEST 22.11 JAN. 25, 1997 LOWEST 24.03 JULY 31, 1996

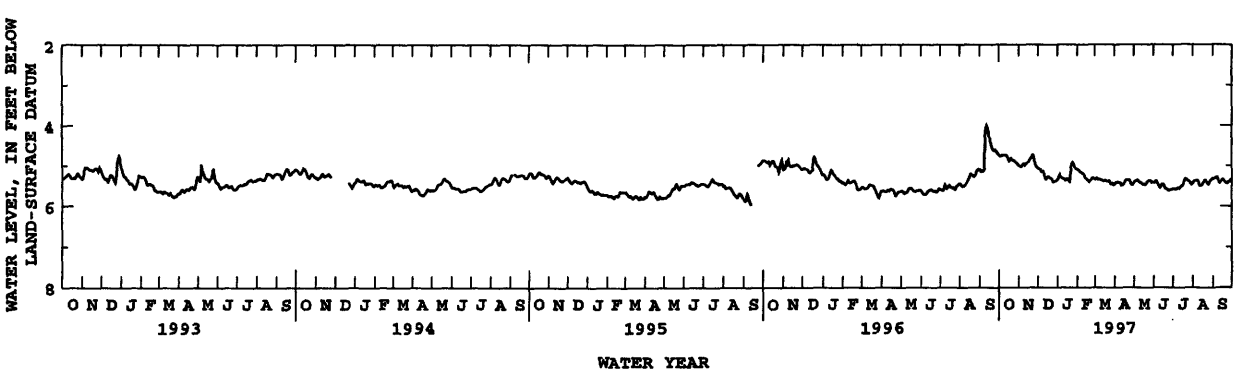


182757066325600. Local number, 206.
LOCATION.--Lat 18°27'57", long 66°32'56", Hydrologic Unit 21010002, 0.84 mi northwest of Barceloneta plaza, 0.64 mi west of Central Plazuela, and 1.96 mi southeast of Escuela Agustín Balseiro. Owner: P.R. Department of Agriculture, Name: Plazuela No. 2.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m), cased 16 in (0.41 m) 0-85 ft (0-25.9 m), open hole 85-101 ft (25.9-30.8 m). Depth 101 ft (30.8 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 7.0 ft (2.1 m) above mean sea level, from topographic map. Measuring point: Hole on side of casing, 1.30 ft (0.40 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.75 ft (1.14 m) below land-surface datum, Sept. 11, 1988; lowest water level recorded, 6.03 ft (1.84 m) below land-surface datum, Sept. 15, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.72	4.98	5.06	5.35	5.08	5.34	5.48	5.44	5.42	5.59	5.43	5.32
2	4.74	5.00	5.08	5.33	5.09	5.35	5.44	5.41	5.43	5.58	5.42	5.31
3	4.76	5.00	5.07	5.31	5.11	5.33	5.43	5.39	5.42	5.57	5.40	5.33
4	4.78	5.01	5.07	5.20	5.12	5.30	5.41	5.38	5.41	5.58	5.38	5.31
5	4.76	5.03	5.08	5.24	5.13	5.32	5.42	5.38	5.38	5.59	5.38	5.32
6	4.74	5.03	5.14	5.29	5.16	5.34	5.41	5.38	5.39	5.59	5.37	5.31
7	4.75	5.01	5.16	5.29	5.17	5.35	5.41	5.35	5.41	5.59	5.37	5.29
8	4.74	4.97	5.16	5.31	5.17	5.33	5.42	5.37	5.45	5.56	5.36	5.28
9	4.73	4.95	5.13	5.31	5.19	5.34	5.42	5.40	5.48	5.55	5.37	5.30
10	4.74	4.94	5.14	5.32	5.20	5.34	5.42	5.42	5.52	5.55	5.40	5.35
11	4.74	4.97	5.18	5.31	5.20	5.36	5.43	5.42	5.54	5.57	5.44	5.40
12	4.73	5.00	5.26	5.33	5.22	5.36	5.48	5.41	5.55	5.57	5.49	5.43
13	4.74	4.94	5.31	5.35	5.27	5.35	5.51	5.43	5.52	5.54	5.51	5.42
14	4.76	4.94	5.35	5.38	5.31	5.38	5.48	5.45	5.46	5.52	5.49	5.40
15	4.79	4.93	5.33	5.34	5.31	5.39	5.48	5.45	5.47	5.50	5.49	5.38
16	4.82	4.92	5.30	5.32	5.33	5.38	5.45	5.48	5.45	5.50	5.49	5.36
17	4.88	4.92	5.28	5.32	5.34	5.36	5.42	5.46	5.47	5.51	5.45	5.34
18	4.89	4.87	5.27	5.34	5.36	5.36	5.38	5.46	5.51	5.46	5.42	5.33
19	4.84	4.85	5.28	5.37	5.37	5.37	5.36	5.48	5.55	5.39	5.39	5.37
20	4.82	4.83	5.30	5.41	5.40	5.39	5.36	5.47	5.57	5.34	5.37	5.39
21	4.82	4.79	5.31	5.40	5.40	5.39	5.35	5.45	5.57	5.32	5.35	5.41
22	4.85	4.81	5.32	5.13	5.37	5.39	5.36	5.41	5.57	5.34	5.38	5.43
23	4.86	4.72	5.32	5.02	5.36	5.38	5.37	5.40	5.59	5.34	5.41	5.42
24	4.88	4.74	5.35	4.96	5.34	5.37	5.36	5.39	5.61	5.37	5.43	5.44
25	4.87	4.74	5.39	4.92	5.31	5.40	5.36	5.37	5.61	5.38	5.45	5.43
26	4.88	4.86	5.42	4.93	5.30	5.45	5.42	5.37	5.62	5.39	5.48	5.39
27	4.90	4.93	5.40	4.95	5.30	5.47	5.45	5.37	5.60	5.39	5.44	5.41
28	4.91	4.97	5.41	4.98	5.33	5.44	5.47	5.38	5.60	5.42	5.40	5.39
29	4.94	5.03	5.37	5.04	---	5.43	5.49	5.40	5.58	5.44	5.37	5.38
30	4.92	5.03	5.38	5.08	---	5.46	5.46	5.42	5.59	5.47	5.36	5.34
31	4.96	---	5.37	5.08	---	5.48	---	5.43	---	5.47	5.34	---
MEAN	4.81	4.92	5.26	5.22	5.26	5.38	5.42	5.41	5.51	5.48	5.41	5.37

WTR YR 1997 MEAN 5.29 HIGHEST 4.68 OCT. 1, 1996 LOWEST 5.65 JUNE 23, 1997

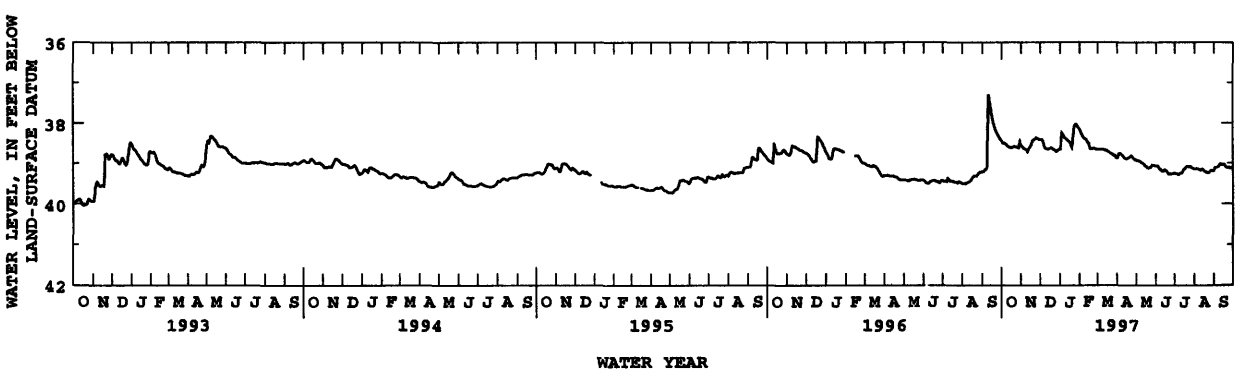


182710066303700. Local number, 207.
LOCATION.--Lat 18°27'10", long 66°30'37", Hydrologic Unit 21010002, 1.92 mi east of Barceloneta plaza, 1.35 mi north of Central Monserrate, and 2.68 mi northeast of Escuela José Cordero. Owner: P.R. Aqueduct and Sewer Authority, Name: Cantito La Luisa.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), cased 20 in (0.51 m) 0-30 ft (0-9.14 m), cased 10 in (0.25 m) 0-126 ft (0-38.4 m), perforated 80-126 ft (24.4-38.4 m). Depth 126 ft (38.4 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 59.0 ft (18.0 m) above mean sea level, from topographic map. Measuring point: Top of shelter floor, 2.80 ft (0.85 m) above land-surface datum. Prior to Nov. 20, 1992, hole on side of casing, 2.00 ft (0.61 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 36.38 ft (11.09 m) below land-surface datum, May 15, 1986; lowest water level recorded, 89.83 ft (27.38 m) below land-surface datum, Oct. 5, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38.43	38.56	38.41	38.65	38.14	38.65	38.87	38.93	39.07	39.25	39.14	39.20
2	38.45	38.57	38.42	38.66	38.18	38.66	38.87	38.93	39.08	39.26	39.14	39.16
3	38.48	38.58	38.42	38.65	38.21	38.66	38.81	38.93	39.07	39.26	39.14	39.10
4	38.51	38.60	38.41	38.25	38.25	38.65	38.76	38.94	39.06	39.26	39.14	39.12
5	38.49	38.62	38.42	38.23	38.29	38.66	38.76	38.94	39.08	39.26	39.14	39.10
6	38.50	38.64	38.46	38.28	38.32	38.66	38.75	38.94	39.10	39.28	39.14	39.10
7	38.51	38.65	38.53	38.31	38.35	38.66	38.76	38.95	39.14	39.29	39.14	39.10
8	38.52	38.65	38.59	38.34	38.37	38.66	38.78	38.96	39.16	39.29	39.15	39.09
9	38.53	38.66	38.61	38.37	38.39	38.66	38.79	38.98	39.16	39.26	39.16	39.08
10	38.55	38.67	38.63	38.38	38.40	38.65	38.81	38.99	39.17	39.25	39.17	39.05
11	38.57	38.70	38.64	38.39	38.40	38.66	38.83	39.00	39.20	39.25	39.17	39.01
12	38.58	38.73	38.64	38.41	38.42	38.67	38.85	39.00	39.20	39.25	39.18	39.02
13	38.59	38.65	38.65	38.42	38.45	38.68	38.87	39.02	39.20	39.24	39.16	39.02
14	38.60	38.62	38.66	38.44	38.48	38.68	38.88	39.04	39.19	39.20	39.15	39.04
15	38.62	38.61	38.65	38.46	38.50	38.67	38.88	39.06	39.16	39.18	39.15	39.04
16	38.60	38.58	38.64	38.46	38.50	38.68	38.89	39.07	39.17	39.14	39.18	39.03
17	38.61	38.56	38.63	38.47	38.60	38.70	38.90	39.08	39.18	39.14	39.19	39.03
18	38.62	38.51	38.62	38.50	38.64	38.71	38.88	39.08	39.19	39.14	39.21	39.03
19	38.60	38.44	38.61	38.55	38.66	38.71	38.86	39.12	39.21	39.10	39.22	39.06
20	38.59	38.43	38.63	38.60	38.64	38.72	38.86	39.12	39.23	39.08	39.22	39.09
21	38.58	38.42	38.64	38.62	38.65	38.74	38.85	39.13	39.27	39.07	39.23	39.10
22	38.58	38.43	38.65	38.40	38.64	38.75	38.83	39.11	39.27	39.07	39.23	39.11
23	38.59	38.39	38.66	38.23	38.63	38.76	38.82	39.10	39.26	39.09	39.25	39.11
24	38.59	38.41	38.67	38.09	38.62	38.77	38.81	39.12	39.27	39.09	39.23	39.12
25	38.59	38.37	38.68	38.06	38.64	38.77	38.83	39.08	39.27	39.08	39.23	39.10
26	38.60	38.37	38.71	38.04	38.65	38.81	38.87	39.06	39.27	39.08	39.20	39.10
27	38.61	38.39	38.71	38.03	38.66	38.81	38.88	39.05	39.26	39.09	39.18	39.13
28	38.62	38.39	38.71	38.04	38.65	38.79	38.89	39.06	39.26	39.12	39.18	39.12
29	38.62	38.41	38.68	38.08	---	38.81	38.91	39.06	39.26	39.12	39.18	39.11
30	38.44	38.42	38.66	38.11	---	38.86	38.93	39.06	39.25	39.14	39.18	39.10
31	38.50	---	38.65	38.12	---	38.87	---	39.06	---	39.14	39.19	---
MEAN	38.56	38.53	38.60	38.34	38.48	38.72	38.84	39.03	39.19	39.18	39.18	39.09

WTR YR 1997 MEAN 38.81 HIGHEST 38.03 JAN. 26, 27, 28, 1997 LOWEST 39.29 JULY 7, 8, 1997

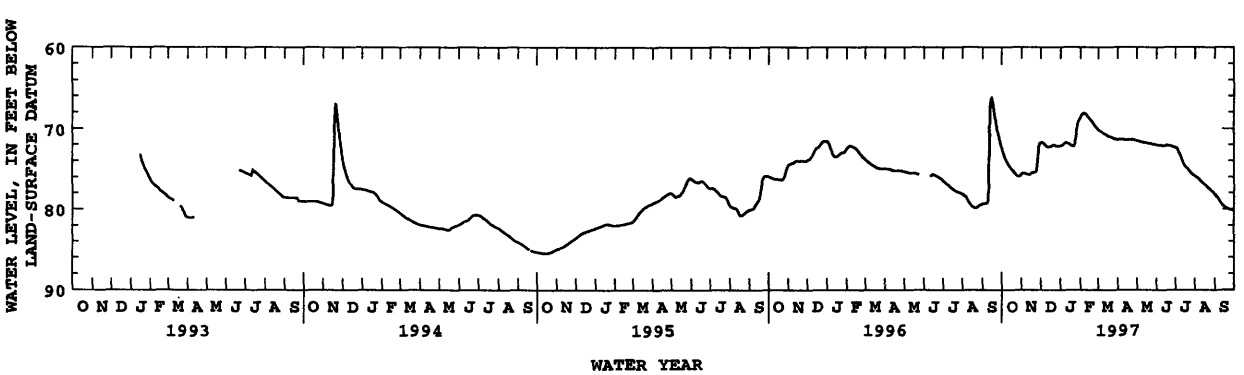


182308066260400. Local number, 210.
LOCATION.--Lat 18°23'08", long 66°26'04", Hydrologic Unit 21010002, 4.88 mi southeast of Manatí plaza, 5.24 mi southwest of Vega Baja plaza, and 2.25 mi west of Escuela Evaristo Camacho. Owner: Gelo Martínez, Name: Gelo Martínez well.
AQUIFER.--Lares Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), cased 8 in (0.20 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 574 ft (174.9 m) above mean sea level, from topographic map. Measuring point: Top of shelter floor, 3.30 ft (1.01 m) above land-surface datum. Prior to January 14, 1993, hole on side of casing, 2.00 ft (0.61 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 40.56 ft (12.36 m) below land-surface datum, May 22, 1986; lowest water level recorded, 85.50 ft (26.06 m) below land-surface datum, Oct. 14, 15, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	72.37	75.73	71.75	72.12	68.74	70.10	71.38	71.50	72.03	72.35	75.87	78.13
2	72.61	75.62	71.73	72.11	68.58	70.16	71.36	71.52	72.04	72.38	75.90	78.24
3	72.86	75.55	71.72	72.11	68.43	70.23	71.35	71.55	72.05	72.41	75.96	78.33
4	73.12	75.52	71.73	72.08	68.29	70.29	71.34	71.56	72.07	72.44	76.03	78.43
5	73.35	75.52	71.80	72.03	68.20	70.33	71.34	71.58	72.09	72.65	76.09	78.52
6	73.57	75.54	71.85	71.92	68.13	70.40	71.34	71.61	72.10	72.89	76.15	78.64
7	73.75	75.56	71.93	71.84	68.10	70.45	71.33	71.63	72.10	73.05	76.21	78.75
8	73.92	75.58	72.01	71.80	68.12	70.53	71.33	71.66	72.10	73.19	76.29	78.86
9	74.07	75.61	72.09	71.78	68.16	70.58	71.34	71.68	72.10	73.30	76.38	79.01
10	74.23	75.64	72.18	71.77	68.22	70.63	71.35	71.69	72.11	73.49	76.48	79.14
11	74.36	75.67	72.24	71.79	68.31	70.68	71.37	71.70	72.12	73.74	76.55	79.25
12	74.50	75.71	72.29	71.81	68.41	70.72	71.39	71.72	72.13	73.95	76.65	79.36
13	74.62	75.73	72.29	71.85	68.52	70.78	71.40	71.73	72.13	74.15	76.72	79.46
14	74.73	75.73	72.28	71.89	68.63	70.80	71.40	71.75	72.13	74.34	76.77	79.53
15	74.83	75.71	72.28	71.92	68.72	70.86	71.40	71.76	72.12	74.49	76.84	79.61
16	74.95	75.64	72.27	71.97	68.81	70.91	71.41	71.77	72.11	74.61	76.93	79.68
17	75.03	75.56	72.25	72.02	68.90	70.95	71.39	71.80	72.10	74.70	76.99	79.75
18	75.14	75.49	72.20	72.09	68.98	70.97	71.38	71.81	72.10	74.78	77.06	79.80
19	75.23	75.46	72.13	72.14	69.06	71.00	71.37	71.82	72.10	74.86	77.14	79.84
20	75.34	75.44	72.06	72.19	69.16	71.03	71.37	71.84	72.10	74.90	77.25	79.88
21	75.46	75.44	72.04	72.23	69.30	71.06	71.37	71.84	72.12	75.00	77.33	79.93
22	75.56	75.45	72.04	72.18	69.41	71.09	71.36	71.85	72.14	75.10	77.39	79.96
23	75.66	75.44	72.07	72.02	69.55	71.12	71.37	71.87	72.15	75.22	77.45	79.99
24	75.74	75.38	72.10	71.54	69.64	71.16	71.38	71.87	72.18	75.30	77.51	80.02
25	75.82	75.21	72.15	71.05	69.71	71.20	71.38	71.90	72.21	75.40	77.57	80.04
26	75.88	74.54	72.20	70.53	69.82	71.23	71.38	71.91	72.24	75.49	77.66	80.06
27	75.92	73.11	72.18	70.01	69.92	71.28	71.39	71.94	72.27	75.60	77.73	80.08
28	75.94	72.18	72.21	69.56	70.02	71.31	71.43	71.96	72.29	75.65	77.78	80.09
29	75.93	71.88	72.20	69.23	---	71.34	71.46	71.99	72.30	75.71	77.83	80.11
30	75.91	71.80	72.17	69.02	---	71.38	71.49	72.00	72.33	75.78	77.92	80.12
31	75.85	---	72.14	68.88	---	71.40	---	72.02	---	75.82	78.04	---
MEAN	74.72	75.08	72.08	71.47	68.85	70.84	71.38	71.77	72.14	74.28	76.92	79.42

WTR YR 1997 MEAN 73.27 HIGHEST 68.10 FEB. 7, 1997 LOWEST 80.12 SEPT. 30, 1997

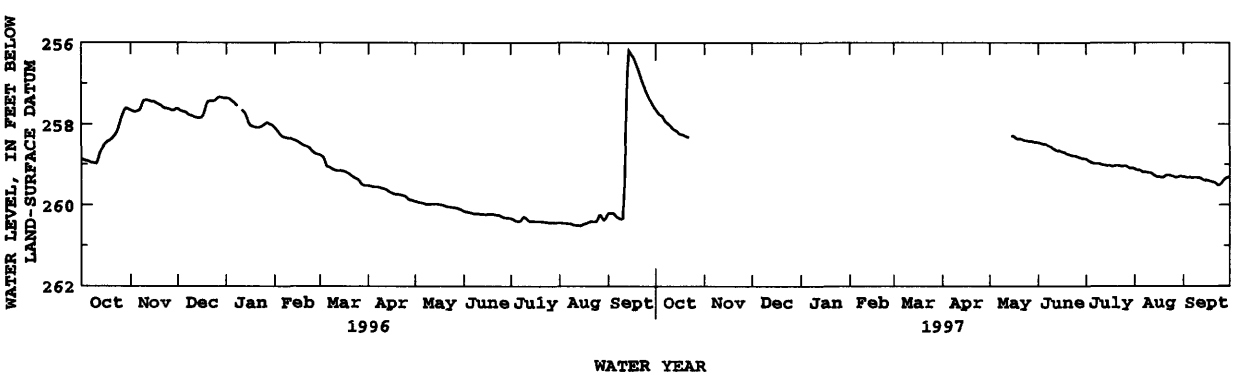


182548066265700. Local number CS-7
LOCATION.Lat 18°25'48", long 66°26'57", Hydrologic Unit 21010002, 0.92 mi east of the intersection of Hwy 686 with Hwy 670, 0.79 mi south of Hwy 2, 0.27 mi east of the intersection of Hwy 672 with Hwy 670, and 0.01 mi south of Hwy 670. Owner: P.R. Aqueduct and Sewer Authority, Name: Cotto Sur No. 7.
AQUIFER.--Tertiary Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 270.0 ft (82.3 m) above mean sea level, from topographic map. Measuring point: Top of 20 in (0.51 m) casing, 2.30 ft (0.70 m) above land-surface datum.
REMARKS.--Observation well. Automated Digital Recorded (ADR) installed on July 11, 1994, changed to an Electronic Data Logger (EDL) on May 15, 1997.
PERIOD OF RECORD.--July 11, 1994 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 254.41 ft (77.54 m) below land-surface datum, Sept. 15, 1996; lowest water level recorded, 260.63 ft (79.44 m) below land-surface datum, Aug. 14, 15, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	257.61	---	---	---	---	---	---	---	258.46	258.85	259.09	259.31
2	257.67	---	---	---	---	---	---	---	258.46	258.88	259.13	259.29
3	257.72	---	---	---	---	---	---	---	258.47	258.91	259.14	259.32
4	257.78	---	---	---	---	---	---	---	258.48	258.93	259.14	259.34
5	257.78	---	---	---	---	---	---	---	258.51	258.95	259.14	259.30
6	257.81	---	---	---	---	---	---	---	258.48	258.98	259.18	259.33
7	257.90	---	---	---	---	---	---	---	258.53	258.97	259.19	259.33
8	257.95	---	---	---	---	---	---	---	258.54	258.98	259.17	259.33
9	257.98	---	---	---	---	---	---	---	258.56	258.98	259.20	259.31
10	258.00	---	---	---	---	---	---	---	258.59	258.97	259.19	259.33
11	258.05	---	---	---	---	---	---	---	258.62	259.00	259.20	259.33
12	258.09	---	---	---	---	---	---	---	258.63	259.01	259.21	259.33
13	258.13	---	---	---	---	---	---	---	258.68	259.01	259.25	259.36
14	258.15	---	---	---	---	---	---	---	258.65	259.02	259.28	259.38
15	258.17	---	---	---	---	---	---	258.33	258.65	259.04	259.30	259.41
16	258.22	---	---	---	---	---	---	258.29	258.70	259.01	259.30	259.39
17	258.25	---	---	---	---	---	---	258.31	258.69	259.03	259.30	259.39
18	258.26	---	---	---	---	---	---	258.33	258.70	259.05	259.32	259.42
19	258.26	---	---	---	---	---	---	258.38	258.74	259.04	259.32	259.42
20	258.29	---	---	---	---	---	---	258.36	258.75	259.03	259.32	259.43
21	258.31	---	---	---	---	---	---	258.37	258.76	259.02	259.26	259.45
22	258.32	---	---	---	---	---	---	258.36	258.78	259.03	259.27	259.45
23	258.35	---	---	---	---	---	---	258.41	258.79	259.03	259.26	259.53
24	---	---	---	---	---	---	---	258.40	258.78	259.06	259.28	259.51
25	---	---	---	---	---	---	---	258.41	258.80	259.04	259.29	259.50
26	---	---	---	---	---	---	---	258.42	258.81	259.03	259.29	259.44
27	---	---	---	---	---	---	---	258.43	258.83	259.04	259.32	259.40
28	---	---	---	---	---	---	---	258.42	258.83	259.06	259.32	259.34
29	---	---	---	---	---	---	---	258.43	258.86	259.09	259.31	259.33
30	---	---	---	---	---	---	---	258.46	258.86	259.10	259.29	259.31
31	---	---	---	---	---	---	---	258.45	---	259.08	259.29	---
MEAN	258.05	---	---	---	---	---	---	258.39	258.67	259.01	259.24	259.38

WTR YR 1997 MEAN 258.86 HIGHEST 257.59 OCT. 1, 1996 LOWEST 259.61 SEPT. 23, 1997

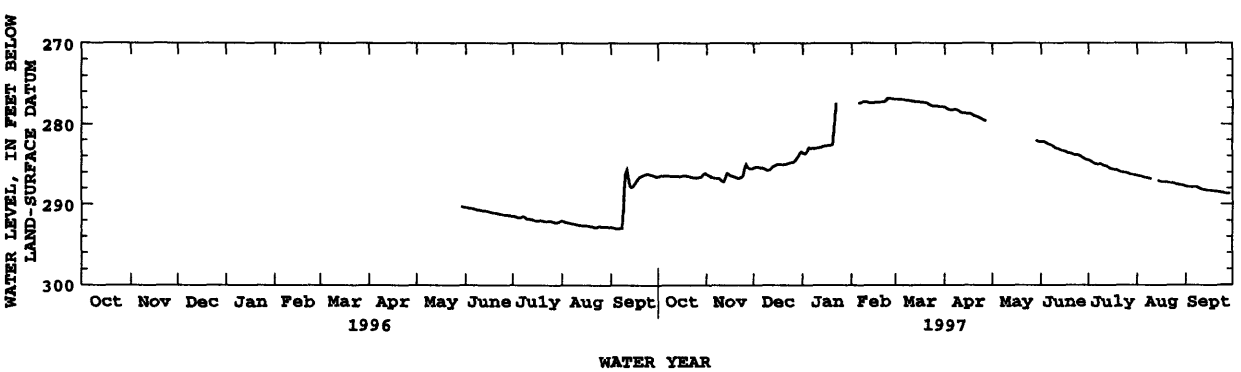


182506066280200. Local number, HI-2.
LOCATION.--Lat 18°25'06", long 66°28'02", Hydrologic Unit 21010002, 0.72 mi southwest of the intersection of Hwy 686 with Hwy 670, 0.73 mi southeast of intersection of Hwy 149 with Hwy 670, and 0.78 mi northeast of Escuela Sabana Seca. Owner: U.S. Geological Survey, WRD, Name: USGS Hill 2.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), screened 360-410 ft (109.7-125.0 m). Depth 410 ft (125.0 m).
INSTRUMENTATION.--Pressure transducer with Data Logger.
DATUM.--Elevation of land-surface datum is about 312 ft (95.0 m) above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.76 ft (1.15 m) above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger installed on May 28, 1996.
PERIOD OF RECORD.--May 28, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 267.96 ft (81.67 m) below land-surface datum, Jan. 24, 1997; lowest water level recorded, 293.09 ft (89.33 m) below land-surface datum, Sept. 5, 6, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	286.59	286.22	285.54	283.55	---	276.93	277.87	---	282.21	284.46	286.39	287.76
2	286.52	286.32	285.43	283.71	---	276.87	277.98	---	282.22	284.51	286.44	287.83
3	286.44	286.41	285.33	283.73	---	276.91	278.09	---	282.22	284.65	286.47	287.83
4	286.53	286.56	285.35	283.60	---	276.93	278.20	---	282.17	284.75	286.49	287.79
5	286.50	286.69	285.44	282.94	277.48	276.94	278.27	---	282.35	284.90	286.55	287.84
6	286.45	286.75	285.49	282.97	277.37	276.95	278.28	---	282.46	284.97	286.65	287.86
7	286.42	286.76	285.50	283.06	277.36	276.97	278.20	---	282.55	285.02	286.66	287.80
8	286.49	286.74	285.57	283.07	277.29	277.01	278.19	---	282.61	285.02	286.69	287.84
9	286.50	286.75	285.68	283.07	277.22	277.02	278.20	---	282.75	284.91	286.77	287.90
10	286.52	286.87	285.81	283.03	277.28	277.10	278.31	---	282.85	285.03	286.85	287.99
11	286.48	287.08	285.81	282.97	277.19	277.05	278.47	---	283.05	285.18	286.85	288.13
12	286.55	287.22	285.70	282.97	277.31	277.16	278.53	---	283.07	285.23	---	288.17
13	286.51	287.13	285.38	282.92	277.39	277.21	278.59	---	283.16	285.20	---	288.18
14	286.50	286.22	285.27	282.85	277.35	277.27	278.62	---	283.23	285.37	287.02	288.24
15	286.57	286.10	285.19	282.75	277.33	277.25	278.69	---	283.27	285.50	287.07	288.31
16	286.55	286.40	285.08	282.72	277.34	277.25	278.69	---	283.33	285.55	287.17	288.33
17	286.49	286.46	284.99	282.71	277.29	277.29	278.67	---	283.43	285.64	287.20	288.30
18	286.42	286.50	285.06	282.64	277.37	277.33	278.71	---	283.59	285.64	287.18	288.32
19	286.40	286.58	285.07	282.65	277.27	277.36	278.87	---	283.67	285.71	287.18	288.36
20	286.51	286.65	285.07	282.65	277.24	277.34	278.99	---	283.65	285.78	287.22	288.34
21	286.55	286.76	285.06	282.49	277.24	277.42	279.04	---	283.72	285.91	287.29	288.43
22	286.58	286.79	285.04	277.86	277.23	277.53	279.12	---	283.84	285.97	287.36	288.47
23	286.66	286.69	284.98	276.94	277.10	277.64	279.17	---	283.86	286.00	287.36	288.50
24	286.64	286.62	284.85	---	276.87	277.74	279.26	---	283.86	286.08	287.36	288.54
25	286.71	286.34	284.80	---	276.73	277.80	279.41	---	283.89	286.08	287.41	288.57
26	286.76	284.79	284.81	---	276.81	277.81	279.53	---	283.95	286.06	287.46	288.64
27	286.67	285.25	284.71	---	276.85	277.76	279.58	---	284.12	286.14	287.52	288.67
28	286.63	285.51	284.47	---	276.88	277.78	279.68	---	284.20	286.24	287.56	288.68
29	286.61	285.59	284.18	---	---	277.86	---	281.97	284.32	286.34	287.59	288.65
30	286.43	285.62	283.96	---	---	277.85	---	282.10	284.43	286.32	287.62	288.71
31	286.05	---	283.42	---	---	277.88	---	282.20	---	286.33	287.68	---
MEAN	286.52	286.41	285.10	282.52	277.20	277.33	278.69	282.09	283.27	285.50	287.07	288.23

WTR YR 1997 MEAN 283.58 HIGHEST 267.96 JAN. 24, 1997 LOWEST 288.72 SEPT. 28, 29, 30, 1997

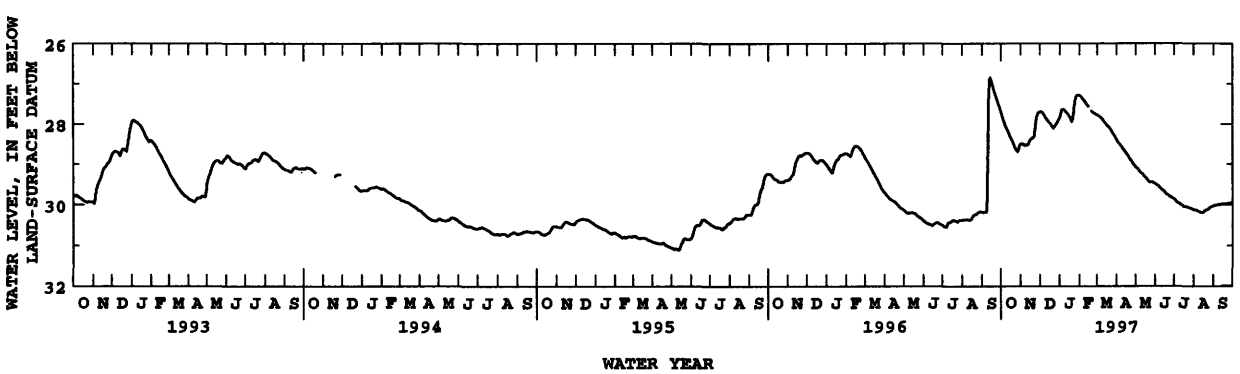


182647066201700. Local number, 70.
LOCATION.--Lat 18°26'47", long 66°20'17", Hydrologic Unit 21010002, 1.52 mi north of Vega Alta plaza, 4.78 mi southwest of Dorado plaza, and 2.01 mi northwest of Escuela Industrial para Mujeres. Owner: P.R. Aqueduct and Sewer Authority, Name: Sabana Hoyos.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 8 in (0.20 m), cased 0-90 ft (0-27.43 m), perforated. Depth 90 ft (27.43 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 49 ft (14.9 m) above mean sea level, from topographic map. Measuring point: Top of casing wooden cover, 1.30 ft (0.40 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--February 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 21.33 ft (6.50 m) below land-surface datum, Oct. 26, 1976; lowest water level recorded, 31.12 ft (9.48 m) below land-surface datum, May 12, 13, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1965 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.68	28.49	27.70	27.85	27.29	27.77	28.38	29.06	29.48	29.86	30.13	30.03
2	27.73	28.49	27.69	27.81	27.29	27.78	28.41	29.08	29.49	29.87	30.13	30.03
3	27.78	28.48	27.69	27.78	27.30	27.79	28.43	29.09	29.50	29.89	30.13	30.02
4	27.84	28.49	27.70	27.66	27.32	27.80	28.46	29.10	29.51	29.91	30.13	30.01
5	27.89	28.50	27.71	27.64	27.34	27.81	28.48	29.11	29.52	29.93	30.14	30.01
6	27.94	28.51	27.73	27.63	27.36	27.82	28.50	29.13	29.53	29.94	30.14	30.01
7	27.98	28.53	27.75	27.63	27.38	27.83	28.52	29.16	29.54	29.95	30.15	30.01
8	28.03	28.54	27.78	27.64	27.40	27.85	28.54	29.18	29.56	29.96	30.16	30.00
9	28.07	28.52	27.81	27.65	27.42	27.87	28.56	29.20	29.58	29.96	30.17	29.99
10	28.10	28.51	27.84	27.67	27.44	27.88	28.58	29.22	29.60	29.98	30.18	29.99
11	28.13	28.52	27.86	27.70	27.46	27.91	28.61	29.22	29.61	29.99	30.18	29.99
12	28.17	28.53	27.88	27.71	27.49	27.93	28.63	29.23	29.63	30.00	30.19	30.00
13	28.20	28.51	27.90	27.73	27.51	27.95	28.65	29.25	29.64	30.01	30.19	30.00
14	28.24	28.47	27.93	27.75	27.53	27.97	28.67	29.27	29.65	30.01	30.19	29.99
15	28.28	28.43	27.95	27.76	27.56	27.99	28.69	29.29	29.66	30.02	30.20	29.98
16	28.32	28.40	27.97	27.80	27.57	28.01	28.72	29.31	29.67	30.04	30.20	29.98
17	28.36	28.38	27.98	27.83	27.59	28.03	28.74	29.33	29.70	30.05	30.18	29.98
18	28.38	28.37	28.00	27.85	---	28.05	28.76	29.34	29.72	30.05	30.15	29.98
19	28.41	28.35	28.02	27.89	27.65	28.07	28.78	29.36	29.74	30.05	30.14	29.98
20	28.45	28.34	28.05	27.92	27.67	28.08	28.80	29.38	29.75	30.05	30.14	29.98
21	28.48	28.34	28.08	27.95	27.68	28.09	28.83	29.41	29.76	30.05	30.13	29.99
22	28.53	28.33	28.09	27.88	27.71	28.12	28.86	29.42	29.77	30.06	30.13	29.98
23	28.57	28.26	28.11	27.76	27.72	28.14	28.88	29.43	29.78	30.06	30.12	29.98
24	28.60	28.10	28.07	27.61	27.73	28.17	28.90	29.45	29.79	30.07	30.12	29.97
25	28.63	27.93	28.04	27.48	27.73	28.20	28.92	29.44	29.80	30.08	30.10	29.97
26	28.66	27.84	28.04	27.40	27.74	28.23	28.95	29.44	29.81	30.08	30.08	29.97
27	28.68	27.78	28.00	27.34	27.74	28.25	28.98	29.44	29.82	30.09	30.07	29.96
28	28.69	27.74	27.97	27.30	27.76	28.28	29.00	29.44	29.83	30.09	30.06	29.96
29	28.64	27.71	27.95	27.28	---	28.30	29.02	29.44	29.84	30.10	30.05	29.96
30	28.56	27.70	27.91	27.28	---	28.32	29.04	29.46	29.85	30.12	30.04	29.96
31	28.52	---	27.88	27.28	---	28.35	---	29.47	---	30.13	30.04	---
MEAN	28.28	28.30	27.91	27.66	27.53	28.02	28.71	29.30	29.67	30.01	30.13	29.99

WTR YR 1997 MEAN 28.80 HIGHEST 27.28 JAN. 29, 30, 31, FEB 1, 2, 1997 LOWEST 30.21 AUG. 15, 16, 1997

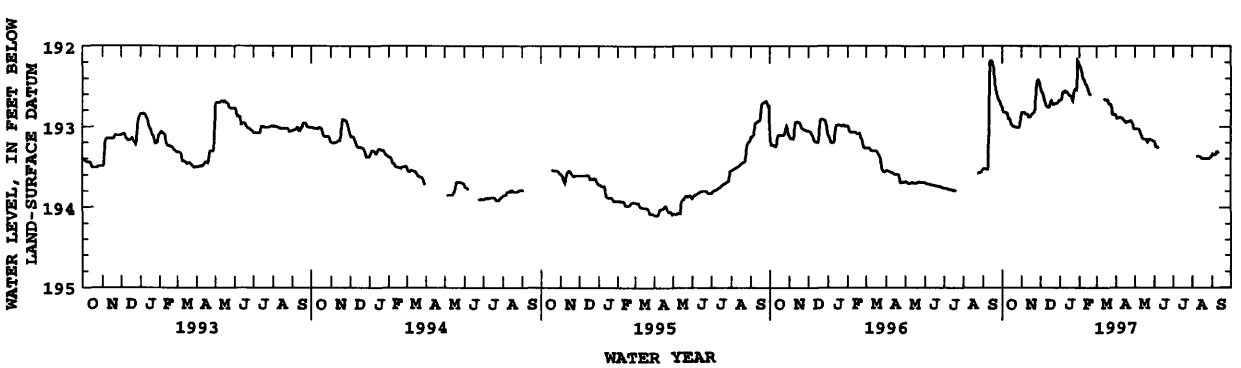


182615066235300. Local number, 211.
LOCATION.--Lat 18°26'15", long 66°23'53", Hydrologic Unit 21010002, 4.46 mi southeast of Manatí plaza, 5.48 mi southwest of Vega Baja plaza, and 1.22 mi east of Hwy 155 km 58.3. Owner: P.R. Aqueduct and Sewer Authority, Name: Rosario No. 2.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 14 in (0.36 m) 0-200 ft (0-61.0 m), diameter 12 in (0.30 m) 200-250 ft (61.0-76.2 m), cased 12 in (0.30 m) 0-250 ft (0-76.2 m), perforated 210-250 ft (64.0-76.2 m), diameter 10 in (0.25 m) 250-270 ft (76.2-82.3 m), open hole; concrete sealed 0-200 ft (0-61.0 m). Depth 270 ft (82.3 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 215 ft (65.5 m) above mean sea level, from topographic map. Measuring point: Top of shelter floor, 3.10 ft (0.94 m) above land-surface datum. Prior to April 11, 1994, hole on side of casing, 1.15 ft (0.35 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 191.29 ft (58.30 m) below land-surface datum, May 16, 1986; lowest water level recorded, 194.1 ft (59.16 m) below land-surface datum, Mar. 31, Apr. 1 to 7, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	192.75	192.83	192.51	192.67	192.21	---	192.86	193.03	193.19	---	---	193.37
2	192.79	192.82	192.54	192.67	192.24	---	192.90	193.03	193.19	---	---	193.34
3	192.81	192.82	192.57	192.67	192.27	---	192.90	193.03	193.25	---	---	193.35
4	192.82	192.82	192.57	192.65	192.29	---	192.89	193.03	193.26	---	---	193.35
5	192.82	192.82	192.59	192.58	192.32	---	192.89	193.03	193.25	---	---	193.35
6	192.82	192.82	192.62	192.56	192.38	---	192.89	193.03	193.25	---	---	193.35
7	192.82	192.84	192.67	192.57	192.41	---	192.89	193.03	193.27	---	193.37	193.35
8	192.83	192.84	192.69	192.57	192.41	---	192.89	193.04	193.27	---	193.37	193.33
9	192.83	192.84	192.70	192.56	192.42	---	192.89	193.07	---	---	193.37	193.31
10	192.83	192.84	192.75	192.55	192.47	---	192.89	193.09	---	---	193.37	193.31
11	192.90	192.85	192.74	192.57	192.47	---	192.90	193.10	---	---	193.37	193.32
12	192.90	192.88	192.75	192.57	192.48	192.65	192.91	193.12	---	---	193.37	193.34
13	192.90	192.88	192.76	192.57	192.48	192.66	192.92	193.14	---	---	193.37	---
14	192.90	192.88	192.75	192.59	192.53	192.66	192.93	193.15	---	---	193.38	---
15	192.96	192.88	192.76	192.61	192.53	192.67	192.94	193.16	---	---	193.38	---
16	192.96	192.86	192.74	192.61	192.58	192.67	192.95	193.16	---	---	193.40	---
17	192.98	192.85	192.69	192.61	192.59	192.67	192.95	193.16	---	---	193.40	---
18	192.99	192.85	192.67	192.62	192.60	192.67	192.94	193.16	---	---	193.40	---
19	192.99	192.83	192.68	192.62	192.60	192.67	192.94	193.16	---	---	193.40	---
20	193.00	192.83	192.72	192.64	192.61	192.72	192.94	193.17	---	---	193.40	---
21	193.00	192.82	192.72	192.70	---	192.72	192.94	193.19	---	---	193.40	---
22	193.00	192.82	192.72	192.66	---	192.72	192.93	193.20	---	---	193.40	---
23	193.00	192.74	192.72	192.54	---	192.73	192.94	193.16	---	---	193.40	---
24	193.01	192.59	192.71	192.55	---	192.73	192.93	193.16	---	---	193.40	---
25	193.01	192.48	192.71	192.53	---	192.76	192.93	193.16	---	---	193.40	---
26	193.01	192.42	192.71	192.53	---	192.85	192.94	193.17	---	---	193.40	---
27	193.01	192.42	192.71	192.54	---	192.85	192.96	193.17	---	---	193.40	---
28	193.01	192.41	192.71	192.54	---	192.85	192.97	193.17	---	---	193.40	---
29	193.01	192.44	192.69	192.17	---	192.85	193.03	193.17	---	---	193.39	---
30	192.94	192.46	192.68	192.18	---	192.85	193.03	193.18	---	---	193.38	---
31	192.91	---	192.67	192.20	---	192.85	---	193.18	---	---	193.37	---
MEAN	192.92	192.75	192.68	192.55	192.44	192.74	192.93	193.12	193.24	---	193.39	193.34

WTR YR 1997 MEAN 192.88 HIGHEST 192.17 JAN. 29, 30, 1997 LOWEST 193.40 AUG. 15-29, 1997

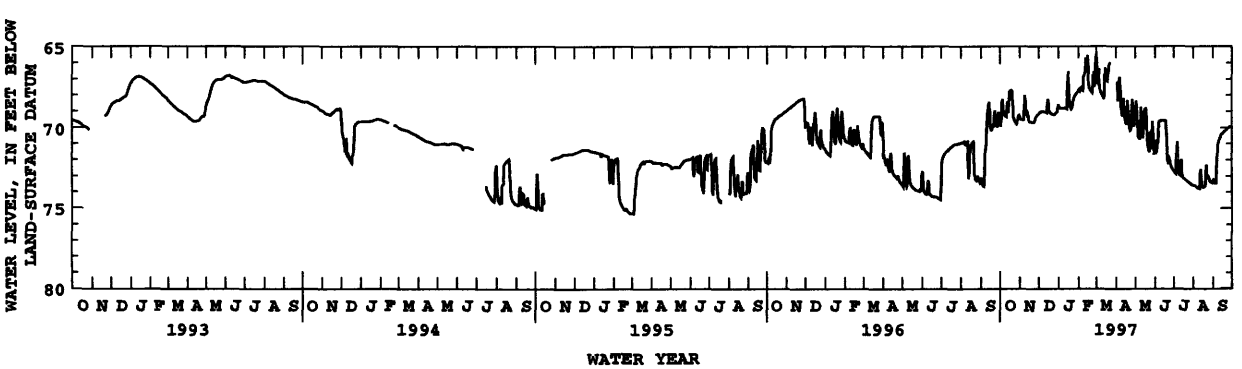


182515066194000. Local number, 212.
LOCATION.--Lat 18°25'15", long 66° 19'40", Hydrologic Unit 21010002, 5.15 mi southwest of Dorado plaza, 0.49 mi north of Vega Alta plaza, and 1.04 mi northwest of Escuela Industrial para Mujeres. Owner: U.S. Geological Survey, WRD, Name: Ponderosa TW-1.
AQUIFER.--Aguada Limestone-Cibao Formation.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-136 ft (0-41.1 m), perforated 121-131 ft (36.9-39.9 m); bentonite packed 0.5-121 ft (0.15-36.9 m). Depth 136 ft (39.9 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 98.0 ft (29.9 m) above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 2.55 ft (0.78 m) above land-surface datum. Prior to November 3, 1989, hole on top of shelter floor casing, 3.00 ft (0.91 m) above land-surface datum.
REMARKS.--Recording observation well. Water levels affected by nearby pumping well.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 63.05 ft (19.22 m) below land-surface datum, July 15, 1987; lowest water level recorded, 75.33 ft (22.96 m) below land-surface datum, Feb. 27, Mar. 4, 5, 6, 1995

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69.81	69.25	69.18	68.35	67.77	65.52	---	68.45	71.72	72.68	73.57	73.44
2	69.88	69.44	69.15	68.77	67.76	65.40	---	70.05	70.11	72.70	73.57	73.15
3	69.83	69.48	69.05	68.79	67.53	67.08	66.26	68.37	71.43	72.78	73.59	73.36
4	69.15	69.51	69.05	68.80	67.68	67.54	68.07	68.32	71.82	72.82	73.60	73.44
5	67.77	69.51	69.05	68.80	67.71	65.48	68.66	70.06	70.40	72.87	73.62	73.45
6	68.72	69.51	69.00	68.80	67.43	67.26	67.35	70.51	71.64	70.99	73.66	73.46
7	69.08	69.51	68.98	68.80	67.64	67.62	66.92	70.68	69.76	70.75	73.68	73.46
8	69.18	69.51	68.99	68.79	67.69	67.70	66.83	70.52	69.63	72.44	73.74	71.54
9	69.25	68.18	68.99	68.79	67.70	67.86	68.54	70.90	69.59	72.79	73.76	71.08
10	69.29	67.81	69.01	68.79	66.06	67.90	68.98	68.81	69.59	72.89	73.77	70.86
11	69.29	69.04	69.04	68.77	67.36	67.98	69.21	68.64	69.56	72.95	73.78	70.77
12	69.36	69.18	69.05	68.79	65.96	68.08	69.37	70.45	69.56	72.97	73.78	70.68
13	67.82	69.22	69.04	68.82	65.40	68.20	67.40	70.64	69.56	71.21	71.91	70.61
14	68.94	68.94	69.06	68.82	67.17	68.25	68.95	70.65	69.56	72.73	73.27	70.48
15	69.21	69.49	69.08	68.85	65.78	66.52	69.38	69.31	69.57	72.99	73.60	70.38
16	67.82	69.62	67.66	66.61	65.27	66.09	69.57	68.91	69.56	73.10	73.68	70.37
17	67.73	69.64	68.80	66.44	67.12	67.47	69.75	68.84	69.57	73.15	73.72	70.36
18	67.70	69.66	69.00	68.02	67.49	66.26	69.83	68.82	69.59	73.17	73.70	70.31
19	67.69	69.66	69.04	68.60	67.59	67.88	68.66	68.80	69.58	73.18	73.64	70.26
20	67.69	69.67	69.07	68.74	67.64	66.33	67.96	70.63	71.06	73.20	73.63	70.22
21	67.77	69.67	69.13	68.85	67.74	66.10	69.58	71.12	71.90	73.23	73.63	70.19
22	69.24	69.68	69.17	68.85	67.75	66.02	69.98	71.32	72.06	73.28	71.87	70.17
23	69.45	69.68	69.19	68.67	67.83	66.01	70.11	71.44	72.22	73.33	72.74	70.13
24	69.52	69.68	69.19	68.43	67.86	66.07	70.23	71.55	71.94	73.34	73.34	70.08
25	69.60	69.59	69.19	68.25	65.76	---	70.04	69.39	71.87	73.38	73.00	70.02
26	69.71	69.43	69.20	68.12	67.32	---	68.75	71.10	72.23	73.38	73.01	70.02
27	69.76	69.33	69.18	68.01	67.65	---	68.29	71.52	72.34	73.45	73.29	70.00
28	69.79	69.28	69.09	67.97	65.60	---	68.19	69.81	72.48	73.45	73.34	69.96
29	69.53	69.22	69.06	67.91	---	---	69.60	69.38	72.53	73.52	73.37	69.93
30	69.32	69.21	69.02	67.87	---	---	70.24	71.13	72.61	73.55	73.41	69.93
31	69.23	---	69.01	67.79	---	---	---	71.58	---	73.56	73.43	---
MEAN	68.97	69.35	69.02	68.41	67.12	66.94	68.81	70.05	70.83	72.90	73.41	71.07

