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

Water Year 1990

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT PR-90-1
Prepared in cooperation with the Commonwealth of Puerto Rico, the Government of the U.S. Virgin Islands, and other agencies

CALENDAR FOR WATER YEAR 1990

1989

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

Water Year 1990

by R.E. Curtis, Jr., Z. Aquino, P.L. Diaz, and R.J. Vachier

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT PR-90-1
Prepared in cooperation with the Commonwealth of Puerto Rico, the Government of the U.S. Virgin Islands, and other agencies

U.S. DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., Secretary

U.S. GEOLOGICAL SURVEY

Dallas L. Peck, Director

For additional information on the water resources investigation programs in Puerto Rico and the U.S. Virgin Islands write to:

Chief, Caribbean District, Water Resources Division
U.S. Geological Survey
P.O. Box 364424
San Juan, Puerto Rico 00936-4424
(Telephone: (809) 749-4346)

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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Ruth I. Guzmán typed the text of the report. Francisco Maldonado prepared the illustrations.

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 Allen L. Zack, District Chief, Caribbean District, San Juan, Puerto Rico.

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16. Abstract (Limit: 200 words)

Water-resources data for surface-water, quality-of-water, and ground-water records for the 1990 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 62 streamflow-gaging stations; 112 partial-record or miscellaneous streamflow stations; stage records for 8 reservoirs; 1 crest-stage, partial record streamflow stations; water quality records for 16 streamflow-gaging stations, 42 ungaged streamsites, 11 lake sites, 2 lagoons, and 1 bay; and water-level records for 85 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.

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b. Identifiers/Open-Ended Terms
Puerto Rico, U.S. Virgin Islands, Sampling sites.

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ILLUSTRATIONS

Page

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

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

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

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

GROUND-WATER WELLS, BY BASIN, FOR WHICH RECORDS ARE PUBLISHED--Continued

GROUND-WATER WELLS, BY BASIN, FOR WHICH RECORDS ARE PUBLISHED--Continued

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WATER RESOURCES DATA FOR PUERTO RICO AND THE U.S. VIRGIN ISLANDS, 1990

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, 1990."

This report includes records on both surface and ground water. Specifically, it contains: (1) Discharge records for 62 streamflow-gaging stations, 91 partial-record or miscellaneous streamflow stations, stage records for 8 reservoirs, 1 crest-stage, partial record station, and (2) water-quality records for 16 streamflow-gaging stations, and for 42 ungaged streamsites, 11 lake sites, 2 lagoon, and 1 bay; and (3) water-level records for 76 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, and 1989 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-90-1". 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 title page or by telephone (809) 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 Resources
Puerto Rico Department of Health
Puerto Rico Electric and Power Authority
Puerto Rico Planning Board
Water Resources Research Institute,
University of Puerto Rico
Water Resources Research Institute,
College of the Virgin Islands
U.S. Virgin Islands Water and Power Authority
U.S. Virgin Islands Energy Office
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 five gaging stations published in this report. Ground-water quality data at selected sites was collected with support from the U.S. Environmental Protection Agency.

SUMMARY OF HYDROLOGIC CONDITIONS

Precipitation

Precipitation in Puerto Rico during the 1990 water year (October 1989 to September 1990) was lower than normal. Islandwide the precipitation averaged about 79 percent of normal, but was 76 percent of normal in the northern part of the island, 72 percent of normal in the southern part, 89 percent of normal in the eastern part, and 83 percent of normal in the western part. Unusually dry conditions prevailed during October, November, December, and May. Monthly average precipitation island-wide for the 1990 water year and for the 30-year reference period 1951-1980 used to define normal rainfall, as reported by the National Oceanic and Atmospheric Administration, are listed in table 1.

Table 1. Island-wide monthly precipitation and annual averages for 1990 water year and the 30-year reference period, 1951-80.

Month	Water year 1989 (inches)	30-year normal (inches)
Oct.	5.17	7.74
Nov.	3.35	5.95
Dec.	1.52	4.32
Jan.	3.27	3.08
Feb.	3.23	2.35
Mar.	4.53	2.62
Apr.	3.05	4.63
May	2.55	6.48
June	6.11	5.58
July	5.13	5.48
Aug.	5.20	7.28
Sept.	7.20	7.78
TOTAL	50.31	63.29

Surface Water

Streamflow in Puerto Rico was below normal during the 1990 water year. The 1990 monthly mean streamflow, the long-term monthly median flow- and extreme monthly flows are shown for four index stations in figure 1.

During October 1989, streamflow began to decline islandwide. Streamflow was high in September because of the rainfall associated with the passage of Hurricane Hugo over eastern Puerto Rico. Streamflow continued to decline during most of the year. This decline resulted in shortages and water rationing in some municipalities.

In October, streamflow was above normal in Río Grande de Manatí in the northern part of the island and Río Grande de Añasco in the western part of the island, which had monthly mean discharges 295 and 146 percent of the long-term median, respectively. For Río Fajardo in the eastern part of the island and Río Inabón in the southern part, monthly mean discharges were below normal with 59 and 72 percent of the long-term median, respectively.

Islandwide, streamflow declined below the normal range as compared to the long-term median. In Río Grande de Añasco and Río Inabón, streamflow records indicated that the 1990 water year was one of the driest on record. Only in October, January, and September were monthly mean discharges above the long-term median. In other months flows ranged from 34 to 92 percent of the long-term median for Río Grande de Añasco and from 20 to 92 percent of the long-term median for Río Inabón. The monthly mean discharge for July at the Río Grande de Añasco station was the lowest ever recorded for that month since records began in 1964. In September, the increase in precipitation caused by the passage of tropical storms produced flows well above the normal range.

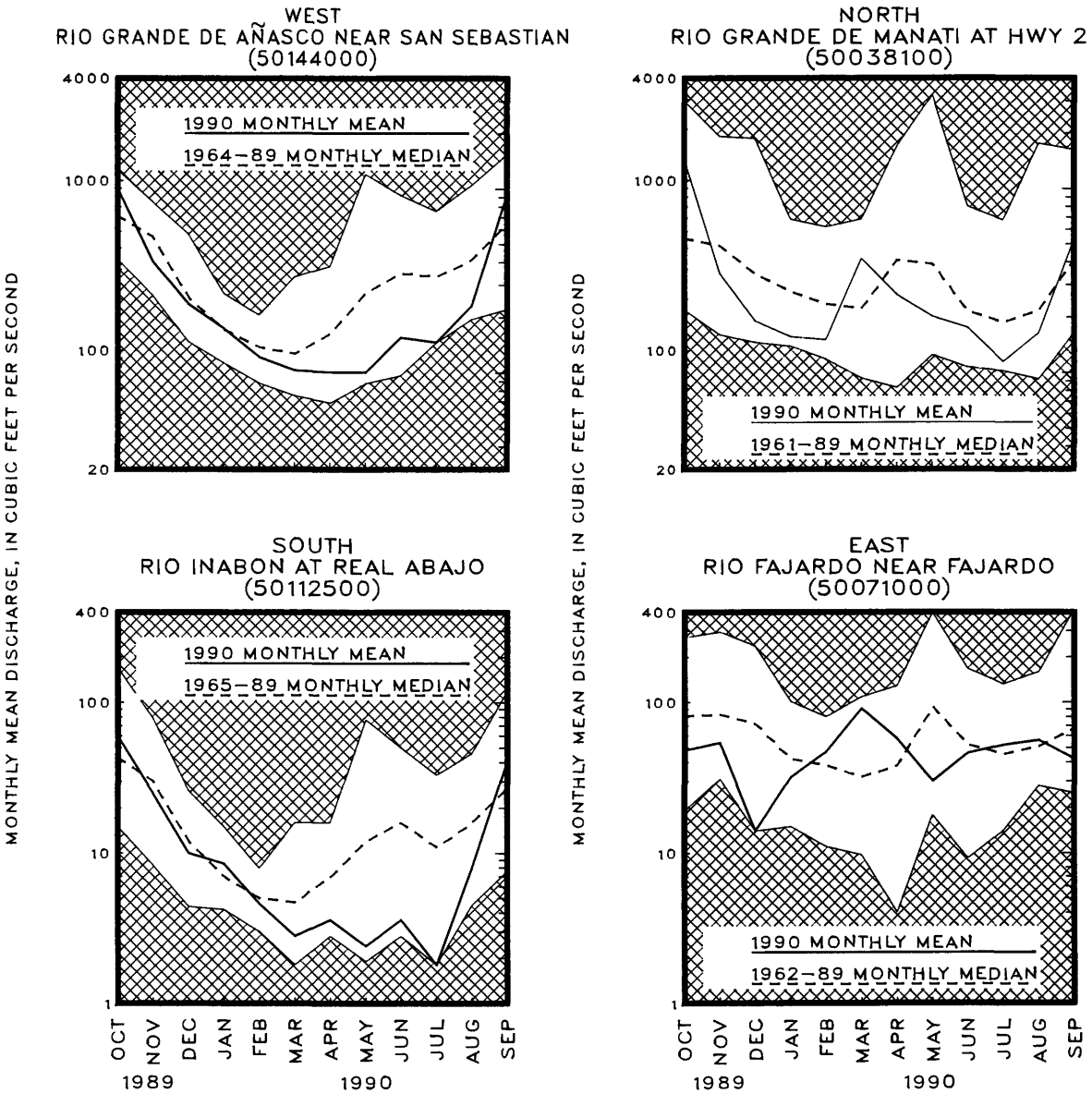
The Río Grande de Manatí, in the northern part of the island, had flows below normal from November to February and from April to August. During these months, the monthly mean discharges ranged from 49 to 80 percent of the long-term median. During March and September, however, monthly mean flows of 198 and 132 percent of the long-term median, respectively, were recorded.

Streams in the eastern part of the island generally had the highest flows during the 1990 water year. Río Fajardo was the only station that recorded monthly mean flows above the long-term median for three consecutive months, February, March, and April. The monthly mean flows at the station were also above the median during July and August. During the rest of the 1990 water year, however, streamflow was below the long-term median. The monthly mean discharge for December was the lowest ever recorded for that month at the Río Fajardo index station since it was started in 1962. The Río Fajardo station also was the only station that recorded flows below the long-term median for September.

In the U.S. Virgin Islands (St. Thomas, St. Croix, and St. John), precipitation and streamflow patterns were similar to those in Puerto Rico. Rainfall in the Virgin Islands in the 1990 water year was 69 percent of normal.

Ground-Water Levels

Ground-water levels generally declined throughout the island during the 1990 water year, in response to below normal rainfall. Slight ground-water level increases were recorded during August and September 1990, when rainfall on the island was near normal. Although water levels declined throughout much of the year, record-high water levels were recorded during the first few months of the water year at several wells in Puerto Rico and the U.S. Virgin Islands (table 2), as a result of excessive rainfall associated with the passage of Hurricane Hugo.



Unshaded area indicates range between highest and lowest monthly mean discharges for the period of record

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

Ground-water levels in the north coast limestone aquifers of Puerto Rico generally declined during the 1990 water year. Slight increases were recorded during March and August 1990 at the Sabana Hoyos index station when seasonal rainfall occurred in the area (fig. 2).

Ground-water levels in the south coast alluvial aquifers declined significantly during the 1990 water year. Below normal rainfall and increased withdrawals caused water levels to decline from October 1989 to July 1990. At the Alomar index well, the water level declined 6.85 feet during that period (fig. 2). During September, this trend was reversed when normal rainfall occurred in the area.

Ground-water levels in the U.S. Virgin Islands responded to the same climatological patterns that affected Puerto Rico. The water level at observation well 11 at Guinea Gut, on St. John declined 16.35 feet from October 1989 to August 1990 in response to scarce rainfall in the area (fig. 2).

Table 2. Highest water level recorded during 1990 water year and previous high water level (in feet below land-surface datum) at selected ground-water wells in Puerto Rico and the U.S. Virgin Islands
[PR, Puerto Rico; St.C, St. Croix; St.T, St. Thomas; St.J, St. John]

Well name	Local number	Location	1990 high water	Date	Previous high water	Date	Period of record
Saltos # 1	165	PR	38.86	09-30-90	40.18	09-18-89	1-82 to 9-90
Ft. Buchanan No. 1	219	PR	34.97	11-12-89 11-13-89 11-14-89	35.58	09-27-89 09-28-89	12-89 to 9-90
Salud Mental No. 1	PN-5	PR	26.20	11-21-89 11-22-89	26.23	09-29-89 09-30-89	4-89 to 9-90
RM # 10	RM # 10	PR	25.47	10-26-89 10-27-89	27.73	09-30-89	3-89 to 9-90
JAC-TW1	JAC-1	PR	17.41	10-25-89	17.48	10-29-88	10-88 to 1-90
JAC-TW2	JAC-2	PR	18.14	10-25-89	18.97	07-26-89	3-89 to 10-89
JAC-TW5	JAC-3	PR	24.28	10-25-89	27.15	09-21-89	3-89 to 10-89
JAC-TW6	JAC-4	PR	18.15	10-25-89 10-26-89	18.61	10-02-88 10-03-88	10-88 to 1-90
Fairplains 2	2	St.C	19.45	11-04-89	20.27	09-30-89	6-83 to 9-90
Grade School	6	St.T	1.53	10-01-89	1.56	09-30-89	3-82 to 9-90
DPW-2	9	St.J	14.93	12-19-89	17.10	07-02-86	9-82 to 9-90
DPW-1	10	St.J	13.54	12-19-89	16.60	07-02-86	9-82 to 9-90
Guinea Gut	11	St.J	2.71	01-03-90	3.05	06-13-86	3-82 to 9-90

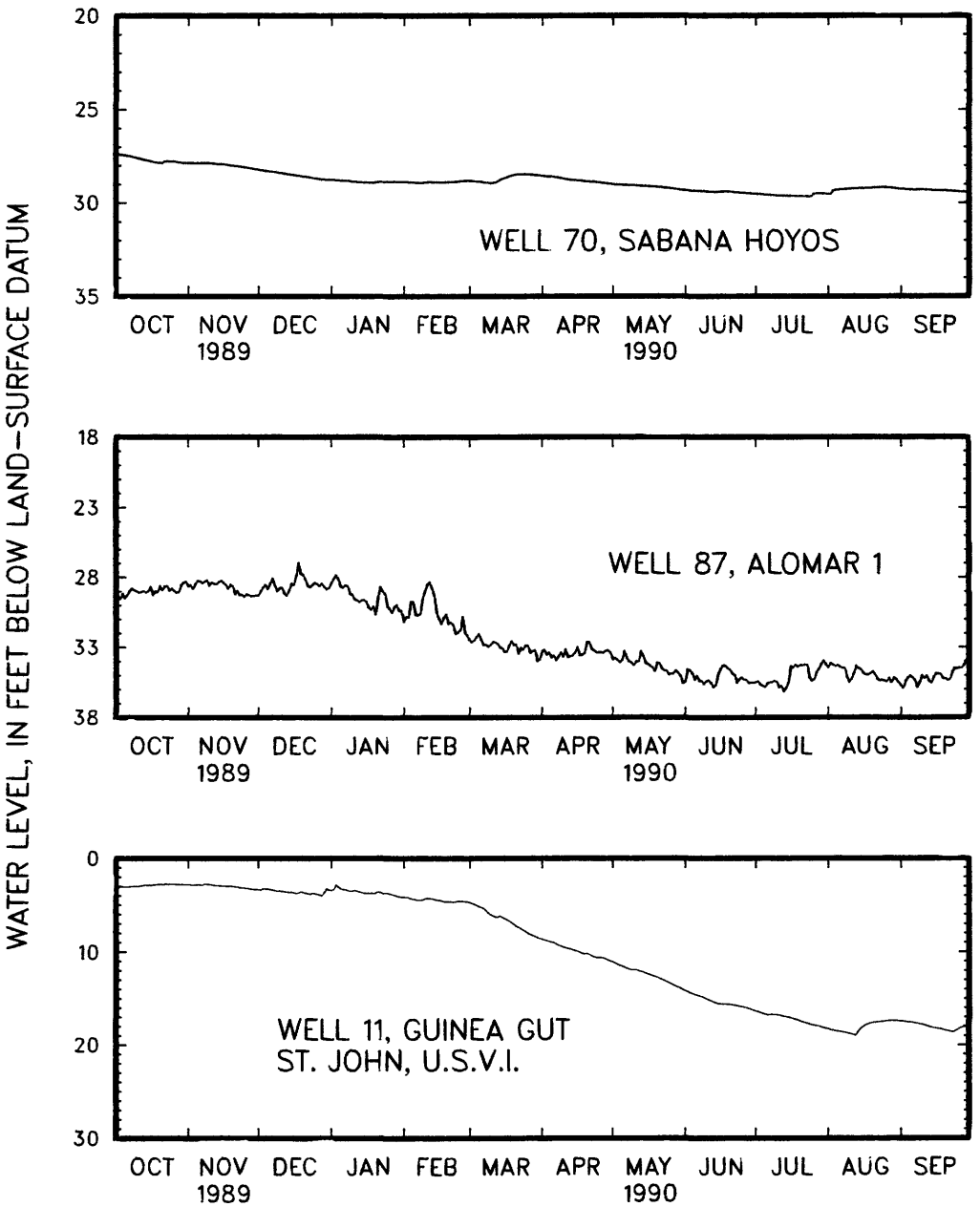


Figure 2.--Ground-water levels at selected wells in Puerto Rico and the U.S. Virgin Islands.

Water Quality

In the 1990 water year, the U.S. Geological Survey, in cooperation with local government agencies, completed the sixth year of sampling for the chemical constituents listed in table 3. These constituents were added to the water quality monitoring program in 1985, and are in addition to the major chemical constituents and physical properties monitored in the continuing water-quality monitoring program in Puerto Rico. The highest concentration of each selected constituent detected during the 1990 water year and the station at which the concentration was detected are summarized in table 3.

Table 3. Surface-water quality stations in Puerto Rico and the highest concentration of selected constituents during the 1990 water year. [All constituent concentrations are in milligrams per liter; MBAS, Methylene blue active substance]

Station number	Station name	Constituent	Concentration
50047600	Río Bayamón near Aguas Buenas	Sulfide	1.4
50047530	Río Hondo at Flood Channel near Cataño	Boron	1.0
50050300	Quebrada Blasina near Carolina	Manganese	0.52
50149100	Río Culebrinas near Aguada	Iron	86
5014910	Río Culebrina near Aguada	Zinc	0.13
50043000	Río de la Plata at Proyecto la Plata	Cyanide	1.0
50055250	Río Cagüitas at Hwy 30 at Caguas	Phenols	0.026
50055250	Río Cagüitas at Hwy 30 at Caguas	MBAS	1.3

High concentrations of fecal coliform (FC) and fecal streptococci (FS) bacteria continued to be the principal surface water quality problems in Puerto Rico during the 1990 water year. Bacteria concentrations exceeding one million colonies per hundred milliliters of raw water were found at two stations during the year, Río Piedras near Río Piedras (station number 50048800), and Río Piedras at Hato Rey (station number 50049100).

Both stations are located in the San Juan metropolitan area where the population density is the highest in Puerto Rico. These streams receive effluent from the upper basin sewage treatment plants upstream of the sampling stations. The highest concentration of FC and FS bacteria in surface waters throughout the island occurred in the heavily populated and industrialized areas.

Elevated concentration of suspended sediment are a common problem in many streams in Puerto Rico, especially in the northern coastal areas. Suspended sediment concentrations are of concern because the deposition of these sediments is rapidly reducing the storage capacities of reservoirs used for water supply. Suspended sediment concentration were monitored at eleven sites in Puerto Rico during the 1990 water year as part of the cooperative program between the U.S. Geological Survey and various other Commonwealth and Federal agencies. The sediment stations operated and the maximum suspended sediments concentrations and loads at each stations are in table 4.

Table 4. Maximum values for suspended-sediment concentrations and loads during the 1990 water-year.

Station name	Station number	Maximum suspended-sediment concentration (milligrams per liter)	Maximum suspended-sediment load (tons per day)
Río Tanamá near Utuado	50028000	2,310	11,400
Río Piedras at El Señorial	50048770	7,110	24,900
Río Piedras at Río Piedras	50049000	3,600	15,100
Quebrada Josefina at Piñero Avenue	50049310	397	1,390
Quebrada Blanca at El Jagual	50051150	355	103
Quebrada Salvatierra near San Lorenzo	50051180	260	91
Río Grande de Loíza at Caguas	50055000	691	2,830
Río Gurabo at Gurabo	50057000	567	2,050
Río Grande de Loíza below Damsite	50059050	210	534
Río Toa Vaca above Lago Toa Vaca	50110900	1,080	1,960
Río Rosario near Hormigueros	50136400	1,440	3,920

The highest concentrations of fecal coliform and fecal streptococcus bacteria in surface waters occured in heavily populated and industrialized areas of the island.

Four sediment stations were operated during the water year. These stations are Río Tanamá near Utuado (50028000), Río Grande de Loíza at Caguas (50055000), Río Gurabo at Gurabo (50057000), and Río Rosario near Hormigueros (50136400). Maximum sediment concentrations were 1,680 milligrams per liter (mg/L) at the Río Tanamá site, 1,950 mg/L at the Río Grande de Loíza site, 1,350 mg/L at the Río Gurabo site, and 1,040 mg/L at the Río Rosario site. Maximum sediment loads at these sites were 2,890 tons per day (ton/d), at the Río Tanamá site, 51,600 ton/d at the Río Grande de Loíza site, 61,700 ton/d at the Río Gurabo site, and 5,350 ton/d at the Río Rosario site.

SPECIAL NETWORKS AND PROGRAMS

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.

EXPLANATION OF RECORDS

The surface-water and ground-water records published in this report are for the 1990 water year that began October 1, 1989 and ended September 30, 1990. 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.

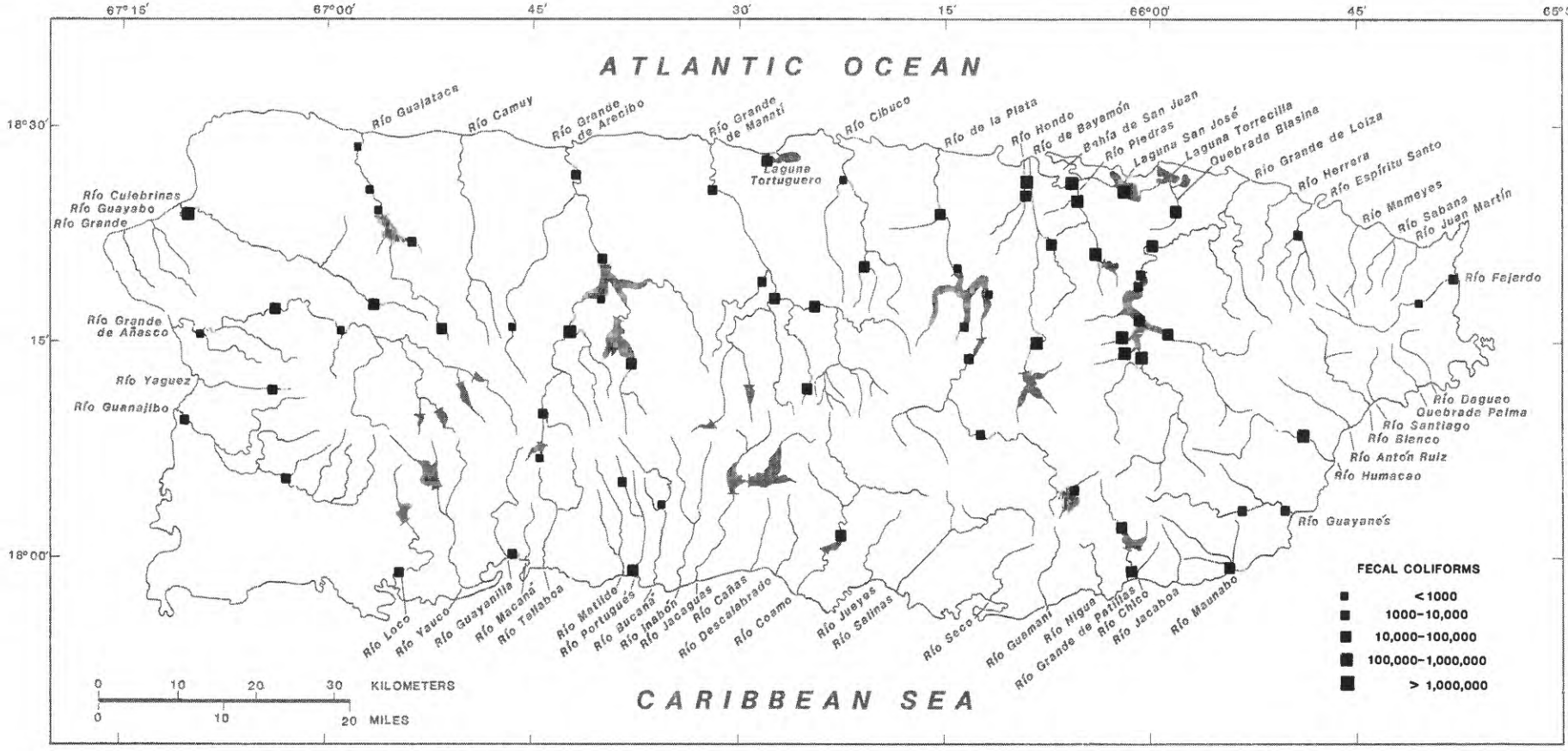


Figure 3.--Location of fecal coliform bacteria concentration at sampled sites.

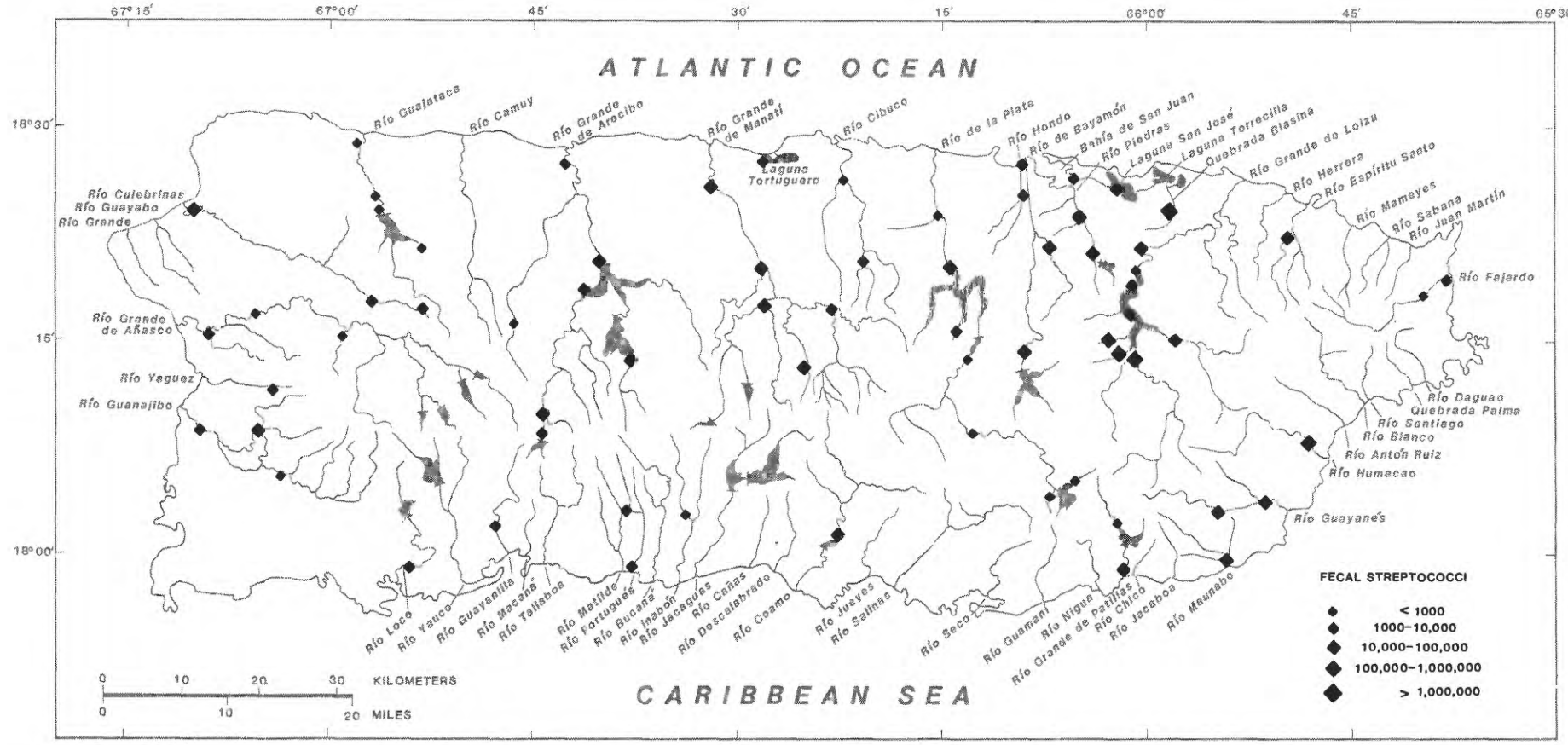


Figure 4.--Location of fecal streptococci bacteria concentration at sampled sites.

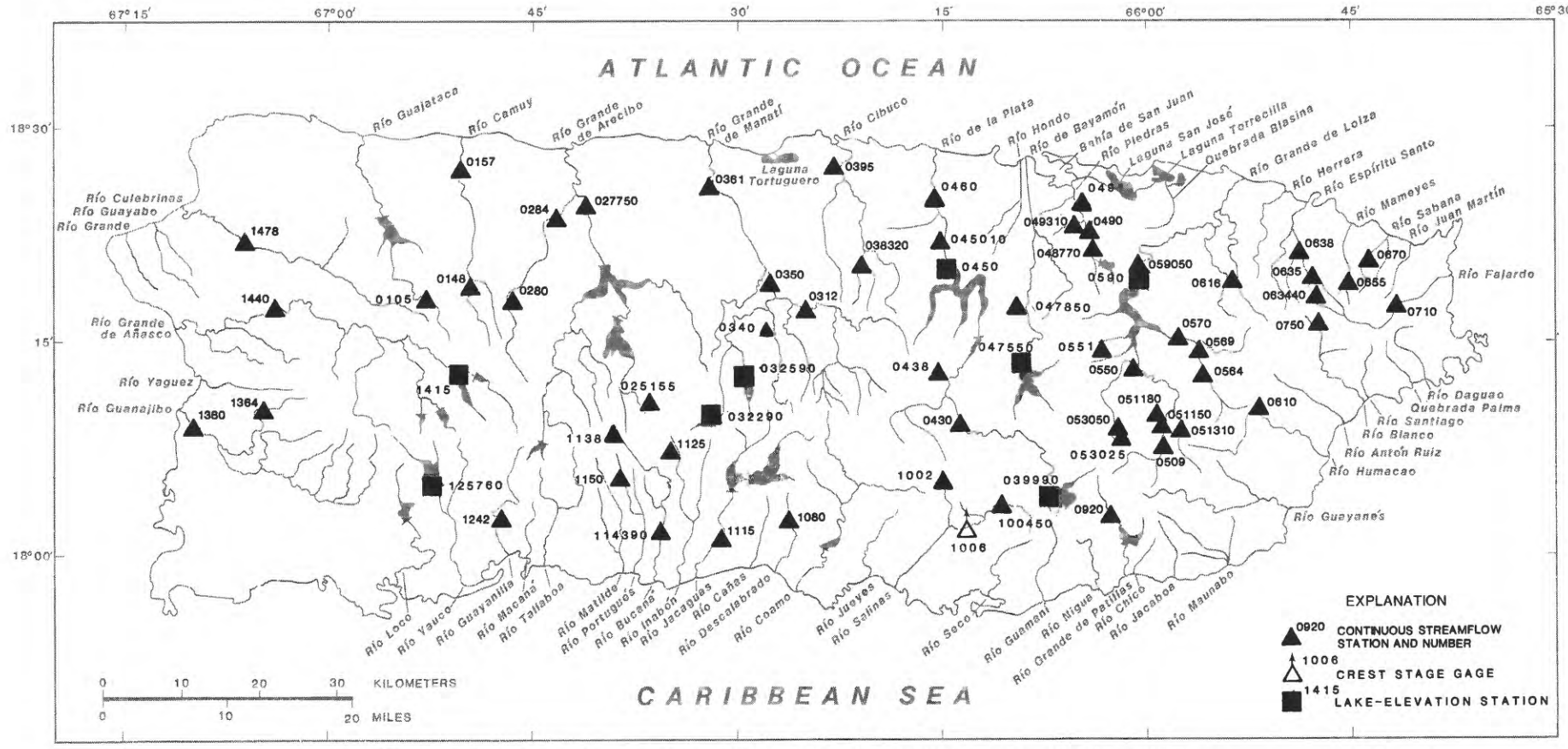


Figure 5.--Location of surface-water stations in Puerto Rico.

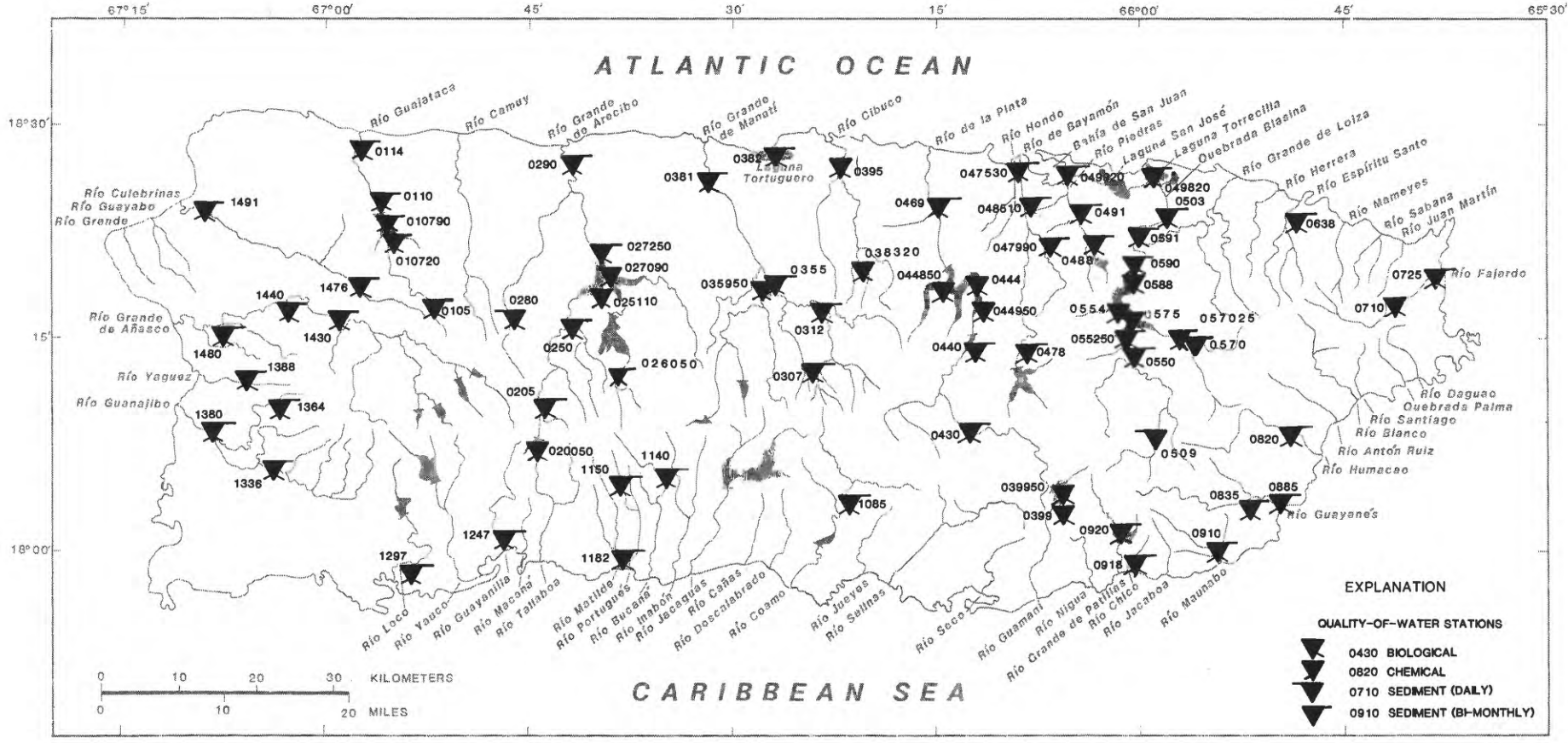


Figure 6.--Location of water-quality stations in Puerto Rico.

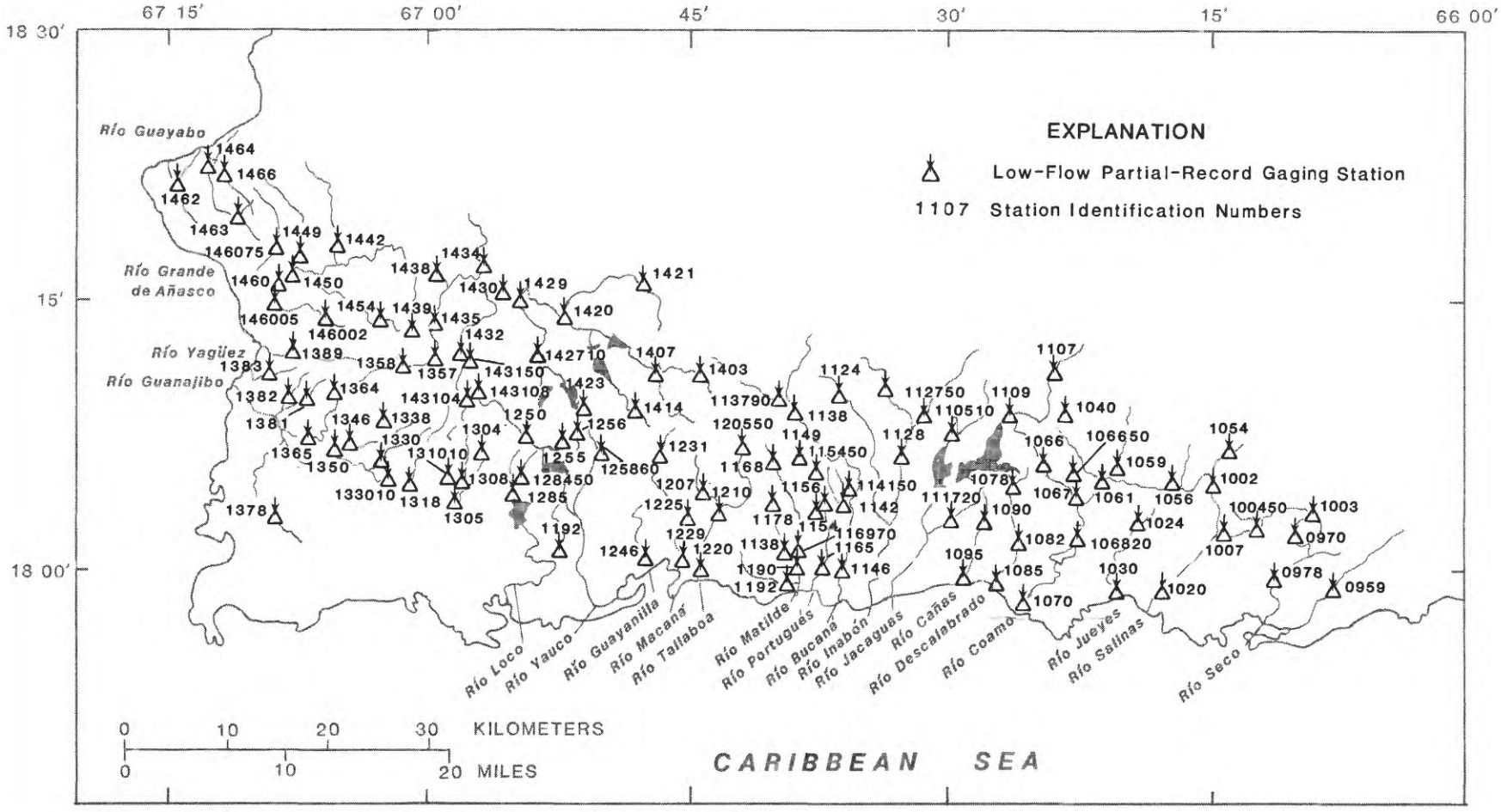


Figure 7.--Location of low-flow partial-record stations in southwest Puerto Rico.

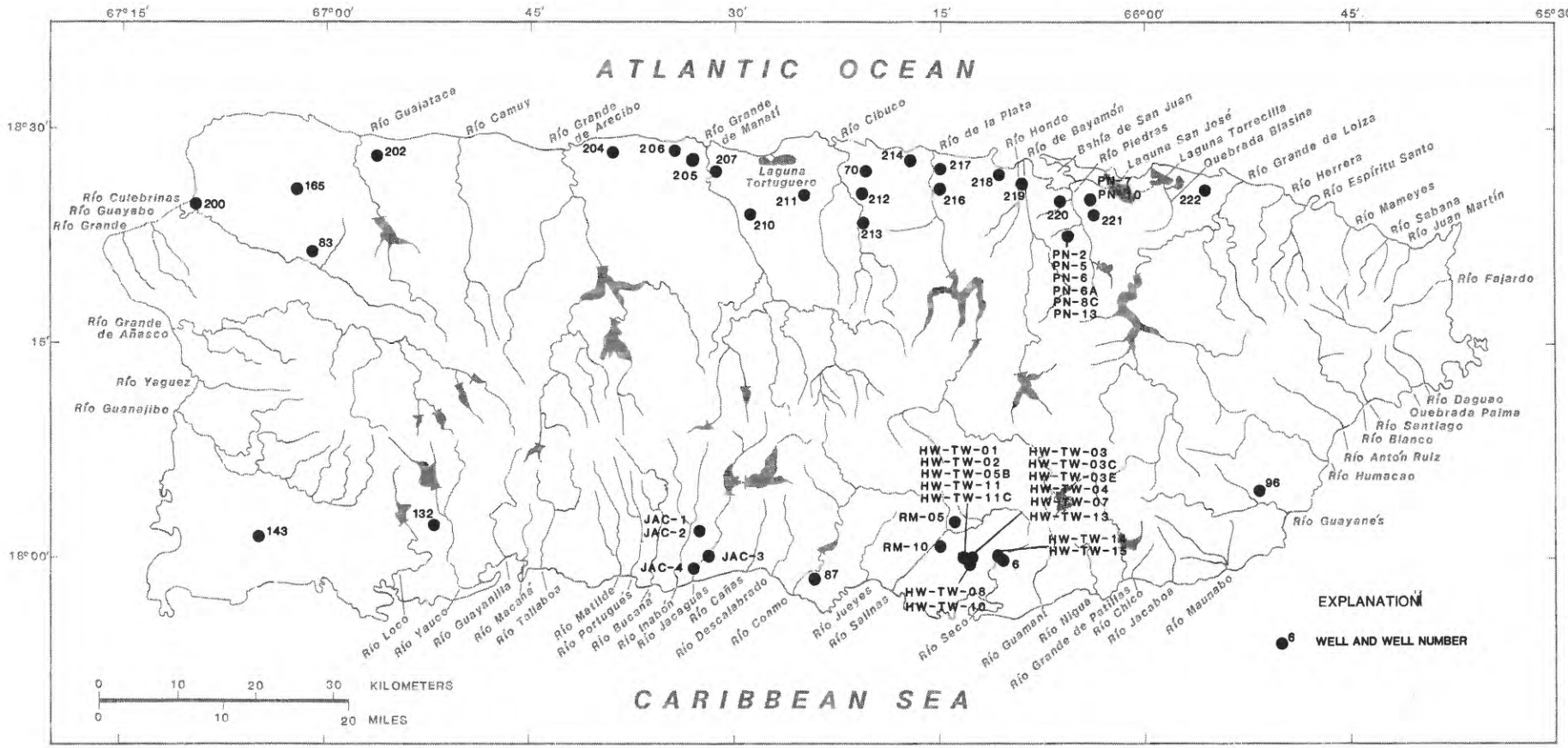


Figure 8.--Location of ground-water stations in Puerto Rico.

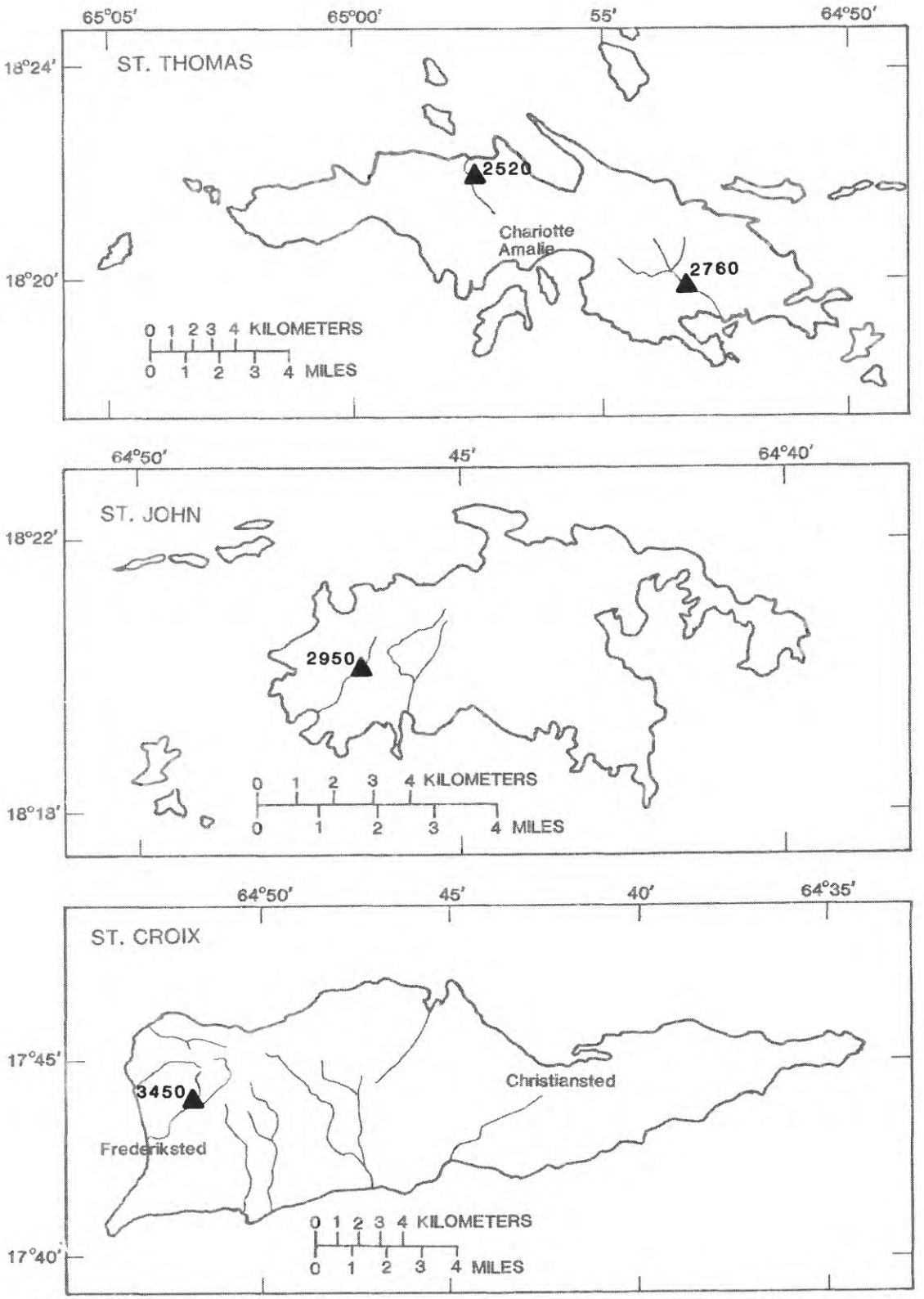


Figure 9.--Location of surface-water stations in the U.S. Virgin Islands.

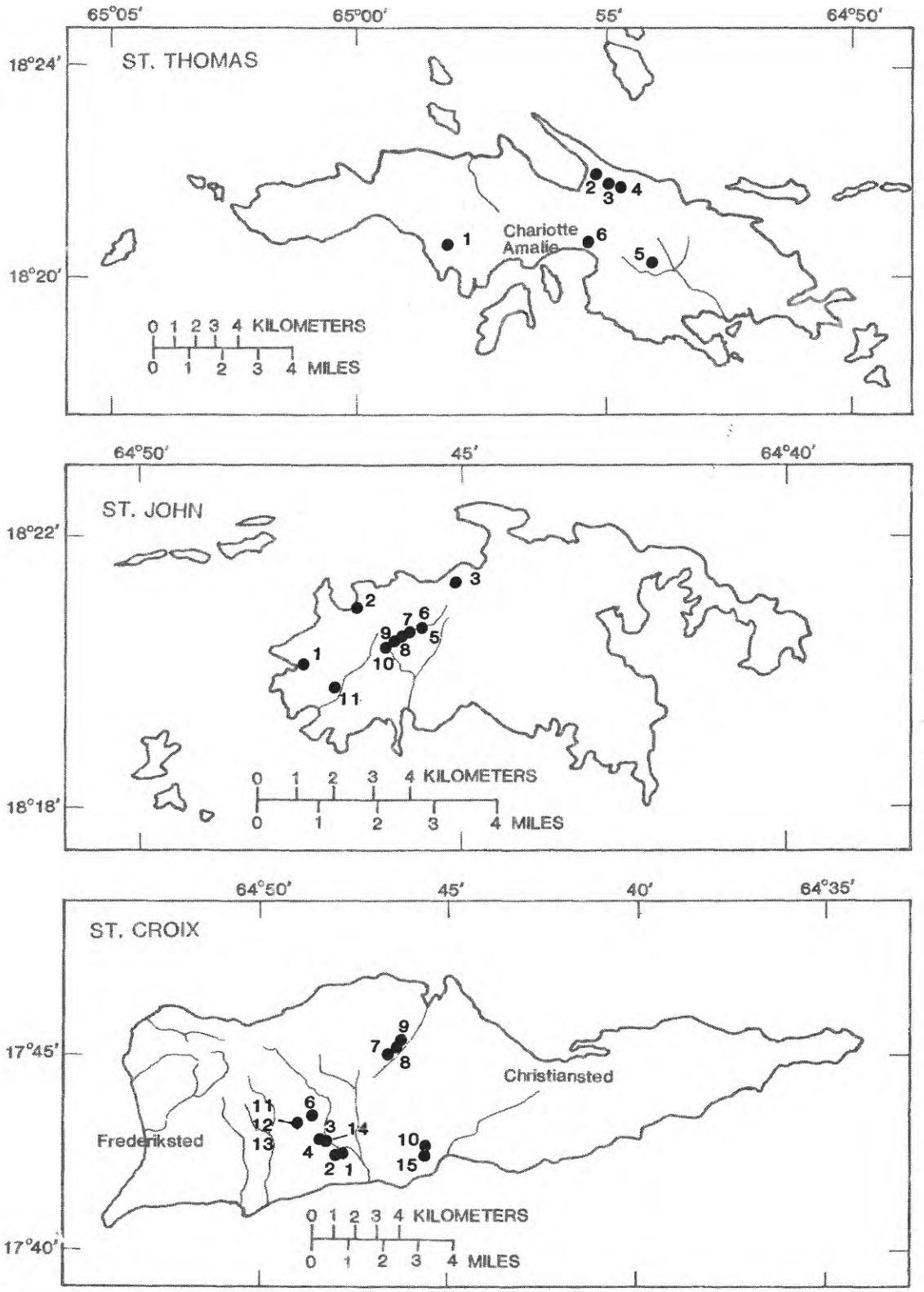


Figure 10.--Location of ground-water stations in the U.S. Virgin Islands.

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 down-stream 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).

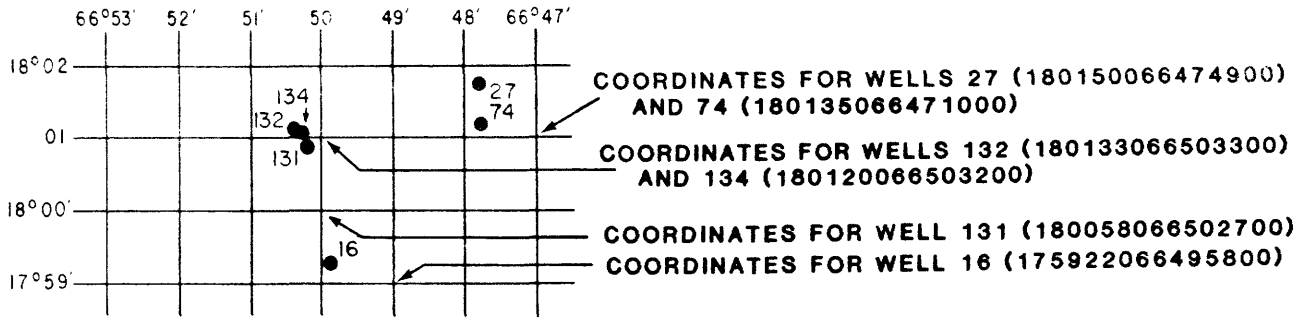


Figure 11.--Grid showing system for numbering wells and miscellaneous sites (latitude and longitude).

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 "Crest-stage partial records," or "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 and crest-stage partial-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 stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. 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

The records published for each gaging station consist of two parts, the manuscript or station description and the data table for the current water year. The manuscript provides, under various headings, descriptive information, such as station location; period of record; average discharge; historical extremes; 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 station description.

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.--Published records, because of new information, 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.

AVERAGE DISCHARGE.--The discharge value given is the arithmetic mean of the water-year mean discharges. It is computed only for stations having at least 5 water years of complete record, and only water years of complete record are included in the computation. It is not computed for stations where diversions, storage, or other water-use practices cause the value to be meaningless. If water developments significantly altering flow at a station are put into use after the station has been in operation for a period of years, a new average is computed as soon as 5 water years of record have accumulated following the development. The median of yearly mean discharges also is given under this heading for stations having 10 or more water years of record, if the median differs from the average given by more than 10 percent.

EXTREMES FOR PERIOD OF RECORD.--Extremes may include maximum and minimum stages and maximum and minimum discharges or content. Unless otherwise qualified, the maximum discharge or content is the instantaneous maximum corresponding to the highest stage that occurred. The highest stage may have been obtained from a graphic or digital recorder, a crest-stage gage, or by direct observation of a nonrecording gage. If the maximum stage did not occur on the same day as the maximum discharge or content, it is given separately. Similarly, the minimum is the instantaneous minimum discharge, unless otherwise qualified, and was determined and is reported in the same manner as the maximum.

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.

EXTREMES FOR CURRENT YEAR.--Extremes given here are similar to those for the period of record, except the peak discharge listing may include secondary peaks. For stations meeting certain criteria, all peak discharges and stages occurring during the water year and greater than a selected base discharge are presented under this heading. The peaks greater than the base discharge, excluding the highest one, are referred to as secondary peaks. Peak discharges are not published for canals, ditches, drains, or streams for which the peaks are subject to substantial control by man. The time of occurrence for peaks is expressed in 24-hour local standard time. For example, 12:30 a.m. is 0030, and 1:30 p.m. is 1330. The minimum for the current water year appears below the table of peak data.

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.

The daily table for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the 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 are omitted if there is extensive regulations or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of annual maximum stage and discharge at crest-stage stations, and the second is a table of discharge measurements at low-flow partial-record stations.

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, in some instances, 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, and suspended-sediment loads for other periods of similar discharge.

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 and bed material 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 two parts, the station description and the data table of water levels observed during the water year. 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.

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.

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 mean sea level datum, if available. It is reported with 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 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.

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 WATSTORE DATA

The National WATer Data STOrage and REtrieval System (WATSTORE) was established for handling water data collected through the activities of the U.S. Geological Survey and to provide for more effective and efficient means of releasing the data to the public. The system is operated and maintained on the central computer facilities of the Survey at its National Center in Reston, Virginia.

WATSTORE can provide a variety of useful products ranging from simple data tables to complex statistical analyses. A minimal fee, plus the actual computer cost incurred in producing a desired product, is charged to the requester. Information about the availability of specific types of data, the acquisition of data or products, and user charges can be obtained locally from each of the Water Resources Division's District offices (see address given on the back of the title page).

General inquiries about WATSTORE may be directed to:

Chief Hydrologist
U.S. Geological Survey
437 National Center
Reston, Virginia 22092

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 charac terized 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 periphton 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.

Clorophyll 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.

Crest-stage station is a special form of partial-record station that records the highest stage of the stream that occurred between periodic visits to the station. A stage-discharge relation for each gage may be developed from discharge measurements made by indirect methods or by current meter.

Cubic foot per second (cfs) 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 (cfs-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.

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:

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

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 (G.H.) 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 (ug/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 (UG/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 5.

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 be expressed 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.

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, Books and Open-File Reports Section, Federal Center, Box 25425, 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."

1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.

2-D2. *Application of seismic-refraction techniquee to hydrologic studies*, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.

2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.

2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and Warren E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.

3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3. Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A9. *Measurement of time of travel in streams by dye tracing*, by F. A. Kilpatrick and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.

3-A10. *Discharge ratings at gaging stations*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.

3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

3-A12. *Fluorometric procedures for dye tracing*, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 41 pages.

3-A13. *Computation of continuous records of streamflow*, by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.

3-A14. *Use of flumes in measuring discharge*, by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.

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3-A16. *Measurement of discharge using tracers*, by F. A. Kilpatrick and E. D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.

3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.

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3-B2. *Introduction to ground-water hydraulics, a programmed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

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3-B4. *Regression modeling of ground-water flow*, by Richard L. Cooley and Richard L. Naff: USGS--TWRI Book 3, Chapter B4. 1990. 232 pages.

3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction*, by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.

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3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

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5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L. J. Britton and P. E. Greeson, editors: USGS--TWRI Book 5, Chapter A4. 1989. 363 pages.

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6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M. G. McDonald and A. W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.

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7-C3. *A model for simulation of flow in singular and interconnected channels*, by R. W. Schaffrannek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.

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8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.

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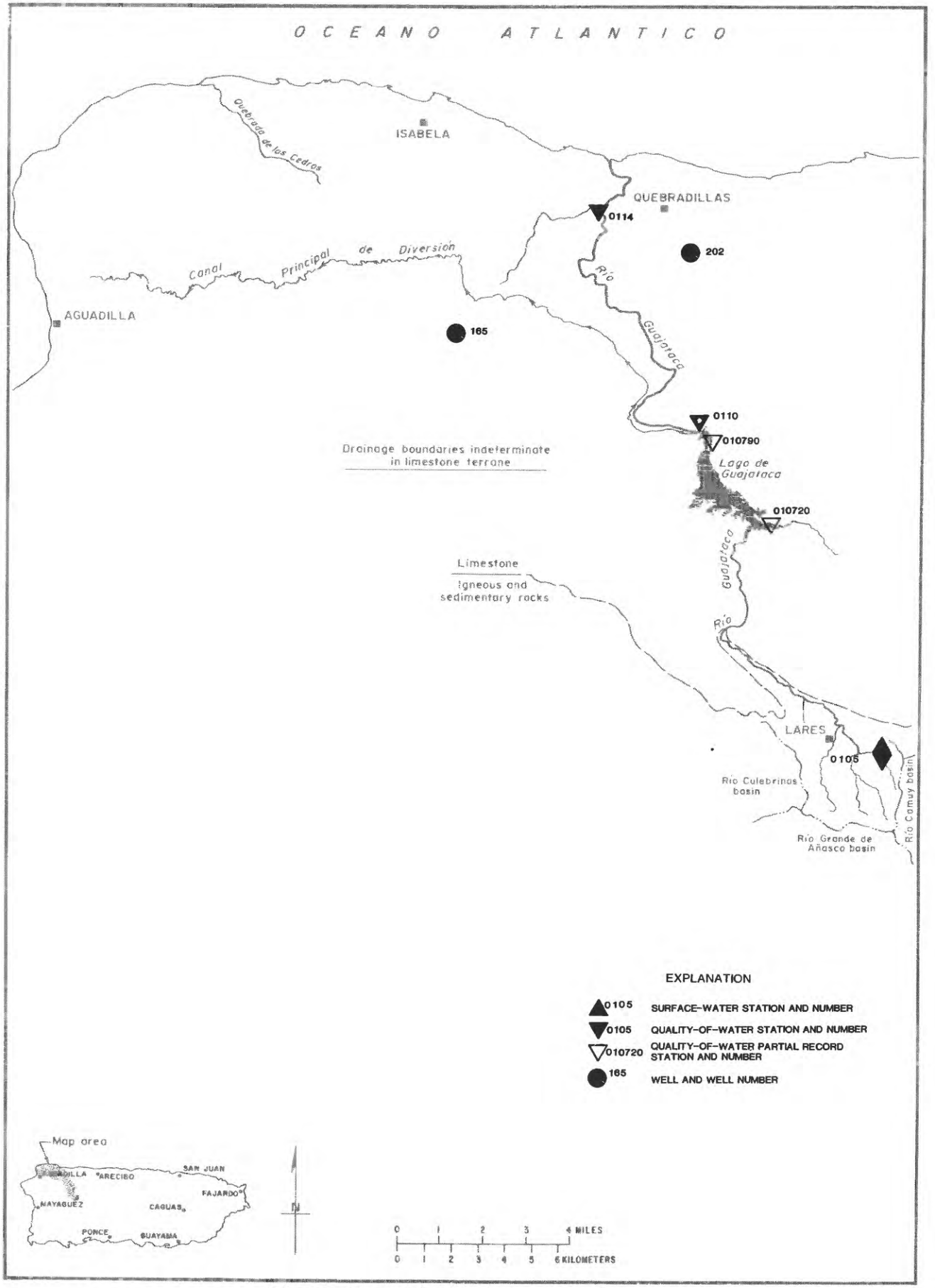

Figure 12.--Río Guajataca basin.

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 September 1990.

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

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,400 ft³/s (96.3 m³/s) May 8, 1990, gage-height 18.32 ft (5.584 m), from rating curve extended above 100 ft³/s (2.832 m³/s) on basis of step-backwater analysis and slope area measurement of peak flow; minimum daily discharge, 0.60 ft³/s (0.017 m³/s), Mar. 22-25,30, Apr. 1, 1970.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 8	1530	*3,400	96.3	*18.32	5.584	Sept. 30	1445	1,280	36.2	13.61	4.148

Minimum daily discharge, 0.72 ft³/s (0.020 m³/s), Aug. 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			---	4.2	1.4	1.5	1.3	.79	5.2	2.0	1.4	1.9
2			---	3.7	1.3	1.1	7.8	.80	2.6	1.9	1.5	1.7
3			---	2.0	1.1	1.1	1.7	.76	2.0	2.0	1.1	5.7
4			---	1.6	.82	1.3	1.1	.75	7.0	1.9	.80	27
5			---	1.5	1.1	1.7	.96	.94	29	2.3	.74	37
6			---	1.6	.86	2.8	.92	.78	13	2.1	.89	8.5
7			---	1.6	1.1	.92	.95	33	5.0	2.3	.72	11
8			---	1.4	1.2	.89	.91	170	4.1	1.9	1.0	10
9			---	1.6	.94	2.7	1.0	68	3.6	2.3	22	26
10			---	1.3	1.1	2.1	.88	17	2.7	1.7	3.7	11
11			---	1.4	.76	2.7	1.0	14	6.4	1.5	15	5.8
12			---	1.2	.75	6.4	.85	6.5	4.3	1.6	3.9	8.8
13			---	1.2	.84	2.9	1.1	4.6	3.1	1.1	6.6	18
14			---	1.1	2.4	1.5	1.1	3.7	15	1.6	2.8	14
15			---	1.2	.96	1.1	1.3	2.9	46	1.5	1.5	14
16			---	1.2	.97	1.3	4.5	2.9	9.5	1.4	1.3	7.1
17			---	1.3	.99	1.2	1.1	2.7	21	2.2	1.4	47
18			---	1.4	.94	2.1	39	2.3	9.8	1.4	1.6	15
19			2.8	1.2	1.7	1.1	4.6	3.7	6.0	1.5	1.4	14
20			2.4	1.5	1.1	1.3	6.9	3.1	4.7	1.5	1.0	25
21			1.8	1.5	1.1	1.2	1.4	2.9	4.4	1.1	1.4	11
22			1.7	1.4	2.4	1.1	1.4	2.8	3.6	1.1	1.1	7.9
23			1.6	1.4	1.4	12	1.1	2.1	4.2	1.5	1.1	6.9
24			1.8	1.5	.95	1.9	1.5	3.0	5.9	1.9	17	20
25			1.7	1.5	.86	1.3	.90	2.4	4.5	6.8	3.3	8.3
26			2.1	1.6	1.3	1.3	.91	2.8	3.6	1.6	1.6	6.4
27			1.5	1.9	.86	.96	.85	2.2	2.7	.95	1.3	5.3
28			9.9	1.7	1.2	.87	.80	2.7	2.4	.93	1.7	5.1
29			3.5	1.3	---	1.3	.81	1.8	2.3	.77	1.3	4.6
30			2.1	1.6	---	1.2	.87	7.8	2.1	.73	1.9	88
31			29	1.3	---	.96	---	2.4	---	10	1.8	---
TOTAL			---	49.9	32.40	61.80	89.51	372.12	235.7	63.08	103.85	472.0
MEAN			---	1.61	1.16	1.99	2.98	12.0	7.86	2.03	3.35	15.7
MAX			---	4.2	2.4	12	39	170	46	10	22	88
MIN			---	1.1	.75	.87	.80	.75	2.0	.73	.72	1.7
AC-FT			---	99	64	123	178	738	468	125	206	936
CFSM			---	.51	.37	.63	.94	3.80	2.49	.64	1.06	4.98
IN.			---	.59	.38	.73	1.05	4.38	2.77	.74	1.22	5.56

50010500 RIO GUAJATACA AT LARES, PR--Continued

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
11...	1245	9.4	210	7.50	22.5	2.0	8.1	96	16	K1100	3000
DEC											
07...	1345	2.7	229	7.20	23.0	0.80	9.2	110	21	K14000	7300
FEB 1990											
05...	1400	0.97	212	8.20	22.0	1.0	9.3	108	11	560	470
MAY											
01...	1015	0.70	289	7.60	21.5	2.0	6.2	72	16	K1300	3600
JUN											
19...	1130	6.0	258	7.80	23.5	10	8.2	97	14	K1800	K1800
AUG											
16...	0940	1.7	296	7.90	24.0	3.0	7.0	84	12	K990	4200

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
11...	92	0	29	4.8	11	0.5	2.1	87	<0.5	6.0	10
DEC											
07...	--	--	--	--	--	--	--	90	--	--	--
FEB 1990											
05...	--	--	--	--	--	--	--	89	--	--	--
MAY											
01...	110	0	33	7.0	15	0.6	2.2	150	<0.5	20	9.6
JUN											
19...	--	--	--	--	--	--	--	85	--	--	--
AUG											
16...	120	0	36	7.3	14	0.6	2.6	120	--	13	13

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
11...	0.10	26	135	3.41	10	--	<0.01	2.2	0.01	0.39
DEC										
07...	--	--	--	--	<1	1.83	0.17	2.0	0.27	0.83
FEB 1990										
05...	--	--	--	--	<1	--	<0.01	1.1	<0.01	--
MAY										
01...	0.50	33	190	.36	5	0.69	0.01	0.70	0.01	0.39
JUN										
19...	--	--	--	--	<1	1.49	0.01	1.5	0.03	0.27
AUG										
16...	<0.10	31	189	.88	<1	--	<0.01	1.0	<0.01	--

K = non-ideal count

50010500 RIO GUAJATACA AT LARES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
11...	0.40	2.6	12	0.05	<1	<100	50	<1	<1	<10
DEC										
07...	1.1	3.1	14	0.12	--	--	--	--	--	--
FEB 1990										
05...	0.20	1.3	5.8	0.06	--	--	--	--	--	--
MAY										
01...	0.40	1.1	4.9	0.06	2	<100	<10	<1	<1	10
JUN										
19...	0.30	1.8	8.0	0.17	--	--	--	--	--	--
AUG										
16...	0.30	1.3	5.8	0.07	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
11...	270	6	40	<0.10	<1	<1	<10	<0.010	5	0.04
DEC										
07...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
05...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	320	2	40	<0.10	<1	<1	<10	<0.010	3	0.04
JUN										
19...	--	--	--	--	--	--	--	--	--	--
AUG										
16...	--	--	--	--	--	--	--	--	--	--

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
11...	0930	50	315	6.90	25.0	3.2	0.6	7	29	K82	K70
DEC											
11...	1230	150	300	7.00	25.0	0.70	1.6	19	21	K10	K10
FEB 1990											
05...	1600	100	313	7.80	24.5	1.2	3.8	46	22	K10	K10
MAY											
08...	1225	100	298	7.80	27.0	1.2	2.4	32	22	30	130
JUN											
25...	1445	120	317	7.40	25.5	1.2	1.6	20	19	K23	56
AUG											
20...	1345	100	295	7.50	27.5	2.6	3.7	46	23	K8	96

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
11...	160	0	56	4.0	6.9	0.2	1.9	140	<0.5	11	9.3
DEC											
11...	--	--	--	--	--	--	--	140	--	--	--
FEB 1990											
05...	--	0	--	--	--	--	--	130	--	--	--
MAY											
08...	130	--	47	4.1	6.6	0.2	1.9	130	<0.5	9.8	14
JUN											
25...	--	--	--	--	--	--	--	140	--	--	--
AUG											
20...	150	7	52	4.1	6.8	0.2	1.9	140	--	11	11

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
11...	0.10	7.0	180	24.2	3	0.38	0.02	0.40	0.19	0.31
DEC										
11...	--	--	--	--	12	--	<0.01	<0.10	0.03	0.27
FEB 1990										
05...	--	--	--	--	10	0.05	0.05	<0.10	0.06	0.74
MAY										
08...	0.10	6.4	165	--	9	--	<0.01	<0.10	0.01	0.29
JUN										
25...	--	--	--	--	6	0.07	0.03	<0.10	0.39	0.31
AUG										
20...	0.10	6.2	177	48.7	6	--	<0.01	<0.10	0.19	0.31

K = non-ideal count

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
11...	0.50	0.90	4.0	0.03	2	<100	<10	<1	<1	<10
DEC										
11...	0.30	--	--	0.03	--	--	--	--	--	--
FEB 1990										
05...	0.80	--	--	0.04	--	--	--	--	--	--
MAY										
08...	0.30	--	--	0.03	1	<100	10	<1	1	<10
JUN										
25...	0.70	--	--	0.02	--	--	--	--	--	--
AUG										
20...	0.50	--	--	0.02	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
11...	240	2	130	<0.10	<1	<1	<10	<0.010	6	0.06
DEC										
11...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
05...	--	--	--	--	--	--	--	--	--	--
MAY										
08...	80	3	60	<0.10	<1	<1	<10	<0.010	<1	0.04
JUN										
25...	--	--	--	--	--	--	--	--	--	--
AUG										
20...	--	--	--	--	--	--	--	--	--	--

50011400 RIO GUAJATACA ABOVE MOUTH NEAR QUEBRADILLAS, PR

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
11...	0715	22	448	7.00	23.5	1.6	5.7	66	16	220	590
DEC											
11...	1500	9.1	510	7.30	24.0	0.40	7.4	86	17	K40	K50
FEB 1990											
06...	0845	8.6	624	7.50	23.0	0.40	4.6	52	13	K90	K18
MAY											
08...	1110	9.0	520	7.40	25.5	1.0	5.8	67	28	K100	200
JUN											
25...	1710	14	446	7.70	25.5	1.0	7.0	85	15	490	520
AUG											
20...	1615	9.6	528	7.70	26.5	1.0	9.4	115	28	K26	K18

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
11...	210	0	72	6.5	16	0.5	1.2	180	<0.5	9.0	23
DEC											
11...	--	--	--	--	--	--	--	210	--	--	--
FEB 1990											
06...	--	--	--	--	--	--	--	220	--	--	--
MAY											
08...	220	0	75	8.8	21	0.6	2.0	220	<0.5	7.3	36
JUN											
25...	--	--	--	--	--	--	--	180	--	--	--
AUG											
20...	210	8	72	7.1	15	0.5	1.3	190	--	8.8	25

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
11...	0.10	6.6	242	14.4	<1	--	<0.01	1.5	0.02	0.48
DEC										
11...	--	--	--	--	6	--	<0.01	1.4	0.02	--
FEB 1990										
06...	--	--	--	--	3	--	<0.01	2.7	0.01	0.39
MAY										
08...	0.30	6.2	282	6.9	6	2.08	0.02	2.1	0.02	0.18
JUN										
25...	--	--	--	--	2	1.29	0.01	1.3	0.02	--
AUG										
20...	0.10	7.2	250	6.6	4	2.29	0.01	2.3	0.05	0.35

K = non-ideal count

RIO GUAJATACA BASIN

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
11...	0.50	2.0	8.9	0.02	<1	<100	<10	<1	<1	10
DEC										
11...	<0.20	--	--	0.17	--	--	--	--	--	--
FEB 1990										
06...	0.40	3.1	14	0.02	--	--	--	--	--	--
MAY										
08...	0.20	2.3	10	0.02	<1	<100	20	<1	3	<10
JUN										
25...	<0.20	--	--	0.04	--	--	--	--	--	--
AUG										
20...	0.40	2.7	12	<0.01	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
11...	90	3	40	<0.10	<1	<1	<10	<0.010	4	0.03
DEC										
11...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
08...	220	3	20	<0.10	<1	<1	<10	<0.010	<1	0.06
JUN										
25...	--	--	--	--	--	--	--	--	--	--
AUG										
20...	--	--	--	--	--	--	--	--	--	--

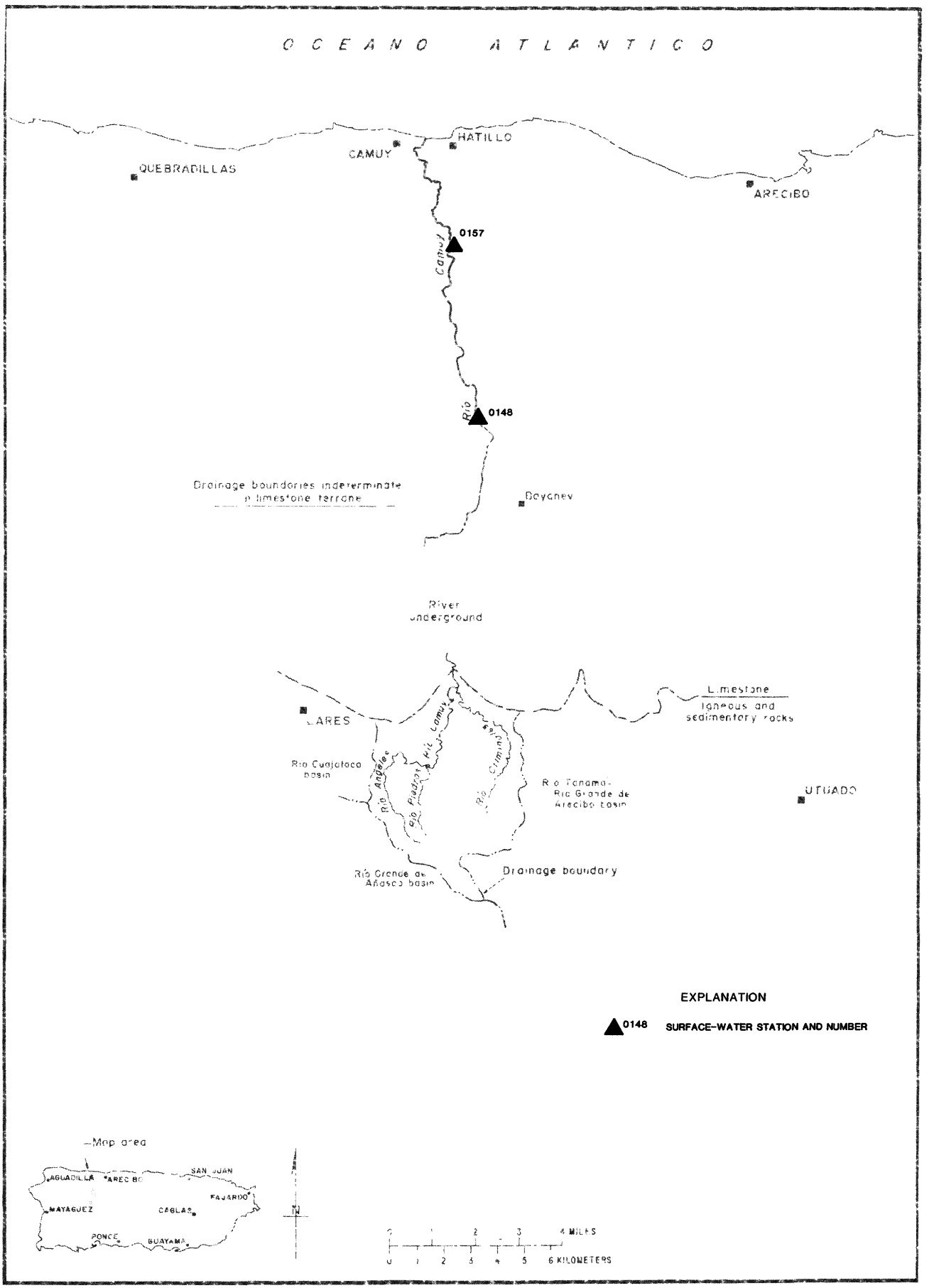

Figure 13.--Río Camuy basin.

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 Atlantic Ocean.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

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. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--6 years (1985-90), 110 ft^3/s (3.115 m^3/s), 79,700 acre-ft/yr (98.3 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,450 ft^3/s (183 m^3/s), Oct. 7, 1985, gage height, 17.66 ft (5.383 m), from rating curve extended above 300 ft^3/s (8.50 m^3/s) on basis of step-backwater analysis; minimum discharge, 25 ft^3/s (0.71 m^3/s), Apr. 26-28, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s (56.6 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 2	2050	2,260	64.0	12.05	3.673	Oct. 22	2100	2,290	64.8	12.13	3.697
Oct. 3	2125	*3,940	112	*14.97	4.563	July 5	1925	2,450	69.4	12.50	3.810
Oct. 19	2045	2,310	65.4	12.17	3.709						

Minimum discharge, 29 ft^3/s (0.821 m^3/s), Mar. 6-9.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	134	133	69	112	35	32	40	35	63	40	93	49
2	623	121	67	76	35	33	40	35	104	39	49	45
3	1410	113	65	68	35	31	54	33	46	38	43	44
4	954	108	64	59	34	31	44	33	41	36	39	73
5	555	104	62	54	34	31	38	32	52	359	40	202
6	369	101	60	52	34	30	35	31	134	199	40	155
7	238	98	60	51	33	29	43	85	166	138	39	87
8	203	95	60	50	38	29	36	252	72	110	38	105
9	170	97	60	49	36	35	35	213	53	73	82	470
10	147	146	59	48	37	37	34	197	46	59	95	217
11	134	128	59	46	37	36	33	99	42	60	55	157
12	125	94	58	46	38	77	33	80	64	64	88	112
13	115	88	57	47	35	116	40	66	65	50	55	101
14	192	87	56	46	49	128	37	56	46	211	81	156
15	138	84	54	46	41	77	35	50	504	131	58	186
16	137	79	54	44	36	54	39	47	163	74	49	167
17	325	327	60	43	35	54	81	45	110	58	46	114
18	321	263	53	43	34	46	219	43	194	73	170	115
19	611	110	52	42	38	44	218	41	117	68	101	133
20	373	96	51	41	39	46	201	39	80	52	53	175
21	181	99	50	40	35	44	97	39	69	45	47	132
22	582	92	49	40	38	51	69	37	58	40	46	100
23	419	84	48	39	37	209	52	36	61	38	69	94
24	240	81	48	39	34	151	46	35	63	39	85	134
25	175	78	47	39	32	74	43	34	54	42	122	120
26	264	76	46	40	32	52	45	57	50	44	67	95
27	192	74	45	39	32	47	43	45	48	35	51	86
28	149	72	65	40	31	44	39	35	45	33	48	81
29	209	71	90	38	---	42	37	33	43	32	47	79
30	165	70	56	37	---	41	36	38	42	31	43	315
31	140	---	126	37	---	40	---	65	---	36	44	---
TOTAL	9990	3269	1850	1491	1004	1791	1842	1966	2695	2347	1983	4099
MEAN	322	109	59.7	48.1	35.9	57.8	61.4	63.4	89.8	75.7	64.0	137
MAX	1410	327	126	112	49	209	219	252	504	359	170	470
MIN	115	70	45	37	31	29	33	31	41	31	38	44
AC-FT	19820	6480	3670	2960	1990	3550	3650	3900	5350	4660	3930	8130

CAL YR 1989 TOTAL 38977 MEAN 107 MAX 1390 MIN 25
WTR YR 1990 TOTAL 34327 MEAN 94.0 MAX 1410 MIN 29

50014800 RIO CAMUY NEAR BAYANEY, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS JUNE 1984 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 13	1442	119	180	25.0	APR. 12	1125	33.3	325	22.0
NOV. 16	1228	85.3	146	26.0	MAY 17	1212	44.3	286	23.0
DEC. 08	1658	61.6	266	26.0	JUNE 07	1105	164	300	23.0
JAN. 11	1132	45.8	268	23.0	JULY 19	1428	62.1	306	20.0
FEB. 15	1026	41.2	285	25.0	AUG. 09	1020	39.3	320	20.0
MAR. 16	0956	52.7	150	20.0	SEPT 14	1151	128	240	22.0

50015700 RIO CAMUY NEAR HATILLO, PR

LOCATION.--Lat 18°27'44", long 66°49'56", Hydrologic Unit 21010002, 1.8 mi (2.9 km) southwest of Hatillo plaza, and 1.8 mi (2.9 km) southeast of Camuy plaza, 1.2 mi (1.9 km) south of Planta de Purificación, and 3.3 mi (5.5 km) upstream from Atlantic Ocean.

DRAINAGE AREA.--Indeterminate.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 13 ft (4 m), from topographic map.

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

AVERAGE DISCHARGE.--6 years (1985-90), 177 ft^3/s (5.013 m^3/s), 128,200 acre-ft/yr (158 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,500 ft^3/s (297 m^3/s), Oct. 7, 1985, gage height, 24.75 ft (7.544 m), from rating curve extended above 200 ft^3/s (5.66 m^3/s) on basis of step-backwater analysis; minimum daily discharge, 25 ft^3/s (0.708 m^3/s), May 30.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s (70.8 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 2	2325	4,470	126	18.34	5.590	Oct. 22	2400	3,740	106	17.15	5.227
Oct. 3	2345	*7,150	202	*21.66	6.602	July 5	2300	5,790	164	20.13	6.136
Oct. 19	2320	3,860	109	17.35	5.288	Sept. 9	2245	2,760	78.2	15.32	4.670

Minimum daily discharge, 25 ft^3/s (0.708 m^3/s), May 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	219	199	83	e123	41	38	46	39	43	31	117	52
2	858	170	80	e82	41	36	50	39	128	30	72	45
3	2450	160	78	e74	40	33	58	38	45	29	59	43
4	2520	148	77	e64	41	33	49	38	34	29	51	76
5	991	138	75	e58	41	32	43	37	43	760	46	179
6	667	134	74	63	40	32	41	37	105	1450	48	299
7	311	129	74	61	38	31	46	48	247	262	43	93
8	232	120	70	58	43	31	41	287	68	252	43	113
9	207	126	67	56	46	34	38	370	42	99	51	692
10	159	188	67	54	48	41	38	348	33	71	140	505
11	138	244	66	52	46	35	36	155	29	72	63	213
12	124	126	64	52	43	87	36	82	47	100	89	135
13	115	114	63	52	39	192	49	66	50	57	60	104
14	230	118	62	52	50	202	43	52	35	331	e82	177
15	191	110	62	54	48	99	41	45	1010	387	e66	310
16	137	101	61	51	44	67	41	41	249	169	e54	293
17	331	417	68	52	42	68	79	39	108	76	e50	139
18	666	676	60	51	38	55	165	37	248	89	e180	175
19	750	160	60	51	43	49	442	34	186	91	e120	135
20	977	129	60	49	43	53	315	32	82	58	e70	235
21	308	130	59	47	38	49	132	32	65	50	e54	e160
22	636	123	58	47	42	56	83	30	51	47	e49	e120
23	987	105	58	45	41	449	59	29	51	46	e66	e105
24	386	102	57	46	37	456	49	28	61	65	e89	e140
25	239	97	56	47	35	111	46	27	48	60	e115	170
26	485	95	56	49	35	71	50	43	42	60	e100	89
27	455	91	56	47	34	62	49	50	38	47	e60	75
28	233	88	55	49	34	54	44	29	35	44	48	e74
29	323	85	137	46	---	49	42	26	32	42	48	84
30	307	84	78	46	---	47	41	25	31	41	44	359
31	220	---	e140	44	---	45	---	58	---	39	42	---
TOTAL	16852	4707	2181	1722	1151	2697	2292	2241	3286	4984	2219	5389
MEAN	544	157	70.4	55.5	41.1	87.0	76.4	72.3	110	161	71.6	180
MAX	2520	676	140	123	50	456	442	370	1010	1450	180	692
MIN	115	84	55	44	34	31	36	25	29	29	42	43

CAL YR 1989 TOTAL 59552 MEAN 163 MAX 2530 MIN 34
WTR YR 1990 TOTAL 49721 MEAN 136 MAX 2520 MIN 25

e Estimated

50015700 RIO CAMUY NEAR HATILLO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1984 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 13	1055	115	232	24.0	APR. 12	0820	35.3	323	23.0
NOV. 16	0914	102	148	24.0	MAY 17	0912	39.7	326	22.0
DEC. 08	1122	49	294	26.0	JUNE 07	1554	172	290	22.0
JAN. 11	0906	51.1	286	24.0	JULY 19	1050	92.7	349	20.0
FEB. 15	0750	50.6	295	22.0	AUG. 09	1257	39.5	330	20.0
MAR. 16	0736	68.2	330	22.0	SEPT 12	1458	123	310	23.0

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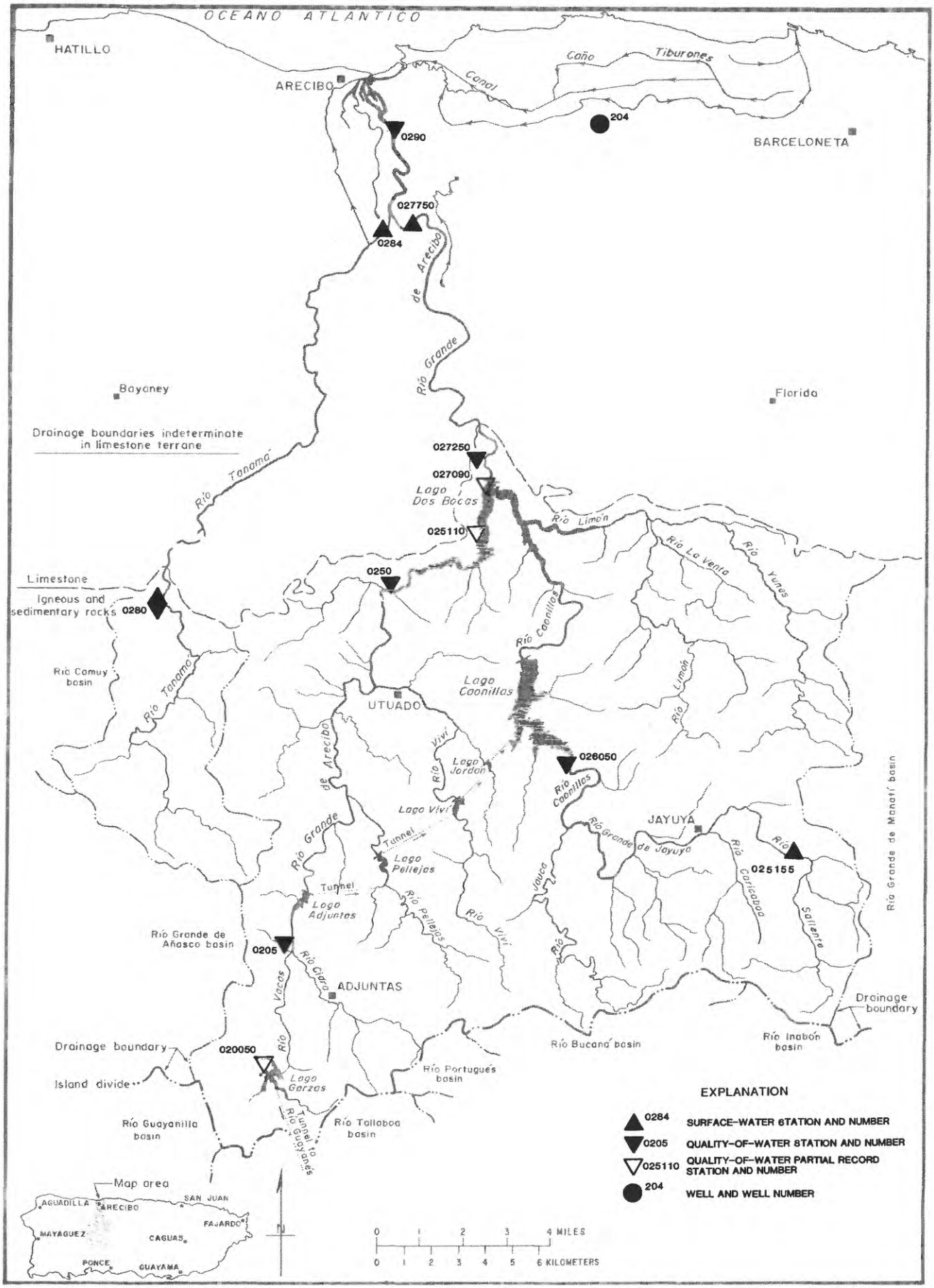

Figure 14.--Río Grande de Arecibo basin.