WTR YR 1997 MEAN 69.82 HIGHEST 65.18 FEB 17, 1997 LOWEST 73.78 AUG. 10-13, 1997

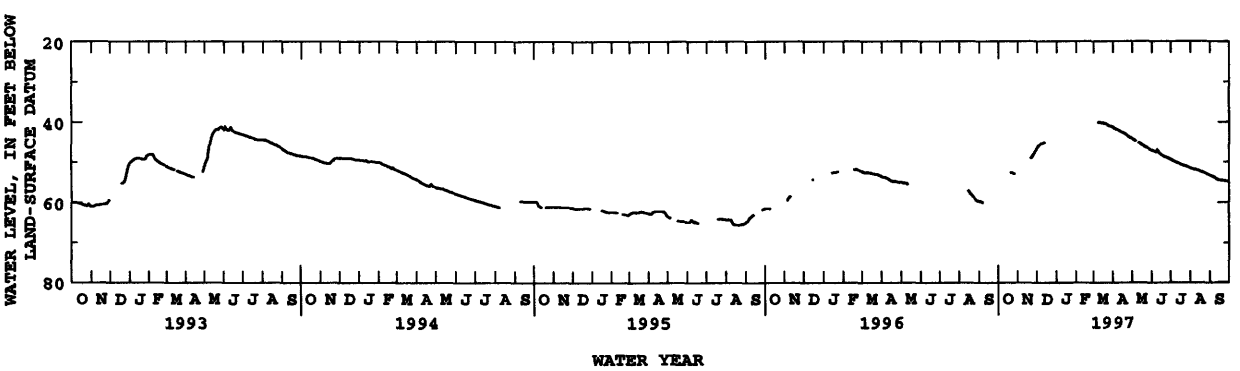


182330066185700. Local number, 213.
LOCATION.--Lat 18°23'30", long 66°18'57", Hydrologic Unit 21010002, 1.82 mi southeast of Vega Alta plaza, 4.23 mi west of Toa Alta plaza, and 1.27 mi northwest off the intersection of Hwy 820 with Hwy 823. Owner: P.R. Aqueduct and Sewer Authority, Name: Pampano No. 2.
AQUIFER.--Rio Indio Limestone-Lares Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), cased 20 in (0.51 m) 0-130 ft (0-39.6 m), diameter 14 in (0.36 m), cased 12 in (0.30 m) 0-220 ft (0-67.1 m); open hole 220-330 ft (67.6-100.6 m). Depth 330 ft (100.6 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 394 ft (120 m) above mean sea level, from topographic map. Measuring point: Top of shelter floor, 9.32 ft (2.84 m) above land-surface datum. Prior April 27, 1993, hole on side of casing, 2.95 ft (0.90 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 34.40 ft (10.50 m) below land-surface datum, Dec. 6, 1985; lowest water level recorded, 65.68 ft (20.02 m) below land-surface datum, Aug. 20, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	46.74	---	---	---	41.28	44.15	47.04	49.32	51.49	53.22
2	---	---	46.47	---	---	---	41.45	44.32	47.12	49.39	51.55	53.32
3	---	---	46.20	---	---	---	41.53	44.47	47.17	49.46	51.60	53.37
4	---	---	45.96	---	---	---	41.72	44.53	47.20	49.59	51.64	53.40
5	---	---	45.86	---	---	---	41.81	44.62	47.27	49.70	51.70	53.56
6	---	---	45.68	---	---	40.18	41.87	44.71	47.38	49.78	51.80	53.63
7	---	---	45.51	---	---	40.19	41.91	44.84	47.41	49.82	51.82	53.64
8	---	---	45.40	---	---	40.20	41.93	44.92	47.56	49.86	51.86	53.76
9	---	---	45.41	---	---	40.19	42.05	---	47.65	49.95	51.90	53.87
10	---	---	45.44	---	---	40.16	42.13	45.06	47.13	50.05	51.79	54.01
11	---	---	45.33	---	---	40.13	42.30	45.15	47.03	50.13	51.94	54.13
12	---	---	45.29	---	---	40.16	42.33	45.24	47.55	50.17	52.01	54.19
13	---	---	45.13	---	---	40.23	42.44	45.30	47.70	50.18	52.03	54.23
14	---	---	45.09	---	---	40.26	42.52	45.35	47.91	50.30	52.12	54.36
15	---	---	45.03	---	---	40.21	42.63	45.49	47.99	50.38	52.19	54.44
16	---	---	---	---	---	40.27	42.65	45.61	48.14	50.42	52.25	54.50
17	---	---	---	---	---	40.31	42.69	45.72	48.22	50.55	52.36	54.43
18	52.58	---	---	---	---	40.35	42.79	45.84	48.38	50.59	52.38	54.46
19	52.60	---	---	---	---	40.37	42.90	45.93	48.49	50.67	52.40	54.48
20	52.61	49.92	---	---	---	40.50	43.03	46.05	48.54	50.73	52.43	54.49
21	52.59	49.43	---	---	---	40.55	43.13	46.10	48.59	50.79	52.52	54.56
22	52.61	48.94	---	---	---	40.58	43.17	46.24	48.72	50.82	52.62	54.58
23	52.58	48.91	---	---	---	40.71	43.27	46.34	48.79	50.90	52.66	54.60
24	52.62	48.64	---	---	---	40.83	43.47	46.44	48.82	50.97	52.71	54.61
25	52.74	48.37	---	---	---	40.96	43.66	46.45	48.91	50.97	52.77	54.61
26	52.81	48.09	---	---	---	41.05	43.75	46.48	48.98	50.98	52.82	54.68
27	52.82	47.82	---	---	---	41.04	43.88	46.60	49.02	51.09	52.90	54.69
28	52.77	47.55	---	---	---	41.10	43.95	46.70	49.10	51.18	52.97	54.70
29	52.81	47.28	---	---	---	41.16	44.06	46.79	49.20	51.24	53.02	54.68
30	---	47.01	---	---	---	41.24	44.10	46.90	49.26	51.34	53.07	54.70
31	---	---	---	---	---	41.25	---	47.00	---	51.40	53.17	---
MEAN	52.68	48.36	45.64	---	---	40.55	42.68	45.64	48.08	50.41	52.27	54.20

WTR YR 1997 MEAN 47.98 HIGHEST 40.03 MAR. 11, 1997 LOWEST 54.71 SEPT. 26-30, 1997

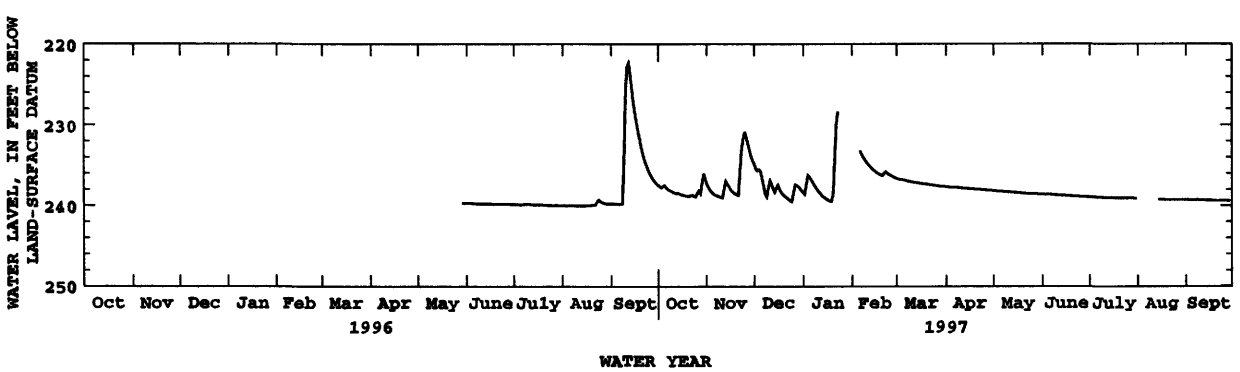


182614066261500. Local number, PA-2.
LOCATION.--Lat 18°26'14", long 66°26'15", Hydrologic Unit 21010002, 1.80 mi east of the intersection of Hwy 686 with Hwy 670, 0.30 mi south of Hwy 2, 0.70 mi northeast of Escuela Ramirez de Arellano, and 0.32 mi north of Hwy 670. Owner: U.S. Geological Survey, WRD, Name: Palo Alto 2.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), screened 265-310 ft (80.8-94.5 m). Depth 310 ft (94.5 m).
INSTRUMENTATION.-Pressure transducer with Electronic Data Logger (EDL).
DATUM.--Elevation of land-surface datum is 245.5 ft (74.8 m) above mean sea level, from topographic survey. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.79 ft (1.16 m) above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL) installed on May 28, 1996.
PERIOD OF RECORD.--May 28, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 221.78 ft (67.60 m) below land-surface datum, Sept. 12, 1996; lowest water level recorded, 240.04 ft (73.16 m) below land-surface datum, Aug. 12-15, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	237.41	237.05	234.60	238.27	---	236.59	237.64	238.15	238.59	238.92	239.10	239.29
2	237.57	237.51	235.16	238.47	---	236.66	237.68	238.17	238.60	238.93	---	239.29
3	237.71	237.89	235.64	238.66	---	236.72	237.70	238.19	238.61	238.94	---	239.30
4	237.85	238.17	235.70	236.18	---	236.78	237.72	238.20	238.61	238.94	---	239.30
5	237.33	238.40	235.34	236.26	---	236.80	237.72	238.21	238.63	238.95	---	239.30
6	237.65	238.56	236.11	236.59	232.98	236.78	237.73	238.23	238.64	238.96	---	239.31
7	237.86	238.69	237.01	236.95	233.42	236.86	237.74	238.24	238.64	238.97	---	239.31
8	238.03	238.78	238.04	237.29	233.81	236.92	237.75	238.26	238.65	238.98	---	239.30
9	238.13	238.85	239.07	237.61	234.16	236.97	237.76	238.28	238.67	238.98	---	239.29
10	238.24	238.93	238.80	237.91	234.46	237.01	237.79	238.29	238.67	239.00	---	239.30
11	238.33	239.00	236.66	238.18	234.74	237.04	237.82	238.30	238.69	239.00	---	239.31
12	238.40	239.05	237.16	238.44	234.99	237.09	237.84	238.31	238.70	239.01	---	239.32
13	238.48	236.64	237.67	238.66	235.20	237.12	237.86	238.33	238.72	239.00	---	239.33
14	238.40	237.25	238.13	238.84	235.41	237.16	237.87	238.35	238.73	239.01	239.22	239.35
15	238.54	237.38	238.52	239.00	235.58	237.20	237.89	238.37	238.74	239.02	239.23	239.35
16	238.61	237.83	237.17	239.14	235.75	237.22	237.91	238.39	238.75	239.03	239.24	239.34
17	238.66	238.13	237.72	239.27	235.90	237.25	237.92	238.40	238.76	239.04	239.24	239.34
18	238.72	238.32	238.18	239.39	236.05	237.28	237.93	238.42	238.78	239.05	239.25	239.35
19	238.76	238.47	238.45	239.50	236.15	237.30	237.95	238.43	238.80	239.05	239.26	239.36
20	238.81	238.58	238.65	239.43	236.24	237.33	237.97	238.47	238.81	239.04	239.26	239.37
21	238.83	238.67	238.89	237.53	236.31	237.36	237.98	238.49	238.83	239.04	239.27	239.39
22	238.86	238.74	238.96	230.85	235.70	237.39	237.99	238.49	238.84	239.04	239.28	239.41
23	238.58	233.15	239.17	228.87	235.88	237.42	238.00	238.51	238.85	239.04	239.28	239.40
24	238.80	232.92	239.34	227.81	236.06	237.45	238.02	238.52	238.86	239.04	239.28	239.39
25	238.90	230.56	239.41	---	236.14	237.48	238.04	238.52	238.88	239.05	239.28	239.40
26	238.92	231.16	239.53	---	236.26	237.51	238.05	238.53	238.89	239.04	239.29	239.40
27	237.97	231.97	237.28	---	236.39	237.54	238.07	238.53	238.90	239.05	239.30	239.40
28	238.36	232.79	237.55	---	236.50	237.56	238.09	238.54	238.90	239.06	239.29	239.41
29	238.60	233.55	237.47	---	---	237.58	238.11	238.55	238.91	239.07	239.29	239.41
30	235.58	234.26	237.77	---	---	237.60	238.13	238.57	238.92	239.08	239.29	239.43
31	236.44	---	238.03	---	---	237.62	---	238.59	---	239.09	239.29	---
MEAN	238.17	236.71	237.65	237.05	235.39	237.18	237.89	238.38	238.75	239.01	239.26	239.35

WTR YR 1997 MEAN 237.92 HIGHEST 227.70 JAN. 24, 1997 LOWEST 239.59 DEC. 9, 10, 1996

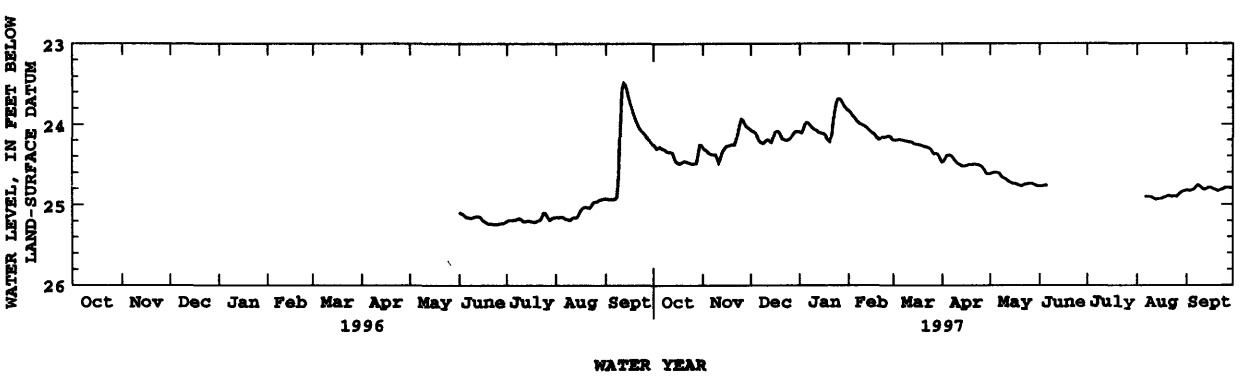


182712066251700. Local number TO-3.
LOCATION.--Lat 18°27'12", long 66°25'17", Hydrologic Unit 21010002, 0.60 mi north of the intersection of Hwy 687 with Hwy 2, 0.55 mi southeast of the eastern shoreline of Laguna Tortuguero, 0.32 mi east of Laguna Rica, and 0.12 mi west of Hwy 687. Owner: U.S. Geological Survey WRD, Name: USGS Tortuguero TW-3.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), screened 68-218 ft (20.7-66.4 m). Depth 218 ft (66.4 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 30 ft (9.0 m) above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.40 ft (1.04 m) above land-surface datum.
REMARKS.--Recording observation well. Automated Digital Recorder (ADR) installed on May 31, 1996.
PERIOD OF RECORD.--May 31, 1996 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 23.48 ft (7.16 m) below land-surface datum, Sept. 12, 13, 1996; lowest water level recorded, 25.26 ft (7.70 m) below land-surface datum, June 21, 22, 23, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.25	24.27	24.06	24.09	23.83	24.19	24.48	24.62	24.77	---	---	24.83
2	24.26	24.31	24.09	24.11	23.84	24.20	24.47	24.62	24.77	---	---	24.82
3	24.29	24.32	24.09	24.11	23.87	24.20	24.46	24.61	24.77	---	---	24.83
4	24.32	24.33	24.10	24.02	23.90	24.20	24.39	24.60	24.77	---	---	24.83
5	24.28	24.36	24.13	23.98	23.92	24.19	24.39	24.60	24.76	---	---	24.82
6	24.29	24.37	24.18	23.98	23.95	24.19	24.39	24.61	24.76	---	24.90	24.82
7	24.31	24.38	24.21	23.99	23.98	24.20	24.39	24.60	24.77	---	24.90	24.80
8	24.31	24.38	24.23	24.02	23.99	24.20	24.41	24.63	---	---	24.90	24.77
9	24.32	24.38	24.24	24.04	24.00	24.21	24.44	24.66	---	---	24.90	24.76
10	24.35	24.38	24.24	24.06	24.01	24.21	24.47	24.67	---	---	24.90	24.77
11	24.35	24.47	24.21	24.07	24.02	24.22	24.48	24.68	---	---	24.91	24.79
12	24.35	24.49	24.19	24.08	24.03	24.22	24.50	24.69	---	---	24.92	24.81
13	24.35	24.38	24.20	24.10	24.05	24.22	24.51	24.71	---	---	24.94	24.82
14	24.37	24.33	24.23	24.11	24.07	24.23	24.52	24.72	---	---	24.93	24.81
15	24.47	24.31	24.23	24.11	24.09	24.25	24.53	24.73	---	---	24.93	24.79
16	24.47	24.28	24.12	24.12	24.11	24.25	24.52	24.74	---	---	24.93	24.79
17	24.49	24.27	24.09	24.12	24.12	24.25	24.52	24.74	---	---	24.93	24.79
18	24.50	24.27	24.09	24.15	24.14	24.26	24.51	24.74	---	---	24.91	24.80
19	24.48	24.26	24.09	24.19	24.16	24.26	24.50	24.76	---	---	24.91	24.81
20	24.47	24.26	24.13	24.21	24.18	24.27	24.51	24.76	---	---	24.90	24.82
21	24.46	24.25	24.17	24.23	24.20	24.28	24.50	24.77	---	---	24.89	24.83
22	24.47	24.26	24.19	24.04	24.16	24.28	24.50	24.77	---	---	24.89	24.83
23	24.48	24.13	24.19	23.87	24.16	24.29	24.50	24.75	---	---	24.90	24.82
24	24.48	24.06	24.21	23.78	24.17	24.29	24.51	24.75	---	---	24.90	24.81
25	24.49	23.94	24.19	23.69	24.16	24.30	24.51	24.75	---	---	24.89	24.81
26	24.50	23.93	24.20	23.68	24.15	24.33	24.52	24.74	---	---	24.90	24.79
27	24.49	23.97	24.16	23.69	24.15	24.37	24.54	24.74	---	---	24.90	24.79
28	24.49	24.01	24.13	23.72	24.16	24.37	24.56	24.74	---	---	24.87	24.79
29	24.49	24.04	24.10	23.76	---	24.36	24.61	24.75	---	---	24.85	24.79
30	24.27	24.05	24.09	23.79	---	24.38	24.63	24.76	---	---	24.84	24.80
31	24.25	---	24.09	23.81	---	24.42	---	24.77	---	---	24.83	---
MEAN	24.39	24.25	24.16	23.99	24.06	24.26	24.49	24.70	24.77	---	24.90	24.80

WTR YR 1997 MEAN 24.40 HIGHEST 23.68 JAN. 25, 26, 27, 1997 LOWEST 24.95 AUG. 16, 1997

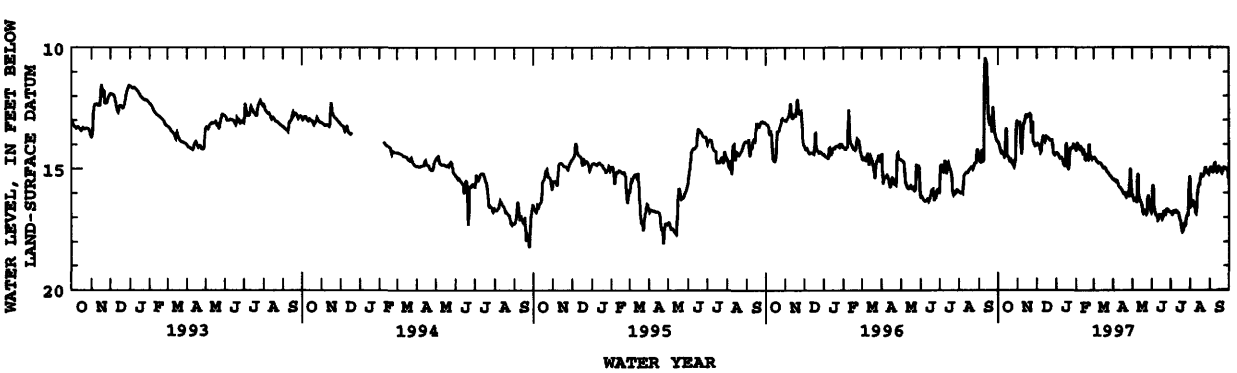


182530066135400. Local number, 216.
LOCATION.--Lat 18°25'30", long 66°13'54", Hydrologic Unit 21010005, 2.61 mi northeast of Toa Alta plaza, 2.73 mi southwest of Sabana Seca U.S. Naval Radio Station, and 1.76 mi southeast of Hwy 2 km 17.7. Owner: P.R. Aqueduct and Sewer Authority, Name: Pozo Navy-Campanillas.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m) 0-106 ft (0-32.3 m), cased 16 in (0.41 m) 0-20 ft (0-6.10 m), cased 12 in (0.30 m) 0-106 ft (0-32.3 m), perforated 20-106 ft (6.10-32.3 m), diameter 10 in (10.25 m) 106-140 ft (32.3-42.7 m), cased 10 in (0.25 m) 106-140 ft (32.3-42.7 m), perforated 106-140 ft (32.3-42.7 m). Depth 140 ft (42.7 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 13.0 ft (3.96 m) above mean sea level, from topographic map. Measuring point: Hole on side of casing, 1.80 ft (0.55 m) above land-surface datum.
REMARKS.--Recording observation well. Water levels affected by nearby pumping well.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.38 ft (2.86 m) below land-surface datum, June 23, 1987; lowest water level recorded, 18.40 ft (5.61 m) below land-surface datum, Sept. 24, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.87	13.05	14.10	14.33	14.12	14.61	15.43	16.05	16.81	16.77	15.20	15.02
2	13.94	13.10	13.94	14.37	14.42	14.53	15.45	16.05	16.58	16.82	16.53	15.00
3	14.01	13.14	13.99	14.37	13.67	14.54	15.48	16.31	14.79	16.83	16.54	14.90
4	14.11	13.10	14.00	14.41	14.15	14.58	15.42	16.24	16.58	16.94	16.47	15.00
5	14.30	13.11	14.05	14.42	14.01	14.62	15.56	16.23	16.58	16.79	16.28	15.09
6	14.33	13.71	14.12	14.60	14.12	14.72	15.50	16.28	16.79	16.75	16.41	15.18
7	14.22	14.42	14.28	14.54	14.19	14.70	15.46	16.36	16.90	16.83	16.40	15.11
8	14.38	14.39	14.37	14.51	14.24	14.77	15.50	16.36	16.94	16.70	16.47	15.07
9	14.40	13.66	14.16	14.54	14.20	14.76	15.63	16.37	16.92	16.77	16.75	14.49
10	14.41	13.16	13.78	14.56	14.09	14.75	15.72	14.19	16.97	16.83	16.89	15.05
11	14.50	13.15	13.66	14.69	14.37	14.78	15.74	16.21	17.27	16.78	16.81	15.03
12	14.55	13.11	13.66	14.71	14.25	14.75	15.75	16.21	16.90	16.78	16.32	15.14
13	14.45	12.93	13.72	14.94	14.18	14.80	15.83	16.20	16.90	16.85	15.89	15.16
14	12.36	12.79	13.88	14.79	14.25	14.86	15.81	16.37	16.93	16.80	15.83	15.10
15	14.32	12.79	13.84	14.82	14.48	14.90	15.91	16.37	16.93	17.14	15.55	14.96
16	14.49	12.85	13.65	14.86	14.77	14.97	15.89	16.43	16.91	17.09	15.71	14.89
17	14.49	12.90	13.69	13.14	14.51	14.99	16.06	16.59	17.00	17.16	15.57	15.00
18	14.54	12.77	13.70	14.77	14.37	14.92	16.00	16.93	17.14	17.42	15.27	15.03
19	14.67	12.77	13.72	14.91	14.50	14.95	16.06	16.70	16.89	17.56	15.28	15.11
20	14.71	12.74	13.74	14.96	14.65	14.96	15.95	16.71	16.64	17.62	15.33	15.20
21	14.63	12.74	13.79	15.16	14.57	15.03	16.21	16.73	16.86	17.46	15.33	15.16
22	14.65	12.80	13.85	14.47	13.48	15.12	16.08	16.77	16.92	17.51	15.27	15.07
23	14.84	14.28	13.85	14.13	14.55	15.13	15.98	16.86	16.87	17.12	15.23	14.95
24	14.71	12.27	13.84	14.20	14.52	15.14	16.10	16.90	16.66	17.58	15.13	14.93
25	14.78	13.81	13.84	14.15	14.48	15.20	15.85	16.75	16.69	17.09	14.95	14.98
26	14.96	13.88	13.83	14.15	14.56	15.22	16.21	15.77	16.65	17.02	14.92	14.99
27	14.89	13.98	14.40	14.17	14.65	15.33	16.11	16.41	16.71	16.86	15.13	15.02
28	14.71	14.04	14.34	13.98	14.49	15.25	14.66	16.46	16.79	16.91	15.15	15.04
29	14.67	14.08	14.47	14.04	---	15.35	15.30	16.55	16.76	16.89	15.13	15.01
30	13.16	13.97	14.42	14.03	---	15.38	16.21	16.68	16.76	15.82	15.27	15.12
31	13.04	---	14.43	14.17	---	15.42	---	16.79	---	15.41	15.19	---
MEAN	14.33	13.32	13.97	14.45	14.32	14.94	15.76	16.38	16.77	16.93	15.75	15.03

WTR YR 1997 MEAN 15.17 HIGHEST 11.92 NOV. 24, 1996 LOWEST 17.62 JULY 20, 1997

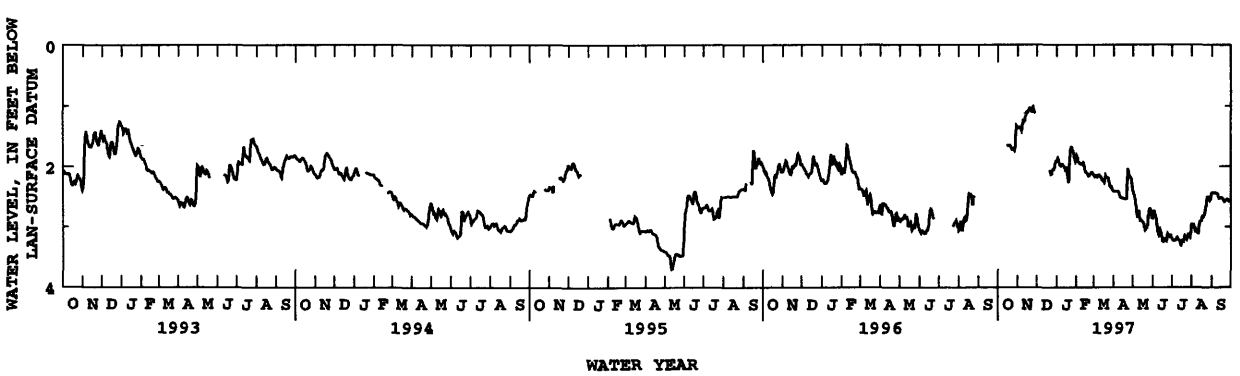


182655066142400. Local number, 217.
LOCATION.--Lat 18°26'55", long 66°14'24", Hydrologic Unit 21010005, 4.00 mi northeast of Toa Alta plaza, 3.40 mi northwest of Hwy 2 km 17.7, and 3.49 mi northwest of Sabana Seca U.S. Naval Radio Station. Owner: U.S. Geological Survey, WRD, Name: Monserrate TW-2.
AQUIFER.-Alluvial Deposits.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-80 ft (0-24.4 m), perforated 10-80 ft (3.05-24.4 m). Depth 80 ft (24.4 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 3.30 ft (1.00 m) above mean sea level, from topographic map. Measuring point: Top of shelter floor, 3.50 ft (1.07 m) above land-surface datum.
REMARKS.--Recording observation well. Instrument flooded during Hurricane Hortense.
PERIOD OF RECORD.--November 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.02 ft (0.006 m) below land-surface datum, May 16, 1986; lowest water level recorded, 3.72 ft (1.13 m) below land-surface datum, May 13, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1.36	---	1.90	1.93	2.13	2.42	2.40	2.89	3.20	2.91	2.44
2	---	1.37	---	1.92	1.87	2.16	2.41	2.43	2.84	3.21	2.99	2.44
3	---	1.37	---	1.85	1.77	2.17	2.41	2.47	2.72	3.24	3.04	2.44
4	---	1.35	---	1.87	1.92	2.13	2.41	2.49	2.74	3.24	2.98	2.44
5	---	1.35	---	1.91	1.92	2.17	2.41	2.56	2.80	3.23	2.99	2.44
6	---	1.35	---	1.96	1.94	2.17	2.41	2.66	2.83	3.24	3.09	2.44
7	---	1.42	---	1.99	1.95	2.19	2.41	2.69	2.87	3.23	3.04	2.44
8	---	1.40	---	2.00	1.96	2.15	2.42	2.89	3.01	3.21	3.04	2.44
9	---	1.31	---	1.99	1.96	2.13	2.41	2.82	3.05	3.17	3.07	2.45
10	---	1.23	---	1.95	1.96	2.15	2.46	2.71	3.17	3.19	3.10	2.45
11	---	1.21	---	1.98	1.95	2.16	2.50	2.75	3.10	3.23	3.11	2.46
12	---	1.30	---	1.98	1.98	2.17	2.52	2.91	3.05	3.23	3.11	2.52
13	---	1.19	---	2.01	1.89	2.19	2.52	2.88	3.05	3.23	2.95	2.54
14	---	1.16	---	2.01	2.00	2.23	2.52	2.89	3.12	3.24	2.92	2.52
15	---	1.11	---	2.07	2.07	2.24	2.52	2.90	3.15	3.35	2.91	2.52
16	1.62	1.07	---	2.09	2.09	2.24	2.53	2.92	3.20	3.27	2.92	2.51
17	1.65	1.10	---	1.99	2.10	2.26	2.54	2.92	3.29	3.23	2.88	2.52
18	1.66	1.09	---	2.03	2.11	2.27	2.54	2.95	3.21	3.24	2.80	2.52
19	1.64	1.02	---	2.22	2.12	2.13	2.54	2.99	3.21	3.25	2.85	2.54
20	1.65	1.04	---	2.25	2.13	2.18	2.54	3.07	3.20	3.25	2.83	2.56
21	1.64	1.04	2.07	2.29	2.19	2.19	2.54	3.05	3.26	3.13	2.80	2.58
22	1.68	1.07	2.06	1.84	2.13	2.19	2.54	3.03	3.21	3.18	2.79	2.59
23	1.72	1.10	2.10	1.73	2.13	2.19	1.95	3.02	3.28	3.17	2.65	2.56
24	1.72	1.08	2.17	1.69	2.13	2.19	2.12	3.00	3.11	3.20	2.66	2.56
25	1.72	.95	2.09	1.67	2.10	2.28	2.07	2.89	3.13	3.22	2.52	2.55
26	1.69	1.07	2.07	1.69	2.09	2.31	2.20	2.76	3.14	3.14	2.50	2.54
27	1.71	1.10	2.03	1.74	2.10	2.36	2.16	2.72	3.17	3.11	2.51	2.55
28	1.74	1.10	2.08	1.74	2.13	2.34	2.20	2.69	3.17	3.14	2.51	2.59
29	1.62	1.12	2.00	1.84	---	2.33	2.18	2.72	3.15	3.15	2.54	2.57
30	1.33	1.10	1.95	1.86	---	2.39	2.32	2.78	3.15	3.19	2.60	2.57
31	1.32	---	1.92	1.92	---	2.40	---	2.83	---	3.05	2.51	---
MEAN	1.63	1.18	2.05	1.93	2.02	2.22	2.39	2.80	3.08	3.21	2.84	2.51

WTR YR 1997 MEAN 2.37 HIGHEST 0.94 NOV. 24, 25, 1996 LOWEST 3.35 JULY 15, 1997

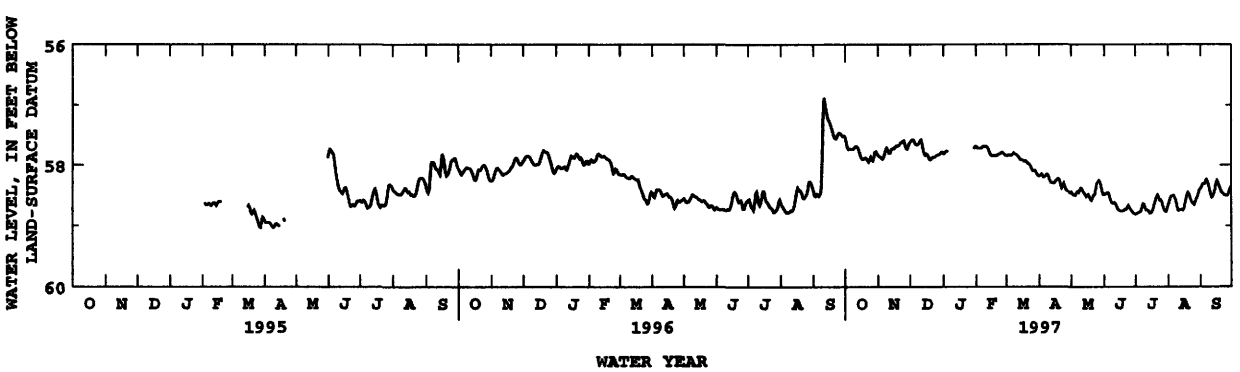


182804066173500. Local number, DA-1.
LOCATION.--Lat 18°28'04", long 66°17'35", Hydrologic Unit 21010005, 2.04 mi west of Dorado plaza, 1.15 mi north of Hwy 696, and 0.03 mi south of Hwy 693. Owner: Dorado Airport, Name: Dorado Airport Well.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m). Depth 98 ft (29.9 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 62.15 ft (18.9 m) above mean sea level, from topographic survey. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.88 ft (1.18 m) above land-surface datum.
REMARKS.--Recording observation well. Water levels affected by nearby pumping well.
PERIOD OF RECORD.--February 2, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 56.67 ft (17.27 m) below land-surface datum, Sept. 11, 1996; lowest water level recorded, 59.21 ft (18.05 m) below land-surface datum Apr. 16, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57.51	57.82	57.62	57.81	57.66	57.84	58.19	58.46	58.47	58.82	58.68	58.40
2	57.57	57.86	57.61	57.82	57.72	57.85	58.18	58.43	58.48	58.81	58.63	58.38
3	57.67	57.86	57.58	57.79	57.72	57.84	58.15	58.53	58.49	58.80	58.59	58.34
4	57.75	57.87	57.58	57.76	57.73	57.83	58.15	58.46	58.46	58.78	58.50	58.29
5	57.73	57.90	57.59	57.77	57.71	57.85	58.20	58.51	58.45	58.79	58.53	58.33
6	57.74	57.90	57.66	57.79	57.72	57.83	58.20	58.49	58.46	58.77	58.49	58.29
7	57.73	57.85	57.66	---	57.71	57.85	58.19	58.42	58.54	58.75	58.51	58.23
8	57.75	57.78	57.67	---	57.67	57.79	58.16	58.46	58.60	58.66	58.55	58.25
9	57.73	57.72	57.65	---	57.70	57.81	58.14	58.45	58.62	58.62	58.58	58.30
10	57.72	57.71	57.63	---	57.69	57.82	58.18	58.38	58.65	58.68	58.69	58.38
11	57.68	57.78	57.57	---	57.69	57.83	58.24	58.38	58.62	58.74	58.76	58.45
12	57.69	57.83	57.60	---	57.72	57.85	58.29	58.41	58.62	58.76	58.75	58.53
13	57.70	57.78	57.71	---	57.75	57.86	58.30	58.46	58.66	58.73	58.74	58.54
14	57.73	57.74	57.78	---	57.83	57.90	58.28	58.47	58.72	58.78	58.74	58.49
15	57.80	57.72	57.86	---	57.84	57.92	58.32	58.51	58.74	58.81	58.73	58.45
16	57.86	57.73	57.82	---	57.85	57.91	58.28	58.54	58.75	58.79	58.77	58.35
17	57.90	57.73	57.81	---	57.84	57.92	58.26	58.47	58.76	58.78	58.67	58.26
18	57.91	57.67	57.84	---	57.85	57.95	58.24	58.50	58.77	58.73	58.60	58.25
19	57.90	57.69	57.89	---	57.84	57.93	58.23	58.56	58.76	58.65	58.52	58.34
20	57.89	57.68	57.93	---	57.85	57.93	58.22	58.59	58.76	58.60	58.46	58.36
21	57.87	57.67	57.90	---	57.84	57.96	58.27	58.58	58.73	58.53	58.45	58.42
22	57.91	57.66	57.87	---	57.82	57.98	58.38	58.50	58.73	58.51	58.51	58.47
23	57.93	57.60	57.87	---	57.82	57.98	58.38	58.50	58.74	58.48	58.55	58.45
24	57.97	57.65	57.88	---	57.81	58.00	58.31	58.48	58.66	58.60	58.63	58.50
25	57.85	57.56	57.85	---	57.78	58.05	58.30	58.31	58.68	58.57	58.62	58.49
26	57.88	57.63	57.85	---	57.80	58.09	58.42	58.29	58.72	58.58	58.66	58.50
27	57.95	57.70	57.82	---	57.81	58.11	58.40	58.26	58.75	58.64	58.65	58.52
28	57.91	57.74	57.85	---	57.84	58.08	58.45	58.25	58.76	58.72	58.56	58.49
29	57.83	57.73	57.81	57.71	---	58.10	58.43	58.31	58.80	58.75	58.54	58.43
30	57.74	57.66	57.80	57.71	---	58.15	58.46	58.38	58.80	58.77	58.52	58.38
31	57.81	---	57.77	57.72	---	58.17	---	58.50	---	58.77	58.41	---
MEAN	57.79	57.74	57.75	57.76	57.77	57.93	58.27	58.45	58.66	58.70	58.60	58.40

WTR YR 1997 MEAN 58.18 HIGHEST 57.47 OCT. 1, 1996 LOWEST 58.84 JULY 5, 1997

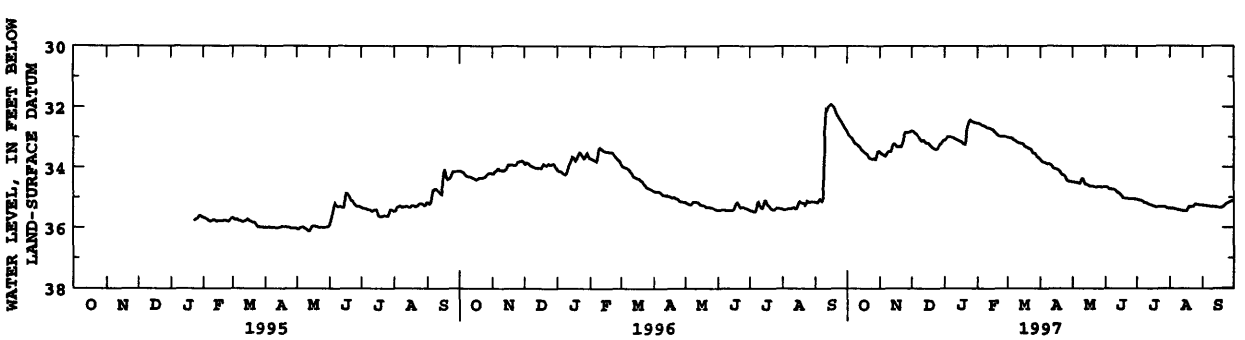


182620066163403. Local number, HG-4.
LOCATION.--Lat 18°26'20", long 66°16'34", Hydrologic Unit 2101005, 1.85 mi south of Dorado plaza, 0.70 mi southwest of Laboratorio Dorado, 0.65 mi northwest of the intersection of Hwy 695 with Hwy 693, and 0.09 mi north of Hwy 695.
Owner: U.S. Geological Survey, WRD, Name: Higuillar No. 4.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-100 ft (0-30.5 m), screened 80-90 ft (24.4-27.4 m). Depth 100 ft (30.5 m)
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 49.2 ft (15.0 m) above mean sea level, from topographic map.
Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.60 ft (1.10 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--January 23, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 31.84 ft (9.70 m) below land-surface datum, Sept. 11, 1996; lowest water level recorded, 36.15 ft (11.02 m) below land-surface datum, May 1, 11, 13, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32.77	33.47	32.77	33.09	32.53	33.00	33.74	34.48	34.65	35.06	35.37	35.26
2	32.82	33.53	32.81	33.10	32.53	33.01	33.76	34.48	34.66	35.07	35.37	35.26
3	32.93	33.56	32.80	33.03	32.54	33.02	33.83	34.50	34.66	35.09	35.37	35.27
4	32.97	33.57	32.85	32.98	32.57	33.02	33.83	34.50	34.66	35.09	35.37	35.27
5	33.01	33.58	32.88	32.98	32.59	33.03	33.84	34.50	34.72	35.10	35.37	35.28
6	33.04	33.63	32.89	32.99	32.61	33.03	33.84	34.51	34.72	35.10	35.38	35.28
7	33.11	33.64	32.96	32.99	32.62	33.10	33.88	34.52	34.73	35.11	35.39	35.29
8	33.18	33.53	33.03	33.01	32.62	33.10	33.89	34.53	34.73	35.18	35.40	35.29
9	33.22	33.49	33.07	33.01	32.66	33.11	33.88	34.54	34.73	35.18	35.41	35.30
10	33.23	33.47	33.13	33.04	32.68	33.17	33.90	34.37	34.74	35.18	35.42	35.30
11	33.25	33.49	33.14	33.06	32.69	33.17	33.91	34.38	34.74	35.19	35.42	35.31
12	33.31	33.48	33.09	33.06	32.70	33.20	33.95	34.40	34.80	35.22	35.43	35.31
13	33.31	33.27	33.13	33.10	32.70	33.20	34.02	34.55	34.85	35.24	35.44	35.32
14	33.36	33.23	33.19	33.11	32.73	33.20	34.03	34.57	34.86	35.24	35.44	35.32
15	33.42	33.22	33.22	33.13	32.74	33.20	34.05	34.57	34.86	35.26	35.45	35.33
16	33.45	33.25	33.19	33.14	32.77	33.23	34.06	34.57	34.95	35.28	35.46	35.33
17	33.48	33.32	33.20	33.13	32.81	33.29	34.06	34.63	34.95	35.28	35.46	35.34
18	33.52	33.34	33.25	33.21	32.85	33.33	34.08	34.63	35.03	35.30	35.45	35.35
19	33.55	33.30	33.29	33.23	32.89	33.33	34.12	34.63	35.03	35.31	35.30	35.35
20	33.55	33.32	33.33	33.24	32.92	33.34	34.13	34.63	35.03	35.31	35.31	35.33
21	33.60	33.33	33.35	33.25	32.97	33.38	34.24	34.63	35.03	35.31	35.31	35.31
22	33.69	33.31	33.38	32.75	32.97	33.38	34.24	34.64	35.03	35.31	35.31	35.29
23	33.69	33.12	33.39	32.64	32.97	33.38	34.26	34.65	35.04	35.31	35.31	35.23
24	33.72	33.01	33.42	32.51	32.98	33.42	34.27	34.65	35.04	35.31	35.32	35.21
25	33.73	32.82	33.38	32.43	32.98	33.53	34.33	34.65	35.04	35.31	35.23	35.19
26	33.74	32.85	33.39	32.44	32.98	33.54	34.45	34.64	35.04	35.31	35.23	35.18
27	33.70	32.86	33.24	32.49	32.98	33.54	34.45	34.64	35.04	35.31	35.23	35.16
28	33.76	32.83	33.25	32.49	32.99	33.55	34.47	34.64	35.05	35.32	35.24	35.14
29	33.72	32.85	33.23	32.52	---	33.67	34.47	34.65	35.05	35.33	35.25	35.13
30	33.50	32.83	33.13	32.52	---	33.67	34.48	34.65	35.06	35.37	35.26	35.11
31	33.46	---	33.13	32.52	---	33.68	---	34.65	---	35.37	35.25	---
MEAN	33.38	33.28	33.15	32.91	32.77	33.28	34.08	34.57	34.88	35.24	35.35	35.27

WTR YR 1997 MEAN 34.02 HIGHEST 32.42 JAN. 25, 1997 LOWEST 35.46 AUG> 15-19, 1997

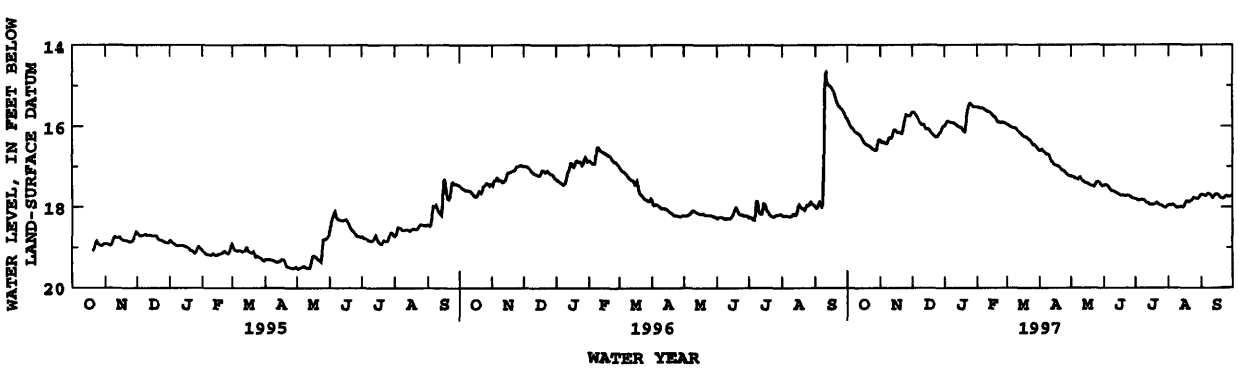


182657066162700. Local number, SA-1.
LOCATION.--Lat 18°26'57", long 66°16'27", Hydrologic Unit 21010005, 1.16 mi south of Dorado plaza, 0.45 mi west of Laboratorio Dorado, 1.79 mi southeast of Dorado airport main gate, and 0.19 mi west of the P.R. Aqueduct and Sewer Authority San Antonio public supply well (San Antonio No. 3). Owner: U.S. Geological Survey, WRD, Name: San Antonio No. 1.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-290 ft (0-88.4 m), screened 270-280 ft (82.3-85.3 m). Depth 290 ft (88.4 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 19.6 ft (6.0 m) above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m), casing, 3.20 ft (0.98 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--October 19, 1994 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.97 ft (4.26 m) below land-surface datum, Sept. 11, 1996; lowest water level recorded, 19.56 ft (5.96 m) below land-surface datum, May 3, 4, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.82	16.34	15.65	15.99	15.53	15.94	16.60	17.23	17.48	17.79	17.95	17.69
2	15.85	16.36	15.67	15.99	15.53	15.97	16.61	17.22	17.46	17.79	17.95	17.69
3	15.92	16.43	15.65	15.90	15.53	15.98	16.58	17.28	17.44	17.81	17.96	17.70
4	16.00	16.38	15.70	15.87	15.56	15.99	16.57	17.23	17.45	17.83	17.94	17.69
5	16.03	16.40	15.74	15.88	15.56	16.01	16.63	17.28	17.46	17.84	17.95	17.72
6	16.05	16.44	15.76	15.90	15.55	16.02	16.64	17.30	17.48	17.82	17.93	17.73
7	16.08	16.43	15.82	15.90	15.56	16.05	16.67	17.29	17.52	17.82	17.96	17.67
8	16.12	16.43	15.89	15.91	15.58	16.04	16.70	17.31	17.57	17.82	17.98	17.67
9	16.16	16.30	15.92	15.91	15.60	16.06	16.69	17.32	17.59	17.82	18.01	17.67
10	16.16	16.28	15.97	15.92	15.62	16.04	16.69	17.23	17.61	17.82	18.03	17.68
11	16.17	16.29	15.97	15.94	15.64	16.10	16.73	17.29	17.59	17.86	18.00	17.72
12	16.20	16.31	15.94	15.96	15.65	16.12	16.82	17.33	17.62	17.91	18.02	17.78
13	16.21	16.18	15.99	15.99	15.65	16.14	16.87	17.36	17.65	17.89	17.99	17.77
14	16.25	16.10	16.06	16.00	15.67	16.17	16.88	17.37	17.65	17.90	17.99	17.70
15	16.29	16.09	16.09	16.02	15.70	16.19	16.94	17.40	17.65	17.95	18.00	17.68
16	16.35	16.10	16.06	16.03	15.74	16.22	16.95	17.41	17.69	17.94	18.01	17.68
17	16.39	16.15	16.07	16.02	15.75	16.25	16.96	17.41	17.70	17.93	17.94	17.68
18	16.43	16.17	16.10	16.07	15.78	16.27	16.96	17.42	17.71	17.94	17.86	17.69
19	16.45	16.16	16.13	16.12	15.79	16.26	16.98	17.45	17.72	17.93	17.84	17.75
20	16.46	16.16	16.19	16.14	15.87	16.27	16.99	17.46	17.68	17.93	17.86	17.78
21	16.47	16.18	16.21	16.15	15.91	16.30	17.01	17.47	17.72	17.88	17.88	17.77
22	16.49	16.19	16.23	15.77	15.90	16.33	17.06	17.47	17.73	17.90	17.86	17.79
23	16.50	16.00	16.26	15.64	15.91	16.34	17.09	17.48	17.72	17.92	17.83	17.78
24	16.54	15.90	16.28	15.52	15.93	16.36	17.09	17.51	17.70	17.95	17.84	17.75
25	16.57	15.72	16.25	15.44	15.90	16.41	17.09	17.41	17.71	17.96	17.76	17.72
26	16.57	15.73	16.25	15.44	15.91	16.47	17.16	17.38	17.72	17.95	17.77	17.72
27	16.59	15.75	16.17	15.48	15.92	16.46	17.16	17.38	17.74	17.98	17.78	17.75
28	16.60	15.74	16.16	15.50	15.93	16.46	17.21	17.37	17.77	17.99	17.79	17.75
29	16.58	15.76	16.13	15.53	---	16.50	17.20	17.41	17.78	18.01	17.78	17.75
30	16.37	15.74	16.04	15.53	---	16.54	17.24	17.45	17.78	18.02	17.80	17.70
31	16.33	---	16.00	15.52	---	16.58	---	17.48	---	17.99	17.74	---
MEAN	16.29	16.14	16.01	15.84	15.72	16.22	16.89	17.37	17.64	17.90	17.90	17.72

WTR YR 1997 MEAN 16.81 HIGHEST 15.42 JAN. 25, 1997 LOWEST 18.03 AUG. 10, 1997



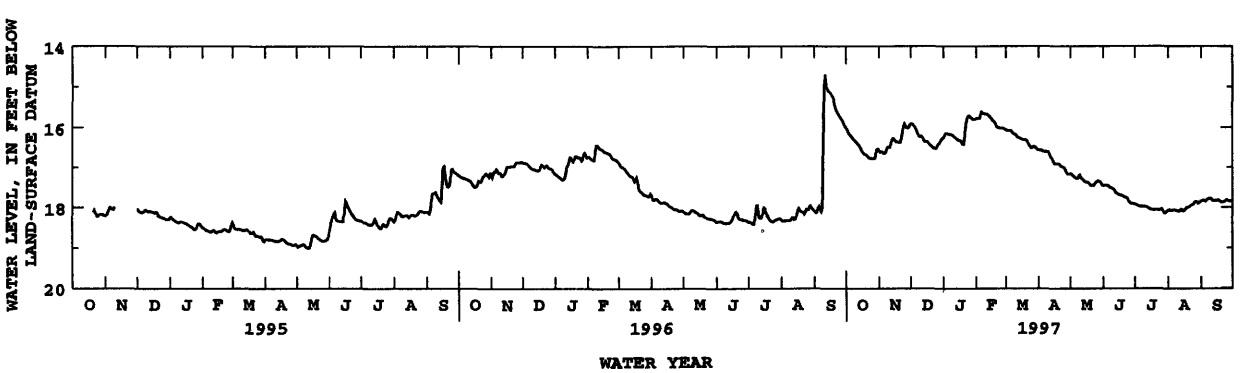
RIO DE LA PLATA BASIN

182657066162701. Local number, SA-3.
LOCATION.--Lat 18°26'57", long 66°16'27", Hydrologic Unit 21010005, 20 ft north of San Antonio USGS # 1. Owner: U.S. Geological Survey, WRD, Name: San Antonio No. 3.
AQUIFER.--Aymamón Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-80 ft (0-24.4 m), screened 65-75 ft (19.8-22.9 m). Depth 80 ft (24.4 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 19.6 ft (6.0 m) above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m), casing, 3.38 ft (1.03 m) above land-surface datum.
REMARKS.--Recording observation well. Electronic Data Logger (EDL) installed on February 6, 1997.
PERIOD OF RECORD.--October 19, 1994 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.95 ft (4.25 m) below land-surface datum, Sept. 11, 1996; lowest water level recorded, 19.03 ft (5.80 m) below land-surface datum, May 13, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.99	16.55	15.91	16.27	15.79	16.05	16.57	17.17	17.45	17.92	18.10	17.85
2	16.03	16.61	15.92	16.26	15.78	16.08	16.57	17.15	17.46	17.92	18.04	17.83
3	16.08	16.64	15.90	16.17	15.77	16.08	16.57	17.19	17.44	17.94	18.08	17.82
4	16.15	16.59	15.95	16.14	15.79	16.08	16.57	17.22	17.45	17.95	18.09	17.82
5	16.19	16.63	15.98	16.16	15.77	16.08	16.58	17.22	17.45	17.98	18.08	17.85
6	16.21	16.67	16.01	16.17	15.62	16.08	16.61	17.27	17.44	17.97	18.07	17.84
7	16.24	16.64	16.07	16.17	15.62	16.09	16.61	17.27	17.49	17.98	18.06	17.79
8	16.29	16.63	16.16	16.19	15.66	16.15	16.61	17.27	17.50	17.98	18.07	17.79
9	16.32	16.50	16.20	16.17	15.65	16.16	16.61	17.28	17.51	17.97	18.08	17.78
10	16.35	16.49	16.24	16.20	15.67	16.17	16.61	17.12	17.53	17.98	18.10	17.77
11	16.36	16.50	16.23	16.23	15.67	16.17	16.61	17.25	17.54	17.98	18.08	17.79
12	16.41	16.50	16.21	16.24	15.67	16.24	16.71	17.28	17.55	17.99	18.13	17.81
13	16.43	16.36	16.27	16.27	15.69	16.25	16.75	17.29	17.64	18.00	18.05	17.85
14	16.46	16.29	16.34	16.30	15.73	16.26	16.77	17.32	17.64	18.01	18.05	17.83
15	16.50	16.27	16.37	16.31	15.74	16.26	16.84	17.36	17.66	18.04	18.08	17.83
16	16.57	16.30	16.35	16.33	15.80	16.30	16.91	17.36	17.68	18.05	18.10	17.82
17	16.62	16.35	16.34	16.31	15.82	16.30	16.92	17.37	17.69	18.04	18.06	17.82
18	16.65	16.37	16.38	16.36	15.85	16.31	16.91	17.37	17.69	18.07	18.02	17.82
19	16.67	16.36	16.42	16.41	15.87	16.31	16.91	17.39	17.70	18.06	18.00	17.85
20	16.69	16.37	16.45	16.43	15.90	16.31	16.91	17.43	17.71	18.06	18.01	17.87
21	16.69	16.38	16.46	16.42	16.00	16.32	16.91	17.46	17.75	18.06	17.98	17.87
22	16.74	16.38	16.49	16.01	16.00	16.34	16.97	17.43	17.75	18.06	17.98	17.87
23	16.76	16.19	16.52	15.87	16.01	16.44	16.98	17.45	17.75	18.04	17.94	17.86
24	16.78	16.08	16.54	15.76	16.02	16.44	16.99	17.45	17.76	18.07	17.94	17.85
25	16.77	15.90	16.52	15.70	16.02	16.51	16.99	17.37	17.85	18.06	17.93	17.81
26	16.78	15.93	16.52	15.72	16.02	16.52	17.03	17.37	17.87	18.04	17.88	17.81
27	16.78	16.01	16.42	15.75	16.02	16.48	17.09	17.33	17.88	18.03	17.85	17.84
28	16.79	16.01	16.42	15.77	16.04	16.48	17.16	17.34	17.93	18.12	17.85	17.85
29	16.76	16.03	16.39	15.80	---	16.48	17.17	17.35	17.89	18.14	17.89	17.84
30	16.57	16.00	16.31	15.81	---	16.50	17.17	17.37	17.91	18.14	17.91	17.84
31	16.54	---	16.29	15.80	---	16.56	---	17.44	---	18.10	17.86	---
MEAN	16.49	16.35	16.28	16.11	15.82	16.28	16.82	17.32	17.65	18.02	18.01	17.83

WTR YR 1997 MEAN 16.92 HIGHEST 15.60 FEB. 6, 1997 LOWEST 18.15 JULY 30, 1997

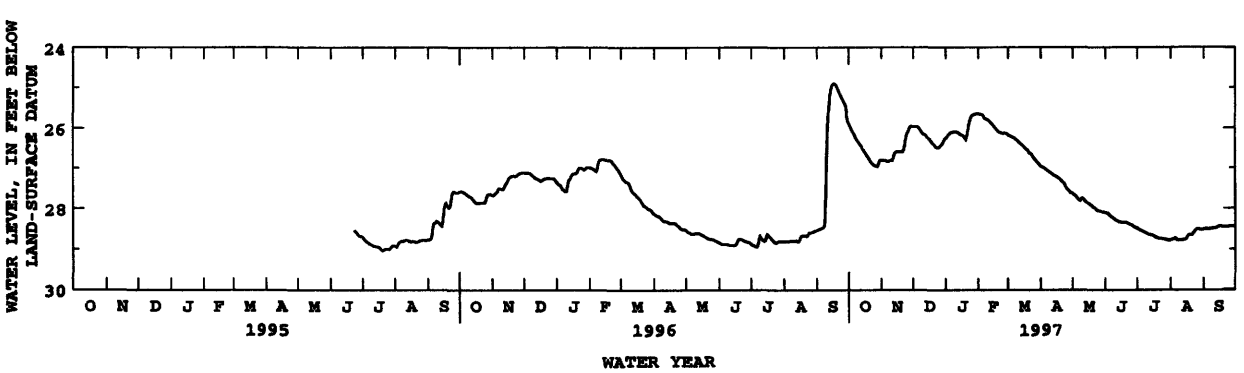


182548066164401. Local number MA-2
LOCATION.--Lat 18°25'48", long 66°16'44", Hydrologic Unit 2101005, 1.47 mi north of Hwy 2, 0.60 mi south of Hwy 695, 0.04 mi south of the intersection of Hwy 694 with 659, and 0.02 mi east of Hwy 659. Owner: U.S. Geological Survey WRD, Name: Maguayo USGS No. 2
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-110 ft (0-33.5 m), screened 95-105 ft (29.0-32.0 m). Depth 110 ft (33.5 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 39.4 ft (12.0 m) above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.80 ft (1.16 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--June 22, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 24.89 ft (7.59 m) below land-surface datum, Sept. 18, 19, 1996; lowest water level recorded, 29.05 ft (8.85 m) below land-surface datum, July 20, 21, 22, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.85	26.80	25.97	26.26	25.65	26.16	26.94	27.61	28.10	28.48	28.78	28.52
2	25.91	26.80	25.97	26.26	25.65	26.19	26.98	27.65	28.11	28.50	28.77	28.50
3	25.97	26.81	25.97	26.20	25.66	26.21	26.97	27.67	28.11	28.52	28.76	28.50
4	26.04	26.81	25.97	26.17	25.66	26.20	26.99	27.68	28.13	28.54	28.76	28.50
5	26.09	26.81	25.97	26.15	25.67	26.23	27.00	27.72	28.15	28.55	28.76	28.50
6	26.13	26.81	25.97	26.12	25.68	26.23	27.03	27.75	28.19	28.56	28.71	28.50
7	26.17	26.84	26.00	26.11	25.76	26.25	27.05	27.78	28.21	28.57	28.77	28.50
8	26.25	26.84	26.05	26.10	25.77	26.27	27.07	27.80	28.22	28.58	28.79	28.50
9	26.29	26.81	26.09	26.10	25.78	26.28	27.09	27.81	28.25	28.61	28.78	28.50
10	26.33	26.81	26.13	26.10	25.79	26.32	27.10	27.73	28.27	28.61	28.78	28.49
11	26.37	26.81	26.17	26.10	25.80	26.33	27.12	27.76	28.28	28.63	28.78	28.49
12	26.42	26.82	26.17	26.10	25.84	26.36	27.15	27.78	28.30	28.65	28.78	28.49
13	26.43	26.67	26.17	26.10	25.86	26.39	27.17	27.81	28.32	28.64	28.77	28.49
14	26.49	26.62	26.21	26.15	25.90	26.41	27.18	27.84	28.32	28.65	28.77	28.47
15	26.54	26.61	26.25	26.16	25.91	26.44	27.20	27.86	28.34	28.66	28.77	28.46
16	26.56	26.59	26.26	26.18	25.95	26.45	27.21	27.87	28.34	28.68	28.76	28.44
17	26.62	26.59	26.28	26.17	25.98	26.49	27.23	27.89	28.35	28.68	28.71	28.44
18	26.66	26.59	26.32	26.20	26.02	26.52	27.25	27.90	28.34	28.72	28.65	28.45
19	26.70	26.59	26.36	26.24	26.05	26.54	27.26	27.91	28.35	28.72	28.65	28.45
20	26.74	26.59	26.39	26.28	26.08	26.54	27.29	27.95	28.35	28.72	28.65	28.45
21	26.76	26.59	26.41	26.31	26.11	26.61	27.33	27.97	28.35	28.74	28.66	28.46
22	26.86	26.59	26.45	26.10	26.11	26.64	27.35	27.98	28.36	28.74	28.65	28.46
23	26.86	26.48	26.48	25.98	26.12	26.64	27.36	28.00	28.37	28.74	28.59	28.46
24	26.89	26.34	26.50	25.84	26.14	26.66	27.41	28.03	28.39	28.74	28.58	28.46
25	26.93	26.16	26.50	25.77	26.14	26.73	27.48	28.06	28.40	28.75	28.52	28.45
26	26.94	26.12	26.50	25.70	26.13	26.76	27.52	28.06	28.40	28.75	28.51	28.44
27	26.95	26.09	26.45	25.68	26.13	26.79	27.55	28.06	28.42	28.75	28.51	28.44
28	26.95	25.98	26.43	25.67	26.14	26.82	27.55	28.07	28.46	28.77	28.51	28.44
29	26.97	25.96	26.41	25.66	---	26.86	27.61	28.08	28.46	28.78	28.51	28.44
30	26.85	25.97	26.35	25.65	---	26.88	27.63	28.09	28.48	28.79	28.53	28.45
31	26.80	---	26.30	25.65	---	26.92	---	28.09	---	28.79	28.53	---
MEAN	26.53	26.56	26.24	26.04	25.91	26.49	27.24	27.88	28.30	28.66	28.68	28.47

WTR YR 1997 MEAN 27.26 HIGHEST 25.65 JAN. 30, 31 Feb. 1, 2 3, 1997 LOWEST 28.79 JULY 29, 30,31, AUG 8, 9, 1997



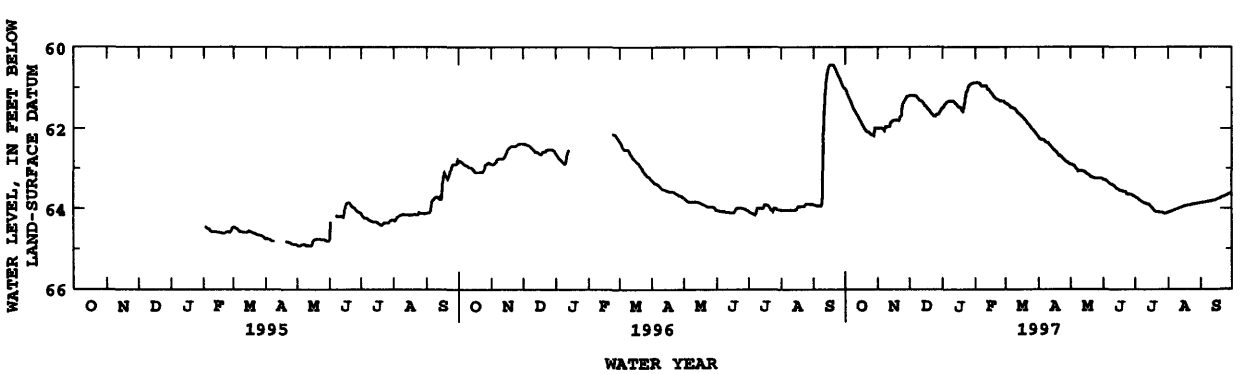
RIO DE LA PLATA BASIN

182526066165001. Local number, SR-2.
LOCATION.--Lat 18°25'26", long 66°16'50", Hydrologic Unit 21010005, 1.03 mi north of Hwy 2, 0.93 mi west of the intersection of Hwy 659 with Hwy 693, and 0.03 mi north of Hwy 659. Owner: U.S. Geological Survey, WRD, Name: Santa Rosa USGS No. 2.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-140 ft (0-42.7 m), screened 120-130 ft (36.6-39.6 m). Depth 140 ft (42.7 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 91.8 ft (28.0 m) above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.31 ft (1.01 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--February 2, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 60.42 ft (18.42 m) below land-surface datum, Sept. 20, 1995; lowest water level recorded, 64.93 ft (19.79 m) below land-surface datum, May 2-5, 10-15, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61.01	62.00	61.19	61.50	60.86	61.37	62.21	62.90	63.29	63.71	64.11	63.87
2	61.05	62.00	61.18	61.48	60.87	61.39	62.25	62.90	63.29	63.72	64.10	63.86
3	61.10	62.00	61.19	61.45	60.86	61.40	62.28	62.93	63.29	63.74	64.09	63.86
4	61.19	62.00	61.19	61.39	60.88	61.42	62.28	62.93	63.29	63.76	64.08	63.85
5	61.22	61.98	61.19	61.37	60.89	61.44	62.28	62.94	63.33	63.79	64.07	63.85
6	61.23	62.01	61.19	61.35	60.91	61.45	62.28	62.97	63.36	63.80	64.06	63.84
7	61.36	62.03	61.19	61.34	60.95	61.49	62.32	63.03	63.36	63.81	64.05	63.84
8	61.44	61.96	61.22	61.33	60.95	61.50	62.34	63.03	63.38	63.82	64.04	63.83
9	61.48	61.96	61.26	61.33	60.95	61.50	62.35	63.07	63.40	63.84	64.03	63.83
10	61.55	61.96	61.29	61.33	60.95	61.52	62.35	63.07	63.41	63.86	64.02	63.82
11	61.59	61.96	61.33	61.33	60.95	61.55	62.37	63.07	63.42	63.87	64.01	63.82
12	61.64	61.96	61.33	61.33	61.03	61.60	62.42	63.07	63.45	63.87	64.00	63.81
13	61.67	61.85	61.34	61.37	61.03	61.62	62.47	63.07	63.47	63.89	63.99	63.81
14	61.72	61.85	61.37	61.40	61.07	61.64	62.49	63.08	63.50	63.89	63.98	63.80
15	61.77	61.83	61.42	61.42	61.11	61.67	62.54	63.11	63.51	63.92	63.97	63.80
16	61.81	61.80	61.44	61.46	61.12	61.69	62.55	63.12	63.54	63.93	63.96	63.79
17	61.87	61.80	61.46	61.48	61.17	61.72	62.58	63.15	63.55	63.97	63.95	63.78
18	61.93	61.80	61.50	61.48	61.20	61.74	62.59	63.16	63.55	64.01	63.94	63.77
19	61.98	61.80	61.53	61.53	61.24	61.78	62.63	63.17	63.57	64.04	63.93	63.75
20	62.02	61.81	61.57	61.57	61.26	61.79	62.66	63.20	63.57	64.06	63.92	63.74
21	62.05	61.81	61.60	61.59	61.28	61.83	62.68	63.21	63.57	64.08	63.92	63.73
22	62.09	61.81	61.64	61.37	61.28	61.89	62.71	63.23	63.58	64.08	63.92	63.72
23	62.09	61.72	61.67	61.12	61.31	61.91	62.73	63.24	63.59	64.08	63.91	63.71
24	62.09	61.46	61.71	61.12	61.33	61.92	62.73	63.25	63.64	64.10	63.91	63.70
25	62.14	61.42	61.71	61.04	61.33	61.97	62.79	63.25	63.64	64.10	63.90	63.68
26	62.16	61.33	61.70	60.96	61.33	62.02	62.80	63.25	63.64	64.10	63.90	63.67
27	62.17	61.29	61.66	60.93	61.33	62.03	62.84	63.25	63.65	64.10	63.89	63.66
28	62.17	61.23	61.66	60.91	61.36	62.06	62.84	63.25	63.66	64.11	63.89	63.65
29	62.19	61.21	61.63	60.90	---	62.10	62.88	63.25	63.66	64.12	63.88	63.64
30	62.00	61.21	61.59	60.88	---	62.13	62.90	63.25	63.68	64.13	63.88	63.63
31	62.00	---	61.54	60.87	---	62.18	---	63.26	---	64.12	63.87	---
MEAN	61.73	61.76	61.44	61.29	61.10	61.72	62.54	63.12	63.49	63.95	63.97	63.77

WTR YR 1997 MEAN 62.50 HIGHEST 60.86 FEB. 1, 3, 1997 LOWEST 64.13 JULY 29, 30, 1997



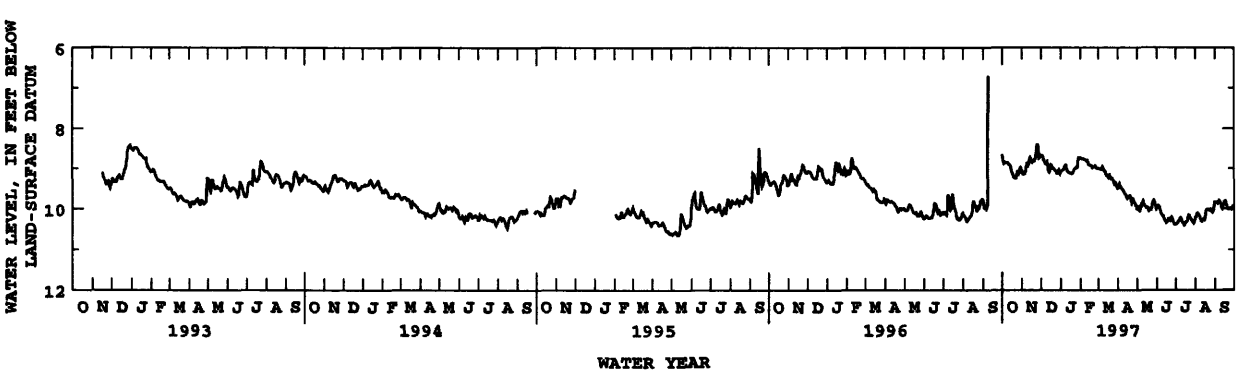
RIO DE LA PLATA BASIN

182654066150600. Local number, TB-1.
LOCATION.--Lat 18°26'54", long 66°15'06", Hydrologic Unit 21010005, 0.92 mi southeast of the Dorado bridge, 0.66 mi east of Hwy 693, 0.09 mi north of the intersection of Hwy 165 with Hwy 867, and 0.01 mi east of Hwy 165.
Owner: U.S. Geological Survey, WRD, Name: Toa Baja TW-1.
AQUIFER.--Tertiary Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-165 ft (0-50.3 m), screened 25-165 ft (7.62-50.3 m). Depth 167 ft (50.9 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 7.0 ft (2.1 m) above mean sea level, from topographic map.
Measuring point: Top of shelter floor on top of 4 in (0.10 m) casing, 3.60 ft (1.10 m) above land-surface datum.
REMARKS.--Recording observation well. Water levels affected by nearby pumping well.
PERIOD OF RECORD.-- November 16, 1992 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.04 ft (0.93 m) below land-surface datum, Sept. 10, 1996; lowest water level recorded, 10.68 ft (3.25 m) below land-surface datum May 3, 4, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.62	9.02	8.68	9.11	8.73	9.00	9.51	9.98	10.00	10.40	10.20	9.84
2	8.69	9.10	8.71	9.07	8.75	9.00	9.48	9.93	9.98	10.37	10.22	9.84
3	8.78	9.17	8.67	9.07	8.75	9.00	9.41	10.06	9.93	10.38	10.19	9.84
4	8.87	9.11	8.70	9.05	8.78	9.00	9.37	9.86	9.91	10.34	10.06	9.84
5	8.88	9.13	8.75	9.04	8.75	9.03	9.50	10.07	9.96	10.32	10.16	9.87
6	8.83	9.15	8.81	9.04	8.77	8.99	9.45	10.08	9.95	10.29	10.14	9.87
7	8.86	9.11	8.82	8.99	8.78	9.05	9.52	9.87	10.07	10.29	10.16	9.76
8	8.87	9.03	8.89	8.93	8.77	8.93	9.52	9.93	10.12	10.21	10.20	9.82
9	8.86	8.89	8.86	8.92	8.78	8.98	9.53	9.91	10.13	10.24	10.25	9.82
10	8.86	8.87	8.92	8.92	8.80	9.00	9.56	9.77	10.19	10.25	10.30	9.85
11	8.85	8.90	8.85	9.06	8.82	9.09	9.62	9.84	10.16	10.32	10.32	9.93
12	8.91	8.94	8.85	9.06	8.82	9.04	9.62	9.90	10.19	10.37	10.31	10.02
13	8.91	8.81	9.05	9.08	8.79	9.09	9.66	9.93	10.26	10.33	10.25	9.98
14	8.91	8.71	9.09	9.11	8.91	9.16	9.66	9.92	10.30	10.38	10.27	9.92
15	8.96	8.75	9.09	9.11	8.91	9.18	9.77	9.97	10.30	10.43	10.27	9.87
16	9.03	8.79	9.01	9.11	8.93	9.14	9.72	9.97	10.34	10.35	10.29	9.85
17	9.10	8.88	8.96	9.13	8.92	9.20	9.72	9.95	10.36	10.32	10.16	9.80
18	9.13	8.82	8.87	9.13	8.94	9.22	9.71	9.98	10.31	10.34	10.03	9.81
19	9.17	8.79	8.99	9.13	8.92	9.11	9.71	10.05	10.27	10.31	10.03	9.90
20	9.25	8.82	9.01	9.13	8.98	9.20	9.63	10.06	10.23	10.26	10.00	9.96
21	9.21	8.82	9.00	9.09	8.99	9.24	9.72	10.02	10.27	10.13	10.03	9.97
22	9.23	8.82	9.00	9.05	8.96	9.29	9.85	9.98	10.31	10.18	10.01	10.03
23	9.24	8.69	9.04	9.02	8.97	9.22	9.85	10.02	10.29	10.15	10.02	9.99
24	9.23	8.66	9.06	8.99	8.95	9.27	9.75	10.01	10.19	10.26	10.06	10.01
25	9.10	8.41	9.06	8.99	8.92	9.30	9.71	9.85	10.22	10.24	10.00	9.98
26	9.08	8.41	9.09	8.98	8.97	9.39	9.90	9.83	10.26	10.28	10.03	9.99
27	9.15	8.41	9.16	8.98	8.99	9.37	9.77	9.79	10.31	10.30	10.02	10.01
28	9.13	8.71	9.09	8.98	9.01	9.31	9.93	9.78	10.36	10.33	10.13	10.02
29	9.05	8.78	9.05	8.73	---	9.40	9.88	9.84	10.40	10.34	10.05	9.96
30	8.94	8.67	9.03	8.76	---	9.43	9.99	9.91	10.38	10.39	10.06	9.89
31	9.01	---	9.16	8.76	---	9.49	---	10.03	---	10.30	9.83	---
MEAN	8.99	8.84	8.95	9.02	8.87	9.17	9.67	9.94	10.20	10.30	10.13	9.91

WTR YR 1997 MEAN 9.50 HIGHEST 8.40 NOV. 27, 1996 LOWEST 10.47 JULY 2, 1997



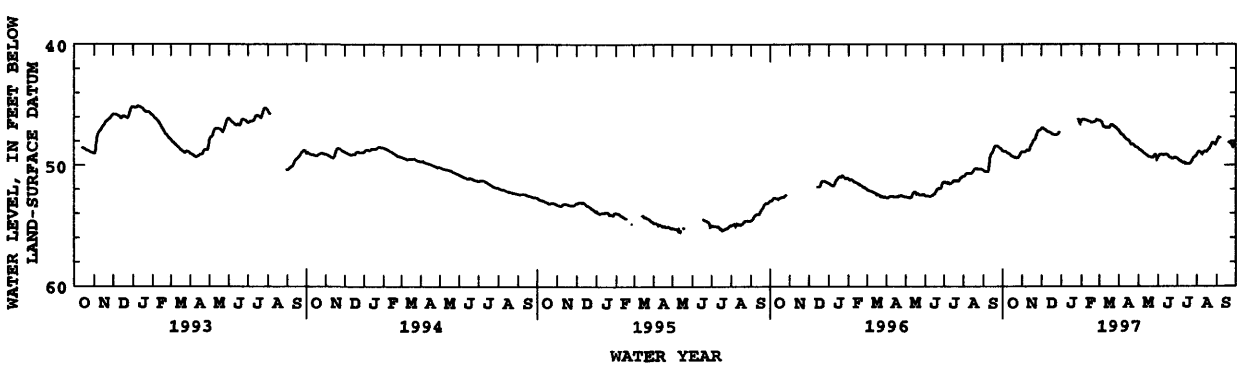
RIO HONDO TO RIO PUERTO NUEVO BASINS

182441066082600. Local number, 219.
LOCATION.--Lat 18°24'41", long 66°08'26", Hydrologic Unit 21010005, 0.47 mi west of Fort Buchanan Military Res. main gate, 1.74 mi northeast of Bayamón plaza, and 1.88 mi southwest of P.R. National Cementery. Owner: U.S. Department of Defense, Name: Ft. Buchanan No.\1, Buchanan Park well.
AQUIFER.--Cibao Formation.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 10 in (0.25 m), cased 10 in (0.25 m) 0-270 ft (0-82.3 m), perforated 46-685 ft (14.0-20.7 m), 88-120 ft (26.8-36.6 m), 160-191 ft (48.8-58.2 m), 240-270 ft (73.2-82.3 m). Depth 270 ft (82.3 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 66.0 ft (20.1 m) above mean sea level, from topographic map. Measuring point: Hole on side of casing, 0.75 ft (0.23 m) above land-surface datum. Prior June 30, 1986, top of shelter floor, 3.59 ft (1.09 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--December 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 34.97 ft (10.66 m) below land-surface datum, Nov. 12, 13, 14, 1989; lowest water level recorded, 55.67 ft (17.0 m) below land-surface datum, May 13, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48.78	48.88	46.99	---	46.27	46.28	47.08	48.54	49.37	49.45	49.10	48.09
2	48.83	48.87	46.91	---	46.21	46.26	47.17	48.62	49.28	49.47	49.02	48.04
3	48.76	48.87	46.86	---	46.20	46.29	47.26	48.70	49.17	49.52	48.91	47.84
4	48.85	48.89	46.91	---	46.20	46.36	47.34	48.73	49.14	49.55	48.84	47.70
5	48.84	48.89	46.98	---	46.21	46.38	47.40	48.74	49.14	49.66	48.85	47.70
6	48.83	48.89	47.00	---	46.18	46.38	47.45	48.76	49.10	49.60	48.90	47.78
7	48.85	48.86	46.99	---	46.23	46.65	47.48	48.82	49.09	49.67	48.92	47.63
8	48.91	48.77	47.04	---	46.24	46.81	47.50	48.88	49.11	49.72	48.98	47.71
9	48.96	48.70	47.10	---	46.23	46.82	47.57	48.93	49.16	49.71	49.13	---
10	48.99	48.70	47.17	---	46.24	46.80	47.64	48.96	49.19	49.77	49.08	---
11	48.99	48.75	47.19	---	46.27	46.84	47.75	49.01	49.09	49.84	48.98	---
12	49.03	48.78	47.22	---	46.30	46.90	47.78	49.05	49.11	49.79	48.90	---
13	49.06	48.69	47.23	---	46.34	46.81	47.80	49.08	49.10	49.76	48.86	---
14	49.10	48.48	47.24	---	46.34	46.85	47.87	49.13	49.11	49.83	48.85	---
15	49.19	48.35	47.28	---	46.35	46.88	47.91	49.15	49.11	49.93	48.82	---
16	49.24	48.29	47.29	---	46.42	46.81	47.92	49.18	49.11	49.84	48.89	---
17	49.24	48.18	47.31	---	46.42	46.85	47.95	49.30	49.15	49.91	48.87	---
18	49.24	48.04	47.39	---	46.48	46.89	47.98	49.28	49.33	49.86	48.75	---
19	49.26	47.94	47.44	---	46.43	46.74	48.16	49.28	49.33	49.89	48.69	48.07
20	49.35	47.90	47.43	---	46.40	46.63	48.25	49.31	49.35	49.92	48.67	48.08
21	49.29	47.86	47.45	---	46.39	46.62	48.25	49.33	49.36	49.84	48.61	48.10
22	49.39	47.82	47.47	---	46.40	46.63	48.23	49.32	49.38	49.86	48.55	48.13
23	49.38	47.59	47.48	---	46.39	46.66	48.24	49.34	49.47	49.76	48.41	48.19
24	49.36	47.48	47.45	---	46.32	46.72	48.28	49.39	49.43	49.66	48.30	48.22
25	49.37	47.29	47.46	---	46.21	46.78	48.36	49.33	49.44	49.56	48.17	48.19
26	49.37	47.16	47.47	---	46.21	46.82	48.41	49.21	49.39	49.46	48.12	48.36
27	49.32	47.08	47.42	46.12	46.23	46.84	48.44	49.14	49.33	49.34	48.12	48.52
28	49.22	47.09	47.34	46.12	46.26	46.86	48.49	49.12	49.41	49.35	48.16	48.47
29	49.11	47.08	47.25	46.32	---	46.95	48.50	49.13	49.36	49.28	48.18	48.35
30	48.99	47.05	47.15	46.61	---	47.02	48.52	49.47	49.38	49.27	48.29	48.11
31	48.91	---	---	46.49	---	47.04	---	49.59	---	49.19	48.25	---
MEAN	49.10	48.17	47.23	46.33	46.30	46.72	47.90	49.09	49.25	49.65	48.68	48.06

WTR YR 1997 MEAN 48.19 HIGHEST 46.11 JAN. 27, 28, 1997 LOWEST 50.04 JULY 10, 1997

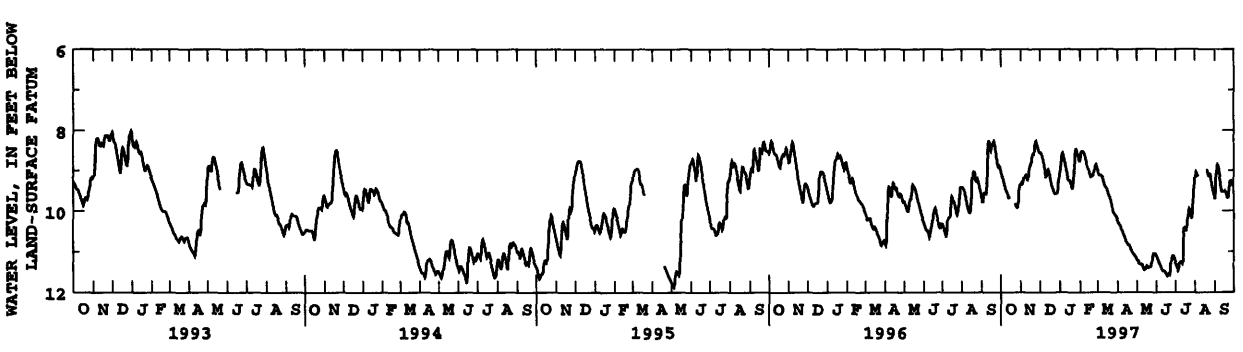


182511066045401. Local number, PN-2.
LOCATION.--Lat 18°25'11, long 66°04'54", Hydrologic Unit 21010005, 1.58 mi northeast of Fort Buchannan Military Res. main gate, 2.95 mi southeast of Cataño plaza, and 2.45 mi southeast of U.S. Naval Reservation in Miramar. Owner: U.S. Geological Survey, WRD, Name: La Esperanza No. 2.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-40 ft (0-12.2 m), perforated 30-40 ft ((9.15-12.2 m). Depth 40 ft (12.2 m).
INSTRUMENTATION.--Digital water level recorder--15-minute punch.
DATUM.--Elevation of land-surface datum is about 13 ft (3.96 m) above mean sea level, from topographic map. Measuring point: Hole on well shaft, 3.17 ft (0.97 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--July 1989 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 8.01 ft (2.44 m) below land-surface datum, Dec. 30, 31, 1992; lowest water level recorded, 11.90 ft (3.63 m) below land-surface datum, July 15, 16, 1991.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.03	9.36	8.56	9.01	8.80	8.97	10.23	11.20	11.09	11.26	9.19	9.65
2	9.11	9.30	8.57	8.97	8.62	9.06	10.26	11.24	11.16	11.30	9.06	9.76
3	9.15	9.31	8.55	8.74	8.53	9.12	10.31	11.21	11.19	11.35	9.02	9.20
4	9.17	9.37	8.64	8.61	8.54	9.11	10.33	11.25	11.23	11.38	9.10	8.95
5	9.20	9.28	8.68	8.56	8.54	9.11	10.34	11.29	11.26	11.44	9.14	8.85
6	9.25	9.18	8.77	8.57	8.51	9.11	10.38	11.32	11.29	11.49	9.06	8.85
7	9.35	9.17	8.82	8.66	8.55	9.14	10.45	11.29	11.30	11.36	---	8.91
8	9.40	9.15	8.92	8.76	8.59	9.15	10.47	11.33	11.34	11.27	---	9.02
9	9.47	9.11	9.06	8.82	8.63	9.16	10.50	11.33	11.40	11.26	---	9.15
10	9.52	9.11	9.18	8.93	8.70	9.23	10.56	11.31	11.44	11.26	---	9.26
11	9.55	9.17	9.18	8.99	8.78	9.28	10.60	11.34	11.48	11.28	---	9.41
12	9.58	9.28	9.01	9.06	8.87	9.37	10.63	11.40	11.47	11.28	---	9.51
13	9.65	9.18	8.97	9.16	8.92	9.40	10.67	11.45	11.47	11.32	---	9.55
14	9.75	8.98	8.97	9.24	8.96	9.42	10.75	11.47	11.48	10.49	---	9.51
15	9.53	8.90	9.04	9.24	8.97	9.42	10.77	11.44	11.49	10.40	---	9.52
16	---	8.86	9.12	9.22	9.05	9.46	10.78	11.44	11.53	10.44	---	9.54
17	---	8.86	9.16	9.26	9.10	9.52	10.83	11.37	11.56	10.44	---	9.51
18	---	8.76	9.24	9.29	9.16	9.59	10.85	11.35	11.60	10.49	---	9.49
19	---	8.62	9.32	9.37	9.15	9.61	10.84	11.40	11.60	10.52	8.95	9.54
20	---	8.61	9.40	9.41	9.12	9.67	10.86	11.41	11.55	10.23	8.99	9.59
21	---	8.57	9.42	9.50	9.16	9.71	10.90	11.41	11.53	10.07	9.08	9.64
22	---	8.62	9.47	9.31	9.08	9.76	10.97	11.38	11.54	9.95	9.17	9.71
23	9.79	8.43	9.53	8.95	9.04	9.83	10.99	11.38	11.59	9.95	9.09	9.64
24	9.84	8.33	9.58	8.73	8.98	9.93	11.02	11.39	11.30	10.00	9.08	9.46
25	9.89	8.26	9.58	8.50	8.91	10.00	11.06	11.28	11.18	10.07	9.10	9.30
26	9.92	8.29	9.57	8.45	8.84	10.06	11.07	11.19	11.12	10.17	9.18	9.26
27	9.92	8.39	9.57	8.49	8.86	10.05	11.09	11.07	11.11	10.23	9.26	9.26
28	9.89	8.43	9.57	8.57	8.94	10.10	11.11	11.06	11.11	10.01	9.36	9.25
29	9.61	8.51	9.51	8.61	---	10.13	11.13	11.06	11.14	9.71	9.47	9.32
30	9.42	8.56	9.30	8.68	---	10.12	11.15	11.05	11.20	9.48	9.52	9.36
31	9.34	---	9.13	8.77	---	10.18	---	11.07	---	9.36	9.61	---
MEAN	9.51	8.87	9.14	8.92	8.85	9.54	10.73	11.30	11.36	10.62	9.18	9.37

WTR YR 1997 MEAN 9.81 HIGHEST 8.19 NOV. 25, 1996 LOWEST 11.60 JUNE 18, 19, 1997



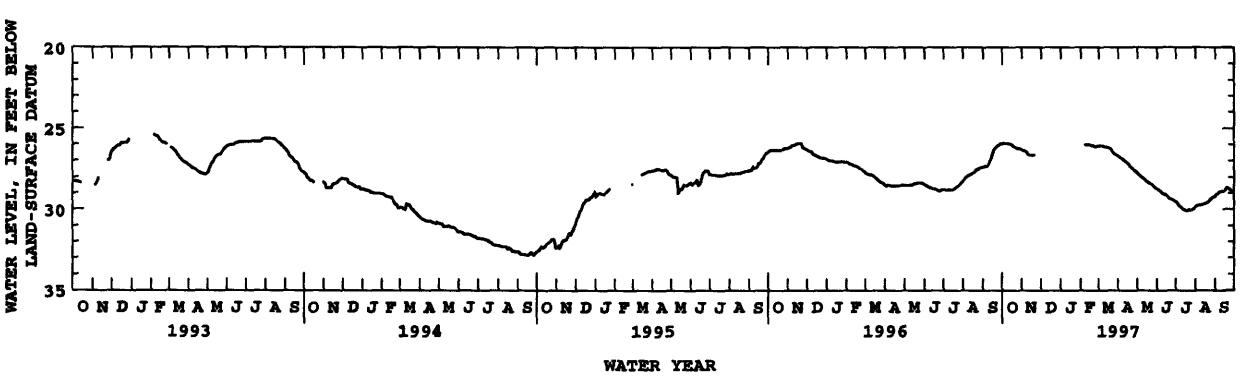
RIO HONDO TO RIO PUERTO NUEVO BASINS

182435066052700. Local number, PN-5.
LOCATION.--Lat 18°24'35", long 66°05'27", Hydrologic Unit 21010005, 2.94 mi southeast of Cataño plaza, 0.44 mi north of Escuela Superior Gabriela Mistral, and 1.19 mi northeast of WAPA TV radio anthena. Owner: U.S. Geological Survey, WRD, Name: Salud Mental No. 1.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 4.0 in (0.10 m), cased 4.0 in (0.10 m), 0-83 ft (0-25.3 m), perforated 73-83 ft (22.2-25.3 m). Depth 83 ft (25.3 m).
INSTRUMENTATION.--Digital water level recorder--15-minute punch.
DATUM.--Elevation of land-surface datum is about 85 ft (25.9 m) above mean sea level, from topographic map. Measuring point: Hole on well shaft, 2.85 ft (0.87 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--April 1989 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 25.37 ft (7.73 m) below land-surface datum, Feb. 5, 1993; lowest water level recorded, 32.82 ft (10.0 m) below land-surface datum, Sept. 25-28, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.94	26.33	---	---	---	26.08	26.69	27.74	28.72	29.51	29.82	29.20
2	25.93	26.33	---	---	---	26.08	26.71	27.78	28.73	29.54	29.81	29.21
3	25.93	26.36	---	---	---	26.07	26.74	27.83	28.75	29.57	29.79	29.07
4	25.93	26.36	---	---	---	26.07	26.78	27.86	28.78	29.63	29.76	29.06
5	25.93	26.38	---	---	---	26.07	26.81	27.89	28.81	29.69	29.75	29.07
6	25.93	26.38	---	---	---	26.07	26.83	27.92	28.84	29.77	29.75	29.03
7	25.93	26.41	---	---	26.05	26.07	26.85	27.96	28.87	29.80	29.74	28.95
8	25.93	26.43	---	---	26.01	26.08	26.87	28.00	28.90	29.80	29.73	28.94
9	25.93	26.43	---	---	26.00	26.10	26.89	28.02	28.95	29.85	29.73	28.91
10	25.93	26.52	---	---	26.00	26.11	26.93	28.05	28.97	29.90	29.72	28.90
11	25.94	26.60	---	---	26.00	26.13	26.98	28.08	29.01	29.95	29.71	28.90
12	25.94	26.62	---	---	26.00	26.14	27.01	28.10	29.03	29.97	29.70	28.89
13	25.94	26.64	---	---	26.00	26.15	27.03	28.13	29.05	29.99	29.70	28.89
14	25.95	26.64	---	---	26.01	26.17	27.06	28.16	29.06	30.01	29.69	28.88
15	25.95	26.64	---	---	26.02	26.18	27.09	28.22	29.08	30.03	29.64	28.88
16	26.00	26.64	---	---	26.02	26.19	27.13	28.26	29.10	30.05	29.64	28.88
17	26.02	26.64	---	---	26.03	26.20	27.16	28.26	29.12	30.06	29.64	28.83
18	26.06	26.64	---	---	26.05	26.22	27.19	28.29	29.18	30.07	29.60	28.78
19	26.10	26.64	---	---	26.06	26.23	27.27	28.32	29.21	30.08	29.57	28.71
20	26.11	26.64	---	---	26.06	26.26	27.33	28.36	29.25	30.08	29.56	28.66
21	26.14	26.64	---	---	26.07	26.29	27.37	28.38	29.31	30.01	29.54	28.65
22	26.18	26.67	---	---	26.08	26.37	27.39	28.40	29.34	30.01	29.52	28.69
23	26.19	---	---	---	26.14	26.42	27.41	28.43	29.36	30.04	29.48	28.71
24	26.19	---	---	---	26.14	26.49	27.46	28.45	29.35	30.05	29.43	28.73
25	26.24	---	---	---	26.14	26.52	27.50	28.47	29.37	30.05	29.36	28.77
26	26.25	---	---	---	26.11	26.55	27.57	28.49	29.39	30.02	29.34	28.82
27	26.26	---	---	---	26.09	26.57	27.59	28.55	29.41	30.01	29.33	28.84
28	26.26	---	---	---	26.08	26.60	27.63	28.58	29.43	29.99	29.29	28.86
29	26.26	---	---	---	---	26.63	27.66	28.63	29.46	29.96	29.26	28.87
30	26.26	---	---	---	---	26.65	27.70	28.65	29.49	29.95	29.22	28.85
31	26.28	---	---	---	---	26.67	---	28.67	---	29.90	29.21	---
MEAN	26.06	26.53	---	---	26.05	26.27	27.15	28.22	29.11	29.91	29.58	28.88

WTR YR 1997 MEAN 27.86 HIGHEST 25.92 OCT. 3, 1996 LOWEST 30.09 AUG. 20, 1997

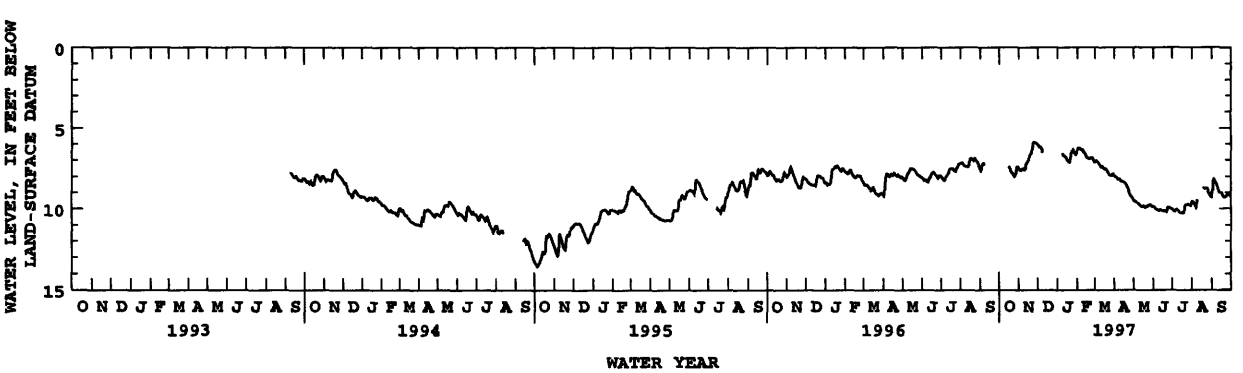


182445066043401. Local number, PN-6.
LOCATION.--Lat 18°24'45", long 66°04'34", Hydrologic Unit 21010005, 0.28 mi northeast of Escuela Dr. Pedreira, 3.52 mi southeast of Cataño plaza, and 0.53 mi south of Hiram Bithorn Stadium main gate. Owner: U.S. Geological Survey, WRD, Name: Alsacia No. 2.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-27 ft (0-8.23 m), perforated 21-27 ft (6.40-8.23 m). Depth 27 ft (8.23 m).
INSTRUMENTATION.--Digital water level recorder--15-minute punch.
DATUM.--Elevation of land-surface datum is about 10 ft (3.05 m) above mean sea level, from topographic map. Measuring point: Hole on well shaft, 3.03 ft (0.91 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--July 1989 to November 27, 1991, Temporary discontinued, September 9, 1993 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.11 ft (0.95 m) below land-surface datum, Sept. 18, 1989; lowest water level recorded, 13.65 ft (4.16 m) below land-surface datum, Oct. 6, 7, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	7.42	6.07	---	6.48	7.17	7.96	9.44	9.88	10.02	9.57	9.26
2	---	7.52	6.06	---	6.26	7.13	8.02	9.52	9.88	10.05	9.55	9.34
3	---	7.62	6.16	---	6.26	7.09	8.03	9.55	9.88	10.12	9.57	8.34
4	---	7.65	6.23	---	6.27	7.02	8.06	9.56	9.95	10.17	9.63	8.20
5	---	7.66	6.14	---	6.24	7.07	8.09	9.58	10.00	10.20	9.70	8.20
6	---	7.59	6.24	---	6.30	7.12	8.16	9.63	10.05	10.17	9.78	8.28
7	---	7.60	6.31	---	6.35	7.17	8.23	9.65	10.08	10.09	9.88	8.33
8	---	7.54	6.37	---	6.35	7.23	8.15	9.65	10.07	10.06	9.96	8.44
9	---	7.53	6.49	6.49	6.34	7.25	8.17	9.70	10.10	10.07	9.58	8.56
10	---	7.60	6.56	6.66	6.36	7.33	8.20	9.69	10.13	10.07	9.34	8.66
11	---	7.63	---	6.75	6.46	7.41	8.32	9.77	10.15	10.14	---	8.82
12	---	7.52	---	6.70	6.52	7.44	8.30	9.81	10.05	10.20	---	8.91
13	---	7.25	---	6.77	6.52	7.34	8.31	9.85	10.08	10.25	---	8.95
14	---	7.17	---	6.82	6.59	7.42	8.34	9.88	10.11	10.27	---	9.00
15	---	7.15	---	6.81	6.64	7.50	8.35	9.88	10.13	10.27	---	9.01
16	7.38	7.10	---	6.93	6.82	7.52	8.37	9.89	10.16	10.27	---	9.01
17	7.42	7.02	---	7.01	6.82	7.56	8.39	9.81	10.16	10.23	---	9.01
18	7.48	6.89	---	7.06	6.91	7.56	8.41	9.85	10.17	10.28	8.80	9.06
19	7.58	6.74	---	7.11	6.87	7.49	8.50	9.92	10.15	10.31	8.71	9.20
20	7.75	6.67	---	7.15	6.92	7.61	8.54	9.97	10.13	10.24	8.74	9.29
21	7.81	6.61	---	7.14	6.92	7.68	8.66	9.90	10.17	9.87	8.78	9.30
22	7.79	6.60	---	6.84	6.86	7.73	8.73	9.83	10.21	9.78	8.77	9.31
23	7.84	6.16	---	6.62	6.86	7.83	8.82	9.86	10.21	9.76	8.68	9.29
24	7.90	5.96	---	6.50	6.94	7.91	8.98	9.88	9.96	9.76	8.76	9.22
25	8.05	5.85	---	6.36	6.84	7.92	9.06	9.78	9.92	9.76	8.71	9.19
26	8.04	5.93	---	6.35	6.89	7.95	9.16	9.78	9.93	9.72	8.82	9.14
27	7.89	5.94	---	6.46	6.99	7.96	9.20	9.73	9.95	9.76	8.97	9.06
28	7.78	5.93	---	6.52	7.10	7.97	9.26	9.77	9.96	9.80	9.05	9.06
29	7.51	5.93	---	6.57	---	7.93	9.31	9.81	9.99	9.75	9.14	9.18
30	7.40	6.00	---	6.65	---	7.81	9.38	9.84	10.02	9.84	9.19	9.17
31	7.42	---	---	6.67	---	7.90	---	9.91	---	9.79	9.28	---
MEAN	7.69	6.93	6.26	6.74	6.63	7.52	8.52	9.76	10.05	10.03	9.21	8.93