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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
25...	1400	103	216	7.20	23.5	2.6	7.9	96	14	2400	480
DEC											
18...	1345	19	295	8.10	22.0	1.2	9.0	106	18	1200	630
FEB 1990											
15...	1100	11	319	8.20	20.0	1.4	7.6	85	16	310	540
APR											
18...	1315	9.0	358	8.00	26.0	2.9	8.0	102	21	K7200	530
JUN											
11...	1140	8.1	323	8.00	26.0	1.8	8.6	110	21	K140	250
AUG											
15...	1015	8.1	420	8.00	25.0	1.5	8.8	110	16	K860	2400

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
25...	78	0	20	6.8	13	0.6	1.6	79	0.8	8.0	12
DEC											
18...	--	--	--	--	--	--	--	110	--	--	--
FEB 1990											
15...	--	--	--	--	--	--	--	110	--	--	--
APR											
18...	120	0	32	9.8	21	0.8	2.2	110	0.8	11	24
JUN											
11...	--	--	--	--	--	--	--	120	--	--	--
AUG											
15...	140	15	36	11	34	1	2.3	120	--	8.3	53

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
25...	0.10	28	137	38.1	1	1.19	0.01	1.2	0.090	0.21
DEC										
18...	--	--	--	--	29	1.38	0.12	1.5	0.10	0.30
FEB 1990										
15...	--	--	--	--	11	1.16	0.14	1.3	0.04	0.46
APR										
18...	0.20	30	197	4.80	6	0.97	0.13	1.1	0.11	0.39
JUN										
11...	--	--	--	--	<1	1.06	0.14	1.2	0.22	0.0
AUG										
15...	0.10	32	249	5.56	5	0.59	0.11	0.7	0.12	0.58

K = non-ideal count

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
25...	0.30	1.5	6.6	0.06	<1	<100	<10	<1	<1	<10
DEC										
18...	0.40	1.9	8.4	0.17	--	--	--	--	--	--
FEB 1990										
15...	0.50	1.8	8.0	0.20	--	--	--	--	--	--
APR										
18...	0.50	1.6	7.1	0.24	<1	<100	50	<1	1	<10
JUN										
11...	0.20	1.4	6.2	0.18	--	--	--	--	--	--
AUG										
15...	0.70	1.4	6.2	0.21	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
25...	240	4	40	<0.10	<1	<1	10	<0.010	<1	0.02
DEC										
18...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
15...	--	--	--	--	--	--	--	--	--	--
APR										
18...	380	1	120	<0.10	<1	<1	<10	<0.010	7	0.06
JUN										
11...	--	--	--	--	--	--	--	--	--	--
AUG										
15...	--	--	--	--	--	--	--	--	--	--

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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
04...	1100	403	205	7.70	25.0	31	8.3	100	11	210000	3000
NOV											
29...	1115	120	255	7.90	23.0	2.4	8.8	102	<10	2100	430
FEB 1990											
20...	1010	50	278	7.20	21.5	1.5	9.2	102	12	31000	K13000
APR											
16...	1230	35	294	8.40	29.0	38	7.4	96	16	K11000	930
JUN											
11...	1400	23	291	8.20	31.5	2.0	7.1	96	19	360	K110
AUG											
15...	1245	37	273	8.00	29.5	2.5	6.5	85	14	K770	310

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
04...	83	0	22	6.7	11	0.5	2.1	68	<0.5	13	10
NOV											
29...	--	--	--	--	--	--	--	84	--	--	--
FEB 1990											
20...	--	--	--	--	--	--	--	98	--	--	--
APR											
16...	110	0	30	8.9	17	0.7	2.1	110	<0.5	19	16
JUN											
11...	--	--	--	--	--	--	--	98	--	--	--
AUG											
15...	110	17	29	8.1	15	0.6	2.3	98	--	21	15

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
04...	0.10	25	131	142	54	1.08	0.02	1.1	0.05	0.25
NOV										
29...	--	--	--	--	13	1.24	0.06	1.3	0.06	0.14
FEB 1990										
20...	--	--	--	--	7	1.04	0.06	1.1	0.16	0.54
APR										
16...	0.10	30	184	17	50	0.75	0.05	0.80	0.08	1.8
JUN										
11...	--	--	--	--	2	0.09	0.01	0.10	0.02	0.68
AUG										
15...	0.10	27	171	17.4	16	0.86	0.04	0.90	0.05	0.75

K = non-ideal count

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
04...	0.30	1.4	6.2	0.07	<1	<100	<10	<1	1	10
NOV										
29...	0.20	1.5	6.6	0.10	--	--	--	--	--	--
FEB 1990										
20...	0.70	1.8	8.0	0.15	--	--	--	--	--	--
APR										
16...	1.9	2.7	12	0.15	<1	<100	20	<1	3	20
JUN										
11...	0.70	0.80	3.5	0.25	--	--	--	--	--	--
AUG										
15...	0.80	1.7	7.5	0.12	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
04...	3400	5	120	<0.10	<1	<1	20	<0.010	3	0.04
NOV										
29...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
20...	--	--	--	--	--	--	--	--	--	--
APR										
16...	3700	2	150	<0.10	<1	<1	20	<0.010	2	0.02
JUN										
11...	--	--	--	--	--	--	--	--	--	--
AUG										
15...	--	--	--	--	--	--	--	--	--	--

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).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to September 1990.

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.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 275 ft³/s (7.79 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 3	1600	*457	12.9	*7.58	2.310	Sept. 9	1800	283	8.01	7.01	2.137

Minimum daily discharge, 2.4 ft³/s (0.068 m³/s), July 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e38	25	13	8.7	e5.6	e5.3	6.1	5.6	4.0	4.6	3.1	31
2	e35	26	12	8.9	e5.4	e5.1	6.0	5.9	4.4	4.5	4.5	37
3	e40	25	13	9.0	e5.3	e5.0	5.6	5.2	4.0	4.0	4.8	74
4	e35	24	13	9.0	e5.2	e4.7	5.3	5.2	4.1	5.2	3.2	75
5	e32	24	12	9.0	e5.1	e4.6	4.5	5.6	16	5.6	22	34
6	28	24	11	8.7	e5.0	e4.6	4.3	5.2	12	4.7	12	49
7	25	24	11	8.7	e6.0	e4.5	4.3	4.7	6.5	15	6.5	54
8	28	25	11	8.4	e6.6	e5.1	4.3	5.1	4.8	19	4.7	41
9	36	23	11	8.0	e5.6	e6.2	4.2	5.9	4.0	7.3	4.0	68
10	32	23	11	8.0	e6.6	e6.6	3.7	10	4.0	5.8	4.8	81
11	28	22	11	8.0	e5.2	e6.4	3.7	19	3.7	4.7	6.5	45
12	29	22	10	7.9	e5.0	e7.5	3.6	7.4	3.4	4.6	3.7	36
13	30	22	10	7.3	e5.6	e25	4.2	5.9	3.4	4.1	30	37
14	25	22	10	7.3	e7.5	e35	6.1	5.9	19	6.7	16	32
15	26	22	9.9	6.6	e9.5	e25	5.8	5.7	102	6.6	8.1	43
16	26	21	9.6	6.6	e7.0	e20	4.7	5.0	25	7.9	5.6	37
17	26	20	9.7	6.6	e6.0	15	5.4	4.7	13	3.9	4.3	25
18	25	20	9.5	6.3	e5.8	13	19	4.7	11	6.7	3.9	20
19	25	20	9.6	6.5	e5.8	11	16	4.3	9.5	7.4	3.5	38
20	27	19	9.4	6.6	e5.5	10	18	4.0	8.3	4.9	2.9	56
21	26	19	8.9	6.2	e6.0	10	9.8	3.9	7.4	3.4	2.7	53
22	25	18	9.0	6.0	e6.5	9.4	7.7	3.6	6.7	2.8	30	30
23	35	17	8.6	6.0	e6.2	8.6	6.8	3.4	7.1	2.4	37	51
24	24	16	8.6	6.3	e5.6	8.3	5.8	3.3	10	4.6	25	51
25	24	15	8.8	6.1	e6.2	7.9	7.0	3.2	9.2	5.3	11	61
26	24	16	8.5	6.2	e7.0	8.1	12	3.0	7.1	8.3	8.0	64
27	24	15	8.4	6.3	e5.8	7.8	8.0	3.2	6.2	21	6.4	37
28	25	14	7.9	e6.2	e5.3	7.1	6.9	3.8	5.5	16	37	28
29	25	13	8.4	e6.0	---	6.9	6.1	6.1	5.2	7.0	53	24
30	26	13	8.8	e5.9	---	6.6	5.5	3.8	4.7	4.8	29	45
31	26	---	8.1	e5.7	---	6.5	---	3.4	---	3.6	36	---
TOTAL	880	609	310.7	223.0	167.9	306.8	210.4	165.7	331.2	212.4	429.2	1357
MEAN	28.4	20.3	10.0	7.19	6.00	9.90	7.01	5.35	11.0	6.85	13.8	45.2
MAX	40	26	13	9.0	9.5	35	19	19	102	21	53	81
MIN	24	13	7.9	5.7	5.0	4.5	3.6	3.0	3.4	2.4	2.7	20
AC-FT	1750	1210	616	442	333	609	417	329	657	421	851	2690
CFSM	3.07	2.19	1.08	.78	.65	1.07	.76	.58	1.19	.74	1.50	4.89
IN.	3.54	2.45	1.25	.90	.68	1.23	.85	.67	1.33	.85	1.73	5.46

WTR YR 1990 TOTAL 5203.3 MEAN 14.3 MAX 102 MIN 2.4 AC-FT 10320 CFSM 1.54 IN. 20.93

e Estimated

50025155 RIO SALIENTE AT COABEY NEAR JAYUYA, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 10	1109	36.0	146	23.0	APR. 09	0938	4.5	132	20.0
NOV. 13	1075	19.5	166	25.0	MAY 14	0850	6.1	143	20.0
DEC. 05	1323	12.6	127	26.0	JUNE 04	0849	3.8	145	22.0
JAN. 08	1124	8.6	122	20.0	JULY 17	1231	3.5	124	22.0
FEB. 12	0959	4.5	133	20.5	AUG. 13	0940	3.3	150	21.0
MAR. 12	1003	18.2	130	19.0	SEPT 10	1019	106	100	21.0

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
25...	1000	285	155	6.90	21.5	8.0	9.4	109	22	2400	440
DEC											
18...	1030	32	203	8.00	21.5	0.40	8.6	98	19	K100	K40
FEB 1990											
15...	1400	32	201	7.90	22.0	1.0	6.5	75	16	390	230
APR											
27...	1150	23	225	8.00	26.0	0.40	7.5	94	10	K45	K64
JUN											
11...	0830	9.5	242	8.00	26.5	1.0	7.6	95	18	K60	K45
AUG											
14...	1015	63	165	7.80	25.0	87	8.5	104	30	27000	31000

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
25...	55	0	14	4.8	9.1	0.5	1.7	44	<0.5	12	8.8
DEC											
18...	--	--	--	--	--	--	--	74	--	--	--
FEB 1990											
15...	--	--	--	--	--	--	--	67	--	--	--
APR											
27...	79	0	21	6.5	12	0.6	1.4	74	<0.5	13	10
JUN											
11...	--	--	--	--	--	--	--	89	--	--	--
AUG											
14...	58	9	15	4.9	8.7	0.5	2.6	49	--	12	11

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
25...	0.10	23	100	76.9	4	1.39	0.01	1.40	0.03	0.37
DEC										
18...	--	--	--	--	<1	--	<0.01	0.60	0.02	--
FEB 1990										
15...	--	--	--	--	3	0.79	0.01	0.80	0.02	0.48
APR										
27...	0.10	20	130	8.1	15	0.29	0.01	0.30	<0.01	--
JUN										
11...	--	--	--	--	<1	--	<0.01	<0.10	0.02	0.68
AUG										
14...	0.10	17	101	17.5	66	0.65	0.05	0.70	0.07	0.83

K = non-ideal count

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
25...	0.40	1.8	8.0	0.05	<1	<100	<10	<1	<1	10
DEC										
18...	<0.20	--	--	0.05	--	--	--	--	--	--
FEB 1990										
15...	0.50	1.3	5.8	0.07	--	--	--	--	--	--
APR										
27...	0.60	0.90	4.0	0.05	<1	<100	<20	<1	<1	10
JUN										
11...	0.70	--	--	0.07	--	--	--	--	--	--
AUG										
14...	0.90	1.6	7.1	0.19	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
25...	850	6	60	0.40	<1	<1	10	<0.010	<1	0.02
DEC										
18...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
15...	--	--	--	--	--	--	--	--	--	--
APR										
27...	80	5	10	<0.10	<1	<1	10	<0.010	<1	0.02
JUN										
11...	--	--	--	--	--	--	--	--	--	--
AUG										
14...	--	--	--	--	--	--	--	--	--	--

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.

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
20...	1145	1660	172	7.20	24.5	130	6.6	78	30	3700	3400
NOV											
29...	0900	e1680	192	7.00	24.5	20	5.8	69	14	K60	K230
FEB 1990											
20...	0845	22	208	7.50	23.0	1.0	8.2	94	13	K30	K54
APR											
03...	1030	1060	222	7.20	24.5	1.7	2.7	32	16	K10	K10
JUN											
21...	0830	17	223	7.50	26.5	1.6	4.9	60	18	K60	130
AUG											
22...	0730	19	229	7.40	27.5	1.5	4.2	52	10	K50	K42

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
20...	67	2	18	5.4	9.0	0.5	2.5	59	<0.5	10	8.0
NOV											
29...	--	--	--	--	--	--	--	64	--	--	--
FEB 1990											
20...	--	--	--	--	--	--	--	79	--	--	--
APR											
03...	84	2	23	6.5	11	0.5	2.1	80	<0.5	13	12
JUN											
21...	--	--	--	--	--	--	--	82	--	--	--
AUG											
22...	90	4	25	6.8	11	0.5	2.3	86	--	8.9	10

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
20...	0.10	20	108	486	122	1.03	0.07	1.10	0.05	0.25
NOV										
29...	--	--	--	--	24	0.99	0.01	1.00	0.11	0.69
FEB 1990										
20...	--	--	--	--	18	0.38	0.02	0.40	0.03	0.27
APR										
03...	<0.10	22	138	393	3	0.39	0.01	0.40	0.04	0.16
JUN										
21...	--	--	--	--	30	0.06	0.04	0.10	0.11	0.29
AUG										
22...	0.10	22	138	7.1	1	0.18	0.02	0.20	0.13	0.27

K = non-ideal count
e = estimate

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
20...	0.30	1.4	6.2	0.12	<1	<100	<10	<1	5	30
NOV										
29...	0.80	1.8	8.0	0.07	--	--	--	--	--	--
FEB 1990										
20...	0.30	0.70	3.1	0.02	--	--	--	--	--	--
APR										
03...	0.20	0.60	2.7	0.02	<1	<100	40	<1	2	10
JUN										
21...	0.40	0.50	2.2	0.04	--	--	--	--	--	--
AUG										
22...	0.40	0.60	2.7	0.03	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
20...	9300	5	180	0.30	<1	<1	30	<0.010	<1	<0.01
NOV										
29...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
20...	--	--	--	--	--	--	--	--	--	--
APR										
03...	270	3	200	0.10	<1	<1	<10	<0.010	<1	0.04
JUN										
21...	--	--	--	--	--	--	--	--	--	--
AUG										
22...	--	--	--	--	--	--	--	--	--	--

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 10.4 mi (16.7 km) downstream from Lago Dos Bocas.

DRAINAGE AREA.--200 mi² (520 km²), approximately, of which an undetermined amount does not contribute directly to surface runoff.

WATER-DISCHARGE RECORDS

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 except those for estimated daily discharges, which are poor. Flow regulated by Lago Dos Bocas Dam 10.4 mi (16.7 km) upstream from gage. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--8 years (1983-90), 438 ft^3/s (12.40 m^3/s), 29.74 in/yr (755 mm/yr), 317,300 acre-ft/yr (391 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,800 ft^3/s (1,300 m^3/s), May 18, 1985, gage height, 18.22 ft (5.553 m), from floodmark, from rating curve extended above 2,400 ft^3/s (68.0 m^3/s) on basis of slope-area measurement of peak flow; minimum discharge, 30 ft^3/s (0.850 m^3/s), Mar. 30, 1986.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,300 ft^3/s (122 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 23	0030	*3,300	93.4	*8.28	2.524						

Minimum daily discharge, 38 ft^3/s (1.076 m^3/s), June 3, Sept. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1300	1270	348	e60	e55	53	416	192	64	50	53	38
2	1270	1160	e91	e58	e49	54	307	160	43	47	48	40
3	1800	1210	e145	e625	e75	55	652	302	38	49	43	72
4	1410	161	773	e500	e170	238	123	413	81	52	44	323
5	1690	104	754	e172	e106	64	173	84	106	82	41	502
6	1590	e93	413	e278	e57	47	197	275	414	68	389	621
7	917	812	611	e229	e50	50	401	575	92	46	94	369
8	873	1060	937	e89	193	70	217	316	373	45	52	95
9	816	761	183	e283	85	232	69	511	93	43	133	353
10	698	746	e190	e354	53	572	98	272	217	235	44	792
11	854	470	e277	e426	53	258	171	424	320	213	42	748
12	783	200	e238	e568	152	264	68	177	417	73	44	526
13	894	204	e352	e151	81	275	139	59	454	326	304	538
14	547	740	450	e195	381	309	70	544	328	137	338	460
15	210	860	190	e100	80	822	239	552	148	54	188	355
16	441	720	576	e543	54	479	183	98	79	394	49	128
17	467	826	258	e146	57	151	220	506	63	254	79	464
18	1550	629	578	e52	130	77	193	537	401	307	190	497
19	756	763	231	e50	463	161	453	120	393	421	44	449
20	1010	439	e143	e42	125	831	488	56	312	531	147	282
21	1030	732	e128	e173	199	196	106	55	107	113	164	441
22	1660	704	e58	e50	268	70	78	270	65	57	236	369
23	1970	267	e57	e49	72	78	291	73	68	51	211	363
24	1710	335	e81	e47	54	492	480	55	53	58	448	433
25	1430	328	e65	e47	126	119	420	86	134	52	227	609
26	830	e240	e351	e44	112	63	430	49	312	389	66	530
27	825	e151	e246	e43	54	137	540	88	369	248	428	593
28	638	e652	e62	e150	47	126	533	109	100	60	453	562
29	840	784	e141	e166	---	145	508	191	137	49	94	615
30	1400	814	e72	e267	---	226	557	259	82	393	48	272
31	1040	---	e58	e58	---	352	---	91	---	100	42	---
TOTAL	33249	18235	9057	6015	3401	7066	8820	7499	5863	4997	4783	12439
MEAN	1073	608	292	194	121	228	294	242	195	161	154	415
MAX	1970	1270	937	625	463	831	652	575	454	531	453	792
MIN	210	93	57	42	47	47	68	49	38	43	41	38
AC-FT	65950	36170	17960	11930	6750	14020	17490	14870	11630	9910	9490	24670
CFSM	7.66	4.34	2.09	1.39	.87	1.63	2.10	1.73	1.40	1.15	1.10	2.96
IN.	8.83	4.85	2.41	1.60	.90	1.88	2.34	1.99	1.56	1.33	1.27	3.31

CAL YR 1989 TOTAL 142936 MEAN 392 MAX 1970 MIN 50 AC-FT 283500 CFSM 2.80 IN. 37.98
WTR YR 1990 TOTAL 121424 MEAN 333 MAX 1970 MIN 38 AC-FT 240800 CFSM 2.38 IN. 32.26

e Estimated

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

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS APRIL 1982 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 16	0927	87.3	80	26.0	APR. 05	0836	122.5	240	22.0
NOV. 03	0846	164	198	26.0	MAY 10	1040	140	240	25.0
DEC. 15	0950	118	212	26.0	JUNE 08	0908	59.4	243	24.0
JAN. 12	1006	116	206	23.0	JULY 10	0956	71	230	24.0
FEB. 16	0843	54	255	26.0	AUG. 17	0803	86.9	260	23.0
MAR. 08	0827	44.4	255	24.0	SEPT 12	0851	155	210	25.0

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 (286.00 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.

AVERAGE DISCHARGE.--30 years (1961-90), 48.0 ft³/s (1.359 m³/s), 35.42 in/yr (900 mm/yr), 34,780 acre-ft/yr (42.9 hm³/yr); median of yearly mean discharges, 48 ft³/s (1.36 m³/s), 34,800 acre-ft/yr (43 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,190 ft³/s (345 m³/s), May 18, 1985, gage height, 17.45 ft (5.319 m) new datum in use, from floodmark and recorder, from rating curve extended above 500 ft³/s (14.2 m³/s) on basis of slope-area measurement of peak flow; minimum discharge, 6.6 ft³/s (0.187 m³/s), June 12, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft³/s (85.0 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 17	1730	3,510	99.4	12.36	3.767	Aug. 9	1645	*4,470	126	*13.52	4.121
Oct. 19	1600	3,620	102	12.50	3.810	Sept. 9	1445	3,370	95.4	12.18	3.712
Oct. 22	1645	4,190	119	13.20	4.023	Sept. 20	1645	3,040	86.1	11.73	3.575

Minimum discharge, 10 ft³/s (0.283 m³/s), Apr. 10,13,14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e100	102	43	44	19	18	12	19	40	18	20	35
2	e300	95	42	42	19	17	12	19	26	18	23	33
3	e290	90	41	36	18	17	12	18	20	17	23	102
4	e310	85	40	31	18	15	12	18	23	28	19	117
5	e350	84	39	30	18	14	11	17	43	53	22	103
6	e200	82	38	29	17	14	55	17	57	32	25	120
7	e120	78	38	28	19	14	24	76	22	35	19	98
8	e160	75	37	29	23	14	14	211	18	47	24	62
9	e130	72	36	28	20	26	12	109	25	35	265	240
10	e115	91	35	27	21	20	12	51	31	23	e64	57
11	112	70	35	27	21	21	11	37	84	21	e55	59
12	131	67	34	27	20	62	11	33	35	20	e46	44
13	103	64	33	26	18	43	11	29	21	20	e67	46
14	91	62	32	26	44	35	12	29	28	22	52	58
15	102	60	32	25	22	23	13	26	184	31	29	38
16	202	57	36	23	20	29	21	25	49	27	24	29
17	474	139	33	24	19	33	16	24	34	22	22	40
18	163	71	31	23	19	20	148	23	31	22	34	31
19	338	60	31	22	24	18	72	23	27	20	23	133
20	170	59	31	23	25	19	75	26	25	19	20	251
21	272	58	29	22	18	18	e35	26	23	18	20	100
22	423	57	29	22	22	16	e23	25	22	17	29	62
23	204	54	28	22	18	16	e22	26	27	17	23	86
24	169	50	28	22	17	17	e21	24	26	22	76	130
25	e155	49	27	23	17	14	e20	24	22	33	37	101
26	e148	47	27	23	18	14	27	23	21	26	25	e61
27	e130	46	26	23	17	13	28	22	21	22	21	e44
28	141	44	45	22	17	13	21	21	20	20	39	39
29	196	44	36	21	---	13	20	21	19	19	28	34
30	126	43	28	20	---	12	19	25	19	19	21	141
31	112	---	86	19	---	12	---	23	---	21	32	---
TOTAL	6037	2055	1106	809	568	630	802	1090	1043	764	1227	2494
MEAN	195	68.5	35.7	26.1	20.3	20.3	26.7	35.2	34.8	24.6	39.6	83.1
MAX	474	139	86	44	44	62	148	211	184	53	265	251
MIN	91	43	26	19	17	12	11	17	18	17	19	29
AC-FT	11970	4080	2190	1600	1130	1250	1590	2160	2070	1520	2430	4950
CFSM	10.6	3.72	1.94	1.42	1.10	1.10	1.45	1.91	1.89	1.34	2.15	4.52
IN.	12.21	4.15	2.24	1.64	1.15	1.27	1.62	2.20	2.11	1.54	2.48	5.04

CAL YR 1989 TOTAL 19019 MEAN 52.1 MAX 474 MIN 12 AC-FT 37720 CFSM 2.83 IN. 38.45
WTR YR 1990 TOTAL 18625 MEAN 51.0 MAX 474 MIN 11 AC-FT 36940 CFSM 2.77 IN. 37.65

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.--US D-49 SEDIMENT SAMPLER SINCE OCTOBER 1968. AUTOMATIC SEDIMENT SAMPLER SINCE 1990

REMARKS.--Sediment samples were collected by a local observer on a weekly basis and during high flow events. Estimates for period of missing daily record were made from a sediment transport curve developed from a period of record over 5 years.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 20,400 mg/L November 27, 1968; minimum daily mean, 0 mg/L during water year 1985.
SEDIMENT LOADS: Maximum daily, 167,000 tons (152,000 tonnes) May 18, 1985, minimum daily, 0.0 ton (0.0 tonne) several days during many years.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 2,310 mg/L October 17, 1989; minimum daily mean, 3.0 mg/L several days.
SEDIMENT LOADS: Maximum daily, 11,400 tons (10,400 tonnes) October 17, 1989; minimum daily, 0.14 ton (0.13 tonne) several days.

WATER-QUALITY DATA, WATER YEARS OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
10...	1215	129	140	7.00	23.0	8.0	9.0	107	26	240	510
DEC											
07...	1115	38	151	6.80	21.0	2.0	9.2	105	15	K82	210
FEB 1990											
05...	1045	17	165	8.00	20.0	1.4	8.7	98	11	K40	K130
MAY											
01...	0845	19	173	7.70	21.0	2.0	8.8	101	11	K53	210
JUN											
14...	1045	21	168	6.70	25.0	10	7.8	95	11	360	750
AUG											
20...	1130	22	158	8.20	26.0	7.3	8.0	99	13	80	210

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
10...	52	4	13	4.8	7.6	0.5	1.9	44	<0.5	11	7.3
DEC											
07...	--	--	--	--	--	--	--	56	--	--	--
FEB 1990											
05...	--	--	--	--	--	--	--	57	--	--	--
MAY											
01...	64	9	15	6.4	11	0.6	2.0	61	<0.5	1.5	39
JUN											
14...	--	--	--	--	--	--	--	56	--	--	--
AUG											
20...	62	6	15	5.9	8.6	0.5	2.4	56	--	12	8.9

K = non-ideal count

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER-QUALITY DATA, WATER YEARS OCTOBER 1989 TO SEPTEMBER 1990

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
10...	0.10	22	94	32.8	5	--	<0.01	1.10	0.02	--
DEC										
07...	--	--	--	--	1	--	<0.01	0.90	0.01	--
FEB 1990										
05...	--	--	--	--	9	--	<0.01	0.70	0.02	--
MAY										
01...	<0.10	26	136	8.36	21	0.49	0.01	0.50	<0.01	0.19
JUN										
14...	--	--	--	--	3	0.79	<0.01	0.80	0.02	0.28
AUG										
20...	<0.10	24	110	6.53	6	0.59	<0.01	0.60	0.06	0.24

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
10...	<0.20	--	--	0.03	<1	<100	30	<1	1	10
DEC										
07...	<0.20	--	--	0.03	--	--	--	--	--	--
FEB 1990										
05...	<0.20	--	--	0.02	--	--	--	--	--	--
MAY										
01...	0.20	0.70	3.1	0.01	<1	<100	<10	<1	<1	10
JUN										
14...	0.30	1.1	4.9	0.13	--	--	--	--	--	--
AUG										
20...	0.30	0.90	4.0	0.02	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
10...	750	1	50	<0.10	<1	<1	<10	<0.010	1	0.03
DEC										
07...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
05...	--	--	--	--	--	--	--	--	--	--
MAY										
01...	150	3	20	<0.10	<1	<1	<10	<0.010	1	0.04
JUN										
14...	--	--	--	--	--	--	--	--	--	--
AUG										
20...	--	--	--	--	--	--	--	--	--	--

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	e100	e100	e19	102	19	5.2	43	6	.69
2	e300	e700	e378	95	16	4.1	42	24	2.7
3	e290	e1010	e641	90	13	3.2	41	5	.55
4	e310	e970	e602	85	12	2.8	40	7	.80
5	e350	e1240	e870	84	12	2.8	39	10	1.0
6	e200	e700	e378	82	12	2.7	38	8	.83
7	e120	e350	e123	78	11	2.4	38	5	.57
8	e160	e300	e113	75	10	2.1	37	12	1.1
9	e130	e350	e123	72	10	2.0	36	19	1.8
10	e115	e275	e85	91	163	77	35	16	1.5
11	112	30	9.1	70	19	3.7	35	11	.96
12	131	276	199	67	12	2.1	34	9	.82
13	103	78	25	64	12	2.0	33	8	.76
14	91	13	3.1	62	12	2.1	32	7	.61
15	102	183	79	60	11	1.8	32	6	.52
16	202	892	2480	57	10	1.6	36	19	2.4
17	474	2310	11400	139	585	848	33	14	1.4
18	163	282	146	71	58	12	31	5	.44
19	338	1450	5910	60	30	4.9	31	5	.40
20	170	235	119	59	22	3.4	31	7	.61
21	272	937	3170	58	19	2.9	29	7	.60
22	423	2100	9190	57	14	2.2	29	5	.39
23	204	350	208	54	10	1.4	28	5	.37
24	169	21	9.7	50	9	1.2	28	5	.36
25	e155	e20	e8.6	49	9	1.2	27	5	.36
26	e148	e20	e7.6	47	8	1.1	27	5	.36
27	e130	e20	e6.7	46	8	1.0	26	5	.36
28	141	302	157	44	7	.85	45	74	24
29	196	885	758	44	6	.70	36	65	6.0
30	126	100	36	43	6	.70	28	39	3.1
31	112	20	5.9	---	---	---	86	364	332
TOTAL	6037	---	37259.7	2055	---	999.15	1106	---	388.36

e Estimated

RIO GRANDE DE ARECIBO BASIN

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	44	42	5.9	19	10	.52	18	5	.27
2	42	34	4.5	19	10	.48	17	5	.24
3	36	34	3.4	18	9	.44	17	5	.22
4	31	26	2.1	18	10	.49	15	5	.23
5	30	22	1.7	18	10	.48	14	6	.22
6	29	20	1.5	17	9	.42	14	7	.26
7	28	18	1.4	19	10	.51	14	8	.32
8	29	16	1.2	23	10	.59	14	10	.36
9	28	14	1.0	20	9	.49	26	20	1.7
10	27	12	.83	21	8	.48	20	18	1.0
11	27	10	.71	21	8	.48	21	15	.88
12	27	10	.69	20	6	.31	62	97	23
13	26	10	.69	18	6	.30	43	29	3.6
14	26	10	.68	44	49	7.3	35	14	1.3
15	25	7	.50	22	12	.74	23	10	.60
16	23	5	.32	20	10	.50	29	37	9.7
17	24	5	.32	19	8	.44	33	33	4.1
18	23	5	.32	19	7	.37	20	14	.76
19	22	4	.27	24	10	1.0	18	11	.52
20	23	4	.23	25	33	2.5	19	10	.51
21	22	4	.23	18	19	.95	18	11	.52
22	22	3	.20	22	13	.85	16	14	.59
23	22	3	.18	18	10	.51	16	20	.91
24	22	3	.18	17	10	.43	17	19	.83
25	23	4	.26	17	9	.41	14	11	.43
26	23	6	.41	18	9	.43	14	7	.28
27	23	9	.55	17	9	.42	13	5	.17
28	22	11	.62	17	7	.34	13	5	.17
29	21	11	.61	---	---	---	13	5	.17
30	20	11	.60	---	---	---	12	5	.18
31	19	11	.56	---	---	---	12	6	.20
TOTAL	809	---	32.66	568	---	23.18	630	---	54.24

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	12	6	.20	19	8	.39	40	63	19
2	12	6	.20	19	7	.33	26	22	1.6
3	12	6	.20	18	7	.34	20	20	1.1
4	12	5	.17	18	7	.33	23	19	1.2
5	11	5	.14	17	7	.32	43	59	15
6	55	228	151	17	7	.32	57	153	63
7	24	106	8.6	76	255	208	22	64	4.2
8	14	55	2.1	211	996	2340	18	45	2.3
9	12	26	.83	109	291	122	25	40	2.6
10	12	10	.30	51	63	9.2	31	75	15
11	11	7	.21	37	23	2.3	84	337	232
12	11	6	.18	33	13	1.1	35	44	5.0
13	11	6	.18	29	10	.82	21	33	1.9
14	12	5	.16	29	10	.74	28	43	10
15	13	4	.15	26	7	.50	184	460	314
16	21	18	2.4	25	5	.33	49	49	7.6
17	16	11	.53	24	6	.39	34	18	1.7
18	148	773	1420	23	7	.47	31	14	1.1
19	72	147	40	23	8	.50	27	11	.78
20	75	130	30	26	9	.61	25	9	.59
21	e35	e27	e2.9	26	11	.76	23	6	.40
22	e23	e8	e.65	25	12	.82	22	5	.29
23	e22	e17	e1.2	26	11	.73	27	8	.61
24	e21	e9	e.44	24	10	.63	26	10	.62
25	e20	e15	e1.0	24	10	.62	22	10	.60
26	27	20	1.6	23	10	.58	21	10	.55
27	28	18	1.6	22	7	.41	21	10	.54
28	21	25	1.4	21	4	.25	20	10	.53
29	20	9	.47	21	5	.27	19	11	.54
30	19	9	.46	25	12	1.0	19	15	.75
31	---	---	---	23	12	.79	---	---	---
TOTAL	802	---	1669.27	1090	---	2695.85	1043	---	705.10

e Estimated

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	18	12	.57	20	14	.75	35	68	10
2	18	13	.61	23	10	.64	33	27	3.1
3	17	17	.78	23	10	.63	102	686	806
4	28	33	4.1	19	10	.50	117	594	579
5	53	118	40	22	15	1.3	103	365	191
6	32	40	4.1	25	15	1.2	120	487	767
7	35	48	7.9	19	10	.53	98	251	97
8	47	92	27	24	12	.80	62	85	15
9	35	50	5.9	265	900	4370	240	1070	4910
10	23	19	1.2	e64	125	30	57	67	12
11	21	18	.98	e55	135	57	59	113	37
12	20	18	.95	e46	81	15	44	55	7.7
13	20	18	.92	e67	218	119	46	67	15
14	22	18	1.1	52	106	20	58	155	73
15	31	25	2.4	29	19	1.4	38	92	10
16	27	37	2.9	24	14	.87	29	22	1.8
17	22	22	1.2	22	11	.63	40	62	19
18	22	14	.75	34	34	5.4	31	37	3.5
19	20	6	.32	23	16	1.0	133	557	754
20	19	3	.15	20	6	.35	251	1020	3720
21	18	4	.19	20	5	.26	100	103	35
22	17	5	.25	29	21	2.0	62	111	19
23	17	6	.27	23	15	1.0	86	238	131
24	22	14	1.0	76	525	358	130	648	839
25	33	41	5.4	37	68	7.9	101	308	229
26	26	20	1.4	25	15	1.2	e61	e90	e16
27	22	15	.82	21	11	.63	e44	e54	e7.1
28	20	12	.63	39	66	23	39	37	3.9
29	19	13	.67	28	33	3.2	34	28	2.6
30	19	16	.82	21	11	.58	141	667	912
31	21	17	.91	32	39	8.8	---	---	---
TOTAL	764	---	116.19	1227	---	5033.57	2494	---	14225.7
YEAR	18625		63202.97						

e Estimated

50028000 RIO TANAMA NEAR UTUADO, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. PERCENT FINER THAN .002 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .004 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .008 MM
MAY 1990							
08...	1800	403	3220	3500	10	17	32
JUN							
15...	0140	432	1320	1540	30	38	48
AUG							
09...	1710	2850	8250	63400	9	18	28
09...	1740	1290	6940	24200	14	23	32
24...	1750	272	7460	5500	18	30	46
SEP							
04...	1820	614	3990	6610	9	16	27
19...	1630	805	5270	11500	13	23	37
24...	1750	713	4630	8910	10	19	32

DATE	SED. SUSP. FALL DIAM. PERCENT FINER THAN .016 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN 1.00 MM
MAY 1990							
08...	62	72	92	98	99	100	100
JUN							
15...	64	70	89	94	97	98	99
AUG							
09...	37	54	70	82	92	98	99
09...	45	60	80	91	98	99	100
24...	60	76	96	99	99	99	100
SEP							
04...	43	64	84	93	98	99	100
19...	51	67	84	92	97	99	100
24...	47	64	83	92	97	100	100

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM
MAY 1990					
08...	1740	412	2010	2236	75
08...	1820	368	2490	2474	90
08...	1900	302	1610	1313	90
08...	1530	790	5490	11710	85
08...	1640	1350	8500	30983	74

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).

WATER-DISCHARGE RECORDS

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 fair except those for estimated daily discharges, which are poor. Diversion 0.8 mi (1.3 km) upstream for municipal supply of Arecibo.

AVERAGE DISCHARGE.--10 years (1969-71,81-90), 86.6 ft³/s (2.452 m³/s), 20.42 in/yr (519 mm/yr), 62,740 acre-ft/yr (77.4 hm³/yr); median of yearly mean discharges, 85 ft³/s (2.41 m³/s), 61,600 acre-ft/yr (76 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s (425 m³/s), May 18, 1985, gage height, 17.95 ft (5.471 m), from floodmark, from rating curve extended above 1,000 ft³/s (28.3 m³/s) on basis of step-backwater analysis; minimum discharge, 3.3 ft³/s (0.093 m³/s), May 28,29, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 2	1830	*5,140	146	*13.51	4.118	Oct. 21	2015	2,220	62.9	10.44	3.182
Oct. 5	1830	3,180	90.0	11.62	3.542	Oct. 22	1915	2,850	80.7	11.23	3.423
Oct. 8	1845	2,790	79.0	11.16	3.402	Aug. 9	1900	3,430	97.1	11.89	3.624
Oct. 17	1945	4,090	116	12.57	3.831	Sept. 9	1715	2,880	81.6	11.27	3.435
Oct. 19	1845	2,760	78.2	11.13	3.392	Sept. 20	1900	2,280	64.6	10.51	3.203

Minimum daily discharge, 13 ft³/s (0.368 m³/s), Mar. 20, Apr. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	183	e150	e54	70	e18	e18	e14	e38	e50	53	56	60
2	610	e137	e52	39	e18	e16	e14	e37	e70	53	53	62
3	587	e125	e50	41	e17	e16	e14	e35	e45	56	57	108
4	567	e115	e48	32	e17	e15	e13	e34	e40	63	48	127
5	709	e109	e47	29	e17	e14	e32	e33	e43	85	42	162
6	438	104	e45	27	e16	e14	44	e60	76	140	55	212
7	250	100	e44	26	e17	e14	68	68	70	114	48	126
8	e380	93	e44	26	e20	e14	39	254	49	141	52	94
9	e290	e97	e43	26	e19	18	36	176	50	121	294	373
10	e290	e181	e42	25	e19	25	36	138	46	90	115	201
11	e280	e137	e40	25	e19	18	34	100	95	96	e54	106
12	e275	106	e40	25	e18	79	34	102	93	146	e79	103
13	e260	96	e39	24	e21	73	38	69	52	81	e50	107
14	e250	92	e38	23	33	71	40	e60	50	115	e112	101
15	e240	87	e37	24	26	29	39	e56	292	260	e54	94
16	e238	81	e36	22	18	18	36	e54	115	133	e50	66
17	e670	228	39	22	14	36	45	e52	85	105	e54	56
18	e240	e183	34	21	14	19	162	e50	82	102	85	71
19	e470	e112	34	21	18	14	119	e54	77	99	100	166
20	e250	e106	33	22	20	13	125	e56	66	89	54	314
21	e350	e110	33	e20	15	18	70	e56	63	82	49	152
22	e580	e90	31	e19	e17	15	51	e56	60	65	62	84
23	e300	e82	30	e18	e15	36	44	e54	63	57	88	104
24	e250	e76	28	e20	e14	45	47	e52	61	61	97	165
25	e225	e72	27	e20	e14	e20	42	e52	59	63	89	133
26	e215	e68	27	e22	e18	e18	53	e49	56	65	58	107
27	e188	e64	26	e21	e16	e17	54	e46	56	56	51	82
28	e200	e62	26	e20	e15	e17	45	e45	55	53	50	80
29	e250	e58	47	e19	---	e17	e40	e43	54	52	68	79
30	e200	e56	31	e18	---	e15	e38	e43	53	50	49	225
31	e160	---	69	e18	---	e14	---	e45	---	55	47	---
TOTAL	10395	3177	1214	785	503	766	1466	2067	2126	2801	2220	3920
MEAN	335	106	39.2	25.3	18.0	24.7	48.9	66.7	70.9	90.4	71.6	131
MAX	709	228	69	70	33	79	162	254	292	260	294	373
MIN	160	56	26	18	14	13	13	33	40	50	42	56
AC-FT	20620	6300	2410	1560	998	1520	2910	4100	4220	5560	4400	7780
CFSM	5.82	1.84	.68	.44	.31	.43	.85	1.16	1.23	1.57	1.24	2.27
IN.	6.71	2.05	.78	.51	.32	.49	.95	1.33	1.37	1.81	1.43	2.53

CAL YR 1989 TOTAL 26261.9 MEAN 72.0 MAX 709 MIN 4.2 AC-FT 52090 CFSM 1.25 IN. 16.96
WTR YR 1990 TOTAL 31440 MEAN 86.1 MAX 709 MIN 13 AC-FT 62360 CFSM 1.50 IN. 20.30

e Estimated

50028400 RIO TANAMA AT CHARCO HONDO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.-- WATER YEARS MARCH 1983 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 16	0927	222	190	25.0	APR. 05	1045	32.2	220	21.0
NOV. 03	1046	115	232	26.0	MAY 10	1325	102	242	24.0
DEC. 15	1229	36	253	26.0	JUNE 08	1136	46.6	250	23.0
JAN. 12	1205	24	247	23.0	JULY 12	1150	142	221	22.0
FEB. 16	1128	15.1	225	25.0	AUG. 17	1104	50.8	260	23.0
MAR. 08	1054	5.8	270	23.0	SEPT 05	0910	85.3	200	22.0

RIO GRANDE DE ARECIBO BASIN

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.

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
26...	1030	488	212	7.30	24.5	94	8.1	96	39	K7500	K16000
NOV											
29...	1345	1510	242	7.80	24.5	57	7.6	90	12	K610	2200
FEB 1990											
01...	0745	76	306	7.90	24.0	5.4	7.0	81	14	K860	260
APR											
16...	1515	119	273	8.50	28.0	1.3	10.4	130	12	200	K30
JUN											
21...	1150	143	274	8.00	28.5	2.0	7.8	99	11	470	K70
AUG											
23...	1100	206	255	7.80	26.0	2.5	8.4	101	16	500	400

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
26...	96	4	31	4.6	7.5	0.3	1.9	89	<0.5	10	7.7
NOV											
29...	--	--	--	--	--	--	--	98	--	--	--
FEB 1990											
01...	--	--	--	--	--	--	--	130	--	--	--
APR											
16...	110	7	35	6.1	10	0.4	1.7	110	<0.5	8.7	8.6
JUN											
21...	--	--	--	--	--	--	--	110	--	--	--
AUG											
23...	120	9	39	5.3	9.1	0.4	2.1	110	--	6.2	9.5

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
26...	0.10	17	133	175	8	0.88	0.02	0.90	0.05	0.45
NOV										
29...	--	--	--	--	78	0.88	0.02	0.90	0.05	0.35
FEB 1990										
01...	--	--	--	--	12	0.49	0.01	0.50	0.03	0.17
APR										
16...	<0.10	18	154	49.5	3	--	<0.01	0.30	<0.01	--
JUN										
21...	--	--	--	--	12	0.29	0.01	0.30	0.04	0.36
AUG										
23...	0.10	17	154	85.7	15	0.39	0.01	0.40	0.13	0.67

K = non-ideal count

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
26...	0.50	1.4	6.2	0.06	<1	<100	<10	<1	6	20
NOV										
29...	0.40	1.3	5.8	0.11	--	--	--	--	--	--
FEB 1990										
01...	0.20	0.70	3.1	0.06	--	--	--	--	--	--
APR										
16...	<0.20	--	--	0.02	<1	<100	10	2	<1	<10
JUN										
21...	0.40	0.70	3.1	0.03	--	--	--	--	--	--
AUG										
23...	0.80	1.2	5.3	0.04	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
26...	5200	5	200	0.10	<1	<1	20	<0.010	1	<0.01
NOV										
29...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
01...	--	--	--	--	--	--	--	--	--	--
APR										
16...	140	1	20	<0.10	<1	<1	<10	<0.010	8	0.02
JUN										
21...	--	--	--	--	--	--	--	--	--	--
AUG										
23...	--	--	--	--	--	--	--	--	--	--

PESTECIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
JUN 1990										
21...	1150	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN 1990										
21...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01

DATE	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 1990									
21...	<0.01	<0.10	<0.1	<1	<0.01	0.01	<0.01	<0.01	<0.01

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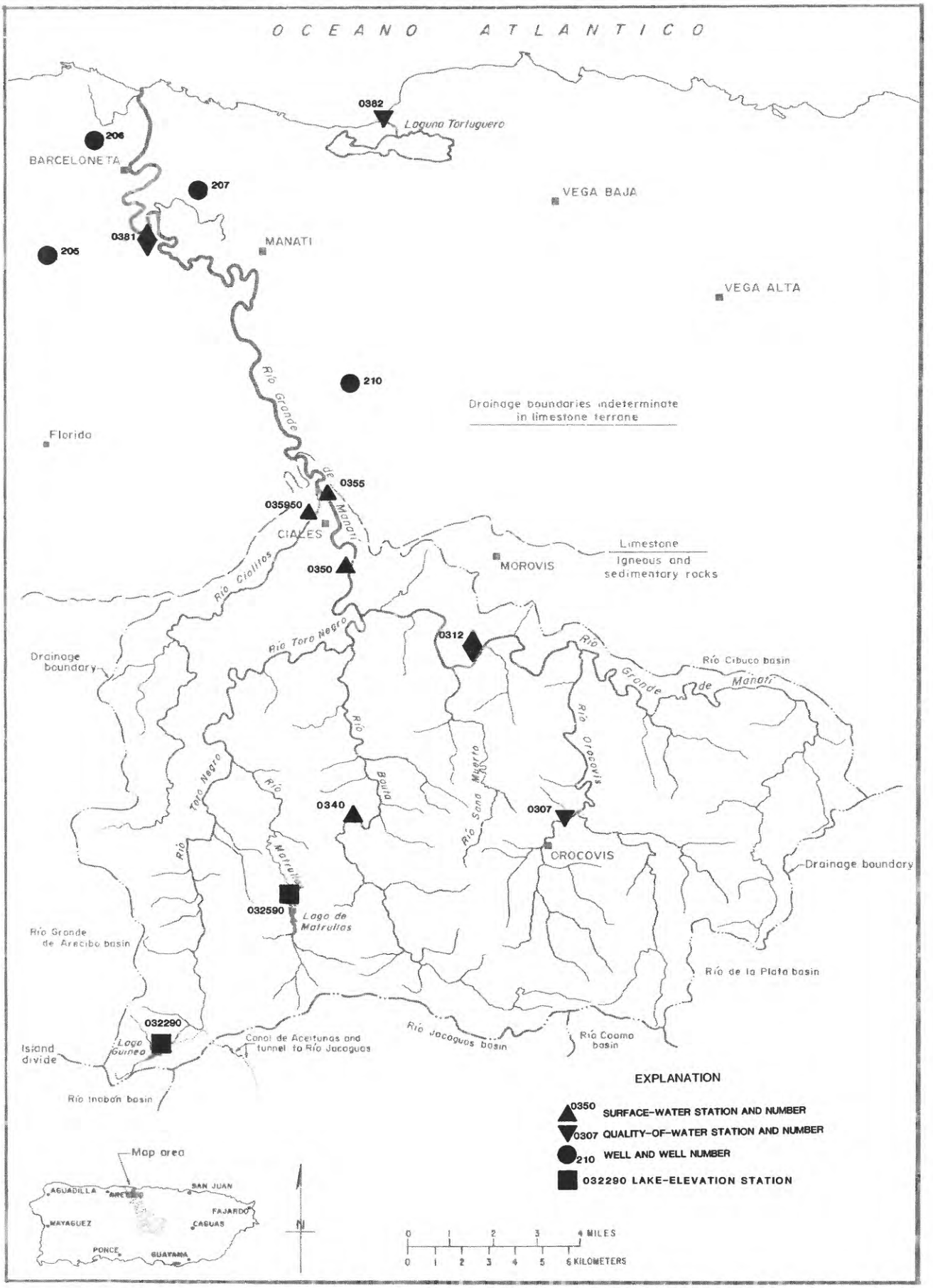

Figure 15.--Río Grande de Manatí basin.

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.

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
24...	1145	77	177	7.80	23.0	32	8.4	101	11	K11000	21000
DEC											
13...	1400	9.8	284	7.90	22.5	3.7	8.0	96	18	510	K82
FEB 1990											
16...	1215	7.6	286	8.40	21.0	10	8.9	102	13	370	420
APR											
11...	1500	4.4	216	9.00	26.0	1.0	8.8	112	18	300	310
JUN											
18...	1515	4.2	325	8.50	25.5	10	7.7	97	12	5800	2000
AUG											
13...	1530	3.4	349	8.00	26.5	3.5	7.2	93	22	K990	K1300

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
24...	65	5	15	6.6	9.0	0.5	2.1	61	0.8	10	11
DEC											
13...	--	--	--	--	--	--	--	120	--	--	--
FEB 1990											
16...	--	--	--	--	--	--	--	120	--	--	--
APR											
11...	140	10	36	13	16	0.6	1.6	120	<0.5	17	17
JUN											
18...	--	--	--	--	--	--	--	140	--	--	--
AUG											
13...	150	13	40	13	16	0.6	1.5	140	--	9.7	18

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
24...	0.10	24	114	23.8	33	1.27	0.03	1.30	0.04	0.16
DEC										
13...	--	--	--	--	1	--	<0.01	2.20	0.04	0.16
FEB 1990										
16...	--	--	--	--	15	1.08	0.02	1.10	0.03	0.37
APR										
11...	<0.10	34	216	2.57	7	1.29	0.01	1.30	0.01	0.59
JUN										
18...	--	--	--	--	1	1.59	0.01	1.60	0.02	--
AUG										
13...	0.10	33	215	1.97	10	1.89	0.01	1.90	0.05	0.75

K = non-ideal count

50030700 RIO OROCOVIS NEAR OROCOVIS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
24...	0.2	1.5	6.6	0.08	<1	<100	<10	<1	7	10
DEC										
13...	0.2	2.4	11	0.01	--	--	--	--	--	--
FEB 1990										
16...	0.4	1.5	6.6	0.19	--	--	--	--	--	--
APR										
11...	0.6	1.9	8.4	0.34	<1	<100	<10	3	2	<10
JUN										
18...	<0.2	--	--	0.30	--	--	--	--	--	--
AUG										
13...	0.8	2.7	12	0.44	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
24...	3400	5	90	0.10	<1	<1	20	<0.010	12	0.02
DEC										
13...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
16...	--	--	--	--	--	--	--	--	--	--
APR										
11...	500	1	40	<0.10	<1	<1	<10	<0.010	12	0.05
JUN										
18...	--	--	--	--	--	--	--	--	--	--
AUG										
13...	--	--	--	--	--	--	--	--	--	--

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).

WATER-DISCHARGE RECORDS

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

AVERAGE DISCHARGE.--25 years (1966-90), 102 ft³/s (2.889 m³/s), 25.09 in/yr (615 mm/yr), 73,900 acre-ft/yr (91.1 hm³/yr); median of yearly mean discharges, 89 ft³/s (2.52 m³/s), 64,500 acre-ft/yr (80 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,000 ft³/s (1,359 m³/s), May 18, 1985, gage height, 17.89 ft (5.453 m), from floodmarks, from rating curve extended above 200 ft³/s (5.66 m³/s) on basis of computations of flow over broad-crested weir and step-backwater analysis; minimum discharge, 4.4 ft³/s (0.125 m³/s), Apr. 15, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s (99.1 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 22	1700	*3,910	111	*5.34	1.628

No other peak greater than base discharge.

Minimum discharge, 11 ft³/s (0.312 m³/s), Aug. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	138	138	61	41	25	39	39	39	20	24	17	19
2	201	123	60	40	23	36	37	42	21	25	19	34
3	216	117	59	40	24	31	35	35	22	22	24	49
4	159	112	57	37	24	28	35	34	23	23	20	81
5	216	122	57	35	22	27	35	35	21	25	21	48
6	149	140	57	34	21	27	34	30	29	25	23	79
7	116	132	56	35	21	27	33	41	21	26	22	112
8	102	122	54	36	34	25	32	130	19	28	24	53
9	94	117	53	34	31	41	32	262	22	25	21	50
10	83	109	50	34	36	81	32	171	19	25	21	76
11	79	104	50	35	25	110	31	148	18	26	36	35
12	73	100	49	34	22	355	30	86	17	24	22	47
13	72	99	48	32	23	450	32	61	17	23	38	318
14	76	115	48	31	99	478	39	56	18	32	109	231
15	88	104	47	33	60	212	32	49	95	29	32	128
16	102	94	48	31	39	181	30	41	58	57	23	91
17	155	89	47	36	32	170	128	39	27	47	20	49
18	154	85	44	33	32	121	192	35	24	116	19	36
19	182	82	45	38	44	92	218	32	22	46	18	32
20	208	80	44	41	33	74	210	30	21	33	16	26
21	326	77	42	37	31	65	128	29	19	27	15	23
22	625	73	40	31	49	58	88	28	20	25	23	21
23	678	72	39	30	57	55	59	26	22	25	28	20
24	390	70	39	39	41	51	45	24	28	24	22	64
25	237	67	38	31	34	50	45	25	45	26	18	108
26	261	67	39	29	58	53	112	24	29	28	17	116
27	231	66	37	33	45	49	65	26	24	28	14	45
28	172	64	38	33	38	46	49	23	23	23	12	35
29	164	62	59	27	---	44	39	22	23	21	23	31
30	145	61	47	24	---	43	36	21	22	20	81	38
31	131	---	43	24	---	42	---	21	---	18	23	---
TOTAL	6023	2863	1495	1048	1023	3161	1952	1665	789	946	821	2095
MEAN	194	95.4	48.2	33.8	36.5	102	65.1	53.7	26.3	30.5	26.5	69.8
MAX	678	140	61	41	99	478	218	262	95	116	109	318
MIN	72	61	37	24	21	25	30	21	17	18	12	19
AC-FT	11950	5680	2970	2080	2030	6270	3870	3300	1560	1880	1630	4160
CFSM	3.52	1.73	.87	.61	.66	1.85	1.18	.97	.48	.55	.48	1.27
IN.	4.06	1.93	1.01	.71	.69	2.13	1.32	1.12	.53	.64	.55	1.41

CAL YR 1989 TOTAL 25436.4 MEAN 69.7 MAX 1800 MIN 8.0 AC-FT 50450 CFSM 1.26 IN 17.14
WTR YR 1990 TOTAL 23881 MEAN 65.4 MAX 678 MIN 12 AC-FT 47370 CFSM 1.19 IN. 16.09

RIO GRANDE DE MANATI BASIN

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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
24...	0815	e430	148	7.20	22.0	270	8.4	97	37	K14000	9100
DEC											
13...	1045	48	268	7.70	22.5	6.9	8.8	101	21	K110	K110
FEB 1990											
16...	1000	39	238	8.00	21.0	20	4.3	48	16	K1500	K1600
APR											
11...	1215	31	202	8.60	27.1	2.5	9.5	118	16	K43	K43
JUN											
15...	0930	93	240	8.00	25.5	10	6.9	84	12	K11000	3300
AUG											
17...	1030	20	254	8.00	27.0	17	7.7	96	17	430	88

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
24...	55	3	13	5.5	8.3	0.5	2.7	45	<0.5	11	11
DEC											
13...	--	--	--	--	--	--	--	110	--	--	--
FEB 1990											
16...	--	--	--	--	--	--	--	90	--	--	--
APR											
11...	120	7	30	11	14	0.6	1.8	120	<0.5	7.4	15
JUN											
15...	--	--	--	--	--	--	--	100	--	--	--
AUG											
17...	100	6	24	10	12	0.5	2.5	95	--	7.2	16

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
24...	0.10	20	99	--	113	1.39	0.11	1.50	0.14	0.66
DEC										
13...	--	--	--	--	21	--	<0.01	0.60	0.02	--
FEB 1990										
16...	--	--	--	--	24	1.06	0.04	1.10	0.05	0.45
APR										
11...	<0.10	27	173	14.4	9	--	<0.01	<0.10	<0.01	--
JUN										
15...	--	--	--	--	6	0.29	0.01	0.30	0.03	0.27
AUG										
17...	<0.10	27	156	8.42	21	0.48	0.02	0.50	0.02	0.58

K = non-ideal count
e = estimate

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
24...	0.8	2.3	10	0.17	<1	<100	20	2	42	60
DEC										
13...	<0.2	--	--	0.06	--	--	--	--	--	--
FEB 1990										
16...	0.5	1.6	7.1	0.10	--	--	--	--	--	--
APR										
11...	0.3	--	--	0.03	<1	<100	10	<1	1	<10
JUN										
15...	0.3	0.6	2.7	0.06	--	--	--	--	--	--
AUG										
17...	0.6	1.1	4.9	0.07	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
24...	24000	7	430	0.10	<1	<1	50	<0.010	2	<0.01
DEC										
13...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
16...	--	--	--	--	--	--	--	--	--	--
APR										
11...	160	<1	20	<0.10	<1	<1	<10	<0.010	10	0.10
JUN										
15...	--	--	--	--	--	--	--	--	--	--
AUG										
17...	--	--	--	--	--	--	--	--	--	--

50032290 LAGO EL GUINEO AT DAMSITE, PR

LOCATION.--Lat 18°09'41", long 66°51'48", Hydrologic Unit 21010001, at damsite on Río 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 mi^2 (4.248 km^2).

ELEVATION RECORDS

PERIOD OF RECORD.--May 1988 to current year.

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

REMARKS.--Lago Guineo was completed in 1931. It provides a maximum storage of approximately 2,180 ac-ft (2.688 hm^3) 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. 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 ft^3/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 2,960.77 ft (902.44 m), Oct. 30, 1989; minimun elevation, 2,919.79 ft (899.95 m), May 27, 1988.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 2,960.77 ft (902.44 m), Oct. 30; minimun elevation, 2,926.05 ft (891.86 m), Aug. 6.

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	1,810

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2947.59	2960.05	2951.03	2940.75	2931.82	2930.59	2929.36	2930.20	2928.70	2927.72	2927.00	2928.91
2	2949.19	2959.77	2951.12	2940.97	2931.89	2930.65	2929.39	2930.21	2928.70	2927.73	2927.04	2928.98
3	2949.33	2959.47	2951.22	2940.67	2931.95	2930.69	2929.43	2930.23	2928.72	2927.72	2927.05	2933.59
4	2949.13	2959.11	2950.27	2940.33	2932.00	2930.75	2929.47	2930.22	2928.86	2927.73	2927.08	2933.85
5	2948.92	2959.36	2949.52	2940.15	2932.07	2930.79	2929.50	2930.24	2928.89	2927.75	2927.16	2933.99
6	2948.96	2959.23	2949.09	2940.25	2932.12	2930.85	2929.53	2930.25	2927.38	2927.76	2926.24	2934.24
7	2948.69	2959.00	2948.23	2940.33	2932.23	2930.85	2929.57	2930.34	2927.39	2927.84	2926.26	2933.57
8	2951.30	2959.19	2947.63	2939.75	2932.29	2929.99	2929.59	2930.38	2927.40	2927.87	2926.27	2933.54
9	2951.27	2958.99	2947.73	2939.44	2932.37	2929.42	2929.61	2930.40	2927.40	2927.87	2926.28	2937.67
10	2951.12	2958.69	2947.83	2939.15	2932.43	2929.47	2929.64	2930.88	2927.40	2927.46	2926.34	2938.21
11	2951.04	2958.36	2947.37	2939.25	2932.56	2929.54	2929.68	2931.00	2927.40	2927.47	2926.36	2938.57
12	2951.21	2958.55	2946.56	2938.49	2932.65	2929.65	2929.70	2931.03	2927.41	2927.47	2926.37	2938.79
13	2950.91	2958.31	2946.09	2937.69	2932.73	2929.79	2929.78	2931.06	2927.41	2927.56	2926.38	2939.00
14	2950.53	A	2945.77	2937.78	2932.95	2929.96	2929.86	2931.09	2927.56	2927.58	2926.30	2939.30
15	2950.45	A	2945.69	2937.51	2933.05	2928.87	2929.91	2931.11	2929.06	2927.80	2926.31	2939.84
16	2950.98	A	2944.87	2936.74	2933.13	2928.70	2929.95	2930.59	2929.17	2927.78	2926.30	2940.39
17	2950.86	A	2943.95	2936.39	2933.21	2928.75	2930.04	2929.72	2929.23	2927.93	2926.31	2940.03
18	2950.54	A	2943.51	2936.09	2933.28	2928.79	2930.16	2929.73	2929.28	2927.42	2926.31	2940.02
19	2950.34	A	2942.97	2935.81	2933.33	2928.85	2930.59	2929.76	2929.35	2927.20	2926.31	2940.31
20	2954.27	A	2942.41	2935.88	2933.42	2928.89	2930.70	2929.78	2928.59	2927.22	2926.28	2940.88
21	2955.72	A	2941.87	2935.95	2932.87	2928.94	2930.74	2929.78	2928.62	2926.41	2926.29	2941.11
22	2956.04	A	2941.29	2935.33	2931.77	2928.99	2930.78	2929.18	2928.65	2926.44	2926.44	2941.35
23	2958.38	A	2940.51	2934.03	2931.11	2929.04	2930.81	2929.18	2928.84	2926.40	2926.98	2942.60
24	2958.72	A	2940.61	2933.75	2930.26	2929.09	2930.84	2929.19	2928.92	2926.46	2927.08	2943.23
25	2958.89	A	2940.71	2933.54	2930.34	2929.12	2930.50	2929.20	2928.96	2926.55	2927.11	2943.77
26	2959.15	A	2940.73	2933.34	2930.44	2929.16	2930.54	2929.20	2928.99	2926.80	2927.13	2944.09
27	2959.03	A	2940.81	2932.10	2930.47	2929.19	2930.57	2929.21	2929.02	2926.89	2927.11	2944.33
28	2958.77	A	2940.89	2932.18	2930.54	2929.23	2930.15	2929.24	2929.02	2926.93	2927.73	2944.12
29	2960.72	2951.70	2940.24	2931.99	---	2929.26	2930.16	2928.64	2928.20	2926.96	2928.43	2944.54
30	2960.51	2951.23	2939.25	2931.68	---	2929.30	2930.18	2928.67	2927.73	2926.98	2928.57	2945.53
31	2960.33	---	2940.27	2931.75	---	2929.33	---	2928.68	---	2926.99	2928.80	---
MEAN	2953.32	---	2944.84	2936.74	2932.12	2929.56	2930.02	2929.95	2928.41	2927.31	2926.83	2938.94
MAX	2960.72	---	2951.22	2940.97	2933.42	2930.85	2930.84	2931.11	2929.35	2927.93	2928.80	2945.53
MIN	2947.59	---	2939.25	2931.68	2930.26	2928.70	2929.36	2928.64	2927.38	2926.40	2926.24	2928.91

A No gage-height record.

50032590 LAGO DE MATRULLAS AT DAMSITE, PR

LOCATION.--Lat 18°12'46", Long 66°28'50", Hydrologic Unit 21010001, in concrete 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.

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 (36.6 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 2,413.49 ft (735.63 m), Sept. 30, 1989; minimum elevation 2,392.81 ft (729.33 m), Sept. 10, 1989.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 2,413.43 ft (735.63 m), Oct. 2; minimum elevation 2,403.11 ft (732.47 m), May 24-26.

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	2,415	2,945

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2412.79	2412.39	2410.29	2407.61	2404.40	2406.61	2408.42	2408.85	2403.82	2405.48	2404.17	2405.66
2	2413.36	2412.29	2410.45	2407.70	2404.51	2406.70	2408.53	2408.39	2404.20	2405.38	2404.08	2405.85
3	2412.89	2412.44	2410.67	2407.59	2404.61	2406.78	2408.60	2407.94	2404.30	2405.30	2403.98	2406.22
4	2412.47	2412.44	2410.53	2407.48	2404.70	2406.85	2408.68	2407.51	2404.37	2405.33	2404.00	2406.50
5	2412.21	2412.64	2410.31	2407.48	2404.80	2406.92	2408.77	2407.45	2405.24	2405.30	2404.04	2406.59
6	2411.89	2412.53	2410.17	2407.60	2404.90	2407.02	2408.87	2407.47	2405.81	2405.22	2403.77	2407.36
7	2411.61	2412.46	2410.00	2407.74	2405.03	2407.10	2408.97	2407.21	2405.94	2405.28	2403.54	2407.98
8	2412.82	2412.39	2409.82	2407.58	2405.20	2406.88	2409.03	2406.83	2405.94	2405.35	2403.42	2408.04
9	2412.45	2412.36	2409.94	2407.38	2405.36	2406.78	2408.83	2406.68	2405.98	2405.30	2403.34	2409.55
10	2412.05	2412.36	2410.13	2407.19	2405.49	2406.84	2408.53	2406.09	2406.04	2405.16	2403.24	2411.21
11	2411.79	2412.28	2410.02	2407.11	2405.61	2406.98	2408.39	2405.85	2405.91	2405.04	2403.28	2411.48
12	2412.17	2412.52	2409.84	2406.89	2405.76	2407.35	2408.07	2405.84	2405.67	2404.96	2403.32	2411.69
13	2412.23	2412.35	2409.61	2406.53	2405.90	2407.76	2408.17	2405.91	2405.39	2404.90	2404.04	2412.21
14	2412.34	2412.25	2409.43	2406.54	2406.31	2408.06	2408.27	2405.65	2405.16	2405.00	2404.26	2412.33
15	2412.33	2412.19	2409.43	2406.56	2406.45	2407.92	2408.32	2405.31	2405.94	2405.09	2404.20	2412.30
16	2412.33	2412.07	2409.19	2406.37	2406.61	2407.76	2408.42	2404.97	2406.15	2404.94	2404.10	2412.15
17	2412.29	2411.99	2408.80	2406.13	2406.73	2407.84	2408.22	2404.55	2406.30	2405.02	2404.12	2411.92
18	2412.27	2411.89	2408.58	2405.97	2406.86	2407.92	2408.00	2404.19	2406.25	2405.00	2404.16	2411.93
19	2412.27	2411.74	2408.34	2405.90	2407.00	2408.02	2408.23	2404.15	2406.05	2404.86	2404.20	2411.98
20	2413.14	2411.55	2408.03	2405.99	2407.10	2407.93	2408.66	2404.19	2405.83	2404.62	2404.19	2411.98
21	2412.94	2411.38	2407.76	2406.11	2407.14	2407.75	2408.81	2403.99	2405.59	2404.33	2404.11	2411.69
22	2412.86	2411.23	2407.50	2405.92	2406.90	2407.77	2408.90	2403.69	2405.45	2404.27	2404.34	2411.56
23	2413.33	2411.05	2407.20	2405.64	2406.58	2407.75	2408.98	2403.35	2405.51	2404.21	2404.37	2412.23
24	2412.68	2410.91	2407.22	2405.46	2406.19	2407.81	2409.06	2403.11	2405.74	2404.15	2404.43	2412.36
25	2412.99	2410.70	2407.35	2405.26	2406.16	2407.91	2409.16	2403.11	2405.73	2404.23	2404.49	2412.15
26	2413.25	2410.85	2407.19	2405.06	2406.30	2407.87	2409.28	2403.15	2405.73	2404.20	2404.54	2411.80
27	2412.81	2410.77	2407.07	2404.74	2406.40	2407.91	2409.37	2403.18	2405.79	2404.26	2404.50	2411.40
28	2412.74	2410.67	2407.17	2404.73	2406.50	2407.99	2409.44	2403.21	2405.83	2404.33	2404.60	2411.38
29	2413.21	2410.59	2407.21	2404.50	---	2408.11	2409.51	2403.26	2405.69	2404.38	2405.08	2411.60
30	2412.67	2410.43	2406.93	2404.26	---	2408.21	2409.27	2403.30	2405.47	2404.32	2405.33	2412.16
31	2412.53	---	2407.13	2404.30	---	2408.32	---	2403.35	---	2404.24	2405.42	---
MEAN	2412.57	2411.79	2408.82	2406.30	2405.91	2407.53	2408.72	2405.22	2405.56	2404.82	2404.15	2410.44
MAX	2413.36	2412.64	2410.67	2407.74	2407.14	2408.32	2409.51	2408.85	2406.30	2405.48	2405.42	2412.36
MIN	2411.61	2410.43	2406.93	2404.26	2404.40	2406.61	2408.00	2403.11	2403.82	2404.15	2403.24	2405.66

WTR YR 1990 TOTAL 878792.65 MEAN 2407.65 MAX 2413.36 MIN 2403.11

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).

WATER-DISCHARGE RECORDS

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.

AVERAGE DISCHARGE.--14 years (1971-82,1989-90), 36.4 ft³/s (1.031 m³/s) 29.60 in/yr (752 mm/yr), 26,370 acre-ft/yr (32.5 hm³/yr); median of yearly mean discharges, 27 ft³/s (0.76 m³/s), 19,600 acre-ft/yr (24 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 ft³/s (504 m³/s), Oct. 9, 1970, gage height, 21.9 ft (6.68 m), from floodmark, from rating curve extended above 100 ft³/s (2.83 m³/s) on basis of step-backwater analysis by U.S. Bureau of Reclamation; minimum discharge 2.8 ft³/s (0.079 m³/s), July 23, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 23	1900	*1,560	44.2	*11.38	3.469	Sept. 13	1750	1,550	43.9	11.37	3.466

Minimum discharge, 3.4 ft³/s (0.096 m³/s), Aug. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158	81	20	16	8.4	8.2	8.4	9.0	5.7	5.0	4.0	4.7
2	280	66	19	16	7.9	7.9	8.3	9.0	6.4	4.9	4.0	4.3
3	214	55	19	13	7.9	7.3	8.3	8.8	5.7	4.6	4.1	4.6
4	88	50	18	12	7.9	7.1	8.0	9.0	5.5	4.6	3.9	6.4
5	63	48	18	11	7.9	7.0	7.9	9.2	7.7	4.5	3.9	4.5
6	50	49	17	11	7.5	6.8	7.9	8.5	8.5	4.7	4.0	51
7	40	45	18	11	8.5	7.0	7.9	e8.3	6.0	4.6	4.0	30
8	116	42	17	11	11	6.8	7.7	e16	5.4	4.5	3.9	15
9	80	40	16	11	9.1	8.9	7.5	e12	5.2	4.4	3.8	95
10	47	41	16	11	10	10	7.5	e15	4.9	4.4	4.3	66
11	36	38	16	11	8.3	9.6	7.5	24	4.9	4.4	4.7	16
12	31	35	15	11	8.7	25	7.2	18	4.8	4.1	3.9	20
13	29	35	15	10	9.1	41	7.8	12	4.7	4.5	66	194
14	52	34	15	10	19	53	9.4	10	5.4	6.1	28	102
15	62	31	14	10	12	25	8.5	9.7	35	5.6	7.8	104
16	82	29	14	9.9	9.4	18	7.9	9.0	16	6.1	5.2	55
17	152	28	14	10	8.6	16	12	8.7	8.6	8.7	4.3	20
18	e120	27	14	9.7	8.6	13	25	8.3	7.1	8.9	4.1	11
19	72	26	14	10	8.9	11	25	8.0	6.4	9.0	3.9	7.9
20	e200	26	14	10	8.1	10	35	7.6	5.9	5.5	3.7	5.9
21	e310	25	13	9.9	8.4	9.9	19	7.5	5.8	4.5	3.6	5.0
22	e260	24	13	9.6	9.9	9.4	13	7.1	5.6	4.2	6.8	4.4
23	e590	24	13	9.4	9.5	9.4	11	6.9	6.1	4.3	7.1	61
24	e210	23	13	10	8.5	9.2	10	6.8	10	7.1	6.2	155
25	125	23	13	9.6	8.5	9.0	10	6.5	10	7.9	4.7	194
26	212	22	12	9.4	11	9.1	12	6.5	6.9	5.7	4.1	101
27	191	22	12	9.7	8.6	9.0	10	6.2	6.0	5.7	3.9	40
28	186	21	12	10	7.9	8.6	9.5	6.3	5.5	5.7	6.1	24
29	242	20	13	9.2	---	8.9	9.0	6.6	5.2	4.5	60	18
30	154	20	12	9.0	---	8.8	9.0	6.0	5.2	4.0	26	75
31	97	---	12	8.8	---	8.6	---	5.8	---	3.9	6.7	---
TOTAL	4549	1050	461	329.2	259.1	398.5	337.2	292.3	226.1	166.6	306.7	1494.7
MEAN	147	35.0	14.9	10.6	9.25	12.9	11.2	9.43	7.54	5.37	9.89	49.8
MAX	590	81	20	16	19	53	35	24	35	9.0	66	194
MIN	29	20	12	8.8	7.5	6.8	7.2	5.8	4.7	3.9	3.6	4.3
AC-FT	9020	2080	914	653	514	790	669	580	448	330	608	2960
CFSM	8.79	2.10	.89	.64	.55	.77	.67	.56	.45	.32	.59	2.98
IN.	10.13	2.34	1.03	.73	.58	.89	.75	.65	.50	.37	.68	3.33

CAL YR 1989 TOTAL 13624.4 MEAN 37.3 MAX 961 MIN 6.1 AC-FT 27020 CFSM 2.24 IN. 30.35
WTR YR 1990 TOTAL 9870.4 MEAN 27.0 MAX 590 MIN 3.6 AC-FT 19580 CFSM 1.62 IN. 21.99

e Estimated

50034000 RIO BAUTA NEAR OROCOVIS, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--OCTOBER 1988 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 05	1608	57.8	99	24.0	APR. 02	1343	8.5	245	22.0
NOV. 02	1157	97	184	25.0	MAY 07	1137	8.7	265	23.0
DEC. 14	1507	14.5	195	26.0	JUNE 14	1252	5.2	210	23.0
JAN. 02	1346	14.4	185	23.0	JULY 10	1146	4.2	202	23.0
FEB. 05	1240	7.4	185	23.0	AUG. 07	1314	4.0	210	23.0
MAR. 05	1037	6.8	200	21.0	SEPT 05	1125	4.3	210	22.0

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 Vales, and 1.2 mi (1.9 km) southeast of Ciales.

DRAINAGE AREA.--128 mi^2 (332 km^2), excludes 6.0 mi^2 (15.5 km^2), the runoff from which is diverted through El Guineo and de Matrullas reservoirs.

WATER-DISCHARGE RECORDS

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 mi^2 (342 km^2).

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 dischages, which are poor. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--30 years (1961-90), 258 ft^3/s (7.306 m^3/s), 27.37 in/yr (695 mm/yr), 186,900 acre-ft/yr (230 hm^3/yr); median of yearly mean discharges, 228 ft^3/s (6.46 m^3/s), 165,000 acre-ft/yr (203 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 125,000 ft^3/s (3,540 m^3/s), Oct. 9, 1970, gage height, 24.0 ft (7.32 m), from floodmark, from rating curve extended above 3,000 ft^3/s (85.0 m^3/s) on basis of slope-area measurements of peak flow at gage heights 13.2 ft (4.02 m), 15.0 ft (4.57 m), 19.0 ft (5.79 m), and 24.0 ft (7.32 m), datum then in use; minimum discharge, 20 ft^3/s (0.566 m^3/s), Apr. 20, 21, 1984.

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.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,000 ft^3/s (198 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 21	1655	8,420	238	7.19	2.192	Oct. 23	1855	*14,400	408	*9.20	2.804
Oct. 22	1755	8,420	238	7.19	2.192						

Minimum discharge, 35 ft^3/s (0.991 m^3/s), July 31, Aug. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	653	376	122	128	68	64	76	96	64	49	36	181
2	903	304	121	118	69	64	73	101	98	48	38	138
3	1070	272	120	92	69	55	72	84	79	47	46	334
4	572	247	116	86	68	52	69	80	74	42	44	299
5	582	253	117	86	66	52	69	75	172	45	39	221
6	413	286	120	85	59	52	69	67	192	47	50	237
7	219	282	117	e85	52	51	68	67	81	46	49	323
8	369	297	113	e83	73	51	68	178	60	46	56	180
9	511	336	111	e81	71	63	58	394	61	45	47	872
10	221	262	110	77	71	100	58	283	62	43	45	611
11	167	256	112	77	58	153	54	296	56	43	66	177
12	145	219	112	77	51	673	52	164	54	41	56	171
13	132	e210	103	74	50	914	58	107	52	40	199	889
14	139	e200	93	79	143	1120	73	100	50	45	353	1030
15	324	e190	92	80	108	392	56	112	310	53	94	593
16	345	e180	93	72	67	450	52	91	185	77	64	413
17	627	e180	90	77	60	358	312	80	96	60	54	222
18	555	155	85	72	54	174	711	73	80	151	51	153
19	712	150	85	76	70	129	563	68	68	84	48	124
20	983	152	83	84	64	108	474	68	60	64	43	100
21	2030	148	81	81	58	109	246	70	56	52	40	97
22	2500	149	80	71	73	102	147	71	53	47	50	91
23	3740	145	79	69	81	99	110	65	54	46	142	172
24	1690	136	79	81	67	97	90	60	83	46	85	640
25	850	136	78	75	58	96	92	63	112	58	65	659
26	1020	135	78	72	78	98	160	60	75	58	55	466
27	958	132	79	74	73	96	118	59	59	56	49	196
28	573	127	89	80	63	84	93	57	53	53	46	137
29	1010	123	125	74	---	85	81	59	51	50	155	118
30	740	124	106	68	---	82	77	63	50	43	227	237
31	423	---	86	63	---	80	---	66	---	38	93	---
TOTAL	25176	6162	3075	2497	1942	6103	4299	3277	2600	1663	2485	10081
MEAN	812	205	99.2	80.5	69.4	197	143	106	86.7	53.6	80.2	336
MAX	3740	376	125	128	143	1120	711	394	310	151	353	1030
MIN	132	123	78	63	50	51	52	57	50	38	36	91
AC-FT	49940	12220	6100	4950	3850	12110	8530	6500	5160	3300	4930	20000
CFSM	6.34	1.60	.77	.63	.54	1.54	1.12	.83	.68	.42	.63	2.63
IN.	7.32	1.79	.89	.73	.56	1.77	1.25	.95	.76	.48	.72	2.93

CAL YR 1989 TOTAL 76720 MEAN 210 MAX 7110 MIN 47 AC-FT 152200 CFSM 1.64 IN. 22.30
WTR YR 1990 TOTAL 69360 MEAN 190 MAX 3740 MIN 36 AC-FT 137600 CFSM 1.48 IN. 20.16

50035000 RIO GRANDE DE MANATI AT CIALES, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS 1979 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 03	1332	1.139	111	26.0
NOV. 01	0840	402	182	25.0
DEC. 13	1109	215	187	27.0
JAN. 03	0956	90.3	216	22.0
FEB. 06	1142	56.2	202	25.0
MAR. 06	0812	54.3	230	24.0
APR. 04	0834	73.3	255	24.0
MAY 08	1100	110	252	23.0
JUNE 13	1123	54.3	220	23.0
JULY 11	0954	44	230	25.0
AUG. 08	0914	60	238	23.0
SEPT 06	1046	193	190	23.0

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

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.

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
17...	1045	300	190	7.60	23.5	69	8.3	97	22	2200	K9000
DEC											
01...	0900	115	260	7.70	23.0	1.2	7.4	86	<10	K60	K40
FEB 1990											
15...	0805	182	249	7.40	22.0	4.5	7.9	90	12	470	1400
APR											
23...	0900	125	235	7.90	24.0	15	7.0	82	17	440	290
JUN											
11...	0840	63	248	7.80	29.0	6.2	6.9	89	19	K40	K80
AUG											
15...	0830	90	223	7.70	27.5	29	6.6	82	25	2200	K1300

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
17...	67	0	17	6.0	9.7	0.5	1.9	65	<0.5	8.0	10
DEC											
01...	--	--	--	--	--	--	--	100	--	--	--
FEB 1990											
15...	--	--	--	--	--	--	--	93	--	--	--
APR											
23...	77	7	19	7.2	10	0.5	2.0	79	<0.5	11	11
JUN											
11...	--	--	--	--	--	--	--	98	--	--	--
AUG											
15...	85	8	22	7.4	12	0.6	2.1	77	--	7.5	15

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
17...	0.10	24	116	93.7	66	0.77	0.03	0.80	0.03	0.47
DEC										
01...	--	--	--	--	7	0.49	0.01	0.50	0.02	0.28
FEB 1990										
15...	--	--	--	--	13	0.48	0.02	0.50	0.02	--
APR										
23...	0.10	23	130	43.9	49	0.69	0.01	0.70	0.07	0.53
JUN										
11...	--	--	--	--	21	0.78	0.02	0.80	0.06	0.34
AUG										
15...	<0.10	23	135	32.8	12	0.29	0.01	0.30	0.03	0.57

K = non-ideal count

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
17...	0.5	1.3	5.1	0.13	<1	<100	<10	<1	5	20
DEC										
01...	0.3	0.8	3.5	0.04	--	--	--	--	--	--
FEB 1990										
15...	<0.2	--	--	0.08	--	--	--	--	--	--
APR										
23...	0.6	1.3	5.8	0.08	<1	100	<10	<1	22	10
JUN										
11...	0.4	1.2	5.3	0.10	--	--	--	--	--	--
AUG										
15...	0.6	0.7	2.9	0.16	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
17...	5100	14	120	<0.10	<1	<1	10	<0.010	3	0.06
DEC										
01...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
15...	--	--	--	--	--	--	--	--	--	--
APR										
23...	3800	<1	100	<0.10	<1	<1	10	<0.010	<1	0.02
JUN										
11...	--	--	--	--	--	--	--	--	--	--
AUG										
15...	--	--	--	--	--	--	--	--	--	--

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.

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
17...	0920	45	158	7.60	22.5	26	8.4	96	46	21000	44000
DEC											
01...	1015	24	232	8.00	21.0	1.0	8.3	92	<10	380	720
FEB 1990											
15...	0935	17	202	7.50	20.5	5.5	8.7	96	17	K1100	K1900
APR											
23...	1000	12	257	8.00	22.5	7.2	7.7	88	<10	K930	440
JUN											
11...	1005	8.8	247	7.90	26.5	2.9	8.3	101	19	K880	670
AUG											
15...	0945	13	175	7.90	25.0	14	7.7	91	20	K1900	4400

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
17...	58	2	16	4.3	8.9	0.5	1.9	53	<0.5	7.0	8.5
DEC											
01...	--	--	--	--	--	--	--	92	--	--	--
FEB 1990											
15...	--	--	--	--	--	--	--	77	--	--	--
APR											
23...	88	6	26	5.7	9.9	0.5	1.7	95	<0.5	9.2	9.2
JUN											
11...	--	--	--	--	--	--	--	100	--	--	--
AUG											
15...	70	13	20	4.9	8.5	0.4	1.9	57	--	5.5	12

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
17...	0.10	21	99	12.0	<1	0.95	0.05	1.00	0.06	0.34
DEC										
01...	--	--	--	--	30	0.89	0.01	0.90	0.01	--
FEB 1990										
15...	--	--	--	--	20	1.17	0.03	1.20	0.04	0.66
APR										
23...	0.10	25	140	4.69	12	0.79	0.01	0.80	0.05	0.45
JUN										
11...	--	--	--	--	<1	1.00	0.10	1.10	0.05	0.25
AUG										
15...	0.10	22	109	3.83	17	1.48	0.02	1.50	0.01	0.39

K = non-ideal count

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
17...	0.4	1.4	6.2	0.10	<1	<100	<10	<1	35	40
DEC										
01...	<0.2	--	--	0.07	--	--	--	--	--	--
FEB 1990										
15...	0.7	1.9	8.4	0.10	--	--	--	--	--	--
APR										
23...	0.5	1.3	5.8	0.08	1	100	20	<1	11	<40
JUN										
11...	0.3	1.4	6.2	0.06	--	--	--	--	--	--
AUG										
15...	0.4	1.9	8.4	0.12	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
17...	24000	6	300	<0.10	<1	<1	30	<0.010	1	0.09
DEC										
01...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
15...	--	--	--	--	--	--	--	--	--	--
APR										
23...	720	<1	40	<0.10	<1	<1	10	<0.010	1	0.02
JUN										
11...	--	--	--	--	--	--	--	--	--	--
AUG										
15...	--	--	--	--	--	--	--	--	--	--

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 (1.088 m) lower.

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

AVERAGE DISCHARGE.--20 years (1971-90), 383 ft³/s (10.85 m³/s), 26.40 in/yr (670 mm/yr), 277,500 acre-ft/yr (342 hm³/yr); median of yearly mean discharges, 348 ft³/s (9.86 m³/s), 252,000 acre-ft/yr (311 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 97,200 ft³/s (2,750 m³/s), Oct. 7, 1985, gage height, 33.79 ft (10.299 m) from rating curve extended above 15,000 ft³/s (425 m³/s) on basis of slope-area measurements of peak flow; minimum discharge, 33 ft³/s (0.935 m³/s), May 12, 1984.