WTR YR 1997 MEAN 8.37 HIGHEST 5.85 NOV. 25, 1996 LOWEST 10.38 JULY 18, 19, 1997

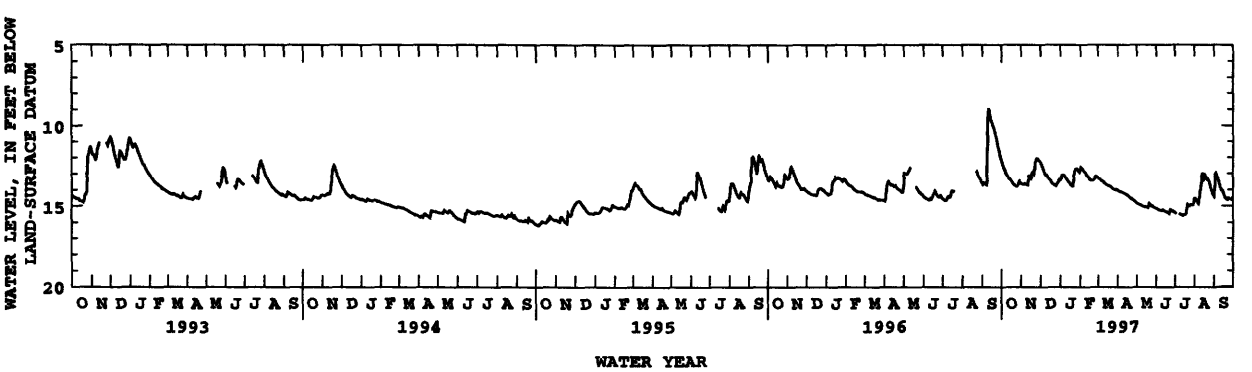


182443066041502. Local number, PN-8c.
LOCATION.--Lat 18°24'43", long 66°04'15", Hydrologic Unit 21010005, 2.29 mi east of Fort Buchannan Military Res. main gate, 3.83 mi southeast of Cataño plaza, and 0.16 mi southwest of Hospital del Maestro. Owner: U.S. Geological Survey, WRD, Name: Parque Luis Muñoz Marin 1C.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 4 in (0.10), 0-33 ft (0-10.1 m), perforated 33-40 ft (10.1-12.2 m). Depth 40 ft (12.2 m).
INSTRUMENTATION.--Digital water level recorder--15-minute punch.
DATUM.--Elevation of land-surface datum is about 13 ft (3.96 m) above mean sea level, from topographic map. Measuring point: Hole on well shaft, 3.66 ft (1.12 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--February 1989 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 8.80 ft (2.68 m) below land-surface datum, Sept. 10, 1996; lowest water level recorded, 16.18 ft (4.93 m) below land-surface datum, Oct. 5, 6, 7, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.12	13.58	12.26	13.39	12.94	13.25	14.02	14.80	15.15	15.37	14.51	14.32
2	12.24	13.62	12.30	13.37	12.61	13.27	14.06	14.82	15.12	15.41	14.51	14.46
3	12.38	13.66	12.43	13.22	12.61	13.31	14.06	14.86	15.17	15.45	14.52	13.06
4	12.48	13.65	12.53	13.12	12.70	13.32	14.10	14.85	15.19	15.53	14.59	12.94
5	12.63	13.66	12.64	13.09	12.72	13.36	14.11	14.88	15.22	---	14.65	13.00
6	12.71	13.58	12.73	13.09	12.77	13.41	14.11	14.90	15.24	---	14.75	13.12
7	12.78	13.63	12.82	13.10	12.84	13.44	14.13	14.91	15.25	---	14.81	13.28
8	12.91	13.65	12.94	13.17	12.91	13.44	14.13	14.93	15.27	15.48	14.89	13.41
9	13.03	13.64	13.03	13.22	12.93	13.45	14.16	14.95	15.28	15.48	14.41	13.57
10	13.11	13.68	13.12	13.29	12.96	13.52	14.18	14.96	15.28	15.50	14.21	13.71
11	13.13	13.70	13.06	13.37	13.08	13.56	14.20	15.01	15.29	15.52	13.90	13.87
12	13.25	13.71	13.15	13.38	13.14	13.61	14.22	15.03	15.22	15.54	13.79	13.99
13	13.31	13.00	13.24	13.44	13.15	13.63	14.23	15.04	15.26	15.55	13.26	14.03
14	13.29	13.20	13.30	13.51	13.23	13.67	14.26	15.05	15.28	15.58	12.92	13.96
15	13.33	13.30	13.36	13.55	13.28	13.69	14.28	15.04	15.30	15.59	13.05	14.08
16	13.40	13.34	13.37	13.62	13.33	13.71	14.29	15.05	15.32	15.54	13.30	14.24
17	13.47	13.32	13.43	13.67	13.39	13.74	14.31	15.05	15.34	15.52	13.38	14.31
18	13.52	13.01	13.52	13.71	13.40	13.75	14.35	15.08	15.36	15.55	13.10	14.40
19	13.58	12.90	13.59	13.74	13.40	13.73	14.38	15.09	15.37	15.50	13.10	14.48
20	13.63	12.93	13.62	13.77	13.41	13.78	14.45	15.11	15.37	15.43	13.20	14.52
21	13.68	13.00	13.64	13.76	13.41	13.79	14.47	14.88	15.40	14.86	13.34	14.56
22	13.69	13.05	13.66	13.28	13.36	13.81	14.50	14.78	15.44	14.96	13.36	14.62
23	13.72	12.34	13.71	13.03	13.34	13.88	14.53	14.94	15.46	14.99	13.29	14.61
24	13.75	12.27	13.68	12.88	13.28	13.91	14.56	15.02	15.23	15.04	13.49	14.48
25	13.79	12.06	13.70	12.73	13.18	13.95	14.59	14.98	15.19	15.00	13.53	14.53
26	13.78	12.05	13.77	12.70	13.18	13.96	14.63	14.94	15.25	14.90	13.70	14.59
27	13.68	12.08	13.52	12.70	13.17	13.98	14.64	15.01	15.27	14.93	13.86	14.56
28	13.61	12.09	13.66	12.70	13.19	14.00	14.69	15.05	15.30	14.95	14.00	14.58
29	13.38	12.20	13.43	12.75	---	13.99	14.73	15.09	15.35	14.92	14.09	14.62
30	13.51	12.21	13.32	12.84	---	13.94	14.77	15.11	15.37	14.97	14.21	14.41
31	13.58	---	13.36	12.91	---	13.99	---	15.11	---	14.81	14.34	---
MEAN	13.24	13.07	13.22	13.23	13.10	13.67	14.34	14.98	15.28	15.28	13.87	14.08

WTR YR 1997 MEAN 13.94 HIGHEST 12.04 OCT. 1, 1996 LOWEST 15.61 JULY 15, 16, 1997

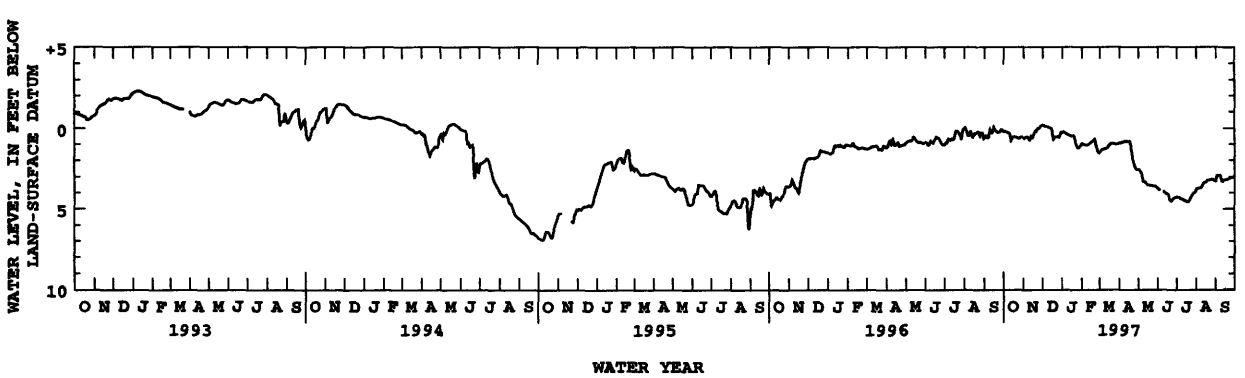


182417066042700. Local number, PN-10.
LOCATION.--Lat 18°24'17", long 66°04'27", Hydrologic Unit 21010005, 3.96 mi southeast of Cataño plaza, 1.00 mi southwest of Escuela J.J. Osuna, and 2.26 mi east of WAPA TV radio anthena. Owner: U.S. Geological Survey, WRD, Name: Las Américas No. 1.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation well, cased 4.0 in (0.10 m), 0-80 ft (0-24.39 m), 4.0 in (0.10 m), perforated pipe 80-90 ft (24.39-27.43 m). Depth 90 ft (27.43 m).
INSTRUMENTATION.--Digital water level recorder--15-minute punch.
DATUM.--Elevation of land-surface datum is about 16 ft (4.89 m) above mean sea level, from topographic map. Measuring point: Hole on well shaft, 3.10 ft (0.95 m) above land-surface datum.
REMARKS.--Recording observation well. Well affected by pumping during June 1994. [+, above land-surface datum].
PERIOD OF RECORD.--October 1989 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +2.30 ft (+0.70 m) above land-surface datum, Jan. 9-12, 1993; lowest water level recorded, 6.92 ft (2.11 m) below land-surface datum, Oct. 6-9, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.21	.58	+.19	.31	.97	1.54	.95	2.57	3.71	4.26	3.76	3.28
2	.26	.65	+.19	.29	.93	1.46	.94	2.56	3.76	4.26	3.75	3.28
3	.23	.66	+.19	.23	.97	1.45	.93	2.56	3.79	4.27	3.74	2.93
4	.18	.60	+.16	.24	1.02	1.38	.93	2.62	3.85	4.27	3.71	2.93
5	.23	.57	+.10	.26	1.00	1.35	.87	2.68	3.89	4.29	3.71	2.90
6	.23	.54	+.09	.29	1.02	1.31	.86	2.74	---	4.31	3.71	2.90
7	.24	.54	+.10	.32	1.05	1.31	.86	2.79	---	4.38	3.70	2.90
8	.26	.55	+.10	.35	1.07	1.30	.86	3.07	---	4.38	3.70	2.90
9	.28	.57	+.09	.39	1.06	1.28	.85	3.30	3.91	4.38	3.70	2.90
10	.34	.68	+.07	.40	1.03	1.28	.82	3.31	3.91	4.38	3.60	3.10
11	.35	.72	+.04	.42	1.03	1.28	.82	3.31	3.95	4.39	3.51	3.28
12	.36	.76	+.03	.44	1.02	1.28	.82	3.32	3.95	4.45	3.48	3.29
13	.78	.52	.00	.47	.98	1.23	.82	3.35	4.00	4.48	3.38	3.29
14	.73	.53	.01	.50	.98	1.21	.82	3.39	4.06	4.49	3.37	3.22
15	.63	.64	.02	.50	.91	1.14	.84	3.46	4.08	4.51	3.36	3.21
16	.56	.58	.03	.50	.89	1.08	.84	3.52	4.08	4.51	3.35	3.21
17	.54	.50	.41	.48	.87	1.04	.82	3.53	4.08	4.55	3.35	3.17
18	.53	.35	.73	.46	.83	1.00	.83	3.53	4.08	4.57	3.23	3.17
19	.54	.34	.67	.47	.80	.96	.98	3.53	4.33	4.57	3.22	3.17
20	.56	.15	.63	.46	.76	.95	1.32	3.54	4.47	4.57	3.22	3.17
21	.58	.22	.55	.57	.74	.96	1.57	3.54	4.49	4.46	3.21	3.16
22	.59	.22	.54	.74	.67	.95	1.77	3.54	4.51	4.37	3.21	3.14
23	.61	.09	.54	1.04	.95	.96	1.94	3.56	4.52	4.30	3.20	3.12
24	.61	.01	.54	1.03	1.22	.97	2.08	3.58	4.43	4.24	3.19	3.08
25	.64	.02	.54	1.20	1.21	.99	2.23	3.58	4.38	4.20	3.19	3.05
26	.66	.04	.56	1.23	1.49	1.01	2.36	3.59	4.34	4.13	3.18	3.05
27	.63	+.01	.56	1.25	1.52	1.00	2.45	3.59	4.32	4.07	3.17	3.05
28	.60	+.11	.60	1.23	1.57	1.02	2.51	3.59	4.31	4.02	3.19	3.05
29	.54	+.14	.42	1.15	---	1.01	2.56	3.61	4.30	3.99	3.21	3.05
30	.54	+.15	.27	1.11	---	.96	2.58	3.65	4.27	3.99	3.26	2.99
31	.57	---	.30	1.08	---	.96	---	3.68	---	3.95	3.28	---
MEAN	.47	.37	.21	.63	1.02	1.15	1.33	3.30	4.14	4.32	3.41	3.10

WTR YR 1997 MEAN 1.94 HIGHEST +0.19 NOV. 30, DEC. 1-4, 1996 LOWEST 4.58 JULY 18, 19, 1997



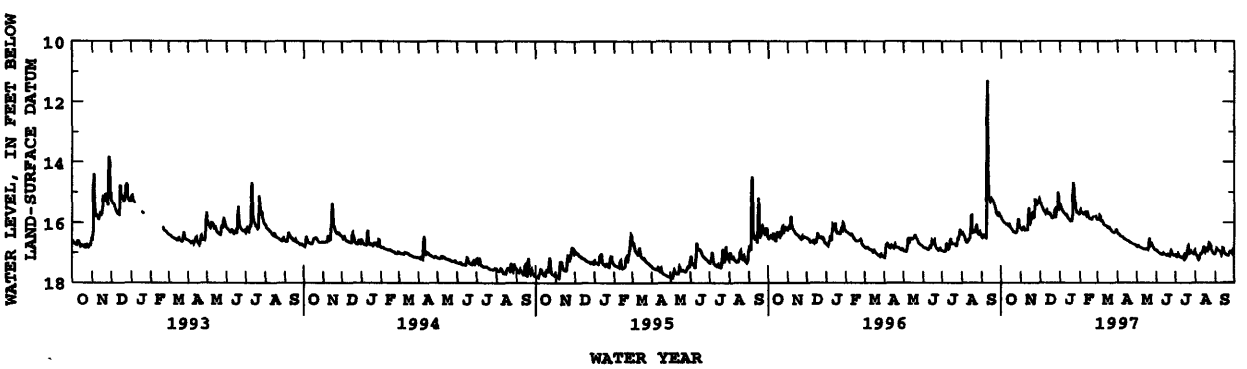
+ above land-surface datum

182349066032600. Local number, PN-13.
LOCATION.--Lat 18°23'49", long 66°03'26", Hydrologic Unit 21010005, 5.15 mi southeast of Cataño plaza, 1.28 mi south of Escuela J.J. Osuna, and 0.69 mi southwest of University of Puerto Rico main gate. Owner: U.S. Geological Survey, WRD, Name: Jardín Botánico No. 1.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 4 in (0.10 m) cased 4.0 in (0.10 m), 0-45 ft (0-13.72 m), perforated 35-45 ft (10.67-13.72 m). Depth 45 ft (13.72 m).
INSTRUMENTATION.--Digital water level recorder--15-minute punch.
DATUM.--Elevation of land-surface datum is about 32 ft (9.75 m) above mean sea level, from topographic map. Measuring point: Hole on well shaft, 2.84 ft (0.86 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--March 1989 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.96 ft (2.12 m) below land-surface datum, Sept. 10, 1996; lowest water level recorded, 17.87 ft (5.45 m) below land-surface datum, Oct. 7, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.80	16.19	15.33	15.61	15.72	15.90	16.33	16.78	16.93	17.04	16.99	17.01
2	15.86	16.22	15.30	15.42	15.51	15.91	16.38	16.81	16.90	17.11	17.07	17.08
3	15.90	16.25	15.44	15.51	15.64	15.91	16.39	16.81	16.95	17.14	17.08	16.88
4	15.94	16.16	15.49	15.56	15.69	15.85	16.39	16.73	16.98	17.15	17.10	16.83
5	15.97	16.14	15.52	15.60	15.65	15.66	16.44	16.80	17.00	17.03	17.18	16.90
6	16.00	16.15	15.59	15.64	15.71	15.91	16.46	16.82	17.01	17.04	17.26	16.93
7	16.01	16.25	15.62	15.67	15.72	15.97	16.47	16.81	17.02	17.12	17.24	16.93
8	16.02	16.25	15.64	15.70	15.72	15.93	16.47	16.84	17.04	17.14	17.18	16.93
9	16.05	16.25	15.67	15.72	15.68	15.95	16.48	16.85	17.06	17.14	17.01	16.97
10	16.07	16.25	15.72	15.76	15.66	16.03	16.49	16.85	17.07	17.16	17.07	17.00
11	16.03	16.24	15.49	15.76	15.75	16.07	16.55	16.87	17.08	17.18	17.03	17.03
12	16.08	16.24	15.68	15.72	15.76	16.09	16.55	16.88	16.99	17.11	17.05	17.13
13	16.10	15.11	15.71	15.84	15.53	16.09	16.55	16.89	17.03	17.17	16.99	16.88
14	16.01	15.91	15.72	15.87	15.76	16.10	16.58	16.87	17.05	17.21	16.76	16.79
15	16.10	16.04	15.72	15.88	15.79	16.12	16.58	16.90	17.07	17.22	16.83	16.91
16	16.16	16.02	15.65	15.91	15.87	16.13	16.61	16.90	17.07	16.89	16.98	17.03
17	16.20	15.92	15.73	15.94	15.88	16.17	16.61	16.85	17.09	17.13	16.96	17.01
18	16.22	15.68	15.76	15.98	15.88	16.17	16.61	16.88	17.10	17.22	16.78	17.05
19	16.25	15.75	15.84	15.95	15.88	16.11	16.61	16.90	17.04	17.08	16.94	17.07
20	16.29	15.79	15.86	15.97	15.89	16.18	16.65	16.92	17.06	16.99	16.96	17.09
21	16.31	15.87	15.85	15.77	15.90	16.21	16.67	16.59	17.10	16.58	16.96	17.09
22	16.31	15.87	15.79	14.55	15.75	16.24	16.67	16.45	17.12	16.94	16.78	17.11
23	16.33	15.26	15.86	14.80	15.87	16.28	16.69	16.75	17.13	17.00	16.57	17.08
24	16.33	15.21	15.31	15.05	15.74	16.30	16.70	16.82	16.96	17.03	16.80	16.93
25	16.36	15.26	15.80	15.35	---	16.32	16.72	16.72	16.91	16.92	16.66	16.98
26	16.30	15.33	15.90	15.55	15.69	16.33	16.72	16.73	17.04	16.99	16.87	16.93
27	16.11	15.45	15.34	15.66	15.83	16.33	16.73	16.82	17.06	17.03	16.93	16.98
28	15.77	15.30	15.75	15.68	15.89	16.35	16.73	16.82	17.09	17.04	16.97	17.02
29	15.97	15.42	15.18	15.66	---	16.30	16.75	16.88	17.10	17.03	17.02	17.05
30	16.15	15.10	14.82	15.71	---	16.19	16.76	16.90	17.10	17.07	17.04	16.79
31	16.18	---	15.48	15.72	---	16.30	---	16.92	---	16.89	17.07	---
MEAN	16.10	15.83	15.60	15.63	15.75	16.11	16.58	16.82	17.04	17.06	16.97	16.98

WTR YR 1997 MEAN 16.38 HIGHEST 13.28 NOV. 13, 1996 LOWEST 17.36 AUG. 5, 1997

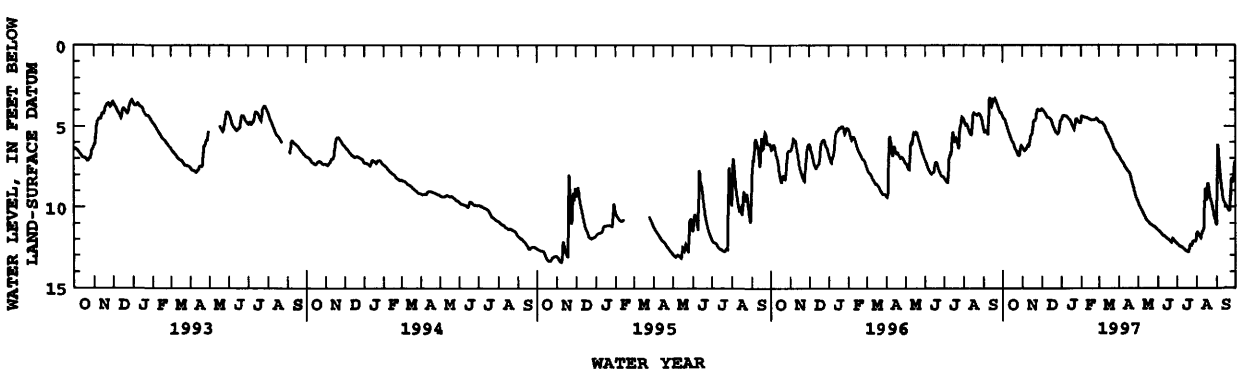


182406066034700. Local number, PN-19.
LOCATION.--Lat 18°24'06", long 66°03'47", Hydrologic Unit 21010005, 4.65 mi southeast of Cataño plaza, 0.89 mi south of Escuela J.J. Osuna, and 0.78 mi southwest of University of Puerto Rico main gate. Owner: U.S. Geological Survey, WRD, Name: Jardín Botánico No. 3.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 4 in (0.10 m) cased 4.0 in (0.10 m), 0-48 ft (0-14.6 m), perforated 38-48 ft (11.6-14.6 m). Depth 48 ft.(14.6 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 32 ft (9.75 m) above mean sea level, from topographic map. Measuring point: Hole on well shaft, 2.91 ft (0.88 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--June 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 3.06 ft (0.93 m) below land-surface datum, Sept. 11, 1996; lowest water level recorded, 13.43 ft (4.09 m) below land-surface datum, Nov. 8, 9, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.33	6.29	3.91	4.60	4.77	4.69	6.80	9.61	11.40	12.25	11.65	11.07
2	4.46	6.32	3.94	4.59	4.40	4.74	6.86	9.73	11.44	12.28	11.55	11.19
3	4.55	6.40	3.98	4.36	4.39	4.75	6.94	9.84	11.47	12.32	11.58	6.03
4	4.51	6.50	4.04	4.34	4.40	4.76	7.02	9.92	11.50	12.37	11.66	6.21
5	4.55	6.53	4.07	4.34	4.41	4.76	7.10	10.00	11.54	12.42	11.73	6.82
6	4.68	6.47	4.13	4.33	4.42	4.76	7.15	10.06	11.60	12.45	11.80	7.39
7	4.84	6.40	4.21	4.35	4.43	4.76	7.22	10.15	11.64	12.45	11.88	7.86
8	4.98	6.39	4.23	4.36	4.46	4.87	7.26	10.22	11.68	12.47	11.94	8.25
9	5.11	6.23	4.36	4.37	4.47	4.88	7.31	10.32	11.73	12.47	11.61	8.66
10	5.25	6.13	4.44	4.41	4.45	4.93	7.38	10.40	11.78	12.51	11.54	8.96
11	5.34	6.17	4.47	4.45	4.46	5.01	7.52	10.47	11.82	12.55	11.47	9.26
12	5.46	6.25	4.47	4.51	4.49	5.18	7.56	10.55	11.79	12.58	11.44	9.55
13	5.56	5.94	4.47	4.55	4.53	5.27	7.59	10.65	11.82	12.63	11.18	9.66
14	5.70	5.61	4.48	4.59	4.55	5.38	7.70	10.74	11.89	12.68	8.74	9.71
15	5.80	5.55	4.54	4.61	4.57	5.42	7.75	10.79	11.91	12.71	8.96	9.77
16	5.91	5.52	4.59	4.71	4.58	5.48	7.78	10.86	11.95	12.73	9.43	9.89
17	5.97	5.46	4.63	4.81	4.62	5.58	7.83	10.87	11.98	12.74	9.76	9.90
18	6.00	4.91	4.80	4.92	4.62	5.68	7.85	10.91	12.02	12.77	8.56	9.94
19	6.12	4.64	4.97	5.00	4.62	5.71	7.97	10.98	12.05	12.78	8.47	10.04
20	6.28	4.64	5.02	5.06	4.62	5.81	8.11	11.04	12.08	12.78	8.75	10.14
21	6.40	4.64	5.14	5.23	4.63	5.92	8.29	11.07	12.12	12.48	9.09	10.20
22	6.45	4.66	5.23	5.19	4.59	6.00	8.46	11.06	12.17	12.34	9.43	10.26
23	6.51	4.33	5.33	4.80	4.58	6.11	8.59	11.10	12.21	12.34	9.50	10.13
24	6.65	4.06	5.37	4.59	4.59	6.26	8.73	11.14	11.97	12.38	9.65	8.97
25	6.73	3.94	5.37	4.53	4.52	6.36	8.89	11.17	11.96	12.38	9.81	8.09
26	6.81	3.97	5.47	4.57	4.51	6.45	9.05	11.20	12.04	12.15	10.01	8.34
27	6.82	4.01	5.47	4.65	4.58	6.49	9.18	11.20	12.09	12.11	10.20	8.62
28	6.81	4.05	5.43	4.71	4.63	6.56	9.33	11.22	12.13	12.13	10.43	8.14
29	6.40	4.03	5.19	4.75	---	6.66	9.45	11.28	12.17	12.13	10.61	8.13
30	6.21	4.03	4.76	4.77	---	6.68	9.53	11.31	12.22	12.13	10.78	7.23
31	6.21	---	4.63	4.77	---	6.73	---	11.35	---	12.13	10.91	---
MEAN	5.72	5.34	4.68	4.64	4.53	5.57	7.94	10.68	11.87	12.44	10.46	8.95

WTR YR 1997 MEAN 7.75 HIGHEST 3.91 DEC. 1, 1996 LOWEST 12.78 JULY 18, 19, 20, 1997



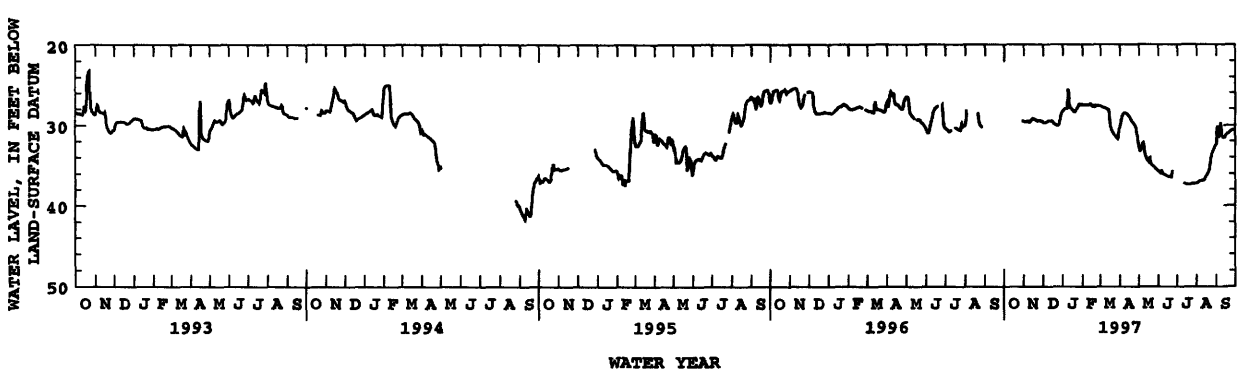
RIO GRANDE DE LOIZA BASIN

181550065593200. Local number, 50.
LOCATION.--Lat 18°15'50", long 65°59'32", Hydrologic Unit 21010005, 1.36 mi northwest of Gurabo plaza, 0.70 mi north of Estación Experimental Agrícola, and 2.42 mi southwest of Escuela Jos% M. Gallardo. Owner: Gurabo Agricultural Experimental Station, Name: Gurabo.
AQUIFER.--Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 13 in (0.34 m), cased 4 in (0.10 m), 0-145 ft (0-44.2 m). Depth 145 ft (44.2 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 148 ft (45.1 m) above mean sea level, from topographic map. Measuring point: Top of 12 in (0.30 m) casing, 0.80 ft (0.24 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--December 1960 to March 1985, September 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.6 ft (3.86 m) below land-surface datum, Sept. 9, 1975; lowest water level measured, 44.4 ft (13.5 m) below land-surface datum, June 18, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	29.51	29.53	28.30	27.45	27.65	30.30	32.54	35.64	---	37.22	32.43
2	---	29.61	29.71	28.25	27.51	27.66	30.21	32.87	35.72	---	37.19	32.34
3	---	29.58	29.72	28.13	27.51	27.72	29.60	33.13	35.79	---	37.17	29.13
4	---	29.63	29.72	28.04	27.46	27.75	29.19	33.33	35.83	---	37.05	31.19
5	---	29.59	29.70	27.98	27.46	27.78	28.87	33.02	35.91	---	36.96	31.37
6	---	29.51	29.67	27.97	27.46	27.80	28.66	32.63	35.96	---	36.95	31.38
7	---	29.51	29.64	27.95	27.50	27.84	28.57	32.36	35.37	---	36.94	30.90
8	---	29.47	29.59	27.94	27.54	27.89	28.52	32.18	35.99	---	36.95	29.79
9	---	29.52	29.54	27.93	27.54	27.92	28.52	32.20	36.08	---	36.96	29.68
10	---	29.67	29.52	23.94	27.52	27.93	28.53	32.79	36.09	---	36.95	31.20
11	---	29.69	29.44	27.11	27.50	27.96	28.56	33.48	36.11	37.16	36.92	31.51
12	---	29.47	29.46	27.57	27.47	28.01	28.59	33.74	36.14	37.19	36.90	31.64
13	---	29.34	29.47	27.82	27.40	28.14	28.64	33.98	36.17	37.23	36.85	31.56
14	---	29.34	29.48	27.92	27.28	28.19	28.73	34.14	36.22	37.27	36.75	31.52
15	---	29.17	29.52	27.99	27.49	28.08	28.85	34.31	36.27	37.32	36.59	31.46
16	---	29.23	29.51	28.11	27.59	29.14	28.91	34.42	36.31	37.36	36.44	31.35
17	---	29.25	29.69	28.10	27.66	29.87	29.06	34.54	36.36	37.38	36.32	31.20
18	---	29.26	29.77	28.27	27.72	30.27	29.15	34.66	36.37	37.39	36.21	31.11
19	---	29.28	29.85	28.35	27.45	30.53	29.32	33.58	36.39	37.40	36.03	31.07
20	---	29.38	29.89	28.43	27.62	30.69	29.44	34.51	36.40	37.42	35.90	31.04
21	---	29.40	29.94	28.39	27.70	30.84	29.55	34.77	36.42	37.40	35.75	31.02
22	---	29.51	29.99	28.19	27.74	30.96	29.68	34.91	36.43	37.33	35.47	30.94
23	---	29.49	30.05	28.02	27.54	31.13	29.76	34.99	36.48	37.31	34.69	30.84
24	---	29.42	30.07	27.90	27.61	31.27	29.87	35.08	35.35	37.29	34.14	30.73
25	---	29.45	30.06	27.79	27.59	31.39	30.00	35.13	35.92	37.24	33.58	30.71
26	---	29.41	30.00	27.63	27.61	31.49	30.10	35.16	---	37.24	33.42	30.63
27	---	29.40	29.90	27.30	27.59	31.55	30.23	35.26	---	37.29	33.26	30.65
28	---	29.55	29.46	27.51	27.61	31.67	30.45	35.33	---	37.30	33.05	30.60
29	29.46	29.54	28.91	27.51	---	31.77	31.54	35.43	---	37.28	32.84	30.55
30	29.44	29.49	28.62	27.51	---	31.24	32.14	35.50	---	37.25	32.69	30.50
31	29.51	---	28.42	27.48	---	30.64	---	35.56	---	37.24	32.53	---
MEAN	29.47	29.46	29.61	27.78	27.54	29.44	29.45	34.05	36.07	37.30	35.70	31.00

WTR YR 1997 MEAN 31.35 HIGHEST 23.94 JAN. 10, 1997 LOWEST 37.43 JULY 20, 1997

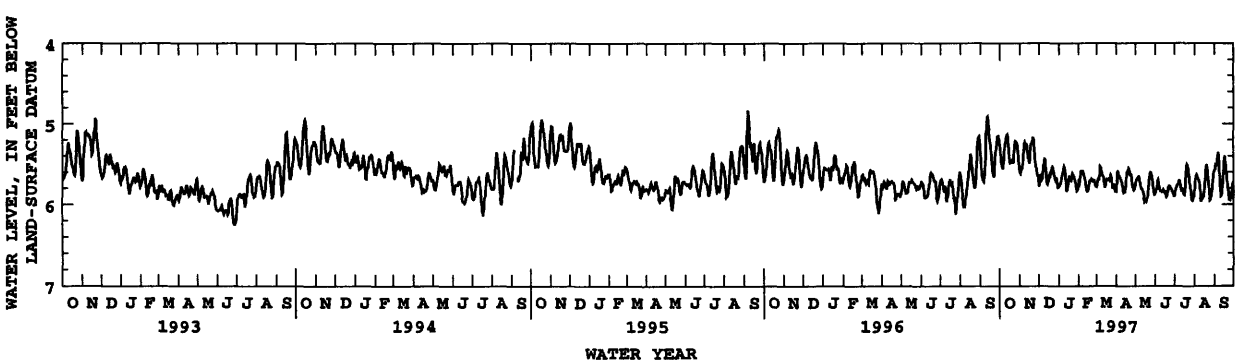


182515065594100. Local number, 222.
LOCATION.--Lat 18°25'15", long 65°59'41", Hydrologic Unit 21010005, 3.56 mi northwest of Carolina plaza, 1.21 mi northwest of Escuela Extensión El Comandante, and 0.74 mi southwest of Escuela Vistamar. Owner: U.S. Geological Survey, WRD, Name: Campo Rico TW-1.
AQUIFER.--Surficial Deposits.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m). Depth 100 ft (30.5 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 10.0 ft (3.05 m) above mean sea level, from topographic map. Measuring point: Hole on side of casing, 0.80 ft (0.24 m) above land-surface datum. Prior July 28, 1986, top of shelter floor, 3.10 ft (0.94 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--February 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 4.33 ft (1.32 m) below land-surface datum, Sept. 6, 1995; lowest water level recorded, 7.42 ft (2.26 m) below land-surface datum, Feb. 9, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.24	5.55	5.77	5.78	5.71	5.78	5.84	5.75	5.85	5.90	5.84	5.58
2	5.27	5.64	5.79	5.78	5.74	5.79	5.75	5.70	5.83	5.82	5.74	5.58
3	5.41	5.59	5.66	5.75	5.75	5.72	5.57	5.69	5.82	5.82	5.66	5.55
4	5.51	5.55	5.62	5.75	5.64	5.68	5.59	5.68	5.77	5.77	5.63	5.46
5	5.51	5.58	5.65	5.71	5.58	5.68	5.66	5.67	5.66	5.78	5.63	5.56
6	5.57	5.52	5.75	5.64	5.59	5.69	5.65	5.65	5.73	5.73	5.67	5.49
7	5.55	5.42	5.63	5.61	5.58	5.57	5.67	5.66	5.77	5.77	5.69	5.31
8	5.42	5.29	5.55	5.61	5.59	5.50	5.69	5.71	5.83	5.70	5.69	5.40
9	5.27	5.23	5.48	5.51	5.61	5.60	5.71	5.78	5.83	5.69	5.74	5.58
10	5.26	5.23	5.49	5.55	5.66	5.60	5.74	5.81	5.85	5.77	5.81	5.78
11	5.21	5.29	5.39	5.56	5.68	5.67	5.78	5.81	5.84	5.81	5.94	5.87
12	5.15	5.29	5.50	5.68	5.73	5.62	5.88	5.82	5.86	5.85	5.97	5.92
13	5.14	5.26	5.68	5.82	5.81	5.72	5.84	5.85	5.83	5.79	5.94	5.85
14	5.13	5.44	5.79	5.86	5.84	5.80	5.87	5.87	5.82	5.84	5.92	5.77
15	5.23	5.41	5.71	5.78	5.84	5.79	5.83	5.96	5.88	5.87	5.93	5.65
16	5.40	5.44	5.73	5.73	5.83	5.74	5.75	5.97	5.83	5.89	5.83	5.53
17	5.47	5.55	5.69	5.66	5.77	5.70	5.65	5.92	5.87	5.88	5.77	5.39
18	5.51	5.30	5.60	5.63	5.74	5.68	5.59	5.96	5.93	5.77	5.67	5.41
19	5.46	5.23	5.64	5.70	5.68	5.71	5.59	5.96	5.89	5.58	5.58	5.56
20	5.48	5.26	5.63	5.71	5.75	5.67	5.58	5.91	5.86	5.51	5.47	5.61
21	5.43	5.21	5.56	5.71	5.67	5.70	5.53	5.83	5.81	5.50	5.54	5.68
22	5.53	5.20	5.55	5.63	5.70	5.70	5.61	5.73	5.76	5.55	5.62	5.79
23	5.43	5.13	5.52	5.61	5.70	5.64	5.66	5.66	5.79	5.57	5.77	5.85
24	5.32	5.28	5.58	5.65	5.74	5.64	5.62	5.61	5.77	5.71	5.80	5.93
25	5.23	5.40	5.63	5.64	5.70	5.69	5.65	5.60	5.80	5.75	5.94	5.94
26	5.20	5.52	5.66	5.70	5.68	5.80	5.79	5.62	5.82	5.80	5.96	5.93
27	5.24	5.56	5.71	5.72	5.77	5.81	5.78	5.66	5.83	5.88	5.92	5.96
28	5.23	5.55	5.70	5.75	5.78	5.72	5.82	5.74	5.87	5.94	5.85	5.87
29	5.26	5.71	5.63	5.84	---	5.80	5.83	5.82	5.85	5.96	5.78	5.81
30	5.39	5.58	5.78	5.83	---	5.84	5.80	5.86	5.92	5.95	5.69	5.73
31	5.50	---	5.81	5.82	---	5.85	---	5.90	---	5.91	5.60	---
MEAN	5.35	5.41	5.64	5.70	5.71	5.71	5.71	5.78	5.83	5.78	5.76	5.68

WTR YR 1997 MEAN 5.67 HIGHEST 4.85 NOV. 18, 1996 LOWEST 6.19 JAN. 8, 1997



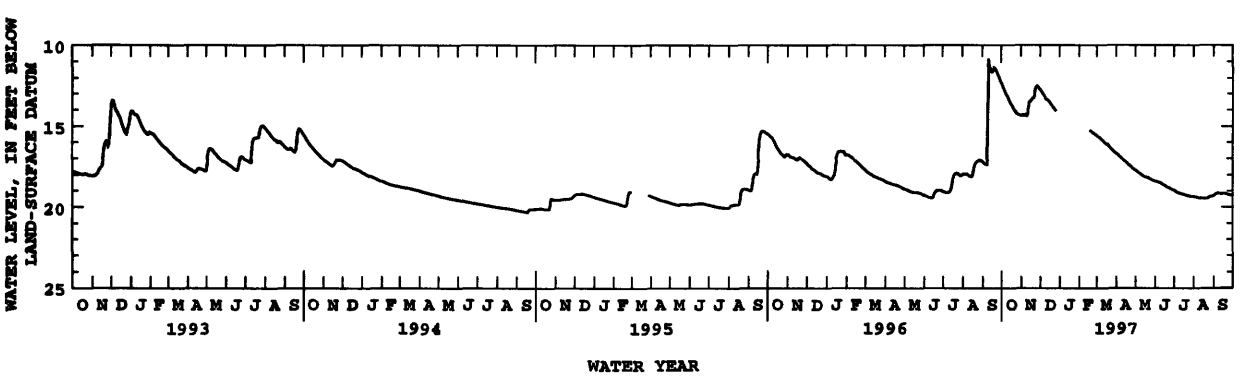
RIO GRANDE DE LOIZA BASIN

181513065554601. Local number, CJ-TW3B.
LOCATION.--Lat 18°15'13", long 65°55'46", Hydrologic Unit 21010005, 2.86 mi east of Gurabo plaza, 3.57 mi southwest of Hwy 186 km 4.7, and 1.39 mi southwest of Hwy 185 km 15.7. Owner: U.S. Geological Survey, WRD, Name: CJ-TW3B.
AQUIFER.--Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-38 ft (0-11.6 m) screened 25-35 ft (7.62 m). Depth 38 ft (11.6 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 187 ft (57.0 m) above mean sea level, from topographic map. Measuring point: Top of casing 2.95 ft (0.90 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--September 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 10.64 ft (3.24 m) below land-surface datum, Sept. 11, 1996; lowest water level recorded, 20.31 ft (6.19 m) below land-surface datum, Sept. 19, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.29	14.36	12.73	---	---	15.55	16.66	17.72	18.39	18.96	19.35	19.29
2	12.40	14.36	12.77	---	---	15.58	16.70	17.73	18.41	18.97	19.35	19.27
3	12.47	14.28	12.83	---	---	15.62	16.73	17.76	18.41	18.99	19.35	19.25
4	12.58	14.28	12.90	---	---	15.66	16.74	17.79	18.41	19.02	19.35	19.22
5	12.69	14.32	12.96	---	---	15.68	16.77	17.83	18.43	19.05	19.37	19.17
6	12.76	14.37	13.03	---	---	15.70	16.84	17.85	18.44	19.08	19.38	19.15
7	12.87	14.32	13.07	---	---	15.73	16.86	17.89	18.44	19.08	19.39	19.14
8	12.94	14.27	13.10	---	---	15.77	16.90	17.93	18.47	19.11	19.40	19.13
9	13.05	14.27	13.23	---	---	15.83	16.93	17.94	18.48	19.12	19.41	19.13
10	13.12	14.32	13.32	---	---	15.84	16.96	17.96	18.50	19.13	19.42	19.13
11	13.13	14.39	13.35	---	---	15.87	17.03	17.99	18.52	19.15	19.43	19.15
12	13.29	14.20	13.35	---	---	15.92	17.06	18.02	18.55	19.16	19.44	19.16
13	13.37	13.75	13.37	---	---	15.96	17.09	18.07	18.58	19.17	19.44	19.16
14	13.44	13.51	13.40	---	---	16.00	17.14	18.09	18.60	19.18	19.44	19.16
15	13.54	13.44	13.44	---	---	16.04	17.17	18.10	18.63	19.19	19.45	19.17
16	13.62	13.45	13.50	---	---	16.07	17.20	18.12	18.64	19.19	19.45	19.17
17	13.66	13.45	13.55	---	---	16.10	17.23	18.14	18.67	19.21	19.46	19.15
18	13.73	13.35	13.63	---	15.26	16.12	17.27	18.15	18.69	19.22	19.46	19.15
19	13.78	13.27	13.69	---	15.26	16.12	17.33	18.16	18.73	19.24	19.46	19.15
20	13.89	13.26	13.71	---	15.30	16.13	17.36	18.16	18.75	19.25	19.47	19.15
21	13.95	13.25	13.78	---	15.32	16.25	17.39	18.17	18.76	19.26	19.47	19.16
22	14.03	13.25	13.85	---	15.36	16.30	17.41	18.19	18.79	19.28	19.47	19.17
23	14.07	12.75	13.88	---	15.40	16.33	17.45	18.23	18.80	19.28	19.44	19.20
24	14.11	12.62	13.93	---	15.42	16.38	17.48	18.25	18.80	19.31	19.43	19.21
25	14.17	12.56	14.00	---	15.43	16.41	17.52	18.26	18.84	19.31	19.39	19.22
26	14.22	12.52	14.05	---	15.47	16.46	17.57	18.28	18.86	19.31	19.35	19.24
27	14.27	12.53	14.08	---	15.51	16.49	17.59	18.31	18.88	19.32	19.33	19.25
28	14.29	12.59	---	---	15.54	16.53	17.64	18.33	18.90	19.33	19.33	19.25
29	14.28	12.62	---	---	---	16.59	17.66	18.34	18.92	19.34	19.33	19.25
30	14.30	12.70	---	---	---	16.60	17.68	18.37	18.93	19.34	19.33	19.26
31	14.33	---	---	---	---	16.63	---	18.38	---	19.34	19.32	---
MEAN	13.50	13.55	13.43	---	15.39	16.07	17.18	18.08	18.64	19.19	19.40	19.19

WTR YR 1997 MEAN 16.81 HIGHEST 12.26 OCT. 1, 1996 LOWEST 19.47 AUG. 20, 21, 22, 1997

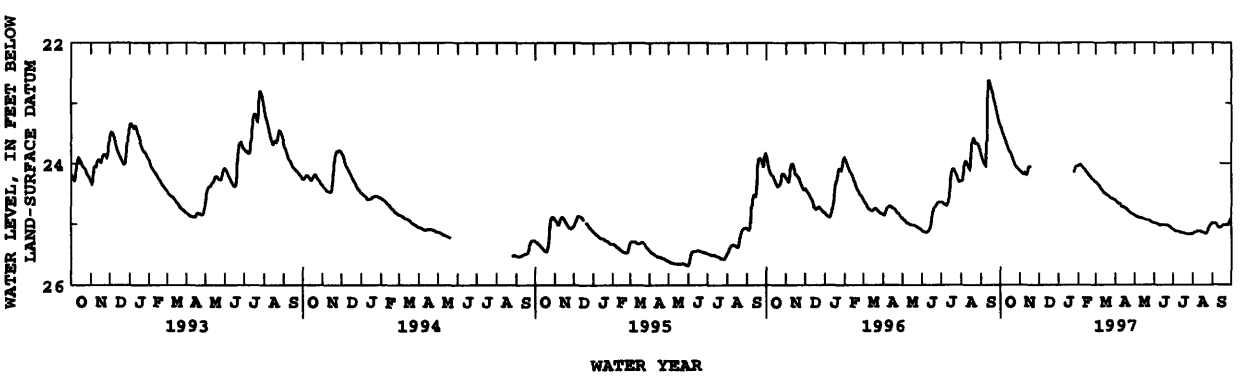


181352066025300. Local number, CJ-TW19A.
LOCATION.--Lat 18°13'52", long 66°02'53", Hydrologic Unit 21010005, 0.96 mi southwest of Caguas plaza, 1.02 mi northwest of Escuela Antonio S. Pedreira, and 0.30 mi southeast of Hwy 156 km 59.1. Owner: U.S. Geological Survey, WRD, Name: CJ-TW19A, Bonneville.
AQUIFER.--Unconsolidated deposits of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-67 ft (0-20.4 m), screened 50-65 ft (15.2-19.8 m). Depth 67 ft (20.4 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 262 ft (79.8 m) above mean sea level, from topographic map. Measuring point: Top of casing 3.00 ft (0.91 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.-- June 1992 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 22.60 ft (6.89 m) below land-surface datum, Sept. 14, 1996; lowest water level recorded, 25.70 ft (7.83 m) below land-surface datum, May 31, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.37	24.12	---	---	24.04	24.31	24.61	24.85	24.98	25.09	25.16	24.99
2	23.39	24.13	---	---	24.04	24.31	24.62	24.86	24.99	25.09	25.16	24.99
3	23.41	24.14	---	---	24.03	24.32	24.64	24.87	24.99	25.10	25.15	24.99
4	23.47	24.15	---	---	24.02	24.34	24.64	24.88	24.99	25.11	25.14	24.99
5	23.50	24.17	---	---	24.02	24.35	24.66	24.88	24.99	25.12	25.14	24.99
6	23.53	24.17	---	---	24.03	24.36	24.67	24.88	24.99	25.12	25.14	24.99
7	23.55	24.18	---	---	24.04	24.38	24.67	24.89	24.99	25.12	25.13	24.99
8	23.58	24.16	---	---	24.06	24.39	24.67	24.90	25.00	25.12	25.12	25.01
9	23.62	24.15	---	---	24.07	24.42	24.67	24.90	25.01	25.12	25.12	25.02
10	23.64	24.18	---	---	24.08	24.43	24.71	24.90	25.02	25.13	25.12	25.05
11	23.66	24.19	---	---	24.10	24.44	24.71	24.90	25.02	25.13	25.12	25.06
12	23.69	24.19	---	---	24.10	24.45	24.71	24.90	25.02	25.13	25.12	25.06
13	23.72	24.14	---	---	24.12	24.48	24.72	24.90	25.02	25.13	25.12	25.06
14	23.75	24.09	---	---	24.14	24.49	24.72	24.91	25.01	25.15	25.12	25.05
15	23.78	24.06	---	---	24.15	24.49	24.73	24.91	25.01	25.15	25.13	25.04
16	23.80	24.05	---	---	24.16	24.49	24.73	24.92	25.01	25.15	25.14	25.04
17	23.81	24.06	---	---	24.18	24.51	24.74	24.92	25.01	25.14	25.14	25.03
18	23.83	24.05	---	---	24.19	24.52	24.74	24.93	25.02	25.15	25.14	25.01
19	23.85	24.06	---	---	24.21	24.52	24.75	24.93	25.02	25.15	25.15	25.01
20	23.89	---	---	---	24.22	24.53	24.76	24.93	25.02	25.16	25.15	25.01
21	23.92	---	---	---	24.23	24.54	24.77	24.93	25.01	25.16	25.16	25.01
22	23.95	---	---	---	24.24	24.55	24.79	24.93	25.02	25.16	25.16	25.01
23	23.98	---	---	---	24.26	24.56	24.80	24.93	25.02	25.16	25.16	25.01
24	24.01	---	---	24.30	24.26	24.57	24.80	24.94	25.03	25.17	25.14	25.01
25	24.04	---	---	24.19	24.26	24.58	24.82	24.95	25.03	25.17	25.11	25.01
26	24.05	---	---	24.12	24.28	24.58	24.83	24.95	25.04	25.17	25.08	25.02
27	24.07	---	---	24.08	24.29	24.58	24.83	24.96	25.05	25.16	25.05	25.01
28	24.07	---	---	24.06	24.30	24.58	24.84	24.97	25.06	25.16	25.04	24.98
29	24.08	---	---	24.05	---	24.59	24.84	24.97	25.08	25.16	25.02	24.95
30	24.10	---	---	24.05	---	24.60	24.85	24.98	25.08	25.17	25.01	24.92
31	24.11	---	---	24.04	---	24.60	---	24.98	---	25.17	24.99	---
MEAN	23.78	24.13	---	24.11	24.15	24.48	24.73	24.92	25.02	25.14	25.12	25.01

WTR YR 1997 MEAN 24.66 HIGHEST 23.35 OCT. 1, 1996 LOWEST 25.17 JULY 23-26, 30, 31, 1997



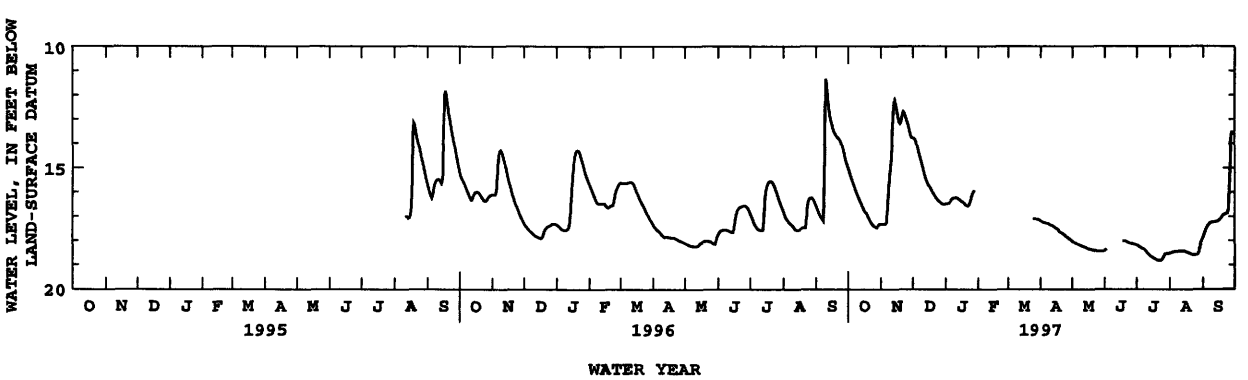
RIO HERRERA TO RIO ANTON RUIZ BASINS

181823065401900. Local number RF-04.
LOCATION.--Lat 18°18'23", long 65°40'19", Hydrologic Unit 2101005, 1.72 mi southwest of the intersection of Hwy 3 with Hwy 976, 1.44 mi west of Hwy 3, 1.33 mi northwest of Hwy 982, and 0.49 mi south of Hwy 976. Owner: U.S. Geological Survey, WRD, Name: RF-04.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m) 0-40 ft (0-12.2 m), screened 20-40 ft (6.1-12.2 m). Depth 40 ft (12.2 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 86.29 ft (26.30 m) above mean sea level, from topographic survey. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.50 ft (1.07 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--August 31, 1993 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 10.92 ft (3.33 m) below land-surface datum, Sept. 10, 1996; lowest water level recorded, 18.82 ft (5.74 m) below land-surface datum, July 21-25, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.95	17.31	13.77	16.48	---	---	17.15	17.99	18.42	18.16	18.52	17.95
2	15.06	17.31	13.77	16.47	---	---	17.18	18.04	18.37	18.18	18.51	17.84
3	15.21	17.31	13.78	16.46	---	---	17.20	18.06	18.30	18.22	18.49	17.70
4	15.36	17.31	13.85	16.46	---	---	17.25	18.08	---	18.24	18.47	17.57
5	15.47	17.31	14.02	16.46	---	---	17.25	18.11	---	18.28	18.46	17.45
6	15.60	17.31	14.22	16.35	---	---	17.25	18.13	---	18.30	18.44	17.39
7	15.74	17.23	14.40	16.29	---	---	17.27	18.15	---	18.32	18.44	17.32
8	15.88	16.19	14.56	16.25	---	---	17.27	18.17	---	18.34	18.44	17.27
9	15.99	15.59	14.71	16.23	---	---	17.29	18.19	---	18.36	18.44	17.24
10	16.10	15.10	14.87	16.23	---	---	17.31	18.21	---	18.42	18.44	17.23
11	16.20	14.64	15.05	16.22	---	---	17.34	18.24	---	18.50	18.43	17.22
12	16.31	13.81	15.21	16.22	---	---	17.36	18.24	---	18.52	18.43	17.22
13	16.39	12.47	15.38	16.24	---	---	17.37	18.26	---	18.58	18.43	17.21
14	16.50	12.18	15.50	16.28	---	---	17.41	18.28	---	18.62	18.43	17.20
15	16.59	12.23	15.60	16.31	---	---	17.44	18.30	---	18.66	18.43	17.20
16	16.67	12.54	15.69	16.35	---	---	17.47	18.32	---	18.68	18.44	17.17
17	16.82	12.77	15.75	16.38	---	---	17.50	18.33	---	18.72	18.47	17.14
18	16.82	12.99	15.80	16.40	---	---	17.53	18.34	18.00	18.74	18.49	17.09
19	16.86	13.15	15.91	16.44	---	---	17.59	18.36	18.02	18.76	18.50	17.02
20	16.98	13.20	15.99	16.51	---	---	17.65	18.37	18.02	18.80	18.51	16.94
21	17.06	12.99	16.06	16.54	---	---	17.68	18.38	18.02	18.82	18.54	16.91
22	17.15	12.68	16.13	16.56	---	---	17.68	18.39	18.02	18.82	18.56	16.89
23	17.23	12.68	16.19	16.56	---	---	17.71	18.41	18.08	18.82	18.58	16.88
24	17.31	12.80	16.26	16.48	---	---	17.74	18.42	18.08	18.82	18.58	16.87
25	17.36	12.96	16.31	16.33	---	17.08	17.79	18.43	18.10	18.82	18.58	16.86
26	17.40	13.07	16.36	16.16	---	17.09	17.83	18.43	18.12	18.72	18.58	16.44
27	17.43	13.24	16.40	16.03	---	17.09	17.86	18.43	18.12	18.62	18.57	14.05
28	17.46	13.41	16.44	15.94	---	17.09	17.89	18.43	18.12	18.54	18.57	13.54
29	17.47	13.59	16.47	15.92	---	17.10	17.93	18.43	18.14	18.53	18.37	13.52
30	17.34	13.73	16.49	---	---	17.10	17.96	18.43	18.16	18.53	18.14	13.53
31	17.31	---	16.49	---	---	17.13	---	18.43	---	18.53	18.07	---
MEAN	16.52	14.30	15.40	16.33	---	17.10	17.51	18.28	18.13	18.55	18.46	16.73

WTR YR 1997 MEAN 16.98 HIGHEST 12.18 NOV. 14, 15, 1996 LOWEST 18.82 JULY 21-25, 1997

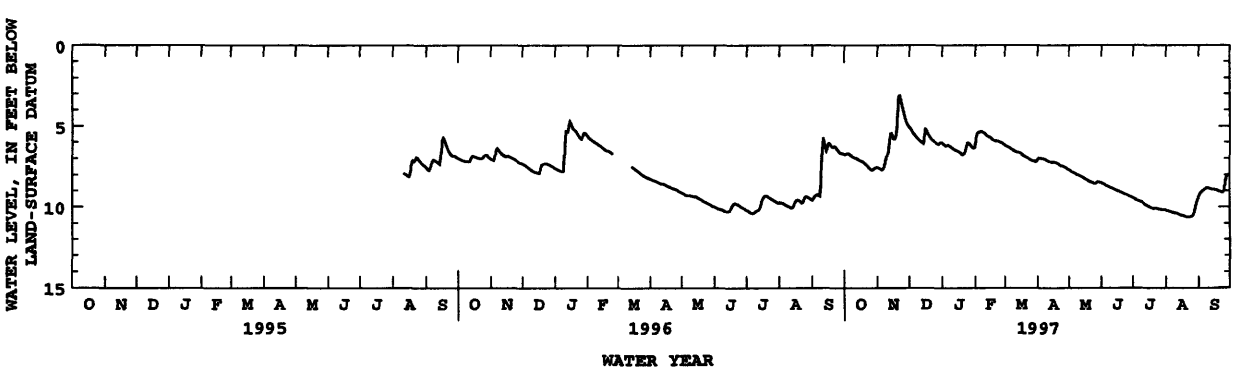


181917065382701. Local number RF-12.
LOCATION.--Lat 18°19'17", long 65°38'27", Hydrologic Unit 2101005, 1.20 mi northwest of Punta Barrancas, 0.81 mi east of Hwy 3, 0.82 mi south of Hwy 195, and 0.61 mi east of Hwy 194. Owner: U.S. Geological Survey, WRD, Name: RF-12.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-34 ft (0-10.4 m), screened 3.75-34 ft (1.14-10.4 m). Depth 34 ft (10.4 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 13.70 ft (4.18 m) above mean sea level, from topographic survey. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 4.16 ft (1.27 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--August 11, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.90 ft (0.88 m) below land-surface datum, Nov. 22, 1996; lowest water level recorded, 10.64 ft (3.24 m) below land-surface datum, Aug. 21, 22, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.74	7.56	5.04	6.04	6.34	6.17	7.13	7.70	8.51	9.43	10.18	9.48
2	6.75	7.57	5.14	6.10	5.65	6.21	7.01	7.72	8.54	9.46	10.21	9.22
3	6.76	7.61	5.24	6.18	5.41	6.25	6.96	7.77	8.58	9.52	10.23	9.15
4	6.67	7.64	5.35	6.24	5.43	6.28	6.98	7.82	8.60	9.55	10.24	9.07
5	6.69	7.70	5.46	6.23	5.32	6.32	6.99	7.84	8.64	9.59	10.27	9.01
6	6.72	7.73	5.54	6.19	5.38	6.35	7.02	7.88	8.68	9.60	10.30	8.96
7	6.79	7.64	5.62	6.20	5.35	6.40	7.03	7.91	8.71	9.64	10.32	8.89
8	6.84	7.45	5.69	6.25	5.36	6.46	7.04	7.96	8.73	9.66	10.34	8.86
9	6.87	7.15	5.79	6.29	5.41	6.48	7.07	8.00	8.78	9.68	10.36	8.81
10	6.92	6.90	5.86	6.33	5.45	6.52	7.11	8.01	8.80	9.68	10.37	8.80
11	6.94	6.79	5.91	6.39	5.52	6.58	7.15	8.04	8.83	9.76	10.38	8.83
12	6.97	6.30	5.95	6.44	5.61	6.60	7.18	8.08	8.86	9.82	10.39	8.87
13	7.00	5.57	6.02	6.49	5.64	6.62	7.20	8.11	8.89	9.85	10.43	8.89
14	7.03	5.40	6.07	6.50	5.68	6.64	7.24	8.14	8.93	9.89	10.47	8.90
15	7.08	5.52	6.13	6.54	5.68	6.64	7.26	8.18	8.95	9.94	10.50	8.91
16	7.12	5.73	5.25	6.57	5.74	6.68	7.23	8.23	8.98	9.97	10.52	8.90
17	7.17	5.89	5.16	6.61	5.81	6.74	7.23	8.25	9.02	10.00	10.53	8.92
18	7.17	5.75	5.38	6.66	5.87	6.80	7.25	8.31	9.06	10.03	10.55	8.94
19	7.20	5.58	5.52	6.71	5.89	6.84	7.25	8.34	9.07	10.06	10.57	8.97
20	7.27	4.97	5.62	6.76	5.92	6.87	7.29	8.38	9.09	10.09	10.59	9.00
21	7.32	3.31	5.72	6.80	5.95	6.90	7.32	8.42	9.12	10.11	10.62	9.03
22	7.40	2.99	5.82	6.67	5.91	6.94	7.37	8.43	9.15	10.08	10.64	9.06
23	7.46	3.26	5.88	6.46	5.95	6.97	7.43	8.46	9.19	10.08	10.61	9.06
24	7.54	3.58	5.94	6.13	5.98	7.03	7.51	8.50	9.22	10.10	10.62	9.08
25	7.61	3.88	5.99	6.02	5.99	7.06	7.43	8.54	9.24	10.12	10.60	9.11
26	7.67	4.17	6.03	6.05	6.04	7.10	7.49	8.57	9.27	10.13	10.60	8.94
27	7.71	4.44	6.08	6.15	6.07	7.14	7.53	8.57	9.31	10.14	10.51	8.34
28	7.74	4.67	6.12	6.24	6.13	7.16	7.56	8.45	9.34	10.16	10.39	8.12
29	7.67	4.85	6.15	6.32	---	7.17	7.60	8.45	9.37	10.16	10.07	8.04
30	7.60	4.96	6.03	6.37	---	7.19	7.66	8.47	9.41	10.17	9.82	7.99
31	7.57	---	6.01	6.37	---	7.23	---	8.48	---	10.18	9.60	---
MEAN	7.16	5.75	5.73	6.36	5.73	6.72	7.25	8.19	8.96	9.89	10.38	8.87

WTR YR 1997 MEAN 7.60 HIGHEST 2.90 NOV. 22, 1996 LOWEST 10.64 AUG. 21, 22, 1997



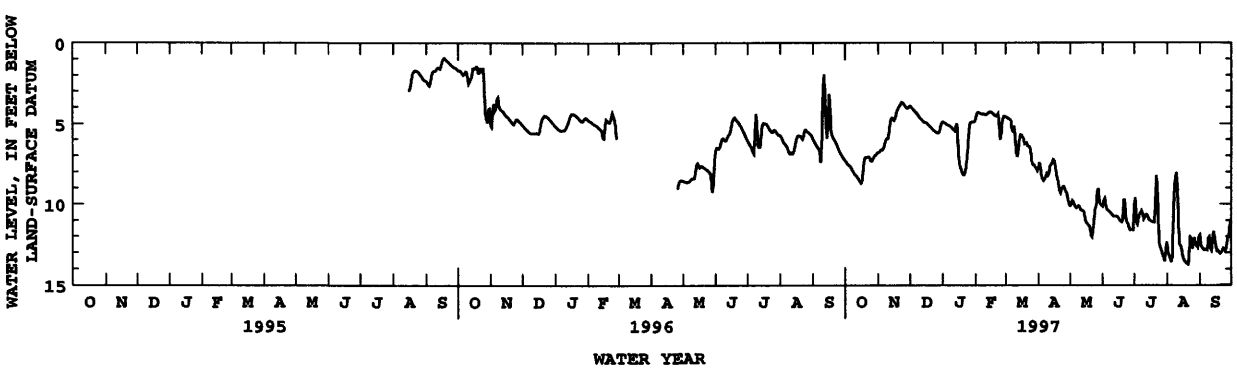
RIO HERRERA TO RIO ANTON RUIZ BASINS

182131065241100. Local number RP-04
LOCATION.--Lat. 18°21'31", long. 65°24'11", Hydrologic Unit 21010005, 1.39 mi southeast of the intersection of Hwy 992 with Hwy 3, 0.40 mi southeast of the intersection of Hwy 983 with Hwy 3, 0.12 mi northwest of the intersection with Hwy 940 with Hwy 983, and 0.03 mi southwest of Hwy 983. Owner: U.S. Geological Survey, WRD, Name: RP-04.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-39 ft (0-11.9 m), screened 4-39 ft (1.2-11.9 m). Depth 39 ft (11.9 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 82.12 ft (25.03 m) above mean sea level, from topographic survey. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 4.18 ft (1.27 m) above land-surface datum.
REMARKS.--Recording observation well. Water levels affected by nearby pumping well.
PERIOD OF RECORD.--August 15, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.91 ft (0.28 m) below land-surface datum, Sept. 18, 1995; lowest water level recorded, 14.05 ft (4.28 m) below land-surface datum, Aug. 21, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.26	6.73	3.89	4.89	4.84	4.56	8.06	9.89	10.08	11.60	11.75	11.34
2	7.34	6.82	3.92	4.90	4.44	4.58	7.45	10.30	10.21	8.44	12.96	12.48
3	7.42	6.73	4.02	4.93	4.30	4.63	7.37	9.76	9.32	10.78	13.11	12.63
4	7.55	6.62	4.10	5.00	4.32	4.67	8.09	9.79	9.95	11.47	13.23	12.73
5	7.60	6.63	4.21	5.06	4.34	4.72	8.40	9.93	10.27	11.05	13.47	12.81
6	7.62	6.64	4.25	5.10	4.37	4.75	8.52	10.10	10.36	10.68	13.72	12.87
7	7.73	6.45	4.31	5.11	4.43	4.83	8.59	10.24	10.41	10.57	12.78	12.73
8	7.86	6.11	4.40	5.16	4.40	5.88	8.33	10.20	10.47	10.55	9.53	12.92
9	7.97	5.93	4.50	5.21	4.41	5.18	8.20	10.21	10.54	10.25	8.61	12.78
10	8.11	5.93	4.61	5.27	4.45	5.12	8.00	9.99	10.61	10.93	8.18	11.44
11	8.21	5.94	4.67	5.36	4.45	6.59	8.47	10.30	10.71	10.96	7.92	12.61
12	8.26	5.22	4.73	5.43	4.42	6.98	7.79	10.36	10.76	10.67	10.24	12.86
13	8.35	4.76	4.82	5.49	4.33	7.19	7.47	10.39	10.77	10.64	12.41	12.86
14	8.45	4.64	4.88	4.80	4.29	6.23	7.62	10.40	10.72	10.66	12.60	11.48
15	8.56	4.66	4.95	5.23	4.25	5.74	7.29	10.48	10.75	10.93	12.52	11.92
16	8.65	4.77	4.94	6.93	4.29	5.66	7.21	11.02	10.83	11.00	13.13	12.32
17	8.75	4.83	4.93	7.51	4.34	5.76	7.39	11.17	10.92	11.03	13.37	12.85
18	8.40	4.45	5.03	7.77	4.42	5.89	8.02	11.21	11.07	11.07	13.50	12.94
19	7.36	4.23	5.12	7.96	4.46	5.98	8.29	11.32	11.09	11.11	13.60	12.78
20	7.13	4.06	5.17	8.16	4.53	6.54	8.56	11.38	11.13	11.14	13.65	13.20
21	7.08	3.94	5.22	8.24	4.53	5.95	8.81	11.42	10.67	11.13	13.74	12.91
22	7.10	3.89	5.31	8.16	4.43	6.44	9.49	12.46	8.83	8.73	13.72	13.03
23	7.06	3.66	5.39	7.81	4.34	6.34	9.11	11.62	10.66	7.72	12.28	12.77
24	7.08	3.69	5.43	7.19	5.83	6.50	8.99	11.44	11.07	10.06	11.82	12.70
25	7.18	3.76	5.49	6.40	6.16	6.44	8.86	10.32	11.18	12.34	12.42	12.86
26	7.48	3.87	5.55	5.17	4.94	7.28	8.96	10.18	11.29	12.67	13.10	12.96
27	7.22	3.96	5.58	4.95	4.61	7.63	9.14	10.06	11.62	12.74	11.63	12.38
28	7.17	4.04	5.60	4.90	4.53	7.51	9.32	8.28	11.60	13.05	12.55	11.83
29	7.00	4.07	5.59	4.91	---	7.67	9.36	9.77	11.57	13.24	12.48	12.35
30	6.94	4.02	5.20	4.90	---	7.74	10.13	9.97	11.61	13.35	12.69	10.54
31	6.95	---	5.00	4.90	---	7.80	---	10.07	---	13.73	12.68	---
MEAN	7.64	5.04	4.86	5.90	4.55	6.09	8.38	10.45	10.70	11.11	12.24	12.50

WTR YR 1997 MEAN 8.31 HIGHEST 2.78 NOV. 23, 1996 LOWEST 14.05 AUG. 21, 1997

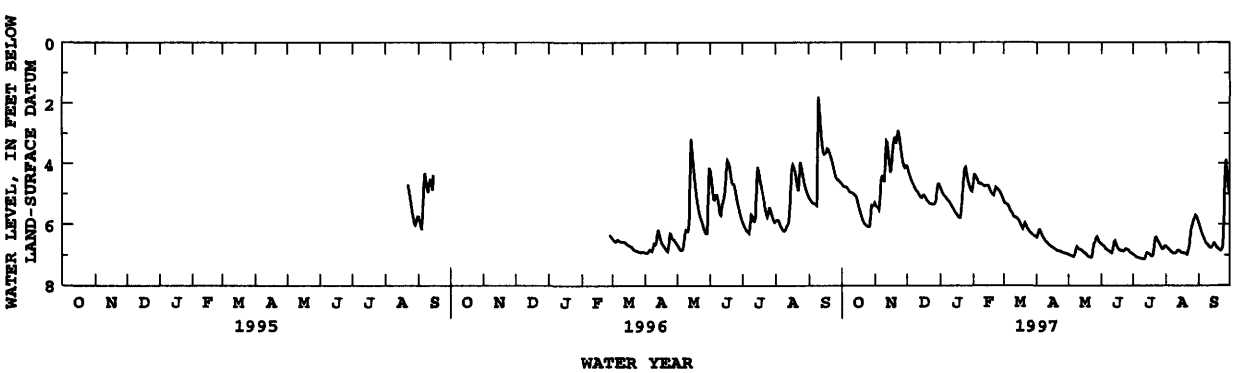


182138065431800. Local number RS-02
LOCATION.--Lat 18°21'38", long 65°43'18", Hydrologic Unit 21010005, 0.87 mi southwest of Hwy 3, 0.39 mi south of the intersection of Hwy 992 with Hwy 991, 0.39 mi north of Hwy 983, and 0.07 mi east of Hwy 991. Owner: U.S. Geological Survey, WRD, Name: RS-02.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-56 ft (0-17.1 m), screened 2.56-56 ft (0.78-17.1 m). Depth 56 ft (17.1 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 33.90 ft (10.30 m) above mean sea level, from topographic survey. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.34 ft (1.02 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--August 22, 1995 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.39 ft (0.42 m) below land-surface datum, Sept. 10, 1996; lowest water level recorded, 7.13 ft (2.17 m) below land-surface datum, July 9-13, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.63	5.29	4.03	4.71	4.93	5.17	6.41	6.97	6.62	6.96	6.69	5.93
2	4.69	5.31	4.13	4.81	4.43	5.28	6.45	6.99	6.66	6.98	6.73	5.99
3	4.73	5.47	4.27	4.91	4.31	5.31	6.23	7.01	6.70	7.02	6.77	6.14
4	4.79	5.41	4.39	4.99	4.45	5.32	6.15	7.01	6.71	7.05	6.81	6.24
5	4.75	5.49	4.51	5.05	4.49	5.35	6.21	7.04	6.77	7.07	6.83	6.34
6	4.77	5.57	4.59	5.09	4.59	5.37	6.31	7.04	6.81	7.09	6.87	6.42
7	4.81	4.71	4.67	5.13	4.71	5.48	6.39	7.06	6.82	7.09	6.91	6.50
8	4.87	4.37	4.73	5.19	4.63	5.57	6.45	6.92	6.86	7.11	6.93	6.57
9	4.93	4.41	4.81	5.21	4.69	5.60	6.51	6.72	6.88	7.11	6.95	6.65
10	4.97	4.65	4.89	5.27	4.69	5.67	6.56	6.74	6.89	7.13	6.95	6.65
11	4.95	4.57	4.91	5.31	4.73	5.78	6.60	6.80	6.93	7.13	6.95	6.71
12	4.97	3.39	4.97	5.39	4.77	5.77	6.62	6.82	6.95	7.13	6.87	6.75
13	5.01	3.13	5.05	5.47	4.73	5.76	6.66	6.82	6.68	7.13	6.85	6.78
14	5.05	3.51	5.09	5.49	4.73	5.81	6.70	6.84	6.50	6.93	6.85	6.76
15	5.05	3.91	5.15	5.59	4.71	5.84	6.72	6.88	6.59	6.93	6.89	6.70
16	5.17	4.19	5.11	5.63	4.75	5.89	6.74	6.92	6.69	6.95	6.91	6.60
17	5.37	4.41	5.01	5.67	4.85	5.98	6.77	6.94	6.79	6.97	6.95	6.64
18	5.47	3.59	5.07	5.73	4.95	6.07	6.79	6.96	6.80	7.01	6.93	6.71
19	5.61	3.47	5.13	5.79	4.99	6.14	6.81	7.02	6.86	7.03	6.93	6.77
20	5.73	3.01	5.19	5.81	5.05	6.18	6.83	7.04	6.86	7.05	6.95	6.79
21	5.85	3.25	5.25	5.79	5.05	5.96	6.85	7.06	6.85	6.94	6.99	6.81
22	5.93	3.43	5.29	5.13	4.79	5.96	6.87	7.08	6.87	6.52	6.99	6.85
23	6.01	2.79	5.33	4.83	4.79	6.08	6.87	7.08	6.89	6.40	6.75	6.86
24	6.01	3.03	5.33	4.31	4.85	6.16	6.87	7.07	6.82	6.46	6.76	6.78
25	6.07	3.23	5.35	4.03	4.87	6.22	6.91	6.61	6.78	6.54	6.12	6.64
26	6.09	3.57	5.35	4.23	4.92	6.26	6.91	6.65	6.82	6.62	6.18	5.22
27	6.09	3.83	5.35	4.47	4.99	6.29	6.93	6.54	6.82	6.66	5.86	3.64
28	6.05	4.03	5.31	4.65	5.08	6.33	6.93	6.36	6.88	6.76	5.90	4.10
29	5.41	4.15	5.17	4.77	---	6.35	6.95	6.46	6.92	6.79	5.71	4.46
30	5.35	4.13	4.71	4.87	---	6.37	6.95	6.55	6.94	6.83	5.71	4.86
31	5.47	---	4.65	4.93	---	6.39	---	6.63	---	6.73	5.77	---
MEAN	5.31	4.11	4.93	5.10	4.77	5.86	6.66	6.86	6.80	6.91	6.65	6.23

WTR YR 1997 MEAN 5.86 HIGHEST 2.77 NOV. 23, 1996 LOWEST 7.13 JULY 9-13, 1997

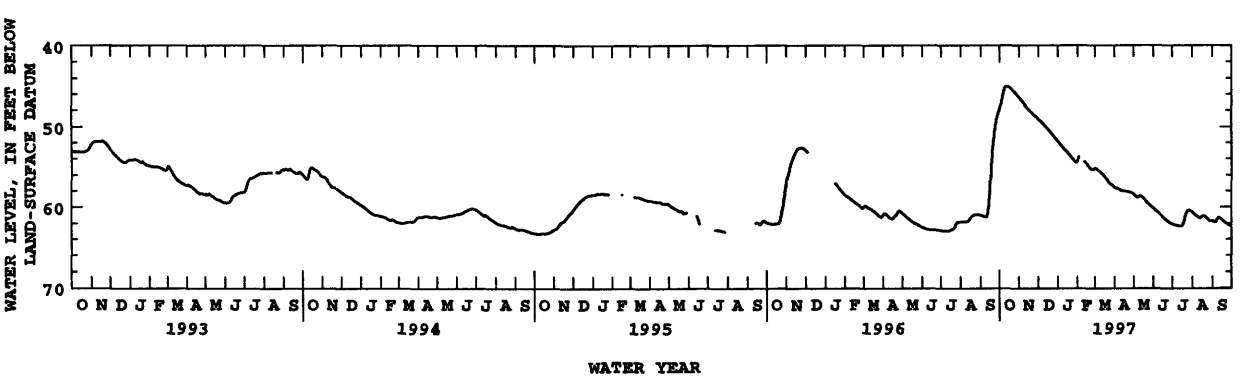


175858066100200. Local number, 6.
LOCATION.--Lat 17°58'58", long 66°10'02", Hydrologic Unit 21010004, 4.23 mi northeast of Central Aguirre Church, 4.08 mi northeast of Colegio del Perpetuo Socorro Church, and 1.77 mi northwest of Hwy 3 km 144.2. Owner: Doctor Bruno, Name: Juana 5.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m). Depth 173 ft (52.74 m) reported, 110 ft (33.54 m) measured.
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 127 ft (38.7 m) above mean sea level, from topographic map. Measuring point: Top of shelter floor, 3.00 ft (0.91 m) above land-surface datum. After Aug. 7, 1981, top of 16 in (0.41 m) casing, 1.55 ft (0.47 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--November 1960 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 26.20 ft (7.99 m) below land-surface datum, Dec. 10, 1979; lowest water level recorded, 65.95 ft (20.10 m) below land-surface datum, June 2, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47.94	46.40	49.01	51.79	54.37	55.19	57.47	58.33	60.11	62.10	60.60	61.72
2	47.64	46.48	49.08	51.89	54.19	55.15	57.55	58.38	60.18	62.14	60.67	61.73
3	47.26	46.58	49.16	51.98	53.92	55.18	57.60	58.46	60.25	62.17	60.74	61.76
4	46.90	46.67	49.24	52.07	53.67	55.24	57.64	58.53	60.32	62.19	60.82	61.81
5	46.54	46.77	49.32	52.17	53.61	55.33	57.64	58.60	60.39	62.21	60.91	61.85
6	46.17	46.87	49.34	52.25	---	55.40	57.65	58.68	60.47	62.23	60.98	61.89
7	45.83	46.98	49.48	52.36	---	55.47	57.67	58.76	60.54	62.25	61.04	61.85
8	45.51	47.08	49.56	52.46	---	55.53	57.71	58.81	60.61	62.27	61.09	61.66
9	45.25	47.18	49.64	52.57	---	55.58	57.77	58.78	60.68	62.29	61.14	61.45
10	45.11	47.27	49.72	52.66	---	55.64	57.83	58.67	60.75	62.31	61.20	61.35
11	45.04	47.40	49.80	52.75	---	55.72	57.89	58.59	60.83	62.33	61.26	61.31
12	45.00	47.50	49.90	52.83	54.19	55.80	57.92	58.56	60.91	62.34	61.33	61.33
13	44.99	47.60	49.98	52.91	54.30	55.88	57.94	58.59	60.98	62.35	61.39	61.37
14	45.00	47.68	50.07	52.98	54.40	55.95	57.95	58.65	61.06	62.36	61.35	61.43
15	45.04	47.77	50.15	53.07	54.50	56.07	57.99	58.73	61.13	62.37	61.26	61.50
16	45.09	47.86	50.23	53.16	54.59	56.16	58.03	58.81	61.20	62.35	61.18	61.57
17	45.14	47.94	50.32	53.26	54.68	56.25	58.04	58.88	61.27	62.26	61.11	61.64
18	45.20	48.01	50.41	53.35	54.79	56.34	58.03	58.97	61.35	62.08	61.07	61.71
19	45.27	48.09	50.51	53.45	54.88	56.44	58.02	59.06	61.42	61.86	61.07	61.78
20	45.34	48.18	50.61	53.54	54.98	56.54	58.02	59.15	61.49	61.57	61.11	61.85
21	45.41	48.26	50.71	53.65	55.09	56.64	58.03	59.25	61.56	61.22	61.16	61.91
22	45.48	48.34	50.80	53.73	55.18	56.74	58.05	59.36	61.63	60.92	61.24	61.97
23	45.56	48.42	50.89	53.83	55.25	56.84	58.08	59.46	61.69	60.71	61.31	62.03
24	45.63	48.50	50.99	53.92	55.31	56.93	58.12	59.55	61.75	60.59	61.38	62.08
25	45.72	48.58	51.10	54.01	55.34	57.03	58.14	59.63	61.83	60.50	61.46	62.14
26	45.82	48.65	51.20	54.10	55.37	57.10	58.15	59.70	61.89	60.42	61.54	62.19
27	45.90	48.72	51.30	54.19	55.35	57.17	58.17	59.77	61.94	60.39	61.61	62.24
28	46.00	48.79	51.40	54.30	55.27	57.21	58.20	59.84	61.99	60.40	61.69	62.28
29	46.08	48.86	51.50	54.38	---	57.26	58.23	59.91	62.04	60.43	61.75	62.32
30	46.18	48.94	51.60	54.46	---	57.32	58.27	59.97	62.07	60.48	61.77	62.35
31	46.29	---	51.69	54.47	---	57.39	---	60.04	---	60.54	61.73	---
MEAN	45.78	47.75	50.28	53.18	54.69	56.21	57.93	59.05	61.14	61.63	61.22	61.80

WTR YR 1997 MEAN 55.91 HIGHEST 44.98 OCT. 13, 1996 LOWEST 62.37 JULY 14, 15, 16, SEPT. 30, 1997

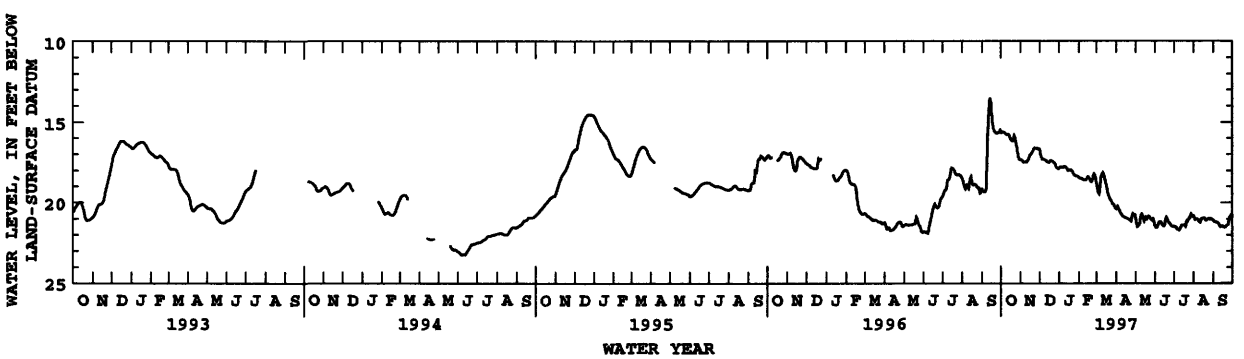


180415065513900. Local number, 96.
LOCATION.--Lat 18°04'15", long 65°51'39", Hydrologic Unit 21010005, 2.44 mi northwest of Escuela Eugenio María de Hostos 4.67 mi southwest of Escuela Segunda Unidad Luciano, and 3.93 mi southwest of Escuela Asunción López. Owner: P.R. Aqueduct and Sewer Authority, Name: USGS TW-2 or Yabucoa 7.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 16 in (0.41 m), cased 0-10 ft (0-3.05 m), diameter 6 in (0.15 m), cased about 0-183 ft (0-55.79 m), perforated 56-81 ft (17.07-24.70 m), 102-123 ft (31.10-37.50 m), 144-181 ft (43.90-55.18 m). Depth 181 ft (55.18 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 25 ft (7.62 m) above mean sea level, from topographic map. Measuring point: Top of shelter floor, 4.00 ft (1.22 m) above land-surface.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--April 25, 1978 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.10 ft (3.99 m) below land-surface datum, Dec. 2, 1987; lowest water level recorded, 28.29 ft (8.62 m) below land-surface datum, Sept. 20, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.47	17.34	16.62	17.90	18.39	18.69	20.36	20.76	21.38	21.47	20.85	21.08
2	15.64	17.34	16.72	17.83	18.46	18.93	20.40	20.98	21.49	21.46	20.80	21.08
3	15.70	17.33	17.10	17.78	18.47	19.15	20.19	21.29	21.53	21.47	21.03	21.15
4	15.61	17.35	17.15	17.78	18.47	19.32	20.27	21.47	21.56	21.49	21.05	21.22
5	15.61	17.45	17.28	17.78	18.48	19.48	20.34	21.50	21.51	21.56	21.04	21.18
6	15.63	17.49	17.30	17.82	18.48	19.43	20.46	21.40	21.36	21.63	20.98	21.20
7	15.64	17.48	17.30	17.81	18.52	18.98	20.55	21.33	21.29	21.64	21.03	21.20
8	15.68	17.44	17.30	17.82	18.56	18.52	20.61	21.40	21.20	21.65	21.00	21.19
9	15.73	17.50	17.31	17.78	18.57	18.28	20.68	21.06	21.19	21.68	21.10	21.27
10	15.77	17.46	17.36	17.72	18.60	18.28	20.73	20.78	21.17	21.71	21.15	21.28
11	15.79	17.50	17.38	17.77	18.60	18.08	20.80	20.71	21.19	21.62	21.20	21.40
12	15.80	17.43	17.38	17.80	18.58	18.16	20.86	20.68	21.29	21.51	21.21	21.48
13	15.74	17.33	17.47	17.80	18.59	18.29	20.87	20.83	21.36	21.40	21.06	21.50
14	15.78	17.34	17.48	17.87	18.53	18.41	20.90	21.01	21.43	21.37	20.95	21.47
15	15.85	17.17	17.48	17.99	18.39	18.65	20.93	21.08	21.45	21.37	20.99	21.44
16	15.98	17.06	17.49	18.01	18.37	18.79	20.94	21.19	21.45	21.39	20.93	21.44
17	16.10	16.97	17.50	17.97	18.41	18.90	20.94	20.87	21.35	21.37	20.97	21.46
18	16.14	17.01	17.39	17.95	18.45	19.13	20.96	20.99	21.08	21.37	20.91	21.51
19	16.17	16.85	17.36	17.95	18.56	19.37	20.97	21.10	20.83	21.43	20.98	21.52
20	16.20	16.87	17.38	17.95	18.66	19.52	20.99	20.95	20.96	21.50	21.05	21.52
21	16.10	16.77	17.43	17.98	18.70	19.62	21.03	20.89	21.03	21.07	21.11	21.50
22	15.83	16.67	17.43	18.02	18.69	19.70	21.05	20.81	21.12	21.18	21.07	21.43
23	15.84	16.59	17.48	18.10	18.62	19.81	21.07	20.87	21.26	21.11	21.00	21.40
24	15.98	16.60	17.53	18.19	18.37	19.86	21.15	20.88	21.24	21.05	21.01	21.37
25	16.26	16.64	17.52	18.28	18.22	19.89	21.15	20.94	21.29	20.95	20.99	21.39
26	16.46	16.61	17.57	18.29	18.20	20.04	20.79	21.01	21.37	20.94	20.98	21.13
27	16.68	16.59	17.74	18.29	18.31	20.07	20.68	21.10	21.45	20.94	21.01	20.94
28	16.94	16.64	17.80	18.32	18.48	20.08	20.68	21.05	21.45	20.68	21.04	20.88
29	17.17	16.67	17.89	18.35	---	20.14	20.79	21.00	21.46	20.74	20.94	20.86
30	17.27	16.67	17.82	18.35	---	20.26	20.69	20.99	21.47	20.87	21.01	20.75
31	17.34	---	17.90	18.35	---	20.35	---	21.23	---	20.86	21.05	---
MEAN	16.06	17.07	17.41	17.99	18.49	19.23	20.76	21.04	21.31	21.31	21.02	21.27

WTR YR 1997 MEAN 19.41 HIGHEST 15.46 OCT. 1, 1996 LOWEST 21.72 JULY 9, 10, 1997

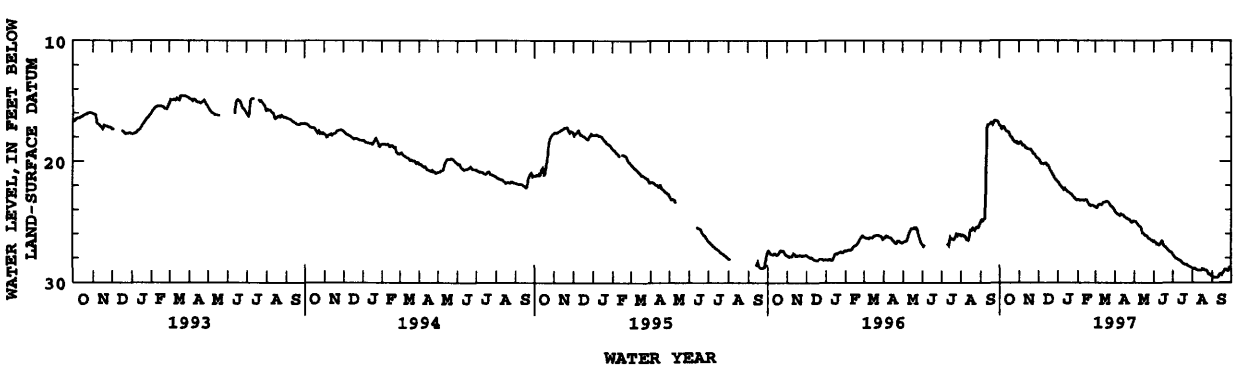


175719066085500. Local number P-13
LOCATION.--Lat 17°57'19", long 66°08'55", Hydrologic Unit 2101004, 1.0 mi east of the intersection of Hwy 3 with Hwy 707, 0.28 mi south of Hwy 3, and 0.25 mi northwest of the Phillps Petroleum oil refinery. Owner: Phillips Petroleum, Name: Phillips Petroleum No. 13.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well.
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 33.0 ft (10.1 m) above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.21 ft (0.98 m) above land-surface datum.
REMARKS.--Recording observation well. Sampling performed on June 7, 1996 by private company.
PERIOD OF RECORD.--September 25, 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.47 ft (4.41 m) below land-surface datum, Mar. 22, 24, 1993; lowest water level recorded, 28.88 ft (8.80 m) below land-surface datum, Sept. 22, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17.12	18.52	19.75	21.65	23.18	23.76	24.00	24.93	26.73	27.61	28.83	29.49
2	16.94	18.45	19.81	21.71	23.13	23.77	24.13	24.98	26.58	27.76	28.86	29.53
3	17.13	18.39	19.85	21.79	23.16	23.81	24.21	24.95	26.59	27.78	28.89	29.61
4	17.32	18.42	20.01	21.91	23.18	23.88	24.26	24.95	26.76	27.86	28.91	29.60
5	17.30	18.55	20.10	21.95	23.24	23.78	24.31	24.99	26.63	27.93	28.86	29.59
6	17.21	18.63	20.21	22.02	23.25	23.62	24.36	25.08	26.82	28.00	28.85	29.64
7	17.09	18.71	20.17	22.08	23.21	23.57	24.39	25.15	26.90	28.06	28.94	29.61
8	17.14	18.63	20.18	22.18	23.17	23.55	24.42	25.25	26.84	28.07	28.97	29.62
9	17.20	18.67	20.21	22.22	23.17	23.55	24.46	25.31	26.84	28.06	29.00	29.68
10	17.39	18.75	20.23	22.28	23.24	23.56	24.49	25.36	26.92	28.13	29.03	29.59
11	17.45	18.83	20.20	22.37	23.27	23.61	24.30	25.39	26.94	28.17	29.04	29.62
12	17.55	18.95	20.20	22.08	23.23	23.59	24.40	25.43	26.83	28.17	29.04	29.52
13	17.52	18.91	20.09	22.33	23.20	23.48	24.44	25.48	26.80	28.22	29.03	29.33
14	17.56	18.92	20.20	22.35	23.18	23.40	24.41	25.65	26.62	28.25	29.02	29.31
15	17.58	19.00	20.30	22.39	23.17	23.37	24.43	25.97	26.60	28.27	29.02	29.30
16	17.55	18.99	20.36	22.45	23.20	23.37	24.55	25.94	26.70	28.36	29.02	29.43
17	17.82	19.00	20.27	22.51	23.32	23.38	24.56	25.98	26.91	28.42	28.92	29.34
18	17.93	18.98	20.40	22.53	23.43	23.37	24.61	26.03	27.02	28.46	28.85	29.19
19	17.98	19.01	20.57	22.56	23.53	23.32	24.65	26.14	27.08	28.50	28.94	29.17
20	18.02	19.00	20.67	22.56	23.58	23.28	24.73	26.16	27.08	28.53	28.99	29.10
21	18.00	19.19	20.79	22.68	23.64	23.34	24.73	26.14	27.12	28.55	29.03	28.97
22	18.22	19.16	20.85	22.68	23.64	23.35	24.70	26.15	27.17	28.57	29.04	28.86
23	18.27	19.35	20.96	22.70	23.71	23.40	24.77	26.25	27.25	28.57	29.03	28.96
24	18.30	19.41	21.09	22.80	23.63	23.47	24.82	26.33	27.31	28.51	29.02	28.91
25	18.43	19.38	21.15	22.90	23.64	23.59	24.81	26.39	27.34	28.62	29.13	29.08
26	18.44	19.41	21.22	22.90	23.65	23.69	24.92	26.39	27.43	28.65	29.25	29.03
27	18.46	19.55	21.39	22.96	23.68	23.72	24.99	26.45	27.51	28.69	29.39	29.07
28	18.29	19.61	21.43	23.05	23.72	23.75	25.05	26.47	27.50	28.69	29.34	28.86
29	18.49	19.72	21.52	23.12	---	23.79	25.05	26.54	27.48	28.74	29.36	28.74
30	18.57	19.74	21.56	23.14	---	23.85	24.96	26.56	27.55	28.78	29.46	28.81
31	18.59	---	21.60	23.23	---	23.94	---	26.52	---	28.80	29.53	---
MEAN	17.77	18.99	20.56	22.45	23.37	23.58	24.56	25.78	26.99	28.32	29.05	29.29

WTR YR 1997 MEAN 24.23 HIGHEST 16.92 OCT. 2, 1996 LOWEST 29.68 SEPT. 9, 1997

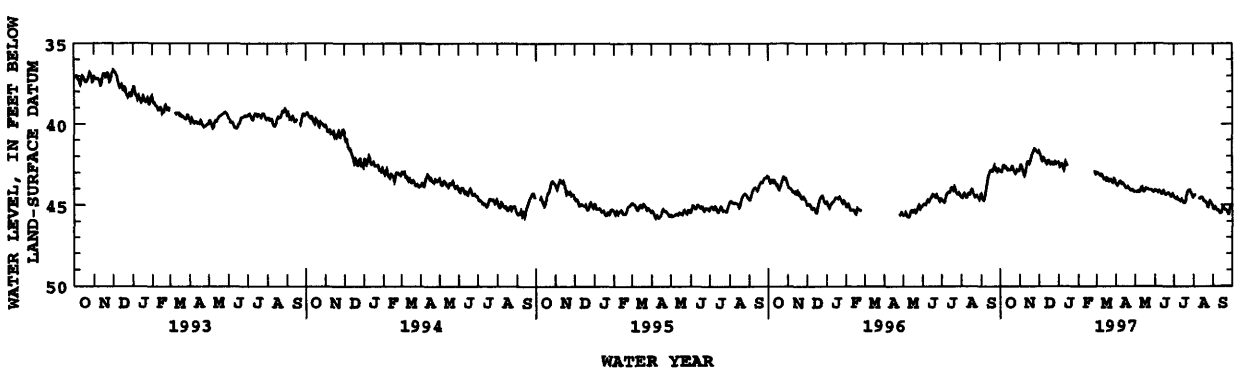


175829066232200. Local number, 87.
LOCATION.--Lat 17°58'29", long 66°23'22", Hydrologic Unit 21010004, 1.10 mi northeast of Santa Isabel plaza, 3.69 mi southeast of Escuela Playita Cortada, and 1.07 mi southeast of Estación Experimental Santa Isabel. Owner: Francisco Alomar, Name: Alomar 1.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), iron cased. Depth 112 ft (34.14 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 35.32 ft (10.77 m) above mean sea level.
Measuring point: Bottom of clean-out shelter door, 2.50 ft (0.76 m) above land-surface datum. Prior to August 1981, top of recorder shelter floor, 4.00 ft (1.22 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--April 1967 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 8.45 ft (2.58 m) below land-surface datum, Dec. 10, 1970; lowest water level recorded, 49.18 ft (14.99 m) below land-surface datum, July 27, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42.88	42.83	41.73	42.41	---	43.17	43.72	44.17	44.08	44.45	44.55	45.17
2	42.94	42.55	41.63	42.33	---	43.03	43.69	44.17	44.09	44.55	44.42	45.30
3	42.82	42.47	41.89	42.56	---	42.92	43.82	44.18	44.17	44.53	44.39	45.21
4	43.08	42.55	41.96	42.72	---	43.04	43.82	44.17	44.08	44.61	44.38	45.09
5	42.81	42.74	42.16	42.49	---	43.07	43.77	44.19	44.13	44.59	44.51	45.13
6	42.58	42.95	42.29	42.50	---	43.10	43.61	44.19	44.19	44.47	---	45.20
7	42.54	43.04	42.28	42.43	---	43.14	43.57	44.07	44.21	44.55	---	45.32
8	42.53	43.13	42.18	42.61	---	43.20	43.52	44.16	44.07	44.72	---	45.35
9	42.69	43.28	41.97	42.82	---	43.19	43.55	44.23	44.17	44.66	44.54	45.31
10	42.73	43.00	42.26	42.84	---	43.00	43.71	44.14	44.18	44.69	44.54	45.31
11	42.59	42.81	42.25	42.58	---	43.23	43.68	43.96	44.22	44.73	44.58	45.50
12	42.86	42.55	42.41	42.33	---	43.29	43.63	43.89	44.36	44.76	44.65	45.45
13	42.78	42.33	42.43	42.30	---	43.44	43.68	43.90	44.29	44.61	44.54	45.45
14	42.77	42.30	42.54	42.53	---	43.39	43.78	44.13	44.25	44.66	44.49	45.52
15	42.93	42.34	42.36	42.53	---	43.36	43.82	44.17	44.08	44.76	44.53	45.38
16	42.80	42.45	42.16	42.49	---	43.29	43.89	44.20	44.17	44.84	44.53	45.14
17	42.87	42.45	42.34	---	---	43.33	44.00	44.09	44.28	44.87	44.72	45.06
18	42.83	42.25	42.41	---	---	43.71	43.95	43.92	44.34	44.84	44.77	45.13
19	42.85	42.11	42.45	---	---	43.33	43.98	44.01	44.40	44.89	44.82	45.24
20	42.55	41.95	42.54	---	---	43.51	43.89	44.04	44.32	44.73	44.76	45.35
21	42.58	41.86	42.42	---	---	43.54	43.88	43.96	44.33	44.45	44.77	45.22
22	42.86	41.75	42.28	---	---	43.56	44.03	44.03	44.28	44.29	44.88	45.36
23	42.85	41.69	42.47	---	---	43.47	44.04	44.06	44.19	44.17	45.06	45.40
24	42.91	41.56	42.52	---	---	43.36	44.10	44.07	44.32	44.11	45.17	45.47
25	43.07	41.52	42.46	---	42.95	43.48	44.11	44.07	44.31	44.12	45.09	45.59
26	43.05	41.63	42.28	---	42.94	43.53	44.06	44.04	44.45	44.06	44.88	45.62
27	42.91	41.58	42.39	---	42.94	43.67	44.03	44.08	44.49	44.09	44.73	45.33
28	42.81	41.79	42.56	---	43.06	43.60	44.06	44.11	44.47	44.19	44.76	45.17
29	43.06	41.71	42.37	---	---	43.41	44.16	44.18	44.32	44.31	44.85	45.08
30	42.81	41.86	42.39	---	---	43.34	44.19	44.19	44.30	44.36	44.89	45.17
31	42.94	---	42.42	---	---	43.49	---	44.19	---	44.48	44.96	---
MEAN	42.82	42.30	42.28	42.53	42.97	43.33	43.86	44.10	44.25	44.52	44.71	45.30