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).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,000 ft³/s (255 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 21	2220	13,400	379	28.62	8.723	Oct. 23	2320	*30,800	872	*30.89	9.415
Oct. 22	2255	13,000	368	28.55	8.702						

Minimum discharge, 62 ft³/s (1.76 m³/s), July 31, Aug. 1,2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1140	e493	e190	174	93	111	123	140	92	93	62	242
2	504	e408	e189	157	93	117	119	164	105	93	64	221
3	2010	e349	e189	140	91	102	118	151	113	90	66	219
4	697	e314	e182	128	92	94	119	148	102	87	71	560
5	649	e307	173	119	92	92	115	152	105	87	68	304
6	600	e373	173	116	90	89	111	152	295	89	67	514
7	301	e363	169	115	87	87	109	152	145	89	74	432
8	246	e308	164	118	101	87	108	187	111	89	79	383
9	784	e499	159	115	125	109	106	474	101	88	77	489
10	288	e368	159	113	118	170	102	e380	99	89	72	1810
11	209	e362	155	116	112	196	101	e350	93	82	74	410
12	173	e311	150	119	97	1030	98	e177	95	83	93	251
13	154	e281	149	117	93	1290	97	e167	91	82	78	402
14	148	e292	147	108	134	1710	119	e161	88	81	619	1740
15	241	e280	143	127	241	822	113	e155	332	88	204	893
16	379	e250	142	113	137	870	104	141	380	89	131	562
17	617	e234	143	112	127	1110	107	133	184	99	109	323
18	919	e232	137	114	109	446	786	127	171	127	102	228
19	691	e224	138	116	120	304	1030	121	137	131	98	183
20	1090	e220	136	122	123	239	570	116	118	96	93	157
21	3510	e222	128	132	107	204	448	112	106	78	90	140
22	4760	e207	124	118	114	178	269	108	100	71	92	130
23	6460	e204	121	113	133	166	203	104	97	69	147	122
24	7510	e199	121	121	128	156	168	102	108	70	175	389
25	1120	e197	117	121	113	150	153	100	156	75	126	974
26	1270	e197	118	110	103	145	196	97	137	82	109	643
27	1500	e195	117	112	130	145	e190	98	111	76	101	285
28	702	e194	115	117	110	138	e155	100	100	71	95	192
29	1070	e190	134	112	---	132	143	95	93	71	141	160
30	e1290	e188	167	104	---	128	136	94	93	68	231	167
31	e597	---	129	97	---	127	---	94	---	65	283	---
TOTAL	41629	8461	4578	3716	3213	10744	6316	4852	4058	2648	3891	13525
MEAN	1343	282	148	120	115	347	211	157	135	85.4	126	451
MAX	7510	499	190	174	241	1710	1030	474	380	131	619	1810
MIN	148	188	115	97	87	87	97	94	88	65	62	122
AC-FT	82570	16780	9080	7370	6370	21310	12530	9620	8050	5250	7720	26830
CFSM	6.82	1.43	.75	.61	.58	1.76	1.07	.79	.69	.43	.64	2.29
IN.	7.86	1.60	.86	.70	.61	2.03	1.19	.92	.77	.50	.73	2.55

CAL YR 1989 TOTAL 126430 MEAN 346 MAX 13900 MIN 51 AC-FT 250800 CFSM 1.76 IN. 23.87
WTR YR 1990 TOTAL 107631 MEAN 295 MAX 7510 MIN 62 AC-FT 213500 CFSM 1.50 IN. 20.32

e Estimated

50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
OCT 1989											
03...	1230	1790	143	7.40	24.0	240	8.0	94	25000	47000	58
DEC											
01...	0945	190	296	7.60	24.0	4.5	7.6	90	3600	1000	130
FEB 1990											
01...	0945	93	313	7.80	24.5	3.1	7.4	87	K11000	4600	150
MAR											
30...	1200	127	320	7.70	25.0	8.0	7.4	88	2300	500	140
JUN											
01...	1230	90	268	8.00	29.5	3.0	8.2	106	K9800	650	140
AUG											
02...	1130	62	299	7.80	29.0	1.0	8.7	111	390	430	150

DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT 1989											
03...	0	16	4.4	7.3	0.4	2.3	52	7.0	8.4	0.10	18
DEC											
01...	--	38	8.0	11	0.4	2.0	120	9.0	12	0.10	16
FEB 1990											
01...	0	44	8.7	12	0.4	1.6	140	9.0	13	0.10	17
MAR											
30...	--	43	8.4	12	0.4	2.0	140	8.8	15	<0.10	21
JUN											
01...	9	42	8.2	12	0.4	2.0	130	7.7	13	0.10	21
AUG											
02...	0	45	8.1	12	0.4	1.2	140	8.3	12	0.20	20

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
OCT 1989											
03...	123	98	594	0.66	0.03	0.04	1.3	0.44	0.07	0.06	0.18
DEC											
01...	147	171	87.9	0.71	0.03	0.04	0.30	0.08	0.06	0.06	0.18
FEB 1990											
01...	193	190	48.5	0.20	0.09	0.12	0.90	0.02	0.02	<0.01	0.20
MAR											
30...	196	195	68.1	0.60	0.02	0.03	<0.20	0.09	0.05	0.05	0.15
JUN											
01...	184	186	44.9	0.40	0.02	0.03	0.40	0.11	0.10	0.08	0.25
AUG											
02...	183	192	30.6	0.10	0.05	0.06	0.60	0.03	0.04	0.02	0.06

K = non-ideal count

50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)
OCT 1989											
03...	120	<1	32	<0.5	<1.0	<1	<3	4	190	2	<4
DEC											
01...	--	--	--	--	--	--	--	--	--	--	--
FEB 1990											
01...	<10	<1	41	<0.5	<1.0	<5	<3	<10	4	<10	<4
MAR											
30...	--	--	--	--	--	--	--	--	--	--	--
JUN											
01...	<10	<1	43	<0.5	<1.0	<1	<3	2	7	1	<4
AUG											
02...	<10	1	36	<0.5	<1.0	<1	<3	3	11	2	<4

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 1989									
03...	9	<0.1	10	2	<1	<1.0	87	<6	8
DEC									
01...	--	--	--	--	--	--	--	--	--
FEB 1990									
01...	33	<0.1	<10	<10	<1	<1.0	220	<6	13
MAR									
30...	--	--	--	--	--	--	--	--	--
JUN									
01...	34	<0.1	<10	<1	<1	<1.0	210	7	6
AUG									
02...	24	0.1	<10	1	<1	<1.0	230	7	7

PESTECIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
JUN 1990										
01...	1230	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN 1990										
01...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01

DATE	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 1990									
01...	<0.01	<0.10	<0.1	<1	<0.01	<0.01	<0.01	<0.01	<0.01

50038100 RIO GRANDE DE MANATI AT HIGHWAY 2 NEAR MANATI, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM
MAR 1990					
30...	1200	127	27	9.3	85
JUN					
01...	1230	90	14	3.4	81
AUG					
02...	1130	62	15	2.5	29

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 mi² (6.8 km²) northeast of Manatí, and 4.4 mi² (7.1 km²) 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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989										
04...	1545	25	1440	8.10	30.0	6.7	88	30	K20	30
NOV										
30...	0800	17	1440	8.20	27.0	7.4	93	26	K70	40
FEB 1990										
08...	0830	9.2	1400	8.00	25.0	5.9	70	46	K67000	900
APR										
17...	1130	9.1	1300	8.20	28.5	6.1	77	41	K130	K70
JUN										
05...	1100	3.0	1500	7.90	29.5	6.2	80	37	K80	26
AUG										
07...	0830	8.7	1380	8.00	29.5	6.0	77	42	K92	31

DATE	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT 1989										
04...	120	<0.5	3	0.58	0.02	0.60	0.28	0.72	1.0	1.6
NOV										
30...	120	--	9	0.58	0.02	0.60	0.26	0.74	1.0	1.6
FEB 1990										
08...	120	--	13	0.78	0.02	0.80	0.15	1.2	1.4	2.2
APR										
17...	110	<0.5	5	0.59	0.01	0.60	0.14	0.76	0.90	1.5
JUN										
05...	100	--	1	0.19	0.01	0.20	0.15	0.75	0.90	1.1
AUG										
07...	100	--	1	0.29	0.01	0.30	0.18	1.5	1.7	2.0

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS TOTAL (MG/L AS P)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)
OCT 1989										
04...	7.1	0.01	60	<10	140	<10	<10	<0.01	5	0.14
NOV										
30...	7.1	<0.01	--	--	--	--	--	--	--	--
FEB 1990										
08...	9.7	0.03	--	--	--	--	--	--	--	--
APR										
17...	6.6	0.02	80	<10	90	20	20	<0.01	7	0.07
JUN										
05...	4.9	0.01	--	--	--	--	--	--	--	--
AUG										
07...	8.9	<0.01	--	--	--	--	--	--	--	--

K = non-ideal count

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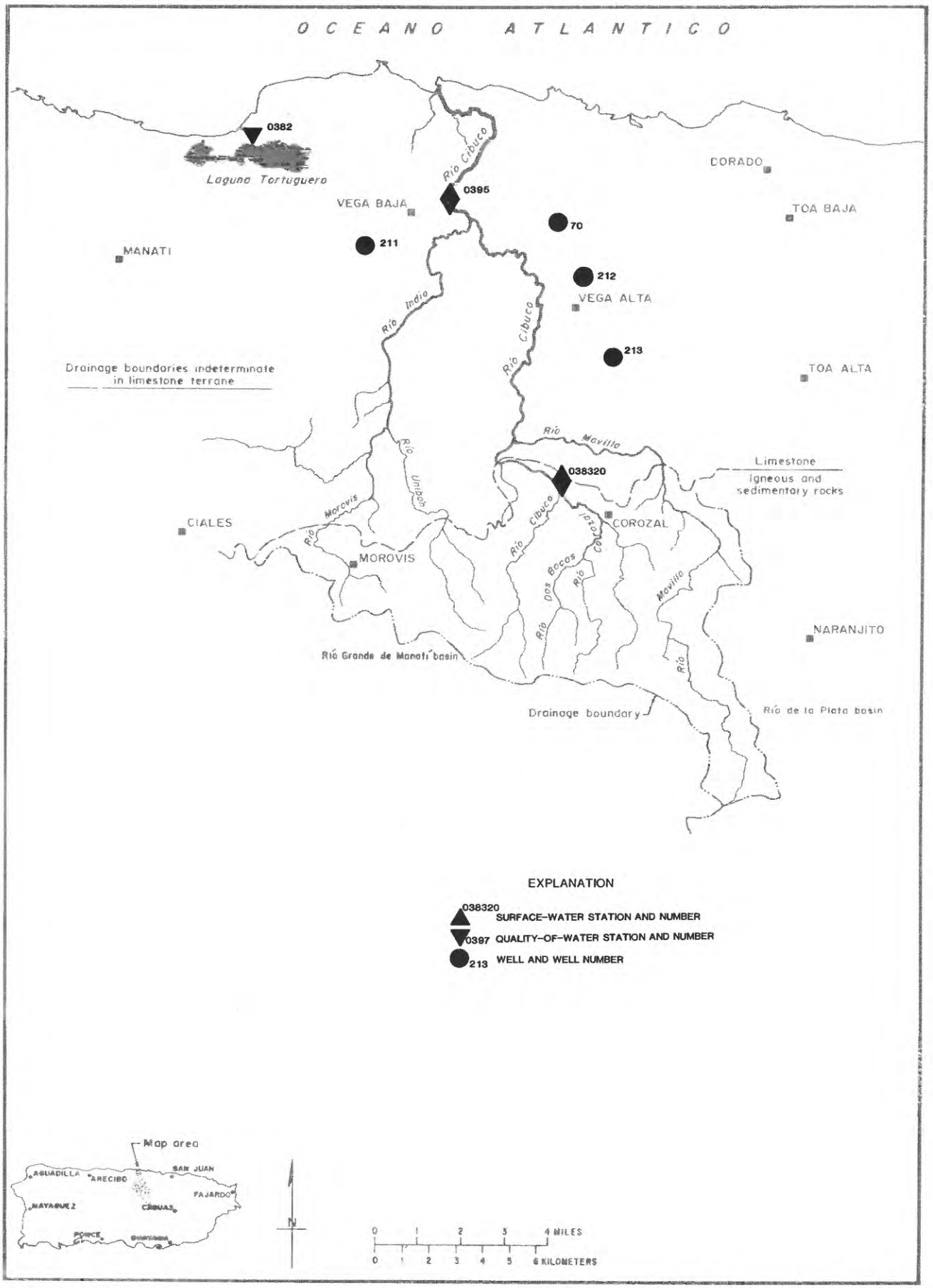

Figure 16.--Río Cibuco basin.

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 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. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--21 years (1970-90), 29.4 ft³/s (0.833 m³/s), 26.44 in/yr (672 mm/yr), 21,300 acre-ft/yr (26.3 hm³/yr); median of yearly mean discharges, 32 ft³/s (0.91 m³/s), 23,200 acre-ft/yr (29 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft³/s (385 m³/s), Nov. 7, 1979, gage height, 19.80 ft (6.035 m), from rating curve extended above 100 ft³/s (2.83 m³/s) on basis of float and slope-area measurements of peak flow; minimum daily discharge, 1.3 ft³/s (0.037 m³/s), July 24-26, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s (70.8 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 2	1910	3,400	96.3	12.00	3.658	Mar. 16	1550	*6,770	192	*15.47	4.715

Minimum daily discharge, 6.7 ft³/s (0.190 m³/s), July 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	65	15	16	7.9	22	13	25	11	9.1	8.1	8.9
2	184	31	15	13	8.0	15	13	22	12	8.6	12	12
3	200	26	13	11	7.5	13	13	14	12	7.9	11	87
4	69	24	12	10	7.7	11	12	13	13	8.2	8.7	36
5	151	41	12	9.5	7.1	11	12	12	12	8.0	10	96
6	60	36	13	9.7	6.8	9.9	11	12	11	7.7	13	39
7	38	35	12	9.4	9.8	11	11	65	10	7.6	20	115
8	30	77	12	9.1	14	11	12	54	10	7.1	13	62
9	27	35	12	8.8	11	26	11	43	11	8.4	12	43
10	24	24	12	8.8	11	18	11	31	10	8.6	17	20
11	23	21	12	9.2	8.0	214	10	27	10	7.1	13	16
12	21	20	11	9.1	7.4	252	10	27	10	7.3	13	17
13	20	19	12	8.5	6.9	313	12	36	9.2	6.7	27	13
14	21	21	11	8.9	42	203	14	38	20	7.9	21	54
15	19	18	11	10	17	56	11	28	52	8.8	12	67
16	18	17	12	9.1	17	399	11	20	17	11	11	28
17	51	16	12	12	15	76	29	19	14	11	9.5	18
18	24	16	12	8.9	15	42	21	16	14	12	11	17
19	45	16	12	9.7	27	30	28	15	13	9.4	9.9	15
20	27	15	11	24	16	26	45	14	12	9.0	9.6	12
21	23	15	12	12	16	22	19	14	11	8.7	9.6	12
22	167	15	13	9.4	26	21	16	13	11	8.4	14	11
23	174	15	12	12	19	19	14	12	11	9.6	14	11
24	71	15	13	14	16	18	13	12	9.5	9.7	10	11
25	66	17	12	9.6	14	18	37	11	9.1	9.2	13	36
26	47	17	12	8.9	13	21	34	28	8.4	8.9	10	45
27	36	18	11	8.9	13	18	17	16	8.0	9.2	9.6	16
28	31	17	16	9.3	15	16	13	12	8.3	9.1	9.2	14
29	52	15	31	9.7	---	16	12	11	8.9	8.6	9.6	12
30	32	16	15	8.6	---	15	11	11	8.7	8.2	9.3	22
31	26	---	14	8.1	---	14	---	11	---	8.2	10	---
TOTAL	1799	733	405	325.2	394.1	1956.9	496	682	377.1	269.2	380.1	965.9
MEAN	58.0	24.4	13.1	10.5	14.1	63.1	16.5	22.0	12.6	8.68	12.3	32.2
MAX	200	77	31	24	42	399	45	65	52	12	27	115
MIN	18	15	11	8.1	6.8	9.9	10	11	8.0	6.7	8.1	8.9
AC-FT	3570	1450	803	645	782	3880	984	1350	748	534	754	1920
CFSM	3.84	1.62	.87	.69	.93	4.18	1.09	1.46	.83	.58	.81	2.13
IN.	4.43	1.81	1.00	.80	.97	4.82	1.22	1.68	.93	.66	.94	2.38

CAL YR 1989 TOTAL 8153.5 MEAN 22.3 MAX 781 MIN 4.0 AC-FT 16170 CFSM 1.48 IN. 20.09
WTR YR 1990 TOTAL 8783.5 MEAN 24.1 MAX 399 MIN 6.7 AC-FT 17420 CFSM 1.59 IN. 21.64

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
18...	1045	27	306	7.60	24.0	46	7.9	93	38	5900	960
DEC											
08...	1315	13	342	7.40	24.0	1.7	7.6	90	22	5800	826
FEB 1990											
02...	0930	7.9	350	7.90	22.0	1.4	7.3	83	23	25000	2000
APR											
09...	1030	11	237	8.00	24.5	0.6	8.3	98	<10	K720	220
JUN											
08...	1200	10	365	7.70	27.0	3.7	7.0	86	31	3700	380
AUG											
03...	1130	8.8	352	7.60	27.5	3.8	7.0	87	37	540	580

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
18...	110	14	27	10	16	0.7	4.2	100	0.8	14	17
DEC											
08...	--	--	--	--	--	--	--	120	--	--	--
FEB 1990											
02...	--	--	--	--	--	--	--	130	--	--	--
APR											
09...	140	6	35	12	20	0.7	3.3	130	<0.5	14	24
JUN											
08...	--	--	--	--	--	--	--	130	--	--	--
AUG											
03...	130	5	35	11	18	0.7	3.2	120	--	17	24

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
18...	0.10	24	172	12.6	44	1.19	0.11	1.3	0.79	0.81
DEC										
08...	--	--	--	--	<1	2.85	0.15	3.0	0.23	0.77
FEB 1990										
02...	--	--	--	--	9	1.60	0.10	1.7	0.26	0.34
APR										
09...	0.10	30	215	6.62	<1	1.66	0.04	1.7	0.11	0.29
JUN										
08...	--	--	--	--	11	1.84	0.06	1.9	0.25	0.65
AUG										
03...	0.10	32	220	6.20	7	1.66	0.04	1.7	0.12	0.68

K = non-ideal count

50038320 RIO CIBUCO BELOW COROZAL, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
18...	1.6	2.9	13	0.26	<1	<100	10	<1	5	10
DEC										
08...	1.0	4.0	18	0.63	--	--	--	--	--	--
FEB 1990										
02...	0.6	2.3	10	0.54	--	--	--	--	--	--
APR										
09...	0.4	2.1	9.3	0.53	1	<100	20	<1	2	<10
JUN										
08...	0.9	2.8	12	0.72	--	--	--	--	--	--
AUG										
03...	0.8	2.5	11	0.64	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
18...	4300	5	100	<0.10	<1	<1	<10	<0.010	1	0.04
DEC										
08...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
02...	--	--	--	--	--	--	--	--	--	--
APR										
09...	160	<1	40	<0.10	<1	<1	<10	<0.010	2	0.06
JUN										
08...	--	--	--	--	--	--	--	--	--	--
AUG										
03...	--	--	--	--	--	--	--	--	--	--

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 (2.37 m) above mean sea level.

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

AVERAGE DISCHARGE.--17 years (1974-90), 131 ft³/s (3.710 m³/s), 17.95 in/yr (456 mm/yr), 94,910 acre-ft/yr (117 hm³/yr); median of yearly mean discharges, 117 ft³/s (3.31 m³/s), 84,800 acre-ft/yr (104 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,000 ft³/s (963 m³/s), Dec. 13, 1981, gage height, 19.10 ft (5.822 m), from rating curve extended above 3,000 ft³/s (85.0 m³/s) on basis of indirect measurements; minimum discharge, 6.1 ft³/s (0.173 m³/s), July 24, 25, 1977.

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).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft³/s (90.6 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 16	2115	*7,020	199	*16.55	5.044

No other peak greater than base discharge.

Minimum discharge, 20 ft³/s (0.566 m³/s), July 21-23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	136	254	61	54	38	59	73	64	42	30	24	63
2	151	163	60	50	37	70	69	172	46	33	65	53
3	585	146	59	46	35	46	72	82	45	29	73	72
4	434	137	57	39	37	39	70	65	48	28	40	279
5	439	176	56	37	36	37	67	59	49	33	31	130
6	377	233	56	35	34	34	65	56	49	32	39	329
7	177	213	57	36	35	34	60	123	41	28	35	141
8	140	210	55	36	77	33	60	515	38	27	69	223
9	119	350	53	35	65	115	59	361	37	26	43	155
10	106	166	52	35	59	131	61	268	38	35	56	80
11	102	145	52	34	46	599	60	190	39	29	49	37
12	95	129	51	34	39	1570	56	83	36	25	38	41
13	91	124	50	33	37	1250	54	71	40	25	39	31
14	89	164	50	32	157	1180	59	148	36	25	181	111
15	88	147	49	44	105	427	57	98	307	29	62	271
16	83	113	53	39	57	1470	54	70	127	38	42	150
17	120	102	54	45	70	1190	73	58	57	34	36	72
18	411	95	50	42	57	405	236	55	46	55	38	56
19	355	94	50	39	118	280	87	47	53	36	34	64
20	287	89	50	109	78	219	201	47	41	24	28	52
21	166	86	47	88	57	178	120	48	37	22	26	48
22	529	81	46	47	109	160	79	44	34	21	27	43
23	704	78	46	42	118	145	64	38	33	26	43	41
24	539	74	43	62	79	123	56	37	44	40	40	42
25	257	71	42	49	59	116	76	37	41	91	32	41
26	466	70	40	43	52	121	167	54	37	60	51	235
27	210	69	39	40	52	120	91	89	33	37	38	67
28	162	66	61	41	47	100	69	48	30	30	31	50
29	218	64	136	47	---	98	60	43	30	27	38	41
30	284	63	94	42	---	85	56	36	31	26	45	44
31	160	---	51	38	---	83	---	35	---	28	97	---
TOTAL	8080	3972	1720	1393	1790	10517	2431	3141	1565	1029	1490	3062
MEAN	261	132	55.5	44.9	63.9	339	81.0	101	52.2	33.2	48.1	102
MAX	704	350	136	109	157	1570	236	515	307	91	181	329
MIN	83	63	39	32	34	33	54	35	30	21	24	31
AC-FT	16030	7880	3410	2760	3550	20860	4820	6230	3100	2040	2960	6070
CFSM	2.63	1.34	.56	.45	.65	3.42	.82	1.02	.53	.33	.49	1.03
IN.	3.03	1.49	.65	.52	.67	3.95	.91	1.18	.59	.39	.56	1.15

CAL YR 1989 TOTAL 40895 MEAN 112 MAX 1970 MIN 13 AC-FT 81120 CFSM 1.13 IN. 15.35
WTR YR 1990 TOTAL 40190 MEAN 110 MAX 1570 MIN 21 AC-FT 79720 CFSM 1.11 IN. 15.09

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
17...	0830	75	421	7.50	26.0	7.0	6.0	73	22	K640	320
DEC											
19...	1045	50	416	8.00	23.0	2.6	7.2	82	19	550	470
FEB 1990											
02...	1330	46	420	8.10	25.0	3.5	7.0	84	22	K650	K110
APR											
04...	1300	65	420	7.90	24.5	0.60	8.4	101	14	360	K110
JUN											
05...	1330	47	374	7.80	27.0	2.4	6.7	82	18	K1000	600
AUG											
07...	1205	33	391	7.70	28.5	0.60	6.0	76	14	460	K91

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
17...	180	17	55	9.3	17	0.6	3.3	170	<0.5	12	21
DEC											
19...	--	--	--	--	--	--	--	170	--	--	--
FEB 1990											
02...	--	--	--	--	--	--	--	170	--	--	--
APR											
04...	190	21	61	9.5	16	0.5	2.5	180	<0.5	11	21
JUN											
05...	--	--	--	--	--	--	--	160	--	--	--
AUG											
07...	170	15	55	9.1	17	0.6	2.4	160	--	12	23

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
17...	0.10	20	240	48.5	5	1.55	0.05	1.60	0.07	0.33
DEC										
19...	--	--	--	--	<1	1.46	0.04	1.50	0.07	0.23
FEB 1990										
02...	--	--	--	--	8	1.36	0.04	1.40	0.03	0.27
APR										
04...	0.20	18	245	43.3	4	1.04	0.06	1.10	0.04	0.36
JUN										
05...	--	--	--	--	<1	1.06	0.04	1.10	0.05	0.25
AUG										
07...	0.10	21	236	21	1	1.09	0.01	1.10	0.03	0.67

K = non-ideal count

50039500 RIO CIBUCO AT VEGA BAJA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
17...	0.4	2.0	8.9	0.24	<1	<100	<10	<1	1	<10
DEC										
19...	0.3	1.8	8.0	0.29	--	--	--	--	--	--
FEB 1990										
02...	0.3	1.7	7.5	0.28	--	--	--	--	--	--
APR										
04...	0.4	1.5	6.6	0.18	<1	<100	<10	4	2	<10
JUN										
05...	0.3	1.4	6.2	0.25	--	--	--	--	--	--
AUG										
07...	0.7	1.8	8.0	0.27	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
17...	740	3	60	<0.10	<1	<1	<10	<0.010	1	0.10
DEC										
19...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
02...	--	--	--	--	--	--	--	--	--	--
APR										
04...	300	4	50	<0.10	<1	<1	10	<0.010	<1	0.07
JUN										
05...	--	--	--	--	--	--	--	--	--	--
AUG										
07...	--	--	--	--	--	--	--	--	--	--

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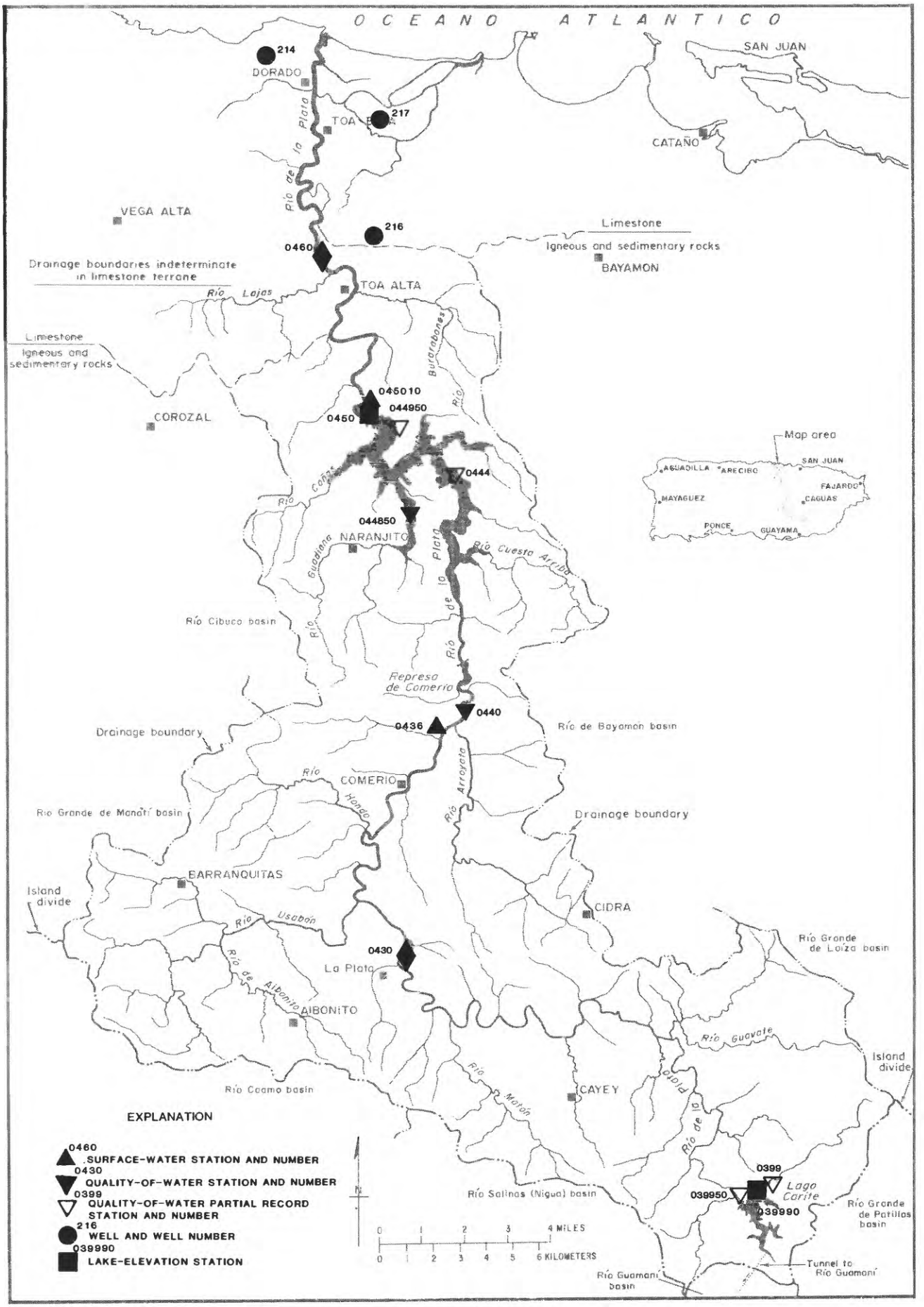

Figure 17.--Río de la Plata basin.

50039990 LAGO CARITE AT GATE TOWER, 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.

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 1,781.42 ft (542.977 m), Oct. 1, 1989; minimum elevation, 1,761.48 ft (536.899 m); June 13,14, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum elevation 1,781.42 ft (542.977 m), Oct. 1; minimum elevation, 1,761.48 ft (536.899 m), June 13,14.

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	1,784	8,996

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1781.40	1779.81	1777.49	1774.74	1772.84	1771.20	1769.32	1765.52	1762.02	1763.32	1765.59	1767.10
2	1781.36	1779.73	1777.40	1774.72	1772.76	1771.14	1769.20	1765.35	1761.93	1763.29	1765.59	1767.08
3	1781.32	1779.67	1777.32	1774.68	1772.71	1771.03	1769.08	1765.20	1761.85	1763.23	1765.58	1767.06
4	1781.30	1779.57	1777.22	1774.58	1772.60	1770.96	1768.98	1765.04	1761.78	1763.23	1765.63	1767.03
5	1781.27	1779.57	1777.12	1774.50	1772.48	1770.86	1768.84	1764.88	1761.72	1763.19	1765.69	1767.00
6	1781.28	1779.49	1777.05	1774.38	1772.39	1770.78	1768.74	1764.74	1761.69	1763.70	1765.68	1766.89
7	1781.20	1779.43	1776.98	1774.28	1772.34	1770.70	1768.62	1764.58	1761.60	1763.81	1765.74	1766.81
8	1781.17	1779.35	1776.87	1774.20	1772.28	1770.61	1768.49	1764.43	1761.53	1763.81	1765.78	1766.76
9	1781.14	1779.31	1776.79	1774.12	1772.23	1770.53	1768.36	1764.36	1761.73	1763.78	1765.80	1766.75
10	1781.10	1779.25	1776.71	1774.06	1772.14	1770.44	1768.19	1764.38	1761.70	1763.76	1766.48	1766.68
11	1781.10	1779.16	1776.61	1773.98	1772.06	1770.41	1768.06	1764.28	1761.61	1763.75	1766.57	1766.61
12	1781.07	1779.08	1776.50	1773.88	1771.98	1770.42	1767.89	1764.09	1761.55	1763.71	1766.59	1766.61
13	1781.03	1779.02	1776.42	1773.80	1771.87	1770.50	1767.92	1763.96	1761.49	1763.87	1766.67	1766.54
14	1780.90	1778.92	1776.32	1773.72	1771.88	1770.71	1767.78	1763.84	1762.48	1763.90	1766.67	1766.60
15	1780.87	1778.84	1776.23	1773.60	1771.78	1770.67	1767.64	1763.75	1762.92	1764.32	1766.67	1766.55
16	1780.80	1778.78	1776.12	1773.52	1771.71	1770.64	1767.55	1763.60	1762.94	1764.37	1766.66	1766.64
17	1780.73	1778.70	1776.04	1773.42	1771.66	1770.59	1767.40	1763.50	1762.95	1764.52	1766.66	1766.60
18	1780.71	1778.61	1775.96	1773.36	1771.58	1770.52	1767.26	1763.41	1762.93	1764.72	1766.64	1766.62
19	1780.60	1778.54	1775.89	1773.34	1771.52	1770.43	1767.17	1763.29	1762.89	1764.81	1766.63	1766.58
20	1780.57	1778.46	1775.80	1773.31	1771.45	1770.36	1767.05	1763.18	1762.98	1764.83	1766.60	1766.50
21	1780.54	1778.38	1775.69	1773.24	1771.42	1770.28	1766.88	1763.05	1762.97	1764.83	1766.59	1766.43
22	1780.49	1778.29	1775.59	1773.16	1771.39	1770.21	1766.73	1762.96	1762.93	1764.80	1766.57	1766.37
23	1780.40	1778.20	1775.50	1773.06	1771.38	1770.14	1766.60	1762.83	1762.95	1764.78	1766.55	1766.30
24	1780.34	1778.11	1775.42	1773.00	1771.52	1770.07	1766.40	1762.75	1763.00	1764.88	1766.54	1766.36
25	1780.26	1778.03	1775.33	1773.05	1771.46	1769.97	1766.38	1762.66	1763.36	1765.16	1766.56	1766.32
26	1780.23	1777.96	1775.22	1773.12	1771.38	1769.90	1766.26	1762.54	1763.44	1765.51	1766.53	1766.24
27	1780.12	1777.87	1775.14	1773.12	1771.31	1769.88	1766.11	1762.46	1763.42	1765.60	1766.51	1766.17
28	1780.06	1777.76	1775.05	1773.10	1771.26	1769.84	1765.94	1762.39	1763.40	1765.61	1766.87	1766.13
29	1780.02	1777.66	1774.98	1773.07	---	1769.68	1765.80	1762.32	1763.35	1765.60	1767.12	1766.07
30	1779.95	1777.58	1774.87	1773.01	---	1769.54	1765.64	1762.20	1763.33	1765.60	1767.14	1766.20
31	1779.89	---	1774.79	1772.93	---	1769.42	---	1762.12	---	1765.60	1767.12	---
MEAN	1780.75	1778.77	1776.14	1773.68	1771.91	1770.40	1767.54	1763.67	1762.48	1764.38	1766.39	1766.59
MAX	1781.40	1779.81	1777.49	1774.74	1772.84	1771.20	1769.32	1765.52	1763.44	1765.61	1767.14	1767.10
MIN	1779.89	1777.58	1774.79	1772.93	1771.26	1769.42	1765.64	1762.12	1761.49	1763.19	1765.58	1766.07

WTR YR 1990 MEAN 1770.23 MAX 1781.40 MIN 1761.49

50043000 RIO DE LA PLATA AT PROYECTO LA PLATA, PR

LOCATION.--Lat 18°09'37", long 66°13'44", Hydrologic Unit 21010005, at upstream side of bridge on Highway 173, 0.4 mi (0.6 km) northeast of Proyecto La Plata, and 2.5 mi (4.0 km) upstream from Río Usabón.

DRAINAGE AREA.--63.0 mi^2 (163.2 km^2), excludes 8.2 mi^2 (21.1 km^2) upstream from Carite Reservoir, the flow of which is diverted to Río Guamaní.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1958 (occasional measurements only), February 1959 to March 1960 (monthly measurements only), April 1960 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 850 ft (259 m), from topographic map. Prior to Mar. 29, 1961, wire-weight gage read twice daily at same site and datum.

REMARKS.--Records fair except those for estimated daily discharge, which are poor. The Puerto Rico Aqueduct and Sewer Authority operates a pumping plant about 5 mi (8 km) upstream which can divert as much as 23 ft^3/s (0.65 m^3/s) into Cidra Reservoir. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--30 years (1961-90), 107 ft^3/s (3.030 m^3/s), 26.52 in/yr (674 mm/yr), 77,520 acre-ft/yr (95.6 hm^3/yr); median of yearly mean discharges, 84 ft^3/s (2.38 m^3/s), 60,900 acre-ft/yr (75 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,600 ft^3/s (1,690 m^3/s), Aug. 27, 1961, gage height, 32.21 ft (9.818 m), from rating curve extended above 7,000 ft^3/s (198 m^3/s) on basis of slope-area measurement; minimum daily discharge, 2.6 ft^3/s (0.074 m^3/s), July 25, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s (113 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 15	0800	4,790	136	10.86	3.310	Aug. 10	2300	4,360	123	10.69	3.258
July 15	1820	6,440	182	11.52	3.511	Sept. 30	2015	*6,690	189	*11.66	3.554

Minimum daily discharge, 3.0 ft^3/s (0.085 m^3/s), June 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	46	13	e13	9.8	e7.0	6.5	8.6	6.3	7.5	8.4	5.6	13
2	74	14	e11	12	e9.0	8.0	7.9	6.9	8.8	12	6.7	7.0
3	31	13	e11	10	e7.0	6.7	8.5	11	9.5	9.9	15	7.2
4	21	14	e12	7.9	e6.0	6.7	8.2	15	11	6.6	9.7	10
5	29	17	e10	5.8	e5.2	7.8	6.4	10	9.2	13	12	19
6	19	21	e11	5.5	e5.0	7.1	6.1	7.0	13	62	16	19
7	17	15	e10	5.5	e5.8	7.2	6.0	11	11	291	16	8.3
8	17	38	e11	5.3	e6.8	7.9	5.8	15	8.1	77	6.8	24
9	18	22	e12	5.1	e9.0	9.6	5.6	31	70	32	6.0	12
10	17	13	e10	5.4	e8.0	22	5.7	23	132	13	325	5.7
11	17	15	e8.6	5.4	e7.0	16	6.3	20	21	11	1600	5.2
12	18	15	e9.0	e5.8	e6.4	42	6.3	18	4.1	14	159	13
13	18	15	e10	e5.6	e6.2	126	6.2	10	3.0	13	41	8.6
14	19	19	e9.0	e5.4	e6.2	611	7.0	14	10	18	291	9.3
15	19	26	e8.2	e5.4	e7.0	144	6.4	13	3060	1330	50	225
16	20	16	12	e5.4	e6.6	33	5.3	21	789	1150	15	59
17	22	18	9.1	e5.6	e7.0	36	5.6	29	116	139	9.4	22
18	21	25	7.5	e6.0	e8.0	17	6.0	24	44	424	9.8	27
19	20	19	8.4	e8.0	e6.6	9.9	6.1	25	29	225	7.4	e15
20	25	17	8.5	e15	e7.0	8.8	30	18	18	70	6.7	e6.6
21	31	17	7.5	e13	e9.0	8.1	13	9.0	13	19	6.4	5.2
22	39	15	6.9	e10	e10	7.1	6.7	5.6	5.5	12	8.8	3.3
23	22	14	8.5	e7.0	e13	7.7	5.0	6.2	8.3	9.5	95	8.9
24	e19	14	9.4	e7.8	e16	7.7	4.3	6.8	15	14	64	23
25	e17	14	8.4	e7.4	e9.0	8.4	5.2	6.9	273	19	18	178
26	e16	13	7.5	e10	e8.4	8.6	13	8.3	347	892	12	911
27	e15	13	8.7	e13	6.6	9.2	12	8.6	70	1440	9.6	70
28	14	12	5.7	e10	5.4	9.2	5.3	8.0	21	136	5.0	14
29	13	14	6.6	e8.0	---	8.4	4.6	8.8	5.7	35	803	8.3
30	16	e12	6.4	e7.0	---	8.3	5.2	10	5.8	18	91	1060
31	14	---	7.2	e8.0	---	8.4	---	8.2	---	8.2	37	---
TOTAL	704	503	284.1	241.1	214.2	1224.3	228.3	414.6	5138.5	6521.6	3757.9	2797.6
MEAN	22.7	16.8	9.16	7.78	7.65	39.5	7.61	13.4	171	210	121	93.3
MAX	74	38	13	15	16	611	30	31	3060	1440	1600	1060
MIN	13	12	5.7	5.1	5.0	6.5	4.3	5.6	3.0	6.6	5.0	3.3
AC-FT	1400	998	564	478	425	2430	453	822	10190	12940	7450	5550
CFSM	.41	.31	.17	.14	.14	.72	.14	.24	3.13	3.84	2.21	1.70
IN.	.48	.34	.19	.16	.15	.83	.15	.28	3.49	4.43	2.55	1.90

CAL YR 1989 TOTAL 16578.6 MEAN 45.4 MAX 3150 MIN 4.4 AC-FT 32880 CFSM .83 IN. 11.25
WTR YR 1990 TOTAL 22029.2 MEAN 60.4 MAX 3060 MIN 3.0 AC-FT 43690 CFSM 1.10 IN. 14.95

e Estimated

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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
23...	1245	20	414	8.20	28.0	0.80	9.7	127	28	K10000	K100
DEC											
15...	1515	8.6	490	8.50	26.0	0.70	11.9	148	18	K70	K20
FEB 1990											
14...	1400	6.4	500	8.50	25.0	1.3	10.7	130	19	K110	K140
APR											
12...	0840	6.4	314	8.10	26.0	2.2	5.3	66	70	K100	160
JUN											
12...	1130	3.3	506	9.20	29.0	3.5	14.0	183	76	K44	K580
AUG											
09...	0900	4.8	517	8.0	28.0	10	4.7	60	25	140	180

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
23...	160	4	39	14	28	1	2.6	150	<0.5	21	25
DEC											
15...	--	--	--	--	--	--	--	190	--	--	--
FEB 1990											
14...	--	--	--	--	--	--	--	180	--	--	--
APR											
12...	190	8	46	18	44	1	3.0	190	<0.5	29	47
JUN											
12...	--	--	--	--	--	--	--	207	--	--	--
AUG											
09...	170	3	43	16	42	1	2.9	170	--	25	44

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
23...	0.20	23	243	13.1	2	1.77	0.03	1.8	0.04	0.46
DEC										
15...	--	--	--	--	<1	0.98	0.02	1.0	0.03	0.87
FEB 1990										
14...	--	--	--	--	8	1.45	0.05	1.5	0.02	0.68
APR										
12...	0.10	25	329	5.68	6	0.68	0.02	0.70	0.03	0.27
JUN										
12...	--	--	--	--	9	--	<0.01	<0.10	0.02	2.7
AUG										
09...	0.10	23	298	3.86	20	1.46	0.04	1.5	0.08	0.92

K = non-ideal count

50043000 RIO DE LA PLATA AT PROYECTO LA PLATA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
23...	0.5	2.3	10	0.49	<1	<100	40	<1	<1	10
DEC										
15...	0.9	1.9	8.4	0.60	--	--	--	--	--	--
FEB 1990										
14...	0.7	2.2	9.7	1.1	--	--	--	--	--	--
APR										
12...	0.3	1.0	4.4	0.92	1	<100	60	<1	<1	10
JUN										
12...	2.7	--	--	1.3	--	--	--	--	--	--
AUG										
09...	1.0	2.5	11	0.87	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
23...	210	3	30	<0.10	<1	<1	10	1.0	<1	0.09
DEC										
15...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
14...	--	--	--	--	--	--	--	--	--	--
APR										
12...	250	1	40	<0.10	<1	<1	<10	<0.010	5	0.16
JUN										
12...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	--	--	--	--	--	--	--	--	--	--

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) notheast of Plaza de Comerío.

DRAINAGE AREA.--109 m^2 (282 km^2).

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 (184.2 m) above mean sea level.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,000 ft^3/s (906 m^3/s), Sept. 18, 1989, gage-height, 17.36 ft (5.291 m), from flodmark, from rating curve extended above 1,000 ft^3/s (28.3 m^3/s) on basis of step-backwater analysis; minimum discharge, 10 ft^3/s (0.283 m^3/s), Aug. 28,29, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 $^3ft/s$ (113 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Aug. 29	2030	*2,900	82.1	*7.24	2.207						

Minimum discharge, 10 ft^3/s (0.283 m^3/s), Aug. 28,29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	57	30	21	20	25	17	17	15	13	13	27
2	161	52	30	24	19	24	17	17	15	14	14	19
3	145	49	27	25	18	21	17	19	15	13	15	22
4	144	47	26	23	18	19	17	18	14	15	14	17
5	118	52	27	20	17	18	17	18	14	14	13	20
6	95	57	26	19	17	17	16	16	15	19	15	64
7	83	53	26	19	18	17	17	47	17	44	15	93
8	79	63	26	20	24	17	16	115	17	32	14	89
9	75	53	27	19	28	26	16	72	21	23	13	47
10	70	47	28	19	30	40	16	69	40	15	15	41
11	69	44	25	19	22	41	16	58	27	13	149	33
12	67	44	24	22	19	83	17	33	17	13	54	35
13	67	42	24	20	18	202	20	26	16	21	30	80
14	67	42	24	20	32	367	19	24	18	18	40	141
15	68	43	22	18	34	158	18	25	350	132	35	85
16	62	42	23	19	30	70	17	24	171	303	17	116
17	68	40	25	25	21	64	74	22	56	57	13	54
18	58	40	23	22	22	46	34	22	31	105	14	38
19	55	39	22	20	23	33	36	21	23	60	13	35
20	153	38	22	21	23	25	70	21	20	61	12	25
21	214	37	21	22	22	24	50	22	17	30	12	22
22	203	36	21	24	26	21	28	23	15	18	12	36
23	506	35	21	20	28	20	21	22	17	15	13	33
24	184	34	22	23	35	20	18	21	24	15	25	126
25	160	34	22	22	48	19	25	20	29	19	17	427
26	181	33	21	25	29	19	35	18	66	43	14	322
27	121	32	21	30	22	20	36	18	33	152	13	100
28	71	32	21	40	21	19	24	18	21	50	11	51
29	84	31	21	33	---	19	19	17	15	25	431	35
30	91	31	22	29	---	18	17	16	13	19	212	48
31	68	---	20	23	---	18	---	15	---	14	48	---
TOTAL	3693	1279	740	706	684	1530	760	894	1162	1385	1326	2281
MEAN	119	42.6	23.9	22.8	24.4	49.4	25.3	28.8	38.7	44.7	42.8	76.0
MAX	506	63	30	40	48	367	74	115	350	303	431	427
MIN	55	31	20	18	17	17	16	15	13	13	11	17
AC-FT	7330	2540	1470	1400	1360	3030	1510	1770	2300	2750	2630	4520
CFSM	1.10	.39	.22	.21	.23	.45	.23	.27	.36	.41	.39	.70
IN.	1.27	.44	.25	.24	.23	.52	.26	.31	.40	.47	.45	.78

CAL YR 1989 TOTAL 44557 MEAN 122 MAX 8420 MIN 10 AC-FT 88380 CFSM 1.13 IN. 15.28
WTR YR 1990 TOTAL 16440 MEAN 45.0 MAX 506 MIN 11 AC-FT 32610 CFSM .42 IN. 5.64

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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
19...	1000	63	396	7.60	25.5	7.8	8.4	103	23	3400	920
NOV											
28...	0830	44	416	8.10	23.0	6.1	6.9	81	29	K1100	K170
FEB 1990											
12...	1130	31	418	7.80	24.0	6.5	9.0	106	16	2900	K140
APR											
06...	0945	28	412	8.10	26.0	2.4	8.6	105	22	3900	K130
JUN											
13...	1210	25	460	7.90	29.0	12	8.9	115	22	440	K110
AUG											
08...	1150	25	395	8.10	30.0	7.2	9.7	128	24	400	K130

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
19...	150	0	37	15	23	0.8	3.1	150	<0.5	18	24
NOV											
28...	--	--	--	--	--	--	--	160	--	--	--
FEB 1990											
12...	--	--	--	--	--	--	--	150	--	--	--
APR											
06...	150	0	37	15	27	0.9	2.9	150	<0.5	19	31
JUN											
13...	--	--	--	--	--	--	--	170	--	--	--
AUG											
08...	150	0	35	14	26	0.9	2.6	140	--	16	26

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
19...	0.20	25	235	40.0	10	1.07	0.03	1.1	0.04	0.46
NOV										
28...	--	--	--	--	23	0.85	0.05	0.90	0.09	0.31
FEB 1990										
12...	--	--	--	--	12	1.34	0.06	1.4	0.10	0.50
APR										
06...	0.20	27	251	18.7	4	0.34	0.06	0.40	0.06	0.54
JUN										
13...	--	--	--	--	16	0.45	0.05	0.50	0.09	4.3
AUG										
08...	<0.10	29	233	15.4	11	0.44	0.06	0.50	0.12	0.38

K = non-ideal count

50044000 RIO DE LA PLATA NEAR COMERIO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
19...	0.5	1.6	6.7	0.20	<1	<100	<10	<1	1	10
NOV										
28...	0.4	1.3	5.8	0.28	--	--	--	--	--	--
FEB 1990										
12...	0.6	2.0	8.9	0.46	--	--	--	--	--	--
APR										
06...	0.6	1.0	4.4	0.36	2	<100	90	<1	2	20
JUN										
13...	4.4	4.9	22	0.42	--	--	--	--	--	--
AUG										
08...	0.5	1.0	4.4	0.37	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
19...	740	2	40	0.30	<1	<1	<10	<0.010	1	0.12
NOV										
28...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
12...	--	--	--	--	--	--	--	--	--	--
APR										
06...	510	1	50	0.20	<1	<1	10	<0.010	2	0.09
JUN										
13...	--	--	--	--	--	--	--	--	--	--
AUG										
08...	--	--	--	--	--	--	--	--	--	--

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 mi^2 (10.3 km^2).

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
19...	1245	15	322	8.00	27.0	2.6	7.5	94	18	4800	930
NOV											
28...	1045	9.5	299	8.30	23.5	2.2	9.0	105	12	46000	520
FEB 1990											
12...	1330	5.2	338	8.50	26.0	1.0	10.0	122	15	K640	K1100
APR											
06...	1215	8.2	206	8.60	27.0	0.50	9.4	116	13	5500	K10
JUN											
13...	1440	9.0	317	7.60	30.0	5.6	7.7	100	14	K890	450
AUG											
08...	1420	7.6	322	8.30	31.5	6.1	7.2	97	21	4200	760

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
19...	130	7	30	13	19	0.7	2.9	110	1.0	19	20
NOV											
28...	--	--	--	--	--	--	--	110	--	--	--
FEB 1990											
12...	--	--	--	--	--	--	--	120	--	--	--
APR											
06...	140	10	31	14	17	0.6	2.1	120	<0.5	15	23
JUN											
13...	--	--	--	--	--	--	--	110	--	--	--
AUG											
08...	130	8	31	13	17	0.6	2.2	110	--	13	23

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
19...	0.10	26	196	7.94	4	1.48	0.02	1.5	0.03	0.27
NOV										
28...	--	--	--	--	7	1.49	0.01	1.5	0.01	0.19
FEB 1990										
12...	--	--	--	--	8	1.79	0.01	1.8	0.01	0.39
APR										
06...	<0.10	25	197	4.36	<1	--	<0.01	1.6	0.01	--
JUN										
13...	--	--	--	--	9	1.19	0.01	1.2	0.02	0.18
AUG										
08...	<0.10	27	192	3.94	14	1.29	0.01	1.3	0.05	0.25

K = non-ideal count

50044850 RIO GUADIANA NEAR NARANJITO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
19...	0.3	1.8	8.0	0.12	<1	<100	10	<1	<1	<10
NOV										
28...	0.2	1.7	7.5	0.18	--	--	--	--	--	--
FEB 1990										
12...	0.4	2.2	9.7	0.31	--	--	--	--	--	--
APR										
06...	<0.2	--	--	0.27	1	<100	10	1	2	<10
JUN										
13...	0.2	1.4	6.2	0.23	--	--	--	--	--	--
AUG										
08...	0.3	1.6	7.1	0.26	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
19...	350	2	40	<0.10	<1	<1	<10	<0.010	6	0.06
NOV										
28...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
12...	--	--	--	--	--	--	--	--	--	--
APR										
06...	170	1	20	<0.10	<1	<1	<10	<0.010	1	0.06
JUN										
13...	--	--	--	--	--	--	--	--	--	--
AUG										
08...	--	--	--	--	--	--	--	--	--	--

50045000 LAGO LA PLATA AT DAMSITE, 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.

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 hm^3) 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 (39.9 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. (47.1 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, 159.41 ft (48.59 m), May 8, 1990; minimum elevation, 146.96 ft (44.79 m), Aug. 4, 1989.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 159.41 ft (48.59 m), May 8; minimum elevation, 148.16 ft (45.16 m), Mar. 9.

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 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155.09	154.98	154.52	152.56	150.07	149.15	156.03	157.10	155.36	153.60	152.33	150.86
2	155.13	154.91	154.49	152.56	149.94	149.07	155.92	157.03	155.22	153.37	152.29	150.77
3	155.09	154.86	154.43	152.53	149.80	148.95	155.82	156.91	155.12	153.19	152.21	151.16
4	155.11	154.84	154.36	152.46	149.68	148.84	155.70	156.80	155.02	153.04	152.06	151.53
5	155.10	154.85	154.31	152.36	149.50	148.70	155.56	156.74	155.02	152.88	151.94	151.67
6	154.94	154.96	154.24	152.30	149.36	148.53	155.43	156.54	154.92	152.72	151.76	151.69
7	154.89	154.94	154.18	152.20	149.27	148.36	155.28	156.98	154.77	152.58	151.75	152.86
8	154.89	154.99	154.14	152.10	149.23	148.19	155.13	159.06	154.60	152.48	151.59	153.23
9	154.88	154.91	154.10	151.98	149.24	148.24	155.03	158.22	154.43	152.39	151.65	153.31
10	154.87	154.87	154.03	151.90	149.24	148.42	154.90	158.48	154.37	152.23	151.55	153.25
11	154.86	154.83	153.98	151.80	149.15	149.91	154.76	158.54	154.28	152.04	151.65	153.27
12	154.85	154.85	153.92	151.70	149.04	A	154.60	158.49	154.15	151.85	151.71	153.19
13	154.87	154.84	153.85	151.60	148.90	A	154.51	158.40	153.99	151.68	152.11	153.13
14	154.86	154.85	153.78	151.51	149.23	155.68	154.44	158.39	153.96	151.57	152.24	153.98
15	154.84	154.83	153.72	151.38	149.27	156.70	154.33	158.27	155.21	151.50	152.22	154.20
16	154.82	154.82	153.67	151.30	149.29	157.30	154.21	158.09	154.92	152.60	152.11	154.42
17	155.11	154.82	153.57	151.23	149.22	157.69	155.74	157.94	154.76	152.95	151.95	154.41
18	154.88	154.81	153.48	151.16	149.17	157.40	156.03	157.76	154.67	153.20	151.79	154.39
19	154.84	154.87	153.38	151.09	149.23	157.24	156.32	157.55	154.59	153.27	151.63	154.42
20	154.93	154.84	153.31	151.19	149.15	157.17	157.25	157.37	154.47	153.30	151.40	154.37
21	155.14	154.79	153.22	151.11	149.14	157.08	157.26	157.16	154.32	153.24	151.21	154.27
22	155.24	154.75	153.12	151.01	149.23	157.00	157.07	157.00	154.19	153.13	151.02	154.14
23	155.14	154.74	153.00	150.96	149.29	156.88	156.91	156.85	154.10	152.99	150.84	154.09
24	154.97	154.72	152.91	150.89	149.25	156.78	156.80	156.66	154.06	152.88	150.60	153.99
25	154.90	154.70	152.83	150.83	149.30	156.72	157.33	156.47	154.05	152.76	150.52	154.85
26	154.95	154.67	152.74	150.69	149.32	156.56	157.67	156.31	154.08	152.68	150.32	155.17
27	154.90	154.64	152.65	150.62	149.26	156.47	157.64	156.15	154.07	152.93	150.13	155.03
28	154.90	154.62	152.59	150.60	149.19	156.38	157.48	155.99	153.98	152.95	149.97	154.86
29	154.90	154.58	152.73	150.59	---	156.30	157.30	155.82	153.88	152.86	150.29	154.74
30	154.91	154.55	152.70	150.48	---	156.23	157.13	155.66	153.73	152.71	151.00	154.71
31	154.90	---	152.61	150.35	---	156.12	---	155.49	---	152.54	150.99	---
MEAN	154.96	154.81	153.57	151.45	149.32	---	155.99	157.23	154.48	152.71	151.45	153.53
MAX	155.24	154.99	154.52	152.56	150.07	---	157.67	159.06	155.36	153.60	152.33	155.17
MIN	154.82	154.55	152.59	150.35	148.90	---	154.21	155.49	153.73	151.50	149.97	150.77

A No gage-height record.

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 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 and precipitation satellite telemetry at station.

EXTREMES FOR PERIOD JULY TO SEPTEMBER 1989.--Maximum discharge, 48,800 ft^3/s (1,380 m^3/s), Sept. 18, 1989, gage height 22.98 ft (7.00 m), from rating curve extended above 10,000 ft^3/s (283 m^3/s) on basis of step-backwater analysis; no flow many days.

FOR CURRENT YEAR.--Maximun discharge, 4,830 ft^3/s (137 m^3/s), Oct. 23, gage-height 13.35 ft (4.07 m), from rating curve extended above 10,000 ft^3/s (283 m^3/s) on basis of step-backwater analysis; minimum discharge, no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1										---	.00	.07
2										---	.00	.16
3										---	.06	.11
4										---	.12	.05
5										---	.01	.03
6										---	.00	.02
7										---	.00	.66
8										---	.00	1.5
9										---	.00	1.3
10										---	.12	110
11										---	.22	1050
12										---	.02	284
13										---	.00	189
14										.00	.00	97
15										.00	.00	60
16										.00	.00	78
17										.00	.00	186
18										.00	.00	15200
19										.00	.00	2290
20										.00	.00	948
21										.00	.00	546
22										.00	.01	636
23										.00	.04	3110
24										.00	.02	4450
25										.00	.00	739
26										.00	.00	428
27										.00	.00	351
28										.00	.00	247
29										.00	.00	217
30										.00	.01	184
31										.00	.00	---
TOTAL										---	0.63	31403.90
MEAN										---	.020	1047
MAX										---	.22	15200
MIN										---	.00	.02
AC-FT										---	1.2	62290
CFSM										---	.00	6.06
IN.										---	.00	6.76

50045010 RIO DE LA PLATA BELOW LA PLATA DAM, PR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	159	114	.10	.31	.18	.34	16	45	3.4	.63	.16	.00
2	246	77	.07	.27	.11	.33	14	42	3.1	.64	.14	.00
3	196	50	.04	.22	.15	.28	12	36	2.5	.57	.17	.01
4	223	37	.03	.19	.13	.33	10	30	2.4	.35	.08	.08
5	234	40	.03	.15	.12	.20	8.2	26	2.7	.29	.04	.41
6	170	90	.02	.15	.05	.13	6.5	22	2.3	.20	.02	.40
7	109	87	.02	.15	.09	.08	5.3	22	1.7	.15	.06	1.2
8	89	87	.01	.13	.28	.04	4.2	257	1.4	.12	.10	.91
9	76	92	.01	.13	.26	.22	3.4	663	1.1	.13	.06	.53
10	68	55	.01	.13	.15	.31	3.0	71	1.2	.28	.24	.43
11	62	38	.01	.12	.08	1.7	2.0	76	1.1	.12	.27	.83
12	54	34	.02	.11	.03	2.8	1.7	74	.96	.03	.13	.92
13	45	33	.02	.10	.01	511	1.0	71	.90	.00	.14	.59
14	56	33	.02	.07	.95	848	.67	71	1.3	.00	.23	.73
15	47	28	.04	.12	.62	51	.36	67	168	.00	.12	1.2
16	36	24	.09	.10	.44	178	.25	61	260	.31	.05	1.3
17	275	20	.13	.17	.30	269	1.8	50	89	1.4	.02	1.1
18	170	17	.13	.15	.23	187	12	40	26	.79	.01	1.2
19	74	29	.13	.11	.48	104	16	31	5.7	.82	.01	1.7
20	65	25	.18	.53	.32	56	58	25	1.4	2.0	.00	1.7
21	263	17	.18	.50	.22	54	98	30	.80	.98	.00	1.4
22	503	10	.17	.27	.28	48	92	24	.67	.67	.00	.82
23	1310	6.2	.16	.17	.50	44	58	20	.67	.36	.00	.48
24	687	4.1	.15	.31	.58	41	31	17	.62	.43	.00	.33
25	184	3.1	.12	.20	.34	36	32	14	.81	.39	.08	.31
26	290	1.8	.10	.12	.26	31	76	11	.66	.28	.11	171
27	204	.81	.10	.10	.21	28	81	9.7	.58	.20	.02	154
28	94	.38	.16	.11	.20	25	73	8.2	.55	.14	.00	80
29	84	.25	1.1	.17	---	22	64	6.0	.51	1.0	.00	29
30	152	.15	.74	.28	---	20	51	5.0	.52	.66	.00	8.2
31	103	---	.39	.34	---	18	---	4.0	---	.30	.00	---
TOTAL	6328	1053.79	4.48	5.98	7.57	2577.76	832.38	1928.9	582.55	14.24	2.26	460.78
MEAN	204	35.1	.14	.19	.27	83.2	27.7	62.2	19.4	.46	.073	15.4
MAX	1310	114	1.1	.53	.95	848	98	663	260	2.0	.27	171
MIN	36	.15	.01	.07	.01	.04	.25	4.0	.51	.00	.00	.00
AC-FT	12550	2090	8.9	12	15	5110	1650	3830	1160	28	4.5	914
CFSM	1.18	.20	.00	.00	.00	.48	.16	.36	.11	.00	.00	.09
IN.	1.36	.23	.00	.00	.00	.55	.18	.42	.13	.00	.00	.10

WTR YR 1990 TOTAL 13798.69 MEAN 37.8 MAX 1310 MIN .00 AC-FT 27370 CFSM .22 IN. 2.97

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 mi^2 (539 km^2), excludes 8.2 mi^2 (21.2 km^2) upstream from Lago Carite, flow from which is diverted to Río Guamaní. Area at site used prior to September 25, 1984, 200 mi^2 (518 km^2).

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, P.R.; October 1984 to September 1988 published as 50046900.

GAGE.--Water-stage recorder. 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 fair except those for estimated daily discharges, which are poor. Regulation at all stages by Puerto Rico Aqueduct and Sewer Authority reservoir upstream from gage. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--30 years (1961-90), 273 ft^3/s (7.731 m^3/s), 18.54 in/yr (471 mm/yr), 197,800 acre-ft/yr (244 hm^3/yr); median of yearly mean discharges, 228 ft^3/s (6.46 m^3/s), 165,000 acre-ft/yr (203 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,500 ft^3/s (2,700 m^3/s), Sept. 6, 1960, gage height, 36.35 ft (11.079m), from floodmark, from rating curve extended above 12,000 ft^3/s (340 m^3/s) on basis of contracted-opening measurement of peak flow at site 1.0 mi upstream and different datum; minimum discharge, 2.2 ft^3/s (0.062 m^3/s), Apr. 25, 1984.

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 ft^3/s (3,400 m^3/s), gage height, 37.4 ft (11.40 m); June 16, 1943, 82,000 ft^3/s (2,322 m^3/s), gage height, 34.4 ft (10.48 m), at site 1.0 mi upstream and different datum.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s (170 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 23	2125	*3,490	98.8	*9.17	2.795						

Minimum discharge, 14 ft^3/s (0.396 m^3/s), Aug. 8,9.

REVISIONS.--The peak discharges and annual maximum (*) reported for some water years have been revised as shown in the following table. They supersede figures published in the reports for 1985,1986,1987,1988 and 1989.

WATER YEAR	Date	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	WATER YEAR	Date	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
1985	Nov. 5, 1984	19,580	554	18.05	5.502	1986	May 13, 1986	30,950	876	20.64	6.291
	Nov. 7, 1984	13,870	393	15.89	4.843		May 14, 1986	25,110	711	19.53	5.953
	Apr. 25, 1985	9,010	255	13.42	4.090	1987	Apr. 12, 1987	*21,150	599	*18.54	5.651
	Apr. 30, 1985	12,480	353	15.25	4.648		May 21, 1987	10,950	310	14.50	4.420
	May 16, 1985	8,270	234	12.96	3.950	1988	Nov. 25, 1987	15,360	435	16.53	5.038
	May 17, 1985	29,350	831	20.44	6.230		Nov. 27, 1987	*29,280	829	*20.43	6.227
	May 18, 1985	38,900	1,100	21.61	6.587		May 10, 1988	8,880	251	13.34	4.066
1986	Oct. 7, 1985	*73,230	2,070	*24.58	7.492		Aug. 24, 1988	20,010	567	18.19	5.544
	Oct. 8, 1985	11,830	335	14.94	4.554		Sept.11, 1988	9,700	275	13.83	4.215
	Oct. 26, 1985	9,520	270	13.72	4.182	1989	Feb. 17, 1989	11,690	331	14.87	4.532
	Nov. 15, 1985	9,960	282	13.98	4.261		Sept.18, 1989	*37,730	1,070	*21.47	6.544
	May 1, 1986	8,100	229	12.85	3.917		Sept.24, 1989	9,810	278	13.89	4.234

50046000 RIO DE LA PLATA AT HIGHWAY 2 NEAR TOA ALTA, PR

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	217	234	28	30	22	43	39	72	33	23	17	e41
2	298	124	27	28	22	31	36	84	31	24	208	e34
3	350	87	27	27	21	20	33	59	27	23	47	e46
4	273	77	27	25	22	18	32	51	34	23	23	e170
5	245	107	27	23	23	18	30	48	36	33	26	e84
6	281	108	26	23	22	18	30	47	42	22	23	e210
7	143	151	27	25	23	e17	27	50	31	27	21	e90
8	108	237	26	22	32	e17	27	285	23	27	23	e150
9	95	208	26	24	e28	e40	26	1360	25	23	93	e80
10	88	112	25	24	e25	e27	28	195	26	29	49	e45
11	77	101	26	23	e22	e51	30	e90	24	e22	40	e23
12	88	71	26	24	e20	e186	26	e54	25	e20	22	e28
13	68	74	25	22	e25	781	25	e47	23	e19	24	e23
14	63	87	24	22	e66	1540	27	e130	25	e18	31	e180
15	64	68	24	30	e40	185	23	e60	384	e20	25	e110
16	58	58	25	27	e25	780	24	e43	450	e23	22	e60
17	244	53	26	32	e30	553	32	e38	135	22	22	e40
18	355	49	25	28	e25	299	56	e34	56	26	28	e37
19	112	49	25	27	e50	266	37	e31	33	21	23	e42
20	78	52	24	95	e30	123	119	e31	23	18	21	e34
21	662	49	23	37	e24	88	87	e32	20	20	21	e31
22	797	43	22	25	e46	81	93	e28	19	20	50	e28
23	1250	38	23	21	e50	74	74	e25	20	23	109	e27
24	1320	36	23	36	e31	66	46	e24	24	49	e26	e28
25	303	33	23	26	e24	62	55	e23	25	128	e21	e27
26	405	32	22	24	e33	62	79	e50	20	66	e32	e160
27	264	31	24	22	23	56	88	e60	23	22	e24	e45
28	136	30	76	21	25	49	74	e30	20	19	e20	e33
29	184	29	144	29	---	46	66	e26	20	18	e24	e27
30	220	28	43	30	---	45	60	e24	21	17	e28	e29
31	147	---	31	25	---	42	---	e23	---	18	e64	---
TOTAL	8993	2456	970	877	829	5684	1429	3154	1698	863	1207	1962
MEAN	290	81.9	31.3	28.3	29.6	183	47.6	102	56.6	27.8	38.9	65.4
MAX	1320	237	144	95	66	1540	119	1360	450	128	208	210
MIN	58	28	22	21	20	17	23	23	19	17	17	23
AC-FT	17840	4870	1920	1740	1640	11270	2830	6260	3370	1710	2390	3890
CFSM	1.45	.41	.16	.14	.15	.92	.24	.51	.28	.14	.19	.33
IN.	1.67	.46	.18	.16	.15	1.06	.27	.59	.32	.16	.22	.37

CAL YR 1989 TOTAL 73888 MEAN 202 MAX 14200 MIN 11 AC-FT 146600 CFSM 1.01 IN.13.76
WTR YR 1990 TOTAL 30122 MEAN 82.5 MAX 1540 MIN 17 AC-FT 59750 CFSM .41 IN. 5.61

e Estimated

50046000 RIO DE LA PLATA AT HWY 2 NR TOA ALTA, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
OCT 1989											
05...	1000	190	300	7.60	28.0	9.4	7.2	91	2700	K100	120
DEC											
05...	1300	61	522	7.70	27.5	1.6	9.0	112	2200	50	210
FEB 1990											
09...	1345	27	451	7.90	26.0	1.0	10.3	124	27000	3200	200
APR											
10...	1230	30	288	8.10	28.5	5.7	11.2	142	K8200	K200	200
JUN											
04...	1115	35	446	7.70	29.5	1.6	8.1	104	350	K170	200
AUG											
06...	1500	22	418	7.60	31.5	4.0	9.2	123	K700	K30	190

DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT 1989											
05...	0	34	8.7	15	0.6	3.1	110	14	18	0.10	20
DEC											
05...	0	65	12	23	0.7	3.0	200	21	33	0.10	19
FEB 1990											
09...	0	60	12	23	0.7	3.6	180	20	35	0.20	17
APR											
10...	0	62	12	23	0.7	2.3	190	19	31	0.20	19
JUN											
04...	21	59	13	24	0.7	1.9	180	15	32	0.20	19
AUG											
06...	0	59	10	20	0.6	2.9	170	19	28	0.20	16

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
OCT 1989											
05...	177	183	90.8	0.49	0.02	0.03	0.70	0.07	0.05	0.04	0.12
DEC											
05...	299	302	49.2	1.0	0.30	0.39	0.90	0.26	0.29	0.27	0.83
FEB 1990											
09...	302	285	22.3	1.0	0.10	0.13	0.50	0.28	0.25	0.27	0.83
APR											
10...	270	286	23.6	0.50	0.01	0.01	0.30	0.20	0.18	0.20	0.61
JUN											
04...	270	276	25.2	0.60	0.03	0.04	0.50	0.24	0.23	0.21	0.64
AUG											
06...	260	261	15.6	0.70	0.02	0.03	0.40	0.14	0.11	0.10	0.31

K = non-ideal count

50046000 RIO DE LA PLATA AT HWY 2 NR TOA ALTA, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)
OCT 1989											
05...	100	<1	39	<0.5	<1.0	<1	<3	<1	45	<1	<4
DEC											
05...	--	--	--	--	--	--	--	--	--	--	--
FEB 1990											
09...	20	1	54	<0.5	<1.0	<5	<3	<10	5	<10	<4
APR											
10...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	20	2	50	0.6	1.0	<1	<3	3	7	5	<4
AUG											
06...	20	2	64	<0.5	<1.0	1	<3	3	6	1	5

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 1989									
05...	10	<0.1	10	2	<1	<1.0	140	8	1800
DEC									
05...	--	--	--	--	--	--	--	--	--
FEB 1990									
09...	75	0.1	<10	10	<1	<1.0	250	<6	4
APR									
10...	--	--	--	--	--	--	--	--	--
JUN									
04...	37	<0.1	<10	2	<1	<1.0	260	7	7
AUG									
06...	81	<0.1	<10	1	<1	<1.0	230	<6	5

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
JUN 1990										
04...	1115	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	0.02	<0.010	<0.010

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN 1990										
04...	<0.010	<0.01	<0.010	<0.010	<0.010	0.01	<0.01	<0.01	<0.01	<0.01

DATE	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 1990									
04...	<0.01	<0.10	<0.1	<1	<0.01	0.02	<0.01	<0.01	<0.01

50046000 RIO DE LA PLATA AT HWY 2 NR TOA ALTA, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM
NOV 1989					
05...	1000	190	70	36	97
DEC					
05...	1300	61	71	12	98
FEB 1990					
09...	1345	27	68	5	97
APR					
10...	1230	30	12	.97	54
JUN					
04...	1115	35	17	1.6	51
AUG					
06...	1500	22	4	.24	86

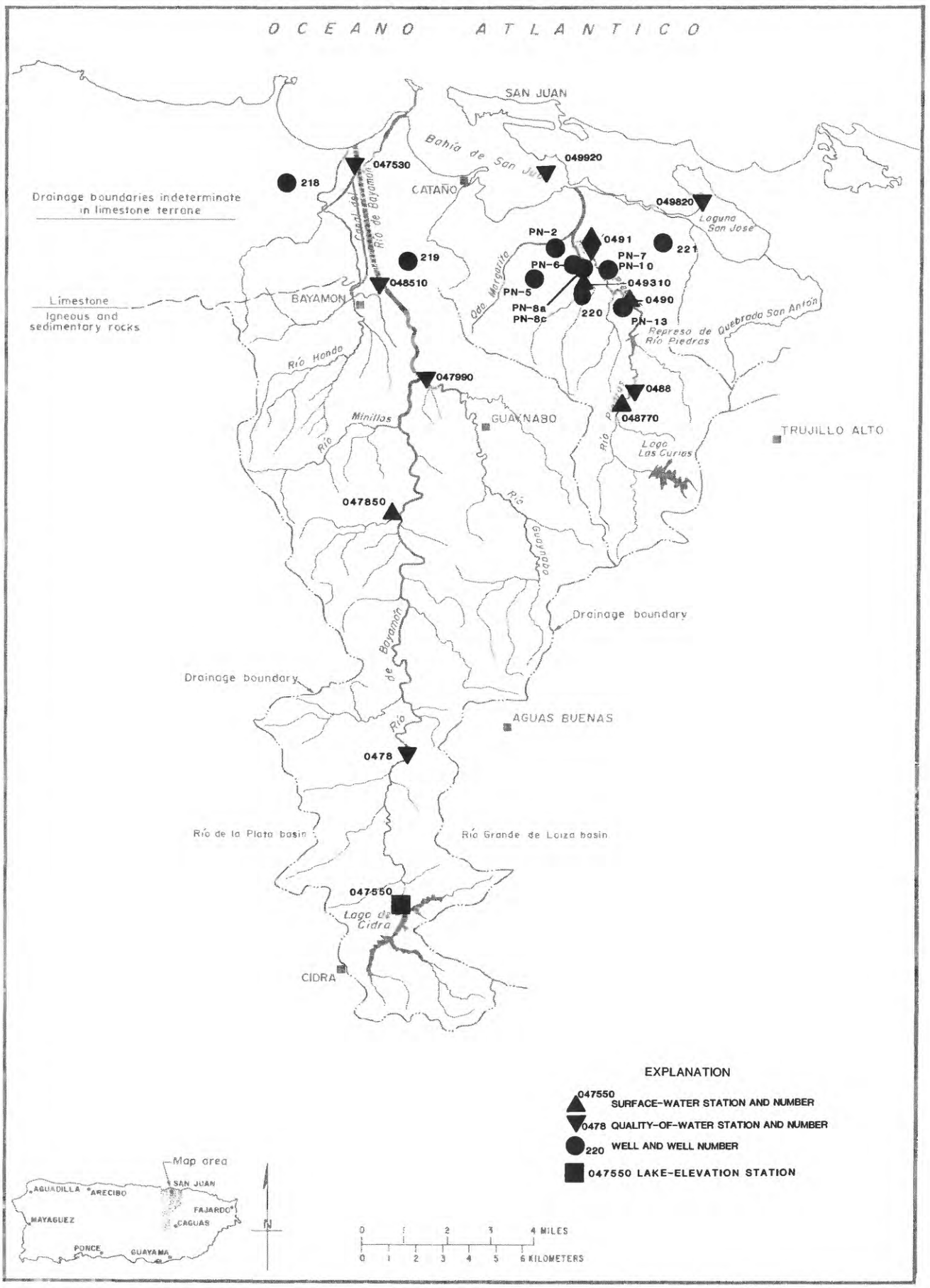

Figure 18.--Río Hondo to Río Puerto Nuevo basins.

50047530 RIO HONDO AT FLOOD CHANNEL NEAR CATANO, 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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
25...	1045	NF	11000	8.40	30.0	5.7	5.4	70	33	3200	210
DEC											
20...	0800	NF	27500	7.60	24.0	7.7	2.7	9	430	38000	K300
FEB 1990											
16...	0705	NF	3900	7.50	21.5	30	6.8	75	75	32000	2200
APR											
30...	0920	NF	13000	8.70	27.0	4.2	11	137	320	K12000	K20
JUN											
26...	0650	NF	28500	8.10	27.5	6.0	4.2	52	780	200000	3400
AUG											
21...	0755	NF	24200	8.60	28.5	9.7	9.8	124	23	2000	K1200

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
25...	1200	0	92	230	2000	25	73	120	<0.5	510	3700
DEC											
20...	--	--	--	--	--	--	--	160	--	--	--
FEB 1990											
16...	--	--	--	--	--	--	--	84	--	--	--
APR											
30...	1500	0	120	280	2200	25	85	160	<0.5	240	4800
JUN											
26...	--	--	--	--	--	--	--	170	--	--	--
AUG											
21...	730	590	60	140	1200	20	54	140	--	380	2500

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
25...	0.30	11	6690	--	11	0.31	0.09	0.40	0.33	0.87
DEC										
20...	--	--	--	--	17	--	0.03	<0.10	2.50	0.60
FEB 1990										
16...	--	--	--	--	35	0.30	0.10	0.40	0.55	0.25
APR										
30...	<0.10	15	7840	--	33	0.12	0.08	0.20	0.18	1.9
JUN										
26...	--	--	--	--	<1	0.05	0.05	0.10	0.53	0.47
AUG										
21...	0.30	11	4400	--	15	--	<0.01	<0.10	0.10	0.40

NF = No flow
K = non-ideal count

50047530 RIO HONDO AT FLOOD CHANNEL NEAR CATANO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
25...	1.2	1.6	7.1	0.18	<1	200	830	<2	<1	30
DEC										
20...	3.1	--	--	0.75	--	--	--	--	--	--
FEB 1990										
16...	0.8	1.2	5.3	0.27	--	--	--	--	--	--
APR										
30...	2.1	2.3	10	0.40	1	<100	1000	<1	1	10
JUN										
26...	1.0	1.1	4.9	0.41	--	--	--	--	--	--
AUG										
21...	0.5	--	--	0.17	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
25...	580	<2	140	0.10	<1	<1	20	<0.010	<1	0.64
DEC										
20...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
16...	--	--	--	--	--	--	--	--	--	--
APR										
30...	450	<1	180	<0.10	<1	<1	30	<0.010	5	0.66
JUN										
26...	--	--	--	--	--	--	--	--	--	--
AUG										
21...	--	--	--	--	--	--	--	--	--	--

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 (21.4 km²).

ELEVATION RECORDS

PERIOD OF RECORD.--January 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,337.58 ft (407.694 m) above mean sea level; gage readings has been adjusted to elevations above 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 (40.0 m) and crest elevation 1,322 ft (403 m), is an ungated ogee crest located 131 ft (40.0 m) from the right abutment. This dam is owned by Puerto Rico Aqueduct and Sewer Authority.

EXTREMES OBSERVED FOR PERIOD OF RECORD.--Maximum elevation 1,323.99 ft (403.552 m), Feb. 3, 1988; minimum elevation 1,305.18 ft (397.819 m), Sept. 30, 1990.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation, 1,322.32 ft (403.043 m), Nov. 3; minimum elevation, 1,305.18 ft (397.819 m), Sept. 30.

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
1,305	1,970	1,319	4,400
1,309	2,610	1,322	5,200
1,312	3,100	1,324	5,800

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1322.27	1322.30	1320.38	1316.54	1313.40	1311.38	1311.64	1308.99	1306.22	1307.69	1307.08	1308.22
2	1322.21	1322.31	1320.29	1316.41	1313.33	1311.32	1311.53	1308.97	1306.13	1307.64	1307.12	1308.09
3	1322.17	1322.28	1320.16	1316.30	1313.25	1311.21	1311.43	1308.89	1306.02	1307.58	1307.19	1307.97
4	1322.09	1322.20	1320.06	1315.97	1313.13	1311.05	1311.29	1308.73	1305.92	1307.46	1307.14	1307.84
5	1322.05	1322.14	1319.96	1315.99	1313.02	1310.90	1311.10	1308.61	1305.86	1307.38	1307.16	1307.82
6	1322.00	1322.14	1319.84	1315.83	1312.90	1310.77	1310.99	1308.47	1305.80	1307.38	1307.18	1307.72
7	1321.98	1322.11	1319.70	1315.64	1312.83	1310.57	1310.88	1308.27	1305.78	1307.46	1307.17	1307.64
8	1321.97	1322.11	1319.52	1315.49	1312.75	1310.40	1310.76	1308.17	1305.78	1307.44	1307.16	1307.60
9	1321.92	1322.10	1319.39	1315.33	1312.74	1310.44	1310.54	1308.20	1306.00	1307.41	1307.29	1307.52
10	1321.84	1322.07	1319.26	1315.27	1312.67	1310.58	1310.37	1308.17	1306.08	1307.36	1307.61	1307.41
11	1321.77	1322.06	1319.10	1315.17	1312.59	1310.67	1310.23	1308.26	1306.19	1307.25	1307.76	1307.27
12	1321.69	1322.01	1318.96	1315.05	1312.46	1310.96	1310.13	1308.28	1306.19	1307.13	1307.87	1307.04
13	1321.61	1322.01	1318.84	1314.91	1312.32	1311.45	1310.04	1308.16	1306.13	1307.00	1308.29	1306.79
14	1321.54	1321.98	1318.68	1314.76	1312.34	1312.03	1310.00	1308.16	1306.10	1306.79	1308.51	1306.63
15	1321.47	1321.95	1318.55	1314.61	1312.28	1312.19	1309.89	1308.22	1307.06	1306.74	1308.66	1306.58
16	1321.39	1321.91	1318.45	1314.53	1312.21	1312.46	1309.78	1308.24	1307.24	1306.72	1308.65	1306.54
17	1321.39	1321.81	1318.38	1314.42	1312.10	1312.61	1309.72	1308.18	1307.32	1306.89	1308.75	1306.47
18	1321.45	1321.67	1318.30	1314.30	1311.99	1312.71	1309.61	1308.05	1307.31	1306.97	1308.76	1306.41
19	1321.50	1321.53	1318.24	1314.20	1311.94	1312.75	1309.52	1307.92	1307.30	1307.07	1308.70	1306.34
20	1321.56	1321.39	1318.16	1314.15	1311.86	1312.73	1309.59	1307.79	1307.26	1307.09	1308.62	1306.22
21	1321.83	1321.30	1318.06	1314.10	1311.76	1312.66	1309.62	1307.68	1307.25	1307.15	1308.50	1306.02
22	1321.87	1321.25	1317.95	1314.02	1311.79	1312.56	1309.53	1307.56	1307.15	1307.11	1308.57	1305.86
23	1321.93	1321.19	1317.85	1313.96	1311.79	1312.47	1309.39	1307.42	1307.40	1307.01	1308.65	1305.71
24	1322.02	1321.13	1317.73	1313.88	1311.77	1312.40	1309.27	1307.28	1307.40	1306.92	1308.70	1305.58
25	1322.07	1321.07	1317.61	1313.80	1311.69	1312.31	1309.33	1307.12	1307.63	1306.94	1308.66	1305.46
26	1322.10	1321.01	1317.51	1313.78	1311.65	1312.24	1309.37	1306.98	1307.77	1307.32	1308.61	1305.46
27	1322.13	1320.91	1317.41	1313.72	1311.58	1312.14	1309.38	1306.84	1307.87	1307.46	1308.56	1305.54
28	1322.16	1320.74	1317.28	1313.67	1311.48	1312.07	1309.35	1306.71	1307.92	1307.50	1308.45	1305.44
29	1322.19	1320.59	1317.12	1313.61	---	1311.98	1309.25	1306.59	1307.86	1307.48	1308.44	1305.31
30	1322.24	1320.47	1316.94	1313.54	---	1311.89	1309.13	1306.47	1307.75	1307.41	1308.41	1305.18
31	1322.27	---	1316.73	1313.48	---	1311.77	---	1306.35	---	1307.16	1308.38	---
MEAN	1321.89	1321.66	1318.59	1314.72	1312.34	1311.73	1310.09	1307.86	1306.79	1307.22	1308.08	1306.66
MAX	1322.27	1322.31	1320.38	1316.54	1313.40	1312.75	1311.64	1308.99	1307.92	1307.69	1308.76	1308.22
MIN	1321.39	1320.47	1316.73	1313.48	1311.48	1310.40	1309.13	1306.35	1305.78	1306.72	1307.08	1305.18

WTR YR 1990 MEAN 1312.31 MAX 1322.31 MIN 1305.18

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
23...	1545	30	224	7.70	24.0	28	6.5	79	28	K150000	950
DEC											
15...	1200	31	249	7.80	22.0	6.4	9.3	107	14	240	K160
FEB 1990											
14...	1645	33	273	8.30	22.5	5.0	8.5	99	23	4100	4800
APR											
12...	1130	18	218	7.50	23.0	1.3	9.9	116	18	K180	K90
JUN											
12...	0840	8.7	335	8.00	25.0	0.40	7.2	88	18	K120	2000
AUG											
09...	1230	19	269	8.50	27.0	1.4	9.1	115	27	200	340

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
23...	100	0	32	5.5	12	0.5	1.5	86	<0.5	9.0	15
DEC											
15...	--	--	--	--	--	--	--	100	--	--	--
FEB 1990											
14...	--	--	--	--	--	--	--	100	--	--	--
APR											
12...	110	1	26	11	22	0.9	1.4	110	1.4	8.4	20
JUN											
12...	--	--	--	--	--	--	--	140	--	--	--
AUG											
09...	98	0	23	9.9	20	0.9	2.3	100	--	8.3	19

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
23...	0.10	20	147	11.9	14	0.68	0.02	0.70	0.03	0.47
DEC										
15...	--	--	--	--	2	--	<0.01	0.60	0.02	--
FEB 1990										
14...	--	--	--	--	7	0.49	0.01	0.50	0.01	0.49
APR										
12...	<0.10	25	180	8.75	4	--	<0.01	0.20	<0.01	--
JUN										
12...	--	--	--	--	6	0.29	0.01	0.30	0.02	0.38
AUG										
09...	<0.10	24	166	8.52	1	0.09	<0.01	0.10	0.01	0.39

K = non-ideal count

RIO DE BAYAMON BASIN

50047600 RIO DE BAYAMON NEAR AGUAS BUENAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
23...	0.5	1.2	5.3	0.08	<1	<100	<10	<1	3	10
DEC										
15...	<0.2	--	--	0.07	--	--	--	--	--	--
FEB 1990										
14...	0.5	1.0	4.4	0.06	--	--	--	--	--	--
APR										
12...	<0.2	--	--	0.02	<1	<100	10	<1	<1	<10
JUN										
12...	0.4	0.70	3.1	0.04	--	--	--	--	--	--
AUG										
09...	0.4	0.50	2.2	0.04	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
23...	3000	51	60	0.10	<1	<1	10	<0.010	4	0.03
DEC										
15...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
14...	--	--	--	--	--	--	--	--	--	--
APR										
12...	120	1	20	<0.10	<1	<1	<10	<0.010	4	0.12
JUN										
12...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	--	--	--	--	--	--	--	--	--	--

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 mi²(2.1 km²) south of colonia Santa Rosa and 4.7 mi (7.6 km) south of Bayamón.

DRAINAGE AREA.--41.8 mi² (108.3 km²).

WATER-DISCHARGE RECORDS

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 topografic 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.

AVERAGE DISCHARGE.--8 years (1965-70,1990), 37.2 ft³/s (1.054 m³/s), 12.08 in/yr (307 mm/yr), 26,950 acre-ft/yr (33.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORDS.--Maximum discharge 28,000 ft³/s (793 m³/s), Oct. 9, 1970, gage height 20.2 ft (6.16 m), from rating curve extended above 1,000 ft³/s (28.3 m³/s) on basis of step-back water analysis; minimum discharge, 0.7 ft³/s (0.020 m³/s), July 2, 1967.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 5	1800	*2,810	79.6	*9.92	3.024

No other peak greater than base discharge.

Minimum discharge, 2.8 ft³/s (0.079 m³/s), Sept. 29,30.

REVISIONS.--The secondary peak discharges greater than base discharge of 2,000 ft³/s (56.6 m³/s), not reported on 1989 water year are listed in the following table:

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 22	1715	3,730	106	11.08	3.377
Feb. 17	1800	9,520	270	15.72	4.791

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	30	13	13	9.1	14	6.8	4.7	7.3	13	7.5	8.7
2	77	21	13	38	8.7	12	6.5	6.7	16	12	9.9	9.2
3	35	17	13	25	9.0	11	6.4	4.9	8.5	11	22	84
4	25	17	14	14	9.4	10	6.0	4.7	13	13	9.0	54
5	88	21	12	12	8.3	9.8	6.0	4.3	14	14	8.8	12
6	45	67	11	11	8.2	9.3	5.6	4.1	12	12	8.8	44
7	25	33	12	10	11	9.3	5.8	4.1	9.0	11	26	87
8	22	31	11	11	22	9.0	5.6	34	8.4	11	19	18
9	22	32	11	11	16	22	5.4	210	8.2	10	66	9.9
10	20	23	11	11	21	75	5.9	57	11	9.8	28	6.2
11	19	19	11	11	12	98	5.6	23	8.0	10	15	5.0
12	18	19	11	10	10	237	5.1	22	7.2	9.2	18	5.0
13	19	18	12	9.6	9.3	338	7.4	23	7.0	9.0	156	5.2
14	19	20	11	9.9	45	348	7.7	30	7.0	10	91	76
15	18	19	11	8.9	17	91	5.9	21	82	9.1	17	167
16	18	17	13	8.7	13	98	5.5	16	28	15	13	14
17	59	18	12	13	12	105	8.4	15	16	14	12	5.3
18	38	18	11	9.7	15	24	9.2	13	15	30	13	3.9
19	20	17	11	11	39	15	11	12	14	11	11	26
20	18	20	10	24	17	12	24	11	14	9.1	9.7	47
21	23	19	9.9	16	26	10	11	19	13	8.9	9.7	7.0
22	27	17	9.8	10	49	9.2	6.4	10	14	8.5	9.6	4.1
23	153	15	9.4	10	28	8.6	5.3	10	17	9.7	9.9	5.4
24	114	15	9.9	16	22	8.1	5.0	9.4	16	12	9.7	3.9
25	33	15	9.6	10	15	7.8	13	8.8	15	15	18	4.8
26	26	15	9.4	9.8	14	8.5	99	8.7	13	11	13	5.2
27	23	14	8.8	12	12	8.9	8.6	8.7	12	9.6	10	3.3
28	21	14	9.6	9.9	11	8.6	5.5	8.4	12	8.4	10	3.1
29	22	14	25	9.9	---	8.6	5.1	7.8	11	7.8	9.1	2.9
30	21	13	14	9.4	---	7.6	4.8	7.4	11	8.0	9.3	3.1
31	27	---	11	8.5	---	7.6	---	7.4	---	7.5	9.5	---
TOTAL	1115	628	360.4	393.3	489.0	1640.9	313.5	626.1	439.6	349.6	678.5	730.2
MEAN	36.0	20.9	11.6	12.7	17.5	52.9	10.4	20.2	14.7	11.3	21.9	24.3
MAX	153	67	25	38	49	348	99	210	82	30	156	167
MIN	18	13	8.8	8.5	8.2	7.6	4.8	4.1	7.0	7.5	7.5	2.9
AC-FT	2210	1250	715	780	970	3250	622	1240	872	693	1350	1450
CFSM	.86	.50	.28	.30	.42	1.27	.25	.48	.35	.27	.52	.58
IN.	.99	.56	.32	.35	.44	1.46	.28	.56	.39	.31	.60	.65

CAL YR 1989 TOTAL 13413.7 MEAN 36.7 MAX 2340 MIN 8.2 AC-FT 26610 CFSM .88 IN. 11.94
WTR YR 1990 TOTAL 7764.1 MEAN 21.3 MAX 348 MIN 2.9 AC-FT 15400 CFSM .51 IN. 6.91

50047850 RIO BAYAMON NEAR BAYAMON, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.-- OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 03	1237	34.3	270	29.0	APR. 20	0934	45.3	230	24.5
NOV. 02	1514	21.1	306	28.5	MAY 15	1432	21.0	306	29.0
DEC. 18	1330	12.4	311	25.0	JUNE 15	1059	59.6	195	27.0
JAN. 04	1250	13	296	24.5	JULY 12	1318	8.28	323	28.0
FEB. 06	0940	8.81	347	22.0	AUG. 28	1517	8.78	343	24.0
MAR. 08	1649	8.57	326	28.5	SEPT 13	1410	4.61	346	29.5

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
16...	1030	36	378	7.40	26.5	3.5	6.2	77	<10	K15000	2700
NOV											
28...	1400	22	404	7.90	28.0	5.6	8.4	107	23	48000	420
FEB 1990											
08...	1115	30	340	7.70	29.5	9.4	7.6	98	21	K13000	8500
APR											
09...	1400	21	264	7.80	29.5	0.80	7.3	94	19	3000	K100
JUN											
06...	0840	21	372	7.40	26.0	25	5.2	63	46	38000	4500
AUG											
22...	1100	20	431	7.40	29.5	10	3.4	44	16	6000	K100

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
16...	140	0	38	11	25	0.9	3.8	140	<0.5	12	25
NOV											
28...	--	--	--	--	--	--	--	160	--	--	--
FEB 1990											
08...	--	--	--	--	--	--	--	130	--	--	--
APR											
09...	160	0	43	13	30	1	3.1	170	<0.5	12	34
JUN											
06...	--	--	--	--	--	--	--	140	--	--	--
AUG											
22...	170	1	47	13	29	1	3.2	170	--	7.5	34

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
16...	0.10	24	223	21.7	<1	0.54	0.06	0.60	0.14	0.36
NOV										
28...	--	--	--	--	22	0.57	0.13	0.70	0.42	0.38
FEB 1990										
08...	--	--	--	--	40	0.56	0.04	0.60	0.09	0.41
APR										
09...	0.10	30	263	15.2	<1	0.59	0.11	0.70	0.26	0.34
JUN										
06...	--	--	--	--	25	0.50	0.10	0.60	0.36	1.2
AUG										
22...	0.20	32	268	--	<1	0.40	0.10	0.50	0.44	0.26

K = non-ideal count

50047990 RIO GUAYNABO NEAR BAYAMON, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
16...	0.5	1.1	4.9	0.16	<1	<100	<10	<1	<1	20
NOV										
28...	0.8	1.5	6.6	0.31	--	--	--	--	--	--
FEB 1990										
08...	0.5	1.1	4.9	0.22	--	--	--	--	--	--
APR										
09...	0.6	1.3	5.8	0.36	2	100	50	<1	1	10
JUN										
06...	1.6	2.2	9.7	0.33	--	--	--	--	--	--
AUG										
22...	0.7	1.2	5.3	0.33	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
16...	540	3	160	<0.10	<1	<1	10	<0.010	5	0.08
NOV										
28...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
08...	--	--	--	--	--	--	--	--	--	--
APR										
09...	490	1	260	<0.10	<1	<1	<10	<0.010	3	0.09
JUN										
06...	--	--	--	--	--	--	--	--	--	--
AUG										
22...	--	--	--	--	--	--	--	--	--	--

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 (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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
17...	1200	74	400	7.40	28.5	3.6	7.1	91	20	5800	K500
NOV											
30...	1100	49	392	7.80	26.0	2.5	6.8	84	10	50000	K360
FEB 1990											
13...	0830	38	400	7.70	25.0	2.3	6.4	76	16	21000	K1500
APR											
17...	1415	38	360	8.20	30.0	3.7	9.0	117	13	3400	K100
JUN											
06...	1100	53	324	7.40	28.0	35	5.6	70	29	20000	2800
AUG											
06...	1110	31	364	7.60	29.5	15	9.1	117	26	K8400	K100

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
17...	150	0	39	12	23	0.8	3.2	150	<0.5	16	25
NOV											
30...	--	--	--	--	--	--	--	140	--	--	--
FEB 1990											
13...	--	--	--	--	--	--	--	160	--	--	--
APR											
17...	150	0	40	13	24	0.8	2.3	160	<0.5	14	31
JUN											
06...	--	--	--	--	--	--	--	140	--	--	--
AUG											
06...	140	4	38	12	22	0.8	2.3	140	--	17	28

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
17...	0.10	24	232	46.4	<1	0.36	0.04	0.40	0.07	0.23
NOV										
30...	--	--	--	--	14	0.54	0.06	0.60	0.09	0.31
FEB 199										
13...	--	--	--	--	2	0.45	0.05	0.50	0.08	0.22
APR										
17...	0.30	30	248	25.0	17	0.27	0.03	0.30	0.04	0.36
JUN										
06...	--	--	--	--	21	0.35	0.05	0.40	0.16	0.34
AUG										
06...	0.30	14	218	18.2	35	0.28	0.02	0.30	0.04	0.46

K = non-ideal count

50048510 RIO DE BAYAMON AT FLOOD CHANNEL AT BAYAMON, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
17...	0.3	0.7	3.1	0.11	<1	<100	30	<1	<1	10
NOV										
30...	0.4	1.0	4.4	0.16	--	--	--	--	--	--
FEB 1990										
13...	0.3	0.8	3.5	0.26	--	--	--	--	--	--
APR										
17...	0.4	0.7	3.1	0.20	1	100	30	<1	2	20
JUN										
06...	0.5	0.9	4.0	0.15	--	--	--	--	--	--
AUG										
06...	0.5	0.8	3.5	0.18	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
17...	1200	5	200	<0.10	<1	<1	<10	<0.010	3	0.07
NOV										
30...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
13...	--	--	--	--	--	--	--	--	--	--
APR										
17...	1200	3	260	<0.10	<1	<1	<10	<0.010	4	0.03
17...	--	--	--	--	--	--	--	--	--	--
JUN										
06...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	--	--	--	--	--	--	--	--	--	--

50048770 RIO PIEDRAS AT EL SENORIAL, PR

LOCATION.--Lat 18°21'51", long 66°03'56", Hydrologic Unit 21010005, on right bank, in the Riberas of Señorial Housing area, 0.6 mi (1.0 km) west of Highway 176 and 2.7 mi (4.3 km) southwest of Río Piedras Plaza.

DRAINAGE AREA.--7.49 mi² (19.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORDS.--March 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage in 98.4 ft (30.0 m), from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,680 ft³/s (132 m³/s), Aug. 24, 1988, gage height, 16.08 ft (4.901 m), from rating curve extended above 200 ft³/s (5.66 m³/s) on basis of step-backwater analysis; minimum daily discharge, 2.1 ft³/s (0.06 m³/s), June 10, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 2	1315	*3,210	90.9	*13.04	3.974	No other peak greater than base discharge.					

Minimum daily discharge, 3.2 ft³/s (0.091 m³/s), Aug. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	55	20	e15	e13	e17	6.6	7.0	22	5.1	7.6	4.7
2	316	17	e18	e11	e11	e7.9	6.2	8.0	9.9	5.1	15	4.4
3	52	13	e15	e19	e9.6	e6.6	5.1	7.2	13	5.7	6.0	16
4	60	13	e12	18	e12	e6.0	4.9	5.4	22	5.6	4.3	12
5	84	15	e7.6	12	e8.0	e6.4	5.7	4.6	27	16	3.8	8.5
6	33	14	e7.7	8.0	e6.4	e6.0	5.0	4.7	8.7	6.2	4.0	7.0
7	24	14	e7.9	7.9	e10	e5.6	6.8	4.3	7.3	13	5.0	128
8	29	28	e8.3	8.2	e13	e5.5	5.5	9.5	6.2	6.1	3.6	20
9	24	45	e7.6	6.9	e18	e23	5.9	77	6.6	9.5	6.3	6.2
10	22	43	e7.6	7.0	e16	e10	5.8	19	7.2	5.7	14	3.7
11	20	13	e8.2	8.6	e10	e110	5.7	27	6.2	4.8	6.4	3.3
12	19	13	e8.0	6.5	e7.0	e80	6.4	11	5.3	4.4	5.9	3.6
13	19	13	e8.2	6.5	e12	e100	32	16	5.2	4.7	10	26
14	19	20	e9.0	8.7	e50	e40	24	18	14	6.1	6.0	6.9
15	56	25	e8.4	8.9	e6.5	e15	8.4	10	16	5.2	5.8	11
16	26	22	e18	8.3	e8.3	e35	7.4	7.9	7.7	5.2	5.3	6.0
17	17	18	e12	10	e7.9	e13	17	11	6.0	9.1	5.8	4.6
18	14	11	e8.0	8.6	e11	e10	17	8.2	5.9	11	8.3	15
19	38	16	7.7	e20	e10	e11	20	9.8	6.5	5.6	6.8	6.2
20	25	12	7.4	e28	e6.0	e9.0	31	7.8	5.3	4.7	6.5	5.3
21	26	10	7.1	e90	e8.2	e6.0	9.4	7.0	4.8	5.5	6.7	4.8
22	96	9.1	7.1	e17	e14	e9.8	9.5	8.0	5.6	5.5	22	4.4
23	47	9.2	7.0	e26	e10	e6.4	9.7	9.2	5.5	6.7	7.2	72
24	42	7.7	7.7	e37	e7.3	e6.4	8.9	8.6	5.9	21	3.2	e39
25	39	8.6	7.8	e15	e8.0	e5.6	64	8.2	6.0	7.1	3.4	e7.2
26	37	6.6	7.4	e12	e11	e7.0	16	7.4	5.7	8.2	3.9	e5.0
27	35	10	7.1	e11	e12	e11	8.8	5.8	5.2	6.8	3.7	40
28	29	19	11	e15	e16	e7.8	6.7	4.9	5.2	8.0	4.1	11
29	16	18	e72	e23	---	12	7.9	4.9	5.2	7.2	4.3	8.2
30	39	17	e8.0	e18	---	8.1	8.3	6.1	5.2	7.7	4.3	32
31	46	---	e60	e14	---	7.5	---	5.4	---	7.9	5.4	---
TOTAL	1390	535.2	408.8	505.1	332.2	604.6	375.6	348.9	262.3	230.4	204.6	522.0
MEAN	44.8	17.8	13.2	16.3	11.9	19.5	12.5	11.3	8.74	7.43	6.60	17.4
MAX	316	55	72	90	50	110	64	77	27	21	22	128
MIN	14	6.6	7.0	6.5	6.0	5.5	4.9	4.3	4.8	4.4	3.2	3.3
AC-FT	2760	1060	811	1000	659	1200	745	692	520	457	406	1040
CFSM	5.99	2.38	1.76	2.18	1.58	2.60	1.67	1.50	1.17	.99	.88	2.32
IN.	6.90	2.66	2.03	2.51	1.65	3.00	1.87	1.73	1.30	1.14	1.02	2.59

CAL YR 1989 TOTAL 8455.0 MEAN 23.2 MAX 610 MIN 2.1 AC-FT 16770 CFSM 3.09 IN. 41.99
WTR YR 1990 TOTAL 5719.7 MEAN 15.7 MAX 316 MIN 3.2 AC-FT 11350 CFSM 2.09 IN. 28.41

e Estimated

50048770 RIO PIEDRAS AT EL SENORIAL, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.-- OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
NOV. 17	1403	12.1	326	28.0
DEC. 18	1036	7.41	374	24.5
JAN. 18	1025	7.68	395	24.5
FEB. 06	1254	6.08	408	28.0
MAR. 08	1245	5.40	408	28.5
APR. 03	1248	5.03	397	33.0
MAY 16	1117	7.94	410	28.5
JUNE 12	0643	5.33	455	--
JULY 12	1318	5.28	389	32.5
AUG. 30	--	4.09	--	--
SEPT 26	1140	3.58	416	28.5

50048770 RIO PIEDRAS AT EL SEÑORIAL, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1988 to current year.

INSTRUMENTATION.-- USD-77 and automatic sediment sampler.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: April 1988 to September 1990.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 24,600 mg/L Sep. 18, 1989; Minimum daily mean, 2 mg/L November 18, 1988.

SEDIMENT LOADS: Maximum daily mean, 96,700tons (88,000tonnes) Sep. 18, 1989; Minimum daily mean, 0.06 ton (0.05 tonne) MAY 6, 1990.

EXTREMES FOR WATER YEARS 1988-89-90.--

Water Year	Suspended-sediment concentration (mg/L) maximum	minimum	Suspended-sediment discharge (tons per day) maximum	minimum
1988	13,900 (Sep. 11)	40 (Jun. 08)	21,600 (Sep. 11)	1.3 (Aug. 06)
1989	24,600 (Sep. 18)	2 (Nov. 18)	96,700 (Sep. 18)	.13 (Nov. 18)
1990	7,110 (Oct. 04)	5 (Jan. 06)	24,900 (Oct. 04)	.06 (May 06)

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	177	5.3	7.8	100	2.1	8.7	144	4.4
2	9.8	167	4.9	7.4	99	2.0	8.1	109	2.4
3	8.3	124	2.8	7.3	97	1.9	7.9	107	2.3
4	9.0	384	12	7.0	97	1.9	7.6	93	1.9
5	8.9	186	4.6	7.2	112	2.8	7.4	69	1.4
6	8.3	130	2.9	7.0	100	1.9	7.2	248	4.8
7	9.9	166	4.9	6.7	85	1.5	7.1	42	.80
8	9.5	155	4.2	6.6	90	1.6	7.0	40	.76
9	8.2	144	4.8	160	8850	13600	7.6	93	2.1
10	8.0	114	2.5	133	6720	7010	7.2	99	1.9
11	10	292	13	47	2180	492	11	193	6.9
12	13	378	45	17	373	18	13	218	7.6
13	9.1	167	5.5	13	244	8.6	10	195	6.2
14	153	3690	7780	14	284	15	9.6	159	4.5
15	82	4380	2180	11	170	5.0	14	331	23
16	23	743	77	10	165	4.5	9.6	153	4.0
17	34	1700	790	9.5	160	6.1	8.8	120	2.9
18	84	2650	1700	9.5	148	3.9	8.7	146	3.8
19	61	2600	669	11	155	4.6	8.9	155	5.9
20	21	520	32	11	155	4.6	14	304	20
21	15	311	13	12	155	5.0	37	1800	469
22	13	265	10	e11	e150	e4.5	12	254	11
23	11	213	7.0	e7.8	e150	e3.2	9.0	130	3.2
24	20	598	57	e7.0	e150	e2.8	15	484	77
25	13	390	16	e6.8	e150	e2.8	9.3	153	4.2
26	11	215	6.7	9.1	168	5.1	8.4	120	2.7
27	9.2	151	3.9	7.7	102	2.1	7.7	108	2.2
28	8.3	155	3.4	8.1	142	5.3	8.8	144	3.9
29	8.2	153	3.5	8.8	146	3.8	7.2	99	1.9
30	7.9	102	2.2	9.7	174	5.1	6.8	92	1.7
31	---	---	---	8.7	136	3.2	---	---	---
TOTAL	696.6	---	13463.1	599.7	---	21230.9	304.6	---	684.36

e Estimated

50048770 RIO PIEDRAS AT EL SEÑORIAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	15	415	44	7.0	122	2.3	110	6090	5910
2	10	171	4.9	6.4	86	1.5	33	1080	111
3	8.0	120	2.6	17	490	56	22	500	30
4	8.8	142	3.7	9.2	143	3.6	19	440	23
5	13	296	18	6.7	88	1.6	17	350	16
6	9.7	147	4.0	5.8	80	1.3	16	330	14
7	22	820	146	13	507	119	17	350	16
8	7.3	110	2.2	6.4	97	1.7	48	2390	694
9	7.8	132	3.2	7.3	119	3.6	e70	e1550	e234
10	7.6	113	2.5	53	2730	1430	27	821	71
11	7.7	119	2.6	17	414	25	237	13900	21600
12	8.4	164	4.2	9.3	138	3.5	68	3360	833
13	11	204	8.8	8.2	122	2.7	30	840	72
14	18	493	46	16	408	42	e47	e1760	e223
15	7.9	115	2.2	10	195	7.2	e45	e1600	e194
16	7.2	102	2.0	20	597	73	e35	e1060	100
17	36	1580	404	21	551	38	e25	e660	45
18	25	923	126	12	231	8.0	e18	e400	19
19	12	217	8.0	8.7	130	3.1	e19	e430	22
20	7.9	120	2.6	8.4	125	2.8	e14	e280	11
21	6.9	99	1.8	8.1	129	2.8	e11	e190	e5.6
22	13	310	22	15	273	15	e130	e8400	e2950
23	10	170	4.6	27	3670	1250	e35	e1060	e100
24	9.0	163	6.4	251	9030	16800	e20	e460	e25
25	7.8	130	3.1	57	2700	490	e17	e370	e17
26	8.3	146	4.2	28	848	70	e13	e250	e8.8
27	6.6	94	1.7	53	2560	578	e12	e220	e7.1
28	8.0	100	2.2	28	765	64	e10	e160	e4.3
29	17	586	75	23	631	48	e9.2	e144	e3.6
30	15	486	39	15	290	12	e9.0	e140	e3.4
31	8.1	131	3.1	39	1570	411	---	---	---
TOTAL	360.0	---	1000.6	806.5	---	21565.00	1183.2	---	33362.8

e Estimated

50048770 RIO PIEDRAS AT EL SEÑORIAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	e13	e250	e8.8	14	74	2.8	7.9	110	2.3
2	e12	e220	e7.1	12	40	1.3	9.2	88	2.2
3	e15	e310	e13	10	35	.94	9.6	68	1.8
4	e20	e460	e25	9.3	33	.82	9.5	48	1.2
5	e12	e220	e7.1	14	164	8.4	8.4	30	.68
6	e10	e160	e4.3	13	160	5.6	7.8	28	.58
7	e9.0	e150	e3.6	12	245	8.9	8.7	28	.66
8	e19	e430	e22	26	808	64	7.5	27	.54
9	e12	e220	e7.1	15	311	13	9.9	152	6.0
10	e30	e860	e70	13	190	6.7	7.8	27	.54
11	11	223	7.8	27	920	57	7.5	105	2.1
12	9.0	147	3.8	65	484	93	6.7	88	1.5
13	7.6	112	2.3	98	5100	7110	7.7	100	2.1
14	8.3	125	2.9	67	2150	591	8.5	120	2.8
15	8.2	120	2.7	30	905	83	10	131	3.5
16	7.8	120	2.5	21	6880	399	9.1	135	3.3
17	8.9	118	2.8	120	1210	267	22	757	102
18	8.9	243	6.2	32	2	.13	9.4	225	5.7
19	28	1060	297	16	325	14	7.9	170	3.6
20	15	323	15	14	318	15	6.8	118	2.2
21	11	150	4.5	19	468	42	5.9	78	1.2
22	9.2	156	5.2	10	175	4.7	20	754	152
23	7.3	100	2.0	9.2	155	3.9	9.1	212	11
24	5.1	60	.82	7.9	115	2.5	39	2100	897
25	32	3420	1550	10	173	5.9	11	233	8.3
26	35	2000	1030	11	260	7.7	9.7	162	6.2
27	7.0	249	6.0	8.1	170	3.7	6.3	100	1.7
28	8.6	194	9.7	7.1	115	2.2	11	268	18
29	21	718	187	7.0	90	1.7	6.8	75	1.4
30	16	423	52	7.3	100	2.0	33	2690	966
31	12	267	17	---	---	---	8.7	140	3.3
TOTAL	428.9	---	3375.22	724.9	---	8817.89	342.4	---	2211.40

e Estimated

50048770 RIO PIEDRAS AT EL SEÑORIAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	5.4	61	.88	7.1	110	2.1	11	110	3.3
2	8.4	143	6.0	6.7	95	1.7	8.4	109	2.5
3	5.1	59	.82	6.6	84	1.5	7.6	95	1.9
4	4.7	51	.64	7.0	78	1.5	8.4	132	3.4
5	4.9	50	.66	7.1	109	2.3	6.4	81	1.4
6	4.4	50	.60	7.9	95	2.0	7.4	93	1.9
7	7.6	132	6.0	5.9	76	1.2	7.3	76	1.5
8	20	615	70	8.0	245	5.8	7.2	103	3.0
9	16	446	35	e16	e340	e15	6.4	98	2.0
10	18	428	30	e6.4	e88	e1.5	34	3010	1360
11	60	3070	1090	e6.0	e80	e1.3	6.9	105	2.4
12	36	1460	201	e5.6	e72	e1.1	38	2200	1030
13	21	556	43	e5.6	e72	e1.1	47	2260	647
14	10	160	4.3	e5.4	e68	e1.0	12	205	6.6
15	8.1	130	2.8	e18	e400	e19	10	185	5.0
16	8.7	110	2.6	e88	e1670	e532	9.2	145	3.6
17	8.4	95	2.2	63	3350	791	11	195	8.5
18	7.2	98	1.9	32	2690	619	11	254	20
19	7.9	109	2.3	9.6	130	3.4	6.6	60	1.1
20	25	786	148	7.9	85	1.8	6.8	79	4.5
21	11	186	5.7	7.1	65	1.2	6.7	109	2.0
22	7.9	105	2.2	7.1	50	.96	7.1	99	1.9
23	7.4	49	.98	5.1	38	.52	7.3	98	1.9
24	7.4	15	.30	5.0	35	.48	9.9	108	2.9
25	11	210	26	5.3	32	.46	12	108	3.5
26	8.2	132	2.9	84	3440	4560	16	108	4.7
27	7.4	103	2.1	47	2280	633	41	1390	384
28	6.8	98	1.8	11	123	3.7	11	202	6.5
29	7.5	105	2.1	---	---	---	8.8	137	4.0
30	7.6	110	2.3	---	---	---	9.3	164	5.1
31	7.4	108	2.2	---	---	---	10	177	5.8
TOTAL	376.4	---	1697.28	491.4	---	7205.62	401.7	---	3531.9

e Estimated

50048770 RIO PIEDRAS AT EL SEÑORIAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	26	1220	405	22	1380	532	50	2800	870
2	12	206	6.8	20	699	205	96	3730	3250
3	12	267	11	6.5	85	1.7	249	12900	21200
4	9.6	96	1.9	14	556	87	89	4060	3390
5	7.5	96	1.9	6.6	99	1.9	13	257	13
6	6.8	91	1.6	6.9	65	1.1	4.7	53	.68
7	6.3	82	1.4	11	253	15	3.1	35	.30
8	6.2	82	1.4	6.0	32	.52	3.4	29	.26
9	6.2	78	1.3	7.4	23	.46	2.3	19	.12
10	6.6	80	1.4	6.0	22	.36	2.1	11	.06
11	6.0	82	1.3	6.7	121	2.5	20	1910	491
12	6.1	72	1.2	5.3	58	.82	8.3	110	2.5
13	13	302	23	5.6	76	1.3	9.7	99	2.6
14	11	289	48	4.9	51	.68	8.2	97	2.1
15	6.0	80	1.3	4.8	53	.68	7.8	105	2.2
16	6.4	70	1.2	4.8	55	.72	7.4	109	2.2
17	6.1	62	1.0	4.8	68	1.0	66	3380	3340
18	5.2	84	1.2	4.8	52	.68	15	424	25
19	5.2	75	1.1	5.3	68	.98	7.6	108	2.2
20	5.1	61	.84	6.1	65	1.1	6.3	88	1.5
21	5.2	60	.84	5.8	65	1.0	7.0	85	2.1
22	5.0	50	.68	5.3	62	.88	12	442	82
23	4.4	280	3.3	6.1	85	1.5	7.2	90	1.7
24	4.2	43	.48	5.4	51	.74	7.3	98	1.9
25	4.1	40	.44	3.6	38	.36	7.6	111	2.3
26	4.2	39	.44	3.8	49	.67	7.3	115	2.7
27	3.6	36	.34	6.9	176	22	5.8	28	.44
28	102	8360	11300	2.7	21	.16	6.8	9	.16
29	55	2580	2040	9.8	879	199	7.5	54	1.5
30	10	182	6.6	4.0	81	1.3	7.5	116	2.5
31	---	---	---	69	8210	4060	---	---	---
TOTAL	367.0	---	13866.96	281.9	---	5143.11	744.9	---	32693.02

RIO PUERTO NUEVO BASIN

50048770 RIO PIEDRAS AT EL SEÑORIAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	7.7	113	2.3	4.7	300	3.8	11	242	8.6
2	25	1070	200	4.3	107	1.3	18	582	116
3	11	195	6.9	8.0	218	32	16	450	43
4	8.5	146	3.9	4.0	50	.54	10	229	6.1
5	7.6	103	2.1	23	801	540	9.9	174	5.1
6	9.7	140	4.4	4.7	70	.88	9.5	48	1.2
7	41	2070	585	26	1200	400	65	2050	2500
8	18	426	24	5.6	82	1.5	58	2720	1410
9	12	222	8.1	3.7	20	.20	15	397	22
10	9.0	162	3.8	44	2470	923	100	5630	5440
11	331	11300	41600	12	253	16	54	1790	576
12	34	1200	195	7.1	98	1.9	21	461	42
13	95	4650	3560	9.7	241	30	26	955	157
14	20	577	57	6.4	85	1.5	18	422	23
15	6.2	61	1.0	27	1280	638	50	2670	1250
16	5.2	73	1.2	14	502	80	38	1620	351
17	7.0	164	15	63	2950	1930	43	1770	304
18	63	2320	2480	54	2370	1000	610	24600	96700
19	7.9	88	1.9	65	2980	1090	39	345	58
20	6.5	62	1.1	44	1720	509	33	1030	289
21	7.2	60	1.2	33	1070	441	51	2360	1210
22	9.0	194	5.7	15	309	26	17	78	5.4
23	8.4	163	10	27	756	191	88	5050	2550
24	4.6	57	.70	23	767	141	78	3690	1540
25	4.8	50	.64	113	5430	6120	18	345	17
26	5.8	58	.90	23	625	43	13	231	8.2
27	32	2030	1410	39	1800	846	154	6680	16600
28	6.3	106	2.2	10	40	1.1	31	304	39
29	4.0	45	.48	97	5000	3120	17	28	1.3
30	5.8	106	9.7	26	737	79	75	3760	3050
31	9.9	304	22	12	192	6.0	---	---	---
TOTAL	823.1	---	50216.22	848.2	---	18213.72	1786.4	---	134322.9
YEAR	7617.2		281295.24						

50048770 RIO PIEDRAS AT EL SEÑORIAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	41	376	43	55	4740	1400	20	90	4.5
2	316	7110	24900	17	2400	117	e18	e90	e4.4
3	52	569	97	13	915	33	e15	e90	e3.6
4	60	1780	910	13	58	2.0	e12	e70	e2.3
5	84	1190	1400	15	100	4.6	e7.6	e33	e.68
6	33	317	30	14	93	4.9	e7.7	e33	e.68
7	24	190	12	14	96	5.5	e7.9	e39	e.84
8	29	260	25	28	521	122	e8.3	e40	e.90
9	24	195	13	45	1400	766	e7.6	e33	e.68
10	22	164	9.7	43	698	410	e7.6	e33	e.68
11	20	146	7.9	13	88	3.5	e8.2	e51	e1.1
12	19	130	6.6	13	70	2.3	e8.0	e35	e.76
13	19	124	6.5	13	68	2.2	e8.2	e32	e.71
14	19	120	6.2	20	1350	82	e9.0	e30	e.71
15	56	821	495	25	280	25	e8.4	e40	e.90
16	26	209	23	22	70	4.1	e18	e114	e5.5
17	17	134	6.3	18	109	12	e12	e47	e1.5
18	14	95	3.7	11	42	1.4	e8.0	e28	e.59
19	38	1110	457	16	189	20	7.7	24	.50
20	25	236	15	12	85	4.2	7.4	18	.35
21	26	205	15	10	28	.74	7.1	13	.24
22	96	1860	3480	9.1	23	.57	7.1	10	.20
23	47	877	217	9.2	20	.46	7.0	10	.20
24	42	43	5.0	7.7	19	.39	7.7	49	1.5
25	39	33	3.4	8.6	19	.43	7.8	64	1.7
26	37	30	3.0	6.6	20	.36	7.4	58	1.1
27	35	27	2.5	10	22	.66	7.1	42	.81
28	29	22	1.8	19	21	1.1	11	281	185
29	16	20	.93	18	20	.95	e72	e6360	e2740
30	39	2950	1010	17	83	3.8	e8.0	e29	e.62
31	46	1280	594	---	---	---	e60	e1270	e206
TOTAL	1390	---	33799.53	535.2	---	3031.16	408.8	---	3169.25

e Estimated

RIO PUERTO NUEVO BASIN

50048770 RIO PIEDRAS AT EL SEÑORIAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	e15	60	2.4	e13	51	1.8	e17	e82	e3.8
2	e11	42	1.2	e11	42	1.2	e7.9	e28	e.60
3	e19	13	.64	e9.6	35	.90	e6.6	e20	e.36
4	18	10	.49	e12	46	1.5	e6.0	e19	e.30
5	12	10	.29	e8.0	28	.60	e6.4	e20	e.34
6	8.0	10	.23	e6.4	19	.32	e6.0	e19	e.30
7	7.9	10	.21	e10	38	1.0	e5.6	e17	e.26
8	8.2	9	.23	e13	51	1.8	e5.5	e17	e.26
9	6.9	14	.27	e18	114	5.5	e23	e213	e13
10	7.0	5	.09	e16	78	3.4	e10	e38	e1.0
11	8.6	31	.83	e10	38	1.0	e110	e4410	e1310
12	6.5	21	.41	e7.0	24	.46	e80	e2000	e432
13	6.5	19	.34	e12	46	1.5	e100	e3900	e1050
14	8.7	28	.71	e50	900	122	e40	e300	e32
15	8.9	34	1.0	e6.5	54	.94	e15	e60	e2.4
16	8.3	39	2.1	e8.3	28	.62	e35	e170	e11
17	10	52	2.2	e7.9	28	.60	e13	e51	e1.8
18	8.6	36	1.1	e11	42	1.2	e10	e38	e1.0
19	e20	e150	e8.1	e10	38	1.0	e11	e42	e1.2
20	e28	e230	e17	e6.0	29	.46	e9.0	e33	e.80
21	e90	e1130	e275	e8.2	29	.64	e6.0	e19	e.30
22	e17	e120	e5.5	e14	55	2.1	e9.8	e90	e 2.4
23	e26	e210	e15	e10	38	1.0	e6.4	e90	e1.6
24	e37	e334	e33	e7.3	25	.50	e6.4	e88	e1.5
25	e15	e22	e.90	e8.0	28	.60	e5.6	e85	e1.3
26	e12	e70	e2.3	e11	42	1.2	e7.0	e75	e1.4
27	e11	e60	e1.8	e12	47	1.5	e11	e42	e1.2
28	e15	e100	e4.1	e16	78	3.4	e7.8	e28	e.58
29	e23	e213	e13	---	---	---	12	47	1.5
30	e18	e170	e8.3	---	---	---	8.1	30	.73
31	e14	e90	e3.4	---	---	---	7.5	21	.46
TOTAL	505.1	---	402.14	332.2	---	158.74	604.6	---	2875.39

e Estimated

50048770 RIO PIEDRAS AT EL SEÑORIAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	6.6	22	.42	7.0	27	.80	22	1200	438
2	6.2	15	.32	8.0	37	.98	9.9	38	1.2
3	5.1	10	.15	7.2	27	.75	13	162	32
4	4.9	14	.18	5.4	12	.18	22	469	97
5	5.7	22	.42	4.6	10	.14	27	813	216
6	5.0	14	.18	4.7	10	.06	8.7	150	4.0
7	6.8	40	.67	4.3	12	.15	7.3	29	.57
8	5.5	14	.21	9.5	74	8.9	6.2	17	.30
9	5.9	22	.44	77	2230	2800	6.6	15	.28
10	5.8	19	.31	19	197	12	7.2	24	.60
11	5.7	18	.26	27	2240	475	6.2	22	.38
12	6.4	24	.64	11	64	3.0	5.3	16	.24
13	32	1080	451	16	163	20	5.2	14	.18
14	24	518	177	18	224	20	14	193	39
15	8.4	33	.83	10	49	1.9	16	119	9.1
16	7.4	23	.49	7.9	26	.54	7.7	25	.57
17	17	864	270	11	41	1.2	6.0	13	.22
18	17	352	132	8.2	29	.63	5.9	10	.16
19	20	292	81	9.8	39	1.2	6.5	30	.64
20	31	819	320	7.8	26	.53	5.3	20	.31
21	9.4	29	.76	7.0	23	.45	4.8	16	.20
22	9.5	19	.47	8.0	30	.72	5.6	13	.17
23	9.7	18	.47	9.2	36	1.1	5.5	11	.15
24	8.9	17	.40	8.6	33	.93	5.9	10	.18
25	64	1230	1800	8.2	32	.88	6.0	10	.15
26	16	221	44	7.4	719	13	5.7	10	.15
27	8.8	21	.49	5.8	14	.22	5.2	21	.38
28	6.7	24	.46	4.9	10	.13	5.2	10	.16
29	7.9	36	1.1	4.9	8	.11	5.2	11	.14
30	8.3	50	1.7	6.1	7	.12	5.2	16	.29
31	---	---	---	5.4	7	.10	---	---	---
TOTAL	375.6	---	3286.37	348.9	---	3365.72	262.3	---	842.72

RIO PUERTO NUEVO BASIN

50048770 RIO PIEDRAS AT EL SEÑORIAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	5.1	11	.15	7.6	22	.48	4.7	15	.19
2	5.1	10	.13	15	267	57	4.4	10	.11
3	5.7	9	.14	6.0	41	.63	16	295	78
4	5.6	9	.14	4.3	39	.44	12	180	22
5	16	200	27	3.8	34	.35	8.5	218	6.5
6	6.2	23	.42	4.0	24	.25	7.0	16	.34
7	13	168	24	5.0	27	.73	128	3810	6720
8	6.1	49	.81	3.6	12	.11	20	546	47
9	9.5	132	17	6.3	27	.97	6.2	39	.75
10	5.7	20	.40	14	280	73	3.7	22	.24
11	4.8	10	.14	6.4	15	.27	3.3	17	.15
12	4.4	9	.10	5.9	14	.24	3.6	14	.13
13	4.7	14	.21	10	169	15	26	3530	1070
14	6.1	18	.28	6.0	22	.49	6.9	27	.62
15	5.2	15	.21	5.8	10	.15	11	113	15
16	5.2	16	.23	5.3	9	.12	6.0	21	.36
17	9.1	63	4.1	5.8	8	.13	4.6	15	.20
18	11	117	11	8.3	46	2.7	15	269	26
19	5.6	9	.14	6.8	22	.39	6.2	138	2.8
20	4.7	10	.12	6.5	21	.33	5.3	51	.81
21	5.5	21	.54	6.7	20	.38	4.8	40	.46
22	5.5	13	.20	22	776	100	4.4	16	.20
23	6.7	25	.64	7.2	663	16	72	1410	2020
24	21	400	76	3.2	268	2.2	e39	e358	e38
25	7.1	18	.38	3.4	148	1.3	e7.2	e33	e.64
26	8.2	60	4.9	3.9	64	.60	e5.0	e22	e.27
27	6.8	19	.36	3.7	42	.43	40	1630	908
28	8.0	29	.74	4.1	18	.16	11	71	2.2
29	7.2	25	.68	4.3	10	.11	8.2	20	.43
30	7.7	29	.75	4.3	9	.10	32	1050	470
31	7.9	34	.78	5.4	20	.40	---	---	---
TOTAL	230.4	---	172.69	204.6	---	275.46	522.0	---	11431.40
YEAR	5719.7		62810.57						

e Estimated

50048770 RIO PIEDRAS AT EL SENORIAL, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1990

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. PERCENT FINER THAN .002 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .004 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .008 MM
APR 1988							
14...	2115	184	26100	13000	32	45	61
15...	0020	355	26000	24900	34	47	62
18...	1825	190	23100	11800	29	41	54
MAY							
09...	1300	411	60637	67289	29	43	54
AUG							
23...	1805	142	45427	17400	20	35	45
24...	1400	232	32045	20100	27	35	51
24...	1425	945	28845	73600	19	28	37
OCT							
25...	1355	221	37279	22200	28	39	53
29...	1610	180	4968	2410	21	45	43
NOV							
14...	1630	344	5279	4903	15	24	35
DEC							
30...	0330	170	37107	16731	22	34	44
JAN 1989							
20...	1610	161	10644	4630	8	15	24
FEB							
26...	1720	899	53703	130000	17	27	35
MAR							
10...	1255	230	38352	23830	17	27	37
27...	1250	67	5115	925	24	33	--
27...	1510	220	6884	4090	9	12	21

DATE	SED. SUSP. FALL DIAM. PERCENT FINER THAN .016 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN 1.00 MM
APR 1988							
14...	74	85	94	98	100	100	100
15...	76	90	95	98	100	100	100
18...	69	79	91	94	100	100	100
MAY							
09...	67	77	84	92	98	100	100
AUG							
23...	62	78	86	94	98	100	100
24...	63	71	77	87	95	100	100
24...	45	55	64	77	93	99	100
OCT							
25...	65	79	80	91	98	100	100
29...	59	71	72	84	95	100	100
NOV							
14...	44	51	58	69	85	98	100
DEC							
30...	57	69	78	90	98	100	100
JAN 1989							
20...	34	48	59	77	95	100	100
FEB							
26...	50	66	71	83	95	99	100
MAR							
10...	47	64	73	86	96	100	100
27...	61	73	83	89	95	100	100
27...	32	42	52	75	94	100	100

RIO PUERTO NUEVO BASIN

50048770 RIO PIEDRAS AT EL SENORIAL, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1990

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. PERCENT FINER THAN .002 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .004 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .008 MM
APR 1989							
28...	1445	481	44500	57800	18	26	34
MAY							
01...	1200	269	32100	23300	21	31	40
29...	1320	130	24800	8700	23	35	48
31...	1150	333	42500	38200	14	21	28
JUN							
01...	1532	70	4970	939	11	16	21
02...	1255	944	30800	78500	7	11	15
02...	1350	422	8310	9470	9	14	19
JUL							
18...	1550	673	24275	44100	19	29	39
27...	1530	439	19985	23700	14	23	32
AUG							
05...	1945	431	10070	11700	17	28	36
17...	1020	358	19000	18400	17	24	32
SEP							
07...	1735	536	34300	49600	14	20	26
OCT							
30...	1250	359	27700	26800	31	35	46
NOV							
09...	1325	376	18000	18300	24	36	47
DEC							
29...	0010	362	30000	29300	20	31	44
JUN 1990							
01...	1710	317	15200	13000	19	29	43
SEP							
07...	1335	612	20800	34400	17	23	38
13...	1425	209	16200	9100	--	38	52
27...	1340	275	58500	43400	21	31	40

DATE	SED. SUSP. FALL DIAM. PERCENT FINER THAN .016 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN 1.00 MM
APR 1989							
28...	48	56	62	75	94	100	100
MAY							
01...	53	62	72	82	96	100	100
29...	65	80	84	93	100	100	100
31...	40	51	57	65	96	100	100
JUN							
01...	28	36	41	60	84	95	98
02...	20	24	32	41	68	95	100
02...	28	36	41	56	85	98	100
JUL							
18...	51	61	70	79	90	98	100
27...	49	67	72	80	94	100	100
AUG							
05...	50	61	67	80	93	98	100
17...	43	52	61	75	91	100	100
SEP							
07...	35	43	50	64	84	98	100
OCT							
30...	61	75	83	92	98	100	100
NOV							
09...	60	73	81	90	97	100	100
DEC							
29...	57	72	81	91	98	100	100
JUN 1990							
01...	61	77	89	94	98	100	100
SEP							
07...	51	66	83	93	98	100	100
13...	70	84	97	99	100	100	100
27...	56	77	89	92	99	100	100

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 Senorial 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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
12...	1125	16	389	7.80	27.0	8.5	7.8	97	26	K73000	51000
DEC											
12...	1040	8.1	451	7.30	24.5	3.3	4.4	52	36	K610000	K140000
FEB 1990											
07...	1105	7.7	457	7.20	22.5	2.5	3.5	40	46	K60000	K130000
APR											
16...	0850	7.4	485	7.60	24.5	3.7	5.3	63	48	K1200000	360000
JUN											
19...	1250	6.8	466	7.10	31.0	12	3.2	42	94	K920000	270000
AUG											
14...	1205	7.1	473	7.60	32.0	18	3.2	43	91	120000	260000

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
12...	130	0	34	12	25	0.9	3.1	130	<0.5	18	25
DEC											
12...	--	--	--	--	--	--	--	160	--	--	--
FEB 1990											
07...	--	--	--	--	--	--	--	160	--	--	--
APR											
16...	150	2	39	12	30	1	4.6	190	<0.5	15	32
JUN											
19...	--	--	--	--	--	--	--	180	--	--	--
AUG											
14...	140	0	38	11	33	1	3.8	150	--	31	37

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
12...	0.10	31	226	10.0	11	0.69	0.11	0.80	0.69	0.81
DEC										
12...	--	--	--	--	19	0.15	0.05	0.20	3.8	1.2
FEB 1990										
07...	--	--	--	--	10	0.34	0.06	0.40	2.8	1.3
APR										
16...	0.10	33	243	4.48	20	0.54	0.06	0.60	5.9	0.0
JUN										
19...	--	--	--	--	15	0.16	0.04	0.20	2.2	3.9
AUG										
14...	0.40	28	272	5.21	44	0.25	0.05	0.30	2.0	4.3

K = non-ideal count

RIO PUERTO NUEVO BASIN

50048800 RIO PIEDRAS NEAR RIO PIEDRAS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
12...	1.5	2.3	10	0.34	<1	<100	10	<1	<1	<10
DEC										
12...	5.0	5.2	23	0.93	--	--	--	--	--	--
FEB 1990										
07...	4.1	4.5	20	0.93	--	--	--	--	--	--
APR										
16...	1.5	2.1	9.3	1.1	1	100	40	<1	<1	20
JUN										
19...	6.1	6.3	28	1.8	--	--	--	--	--	--
AUG										
14...	6.3	6.6	29	1.5	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
12...	600	4	120	<0.10	<1	<1	20	<0.010	1	0.07
DEC										
12...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
07...	--	--	--	--	--	--	--	--	--	--
APR										
16...	1400	3	280	0.10	<1	<1	20	<0.010	4	0.23
JUN										
19...	--	--	--	--	--	--	--	--	--	--
AUG										
14...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
JUN 1990										
19...	1250	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	0.15	<0.010	<0.010

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN 1990										
19...	<0.010	<0.01	<0.010	<0.010	0.010	0.06	0.01	<0.01	<0.01	<0.01

DATE	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 1990									
19...	<0.01	<0.10	<0.1	<1	<0.01	0.06	<0.01	<0.01	<0.01

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR

LOCATION.--Lat 18°23'48", long 66°03'24", Hydrologic Unit 21010005, on left bank, at bridge on Highway 1, 0.3 mi (0.5 km) southwest of the plaza in Río Piedras, and 0.4 mi (0.6 km) downstream from diversion for water supply.

DRAINAGE AREA.--12.5 mi² (32.4 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 (maximum discharge measurement only), 1959-64 (annual low-flow measurements only), July 1971 to September 1982, October 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 50 ft (15.2 m), from topographic map.

REMARKS.--Records fair except those for estimated daily discharge, which are poor. Low flow affected by diversions for water supply. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--14 years (1972-82,1988-90), 27.2 ft^3/s (0.770 m^3/s), 31.72 in/yr (806 mm/yr), 21,160 acre-ft/yr (26.1 hm^3/yr); median of yearly mean discharges, 26 ft^3/s (0.74 m^3/s), 18,800 acre-ft/yr (23 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 10,000 ft^3/s (283 m^3/s), Dec. 11, 1975, gage height, 21.02 ft (6.407 m), from rating curve extended above 3,000 ft^3/s (85.0 m^3/s) on basis of slope-area measurements; minimum daily discharge, 0.26 ft^3/s (0.007 m^3/s), May 19, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,800 ft^3/s (79.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 2	1400	*3,870	110	*10.39	3.167	May 9	unknown	3,380	95.7	9.68	2.950
Oct. 22	1345	3,440	97.4	9.78	2.981	Sept. 7	1520	3,380	95.7	9.69	2.954
Apr. 25	1250	2,770	78.4	8.73	2.661						

Minimum discharge, 5.2 ft^3/s (0.147 m^3/s), Aug. 17.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	87	22	30	10	20	10	8.4	38	14	10	7.8
2	502	24	21	22	10	17	9.5	14	14	11	21	8.1
3	59	20	20	23	11	19	8.7	13	15	11	9.5	34
4	74	21	18	20	9.7	23	8.3	11	27	14	8.4	99
5	165	27	14	17	9.0	23	8.2	9.6	163	23	14	24
6	36	21	14	14	8.6	21	8.3	9.1	21	13	8.4	6.6
7	28	23	14	14	13	17	8.8	7.8	17	18	14	315
8	66	31	15	14	16	17	7.9	e20	16	11	7.3	18
9	28	131	16	15	20	33	7.8	e250	15	33	8.1	12
10	24	67	17	13	16	17	7.9	e50	24	12	29	10
11	23	25	17	16	12	205	7.9	34	12	8.1	9.7	11
12	22	22	16	12	11	87	8.4	24	12	7.8	8.9	8.8
13	24	21	15	12	11	181	27	42	13	8.6	28	63
14	36	29	15	14	58	32	19	33	43	9.4	9.0	11
15	168	29	14	17	10	20	13	19	43	8.6	6.8	20
16	30	25	21	19	12	41	13	14	16	7.8	6.8	13
17	22	42	16	22	10	18	25	18	15	25	7.8	11
18	19	19	16	40	15	14	98	13	14	46	10	34
19	36	26	15	20	15	15	37	13	14	9.5	7.4	12
20	26	34	14	91	9.8	13	49	11	12	8.7	7.5	12
21	26	18	14	14	11	9.6	13	11	12	11	7.5	9.6
22	270	17	16	13	16	12	14	12	12	10	67	11
23	41	17	15	23	12	12	12	12	12	11	8.5	139
24	35	16	16	19	10	14	13	12	19	82	6.8	67
25	32	17	17	11	11	15	218	12	14	15	20	18
26	31	17	18	9.4	13	19	34	12	11	15	7.9	11
27	30	18	16	8.8	16	22	15	11	13	28	8.3	49
28	28	21	20	13	19	14	13	11	12	13	8.1	13
29	23	21	152	17	---	15	13	10	12	12	8.5	11
30	61	21	19	14	---	14	12	11	17	11	6.8	61
31	50	---	173	13	---	12	---	11	---	10	7.9	---
TOTAL	2063	907	806	600.2	395.1	991.6	739.7	738.9	678	517.5	388.9	1119.9
MEAN	66.5	30.2	26.0	19.4	14.1	32.0	24.7	23.8	22.6	16.7	12.5	37.3
MAX	502	131	173	91	58	205	218	250	163	82	67	315
MIN	19	16	14	8.8	8.6	9.6	7.8	7.8	11	7.8	6.8	6.6
AC-FT	4090	1800	1600	1190	784	1970	1470	1470	1340	1030	771	2220
CFSM	5.32	2.42	2.08	1.55	1.13	2.56	1.97	1.91	1.81	1.34	1.00	2.99
IN.	6.14	2.70	2.40	1.79	1.18	2.95	2.20	2.20	2.02	1.54	1.16	3.33

CAL YR 1989 TOTAL 16838.7 MEAN 46.1 MAX 1580 MIN 4.6 AC-FT 33400 CFSM 3.69 IN. 50.11
WTR YR 1990 TOTAL 9945.8 MEAN 27.2 MAX 502 MIN 6.6 AC-FT 19730 CFSM 2.18 IN. 29.60

e Estimated

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.-- OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
NOV. 20	0943	17.7	428	25.0
DEC. 14	0943	16.8	416	23.5
JAN. 05	1127	19.1	343	25.5
FEB. 02	0848	10.5	444	23.5
MAR. 09	1112	97.7	245	25.0
APR. 04	0922	9.48	454	25.0
MAY 11	1058	16.3	408	28.0
JUNE 12	0756	9.67	470	--
JULY 11	1238	8.82	406	30.5
AUG. 27	1133	9.15	470	29.5
SEPT 21	1225	9.97	441	29.0

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1988 to current year.

INSTRUMENTATION.-- USD-77 and automatic sediment sampler.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1988 to September 1990.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 13,000 mg/L Sep. 18, 1989; Minimum daily mean, 4 mg/L June 4, 1990.

SEDIMENT LOADS: Maximum daily mean, 165,000 tons (150,200 tonnes) Sep. 18, 1989; Minimum daily mean, 0.12 ton (0.11 tonne) June 28, 1990.

EXTREMES FOR WATER YEARS 1988-89-90.--

Water Year	Suspended-sediment concentration (mg/L) maximum	minimum	Suspended-sediment discharge (tons per day) maximum	minimum
1988	4,670 (May 09)	8 (Feb. 26)	39,900 (May 09)	.38 (Nov. 10)
1989	13,000 (Sep. 18)	9 (several days)	165,000 (Sep. 18)	.16 (May 19)
1990	3,600 (Dec. 29)	4 (Jun. 28)	15,100 (Oct. 02)	.12 (Jun. 28)

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	e14	___	___	18	55	2.7	103	976	2380
2	e18	---	---	15	23	.94	55	391	164
3	e50	---	---	17	13	.52	21	454	29
4	e30	---	---	17	13	.60	14	70	2.6
5	e70	---	---	14	12	.46	54	395	187
6	e25	---	---	16	12	.52	35	198	28
7	e18	---	---	15	12	.48	316	3750	10200
8	e17	---	---	18	59	4.4	e290	e2510	e7280
9	e18	---	---	15	25	1.0	e30	e225	e48
10	e16	---	---	13	11	.38	e25	e130	e8.8
11	e16	---	---	13	11	.38	e22	e112	e6.7
12	e15	---	---	13	11	.38	e20	e100	e5.4
13	e14	---	---	30	167	37	e19	e94	e4.8
14	e14	---	---	13	55	2.7	17	70	3.2
15	e25	---	---	8.1	30	.66	54	354	119
16	e30	---	---	15	84	22	20	90	4.9
17	e50	---	---	55	411	77	15	73	3.0
18	e40	---	---	42	379	71	13	65	2.3
19	21	18	1.0	16	81	4.7	32	176	29
20	15	17	.68	11	51	1.7	123	1080	817
21	28	138	36	9.1	35	.86	84	592	306
22	14	64	2.4	8.6	30	.70	35	171	18
23	25	137	20	38	278	64	27	122	8.9
24	36	225	53	172	1630	1500	24	118	7.9
25	59	406	125	86	641	301	26	135	10
26	18	94	5.0	133	1170	1130	53	330	81
27	15	70	2.8	445	3990	6860	34	199	21
28	21	113	9.6	84	516	276	30	164	14
29	18	80	3.9	31	171	16	23	135	8.3
30	15	70	2.8	18	88	4.4	22	123	7.8
31	19	80	4.1	---	---	---	104	847	1080
TOTAL	784	---	---	1398.8	---	10382.48	1740	---	22885.6

e Estimated

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	159	1540	1390	102	1100	387	18	104	5.1
2	76	576	178	48	278	38	20	103	5.6
3	40	226	26	122	1030	572	18	101	4.9
4	32	158	14	56	338	58	17	100	4.6
5	34	158	16	34	201	19	17	98	4.5
6	24	105	6.8	27	125	9.1	17	95	4.4
7	24	90	5.8	22	78	4.6	18	93	4.5
8	21	75	4.3	22	52	3.1	16	90	3.9
9	19	55	2.8	22	49	2.9	17	82	3.8
10	20	44	2.7	20	48	2.6	15	73	3.0
11	23	52	4.2	20	45	2.4	14	61	2.3
12	20	21	1.1	27	130	21	18	50	2.4
13	29	123	16	25	138	9.8	15	43	1.7
14	25	132	8.9	19	100	5.4	15	38	1.5
15	19	95	4.9	30	142	13	14	30	1.1
16	18	87	4.2	20	100	5.4	23	97	28
17	21	89	5.0	21	75	4.3	25	152	17
18	24	134	14	22	45	2.7	13	62	2.2
19	32	181	21	18	30	1.5	14	58	2.2
20	18	27	1.4	18	29	1.4	14	57	2.2
21	18	19	.92	19	25	1.3	11	56	1.7
22	16	19	.82	19	21	1.1	12	55	1.8
23	15	19	.76	18	19	.92	11	52	1.5
24	16	18	.78	19	16	.82	63	550	454
25	22	113	7.7	20	12	.64	36	272	55
26	15	78	3.2	19	8	.42	53	335	61
27	14	64	2.4	34	203	22	49	295	66
28	36	242	41	21	108	6.1	48	284	39
29	98	881	783	18	105	5.1	73	518	349
30	29	150	12	---	---	---	67	548	273
31	37	212	35	---	---	---	23	110	6.8
TOTAL	994	---	2614.68	882	---	1201.60	784	---	1413.7

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	17	78	3.6	24	140	9.1	13	35	1.2
2	16	70	3.0	24	128	8.3	13	28	.98
3	14	68	2.6	22	112	6.7	12	22	.72
4	15	65	2.6	20	104	5.6	12	20	.64
5	14	61	2.3	21	104	5.9	12	20	.64
6	11	50	1.5	21	104	5.9	13	21	.74
7	15	65	4.8	21	101	5.7	13	23	.80
8	14	62	2.3	21	98	5.6	17	63	4.0
9	13	51	1.8	485	4670	39900	15	68	2.8
10	11	32	.96	276	2430	7060	14	65	2.5
11	14	21	.80	121	741	574	19	85	4.4
12	18	66	5.6	43	164	19	26	135	9.5
13	13	61	2.3	26	138	9.7	23	138	8.6
14	256	1810	19900	36	239	34	27	150	13
15	408	3660	19400	22	148	8.8	35	193	25
16	79	428	135	18	118	5.7	30	171	22
17	100	863	773	18	100	4.7	20	99	5.3
18	172	1560	2130	16	90	3.9	17	80	3.7
19	106	716	284	16	74	3.2	26	137	13
20	46	262	34	18	62	3.0	35	245	29
21	46	280	50	15	50	2.0	73	529	262
22	37	205	20	15	33	1.3	27	105	7.7
23	34	190	17	13	21	.74	16	78	3.4
24	111	1020	889	12	20	.64	39	271	106
25	46	288	43	12	20	.64	16	82	3.5
26	40	227	26	14	19	.72	14	68	2.6
27	34	178	16	13	18	.64	12	55	1.8
28	30	157	13	14	35	1.5	37	261	109
29	27	140	10	14	58	2.2	13	61	2.1
30	27	140	10	15	50	2.0	12	48	1.6
31	---	---	---	14	45	1.7	---	---	---
TOTAL	1784	---	43784.16	1420	---	47692.88	651	---	648.22

RIO PUERTO NUEVO BASIN

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	24	133	15	14	40	1.5	218	2390	7180
2	14	65	2.5	13	39	1.4	45	267	37
3	11	48	1.4	35	198	30	33	182	16
4	12	40	1.3	19	130	6.7	26	145	10
5	17	85	6.5	13	60	2.1	27	120	8.7
6	13	61	2.6	13	60	2.1	22	111	6.6
7	108	1090	1290	23	159	22	24	122	7.9
8	12	99	3.2	14	200	7.6	83	882	753
9	11	97	2.9	17	127	6.3	126	1060	486
10	11	95	2.8	167	2330	11300	60	363	65
11	11	92	2.7	30	120	9.7	417	3030	7510
12	12	86	2.8	16	55	2.4	88	607	180
13	14	94	3.8	11	50	1.5	47	269	35
14	36	208	33	22	107	9.2	83	518	331
15	14	75	2.8	14	57	2.2	79	701	473
16	13	70	2.5	24	95	8.8	61	401	105
17	61	549	449	35	205	22	40	215	23
18	44	236	38	20	88	5.4	32	180	16
19	20	98	5.3	13	63	2.2	34	195	22
20	15	72	2.9	13	53	1.9	23	110	6.8
21	13	60	2.1	10	45	1.2	20	95	5.1
22	31	173	24	38	265	76	222	2160	12100
23	19	90	4.6	58	463	267	38	221	23
24	16	82	5.2	885	3300	20900	29	163	15
25	19	129	6.6	109	781	298	25	120	8.1
26	17	92	4.2	48	277	38	20	97	5.2
27	14	86	3.3	90	718	299	17	85	3.9
28	16	80	3.5	45	270	38	16	75	3.2
29	27	147	18	44	284	54	15	70	2.8
30	28	169	15	27	148	12	15	70	2.8
31	17	68	3.1	65	505	361	---	---	---
TOTAL	690	---	1960.6	1945	---	33789.2	1985	---	29441.1

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	40	133	11	29	140	9.8	33	136	9.2
2	39	123	8.8	20	88	4.0	33	139	9.4
3	42	149	13	18	30	1.3	36	133	11
4	47	186	20	16	47	1.8	34	110	7.7
5	37	107	6.4	17	46	1.9	32	85	5.7
6	34	90	4.4	18	46	2.0	33	80	5.2
7	32	78	3.4	17	48	1.8	36	80	6.0
8	48	192	37	41	221	32	33	79	4.9
9	36	95	4.9	26	152	11	39	117	11
10	72	542	478	19	79	3.6	34	108	6.1
11	36	182	9.8	33	188	42	34	98	5.0
12	36	130	6.7	21	106	6.5	31	78	3.4
13	36	120	5.8	149	1620	3830	30	68	2.6
14	37	63	3.4	63	378	144	30	64	2.2
15	37	92	5.0	35	165	14	36	80	4.5
16	32	80	3.5	31	152	11	36	95	4.9
17	33	62	2.8	188	1860	3210	57	286	69
18	33	48	2.2	39	205	22	33	105	4.3
19	76	370	285	33	163	13	30	88	3.1
20	36	98	5.3	36	172	15	31	75	2.8
21	37	88	5.2	50	303	51	33	68	2.8
22	48	206	27	40	255	35	70	427	210
23	46	175	17	30	190	18	54	246	38
24	41	158	12	28	182	16	84	475	220
25	80	660	541	26	158	14	41	135	8.7
26	123	1110	1460	21	139	11	40	131	8.7
27	43	110	10	21	149	11	34	75	3.0
28	54	270	42	18	151	9.0	51	201	39
29	59	325	122	20	148	10	39	112	6.8
30	61	295	58	21	138	10	79	477	195
31	85	871	1160	---	---	---	23	110	6.8
TOTAL	1496	---	4370.6	1124	---	7561.7	1239	---	916.8

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	33	68	2.6	24	60	2.6	11	60	2.1
2	35	83	4.8	20	60	2.1	8.7	41	1.1
3	30	59	1.9	17	59	1.8	8.6	45	1.2
4	30	55	1.6	19	56	1.8	11	48	1.7
5	30	51	1.7	18	63	2.4	12	59	2.2
6	29	62	2.8	24	84	4.6	26	122	11
7	30	49	1.9	15	43	1.2	18	95	4.4
8	60	301	76	35	237	33	15	70	3.1
9	41	148	14	35	188	43	21	111	9.1
10	47	178	19	7.1	33	.76	60	481	282
11	101	895	483	6.8	26	.58	21	115	6.8
12	51	431	66	4.9	22	.36	76	745	924
13	40	202	22	5.0	25	.42	76	688	279
14	26	68	2.8	9.5	45	1.3	24	124	9.4
15	20	40	1.3	---	210	34	14	64	2.4
16	18	34	1.0	---	1050	1190	14	52	2.0
17	15	40	.92	88	758	267	22	106	8.5
18	12	29	.62	43	280	60	18	120	8.2
19	13	30	.68	14	95	4.4	3.7	52	1.5
20	49	285	73	10	62	2.2	3.0	29	.86
21	31	172	9.8	9.5	48	1.4	3.4	52	1.7
22	22	145	5.5	10	31	1.0	3.8	58	2.0
23	21	112	3.9	12	43	1.9	4.3	70	2.8
24	21	85	3.0	8.5	44	1.2	4.9	76	3.9
25	28	93	6.1	8.6	40	1.1	5.4	118	7.3
26	23	72	2.7	90	2640	3250	6.0	196	19
27	19	65	2.1	88	1030	742	6.4	25	4.7
28	19	62	2.0	15	86	3.9	6.2	88	4.3
29	23	60	2.4	---	---	---	6.2	70	2.8
30	23	59	2.4	---	---	---	6.1	76	3.3
31	24	58	2.3	---	---	---	---	166	14
TOTAL	964	---	819.82	---	---	5656.02	---	---	1626.36

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	5.7	238	28	940	141	31	---	659	392
2	5.7	106	6.0	410	153	34	219	1510	3230
3	5.7	100	5.4	19	80	3.0	907	6330	39000
4	12	76	3.3	25	95	8.6	212	1400	2880
5	19	71	3.3	25	68	3.3	34	143	14
6	31	163	43	19	60	2.3	14	40	1.3
7	14	58	1.7	36	174	19	12	40	1.1
8	12	40	.90	---	52	2.4	12	43	1.2
9	12	30	.66	20	35	1.3	12	46	1.2
10	15	40	1.2	18	29	.94	13	50	1.5
11	12	39	.86	17	20	.64	97	1070	2000
12	13	35	.88	15	19	.52	15	53	1.7
13	20	72	4.6	---	18	.48	15	53	1.9
14	25	101	12	12	16	.34	15	58	2.0
15	13	30	.72	11	13	.26	14	52	1.7
16	12	28	.64	10	10	.18	15	48	1.6
17	12	27	.62	11	9	.18	117	889	2070
18	11	25	.56	11	9	.18	9.8	41	1.9
19	11	24	.56	10	9	.16	5.6	18	.22
20	12	23	.56	10	10	.18	5.4	18	.22
21	12	21	.50	10	10	.18	7.1	17	.28
22	11	20	.46	10	10	.18	9.7	28	1.2
23	11	20	.46	10	10	.18	6.1	20	.35
24	10	20	.40	11	10	.20	5.9	14	.18
25	9.9	20	.38	11	10	.20	7.0	13	.22
26	11	20	.44	52	293	161	7.9	13	.24
27	---	20	.38	29	110	9.2	8.9	12	.24
28	260	3750	12500	29	126	13	8.3	11	.22
29	283	640	173	30	128	16	---	10	.18
30	759	118	7.3	39	198	36	7.5	10	.18
31	---	---	---	202	2790	4980	---	---	---
TOTAL	---	---	12798.78	---	---	5325.10	---	---	49606.83

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	.64	---	33	3.2	17	80	3.5
2	---	649	845	---	22	2.0	26	133	11
3	8.8	29	.73	51	191	47	21	105	6.1
4	7.2	20	.32	37	200	19	16	51	2.1
5	6.7	20	.30	96	671	754	15	25	1.0
6	40	207	37	41	237	27	14	22	.84
7	126	949	655	63	400	131	132	908	2320
8	40	204	22	39	155	15	72	615	441
9	28	126	8.9	---	25	2.2	92	728	1130
10	24	100	5.6	84	488	229	239	1660	4780
11	570	5300	35400	73	467	130	41	300	89
12	44	225	36	52	290	38	13	59	2.2
13	172	1150	2020	97	808	750	14	57	2.6
14	42	191	22	59	345	54	---	113	18
15	25	104	5.9	118	859	577	37	271	143
16	24	100	5.4	85	511	130	21	105	16
17	29	129	9.9	162	1550	2330	20	88	4.6
18	114	1740	2900	97	803	676	1590	13000	165000
19	27	117	8.0	---	752	301	63	227	35
20	20	80	3.5	156	1430	1600	109	723	620
21	19	79	3.4	102	863	1010	69	357	344
22	32	156	24	50	196	27	23	55	3.2
23	35	202	42	68	428	113	173	1050	1320
24	23	93	4.8	---	682	432	144	977	1470
25	---	31	1.5	---	1090	2460	22	105	5.7
26	---	80	3.7	---	137	12	18	80	3.7
27	---	1480	2150	86	605	690	277	2470	12200
28	39	208	22	---	103	7.8	77	251	48
29	33	167	14	---	2580	5210	44	106	6.1
30	35	174	18	39	217	33	137	951	1670
31	---	409	120	20	95	4.9	---	---	---
TOTAL	---	---	44389.59	---	---	17815.1	---	---	191696.64

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	48	152	21	87	401	521	22	23	1.4
2	502	2880	15100	24	47	3.2	21	21	1.2
3	59	205	39	20	44	2.4	20	19	1.0
4	74	307	207	21	41	2.3	18	18	.83
5	165	1430	1990	27	58	4.8	14	15	.56
6	36	103	11	21	44	2.5	14	12	.44
7	28	66	5.1	23	56	4.3	14	10	.38
8	66	274	120	31	76	9.0	15	10	.39
9	28	59	4.6	131	985	1410	16	10	.42
10	24	52	3.4	67	264	175	17	10	.46
11	23	49	3.0	25	59	4.1	17	10	.46
12	22	47	2.8	22	47	2.8	16	10	.45
13	24	45	2.9	21	43	2.4	15	14	.57
14	36	104	16	29	172	15	15	16	.62
15	168	889	1770	29	70	5.8	14	13	.47
16	30	75	7.1	25	63	4.2	21	44	4.4
17	22	35	2.2	42	139	44	16	28	1.2
18	19	22	1.2	19	39	2.0	16	22	.95
19	36	105	27	26	65	6.3	15	17	.69
20	26	61	4.4	34	104	31	14	15	.55
21	26	58	4.0	18	29	1.4	14	14	.51
22	270	1510	8030	17	19	.87	16	13	.54
23	41	121	19	17	18	.82	15	14	.54
24	35	57	5.6	16	18	.81	16	14	.57
25	32	35	3.0	17	17	.75	17	13	.55
26	31	27	2.2	17	13	.57	18	12	.54
27	30	23	1.8	18	9	.45	16	11	.48
28	28	21	1.7	21	9	.52	20	15	1.0
29	23	21	1.3	21	20	1.2	152	3600	2380
30	61	2780	1060	21	28	1.6	19	37	1.9
31	50	920	485	---	---	---	173	950	3250
TOTAL	2063	---	28951.3	907	---	2261.09	806	---	5654.07

RIO PUERTO NUEVO BASIN

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	138	15	10	13	.36	20	64	4.0
2	22	188	11	10	16	.44	17	27	1.2
3	23	139	8.5	11	18	.59	19	20	1.0
4	20	93	5.1	9.7	15	.37	23	14	.91
5	17	66	3.1	9.0	12	.30	23	9	.53
6	14	59	2.1	8.6	10	.23	21	7	.41
7	14	52	1.9	13	19	.97	17	7	.33
8	14	45	1.6	16	32	1.5	17	13	1.8
9	15	34	1.4	20	42	2.2	33	89	13
10	13	28	1.0	16	33	2.1	17	32	1.6
11	16	31	1.5	12	16	.51	205	1120	1570
12	12	22	.75	11	16	.46	87	500	462
13	12	20	.66	11	16	.44	181	896	883
14	14	26	1.1	58	248	149	32	177	19
15	17	34	1.7	10	20	.55	20	107	5.6
16	19	68	6.1	12	20	.76	41	152	32
17	22	47	3.2	10	15	.42	18	43	2.2
18	40	875	386	15	23	1.1	14	32	1.2
19	20	181	10	15	31	1.6	15	104	5.5
20	91	714	666	9.8	19	.51	13	25	.87
21	14	25	.94	11	16	.46	9.6	20	.50
22	13	19	.65	16	252	12	12	23	.79
23	23	58	11	12	22	.71	12	19	.63
24	19	45	2.6	10	21	.56	14	19	.69
25	11	25	.73	11	18	.53	15	27	1.2
26	9.4	21	.52	13	38	1.5	19	41	2.3
27	8.8	16	.38	16	30	1.3	22	48	3.4
28	13	24	1.5	19	38	2.1	14	18	.69
29	17	56	3.2	---	---	---	15	198	11
30	14	23	.85	---	---	---	14	30	1.3
31	13	16	.56	---	---	---	12	23	.74
TOTAL	600.2	---	1150.64	395.1	---	183.57	991.6	---	3029.39

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	18	.48	8.4	14	.32	38	138	80
2	9.5	14	.35	14	14	.53	14	35	2.1
3	8.7	12	.27	13	14	.47	15	25	3.3
4	8.3	12	.27	11	12	.36	27	77	14
5	8.2	11	.26	9.6	11	.29	163	1310	2410
6	8.3	10	.22	9.1	10	.25	21	86	5.1
7	8.8	10	.23	7.8	9	.19	17	68	3.1
8	7.9	9	.19	e20	e40	e2.2	16	52	2.2
9	7.8	8	.17	e250	e1330	e894	15	38	1.4
10	7.9	7	.16	e50	e26	e3.5	24	68	8.4
11	7.9	6	.14	34	109	26	12	21	.67
12	8.4	6	.13	24	57	5.7	12	18	.56
13	27	79	19	42	140	32	13	17	.57
14	19	49	8.5	33	96	12	43	152	58
15	13	20	.70	19	41	2.5	43	142	23
16	13	17	.58	14	25	.94	16	24	1.1
17	25	74	23	18	39	2.1	15	15	.56
18	98	621	542	13	29	1.1	14	9	.33
19	37	156	82	13	17	.60	14	7	.25
20	49	212	120	11	13	.38	12	6	.20
21	13	23	.79	11	15	.43	12	6	.18
22	14	27	1.2	12	8	.27	12	6	.20
23	12	16	.55	12	9	.29	12	9	.28
24	13	13	.45	12	10	.31	19	28	2.6
25	218	888	3020	12	11	.34	14	23	.89
26	34	93	21	12	12	.39	11	12	.37
27	15	32	1.3	11	13	.37	13	8	.27
28	13	28	.97	11	15	.42	12	4	.12
29	13	22	.77	10	16	.43	12	6	.19
30	12	18	.57	11	13	.41	17	24	1.9
31	---	---	---	11	7	.21	---	---	---
TOTAL	739.7	---	3846.25	738.9	---	989.30	678	---	2621.84

e Estimated

RIO PUERTO NUEVO BASIN

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	29	1.2	10	15	.43	7.8	39	.83
2	11	26	.80	21	79	11	8.1	20	.46
3	11	22	.64	9.5	93	2.5	34	128	52
4	14	32	1.5	8.4	35	.81	99	263	293
5	23	72	9.1	14	53	3.9	24	76	14
6	13	24	.88	8.4	57	1.3	6.6	12	.20
7	18	76	7.2	14	39	2.4	315	1540	6590
8	11	135	4.5	7.3	11	.21	18	40	3.1
9	33	174	51	8.1	13	.31	12	30	1.5
10	12	43	1.6	29	96	35	10	62	1.7
11	8.1	11	.23	9.7	16	.49	11	44	1.6
12	7.8	10	.21	8.9	15	.39	8.8	13	.29
13	8.6	10	.24	28	270	47	63	379	236
14	9.4	10	.25	9.0	112	3.4	11	24	.74
15	8.6	10	.23	6.8	76	1.3	20	58	11
16	7.8	7	.15	6.8	62	1.2	13	29	1.9
17	25	79	15	7.8	53	1.1	11	21	.97
18	46	173	61	10	28	.89	34	123	40
19	9.5	16	.40	7.4	9	.17	12	18	.65
20	8.7	15	.37	7.5	36	.82	12	26	1.4
21	11	14	.43	7.5	9	.19	9.6	15	.38
22	10	13	.36	67	592	433	11	17	.56
23	11	19	.62	8.5	194	4.5	139	1080	2030
24	82	390	153	6.8	10	.17	67	338	418
25	15	28	1.4	20	56	9.0	18	49	12
26	15	31	1.9	7.9	11	.22	11	69	2.5
27	28	89	23	8.3	39	.87	49	265	127
28	13	22	.76	8.1	53	1.2	13	85	3.2
29	12	21	.67	8.5	51	1.2	11	18	.54
30	11	21	.60	6.8	46	.84	61	257	132
31	10	19	.51	7.9	38	.84	---	---	---
TOTAL	517.5	---	339.75	388.9	---	566.65	1119.9	---	9977.52
YEAR	9945.8		59571.37						

RIO PUERTO NUEVO BASIN

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1990

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. PERCENT FINER THAN .002 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .004 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .008 MM
NOV 1987							
24...	0830	49	844	112	53	69	82
27...	1340	229	1586	980	38	46	59
27...	1450	488	4558	6000	20	26	35
27...	1500	528	4388	6250	21	24	38
APR 1988							
15...	0920	165	1445	644	50	63	75
18...	2130	1007	11730	31900	28	41	55
MAY							
10...	1800	3377	19977	182000	22	36	47
AUG							
24...	1445	1835	34111	169000	13	20	26
SEP							
09...	1350	225	5320	3230	32	46	59
11...	1045	974	6647	17500	20	34	47
OCT							
31...	1520	538	23963	34800	31	44	58
NOV							
13...	1700	1650	22426	99900	12	18	21
FEB 1989							
16...	2215	792	3270	7000	11	15	26
26...	1820	862	35112	81700	12	24	31
APR							
28...	1540	2037	22600	124000	20	32	43
MAY							
31...	1610	1623	12381	54200	11	17	24

DATE	SED. SUSP. FALL DIAM. PERCENT FINER THAN .016 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN 1.00 MM
NOV 1987							
24...	86	87	95	96	97	98	100
27...	70	80	83	90	96	98	100
27...	45	50	56	65	79	91	97
27...	39	44	52	68	79	92	100
APR 1988							
15...	85	90	95	97	99	100	100
18...	69	76	90	97	99	100	100
MAY							
10...	59	69	77	87	96	100	100
AUG							
24...	33	41	48	62	79	91	97
SEP							
09...	75	88	93	97	99	100	100
11...	60	73	83	94	98	100	100
OCT							
31...	74	88	95	98	100	100	100
NOV							
13...	36	46	63	82	97	100	100
FEB 1989							
16...	39	51	63	77	88	95	98
26...	55	76	85	96	99	100	100
APR							
28...	55	66	73	83	94	99	100
MAY							
31...	31	39	44	57	70	91	97

RIO PUERTO NUEVO BASIN

50049000 RIO PIEDRAS AT RIO PIEDRAS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1990

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. PERCENT FINER THAN .002 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .004 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .008 MM
JUN 1989							
02...	1410	1560	13300	56000	7	14	19
11...	0255	1230	19000	63100	3	4	5
JUL							
18...	1555	1041	13200	37100	22	32	43
27...	1620	1127	9340	28400	16	26	34
AUG							
24...	1425	542	2849	4170	23	33	45
SEP							
07...	1915	1360	7177	26300	12	20	28
23...	1835	340	1219	1120	38	50	69
OCT							
30...	1350	429	9120	10600	17	29	40
31...	1500	326	10320	9080	22	34	46
NOV							
09...	1415	974	2880	7180	9	14	23
APR 1990							
25...	1340	2640	6250	44500	14	21	31
AUG							
22...	1345	820	4970	11000	11	19	31
SEP							
04...	2035	952	1590	4090	16	34	51
07...	1425	1630	6700	29500	32	36	59
07...	1515	2800	8000	60500	17	28	37
23...	1530	1530	24100	99500	8	45	53

DATE	SED. SUSP. FALL DIAM. PERCENT FINER THAN .016 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN 1.00 MM
JUN 1989							
02...	26	32	39	46	63	89	94
11...	8	10	12	18	36	49	58
JUL							
18...	55	66	75	85	92	96	98
27...	47	60	69	80	90	96	98
AUG							
24...	60	71	80	90	95	98	100
SEP							
07...	37	49	61	77	91	97	99
23...	83	95	96	98	100	100	100
OCT							
30...	60	74	81	95	98	100	100
31...	63	79	92	98	100	100	100
NOV							
09...	37	48	60	77	89	96	99
APR 1990							
25...	41	51	56	63	75	90	96
AUG							
22...	52	55	98	99	100	100	100
SEP							
04...	77	86	93	96	98	98	100
07...	70	78	93	96	98	99	100
07...	53	70	98	99	100	100	100
23...	67	83	94	99	99	100	100

50049100 RIO PIEDRAS AT HATO REY, PR

LOCATION.--Lat 18°24'34", long 66°04'10", Hydrologic Unit 21010005, at bridge on Avenida Piñeiro at Expreso Las Américas, 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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 8,640 ft³/s (245 m³/s), June 17, 1970, gage height 20.77 ft (6.33 m), from floodmarks, from rating curve extended above 3,000 ft³/s (85.0 m³/s), on basis of slope-area and contracted opening measurements of peak flow; minimum daily discharge 8.4 ft³/s (0.24 m³/s), May 23, 1989.

EXTREMES FOR WATER YEARS 1988-90.--Peak discharge greater than base discharge of 2,500 ft³/s (70.8 m³/s) and maximums (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Aug. 24,1988	1615	*7,270	206	*19.24	5.864	Dec. 31,1989	1800	2,740	77.6	13.57	4.136
Sept. 18,1989	1030	*7,970	226	*19.92	6.072	Apr. 25,1990	1345	3,050	86.4	14.08	4.292
Oct. 2,1989	1415	3,040	86.1	14.07	4.288	May 9,1990	1430	3,420	96.8	14.64	4.462
Oct. 22,1989	1400	*3,610	102	*14.92	4.548	Sept. 7,1990	1545	3,420	96.8	14.64	4.462

Minimum daily discharge, 11 ft³/s (0.312 m³/s), Jan. 11, 1988; 8.4 ft³/s (0.238 m³/s) May 23,1989; 9.5 ft³/s (0.269 m³/s), July 11,1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					187	22	21	24	18	36	17	262
2					80	24	19	24	17	22	17	62
3					209	21	19	23	16	21	48	44
4					91	21	21	23	16	22	17	42
5					47	21	21	23	16	28	13	41
6					31	21	21	23	16	28	14	35
7					32	22	24	23	15	301	28	34
8					27	20	20	26	17	27	14	125
9					26	20	20	703	14	25	15	246
10					25	22	20	426	16	25	256	95
11					25	22	21	157	19	27	35	541
12					35	25	26	26	21	26	18	140
13					27	22	18	22	20	27	15	63
14					23	24	202	38	30	53	27	120
15					33	23	876	21	31	22	17	102
16					24	34	132	17	26	22	32	77
17					25	36	180	18	22	81	45	41
18					26	19	255	19	15	50	20	34
19					24	19	131	18	28	23	16	45
20					23	20	38	39	59	20	16	31
21					23	19	39	19	127	19	15	28
22					22	20	29	22	37	45	62	236
23					22	19	28	22	24	24	78	52
24					24	104	249	19	59	22	1030	39
25					21	41	59	23	22	23	160	34
26				12	22	63	48	24	20	20	73	30
27				11	44	60	26	20	20	18	159	31
28				45	23	48	23	21	131	22	99	31
29				137	21	99	24	21	30	32	88	30
30				32	---	88	26	23	23	30	54	30
31				51	---	22	---	18	---	19	113	---
TOTAL				---	1242	1041	2636	1925	925	1160	2611	2721
MEAN				---	42.8	33.6	87.9	62.1	30.8	37.4	84.2	90.7
MAX				---	209	104	876	703	131	301	1030	541
MIN				---	21	19	18	17	14	18	13	28
AC-FT				---	2460	2060	5230	3820	1830	2300	5180	5400
CFSM				---	2.82	2.21	5.78	4.09	2.03	2.46	5.54	5.97
IN.				---	3.04	2.55	6.45	4.71	2.26	2.84	6.39	6.66

50049100 RIO PIEDRAS AT HATO REY, PR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37	29	18	16	18	26	40	37	161	19	22	29
2	35	21	17	18	17	23	20	36	331	97	20	41
3	40	20	21	15	16	23	23	19	851	14	41	34
4	58	18	17	15	18	23	25	24	253	12	20	29
5	29	24	16	15	17	22	28	26	52	12	67	29
6	31	38	16	16	24	36	49	17	31	20	23	28
7	26	e18	21	14	15	23	14	46	27	92	39	144
8	96	e50	16	63	33	21	13	15	26	15	18	117
9	24	e32	24	25	41	30	13	14	24	10	17	170
10	69	e22	19	35	19	85	16	11	25	9.5	48	291
11	20	e36	18	160	20	22	15	13	101	465	39	113
12	24	e24	17	91	15	120	17	11	25	74	19	37
13	22	e190	17	44	15	127	25	12	21	175	60	37
14	21	e100	16	23	15	29	29	12	19	43	18	87
15	22	e50	19	20	52	20	15	11	17	22	58	59
16	20	e35	17	25	243	22	12	12	16	21	23	60
17	22	e240	51	21	141	26	12	11	93	29	155	44
18	20	e50	16	19	55	37	12	11	61	116	83	1830
19	67	e38	14	20	26	20	12	10	19	39	86	84
20	21	e41	18	62	22	28	12	9.4	17	20	183	188
21	22	e66	18	23	21	21	11	9.1	20	19	87	97
22	31	e56	65	19	21	17	11	9.0	21	48	36	32
23	20	20	39	18	23	17	11	8.4	19	38	61	219
24	20	19	88	19	17	19	11	8.5	16	18	121	178
25	84	22	23	21	18	21	12	8.9	17	17	207	39
26	131	27	20	17	126	16	12	71	16	16	29	32
27	24	21	16	17	164	49	11	20	16	122	94	241
28	41	18	53	17	31	20	334	28	16	28	23	90
29	65	17	22	19	---	16	289	23	16	21	412	21
30	48	17	78	17	---	17	27	74	15	20	67	88
31	90	---	23	22	---	29	---	337	---	53	34	---
TOTAL	1280	1359	833	926	1243	1005	1131	954.3	2342	1704.5	2210	4488
MEAN	41.3	45.3	26.9	29.9	44.4	32.4	37.7	30.8	78.1	55.0	71.3	150
MAX	131	240	88	160	243	127	334	337	851	465	412	1830
MIN	20	17	14	14	15	16	11	8.4	15	9.5	17	21
AC-FT	2540	2700	1650	1840	2470	1990	2240	1890	4650	3380	4380	8900
CFSM	2.72	2.98	1.77	1.97	2.92	2.13	2.48	2.03	5.14	3.62	4.69	9.84
IN.	3.13	3.33	2.04	2.27	3.04	2.46	2.77	2.34	5.73	4.17	5.41	10.98

WTR YR 1989 TOTAL 19475.8 MEAN 53.4 MAX 1830 MIN 8.4 AC-FT 38630 CFSM 3.51 IN. 47.66

e Estimated

50049100 RIO PIEDRAS AT HATO REY, PR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	164	33	46	23	38	14	22	45	12	17	10
2	429	45	29	27	19	17	13	18	16	10	29	10
3	51	33	31	28	24	15	13	17	15	10	15	43
4	73	46	29	25	17	16	15	16	22	16	15	121
5	185	66	20	22	16	15	14	15	302	17	24	95
6	27	55	20	17	13	14	15	15	23	16	15	20
7	19	48	20	17	24	14	16	14	16	15	21	426
8	91	124	20	17	30	14	15	136	16	11	15	30
9	20	222	18	19	39	58	16	328	16	36	18	22
10	14	138	18	16	33	18	15	41	38	11	58	16
11	12	47	19	26	17	360	14	36	13	9.5	16	19
12	13	37	18	17	14	199	15	37	13	9.8	15	13
13	16	34	19	16	14	353	93	54	13	11	63	143
14	78	50	17	18	129	77	41	33	61	12	16	19
15	225	48	17	25	15	35	16	19	46	11	13	25
16	56	39	35	27	19	91	14	16	14	10	13	21
17	37	116	15	34	18	32	31	25	19	34	15	17
18	32	33	15	87	25	25	181	22	12	64	20	45
19	61	45	18	40	23	29	62	16	13	15	13	16
20	46	78	16	197	13	23	80	16	13	14	14	16
21	63	28	15	30	21	15	20	16	12	14	15	14
22	380	25	14	25	36	25	20	16	11	14	106	18
23	93	25	14	74	21	16	18	16	12	15	19	143
24	75	22	14	69	16	16	18	16	24	168	15	81
25	65	24	13	19	17	14	273	16	12	20	54	18
26	64	25	12	17	23	17	44	16	11	18	13	14
27	61	28	13	16	24	28	20	14	12	109	11	49
28	56	33	22	25	32	19	18	14	11	18	11	12
29	48	33	284	37	---	30	19	14	11	16	11	11
30	103	33	19	29	---	28	19	13	16	15	11	155
31	87	---	261	26	---	18	---	13	---	16	11	---
TOTAL	2607	1744	1108	1088	715	1669	1162	1060	858	767.3	702	1642
MEAN	84.1	58.1	35.7	35.1	25.5	53.8	38.7	34.2	28.6	24.8	22.6	54.7
MAX	429	222	284	197	129	360	273	328	302	168	106	426
MIN	12	22	12	16	13	14	13	13	11	9.5	11	10
AC-FT	5170	3460	2200	2160	1420	3310	2300	2100	1700	1520	1390	3260
CFSM	5.53	3.82	2.35	2.31	1.68	3.54	2.55	2.25	1.88	1.63	1.49	3.60
IN.	6.38	4.27	2.71	2.66	1.75	4.08	2.84	2.59	2.10	1.88	1.72	4.02

CAL YR 1989 TOTAL 21462.8 MEAN 58.8 MAX 1830 MIN 8.4 AC-FT 42570 CFSM 3.87 IN. 52.53
WTR YR 1990 TOTAL 15122.3 MEAN 41.4 MAX 429 MIN 9.5 AC-FT 30000 CFSM 2.73 IN. 37.01

50049100 RIO PIEDRAS AT HATO REY, PR

WATER-QUALITY RECORDS

LOCATION.--Lat 18°24'34", long 66°04'10", at bridge on Avenida Piñeiro at Expreso Las Americas, 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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
13...	1245	15	427	7.60	29.0	6.3	4.8	61	61	K1100000	320000
DEC											
12...	1200	17	490	7.70	26.0	1.2	6.6	80	26	K80000	33000
FEB 1990											
15...	1205	19	459	7.50	24.0	1.4	3.9	46	31	K176000	49000
APR											
16...	1050	13	517	7.80	28.0	12	4.8	61	35	K180000	K100000
JUN											
21...	1150	12	528	7.70	31.5	3.1	6.5	87	44	560000	230000
AUG											
20...	1135	14	531	7.80	30.0	3.6	4.7	61	38	K600000	K900000

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
13...	130	0	34	10	27	1	4.1	150	<0.5	20	28
DEC											
12...	--	--	--	--	--	--	--	180	--	--	--
FEB 1990											
15...	--	--	--	--	--	--	--	170	--	--	--
APR											
16...	160	0	43	12	33	1	4.0	180	<0.5	14	35
JUN											
21...	--	--	--	--	--	--	--	170	--	--	--
AUG											
20...	160	0	46	12	35	1	4.3	180	--	18	43

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
13...	0.10	25	238	9.64	10	0.51	0.09	0.60	2.0	1.7
DEC										
12...	--	--	--	--	18	0.55	0.25	0.80	2.5	1.1
FEB 1990										
15...	--	--	--	--	7	0.73	0.17	0.90	2.0	1.3
APR										
16...	0.10	32	265	17.8	56	0.55	0.15	0.70	2.8	1.4
JUN										
21...	--	--	--	--	14	0.45	0.35	0.80	2.0	0.70
AUG										
20...	0.10	31	297	11.2	9	0.28	0.22	0.50	0.64	4.0

K = non-ideal count

50049100 RIO PIEDRAS AT HATO REY, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
13...	3.7	4.3	19	0.84	1	200	30	<1	<1	20
DEC										
12...	3.6	4.4	19	0.85	--	--	--	--	--	--
FEB 1990										
15...	3.3	4.2	19	0.58	--	--	--	--	--	--
APR										
16...	4.2	4.9	22	0.91	2	200	30	<1	2	<10
JUN										
21...	2.7	3.5	15	0.80	--	--	--	--	--	--
AUG										
20...	4.6	5.1	23	1.0	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
13...	850	4	110	<0.10	<1	2	40	<0.010	5	0.16
DEC										
12...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
15...	--	--	--	--	--	--	--	--	--	--
APR										
16...	2400	1	380	0.10	<1	1	20	<0.010	2	0.10
JUN										
21...	--	--	--	--	--	--	--	--	--	--
AUG										
20...	--	--	--	--	--	--	--	--	--	--

50049310 QUEBRADA JOSEFINA AT PIÑERO AVENUE, PR

LOCATION.--Lat 18°24'34", long 66°04'31" Hydrologic Unit 21010005, on right bank, 75 ft. (23 m) downstream from bridge at highway 17, Piñero Avenue, 1.6 mi (2.6 km), northwest from Río Piedras Plaza, 0.8 mi (1.3 km) north from University of Puerto Rico Medical Center and 0.4 mi (0.6 km) upstream from confluence with Río Piedras.