WTR YR 1997 MEAN 43.67 HIGHEST 41.47 NOV. 25, 1996 LOWEST 45.79 SEPT. 25, 26, 1997

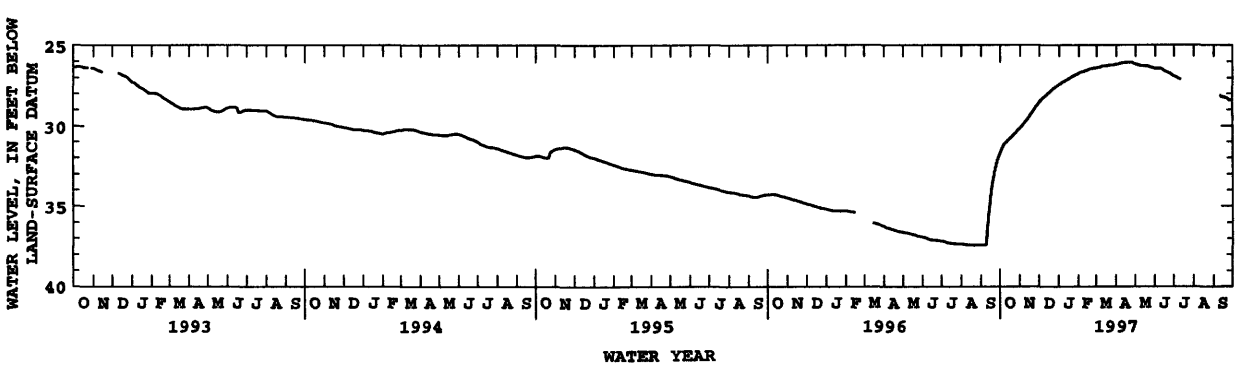


180002066132200. Local number, HW-TW-01.
LOCATION.--Lat 18°00'02", long 66°13'22", Hydrologic Unit 21010004, 3.30 mi southwest of Cerro Guaraco, 8.71 mi southwest of Cayey plaza, and 2.80 mi southeast of Hwy 1 km 82.3 on Rabo del Buey. Owner: U.S. Geological Survey, WRD, Name: HW-TW-01.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-39.5 ft (0-12.0 m), cased 4 in (0.10 m), 0-38.2 ft (0-11.6 m), screened 32-37 ft (9.75-11.3 m). Depth 39.5 ft (12.0 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 190 ft (58.0 m) above mean sea level.
Measuring point: Hole on side of 4 in (0.10 m) casing, 2.84 ft (0.87 m) above land-surface datum. Prior October 13, 1988, top of shelter floor, 3.48 ft (1.06 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--April 14, 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 19.34 ft (5.89 m) below land-surface datum, Dec. 18, 1990 to Jan. 26, 1991; lowest water level recorded, 37.45 ft (11.42 m) below land-surface datum, Sept. 10, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31.78	30.18	28.58	27.44	26.72	26.38	26.17	26.14	26.41	26.90	---	---
2	31.68	30.14	28.52	27.41	26.70	26.37	26.16	26.16	26.41	26.91	---	---
3	31.57	30.10	28.47	27.38	26.68	26.36	26.16	26.17	26.41	26.93	---	---
4	31.49	30.05	28.43	27.37	26.66	26.35	26.15	26.18	26.41	26.94	---	---
5	31.40	30.02	28.38	27.33	26.65	26.35	26.14	26.19	26.41	26.97	---	---
6	31.31	29.96	28.33	27.29	26.64	26.34	26.13	26.20	26.41	27.00	---	---
7	31.23	29.91	28.28	27.28	26.63	26.34	26.11	26.22	26.41	27.03	---	---
8	31.16	29.86	28.24	27.26	26.62	26.33	26.10	26.23	26.41	27.05	---	---
9	31.13	29.80	28.22	27.24	26.61	26.31	26.09	26.24	26.41	27.06	---	---
10	31.08	29.76	28.19	27.22	26.60	26.27	26.08	26.25	26.42	27.08	---	28.08
11	31.05	29.72	28.14	27.20	26.58	26.27	26.08	26.26	26.44	27.10	---	28.08
12	31.01	29.67	28.12	27.17	26.56	26.27	26.08	26.26	26.46	27.11	---	28.09
13	30.96	29.61	28.08	27.14	26.55	26.27	26.06	26.26	26.48	27.26	---	28.13
14	30.92	29.55	28.03	27.10	26.54	26.27	26.06	26.26	26.51	---	---	28.16
15	30.88	29.50	28.00	27.09	26.52	26.27	26.06	26.26	26.56	---	---	28.20
16	30.85	29.44	27.96	27.07	26.50	26.26	26.05	26.26	26.57	---	---	28.21
17	30.81	29.37	27.92	27.05	26.48	26.25	26.05	26.26	26.59	---	---	28.22
18	30.76	29.32	27.90	27.02	26.48	26.25	26.04	26.26	26.61	---	---	28.22
19	30.73	29.28	27.88	26.99	26.46	26.24	26.04	26.26	26.63	---	---	28.23
20	30.70	29.20	27.83	26.98	26.44	26.24	26.04	26.27	26.64	---	---	28.24
21	30.67	29.14	27.79	26.95	26.43	26.23	26.04	26.28	26.66	---	---	28.26
22	30.61	29.09	27.75	26.91	26.42	26.23	26.04	26.29	26.68	---	---	28.27
23	30.56	29.02	27.70	26.90	26.42	26.22	26.04	26.32	26.70	---	---	28.29
24	30.52	28.98	27.68	26.88	26.41	26.22	26.04	26.33	26.72	---	---	28.30
25	30.48	28.91	27.65	26.87	26.40	26.21	26.04	26.34	26.74	---	---	28.33
26	30.45	28.84	27.63	26.85	26.40	26.21	26.05	26.35	26.76	---	---	28.41
27	30.41	28.79	27.60	26.82	26.40	26.21	26.06	26.36	26.79	---	---	28.41
28	30.35	28.75	27.56	26.81	26.39	26.20	26.09	26.37	26.82	---	---	28.41
29	30.30	28.70	27.53	26.77	---	26.19	26.12	26.39	26.85	---	---	28.41
30	30.26	28.64	27.50	26.77	---	26.18	26.14	26.40	26.89	---	---	28.41
31	30.23	---	27.47	26.75	---	26.17	---	26.41	---	---	---	---
MEAN	30.88	29.44	27.98	27.07	26.53	26.27	26.08	26.27	26.57	27.03	---	28.26

WTR YR 1997 MEAN 27.50 HIGHEST 26.04 APR. 18-25, 1997 LOWEST 31.83 OCT. 1, 1996

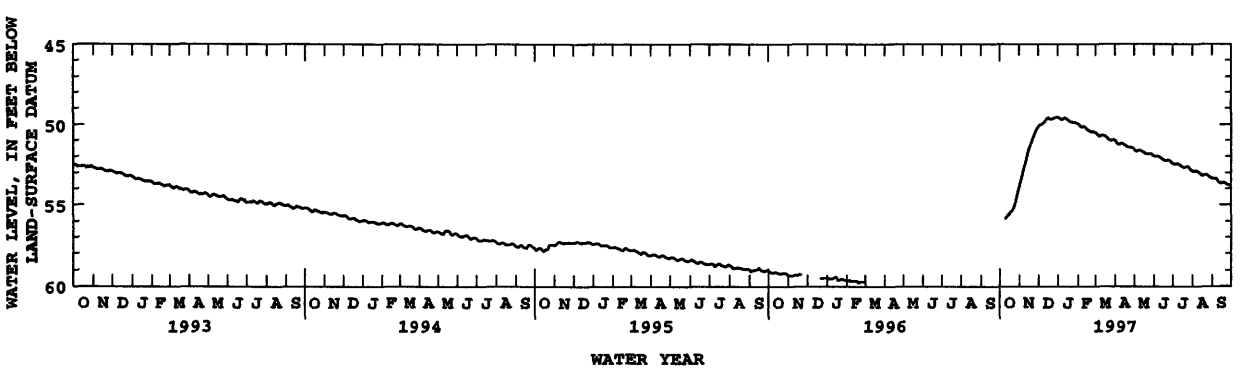


180001066122002 Local number, HW-TW-03C.
LOCATION.--Lat 18°00'01", long 66°12'20", Hydrologic Unit 21010004, 8.27 mi southwest of Cayey plaza, 2.38 mi southwest of Cerro Garau, and 3.45 mi southeast of Hwy 1 km 82.3. Owner: U.S. Geological Survey, WRD, Name: HW-TW-03C.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-220 ft (0-67.0 m), cased 4 in (0.10 m), 0-150 ft (0-45.7 m), open hole 150-220 ft (45.7-67.0 m). Depth 220 ft (67.0 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 270 ft (82.6 m) above mean sea level.
Measuring point: Top of shelter floor, 3.32 ft (1.01 m) above land-surface datum.
REMARKS.--Recording observation well. Aquifer test performed during May 24, 25, 26, 1989.
PERIOD OF RECORD.--December 15, 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 26.29 ft (8.01 m) below land-surface datum, Dec. 15, 1990; lowest water level recorded, 59.82 ft (18.23 m) below land-surface datum, Mar. 1, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	53.92	50.17	49.55	49.92	50.49	50.99	51.51	51.97	52.43	52.92	53.35
2	---	53.75	50.11	49.56	49.94	50.49	51.04	51.58	52.00	52.45	52.92	53.39
3	---	53.60	50.03	49.57	49.99	50.53	51.08	51.63	51.99	52.48	52.93	53.38
4	---	53.46	50.02	49.60	50.02	50.59	51.15	51.66	51.98	52.48	52.91	53.38
5	---	53.33	50.02	49.63	50.08	50.64	51.21	51.65	51.99	52.49	52.93	53.38
6	---	53.15	50.00	49.67	50.12	50.67	51.24	51.67	52.00	52.49	52.93	53.37
7	---	52.98	49.97	49.69	50.15	50.71	51.24	51.67	51.98	52.48	52.91	53.35
8	---	52.82	49.94	49.69	50.17	50.74	51.24	51.64	51.98	52.46	52.91	53.38
9	55.92	52.67	49.93	49.69	50.15	50.76	51.23	51.62	52.00	52.46	52.93	53.45
10	55.84	52.52	49.89	49.65	50.13	50.72	51.16	51.59	52.02	52.47	52.96	53.48
11	55.78	52.41	49.83	49.59	50.12	50.67	51.17	51.61	52.04	52.50	52.97	53.55
12	55.74	52.25	49.78	49.58	50.13	50.65	51.17	51.62	52.07	52.52	53.02	53.60
13	55.69	52.07	49.72	49.58	50.17	50.67	51.19	51.65	52.10	52.52	53.05	53.62
14	55.65	51.86	49.65	49.63	50.21	50.68	51.22	51.68	52.14	52.57	53.10	53.66
15	55.63	51.70	49.61	49.66	50.24	50.69	51.25	51.68	52.17	52.62	53.13	53.66
16	55.59	51.59	49.59	49.67	50.26	50.70	51.27	51.71	52.18	52.64	53.17	53.68
17	55.53	51.47	49.58	49.70	50.32	50.73	51.29	51.75	52.21	52.67	53.20	53.65
18	55.48	51.34	49.62	49.73	50.36	50.78	51.32	51.78	52.25	52.67	53.19	53.64
19	55.43	51.25	49.66	49.77	50.38	50.81	51.35	51.81	52.26	52.70	53.19	53.63
20	55.40	51.15	49.66	49.81	50.39	50.84	51.39	51.82	52.27	52.70	53.17	53.61
21	55.39	51.05	49.68	49.83	50.42	50.88	51.41	51.83	52.26	52.68	53.16	53.62
22	55.33	50.92	49.67	49.84	50.45	50.92	51.42	51.84	52.26	52.65	53.13	53.66
23	55.25	50.82	49.66	49.85	50.47	50.96	51.42	51.86	52.24	52.64	53.12	53.67
24	55.15	50.73	49.63	49.87	50.46	50.98	51.42	51.84	52.22	52.63	53.14	53.70
25	55.05	50.65	49.63	49.88	50.43	51.00	51.43	51.82	52.22	52.64	53.16	53.76
26	54.92	50.53	49.62	49.87	50.45	51.01	51.42	51.81	52.25	52.65	53.20	53.77
27	54.76	50.43	49.60	49.87	50.47	50.98	51.43	51.81	52.27	52.69	53.24	53.76
28	54.56	50.34	49.57	49.88	50.47	50.98	51.46	51.83	52.31	52.74	53.28	53.76
29	54.39	50.27	49.56	49.88	---	50.95	51.46	51.83	52.37	52.80	53.31	53.78
30	54.23	50.22	49.55	49.91	---	50.96	51.48	51.89	52.40	52.84	53.31	53.80
31	54.08	---	49.55	49.92	---	50.97	---	51.93	---	52.87	53.34	---
MEAN	55.25	51.84	49.76	49.73	50.25	50.78	51.28	51.73	52.15	52.60	53.09	53.58

WTR YR 1997 MEAN 51.77 HIGHEST 49.50 DEC. 24, 25, 1996 LOWEST 55.92 OCT. 9, 1996

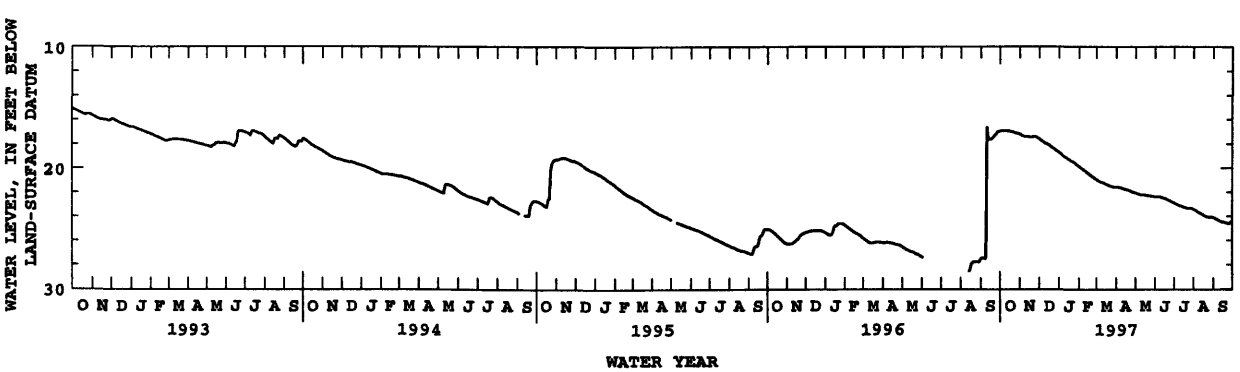


175947066130601 Local number, HW-TW-05B.
LOCATION.--Lat 17°59'47", long 66°13'06", Hydrologic Unit 21010004, 2.70 mi northeast of Central Aguirre Church, 6.16 mi northwest of Escuela de Guayama, and 2.70 mi northeast of Hwy 3 km 151.3. Owner: U.S. Geological Survey, WRD, Name: HW-TW-05B.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-52 ft (0-15.8 m), cased 4 in (0.10 m), 0-51 ft (0-15.5 m), screened 41-46 ft (12.5-14.0 m). Depth 52 ft (15.8 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 145 ft (44.2 m) above mean sea level.
Measuring point: Hole on side of casing, 3.00 ft (0.91 m) above land-surface datum. Prior October 13, 1989 top of shelter floor, 3.47 ft (1.06 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--April 13, 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.89 ft (2.40 m) below land-surface datum, May 26, 1992; lowest water level recorded, 28.55 ft (8.70 m) below land-surface datum, Aug. 14, 15, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.95	17.17	17.53	18.67	19.82	20.92	21.58	22.03	22.35	22.85	23.40	24.08
2	16.93	17.18	17.57	18.70	19.83	20.94	21.59	22.04	22.36	22.88	23.41	24.10
3	16.90	17.22	17.61	18.74	19.90	20.97	21.59	22.06	22.37	22.92	23.44	24.13
4	16.90	17.27	17.65	18.78	19.93	21.00	21.59	22.08	22.37	22.94	23.46	24.14
5	16.91	17.29	17.73	18.81	19.98	21.06	21.59	22.10	22.36	22.98	23.50	24.18
6	16.90	17.33	17.74	18.89	20.02	21.07	21.59	22.12	22.35	23.00	23.54	24.20
7	16.90	17.34	17.77	18.94	20.05	21.11	21.60	22.14	22.35	23.02	23.58	24.22
8	16.90	17.36	17.81	18.98	20.11	21.13	21.61	22.18	22.35	23.04	23.62	24.26
9	16.89	17.36	17.86	19.00	20.13	21.16	21.61	22.18	22.35	23.06	23.65	24.30
10	16.90	17.38	17.90	19.02	20.16	21.17	21.65	22.19	22.36	23.08	23.69	24.31
11	16.89	17.39	17.90	19.07	20.19	21.20	21.67	22.19	22.42	23.11	23.70	24.34
12	16.89	17.40	17.93	19.07	20.23	21.21	21.70	22.19	22.42	23.12	23.75	24.39
13	16.90	17.38	17.97	19.09	20.28	21.24	21.71	22.19	22.44	23.14	23.76	24.40
14	16.90	17.38	17.99	19.20	20.35	21.27	21.72	22.19	22.45	23.17	23.78	24.43
15	16.93	17.38	18.03	19.20	20.37	21.30	21.74	22.20	22.46	23.19	23.82	24.46
16	16.94	17.39	18.05	19.22	20.42	21.32	21.76	22.21	22.48	23.21	23.86	24.46
17	16.95	17.42	18.06	19.23	20.48	21.34	21.77	22.22	22.50	23.23	23.89	24.46
18	16.96	17.42	18.10	19.29	20.52	21.37	21.78	22.23	22.52	23.24	23.91	24.46
19	16.97	17.42	18.18	19.33	20.55	21.37	21.79	22.24	22.54	23.26	23.93	24.47
20	16.97	17.43	18.21	19.38	20.59	21.40	21.80	22.25	22.55	23.29	23.97	24.49
21	16.98	17.43	18.23	19.42	20.64	21.43	21.84	22.27	22.57	23.30	24.01	24.52
22	16.98	17.40	18.28	19.43	20.66	21.46	21.85	22.27	22.63	23.30	24.04	24.53
23	17.01	17.39	18.33	19.44	20.69	21.48	21.86	22.29	22.65	23.30	24.04	24.54
24	17.02	17.39	18.36	19.47	20.73	21.51	21.88	22.30	22.66	23.30	24.04	24.55
25	17.07	17.39	18.39	19.50	20.76	21.51	21.91	22.31	22.69	23.30	24.04	24.59
26	17.08	17.39	18.43	19.55	20.80	21.54	21.95	22.31	22.72	23.30	24.04	24.61
27	17.12	17.41	18.48	19.59	20.86	21.55	21.97	22.31	22.75	23.30	24.04	24.56
28	17.12	17.44	18.51	19.64	20.89	21.56	22.00	22.32	22.78	23.30	24.04	24.50
29	17.13	17.46	18.55	19.71	---	21.57	22.01	22.33	22.81	23.32	24.04	24.46
30	17.13	17.51	18.59	19.74	---	21.57	22.02	22.34	22.83	23.33	24.05	24.44
31	17.15	---	18.62	19.78	---	21.58	---	22.34	---	23.37	24.06	---
MEAN	16.97	17.37	18.08	19.22	20.35	21.30	21.76	22.21	22.51	23.17	23.81	24.39

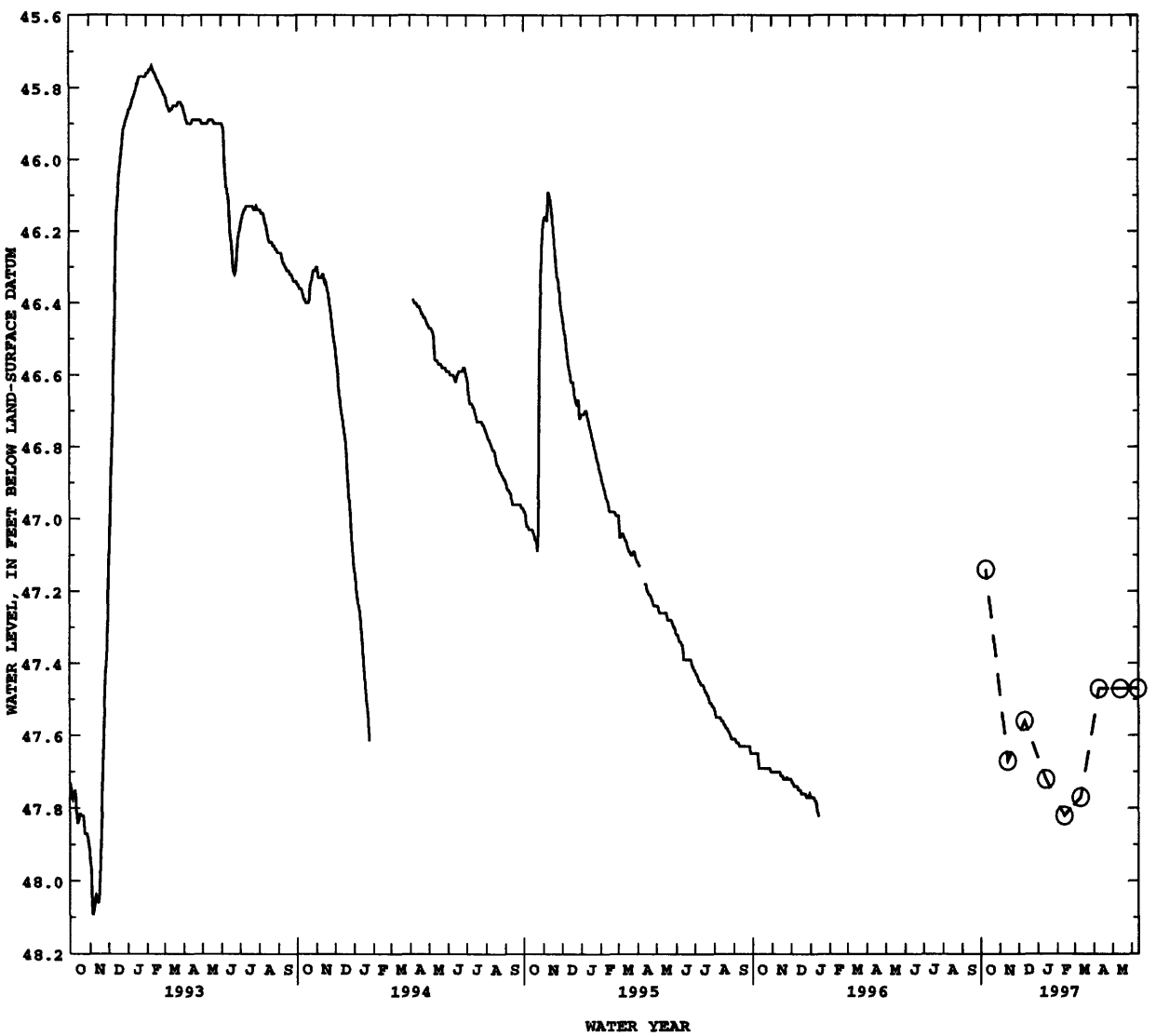
WTR YR 1997 MEAN 20.93 HIGHEST 16.89 OCT. 9-12, 1996 LOWEST 24.61 SEPT. 25, 26, 1997



175957066123400 Local number, HW-TW-13.
LOCATION.--Lat 17°59'57", long 66°12'34", Hydrologic Unit 21010004, 3.11 northeast of Central Aguirre Church, 5.76 mi northwest of Escuela de Guayama, and 2.03 mi northeast of Hwy 3 km 151.3. Owner: U.S. Geological Survey, WRD, Name: HW-TW-13.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-69 ft (0-21.0 m), cased 4 in (0.10 m), 0-69 ft (0-21.0 m), screened 4.0-69 ft (1.22-21.0 m). Depth 69 ft (21.0 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 203 ft (61.9 m) above mean sea level.
Measuring point: Hole on side of casing, 2.33 ft (0.71 m) above land-surface datum. Prior October 14, 1988, top of shelter floor, 3.47 ft (1.06 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--April 14, 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 34.39 ft (10.5 m) below land-surface datum, Oct. 27, 1990; lowest water level recorded, 48.10 ft (14.7 m) below land-surface datum, Nov. 6, 7, 1992.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 9	47.14	Jan. 14	47.72	Mar. 11	47.77	May 14	47.47
Nov. 13	47.67	Feb. 12	47.82	Apr. 9	47.47	June 11	47.47
Dec. 10	47.56						

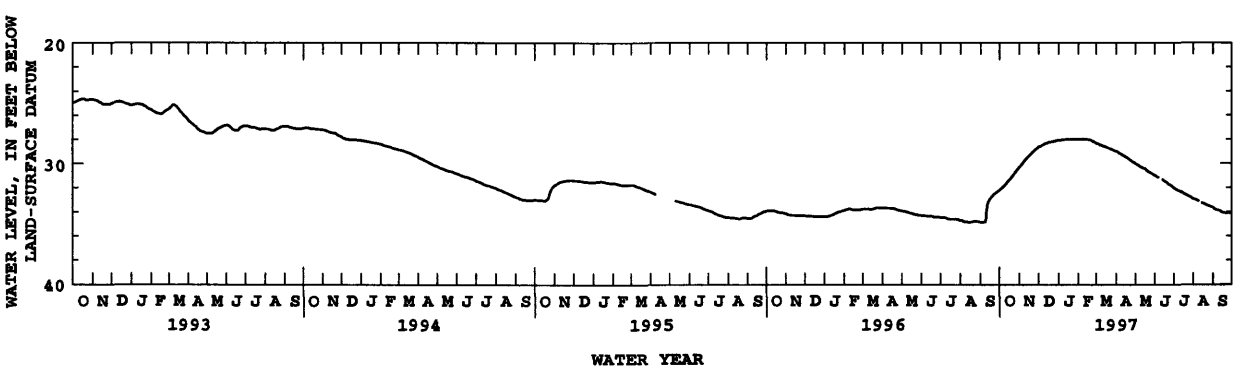


175903066165000. Local number PG-07
LOCATION.--Lat 17°59'03", long. 66°16'50", Hydrologic Unit 21010004, 0.42 mi north of Hwy 3, 0.60 mi southeast of the intersection of Hwy 1 with Hwy 52, and 1.56 mi northeast of Punta Salinas. Owner: C. Godreau, Name: Pozo Godreau No. 7.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), cased 20 in (0.51 m) 0-120 ft (0-36.6 m), perforated 30-120 ft (9.1-36.6 m). Depth 120 ft (36.6 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 54.0 ft (16.5 m) above mean sea level, from topographic map. Measuring point: Shelter floor on top of 20 in (0.50 m) casing, 3.63 ft (1.11 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--September 25, 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 24.62 ft (7.50 m) below land-surface datum, Oct. 18, 1992; lowest water level recorded, 34.87 ft (10.63 m) below land-surface datum, Sept. 3, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32.21	30.32	28.64	28.07	27.99	28.29	28.98	29.96	30.96	31.98	32.92	33.61
2	32.16	30.26	28.61	28.06	27.99	28.33	29.01	30.00	30.98	32.03	32.94	33.62
3	32.11	30.20	28.59	28.06	27.99	28.34	29.02	30.03	31.01	32.05	32.96	33.73
4	32.09	30.14	28.58	28.06	27.99	28.36	29.04	30.07	31.06	32.09	32.97	33.76
5	32.03	30.08	28.56	28.05	27.99	28.38	29.10	30.10	31.09	32.12	32.99	33.80
6	31.99	30.01	28.53	28.04	27.99	28.40	29.13	30.13	31.12	32.16	33.02	33.82
7	31.94	29.94	28.47	28.04	27.99	28.44	29.16	30.16	31.16	32.20	33.05	33.83
8	31.88	29.88	28.46	28.03	27.99	28.49	29.19	30.20	31.20	32.22	33.07	33.85
9	31.83	29.81	28.44	28.02	27.99	28.50	29.25	30.24	---	32.26	33.09	33.87
10	31.77	29.75	28.40	28.02	27.99	28.50	29.25	30.27	---	32.26	33.13	33.87
11	31.72	29.68	28.36	28.02	27.99	28.52	29.27	30.30	---	32.26	33.15	33.87
12	31.64	29.62	28.35	28.02	27.99	28.55	29.34	30.32	31.28	32.29	---	33.89
13	31.57	29.55	28.33	28.02	28.00	28.57	29.36	30.35	31.31	32.33	33.22	33.91
14	31.51	29.50	28.31	28.00	28.00	28.59	29.38	30.38	31.35	32.37	33.23	33.96
15	31.46	29.45	28.29	28.00	28.00	28.60	29.41	30.38	31.38	32.40	33.25	34.02
16	31.40	29.39	28.27	28.00	28.01	28.61	29.45	30.39	31.41	32.44	33.27	34.03
17	31.33	29.34	28.23	28.00	28.01	28.63	29.48	30.42	31.46	32.47	33.30	34.05
18	31.27	29.27	28.23	28.00	28.02	28.65	29.51	30.46	31.49	32.51	33.32	34.06
19	31.19	29.22	28.23	28.00	28.03	28.67	29.54	30.54	31.52	32.55	33.35	34.07
20	31.13	29.17	28.22	28.00	28.04	28.70	29.58	30.58	31.56	32.57	33.38	34.08
21	31.07	29.11	28.21	28.00	28.06	28.73	29.61	30.62	31.60	32.60	33.40	34.09
22	31.01	29.06	28.20	28.00	28.09	28.76	29.64	30.65	31.64	32.63	33.42	34.09
23	30.94	29.02	28.18	28.00	28.13	28.79	29.68	30.69	31.68	32.65	33.42	34.09
24	30.87	28.98	28.18	28.00	28.15	28.82	29.71	30.72	31.73	32.68	33.46	34.09
25	30.78	28.90	28.17	28.00	28.17	28.83	29.77	30.76	31.77	32.71	33.47	34.09
26	30.71	28.85	28.16	28.00	28.21	28.84	29.80	30.79	31.79	32.72	33.49	34.09
27	30.65	28.81	28.13	28.00	28.23	28.86	29.84	30.80	31.81	32.75	33.52	34.09
28	30.58	28.78	28.11	28.00	28.26	28.88	29.87	30.83	31.86	32.78	33.55	34.09
29	30.52	28.73	28.10	27.99	---	28.93	29.90	30.87	31.90	32.82	33.60	34.09
30	30.44	28.68	28.09	27.99	---	28.95	29.93	30.90	31.94	32.85	33.60	34.09
31	30.38	---	28.07	27.99	---	28.96	---	30.93	---	32.91	33.61	---
MEAN	31.36	29.45	28.31	28.02	28.05	28.63	29.44	30.45	31.45	32.44	33.27	33.95

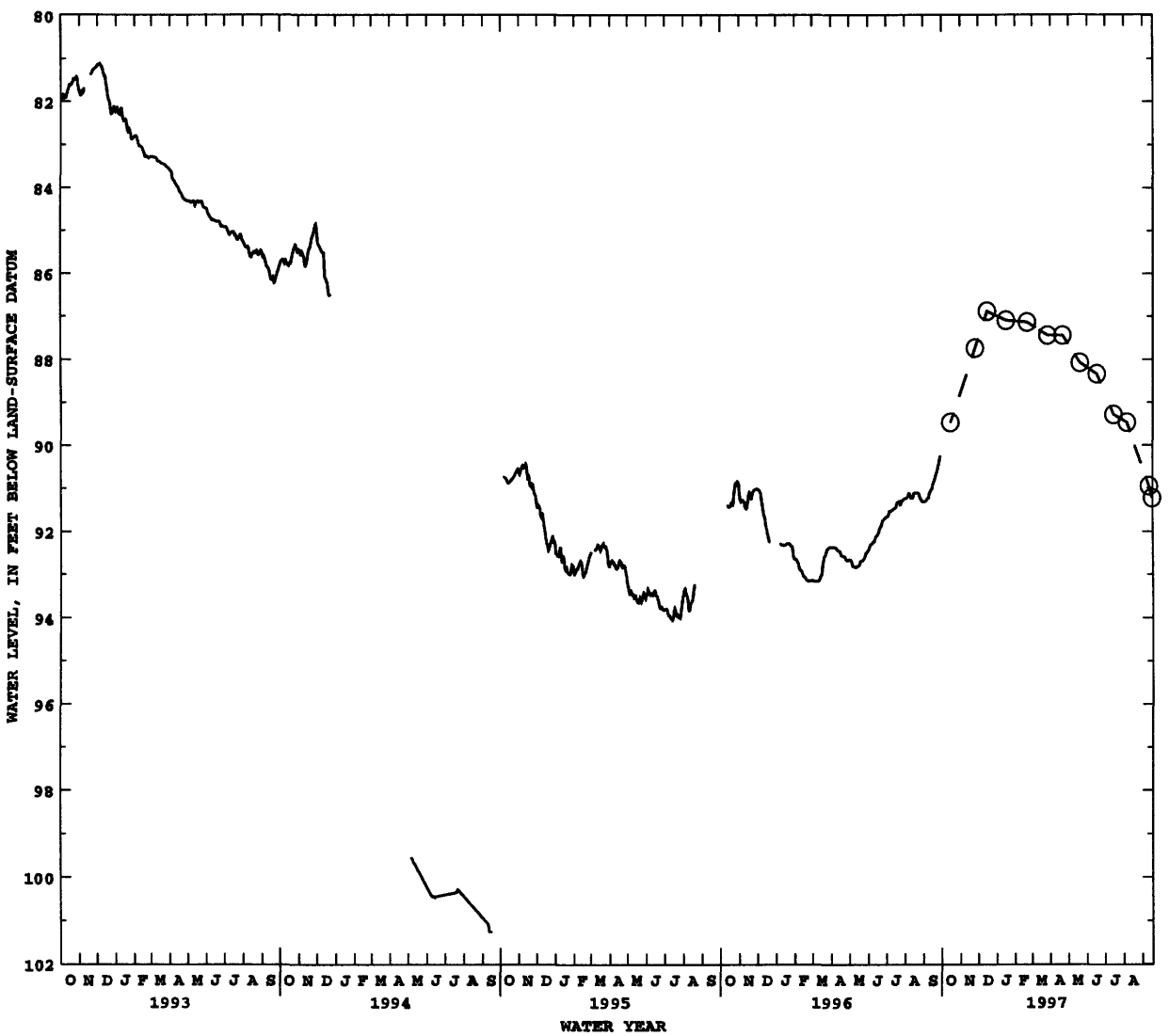
WTR YR 1997 MEAN 30.40 HIGHEST 27.99 JAN. 29 to FEB.12, 1997 LOWEST 34.10 SEPT. 26. 1997



175943066224800. Local number PS-07
LOCATION.--Lat 17°59'43", long 66°22'48", Hydrologic Unit 2101004, 0.74 mi east of Hwy 153, 1.45 mi northeast of Estación Santa Isabel, and 1.98 mi north of Hwy 1. Owner: Luce and Company, Name: Paso Seco No. 7.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well. Depth 235 ft (71.6 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 89.0 ft (27.1 m) above mean sea level, from topographic map. Measuring point: Side of the casing, 0.80 ft (0.24 m) above land-surface datum.
REMARKS.--Recording observation well. Water levels affected by nearby pumping wells.
PERIOD OF RECORD.--March 27, 1992 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 81.11 ft (24.72 m) below land-surface datum, Dec. 3, 4, 6, 7, 1992; lowest water level recorded, 101.28 ft (30.87 m) below land-surface datum, Sept. 13, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 16	89.47	Feb 21	87.13	May 20	88.08	Aug. 6	89.47
Nov. 26	87.74	Mar. 27	87.44	June 17	88.34	Sept. 12	90.95
Dec. 16	86.88	Apr. 21	87.44	July 25	89.29	Sept. 17	91.23
Jan. 17	87.09						

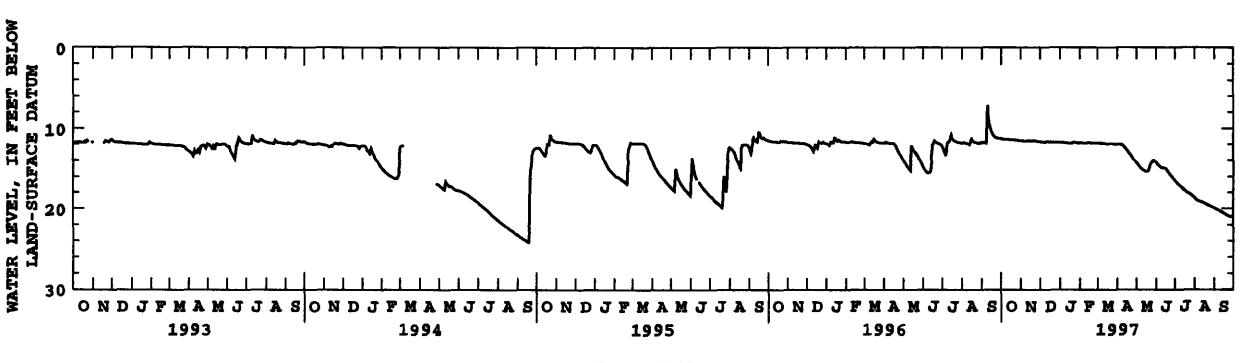


180206066135500. Local number, RM # 5.
LOCATION.--Lat 18°02'06", long 66°13'55", Hydrologic Unit 21010004, 6.98 mi southwest of Cayey plaza, 0.63 mi east of Hwy 1 km 82.3 on Rabo del Buey, and 1.75 mi southeast of Capilla de Santa Marta. Owner: U.S. Geological Survey, WRD, Name: RM # 5.
AQUIFER.--Quaternary alluvium.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-34 ft (0-10.4 m), screened 24-34 ft (7.32-10.7 m). Depth 34 ft (10.4 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is 276.35 ft (84.2 m) above mean sea level.
Measuring point: Top of shelter floor, 3.28 ft (1.0 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--March 9, 1989 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 5.56 ft (1.69 m) below land-surface datum, Sept. 10, 1996; lowest water level recorded, 24.24 ft (7.39 m) below land-surface datum, Sept. 20, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.27	11.52	11.65	11.74	11.84	11.82	12.01	14.22	14.16	16.50	18.64	19.91
2	11.29	11.52	11.65	11.76	11.79	11.82	12.03	14.31	14.31	16.57	18.70	19.95
3	11.31	11.54	11.67	11.77	11.79	11.83	12.01	14.42	14.37	16.65	18.78	19.99
4	11.33	11.56	11.69	11.77	11.80	11.84	12.02	14.52	14.51	16.77	18.89	20.03
5	11.34	11.56	11.70	11.78	11.80	11.85	12.00	14.62	14.56	16.85	18.96	20.08
6	11.36	11.56	11.71	11.78	11.82	11.85	11.99	14.73	14.61	16.92	19.00	20.11
7	11.36	11.58	11.71	11.79	11.82	11.85	11.99	14.86	14.69	17.00	19.04	20.14
8	11.37	11.59	11.73	11.79	11.83	11.86	11.99	14.94	14.82	17.07	19.08	20.18
9	11.37	11.60	11.73	11.79	11.83	11.86	11.99	15.00	14.87	17.10	19.11	20.22
10	11.37	11.60	11.74	11.80	11.83	11.87	12.10	15.07	14.92	17.21	19.14	20.27
11	11.37	11.60	11.72	11.80	11.85	11.91	12.19	15.14	14.92	17.28	19.18	20.34
12	11.37	11.53	11.62	11.80	11.85	11.91	12.26	15.20	14.92	17.35	19.18	20.36
13	11.37	11.50	11.65	11.82	11.85	11.91	12.35	15.25	14.94	17.43	19.21	20.41
14	11.39	11.51	11.67	11.82	11.77	11.91	12.43	15.29	14.94	17.50	19.24	20.44
15	11.39	11.54	11.68	11.82	11.77	11.92	12.55	15.36	14.94	17.59	19.28	20.49
16	11.40	11.57	11.67	11.82	11.80	11.93	12.64	15.36	14.97	17.67	19.31	20.54
17	11.40	11.58	11.70	11.82	11.80	11.93	12.73	15.36	15.07	17.74	19.33	20.57
18	11.42	11.54	11.71	11.82	11.81	11.93	12.81	15.36	15.18	17.80	19.38	20.66
19	11.39	11.57	11.72	11.82	11.82	11.91	12.91	15.36	15.28	17.89	19.42	20.69
20	11.39	11.57	11.72	11.82	11.83	11.91	13.02	15.31	15.40	17.96	19.47	20.75
21	11.40	11.57	11.73	11.82	11.83	11.91	13.12	15.03	15.50	18.01	19.52	20.79
22	11.41	11.48	11.73	11.77	11.83	11.91	13.22	14.71	15.62	18.05	19.56	20.84
23	11.43	11.53	11.73	11.70	11.83	11.91	13.31	14.48	15.74	18.07	19.58	20.89
24	11.44	11.55	11.75	11.73	11.83	11.91	13.45	14.31	15.82	18.13	19.63	20.93
25	11.46	11.57	11.75	11.76	11.82	11.91	13.59	14.20	15.93	18.18	19.66	20.96
26	11.49	11.60	11.75	11.78	11.82	11.92	13.71	14.15	16.01	18.24	19.70	20.99
27	11.49	11.62	11.74	11.79	11.82	11.94	13.84	14.13	16.12	18.31	19.73	21.00
28	11.49	11.63	11.74	11.82	11.82	11.95	13.94	13.99	16.21	18.36	19.76	21.00
29	11.50	11.63	11.75	11.83	---	11.95	14.03	13.99	16.31	18.43	19.79	21.00
30	11.51	11.64	11.76	11.84	---	11.96	14.12	13.99	16.38	18.50	19.83	20.99
31	11.51	---	11.74	11.84	---	11.98	---	14.07	---	18.57	19.87	---
MEAN	11.40	11.57	11.71	11.79	11.82	11.90	12.74	14.73	15.20	17.60	19.32	20.52

WTR YR 1997 MEAN 14.20 HIGHEST 11.27 OCT. 1, 1996 LOWEST 21.01 SEPT. 30, 1997

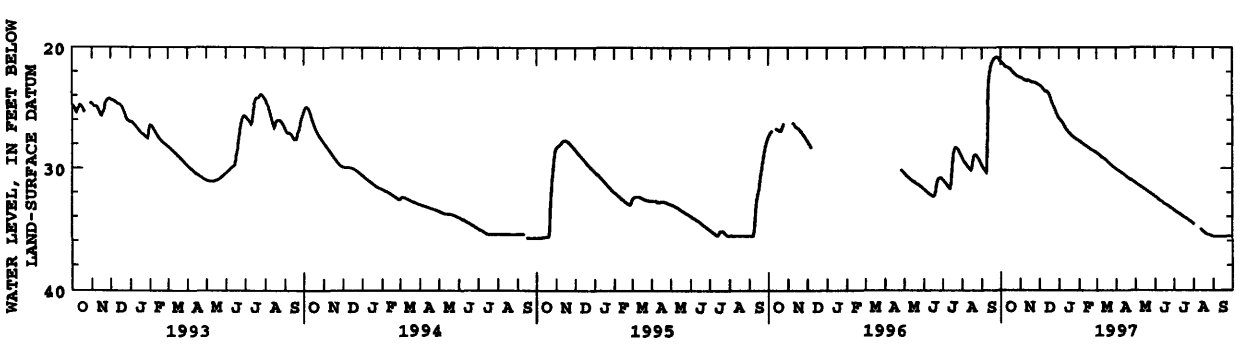


180104066152300. Local number, RM # 10.
LOCATION.--Lat 18°01'04", long 66°15'23", Hydrologic Unit 21010004, 8.00 mi southeast of Coamo plaza, 1.07 mi northeast of Escuela de Coco, and 0.70 mi southwest of Escuela Sabana Llana. Owner: U.S. Geological Survey, WRD, Name: RM # 10.
AQUIFER.--Quaternary alluvium.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-37 ft (0-11.3 m), screened 27-37 ft (8.23-11.3 m). Depth 37 ft (11.3 m).
INSTRUMENTATION.--Digital water level recorder--15-minute punch.
DATUM.--Elevation of land-surface datum is 164.13 ft (50.0 m) above mean sea level, from leveling survey. Measuring point: Top of shelter floor, 3.62 ft (1.10 m) above land-surface datum.
REMARKS.--Recording observation well. Pumping test performed on February 8, 1990. Well dry at 35.77 ft (10.9 m).
PERIOD OF RECORD.--March 13, 1989 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 18.0 ft (5.49 m) below land-surface datum, Nov. 9, 1990; lowest water level recorded, 35.77 ft (10.9 m) below land-surface datum, Sept. 14 to Oct. 5, 1994

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.11	22.42	23.06	25.83	27.67	28.67	30.02	31.15	32.32	33.43	34.56	35.63
2	21.17	22.45	23.09	25.88	27.71	28.71	30.05	31.18	32.34	33.47	34.61	35.63
3	21.23	22.47	23.12	25.94	27.74	28.75	30.10	31.24	32.37	33.51	34.65	35.63
4	21.28	22.51	23.17	26.02	27.78	28.80	30.13	31.27	32.40	33.56	---	35.63
5	21.32	22.54	23.23	26.07	27.83	28.84	30.17	31.31	32.46	33.61	---	35.62
6	21.38	22.59	23.28	26.16	27.87	28.87	30.21	31.34	32.51	33.64	---	35.63
7	21.40	22.63	23.38	26.24	27.91	28.93	30.24	31.37	32.57	33.67	---	35.63
8	21.48	22.65	23.43	26.32	27.96	28.97	30.26	31.40	32.61	33.70	---	35.63
9	21.55	22.67	23.49	26.43	27.98	29.03	30.30	31.45	32.64	33.75	---	35.63
10	21.58	22.70	23.57	26.51	28.02	29.07	30.35	31.49	32.69	33.75	---	35.64
11	21.59	22.74	23.64	26.62	28.08	29.09	30.39	31.53	32.71	33.79	---	35.64
12	21.60	22.73	23.64	26.71	28.09	29.13	30.42	31.56	32.75	33.83	34.99	35.64
13	21.63	22.69	23.59	26.79	28.12	29.17	30.46	31.59	32.78	33.88	35.02	35.64
14	21.66	22.67	23.61	26.85	28.16	29.21	30.50	31.62	32.81	33.91	35.05	35.63
15	21.69	22.68	23.68	26.93	28.21	29.24	30.55	31.67	32.88	33.96	35.13	35.63
16	21.72	22.74	23.76	26.98	28.23	29.27	30.59	31.70	32.93	33.99	35.19	35.63
17	21.76	22.78	23.86	27.03	28.26	29.32	30.64	31.73	32.96	34.03	35.22	35.63
18	21.85	22.79	23.99	27.08	28.31	29.38	30.69	31.77	32.99	34.05	35.25	35.63
19	21.93	22.81	24.13	27.14	28.36	29.44	30.72	31.81	33.02	34.08	35.29	35.63
20	21.97	22.85	24.29	27.22	28.40	29.49	30.76	31.85	33.04	34.12	35.34	35.63
21	22.04	22.85	24.46	27.26	28.43	29.54	30.80	31.88	33.07	34.15	35.42	35.62
22	22.10	22.83	24.63	27.30	28.46	29.59	30.84	31.93	33.10	34.19	35.44	35.62
23	22.13	22.83	24.79	27.35	28.48	29.63	30.88	31.97	33.13	34.23	35.45	35.62
24	22.19	22.86	24.91	27.40	28.51	29.68	30.91	32.01	33.17	34.25	35.46	35.62
25	22.24	22.88	25.03	27.43	28.53	29.72	30.94	32.05	33.22	34.28	35.47	35.62
26	22.28	22.91	25.16	27.46	28.56	29.78	30.97	32.07	33.26	34.33	35.49	35.62
27	22.32	22.93	25.28	27.51	28.60	29.82	31.01	32.10	33.29	34.38	35.51	35.62
28	22.34	22.95	25.42	27.55	28.64	29.86	31.04	32.14	33.31	34.40	35.53	35.61
29	22.37	22.99	25.53	27.59	---	29.91	31.08	32.18	33.37	34.44	35.55	35.61
30	22.39	23.02	25.65	27.62	---	29.95	31.12	32.21	33.39	34.48	35.58	35.61
31	22.40	---	25.76	27.65	---	29.99	---	32.26	---	34.52	35.61	---
MEAN	21.80	22.74	24.12	26.87	28.18	29.32	30.57	31.70	32.87	33.98	35.25	35.63