DRAINAGE AREA.--19.0 m^2 (49.2 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1988 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 13.1 ft (4.0 m), from topographic map.

REMARKS.--Record fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,320 ft^3/s (122 m^3/s), Sept. 18, 1989, gage-height 8.69 ft (2.649 m) from rating curve extended above 100 ft^3/s (2.83 m^3/s), on basis of step-backwater analysis; minimum discharge, 0.82 ft^3/s (0.023 m^3/s), May 27, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,800 ft^3/s (51.0 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 22	1330	2,440	69.1	6.66	2.030	May 9	1345	*2,900	82.1	*7.20	2.194
Nov. 9	1315	2,100	59.5	6.23	1.899	Sept. 30	1730	2,390	67.7	6.60	2.012

Minimum daily discharge, 1.1 ft^3/s (0.031 m^3/s), Aug. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	30	7.3	8.7	5.4	19	6.3	6.6	4.7	5.4	1.8	2.2
2	16	14	7.5	3.5	4.0	4.8	7.1	4.9	2.2	4.1	6.7	2.6
3	14	12	6.4	5.0	11	3.0	7.2	2.2	4.1	5.0	1.5	10
4	15	17	5.7	4.1	4.2	3.6	4.5	2.2	4.4	9.2	1.5	3.3
5	16	28	5.0	4.2	2.7	4.1	3.6	2.2	77	3.2	3.9	32
6	10	16	4.6	4.0	2.7	2.8	4.0	2.2	3.0	5.5	1.2	3.6
7	11	12	4.2	3.3	8.8	3.0	3.6	2.4	1.9	3.1	2.8	75
8	26	42	5.0	3.1	20	4.3	2.5	39	2.5	2.7	2.5	4.9
9	8.3	78	4.6	6.1	15	17	2.6	105	2.7	5.8	1.5	14
10	8.7	22	4.9	3.4	12	7.8	2.3	7.1	9.8	2.4	10	4.7
11	8.5	7.7	4.1	8.7	4.0	56	2.7	2.8	2.1	2.4	1.1	11
12	9.2	6.3	4.0	2.6	3.6	35	2.6	13	2.1	2.4	2.6	3.7
13	10	7.4	3.6	2.8	4.3	50	13	9.7	2.3	4.8	27	21
14	40	12	3.2	2.9	24	17	2.8	6.4	11	3.7	2.5	3.1
15	42	6.8	3.4	9.9	5.3	12	2.3	3.1	12	4.4	2.0	5.7
16	6.1	8.1	12	6.6	8.1	16	3.2	3.0	2.3	2.5	1.8	12
17	7.7	22	2.8	9.8	7.9	2.6	5.0	7.6	7.1	13	2.6	5.5
18	6.9	5.5	3.3	22	12	2.2	15	4.9	2.6	12	4.2	16
19	6.7	11	3.7	20	4.4	2.6	5.0	3.1	2.6	3.4	2.1	3.1
20	7.4	21	3.1	47	4.3	3.9	6.8	3.0	3.0	3.0	2.1	4.7
21	18	6.3	2.9	4.0	10	2.4	5.1	2.6	3.0	3.0	2.2	5.7
22	82	6.3	2.9	4.9	11	10	3.4	2.5	3.0	2.7	9.4	15
23	7.9	9.8	3.5	21	7.7	2.3	3.2	2.4	3.1	2.6	2.8	7.1
24	6.2	12	3.0	23	3.7	6.8	4.6	2.2	8.0	36	2.4	7.2
25	7.2	13	4.2	4.7	4.7	3.4	11	2.2	3.2	3.5	15	3.0
26	8.2	12	2.5	4.7	6.1	5.3	6.4	2.2	2.6	3.3	2.3	2.8
27	7.7	12	2.3	3.7	3.8	3.8	2.8	2.2	2.6	37	2.5	3.2
28	7.3	11	5.8	3.9	11	3.9	3.6	2.4	2.6	2.0	2.3	4.1
29	16	7.7	34	8.8	---	5.0	4.1	2.1	2.9	1.8	2.1	3.4
30	12	12	4.6	5.7	---	8.6	3.8	3.2	7.2	1.8	2.0	107
31	13	---	64	2.7	---	4.5	---	2.0	---	1.6	1.6	---
TOTAL	469.0	480.9	228.1	264.8	221.7	322.7	150.1	256.4	197.6	193.3	126.0	396.6
MEAN	15.1	16.0	7.36	8.54	7.92	10.4	5.00	8.27	6.59	6.24	4.06	13.2
MAX	82	78	64	47	24	56	15	105	77	37	27	107
MIN	6.1	5.5	2.3	2.6	2.7	2.2	2.3	2.0	1.9	1.6	1.1	2.2
AC-FT	930	954	452	525	440	640	298	509	392	383	250	787
CFSM	3.94	4.17	1.92	2.22	2.06	2.71	1.30	2.15	1.72	1.62	1.06	3.44
IN.	4.54	4.66	2.21	2.57	2.15	3.13	1.45	2.48	1.91	1.87	1.22	3.84

CAL YR 1989 TOTAL 5521.8 MEAN 15.1 MAX 664 MIN 1.8 AC-FT 10950 CFSM 3.94 IN. 53.49
WTR YR 1990 TOTAL 3307.2 MEAN 9.06 MAX 107 MIN 1.1 AC-FT 6560 CFSM 2.36 IN. 32.04

50049310 QUEBRADA JOSEFINA AT PINERO AVENUE, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.-- OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
NOV. 21	0930	6.44	357	25.5
DEC. 14	1514	6.86	374	30.5
JAN. 18	1250	2.88	364	27.0
FEB. 07	1100	10.4	372	25.5
MAR. 23	1323	2.93	377	33.0
APR. 16	1435	5.1	372	33.0
MAY 16	1502	2.96	428	34.0
JUNE 14	1320	4.14	403	34.5
JULY 20	0943	3.57	611	29.0
AUG. 30	1214	2.24	392	33.0
SEPT. 26	1247	1.54	539	30.0

RIO PUERTO NUEVO BASIN

50049310 QUEBRADA JOSEFINA AT PINERO AVENUE, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1988 to 1989.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: February 1988 to September 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 397 mg/L September 18, 1989; Minimum daily mean, 2 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 1,390 tons (1,250 tonnes) September 18, 1989; Minimum daily mean, 0.0 ton (0.0 tonne) several days.

EXTREMES FOR WATER YEARS 1988-89.--

Water Year	Suspended-sediment concentration (mg/L) maximum	Suspended-sediment concentration (mg/L) minimum	Suspended-sediment discharge (tons per day) maximum	Suspended-sediment discharge (tons per day) minimum
1988	297 (Apr. 15)	2 (several days)	461 (Aug. 24)	0.0 (several days)
1989	397 (Sep. 18)	2 (several days)	1,390 (Sep. 18)	0.0 (several days)

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	---	---	---	---	---	---	6.0	13	.59
2	---	---	---	---	---	---	6.2	12	.20
3	---	---	---	---	---	---	4.3	5	.06
4	---	---	---	---	---	---	4.3	5	.06
5	---	---	---	---	---	---	4.3	5	.06
6	---	---	---	---	---	---	4.0	5	.06
7	---	---	---	---	---	---	4.2	5	.06
8	---	---	---	---	---	---	4.3	5	.06
9	---	---	---	---	---	---	4.1	5	.06
10	---	---	---	---	---	---	4.2	5	.06
11	---	---	---	---	---	---	4.3	5	.06
12	---	---	---	---	---	---	3.7	5	.04
13	---	---	---	---	---	---	3.6	6	.06
14	---	---	---	---	---	---	3.2	8	.06
15	---	---	---	---	---	---	3.1	20	.16
16	---	---	---	---	---	---	3.0	4	.04
17	---	---	---	---	---	---	8.8	33	3.7
18	---	---	---	---	---	---	3.6	5	.04
19	---	---	---	---	---	---	5.5	5	.08
20	---	---	---	---	---	---	6.6	12	.22
21	---	---	---	---	---	---	4.3	4	.04
22	---	---	---	2.7	e5	e0.04	4.3	4	.04
23	---	---	---	5.0	10	.14	4.6	5	.06
24	---	---	---	4.9	15	.20	22	65	18
25	---	---	---	5.1	18	.24	4.4	8	.10
26	---	---	---	4.6	20	.26	18	62	6.6
27	---	---	---	9.2	24	1.5	20	57	5.6
28	---	---	---	3.8	3	.04	11	18	.54
29	---	---	---	4.3	22	.26	35	91	24
30	---	---	---	---	---	---	8.9	16	.38
31	---	---	---	---	---	---	3.6	6	.06
TOTAL	---	---	---	---	---	---	227.4	---	61.15

e Estimated

50049310 QUEBRADA JOSEFINA AT PINERO AVENUE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	5.7	6	.10	4.7	10	.12	5.7	8	.12
2	4.6	5	.06	4.9	8	.10	4.6	8	.10
3	4.3	5	.06	4.8	7	.10	4.1	9	.10
4	4.3	5	.06	4.4	6	.08	4.6	10	.12
5	4.7	6	.08	4.1	5	.06	4.6	10	.12
6	4.7	7	.08	3.6	5	.04	3.8	10	.10
7	7.1	22	1.4	3.1	5	.04	3.7	6	.06
8	3.6	8	.08	3.1	5	.04	4.8	20	.26
9	4.4	6	.08	152	172	389	3.1	6	.06
10	5.0	5	.06	70	123	69	4.7	12	.16
11	5.8	5	.08	34	56	33	5.2	15	.22
12	8.5	23	3.0	3.3	4	.04	6.1	6	.10
13	3.0	4	.04	3.6	4	.04	5.8	6	.10
14	49	41	88	14	40	14	15	59	11
15	191	297	263	2.2	3	.02	4.3	4	.04
16	21	56	13	2.4	3	.02	4.6	5	.06
17	49	2	.36	3.1	4	.04	5.0	8	.10
18	49	141	39	3.5	4	.04	4.0	10	.24
19	25	60	13	4.3	4	.04	8.6	33	4.9
20	11	24	1.2	12	41	6.4	25	44	28
21	7.0	12	.22	2.6	5	.04	7.9	24	2.2
22	8.0	13	.28	3.4	4	.04	2.0	2	.02
23	9.1	15	.36	6.7	20	.36	1.9	2	.02
24	92	132	134	7.3	10	.20	7.1	23	3.4
25	13	39	3.0	5.6	10	.16	3.3	15	.14
26	8.0	20	.44	5.7	10	.16	1.8	2	.00
27	6.0	10	.16	4.1	6	.06	2.2	2	.02
28	4.4	7	.08	4.8	6	.08	59	53	60
29	5.9	15	.24	4.6	6	.08	2.2	4	.02
30	6.1	10	.16	5.5	6	.08	2.0	4	.02
31	---	---	---	4.9	6	.08	---	---	---
TOTAL	620.2	---	561.68	392.3	---	513.56	216.7	---	111.80

50049310 QUEBRADA JOSEFINA AT PINERO AVENUE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	7.1	25	1.8	2.9	5	.04	2.9	10	.08
2	2.4	3	.02	4.0	5	.06	2.7	10	.08
3	3.1	4	.04	18	64	6.3	2.5	3	.02
4	3.3	4	.04	2.7	5	.04	2.6	3	.84
5	8.9	39	4.4	2.4	3	.02	2.7	3	.02
6	6.7	16	4.7	2.8	3	.02	2.6	4	.02
7	87	76	85	11	40	4.6	2.1	2	.02
8	1.6	2	.00	2.8	10	.08	22	67	23
9	1.6	4	.02	4.3	20	.24	70	192	63
10	2.5	4	.02	33	84	43	28	101	12
11	4.0	1	.02	4.5	20	.24	86	194	81
12	3.0	3	.02	2.0	2	.02	25	82	14
13	4.0	10	.10	2.0	2	.02	16	49	3.7
14	9.1	33	3.7	6.8	20	.91	33	78	22
15	2.6	3	.02	2.1	2	.02	9.1	15	.36
16	2.5	3	.02	6.7	22	1.9	10	28	1.8
17	4.0	5	.06	13	45	4.9	6.5	12	.22
18	9.7	28	3.5	2.0	3	.02	6.7	12	.22
19	4.0	5	.06	1.7	2	.00	9.3	20	.50
20	3.9	4	.04	1.6	2	.00	6.7	12	.22
21	3.9	4	.04	2.6	10	.08	8.6	15	.34
22	10	35	3.6	17	78	17	21	52	13
23	1.7	2	.00	7.4	20	2.2	5.1	7	.10
24	2.5	3	.02	344	246	461	9.8	31	4.4
25	2.3	5	.04	14	30	1.1	5.3	10	.14
26	3.8	20	8.4	5.7	10	.16	5.8	10	.16
27	1.8	2	.00	16	47	4.1	6.4	10	.18
28	1.9	2	.02	12	35	4.0	7.0	12	.22
29	5.1	20	.28	19	61	25	7.3	12	.24
30	5.5	20	.30	2.5	3	.02	7.6	12	.24
31	2.8	3	.02	7.0	22	2.9	---	---	---
TOTAL	212.3	---	116.30	573.5	---	579.99	430.3	---	242.12

50049310 QUEBRADA JOSEFINA AT PINERO AVENUE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	11	40	5.5	2.9	5	.04	2.9	3	.02
2	7.4	24	2.0	3.1	5	.04	2.7	3	.02
3	9.2	23	1.6	3.1	5	.04	7.2	21	1.6
4	30	97	20	3.3	5	.04	3.7	4	.04
5	5.1	10	.14	3.4	5	.04	3.7	4	.04
6	5.5	10	.14	9.1	25	5.2	3.7	4	.04
7	3.7	4	.04	4.8	10	.12	10	26	1.1
8	38	78	40	23	66	17	4.3	6	.06
9	2.5	3	.02	3.9	5	.06	10	34	3.2
10	3.8	10	.10	4.5	6	.08	9.0	31	1.5
11	4.4	5	.06	4.0	5	.06	5.8	10	.16
12	8.5	53	2.9	7.3	19	1.6	5.0	8	.10
13	5.1	14	1.2	60	67	79	5.2	8	.12
14	7.5	17	1.0	4.9	6	.08	3.1	4	.04
15	5.3	15	.22	4.8	6	.08	5.8	15	.24
16	3.3	5	.04	14	37	2.6	4.3	12	.14
17	3.7	5	.04	23	74	15	15	49	9.4
18	2.6	4	.02	6.3	10	.18	5.7	8	.12
19	15	39	12	5.7	10	.16	3.5	5	.04
20	3.6	6	.06	5.6	10	.16	9.3	30	4.1
21	5.6	15	.22	14	52	3.0	9.6	51	4.3
22	9.9	29	2.1	12	45	5.1	22	104	12
23	7.1	10	.20	3.1	4	.04	9.5	25	1.4
24	5.7	12	.18	2.6	3	.02	26	101	12
25	16	40	9.8	5.1	20	.28	12	31	3.5
26	6.3	17	1.4	9.4	31	2.9	9.2	20	1.4
27	4.2	5	.06	3.4	5	.04	5.1	6	.08
28	13	39	3.0	2.4	3	.02	23	75	16
29	15	50	6.9	2.7	3	.02	5.7	15	1.1
30	4.2	5	.06	2.8	3	.02	7.6	14	.69
31	6.1	16	1.5	---	---	---	4.0	5	.06
TOTAL	268.3	---	112.50	254.2	---	133.02	253.6	---	74.61

RIO PUERTO NUEVO BASIN

50049310 QUEBRADA JOSEFINA AT PINERO AVENUE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	3.0	4	.04	3.6	4	.04	2.5	3	.02
2	3.4	5	.04	3.0	3	.02	2.7	3	.02
3	4.7	5	.06	3.0	3	.02	3.0	4	.04
4	4.3	5	.06	4.5	6	.08	2.8	3	.02
5	2.8	3	.02	3.1	4	.04	2.9	10	.08
6	4.1	5	.06	6.7	18	1.2	11	33	3.0
7	3.6	5	.04	2.6	3	.02	2.1	2	.02
8	26	104	14	8.7	30	3.3	1.8	2	.00
9	5.7	5	.08	10	39	5.4	8.8	35	8.7
10	24	91	11	2.9	3	.02	5.9	21	1.5
11	51	180	42	4.6	15	.90	2.3	3	.02
12	37	156	21	1.8	2	.00	21	94	16
13	9.8	28	.74	2.2	2	.02	19	66	10
14	8.6	18	.42	2.1	2	.02	10	33	5.8
15	11	29	1.6	20	68	12	4.6	9	.51
16	17	72	7.7	59	128	53	9.4	27	3.8
17	7.1	20	.38	21	58	6.2	5.0	6	.08
18	9.0	9	.14	9.5	29	3.0	9.9	33	3.1
19	11	15	.44	4.2	5	.06	4.5	5	.06
20	20	65	8.8	4.5	6	.07	7.6	20	.42
21	6.5	9	.16	4.9	7	.10	4.9	8	.10
22	5.8	9	.14	2.2	5	.02	4.5	6	.08
23	5.4	8	.12	6.5	18	1.4	4.5	6	.08
24	9.6	28	2.9	4.1	5	.06	5.7	13	.76
25	4.7	6	.08	3.5	4	.04	6.3	19	1.3
26	5.6	8	.12	26	62	34	3.0	4	.04
27	6.1	10	.16	41	63	36	4.4	5	.06
28	6.6	12	.22	2.6	3	.02	4.5	6	.08
29	9.1	24	2.4	---	---	---	6.0	10	.16
30	4.6	5	.06	---	---	---	7.8	23	1.6
31	9.9	32	4.2	---	---	---	15	41	16
TOTAL	337.0	---	119.18	267.8	---	157.05	203.4	---	73.45

50049310 QUEBRADA JOSEFINA AT PINERO AVENUE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	8.6	28	2.4	6.6	21	2.3	27	84	17
2	6.9	22	1.6	2.9	3	.02	172	184	261
3	11	35	4.1	4.2	5	.06	226	198	348
4	12	53	4.5	3.9	5	.06	56	88	63
5	8.5	29	3.3	9.3	24	1.6	3.8	4	.04
6	6.9	20	1.5	5.2	8	.12	2.3	3	.02
7	3.5	8	.08	21	80	11	2.3	3	.02
8	4.3	5	.06	2.5	3	.02	3.4	3	.02
9	5.0	8	.10	2.8	3	.02	3.9	4	.04
10	6.9	10	.18	2.5	3	.02	5.3	6	.08
11	4.9	6	.08	2.8	3	.01	61	81	78
12	5.7	10	.16	3.6	4	.04	2.7	3	.02
13	11	31	5.3	4.3	5	.06	3.5	4	.04
14	9.1	30	4.9	4.4	5	.06	4.1	4	.04
15	4.6	10	.12	4.2	5	.06	3.9	4	.04
16	3.7	6	.06	3.8	5	.06	3.4	4	.04
17	5.0	6	.08	3.7	15	.14	4.0	5	.06
18	7.0	8	.16	3.6	4	.04	12	28	10
19	5.4	8	.12	3.4	4	.04	2.1	2	.02
20	6.7	8	.14	4.0	5	.06	1.9	2	.02
21	6.6	9	.16	4.5	5	.06	4.6	15	.18
22	6.5	9	.16	4.0	5	.06	3.0	4	.04
23	5.3	8	.12	2.8	5	.04	7.2	25	2.3
24	4.1	6	.06	2.6	3	.02	2.8	3	.02
25	4.4	6	.08	2.2	3	.02	3.2	3	.02
26	3.4	5	.04	14	48	13	2.9	3	.02
27	3.6	5	.04	2.3	10	.06	3.7	3	.02
28	53	98	68	8.9	38	4.4	3.2	3	.02
29	96	105	155	2.1	3	.02	3.1	3	.02
30	7.4	30	3.7	27	59	15	3.1	3	.02
31	---	---	---	76	187	165	---	---	---
TOTAL	327.0	---	256.30	245.1	---	213.47	637.4	---	780.16

RIO PUERTO NUEVO BASIN

50049310 QUEBRADA JOSEFINA AT PINERO AVENUE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	16	1.7	7.3	8	.16	13	5	.18
2	19	42	17	9.5	10	.26	17	20	.92
3	2.8	3	.02	20	50	15	15	20	.82
4	4.0	10	.60	5.2	8	.12	12	25	.82
5	2.4	3	.02	9.2	25	.62	13	38	3.2
6	10	36	3.3	7.6	15	.30	8.1	5	.10
7	24	89	17	11	34	3.2	13	38	4.1
8	3.6	4	.04	3.2	4	.04	22	48	17
9	3.5	4	.04	5.7	15	.24	61	68	93
10	4.1	5	.06	27	65	31	41	67	47
11	18	70	10	5.1	8	.12	16	25	1.1
12	2.9	3	.02	4.5	6	.08	17	10	.46
13	47	86	126	17	42	11	18	10	.48
14	14	35	9.8	5.8	10	.16	37	71	28
15	4.7	6	.08	25	96	15	9.2	12	.30
16	4.4	5	.06	6.0	5	.08	27	82	20
17	7.5	20	1.3	57	78	54	17	62	5.2
18	19	61	14	28	95	18	664	397	1390
19	10	29	3.3	26	84	13	19	25	1.3
20	3.4	4	.04	51	122	51	27	90	15
21	3.3	4	.04	9.9	30	.80	16	40	1.7
22	18	62	11	10	20	.54	20	35	1.9
23	14	37	9.7	25	65	17	56	174	40
24	4.3	5	.06	36	109	27	30	90	11
25	5.4	5	.08	37	95	24	23	42	2.6
26	3.9	5	.06	9.7	20	.52	24	38	2.5
27	24	54	22	57	143	60	26	35	2.5
28	4.1	5	.06	9.5	35	.90	44	69	26
29	5.2	6	.08	107	208	125	20	30	1.6
30	7.5	20	.40	15	45	1.8	22	30	1.8
31	17	51	4.0	15	25	1.0	---	---	---
TOTAL	316.6	---	251.86	662.2	---	471.94	1347.3	---	1720.58
YEAR	5119.9		4364.12						

RIO PUERTO NUEVO BASIN

50049310 QUEBRADA JOSEFINA AT PINERO AVENUE, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1989

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. PERCENT FINER THAN .002 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .004 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .008 MM
DEC 1987							
07...	1425	155	761	339	57	71	82
07...	1550	400	732	790	36	48	69
MAY 1988							
09...	1440	1225	1084	3585	27	56	70
JUN							
28...	1555	951	670	1720	39	47	56
JUL							
07...	0205	205	565	312	40	60	73
FEB 1989							
16...	2010	452	710	866	--	42	54
26...	1730	243	831	545	15	22	38
MAY							
26...	1155	206	1100	611	15	20	21
31...	1225	720	2145	4170	24	42	58
JUN							
02...	1340	1435	1320	5100	--	20	30
11...	0305	620	907	1520	30	35	63
JUL							
13...	1515	1240	1460	4890	18	30	45
AUG							
10...	1645	297	1183	948	16	22	42

DATE	SED. SUSP. FALL DIAM. PERCENT FINER THAN .016 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN 1.00 MM
DEC 1987							
07...	88	89	96	97	98	100	100
07...	76	85	89	94	98	100	100
MAY 1988							
09...	75	88	90	93	98	99	100
JUN							
28...	74	80	88	95	97	98	100
JUL							
07...	76	85	94	96	97	98	100
FEB 1989							
16...	65	72	81	90	96	99	100
26...	61	81	83	96	98	100	100
MAY							
26...	39	48	54	86	92	95	100
31...	76	77	91	95	98	100	100
JUN							
02...	35	48	83	90	94	96	100
11...	79	89	92	97	98	100	100
JUL							
13...	62	79	84	91	95	98	100
AUG							
10...	67	76	86	97	100	100	100

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 mi²(0.3 km²) 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 1989 TO SEPTEMBER 1990

DATE	TIME	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (IN)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3
OCT 1989											
27...	0845	1.00	13000	8.20	28.0	16	2.0	25	520000	K11000	150
DEC											
20...	1030	1.00	9600	8.10	27.0	40	2.6	32	K13000	K200	140
FEB 1990											
16...	0915	1.00	21000	7.90	22.5	15	5.0	56	K100	K100	110
APR											
30...	1055	1.00	26000	7.90	27.5	37	8.0	101	2600	K100	89
JUN											
26...	0850	1.00	26500	7.40	29.0	36	3.3	42	K15000	K1100	92
AUG											
21...	1015	1.00	24400	7.50	29.5	44	3.3	42	530	K1000	100

DATE	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1989											
27...	9	--	0.01	<0.10	1.3	2.5	3.8	--	--	0.69	17
DEC											
20...	<1	--	<0.01	<0.10	0.65	1.7	2.3	--	--	0.55	11
FEB 1990											
16...	<1	--	0.04	<0.10	0.37	0.33	0.70	--	--	0.20	5.2
APR											
30...	3	0.01	0.09	0.10	0.82	1.1	1.9	2.0	8.9	0.18	8.3
JUN											
26...	<1	--	0.06	<0.10	0.92	0.0	0.70	--	--	0.18	3.0
AUG											
21...	29	0.05	0.05	0.10	1.0	0.50	1.5	1.6	7.1	0.21	6.9

K = non-ideal count

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 mi²(0.6 km²) west of Puente de la Constitución, and 0.5 mi (0.8 km²) south from U.S. Naval Reservation.

DRAINAGE--Indeterminate.

PERIOD OF RECORD--Water years 1974 to present.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (IN)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3
OCT 1989											
27...	1030	1.00	>50000	7.30	29.0	14	4.0	52	220000	3900	150
DEC											
20...	1315	1.00	33800	7.30	28.0	31	4.4	55	K83000	8000	150
FEB 1990											
16...	1115	1.00	24000	7.70	24.5	18	8.5	100	K18000	2700	100
APR											
30...	1245	1.00	>50000	8.00	29.5	20	7.5	98	5100	2000	160
JUN											
26...	1010	1.00	47000	7.60	28.0	30	5.2	65	K190000	4400	130
AUG											
21...	1135	1.00	43600	7.90	30.5	12	5.5	72	39000	3300	150

DATE	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	CARBON, ORGANIC TOTAL (MG/L AS C)
OCT 1989											
27...	11	0.30	0.10	0.40	1.4	1.3	2.7	3.1	14	0.37	6.7
DEC											
20...	5	--	0.03	<0.10	1.9	0.70	2.6	--	--	0.46	7.7
FEB 1990											
16...	24	0.21	0.09	0.30	1.3	0.90	2.2	2.5	11	0.31	5.0
APR											
30...	37	0.14	0.06	0.20	0.95	1.0	2.0	2.2	9.7	0.38	7.1
JUN											
26...	8	0.04	0.06	0.10	0.99	0.0	0.50	0.60	2.7	0.30	9.5
AUG											
21...	71	0.06	0.04	0.10	1.1	0.30	1.4	1.5	6.6	0.34	5.1

K = non-ideal count

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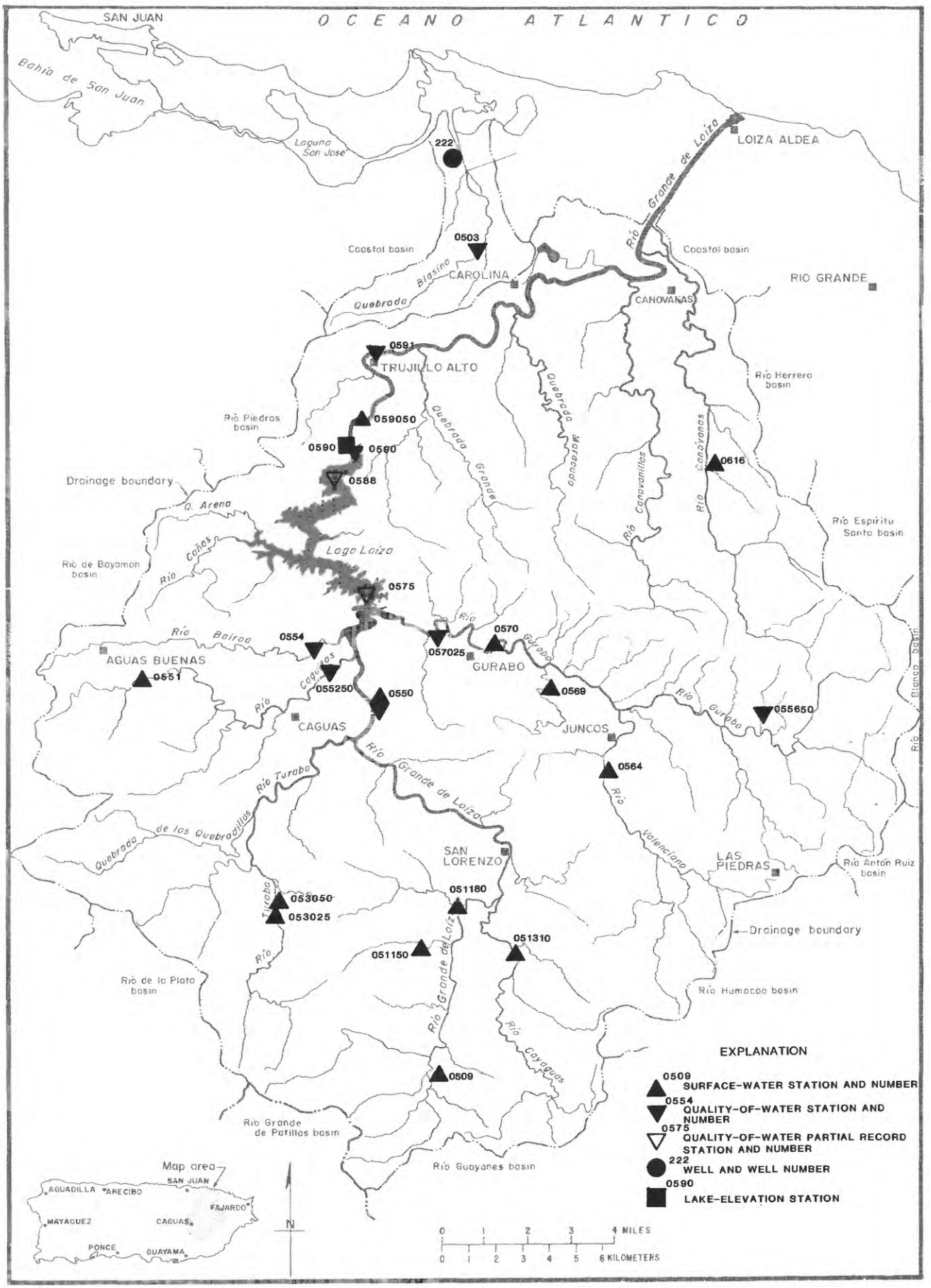

Figure 19.--Río Grande de Loíza basin.

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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
19...	1110	12	417	7.50	26.5	20	5.4	66	45	K71000	K14000
DEC											
11...	1055	12	440	7.50	25.0	38	4.4	52	46	K17000	33000
FEB 1990											
05...	1105	7.5	478	7.40	22.5	1.5	4.8	54	15	220000	K160000
APR											
06...	1105	13	446	7.60	26.0	7.0	6.4	77	33	210000	1800
JUN											
04...	1005	4.3	446	7.10	26.5	4.6	4.5	55	29	24000	2700
AUG											
06...	1050	6.2	422	7.80	27.0	21	5.5	68	10	20000	1500

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
19...	140	0	43	8.4	23	0.8	4.1	140	<0.5	26	24
DEC											
11...	--	--	--	--	--	--	--	160	--	--	--
FEB 1990											
05...	--	--	--	--	--	--	--	200	--	--	--
APR											
06...	160	0	46	10	27	0.9	3.0	160	<0.5	20	36
JUN											
04...	--	--	--	--	--	--	--	180	--	--	--
AUG											
06...	140	4	36	11	27	1	3.6	140	--	24	27

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
19...	0.10	21	234	7.88	43	0.77	0.13	0.90	0.69	0.91
DEC										
11...	--	--	--	--	69	0.71	0.09	0.80	0.20	1.7
FEB 1990										
05...	--	--	--	--	19	1.26	0.24	1.5	1.2	0.90
APR										
06...	0.10	25	256	9.20	32	1.08	0.12	1.2	0.23	0.87
JUN										
04...	--	--	--	--	1	0.83	0.17	1.0	0.61	0.99
AUG										
06...	0.20	30	240	4.10	10	0.91	0.09	1.00	0.22	0.98

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50050300 QUEBRADA BLASINA NEAR CAROLINA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
19...	1.6	2.5	11	0.40	<1	<100	<10	<1	2	<10
DEC										
11...	1.9	2.7	12	0.74	--	--	--	--	--	--
FEB 1990										
05...	2.1	3.6	16	0.59	--	--	--	--	--	--
APR										
06...	1.1	2.3	10	0.53	2	<100	20	1	2	10
JUN										
04...	1.6	2.6	12	0.50	--	--	--	--	--	--
AUG										
06...	1.2	2.2	9.7	0.45	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
19...	2000	5	350	<0.10	<1	<1	10	<0.010	<1	0.05
DEC										
11...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
05...	--	--	--	--	--	--	--	--	--	--
APR										
06...	1400	9	520	<0.10	<1	<1	20	<0.010	2	0.12
JUN										
04...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	--	--	--	--	--	--	--	--	--	--

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).

WATER-DISCHARGE RECORDS

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 discharge, which are poor. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--13 years (1978-90), 29.9 ft³/s (0.847 m³/s), 67.67 in/yr, (1,719 mm/yr), 21,600 acre-ft/yr (26.7 hm³/yr); median of yearly mean discharges, 29 ft³/s (0.82 m³/s), 21,000 acre-ft/yr (26 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s (331 m³/s), Nov. 5, 1983, gage height, 14.78 ft (4.505 m), from rating curve extended above 500 ft³/s (14.2 m³/s) on basis of step-backwater analysis; minimum discharge, 2.8 ft³/s (0.079 m³/s), May 5, 6, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 9	2100	3,570	101	9.77	2.978	Aug. 28	1610	*3,780	107	*9.95	3.033

Minimum discharge, 4.0 ft³/s (0.113 m³/s), Apr. 22-25, May 6,7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	9.4	7.2	6.0	7.6	8.9	5.6	4.5	4.7	15	10	12
2	19	8.8	7.2	8.0	7.8	8.5	5.7	4.5	5.3	11	10	11
3	18	8.5	7.3	9.8	6.9	7.8	5.5	4.3	4.6	9.3	9.8	11
4	17	8.6	7.2	6.2	6.7	7.7	5.6	4.3	7.3	9.3	9.5	12
5	17	13	7.2	5.5	6.3	7.3	5.5	4.3	11	10	13	10
6	15	9.0	7.4	5.2	6.0	7.3	5.2	4.1	8.8	76	10	10
7	15	8.7	7.6	5.2	e6.2	7.2	4.9	4.3	7.0	18	19	10
8	14	9.4	7.1	5.4	e6.4	6.8	4.9	4.3	5.4	13	30	13
9	17	9.7	6.7	5.3	e8.0	7.1	4.8	265	20	11	22	11
10	14	8.9	6.7	6.1	e7.5	7.5	4.7	52	6.6	10	126	10
11	13	8.1	6.9	6.2	e7.5	7.5	4.6	14	6.0	9.5	24	9.6
12	13	7.8	6.9	5.3	e7.0	8.5	4.7	8.4	5.2	9.1	16	10
13	13	7.5	6.8	5.3	e7.0	9.5	10	7.2	5.1	8.6	15	15
14	13	7.3	6.8	4.9	11	32	6.1	8.4	218	11	13	37
15	14	7.4	6.6	4.7	7.6	12	5.1	6.7	63	16	12	16
16	12	7.5	6.4	4.4	7.2	10	6.4	5.8	22	12	11	35
17	11	7.9	6.4	4.7	7.8	9.6	5.2	6.2	19	12	10	18
18	11	8.4	6.5	4.5	11	8.0	4.8	5.9	13	44	9.8	56
19	11	9.3	6.7	7.9	9.1	7.5	4.7	5.5	12	40	9.9	21
20	11	9.3	6.7	19	12	7.7	4.6	5.2	30	S13	9.4	15
21	10	8.1	6.1	8.4	18	7.1	4.3	5.0	14	11	8.8	13
22	12	7.6	5.8	6.6	16	6.6	4.2	4.9	e12	9.8	9.1	11
23	11	7.7	6.4	5.7	24	7.3	4.0	4.8	e10	9.1	10	76
24	12	7.6	6.1	6.4	84	6.8	4.0	4.7	e30	11	9.0	17
25	11	7.4	6.5	11	15	6.3	14	4.6	e80	90	11	15
26	10	8.1	5.8	24	12	6.1	14	6.4	23	123	11	43
27	9.5	7.5	5.6	15	10	6.7	9.2	5.5	15	22	8.8	18
28	9.2	7.3	5.4	16	9.2	6.6	5.5	5.4	12	15	330	80
29	9.4	7.2	7.3	12	---	7.0	5.0	4.9	11	13	30	30
30	13	7.3	6.5	9.7	---	6.2	4.7	4.4	9.9	12	16	34
31	10	---	6.2	8.5	---	6.0	---	4.5	---	11	13	---
TOTAL	406.1	250.3	206.0	252.9	344.8	261.1	177.5	480.0	690.9	684.7	846.1	679.6
MEAN	13.1	8.34	6.65	8.16	12.3	8.42	5.92	15.5	23.0	22.1	27.3	22.7
MAX	21	13	7.6	24	84	32	14	265	218	123	330	80
MIN	9.2	7.2	5.4	4.4	6.0	6.0	4.0	4.1	4.6	8.6	8.8	9.6
AC-FT	805	496	409	502	684	518	352	952	1370	1360	1680	1350
CFSM	2.18	1.39	1.11	1.36	2.05	1.40	.99	2.58	3.84	3.68	4.55	3.78
IN.	2.52	1.55	1.28	1.57	2.14	1.62	1.10	2.98	4.28	4.25	5.25	4.21

CAL YR 1989 TOTAL 8451.3 MEAN 23.2 MAX 725 MIN 5.3 AC-FT 16760 CFSM 3.86 IN. 52.40
WTR YR 1990 TOTAL 5280.0 MEAN 14.5 MAX 330 MIN 4.0 AC-FT 10470 CFSM 2.41 IN. 32.74

e Estimated

50050900 RIO GRANDE DE LOIZA AT QUEBRADA ARENAS, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 10	1348	14.2	142	28.0	APR. 13	0959	8.89	159	23.5
NOV. 13	1502	7.60	147	26.0	MAY 16	1500	5.85	151	28.0
DEC. 12	1359	7.18	146	24.0	JUNE 22	1242	10.9	149	27.5
JAN. 18	1214	4.57	138	23.0	JULY 17	1442	13.8	150	27.0
FEB. 06	1223	6.24	259	23.5	AUG. 13	1037	14.0	158	25.0
MAR. 15	0930	11.6	142	21.5	SEPT 08	1018	1.94	270	26.0

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. 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.

AVERAGE DISCHARGE.--6 years (1985-90), 8.15 ft^3/s (0.231 m^3/s), 34.05 in/yr (865 mm/yr), 5,900 acre-ft/yr (7.27 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,400 ft^3/s (210 m^3/s), May 17, 1985, gage height, 14.58 ft (4.444 m), from floodmark, from rating curve extended above 400 ft^3/s (11.3 m^3/s) on basis of step-backwater analysis and slope-area measurement; minimum discharge, 0.46 ft^3/s (0.013 m^3/s), May 8, 1985.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s (28.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Aug. 10	0730	*889	25.1	*7.88	2.402						

Minimum discharge, 0.45 ft^3/s (0.013 m^3/s), May 23-25.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e12	2.4	1.7	1.9	1.6	3.0	.93	.77	.73	1.9	1.7	.80
2	e7.9	2.2	1.7	2.5	2.2	2.5	.91	.79	.86	1.7	3.1	.74
3	e6.4	2.4	1.7	1.8	1.6	1.9	.93	.75	.77	1.2	2.9	.72
4	5.5	2.7	1.7	1.4	1.4	1.7	.86	.73	.82	1.5	4.8	3.1
5	4.9	7.8	1.6	1.2	1.2	1.7	.83	.81	3.0	1.2	4.6	.88
6	4.6	4.2	1.6	1.1	1.1	1.5	.78	.76	2.4	4.1	3.2	.68
7	4.3	3.8	1.6	1.1	1.4	1.3	.77	.72	2.2	4.1	4.5	.62
8	4.1	3.3	1.6	1.1	1.9	1.3	.78	.72	1.3	3.1	19	.65
9	7.7	2.8	1.6	1.0	2.2	2.3	.76	12	1.2	1.8	15	.72
10	4.0	2.6	1.6	1.2	2.0	2.1	.74	8.8	1.2	1.8	53	.63
11	3.4	2.5	1.6	1.3	1.6	1.5	.74	5.1	1.2	1.8	21	.51
12	3.1	2.4	1.5	1.2	1.5	3.3	.87	1.5	1.0	1.5	11	.53
13	3.1	2.3	1.5	1.2	1.3	5.3	2.3	.93	1.1	1.1	11	.73
14	3.0	2.3	1.5	1.1	2.2	12	1.3	1.8	15	1.2	5.4	.76
15	2.9	2.6	1.4	1.1	1.6	4.8	.95	.89	13	1.7	3.6	.93
16	2.8	2.5	1.3	1.1	1.5	6.3	1.1	.74	9.1	1.4	2.9	3.1
17	2.5	2.4	1.3	1.1	1.7	5.3	.84	.66	4.0	4.4	2.3	1.5
18	2.3	2.2	1.4	1.2	1.8	2.7	.78	.62	2.3	2.7	2.1	2.3
19	2.4	2.1	1.5	1.7	1.5	2.0	1.9	.60	1.7	6.2	2.1	1.9
20	2.3	2.2	1.6	6.1	1.9	1.7	1.5	.60	1.9	2.4	1.9	.83
21	2.2	2.0	1.4	2.6	2.8	1.4	.92	.56	1.5	1.5	1.3	.61
22	3.0	1.8	1.2	1.7	3.2	1.3	.78	.53	1.1	1.0	1.5	.55
23	2.5	1.8	1.3	1.6	3.3	1.2	.73	.49	1.0	.96	1.5	.59
24	2.1	1.7	1.3	1.8	4.1	1.0	.71	.48	1.4	2.4	4.5	.60
25	2.2	1.6	1.2	1.7	2.5	1.1	3.5	.47	5.6	8.8	2.1	2.5
26	2.5	e1.7	1.1	4.5	2.1	.96	2.8	.81	5.8	6.5	1.4	2.7
27	2.2	e1.7	1.1	2.8	2.0	.95	2.4	.68	3.2	3.7	1.0	4.1
28	2.1	e1.6	1.1	2.1	2.0	1.0	1.2	.63	2.2	2.7	.97	3.5
29	2.1	e1.6	2.2	1.7	---	1.0	.88	.60	1.7	2.2	2.3	2.1
30	2.7	1.6	1.9	1.6	---	1.1	.79	.55	1.6	2.0	2.1	.81
31	2.5	---	1.5	1.9	---	1.1	---	.78	---	1.9	.97	---
TOTAL	115.3	74.8	46.3	55.4	55.2	76.31	35.28	46.87	89.88	80.46	194.74	40.69
MEAN	3.72	2.49	1.49	1.79	1.97	2.46	1.18	1.51	3.00	2.60	6.28	1.36
MAX	12	7.8	2.2	6.1	4.1	12	3.5	12	15	8.8	53	4.1
MIN	2.1	1.6	1.1	1.0	1.1	.95	.71	.47	.73	.96	.97	.51
AC-FT	229	148	92	110	109	151	70	93	178	160	386	81
CFSM	1.14	.77	.46	.55	.61	.76	.36	.47	.92	.80	1.93	.42
IN.	1.32	.86	.53	.63	.63	.87	.40	.54	1.03	.92	2.23	.47

CAL YR 1989 TOTAL 2273.55 MEAN 6.23 MAX 295 MIN .80 AC-FT 4510 CFSM 1.92 IN. 26.02
WTR YR 1990 TOTAL 911.23 MEAN 2.50 MAX 53 MIN .47 AC-FT 1810 CFSM .77 IN. 10.43

e Estimated

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--JANUARY 1985 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 31	1225	6.46	218	27.5
NOV. 03	1328	2.54	260	26.5
DEC. 05	1509	1.68	266	25.0
JAN. 12	1257	1.85	250	25.0
FEB. 09	1317	2.28	275	23.0
MAR. 12	1554	3.22	279	21.5
APR. 06	0916	.83	300	25.0
MAY 23	1552	.50	290	30.5
JULY 27	1100	3.93	240	26.5
AUG. 17	1139	2.65	270	27.0
SEPT 17	1213	1.38	292	27.5

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 September 1990.

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.

SEDIMENT LOADS: Maximum daily mean, 4,940 tons (23,400 tonnes) May 17, 1985; Minimum daily mean, 0.0 ton (0.0 tonne) several days.

EXTREMES FOR WATER YEARS 1989-90.--

Water Year	Suspended-sediment concentration (mg/L) maximum	minimum	Suspended-sediment discharge (tons per day) maximum	minimum
1989	1,180 (Nov. 17)	4 (several days)	1,590 (Mar. 10)	0.0 (several days)
1990	355 (Aug. 10)	1 (several days)	103 (Aug. 10)	0.0 (several days)

REVISIONS.--
SEDIMENT DISCHARGE (tons/day):
Nov. 03, 1984; 1,040
May 17, 1985; 3,430
May 18, 1985; 1,860
Oct. 06, 1985; 2,280

SEDIMENT DISCHARGE (tons/day):
Oct. 07, 1985; 426
May 08, 1986; 785
May 13, 1986; 1,010
May 14, 1986; 344

TOTAL SEDIMENT DISCHARGE (Tons/year):
1985 Water year; 24,764.21
1986 Water year; 9,503.04

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	2.1	11	.06	3.5	25	.24	5.0	40	.54
2	5.2	50	.70	4.1	28	.30	4.9	39	.52
3	4.5	38	.46	3.4	25	.22	4.8	35	.46
4	27	300	35	3.2	20	.18	4.3	35	.40
5	5.0	42	.56	3.0	20	.16	5.5	33	.50
6	3.3	35	.32	3.2	20	.18	4.0	28	.30
7	4.3	30	.34	4.9	30	.40	4.0	30	.32
8	4.0	25	.26	29	313	38	4.4	30	.36
9	2.8	40	.30	36	306	70	3.8	30	.30
10	2.5	20	.14	5.9	40	.64	3.8	28	.28
11	2.3	15	.10	4.7	25	.32	3.7	28	.28
12	2.8	20	.16	3.6	22	.22	3.5	28	.26
13	3.6	28	.28	71	305	308	3.7	28	.28
14	2.3	24	.15	11	110	3.3	3.7	25	.24
15	3.8	35	.36	6.2	50	.84	3.4	25	.22
16	2.8	22	.16	26	174	72	3.3	25	.22
17	4.4	45	.54	311	1180	1440	23	217	46
18	3.1	25	.20	36	350	34	5.3	45	.64
19	2.3	20	.12	17	200	9.2	3.9	30	.32
20	11	126	8.6	11	130	3.9	3.7	29	.28
21	25	274	39	9.3	100	2.5	3.4	25	.22
22	6.9	70	1.3	8.0	80	1.7	4.0	25	.26
23	4.8	40	.52	6.6	70	1.2	4.3	28	.32
24	5.5	40	.60	5.6	50	.76	4.9	40	.52
25	4.5	40	.48	17	164	23	28	314	46
26	3.8	30	.30	35	292	88	15	177	15
27	3.4	25	.22	12	150	4.9	6.6	45	.80
28	3.8	30	.30	7.7	70	1.5	7.2	67	2.6
29	4.5	40	.48	6.2	55	.92	57	536	131
30	5.0	40	.54	5.5	45	.66	53	476	129
31	4.2	30	.34	---	---	---	11	130	3.9
TOTAL	170.5	---	92.89	706.6	---	2107.24	296.1	---	382.34

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	7.7	80	1.7	2.8	18	.14	3.5	23	.21
2	5.6	50	.76	2.5	15	.10	3.1	20	.16
3	4.7	40	.50	2.5	15	.10	2.9	20	.16
4	4.4	34	.40	2.6	15	.10	3.1	20	.16
5	4.2	33	.38	2.5	15	.10	12	127	6.4
6	3.9	32	.34	2.6	15	.10	9.7	107	4.7
7	3.8	30	.31	2.4	15	.10	5.0	45	.60
8	3.7	25	.24	2.9	15	.12	4.0	31	.34
9	3.4	25	.22	3.1	15	.12	39	306	102
10	4.3	30	.34	2.6	14	.10	295	902	1590
11	9.6	94	3.7	2.5	14	2.5	36	370	36
12	5.4	60	.88	2.4	14	.10	16	190	8.2
13	4.3	30	.34	2.4	14	.10	25	300	20
14	3.7	25	.24	2.4	15	.10	17	160	7.3
15	3.5	22	.20	4.5	21	.26	12	110	3.6
16	3.3	22	.20	11	138	10	8.8	90	2.1
17	6.7	60	.84	42	434	87	7.5	80	1.6
18	4.5	35	.42	49	414	109	6.4	60	1.0
19	4.3	32	.38	7.6	70	1.4	5.9	45	.72
20	4.3	35	.40	4.6	40	.50	5.7	42	.64
21	17	178	16	36	269	89	4.9	40	.52
22	4.8	40	.52	11	100	3.0	37	236	95
23	3.6	38	.36	6.5	60	1.1	9.4	120	3.0
24	3.2	20	.18	5.1	50	.68	5.6	40	.60
25	2.9	18	.14	4.2	35	.40	5.0	40	.54
26	2.8	18	.14	5.1	50	.68	5.7	40	.62
27	2.8	18	.14	3.8	30	.30	4.5	37	.44
28	2.7	16	.12	3.4	23	.22	3.8	27	.27
29	2.6	16	.12	---	---	---	3.5	25	.24
30	2.5	15	.10	---	---	---	11	94	7.8
31	2.4	18	.12	---	---	---	33	274	75
TOTAL	142.6	---	30.73	230.0	---	307.42	641.0	---	1969.92

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	14	165	8.7	2.4	13	.08	6.7	60	1.1
2	6.5	60	1.1	3.0	15	.12	7.2	70	1.4
3	5.2	40	.56	2.3	15	.05	24	169	21
4	4.4	30	.36	3.8	18	.18	11	82	2.4
5	3.8	20	.20	2.9	20	.16	6.3	60	1.0
6	3.3	10	.08	9.3	191	7.2	4.3	33	.38
7	3.2	22	.20	13	138	8.5	3.4	25	.22
8	14	144	16	3.4	22	.20	2.7	17	.12
9	3.8	35	2.0	2.6	16	.12	2.2	12	.08
10	6.8	60	1.1	2.1	10	.06	2.0	10	.06
11	4.5	38	.46	1.8	8	.04	3.0	10	.08
12	18	170	27	1.8	8	.04	2.1	10	.06
13	7.8	100	2.1	1.8	8	.04	1.9	10	.06
14	6.0	40	.64	1.8	8	.04	1.7	16	.08
15	4.3	35	.40	1.7	7	.04	1.6	15	.06
16	4.5	32	.38	1.6	6	.02	1.7	16	.08
17	4.1	35	.38	1.4	6	.02	3.3	35	.32
18	3.5	25	.24	1.5	5	.02	2.0	10	.06
19	2.9	20	.16	1.4	5	.02	2.0	9	.04
20	2.8	16	.12	1.3	5	.02	1.7	8	.04
21	2.7	15	.10	1.3	5	.02	1.5	6	.02
22	2.8	15	.12	1.2	4	.02	1.5	6	.02
23	2.4	12	.08	1.2	4	.02	1.5	6	.02
24	2.3	12	.08	1.2	4	.02	1.4	5	.02
25	2.1	10	.06	1.2	4	.02	1.4	5	.02
26	2.1	10	.06	1.5	6	.02	1.2	4	.02
27	2.1	10	.06	6.5	66	1.5	1.1	4	.02
28	1.9	10	.06	3.6	25	.24	1.0	4	.02
29	2.2	12	.08	2.5	15	.10	1.6	5	.02
30	2.4	15	.10	8.6	96	4.2	1.1	5	.02
31	---	---	---	9.5	100	3.7	---	---	---
TOTAL	146.4	---	62.98	99.2	---	26.83	104.1	---	28.84

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	1.0	4	.02	1.3	6	.02	3.3	20	.18
2	4.0	30	.32	1.1	4	.02	2.7	16	.12
3	2.4	10	.06	.96	4	.02	3.2	15	.12
4	1.3	6	.02	3.3	35	1.3	2.5	14	.10
5	11	136	5.5	2.7	20	.14	2.2	12	.08
6	9.4	101	3.2	1.1	4	.02	2.1	10	.06
7	12	141	5.5	.84	4	.00	2.0	10	.06
8	5.6	50	.76	.84	4	.00	1.9	10	.06
9	3.0	20	.16	.80	4	.00	2.1	10	.06
10	2.0	10	.06	.81	4	.00	8.4	183	6.8
11	1.7	6	.02	9.2	66	8.4	6.6	73	1.7
12	3.6	22	.22	3.1	20	.16	8.9	101	3.8
13	1.5	6	.02	2.0	8	.04	4.5	44	2.1
14	1.2	5	.02	1.7	6	.02	17	167	13
15	1.4	6	.02	1.3	5	.02	4.9	40	.52
16	1.0	4	.02	1.8	6	.02	4.8	20	11
17	1.0	4	.02	14	154	11	9.7	89	4.7
18	1.5	6	.02	5.3	49	1.5	144	408	298
19	1.7	6	.02	35	354	68	15	200	8.1
20	1.3	5	.02	13	150	9.6	7.0	60	1.1
21	1.1	4	.02	7.5	70	1.4	6.0	50	4.5
22	1.2	4	.02	4.0	35	.38	24	226	58
23	3.0	22	.18	4.3	40	.46	54	435	139
24	1.6	6	.02	5.8	55	.86	e9.4	102	3.9
25	1.4	5	.02	3.8	20	.20	e9.7	70	1.8
26	3.2	20	.18	2.6	15	4.2	e8.8	70	1.7
27	7.1	72	3.7	14	139	11	e8.3	60	1.3
28	3.9	30	.32	4.0	25	.26	e16	175	33
29	1.6	6	.87	6.0	53	1.3	e15	100	4.1
30	1.1	5	.02	10	112	4.1	e8.8	80	1.9
31	1.5	5	.02	4.6	38	.48	---	---	---
TOTAL	94.3	---	21.37	166.75	---	124.92	412.8	---	600.86
YEAR	3210.35		5756.34						

e Estimated

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	109	6.9	2.4	6	.04	1.7	4	.02
2	e7.9	62	1.4	2.2	5	.02	1.7	4	.02
3	e6.4	45	.78	2.4	6	.04	1.7	4	.02
4	5.5	22	.32	2.7	9	.06	1.7	4	.02
5	4.9	19	.26	7.8	43	1.1	1.6	4	.02
6	4.6	18	.22	4.2	12	.14	1.6	4	.02
7	4.3	15	.18	3.8	11	.12	1.6	11	.04
8	4.1	14	.16	3.3	9	.08	1.6	14	.06
9	7.7	41	1.4	2.8	6	.04	1.6	12	.06
10	4.0	11	.12	2.6	6	.04	1.6	10	.04
11	3.4	10	.10	2.5	5	.04	1.6	9	.04
12	3.1	10	.08	2.4	5	.04	1.5	8	.04
13	3.1	7	.06	2.3	5	.04	1.5	7	.02
14	3.0	7	.06	2.3	5	.04	1.5	5	.02
15	2.9	7	.06	2.6	5	.04	1.4	3	.02
16	2.8	7	.06	2.5	5	.04	1.3	2	.00
17	2.5	5	.04	2.4	5	.04	1.3	2	.00
18	2.3	5	.04	2.2	5	.02	1.4	2	.00
19	2.4	3	.02	2.1	5	.02	1.5	2	.00
20	2.3	4	.02	2.2	5	.02	1.6	2	.00
21	2.2	3	.02	2.0	4	.02	1.4	2	.00
22	3.0	8	.06	1.8	4	.02	1.2	2	.00
23	2.5	5	.04	1.8	3	.02	1.3	2	.00
24	2.1	5	.02	1.7	3	.02	1.3	2	.00
25	2.2	5	.02	1.6	3	.02	1.2	2	.00
26	2.5	5	.04	e1.7	3	.02	1.1	2	.00
27	2.2	5	.02	e1.7	3	.02	1.1	2	.00
28	2.1	5	.02	e1.6	3	.02	1.1	2	.00
29	2.1	5	.02	e1.6	5	.02	2.2	10	.06
30	2.7	6	.04	1.6	4	.02	1.9	6	.04
31	2.5	6	.04	---	---	---	1.5	2	.00
TOTAL	115.3	---	12.62	74.8	---	2.22	46.3	---	0.56

e Estimated

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	1.9	4	.02	1.6	2	.00	3.0	6	.04
2	2.5	10	.06	2.2	5	.02	2.5	6	.04
3	1.8	5	.02	1.6	5	.02	1.9	4	.02
4	1.4	2	.00	1.4	5	.02	1.7	2	.00
5	1.2	2	.00	1.2	5	.02	1.7	2	.00
6	1.1	2	.00	1.1	5	.02	1.5	2	.00
7	1.1	2	.00	1.4	5	.02	1.3	2	.00
8	1.1	2	.00	1.9	5	.02	1.3	2	.00
9	1.0	2	.00	2.2	5	.02	2.3	2	.00
10	1.2	2	.00	2.0	5	.02	2.1	2	.00
11	1.3	2	.00	1.6	5	.02	1.5	2	.00
12	1.2	2	.00	1.5	5	.02	3.3	5	.04
13	1.2	2	.00	1.3	5	.02	5.3	10	.14
14	1.1	2	.00	2.2	5	.02	12	76	3.0
15	1.1	2	.00	1.6	5	.02	4.8	15	.20
16	1.1	2	.00	1.5	4	.02	6.3	26	.44
17	1.1	2	.00	1.7	5	.02	5.3	20	.28
18	1.2	2	.00	1.8	5	.02	2.7	6	.04
19	1.7	3	.02	1.5	5	.02	2.0	4	.02
20	6.1	32	1.0	1.9	5	.02	1.7	3	.02
21	2.6	7	.04	2.8	5	.04	1.4	2	.00
22	1.7	2	.00	3.2	5	.04	1.3	2	.00
23	1.6	2	.00	3.3	5	.04	1.2	2	.00
24	1.8	2	.00	4.1	7	.06	1.0	2	.00
25	1.7	2	.00	2.5	6	.04	1.1	2	.00
26	4.5	20	.24	2.1	6	.02	.96	2	.00
27	2.8	7	.06	2.0	6	.02	.95	2	.00
28	2.1	2	.02	2.0	6	.02	1.0	2	.00
29	1.7	2	.00	---	---	---	1.0	2	.00
30	1.6	2	.00	---	---	---	1.1	2	.00
31	1.9	2	.02	---	---	---	1.1	2	.00
TOTAL	55.4	---	1.50	55.2	---	0.66	76.31	---	4.28

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	.93	2	.00	.77	1	.00	.73	1	.00
2	.91	2	.00	.79	1	.00	.86	1	.00
3	.93	2	.00	.75	1	.00	.77	1	.00
4	.86	2	.00	.73	1	.00	.82	1	.00
5	.83	2	.00	.81	1	.00	3.0	10	.14
6	.78	1	.00	.76	1	.00	2.4	5	.03
7	.77	1	.00	.72	1	.00	2.2	3	.02
8	.78	1	.00	.72	1	.00	1.3	1	.00
9	.76	1	.00	12	108	34	1.2	1	.00
10	.74	1	.00	8.8	48	1.8	1.2	1	.00
11	.74	1	.00	5.1	24	.46	1.2	1	.00
12	.87	1	.00	1.5	11	.04	1.0	1	.00
13	2.3	5	.04	.93	8	.02	1.1	1	.00
14	1.3	2	.01	1.8	7	.03	15	180	44
15	.95	2	.00	.89	4	.01	13	36	1.6
16	1.1	1	.00	.74	3	.00	9.1	53	1.8
17	.84	1	.00	.66	2	.00	4.0	13	.16
18	.78	1	.00	.62	1	.00	2.3	5	.03
19	1.9	4	.04	.60	1	.00	1.7	4	.02
20	1.5	1	.01	.60	1	.00	1.9	3	.01
21	.92	1	.00	.56	1	.00	1.5	2	.00
22	.78	1	.00	.53	1	.00	1.1	2	.00
23	.73	1	.00	.49	1	.00	1.0	1	.00
24	.71	1	.00	.48	1	.00	1.4	2	.00
25	3.5	14	.30	.47	1	.00	5.6	25	.52
26	2.8	8	.08	.81	1	.00	5.8	14	.24
27	2.4	3	.02	.68	1	.00	3.2	8	.08
28	1.2	1	.00	.63	1	.00	2.2	3	.03
29	.88	1	.00	.60	1	.00	1.7	2	.01
30	.79	1	.00	.55	1	.00	1.6	2	.00
31	---	---	---	.78	1	.00	---	---	---
TOTAL	35.28	---	0.50	46.87	---	36.36	89.88	---	48.69

50051150 QUEBRADA BLANCA AT EL JAGUAL, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	1.9	2	.01	1.7	2	.00	.80	1	.00
2	1.7	2	.01	3.1	6	.06	.74	1	.00
3	1.2	2	.00	2.9	6	.06	.72	1	.00
4	1.5	2	.00	4.8	20	.52	3.1	10	.14
5	1.2	2	.00	4.6	17	.22	.88	1	.00
6	4.1	15	.24	3.2	8	.07	.68	1	.00
7	4.1	5	.05	4.5	18	.37	.62	1	.00
8	3.1	2	.02	19	126	8.6	.65	1	.00
9	1.8	2	.01	15	106	5.0	.72	1	.00
10	1.8	2	.01	53	355	103	.63	1	.00
11	1.8	2	.01	21	183	11	.51	1	.00
12	1.5	2	.00	11	50	1.6	.53	1	.00
13	1.1	2	.00	11	67	2.7	.73	1	.00
14	1.2	2	.00	5.4	22	.36	.76	1	.00
15	1.7	2	.01	3.6	9	.09	.93	1	.00
16	1.4	2	.00	2.9	6	.05	3.1	9	.12
17	4.4	21	.48	2.3	5	.03	1.5	2	.01
18	2.7	11	.11	2.1	6	.04	2.3	2	.02
19	6.2	28	.60	2.1	8	.06	1.9	2	.00
20	2.4	5	.04	1.9	10	.05	.83	1	.00
21	1.5	3	.01	1.3	7	.03	.61	1	.00
22	1.0	1	.00	1.5	4	.01	.55	1	.00
23	.96	1	.00	1.5	3	.00	.59	1	.00
24	2.4	9	.14	4.5	13	.21	.60	1	.00
25	8.8	43	1.1	2.1	4	.03	2.5	6	.08
26	6.5	34	.66	1.4	1	.00	2.7	8	.11
27	3.7	12	.13	1.0	1	.00	4.1	14	.22
28	2.7	5	.04	.97	1	.00	3.5	7	.08
29	2.2	3	.02	2.3	6	.06	2.1	4	.02
30	2.0	2	.02	2.1	7	.06	.81	1	.00
31	1.9	2	.01	.97	1	.00	---	---	---
TOTAL	80.46	---	3.73	194.74	---	134.28	40.69	---	0.80
YEAR	911.23		246.20						

50051150 QUEBRADA BLANCA AT EL JAGUAL--Continued

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS	SEDI-MENT, SUS-PENDED	SEDI-MENT, DIS-CHARGE, SUS-PENDED	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN
MAY 1990					
09...	2139	245	673	646	60
09...	2140	343	977	905	65
09...	2143	441	1160	1381	76
09...	2147	480	956	1239	83
09...	2200	107	992	287	89
09...	2210	115	1230	382	88
JUN					
13...	1533	116	2440	764	97

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 Rio Grande de Loiza, 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.

AVERAGE DISCHARGE.--5 years (1985-89), 8.03 ft^3/s (0.227 m^3/s), 29.16 in/yr (741 mm/yr), 5,820 acre-ft/yr (7.18 hm^3/yr).
--6 years (1985-90), 7.23 ft^3/s (0.205 m^3/s), 26.25 in/yr (667 mm/yr), 5,240 acre-ft/yr (6.46 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,320 ft^3/s (264 m^3/s), May 17, 1985, gage height, 17.10 ft (5.212 m), from floodmark, from rating curve extended above 200 ft^3/s (5.66 m^3/s) on basis of step-backwater analysis and slope-area measurement; minimum discharge, 0.26 ft^3/s (0.007 m^3/s), May 30,31, 1990.

EXTREMES FOR WATER YEARS 1989-90.--Peak discharges greater than base discharge of 1,000 ft^3/s (28.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Nov. 17,1988	0315	*2,090	59.2	*10.53	3.210	Sept. 22,1989	1015	1,140	32.3	8.63	2.630
Mar. 10,1989	1000	1,450	41.1	9.34	2.847	Sept. 23,1989	2230	1,560	44.2	9.68	2.950
Sept.18,1989	0900	1,910	54.1	10.43	3.179	June 14,1990	1600	*446	12.6	*6.28	1.914

Minimum discharge, 1.2 ft^3/s (0.034 m^3/s), Aug. 10, 1989; 0.26 ft^3/s (0.007 m^3/s), May 30,31, 1990.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.8	e2.7	3.8	4.5	1.6	2.6	e12	2.4	e2.9	1.7	1.7	2.7
2	e2.9	e2.6	3.8	3.4	1.5	2.5	e7.0	2.6	2.1	6.7	1.5	2.9
3	e2.8	e2.5	3.8	3.1	1.5	2.4	e4.7	2.3	22	3.2	1.4	3.5
4	e19	e2.4	3.7	2.8	1.6	2.5	e3.5	2.5	10	2.3	4.7	2.4
5	e5.4	2.4	3.4	2.6	1.4	3.7	3.1	2.2	4.1	11	3.8	2.0
6	e4.5	2.4	3.1	2.4	1.4	9.6	2.8	4.3	2.8	5.1	1.6	1.9
7	e5.0	2.9	3.1	2.2	1.3	4.2	2.7	4.0	2.3	7.4	1.4	1.7
8	e3.8	4.6	3.1	2.2	1.6	3.0	23	2.3	2.0	4.2	1.3	1.6
9	e3.5	8.2	3.0	2.1	1.5	21	4.5	2.1	1.9	2.9	1.3	1.7
10	e3.3	3.2	3.2	2.1	1.4	197	13	e2.2	1.9	2.2	1.3	12
11	e3.2	3.2	3.0	2.6	1.4	30	5.2	e2.0	2.7	2.1	5.8	11
12	e2.9	2.8	2.9	2.8	1.4	15	16	e2.0	1.9	3.8	5.4	9.6
13	e4.0	52	3.0	2.5	1.3	24	25	e2.0	1.7	2.1	5.1	6.0
14	e3.3	10	2.9	2.2	1.3	21	10	e1.9	1.6	1.8	5.0	22
15	e2.8	6.9	2.8	2.0	3.2	e13	5.8	e1.8	1.5	1.7	3.3	7.2
16	e2.7	7.6	2.8	2.0	3.7	e11	5.3	e1.7	1.5	1.5	3.2	5.7
17	e4.1	213	9.0	2.5	20	e10	4.1	e1.6	1.9	1.4	11	11
18	e3.0	18	3.8	2.3	26	e6.2	3.6	e1.7	1.8	1.4	7.9	320
19	e2.6	7.5	3.0	2.2	5.4	e5.6	3.4	e1.6	1.7	1.6	21	21
20	e6.1	5.2	2.8	2.1	3.7	e5.4	3.3	e1.6	1.5	1.7	11	15
21	e10	4.4	2.7	3.3	10	e5.2	3.2	e1.6	1.4	1.4	8.8	24
22	e4.2	4.4	2.7	2.2	6.0	e25	3.2	e1.5	1.8	1.4	3.9	73
23	e3.5	3.9	3.0	1.9	4.0	e12	2.9	e1.5	1.6	1.5	5.2	156
24	e6.6	3.7	3.3	1.8	3.4	e7.1	2.8	e1.5	1.6	1.5	9.7	58
25	e3.6	13	4.7	1.8	3.1	e5.5	2.6	e1.6	1.6	1.5	3.6	18
26	e3.5	7.2	4.8	1.7	3.4	e5.1	2.5	e2.0	1.6	2.8	2.4	14
27	e3.3	4.6	3.6	1.7	3.0	e4.8	2.5	e5.0	1.7	4.5	6.4	13
28	e3.7	4.0	3.2	1.6	2.7	e4.4	2.1	e4.0	1.6	2.8	2.5	22
29	e3.1	3.9	23	1.6	---	e4.0	2.2	e2.7	1.9	1.7	5.5	17
30	e2.9	3.8	25	1.6	---	e25	3.0	e6.0	1.8	1.5	5.9	13
31	e2.8	---	5.2	1.6	---	e52	---	e10	---	2.0	2.6	---
TOTAL	134.9	413.0	151.2	71.4	117.8	539.8	185.0	82.2	86.4	88.4	155.2	868.9
MEAN	4.35	13.8	4.88	2.30	4.21	17.4	6.17	2.65	2.88	2.85	5.01	29.0
MAX	19	213	25	4.5	26	197	25	10	22	11	21	320
MIN	2.6	2.4	2.7	1.6	1.3	2.4	2.1	1.5	1.4	1.4	1.3	1.6
AC-FT	268	819	300	142	234	1070	367	163	171	175	308	1720
CFSM	1.16	3.68	1.30	.62	1.12	4.66	1.65	.71	.77	.76	1.34	7.74
IN.	1.34	4.11	1.50	.71	1.17	5.37	1.84	.82	.86	.88	1.54	8.64

CAL YR 1988 TOTAL 2563.4 MEAN 7.00 MAX 213 MIN 1.0 AC-FT 5080 CFSM 1.87 IN. 25.50
WTR YR 1989 TOTAL 2894.2 MEAN 7.93 MAX 320 MIN 1.3 AC-FT 5740 CFSM 2.12 IN. 28.79

e Estimated

50051180 QUEBRADA SALVATIERRA NR SAN LORENZO, PR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44	2.0	e2.0	.96	.97	1.4	.83	.67	.48	.87	.70	.37
2	15	1.7	e1.8	.80	1.6	1.0	.83	.72	.59	.90	3.7	.34
3	9.5	1.9	e1.6	1.0	.94	.80	.75	.73	.52	.58	3.7	.40
4	6.2	2.2	e1.6	.93	.93	.75	.75	.61	.59	.78	15	2.2
5	8.4	3.2	e1.6	.85	.93	.75	.73	.65	7.0	.78	11	.51
6	8.3	2.6	1.5	.83	1.3	.68	.69	.48	6.4	10	3.6	.49
7	8.5	3.6	1.5	.83	2.1	.58	.67	.43	4.2	7.3	1.9	1.6
8	7.5	3.6	1.4	.79	2.3	.62	.72	.42	1.4	6.4	31	1.6
9	8.3	3.1	1.4	.75	1.9	1.2	.70	5.2	1.7	1.7	15	.56
10	6.3	2.5	1.4	.81	1.5	1.1	.67	14	1.7	1.3	61	.49
11	7.1	2.2	1.4	.72	1.2	.83	.60	11	.99	1.1	30	.32
12	6.0	2.1	1.4	.66	1.0	3.7	.67	1.7	.93	1.2	13	.29
13	5.6	3.6	1.1	.80	.83	3.2	3.0	.90	.85	.72	29	.48
14	5.3	5.3	1.1	.77	1.8	12	1.4	1.7	46	.67	15	.55
15	4.5	4.0	1.1	.81	.90	3.0	.95	.76	31	3.6	7.3	.52
16	3.5	3.1	1.1	.93	.83	7.9	1.2	.52	23	1.5	3.7	5.0
17	3.6	3.0	1.0	.93	.84	5.7	.83	.46	9.1	7.5	2.3	1.5
18	3.5	2.8	1.0	.91	.84	1.9	.75	.44	3.8	6.4	1.5	1.4
19	3.1	2.9	.86	1.2	.75	1.3	5.1	.42	1.8	13	1.5	1.3
20	2.5	2.7	.89	4.0	.86	1.2	6.0	.44	1.9	4.8	1.1	.65
21	2.7	2.6	1.0	2.2	1.2	1.1	1.6	.41	1.0	1.7	2.2	.51
22	5.5	2.5	.96	1.4	1.6	1.0	1.0	.39	.79	1.1	3.0	.61
23	3.9	2.5	.88	1.3	1.6	.93	.91	.40	.60	.86	1.3	1.3
24	2.8	2.4	.84	1.8	1.8	.91	.85	.40	1.2	6.7	2.1	.89
25	2.7	2.3	.83	1.2	1.1	.89	7.6	.38	8.1	21	1.3	10
26	2.7	2.4	.83	1.8	1.0	.96	4.9	1.1	5.4	14	.74	10
27	2.7	2.4	.79	1.6	.93	.90	1.7	.58	1.6	7.7	.56	6.4
28	2.6	e2.3	.79	1.4	.91	.89	1.2	.42	1.0	3.0	.53	4.1
29	2.6	e2.2	.87	1.0	---	.92	.93	.34	.73	1.7	.56	1.2
30	2.7	e2.0	.92	1.1	---	1.0	.84	.31	.60	1.1	.89	.74
31	2.6	---	.93	.99	---	1.1	---	.50	---	.86	.43	---
TOTAL	200.2	81.7	36.39	36.07	34.46	60.21	49.37	47.48	164.97	130.82	264.61	56.32
MEAN	6.46	2.72	1.17	1.16	1.23	1.94	1.65	1.53	5.50	4.22	8.54	1.88
MAX	44	5.3	2.0	4.0	2.3	12	7.6	14	46	21	61	10
MIN	2.5	1.7	.79	.66	.75	.58	.60	.31	.48	.58	.43	.29
AC-FT	397	162	72	72	68	119	98	94	327	259	525	112
CFSM	1.73	.73	.31	.31	.33	.52	.44	.41	1.47	1.13	2.28	.50
IN.	1.99	.81	.36	.36	.34	.60	.49	.47	1.64	1.30	2.63	.56

CAL YR 1989 TOTAL 2513.39 MEAN 6.89 MAX 320 MIN .79 AC-FT 4990 CFSM 1.84 IN. 25.00
WTR YR 1990 TOTAL 1162.60 MEAN 3.19 MAX 61 MIN .29 AC-FT 2310 CFSM .85 IN. 11.56

e Estimated

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS FEBRUARY 1984 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 03	1608	7.48	262	28.5	APR. 06	1249	.72	405	29.5
NOV. 03	1016	2.07	374	24.5	MAY 14	1350	2.00	348	30.0
DEC. 05	1214	1.46	402	23.0	JULY 06	1324	7.26	320	26.0
JAN. 12	1439	.85	355	24.5	AUG. 10	1032	28.6	154	24.5
FEB. 09	0937	1.53	398	21.5	SEPT 17	1510	1.26	378	29.5
MAR. 12	1312	3.62	378	23.5					

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 September 1990.

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.

SEDIMENT LOADS: Maximum daily mean, 4,940 tons (23,400 tonnes) May 17, 1985; Minimum daily mean, 0.0 ton (0.0 tonne) several days.

EXTREMES FOR WATER YEARS 1989-90.--

Water Year	Suspended-sediment concentration (mg/L) maximum	Suspended-sediment concentration (mg/L) minimum	Suspended-sediment discharge (tons per day) maximum	Suspended-sediment discharge (tons per day) minimum
1989	958 (NOV. 17)	2 (several days)	2,650 (Nov. 17)	0.0 (several days)
1990	260 (Aug. 10)	1 (several days)	91 (Jun. 14)	0.0 (several days)

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	e2.8	9	.06	e2.7	6	.04	3.8	7	.08
2	e2.9	9	.08	e2.6	6	.04	3.8	7	.08
3	e2.8	9	.06	e2.5	5	.04	3.8	7	.08
4	e19	61	5.2	e2.4	5	.04	3.7	7	.06
5	e5.4	10	.14	2.4	5	.04	3.4	6	.06
6	e4.5	10	.12	2.4	5	.04	3.1	6	.06
7	e5.0	10	.14	2.9	6	.04	3.1	6	.06
8	e3.8	9	.10	4.6	11	.17	3.1	6	.06
9	e3.5	9	.08	8.2	22	.90	3.0	6	.04
10	e3.3	9	.08	3.2	5	.04	3.2	6	.06
11	e3.2	9	.08	3.2	5	.04	3.0	6	.04
12	e2.9	8	.06	2.8	5	.04	2.9	6	.04
13	e4.0	8	.08	52	216	260	3.0	6	.04
14	e3.3	7	.06	10	28	.85	2.9	6	.04
15	e2.8	7	.06	6.9	17	.32	2.8	6	.04
16	e2.7	7	.06	7.6	20	1.0	2.8	6	.04
17	e4.1	8	.08	213	958	2650	9.0	25	1.4
18	e3.0	7	.06	18	48	2.9	3.8	8	.08
19	e2.6	7	.04	7.5	15	.30	3.0	6	.04
20	e6.1	17	.45	5.2	11	.16	2.8	6	.04
21	e10	26	1.3	4.4	9	.10	2.7	5	.04
22	e4.2	10	.12	4.4	8	.10	2.7	5	.04
23	e3.5	8	.08	3.9	7	.08	3.0	5	.04
24	e6.6	17	.60	3.7	7	.06	3.3	7	.06
25	e3.6	9	.08	13	43	5.5	4.7	10	.14
26	e3.5	7	.06	7.2	18	.56	4.8	11	.23
27	e3.3	6	.06	4.6	8	.10	3.6	7	.06
28	e3.7	6	.06	4.0	7	.08	3.2	6	.06
29	e3.1	6	.06	3.9	7	.08	23	66	6.8
30	e2.9	6	.04	3.8	7	.08	25	82	13
31	e2.8	6	.04	---	---	---	5.2	12	.16
TOTAL	134.9	---	9.59	413.0	---	2923.74	151.2	---	23.07

e Estimated

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR-Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	4.5	10	.12	1.6	3	.02	2.6	5	.04
2	3.4	7	.06	1.5	3	.02	2.5	5	.04
3	3.1	6	.06	1.5	3	.02	2.4	5	.04
4	2.8	5	.04	1.6	3	.02	2.5	5	.04
5	2.6	5	.04	1.4	3	.02	3.7	6	.06
6	2.4	5	.04	1.4	3	.02	9.6	27	1.9
7	2.2	4	.02	1.3	3	.02	4.2	9	.10
8	2.2	4	.02	1.6	3	.02	3.0	6	.04
9	2.1	4	.02	1.5	3	.02	21	67	11
10	2.1	4	.02	1.4	3	.02	197	886	2350
11	2.6	4	.02	1.4	3	.02	30	92	8.9
12	2.8	5	.04	1.4	3	.02	15	40	1.6
13	2.5	5	.04	1.3	3	.02	24	71	5.4
14	2.2	4	.02	1.3	3	.02	21	67	6.3
15	2.0	4	.02	3.2	10	.08	e13	43	1.9
16	2.0	4	.02	3.7	10	.10	e11	45	2.5
17	2.5	5	.04	20	58	4.8	e10	38	1.6
18	2.3	5	.04	26	86	13	e6.2	14	.24
19	2.2	4	.02	5.4	12	.18	e5.6	13	.20
20	2.1	4	.02	3.7	9	.08	e5.4	12	.18
21	3.3	6	.06	10	29	2.1	e5.2	12	.16
22	2.2	4	.02	6.0	13	.22	e25	102	32
23	1.9	3	.02	4.0	8	.08	e12	32	1.0
24	1.8	3	.02	3.4	6	.06	e7.1	17	.32
25	1.8	3	.02	3.1	5	.04	e5.5	12	.18
26	1.7	3	.02	3.4	6	.06	e5.1	11	.16
27	1.7	3	.02	3.0	6	.04	e4.8	10	.12
28	1.6	3	.02	2.7	5	.04	e4.4	9	.10
29	1.6	3	.02	---	---	---	e4.0	8	.08
30	1.6	3	.02	---	---	---	e25	101	33
31	1.6	3	.02	---	---	---	e52	257	178
TOTAL	71.4	---	0.98	117.8	---	21.16	539.8	---	2637.20

e Estimated

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR-Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	e12	3	.08	2.4	5	.04	e2.9	6	.04
2	e7.0	11	.20	2.6	5	.04	2.1	4	.02
3	e4.7	10	.12	2.3	4	.02	22	66	11
4	e3.5	10	.10	2.5	4	.02	10	22	.60
5	3.1	9	.08	2.2	4	.02	4.1	8	.08
6	2.8	6	.04	4.3	15	.18	2.8	6	.04
7	2.7	5	.04	4.0	12	.12	2.3	5	.04
8	23	75	16	2.3	4	.02	2.0	4	.02
9	4.5	8	.10	2.1	4	.02	1.9	4	.02
10	13	36	2.3	e2.2	4	.02	1.9	4	.02
11	5.2	10	.14	e2.0	4	.02	2.7	4	.02
12	16	46	4.4	e2.0	4	.02	1.9	4	.02
13	25	75	7.9	e2.0	4	.02	1.7	3	.02
14	10	16	.44	e1.9	4	.02	1.6	3	.02
15	5.8	11	.18	e1.8	3	.02	1.5	3	.02
16	5.3	10	.14	e1.7	3	.02	1.5	3	.44
17	4.1	9	.10	e1.6	3	.02	1.9	3	.02
18	3.6	7	.06	e1.7	3	.02	1.8	3	.02
19	3.4	6	.06	e1.6	3	.02	1.7	3	.02
20	3.3	6	.06	e1.6	3	.02	1.5	3	.02
21	3.2	6	.06	e1.6	3	.02	1.4	3	.02
22	3.2	6	.06	e1.5	3	.02	1.8	3	.02
23	2.9	5	.04	e1.5	3	.02	1.6	3	.02
24	2.8	5	.04	e1.5	3	.02	1.6	3	.02
25	2.6	5	.04	e1.6	3	.02	1.6	3	.02
26	2.5	6	.04	e2.0	4	.02	1.6	3	.02
27	2.5	5	.04	e5.0	11	.14	1.7	3	.02
28	2.1	5	.02	e4.0	8	.08	1.6	3	.02
29	2.2	5	.02	e2.7	5	.04	1.9	3	.02
30	3.0	6	.04	e6.0	14	.22	1.8	3	.02
31	---	---	---	e10	26	.70	---	---	---
TOTAL	185.0	---	32.94	82.2	---	2.00	86.4	---	12.70

e Estimated

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR-Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	3	.02	1.7	3	.02	2.7	5	.04
2	6.7	16	.47	1.5	3	.02	2.9	6	.04
3	3.2	6	.06	1.4	3	.02	3.5	6	.06
4	2.3	4	.02	4.7	12	.51	2.4	5	.04
5	11	30	1.6	3.8	8	.08	2.0	4	.02
6	5.1	11	.16	1.6	3	.02	1.9	3	.02
7	7.4	18	.36	1.4	3	.02	1.7	3	.02
8	4.2	9	.10	1.3	2	.00	1.6	3	.02
9	2.9	6	.04	1.3	2	.00	1.7	3	.02
10	2.2	4	.02	1.3	2	.00	12	32	1.0
11	2.1	4	.02	5.8	15	.68	11	29	.86
12	3.8	5	.06	5.4	12	.18	9.6	16	.42
13	2.1	4	.02	5.1	7	.10	6.0	14	.31
14	1.8	4	.02	5.0	8	.10	22	63	7.5
15	1.7	3	.02	3.3	6	.06	7.2	10	.20
16	1.5	3	.02	3.2	5	.04	5.7	7	.10
17	1.4	3	.02	11	27	1.2	11	29	1.0
18	1.4	3	.02	7.9	20	.60	320	159	200
19	1.6	3	.02	21	199	35	21	7	.41
20	1.7	3	.02	11	31	1.6	15	40	1.6
21	1.4	3	.02	8.8	14	.34	24	73	9.3
22	1.4	3	.02	3.9	10	.10	73	58	65
23	1.5	3	.02	5.2	20	.28	156	711	1230
24	1.5	3	.02	9.7	25	.92	58	198	70
25	1.5	3	.02	3.6	7	.06	18	50	2.4
26	2.8	3	.02	2.4	5	.04	14	38	1.4
27	4.5	13	.16	6.4	20	.34	13	32	1.1
28	2.8	6	.04	2.5	5	.04	22	82	19
29	1.7	3	.02	5.5	15	.22	17	47	2.6
30	1.5	3	.02	5.9	9	.14	13	40	1.4
31	2.0	4	.02	2.6	5	.04	---	---	---
TOTAL	88.4	---	3.47	155.2	---	42.77	868.9	---	1615.88
YEAR	2894.2		7325.50						

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR-Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	44	164	68	2.0	3	.01	e2.0	2	.02
2	15	45	2.1	1.7	2	.00	e1.8	2	.00
3	9.5	8	.23	1.9	2	.01	e1.6	2	.00
4	6.2	12	.22	2.2	2	.02	e1.6	2	.00
5	8.4	29	.67	3.2	3	.03	e1.6	2	.00
6	8.3	25	.56	2.6	4	.02	1.5	3	.01
7	8.5	25	.56	3.6	3	.03	1.5	5	.02
8	7.5	23	.45	3.6	3	.03	1.4	5	.02
9	8.3	25	.63	3.1	3	.02	1.4	5	.02
10	6.3	17	.29	2.5	3	.02	1.4	5	.02
11	7.1	18	.33	2.2	3	.02	1.4	5	.02
12	6.0	18	.29	2.1	3	.02	1.4	5	.02
13	5.6	19	.31	3.6	9	.15	1.1	5	.02
14	5.3	20	.29	5.3	17	.26	1.1	5	.02
15	4.5	14	.17	4.0	8	.10	1.1	5	.02
16	3.5	12	.11	3.1	3	.02	1.1	5	.02
17	3.6	11	.10	3.0	2	.02	1.0	5	.02
18	3.5	11	.10	2.8	2	.02	1.0	4	.02
19	3.1	11	.09	2.9	2	.01	.86	2	.00
20	2.5	10	.08	2.7	2	.02	.89	2	.00
21	2.7	10	.07	2.6	2	.02	1.0	2	.00
22	5.5	18	.35	2.5	2	.02	.96	1	.00
23	3.9	10	.12	2.5	2	.02	.88	1	.00
24	2.8	4	.03	2.4	2	.02	.84	1	.00
25	2.7	3	.02	2.3	2	.02	.83	1	.00
26	2.7	3	.02	2.4	2	.02	.83	1	.00
27	2.7	3	.02	2.4	2	.02	.79	1	.00
28	2.6	3	.02	e2.3	2	.02	.79	1	.00
29	2.6	3	.02	e2.2	2	.02	.87	1	.00
30	2.7	3	.02	e2.0	2	.01	.92	1	.00
31	2.6	3	.02	---	---	---	.93	1	.00
TOTAL	200.2	---	76.29	81.7	---	1.02	36.39	---	0.27

e Estimated

RIO GRANDE DE LOIZA BASIN

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR-Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	.96	1	.00	.97	5	.02	1.4	3	.01
2	.80	1	.00	1.6	5	.02	1.0	2	.01
3	1.0	1	.00	.94	5	.01	.80	2	.00
4	.93	1	.00	.93	4	.02	.75	2	.00
5	.85	1	.00	.93	5	.02	.75	1	.00
6	.83	1	.00	1.3	6	.02	.68	2	.00
7	.83	1	.00	2.1	6	.04	.58	2	.00
8	.79	1	.00	2.3	6	.04	.62	1	.00
9	.75	1	.00	1.9	6	.04	1.2	2	.00
10	.81	1	.00	1.5	5	.02	1.1	2	.00
11	.72	1	.00	1.2	4	.01	.83	2	.00
12	.66	1	.00	1.0	4	.01	3.7	8	.11
13	.80	1	.00	.83	4	.00	3.2	5	.05
14	.77	1	.00	1.8	3	.01	12	37	1.7
15	.81	1	.00	.90	3	.00	3.0	11	.11
16	.93	1	.00	.83	3	.00	7.9	27	1.4
17	.93	1	.00	.84	3	.00	5.7	14	.28
18	.91	1	.00	.84	3	.00	1.9	5	.03
19	1.2	1	.00	.75	3	.00	1.3	6	.03
20	4.0	11	.18	.86	14	.03	1.2	6	.03
21	2.2	5	.03	1.2	7	.02	1.1	6	.02
22	1.4	2	.00	1.6	6	.02	1.0	6	.02
23	1.3	2	.00	1.6	5	.02	.93	5	.02
24	1.8	2	.01	1.8	5	.02	.91	5	.02
25	1.2	2	.00	1.1	4	.02	.89	5	.02
26	1.8	3	.01	1.0	3	.01	.96	5	.02
27	1.6	4	.02	.93	3	.00	.90	5	.02
28	1.4	4	.02	.91	3	.00	.89	5	.02
29	1.0	4	.02	---	---	---	.92	5	.02
30	1.1	4	.01	---	---	---	1.0	5	.02
31	.99	4	.02	---	---	---	1.1	5	.02
TOTAL	36.07	---	0.32	34.46	---	0.42	60.21	---	3.98

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR-Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	.83	5	.02	.67	5	.01	.48	2	.00
2	.83	4	.01	.72	5	.01	.59	2	.00
3	.75	4	.00	.73	5	.01	.52	2	.00
4	.75	4	.01	.61	5	.00	.59	2	.00
5	.73	3	.00	.65	5	.00	7.0	22	.80
6	.69	3	.00	.48	5	.00	6.4	20	.43
7	.67	3	.00	.43	5	.00	4.2	16	.21
8	.72	2	.00	.42	5	.00	1.4	4	.01
9	.70	2	.00	5.2	18	2.2	1.7	5	.02
10	.67	2	.00	14	72	3.9	1.7	8	.04
11	.60	2	.00	11	45	2.2	.99	6	.02
12	.67	2	.00	1.7	5	.02	.93	5	.01
13	3.0	10	.11	.90	2	.00	.85	4	.01
14	1.4	5	.02	1.7	10	.05	46	180	91
15	.95	4	.01	.76	4	.01	31	76	7.0
16	1.2	4	.01	.52	4	.00	23	77	5.9
17	.83	3	.01	.46	4	.00	9.1	21	.58
18	.75	3	.01	.44	4	.00	3.8	6	.07
19	5.1	102	2.3	.42	4	.00	1.8	5	.02
20	6.0	19	.39	.44	4	.00	1.9	5	.02
21	1.6	6	.03	.41	4	.00	1.0	4	.01
22	1.0	4	.02	.39	4	.00	.79	4	.01
23	.91	4	.01	.40	4	.00	.60	4	.00
24	.85	4	.01	.40	4	.00	1.2	5	.01
25	7.6	25	1.3	.38	4	.00	8.1	26	.74
26	4.9	13	.22	1.1	4	.01	5.4	17	.27
27	1.7	7	.03	.58	4	.00	1.6	7	.03
28	1.2	6	.02	.42	4	.00	1.0	5	.02
29	.93	6	.02	.34	4	.00	.73	5	.01
30	.84	6	.02	.31	2	.00	.60	5	.00
31	---	---	---	.50	2	.00	---	---	---
TOTAL	49.37	---	4.58	47.48	---	8.42	164.97	---	107.24

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR-Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	.87	5	.01	.70	7	.01	.37	3	.00
2	.90	5	.01	3.7	14	.30	.34	3	.00
3	.58	5	.00	3.7	12	.17	.40	3	.00
4	.78	6	.01	15	56	5.5	2.2	6	.06
5	.78	6	.01	11	36	1.4	.51	4	.00
6	10	33	1.5	3.6	19	.19	.49	4	.00
7	7.3	23	.46	1.9	13	.07	1.6	5	.05
8	6.4	29	.51	31	127	21	1.6	6	.05
9	1.7	23	.12	15	48	2.0	.56	4	.00
10	1.3	19	.07	61	260	89	.49	4	.00
11	1.1	13	.04	30	100	8.8	.32	4	.00
12	1.2	11	.04	13	40	1.5	.29	4	.00
13	.72	7	.01	29	121	23	.48	4	.00
14	.67	5	.00	15	49	2.3	.55	4	.00
15	3.6	18	.33	7.3	22	.45	.52	2	.00
16	1.5	20	.09	3.7	12	.13	5.0	15	.33
17	7.5	27	.88	2.3	8	.06	1.5	14	.06
18	6.4	21	.45	1.5	6	.03	1.4	7	.02
19	13	41	1.6	1.5	6	.03	1.3	4	.02
20	4.8	20	.26	1.1	6	.01	.65	2	.00
21	1.7	13	.06	2.2	8	.12	.51	2	.00
22	1.1	12	.03	3.0	10	.13	.61	3	.00
23	.86	10	.02	1.3	6	.02	1.3	5	.02
24	6.7	26	1.5	2.1	6	.03	.89	4	.00
25	21	75	5.3	1.3	5	.02	10	36	3.5
26	14	45	1.8	.74	3	.00	10	35	1.7
27	7.7	21	.51	.56	3	.00	6.4	20	.46
28	3.0	13	.11	.53	3	.00	4.1	13	.19
29	1.7	11	.06	.56	3	.00	1.2	5	.02
30	1.1	10	.03	.89	4	.01	.74	3	.00
31	.86	9	.02	.43	3	.00	---	---	---
TOTAL	130.82	---	15.84	264.61	---	156.28	56.32	---	6.48
YEAR	1162.60		381.14						

50051180 QUEBRADA SALVATIERRA NEAR SAN LORENZO, PR--Continued

WATER QUALITY DATA, WATER YEAR AUGUST 1989 TO SEPTEMBER 1990

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. PERCENT FINER THAN .002 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .004 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .008 MM
AUG 1989							
19...	0050	80	5580	1205	10	14	18
SEP							
18...	0439	103	2520	701	32	34	43
19...	0947	1110	1680	5035	24	30	41
22...	0932	113	666	203	58	--	--
APR 1990							
19...	1127	5.1	10700	147	19	34	56
19...	1200	5.9	25200	401	11	22	39

DATE	SED. SUSP. FALL DIAM. PERCENT FINER THAN .016 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN 1.00 MM
AUG 1989							
19...	29	47	60	93	99	99	100
SEP							
18...	60	72	84	94	97	98	100
19...	60	70	73	86	94	98	100
22...	--	--	77	84	90	96	100
APR 1990							
19...	83	96	100	100	100	100	100
19...	64	86	96	99	100	100	100

50051310 RIO CAYAGUAS AT CERRO GORDO, PR

LOCATION.--Lat 18°09'13", long 65°57'20", Hydrologic Unit 21010005, at downstream side on bridge on Highway 912, at Barrio Cerro Gordo, 2.8 mi (4.5 km) south of San Lorenzo.