WTR YR 1997 MEAN 29.29 HIGHEST 21.08 OCT. 1, 1996 LOWEST 35.64 SEPT. 9-14, 1997

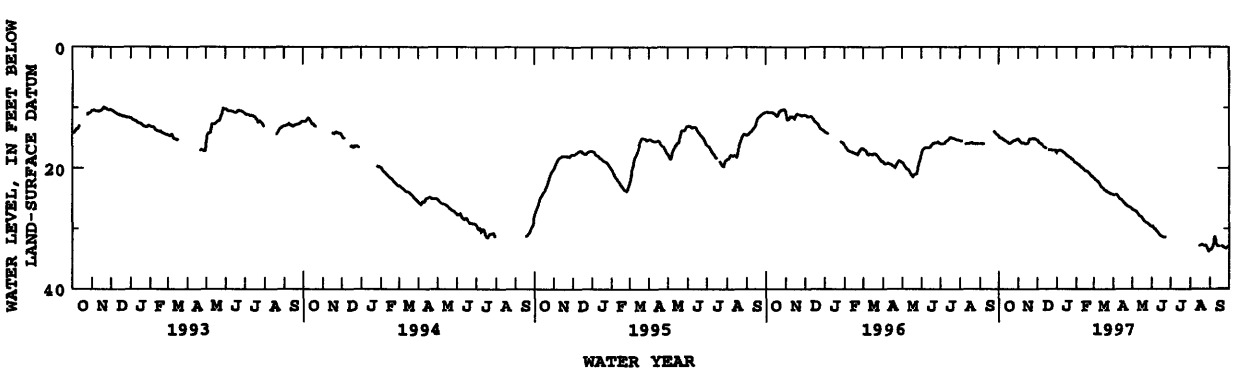


180133066503300. Local number, 132.
LOCATION.--Lat 18°01'33", long 66°50'33", Hydrologic Unit 21010004, 0.90 mi southeast of Yauco plaza, 3.46 mi west of Guayanilla plaza, and 1.32 mi north of Escuela Segunda Unidad Barinas. Owner: Pittsburg Plate Glass 4, Name: Yauco 2.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled observation well, cased 20 in (0.51 m) 0-20 ft (0-6.1 m), 12 in (0.30 m) perforated pipe 20-84 ft (6.1-25.61 m), 10 in (0.25 m) perforated pipe 84-190 ft (25.61-57.93 m). Depth 190 ft (57.93 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 75 ft (22.87 m) above mean sea level, from topographic map. Measuring point: Top of shelter floor, 2.35 ft (0.72 m) above land-surface datum.
REMARKS.--Recording observation well. [+, above land-surface datum].
PERIOD OF RECORD.--July 1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +0.12 ft (0.04 m) below land-surface datum, July 19, 1979; lowest water level recorded, 36.91 ft (11.25 m) below land-surface datum, June 27, 1974.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.56	15.18	15.32	17.30	19.15	21.54	24.33	26.66	29.69	---	---	33.51
2	14.77	15.25	15.36	17.21	19.22	21.59	24.38	26.81	29.59	---	---	33.59
3	15.00	15.47	15.53	17.08	19.27	21.71	24.42	26.93	29.64	---	---	33.54
4	15.01	15.57	15.71	17.06	19.32	21.85	24.41	26.97	29.86	---	---	33.40
5	15.01	15.64	15.82	17.04	19.40	21.94	24.40	26.98	30.00	---	---	33.18
6	15.00	15.73	15.95	17.03	19.40	22.02	24.35	27.00	30.11	---	---	32.83
7	15.04	15.87	15.95	17.03	19.65	22.10	24.34	27.03	29.97	---	---	32.60
8	15.16	15.87	16.03	17.08	19.74	22.16	24.47	27.15	30.30	---	---	31.41
9	15.30	15.84	16.03	17.16	19.80	22.29	24.65	27.26	30.41	---	---	31.15
10	15.37	15.84	16.38	17.27	19.86	22.44	24.80	27.39	30.52	---	---	32.05
11	15.37	15.85	16.41	17.31	19.98	22.63	24.99	27.52	30.67	---	---	32.65
12	15.47	16.00	16.52	17.38	20.07	22.85	25.07	27.75	30.80	---	---	32.77
13	15.54	16.00	16.60	17.45	20.14	23.02	25.17	27.85	30.93	---	---	32.91
14	15.54	15.94	16.64	17.56	20.30	23.14	25.15	27.99	31.07	---	32.79	32.93
15	15.65	15.94	16.72	17.62	20.40	23.21	25.31	27.95	31.22	---	32.95	32.94
16	15.67	15.94	16.77	17.79	20.41	23.21	25.42	28.05	31.24	---	32.86	32.90
17	15.85	15.94	---	17.90	20.42	23.35	25.46	28.15	31.25	---	32.80	32.80
18	15.93	15.59	16.76	17.96	20.46	23.55	25.62	28.34	31.34	---	32.73	---
19	15.93	15.27	16.94	18.01	20.48	23.67	25.76	28.49	31.42	---	32.64	32.70
20	15.88	15.15	16.98	18.06	20.58	23.71	25.85	28.62	31.43	---	32.69	32.86
21	15.84	15.19	17.00	18.15	20.74	23.71	25.96	28.77	31.45	---	32.79	32.93
22	15.73	15.15	17.00	18.21	20.82	23.80	26.05	28.91	31.45	---	32.78	33.03
23	15.60	15.12	17.01	18.20	20.89	23.88	26.18	28.98	31.37	---	32.86	33.12
24	15.55	15.08	17.01	18.39	21.11	23.94	26.24	29.01	31.45	---	32.87	33.16
25	15.43	15.07	17.01	18.54	21.23	23.96	26.29	29.04	---	---	32.79	33.30
26	15.43	15.11	17.01	18.54	21.28	24.06	26.31	29.11	---	---	32.87	33.32
27	15.46	15.03	17.01	18.49	21.37	24.11	26.37	29.25	---	---	33.10	33.32
28	15.37	15.10	17.01	18.81	21.44	24.18	26.45	29.34	---	---	33.35	33.14
29	15.34	15.23	17.01	18.94	---	24.23	26.53	29.40	---	---	33.57	33.12
30	15.17	15.24	17.01	19.01	---	24.23	26.62	29.55	---	---	33.82	32.94
31	15.16	---	17.57	19.08	---	24.26	---	29.65	---	---	33.75	---
MEAN	15.39	15.51	16.54	17.83	20.25	23.11	25.38	28.13	30.72	---	33.00	32.90

WTR YR 1997 MEAN 22.98 HIGHEST 14.56 OCT. 1, 1996 LOWEST 33.89 AUG. 30, 31, 1997

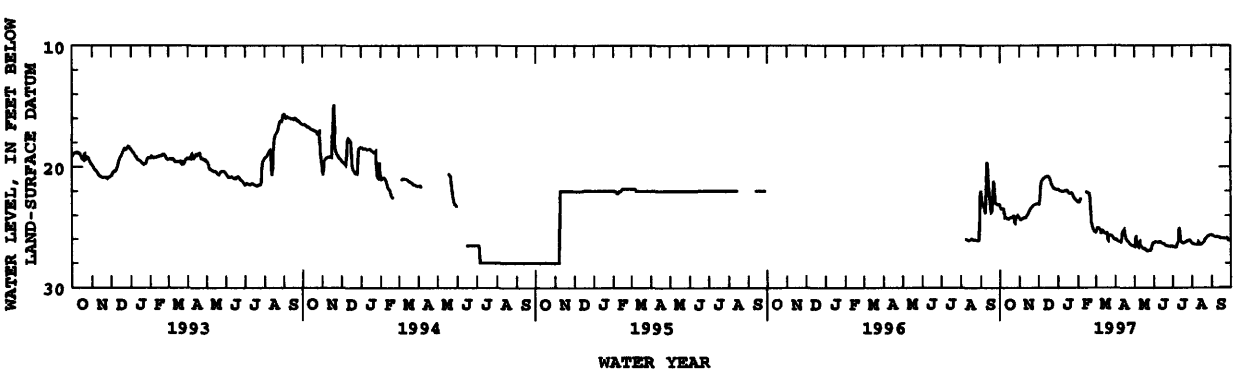


175950066354200. Local number, 141.
LOCATION.--Lat 17°59'50", long 66°35'42", Hydrologic Unit 21010004, 1.71 mi southeast of Plaza Degetau at Ponce, 1.31 mi southeast of the intersection between Hwy 10 and Hwy 2, and 2.60 mi notheast of Muellle de Ponce. Owner: P.R. Aqueduct and Sewer Authority, Name: Restaurada 8A.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused public supply well, diameter 16-10 in (0.41-0.25 m), cased 16 in (0.41 m) 2-20 ft (0.6-6.1 m), perforated 20-130 ft (6.10-39.6 m), 10 in (0.25 m) 128-165 ft (39.0-50.3 m), perforated. Depth 165 ft (50.3 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 24 ft (7.30 m) above mean sea level, from topographic map. Measuring point: Bottom edge of hole on side of casing 1.90 ft (0.58 m) above land-surface datum, 26.2 ft (7.67 m), above mean sea level.
REMARKS.--Recording observation well. Discontinued on Nov. 8, 1994 due to apparent collapsed casing, repair on August 7, 1996.
PERIOD OF RECORD.--October 1981 to March 1, 1986, discontinued, November 18, 1991 to November 8, 1994, discontinued, August 7, 1996 to September 30, 1996.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.2 ft (3.41 m) below land-surface datum, Oct. 9, 1985; lowest water level recorded, 28.6 ft (8.71 m) below land-surface datum, July 9, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23.03	24.19	23.00	21.83	22.88	25.39	26.01	26.58	26.28	26.58	26.32	25.65
2	23.31	24.28	23.01	21.84	22.92	25.47	26.01	26.60	26.31	26.60	26.37	25.63
3	23.42	24.33	23.06	21.93	22.90	25.24	25.95	26.65	26.24	26.62	26.38	25.68
4	23.49	24.36	22.38	21.99	22.85	25.00	26.08	25.17	26.19	26.65	26.42	25.72
5	23.44	24.29	21.43	21.98	22.81	25.05	26.13	26.21	26.22	26.65	26.41	25.76
6	23.45	24.25	21.22	22.00	22.30	25.03	26.17	26.49	26.21	26.66	26.41	25.78
7	23.44	24.21	21.13	22.01	---	25.10	26.22	26.59	26.26	26.64	26.43	25.76
8	23.43	24.16	21.05	22.04	---	25.19	26.20	26.65	26.25	26.60	26.46	25.84
9	24.20	24.20	21.04	22.06	---	25.21	26.24	26.68	26.26	26.09	26.46	25.81
10	24.15	24.17	20.95	22.01	---	25.73	26.24	25.91	26.23	26.57	26.49	25.82
11	24.12	24.20	20.89	22.02	---	25.25	26.27	26.48	26.16	25.68	26.39	25.77
12	24.20	24.07	20.86	21.96	---	25.28	25.50	26.59	26.24	24.38	26.00	25.83
13	24.26	23.98	20.84	21.95	22.07	25.25	25.38	26.59	26.28	26.03	26.47	25.82
14	24.30	23.97	20.80	22.00	22.07	25.47	25.29	26.69	26.35	26.18	26.47	25.84
15	24.29	23.85	20.78	21.95	22.08	25.45	25.19	26.75	26.29	26.21	26.47	25.92
16	24.29	23.61	20.76	21.93	22.08	25.51	25.14	26.83	26.37	26.26	26.40	25.92
17	24.20	23.65	20.75	22.07	22.12	25.51	25.81	26.76	26.38	26.30	26.38	25.89
18	24.13	23.43	20.86	22.17	22.21	25.52	25.93	26.78	26.37	26.34	26.37	25.87
19	24.16	23.40	20.94	22.19	22.19	25.42	26.03	26.83	26.48	26.34	26.28	25.91
20	24.17	23.35	20.97	22.21	22.20	25.50	26.12	26.88	26.51	26.30	26.26	25.92
21	24.18	23.27	21.33	22.21	22.92	26.53	26.18	26.92	26.53	26.31	26.12	25.92
22	24.03	23.25	21.42	22.15	24.25	25.68	26.21	27.03	26.56	26.22	25.98	25.93
23	24.03	23.16	21.52	22.13	24.66	25.65	26.27	26.95	26.57	26.20	25.94	25.94
24	24.02	23.15	21.66	22.22	24.91	25.67	26.36	26.95	26.56	26.17	25.89	25.94
25	25.03	23.10	21.73	22.41	25.06	25.64	26.43	26.95	26.58	26.10	25.81	25.93
26	24.23	23.08	21.79	22.53	25.23	25.72	26.46	26.95	26.59	26.13	25.71	25.85
27	24.12	23.05	21.83	22.59	25.31	25.69	26.49	26.93	26.55	26.13	25.78	26.07
28	24.10	23.02	21.79	22.64	25.35	25.78	26.53	26.92	26.60	26.09	25.72	26.10
29	24.04	23.05	21.83	22.69	---	25.89	26.55	26.58	26.63	26.08	25.65	26.07
30	23.92	23.02	21.90	22.74	---	25.95	26.58	26.44	26.56	26.15	25.65	26.12
31	24.16	---	21.87	22.81	---	26.03	---	26.31	---	26.26	25.66	---
MEAN	23.98	23.70	21.46	22.17	23.24	25.51	26.07	26.63	26.39	26.24	26.18	25.87

WTR YR 1997 MEAN 24.82 HIGHEST 20.70 DEC. 17, 1996 LOWEST 27.08 MAY 22, 1997

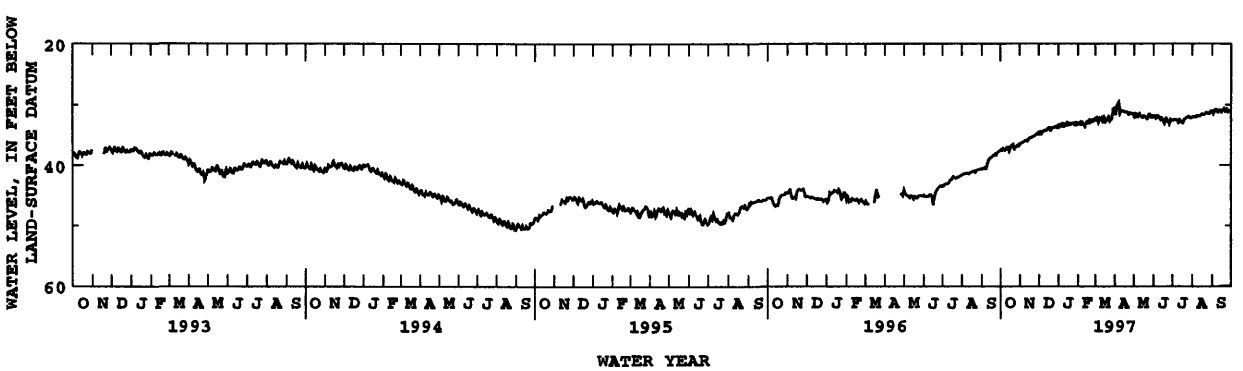


180045066381600. Local number AN-1
LOCATION.--Lat 18°00'45", long 66°38'16", Hydrologic Unit 21010004, 0.27 mi east of the intersection of Hwy 10 with Hwy 132, 0.60 mi northwest of Parque Montaner, and 0.04 mi south of Hwy 132. Owner: Albergue de Niños de Ponce, Name: Albergue de Niños.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled unused water-table well.
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 49.0 ft (14.90 m) above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 5.42 ft (1.65 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--March 30, 1992 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 35.29 ft (10.76 m) below land-surface datum, June 22, 1992; lowest water level recorded, 51.88 ft (15.81 m) below land-surface datum, Aug. 30, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37.57	36.43	34.57	33.36	33.02	32.30	31.41	31.47	31.94	32.62	32.21	30.97
2	37.47	36.38	35.17	33.34	32.95	32.24	31.66	32.30	32.13	32.59	31.99	30.98
3	37.36	36.27	34.54	34.04	32.94	32.81	31.42	31.71	31.91	32.47	31.94	31.48
4	37.77	36.34	34.53	33.32	33.37	32.28	30.37	31.64	31.80	32.42	32.03	31.56
5	37.31	36.24	35.10	33.24	32.98	32.25	30.04	32.33	31.93	32.43	32.02	31.11
6	37.19	36.22	34.58	33.20	32.94	32.87	29.79	31.67	32.49	32.38	31.90	30.86
7	37.57	36.10	34.42	33.80	33.57	32.94	29.73	31.52	31.86	32.50	32.06	30.75
8	37.35	36.01	34.34	33.27	33.02	32.27	29.47	31.81	31.84	32.44	32.00	30.78
9	37.74	35.99	34.43	33.20	32.97	32.20	31.51	31.92	31.88	32.51	31.81	30.83
10	37.14	35.90	34.30	33.88	33.50	32.51	31.37	31.48	32.02	32.66	31.76	31.39
11	37.07	35.94	34.20	33.18	33.01	32.17	31.12	31.57	32.05	33.21	31.81	31.05
12	37.04	35.83	34.15	33.11	33.58	32.15	30.96	31.89	32.58	32.47	31.80	31.07
13	36.98	35.79	34.32	33.15	33.50	33.06	31.01	31.93	32.30	32.40	31.91	30.88
14	36.99	36.14	34.08	33.69	33.07	32.91	31.04	31.99	32.19	32.78	31.78	30.86
15	37.93	35.62	34.02	33.09	32.82	32.14	31.16	32.09	32.11	32.80	31.79	31.07
16	37.49	35.55	33.79	33.05	32.72	32.10	31.10	32.10	32.53	32.78	31.57	31.40
17	37.18	35.46	33.91	33.66	32.72	32.78	31.11	31.87	32.54	32.83	31.48	31.11
18	36.85	35.39	33.56	33.05	33.25	32.81	31.30	31.82	33.11	33.09	31.61	30.88
19	36.74	35.51	33.92	33.02	32.68	32.55	31.15	32.05	33.03	32.43	31.63	30.93
20	36.68	35.29	34.58	33.07	32.63	32.52	31.18	32.10	32.38	32.38	31.62	30.68
21	36.59	35.24	33.88	33.33	33.33	32.18	31.24	32.11	32.30	32.30	31.61	30.58
22	36.51	35.23	33.81	33.04	32.57	32.01	31.30	32.09	32.17	32.17	31.50	31.14
23	37.74	35.19	33.80	33.05	32.52	31.94	31.88	32.55	32.57	32.13	31.30	30.98
24	36.79	35.14	33.77	33.02	32.45	32.70	31.34	31.95	32.92	32.12	31.20	30.85
25	37.11	35.17	33.63	33.01	32.43	32.59	31.39	31.92	32.46	31.98	31.37	30.56
26	37.00	34.99	33.62	32.95	33.01	32.25	31.38	31.16	33.10	31.96	31.50	31.33
27	36.87	34.88	33.68	33.00	32.41	32.60	31.38	31.95	33.13	31.93	31.37	31.01
28	36.78	34.81	33.67	33.61	32.42	31.98	31.45	31.95	32.41	32.27	31.56	30.93
29	36.68	34.78	33.44	32.97	---	30.97	31.48	31.86	32.37	32.03	31.37	31.09
30	36.59	34.70	34.04	32.99	---	30.39	31.51	32.41	32.57	32.20	31.06	31.07
31	37.09	---	33.45	33.57	---	30.80	---	31.87	---	32.08	30.99	---
MEAN	37.13	35.62	34.11	33.27	32.94	32.27	31.08	31.91	32.35	32.43	31.66	31.01

WTR YR 1997 MEAN 32.99 HIGHEST 29.44 APR. 8, 1997 LOWEST 38.21 OCT. 15, 1996

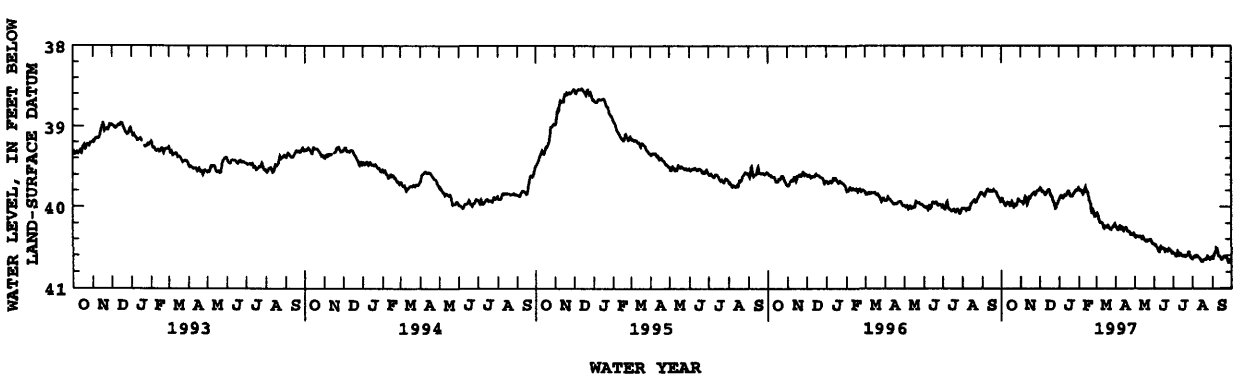


180132067033800. Local number, 143.
LOCATION.--Lat 18°01'32", long 67°03'38", Hydrologic Unit 21010003, 1.86 mi south of Lajas plaza, 1.27 mi southeast of the Estación Experimental Agrícola, and 1.30 mi northwest of the intersection of Hwy 116 with Hwy 305.
Owner: Pedro P. Vivoni, Name: Vivoni, Hacienda Amistad.
AQUIFER.--Limestone of unknown age.
WELL CHARACTERISTICS.--Drilled unused irrigation well, diameter 12 in (0.30 m). Depth 200 ft (60.98 m).
INSTRUMENTATION.--Digital water level recorder--15-minute punch.
DATUM.--Elevation of land-surface datum is about 52.5 ft (16.0 m) above mean sea level, from topographic map.
Measuring point: Hole side of casing, 0.80 ft (0.24 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--December 1981 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 37.36 ft (11.39 m) below land-surface datum, Nov. 20, 1985; lowest water level recorded, 40.70 ft (12.40 m) below land-surface datum, Sept, 26, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39.94	39.93	39.78	39.92	39.76	40.12	40.21	40.32	40.46	40.57	40.65	40.62
2	39.92	39.94	39.77	39.91	39.77	40.09	40.26	40.35	40.46	40.56	40.63	40.66
3	39.87	39.93	39.76	39.87	39.78	40.07	40.24	40.38	40.48	40.58	40.62	40.62
4	39.92	39.94	39.79	39.87	39.81	40.08	40.26	40.37	40.45	40.58	40.61	40.57
5	39.95	39.96	39.82	39.85	39.79	40.10	40.29	40.36	40.49	40.61	40.61	40.58
6	39.94	39.96	39.81	39.88	39.80	40.16	40.28	40.36	40.50	40.61	40.63	40.55
7	39.96	39.93	39.80	39.89	39.81	40.17	40.28	40.37	40.51	40.61	40.60	40.51
8	40.00	39.88	39.82	39.89	39.84	40.19	40.24	40.36	40.54	40.56	40.60	40.50
9	39.97	39.87	39.83	39.87	39.84	40.20	40.23	40.37	40.56	40.54	40.61	40.53
10	39.97	39.90	39.85	39.85	39.82	40.19	40.25	40.37	40.55	40.59	40.62	40.58
11	39.94	39.96	39.85	39.85	39.81	40.19	40.30	40.37	40.52	40.61	40.62	40.61
12	39.95	39.98	39.83	39.86	39.74	40.20	40.25	40.36	40.48	40.59	40.63	40.61
13	39.94	39.93	39.82	39.86	39.77	40.24	40.27	40.38	40.50	40.56	40.64	40.61
14	39.95	39.88	39.80	39.83	39.82	40.27	40.30	40.41	40.52	40.60	40.66	40.62
15	39.98	39.88	39.79	39.82	39.81	40.26	40.29	40.37	40.51	40.60	40.67	40.65
16	39.99	39.89	39.78	39.80	39.81	40.24	40.27	40.37	40.51	40.60	40.68	40.65
17	39.97	39.89	39.79	39.81	39.84	40.24	40.26	40.41	40.51	40.62	40.67	40.64
18	39.94	39.85	39.83	39.83	39.91	40.25	40.25	40.41	40.55	40.60	40.66	40.63
19	39.93	39.85	39.87	39.85	39.93	40.25	40.26	40.43	40.55	40.60	40.65	40.62
20	39.98	39.84	39.86	39.88	39.93	40.23	40.29	40.42	40.54	40.61	40.65	40.60
21	40.00	39.84	39.87	39.86	39.96	40.23	40.31	40.41	40.52	40.62	40.65	40.62
22	40.01	39.83	39.90	39.87	40.01	40.25	40.30	40.41	40.55	40.60	40.65	40.62
23	39.98	39.82	39.94	39.87	40.10	40.27	40.31	40.44	40.54	40.60	40.65	40.61
24	39.96	39.85	39.94	39.84	40.06	40.27	40.30	40.41	40.51	40.60	40.61	40.63
25	39.98	39.85	39.96	39.83	40.01	40.28	40.34	40.42	40.52	40.57	40.61	40.64
26	39.98	39.83	40.00	39.83	40.08	40.28	40.34	40.41	40.53	40.55	40.62	40.69
27	39.96	39.80	40.04	39.81	40.12	40.25	40.33	40.39	40.54	40.57	40.64	40.68
28	39.91	39.80	39.99	39.79	40.12	40.25	40.35	40.41	40.54	40.60	40.65	40.68
29	39.90	39.80	39.96	39.80	---	40.24	40.34	40.43	40.57	40.63	40.65	40.65
30	39.92	39.80	39.97	39.80	---	40.23	40.33	40.45	40.58	40.63	40.63	40.64
31	39.93	---	39.93	39.79	---	40.21	---	40.46	---	40.64	40.61	---
MEAN	39.95	39.88	39.86	39.85	39.89	40.21	40.28	40.39	40.52	40.59	40.63	40.61

WTR YR 1997 MEAN 40.23 HIGHEST 39.72 FEB. 6, 1997 LOWEST 40.70 SEPT. 26, 1997

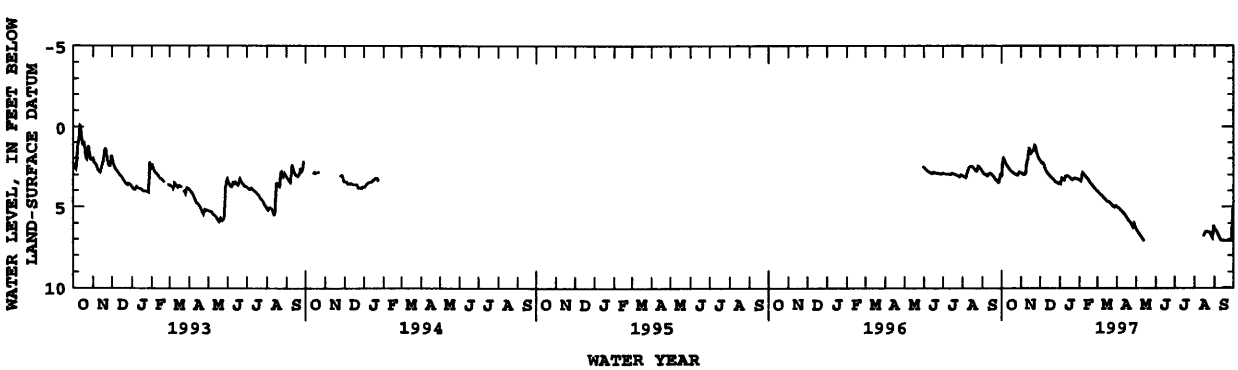


180628067084300. Local number, CR-TW-9A.
LOCATION.--Lat 18°06'28", long 67°08'43", Hydrologic Unit 21010003, 1.29 mi north of Cabo Rojo plaza, 1.54 mi northwest of Escuela Segunda Unidad Antonio Acarón Correa, and 1.23 mi southeast of Escuela Sabana Alta. Owner: U.S. Geological Survey, WRD, Name: CR-TW-9A.
AQUIFER.--Sandy and clay.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-24 ft (0-7.32 m), screened 19-24 ft (5.79-7.32 m). Depth 24 ft (7.32 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 33.21 ft (10.1 m) above mean sea level, from topographic map. Measuring point: Hole on shelter floor, 4.51 ft (1.37 m) above land-surface datum.
REMARKS.--Observation well. Drilled on Mar. 25, 1992, Automatic Digital Recorder (ADR) re-installed on May 29, 1996.
PERIOD OF RECORD.--July 1992 to January 1994, discontinued, May 27, 1996 to September 30, 1996.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +0.24 ft (+0.07 m) below land-surface datum, Oct. 12, 1992; lowest water level recorded, 7.22 ft (2.20 m) below land-surface datum, Aug. 14, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.01	2.86	2.09	3.46	3.30	4.01	4.97	6.31	---	---	---	6.24
2	3.06	2.88	2.15	3.51	3.32	4.01	5.00	6.38	---	---	---	6.37
3	2.16	2.92	2.21	3.59	3.38	4.07	5.03	6.44	---	---	---	6.41
4	1.92	2.98	2.29	3.21	3.39	4.12	5.05	6.51	---	---	---	6.42
5	1.99	2.98	2.23	3.17	3.09	4.16	5.08	6.58	---	---	---	6.52
6	2.10	2.97	2.26	3.22	2.83	4.21	5.14	6.62	---	---	---	6.60
7	2.17	2.97	2.30	3.29	2.88	4.23	5.18	6.67	---	---	---	6.67
8	2.28	2.97	2.47	3.34	2.95	4.26	5.20	6.74	---	---	---	6.78
9	2.34	2.74	2.59	3.32	3.00	4.28	5.24	6.81	---	---	---	6.88
10	2.42	2.23	2.70	3.09	3.06	4.32	5.30	6.88	---	---	---	6.95
11	2.49	2.08	2.74	3.06	3.10	4.39	5.35	6.90	---	---	---	7.04
12	2.53	2.11	2.83	3.06	3.15	4.42	5.36	6.99	---	---	---	7.07
13	2.60	1.42	2.86	3.07	3.18	4.47	5.42	7.06	---	---	---	7.07
14	2.66	1.27	2.92	3.06	3.23	4.51	5.48	7.07	---	---	---	7.07
15	2.71	1.46	2.97	3.08	3.27	4.56	5.54	7.09	---	---	6.80	7.06
16	2.77	1.64	2.99	3.12	3.35	4.61	5.60	---	---	---	6.81	7.07
17	2.79	1.71	3.10	3.17	3.42	4.66	5.64	---	---	---	6.65	7.07
18	2.82	1.58	3.12	3.20	3.49	4.64	5.71	---	---	---	6.56	7.10
19	2.85	1.51	3.14	3.25	3.50	4.66	5.78	---	---	---	6.52	7.10
20	2.88	1.51	3.19	3.29	3.60	4.65	5.83	---	---	---	6.52	7.10
21	2.92	1.47	3.23	3.30	3.62	4.71	5.89	---	---	---	6.52	7.10
22	2.92	1.21	3.26	3.30	3.67	4.76	5.90	---	---	---	6.53	7.10
23	2.96	1.07	3.31	3.22	3.74	4.81	5.95	---	---	---	6.55	7.10
24	2.96	1.27	3.35	3.20	3.78	4.85	6.04	---	---	---	6.58	7.10
25	3.00	1.46	3.41	3.19	3.83	4.90	6.11	---	---	---	6.53	7.10
26	3.03	1.63	3.45	3.20	3.86	4.94	6.19	---	---	---	6.61	7.10
27	3.01	1.76	3.48	3.23	3.92	4.97	6.24	---	---	---	6.74	7.10
28	2.92	1.89	3.48	3.26	3.96	5.01	5.87	---	---	---	6.80	7.10
29	2.80	1.98	3.48	3.24	---	5.01	6.08	---	---	---	6.88	7.10
30	2.82	2.01	3.54	3.26	---	4.89	6.20	---	---	---	6.94	5.34
31	2.86	---	3.55	3.28	---	4.96	---	---	---	---	6.03	---
MEAN	2.67	2.02	2.93	3.23	3.39	4.55	5.58	6.74	---	---	6.62	6.86

WTR YR 1997 MEAN 4.22 HIGHEST 1.07 NOV. 22, 1996 LOWEST 7.22 AUG. 14, 1997

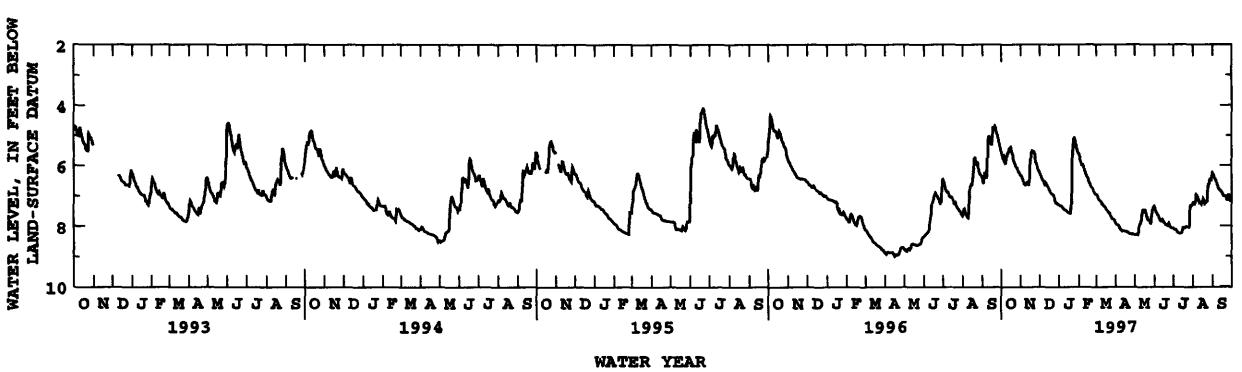


182442067091700. Local number, 200.
LOCATION.--Lat 18°24'42", long 67°09'17", Hydrologic Unit 21010002, 1.40 mi south of Aguadilla plaza, 3.04 mi northeast of Aguada plaza, and 0.20 mi north of Hwy 2 km 146.4. Owner: Carmelo Sánchez, Name: Aguadilla Cement Well.
AQUIFER.--Surficial deposits.
WELL CHARACTERISTICS.--Abandoned water-table industrial well, diameter 4 in (0.10 m), cased 0-20 ft (0-6.10 m), perforated 11-20 ft (3.35-6.10 m). Depth 20 ft (6.10 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 10 ft (3.05 m) above mean sea level, from topographic map. Measuring point: Shelter floor on top of 4 in (0.10 m) casing, 3.25 ft (0.99 m) above land-surface datum.
REMARKS.--Recording observation well. Water levels affected by nearby pumping well.
PERIOD OF RECORD.--October 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.24 ft (0.68 m) below land-surface datum, Aug 25, 1988; lowest water level recorded, 9.60 ft (2.93 m) below land-surface datum, Feb. 20, 1992.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.54	6.33	6.18	7.30	5.59	6.96	7.91	8.30	7.34	8.08	7.24	6.24
2	5.63	6.34	6.28	7.31	5.64	6.97	7.95	8.29	7.36	8.11	7.23	6.26
3	5.68	6.34	6.32	7.34	5.71	6.99	7.95	8.30	7.47	8.12	7.25	6.29
4	5.74	6.45	6.37	7.33	5.82	7.10	7.98	8.29	7.54	8.12	7.33	6.36
5	5.78	6.46	6.46	7.33	5.88	7.11	7.98	8.31	7.54	8.12	7.25	6.44
6	5.84	6.56	6.49	7.34	5.95	7.16	7.98	8.31	7.63	8.14	6.96	6.46
7	5.54	6.61	6.49	7.41	6.03	7.16	8.04	8.31	7.63	8.20	6.97	6.52
8	5.94	6.64	6.54	7.41	5.95	7.20	8.11	8.00	7.65	8.22	7.01	6.58
9	6.00	6.65	6.61	7.43	6.01	7.20	8.12	8.01	7.75	8.23	7.05	6.65
10	5.70	6.66	6.71	7.46	6.08	7.27	8.14	7.91	7.78	8.24	7.13	6.71
11	5.53	6.57	6.58	7.47	6.16	7.28	8.18	7.93	7.84	8.25	7.21	6.78
12	5.64	6.55	6.59	7.47	6.23	7.29	8.18	7.82	7.84	8.25	7.28	6.81
13	5.53	6.55	6.67	7.49	6.28	7.33	8.17	7.69	7.86	8.26	7.20	6.82
14	5.38	6.66	6.67	7.52	6.36	7.36	8.17	7.51	7.79	8.22	7.24	6.82
15	5.51	6.69	6.73	7.54	6.36	7.36	8.17	7.46	7.79	8.25	7.29	6.87
16	5.33	6.14	6.79	7.56	6.42	7.37	8.18	7.52	7.88	8.08	7.30	6.90
17	5.45	5.97	6.83	7.58	6.51	7.44	8.19	7.52	7.89	8.06	7.09	6.91
18	5.60	5.55	6.89	7.58	6.56	7.48	8.19	7.42	7.91	8.06	7.13	7.01
19	5.61	5.50	6.91	7.58	6.62	7.48	8.20	7.54	7.95	8.06	7.19	7.01
20	5.69	5.51	6.93	7.60	6.65	7.51	8.19	7.64	7.98	8.07	7.26	7.02
21	5.82	5.52	6.95	7.27	6.73	7.56	8.22	7.71	7.98	8.02	7.30	7.01
22	5.86	5.56	6.96	6.12	6.71	7.57	8.25	7.80	7.98	8.03	7.19	7.03
23	5.91	5.55	6.98	5.36	6.73	7.57	8.25	7.81	8.01	8.03	7.19	7.07
24	5.98	5.66	6.99	5.13	6.82	7.66	8.27	7.81	7.90	8.04	7.19	7.15
25	6.06	5.84	7.13	5.09	6.86	7.69	8.27	7.82	7.93	8.04	6.66	7.19
26	6.06	5.93	7.21	5.08	6.88	7.74	8.27	7.91	8.02	8.04	6.63	6.92
27	6.07	5.96	7.25	5.16	6.95	7.77	8.26	7.98	8.06	8.05	6.67	7.00
28	6.18	6.02	7.25	5.30	6.96	7.77	8.28	7.69	8.07	7.33	6.47	7.07
29	6.20	6.17	7.25	5.41	---	7.77	8.29	7.52	8.07	7.34	6.47	7.20
30	6.24	6.17	7.28	5.50	---	7.80	8.29	7.42	8.07	7.30	6.48	7.22
31	6.29	---	7.30	5.60	---	7.82	---	7.42	---	7.37	6.49	---
MEAN	5.78	6.17	6.79	6.78	6.34	7.41	8.15	7.84	7.82	8.02	7.04	6.81

WTR YR 1997 MEAN 7.08 HIGHEST 4.88 OCT. 10, 1996 LOWEST 8.31 MAY 5, 6, 7, 1997



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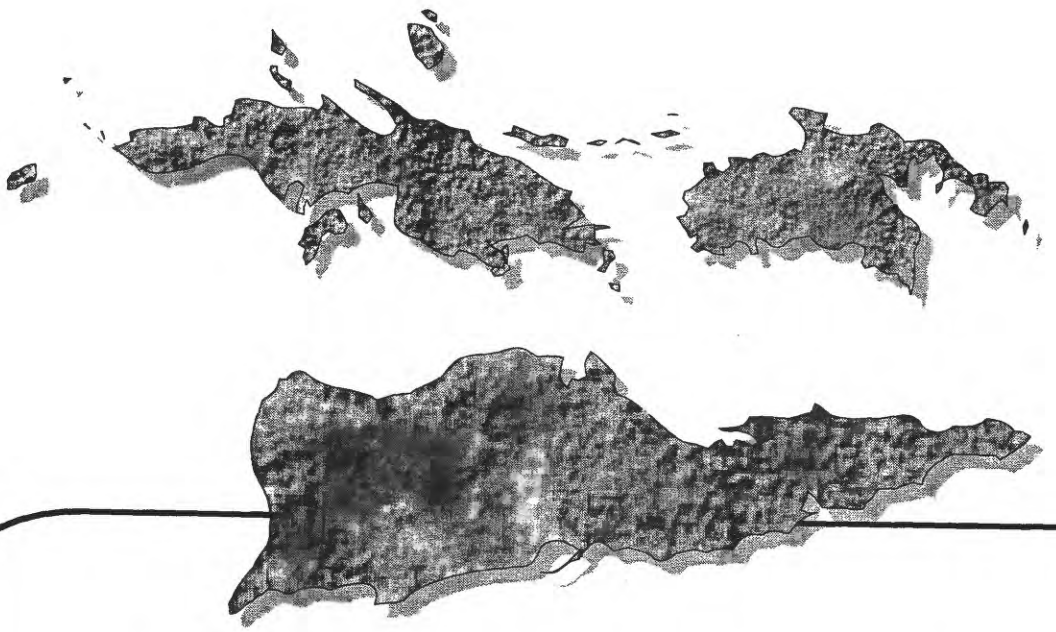

Surface-Water Records for U.S. Virgin Islands

50252000 BONNE RESOLUTION GUT AT BONNE RESOLUTION, ST. THOMAS, VI

LOCATION.--Lat 18°21'57", long 64°57'34", Hydrologic Unit 21020001, on right bank near Hull Bay Road, 0.5 mi (0.8 km) upstream from mouth, and 2.5 mi (4.0 km) northwest of Fort Christian, Charlotte Amalie.

DRAINAGE AREA.--0.49 mi² (1.27 km²).

PERIOD OF RECORD.--December 1962 to February 1967, March 1979 to April 1981, May 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 280 ft (85 m), from topographic map. December 1962 to February 1967 and March 1979 to April 1981 at site about 100 ft (30 m) upstream at different datum.

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.01	e.06	e.10	e.20	.03	.01	.01	.01	.01	.01	.06
2	.01	.01	e.06	e.10	e.15	.03	.01	.01	.01	.01	.01	.05
3	.01	.01	e.06	e.10	e.14	.03	.01	.01	.01	.01	.01	.05
4	.01	.01	e.06	e.10	e.15	.02	.01	.01	.01	.01	.01	.04
5	.01	.01	e.08	e.10	e.16	.02	.01	.01	.01	.01	.01	.04
6	.01	.01	e.08	e.10	e.15	.02	.01	.01	.01	.01	.02	.05
7	.01	.01	e.08	e.10	e.15	.02	.01	.01	.01	.01	.01	.41
8	.01	.01	e.08	e.10	e.15	.02	.01	.01	.01	.01	.01	.14
9	.01	.01	e.08	e.10	e.15	.02	.01	.01	.01	.01	.01	.07
10	.01	.01	e.07	e.10	e.16	.02	.01	.01	.01	.01	.01	.05
11	.01	.02	e.07	e.10	e.16	.01	.01	.01	.01	.01	.01	.04
12	.01	1.0	e.07	e.10	e.14	.01	.01	.01	.01	.01	.01	.04
13	.01	.08	e.08	e.10	e.12	.01	.01	.01	.01	.01	.07	.04
14	.01	.03	e.08	e.10	e.11	.01	.01	.01	.01	.01	.01	.04
15	.01	.02	e.08	e.10	e.10	.01	.01	.01	.01	.01	.01	.05
16	.01	.01	e.08	e.10	e.10	.01	.01	.01	.01	.01	.01	.06
17	.01	.01	e.08	e.12	e.10	.01	.01	.01	.01	.01	.01	.04
18	.02	.05	e.08	e.12	e.08	.01	.01	.01	.01	.01	.01	.04
19	.01	.05	e.09	e.12	e.08	.01	.01	.01	.01	.02	.01	.04
20	.01	.07	e.09	e.12	.06	.01	.01	.01	.01	.01	.01	.04
21	.01	e19	e.08	e.15	.10	.01	.01	.01	.01	.01	.02	.04
22	.01	e.23	e.09	e.14	.08	.01	.01	.01	.01	.01	.04	.03
23	.01	e.15	e.09	e.12	.07	.01	.01	.01	.01	.01	.02	.04
24	.01	e.30	e.09	e.12	.05	.01	.01	.01	.01	.01	.05	.03
25	.01	e.09	e.10	e.12	.05	.00	.01	.01	.01	.01	.05	.04
26	.01	e.06	e.10	e.11	.04	.01	.01	.01	.01	.01	.05	.06
27	.01	e.10	e.10	e.12	.04	.01	.01	.01	.01	.01	.05	.07
28	.02	e.12	e.10	e.12	.03	.02	.01	.01	.01	.01	.05	.06
29	.01	e.08	e.10	e.12	---	.01	.01	.01	.01	.01	.05	.04
30	.01	e.08	e.10	e.12	---	.01	.01	.01	.01	.01	.05	.04
31	.01	---	e.10	e.12	---	.01	---	.01	---	.01	.05	---
TOTAL	0.33	21.65	2.56	3.44	3.07	0.44	0.30	0.31	0.30	0.32	0.75	1.84
MEAN	.011	.72	.083	.11	.11	.014	.010	.010	.010	.010	.024	.061
MAX	.02	19	.10	.15	.20	.03	.01	.01	.01	.02	.07	.41
MIN	.01	.01	.06	.10	.03	.00	.01	.01	.01	.01	.01	.03
AC-FT	.7	43	5.1	6.8	6.1	.9	.6	.6	.6	.6	1.5	3.6
CFSM	.02	1.47	.17	.23	.22	.03	.02	.02	.02	.02	.05	.13
IN.	.03	1.64	.19	.26	.23	.03	.02	.02	.02	.02	.06	.14

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1997, BY WATER YEAR (WY)

MEAN	.48	.76	.062	.068	.061	.051	.063	.33	.13	.043	.054	.98
MAX	3.09	4.22	.30	.35	.38	.31	.34	2.06	.89	.18	.23	8.91
(WY)	1986	1988	1993	1992	1992	1987	1986	1987	1987	1988	1988	1989
MIN	.011	.011	.002	.016	.005	.001	.000	.002	.004	.010	.010	.009
(WY)	1997	1995	1995	1986	1995	1995	1995	1995	1995	1994	1994	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1963 - 1997	
ANNUAL TOTAL	63.17		35.31			
ANNUAL MEAN	.17		.097		.25	
HIGHEST ANNUAL MEAN					.77	1989
LOWEST ANNUAL MEAN					.026	1964
HIGHEST DAILY MEAN	32	Sep 10	19	Nov 21	169	Apr 18 1983
LOWEST DAILY MEAN	.01	Jan 1	.00	Mar 25	.00	Apr 11 1980
ANNUAL SEVEN-DAY MINIMUM	.01	Jan 1	.01	Mar 19	.00	Jan 31 1986
INSTANTANEOUS PEAK FLOW			884	Nov 21	1650	Apr 18 1983
INSTANTANEOUS PEAK STAGE			6.18	Nov 21	7.00	Apr 18 1983
ANNUAL RUNOFF (AC-FT)	125		70		186	
ANNUAL RUNOFF (CFSM)	.35		.20		.51	
ANNUAL RUNOFF (INCHES)	4.80		2.68		6.93	
10 PERCENT EXCEEDS	.08		.11		.11	
50 PERCENT EXCEEDS	.01		.01		.02	
90 PERCENT EXCEEDS	.01		.01		.01	

e Estimated

50274000 TURPENTINE RUN AT MOUNT ZION, ST. THOMAS, VI

LOCATION.--Lat 18°19'55", long 64°53'20", Hydrologic Unit 21020001, on left bank at Mount Zion, 0.6 mi (0.9 km) east southeast from Donoe School, 0.5 mi (0.8 km) northwest from Mariendal, and 0.4 mi (0.6 km) southeast from conjunction of roads 38 and 32.

DRAINAGE AREA.--2.33 mi² (6.03 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1963 to December 1969, October 1992 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 120 ft (36 m), from topographic map. Datum of gage for period of October 1992 to current year is 1.62 ft (0.49 m), higher than previous record.

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.88	.43	.91	e.77	e6.3	e.35	.32	.33	e.37	.17	.10	.22
2	e.55	.41	.78	.96	e2.0	e.49	.38	.32	e3.1	.15	.13	.27
3	e.63	.55	.86	.67	e.82	.78	.31	.29	e.32	.12	.20	.19
4	.86	.54	.81	.67	e.89	.51	.26	.31	.22	.12	.11	.17
5	.58	.42	.80	.51	e.72	.38	.34	.30	.20	.12	.28	.16
6	e.49	.89	.86	.53	e.62	e.47	.26	.30	.22	.13	.36	.25
7	.71	.40	e.72	.62	e.92	e.40	.25	.31	.21	.16	.31	5.1
8	.47	.36	e.81	.72	e1.2	e.63	.21	.26	.23	.18	.31	1.3
9	.57	.41	.76	.52	e.48	e.43	.20	1.2	.20	.43	.37	.51
10	e.53	.41	.70	.51	e.45	e.31	.24	.42	.26	.16	.77	.38
11	e.43	e.58	1.1	.50	e2.3	.31	.25	.33	.19	.19	.46	.36
12	.49	e5.2	.62	.61	e1.1	.71	.29	.35	.21	.17	.17	.31
13	.49	.84	.60	.56	.63	.53	.31	.32	.21	.16	8.3	.36
14	.42	.54	.74	.54	.59	.39	.26	.30	.26	.19	1.2	.43
15	.45	.45	1.3	.52	.48	.39	.25	.27	.28	.12	.29	1.2
16	.37	.74	.86	.46	.71	.30	.24	.41	.32	.40	.31	1.5
17	.42	.57	.66	.57	.68	.32	.24	.37	.32	.17	.20	e.67
18	.40	.70	.76	.51	.59	.33	.22	.21	.29	.41	.14	e.46
19	.42	.93	.75	.47	.57	.30	.27	.20	.29	.65	.12	e.48
20	.40	.67	.77	.82	.49	.22	.35	.15	.30	.91	.16	e.33
21	.43	53	.61	3.3	.48	.21	.31	.16	.29	.66	.31	e.32
22	.40	3.0	.69	4.9	.51	.27	.24	.21	.24	.32	.94	e.37
23	.44	3.5	.64	.97	.96	.18	.26	.41	.57	.19	.30	e.42
24	.36	4.9	.57	e1.3	e.48	.23	.38	.31	.29	.14	1.5	.43
25	.30	1.5	.56	e.71	e.53	.27	.25	e.25	.23	.23	.48	.38
26	.51	e1.0	.75	e.54	e.40	.27	.28	e1.4	.21	.15	.33	1.0
27	.40	e.92	1.1	e.54	e.34	.27	.25	e1.3	.20	.14	.31	.43
28	1.1	e1.6	.63	e.48	.32	.29	.26	e.54	.14	.15	.33	.48
29	.54	1.3	1.7	e.59	---	.37	.28	e.35	.14	.13	.23	.37
30	.46	1.2	2.0	e.46	---	.27	.32	e.32	.19	.10	.27	.28
31	.39	---	e.86	e1.8	---	.27	---	e.33	---	.09	.24	---
TOTAL	15.89	87.96	26.28	27.63	26.56	11.45	8.28	12.53	10.50	7.41	19.53	19.13
MEAN	.51	2.93	.85	.89	.95	.37	.28	.40	.35	.24	.63	.64
MAX	1.1	53	2.0	4.9	6.3	.78	.38	1.4	3.1	.91	8.3	5.1
MIN	.30	.36	.56	.46	.32	.18	.20	.15	.14	.09	.10	.16
AC-FT	32	174	52	55	53	23	16	25	21	15	39	38
CFSM	.22	1.26	.36	.38	.41	.16	.12	.17	.15	.10	.27	.27
IN.	.25	1.40	.42	.44	.42	.18	.13	.20	.17	.12	.31	.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1997, BY WATER YEAR (WY)

MEAN	.23	.96	.59	.08	.05	.12	.04	.73	.32	.08	.07	.47
MAX	2.04	6.49	4.79	.89	.95	.37	.92	.77	3.16	.74	.63	38.0
(WY)	1993	1993	1993	1997	1997	1997	1993	1993	1993	1996	1997	1995
MIN	.23	.37	.23	.086	.047	.076	.025	.15	.18	.078	.074	.25
(WY)	1997	1996	1994	1997	1997	1995	1995	1995	1994	1997	1997	1994

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1964 - 1997	
ANNUAL TOTAL	465.72		273.15			
ANNUAL MEAN	1.27		.75		.78	
HIGHEST ANNUAL MEAN					3.43	1995
LOWEST ANNUAL MEAN					.00	1965
HIGHEST DAILY MEAN	205	Sep 10	53	Nov 21	802	Sep 16 1995
LOWEST DAILY MEAN	.04	Jul 6	.09	Jul 31	.01	Apr 5 1995
ANNUAL SEVEN-DAY MINIMUM	.11	Jun 24	.12	Jul 27	.01	Apr 3 1995
INSTANTANEOUS PEAK FLOW			1370	Nov 21	10500	Sep 16 1995
INSTANTANEOUS PEAK STAGE			5.71	Nov 21	7.28	Sep 16 1995
ANNUAL RUNOFF (AC-FT)	924		542		565	
ANNUAL RUNOFF (CFSM)	.55		.32		.33	
ANNUAL RUNOFF (INCHES)	7.44		4.36		8.87	
10 PERCENT EXCEEDS	.91		1.0		.93	
50 PERCENT EXCEEDS	.39		.40		.28	
90 PERCENT EXCEEDS	.16		.19		.09	

e Estimated

50295000 GUINEA GUT AT BETHANY, ST. JOHN, VI

LOCATION.--Lat 18°19'55", long 64°46'50", Hydrologic Unit 21020001, 600 ft (183 m) southeast of Bethany Church, and 1.0 mi (1.6 km) east of Government House at Cruz Bay.