DRAINAGE AREA.--10.2 mi^2 (26.4 km^2).

WATER-DISCHARGE RECORDS

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.

AVERAGE DISCHARGE.--13 years (1978-90), 46.4 ft^3/s (1.314 m^3/s), 61.78 in/yr (1,569 mm/yr), 33,620 acre-ft/yr (41.45 hm^3/yr); median of yearly mean discharges, 40.0 ft^3/s (1.13 m^3/s), 29,000 acre-ft/yr (35.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,200 ft^3/s (374 m^3/s), Aug. 31, 1979, gage height, 9.44 ft (2.877 m), site and datum then in use, from rating curve extended above 1,000 ft^3/s (28.3 m^3/s) on basis of slope-area measurement; minimum discharge, 7.1 ft^3/s (0.201 m^3/s), Feb. 4, May 3, 1981, Apr. 12, 13, 16, 17, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s (70.8 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Aug. 10	0830	*528	15.0	*8.24	2.512						

Minimum discharge, 8.3 ft^3/s (0.235 m^3/s), May 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	54	e26	17	13	15	14	14	11	9.2	17	13	22
2	51	e26	17	15	17	14	14	10	9.9	16	14	21
3	49	e25	16	14	15	13	15	9.4	9.2	14	14	22
4	47	e23	16	13	15	13	14	9.2	9.7	15	14	26
5	43	e34	16	12	14	13	14	9.1	13	15	14	21
6	40	e26	16	12	14	13	14	8.9	14	23	14	21
7	37	e25	16	12	14	13	14	8.8	12	18	19	21
8	35	e29	15	12	16	13	14	8.7	10	16	27	21
9	39	e30	15	12	15	13	14	10	9.5	15	17	21
10	31	e27	15	12	15	13	13	16	9.3	15	127	23
11	30	e25	15	13	14	14	13	13	9.3	15	36	21
12	29	e22	15	12	14	14	14	9.4	9.1	14	28	21
13	29	e21	14	12	14	15	17	8.7	9.1	14	28	30
14	28	21	15	12	15	19	14	9.4	54	14	25	35
15	29	20	15	12	14	17	14	8.8	52	15	24	32
16	e30	20	14	11	14	16	13	8.9	21	14	23	40
17	e26	20	14	12	14	16	13	9.4	17	14	22	31
18	e24	20	14	12	16	15	13	9.7	15	16	22	28
19	e22	21	14	14	15	14	13	9.3	14	19	22	29
20	e23	21	15	20	16	15	12	9.3	18	15	22	23
21	e26	20	14	16	18	15	12	9.3	14	14	21	21
22	e58	18	13	15	17	14	12	9.1	13	13	22	20
23	e34	18	14	14	17	14	11	9.0	12	13	22	20
24	e30	18	14	16	30	14	11	8.8	14	14	22	23
25	e31	18	15	17	16	14	21	8.6	42	27	22	19
26	e33	18	13	27	16	14	18	12	23	27	22	20
27	e30	17	12	20	15	14	13	9.6	17	18	21	18
28	e29	17	12	21	14	15	11	9.3	16	15	94	28
29	e30	17	14	18	---	15	11	9.2	15	14	42	21
30	e43	17	14	16	---	15	11	8.9	15	14	25	19
31	e28	---	12	16	---	15	---	9.4	---	14	22	---
TOTAL	1068	660	451	453	439	446	407	300.2	505.3	497	860	718
MEAN	34.5	22.0	14.5	14.6	15.7	14.4	13.6	9.68	16.8	16.0	27.7	23.9
MAX	58	34	17	27	30	19	21	16	54	27	127	40
MIN	22	17	12	11	14	13	11	8.6	9.1	13	13	18
AC-FT	2120	1310	895	899	871	885	807	595	1000	986	1710	1420
CFSM	3.38	2.16	1.43	1.43	1.54	1.41	1.33	.95	1.65	1.57	2.72	2.35
IN.	3.90	2.41	1.64	1.65	1.60	1.63	1.48	1.09	1.84	1.81	3.14	2.62

CAL YR 1989 TOTAL 11326 MEAN 31.0 MAX 585 MIN 11 AC-FT 22470 CFSM 3.04 IN. 41.31
WTR YR 1990 TOTAL 6804.5 MEAN 18.6 MAX 127 MIN 8.6 AC-FT 13500 CFSM 1.83 IN. 24.82

e Estimated

50051310 RIO CAYAGUAS AT CERRO GORDO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 10	1043	30.4	130	25.5	APR. 13	1237	16.8	131	27.5
NOV. 13	1210	21.0	127	26.5	MAY 16	1139	3.98	140	29.0
DEC. 14	0954	14.7	--	21.5	JUNE 22	0956	12.5	140	26.5
JAN. 18	0917	11.6	126	21.5	JULY 18	1015	15.7	140	25.5
FEB. 06	1513	14.2	131	26.0	AUG. 13	1340	32.0	137	26.5
MAR. 15	1347	15.2	131	26.0	SEPT 13	1447	30.8	133	28.0

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 to September 1990.

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.

EXTREMES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 1,200 ft^3/s (34.0 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Sept. 30	1615	*985	27.9	*10.75	3.277						

Minimum discharge, 3.9 ft^3/s (1.189 m^3/s), May 22,23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				e7.6	6.9	8.2	5.6	5.4	4.9	15	6.9	14
2				e7.4	7.7	7.6	5.4	5.3	5.4	9.8	8.2	11
3				e6.4	6.8	6.8	5.3	5.2	4.9	8.7	7.5	9.8
4				e6.0	6.3	6.7	5.2	5.4	5.8	14	8.7	13
5				e6.2	6.2	6.5	5.1	5.5	6.2	9.1	11	9.0
6				e6.4	6.1	6.3	5.1	5.3	6.3	15	7.7	8.4
7				e6.6	6.3	6.2	4.9	5.2	8.0	12	11	11
8				e6.2	8.3	6.2	5.0	5.3	6.0	9.9	30	9.8
9				e6.4	9.4	8.4	4.9	81	11	8.6	13	8.8
10				e7.4	8.3	8.3	5.1	39	6.9	8.9	178	8.2
11				e6.8	6.8	10	4.9	13	6.6	7.9	30	7.9
12				e6.2	6.4	22	5.1	7.3	6.6	8.1	15	8.4
13				e6.0	6.0	34	8.9	5.9	6.3	8.3	13	9.0
14				e5.8	11	80	6.4	8.9	162	9.2	11	9.8
15				e5.6	7.7	15	5.5	6.2	92	20	9.7	9.2
16				e5.6	6.9	16	5.2	5.4	17	12	8.7	13
17				e5.4	6.7	12	5.1	5.2	11	20	8.1	11
18				e6.0	7.6	8.8	5.1	5.0	8.3	24	8.2	23
19				6.8	6.7	7.4	7.0	4.9	7.8	50	9.0	12
20				14	7.9	6.9	6.6	4.8	10	15	8.1	9.1
21				7.4	12	6.7	5.3	4.7	7.9	11	14	8.9
22				6.1	11	6.3	5.2	4.4	6.8	11	18	8.7
23				5.9	12	6.3	5.3	4.1	7.1	12	12	10
24				6.6	35	6.2	4.9	4.1	10	13	11	9.8
25				7.5	10	6.1	11	4.1	99	101	9.2	26
26				26	8.5	6.1	16	4.9	37	92	8.4	14
27				12	7.7	6.0	8.9	4.9	14	19	7.4	9.7
28				13	7.8	6.2	6.3	4.6	10	12	96	9.1
29				9.0	---	6.0	5.6	4.6	8.3	9.4	67	8.4
30				7.8	---	6.5	5.4	4.4	8.1	8.1	19	104
31				7.4	---	6.1	---	4.6	---	7.2	12	---
TOTAL				243.5	250.0	351.8	185.3	278.6	601.2	581.2	676.8	424.0
MEAN				7.85	8.93	11.3	6.18	8.99	20.0	18.7	21.8	14.1
MAX				26	35	80	16	81	162	101	178	104
MIN				5.4	6.0	6.0	4.9	4.1	4.9	7.2	6.9	7.9
AC-FT				483	496	698	368	553	1190	1150	1340	841
CFSM				1.10	1.25	1.59	.87	1.26	2.81	2.63	3.06	1.98
IN.				1.27	1.30	1.83	.97	1.45	3.13	3.03	3.53	2.21

e Estimated

50053025 RIO TURABO ABOVE BORINQUEN, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.-- OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
MAR. 13	1733	32.5	150	23.0
APR. 18	1204	5.61	171	26.0
MAY 22	1419	4.44	170	29.5
JUNE 13	1118	7.04	176	26.5
JULY 12	1337	8.06	160	28.5
AUG. 09	1120	12.2	157	26.0
SEPT 10	1250	9.03	169	28.5

50053050 RIO TURABO AT BORINQUEN, PR

LOCATION.--Lat 18°10'10", long 66°02'37", Hydrologic Unit 21010005, at right upstream end of bridge on Highway 765, 0.5 mi (0.8 km) south of Villa Borinquen, and 7.3 mi (11.7 km) upstream from Río Grande de Loíza.

DRAINAGE AREA.--7.89 mi² (20.44 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1983 to April 1990 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 430 ft (131 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--5 years (1985-89), 28 ft³/s (0.793 m³/s), 48.19 in/yr (1,224 mm/yr), 20,290 acre-ft/yr (25.0 hm³/yr) .

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,800 ft³/s (391 m³/s), Nov.27, 1987, gage height, 18.02 ft (5.492 m), from floodmark, from rating curve extended above 200 ft³/s (5.66 m³/s) on basis of step-backwater analysis and slope-area measurement; minimum discharge, 1.4 ft³/s (0.040 m³/s), Oct. 11, 1987.

EXTREMES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 1	1615	*578	16.4	*6.21	1.893						

Minimum discharge, 4.7 ft³/s (0.133 m³/s), Apr. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98	12	7.8	8.3	8.0	8.8	7.4					
2	39	12	7.7	8.8	8.9	8.3	7.4					
3	25	11	7.8	8.4	7.8	7.4	7.2					
4	28	11	7.6	7.3	7.2	7.3	6.9					
5	22	22	7.5	6.9	7.0	6.9	7.4					
6	21	14	7.7	7.2	6.5	7.0	7.6					
7	21	16	7.5	7.4	7.0	6.9	7.3					
8	20	14	7.5	7.6	8.8	6.6	7.7					
9	23	14	7.0	7.0	10	9.0	7.7					
10	19	13	6.9	7.5	9.1	8.4	7.4					
11	18	11	7.0	8.7	7.7	11	7.0					
12	18	11	7.2	7.9	7.1	23	7.4					
13	17	15	7.0	7.3	6.8	32	12					
14	17	14	6.9	6.8	12	72	7.9					
15	17	12	6.8	6.7	8.7	18	6.9					
16	16	11	6.5	6.5	8.1	21	6.3					
17	16	11	6.5	6.5	8.0	15	---					
18	17	10	6.9	6.3	8.7	11	---					
19	16	9.8	7.1	7.9	7.9	9.6	---					
20	16	10	7.0	16	8.9	9.3	---					
21	15	9.8	6.9	8.2	13	8.7	---					
22	18	9.4	6.9	6.8	12	9.0	---					
23	13	9.2	7.6	6.9	12	8.9	---					
24	12	9.1	6.7	7.6	33	8.2	---					
25	12	9.2	6.7	8.7	11	8.4	---					
26	12	9.4	6.7	28	9.5	8.2	---					
27	12	9.0	6.8	14	8.7	8.4	---					
28	11	8.7	6.8	14	8.9	8.4	---					
29	11	8.1	7.6	10	---	8.0	---					
30	15	8.1	7.4	9.1	---	8.5	---					
31	12	---	7.7	8.7	---	8.2	---					
TOTAL	627	343.8	221.7	279.0	272.3	391.4	---					
MEAN	20.2	11.5	7.15	9.00	9.72	12.6	---					
MAX	98	22	7.8	28	33	72	---					
MIN	11	8.1	6.5	6.3	6.5	6.6	---					
AC-FT	1240	682	440	553	540	776	---					
CFSM	2.56	1.45	.91	1.14	1.23	1.60	---					
IN.	2.96	1.62	1.05	1.32	1.28	1.85	---					

CAL YR 1989 TOTAL 7034.1 MEAN 19.3 MAX 395 MIN 5.7 AC-FT 13950 CFSM 2.44 IN. 33.16

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. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGES.--30 years (1961-90), 222 ft³/s (6.287 m³/s), 33.57 in/yr (853 mm/yr), 160,800 acre-ft/yr (198 hm³/yr); median of yearly mean discharges, 215 ft³/s (6.09 m³/s), 156,000 acre-ft/yr (192 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 71,500 ft³/s (2,020 m³/s), Sept. 6, 1960, gage height, 31.17 ft (9.501 m), from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of slope-area measurement; minimum daily discharge, 10 ft³/s (0.283 m³/s), Apr. 5, 10, 29, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft³/s (227 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Aug. 10	1045	*4,470	127	*10.69	3.258						

Minimum discharge, 13 ft³/s (0.368 m³/s), May 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	560	103	54	54	57	61	39	26	21	70	48	55
2	319	95	55	71	68	60	39	26	22	75	79	55
3	235	90	56	80	56	48	37	27	24	52	85	69
4	246	85	53	60	52	48	37	25	21	56	123	76
5	240	146	51	50	43	43	37	23	33	58	119	54
6	211	115	53	45	41	42	34	22	79	193	74	44
7	187	96	56	48	50	40	30	19	53	133	64	42
8	182	110	54	46	67	37	29	19	37	90	363	51
9	257	100	52	46	95	73	31	87	36	61	163	47
10	168	98	53	45	83	77	30	613	42	57	1100	47
11	157	83	49	53	58	67	27	220	26	53	365	38
12	151	79	49	51	50	123	27	75	23	48	170	38
13	142	80	49	47	48	139	50	51	19	43	229	65
14	143	85	45	49	65	332	66	60	723	66	174	93
15	145	77	45	45	69	147	36	54	804	121	105	129
16	132	74	49	44	52	148	31	39	235	103	85	122
17	116	72	43	44	52	149	30	34	125	80	74	123
18	103	72	44	42	60	86	29	32	86	113	71	91
19	91	74	49	48	61	63	85	30	68	210	70	146
20	91	72	56	97	54	59	104	26	96	108	64	75
21	96	72	51	118	82	56	41	26	77	67	57	59
22	167	68	44	61	112	50	30	23	55	52	67	54
23	150	67	43	59	96	53	27	24	74	47	81	108
24	120	70	47	57	272	55	22	21	79	98	73	106
25	115	67	46	57	103	51	38	20	366	344	67	74
26	111	68	43	133	79	48	132	27	200	348	68	147
27	109	64	38	131	68	48	71	35	111	175	51	159
28	100	58	36	121	59	49	41	25	77	96	432	120
29	99	56	42	93	---	50	32	23	62	72	307	188
30	128	56	58	76	---	46	27	19	54	60	121	137
31	117	---	45	61	---	50	---	19	---	52	66	---
TOTAL	5188	2452	1508	2032	2052	2398	1289	1770	3728	3201	5015	2612
MEAN	167	81.7	48.6	65.5	73.3	77.4	43.0	57.1	124	103	162	87.1
MAX	560	146	58	133	272	332	132	613	804	348	1100	188
MIN	91	56	36	42	41	37	22	19	19	43	48	38
AC-FT	10290	4860	2990	4030	4070	4760	2560	3510	7390	6350	9950	5180
CFSM	1.86	.91	.54	.73	.82	.86	.48	.64	1.38	1.15	1.80	.97
IN.	2.15	1.02	.62	.84	.85	.99	.53	.73	1.54	1.33	2.08	1.08

CAL YR 1989 TOTAL 70628 MEAN 194 MAX 7080 MIN 36 AC-FT 140100 CFSM 2.15 IN. 29.26
WTR YR 1990 TOTAL 33245 MEAN 91.1 MAX 1100 MIN 19 AC-FT 65940 CFSM 1.01 IN. 13.77

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 September 1989.

INSTRUMENTATION.-- USD-49 and automatic sediment sampler.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean,14,500 mg/L Nov 27, 1987; Minimum daily mean, 11 mg/L August 12, 1985.
SEDIMENT LOADS: Maximum daily mean, 227,000 tons (205,890 tonnes) Nov 27, 1987; Minimum daily mean, 1.3 tons (1.2) July 14, 1985.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 691 mg/L October 23,1989 ; minimum daily mean, 12 mg/L October 27, 1989.
SEDIMENT LOADS: Maximum daily mean, 2,830 tons (2,580 tonnes) August 10, 1990 ; minimum daily 1.4 ton (1.3 tonnes) May 25, 1990.

REVISIONS.--
MEAN CONCENTRATION (mg/L): On May 13, 1986 is 1,550.
SEDIMENT DISCHARGE (tons/day): On May 13, 1986 is 36,300.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
12...	0840	148	247	7.40	26.0	50	7.1	87	23	K79000	K2000
DEC											
07...	0845	58	270	7.40	24.0	44	5.3	62	25	23000	K1700
FEB 1990											
07...	0855	45	276	7.20	23.0	55	6.9	80	18	4900	380
APR											
11...	0925	30	303	7.40	24.5	45	6.8	81	27	4600	K200
JUN											
05...	0845	38	301	7.00	27.5	15	7.2	90	19	K820	500
AUG											
14...	0900	179	200	7.60	25.0	280	6.9	83	50	560000	33000

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
12...	74	0	18	7.0	20	1	2.1	80	<0.5	13	17
DEC											
07...	--	--	--	--	--	--	--	86	--	--	--
FEB 1990											
07...	--	--	--	--	--	--	--	86	--	--	--
APR											
11...	88	0	22	8.1	27	1	1.7	94	<0.5	24	26
JUN											
05...	--	--	--	--	--	--	--	90	--	--	--
AUG											
14...	58	0	14	5.5	15	0.9	2.4	62	--	12	20

K = non-ideal count

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
12...	0.10	31	156	62.4	77	0.26	0.04	0.30	0.07	0.23
DEC										
07...	--	--	--	--	58	0.62	0.08	0.70	0.14	0.46
FEB 1990										
07...	--	--	--	--	70	0.46	0.14	0.60	0.19	0.31
APR										
11...	<0.10	32	195	15.7	62	0.79	0.11	0.90	0.25	0.35
JUN										
05...	--	--	--	--	22	0.73	0.07	0.80	0.10	0.20
AUG										
14...	<0.10	24	130	70.0	500	0.33	0.17	0.50	0.25	0.85

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
12...	0.30	0.60	2.7	0.16	<1	<100	10	<1	<1	<10
DEC										
07...	0.60	1.3	5.8	0.28	--	--	--	--	--	--
FEB 1990										
07...	0.50	1.1	4.9	0.22	--	--	--	--	--	--
APR										
11...	0.60	1.5	6.6	0.32	<1	<100	100	1	4	20
JUN										
05...	0.30	1.1	4.9	0.34	--	--	--	--	--	--
AUG										
14...	1.1	1.6	7.1	0.28	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
12...	4200	2	330	<0.10	<1	<1	20	<0.010	<1	0.02
DEC										
07...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
07...	--	--	--	--	--	--	--	--	--	--
APR										
11...	740	3	330	<0.10	<1	1	20	<0.010	18	0.20
JUN										
05...	--	--	--	--	--	--	--	--	--	--
AUG										
14...	--	--	--	--	--	--	--	--	--	--

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	560	349	856	106	90	24	55	58	8.9
2	319	148	136	97	90	23	57	57	8.8
3	235	40	26	92	88	21	58	51	8.1
4	246	82	73	87	84	19	54	48	6.6
5	240	192	129	149	128	52	53	46	6.1
6	211	167	96	118	106	34	54	43	6.0
7	185	156	81	98	79	21	58	136	21
8	186	152	81	112	63	20	55	55	7.7
9	252	305	221	102	61	16	54	40	5.8
10	167	230	107	100	60	16	55	40	6.3
11	157	141	62	85	53	12	51	40	5.2
12	150	55	23	81	43	9.0	50	40	5.6
13	141	26	9.8	83	39	8.5	50	37	5.0
14	142	24	9.3	87	36	8.8	47	99	12
15	138	21	8.4	79	35	7.6	47	30	3.8
16	135	20	7.0	76	42	8.4	51	30	4.1
17	116	19	5.8	74	48	9.7	45	29	3.5
18	103	20	5.4	74	55	10	45	28	3.4
19	91	119	29	76	64	13	49	27	3.6
20	91	20	4.8	74	69	14	54	27	3.9
21	96	20	5.2	74	68	14	49	26	3.6
22	167	317	276	70	58	11	43	25	3.0
23	150	691	296	69	42	7.6	42	25	3.0
24	123	408	127	72	34	6.8	45	27	3.3
25	119	139	43	68	29	5.2	44	26	3.2
26	114	16	4.8	70	33	6.1	41	25	3.0
27	112	12	3.5	66	35	6.1	36	23	2.3
28	103	16	4.2	60	39	6.5	35	21	2.0
29	101	16	4.1	57	41	5.9	40	20	2.1
30	131	102	38	58	50	7.6	56	24	3.4
31	120	108	37	---	---	---	43	26	3.1
TOTAL	5201	---	2809.3	2514	---	423.8	1516	---	167.4

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	52	30	4.2	55	45	6.7	59	100	15
2	69	31	5.8	66	106	20	58	91	14
3	78	33	6.6	55	140	22	46	80	10
4	58	35	5.6	50	140	19	47	69	8.2
5	48	36	4.4	42	130	15	41	57	6.4
6	43	32	3.7	40	83	9.5	41	50	5.4
7	46	30	3.8	48	216	28	38	44	4.4
8	45	36	4.4	65	103	18	36	35	3.4
9	45	111	15	93	90	24	71	73	18
10	43	21	2.4	81	74	17	75	83	18
11	52	24	3.2	56	63	9.9	65	74	13
12	49	25	3.3	49	52	6.9	121	116	40
13	45	27	3.2	46	42	5.0	136	124	48
14	47	29	3.6	63	42	7.2	328	239	243
15	43	30	3.6	67	43	7.4	144	130	56
16	43	33	3.9	50	42	5.6	145	129	61
17	43	35	4.0	51	43	5.8	145	129	56
18	41	35	3.6	58	42	6.6	83	97	22
19	46	38	4.4	60	41	6.9	61	93	16
20	95	86	31	52	43	6.2	57	92	14
21	115	107	40	80	45	9.8	54	97	14
22	59	54	8.8	110	45	13	47	98	13
23	57	48	7.7	93	45	11	48	93	12
24	55	49	7.4	269	199	189	51	82	12
25	56	52	8.2	100	92	28	47	74	9.8
26	130	109	49	77	52	11	44	67	8.2
27	128	118	45	66	41	7.3	45	68	7.9
28	118	100	32	57	103	16	48	74	9.3
29	91	68	19	---	---	---	50	79	10
30	74	40	7.9	---	---	---	47	74	9.3
31	60	40	6.6	---	---	---	51	70	9.3
TOTAL	1974	---	351.3	1999	---	531.8	2329	---	786.6

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	59	6.2	25	58	4.1	19	60	2.8
2	40	49	5.5	24	59	3.9	21	43	2.5
3	38	45	4.5	25	56	3.9	22	31	1.8
4	38	44	4.5	23	61	3.6	20	31	1.8
5	38	42	4.3	22	60	3.7	31	69	7.3
6	35	37	3.3	20	61	3.3	76	661	149
7	31	35	2.8	17	59	2.8	50	147	21
8	29	35	2.8	18	55	2.6	35	47	5.0
9	32	95	8.3	91	110	205	34	121	17
10	30	59	5.1	587	546	1640	40	236	6.8
11	29	34	2.7	214	176	123	25	234	17
12	30	36	2.8	72	64	14	21	158	11
13	53	59	9.3	49	27	3.8	18	134	6.9
14	69	81	16	57	35	5.6	727	439	2670
15	38	80	8.2	52	59	7.9	789	276	902
16	32	81	6.8	37	73	6.7	229	60	43
17	30	90	7.2	32	74	6.2	121	57	19
18	31	101	8.6	30	69	5.7	83	92	22
19	85	125	36	28	60	4.6	65	72	13
20	104	97	32	24	52	3.4	93	96	27
21	41	47	5.1	25	44	3.0	74	78	17
22	30	39	3.0	21	40	2.2	52	62	9.0
23	27	36	2.8	22	40	2.3	71	79	20
24	24	29	1.9	20	40	2.2	76	78	15
25	41	48	6.8	18	28	1.4	358	255	317
26	136	124	50	25	41	3.2	194	161	93
27	73	76	14	33	55	4.9	108	108	34
28	41	64	6.9	23	56	3.6	74	31	6.7
29	31	61	4.9	22	54	3.3	59	22	3.5
30	25	59	4.1	18	46	2.4	51	22	3.1
31	---	---	---	18	46	2.2	---	---	---
TOTAL	1321	---	276.4	1692	---	2084.5	3636	---	4464.2

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	67	47	11	46	60	7.2	54	53	8.0
2	72	85	17	77	80	19	53	50	7.2
3	50	61	8.4	83	87	21	69	71	16
4	53	70	11	121	114	64	73	76	16
5	56	50	8.7	116	173	60	52	68	10
6	189	147	104	72	123	25	42	67	7.5
7	129	122	46	62	91	16	41	66	7.3
8	87	75	18	357	255	307	49	64	8.5
9	58	49	8.1	160	181	79	46	61	7.6
10	55	54	8.1	1110	528	2830	45	58	6.7
11	51	61	8.1	361	276	311	37	54	5.4
12	46	75	9.3	167	146	72	36	51	4.6
13	41	60	6.7	225	178	135	63	68	12
14	63	73	14	170	199	98	91	91	28
15	117	109	48	103	133	39	126	109	42
16	99	99	30	83	90	21	120	109	45
17	77	82	19	72	78	16	120	152	52
18	110	108	35	68	74	14	90	145	37
19	204	166	97	69	71	14	143	129	54
20	104	101	31	62	69	12	73	81	17
21	65	74	13	56	65	10	57	67	11
22	50	63	8.8	66	57	9.8	53	63	10
23	45	56	7.0	79	46	9.2	105	98	46
24	95	92	42	71	54	9.8	104	106	36
25	344	312	368	65	73	13	72	80	18
26	340	218	266	67	58	10	144	126	58
27	172	137	70	50	29	4.1	155	137	70
28	94	52	26	443	218	1140	118	108	69
29	70	26	5.0	302	212	265	185	156	107
30	58	23	3.7	118	119	43	134	121	61
31	50	22	2.8	65	65	12	---	---	---
TOTAL	3111	---	1350.7	4966	---	5686.1	2550	---	877.8
YEAR	32809		19809.9						

RIO GRANDE DE LOIZA BASIN

50055000 RIO GRANDE DE LOIZA AT CAGUAS, PR--Continued

WATER QUALITY DATA, WATER YEAR AUGUST 1989 TO SEPTEMBER 1990

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. PERCENT FINER THAN .002 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .004 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .008 MM
MAY 1990							
10...	0805	456	483	595	36	51	69
10...	1418	248	459	307	66	76	80

DATE	SED. SUSP. FALL DIAM. PERCENT FINER THAN .016 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN 1.00 MM
MAY 1990							
10...	85	86	95	97	98	99	100
10...	91	--	93	96	97	99	99

50055000 RIO GRANDE DE LOIZA AT CAGUAS--Continued

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM
APR 1990					
27...	1225	80	94	20	96
JUN					
06...	1420	73	749	148	99
07...	1005	50	157	21	91
11...	1025	28	365	28	99
25...	0925	552	1040	1550	99
27...	1555	104	766	215	100
JUL					
25...	1020	180	759	369	98
AUG					
08...	1530	520	1420	1994	99
10...	1440	1700	815	3740	94

RIO GRANDE DE LOIZA BASIN

50055100 RIO CAGUITAS 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 (13.7 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to September 1990.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 394 ft (120 m), from topographic map.

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

EXTREMES FOR CURRENT PERIOD.--Peak discharges greater than base discharge of 100 ft³/s (2.83 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Mar. 14	0700	141	3.99	11.00	3.353	Sept. 3	1615	359	10.2	12.07	3.679
Aug. 13	1630	*1,040	29.0	*14.12	4.804						

Minimum discharge, 1.8 ft³/s (0.051 m³/s), May 3, 6-8, 24-26, 28-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					e3.6	3.7	4.3	2.1	2.3	3.7	3.2	2.7
2					e4.2	3.2	4.0	2.1	2.7	3.4	17	4.6
3					e4.0	2.9	3.9	2.0	2.5	3.2	6.5	38
4					e3.4	2.9	3.7	2.0	2.7	3.4	3.7	10
5					e3.0	2.9	3.7	2.1	3.0	3.1	5.3	4.5
6					e2.7	2.8	3.8	2.0	2.8	5.9	3.7	4.5
7					e2.6	2.8	3.7	1.8	4.0	3.7	4.1	4.1
8					e3.0	2.6	3.6	1.9	3.3	3.4	4.4	3.7
9					e3.5	14	3.8	6.9	2.7	3.2	3.5	3.5
10					e5.0	6.2	3.9	4.9	2.2	3.2	4.3	e3.5
11					e4.0	5.5	3.4	4.0	2.1	3.2	3.7	e3.1
12					e3.6	19	3.5	2.7	2.1	3.2	3.5	3.4
13					2.9	39	5.8	2.8	2.0	3.6	48	3.1
14					4.8	51	4.0	3.1	4.1	3.5	10	3.5
15					3.2	13	3.4	2.7	12	11	4.6	3.4
16					3.0	16	3.0	2.6	5.6	3.9	3.6	4.4
17					3.4	13	3.0	2.3	4.3	7.0	3.6	3.6
18					3.7	8.2	3.1	2.3	3.8	5.2	3.8	3.6
19					3.4	6.7	4.6	2.3	3.6	3.4	3.2	3.5
					3.1	5.7	3.8	2.1	3.5	3.0	3.0	3.3
21					3.7	5.2	3.0	2.1	3.5	2.6	2.9	3.1
22					4.3	5.0	2.6	2.0	3.5	2.4	3.2	6.0
23					3.7	5.1	2.5	2.0	8.5	2.3	3.2	4.6
24					3.7	4.8	2.1	1.9	5.4	4.4	2.8	3.7
25					3.4	4.6	9.6	1.8	6.2	4.3	3.3	3.4
26					3.4	4.6	5.3	1.9	4.5	3.2	3.3	3.2
27					3.0	4.7	2.7	2.0	4.0	2.8	2.8	3.7
28					2.9	4.9	2.3	2.0	3.6	2.5	2.7	3.2
29					---	5.1	2.0	2.0	3.5	2.5	2.7	3.1
30					---	5.2	2.0	2.0	3.5	2.7	2.7	4.3
31					---	4.6	---	2.6	---	2.9	2.5	---
TOTAL					98.2	274.9	110.1	77.0	117.5	115.8	174.8	152.3
MEAN					3.51	8.87	3.67	2.48	3.92	3.74	5.64	5.08
MAX					5.0	51	9.6	6.9	12	11	48	38
MIN					2.6	2.6	2.0	1.8	2.0	2.3	2.5	2.7
AC-FT					195	545	218	153	233	230	347	302
CFSM					.66	1.67	.69	.47	.74	.70	1.06	.96
IN.					.69	1.93	.77	.54	.82	.81	1.23	1.07

e Estimated

50055100 RIO CAGUITAS NEAR AGUAS BUENAS, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.-- OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
MAR. 08	1540	2.65	341	23.5	JULY 24	0846	3.06	330	24.0
APR. 09	1133	3.63	332	23.0	AUG. 15	0938	4.92	322	24.5
MAY 24	1324	1.82	337	26.5	SEPT 11	1442	3.04	360	26.5
JUNE 27	1119	4.02	348	25.0					

50055250 RIO CAGUITAS 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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
11...	0920	36	576	7.30	27.0	2.1	4.2	52	59	240	7300
DEC											
07...	1035	21	637	7.30	26.0	7.5	2.1	25	87	K120000	K13000
FEB 1990											
06...	0920	17	670	7.20	23.5	5.6	2.6	30	110	30000	7100
APR											
11...	1120	19	650	7.40	26.5	3.5	3.0	37	25	K15000	K100
JUN											
05...	1040	19	313	7.10	29.0	5.3	3.0	39	81	49000	180000
AUG											
08...	0930	66	334	7.40	28.0	5.6	3.1	39	45	240000	69000

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
11...	140	0	38	12	36	1	5.2	150	<0.5	47	42
DEC											
07...	--	--	--	--	--	--	--	180	--	--	--
FEB 1990											
06...	--	--	--	--	--	--	--	190	--	--	--
APR											
11...	140	0	38	12	47	2	5.7	110	<0.5	45	72
JUN											
05...	--	--	--	--	--	--	--	190	--	--	--
AUG											
08...	98	0	28	6.9	22	1	4.3	110	--	21	22

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
11...	0.30	28	298	28.8	9	1.18	0.02	1.20	0.05	0.25
DEC										
07...	--	--	--	--	<1	0.31	0.09	0.40	12.0	5.0
FEB 1990										
06...	--	--	--	--	15	--	0.04	<0.10	13.0	5.0
APR										
11...	0.10	30	349	18.0	16	0.02	0.08	0.10	1.90	12
JUN										
05...	--	--	--	--	1	--	0.06	<0.10	12.0	2.0
AUG										
08...	<0.10	19	189	33.6	22	0.19	0.11	0.30	4.10	2.7

K = non-ideal count

50055250 RIO CAGUITAS AT HIGHWAY 30 AT CAGUAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
11...	0.30	1.5	6.6	0.26	<1	<100	110	<1	2	<10
DEC										
07...	17	17	77	3.1	--	--	--	--	--	--
FEB 1990										
06...	18	--	--	3.8	--	--	--	--	--	--
APR										
11...	14	14	62	3.1	1	<100	30	<1	2	20
JUN										
05...	14	--	--	3.8	--	--	--	--	--	--
AUG										
08...	6.8	7.1	31	1.0	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
11...	630	10	370	0.20	<1	1	30	<0.010	7	0.21
DEC										
07...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
06...	--	--	--	--	--	--	--	--	--	--
APR										
11...	4100	2	350	0.20	<1	<1	20	<0.010	26	1.3
JUN										
05...	--	--	--	--	--	--	--	--	--	--
AUG										
08...	--	--	--	--	--	--	--	--	--	--

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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
11...	1110	7.4	432	8.00	26.5	1.1	8.6	106	16	410	K1500
DEC											
07...	1130	4.1	423	7.70	24.0	0.90	5.9	70	20	K6700	2000
FEB 1990											
06...	1030	3.0	445	7.50	22.0	1.2	6.8	77	14	K7500	1500
APR											
11...	1240	3.4	430	7.70	25.0	1.5	8.0	96	16	21000	4200
JUN											
19...	1110	360	432	7.63	27.0	32	6.5	81	16	3000	2400
AUG											
08...	1100	9.8	296	7.60	26.5	2.8	5.9	73	25	23000	38000

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
11...	150	0	37	15	24	0.8	3.9	140	<0.5	22	31
DEC											
07...	--	--	--	--	--	--	--	140	--	--	--
FEB 1990											
06...	--	--	--	--	--	--	--	140	--	--	--
APR											
11...	150	0	44	8.6	12	0.4	1.4	140	<0.5	8.4	<0.10
JUN											
19...	--	--	--	--	--	--	--	140	--	--	--
AUG											
08...	100	0	27	8.6	18	0.8	4.0	98	--	11	22

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
11...	0.20	27	244	4.85	<1	0.28	0.12	0.40	6.8	3.2
DEC										
07...	--	--	--	--	9	1.78	0.02	1.8	0.09	0.21
FEB 1990										
06...	--	--	--	--	16	1.46	0.04	1.5	0.02	0.38
APR										
11...	<0.10	21	201	1.88	2	1.57	0.03	1.6	0.18	0.02
JUN										
19...	--	--	--	--	<1	1.54	0.06	1.6	0.07	0.63
AUG										
08...	<0.10	21	170	4.53	38	0.86	0.04	0.90	0.14	0.46

K = non-ideal count

50055400 RIO BAIROA NEAR CAGUAS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
11...	10	10	46	2.2	1	<100	60	<1	1	20
DEC										
07...	0.30	2.1	9.3	0.35	--	--	--	--	--	--
FEB 1990										
06...	0.40	1.9	8.4	0.44	--	--	--	--	--	--
APR										
11...	0.20	1.8	8.0	0.46	<1	<100	10	3	<1	<10
JUN										
19...	0.70	2.3	10	0.53	--	--	--	--	--	--
AUG										
08...	0.60	1.5	6.6	0.51	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
11...	160	4	80	<0.10	<1	<1	<10	<0.010	<1	0.08
DEC										
07...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
06...	--	--	--	--	--	--	--	--	--	--
APR										
11...	140	4	10	<0.10	<1	<1	<10	<0.010	1	0.10
JUN										
19...	--	--	--	--	--	--	--	--	--	--
AUG										
08...	--	--	--	--	--	--	--	--	--	--

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 fair except those for estimated daily discharges, which are poor. Minor diversion from public water supply tank, 0.5 mi upstream, during low flow. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--19 years (1972-90), 52.4 ft³/s (1.484 m³/s), 43.39 in/yr (1,102 mm/yr), 37,960 acre-ft/yr (46.8 hm³/yr); median of yearly mean discharges, 52 ft³/s (1.47 m³/s), 37,700 acre-ft/yr (46 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft³/s (1,130 m³/s), Dec. 8, 1987, gage height, 25.63 ft (7.812 m), from floodmark and rating curve extended above 100 ft³/s (2.83 m³/s) on basis of slope-area measurement and step-backwater analysis; minimum discharge, 1.4 ft³/s (0.040 m³/s), Apr. 21, 1988, result of diversion and June 12, 1990.

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).

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,400 ft³/s (96.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Aug. 10	1100	*1,480	41.9	*5.38	1.640						

Minimum discharge, 1.4 ft³/s (0.034 m³/s), June 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	26	13	25	11	7.4	5.5	e3.2	3.8	5.4	7.6	9.4
2	41	21	13	34	17	7.1	5.7	e3.1	7.8	5.0	9.9	8.5
3	36	19	12	18	11	6.2	20	e3.2	3.7	3.8	10	9.2
4	e40	17	12	11	10	6.2	8.9	e3.0	3.5	5.4	11	16
5	e34	50	12	9.6	9.5	5.9	6.0	e2.6	10	9.4	9.6	10
6	30	27	12	9.1	9.2	6.1	4.8	e2.3	16	68	11	8.5
7	28	20	13	8.3	13	6.1	4.7	e2.2	8.5	65	9.3	7.7
8	106	28	11	9.8	24	5.0	4.2	2.4	5.0	19	136	9.8
9	147	41	11	8.6	33	6.3	4.3	6.7	3.7	11	30	9.7
10	36	26	11	11	19	6.3	4.7	36	4.3	12	393	24
11	32	20	10	11	15	6.2	5.9	9.6	3.4	9.0	80	11
12	29	18	10	10	12	9.4	4.7	6.1	1.8	8.7	41	11
13	26	18	9.8	14	11	11	24	4.8	2.0	6.5	60	47
14	27	18	9.3	9.9	13	49	11	10	98	6.8	44	27
15	26	17	9.0	8.7	10	e14	5.5	7.2	94	21	27	20
16	24	15	8.9	8.9	10	e25	4.9	e5.1	29	13	22	17
17	23	15	9.1	10	12	e17	4.4	e4.0	12	11	19	23
18	27	17	9.3	9.7	17	e9.6	4.1	e3.5	8.2	27	18	24
19	24	17	9.6	10	11	e8.4	4.6	e3.1	10	27	21	18
20	24	17	9.4	40	13	e11	e4.0	e2.8	32	12	15	11
21	26	15	8.8	17	16	e10	e3.5	e2.6	12	8.1	11	e8.2
22	62	14	8.1	11	15	e8.6	e2.9	e2.5	7.9	6.6	11	e8.0
23	42	14	8.1	10	12	9.6	e2.6	e2.3	5.4	5.5	16	e7.7
24	25	13	14	12	14	6.8	e2.5	2.6	9.8	120	23	e8.2
25	23	13	19	13	8.5	7.4	e20	2.2	27	e135	23	e8.8
26	22	15	9.7	21	8.0	7.1	26	3.2	17	28	16	e9.4
27	20	14	8.6	17	7.8	6.9	8.4	3.8	8.2	16	12	9.4
28	20	13	9.6	16	6.9	8.6	5.7	3.2	6.0	12	16	8.6
29	19	13	15	13	---	8.4	e4.0	5.0	5.0	9.5	26	9.5
30	27	13	14	14	---	7.0	e3.8	2.4	4.6	8.5	12	8.6
31	22	---	11	14	---	7.8	---	5.0	---	8.0	10	---
TOTAL	1116	584	340.3	434.6	368.9	311.4	221.3	155.7	459.6	703.2	1150.4	408.2
MEAN	36.0	19.5	11.0	14.0	13.2	10.0	7.38	5.02	15.3	22.7	37.1	13.6
MAX	147	50	19	40	33	49	26	36	98	135	393	47
MIN	19	13	8.1	8.3	6.9	5.0	2.5	2.2	1.8	3.8	7.6	7.7
AC-FT	2210	1160	675	862	732	618	439	309	912	1390	2280	810
CFSM	2.20	1.19	.67	.85	.80	.61	.45	.31	.93	1.38	2.26	.83
IN.	2.53	1.32	.77	.99	.84	.71	.50	.35	1.04	1.60	2.61	.93

CAL YR 1989 TOTAL 14720.3 MEAN 40.3 MAX 2140 MIN 8.2 AC-FT 29200 CFSM 2.46 IN. 33.39
WTR YR 1990 TOTAL 6253.6 MEAN 17.1 MAX 393 MIN 1.8 AC-FT 12400 CFSM 1.04 IN. 14.18

e Estimated

50056400 RIO VALENCIANO NEAR JUNCOS, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 05	1508	33.8	222	28.5	APR. 11	1023	4.78	269	27.5
NOV. 15	1415	16.2	229	26.5	MAY 23	1247	2.19	280	33.0
DEC. 06	1537	12.7	235	26.0	JUNE 21	1446	9.60	299	29.5
JAN. 16	1701	11.0	220	25.5	JULY 25	1654	32.4	200	28.0
FEB. 22	1440	4.45	312	22.5	AUG. 23	1453	10.1	308	30.0
MAR. 06	1334	6.46	275	26.0	SEPT 18	0942	14.6	256	27.0

50056900 QUEBRADA MAMEY NEAR GURABO, PR

LOCATION.--Lat 18°14'57", long 65°56'44", Hydrologic Unit 21010005, at left downstream side of bridge on Highway 189, 1.9 mi (3.0 km) southeast of Gurabo plaza, and 2.1 mi (3.4 km) northwest of Juncos plaza.

DRAINAGE AREA.--2.30 mi² (5.96 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1983 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 180 ft (55 m), from topographic map.

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

AVERAGE DISCHARGE.--6 years (1985-90), 3.68 ft³/s (0.104 m³/s), 21.73 in/yr (552 mm/yr), 2,670 acre-ft/yr (3.29 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,740 ft³/s (77.6 m³/s), Nov. 26, 1987, gage height, 11.04 ft (3.365 m), from rating curve extended above 400 ft³/s (11.3 m³/s) on basis of indirect measurement of peak flow and step-backwater analysis; minimum discharge, 0.20 ft³/s (0.006 m³/s), Feb. 10, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 6	1700	*140	3.965	*5.20	1.585						

Minimum discharge, 0.15 ft³/s (0.004 m³/s), June 12, July 5,6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	1.1	1.1	2.0	1.4	e.45	.26	.22	.36	.25	.32	.39
2	3.1	1.0	1.2	2.0	1.6	e.56	.25	.23	.47	.24	.88	.43
3	2.3	1.0	1.2	2.3	1.6	e.42	.33	.20	.48	.21	.96	1.0
4	14	1.0	1.2	1.4	1.5	e.38	.28	.21	.53	.20	12	1.0
5	5.5	1.1	1.2	1.2	1.4	e.36	.28	.23	.58	.17	4.1	.58
6	15	1.3	1.4	1.3	1.3	e.36	.25	.23	.68	1.6	.90	.50
7	3.8	1.3	1.3	1.3	1.8	e.34	.23	.22	.48	1.4	1.0	.46
8	3.4	1.3	1.3	1.2	2.2	e.33	.23	.23	.37	.49	32	.45
9	5.9	1.2	1.3	1.1	2.4	e1.4	.24	.27	.42	.29	2.5	.50
10	2.1	1.1	1.6	1.3	1.7	.79	.25	.45	.38	.29	1.8	.51
11	1.7	.99	1.4	1.3	1.2	.92	.24	.42	.26	.32	1.9	.48
12	1.5	.98	1.2	1.3	.90	1.1	.28	.37	.23	.29	1.0	.41
13	1.5	.95	1.2	1.4	.72	.83	.37	.41	.30	.26	1.8	.41
14	1.4	.94	1.3	1.5	1.1	1.9	.47	.50	4.0	.31	2.1	3.7
15	1.3	1.0	1.4	1.2	.61	.65	.38	.46	4.2	.37	.97	1.9
16	1.2	1.0	1.3	1.2	.44	.47	.36	.43	.94	.44	.70	.59
17	1.2	1.1	1.4	1.1	.44	.45	.36	.39	.37	.91	.70	.52
18	1.2	1.1	1.5	1.0	e.70	.35	.34	.42	.29	1.1	.76	1.1
19	1.3	1.5	1.6	1.1	e.68	.29	8.7	.40	.29	.66	.68	1.2
20	1.3	1.2	1.7	1.2	e.60	.28	1.4	.39	2.0	.48	.55	.45
21	1.3	1.3	1.6	1.3	e.64	.29	.36	.39	.65	.37	.49	.29
22	1.2	1.1	1.4	1.1	e.82	.26	.22	.37	.30	.31	.51	2.2
23	1.2	1.1	1.4	1.2	e.85	.32	.19	.36	.69	.29	.55	7.9
24	1.1	1.2	1.5	1.3	e.86	.36	.18	.32	3.0	8.7	.53	3.0
25	1.0	1.2	1.4	1.2	e.60	.30	.40	.30	2.2	6.4	.52	3.5
26	1.0	1.2	1.3	1.2	e.48	.26	.33	.31	.58	3.6	.48	.61
27	.99	1.2	1.2	1.3	e.46	.29	.26	.31	.36	2.7	.45	.41
28	.97	1.1	1.3	1.3	e.41	.32	.21	.36	.30	.74	.40	.33
29	1.1	1.1	1.4	1.2	---	.32	.19	.39	.24	.48	.42	.26
30	1.4	1.1	1.4	1.2	---	.29	.20	.36	.23	.40	.42	.28
31	1.2	---	1.4	1.2	---	.27	---	.37	---	.34	.39	---
TOTAL	88.46	33.76	42.1	40.9	29.41	15.91	18.04	10.52	26.18	34.61	72.78	35.36
MEAN	2.85	1.13	1.36	1.32	1.05	.51	.60	.34	.87	1.12	2.35	1.18
MAX	15	1.5	1.7	2.3	2.4	1.9	8.7	.50	4.2	8.7	32	7.9
MIN	.97	.94	1.1	1.0	.41	.26	.18	.20	.23	.17	.32	.26
AC-FT	175	67	84	81	58	32	36	21	52	69	144	70
CFSM	1.24	.49	.59	.57	.46	.22	.26	.15	.38	.49	1.02	.51
IN.	1.43	.55	.68	.66	.48	.26	.29	.17	.42	.56	1.18	.57

CAL YR 1989 TOTAL 1027.34 MEAN 2.81 MAX 235 MIN .42 AC-FT 2040 CFSM 1.22 IN. 16.62
WTR YR 1990 TOTAL 448.03 MEAN 1.23 MAX 32 MIN .17 AC-FT 889 CFSM .53 IN. 7.25

e Estimated

50056900 QUEBRADA MAMEY NEAR GURABO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS MARCH 1984 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 06	0846	2.80	376	25.0	APR. 04	1530	.23	590	27.0
NOV. 16	1213	.92	560	25.0	MAY 07	1408	.23	550	28.5
DEC. 08	0928	1.22	590	23.0	JUNE 18	1408	.41	550	28.5
JAN. 09	1733	1.08	501	25.0	JULY 19	0927	.54	510	26.5
FEB. 16	0820	.42	550	22.5	AUG. 23	0832	.39	606	27.0
MAR. 09	1004	.33	580	23.5	SEPT 12	1304	1.02	640	27.0

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 (40.10 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.

AVERAGE DISCHARGE.--31 years (1960-90), 137 ft^3/s (3.880 m^3/s), 30.90 in/yr (785 mm/yr), 99,260 acre-ft/yr (122hm^3/yr); median of yearly mean discharges, 127 ft^3/s (3.60 m^3/s), 92,000 acre-ft/yr (110 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 74,600 ft^3/s (2,133 m^3/s), Sept. 6, 1960, gage height, 27.7 ft (8.44 m), from floodmark, from rating curve extended above 8,000 ft^3/s (227 m^3/s) on basis of slope-area measurement at gage height 21.6 ft (6.58 m), contracted opening, culvert and flow over road measurement at gage height 23.76 ft (7.242 m), datum then in use, and estimate of peak flow based on slope-area measurements of Río Gurabo and Río Valenciano, 7.0 mi (11.3 km) upstream, adjusted for channel storage and flow from intervening area; minimum discharge, 4.5 ft^3/s (0.127 m^3/s), Feb. 21,25, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Approximate elevation to gage datum of the Aug. 4, 1945 flood, as pointed out by local residents, 26.6 ft (8.11 m), datum then is use.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s (85.0 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 8	2200	*3,220	91.2	*14.21	4.331

No other peak greater than base discharge.

Minimum daily discharge, 8.4 ft^3/s (0.238 m^3/s), May 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	276	78	28	40	26	27	19	11	17	28	23	25
2	196	66	30	115	30	35	19	10	18	29	27	24
3	164	55	32	84	28	26	30	10	20	27	33	28
4	502	51	33	41	24	23	24	9.4	19	26	43	33
5	367	116	33	29	23	22	19	9.2	15	26	58	28
6	196	97	34	26	21	22	18	8.8	30	103	63	25
7	152	66	30	25	23	21	17	8.4	21	269	36	23
8	669	115	27	26	35	20	16	9.0	15	62	262	23
9	826	128	26	25	60	57	16	10	13	34	79	26
10	222	97	25	26	87	87	15	28	12	28	432	77
11	161	59	25	30	37	44	15	26	11	24	258	71
12	132	49	23	28	35	95	15	16	11	23	78	88
13	114	56	23	29	28	134	25	12	9.5	20	71	180
14	106	50	22	30	39	192	44	15	22	20	124	113
15	183	44	22	25	41	67	25	22	217	25	51	111
16	119	42	22	25	27	42	19	16	66	39	39	63
17	92	38	22	26	25	106	19	14	35	29	33	73
18	86	39	22	28	44	36	15	13	33	78	29	79
19	83	40	23	28	42	28	29	13	27	137	29	105
20	128	41	23	52	36	25	18	12	92	42	26	53
21	125	39	23	68	39	26	14	11	62	29	26	45
22	112	34	21	34	50	23	12	11	39	24	31	43
23	99	33	20	30	52	26	11	10	40	21	43	43
24	62	32	25	33	53	24	10	10	67	134	72	39
25	63	31	35	34	38	21	26	9.9	195	317	43	81
26	57	30	24	40	29	20	85	9.9	82	73	44	64
27	55	31	22	40	28	24	21	11	50	56	31	41
28	51	28	21	36	25	32	15	11	37	38	33	40
29	55	27	22	29	---	29	12	12	31	31	62	36
30	121	29	30	29	---	23	11	12	29	27	33	34
31	94	---	23	26	---	22	---	13	---	24	28	---
TOTAL	5668	1641	791	1137	1025	1379	634	393.6	1335.5	1843	2240	1714
MEAN	183	54.7	25.5	36.7	36.6	44.5	21.1	12.7	44.5	59.5	72.3	57.1
MAX	826	128	35	115	87	192	85	28	217	317	432	180
MIN	51	27	20	25	21	20	10	8.4	9.5	20	23	23
AC-FT	11240	3250	1570	2260	2030	2740	1260	781	2650	3660	4440	3400
CFSM	3.04	.91	.42	.61	.61	.74	.35	.21	.74	.99	1.20	.95
IN.	3.50	1.01	.49	.70	.63	.85	.39	.24	.83	1.14	1.38	1.06

CAL YR 1989 TOTAL 57092 MEAN 156 MAX 14700 MIN 20 AC-FT 113200 CFSM 2.60 IN. 35.28
WTR YR 1990 TOTAL 19801.1 MEAN 54.2 MAX 826 MIN 8.4 AC-FT 39280 CFSM .90 IN. 12.24

50057000 RIO GURABO AT GURAGO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
NOV. 12	1014	63.2	298	26.5
DEC. 07	1133	25.8	370	26.0
JAN. 11	1338	30.1	308	27.5
FEB. 08	0955	38.6	366	24.0
MAR. 14	0900	134	212	24.5
APR. 05	0911	19.7	329	25.5
MAY 08	0853	10.6	391	27.0
JUNE 20	1644	172	270	29.5
JULY 13	1315	20.3	350	31.5
AUG. 21	0932	26.6	356	29.5
SEPT 14	1318	73.1	232	28.5

50057000 RIO GURABO AT GURABO--Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: October 1983 to September 1989.

INSTRUMENTATION.-- USD-49 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, 5 mg/L April 17 and 24, 1990.
SEDIMENT LOADS: Maximum daily mean, 686,000 tons (622,340 tonnes) Nov 27, 1987; Minimum daily mean, 0.14 ton (0.13 tonne) April 24, 1990.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 567 mg/L October 9, 1989; minimum daily mean, 5 mg/L April 17 and 24, 1990.
SEDIMENT LOADS: Maximum daily mean, 2,050 tons (1,890 tonnes) October 8, 1989; minimum daily 0.14 ton (0.13 tonne) April 24, 1990.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	276	217	167	78	35	7.1	28	11	.81
2	196	126	71	66	30	5.7	30	10	.78
3	164	68	30	55	28	4.1	32	10	.87
4	502	296	1210	51	24	3.3	33	11	.93
5	367	282	335	116	92	35	33	12	1.0
6	196	163	88	97	88	25	34	12	1.1
7	152	136	59	66	63	11	30	19	1.5
8	669	421	2050	115	93	37	27	20	1.4
9	826	567	1920	128	126	47	26	20	1.4
10	222	86	56	97	86	26	25	25	1.7
11	161	38	16	59	34	5.7	25	20	1.3
12	132	32	11	49	19	2.5	23	20	1.3
13	114	25	7.7	56	14	1.9	23	20	1.2
14	106	21	6.3	50	12	1.7	22	18	1.0
15	183	149	84	44	20	2.7	22	13	.78
16	119	105	35	42	40	4.7	22	10	.58
17	92	60	15	38	33	3.1	22	10	.56
18	86	29	6.5	39	30	3.1	22	10	.59
19	83	28	7.3	40	29	3.2	23	15	.95
20	128	114	48	41	28	3.2	23	11	.64
21	125	114	43	39	28	2.8	23	27	1.6
22	112	98	43	34	27	2.5	21	23	1.3
23	99	93	29	33	25	2.3	20	20	1.0
24	62	44	7.8	32	23	2.0	25	24	1.8
25	63	37	6.0	31	21	1.7	35	29	3.1
26	57	25	3.9	30	20	1.7	24	20	1.4
27	55	20	2.9	31	28	2.4	22	13	.75
28	51	20	2.7	28	24	1.8	21	10	.55
29	55	20	2.8	27	21	1.6	22	10	.62
30	121	91	57	29	16	1.2	30	32	2.7
31	94	78	23	---	---	---	23	29	1.8
TOTAL	5668	---	6443.9	1641	---	253.0	791	---	37.01

50057000 RIO GURABO AT GURABO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	47	5.7	26	20	1.3	27	6	.44
2	115	94	35	30	21	1.7	35	32	3.2
3	84	49	13	28	21	1.7	26	30	2.2
4	41	26	3.0	24	17	1.1	23	23	1.4
5	29	23	1.8	23	14	.83	22	21	1.2
6	26	21	1.4	21	10	.56	22	18	1.0
7	25	19	1.3	23	11	.70	21	14	.75
8	26	16	1.1	35	24	2.5	20	12	.63
9	25	12	.79	60	56	10	57	43	18
10	26	10	.74	87	78	21	87	85	28
11	30	10	.81	37	37	3.9	44	51	6.3
12	28	10	.72	35	28	2.4	95	55	15
13	29	12	1.0	28	25	1.9	134	55	21
14	30	30	2.7	39	40	4.7	192	127	98
15	25	23	1.6	41	44	5.2	67	67	14
16	25	19	1.3	27	32	2.4	42	45	5.6
17	26	18	1.2	25	26	1.8	106	97	33
18	28	18	1.3	44	42	5.7	36	45	4.8
19	28	17	1.2	42	39	4.6	28	38	2.8
20	52	39	12	36	25	2.6	25	36	2.4
21	68	68	15	39	20	2.0	26	34	2.3
22	34	37	3.5	50	20	2.7	23	33	2.1
23	30	30	2.4	52	20	2.8	26	32	2.2
24	33	28	2.4	53	41	6.3	24	31	2.1
25	34	24	2.2	38	37	4.1	21	31	1.7
26	40	21	2.2	29	25	2.1	20	31	1.7
27	40	21	2.3	28	18	1.3	24	30	2.0
28	36	21	2.0	25	11	.77	32	31	2.9
29	29	20	1.7	---	---	---	29	22	1.6
30	29	20	1.6	---	---	---	23	21	1.3
31	26	19	1.5	---	---	---	22	21	1.2
TOTAL	1137	---	124.46	1025	---	98.66	1379	---	280.82

50057000 RIO GURABO AT GURABO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	21	1.1	11	12	.38	17	10	.43
2	19	20	.98	10	12	.38	18	10	.48
3	30	28	2.6	10	12	.37	20	10	.52
4	24	27	1.9	9.4	14	.42	19	10	.50
5	19	19	.97	9.2	17	.49	15	10	.42
6	18	19	.90	8.8	19	.55	30	293	26
7	17	19	.85	8.4	19	.50	21	250	17
8	16	19	.80	9.0	12	.29	15	145	6.1
9	16	18	.75	10	10	.29	13	95	3.2
10	15	19	.77	28	43	3.9	12	73	2.3
11	15	25	1.0	26	20	1.3	11	58	1.7
12	15	29	1.2	16	19	.85	11	40	1.2
13	25	31	2.7	12	24	.81	9.5	23	.59
14	44	46	6.7	15	29	1.2	22	26	7.5
15	25	20	1.3	22	26	1.6	217	299	242
16	19	7	.36	16	17	.81	66	70	13
17	19	5	.24	14	14	.49	35	62	5.9
18	15	7	.28	13	11	.39	33	63	5.3
19	29	28	4.0	13	10	.34	27	60	4.4
20	18	24	1.3	12	10	.32	92	97	30
21	14	14	.52	11	10	.31	62	65	12
22	12	10	.33	11	10	.28	39	45	4.8
23	11	7	.22	10	10	.30	40	44	5.7
24	10	5	.14	10	10	.25	67	65	29
25	26	23	7.0	9.9	8	.22	195	168	102
26	85	81	26	9.9	8	.22	82	77	18
27	21	28	1.8	11	10	.27	50	25	3.6
28	15	20	.81	11	10	.31	37	29	3.0
29	12	19	.63	12	10	.31	31	26	2.2
30	11	15	.47	12	9	.28	29	22	1.7
31	---	---	---	13	10	.33	---	---	---
TOTAL	634	---	68.62	393.6	---	18.76	1335.5	---	550.54

50057000 RIO GURABO AT GURABO--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	28	21	1.6	23	110	6.1	25	33	2.1
2	29	21	1.5	27	101	6.9	24	32	2.0
3	27	20	1.5	33	76	6.2	28	36	3.0
4	26	20	1.4	43	64	8.2	33	36	3.4
5	26	20	1.4	58	57	13	28	28	2.2
6	103	85	38	63	61	11	25	24	1.6
7	269	310	279	36	37	3.5	23	22	1.4
8	62	322	57	262	265	226	23	21	1.3
9	34	283	26	79	325	73	26	20	1.4
10	28	253	19	432	514	893	77	67	16
11	24	235	16	258	199	181	71	70	15
12	23	215	12	78	83	18	88	75	32
13	20	223	601	71	67	17	180	154	81
14	20	231	12	124	116	44	113	106	37
15	25	223	16	51	73	11	111	105	35
16	39	218	22	39	54	5.6	63	69	12
17	29	209	17	33	39	3.5	73	65	12
18	78	268	133	29	25	2.0	79	76	22
19	137	290	117	29	19	1.4	105	96	32
20	42	240	29	26	17	1.2	53	57	8.8
21	29	225	17	26	15	1.0	45	42	5.2
22	24	216	13	31	15	1.3	43	51	5.5
23	21	211	11	43	17	2.0	43	50	5.9
24	134	250	204	72	94	19	39	47	5.6
25	317	257	344	43	85	11	81	76	23
26	73	87	17	44	79	9.3	64	71	15
27	56	91	13	31	75	6.5	41	47	5.4
28	38	96	8.9	33	70	6.7	40	43	4.7
29	31	103	7.7	62	67	12	36	41	4.0
30	27	108	7.0	33	42	3.8	34	41	4.1
31	24	110	6.5	28	36	2.6	---	---	---
TOTAL	1843	---	2050.5	2240	---	1606.8	1714	---	399.6
YEAR	19801.1		11932.67						

RIO GRANDE DE LOIZA BASIN

50057000 RIO GURABO AT GURABO--Continued

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM
MAY 1990					
10...	0835	39	90	9.5	90
29...	1630	12	426	14	79
31...	1115	15	12	.49	88
JUN					
01...	1640	17	403	18	82
15...	1437	114	210	65	93
JUL					
20...	1327	38	232	24	100
AUG					
06...	1232	50	486	66	100

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
13...	0750	50	346	7.20	27.0	10	4.7	59	29	K1600	480
DEC											
12...	0830	15	425	6.90	25.0	4.6	5.4	65	23	3400	390
FEB 1990											
06...	0745	17	430	7.00	22.5	2.6	4.5	52	17	3800	K180
APR											
20...	0945	40	366	7.30	25.5	15	3.7	45	22	49000	K14000
JUN											
20...	1110	1010	346	7.10	29.5	6.4	3.0	39	29	5900	2000
AUG											
20...	0730	17	373	7.40	29.5	11	2.9	38	23	4400	390

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
13...	110	0	26	11	25	1	4.5	113	<0.5	17	23
DEC											
12...	--	--	--	--	--	--	--	150	--	--	--
FEB 1990											
06...	--	--	--	--	--	--	--	130	--	--	--
APR											
20...	110	0	24	12	29	1	4.3	110	<0.5	14	28
JUN											
20...	--	--	--	--	--	--	--	98	--	--	--
AUG											
20...	120	3	28	13	30	1	5.0	120	--	17	34

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
13...	0.10	28	202	27.3	12	0.83	0.07	0.90	0.17	0.53
DEC										
12...	--	--	--	--	14	0.90	0.10	1.0	0.89	0.41
FEB 1990										
06...	--	--	--	--	19	1.53	0.07	1.6	0.21	0.69
APR										
20...	<0.10	26	204	22.0	26	1.1	0.10	1.2	0.38	0.62
JUN										
20...	--	--	--	--	26	1.21	0.19	1.4	0.53	1.2
AUG										
20...	<0.10	33	232	10.8	16	1.4	0.10	1.5	0.39	0.61

K = non-ideal count

RIO GRANDE DE LOIZA BASIN

50057025 RIO GURABO NEAR GURABO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
13...	0.70	1.6	7.1	0.25	<1	<100	30	<1	1	10
DEC										
12...	1.3	2.3	10	0.34	--	--	--	--	--	--
FEB 1990										
06...	0.90	2.5	11	0.59	--	--	--	--	--	--
APR										
20...	1.0	2.2	9.7	0.49	1	100	50	<1	2	60
JUN										
20...	1.7	3.1	14	0.61	--	--	--	--	--	--
AUG										
20...	1.0	2.5	11	0.54	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
13...	940	2	270	<0.10	<1	<1	10	<0.010	<1	0.08
DEC										
12...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
06...	--	--	--	--	--	--	--	--	--	--
APR										
20...	1700	2	510	0.10	<1	<1	<10	<0.010	3	0.08
JUN										
20...	--	--	--	--	--	--	--	--	--	--
AUG										
20...	--	--	--	--	--	--	--	--	--	--

50059000 LAGO LOIZA AT DAMSITE, 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.

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.--Maximun elevation 147.42 ft (44.93 m), Sept. 18, 1989; minimun elevation, 125.86 ft (38.36 m), June 12, 1988.

EXTREMES OBSERVED FOR CURRENT YEAR.--Maximum elevation 135.69 ft (41.36 m), Oct. 8; minimum elevation, 127.29 ft (38.80 m), Jan. 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
98.4	5	128.6	18
111.5	8.9	137.8	26
120.4	13	147.6	35

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	134.41	134.78	132.64	128.47	128.04	129.08	133.91	132.04	129.88	134.00	133.26	134.14
2	134.13	134.82	132.48	128.79	127.98	129.04	133.79	131.88	129.68	133.95	133.46	134.24
3	134.74	134.80	132.27	128.99	127.97	128.94	133.70	131.70	129.54	133.85	133.56	133.17
4	133.83	134.82	132.10	129.01	127.85	128.81	133.58	131.52	129.36	133.76	133.66	133.38
5	134.27	134.82	131.90	128.91	127.67	128.67	133.44	131.31	129.22	133.72	133.84	133.38
6	134.85	134.43	131.72	128.79	127.49	128.55	133.29	131.20	129.26	133.60	133.93	133.34
7	134.01	134.49	131.56	128.72	127.45	128.38	133.13	130.96	129.26	134.36	134.00	133.58
8	135.69	134.89	131.38	128.60	127.59	128.18	132.97	130.75	129.12	134.52	134.34	133.56
9	135.04	134.27	131.16	128.49	127.81	128.51	132.82	131.46	128.93	133.86	133.48	133.54
10	133.88	134.45	130.98	128.36	128.05	128.79	132.68	132.94	128.79	133.78	133.84	133.58
11	134.16	134.47	130.79	128.28	128.04	129.18	132.50	133.32	128.58	133.70	133.68	133.60
12	134.40	134.50	130.59	128.19	127.96	129.82	132.34	133.36	128.36	133.58	134.04	133.60
13	134.60	134.51	130.41	128.06	127.84	131.30	132.30	133.34	128.10	133.46	133.54	133.94
14	134.77	134.54	130.30	127.98	127.88	133.14	132.39	133.34	130.39	133.36	132.74	134.22
15	134.09	134.48	130.18	127.82	127.90	133.53	132.30	133.32	133.38	133.68	132.74	134.54
16	134.29	134.42	130.08	127.71	127.84	134.17	132.17	133.20	133.94	133.79	132.80	134.74
17	134.41	134.36	129.95	127.60	127.78	134.55	132.01	133.08	134.08	134.04	132.82	133.34
18	134.53	134.28	129.87	127.47	127.85	134.60	132.04	132.92	134.18	134.28	132.82	133.62
19	134.68	134.22	129.79	127.35	128.03	134.58	132.36	132.79	134.16	134.36	132.80	134.20
20	134.84	134.18	129.70	127.31	127.99	134.55	132.53	132.56	134.36	134.44	132.74	134.28
21	134.52	134.12	129.60	127.67	128.05	134.48	132.43	132.36	134.34	134.40	132.68	134.26
22	134.84	134.02	129.45	127.64	128.25	134.43	132.29	132.16	134.28	134.29	132.70	134.30
23	134.66	133.90	129.30	127.61	128.43	134.36	132.13	131.93	134.54	134.18	132.76	134.38
24	134.82	133.78	129.18	127.56	129.01	134.30	131.94	131.71	134.42	134.22	132.86	134.44
25	134.93	133.63	129.08	127.50	129.18	134.22	132.08	A	134.09	133.82	132.88	134.52
26	134.95	133.49	128.98	127.58	129.20	134.17	132.53	A	134.10	133.10	132.88	134.72
27	134.97	133.35	128.82	127.90	129.16	134.15	132.56	131.02	134.18	133.52	132.80	133.18
28	134.95	133.18	128.66	128.00	129.06	134.15	132.44	130.78	134.18	133.60	133.64	133.28
29	134.32	133.01	128.63	128.10	---	134.14	132.29	130.54	134.10	133.58	134.20	133.52
30	134.50	132.85	128.59	128.10	---	134.10	132.14	130.30	134.02	133.52	134.26	133.74
31	134.70	---	128.49	128.06	---	134.02	---	130.04	---	133.38	134.20	---
MEAN	134.57	134.20	130.28	128.08	128.12	132.03	132.64	---	131.83	133.86	133.35	133.88
MAX	135.69	134.89	132.64	129.01	129.20	134.60	133.91	---	134.54	134.52	134.34	134.74
MIN	133.83	132.85	128.49	127.31	127.45	128.18	131.94	---	128.10	133.10	132.68	133.17

A No gage-height record.

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 mi² (3.1 km²) 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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989										
25...	0720	L	264	6.90	27.0	3.1	39	24	20	K10
DEC										
15...	1125	L	348	7.10	26.0	5.0	60	26	30	K10
FEB 1990										
06...	1125	L	385	7.10	25.0	3.0	36	20	K4	K9
APR										
20...	1110	L	330	7.00	26.5	2.8	35	33	86	54
JUN										
05...	1140	L	324	6.60	28.0	3.2	41	19	K8	43
AUG										
08...	1200	L	279	7.10	28.5	2.2	28	25	100	K12

DATE	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)
OCT 1989										
25...	86	0.8	1	0.23	0.07	0.30	0.27	0.33	0.60	0.90
DEC										
15...	110	--	7	0.35	0.05	0.40	0.19	0.41	0.60	1.0
FEB 1990										
06...	120	--	4	0.93	0.07	1.0	0.48	0.72	1.2	2.2
APR										
20...	100	<0.5	19	0.07	0.03	0.10	0.24	0.56	0.80	0.90
JUN										
05...	100	--	2	0.08	0.02	0.10	0.28	0.32	0.60	0.70
AUG										
08...	87	--	8	0.06	0.04	0.10	0.31	2.1	2.4	2.5

DATE	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS TOTAL (MG/L AS P)	BORON, TOTAL RECOV-ERABLE (UG/L AS B)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHY-LENE BLUE ACTIVE SUB-STANCE (MG/L)
OCT 1989										
25...	4.0	0.14	30	<10	300	290	40	<0.01	1	0.04
DEC										
15...	4.4	0.21	--	--	--	--	--	--	--	--
FEB 1990										
06...	9.7	0.24	--	--	--	--	--	--	--	--
APR										
20...	4.0	0.23	40	20	210	290	40	<0.01	<1	0.07
JUN										
05...	3.1	0.24	--	--	--	--	--	--	--	--
AUG										
08...	11	1.4	--	--	--	--	--	--	--	--

L = Lake
K = non-ideal count

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. Elevation of gage is 32 ft (10 m), from topographic map.

REMARKS.--Records fair. Flow regulated by Lago Loíza Dam. Gage-height and precipitation satellite telemetry at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 124,300 ft³/s (3,520 m³/s), Nov. 27, 1987, gage height, 39.57 ft (12.06 m), from floodmarks and rating curve extended above 100 ft³/s (2.83 m³/s) on basis of step-back water analysis; minimum daily discharge, 3.1 ft³/s (0.09 m³/s), Sept. 1, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16,700 ft³/s (473 m³/s), Oct. 9, gage height, 17.91 ft (5.46 m), from rating curve extended above 100 ft³/s (2.83 m³/s) on basis of step-back water analysis; minimum daily discharge, 2.1 ft³/s (0.059 m³/s), Sept. 22,23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	448	60	73	8.3	4.5	5.0	4.8	8.1	6.3	4.2	8.3	2.5
2	672	63	72	7.3	4.5	4.5	4.7	10	6.2	4.0	9.4	2.3
3	54	65	70	6.5	4.5	4.5	4.8	10	6.9	3.9	9.9	314
4	941	63	67	6.1	4.9	4.4	4.8	10	7.0	3.8	11	4.4
5	303	357	63	5.6	5.4	4.3	4.8	9.7	6.7	3.7	12	2.9
6	46	61	63	5.6	5.1	4.7	4.8	9.4	6.0	172	13	2.3
7	419	60	61	5.6	4.5	4.8	4.8	8.4	5.9	3.7	14	2.3
8	62	60	58	5.4	4.9	4.8	5.0	7.4	5.7	3.9	164	2.6
9	917	327	55	5.0	4.1	5.5	5.4	31	5.4	179	193	2.3
10	512	77	49	5.0	4.2	4.8	5.4	7.3	4.7	5.6	641	2.3
11	64	62	48	4.9	4.0	8.4	5.3	6.2	4.9	4.2	233	2.4
12	64	59	49	4.3	3.9	10	5.3	5.5	4.6	5.0	9.8	2.5
13	67	58	39	4.0	3.8	20	5.3	6.4	4.6	4.8	215	4.1
14	68	60	11	4.6	4.8	8.3	6.8	7.2	5.7	4.3	219	3.4
15	348	81	11	4.6	4.0	5.9	5.8	6.1	5.6	3.7	5.1	3.1
16	73	89	11	4.2	4.1	8.3	5.6	5.9	5.1	3.8	4.8	3.3
17	54	83	10	4.3	4.2	6.8	5.7	6.0	4.8	4.0	4.8	248
18	50	75	9.9	4.4	5.3	6.4	6.0	5.9	4.6	3.9	4.9	2.2
19	59	70	9.5	4.7	6.1	6.3	5.8	5.9	4.8	122	4.8	2.2
20	51	69	9.3	5.1	4.3	6.4	6.6	5.9	4.8	3.5	4.9	2.2
21	197	65	8.8	4.2	4.3	6.3	6.2	5.8	27	3.8	4.8	2.2
22	55	68	8.5	4.0	4.6	6.3	6.7	5.8	7.9	4.0	8.2	2.1
23	224	67	8.1	4.9	4.3	6.4	6.9	5.9	5.9	4.5	4.4	2.1
24	48	76	7.9	5.6	4.2	6.7	6.9	5.9	53	164	4.1	2.4
25	65	86	7.5	4.6	4.4	6.7	13	5.8	406	610	4.0	2.3
26	79	82	7.2	4.5	4.5	7.2	6.9	5.9	112	434	3.8	2.3
27	85	82	6.9	4.5	4.5	6.4	6.4	5.9	6.4	5.7	3.6	258
28	76	81	7.5	4.7	4.7	5.2	6.0	5.7	5.0	5.9	3.6	2.8
29	263	78	12	4.8	---	5.0	5.9	5.7	4.7	6.2	3.3	2.3
30	67	75	7.7	4.8	---	4.8	5.9	5.7	4.4	6.8	3.3	2.7
31	63	---	8.1	4.5	---	4.8	---	5.8	---	7.5	2.8	---
TOTAL	6494	2659	928.9	156.6	126.6	199.9	178.3	236.2	742.6	1795.4	1827.6	890.5
MEAN	209	88.6	30.0	5.05	4.52	6.45	5.94	7.62	24.8	57.9	59.0	29.7
MAX	941	357	73	8.3	6.1	20	13	31	406	610	641	314
MIN	46	58	6.9	4.0	3.8	4.3	4.7	5.5	4.4	3.5	2.8	2.1
AC-FT	12880	5270	1840	311	251	397	354	469	1470	3560	3630	1770
CFSM	1.00	.42	.14	.02	.02	.03	.03	.04	.12	.28	.28	.14
IN.	1.16	.47	.17	.03	.02	.04	.03	.04	.13	.32	.33	.16

CAL YR 1989 TOTAL 96848.3 MEAN 265 MAX 22700 MIN 3.1 AC-FT 192100 CFSM 1.27 IN. 17.24
WTR YR 1990 TOTAL 16235.6 MEAN 44.5 MAX 941 MIN 2.1 AC-FT 32200 CFSM .21 IN. 2.89

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.-- OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 11	0818	63.5	221	26.0
NOV. 02	1500	62.5	257	30.0
DEC. 07	1656	60	303	29.0
JAN. 17	1644	4.10	316	29.0
FEB. 08	1446	4.61	355	26.5
MAR. 14	1511	6.66	280	27.0
APR. 05	1348	4.75	329	31.5
MAY 15	1511	6.17	350	31.5
JUNE 26	1519	4.44	287	25.5
JULY 19	1458	84.2	285	29.5
AUG. 21	1433	5.90	260	33.5

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.-- Water years 1987 to 1990.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: December 1986 to September 1990.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 628 mg/L September 18, 1989; Minimum daily mean, 11 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 79,900 tons (72,710 tonnes) December 8, 1987; Minimum daily mean, 0.10 ton (0.0 tonne) several days.