DRAINAGE AREA.--0.37 mi² (0.96 km²).

PERIOD OF RECORD.--January 1963 to October 1967, September 1982 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 260 ft (79 m), from topographic map. Prior to September 1982, at datum 1.00 ft (0.30 m) higher.

REMARKS.--Records poor. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.02	.07	e.05	e.06	.02	.01	.01	.03	.01	.00	.00
2	.05	.02	.06	e.05	e.05	.02	.01	.01	.03	.01	.00	.01
3	.05	.02	e.06	e.05	e.04	.02	.01	.01	.02	.01	.00	.01
4	.05	.02	e.06	e.05	e.05	.01	.01	.01	.01	.01	.00	.01
5	.04	.03	e.07	e.05	e.05	.02	.01	.01	.01	.01	.00	.01
6	.04	.04	e.07	e.05	e.05	.01	.01	.01	.01	.01	.00	.00
7	.04	.04	e.07	e.05	e.05	.01	.01	.01	.01	.01	.00	.01
8	.04	.03	e.07	e.05	e.05	.01	.01	.01	.01	.01	.00	.01
9	.04	.03	e.07	e.05	e.05	.01	.01	.02	.01	.01	.00	.01
10	.04	.03	e.05	e.05	e.05	.01	.01	.01	.01	.01	.00	.01
11	.04	.03	e.05	e.05	e.05	.01	.01	.01	.01	.01	.00	.01
12	.04	1.8	e.05	e.05	e.04	.01	.01	.01	.01	.01	.00	.01
13	.03	.68	e.06	e.05	e.04	.01	.01	.01	.01	.01	.00	.01
14	.03	.24	e.06	e.06	.03	.01	.01	.01	.01	.01	.00	.01
15	.03	.13	e.06	e.06	.02	.01	.01	.02	.01	.01	.00	.01
16	.03	.08	e.06	e.06	.02	.01	.01	.02	.01	.01	.00	.02
17	.03	.03	e.06	e.06	.02	.01	.01	.02	.01	.01	.00	.01
18	.03	.03	e.06	e.06	.01	.01	.01	.02	.01	.01	.00	.01
19	.03	.03	e.07	e.06	e.01	.01	.01	.02	.01	.01	.00	.01
20	.03	.03	e.07	e.06	e.01	.01	.01	.01	.01	.01	.00	.01
21	.03	12	e.04	e.07	.02	.01	.01	.01	.01	.01	.00	.01
22	.03	1.1	e.04	e.07	.02	.01	.01	.03	.01	.01	.00	.01
23	.02	.25	e.04	e.05	.02	.01	.01	.03	.01	.01	.00	.01
24	.02	7.3	e.04	e.05	.02	.01	.01	.03	.01	.01	.01	.01
25	.02	.65	e.05	e.05	.02	.01	.01	.03	.01	.01	.01	.01
26	.02	.09	e.05	e.04	.02	.00	.01	.04	.01	.01	.01	.01
27	.02	.06	e.05	e.04	.02	.00	.01	.04	.01	.01	.01	.01
28	.03	.80	e.05	e.04	.02	.00	.01	.04	.01	.01	.01	.01
29	.03	.30	e.05	e.04	---	.00	.01	.04	.01	.01	.01	.01
30	.03	.14	e.05	e.04	---	.00	.01	.04	.01	.01	.01	.01
31	.02	---	e.05	e.04	---	.00	---	.03	---	.01	.00	---
TOTAL	1.03	26.05	1.76	1.60	0.91	0.29	0.30	0.62	0.35	0.31	0.07	0.29
MEAN	.033	.87	.057	.052	.032	.009	.010	.020	.012	.010	.002	.010
MAX	.05	12	.07	.07	.06	.02	.01	.04	.03	.01	.01	.02
MIN	.02	.02	.04	.04	.01	.00	.01	.01	.01	.01	.00	.00
AC-FT	2.0	52	3.5	3.2	1.8	.6	.6	1.2	.7	.6	.1	.6
CFSM	.09	2.35	.15	.14	.09	.03	.03	.05	.03	.03	.01	.03
IN.	.10	2.62	.18	.16	.09	.03	.03	.06	.04	.03	.01	.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1997, BY WATER YEAR (WY)

MEAN	.048	.35	.028	.016	.008	.005	.29	.089	.010	.011	.015	.30
MAX	.23	2.52	.11	.052	.032	.023	4.03	.89	.031	.041	.082	2.35
(WY)	1986	1985	1989	1997	1997	1996	1983	1986	1987	1996	1983	1989
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1992	1992	1987	1992	1992	1986	1995	1994	1991	1987	1991	1991

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1963 - 1997	
ANNUAL TOTAL	49.77		33.58			
ANNUAL MEAN	.14		.092		.078	
HIGHEST ANNUAL MEAN					.35	1983
LOWEST ANNUAL MEAN					.00	1967
HIGHEST DAILY MEAN	12	Nov 21	12	Nov 21	110	Apr 18 1983
LOWEST DAILY MEAN	.00	Jun 17	.00	Mar 26	.00	Oct 3 1982
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 17	.00	Aug 1	.00	Jan 9 1983
INSTANTANEOUS PEAK FLOW			319	Nov 21	946	Apr 18 1983
INSTANTANEOUS PEAK STAGE			3.74	Nov 21	5.33	Apr 18 1983
ANNUAL RUNOFF (AC-FT)	99		67		56	
ANNUAL RUNOFF (CFSM)	.37		.25		.21	
ANNUAL RUNOFF (INCHES)	5.00		3.38		2.86	
10 PERCENT EXCEEDS	.07		.06		.04	
50 PERCENT EXCEEDS	.02		.01		.01	
90 PERCENT EXCEEDS	.01		.01		.00	

e Estimated

50345000 JOLLY HILL GUT AT JOLLY HILL, ST. CROIX, VI

LOCATION.--Lat 17°44'00", long 64°51'47", Hydrologic Unit 21020002, on Mahogany Road at Jolly Hill, 1.8 mi (2.9 km) northeast of Frederiksted.

DRAINAGE AREA.--2.10 mi² (5.44 km²).

PERIOD OF RECORD.--January 1963 to December 1968. Monthly measurements, 1962-69. October 1982 to current year.

GAGE.--Water-stage recorder, crest-stage gage and sharp-crested concrete control. Elevation of gage is 140 ft (43 m), from topographic map.

REMARKS.--Records poor. Low-water diversions upstream from station. Gage-height and precipitation satellite telemetry at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.30	e.15	e.30	e.26	e.32	.25	.10	e.06	e.04	.00	.00	.00
2	e.19	e.14	e.27	e.26	e.29	.24	.10	.05	.04	.00	.00	e.00
3	e.21	e.19	e.30	e.26	e.27	.23	.10	.06	.04	.00	.00	e.00
4	e.29	e.18	e.28	e.26	e.29	.22	.10	.05	e.05	.00	.00	e.00
5	e.20	e.15	e.28	e.26	e.30	.22	.09	.05	e.03	.00	.00	e.00
6	e.17	e.30	e.29	e.26	e.29	.21	.09	.05	.03	.00	.00	e.00
7	e.29	e.14	e.25	e.26	e.29	.22	.09	.06	e.04	.00	.00	e.00
8	e.16	e.12	e.28	e.26	e.29	.22	.09	.09	e.04	.00	.00	e.00
9	e.19	e.14	e.27	e.26	.29	.21	.09	.07	e.04	e.00	.00	e.00
10	e.18	e.14	e.24	e.26	.29	.20	.08	.07	e.04	e.00	e.00	e.00
11	e.15	e.20	e.37	e.26	.29	.18	.08	.07	e.04	e.00	e.00	e.00
12	e.16	e1.7	e.22	e.26	.30	.18	.08	.07	e.05	e.00	e.00	e.00
13	e.16	e.29	e.21	e.26	.29	.18	.08	.06	e.03	e.00	e.00	e.00
14	e.14	e.18	e.21	e.31	.29	.18	.09	.07	e.02	e.00	e.00	e.00
15	e.15	e.16	e.21	e.31	.29	.19	.11	.07	e.01	e.00	e.00	e.00
16	e.13	e.25	e.21	e.31	.29	.18	.10	.10	e.00	e.00	e.00	e.00
17	e.14	e.20	e.21	e.31	.29	.17	.09	.07	e.00	e.00	e.00	e.00
18	e.14	e.24	e.21	e.31	.29	.14	.08	.12	.00	e.00	e.00	e.00
19	e.14	e.32	e.23	e.31	.29	.18	.08	.11	.00	e.00	e.00	e.00
20	e.14	e.23	e.23	e.31	.28	.13	.07	.07	.00	e.00	e.00	e.00
21	e.15	e17	e.21	e.39	.28	.13	.07	.07	.00	e.00	e.00	e.00
22	e.14	e1.0	e.23	e.37	.28	.13	.07	e.05	.00	e.00	e.00	e.00
23	e.15	e1.2	e.23	e.31	.27	.13	.07	e.06	.00	e.00	e.00	.00
24	e.12	e1.6	e.23	e.31	.27	.12	.07	e.07	.00	e.00	e.00	.00
25	e.11	e.50	e.26	e.31	.27	.12	e.07	e.13	.00	e.00	e.00	.00
26	e.17	e.34	e.26	e.29	.27	.11	e.09	e.10	.00	e.00	.00	.00
27	e.14	e.32	e.26	e.31	.24	.11	e.06	e.08	.00	e.00	.00	.00
28	e.37	e.54	e.26	e.31	e.24	.12	e.07	e.17	.00	e.00	.00	.00
29	e.18	e.45	e.26	.31	---	.12	e.06	e.16	.00	e.00	.00	.00
30	e.11	e.41	e.26	.31	---	.11	e.06	e.07	.00	.00	.00	.00
31	e.13	---	e.26	.31	---	.11	---	e.04	---	.00	.00	---
TOTAL	5.40	28.78	7.79	9.08	7.94	5.24	2.48	2.42	0.54	0.00	0.00	0.00
MEAN	.17	.96	.25	.29	.28	.17	.083	.078	.018	.000	.000	.000
MAX	.37	17	.37	.39	.32	.25	.11	.17	.05	.00	.00	.00
MIN	.11	.12	.21	.26	.24	.11	.06	.04	.00	.00	.00	.00
AC-FT	11	57	15	18	16	10	4.9	4.8	1.1	.00	.00	.00
CFSM	.08	.46	.12	.14	.14	.08	.04	.04	.01	.00	.00	.00
IN.	.10	.51	.14	.16	.14	.09	.04	.04	.01	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1997, BY WATER YEAR (WY)

MEAN	.92	.77	.50	.29	.19	.096	.068	.093	.17	.084	.030	.74
MAX	5.92	2.33	2.34	.88	.55	.34	.23	.46	1.43	.52	.18	3.80
(WY)	1996	1988	1988	1988	1988	1990	1990	1992	1987	1987	1987	1995
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1987	1992	1992	1992	1989	1989	1989	1989	1989	1989	1989	1991

SUMMARY STATISTICS	FOR 1996 CALENDAR YEAR		FOR 1997 WATER YEAR		WATER YEARS 1964 - 1997	
ANNUAL TOTAL	150.33		69.67			
ANNUAL MEAN	.41		.19		.19	
HIGHEST ANNUAL MEAN					.94	1996
LOWEST ANNUAL MEAN					.00	1965
HIGHEST DAILY MEAN	62	Sep 10	17	Nov 21	62	Sep 10 1996
LOWEST DAILY MEAN	.00	Jun 4	.00	Jun 16	.00	Oct 1 1985
ANNUAL SEVEN-DAY MINIMUM	.00	Jun 4	.00	Jun 16	.00	Sep 4 1986
INSTANTANEOUS PEAK FLOW			11	Nov 21	937	Sep 15 1995
INSTANTANEOUS PEAK STAGE			1.62	Nov 21	5.38	Sep 15 1995
ANNUAL RUNOFF (AC-FT)	298		138		159	
ANNUAL RUNOFF (CFSM)	.20		.091		.10	
ANNUAL RUNOFF (INCHES)	2.66		1.23		1.42	
10 PERCENT EXCEEDS	.41		.30		.64	
50 PERCENT EXCEEDS	.14		.11		.04	
90 PERCENT EXCEEDS	.01		.00		.00	

e Estimated

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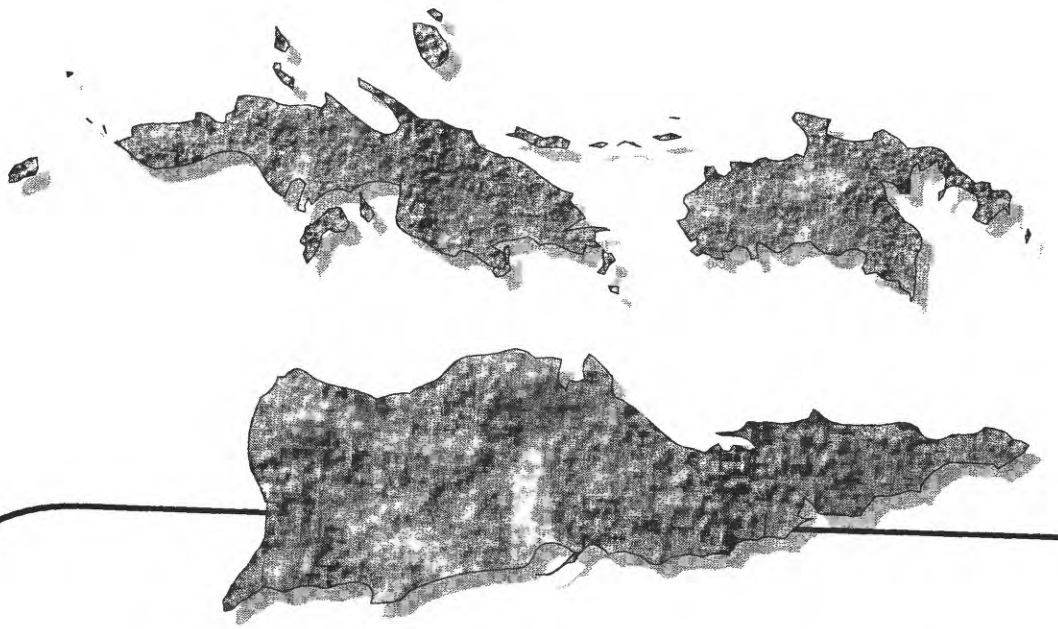


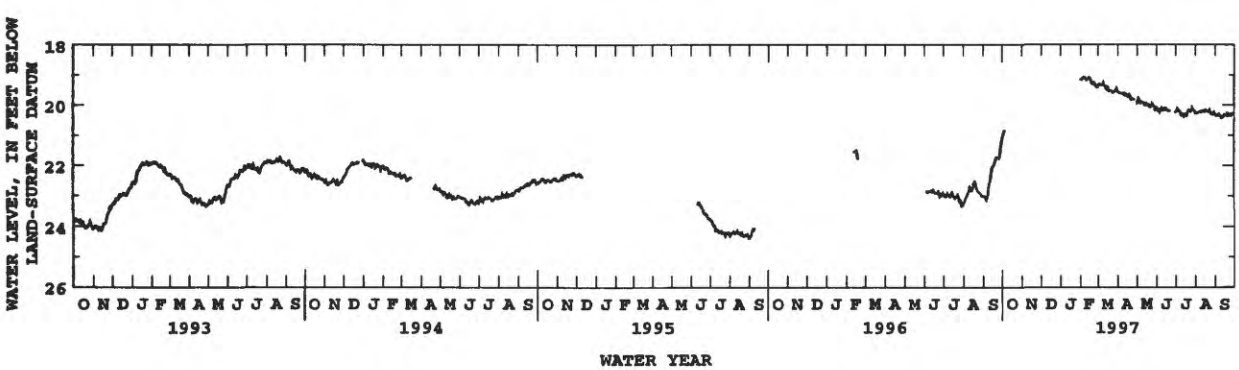
Ground-Water Records for U.S. Virgin Islands

174225064472000. Local number, 2.
LOCATION.--Lat 17°42'25", long 64°47'20", Hydrologic Unit 21020002, 0.90 mi southeast of the Experimental Station, 0.6 mi southwest of Christiansted Plaza, and 0.18 mi northeast of the Alexander Hamilton Airport entrance on Hwy 64. Owner: U.S. Virgin Islands Government, Name: USGS-10, Fairplains 2 (FP2).
AQUIFER.--Alluvium and marl.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 20 ft (6.10 m) above mean sea level, from topographic map. Measuring point: Top of 0.5 in (0.01 m) hole at concrete base wall, 3.00 ft (0.91 m) above land-surface datum.
REMARKS.--Recording observation well. Nearby pumping well.
PERIOD OF RECORD.--June 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 19.02 ft (5.80 m) below land-surface datum, Feb. 8, 1997; lowest water level recorded, 26.46 ft (8.06 m) below land-surface datum, Aug. 25, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21.14	---	---	---	19.21	19.39	19.57	19.79	20.09	20.27	20.32	20.31
2	21.06	---	---	---	19.16	19.33	19.58	19.91	20.09	20.21	20.25	20.32
3	20.99	---	---	---	19.16	19.28	19.58	19.89	20.19	20.24	20.26	20.36
4	20.92	---	---	---	19.16	19.30	19.60	19.77	20.18	20.14	20.26	20.37
5	20.83	---	---	---	19.13	19.34	19.60	19.80	20.09	20.11	20.27	20.36
6	20.82	---	---	---	19.07	19.34	19.63	19.88	20.21	20.22	20.25	20.34
7	---	---	---	---	19.10	19.35	19.63	19.99	20.22	20.21	20.25	20.25
8	---	---	---	---	19.08	19.33	19.63	19.91	20.07	20.21	20.23	20.32
9	---	---	---	---	19.07	19.25	19.61	19.90	20.11	20.24	20.20	20.36
10	---	---	---	---	19.16	19.26	19.60	19.93	20.22	20.37	20.24	20.36
11	---	---	---	---	19.15	19.33	19.67	19.87	20.14	20.34	20.23	20.39
12	---	---	---	---	19.18	19.39	19.66	19.97	20.15	20.36	20.18	20.46
13	---	---	---	---	19.10	19.40	19.57	19.95	20.19	20.25	20.20	20.37
14	---	---	---	---	19.15	19.47	19.71	19.95	20.16	20.37	20.20	20.40
15	---	---	---	---	19.12	19.44	19.66	20.08	20.07	20.38	20.22	20.36
16	---	---	---	---	19.04	19.32	19.65	19.95	20.12	20.30	20.23	20.29
17	---	---	---	---	19.18	19.47	19.74	19.95	20.10	20.32	20.13	20.38
18	---	---	---	---	19.12	19.52	19.71	19.99	20.22	20.39	20.18	20.28
19	---	---	---	---	19.25	19.56	19.69	20.02	20.17	20.33	20.22	20.38
20	---	---	---	---	19.26	19.51	19.60	20.02	20.20	20.24	20.22	20.33
21	---	---	---	---	19.32	19.54	19.75	19.99	20.19	20.15	20.22	20.22
22	---	---	---	---	19.28	19.52	19.83	20.08	20.19	20.20	20.22	20.33
23	---	---	---	---	19.20	19.54	19.81	20.08	20.21	20.22	20.19	20.39
24	---	---	---	---	19.28	19.54	19.78	20.04	20.20	20.17	20.14	20.33
25	---	---	---	---	19.35	19.60	19.83	19.95	---	20.20	20.32	20.32
26	---	---	---	---	19.35	19.56	19.81	19.92	---	20.20	20.26	20.36
27	---	---	---	---	19.38	19.58	19.79	20.03	---	20.08	20.30	20.35
28	---	---	---	---	19.44	19.53	19.80	20.07	---	20.10	20.34	20.23
29	---	---	---	---	---	19.49	---	20.01	---	20.23	20.31	20.33
30	---	---	---	---	---	19.46	---	20.14	20.24	20.13	20.22	20.32
31	---	---	---	---	---	19.42	---	20.19	---	20.25	20.26	---
MEAN	20.96	---	---	---	19.19	19.43	19.68	19.97	20.16	20.24	20.24	20.34

WTR YR 1997 MEAN 19.94 HIGHEST 19.02 FEB. 8, 1997 LOWEST 21.14 OCT. 1, 1996



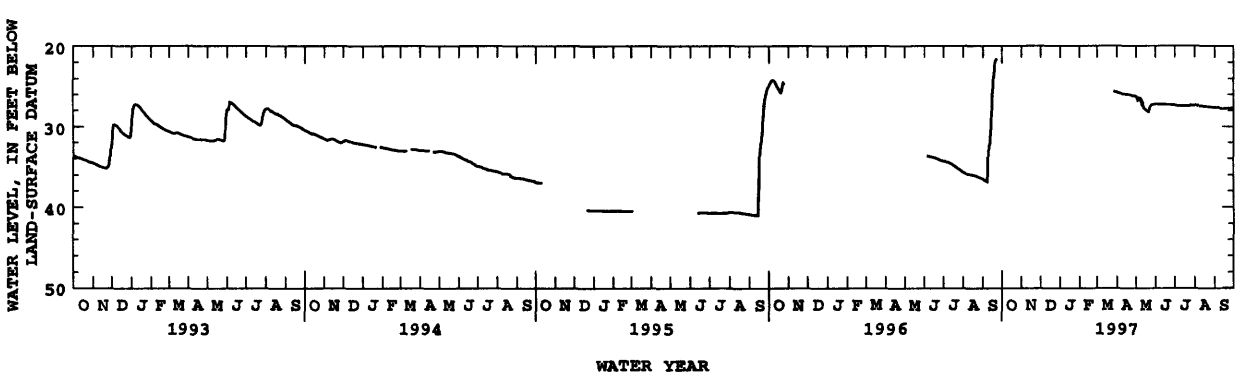
ST. CROIX, U.S. VIRGIN ISLANDS

174243064475100. Local number, 3.
LOCATION.--Lat 17°42'43", long 64°47'51", Hydrologic Unit 21020002, 0.75 mi northwest of the Alexander Hamilton Airport entrance on Hwy 64, 6.45 mi southwest of Christiansted Plaza, and 0.57 mi southwest of the Experimental Station. Owner: U.S. Virgin Islands Government, Name: Golden Grove - 6 (PW6).
AQUIFER.--Alluvium and marl.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), cased 8 in (0.20 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 40 ft (12.2 m) above mean sea level, from topographic map. Measuring point: Upper edge of hole at 8 in (0.20 m) casing, 4.20 ft (1.28 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 12.99 ft (3.96 m) below land-surface datum, Nov. 10, 1990; lowest water level recorded, 41.05 ft (12.51 m) below land-surface datum, Sept. 15, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	24.43	---	25.69	26.21	27.19	27.30	27.38	27.62
2	---	---	---	---	24.51	---	25.74	26.26	27.18	27.31	27.28	27.63
3	---	---	---	---	24.52	---	25.75	26.28	27.18	27.35	27.30	27.60
4	---	---	---	---	24.52	---	25.79	26.67	27.15	27.34	27.30	27.61
5	---	---	---	---	24.50	---	25.81	26.76	27.19	27.41	27.38	27.63
6	---	---	---	---	24.45	---	25.85	26.44	27.19	27.42	27.39	27.61
7	---	---	---	---	24.46	---	25.83	26.41	27.19	27.40	27.37	27.58
8	---	---	---	---	---	---	25.82	26.41	27.19	27.36	27.36	27.63
9	---	---	---	---	---	---	25.86	26.56	27.21	27.36	27.39	27.65
10	---	---	---	---	---	---	25.90	27.23	27.22	27.42	27.40	27.68
11	---	---	---	---	---	---	25.93	27.09	27.20	27.42	27.39	27.76
12	---	---	---	---	---	---	25.92	26.68	27.21	27.41	27.41	27.76
13	---	---	---	---	---	---	25.94	27.55	27.23	27.41	27.41	27.77
14	---	---	---	---	---	---	25.98	27.65	27.24	27.44	27.42	27.79
15	---	---	---	---	---	---	25.98	27.74	27.23	27.43	27.44	27.77
16	---	---	---	---	---	---	25.96	27.85	27.22	27.41	27.47	27.76
17	---	---	---	---	---	---	25.96	27.91	27.22	27.43	27.47	27.74
18	---	---	---	---	---	---	25.98	27.95	27.24	27.42	27.45	27.76
19	---	---	---	---	---	---	26.01	28.04	27.25	27.41	27.47	27.75
20	---	---	---	---	---	---	26.03	28.08	27.25	27.43	27.49	27.71
21	---	---	---	---	---	---	26.03	28.13	27.24	27.41	27.51	27.73
22	---	---	---	---	---	---	26.04	28.18	27.26	27.41	27.51	27.71
23	---	---	---	---	---	---	26.05	27.62	27.26	27.40	27.51	27.70
24	---	---	---	---	---	---	26.07	27.48	27.25	27.40	27.51	27.70
25	---	---	---	---	---	---	26.16	27.40	27.26	27.38	27.55	27.71
26	---	---	---	---	---	---	26.16	27.29	27.26	27.32	27.55	27.75
27	---	---	---	---	---	25.61	26.16	27.25	27.27	27.28	27.56	27.72
28	---	---	---	---	---	25.63	26.17	27.24	27.27	27.33	27.58	27.69
29	---	---	---	---	---	25.66	26.17	27.23	27.30	27.37	27.58	27.69
30	---	---	---	---	---	25.68	26.18	27.22	27.31	27.36	27.56	27.69
31	---	---	---	24.41	---	25.68	---	27.21	---	27.38	27.59	---
MEAN	---	---	---	24.41	24.48	25.65	25.96	27.23	27.23	27.38	27.45	27.70

WTR YR 1997 MEAN 27.01 HIGHEST 24.32 JAN. 31, 1997 LOWEST 28.18 MAY 22, 1997

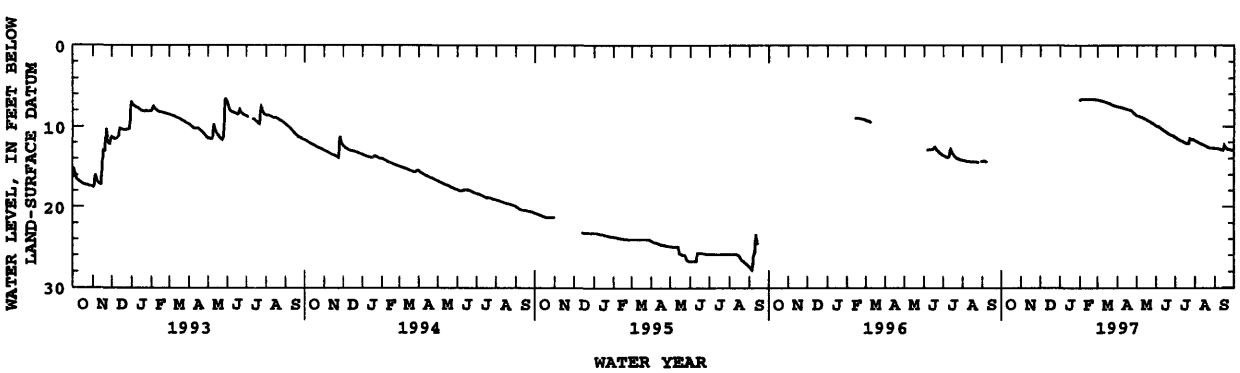


174316064480800. Local number, 13.
LOCATION.--Lat 17°43'16", long 64°48'08", Hydrologic Unit 21020002, 5.25 mi east of Fort Frederick at Frederickstead, 0.95 mi southeast of Holy Cross Church, and 0.65 mi northeast of Adventure Ruins. Owner: U.S. Virgin Islands Water and Power Authority, Name: WAPA-17 at Adventure well field.
AQUIFER.--Kingshill Limestone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 0-95 ft (0-29.0 m), screened 10-40 ft (3.05-12.2 m). Depth 95 ft (29.0 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 75 ft (22.9 m) above mean sea level, from topographic map. Measuring point: Top of shelter floor, 2.33 ft (0.71 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--February 28, 1990 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.27 ft (0.08 m) below land-surface datum, Sept. 10, 1996; lowest water level recorded, 27.88 ft (8.50 m) below land-surface datum, Sept. 6, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	6.75	6.67	7.52	8.66	9.95	11.34	11.73	12.72
2	---	---	---	---	6.64	6.72	7.54	8.68	9.97	11.36	11.78	12.73
3	---	---	---	---	6.64	6.73	7.56	8.69	9.97	11.44	11.83	12.75
4	---	---	---	---	6.63	6.75	7.58	8.70	9.99	11.49	11.87	12.75
5	---	---	---	---	6.63	6.75	7.60	8.74	10.04	11.54	11.92	12.77
6	---	---	---	---	6.62	6.78	7.62	8.78	10.10	11.58	11.97	12.77
7	---	---	---	---	6.61	6.81	7.65	8.82	10.16	11.63	12.02	12.78
8	---	---	---	---	6.61	6.84	7.67	8.84	10.22	11.67	12.05	12.79
9	---	---	---	---	6.61	6.84	7.69	8.85	10.32	11.71	12.09	12.79
10	---	---	---	---	6.61	6.88	7.71	8.89	10.37	11.75	12.13	12.81
11	---	---	---	---	6.62	6.91	7.74	8.93	10.42	11.79	12.16	12.88
12	---	---	---	---	6.62	6.94	7.76	8.98	10.47	11.82	12.21	12.92
13	---	---	---	---	6.62	6.96	7.78	9.02	10.54	11.86	12.23	12.93
14	---	---	---	---	6.62	6.96	7.81	9.06	10.59	11.92	12.27	12.95
15	---	---	---	---	6.63	7.01	7.84	9.09	10.63	11.95	12.32	12.95
16	---	---	---	---	6.63	7.03	7.86	9.13	10.67	11.98	12.34	12.26
17	---	---	---	---	6.63	7.06	7.88	9.19	10.74	12.03	12.40	12.41
18	---	---	---	---	6.63	7.09	7.90	9.23	10.80	12.06	12.44	12.58
19	---	---	---	---	6.64	7.10	7.93	9.29	10.84	12.11	12.47	12.69
20	---	---	---	---	6.64	7.13	7.96	9.35	10.90	12.14	12.51	12.77
21	---	---	---	---	6.64	7.20	7.98	9.38	10.96	12.12	12.57	12.82
22	---	---	---	---	6.64	7.24	8.01	9.43	10.99	12.13	12.60	12.84
23	---	---	---	---	6.65	7.29	8.05	9.47	11.05	12.13	12.64	12.84
24	---	---	---	---	6.65	7.32	8.15	9.52	11.10	11.44	12.66	12.85
25	---	---	---	---	6.65	7.35	8.22	9.57	11.12	11.53	12.68	12.88
26	---	---	---	---	6.66	7.38	8.30	9.61	11.12	11.58	12.69	12.92
27	---	---	---	---	6.66	7.41	8.38	9.66	11.14	11.65	12.69	12.93
28	---	---	---	---	6.67	7.43	8.46	9.70	11.19	11.71	12.70	12.96
29	---	---	---	---	---	7.45	8.52	9.77	11.24	11.60	12.70	12.97
30	---	---	---	---	---	7.47	8.59	9.85	11.34	11.61	12.71	12.99
31	---	---	---	6.86	---	7.50	---	9.90	---	11.69	12.71	---
MEAN	---	---	---	6.86	6.64	7.06	7.91	9.19	10.63	11.75	12.33	12.80

WTR YR 1997 MEAN 9.81 HIGHEST 6.61 FEB. 7-10, 1997 LOWEST 13.02 SEPT. 30, 1997



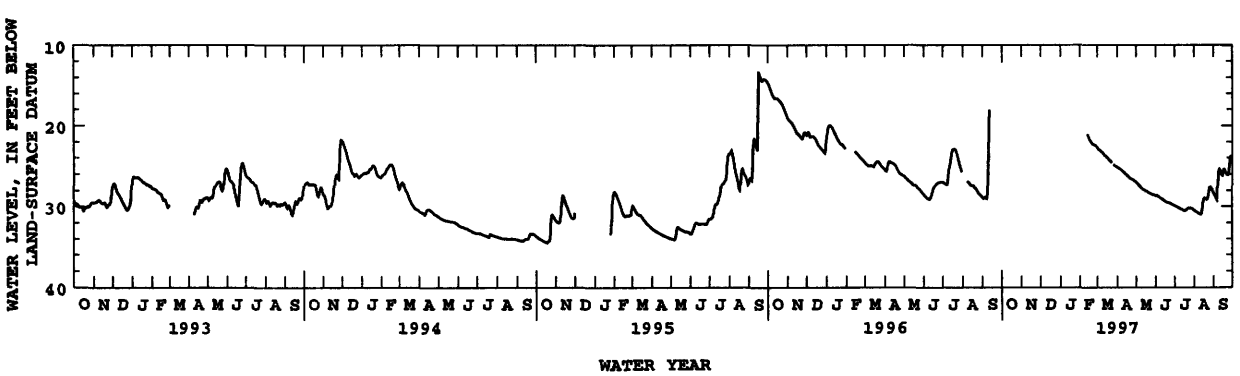
ST. THOMAS, U.S. VIRGIN ISLANDS

182038064550300. Local number, 6.
LOCATION.--Lat 18°20'38", long 64°55'03", Hydrologic Unit 21020001, 1.12 mi east of Charlotte Amalie, 0.75 mi southwest of Winterberg Peak, and 1.08 mi southeast of Canaan. Owner: U.S. Virgin Islands Government, Name: Grade School 3.
AQUIFER.--Volcanic breccia.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 70 ft (21.3 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 60 ft (18.3 m) above mean sea level, from topographic map. Measuring point: Top of 0.5 in (0.01 m) hole at 6 in (0.15 m) casing, 1.30 ft (0.40 m) above land-surface datum. Prior to June 27, 1983, top of 6 in (0.15 m) casing, 2.90 ft (0.88 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.53 ft (0.47 m) below land-surface datum, Oct. 1, 1989; lowest water level recorded, 35.38 ft (10.79 m) below land-surface datum, July 21, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	22.70	25.11	26.98	28.63	29.86	30.42	28.18
2	---	---	---	---	---	22.83	25.17	27.07	28.66	29.90	30.50	28.36
3	---	---	---	---	---	22.94	25.22	27.15	28.57	29.93	30.55	28.53
4	---	---	---	---	---	22.98	25.27	27.23	28.62	29.97	30.60	28.69
5	---	---	---	---	---	23.03	25.33	27.31	28.67	30.01	30.64	28.86
6	---	---	---	---	---	23.10	25.38	27.38	28.73	30.06	30.69	29.03
7	---	---	---	---	---	23.19	25.44	27.46	28.80	30.10	30.74	29.17
8	---	---	---	---	---	23.27	25.50	27.55	28.86	30.15	30.78	26.87
9	---	---	---	---	---	23.33	25.57	27.62	28.92	30.19	30.82	25.62
10	---	---	---	---	---	23.42	25.64	27.69	28.96	30.24	30.88	25.37
11	---	---	---	---	---	23.53	25.70	27.75	29.02	30.28	30.92	25.41
12	---	---	---	---	---	23.65	25.77	27.82	29.07	30.32	30.95	25.56
13	---	---	---	---	20.99	23.72	25.85	27.87	29.13	30.35	30.97	25.76
14	---	---	---	---	21.16	23.79	25.93	27.91	29.19	30.39	30.63	26.00
15	---	---	---	---	21.36	23.85	26.00	27.98	29.24	30.42	29.84	26.21
16	---	---	---	---	21.54	23.92	26.07	28.04	29.29	30.47	29.31	26.12
17	---	---	---	---	21.72	24.01	26.14	28.07	29.35	30.50	29.04	25.51
18	---	---	---	---	21.89	24.09	26.22	28.10	29.41	30.52	28.94	25.37
19	---	---	---	---	22.02	24.17	26.30	28.13	29.47	30.51	28.93	25.47
20	---	---	---	---	22.13	24.26	26.38	28.18	29.52	30.42	28.98	25.66
21	---	---	---	---	22.24	24.36	26.46	28.25	29.50	30.33	29.07	25.87
22	---	---	---	---	22.31	24.44	26.52	28.31	29.50	30.26	29.20	25.99
23	---	---	---	---	22.34	24.54	26.58	28.33	29.53	30.18	28.99	26.08
24	---	---	---	---	22.33	24.62	26.63	28.36	29.57	30.17	28.81	26.18
25	---	---	---	---	22.37	---	26.65	28.40	29.62	30.20	28.29	26.06
26	---	---	---	---	22.43	24.76	26.69	28.43	29.65	30.21	27.73	25.78
27	---	---	---	---	22.50	24.84	26.74	28.48	29.70	30.19	27.58	24.42
28	---	---	---	---	22.60	24.92	26.79	28.53	29.74	30.20	27.60	23.88
29	---	---	---	---	---	24.98	26.84	28.51	29.78	30.23	27.69	23.80
30	---	---	---	---	---	25.02	26.88	28.53	29.82	30.30	27.83	23.88
31	---	---	---	---	---	25.06	---	28.57	---	30.35	27.99	---
MEAN	---	---	---	---	22.00	23.91	26.03	27.94	29.22	30.23	29.55	26.26

WTR YR 1997 MEAN 27.22 HIGHEST 20.84 FEB. 12, 1997 LOWEST 30.98 AUG. 13, 1997



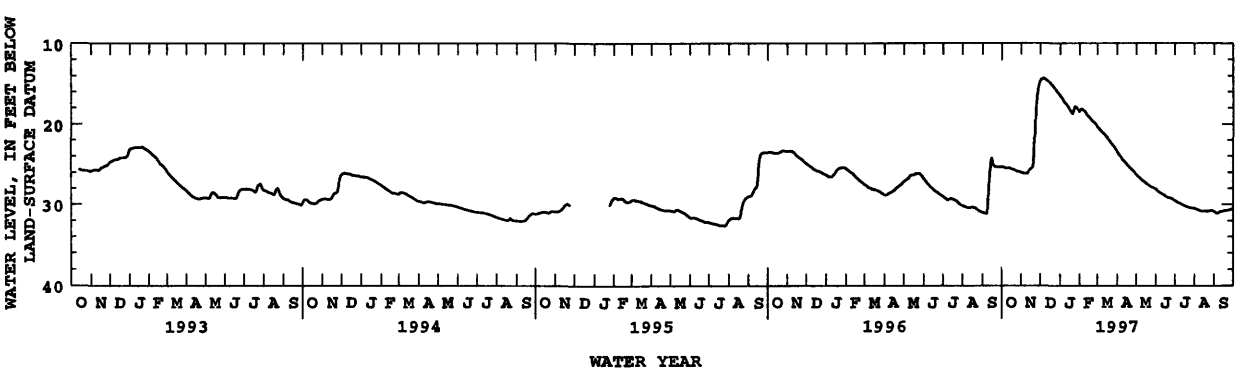
ST. THOMAS, U.S. VIRGIN ISLANDS

182038064580000. Local number, 8.
LOCATION.--Lat 18°20'38", long 64°58'00", Hydrologic Unit 21020001, 2.08 mi northwest of Charlotte Amalie, 0.50 mi northeast of Harry S. Truman Airport entrance on Hwy 302, and 1.15 mi southwest of Dorothea. Owner: U.S. Virgin Islands Water and Power Authority, Name: Kirwan Terrace, VIEO-6.
AQUIFER.--Alluvial deposits, volcanic rock.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 0-56 in (0-17.1 m), screened 56-76 ft (17.1-23.2 m). Depth 76 ft (23.2 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 35 ft (10.7 m) above mean sea level, from topographic map. Measuring point: Top of shelter floor, 3.00 ft (0.91 m) above land-surface datum.
REMARKS.--Observation well. Drilled on July 1, 1991. Automated digital recorder installed on October 2, 1991.
PERIOD OF RECORD.--October 2, 1991 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.34 ft (4.37 m) below land-surface datum, Dec. 6, 7, 1996; lowest water level recorded, 32.67 ft (9.96 m) below land-surface datum, July 27, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25.31	26.02	14.66	16.49	18.48	20.32	23.33	26.25	28.05	29.49	30.46	30.84
2	25.32	26.06	14.50	16.51	18.27	20.42	23.48	26.33	28.09	29.53	30.49	30.89
3	25.34	26.07	14.42	16.64	18.13	20.51	23.62	26.42	28.24	29.58	30.52	30.94
4	25.38	26.08	14.39	16.76	18.09	20.63	23.75	26.48	28.28	29.63	30.55	31.00
5	25.40	26.13	14.37	16.89	18.12	20.71	23.85	26.54	28.36	29.67	30.58	31.05
6	25.42	26.17	14.35	17.02	18.18	20.78	23.96	26.60	28.43	29.73	30.62	31.09
7	25.43	26.15	14.35	17.17	18.27	20.87	24.06	26.69	28.48	29.76	30.65	31.12
8	25.47	26.13	14.37	17.31	18.33	20.96	24.17	26.76	28.53	29.80	30.69	31.06
9	25.52	26.15	14.43	17.38	18.40	21.03	24.29	26.85	28.57	29.83	30.72	30.98
10	25.52	26.17	14.52	17.45	18.50	21.08	24.40	26.91	28.61	29.87	30.75	30.93
11	25.51	26.18	14.55	17.52	18.59	21.18	24.50	26.98	28.65	29.91	30.79	30.90
12	25.51	26.10	14.61	17.64	18.82	21.27	24.59	27.04	28.70	29.95	30.82	30.88
13	25.48	25.91	14.65	17.76	18.92	21.36	24.69	27.11	28.75	29.99	30.85	30.85
14	25.47	25.76	14.73	17.89	19.00	21.45	24.79	27.15	28.80	30.04	30.86	30.85
15	25.51	25.68	14.78	18.01	19.09	21.53	24.88	27.21	28.85	30.07	30.85	30.84
16	25.56	25.65	14.83	18.15	19.14	21.61	24.96	27.27	28.90	30.11	30.83	30.81
17	25.59	25.55	14.93	18.29	19.24	21.70	25.06	27.33	28.95	30.14	30.81	30.79
18	25.64	25.47	15.02	18.42	19.34	21.81	25.14	27.41	29.01	30.18	30.80	30.75
19	25.66	25.38	15.13	18.55	19.42	21.92	25.22	27.47	29.06	30.21	30.82	30.73
20	25.70	25.33	15.20	18.69	19.52	22.03	25.31	27.52	29.10	30.25	30.83	30.72
21	25.69	24.63	15.30	18.73	19.60	22.13	25.39	27.57	29.14	30.28	30.83	30.73
22	25.71	22.07	15.40	18.53	19.68	22.25	25.46	27.63	29.15	30.31	30.84	30.72
23	25.76	20.32	15.50	18.09	19.75	22.35	25.55	27.70	29.16	30.34	30.84	30.70
24	25.81	19.01	15.62	17.88	19.81	22.45	25.64	27.75	29.17	30.36	30.84	30.71
25	25.85	17.64	15.73	17.83	19.88	22.55	25.72	27.79	29.20	30.38	30.80	30.69
26	25.90	16.69	15.83	17.85	19.98	22.64	25.77	27.81	29.24	30.40	30.76	30.66
27	25.91	16.04	15.94	17.93	20.10	22.75	25.85	27.85	29.28	30.42	30.74	30.62
28	25.91	15.55	16.06	18.04	20.20	22.88	25.92	27.89	29.33	30.43	30.73	30.61
29	25.93	15.18	16.15	18.17	---	22.99	26.00	27.93	29.38	30.43	30.73	30.57
30	25.96	14.91	16.19	18.29	---	23.10	26.16	27.97	29.43	30.42	30.76	30.56
31	25.98	---	16.28	18.40	---	23.22	---	28.02	---	30.44	30.82	---
MEAN	25.62	23.34	15.06	17.75	19.03	21.69	24.85	27.23	28.83	30.06	30.74	30.82

WTR YR 1997 MEAN 24.61 HIGHEST 14.34 DEC. 6, 7, 1996 LOWEST 31.12 SEPT. 7, 1997



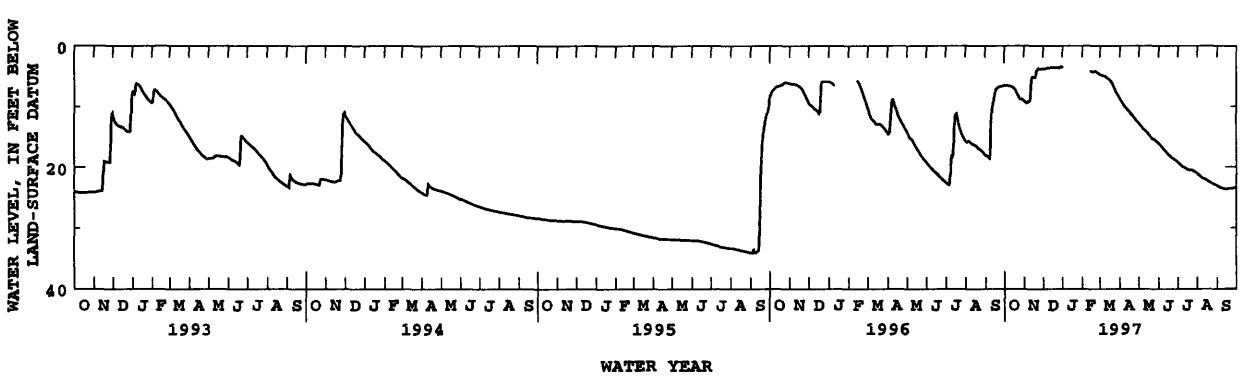
ST. JOHN, U.S. VIRGIN ISLANDS

181956064464500. Local number, 11.
LOCATION.--Lat 18°19'56", long 64°46'45", Hydrologic Unit 21020001, 1.05 mi southeast of Cruz Bay plaza, 0.25 mi southeast of Bethany Church, and 0.48 mi southeast of Margaret Hill. Owner: U.S. Virgin Islands Government, Name: Guinea Gut Well.
AQUIFER.--Louisenhoj Formation (Donnelly, 1959).
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 85 ft (25.9 m).
INSTRUMENTATION.--Digital water level recorder--60-minute punch.
DATUM.--Elevation of land-surface datum is about 280 ft (85.36 m) above mean sea level, from topographic map. Measuring point: Bottom of 0.5 in (0.01 m) hole at 6 in (0.15 m) casing, 1.50 ft (0.46 m) above land-surface datum. Prior to June 28, 1983, top of 6 in (0.15 m) casing, 1.80 ft (0.55 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.71 ft (0.79 m) below land-surface datum, Jan. 3, 1990; lowest water level recorded, 34.18 ft (10.42 m) below land-surface datum, Sept. 6, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1996 TO SEPTEMBER 1997
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.54	9.04	3.75	3.50	---	4.65	8.64	12.76	16.12	19.17	21.09	22.99
2	6.53	9.15	3.78	3.39	---	4.74	8.83	12.90	16.18	19.32	21.16	23.07
3	6.48	9.25	3.78	3.44	---	4.77	9.02	12.99	16.32	19.40	21.25	23.14
4	6.50	9.37	3.75	---	---	4.83	9.19	13.14	16.41	19.51	21.33	23.19
5	6.50	9.46	3.74	---	---	4.84	9.38	13.28	16.54	19.59	21.43	23.28
6	6.52	9.47	3.71	---	---	4.86	9.57	13.40	16.71	19.70	21.52	23.33
7	6.55	9.27	3.69	---	---	4.92	9.76	13.56	16.82	19.78	21.59	23.38
8	6.58	9.23	3.65	---	---	4.98	9.90	13.73	16.95	19.86	21.70	23.40
9	6.59	9.21	3.63	---	---	4.97	10.03	13.83	17.09	19.94	21.76	23.43
10	6.59	9.07	3.62	---	---	5.03	10.16	13.87	17.20	19.98	21.83	23.47
11	6.60	9.02	3.58	---	---	5.12	10.29	13.94	17.32	20.04	21.88	23.50
12	6.62	7.04	3.60	---	---	5.18	10.40	14.04	17.41	20.09	21.93	23.53
13	6.67	5.53	3.58	---	---	5.29	10.53	14.15	17.54	20.14	21.98	23.58
14	6.74	5.19	3.56	---	4.05	5.37	10.64	14.28	17.67	20.25	22.00	23.61
15	6.84	5.11	3.54	---	4.10	5.42	10.77	14.39	17.77	20.34	22.06	23.65
16	6.93	5.12	3.53	---	4.20	5.53	10.88	14.53	17.90	20.39	22.12	23.62
17	7.02	5.17	3.58	---	4.24	5.67	11.01	14.67	17.99	20.43	22.18	23.59
18	7.14	5.20	3.59	---	4.31	5.80	11.12	14.79	18.11	20.46	22.26	23.56
19	7.30	5.21	3.56	---	4.35	5.85	11.25	14.94	18.18	20.49	22.33	23.55
20	7.56	5.13	3.55	---	4.22	6.07	11.34	15.09	18.30	20.50	22.39	23.53
21	7.77	4.10	3.52	---	4.17	6.30	11.46	15.19	18.37	20.45	22.48	23.54
22	7.97	4.05	3.55	---	4.16	6.52	11.60	15.31	18.50	20.47	22.55	23.55
23	8.15	3.99	3.53	---	4.20	6.77	11.74	15.36	18.60	20.50	22.59	23.53
24	8.38	3.62	3.56	---	4.20	6.98	11.85	15.36	18.59	20.54	22.66	23.54
25	8.62	3.79	3.56	---	4.33	7.25	12.03	15.49	18.67	20.59	22.70	23.55
26	8.78	3.82	3.56	---	4.43	7.53	12.17	15.52	18.74	20.64	22.73	23.55
27	8.83	3.84	3.60	---	4.48	7.69	12.31	15.60	18.83	20.70	22.77	23.50
28	8.83	3.85	3.63	---	4.56	7.91	12.45	15.70	18.92	20.79	22.80	23.44
29	8.80	3.76	3.55	---	---	8.09	12.52	15.78	18.99	20.87	22.83	23.42
30	8.79	3.71	3.38	---	---	8.23	12.64	15.90	19.10	20.94	22.87	23.41
31	8.91	---	3.42	---	---	8.44	---	16.00	---	21.01	22.93	---
MEAN	7.38	6.29	3.60	3.44	4.27	5.99	10.78	14.50	17.73	20.22	22.12	23.45

WTR YR 1997 MEAN 12.68 HIGHEST 3.33 DEC. 30, 1996 LOWEST 23.65 SEPT. 15, 1997



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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^{0}	kilometer
	Area	
acre	4.047×10^{3}	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi^2)	2.590×10^{0}	square kilometer
	Volume	
gallon (gal)	3.785×10^{0}	liter
	3.785×10^{0}	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^{3}	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft^3)	2.832×10^{1}	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft^3/s) d]	2.447×10^{3}	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^{3}	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
	Flow	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second
	2.832×10^{1}	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^{1}	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
	Mass	
ton (short)	9.072×10^{-1}	megagram or metric ton

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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