EXTREMES FOR WATER YEARS 1987-88-89-90.--

Water Year	Suspended-sediment concentration (mg/L) maximum	minimum	Suspended-sediment discharge (tons per day) maximum	minimum
1987	454 (Jun. 22)	17 (Feb. 16)	11,100 (Jun. 22)	.22 (Feb. 16)
1988	578 (Dec. 07)	18 (Aug. 14)	79,900 (Dec. 08)	.24 (Aug. 14)
1989	628 (Sep. 18)	16 (Jan. 07)	38,500 (Sep. 18)	.16 (Sep. 01)
1990	210 (Oct. 04)	11 (several days)	534 (Oct. 10)	.10 (several days)

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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	12	29	.94	27	41	3.0	6.8	21	.38
2	12	29	.94	341	135	124	6.6	21	.38
3	12	29	.94	7.0	21	.40	6.3	20	.34
4	13	30	1.1	7.0	21	.40	6.5	21	.36
5	368	141	140	7.2	22	.42	356	139	134
6	9.8	26	.68	7.0	21	.40	6.5	21	.36
7	450	156	190	7.0	21	.40	6.4	20	.34
8	9.5	25	.64	6.7	21	.38	6.1	20	.32
9	300	123	100	6.6	20	.36	6.2	20	.34
10	9.8	26	.68	6.8	20	.36	6.1	20	.32
11	9.4	25	.64	1290	250	871	6.1	20	.32
12	9.1	24	.58	307	125	104	6.1	20	.32
13	9.0	25	.60	584	171	270	6.4	20	.34
14	9.9	26	.70	421	166	189	6.4	20	.34
15	11	28	.84	5.5	19	.28	6.9	21	.40
16	365	141	139	4.9	17	.22	7.6	22	.46
17	7.6	22	.46	5.0	18	.24	14	32	1.2
18	7.5	22	.44	5.5	19	.28	229	115	71
19	7.5	22	.44	5.7	19	.30	6.5	21	.36
20	7.6	22	.46	6.0	20	.32	6.3	20	.34
21	7.6	22	.46	6.3	20	.34	6.1	20	.32
22	7.6	22	.46	6.3	20	.34	6.1	20	.32
23	7.6	22	.46	6.2	20	.34	5.8	19	.30
24	7.9	23	.50	6.1	20	.32	5.8	19	.30
25	8.0	23	.50	6.1	20	.32	5.8	19	.30
26	8.0	23	.50	6.6	21	.38	6.0	20	.32
27	8.3	24	.54	6.9	21	.40	6.1	20	.32
28	8.3	24	.54	6.7	21	.38	5.8	19	.30
29	8.4	24	.54	---	---	---	5.8	19	.30
30	484	161	210	---	---	---	5.8	19	.30
31	9.3	25	.62	---	---	---	5.8	19	.30
TOTAL	2204.7	---	795.20	3109.1	---	1568.58	773.7	---	215.60

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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	5.8	19	.30	6.4	20	.34	10	26	.70
2	5.8	19	.30	6.4	20	.34	330	132	118
3	5.8	19	.30	7.2	22	.42	348	137	129
4	5.8	19	.30	6.5	21	.36	463	158	198
5	6.2	20	.34	6.3	20	.34	10	26	.70
6	5.9	19	.30	6.4	20	.34	9.6	25	.64
7	5.8	19	.30	118	85	27	10	26	.70
8	5.8	19	.30	6.1	20	.32	181	106	52
9	5.8	19	.30	6.4	20	.34	10	26	.70
10	5.8	19	.30	6.4	20	.34	235	116	74
11	20	37	2.0	9.7	26	.68	11	28	.84
12	1840	286	1420	207	120	67	9.6	25	.64
13	504	163	222	5.9	19	.30	10	26	.70
14	450	156	190	5.9	19	.30	18	35	1.7
15	28	42	3.2	5.7	19	.30	675	178	324
16	8.8	24	.58	5.6	19	.28	452	156	190
17	378	144	147	5.6	19	.28	9.8	26	.68
18	6.5	21	.36	5.8	19	.29	28	42	3.2
19	6.4	20	.34	5.9	19	.30	1070	224	647
20	6.3	20	.34	936	207	522	3500	328	3100
21	6.3	20	.34	1830	285	1410	4180	348	3930
22	6.2	20	.34	495	162	217	9050	454	11100
23	6.2	20	.34	383	145	150	882	204	486
24	6.2	20	.34	5.3	18	.26	434	154	180
25	6.3	20	.34	377	143	146	394	146	155
26	6.3	20	.34	1570	271	1150	48	55	7.1
27	6.1	20	.32	1320	252	898	394	147	156
28	6.1	20	.32	13	28	.98	237	117	75
29	6.2	20	.34	488	161	212	40	51	5.5
30	6.4	20	.34	9.2	25	.62	461	157	195
31	---	---	---	12	29	.94	---	---	---
TOTAL	3368.8	---	1992.22	7871.7	---	4807.67	23510.0	---	21132.80

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987

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	66	62	11	94	71	18	333	133	120
2	468	159	201	58	61	9.6	55	59	8.8
3	65	63	11	367	141	140	73	66	13
4	65	63	11	60	62	10	56	60	9.1
5	445	156	187	254	120	82	54	58	8.5
6	71	63	12	57	60	9.2	52	57	8.0
7	270	121	88	58	61	9.6	53	57	8.2
8	62	60	10	59	62	9.9	53	57	8.2
9	66	62	11	57	60	9.2	58	61	9.6
10	228	115	71	56	60	9.1	61	61	10
11	64	64	11	56	60	9.1	72	62	12
12	66	62	11	55	59	8.8	61	61	10
13	67	61	11	55	59	8.8	61	61	10
14	67	61	11	55	59	8.8	60	62	10
15	368	142	141	56	60	9.1	60	62	10
16	68	65	12	55	59	8.8	62	60	10
17	67	61	11	56	60	9.1	60	62	10
18	71	63	12	56	60	9.1	61	61	10
19	81	64	14	55	59	8.8	61	61	10
20	86	65	15	54	58	8.5	62	60	10
21	535	167	241	53	57	8.2	60	60	9.7
22	60	62	10	61	61	10	61	60	9.9
23	59	58	9.2	52	57	8.0	60	62	10
24	61	61	10	51	58	8.0	59	62	9.9
25	64	64	11	60	62	10	58	61	9.6
26	64	64	11	60	62	10	58	61	9.6
27	63	64	11	51	58	8.0	59	62	9.9
28	63	64	11	53	57	8.2	60	62	9.9
29	63	64	11	54	58	8.5	60	62	9.9
30	63	64	11	53	57	8.2	61	61	9.6
31	61	61	10	53	57	8.2	---	---	---
TOTAL	3967	---	1208.2	2274	---	490.8	2064	---	403.4

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	61	61	10	66	62	11	393	143	152
2	62	60	10	66	62	11	571	170	262
3	61	61	10	64	64	11	439	154	183
4	61	61	10	65	63	11	18	35	1.7
5	61	61	10	416	151	170	348	136	128
6	61	61	10	134	91	33	801	194	420
7	62	60	10	58	61	9.6	e17800	578	27800
8	63	65	11	71	63	12	e40000	740	79900
9	61	61	10	71	63	12	e10000	481	13000
10	61	61	10	67	61	11	e1520	268	1100
11	63	65	11	64	64	11	628	175	297
12	61	61	10	60	61	9.9	51	57	7.8
13	61	61	10	61	61	10	581	171	268
14	61	61	10	58	61	9.6	473	160	204
15	62	60	10	55	59	8.8	83	67	15
16	62	60	10	55	59	8.8	466	159	200
17	808	196	428	70	63	12	52	57	8.0
18	3940	341	3630	369	141	140	254	118	81
19	588	172	273	55	59	8.8	698	180	339
20	332	133	119	55	59	8.8	689	179	333
21	64	64	11	56	60	9.1	761	189	388
22	61	61	10	54	58	8.5	767	190	393
23	66	62	11	56	60	9.1	68	65	12
24	89	66	16	14100	541	20600	638	176	303
25	574	170	263	2870	316	2450	351	137	130
26	63	65	11	4110	346	3840	86	65	15
27	64	64	11	51200	506	69900	631	175	298
28	63	65	11	6140	392	6500	63	65	11
29	64	64	11	1290	250	871	495	162	217
30	67	61	11	116	83	26	74	65	13
31	67	61	11	---	---	---	905	206	503
TOTAL	7894	---	4989	81972	---	104733.0	80704	---	126982.5

e Estimated

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	1500	267	1080	165	103	46	83	67	15
2	618	174	290	78	66	14	342	135	125
3	838	199	450	743	186	373	61	61	10
4	44	53	6.3	53	57	8.2	62	60	10
5	557	169	254	56	60	9.1	62	60	10
6	240	117	76	78	66	14	63	60	10
7	379	143	146	226	115	70	62	60	10
8	65	63	11	205	112	62	62	60	10
9	850	200	459	71	63	12	65	63	11
10	78	66	14	73	66	13	63	65	11
11	811	196	429	73	66	13	63	65	11
12	74	65	13	76	63	13	63	64	11
13	467	159	200	647	176	307	64	64	11
14	88	67	16	68	65	12	65	63	11
15	67	61	11	63	64	11	66	62	11
16	73	66	13	68	65	12	65	63	11
17	505	164	224	249	118	79	64	64	11
18	79	66	14	78	66	14	64	64	11
19	78	66	14	76	63	13	63	64	11
20	75	64	13	76	63	13	62	60	10
21	77	63	13	78	66	14	62	60	10
22	97	73	19	77	62	13	62	60	10
23	113	82	25	76	63	13	61	61	10
24	119	87	28	74	65	13	64	64	11
25	513	165	229	74	65	13	66	62	11
26	77	63	13	173	49	23	62	60	10
27	73	66	13	855	464	1070	62	60	10
28	73	66	13	76	63	13	58	61	9.6
29	78	62	13	87	68	16	63	65	11
30	75	64	13	---	---	---	62	60	10
31	82	63	14	---	---	---	61	61	10
TOTAL	8863	---	4126.3	4792	---	2296.3	2247	---	443.6

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	61	61	10	54	58	8.5	42	52	5.9
2	62	60	10	51	62	8.5	42	52	5.9
3	61	61	10	49	55	7.3	41	51	5.6
4	61	61	10	42	52	5.9	38	50	5.1
5	60	62	10	43	53	6.2	37	49	4.9
6	54	58	8.5	43	53	6.2	37	49	4.9
7	55	59	8.8	44	53	6.3	38	50	5.1
8	45	53	6.4	45	53	6.4	42	52	5.9
9	42	52	5.9	57	60	9.2	42	52	5.9
10	45	53	6.4	88	67	16	40	51	5.5
11	48	55	7.1	55	59	8.8	26	41	2.9
12	51	57	7.8	49	55	7.3	11	28	.84
13	54	58	8.5	49	55	7.3	7.9	23	.50
14	74	65	13	48	55	7.1	7.2	22	.42
15	75	64	13	47	54	6.9	8.4	23	.52
16	60	62	10	43	53	6.2	7.8	23	.48
17	60	62	10	45	53	6.4	7.5	22	.44
18	152	100	41	46	54	6.7	7.2	22	.42
19	76	63	13	49	55	7.3	7.2	22	.42
20	60	62	10	51	57	7.8	7.7	22	.46
21	87	68	16	51	57	7.8	17	35	1.6
22	60	62	10	50	56	7.6	8.6	24	.56
23	58	61	9.6	51	57	7.8	7.6	22	.46
24	58	61	9.6	49	55	7.3	7.7	23	.48
25	56	60	9.1	47	54	6.9	20	37	2.0
26	55	59	8.8	45	53	6.4	103	76	21
27	54	58	8.5	48	54	7.0	163	102	45
28	54	58	8.5	48	54	7.0	8.2	23	.50
29	52	57	8.0	44	53	6.3	179	108	52
30	53	57	8.2	43	52	6.0	149	99	40
31	---	---	---	41	51	5.6	---	---	---
TOTAL	1843	---	315.7	1515	---	228.0	1160.0	---	225.70

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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	668	177	319	7.3	22	.44	1030	219	609
2	4420	423	5050	5.8	19	.30	11	28	.84
3	254	118	81	5.9	19	.30	10	26	.70
4	46	54	6.7	370	142	142	9.8	26	.68
5	133	92	33	5.7	19	.30	9.9	26	.70
6	123	87	29	5.7	19	.30	348	137	129
7	1430	262	1010	5.6	19	.28	21	37	2.1
8	123	87	29	6.1	20	.32	11	28	.84
9	171	104	48	397	147	158	e1000	215	581
10	202	112	61	994	214	574	e15	32	1.3
11	5.7	19	.30	1230	243	807	e2750	300	2230
12	185	108	54	45	53	6.4	2810	315	2390
13	5.5	19	.28	5.2	19	.26	715	182	351
14	874	203	479	4.9	18	.24	829	198	443
15	227	116	71	192	110	57	943	210	535
16	5.7	19	.30	6.8	21	.38	489	161	213
17	114	81	25	478	160	207	831	198	444
18	6.6	21	.38	7.9	23	.50	6.0	20	.32
19	318	129	111	353	138	132	1420	261	1000
20	5.6	19	.28	371	142	142	64	64	11
21	5.4	18	.26	5.7	19	.30	374	143	144
22	228	115	71	213	113	65	24	42	2.7
23	5.9	19	.30	827	198	442	555	253	379
24	135	93	34	9750	467	12300	6.6	21	.38
25	83	67	15	4600	362	4500	213	113	65
26	112	83	25	421	151	172	7.9	23	.50
27	7.8	23	.48	406	148	160	418	152	172
28	56	60	9.1	449	156	189	5.4	19	.28
29	200	111	60	19	37	1.9	5.2	19	.26
30	183	107	53	517	165	230	5.2	19	.26
31	169	103	47	550	168	249	---	---	---
TOTAL	10502.2	---	7723.38	22254.6	---	20538.22	14937.0	---	9707.86
YEAR	238683.8		282309.56						

e Estimated

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR.--Continued

DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	356	142	140	84	66	15	368	142	141
2	7.0	21	.40	6.8	21	.38	11	28	.84
3	376	144	146	433	154	180	7.4	22	.44
4	1490	266	1070	6.5	21	.36	7.4	22	.44
5	444	155	186	5.3	18	.26	288	122	95
6	298	123	99	5.0	18	.24	7.2	22	.42
7	7.3	22	.44	406	150	164	396	148	158
8	392	146	155	13	31	1.1	10	74	2.0
9	6.8	34	.62	547	168	248	7.3	22	.44
10	355	139	133	8.9	25	.60	6.9	21	.40
11	7.5	22	.44	484	161	210	69	64	12
12	405	149	163	12	29	.94	330	132	118
13	562	169	256	3210	322	2790	6.8	21	.38
14	7.1	21	.40	865	202	472	6.9	21	.40
15	453	157	192	16	32	1.4	7.0	21	.40
16	7.1	21	.40	737	186	370	6.9	21	.40
17	456	158	195	7620	432	8890	573	171	265
18	7.8	24	.50	519	164	230	10	74	2.0
19	36	48	4.7	544	167	245	7.1	21	.40
20	524	165	233	566	170	260	421	151	172
21	1280	249	861	9.0	25	.60	7.1	21	.40
22	463	158	198	737	187	372	7.7	21	.44
23	401	148	160	8.8	24	.58	7.3	22	.86
24	37	47	4.7	7.5	22	.44	566	170	260
25	418	152	172	1100	229	680	7.2	22	.42
26	12	29	.94	518	165	231	356	139	134
27	430	153	178	102	76	21	7.0	21	.40
28	600	173	280	7.1	21	.40	7.2	21	.40
29	1010	216	589	325	131	115	1300	251	881
30	1280	249	861	7.6	22	.46	1060	224	641
31	499	162	218	---	---	---	128	90	31
TOTAL	12627.6	---	6498.54	18910.5	---	15500.76	6000.4	---	2919.88

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	354	138	132	7.3	22	.44	174	106	50
2	6.7	17	.30	7.7	22	.46	5.0	18	.24
3	6.7	17	.30	7.8	23	.48	8.1	23	.50
4	6.8	16	.30	7.9	23	.50	4.8	18	.24
5	121	86	28	7.7	23	.48	146	96	38
6	8.2	24	.54	7.9	23	.50	270	121	88
7	6.8	16	.30	7.8	23	.48	7.1	21	.40
8	308	126	105	234	117	74	208	112	63
9	20	37	2.0	8.7	24	.56	497	162	217
10	7.6	22	.46	7.8	23	.48	3760	336	3410
11	391	146	154	7.7	23	.48	6.0	20	.32
12	573	171	265	7.7	23	.48	336	134	122
13	311	126	106	7.8	23	.48	559	169	255
14	8.4	24	.54	8.1	23	.50	4.9	18	.24
15	7.4	22	.44	446	156	188	253	119	81
16	7.6	22	.46	10	74	2.0	348	137	129
17	399	148	159	2830	305	2330	7.3	22	.44
18	8.7	24	.56	1550	270	1130	e830	198	444
19	7.1	21	.40	322	130	113	e7.3	22	.44
20	7.5	22	.44	5.6	19	.28	e5.9	19	.30
21	390	146	154	85	65	15	e4.9	18	.24
22	7.0	21	.39	304	124	102	90	66	16
23	7.0	21	.40	5.8	19	.30	372	142	143
24	7.1	21	.40	237	117	75	30	43	3.5
25	170	104	48	5.6	19	.28	4.4	18	.22
26	8.2	23	.50	637	176	303	234	117	74
27	7.1	21	.40	7.6	22	.46	419	151	171
28	7.1	21	.40	5.8	19	.30	4.0	18	.20
29	7.3	21	.42	---	---	---	3.7	19	.18
30	379	156	160	---	---	---	385	145	151
31	7.3	22	.44	---	---	---	285	122	94
TOTAL	3563.6	---	1321.39	6787.3	---	4339.94	9269.4	---	5553.46

e Estimated

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	28	42	3.2	6.8	21	.38	888	204	489
2	995	214	575	6.5	21	.36	313	128	108
3	11	28	.84	6.7	21	.38	2570	310	2150
4	7.8	23	.48	150	99	40	710	182	349
5	7.2	22	.42	8.6	24	.56	8.1	23	.50
6	253	119	81	7.0	21	.40	7.7	23	.48
7	7.3	22	.44	221	113	67	7.6	22	.46
8	332	133	119	190	109	56	7.7	23	.48
9	6.6	21	.38	6.9	21	.40	8.5	24	.56
10	315	128	109	6.9	21	.40	149	97	39
11	7.2	22	.42	506	163	223	6.7	21	.38
12	5.3	18	.26	7.5	22	.44	5.8	19	.30
13	331	132	118	6.5	21	.36	5.8	19	.30
14	6.0	20	.32	6.5	21	.36	5.8	19	.30
15	269	120	87	6.6	21	.38	6.0	20	.32
16	5.3	18	.26	6.6	21	.38	6.1	20	.32
17	5.3	18	.26	6.6	21	.38	186	107	54
18	5.4	19	.28	6.6	21	.38	6.7	21	.38
19	6.3	21	.36	6.7	21	.38	5.0	18	.24
20	135	93	34	6.6	21	.38	5.0	18	.24
21	7.6	22	.46	6.6	21	.38	4.8	18	.24
22	6.8	21	.38	6.6	21	.38	4.8	18	.24
23	6.9	21	.40	6.6	21	.38	4.7	18	.22
24	6.9	21	.40	6.2	20	.34	4.5	18	.22
25	7.1	21	.40	6.5	20	.36	4.6	18	.22
26	8.3	24	.54	6.6	21	.38	6.1	20	.32
27	7.1	21	.40	7.5	22	.44	4.8	18	.24
28	6.9	21	.40	357	139	134	4.9	18	.24
29	317	129	110	6.2	20	.34	5.1	19	.26
30	7.7	23	.48	397	147	158	5.3	18	.26
31	---	---	---	26	41	2.9	---	---	---
TOTAL	3121.0	---	1244.78	2009.4	---	690.22	4958.1	---	3196.72

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	5.3	18	.26	217	114	67	3.1	19	.16
2	10	26	.70	61	61	10	868	202	473
3	376	144	146	768	190	394	97	73	19
4	5.1	18	.24	7.1	21	.40	95	70	18
5	754	188	383	7.1	21	.40	95	70	18
6	6.8	21	.38	6.8	21	.38	94	71	18
7	375	143	145	7.0	21	.40	94	70	18
8	407	149	164	6.7	21	.38	88	67	16
9	4.9	18	.24	6.6	21	.38	88	67	16
10	4.8	18	.24	6.7	21	.38	92	68	17
11	289	123	96	8.1	23	.50	412	150	167
12	6.6	21	.38	6.6	21	.38	137	95	35
13	16	32	1.4	6.6	21	.38	347	137	128
14	156	100	42	6.6	21	.38	306	126	104
15	7.2	22	.42	6.6	21	.38	96	69	18
16	7.4	22	.44	6.7	21	.38	842	199	452
17	7.8	23	.48	8.3	22	.52	821	197	437
18	11	23	.68	241	116	75	22700	628	38500
19	7.9	23	.50	1450	263	1030	5230	375	5300
20	7.4	22	.44	375	143	145	851	200	460
21	7.5	22	.44	8.3	24	.54	1490	266	1070
22	7.5	22	.44	301	123	100	1580	272	1160
23	7.9	22	.46	6.1	20	.32	2710	313	2290
24	199	110	59	704	180	342	4570	362	4470
25	7.2	22	.42	18	35	1.7	356	139	134
26	7.2	22	.42	345	136	127	1150	235	730
27	8.2	24	.54	376	143	145	738	186	371
28	8.4	24	.54	6.5	21	.36	291	122	96
29	25	40	2.7	354	138	132	866	202	472
30	17	35	1.6	59	62	9.9	1260	247	840
31	13	31	1.1	530	166	238	---	---	---
TOTAL	2773.1	---	1050.46	5917.4	---	2823.46	48367.1	---	57847.16
YEAR	124304.9		102986.77						

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	448	156	189	60	62	10	73	66	13
2	672	178	323	63	65	11	72	62	12
3	54	58	8.5	65	63	11	70	63	12
4	941	210	534	63	65	11	67	61	11
5	303	125	102	357	139	134	63	65	11
6	46	54	6.7	61	61	10	63	65	11
7	419	146	165	60	62	10	61	61	10
8	62	60	10	60	62	10	58	61	9.6
9	917	207	509	327	131	116	55	59	8.8
10	512	164	227	77	63	13	49	55	7.3
11	64	66	11	62	60	10	48	55	7.1
12	64	64	11	59	61	9.7	49	55	7.3
13	67	61	11	58	61	9.6	39	50	5.3
14	68	65	12	60	62	10	11	28	.84
15	348	137	129	81	64	14	11	28	.84
16	73	66	13	89	67	16	11	28	.84
17	54	58	8.5	83	67	15	10	26	.70
18	50	56	7.6	75	64	13	9.9	26	.70
19	59	62	9.9	70	63	12	9.5	25	.64
20	51	57	7.8	69	64	12	9.3	25	.62
21	197	109	58	65	63	11	8.8	24	.58
22	55	59	8.8	68	65	12	8.5	24	.56
23	224	114	69	67	60	11	8.1	23	.50
24	48	55	7.1	76	63	13	7.9	23	.50
25	65	63	11	86	64	15	7.5	22	.44
26	79	66	14	82	63	14	7.2	22	.42
27	85	65	15	82	63	14	6.9	21	.40
28	76	63	13	81	64	14	7.5	22	.44
29	263	120	85	78	66	14	12	29	.94
30	67	61	11	75	64	13	7.7	23	.48
31	63	65	11	---	---	---	8.1	23	.50
TOTAL	6494	---	2597.9	2659	---	588.3	928.9	---	136.34

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	8.3	24	.54	4.5	18	.22	5.0	18	.24
2	7.3	23	.46	4.5	18	.22	4.5	18	.22
3	6.5	21	.36	4.5	18	.22	4.5	18	.22
4	6.1	20	.32	4.9	18	.24	4.4	52	.62
5	5.6	19	.28	5.4	18	.26	4.3	18	.20
6	5.6	19	.28	5.1	18	.24	4.7	18	.22
7	5.6	19	.28	4.5	18	.22	4.8	18	.24
8	5.4	19	.28	4.9	18	.24	4.8	18	.24
9	5.0	18	.24	4.1	19	.22	5.5	18	.26
10	5.0	18	.24	4.2	19	.21	4.8	18	.24
11	4.9	17	.22	4.0	19	.20	8.4	24	.54
12	4.3	18	.20	3.9	19	.20	10	26	.70
13	4.0	19	.20	3.8	19	.20	20	37	2.0
14	4.6	18	.22	4.8	18	.24	8.3	24	.54
15	4.6	18	.22	4.0	19	.20	5.9	19	.30
16	4.2	18	.20	4.1	18	.20	8.3	23	.52
17	4.3	18	.20	4.2	19	.22	6.8	21	.38
18	4.4	18	.22	5.3	18	.26	6.4	20	.34
19	4.7	18	.22	6.1	20	.32	6.3	20	.34
20	5.1	18	.24	4.3	18	.20	6.4	20	.34
21	4.2	19	.22	4.3	18	.20	6.3	20	.34
22	4.0	19	.20	4.6	18	.22	6.3	20	.34
23	4.9	19	.26	4.3	18	.20	6.4	20	.34
24	5.6	19	.28	4.2	19	.22	6.7	21	.38
25	4.6	18	.22	4.4	19	.22	6.7	21	.38
26	4.5	18	.22	4.5	18	.22	7.2	22	.42
27	4.5	18	.22	4.5	18	.22	6.4	20	.34
28	4.7	18	.22	4.7	18	.22	5.2	18	.26
29	4.8	18	.24	---	---	---	5.0	18	.24
30	4.8	18	.24	---	---	---	4.8	18	.24
31	4.5	18	.22	---	---	---	4.8	18	.24
TOTAL	156.6	---	7.96	126.6	---	6.25	199.9	---	12.22

RIO GRANDE DE LOIZA BASIN

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	4.8	18	.24	8.1	25	.53	6.3	20	.34
2	4.7	17	.22	10	26	.70	6.2	20	.34
3	4.8	18	.24	10	26	.70	6.9	21	.40
4	4.8	18	.24	10	26	.70	7.0	21	.40
5	4.8	18	.24	9.7	26	.68	6.7	21	.38
6	4.8	18	.24	9.4	23	.58	6.0	20	.32
7	4.8	18	.24	8.4	24	.54	5.9	19	.30
8	5.0	18	.24	7.4	22	.44	5.7	19	.30
9	5.4	19	.28	31	44	3.7	5.4	19	.28
10	5.4	19	.28	7.3	22	.44	4.7	18	.22
11	5.3	18	.26	6.2	20	.34	4.9	18	.24
12	5.3	18	.26	5.5	19	.28	4.6	18	.22
13	5.3	18	.26	6.4	20	.34	4.6	18	.22
14	6.8	21	.38	7.2	22	.42	5.7	19	.30
15	5.8	19	.30	6.1	20	.32	5.6	19	.28
16	5.6	18	.28	5.9	19	.30	5.1	18	.24
17	5.7	19	.30	6.0	20	.32	4.8	18	.24
18	6.0	20	.32	5.9	19	.30	4.6	18	.22
19	5.8	19	.30	5.9	19	.30	4.8	18	.24
20	6.6	21	.38	5.9	19	.30	4.8	18	.24
21	6.2	20	.34	5.8	19	.30	27	41	3.0
22	6.7	21	.38	5.8	19	.30	7.9	23	.50
23	6.9	21	.40	5.9	19	.30	5.9	19	.30
24	6.9	21	.40	5.9	19	.30	53	57	8.2
25	13	31	1.1	5.8	19	.30	406	150	164
26	6.9	21	.40	5.9	19	.30	112	83	25
27	6.4	20	.34	5.9	19	.30	6.4	19	.32
28	6.0	20	.32	5.7	19	.30	5.0	18	.24
29	5.9	19	.30	5.7	19	.30	4.7	18	.22
30	5.9	19	.30	5.7	19	.30	4.4	19	.22
31	---	---	---	5.8	19	.30	---	---	---
TOTAL	178.3	---	9.78	236.2	---	15.53	742.6	---	207.72

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE, PR.--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	4.2	19	.22	8.3	24	.54	2.5	15	.10
2	4.0	19	.20	9.4	25	.64	2.3	16	.10
3	3.9	19	.20	9.9	26	.70	314	127	108
4	3.8	19	.20	11	28	.84	4.4	19	.22
5	3.7	20	.20	12	29	.94	2.9	13	.10
6	172	106	49	13	31	1.1	2.3	16	.10
7	3.7	20	.20	14	31	1.2	2.3	16	.10
8	3.9	19	.20	164	103	46	2.6	14	.10
9	179	105	51	193	109	57	2.3	16	.10
10	5.6	19	.28	641	176	305	2.3	16	.10
11	4.2	19	.22	233	116	73	2.4	15	.10
12	5.0	18	.24	9.8	25	.66	2.5	15	.10
13	4.8	18	.24	215	107	62	4.1	18	.20
14	4.3	18	.20	219	113	67	3.4	22	.20
15	3.7	20	.20	5.1	18	.24	3.1	24	.20
16	3.8	19	.20	4.8	18	.22	3.3	22	.20
17	4.0	18	.20	4.8	18	.22	248	117	78
18	3.9	19	.20	4.9	18	.22	2.2	17	.10
19	122	88	29	4.8	18	.22	2.2	17	.10
20	3.5	21	.20	4.9	18	.22	2.2	17	.10
21	3.8	19	.20	4.8	18	.20	2.2	17	.10
22	4.0	18	.20	8.2	22	.44	2.1	18	.10
23	4.5	18	.22	4.4	18	.22	2.1	18	.10
24	164	103	46	4.1	18	.20	2.4	15	.10
25	610	174	287	4.0	19	.20	2.3	16	.10
26	434	154	180	3.8	19	.20	2.3	16	.10
27	5.7	18	.28	3.6	21	.20	258	119	83
28	5.9	19	.30	3.6	21	.20	2.8	13	.10
29	6.2	20	.34	3.3	11	.10	2.3	16	.10
30	6.8	20	.36	3.3	11	.10	2.7	13	.10
31	7.5	22	.44	2.8	13	.10	---	---	---
TOTAL	1795.4	---	647.94	1827.6	---	620.12	890.5	---	272.22
YEAR	16235.6		5122.28						

50059050 RIO GRANDE DE LOIZA BELOW DAMSITE--Continued

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM
MAY 1990					
05...	1354	22	146	8.7	96
JUL					
25...	1020	671	759	1375	98
AUG					
08...	1530	565	1520	2319	99
10...	1440	2400	815	5281	94
10...	1444	2400	812	5262	95
10...	1457	2400	770	4990	95
10...	1502	1590	756	3245	94
10...	1507	1590	739	3172	95
10...	1509	1590	732	4423	96
10...	1513	1590	722	3099	96

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
13...	1010	60	262	7.40	26.5	12	7.2	89	27	330	K150
DEC											
15...	1010	12	402	7.70	26.0	1.3	9.1	110	20	K130	K150
FEB 1990											
14...	1045	10	397	7.40	23.5	42	7.6	88	28	31000	34000
APR											
26...	1115	9.6	380	7.50	27.5	22	7.5	94	35	2200	K1500
JUN											
04...	1140	11	380	7.30	29.5	30	7.4	95	23	34000	K5000
AUG											
20...	0935	7.6	346	8.30	30.0	1.4	8.6	112	20	50	K10

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
13...	88	0	21	8.6	19	0.9	5.8	87	<0.5	14	18
DEC											
15...	--	--	--	--	--	--	--	140	--	--	--
FEB 1990											
14...	--	--	--	--	--	--	--	140	--	--	--
APR											
26...	120	0	30	12	26	1	2.8	140	<0.5	19	27
JUN											
04...	--	--	--	--	--	--	--	130	--	--	--
AUG											
20...	120	0	29	11	27	1	3.1	120	--	18	28

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
13...	0.10	22	161	--	<1	0.76	0.04	0.80	0.03	0.47
DEC										
15...	--	--	--	--	<1	0.59	0.01	0.60	0.04	0.16
FEB 1990										
14...	--	--	--	--	74	0.83	0.07	0.90	0.14	0.56
APR										
26...	0.20	26	219	5.32	8	0.47	0.03	0.50	0.06	0.64
JUN										
04...	--	--	--	--	31	0.36	0.04	0.40	0.08	0.42
AUG										
20...	<0.10	27	215	4.49	<1	0.29	0.01	0.30	0.09	1.9

K = non-ideal count

50059100 RIO GRANDE DE LOIZA BELOW TRUJILLO ALTO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
13...	0.50	1.3	5.8	0.17	<1	<100	20	<1	1	10
DEC										
15...	0.20	0.80	3.5	0.19	--	--	--	--	--	--
FEB 1990										
14...	0.70	1.6	7.1	0.30	--	--	--	--	--	--
APR										
26...	0.70	1.2	5.3	0.21	1	<100	20	<1	3	20
JUN										
04...	0.50	0.90	4.0	0.26	--	--	--	--	--	--
AUG										
20...	2.0	2.3	10	0.19	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
13...	840	4	60	<0.10	<1	<1	10	<0.010	<1	0.05
DEC										
15...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
14...	--	--	--	--	--	--	--	--	--	--
APR										
26...	2800	18	240	<0.10	<1	<1	20	<0.010	5	0.04
JUN										
04...	--	--	--	--	--	--	--	--	--	--
AUG										
20...	--	--	--	--	--	--	--	--	--	--

50061800 RIO CANOVANAS NEAR CAMPO RICO, PR

LOCATION.--Lat 18°19'08", long 65°53'21", Hydrologic Unit 21010005, at center pier on downstream 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).

WATER-DISCHARGE RECORDS

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.

AVERAGE DISCHARGE.--23 years (1968-90), 28.4 ft³/s (0.804 m³/s), 39.19 in/yr (995 mm/yr), 20,580 acre-ft/yr (25.4 hm³/yr); median of yearly mean discharges, 27 ft³/s (0.76 m³/s), 19,600 acre-ft/yr (24 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s (425 m³/s), Sept. 13, 1982, gage height, 13.1 ft (3.99 m), from floodmarks, from rating curve extended above 350 ft³/s (9.91 m³/s) on basis of slope-area measurements and step-backwater analysis made in 1981; minimum daily discharge, 0.80 ft³/s (0.023 m³/s), July 24, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s (70.8 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Aug. 13	unknown	*1,760	49.8	*7.52	2.292						

Minimum discharge, 5.3 ft³/s (0.150 m³/s), June 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	23	e13	e35	7.9	29	12	11	7.1	8.4	10	9.8
2	28	18	e12	e50	7.9	19	11	11	7.2	8.0	11	11
3	26	16	e12	e25	7.6	12	11	10	6.8	7.2	13	13
4	54	21	e12	e15	7.6	10	11	10	7.4	6.9	10	12
5	36	37	e12	e10	7.9	9.2	11	9.5	7.6	6.7	16	8.9
6	24	30	e12	e9.0	6.7	8.9	10	9.2	13	18	16	8.7
7	23	49	e11	e8.0	6.9	8.9	10	9.2	8.4	30	e20	8.8
8	43	29	e11	e7.5	9.2	8.7	10	8.7	6.5	11	e25	8.8
9	42	26	e11	e7.0	14	39	9.8	8.9	6.1	8.3	e15	15
10	24	20	e11	e7.5	15	27	10	13	6.1	7.9	e35	22
11	21	18	e11	e9.0	9.2	130	9.2	15	7.1	7.1	e15	11
12	19	17	e11	e6.5	7.9	126	8.9	9.4	5.9	7.1	e20	13
13	19	27	e10	6.0	7.2	132	9.5	9.7	5.6	6.7	e150	17
14	28	26	e10	5.9	33	113	10	14	46	7.1	e35	14
15	48	20	e10	6.1	14	43	9.5	13	42	11	e25	21
16	29	20	e10	6.8	10	34	9.2	10	12	9.6	e20	13
17	21	19	e10	10	9.5	32	8.7	9.9	9.7	12	e17	13
18	19	17	e11	8.5	13	26	8.4	9.3	11	75	e20	16
19	17	18	e11	9.2	15	21	9.8	8.2	9.1	39	e15	16
20	17	17	e11	19	11	19	11	7.5	25	13	e14	12
21	102	16	e10	13	10	17	11	7.6	12	9.6	e12	9.5
22	33	15	e10	8.6	15	15	9.2	7.7	8.0	8.6	e25	8.4
23	31	e15	e10	8.1	16	15	7.9	6.8	7.2	9.5	e20	26
24	26	e15	e9.5	10	17	14	7.9	6.7	28	66	e15	128
25	31	e14	e9.5	9.1	13	16	125	6.9	54	45	e20	76
26	24	e14	e9.5	8.9	12	16	41	7.1	18	18	e15	22
27	19	e14	e9.0	8.7	11	21	17	7.1	10	14	e13	13
28	18	e13	e12	8.6	11	17	13	7.2	8.5	11	e11	11
29	25	e13	e25	10	---	17	12	6.8	7.9	9.5	e11	9.3
30	19	e13	e13	9.1	---	14	11	6.4	7.3	10	13	72
31	17	---	e23	7.5	---	13	---	6.9	---	10	10	---
TOTAL	915	610	362.5	362.6	325.5	1022.7	455.0	283.7	410.5	511.2	667	639.2
MEAN	29.5	20.3	11.7	11.7	11.6	33.0	15.2	9.15	13.7	16.5	21.5	21.3
MAX	102	49	25	50	33	132	125	15	54	75	150	128
MIN	17	13	9.0	5.9	6.7	8.7	7.9	6.4	5.6	6.7	10	8.4
AC-FT	1810	1210	719	719	646	2030	902	563	814	1010	1320	1270
CFSM	3.00	2.07	1.19	1.19	1.18	3.35	1.54	.93	1.39	1.68	2.19	2.17
IN.	3.46	2.31	1.37	1.37	1.23	3.87	1.72	1.07	1.55	1.93	2.52	2.42

CAL YR 1989 TOTAL 9405.4 MEAN 25.8 MAX 1140 MIN 4.8 AC-FT 18660 CFSM 2.62 IN. 35.56
WTR YR 1990 TOTAL 6564.9 MEAN 18.0 MAX 150 MIN 5.6 AC-FT 13020 CFSM 1.83 IN. 24.82

e Estimated

50061800 RIO CANOVANAS NEAR CAMPO RICO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 05	1428	28.8	159	27.0	APR. 16	0954	9.31	224	24.0
NOV. 17	1020	17.1	219	24.0	MAY 10	1130	8.80	225	27.5
DEC. 19	1437	10.6	238	27.0	JUNE 21	1041	13.1	125	27.0
JAN. 16	0957	6.74	234	22.5	JULY 19	0913	36.8	100	23.5
FEB. 31	1258	7.36	226	25.0	AUG. 29	1450	10.3	196	24.0
MAR. 21	1042	17.4	178	23.5	SEPT 19	1421	13.5	174	30.0

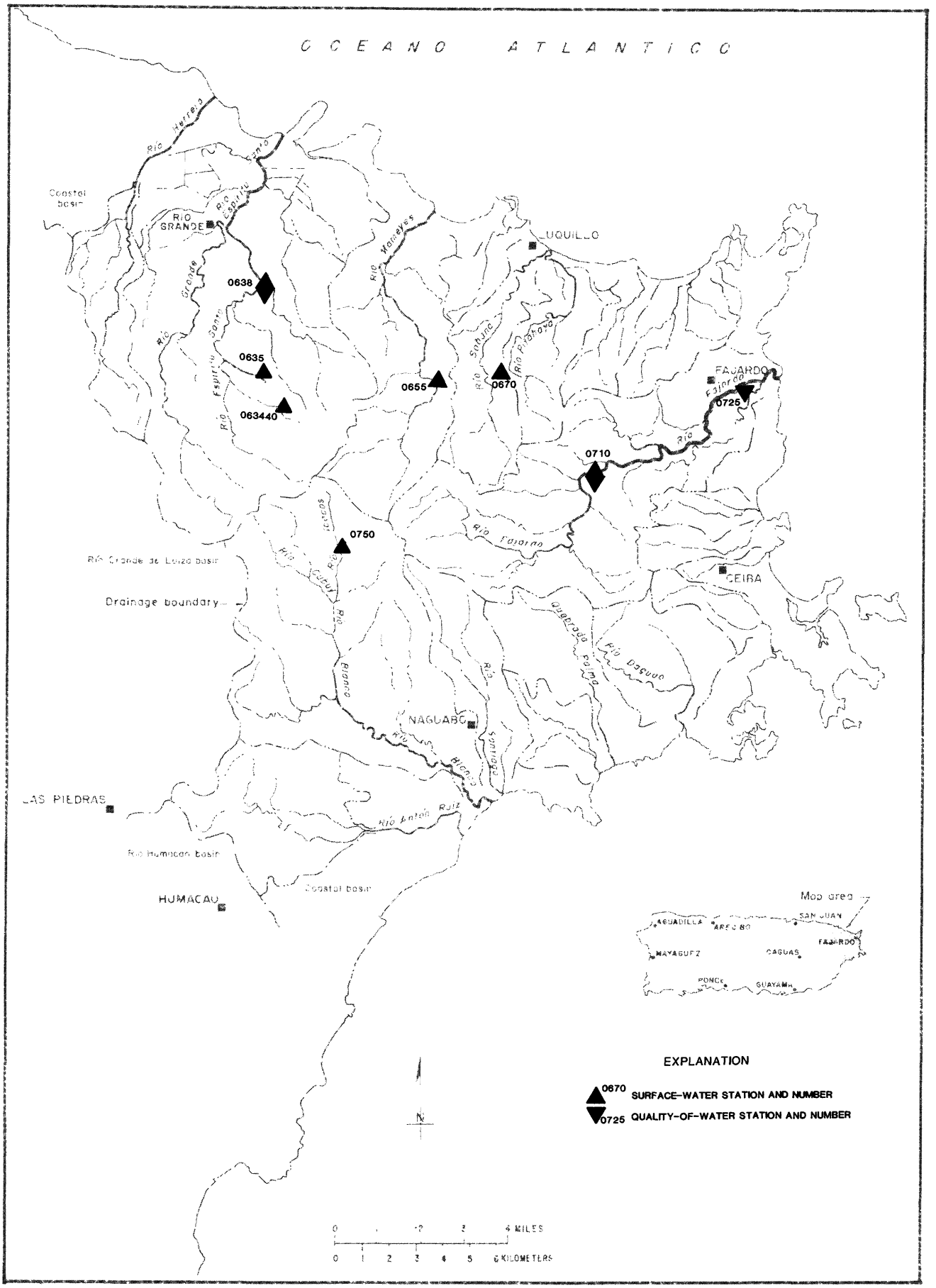

Figure 20.--Northeastern river basins the Río Herrera to Río Antón Ruíz basins.

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).

WATER-DISCHARGE RECORDS

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.

AVERAGE DISCHARGE.--7 years (1984-90), 7.50 ft³/s (0.212 m³/s), 100.8 in/yr (2,560 mm/yr), 5,430 acre-ft/yr (6.70 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,230 ft³/s (63.2 m³/s), Dec. 7, 1987, gage height, 9.42 ft (2.871 m) from rating curve extended above 20 ft³/s (0.57 m³/s) on basis of step-backwater analysis; minimum discharge, 0.13 ft³/s (0.004 m³/s), May 26, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s (14.2 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 25	1130	678	19.2	7.48	2.280	Aug. 13	1515	*786	22.2	*7.69	2.344
May 10	1515	586	16.6	7.28	2.219						

Minimum daily discharge, 0.20 ft³/s (0.006 m³/s), Dec. 17, 23-28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.1	9.7	.73	14	4.3	24	2.3	3.5	5.8	4.6	.82	.54
2	2.8	1.9	.68	19	3.3	5.9	4.6	4.5	12	.83	12	3.6
3	2.4	2.2	.65	5.4	3.0	3.9	2.8	2.6	16	.47	3.3	11
4	2.9	9.3	.61	3.8	2.6	3.3	2.2	2.5	6.0	.37	.84	1.3
5	2.4	22	.54	1.8	2.1	2.8	2.0	2.1	19	.32	.63	.58
6	1.9	6.8	.50	1.4	1.9	2.9	1.7	1.5	13	43	.57	.53
7	1.7	12	.47	1.4	4.3	2.6	1.6	1.3	5.7	4.3	25	.52
8	2.1	11	.43	1.6	20	2.1	1.6	1.2	3.1	1.5	13	.50
9	2.1	15	.40	1.3	24	28	1.5	15	11	1.5	2.2	.52
10	1.5	4.2	.35	1.3	6.3	18	3.3	65	31	2.3	24	.55
11	1.4	4.5	.32	2.6	8.6	61	1.7	6.1	4.1	1.1	5.5	.48
12	1.3	3.1	.29	2.6	3.2	84	1.5	2.4	1.6	1.0	6.5	12
13	1.3	14	.28	1.5	2.3	91	5.8	22	1.1	.71	67	12
14	2.6	7.8	.26	2.7	48	34	3.9	23	1.1	7.4	9.0	13
15	14	8.6	.25	3.1	5.3	7.0	2.3	14	2.4	9.0	5.9	1.9
16	2.0	4.9	.24	12	3.9	19	12	4.8	1.3	1.7	3.2	9.1
17	1.5	3.6	.20	18	8.8	7.7	2.5	8.8	.66	6.5	2.5	5.3
18	1.3	2.8	.22	19	13	4.7	2.1	11	.77	5.7	4.5	4.6
19	1.2	3.0	.22	16	15	3.3	5.6	2.3	6.4	7.1	2.5	1.6
20	1.2	2.2	.23	29	5.9	2.9	16	1.7	31	1.7	2.1	4.8
21	2.0	1.7	.22	5.8	15	2.5	3.2	1.4	2.2	1.0	1.6	.93
22	21	1.5	.21	3.6	20	2.4	2.3	1.1	.91	.79	5.1	1.3
23	2.6	1.3	.20	12	13	2.4	1.9	.90	1.6	5.1	7.5	1.3
24	1.5	1.2	.20	19	11	2.1	1.8	.78	3.5	33	2.0	2.9
25	4.9	1.1	.20	23	5.5	4.3	91	.70	20	22	2.3	.85
26	2.1	1.1	.20	12	10	4.5	9.2	12	20	5.4	1.7	.56
27	1.4	1.0	.20	8.7	5.6	8.9	4.9	3.2	3.5	3.5	1.0	.61
28	1.5	.94	.20	4.8	8.4	6.9	3.2	1.6	1.1	1.7	.77	.64
29	1.2	.84	15	11	---	7.2	2.6	1.0	.72	1.1	.64	.53
30	6.0	.78	1.7	4.3	---	3.6	2.3	.72	.58	.86	.59	20
31	2.4	---	3.3	3.2	---	2.7	---	4.5	---	.70	.55	---
TOTAL	97.3	160.06	29.50	264.9	274.3	455.6	199.4	223.20	227.14	176.25	214.81	114.04
MEAN	3.14	5.34	.95	8.55	9.80	14.7	6.65	7.20	7.57	5.69	6.93	3.80
MAX	21	22	15	29	48	91	91	65	31	43	67	20
MIN	1.2	.78	.20	1.3	1.9	2.1	1.5	.70	.58	.32	.55	.48
AC-FT	193	317	59	525	544	904	396	443	451	350	426	226
CFSM	3.11	5.28	.94	8.46	9.70	14.6	6.58	7.13	7.50	5.63	6.86	3.76
IN.	3.58	5.90	1.09	9.76	10.10	16.78	7.34	8.22	8.37	6.49	7.91	4.20

CAL YR 1989 TOTAL 2436.23 MEAN 6.67 MAX 192 MIN .14 AC-FT 4830 CFSM 6.61 IN. 89.73
WTR YR 1990 TOTAL 2436.50 MEAN 6.68 MAX 91 MIN .20 AC-FT 4830 CFSM 6.61 IN. 89.74

50063440 QUEBRADA SONADORA NEAR EL VERDE, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS APRIL 1983 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 05	0936	2.30	62	22.0
NOV. 16	1235	3.85	61	22.0
DEC. 19	1016	3.20	62	23.0
JAN. 16	1306	4.09	63	20.5
FEB. 01	1210	4.66	56	20.5
MAR. 21	1332	2.52	56	21.5
APR. 19	1242	11.6	61	22.0
MAY 09	0946	1.02	66	22.5
JUNE 21	1322	2.44	45	23.5
JULY 18	1238	3.00	52	23.0
AUG. 29	1030	4.36	57	19.0
SEPT 19	0947	1.55	54	23.0

50063500 QUEBRADA TORONJA AT EL VERDE, PR

LOCATION.--Lat 18°19'43", long 65°49'14", Hydrologic Unit 21010005, in Caribbean National Forest, at downstream side of culvert on Highway 186, 0.2 mi (0.3 km) upstream from Río Espíritu Santo, and about 0.9 mi (1.4 km) south of El Verde.

DRAINAGE AREA.--0.064 mi² (0.166 km²).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1983 to current year.

GAGE.--Water-stage recorder and concrete broad-V-notch crested weir. Elevation of gage is 876 ft (267 m), from topographic map.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--7 years (1984-90), 0.33 ft³/s (0.009 m³/s), 70.02 in/yr (1,778 mm/yr), 239 acre-ft/yr (0.295 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 101 ft³/s (2.86 m³/s), Aug. 13, 1990, gage height, 2.61 ft (0.796 m), from rating curve extended above 1.0 ft³/s (0.03 m³/s) on basis of step-backwater analysis; minimum discharge, no flow for part of each day Apr. 10, 17, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 13 ft³/s (0.37 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Aug. 13	1445	*101	2.86	*2.61	0.796	No other peak greater than base discharge.					

Minimum discharge, 0.05 ft³/s (0.001 m³/s), Dec. 21-28,31, Jan. 7-15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.28	.22	.09	.34	.24	.78	.20	.21	.15	.22	.12	.10
2	.23	.13	.09	.49	.17	.24	.19	.19	.20	.14	.22	.23
3	.20	.13	.12	.21	.18	.20	.18	.16	.24	.12	.13	.31
4	.19	.26	.11	.09	.16	.17	.16	.17	.21	.12	.09	.14
5	.17	.51	.11	.07	.14	.15	.18	.15	.38	.12	.09	.12
6	.15	.27	.10	.07	.13	.17	.18	.14	.47	1.2	.09	.11
7	.15	.42	.09	.07	.16	.14	.16	.13	.29	.23	.74	.12
8	.15	.26	.09	.06	.25	.13	.16	.13	.19	.17	.50	.11
9	.13	.44	.09	.06	.32	.28	.15	.42	.57	.15	.17	.12
10	.12	.25	.09	.06	.19	.18	.15	1.3	.80	.14	.48	.12
11	.12	.26	.09	.06	.17	1.7	.14	.38	.33	.12	.20	.12
12	.12	.19	.08	.06	.14	2.8	.12	.24	.20	.09	.19	.35
13	.11	.26	.08	.05	.13	3.8	.16	.84	.17	.09	2.9	.26
14	.20	.33	.07	.06	1.2	2.0	.15	1.2	.18	.13	.79	.26
15	.28	.30	.07	.07	.24	.90	.15	.51	.18	.17	.44	.15
16	.13	.24	.07	.10	.20	.98	.25	.34	.15	.10	.34	.24
17	.11	.21	.07	.18	.30	.60	.15	.43	.14	.18	.28	.24
18	.09	.18	.08	.42	.33	.45	.15	.65	.14	.18	.28	.21
19	.09	.18	.08	.28	.46	.35	.17	.29	.15	.15	.22	.16
20	.09	.16	.07	.94	.25	.30	.24	.27	.76	.10	.19	.18
21	.11	.15	.07	.23	.40	.24	.16	.24	.23	.09	.18	.15
22	.59	.15	.06	.16	.49	.23	.14	.22	.16	.08	.16	.16
23	.15	.13	.06	.53	.37	.21	.12	.20	.19	.20	.16	.15
24	.12	.13	.05	.49	.42	.18	.18	.20	.21	1.2	.14	.22
25	.11	.12	.05	.57	.23	.21	2.4	.18	1.1	1.1	.18	.16
26	.11	.12	.05	.35	.21	.44	.47	.21	.92	.26	.14	.12
27	.12	.12	.05	.31	.17	.43	.27	.18	.32	.17	.12	.17
28	.11	.11	.06	.23	.22	.32	.21	.17	.21	.15	.12	.13
29	.16	.10	.45	.29	---	.62	.19	.15	.16	.13	.10	.11
30	.28	.09	.08	.20	---	.25	.18	.15	.15	.12	.09	.28
31	.14	---	.11	.18	---	.22	---	.15	---	.11	.09	---
TOTAL	5.11	6.42	2.83	7.28	7.87	19.67	7.71	10.20	9.55	7.53	9.94	5.30
MEAN	.16	.21	.091	.23	.28	.63	.26	.33	.32	.24	.32	.18
MAX	.59	.51	.45	.94	1.2	3.8	2.4	1.3	1.1	1.2	2.9	.35
MIN	.09	.09	.05	.05	.13	.13	.12	.13	.14	.08	.09	.10
AC-FT	10	13	5.6	14	16	39	15	20	19	15	20	11
CFSM	2.75	3.57	1.52	3.91	4.68	10.6	4.28	5.48	5.31	4.05	5.34	2.94
IN.	3.17	3.98	1.75	4.51	4.88	12.20	4.78	6.32	5.92	4.67	6.16	3.29

CAL YR 1989 TOTAL 100.51 MEAN .28 MAX 4.0 MIN .05 AC-FT 199 CFSM 4.59 IN. 62.32
WTR YR 1990 TOTAL 99.41 MEAN .27 MAX 3.8 MIN .05 AC-FT 197 CFSM 4.54 IN. 61.63

50063500 QUEBRADA TORONJA AT EL VERDE, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS APRIL 1983 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 05	1125	0.17	105	24.0
NOV. 16	1424	0.17	112	23.5
DEC. 19	1107	0.11	116	22.0
JAN. 16	1438	0.08	122	22.0
FEB. 01	1312	0.17	107	22.0
MAR. 21	1452	0.23	102	23.5
MAY 09	1104	0.11	117	23.0
JULY 18	1404	0.22	102	24.5
AUG. 29	0900	0.13	113	21.0
SEPT 19	1049	0.13	116	24.0

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR

LOCATION.--Lat 18°21'37", long 65°48'49", Hydrologic Unit 21010005, at left abutment, on 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 fair.

AVERAGE DISCHARGE.--24 years (1967-90), 60.1 ft^3/s (1.702 m^3/s), 94.68 in/yr (2,405 mm/yr), 43,540 acre-ft/yr (53.7 hm^3/yr); median of yearly mean discharges, 58 ft^3/s (1.64 m^3/s), 42,000 acre-ft/yr (52 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft^3/s (544 m^3/s), Aug. 13, 1990, gage height, 15.74 ft (4.798 m), from rating curve extended above 600 ft^3/s (17.0 m^3/s) on basis of step-backwater analysis and slope-area measurement of peak discharge; minimum discharge, 4.0 ft^3/s (0.113 m^3/s), July 3-5, 1975, Apr. 14, 15, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s (85.0 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Apr. 25	1445	4,370	124	8.22	2.505	Aug. 13	1545	*19,200	544	*15.74	4.798
May 10	1600	3,210	90.9	7.37	2.246						

Minimum discharge, 9.4 ft^3/s (0.266 m^3/s), Dec. 28.

REVISIONS.--The peak discharges and Annual maximum (*) reported for some water years have been revised as shown in the following table. They supersede figures published in the reports for 1971,1973,1975,1979,1984,1988, and 1989.

WATER YEAR	Date	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	WATER YEAR	Date	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
1971	Oct. 9, 1970	*12,790	362	*12.50	3.810	1979	Oct. 26, 1978	*11,450	324	*11.85	3.612
1973	Oct. 21, 1972	*13,520	383	*12.88	3.926	1984	Dec. 2, 1983	*11,900	337	*12.07	3.679
	Aug. 15, 1973	11,330	321	11.79	3.594	1988	Dec. 7, 1987	*16,770	475	*14.52	4.426
	Sept. 4, 1973	13,020	369	12.61	3.844	1989	Sept.18, 1989	*15,080	427	*13.69	4.173
1975	Sept.16, 1975	*13,260	376	*12.74	3.883						

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	121	19	132	45	172	33	29	22	64	25	26
2	49	30	18	191	31	53	48	33	94	25	122	38
3	42	28	17	70	30	35	40	26	57	19	57	91
4	98	103	17	35	26	31	30	23	78	18	25	44
5	58	225	16	20	22	28	27	24	124	17	22	28
6	36	105	16	17	20	27	25	20	109	406	21	25
7	33	192	16	17	25	26	23	18	65	53	208	27
8	41	150	15	17	126	22	22	18	34	27	132	26
9	43	172	15	16	146	191	21	48	112	18	37	30
10	29	86	14	16	64	133	30	458	205	23	187	33
11	28	74	14	19	56	519	23	90	67	17	53	22
12	27	44	13	21	35	792	21	38	26	16	63	96
13	25	126	13	17	25	951	44	160	21	14	1180	118
14	49	118	13	17	349	413	38	195	23	37	130	85
15	190	88	12	18	51	119	23	99	37	70	79	45
16	39	68	13	38	37	207	89	53	24	23	58	70
17	30	60	12	123	61	123	27	68	18	46	49	84
18	26	48	12	111	95	93	23	108	20	58	65	67
19	24	48	12	116	111	62	27	38	46	63	47	39
20	23	37	12	237	50	55	118	30	270	23	40	46
21	27	33	11	58	88	48	32	26	47	28	35	26
22	176	28	11	32	163	44	25	24	23	39	82	27
23	48	26	11	94	100	44	23	22	27	49	63	27
24	28	24	11	156	113	39	93	21	82	345	47	58
25	45	25	10	169	50	55	809	19	215	249	48	29
26	30	24	10	87	71	63	99	66	151	64	46	22
27	24	22	9.7	72	48	126	46	49	48	48	34	27
28	22	21	13	51	52	79	33	23	27	33	31	24
29	28	20	126	89	---	107	28	19	22	27	33	21
30	80	19	25	44	---	56	25	16	21	23	32	150
31	36	---	34	31	---	42	---	35	---	19	27	---
TOTAL	1489	2165	560.7	2131	2090	4755	1945	1896	2115	1961	3078	1451
MEAN	48.0	72.2	18.1	68.7	74.6	153	64.8	61.2	70.5	63.3	99.3	48.4
MAX	190	225	126	237	349	951	809	458	270	406	1180	150
MIN	22	19	9.7	16	20	22	21	16	18	14	21	21
AC-FT	2950	4290	1110	4230	4150	9430	3860	3760	4200	3890	6110	2880
CFSM	5.57	8.37	2.10	7.97	8.66	17.8	7.52	7.10	8.18	7.34	11.5	5.61
IN.	6.43	9.34	2.42	9.20	9.02	20.52	8.39	8.18	9.13	8.46	13.28	6.26

CAL YR 1989 TOTAL 27831.7 MEAN 76.3 MAX 2180 MIN 9.7 AC-FT 55200 CFSM 8.85 IN. 120.11
WTR YR 1990 TOTAL 25636.7 MEAN 70.2 MAX 1180 MIN 9.7 AC-FT 50850 CFSM 8.15 IN. 110.64

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
19...	0820	24	142	7.50	23.5	1.3	8.2	94	16	390	430
DEC											
11...	0855	15	143	7.40	22.5	1.0	8.4	95	18	K700	310
FEB 1990											
05...	0840	22	114	6.90	20.5	3.0	8.7	96	35	K1200	470
APR											
06...	0825	25	108	7.50	28.5	1.0	8.2	94	<10	290	230
JUN											
04...	0750	70	113	6.70	23.5	10	8.2	96	27	400	1000
AUG											
06...	0845	22	110	7.70	25.0	1.0	6.3	75	11	K720	320

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
19...	40	0	8.7	4.5	9.6	0.7	1.2	41	0.8	2.0	11
DEC											
11...	--	--	--	--	--	--	--	49	--	--	--
FEB 1990											
05...	--	--	--	--	--	--	--	36	--	--	--
APR											
06...	37	0	8.2	4.1	9.4	0.7	1.2	38	<0.5	1.9	11
JUN											
04...	--	--	--	--	--	--	--	15	--	--	--
AUG											
06...	41	4	9.3	4.4	9.1	0.6	0.7	37	--	1.8	12

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
19...	<0.10	21	83	5.44	<1	--	<0.01	<0.10	0.02	--
DEC										
11...	--	--	--	--	<1	--	<0.01	<0.10	0.01	--
FEB 1990										
05...	--	--	--	--	28	--	<0.01	0.10	0.02	--
APR										
06...	<0.10	21	80	5.42	<1	--	<0.01	<0.10	<0.01	--
JUN										
04...	--	--	--	--	<1	0.19	0.01	0.20	0.02	0.38
AUG										
06...	<0.10	42	101	6.11	<1	0.09	<0.01	<0.10	0.02	0.38

K = non-ideal count

50063800 RIO ESPIRITU SANTO NEAR RIO GRANDE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
19...	<0.20	--	--	0.01	<1	<100	<10	<1	<1	<10
DEC										
11...	<0.20	--	--	0.02	--	--	--	--	--	--
FEB 1990										
05...	<0.20	--	--	0.03	--	--	--	--	--	--
APR										
06...	<0.20	--	--	0.01	<1	<100	<10	<1	<1	<10
JUN										
04...	0.40	0.60	2.7	0.02	--	--	--	--	--	--
AUG										
06...	0.40	0.60	2.1	0.01	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
19...	260	5	20	<0.10	<1	<1	<10	<0.010	<1	0.01
DEC										
11...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
05...	--	--	--	--	--	--	--	--	--	--
APR										
06...	200	1	10	<0.10	<1	<1	<10	<0.010	<1	0.03
JUN										
04...	--	--	--	--	--	--	--	--	--	--
AUG										
06...	--	--	--	--	--	--	--	--	--	--

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.

AVERAGE DISCHARGE.--13 years (1968-73, 1984-90), 58.6 ft³/s (1.660 m³/s), 115.67 in/yr (2,938 mm/yr), 42,460 acre-ft/yr (52.4 hm³/yr); median of yearly mean discharges, 59 ft³/s (1.67 m³/s), 42,700 acre-ft/yr (53 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,500 ft³/s (580 m³/s), Sept. 18, 1989, gage height, 13.19 ft (4.020 m), from rating curve extended above 1,800 ft³/s (51.0 m³/s) on basis of slope-area measurement of peak flow; minimum discharge, 5.1 ft³/s (0.144 m³/s), Apr. 8, 9, 1970.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft³/s (113 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 25	1430	*12,160	344	*10.90	3.322	Aug. 13	1530	*9,960	282	*10.21	3.112

Minimum discharge, 11 ft³/s (0.312 m³/s), Dec. 22-25, 27,28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	159	20	96	e37	43	31	27	65	53	32	23
2	43	39	19	124	e18	21	51	28	122	39	45	24
3	38	33	18	56	e18	18	36	23	100	35	41	33
4	64	73	17	31	e17	16	31	23	78	34	36	30
5	45	143	17	21	e16	15	28	22	95	31	39	36
6	33	72	16	20	e20	15	26	21	93	190	44	22
7	33	105	16	18	e19	14	25	21	73	63	116	22
8	33	112	16	18	e20	14	25	19	70	36	97	21
9	33	116	15	17	e30	94	24	98	78	30	61	35
10	28	59	15	18	e58	94	29	201	141	30	113	29
11	27	65	14	23	e35	244	25	58	75	27	72	22
12	26	46	14	22	e20	382	24	38	53	25	64	103
13	25	58	14	20	e60	434	44	92	48	24	418	113
14	35	55	13	18	e103	184	48	107	53	34	83	80
15	184	64	13	19	e25	73	29	67	56	32	52	37
16	39	53	13	28	e29	100	76	54	47	24	41	67
17	50	65	13	50	e32	74	28	60	47	45	37	65
18	32	48	13	76	e26	55	25	80	51	49	39	39
19	28	44	13	64	e20	44	24	54	79	49	35	37
20	26	36	13	120	e36	40	70	53	116	36	31	49
21	27	32	12	39	e50	37	34	52	46	33	30	33
22	57	29	11	30	e65	36	31	54	37	31	77	39
23	32	28	12	48	e70	36	31	51	43	44	67	42
24	26	26	12	101	e25	33	31	48	54	151	37	31
25	29	25	12	79	e26	39	945	47	113	118	40	27
26	29	25	12	47	e22	41	82	290	96	60	33	27
27	24	23	12	47	e21	83	46	128	47	56	28	30
28	22	22	16	34	22	53	34	74	40	44	27	27
29	23	21	46	42	---	57	29	58	36	39	26	26
30	56	20	19	30	---	46	27	55	38	36	25	110
31	42	---	50	e22	---	35	---	73	---	34	23	---
TOTAL	1236	1696	516	1378	940	2470	1989	2076	2090	1532	1909	1279
MEAN	39.9	56.5	16.6	44.5	33.6	79.7	66.3	67.0	69.7	49.4	61.6	42.6
MAX	184	159	50	124	103	434	945	290	141	190	418	113
MIN	22	20	11	17	16	14	24	19	36	24	23	21
AC-FT	2450	3360	1020	2730	1860	4900	3950	4120	4150	3040	3790	2540
CFSM	5.80	8.22	2.42	6.46	4.88	11.6	9.64	9.73	10.1	7.18	8.95	6.20
IN.	6.68	9.17	2.79	7.45	5.08	13.36	10.75	11.22	11.30	8.28	10.32	6.92

CAL YR 1989 TOTAL 22427 MEAN 61.4 MAX 2780 MIN 11 AC-FT 44480 CFSM 8.93 IN. 121.26
WTR YR 1990 TOTAL 19111 MEAN 52.4 MAX 945 MIN 11 AC-FT 37910 CFSM 7.61 IN. 103.33

e Estimated

50065500 RIO MAMEYES NEAR SABANA, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS JUNE 1983 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 04	1120	33.3	105	25.0	APR. 17	1235	27.2	97	25.0
NOV. 15	0905	57.7	102	23.5	MAY 08	0810	19.7	111	24.0
DEC. 19	1210	12.5	120	23.5	JUNE 18	1318	42.7	98	25.5
JAN. 11	0917	22.0	109	23.0	JULY 17	1658	77.8	100	25.5
JAN. 30	1032	30.7	103	22.0	AUG. 28	1535	26.2	108	27.0
MAR. 22	1645	35.5	102	24.0	SEPT 20	1612	41.6	93	27.0

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).

WATER-DISCHARGE RECORDS

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.

AVERAGE DISCHARGE.--11 years (1980-90), 19.9 ft³/s (0.564 m³/s), 68.24 in/yr (1,733 mm/yr), 14,420 acre-ft/yr (17.8 hm³/yr); median of yearly mean discharges, 20 ft³/s (0.57 m³/s), 14,500 acre-ft/yr (18 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,010 ft³/s (255 m³/s), Apr. 21, 1983, gage height, 19.35 ft (5.898 m), from floodmark, from rating curve extended above 200 ft³/s (5.66 m³/s) on basis of step-backwater analysis and slope-area measurement; minimum discharge, 0.86 ft³/s (0.024 m³/s), Apr. 17, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 25	1015	2,900	82.1	14.22	4.334	Aug. 13	1600	*4,660	132	*16.08	4.901
July 6	0645	1,520	43.0	12.23	3.728						

Minimum discharge, 1.5 ft³/s (0.042 m³/s), Dec. 25-28,30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	e60	e5.6	34	6.5	7.1	15	7.5	6.0	6.9	4.2	5.3
2	13	e20	e5.4	70	4.7	5.3	21	8.8	20	5.7	4.4	5.6
3	13	e10	e5.2	22	4.2	4.3	16	6.6	6.9	5.3	5.3	6.7
4	11	e20	e5.0	6.1	4.2	4.4	18	6.3	10	5.6	3.8	6.5
5	10	e50	e4.8	3.6	3.8	3.8	16	6.1	e13	5.3	4.8	7.2
6	9.9	e20	e4.5	2.9	3.4	3.8	13	5.6	e9.5	150	3.9	5.5
7	11	e25	e4.3	2.6	4.9	3.6	13	6.9	e8.0	24	58	5.5
8	9.4	e35	e4.0	2.5	8.8	3.3	14	10	e7.0	16	42	5.4
9	8.6	e40	e4.0	2.2	14	16	13	13	e8.0	8.6	7.5	12
10	8.1	e15	e3.7	2.5	8.6	e10	13	68	e17	8.4	19	13
11	7.9	e18	e3.7	3.2	16	e20	12	13	e9.0	7.1	11	5.5
12	8.6	e11	e3.5	3.1	5.8	e60	12	7.0	e6.0	6.5	8.2	7.2
13	e7.5	e13	e3.5	4.4	4.3	e200	14	16	e5.0	6.0	287	17
14	e10	e12	e3.3	2.7	43	e90	16	21	e7.0	7.1	39	19
15	e70	e14	e3.2	2.7	7.2	e50	12	8.9	e6.5	6.3	16	8.4
16	e11	e13	e3.2	3.8	5.4	e20	20	7.0	e5.0	5.5	12	7.1
17	e14	e16	e3.0	5.4	7.3	e30	14	6.6	e7.0	5.7	e10	21
18	e10	e13	e2.8	23	7.7	e20	20	10	e20	5.9	e9.0	6.2
19	e8.0	e12	e2.5	19	5.1	e15	13	6.7	25	7.0	e8.5	6.3
20	e7.0	e11	e2.5	32	4.6	e12	23	5.9	11	4.8	e8.0	10
21	e7.5	e10	e2.3	9.7	12	e10	16	5.6	5.9	4.2	e7.5	5.8
22	e20	e9.0	2.0	5.9	14	e9.5	12	5.5	5.0	3.9	e30	6.5
23	e9.0	e8.5	1.9	14	14	8.4	12	5.1	5.3	6.7	e20	5.7
24	e7.5	e8.0	2.0	24	12	7.5	11	5.0	8.9	108	e10	5.3
25	e8.0	e7.5	1.9	17	6.0	7.6	569	4.7	50	33	e15	5.3
26	e8.0	e7.0	1.7	7.9	6.2	8.4	36	96	26	11	e11	4.8
27	e7.0	e7.0	1.7	8.7	5.0	18	14	59	7.1	7.9	e8.0	29
28	e6.0	e6.5	2.0	6.0	5.2	21	10	17	6.6	5.8	e7.0	6.0
29	e6.5	e6.5	5.4	7.6	---	21	8.3	7.1	6.1	5.2	6.3	4.8
30	e20	e6.0	2.0	5.5	---	20	7.7	5.7	5.8	4.7	5.9	14
31	e15	---	21	4.4	---	18	---	7.2	---	4.3	5.9	---
TOTAL	376.5	504.0	121.6	358.4	243.9	728.0	1004.0	458.8	333.6	492.4	688.2	267.6
MEAN	12.1	16.8	3.92	11.6	8.71	23.5	33.5	14.8	11.1	15.9	22.2	8.92
MAX	70	60	21	70	43	200	569	96	50	150	287	29
MIN	6.0	6.0	1.7	2.2	3.4	3.3	7.7	4.7	5.0	3.9	3.8	4.8
AC-FT	747	1000	241	711	484	1440	1990	910	662	977	1370	531
CFSM	3.07	4.24	.99	2.92	2.20	5.93	8.45	3.74	2.81	4.01	5.61	2.25
IN.	3.54	4.73	1.14	3.37	2.29	6.84	9.43	4.31	3.13	4.63	6.46	2.51

CAL YR 1989 TOTAL 7240.3 MEAN 19.8 MAX 887 MIN 1.7 AC-FT 14360 CFSM 5.01 IN. 68.01
WTR YR 1990 TOTAL 5577.0 MEAN 15.3 MAX 569 MIN 1.7 AC-FT 11060 CFSM 3.86 IN. 52.39

e Estimated

50067000 RIO SABANA AT SABANA, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 04	1433	10.8	106	27.0	APR. 17	0945	11.5	122	25.0
NOV. 14	1441	11.9	107	25.5	MAY 07	1530	6.35	117	27.0
DEC. 19	0937	2.87	135	23.0	JUNE 18	1026	4.84	115	27.0
JAN. 10	1434	4.11	135	25.0	JULY 17	1400	5.44	121	27.0
JAN. 30	1257	5.13	123	24.5	AUG. 28	1206	6.99	118	28.0
MAR. 22	1406	9.63	104	25.0	SEPT 20	1353	10.4	100	28.0

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. 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.

AVERAGE DISCHARGE.--29 years (1962-90), 69.0 ft³/s (1.954 m³/s), 62.89 in/yr (1,597 mm/yr), 49,990 acre-ft/yr (61.6 hm³/yr); median of yearly mean discharges, 69 ft³/s (1.95 m³/s), 50,000 acre-ft/yr (62 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,500 ft³/s (665 m³/s), Sept. 18, 1989, gage height, 20.00 ft (6.096 m), datum then in use, from rating curve extended above 100 ft³/s (2.83 m³/s) on basis of step-backwater analysis, slope-area measurements, and contracted opening of peak discharges; minimum discharge, 0.86 ft³/s (0.024 m³/s), May 3, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,500 ft³/s (99.1 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 25	1520	4,370	124	8.68	2.646	Aug. 13	1615	*6,690	189	*10.41	3.173
July 6	0745	3,730	106	8.13	2.478						

Minimum daily discharge, 6.8 ft³/s (0.192 m³/s), Apr. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	103	16	145	35	90	17	21	20	35	13	17
2	58	34	15	153	13	28	23	21	69	32	36	17
3	53	28	15	76	14	16	21	19	32	28	24	24
4	46	75	15	24	13	14	23	16	45	29	13	25
5	44	170	14	15	9.1	12	15	15	59	28	18	95
6	41	54	15	12	7.2	11	12	14	45	550	16	27
7	46	48	14	12	11	9.8	10	13	25	182	104	18
8	41	167	13	11	53	8.5	10	13	28	44	43	19
9	41	131	12	9.3	228	138	9.1	31	29	31	35	37
10	39	48	13	10	56	115	16	107	30	30	140	37
11	38	38	12	14	69	225	12	30	37	25	52	22
12	36	32	12	9.2	26	416	8.1	19	23	22	47	146
13	36	32	12	8.5	16	629	27	45	20	20	466	158
14	44	35	11	7.6	207	248	101	51	21	37	103	112
15	213	122	10	7.1	33	82	19	28	24	34	51	44
16	60	81	10	17	20	88	88	24	20	22	37	60
17	62	74	9.9	20	27	97	17	19	50	34	31	77
18	43	45	9.3	17	35	67	12	20	84	42	30	36
19	35	59	9.4	32	24	34	12	15	97	31	27	31
20	33	36	9.7	123	17	29	38	14	101	20	24	30
21	32	29	11	28	87	24	24	14	52	18	23	23
22	49	25	9.4	15	82	21	12	12	40	16	88	24
23	34	22	9.4	33	75	29	9.8	12	44	16	53	26
24	28	21	9.0	60	67	17	6.8	11	55	104	31	22
25	47	19	8.7	68	27	34	982	11	105	86	49	19
26	54	22	8.2	31	32	25	105	176	104	27	36	18
27	29	18	8.8	27	21	104	44	60	46	20	23	27
28	25	18	7.3	18	17	57	27	36	39	18	21	22
29	28	17	32	16	---	35	22	22	34	16	26	19
30	47	17	12	11	---	47	19	18	32	15	22	36
31	43	---	98	9.2	---	23	---	26	---	14	17	---
TOTAL	1482	1620	461.1	1038.9	1321.3	2773.3	1741.8	933	1410	1626	1699	1268
MEAN	47.8	54.0	14.9	33.5	47.2	89.5	58.1	30.1	47.0	52.5	54.8	42.3
MAX	213	170	98	153	228	629	982	176	105	550	466	158
MIN	25	17	7.3	7.1	7.2	8.5	6.8	11	20	14	13	17
AC-FT	2940	3210	915	2060	2620	5500	3450	1850	2800	3230	3370	2520
CFSM	3.21	3.62	1.00	2.25	3.17	6.00	3.90	2.02	3.15	3.52	3.68	2.84
IN.	3.70	4.04	1.15	2.59	3.30	6.92	4.35	2.33	3.52	4.06	4.24	3.17

CAL YR 1989 TOTAL 31947.9 MEAN 87.5 MAX 8800 MIN 2.6 AC-FT 63370 CFSM 5.87 IN. 79.76
WTR YR 1990 TOTAL 17374.4 MEAN 47.6 MAX 982 MIN 6.8 AC-FT 34460 CFSM 3.19 IN. 43.38

RIO FAJARDO BASIN

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
03...	0815	56	140	7.40	25.0	82	7.8	94	26	220	600
NOV											
28...	0840	18	134	7.20	24.5	1.2	8.2	98	12	K20	550
JAN 1990											
30...	0850	12	128	7.10	23.5	2.1	8.6	100	12	K20	K130
APR											
04...	0850	23	128	7.10	24.5	3.8	7.8	93	10	310	320
JUN											
01...	0920	19	115	7.20	27.0	2.8	8.5	104	14	430	K160
AUG											
02...	0855	12	132	7.60	28.0	1.3	8.4	107	13	K27	K110

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
03...	33	0	7.3	3.6	11	0.8	1.9	37	<0.5	5.0	13
NOV											
28...	--	--	--	--	--	--	--	39	--	--	--
JAN 1990											
30...	--	--	--	--	--	--	--	36	--	--	--
APR											
04...	35	0	8.4	3.4	12	0.9	2.6	51	<0.5	3.9	14
JUN											
01...	--	--	--	--	--	--	--	31	--	--	--
AUG											
02...	39	0	8.8	4.2	13	0.9	2.9	39	--	3.6	15

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
03...	0.10	23	87	13.2	117	0.29	0.01	0.30	0.03	0.37
NOV										
28...	--	--	--	--	5	--	<0.01	0.40	<0.01	--
JAN 1990										
30...	--	--	--	--	7	--	<0.01	0.20	0.02	--
APR										
04...	<0.10	24	·89	5.53	<1	--	<0.01	0.10	<0.01	--
JUN										
01...	--	--	--	--	1	0.18	0.02	0.20	0.01	0.49
AUG										
02...	0.30	26	97	3.20	<1	0.99	0.01	<0.10	0.02	0.28

K = non-ideal count

50071000 RIO FAJARDO NEAR FAJARDO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
03...	0.40	0.70	3.0	0.06	<1	<100	<10	1	<1	10
NOV										
28...	<0.20	--	--	<0.01	--	--	--	--	--	--
JAN 1990										
30...	<0.20	--	--	0.03	--	--	--	--	--	--
APR										
04...	<0.20	--	--	0.03	<1	<100	10	<1	<1	10
JUN										
01...	0.50	0.70	3.1	0.02	--	--	--	--	--	--
AUG										
02...	0.30	0.40	2.7	0.01	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
03...	5600	12	130	<0.10	<1	<1	20	<0.010	<1	0.10
NOV										
28...	--	--	--	--	--	--	--	--	--	--
JAN 1990										
30...	--	--	--	--	--	--	--	--	--	--
APR										
04...	920	1	20	<0.10	<1	<1	<10	<0.010	<1	0.05
JUN										
01...	--	--	--	--	--	--	--	--	--	--
AUG										
02...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
JUN 1990										
01...	0920	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN 1990										
01...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01

DATE	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 1990									
01...	<0.01	<0.10	<0.1	<1	<0.01	<0.01	<0.01	<0.01	<0.01

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
03...	1040	76	168	7.20	27.0	16	7.5	92	<10	K7000	2000
NOV											
28...	1045	22	186	7.10	26.0	3.1	7.4	89	12	490	K10
JAN 1990											
30...	1045	21	192	7.00	24.5	3.0	7.7	90	<10	1460	K90
APR											
04...	1115	29	154	7.30	27.0	2.0	8.0	98	15	4100	460
JUN											
01...	1125	22	135	7.30	29.5	3.0	8.3	107	14	K730	K100
AUG											
02...	1045	13	159	7.50	29.5	2.1	7.1	91	11	4700	K130

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
03...	41	0	9.4	4.3	13	0.9	1.9	41	<0.5	5.0	18
NOV											
28...	--	--	--	--	--	--	--	44	--	--	--
JAN 1990											
30...	--	--	--	--	--	--	--	43	--	--	--
APR											
04...	39	0	9.2	3.9	14	1	1.4	38	<0.5	4.5	19
JUN											
01...	--	--	--	--	--	--	--	36	--	--	--
AUG											
02...	41	2	9.2	4.3	15	1	1.3	36	--	4.3	23

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
03...	0.10	21	97	19.9	14	0.19	0.01	0.20	0.11	0.39
NOV										
28...	--	--	--	--	26	--	<0.01	0.20	0.03	--
JAN 1990										
30...	--	--	--	--	11	--	<0.01	0.20	0.06	--
APR										
04...	<0.10	22	97	7.59	<1	--	<0.01	<0.10	0.03	--
JUN										
01...	--	--	--	--	1	--	<0.01	0.10	0.02	--
AUG										
02...	<0.10	23	102	3.60	10	0.99	0.01	0.10	0.07	0.13

K = non-ideal count

50072500 RIO FAJARDO BELOW FAJARDO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
03...	0.50	0.70	3.1	0.04	<1	<100	10	<1	<1	20
NOV										
28...	<0.20	--	--	0.02	--	--	--	--	--	--
JAN 1990										
30...	<0.20	--	--	0.04	--	--	--	--	--	--
APR										
04...	<0.20	--	--	0.03	<1	<100	<10	<1	<1	<10
JUN										
01...	<0.20	--	--	0.02	--	--	--	--	--	--
AUG										
02...	0.20	0.30	1.3	0.06	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
03...	1700	5	100	<0.10	<1	<1	<10	<0.010	3	0.04
NOV										
28...	--	--	--	--	--	--	--	--	--	--
JAN 1990										
30...	--	--	--	--	--	--	--	--	--	--
APR										
04...	370	<1	60	<0.10	<1	<1	<10	<0.010	4	0.04
JUN										
01...	--	--	--	--	--	--	--	--	--	--
AUG										
02...	--	--	--	--	--	--	--	--	--	--

RIO BLANCO BASIN

50075000 RIO ICACOS NEAR NAGUABO, PR

LOCATION.--Lat 18°16'38", long 65°47'09", Hydrologic Unit 21010001, in Caribbean National Forest, off 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.

AVERAGE DISCHARGE.--18 years (1946-52, 1980-90), 15.0 ft³/s (0.425 m³/s), 161.68 in/yr (4,107 mm/yr), 10,870 acre-ft/yr (13.4 hm³/yr); median of yearly mean discharges, 14 ft³/s (0.40 m³/s), 10,100 acre-ft/yr (12 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,860 ft³/s (81.0 m³/s), Apr. 21, 1983, gage height, 8.96 ft (2.731 m), from rating curve extended above 30 ft³/s (0.850 m³/s) on basis of step-backwater analysis; minimum daily discharge, 1.5 ft³/s (0.042 m³/s), Mar. 22, Apr. 10, 1946.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 650 ft³/s (18.4 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Apr. 25	1430	*1,220	34.6	*6.64	2.024	No other peak greater than base discharge.					

Minimum discharge, 3.9 ft³/s (0.110 m³/s), Dec. 25-28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	16	5.7	9.9	7.6	15	10	9.1	15	10	6.9	6.1
2	12	8.9	5.6	33	6.9	7.8	12	9.3	23	7.3	37	7.6
3	12	8.7	5.6	9.6	6.8	6.9	10	7.9	17	6.9	9.2	10
4	49	14	5.6	7.4	5.8	6.8	11	9.9	13	7.0	7.4	7.8
5	15	29	5.3	6.5	5.5	6.4	9.6	8.1	37	7.1	7.7	6.3
6	12	15	5.3	6.4	5.2	6.4	9.3	7.4	22	52	7.5	6.0
7	13	18	5.2	6.3	6.8	6.3	9.0	7.3	11	26	19	6.0
8	17	26	5.2	6.2	19	6.0	9.0	7.0	11	9.0	12	5.9
9	13	27	5.2	6.0	24	65	9.3	30	12	8.3	11	19
10	12	10	5.0	6.3	7.9	33	9.8	61	23	9.0	35	7.6
11	12	11	4.9	6.6	11	77	8.8	14	11	8.0	11	7.2
12	11	10	4.9	6.1	6.7	106	8.8	12	9.4	7.6	10	29
13	11	15	4.8	6.2	6.0	96	14	21	9.0	7.5	75	20
14	23	15	4.8	6.0	43	45	17	21	9.9	9.8	12	16
15	60	16	4.6	7.6	7.6	17	9.6	14	11	16	9.2	7.2
16	12	9.9	4.5	8.0	7.5	27	20	12	8.9	7.9	8.1	21
17	11	11	4.5	11	8.9	24	9.6	12	9.5	13	7.9	15
18	10	9.6	4.6	11	12	16	8.6	13	14	14	10	15
19	9.8	10	4.5	12	9.7	13	9.3	10	24	12	7.9	7.9
20	9.6	8.8	4.5	21	7.2	13	20	9.8	51	8.0	7.4	11
21	11	7.9	4.2	7.3	13	12	9.9	9.5	10	7.4	11	6.6
22	10	7.3	4.2	7.6	15	12	8.8	9.4	8.3	7.2	18	7.9
23	9.3	6.9	4.3	12	15	13	8.0	9.1	11	10	11	10
24	9.0	6.8	4.2	14	11	12	8.0	9.0	13	36	8.1	6.4
25	9.3	6.6	4.2	19	8.0	14	231	8.8	22	20	11	5.9
26	8.7	6.5	3.9	8.9	9.8	15	17	25	14	12	7.9	5.6
27	8.4	6.2	3.9	9.1	7.6	29	11	12	8.8	9.3	7.0	6.2
28	8.3	6.0	4.9	7.1	8.7	15	9.4	10	8.1	8.0	6.7	5.7
29	8.0	6.0	7.8	7.0	---	13	8.9	9.2	7.7	7.4	7.0	5.4
30	12	6.0	4.6	6.1	---	14	8.5	8.9	7.4	7.2	6.4	44
31	9.1	---	8.1	5.7	---	11	---	9.8	---	6.9	6.0	---
TOTAL	440.5	355.1	154.6	296.9	303.2	753.6	545.2	416.5	452.0	377.8	411.3	335.3
MEAN	14.2	11.8	4.99	9.58	10.8	24.3	18.2	13.4	15.1	12.2	13.3	11.2
MAX	60	29	8.1	33	43	106	231	61	51	52	75	44
MIN	8.0	6.0	3.9	5.7	5.2	6.0	8.0	7.0	7.4	6.9	6.0	5.4
AC-FT	874	704	307	589	601	1490	1080	826	897	749	816	665
CFSM	11.3	9.39	3.96	7.60	8.59	19.3	14.4	10.7	12.0	9.67	10.5	8.87
IN.	13.01	10.48	4.56	8.77	8.95	22.25	16.10	12.30	13.34	11.15	12.14	9.90

CAL YR 1989 TOTAL 5547.6 MEAN 15.2 MAX 470 MIN 3.9 AC-FT 11000 CFSM 12.1 IN. 163.79
WTR YR 1990 TOTAL 4842.0 MEAN 13.3 MAX 231 MIN 3.9 AC-FT 9600 CFSM 10.5 IN. 142.95

RIO BLANCO BASIN

50075000 RIO ICACOS NEAR NAGUABO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 12	1357	9.96	63	23.5	APR. 19	0924	8.46	61	20.5
NOV. 15	1215	11.0	56	22.0	MAY 08	1144	7.34	62	21.5
DEC. 19	1452	4.46	62	21.5	JUNE 19	1057	9.65	58	21.5
JAN. 11	1226	7.24	68	21.0	JULY 18	0916	9.91	54	21.5
JAN. 31	0924	5.92	61	20.0	AUG. 29	1300	6.45	59	23.0
MAR. 26	1254	14.9	56	21.0	SEPT 27	1258	7.34	66	22.5

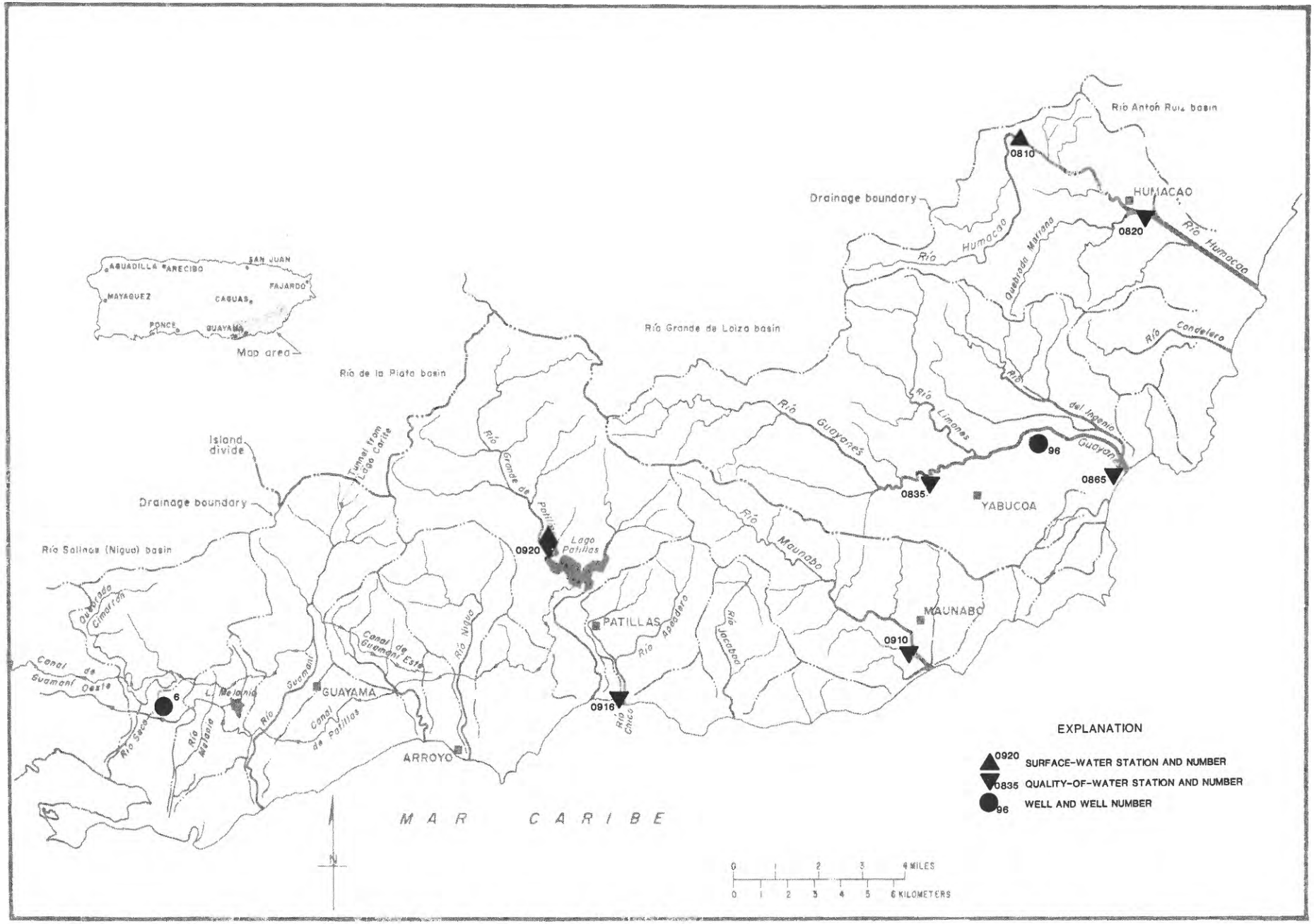

Figure 21.--Southeastern river basins the Río Humacao to Río Seco basins.

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).

WATER-DISCHARGE RECORDS

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. Elevation of gage is 260 ft (79.2 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 above 1,000 ft³/s (28.3 m³/s), and estimated daily discharges, which are poor. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--6 years (1975-77, 1988-90), 23.8 ft³/s (0.674 m³/s), 48.60 in/yr (1,234 mm/yr), 17,240 acre-ft/yr (21.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,800 ft³/s (589 m³/s) Sept. 6, 1960, gage height, 34.4 ft (10.485 m), datum then in use, from floodmarks, and rating curve extended above 5,300 ft³/s (150 m³/s) on basis of slope-area measurement of peak flow; minimun daily discharge, 2.2 ft³/s (0.062 m³/s) July 16, 1974.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s (28.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Aug. 10	1100	*755	21.4	*3.97	1.210						

Minimum discharge, 4.8 ft³/s (0.136 m³/s), July 3,4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	18	13	15	9.1	10	8.9	7.7	6.8	6.5	5.4	6.8
2	33	17	13	18	12	10	8.7	7.7	8.0	5.8	5.7	6.8
3	28	16	13	11	9.4	9.7	21	7.2	6.4	5.2	6.0	7.7
4	26	17	13	9.3	9.0	9.2	8.4	7.1	6.8	5.9	5.3	14
5	28	25	12	8.7	8.7	9.0	7.4	7.0	10	8.1	6.2	8.0
6	30	17	13	8.7	8.4	8.8	7.1	6.8	10	28	6.6	7.1
7	26	16	12	8.7	9.6	8.6	6.8	6.9	12	14	8.3	6.6
8	27	27	12	8.9	11	8.3	6.6	7.0	7.7	8.8	22	6.8
9	46	32	12	9.0	11	8.6	6.6	11	6.8	7.2	9.2	9.6
10	25	21	12	9.4	10	8.9	6.5	11	6.6	7.3	174	12
11	23	17	12	10	9.7	8.8	6.6	7.6	6.0	6.5	24	7.4
12	23	16	12	9.2	9.3	9.4	7.2	7.1	5.7	5.7	14	8.4
13	23	16	12	12	8.7	11	10	6.9	6.3	5.3	14	25
14	22	15	11	8.9	10	22	7.1	8.8	43	5.3	12	22
15	23	15	11	8.7	11	11	6.6	7.3	49	6.6	10	11
16	21	15	11	8.4	12	12	6.3	7.0	11	5.8	9.6	9.8
17	21	15	11	8.9	12	11	6.3	6.6	8.5	6.0	9.0	10
18	25	15	11	8.1	13	9.0	7.3	6.6	7.1	9.1	11	11
19	21	15	11	8.9	9.5	8.7	6.6	6.3	7.1	9.4	11	9.8
20	20	17	12	32	12	9.7	6.0	6.3	13	6.9	8.9	8.5
21	20	16	11	12	19	9.6	6.0	6.2	7.4	5.7	8.4	8.0
22	41	15	10	9.5	14	8.7	5.5	5.7	6.1	5.4	8.5	7.4
23	24	15	10	9.2	14	8.7	5.5	5.5	6.1	5.3	12	7.4
24	19	15	14	11	16	8.2	5.5	5.5	8.3	14	12	7.4
25	18	14	17	10	e12	8.3	16	5.5	16	12	11	7.4
26	21	16	11	12	e11	8.4	21	11	11	9.0	8.8	7.1
27	17	15	10	10	10	8.6	10	8.0	7.5	8.0	7.6	7.0
28	17	14	11	11	9.9	10	8.6	6.8	6.2	6.8	7.6	7.3
29	17	14	14	9.8	---	9.5	7.9	7.5	5.7	5.9	13	13
30	30	14	12	9.4	---	11	7.7	6.6	5.3	5.5	7.8	20
31	20	---	10	9.9	---	10	---	6.8	---	5.5	6.9	---
TOTAL	770	510	369	335.6	311.3	304.7	251.7	225.0	317.4	246.5	475.8	300.3
MEAN	24.8	17.0	11.9	10.8	11.1	9.83	8.39	7.26	10.6	7.95	15.3	10.0
MAX	46	32	17	32	19	22	21	11	49	28	174	25
MIN	17	14	10	8.1	8.4	8.2	5.5	5.5	5.3	5.2	5.3	6.6
AC-FT	1530	1010	732	666	617	604	499	446	630	489	944	596
CFSM	3.74	2.56	1.79	1.63	1.67	1.48	1.26	1.09	1.59	1.20	2.31	1.51
IN.	4.31	2.85	2.06	1.88	1.74	1.70	1.41	1.26	1.78	1.38	2.66	1.68

CAL YR 1989 TOTAL 8042.2 MEAN 22.0 MAX 450 MIN 7.4 AC-FT 15950 CFSM 3.31 IN. 44.99
WTR YR 1990 TOTAL 4417.3 MEAN 12.1 MAX 174 MIN 5.2 AC-FT 8760 CFSM 1.82 IN. 24.71

e Estimated

50081000 RIO HUMACAO AT LAS PIEDRAS, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.-- OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 05	1112	22	174	27.5	APR. 12	1014	6.44	180	24.5
NOV. 15	1059	14.7	170	25.0	MAY 21	1448	6.05	181	29.5
DEC. 06	1253	12.6	166	25.0	JUNE 20	1251	14.4	170	27.5
JAN. 16	1330	8.98	154	26.0	JULY 23	1441	5.48	190	29.5
FEB. 14	1223	10.1	170	23.5	AUG. 23	1137	8.55	197	27.0
MAR. 06	0953	9.00	182	22.5	SEPT 12	1035	8.34	193	25.0

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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
18...	1115	54	262	7.40	29.0	47	7.0	89	32	K180000	21000
DEC											
15...	0705	18	329	7.40	21.0	10	7.6	85	18	K110000	39000
FEB 1990											
14...	0745	19	336	7.00	22.5	4.6	4.4	50	25	K76000	30000
APR											
26...	0800	38	288	7.50	23.5	12	7.2	84	29	K89000	46000
JUN											
21...	0920	13	336	7.10	28.0	3.0	5.9	74	20	250000	82000
AUG											
17...	0945	14	451	7.50	28.0	4.5	6.0	75	23	440000	130000

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
18...	73	0	20	5.7	20	1	2.9	75	1.0	10	23
DEC											
15...	--	--	--	--	--	--	--	92	--	--	--
FEB 1990											
14...	--	--	--	--	--	--	--	98	--	--	--
APR											
26...	79	0	19	6.3	22	1	2.3	61	<0.5	12	19
JUN											
21...	--	--	--	--	--	--	--	87	--	--	--
AUG											
17...	100	2	29	6.7	29	1	2.6	98	--	15	42

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
18...	0.10	31	158	22.8	86	0.47	0.03	0.50	0.22	0.58
DEC										
15...	--	--	--	--	10	0.90	0.10	1.0	0.40	0.40
FEB 1990										
14...	--	--	--	--	13	0.60	0.10	0.70	0.46	0.34
APR										
26...	0.10	35	162	16.9	16	0.37	0.03	0.40	0.44	0.66
JUN										
21...	--	--	--	--	18	0.37	0.03	0.40	0.83	0.47
AUG										
17...	0.60	35	219	8.43	18	0.39	0.01	0.40	1.20	1.0

K = non-ideal count

50082000 RIO HUMACAO AT HIGHWAY 3 AT HUMACAO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
18...	0.80	1.3	5.8	0.23	<1	<100	<10	<1	<1	10
DEC										
15...	0.80	1.8	8.0	0.31	--	--	--	--	--	--
FEB 1990										
14...	0.80	1.5	6.6	0.38	--	--	--	--	--	--
APR										
26...	1.1	1.5	6.6	0.29	<1	400	60	<1	57	830
JUN										
21...	1.3	1.7	7.5	0.39	--	--	--	--	--	--
AUG										
17...	2.2	2.6	12	0.43	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
18...	4700	10	250	<0.10	<1	<1	20	<0.010	14	0.02
DEC										
15...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
14...	--	--	--	--	--	--	--	--	--	--
APR										
26...	24000	11	430	<0.10	<1	<1	70	<0.010	1	<0.01
JUN										
21...	--	--	--	--	--	--	--	--	--	--
AUG										
17...	--	--	--	--	--	--	--	--	--	--

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
18...	0905	50	170	7.20	24.5	6.5	7.3	87	<10	K730	K1900
DEC											
13...	1025	21	173	7.10	22.5	3.9	8.3	94	11	370	250
FEB 1990											
12...	1105	22	175	7.00	23.5	6.0	7.5	86	13	540	420
APR											
24...	1130	16	170	7.30	25.0	7.0	8.0	95	<10	300	3800
JUN											
20...	0905	68	154	7.60	25.5	33	6.9	83	24	K12000	24000
AUG											
16...	0845	32	170	7.40	25.5	11	7.2	86	10	500	730

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
18...	51	0	13	4.4	15	0.9	1.5	59	<0.5	4.0	11
DEC											
13...	--	--	--	--	--	--	--	62	--	--	--
FEB 1990											
12...	--	--	--	--	--	--	--	62	--	--	--
APR											
24...	53	0	13	4.9	17	1	1.1	66	<0.5	4.9	18
JUN											
20...	--	--	--	--	--	--	--	54	--	--	--
AUG											
16...	51	0	13	4.4	15	0.9	2.5	61	--	3.0	16

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
18...	0.10	37	121	16.5	15	0.39	0.01	0.40	0.04	0.26
DEC										
13...	--	--	--	--	1	--	<0.01	0.30	0.03	--
FEB 1990										
12...	--	--	--	--	16	0.19	0.01	0.20	0.02	0.18
APR										
24...	0.10	39	138	5.92	10	0.19	0.01	0.20	0.03	0.17
JUN										
20...	--	--	--	--	78	0.28	0.02	0.30	0.05	1.2
AUG										
16...	<0.10	35	125	11	28	0.19	0.01	0.20	0.06	0.54

K = non-ideal count

RIO GUAYANES BASIN

50083500 RIO GUAYANES AT YABUCOA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
18...	0.30	0.70	3.1	0.05	<1	<100	<10	<1	<1	10
DEC										
13...	<0.20	--	--	0.05	--	--	--	--	--	--
FEB 1990										
12...	0.20	0.40	1.8	0.04	--	--	--	--	--	--
APR										
24...	0.20	0.40	1.8	0.06	<1	<100	20	<1	<1	<10
JUN										
20...	1.3	1.6	7.1	0.14	--	--	--	--	--	--
AUG										
16...	0.60	0.80	3.5	0.06	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
18...	1800	2	110	<0.10	<1	<1	<10	<0.010	2	0.03
DEC										
13...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
12...	--	--	--	--	--	--	--	--	--	--
APR										
24...	1600	17	130	<0.10	<1	<1	<10	<0.010	2	0.02
JUN										
20...	--	--	--	--	--	--	--	--	--	--
AUG										
16...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
JUN 1990										
20...	0905	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN 1990										
20...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01

DATE	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 1990									
20...	<0.01	<0.10	<0.1	<1	<0.01	<0.01	<0.01	<0.01	<0.01

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
24...	1130	67	182	7.40	27.0	9.4	7.8	96	21	420	K140
DEC											
14...	1040	30	180	7.40	23.5	9.7	7.4	85	15	250	370
FEB 1990											
13...	1135	15	185	7.40	25.0	10	6.5	77	14	520	400
APR											
25...	0830	23	172	7.20	24.5	17	6.0	70	24	4000	9600
JUN											
21...	0735	50	167	7.00	26.0	24	7.1	83	20	2200	2700
AUG											
16...	1020	56	190	7.60	27.5	12	6.6	82	14	K1200	2100

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
24...	48	0	12	4.4	16	1	1.4	60	<0.5	5.0	13
DEC											
14...	--	--	--	--	--	--	--	61	--	--	--
FEB 1990											
13...	--	--	--	--	--	--	--	62	--	--	--
APR											
25...	37	0	9.5	3.3	13	1	3.1	54	<0.5	9.2	12
JUN											
21...	--	--	--	--	--	--	--	51	--	--	--
AUG											
16...	54	0	14	4.7	17	1	1.9	70	--	3.8	21

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
24...	0.10	38	126	22.8	12	--	<0.01	0.40	0.03	--
DEC										
14...	--	--	--	--	17	--	<0.01	0.30	0.02	--
FEB 1990										
13...	--	--	--	--	15	--	<0.01	0.30	0.01	--
APR										
25...	<0.10	28	100	6.33	44	--	0.01	<0.10	<0.01	--
JUN										
21...	--	--	--	--	56	0.28	0.02	0.30	0.06	0.44
AUG										
16...	<0.10	36	140	21.6	29	0.29	0.01	0.30	0.02	0.68

K = non-ideal count

RIO GUAYANES BASIN

50086500 RIO GUAYANES ABOVE MOUTH AT PLAYA DE GUAYANES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
24...	<0.20	--	--	0.06	<1	<100	<10	<1	<1	10
DEC										
14...	<0.20	--	--	0.05	--	--	--	--	--	--
FEB 1990										
13...	<0.20	--	--	0.08	--	--	--	--	--	--
APR										
25...	0.50	--	--	0.01	<1	100	50	<1	3	10
JUN										
21...	0.50	0.80	3.5	0.12	--	--	--	--	--	--
AUG										
16...	0.70	1.0	4.4	0.14	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
24...	1500	3	80	<0.10	<1	<1	<10	<0.010	<1	0.02
DEC										
14...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
13...	--	--	--	--	--	--	--	--	--	--
APR										
25...	3500	<1	220	<0.10	<1	<1	30	<0.010	<1	0.06
JUN										
21...	--	--	--	--	--	--	--	--	--	--
AUG										
16...	--	--	--	--	--	--	--	--	--	--

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
24...	0920	21	250	7.30	25.0	2.7	7.6	91	20	2600	420
DEC											
13...	0825	10	281	7.40	22.0	32	7.5	84	13	K1300	530
FEB 1990											
12...	0910	12	250	7.10	23.0	1.0	7.0	80	29	590	380
APR											
24...	0940	2.7	455	7.40	26.0	30	7.2	88	18	K1100	320
JUN											
13...	0955	2.3	402	7.20	29.0	50	7.1	90	18	K1400	350
AUG											
13...	1050	40	188	7.60	28.0	75	6.7	84	30	35000	24000

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
24...	73	0	18	6.9	20	1	1.3	80	<0.5	10	16
DEC											
13...	--	--	--	--	--	--	--	95	--	--	--
FEB 1990											
12...	--	--	--	--	--	--	--	87	--	--	--
APR											
24...	130	0	31	13	41	2	3.9	88	<0.5	24	52
JUN											
13...	--	--	--	--	--	--	--	100	--	--	--
AUG											
13...	56	0	13	5.6	17	1	2.0	59	--	7.8	19

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
24...	0.10	39	159	9.12	17	0.39	0.01	0.40	0.03	0.47
DEC										
13...	--	--	--	--	56	0.28	0.02	0.30	1.0	0.50
FEB 1990										
12...	--	--	--	--	5	0.19	0.01	0.20	0.02	0.48
APR										
24...	0.30	45	280	2.02	89	1.67	0.13	1.8	0.96	0.34
JUN										
13...	--	--	--	--	61	0.28	0.12	0.40	0.84	0.46
AUG										
13...	<0.10	28	128	14.1	130	0.37	0.03	0.40	0.04	2.3

K = non-ideal count

RIO MAUNABO BASIN

50091000 RIO MAUNABO AT MAUNABO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
24...	0.50	0.90	4.0	0.07	<1	<100	30	<1	<1	<10
DEC										
13...	1.5	1.8	8.0	0.24	--	--	--	--	--	--
FEB 1990										
12...	0.50	0.70	3.1	0.16	--	--	--	--	--	--
APR										
24...	1.3	3.1	14	1.6	1	100	40	<1	<1	<10
JUN										
13...	1.3	1.7	7.5	0.81	--	--	--	--	--	--
AUG										
13...	2.3	2.7	12	0.11	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
24...	790	4	60	<0.10	<1	<1	<10	<0.010	<1	0.03
DEC										
13...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
12...	--	--	--	--	--	--	--	--	--	--
APR										
24...	4700	1	230	<0.10	<1	<1	20	<0.010	<1	0.12
JUN										
13...	--	--	--	--	--	--	--	--	--	--
AUG										
13...	--	--	--	--	--	--	--	--	--	--

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
16...	0940	3.4	407	7.60	26.5	1.8	7.1	88	16	K130	K120
DEC											
14...	0820	2.0	588	7.40	26.0	4.0	6.2	75	55	260	K170
FEB 1990											
13...	0905	1.1	606	7.50	24.5	35	6.1	72	38	K100	390
APR											
24...	0830	5.4	668	7.80	30.5	10	5.0	66	67	2200	K160
JUN											
13...	0835	1.0	598	7.00	29.0	4.1	2.5	32	37	5600	11000
AUG											
13...	0915	22	245	7.90	26.0	11	6.2	75	23	42000	40000

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
16...	110	0	26	11	42	2	3.1	130	<0.5	17	30
DEC											
14...	--	--	--	--	--	--	--	140	--	--	--
FEB 1990											
13...	--	--	--	--	--	--	--	160	--	--	--
APR											
24...	130	0	34	12	76	3	12	250	<0.5	42	100
JUN											
13...	--	--	--	--	--	--	--	120	--	--	--
AUG											
13...	120	3	28	13	30	1	5.0	74	--	17	34

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
16...	0.20	31	238	2.22	<1	1.38	0.02	1.4	0.11	0.69
DEC										
14...	--	--	--	--	14	4.87	0.23	5.1	0.30	2.5
FEB 1990										
13...	--	--	--	--	13	1.91	0.09	2.0	0.28	1.7
APR										
24...	0.20	35	376	5.47	10	8.16	0.14	8.3	0.11	3.6
JUN										
13...	--	--	--	--	<1	3.78	0.02	3.8	0.07	1.7
AUG										
13...	0.10	33	232	14	16	0.75	0.05	0.80	0.09	1.3

K = non-ideal count

RIO CHICO BASIN

50091800 RIO CHICO AT PROVIDENCIA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
16...	0.80	2.2	9.7	1.5	<1	<100	20	<1	<1	<10
DEC										
14...	2.8	7.9	35	4.1	--	--	--	--	--	--
FEB 1990										
13...	2.0	4.0	18	4.7	--	--	--	--	--	--
APR										
24...	3.7	12	53	8.3	1	<100	180	<1	1	20
JUN										
13...	1.8	5.6	25	7.3	--	--	--	--	--	--
AUG										
13...	1.4	2.2	9.7	0.60	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
16...	210	5	40	0.20	<1	<1	10	<0.010	2	0.10
DEC										
14...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
13...	--	--	--	--	--	--	--	--	--	--
APR										
24...	240	6	30	0.10	<1	<1	40	<0.010	3	0.28
JUN										
13...	--	--	--	--	--	--	--	--	--	--
AUG										
13...	--	--	--	--	--	--	--	--	--	--

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. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--24 years (1967-90), 59.8 ft³/s (1.694 m³/s), 44.38 in/yr (1,127 mm/yr), 43,320 acre-ft/yr (53.4 hm³/yr); median of yearly mean discharges, 60 ft³/s (1.70 m³/s), 43,500 acre-ft/yr (54 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,800 ft³/s (419 m³/s), Sept. 16, 1975, gage height, 12.45 ft (3.795 m), from rating curve extended above 250 ft³/s (7.08 m³/s) on basis of slope-area measurement of peak flow; minimum discharge, 4.6 ft³/s (0.130 m³/s), May 13-16, 1968.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft³/s (70.8 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
June 14	1610	*1,750	49.6	*7.73	2.356						

Minimum discharge, 8.1 ft³/s (0.229 m³/s), May 22-26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	22	14	16	17	16	11	12	12	34	26	23
2	61	21	14	20	16	15	11	12	15	33	24	22
3	57	19	14	27	15	13	11	11	12	27	24	21
4	77	19	14	16	13	13	12	11	18	25	23	21
5	68	28	14	13	12	12	12	11	16	27	38	18
6	56	22	14	13	12	12	11	11	25	174	26	17
7	51	22	14	13	11	11	10	11	14	88	28	17
8	47	24	13	13	16	11	10	12	10	50	50	19
9	44	23	13	13	19	12	10	89	80	35	34	19
10	39	21	13	13	18	13	9.3	155	17	37	168	19
11	37	20	13	12	17	11	9.2	40	13	45	82	16
12	36	18	13	11	14	15	9.0	17	10	40	47	29
13	35	18	13	9.8	13	22	25	13	11	52	45	24
14	33	18	13	9.8	22	92	16	14	268	64	35	21
15	34	17	13	9.7	18	27	12	13	136	81	30	25
16	33	17	12	9.1	15	23	17	11	58	67	27	29
17	30	18	12	10	18	22	13	14	34	57	24	30
18	29	19	12	11	20	16	13	11	23	90	24	42
19	28	18	13	20	20	14	12	9.9	20	95	22	35
20	28	18	13	39	20	14	11	9.2	27	54	19	22
21	28	17	12	23	24	13	11	8.8	27	42	18	19
22	26	16	12	16	28	13	10	8.6	31	34	17	18
23	26	15	12	14	28	17	10	8.1	35	28	20	25
24	25	15	12	15	95	13	10	8.1	57	33	19	36
25	26	15	12	32	26	12	10	8.1	154	91	20	39
26	24	15	12	62	20	12	19	8.8	73	129	23	82
27	23	15	12	46	17	13	19	9.8	47	67	17	41
28	22	15	13	36	15	13	13	9.5	37	45	154	58
29	22	14	13	30	---	13	11	11	33	36	67	91
30	24	14	14	25	---	12	11	11	32	32	36	124
31	23	---	15	19	---	12	---	13	---	28	27	---
TOTAL	1158	553	403	616.4	579	527	368.5	591.9	1345	1740	1214	1002
MEAN	37.4	18.4	13.0	19.9	20.7	17.0	12.3	19.1	44.8	56.1	39.2	33.4
MAX	77	28	15	62	95	92	25	155	268	174	168	124
MIN	22	14	12	9.1	11	11	9.0	8.1	10	25	17	16
AC-FT	2300	1100	799	1220	1150	1050	731	1170	2670	3450	2410	1990
CFSM	2.04	1.01	.71	1.09	1.13	.93	.67	1.04	2.45	3.07	2.14	1.83
IN.	2.35	1.12	.82	1.25	1.18	1.07	.75	1.20	2.73	3.54	2.47	2.04

CAL YR 1989 TOTAL 16163 MEAN 44.3 MAX 1040 MIN 10 AC-FT 32060 CFSM 2.42 IN. 32.86
WTR YR 1990 TOTAL 10097.8 MEAN 27.7 MAX 268 MIN 8.1 AC-FT 20030 CFSM 1.51 IN. 20.53

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)
OCT 1989											
10...	1035	40	161	8.20	24.0	0.80	8.3	98	290	K110	49
JAN 1990											
05...	0850	13	189	7.60	21.0	0.40	7.7	86	K830	430	57
APR											
09...	0950	10	175	7.70	23.5	0.30	8.4	98	300	550	53
JUL											
06...	1045	594	184	7.50	23.0	120	8.5	98	K14000	39000	21

DATE	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
OCT 1989											
10...	0	11	5.3	13	0.8	0.60	52	10	11	0.10	26
JAN 1990											
05...	0	13	6.0	16	0.9	0.70	57	12	13	0.10	25
APR											
09...	0	12	5.6	15	0.9	0.60	56	10	14	0.30	24
JUL											
06...	0	5.0	2.0	7.4	0.7	1.7	17	5.4	9.5	<0.10	11

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS DIS-SOLVED (MG/L AS P)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4)
OCT 1989											
10...	90	108	9.79	<0.10	0.03	0.04	0.90	0.03	0.02	0.02	0.06
JAN 1990											
05...	121	121	4.35	0.28	0.04	0.05	0.40	0.05	0.04	0.03	0.09
APR											
09...	119	116	3.16	<0.10	0.03	0.04	0.30	0.02	0.02	0.01	0.03
JUL											
06...	60	55	90	0.40	0.17	0.22	1.8	0.07	0.05	0.01	0.03

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL)	ARSENIC DIS-SOLVED (UG/L AS AS)	BARIUM, DIS-SOLVED (UG/L AS BA)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE)	CADMIUM DIS-SOLVED (UG/L AS CD)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COBALT, DIS-SOLVED (UG/L AS CO)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	LITHIUM DIS-SOLVED (UG/L AS LI)
OCT 1989											
10...	20	<1	14	<0.5	1.0	<1	<3	<1	54	<1	<4
JAN 1990											
05...	10	<1	14	<0.5	<1.0	1	<3	<10	23	<10	<4
APR											
09...	20	<1	13	<0.5	1.0	<5	<3	<10	14	<10	<4
JUL											
06...	210	3	8	<0.5	3.0	3	<3	12	280	6	<4

K=non-ideal count

RIO GRANDE DE PATILLAS BASIN

50092000 RIO GRANDE DE PATILLAS NEAR PATILLAS, PR--Continued
(National stream-quality accounting network station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 1989									
10...	8	<0.1	<10	1	<1	<1.0	43	<6	6
JAN 1990									
05...	19	<0.1	<10	<10	<1	<1.0	45	<6	9
APR									
09...	9	0.1	<10	<10	<1	<1.0	43	<6	16
JUL									
06...	48	0.1	<10	2	<1	<1.0	21	<6	18

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM
OCT 1989					
10...	1035	40	44	4.8	84
JAN 1990					
05...	0850	13	36	1.3	86
APR					
09...	0950	10	10	0.27	72
JUL					
06...	1045	594	3	4.8	50

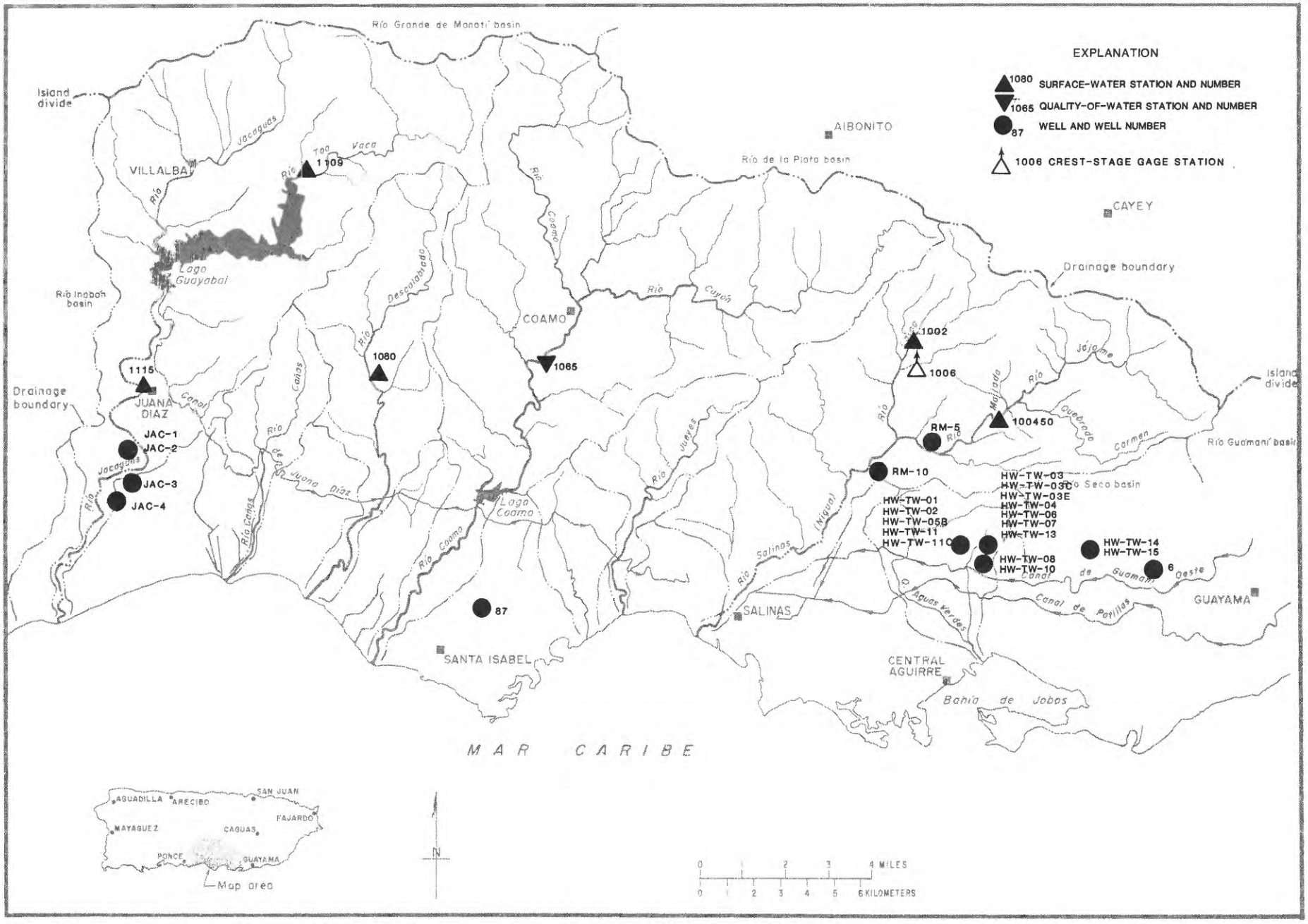

Figure 22.--South coast river basins the Río Salinas to Río Jacaguas basins.

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).

WATER-DISCHARGE RECORDS

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 fair.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,540 ft³/s (43.6 m³/s), Sept. 10, 1989, gage height, 9.94 ft (3.030 m) from rating curve extended above 100 ft³/s (2.832 m³/s) on basis of step-backwater analysis; minimum daily discharge, 0.02 ft³/s (0.0006 m³/s), Aug. 29, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s (5.66 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 20	1500	368	10.4	7.68	2.341	Aug. 29	1630	699	19.8	8.52	2.597
Oct. 21	1400	459	13.0	7.94	2.420	Sept. 14	1615	*755	21.4	*8.64	2.633
Oct. 25	1745	342	9.68	7.60	2.316	Sept. 25	1645	209	5.92	7.11	2.167
Aug. 22	1630	202	5.72	7.08	2.158	Sept. 30	1330	309	8.75	7.49	2.283
Aug. 28	1430	562	15.9	8.20	2.499						

Minimum daily discharge 0.06 ft³/s (0.002 m³/s), May 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	7.3	2.0	.76	.34	.89	.24	.21	.20	.34	.31	1.9
2	9.3	6.5	1.9	.80	.35	.68	.20	.22	.16	.36	.31	1.9
3	7.9	6.1	1.7	.81	.32	.53	.18	.23	.13	.31	.31	.97
4	7.3	5.7	1.7	.78	.29	.46	.20	.21	.13	.26	.33	.68
5	6.7	6.5	1.7	.74	.30	.39	.19	.20	.11	.28	.35	.51
6	6.0	6.0	2.0	.72	.25	.39	.18	.18	.13	.34	.32	.52
7	5.7	5.7	1.7	.66	.27	.37	.18	.18	.08	.31	.45	.65
8	5.7	5.9	1.6	.74	.33	.32	.18	.22	.08	.27	.42	.65
9	4.8	5.4	1.6	.72	.36	.40	.17	.25	.09	.26	.32	.54
10	4.2	4.9	1.6	.68	.36	.61	.18	.47	.11	.26	.98	.55
11	3.8	4.5	1.6	.77	.30	.47	.20	.25	.10	.21	.81	.69
12	3.4	4.2	1.3	.71	.31	.62	.18	.20	.15	.20	.47	.73
13	3.3	4.2	1.3	.62	.38	.89	.55	.17	.16	.20	.43	.88
14	3.4	4.0	1.2	.58	.74	1.1	.30	.20	2.1	.12	.42	81
15	3.1	3.6	1.1	.47	.69	.75	.25	.17	4.3	.29	.38	37
16	2.9	3.5	1.1	.44	.62	.59	.24	.14	1.9	.77	.30	12
17	3.0	3.4	1.2	.46	.62	.52	.25	.10	.80	.99	.25	7.4
18	2.7	3.1	1.1	.39	.60	.41	.25	.15	.53	1.5	.20	5.3
19	2.6	3.0	1.1	.47	.52	.32	.30	.14	.48	.64	.09	4.1
20	46	2.9	1.1	.48	.48	.29	.49	.13	.95	.49	.12	3.6
21	61	2.8	1.0	.44	.53	.29	.47	.11	.67	.34	.18	3.1
22	28	2.6	.91	.43	.60	.29	.33	.12	.50	.24	17	3.5
23	16	2.4	.91	.40	.63	.28	.31	.12	.55	.20	2.4	4.2
24	11	2.4	.91	.44	1.1	.24	.28	.15	.61	.53	.89	3.5
25	41	2.4	.91	.44	.87	.20	.28	.08	.59	5.2	.63	33
26	43	2.2	.91	.44	.60	.19	.39	.11	.46	2.3	.56	21
27	21	2.1	.91	.44	.54	.20	.46	.06	.42	1.6	.41	7.1
28	14	2.0	.89	.45	.51	.21	.36	.13	.39	.90	57	4.5
29	11	2.0	.83	.44	---	.21	.30	.14	.38	.57	80	8.3
30	10	2.0	.78	.42	---	.21	.26	.18	.35	.43	18	42
31	8.2	---	.80	.37	---	.22	---	.21	---	.36	3.3	---
TOTAL	406.0	119.3	39.36	17.51	13.81	13.54	8.35	5.43	17.61	21.07	187.94	291.77
MEAN	13.1	3.98	1.27	.56	.49	.44	.28	.18	.59	.68	6.06	9.73
MAX	61	7.3	2.0	.81	1.1	1.1	.55	.47	4.3	5.2	80	81
MIN	2.6	2.0	.78	.37	.25	.19	.17	.06	.08	.12	.09	.51
AC-FT	805	237	78	35	27	27	17	11	35	42	373	579
CFSM	1.32	.40	.13	.06	.05	.04	.03	.02	.06	.07	.61	.98
IN.	1.52	.45	.15	.07	.05	.05	.03	.02	.07	.08	.70	1.09

CAL YR 1989 TOTAL 1582.26 MEAN 4.33 MAX 210 MIN .02 AC-FT 3140 CFSM .44 IN. 5.93
WTR YR 1990 TOTAL 1141.69 MEAN 3.13 MAX 81 MIN .06 AC-FT 2260 CFSM .32 IN. 4.28

RIO SALINAS BASIN

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).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 886 ft³/s (25.1 m³/s), Sept. 23, 1989, gage height, 6.68 ft (2.036 m) from rating curve extended above 8.7 ft³/s (0.246 m³/s) on basis of step-backwater analysis and logarithmic extension; minimum daily discharge, 0.05 ft³/s (0.001 m³/s), June 4-10, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft³/s (1.42 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Aug. 28	1945	51	1.44	4.07	1.240	Sept. 24	1830	*375	10.6	*5.86	1.786
Aug. 29	1845	162	4.59	4.97	1.515	Sept. 30	1300	204	5.78	5.19	1.582
Sept. 14	1615	367	10.4	5.83	1.777						

Minimum daily discharge 0.05 ft³/s (0.001 m³/s), June 4-10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	2.5	1.7	e.84	.75	.48	.24	.44	.08	.13	.47	1.7
2	4.1	2.3	1.7	e.86	.68	.56	.21	.44	.07	.14	.37	1.1
3	3.7	2.2	1.6	e.82	.59	.48	.22	.40	.06	.16	.41	.92
4	3.5	2.1	1.6	e.74	.63	.44	.31	.37	.05	.15	.48	.74
5	3.8	2.3	1.6	e.70	.56	.41	.45	.33	.05	.12	.94	.62
6	3.3	2.3	1.5	e.70	.49	.34	.44	.37	.05	.16	1.1	.56
7	3.1	2.4	1.8	e.88	.43	.34	.34	.37	.05	.49	.86	.50
8	2.8	2.5	1.5	e.86	.49	.33	.31	.38	.05	.60	.67	.51
9	2.7	2.5	1.4	e.90	.63	.29	.31	.45	.05	.32	.52	.68
10	2.5	2.4	1.4	e1.0	.75	.45	.28	.49	.05	.16	1.6	.86
11	2.3	2.2	1.4	e.94	.59	.45	.26	.45	.06	.12	3.8	.69
12	2.1	1.9	1.3	e.80	.47	.56	.22	.36	.06	.09	1.5	.65
13	2.1	2.0	1.3	e.72	.38	.93	.55	.28	.06	.07	1.0	.67
14	2.1	2.0	1.2	e.70	.47	1.6	1.1	.22	.36	.08	1.1	49
15	2.0	1.9	1.2	e.66	.68	1.8	.82	.18	3.6	.08	.74	18
16	2.0	1.9	1.1	e.68	.49	1.0	.61	.17	2.5	1.7	.58	6.0
17	1.9	2.1	1.1	e.60	.44	1.1	.53	.17	.94	.92	.47	5.0
18	1.8	2.2	1.0	e.90	.53	.89	.49	.16	.57	1.4	.37	3.2
19	1.8	2.3	1.1	e1.2	.54	.65	.74	.18	.47	2.1	.24	2.7
20	5.6	2.3	1.2	1.0	.48	.57	1.5	.17	2.9	1.1	.19	1.8
21	6.3	2.3	1.1	.84	.57	.53	.96	.34	.89	.62	.14	1.1
22	4.2	2.2	1.0	.76	.92	.53	.72	.36	.51	.34	1.3	1.0
23	3.2	2.2	.99	.63	.88	.50	.64	.13	.43	.20	.63	4.5
24	2.8	2.2	.95	.89	1.2	.48	.59	.11	.33	1.2	.28	27
25	2.9	2.1	1.0	.92	1.1	.45	.60	.07	.40	5.7	.21	19
26	2.8	2.1	.97	2.0	.71	.40	.97	.07	.35	3.8	.16	10
27	2.6	1.9	.88	2.1	.62	.36	1.1	.06	.32	2.9	.12	5.0
28	2.4	1.8	.87	2.3	.52	.40	.82	.06	.24	1.4	9.5	3.1
29	2.4	1.7	.88	1.5	---	.39	.66	.06	.20	.89	30	2.9
30	2.4	1.7	.71	1.2	---	.28	.53	.06	.16	.66	8.1	18
31	2.5	---	e.83	.88	---	.27	---	.08	---	.55	3.1	---
TOTAL	92.1	64.5	37.88	30.52	17.59	18.26	17.52	7.78	15.91	28.35	70.95	187.50
MEAN	2.97	2.15	1.22	.98	.63	.59	.58	.25	.53	.91	2.29	6.25
MAX	6.3	2.5	1.8	2.3	1.2	1.8	1.5	.49	3.6	5.7	30	49
MIN	1.8	1.7	.71	.60	.38	.27	.21	.06	.05	.07	.12	.50
AC-FT	183	128	75	61	35	36	35	15	32	56	141	372
CFSM	.18	.13	.07	.06	.04	.04	.03	.02	.03	.05	.14	.37
IN.	.21	.14	.08	.07	.04	.04	.04	.02	.04	.06	.16	.42

CAL YR 1989 TOTAL 1509.97 MEAN 4.14 MAX 278 MIN .21 AC-FT 3000 CFSM .25 IN. 3.36
WTR YR 1990 TOTAL 588.86 MEAN 1.61 MAX 49 MIN .05 AC-FT 1170 CFSM .10 IN. 1.31

e Estimated

RIO COAMO BASIN

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 Rio 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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
23...	1140	73	466	8.00	26.5	4.0	7.1	88	11	K730	550
DEC											
08...	1105	13	686	7.80	26.5	2.4	5.3	66	17	4500	4600
FEB 1990											
09...	1120	8.1	600	7.80	25.0	2.1	7.8	94	18	470	290
APR											
10...	1145	5.4	668	7.80	30.5	15	5.0	66	23	K630	280
JUN											
22...	1040	622	703	7.40	30.5	3.7	3.7	49	25	K86000	22000
AUG											
03...	1040	2.8	736	7.60	29.0	2.5	3.1	40	16	3900	3000

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
23...	170	0	46	14	25	0.8	2.7	160	<0.5	26	25
DEC											
08...	--	--	--	--	--	--	--	240	--	--	--
FEB 1990											
09...	--	--	--	--	--	--	--	250	--	--	--
APR											
10...	260	0	68	21	42	1	3.8	250	<0.5	34	50
JUN											
22...	--	--	--	--	--	--	--	260	--	--	--
AUG											
03...	270	0	73	22	45	1	3.8	270	--	33	59

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
23...	0.20	29	264	52.0	11	1.65	0.05	1.7	0.35	0.25
DEC										
08...	--	--	--	--	--	1.60	0.30	1.9	0.64	1.9
FEB 1990										
09...	--	--	--	--	11	1.31	0.39	1.7	1.0	0.60
APR										
10...	0.20	33	397	5.79	<1	0.79	0.31	1.1	1.2	0.40
JUN										
22...	--	--	--	--	23	0.58	0.22	0.80	2.5	1.6
AUG										
03...	0.80	35	433	3.29	2	1.23	0.37	1.6	0.50	0.60

K = non-ideal count

RIO COAMO BASIN

50106500 RIO COAMO NEAR COAMO, PR--Continued

WATER-QUALITY RECORDS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
23...	0.60	2.3	10	0.28	<1	<100	20	<1	<1	<10
DEC										
08...	2.5	4.4	19	1.1	--	--	--	--	--	--
FEB 1990										
09...	1.6	3.3	15	0.85	--	--	--	--	--	--
APR										
10...	1.6	2.7	12	0.90	1	<100	190	2	3	20
JUN										
22...	4.1	4.9	22	1.0	--	--	--	--	--	--
AUG										
03...	1.1	2.7	12	0.97	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
23...	670	1	40	<0.10	<1	<1	<10	<0.010	8	0.05
DEC										
08...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
09...	--	--	--	--	--	--	--	--	--	--
APR										
10...	1800	7	210	<0.10	<1	<1	10	<0.010	1	0.06
JUN										
22...	--	--	--	--	--	--	--	--	--	--
AUG										
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 mi^2 (33.4 km^2).

WATER-DISCHARGE RECORDS

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 fair except those for estimated daily discharges, which are poor. Some regulation at low flow by local resident upstream from station.

AVERAGE DISCHARGE.--6 years (1985-1990), 9.045 ft^3/s (0.256 m^3/s), 9.522 in/yr (242 mm/yr), 6,550 acre-ft/yr (8.08 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft^3/s (850 m^3/s), Oct. 7, 1985, gage height, 24.37 ft (7.43 m), from rating curve extended above 10,000 ft^3/s (283 m^3/s) on basis of step-backwater analysis; no flow many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s (42.5 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 8	1745	2,210	62.6	8.77	2.673	Sept. 14	1715	*3,200	90.6	*10.13	3.088
Oct. 20	1615	1,690	47.9	7.98	2.432	Sept. 28	1645	1,920	54.4	8.34	2.542

Minimum daily discharge, 0.05 ft^3/s (0.001 m^3/s), Aug. 26,30, Sept. 1,2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	5.9	2.1	6.0	.83	.35	.16	.18	.11	.11	.07	.05
2	1.8	4.0	2.0	10	.69	.35	.18	.18	.13	.12	.08	.05
3	4.6	2.9	1.4	6.1	.61	.33	.24	.17	.16	.13	.07	29
4	2.9	2.7	1.4	2.2	.61	.32	.53	.12	.16	.12	3.4	5.6
5	2.8	2.3	1.1	.72	.51	.33	.34	.12	.23	.15	.06	.98
6	24	2.4	1.2	.90	.44	.29	.32	.11	.21	.28	.05	9.2
7	9.5	2.1	1.1	.89	.53	.30	.35	.12	.27	.15	.06	.33
8	173	9.4	.93	.88	.57	.29	.52	.29	.21	.10	.05	1.1
9	35	15	.89	.81	.52	.29	.47	.22	.18	.10	.07	52
10	12	64	.82	.89	.55	.28	.40	.17	.14	.08	.10	14
11	9.5	12	.81	1.2	.41	.24	.33	7.2	.14	.08	.07	1.6
12	4.8	6.7	.97	1.2	.50	.21	.26	1.9	.12	.08	.14	.83
13	1.7	4.2	.97	1.1	.54	.26	.53	.10	.14	.08	.12	.21
14	1.3	3.2	1.5	.93	.31	.31	.55	.09	1.0	.10	.12	194
15	5.2	2.6	2.6	.84	.35	.24	.48	.09	8.1	3.6	.11	46
16	6.1	2.4	3.0	.84	.32	.24	.41	.09	.29	.16	.10	e4.3
17	3.8	12	3.0	.73	.34	.34	.34	.08	.11	.20	.09	e1.8
18	2.3	5.2	2.9	.75	.31	.20	.34	.08	.09	.09	.09	e.66
19	1.9	2.6	3.5	.84	.30	.20	12	.09	1.7	.10	.08	e2.9
20	122	2.1	2.7	1.4	.45	.14	2.4	.10	.15	.10	.18	e3.7
21	19	1.5	2.5	.79	.47	.13	.35	.09	.09	.09	.11	e1.1
22	17	1.4	2.4	.67	1.3	.14	.25	.10	.09	.10	.08	e2.9
23	8.5	1.4	1.9	.61	.24	.13	.24	.11	.35	.21	.11	e21
24	6.6	1.9	2.2	.62	.37	.12	.22	.12	.21	.11	.06	e100
25	5.7	2.3	3.1	.74	.29	.11	.21	.14	.16	.10	.06	e25
26	5.7	2.4	2.8	.90	.34	.09	.27	.15	.13	.16	.05	e60
27	5.7	2.0	3.1	1.1	.37	.09	.20	.15	.12	.11	.06	e65
28	5.1	1.7	3.2	1.4	.38	.10	.16	.14	.10	.12	.06	e145
29	8.7	1.8	3.7	1.1	---	.11	.15	.12	.10	.12	.06	e105
30	7.1	1.8	4.7	.93	---	.14	.15	.12	.12	.12	.05	e35
31	7.8	---	4.4	.83	---	.15	---	.12	---	.11	.06	---
TOTAL	523.1	181.9	68.89	48.91	13.45	6.82	23.35	12.86	15.11	7.28	5.87	928.31
MEAN	16.9	6.06	2.22	1.58	.48	.22	.78	.41	.50	.23	.19	30.9
MAX	173	64	4.7	10	1.3	.35	12	7.2	8.1	3.6	3.4	194
MIN	1.3	1.4	.81	.61	.24	.09	.15	.08	.09	.08	.05	.05
AC-FT	1040	361	137	97	27	14	46	26	30	14	12	1840
CFSM	1.31	.47	.17	.12	.04	.02	.06	.03	.04	.02	.01	2.40
IN.	1.51	.52	.20	.14	.04	.02	.07	.04	.04	.02	.02	2.68

CAL YR 1989 TOTAL 1638.72 MEAN 4.49 MAX 173 MIN .27 AC-FT 3250 CFSM .35 IN. 4.73
WTR YR 1990 TOTAL 1835.85 MEAN 5.03 MAX 194 MIN .05 AC-FT 3640 CFSM .39 IN. 5.29

e Estimated

RIO DESCALABRADO BASIN

50108000 RIO DESCALABRADO NEAR LOS LLANOS, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS APRIL 1984 TO SEPTEMBER 1985, OCTOBER 1987 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
NOV. 02	1204	4.97	485	27.5					
DEC. 01	1217	2.57	500	26.0					
JAN. 19	1002	.80	608	24.0					
FEB. 05	1205	--	580	27.0					
MAR. 05	1305	.28	687	30.0					
APR. 03	1325	.22	721	30.5					

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 mi^2 (19.79 km^2).

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.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 3,740 ft^3/s (106 m^3/s), Aug. 24, 1989, gage-height, 9.62 ft (2.93 m), from rating curve extended above 100 ft^3/s (2.83 m^3/s) on basis of step-backwater analyisis, minimum discharge, 0.44 ft^3/s (0.012 m^3/s), Aug. 7,8, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s (28.3 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Oct. 8	1630	*1,750	49.6	*7.61	2.320	Sept. 23	1500	1,350	38.2	7.06	2.152
Sept. 9	1745	1,280	36.2	6.95	2.118	Sept. 24	1615	1,430	40.5	7.18	2.188
Sept. 14	1730	1,290	36.5	6.96	2.121	Sept. 30	1445	1,310	37.1	7.00	2.134

Minimum discharge, 0.44 ft^3/s (0.012 m^3/s), Aug. 7,8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	29	e6.6	11	2.3	1.8	1.3	1.2	1.2	.70	.67	1.5
2	110	25	e6.0	9.1	2.4	1.8	1.4	1.2	1.0	.73	.89	1.2
3	92	21	e6.6	4.3	2.4	1.8	1.4	1.3	.92	.66	.85	35
4	65	18	e7.8	3.7	2.3	1.8	1.3	1.3	.91	.74	1.5	5.8
5	53	17	e6.0	3.6	2.3	1.8	1.3	1.2	.91	.73	.92	43
6	55	16	6.4	3.3	2.2	1.8	1.3	1.2	1.0	.71	.59	21
7	37	15	7.1	3.3	2.3	1.8	1.3	1.2	1.0	.74	.45	4.3
8	100	23	6.5	3.2	2.8	1.8	1.2	2.6	.92	.73	.46	2.8
9	54	16	6.3	e5.4	2.7	1.6	1.2	2.0	.87	.65	.48	99
10	35	e14	5.8	e3.9	2.6	1.7	1.2	1.5	.86	.64	.62	45
11	27	e12	5.7	e4.1	2.9	1.7	1.2	5.6	.84	.58	.95	13
12	23	e11	5.3	3.7	4.0	1.6	1.2	3.0	.84	.56	.71	7.0
13	21	e10	5.5	3.5	3.0	1.7	1.2	1.3	.92	.51	.74	34
14	19	e9.4	5.6	3.5	3.1	2.2	1.4	1.1	1.1	.60	1.6	129
15	24	e9.2	5.2	3.4	2.9	2.2	1.6	1.0	9.2	.70	1.1	86
16	26	e9.0	4.9	3.1	2.3	1.8	1.4	.95	2.7	.83	.86	49
17	26	e11	4.7	3.2	2.2	1.8	1.3	.95	1.2	.63	.71	25
18	28	e9.6	4.4	3.0	2.2	1.7	2.6	1.0	.91	.72	.76	16
19	24	e8.8	4.3	3.0	2.2	1.6	5.6	1.1	1.1	1.1	.73	11
20	96	e8.6	4.1	3.0	2.0	1.6	1.9	1.1	1.1	.79	.71	8.0
21	71	e8.4	4.0	3.0	1.9	1.5	1.4	1.2	.88	.60	.70	6.3
22	51	e8.4	4.1	2.8	1.9	1.5	1.2	1.1	.73	.54	1.7	4.7
23	42	e8.0	4.0	2.9	2.0	1.6	1.1	1.2	.71	.51	1.8	114
24	39	e7.6	4.0	3.6	2.1	1.5	1.1	1.0	.75	.63	1.3	134
25	41	e7.4	4.0	3.0	1.9	1.4	1.0	1.0	.83	1.1	.92	94
26	50	e7.4	3.9	2.9	1.9	1.5	1.1	1.1	.79	.86	.76	57
27	52	e7.0	3.8	3.0	1.9	1.5	1.1	1.1	.70	.91	.73	34
28	50	e6.6	4.0	3.0	1.8	1.5	1.1	1.1	.67	.86	12	18
29	63	e6.6	3.9	2.8	---	1.5	1.1	1.3	.66	.73	32	27
30	48	e6.6	3.1	2.7	---	1.4	1.2	1.1	.64	.70	14	151
31	35	---	5.9	2.3	---	1.4	---	1.1	---	.65	2.7	---
TOTAL	1512	366.6	159.5	116.3	66.5	51.9	43.7	44.10	36.86	22.14	84.91	1276.6
MEAN	48.8	12.2	5.15	3.75	2.37	1.67	1.46	1.42	1.23	.71	2.74	42.6
MAX	110	29	7.8	11	4.0	2.2	5.6	5.6	9.2	1.1	32	151
MIN	19	6.6	3.1	2.3	1.8	1.4	1.0	.95	.64	.51	.45	1.2
AC-FT	3000	727	316	231	132	103	87	87	73	44	168	2530
CFSM	6.38	1.60	.67	.49	.31	.22	.19	.19	.16	.09	.36	5.57
IN.	7.36	1.79	.78	.57	.32	.25	.21	.21	.18	.11	.41	6.22

WTR YR 1990 TOTAL 3781.11 MEAN 10.4 MAX 151 MIN .45 AC-FT 7500 CFSM 1.36 IN. 18.41

e Estimated

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORDS.-- Water years 1988 to 1990.

PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT DISCHARGE: April 1988 to September 1990.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 1,080 mg/L Sep. 31, 1989; Minimum daily mean, 1 mg/L several days.

SEDIMENT LOADS: Maximum daily mean, 1,960 tons (1,780 tonnes) Sep. 31, 1990; Minimum daily mean, 0.0 ton (0.0 tonne) several days.

EXTREMES FOR WATER YEARS 1989-90.--

Water Year	Suspended-sediment concentration (mg/L) maximum	minimum	Suspended-sediment discharge (tons per day) maximum	minimum
1989	978 (Sep. 18)	1 (several days)	3,400 (Aug. 24)	0.0 (several days)
1990	1,080 (Sep. 31)	1 (several days)	1,960 (Sep. 31)	0.0 (several days)

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	---	---	---	1.3	2	.00	5.1	5	.07
2	---	---	---	1.0	2	.00	8.2	10	.39
3	---	---	---	.96	2	.00	12	12	.82
4	---	---	---	.96	2	.00	30	31	4.8
5	1.2	---	---	.96	2	.00	13	14	.61
6	1.2	2	.00	.96	2	.00	4.8	6	.09
7	1.1	2	.00	1.2	2	.00	3.4	6	.05
8	1.1	2	.00	1.3	2	.00	2.4	6	.04
9	1.1	2	.00	1.5	2	.00	2.0	5	.03
10	1.1	2	.00	1.8	3	.01	1.8	5	.02
11	1.1	2	.00	1.1	2	.00	1.6	5	.02
12	1.1	2	.00	1.1	2	.00	1.7	5	.02
13	1.3	2	.00	1.1	2	.00	1.7	3	.02
14	1.3	2	.00	1.2	2	.00	1.6	3	.02
15	1.3	2	.00	1.4	2	.00	1.5	2	.01
16	1.3	2	.00	1.4	2	.00	1.4	3	.01
17	1.3	2	.00	1.3	2	.00	1.4	5	.02
18	1.4	2	.00	1.4	2	.00	1.3	5	.02
19	1.4	2	.01	1.4	2	.00	1.5	8	.03
20	1.7	3	.02	1.5	2	.01	1.3	10	.04
21	1.7	3	.01	1.5	3	.01	1.2	10	.04
22	1.8	2	.00	1.6	2	.00	2.9	10	.08
23	1.2	2	.00	1.7	2	.00	1.7	10	.05
24	1.2	2	.00	1.7	2	.01	1.4	10	.04
25	1.2	2	.00	3.3	4	.03	1.3	7	.03
26	1.1	2	.00	3.3	4	.04	1.2	5	.02
27	1.3	2	.00	3.6	4	.03	1.2	4	.02
28	1.1	1	.00	2.7	3	.02	1.2	4	.02
29	1.1	2	.00	21	28	10	1.1	5	.02
30	1.4	2	.00	6.5	7	.13	1.1	5	.02
31	---	---	---	3.8	5	.06	---	---	---
TOTAL	---	---	---	75.54	---	10.35	112.0	---	7.47

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	1.2	5	.02	.93	4	.00	3.5	10	.10
2	1.6	5	.02	.87	3	.00	2.7	10	.08
3	1.6	8	.03	.96	3	.00	2.3	10	.07
4	1.4	9	.03	5.9	6	.21	1.9	10	.05
5	1.4	8	.02	6.6	7	.18	1.9	10	.05
6	2.6	6	.05	2.6	4	.03	2.1	10	.05
7	5.7	17	.57	2.7	4	.04	1.9	10	.05
8	4.1	24	.30	2.5	4	.02	20	33	10
9	2.5	18	.12	1.5	2	.01	30	30	3.8
10	2.1	11	.07	1.7	2	.00	30	35	7.8
11	16	20	3.1	4.2	4	.04	42	40	5.7
12	8.1	9	.25	2.2	4	.03	14	14	.56
13	34	140	91	2.1	4	.02	8.5	9	.22
14	17	43	2.0	1.3	5	.02	5.4	6	.09
15	5.4	39	.59	1.1	5	.02	4.1	5	.06
16	3.1	35	.29	1.2	5	.02	3.2	4	.04
17	2.0	30	.16	1.1	5	.02	3.1	4	.03
18	1.7	21	.09	1.1	5	.02	356	978	3090
19	1.6	11	.04	3.5	5	.04	180	491	769
20	1.6	4	.01	2.2	5	.03	79	90	22
21	1.6	2	.00	25	130	106	65	102	60
22	1.5	2	.00	3.0	4	.04	28	24	2.0
23	1.4	2	.00	1.6	2	.00	68	83	25
24	1.1	1	.00	219	680	3400	123	75	25
25	1.2	1	.00	39	39	6.1	58	21	3.7
26	1.3	1	.00	8.6	16	.36	27	8	.64
27	.99	3	.01	5.3	17	.22	16	4	.19
28	1.1	5	.02	4.1	17	.19	53	581	438
29	1.1	5	.02	6.0	12	.20	83	96	25
30	1.1	5	.02	7.6	10	.21	72	92	29
31	.95	4	.01	4.1	10	.12	---	---	---
TOTAL	128.04	---	98.84	369.56	---	3514.19	1384.6	---	4518.28

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	55	56	9.8	29	11	.90	e6.6	e4	e.08
2	110	270	337	25	10	.63	e6.0	e4	e.06
3	92	116	31	21	7	.41	e6.6	e4	e.08
4	65	49	9.0	18	5	.24	e7.8	e3	e.07
5	53	35	5.8	17	4	.20	e6.0	e4	e.06
6	55	48	14	16	4	.17	6.4	6	.11
7	37	32	3.4	15	4	.16	7.1	8	.16
8	100	243	443	23	16	2.1	6.5	10	.17
9	54	28	4.4	16	11	.53	6.3	11	.16
10	35	14	1.4	e14	3	.14	5.8	11	.16
11	27	11	.81	e12	e3	e.10	5.7	12	.17
12	23	11	.67	e11	e2	e.07	5.3	13	.18
13	21	10	.55	e10	e2	e.06	5.5	14	.20
14	19	9	.49	e9.4	e2	e.06	5.6	14	.21
15	24	22	1.6	e9.2	e1	e.03	5.2	13	.17
16	26	18	1.6	e9.0	e1	e.03	4.9	9	.11
17	26	25	2.1	e11	e3	e.09	4.7	7	.08
18	28	25	2.1	e9.6	e4	e.11	4.4	6	.07
19	24	18	1.3	e8.8	e5	e.12	4.3	6	.06
20	96	614	867	e8.6	e7	e.18	4.1	5	.06
21	71	59	12	e8.4	e8	e.18	4.0	5	.06
22	51	16	2.2	e8.4	e5	e.12	4.1	5	.06
23	42	22	3.5	e8.0	e4	e.08	4.0	5	.06
24	39	36	4.1	e7.6	e4	e.08	4.0	5	.06
25	41	40	5.9	e7.4	e4	e.09	4.0	5	.06
26	50	52	8.3	e7.4	e5	e.11	3.9	5	.05
27	52	52	8.0	e7.0	e6	e.12	3.8	5	.05
28	50	50	9.7	e6.6	e6	e.10	4.0	5	.06
29	63	68	14	e6.6	e5	e.09	3.9	5	.05
30	48	35	4.9	e6.6	e5	e.08	3.1	5	.04
31	35	18	1.8	---	---	---	5.9	16	.45
TOTAL	1512	---	1811.42	366.6	---	7.38	159.5	---	3.42

e Estimated

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	11	31	1.5	2.3	4	.02	1.8	4	.02
2	9.1	22	.77	2.4	4	.03	1.8	4	.02
3	4.3	12	.13	2.4	5	.04	1.8	4	.02
4	3.7	10	.10	2.3	5	.03	1.8	5	.02
5	3.6	10	.10	2.3	5	.03	1.8	5	.02
6	3.3	10	.09	2.2	5	.03	1.8	5	.02
7	3.3	10	.08	2.3	5	.03	1.8	5	.02
8	3.2	10	.08	2.8	5	.03	1.8	3	.01
9	e5.4	e10	e.14	2.7	5	.04	1.6	5	.02
10	e3.9	e7	e.08	2.6	5	.04	1.7	5	.02
11	e4.1	e5	e.05	2.9	5	.04	1.7	4	.02
12	3.7	5	.04	4.0	3	.03	1.6	3	.01
13	3.5	5	.04	3.0	3	.02	1.7	2	.01
14	3.5	5	.04	3.1	5	.04	2.2	2	.02
15	3.4	5	.04	2.9	8	.06	2.2	3	.02
16	3.1	5	.04	2.3	10	.06	1.8	3	.02
17	3.2	5	.04	2.2	9	.05	1.8	3	.02
18	3.0	5	.04	2.2	7	.04	1.7	3	.02
19	3.0	5	.04	2.2	5	.03	1.6	3	.02
20	3.0	6	.05	2.0	3	.02	1.6	3	.01
21	3.0	7	.06	1.9	2	.02	1.5	2	.00
22	2.8	8	.06	1.9	3	.02	1.5	2	.00
23	2.9	7	.05	2.0	4	.02	1.6	2	.00
24	3.6	6	.05	2.1	5	.02	1.5	2	.00
25	3.0	5	.04	1.9	6	.03	1.4	2	.00
26	2.9	5	.04	1.9	8	.04	1.5	4	.01
27	3.0	5	.04	1.9	7	.04	1.5	6	.02
28	3.0	5	.04	1.8	5	.03	1.5	8	.03
29	2.8	5	.04	---	---	---	1.5	10	.04
30	2.7	4	.02	---	---	---	1.4	7	.02
31	2.3	4	.02	---	---	---	1.4	6	.02
TOTAL	116.3	---	3.95	66.5	---	0.93	51.9	---	0.50

e Estimated

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	1.3	3	.00	1.2	7	.03	1.2	4	.02
2	1.4	3	.02	1.2	5	.01	1.0	2	.00
3	1.4	2	.01	1.3	4	.02	.92	2	.00
4	1.3	2	.00	1.3	3	.01	.91	2	.00
5	1.3	1	.00	1.2	3	.00	.91	2	.00
6	1.3	1	.00	1.2	3	.00	1.0	2	.00
7	1.3	1	.00	1.2	3	.00	1.0	2	.00
8	1.2	1	.00	2.6	7	.07	.92	2	.00
9	1.2	1	.00	2.0	4	.02	.87	2	.00
10	1.2	2	.00	1.5	3	.02	.86	3	.00
11	1.2	2	.00	5.6	14	.48	.84	2	.00
12	1.2	2	.00	3.0	8	.10	.84	3	.00
13	1.2	2	.00	1.3	3	.01	.92	3	.00
14	1.4	2	.00	1.1	2	.00	1.1	3	.00
15	1.6	2	.00	1.0	3	.01	9.2	21	.55
16	1.4	2	.00	.95	4	.01	2.7	7	.07
17	1.3	2	.00	.95	3	.00	1.2	4	.02
18	2.6	2	.01	1.0	2	.00	.91	5	.02
19	5.6	21	.74	1.1	3	.00	1.1	5	.01
20	1.9	6	.04	1.1	3	.00	1.1	5	.01
21	1.4	5	.02	1.2	5	.01	.88	5	.02
22	1.2	4	.02	1.1	5	.02	.73	3	.00
23	1.1	3	.01	1.2	5	.01	.71	3	.00
24	1.1	1	.00	1.0	5	.02	.75	3	.00
25	1.0	1	.00	1.0	5	.02	.83	3	.00
26	1.1	1	.00	1.1	5	.02	.79	3	.00
27	1.1	2	.00	1.1	5	.02	.70	3	.00
28	1.1	2	.00	1.1	5	.01	.67	3	.00
29	1.1	2	.00	1.3	5	.02	.66	3	.00
30	1.2	6	.02	1.1	5	.02	.64	3	.00
31	---	---	---	1.1	5	.02	---	---	---
TOTAL	43.7	---	0.89	44.10	---	0.98	36.86	---	0.72

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	.70	3	.00	.67	14	.02	1.5	14	.05
2	.73	5	.01	.89	11	.02	1.2	12	.04
3	.66	4	.00	.85	6	.01	35	205	124
4	.74	4	.01	1.5	5	.02	5.8	35	.71
5	.73	5	.01	.92	7	.02	43	421	409
6	.71	5	.00	.59	8	.02	21	71	7.1
7	.74	5	.01	.45	5	.00	4.3	12	.17
8	.73	5	.02	.46	8	.01	2.8	7	.06
9	.65	4	.00	.48	11	.02	99	647	1150
10	.64	26	.04	.62	10	.02	45	174	28
11	.58	9	.01	.95	10	.03	13	34	1.3
12	.56	55	.09	.71	10	.02	7.0	12	.24
13	.51	63	.09	.74	9	.02	34	165	66
14	.60	59	.10	1.6	9	.04	129	773	1180
15	.70	54	.10	1.1	11	.03	86	420	116
16	.83	51	.10	.86	14	.03	49	185	27
17	.63	50	.08	.71	15	.02	25	77	5.3
18	.72	48	.10	.76	16	.03	16	43	1.8
19	1.1	47	.14	.73	16	.04	11	26	.79
20	.79	44	.10	.71	15	.03	8.0	17	.36
21	.60	40	.07	.70	13	.02	6.3	15	.24
22	.54	36	.05	1.7	12	.07	4.7	13	.18
23	.51	32	.04	1.8	11	.05	114	988	1590
24	.63	28	.06	1.3	10	.03	134	771	1100
25	1.1	24	.06	.92	9	.02	94	460	145
26	.86	22	.06	.76	9	.02	57	143	27
27	.91	19	.05	.73	8	.02	34	93	14
28	.86	16	.04	12	48	6.5	18	55	2.8
29	.73	15	.03	32	159	55	27	99	21
30	.70	14	.02	14	44	3.0	151	1080	1960
31	.65	14	.02	2.7	13	.09	---	---	---
TOTAL	22.14	---	1.51	84.91	---	65.27	1276.6	---	7978.14
YEAR	3781.11		9875.11						

RIO JACAGUAS BASIN

50110900 RIO TOA VACA ABOVE LAGO TOA VACA, PR--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. PERCENT FINER THAN .002 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .004 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .008 MM
SEP 1990							
14...	1633	701	3960	7500	11	22	26
23...	1457	1160	9430	29500	9	13	19
30...	1437	1160	13000	41600	6	12	15

DATE	SED. SUSP. FALL DIAM. PERCENT FINER THAN .016 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN 1.00 MM
SEP 1990							
14...	52	66	88	95	99	100	100
23...	31	50	72	85	92	97	98
30...	23	35	56	70	85	95	99

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 mi^2 (129.0 km^2).

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Elevation of gage is 131 ft (40 m), from topographic map.

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

AVERAGE DISCHARGE.--6 years (1985-90), 48.2 ft^3/s (1.365 m^3/s), 13.14 in/yr (334 mm/yr), 34,920 acre-ft/yr (43.0 hm^3/yr)

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,000 ft^3/s (1,130 m^3/s), Oct. 7, 1985, gage height, 29.42 ft (8.967 m) from rating curve extended above 500 ft^3/s (14.2 m^3/s) on basis of step-backwater analysis and logarithmic extension; minimum daily discharge, 0.68 ft^3/s (0.012 m^3/s), Sept. 1, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,810 ft^3/s (108 m^3/s), Oct. 8, gage height, 12.6 ft (3.840 m) from rating curve extended above 500 ft^3/s (14.2 m^3/s) on basis of step-backwater analysis and logarithmic extension; minimum daily discharge 0.68 ft^3/s (0.012 m^3/s), Sept. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	165	115	18	7.7	5.8	4.2	4.8	5.0	2.1	3.2	1.8	.68
2	287	110	16	36	5.7	4.3	4.9	5.7	2.8	3.2	1.5	1.3
3	177	78	8.0	47	5.6	4.3	5.3	4.8	2.3	2.9	1.6	4.5
4	122	80	7.3	20	5.2	4.3	5.4	5.1	1.4	2.6	2.3	7.9
5	112	64	8.0	14	5.2	4.3	5.6	4.5	2.6	2.7	3.5	2.1
6	120	59	21	8.4	5.3	4.3	5.6	3.4	3.3	3.5	3.1	4.4
7	118	71	21	7.4	5.2	4.0	5.4	2.9	3.2	3.4	2.9	1.4
8	396	86	29	6.8	5.2	3.7	4.7	3.3	2.9	3.0	2.8	1.0
9	144	107	19	6.4	5.6	3.4	3.9	4.5	3.3	2.9	2.6	.90
10	122	84	7.8	7.2	5.5	3.5	4.7	4.6	3.6	2.5	2.5	1.0
11	113	66	6.9	7.3	4.9	3.5	4.5	4.5	3.8	2.4	2.2	1.4
12	73	48	7.1	7.9	4.9	3.4	4.7	4.3	3.3	2.7	1.9	1.7
13	67	33	7.4	7.2	4.7	3.9	4.0	4.6	3.0	3.5	1.7	1.7
14	76	56	9.5	6.8	4.7	3.9	3.5	4.0	4.2	3.3	1.8	15
15	75	56	9.1	6.8	4.5	3.9	3.3	3.1	9.4	4.9	1.9	11
16	317	52	7.3	6.8	4.5	4.3	3.3	2.8	4.6	5.1	1.9	6.8
17	111	110	9.0	6.8	4.5	4.8	3.5	2.9	2.9	3.8	2.2	3.5
18	114	112	39	6.8	4.7	4.5	4.5	2.7	2.3	3.8	2.5	2.1
19	132	95	43	7.4	4.7	4.5	16	2.5	2.7	3.0	2.5	2.0
20	e150	95	22	8.0	4.5	4.5	8.0	2.3	2.9	2.5	2.4	1.8
21	e260	72	19	7.4	4.4	4.5	4.5	2.2	2.5	2.1	2.1	1.6
22	e190	45	18	7.4	4.3	4.5	4.0	3.3	2.5	1.9	1.7	1.7
23	e180	34	18	7.2	4.3	4.5	3.6	3.5	2.8	1.9	1.5	2.0
24	e150	30	18	6.6	4.3	5.1	3.4	3.6	3.0	2.5	1.7	24
25	e100	31	7.7	6.5	4.2	5.7	4.2	3.9	2.6	3.0	2.1	12
26	e130	33	6.9	6.6	4.1	5.4	5.2	3.7	2.3	2.6	2.1	e190
27	e110	13	6.6	6.5	4.2	6.2	5.1	2.8	2.2	2.7	1.8	e60
28	e90	22	6.5	6.2	4.3	5.9	4.8	2.3	2.4	2.6	5.8	23
29	e140	17	6.5	5.7	---	5.7	4.9	2.0	2.7	2.5	3.3	17
30	e120	14	6.5	5.9	---	5.5	4.2	2.6	2.9	2.3	1.2	357
31	117	---	6.8	6.3	---	5.1	---	2.1	---	2.0	.89	---
TOTAL	4578	1888	435.9	305.0	135.0	139.6	149.5	109.5	92.5	91.0	69.79	760.48
MEAN	148	62.9	14.1	9.84	4.82	4.50	4.98	3.53	3.08	2.94	2.25	25.3
MAX	396	115	43	47	5.8	6.2	16	5.7	9.4	5.1	5.8	357
MIN	67	13	6.5	5.7	4.1	3.4	3.3	2.0	1.4	1.9	.89	.68
AC-FT	9080	3740	865	605	268	277	297	217	183	180	138	1510
CFSM	2.97	1.26	.28	.20	.10	.09	.10	.07	.06	.06	.05	.51
IN.	3.42	1.41	.33	.23	.10	.10	.11	.08	.07	.07	.05	.57

CAL YR 1989 TOTAL 9600.50 MEAN 26.3 MAX 372 MIN 2.8 AC-FT 19040 CFSM .53 IN. 7.17
WTR YR 1990 TOTAL 8754.27 MEAN 24.0 MAX 396 MIN .68 AC-FT 17360 CFSM .48 IN. 6.54

e Estimated

RIO JACAGUAS BASIN

50111500 RIO JACAGUAS AT JUANA DIAZ, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS APRIL 1984 TO SEPTEMBER 1985, OCTOBER 1987 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
NOV. 03	1223	50.7	260	28.5					
DEC. 05	1307	8.18	340	30.0					
JAN. 18	1535	6.70	319	26.0					
FEB. 08	1013	--	335	26.5					
MAR. 06	1316	4.17	333	30.0					
APR. 09	1340	3.61	330	30.5					

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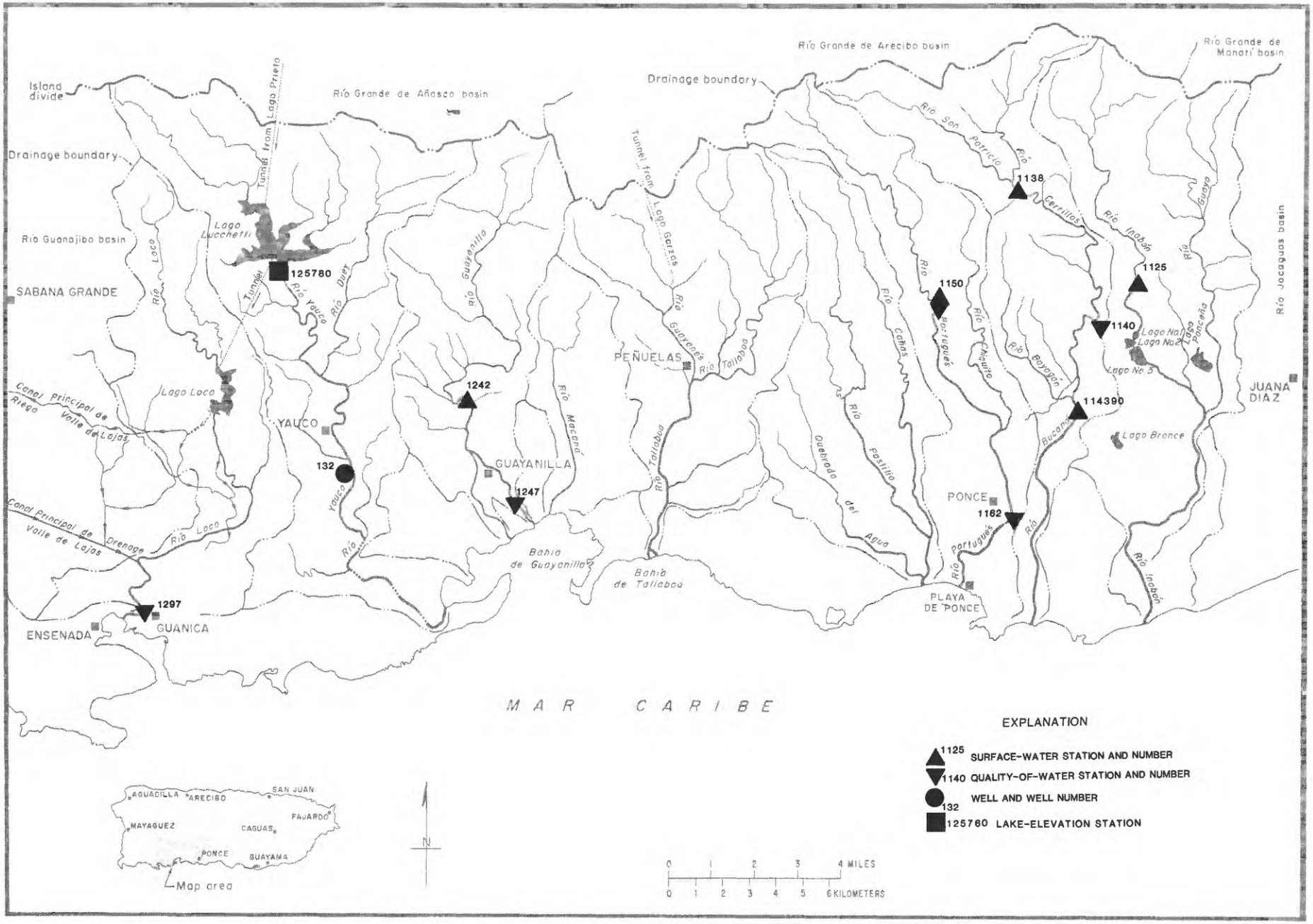

Figure 23.--South coast river basins the Río Inabón to Río Loco basins.

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).

WATER-DISCHARGE RECORDS

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 nonrecording gage and crest-stage gage at different datum.

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

AVERAGE DISCHARGE.--24 years (1965-69, 1972-90), 18.6 ft³/s (0.527 m³/s), 26.04 in/yr (661 mm/yr), 13,480 acre-ft/yr (16.6 hm³/yr); median of yearly mean discharges, 17 ft³/s (0.48 m³/s), 12,300 acre-ft/yr (15 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,000 ft³/s (538 m³/s), Oct. 7, 1985, gage height, 25.3 ft (7.71 m), datum then in use, from floodmark, from rating curve extended above 30 ft³/s (0.850 m³/s) on basis of contracted opening and flow-over-road measurements of peak flow; minimum daily discharge, 0.80 ft³/s (0.023 m³/s), July 23, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft³/s (14.2 m³/s), and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 20	1700	520	14.7	6.79	2.070	Oct. 29	1555	594	16.8	7.41	2.258
Oct. 21	1640	*860	24.4	*9.67	2.947	Sept. 9	1700	682	19.3	8.16	2.487
Oct. 23	1900	650	18.4	7.91	2.411						

Minimum daily discharge, 0.93 ft³/s (0.030 m³/s), July 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	50	45	11	28	4.1	3.3	2.7	3.7	1.8	2.0	1.6	7.6
2	42	40	10	20	3.8	3.9	2.5	5.3	1.6	1.9	1.5	6.6
3	36	37	11	15	3.9	3.6	2.2	1.8	1.4	1.7	2.1	44
4	30	34	13	12	4.1	2.5	2.2	1.8	1.7	1.4	6.1	33
5	29	33	11	10	4.0	2.9	2.5	1.7	2.1	1.4	3.4	18
6	25	31	10	9.2	3.4	2.9	2.5	1.6	1.6	1.2	4.6	23
7	22	30	12	8.7	3.3	3.8	2.5	2.0	1.5	2.5	2.8	22
8	60	49	9.9	8.6	4.9	3.7	2.5	2.5	1.4	6.5	2.2	20
9	50	60	9.7	8.6	4.4	2.8	2.5	3.1	1.3	2.6	2.0	104
10	32	42	9.5	8.5	5.4	3.4	2.5	3.0	1.6	1.6	2.4	61
11	24	32	9.2	8.5	4.6	3.8	2.3	8.3	2.0	1.2	2.2	26
12	21	28	9.2	8.3	9.9	3.6	2.1	4.5	2.0	1.1	1.9	19
13	21	25	9.2	7.7	7.7	4.1	2.6	3.0	2.3	.93	1.6	14
14	23	23	8.8	7.5	6.8	3.6	2.9	2.3	3.2	1.0	1.5	34
15	87	22	8.5	7.7	7.3	2.8	2.3	2.5	30	1.2	1.4	38
16	87	20	8.8	8.1	5.7	2.0	2.8	2.6	9.5	1.2	1.3	35
17	74	22	8.7	8.2	5.4	2.0	3.2	2.1	4.6	1.2	1.2	24
18	56	20	8.5	7.5	6.0	2.1	7.9	2.0	4.0	1.1	1.3	16
19	54	18	8.8	7.3	4.8	2.2	13	2.0	4.0	1.3	1.3	29
20	91	17	8.8	7.7	3.5	2.6	9.7	1.7	4.3	1.3	1.2	32
21	153	16	8.7	7.4	3.4	2.6	3.8	1.5	3.5	1.0	1.5	21
22	117	16	8.5	6.3	3.1	2.6	2.6	1.6	3.1	1.1	e43	30
23	104	15	8.5	5.2	2.7	2.4	2.7	1.6	2.7	1.6	e26	64
24	96	14	8.5	6.1	2.9	2.3	2.9	1.3	3.1	2.4	15	83
25	60	13	8.5	5.6	3.1	1.8	3.6	1.3	3.3	2.0	7.7	99
26	76	13	8.4	5.8	3.5	1.7	8.0	1.3	2.8	1.7	5.6	82
27	68	12	8.1	4.7	3.4	1.8	4.4	1.1	2.4	3.2	4.6	59
28	53	11	8.1	4.3	3.0	1.8	2.6	1.1	2.1	2.2	19	56
29	86	11	9.8	4.6	---	2.1	1.9	1.5	1.9	1.8	47	48
30	72	11	11	4.5	---	2.7	2.0	1.9	1.9	1.8	25	73
31	53	---	40	4.1	---	2.6	---	1.7	---	1.6	10	---
TOTAL	1852	760	323.7	265.7	128.1	86.0	107.9	73.4	108.7	54.73	248.0	1221.2
MEAN	59.7	25.3	10.4	8.57	4.57	2.77	3.60	2.37	3.62	1.77	8.00	40.7
MAX	153	60	40	28	9.9	4.1	13	8.3	30	6.5	47	104
MIN	21	11	8.1	4.1	2.7	1.7	1.9	1.1	1.3	.93	1.2	6.6
AC-FT	3670	1510	642	527	254	171	214	146	216	109	492	2420
CFSM	6.16	2.61	1.08	.88	.47	.29	.37	.24	.37	.18	.82	4.20
IN.	7.10	2.91	1.24	1.02	.49	.33	.41	.28	.42	.21	.95	4.68

CAL YR 1989 TOTAL 6572.40 MEAN 18.0 MAX 152 MIN 2.1 AC-FT 13040 CFSM 1.86 IN. 25.21
WTR YR 1990 TOTAL 5229.43 MEAN 14.3 MAX 153 MIN .93 AC-FT 10370 CFSM 1.48 IN. 20.06

e Estimated

RIO INABON BASIN

50112500 RIO INABON AT REAL ABAJO, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 30	1103	72.6	195	23.0					
NOV. 28	1104	11.6	280	24.0					
JAN. 29	1058	--	285	23.0					
FEB. 27	1030	--	270	25.0					
MAR. 29	1235	2.37	283	26.5					
APR. 27	1355	4.13	290	27.5					

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 Maragüez.

DRAINAGE AREA.-- 15.4 mi² (39.9 km²).

WATER-DISCHARGE RECORDS

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.

EXTREMES FOR PERIOD OF RECORD.--Maximun discharge, 2,500 ft³/s (70.8 m³/s), Sept. 25, 1990, estimated based on mean daily discharge correlation with nearby station 50115000; minimum discharge, 3.3 ft³/s (0.093 m³/s), Aug. 16-18, 20,21, 1990.

EXTREMES FOR CURRENT YEAR..---Peak discharges greater than base discharge of 600 ft³/s (17.0 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 8	1430	768	21.7	3.78	1.152	Nov. 9	1445	666	18.9	3.54	1.079
Oct. 16	1730	916	25.9	4.10	1.250	Sept. 3	1545	1,380	39.1	4.86	1.481
Oct. 20	1700	1,040	29.4	4.34	1.323	Sept. 9	1645	786	22.3	3.82	1.164
Oct. 21	1630	955	27.0	4.18	1.274	Sept. 20	1645	1,030	29.2	4.33	1.320
Oct. 23	1815	1,280	36.2	4.73	1.442	Sept. 25	unknown	*2,500	70.8	unknown	

Minimunm discharge, 3.3 ft³/s (0.093 m³/s), Aug. 16-18,20,21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	89	54	19	e22	7.4	5.4	4.0	6.3	3.8	4.5	3.8	13
2	67	47	19	23	7.4	5.1	4.0	6.3	3.8	4.5	4.2	14
3	53	46	19	18	7.4	5.1	4.1	4.9	3.7	4.5	4.7	121
4	47	40	19	14	7.1	5.1	4.0	4.5	7.2	4.5	4.5	40
5	43	49	18	13	6.7	4.8	4.0	4.5	7.7	4.6	20	18
6	56	40	20	12	6.7	4.8	4.1	4.5	4.7	4.6	6.5	60
7	45	38	18	12	6.5	4.9	4.0	4.3	4.5	6.8	4.3	34
8	129	85	17	12	6.3	4.8	4.0	4.4	4.2	7.6	4.0	27
9	86	139	17	11	6.3	4.5	3.8	4.3	4.3	4.7	4.2	128
10	51	81	17	11	6.2	4.7	3.8	7.1	4.2	4.2	4.5	69
11	42	48	17	11	9.1	4.8	3.9	8.0	4.0	4.0	4.0	27
12	44	40	16	11	7.5	4.9	3.8	5.9	4.1	4.0	3.6	21
13	38	34	16	11	7.4	4.9	4.2	5.0	4.6	3.9	3.6	21
14	50	32	16	11	7.0	5.1	4.7	4.6	5.7	3.8	3.6	47
15	157	30	16	11	6.3	5.0	4.3	4.5	40	4.9	3.6	65
16	181	28	16	10	5.7	4.7	4.4	4.3	9.9	5.9	3.3	42
17	133	28	16	10	5.7	5.1	9.4	4.3	6.0	4.3	3.3	26
18	66	27	16	10	5.7	4.8	8.2	4.3	5.4	4.2	3.9	20
19	49	25	17	10	5.7	4.8	40	4.3	5.8	4.2	3.6	82
20	130	24	17	10	5.7	4.7	11	4.0	5.5	4.0	3.4	133
21	174	24	16	9.6	5.7	4.7	5.6	4.0	5.1	3.8	4.3	67
22	145	22	16	8.7	5.7	4.5	4.8	4.0	4.8	3.8	40	e60
23	183	22	16	8.8	5.4	4.6	4.6	3.9	5.8	4.5	21	e56
24	159	22	16	9.5	5.4	4.8	4.5	3.7	6.8	5.0	12	e220
25	99	22	16	9.5	5.4	4.9	9.6	3.8	5.9	4.5	6.8	e270
26	104	21	15	9.2	5.4	4.5	7.9	3.8	5.1	4.9	6.0	e76
27	77	21	13	8.8	5.4	4.5	6.8	3.8	4.8	6.3	5.4	e66
28	65	20	13	8.3	5.4	4.5	5.0	3.6	4.6	5.7	34	e120
29	90	19	24	7.8	---	4.4	4.5	3.7	4.5	4.3	77	e76
30	88	19	16	7.8	.---	4.3	4.5	3.6	4.5	4.0	33	e180
31	68	---	e15	7.6	---	4.1	---	3.8	---	3.9	16	---
TOTAL	2808	1147	522	348.6	177.6	147.8	191.5	142.0	191.0	144.4	352.1	2199
MEAN	90.6	38.2	16.8	11.2	6.34	4.77	6.38	4.58	6.37	4.66	11.4	73.3
MAX	183	139	24	23	9.1	5.4	40	8.0	40	7.6	77	270
MIN	38	19	13	7.6	5.4	4.1	3.8	3.6	3.7	3.8	3.3	13
AC-FT	5570	2280	1040	691	352	293	380	282	379	286	698	4360
CFSM	5.88	2.48	1.09	.73	.41	.31	.41	.30	.41	.30	.74	4.76
IN.	6.78	2.77	1.26	.84	.43	.36	.46	.34	.46	.35	.85	5.31

CAL YR 1989 TOTAL 11943.4 MEAN 32.7 MAX 212 MIN 5.4 AC-FT 23690 CFSM 2.12 IN. 28.85
WTR YR 1990 TOTAL 8371.0 MEAN 22.9 MAX 270 MIN 3.3 AC-FT 16600 CFSM 1.49 IN. 20.22

e Estimated

RIO BUCANA BASIN

50114000 RIO CERRILLOS NEAR PONCE, PR

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)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
20...	1125	65	291	8.10	24.0	65	8.2	97	15	K130	260
DEC											
06...	1145	16	314	8.00	23.5	190	6.3	74	35	200	200
FEB 1990											
08...	1100	12	276	7.90	22.0	140	8.0	91	26	K50	210
APR											
12...	1110	3.1	347	7.70	24.0	150	8.0	94	20	K910	400
JUN											
12...	1125	3.0	291	7.80	29.5	110	6.7	87	84	K120	K130
AUG											
07...	1030	e3.0	291	8.10	26.5	180	5.2	64	10	K540	480

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
20...	130	0	40	6.5	9.5	0.4	1.3	140	<0.5	15	6.5
DEC											
06...	--	--	--	--	--	--	--	190	--	--	--
FEB 1990											
08...	--	--	--	--	--	--	--	170	--	--	--
APR											
12...	95	5	30	4.9	7.9	0.4	1.1	500	<0.5	15	6.4
JUN											
12...	--	--	--	--	--	--	--	110	--	--	--
AUG											
07...	110	8	34	5.5	8.9	0.4	1.2	100	--	15	6.2

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
20...	0.10	23	186	32.5	17	0.97	0.03	1.0	0.04	0.16
DEC										
06...	--	--	--	--	242	0.77	0.03	0.80	0.04	0.36
FEB 1990										
08...	--	--	--	--	247	0.48	0.12	0.60	0.19	0.11
APR										
12...	0.10	20	137	1.18	265	0.29	0.01	0.30	0.04	--
JUN										
12...	--	--	--	--	228	0.38	0.02	0.40	0.04	0.96
AUG										
07...	<0.10	20	150	--	26	0.47	0.03	0.50	0.05	1.0

e = estimated
K = non-ideal count

50114000 RIO CERRILLOS NEAR PONCE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
20...	0.20	1.2	5.3	0.09	<1	<100	<10	<1	2	20
DEC										
06...	0.40	1.2	5.3	0.25	--	--	--	--	--	--
FEB 1990										
08...	0.30	0.90	4.0	0.10	--	--	--	--	--	--
APR										
12...	<0.20	--	--	0.12	<1	300	30	1	4	20
JUN										
12...	1.0	1.4	6.2	1.9	--	--	--	--	--	--
AUG										
07...	1.1	1.6	7.1	0.19	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
20...	4600	4	130	<0.10	<1	<1	10	<0.010	<1	0.04
DEC										
06...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
08...	--	--	--	--	--	--	--	--	--	--
APR										
12...	6800	5	220	<0.10	<1	2	30	<0.010	<1	0.06
JUN										
12...	--	--	--	--	--	--	--	--	--	--
AUG										
07...	--	--	--	--	--	--	--	--	--	--

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, 0.2 mi (0.3 km) southeast of Escuela Cerrillos, and 2.8 mi (4.5 km) northeast of Degetau Plaza in Ponce.

DRAINAGE AREA.--24.9 mi² (64.5 km²).

WATER-DISCHARGE RECORDS

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 fair. Only minor regulation of low flow at present. Gage-height and precipitation satellite telemetry at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge 17,400 ft³/s (493 m³/s), Oct. 7, 1985, gage height, 13.48 ft (4.109 m), (previously published as 129.88 ft (39.59 m) near sea level from floodmark and rating curve extended above 200 ft³/s (5.66 m³/s), on basis of step-backwater analysis; minimum daily discharge, 3.9 ft³/s (0.110 m³/s), June 29, 1990, result of regulation.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft³/s (45.3 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 8	1725	2,030	57.5	7.08	2.158	Oct. 23	2015	*2,990	84.7	*8.05	2.454
Oct. 15	1725	2,550	72.2	7.64	2.329	Nov. 9	1730	1,970	55.8	7.01	2.137
Oct. 16	2010	2,180	61.7	7.25	2.210	Sept. 9	1845	2,120	60.0	7.18	2.188
Oct. 20	1900	2,470	69.9	7.56	2.304	Sept. 24	1900	1,620	45.9	6.58	2.006
Oct. 21	1915	2,010	56.9	7.06	2.152						

Minimum daily discharge, 3.9 ft³/s (0.110 m³/s), June 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	405	134	22	105	7.3	6.8	4.5	5.8	4.8	5.1	6.4	14
2	204	92	23	47	7.2	6.8	4.6	9.4	4.3	4.7	6.3	13
3	142	79	22	36	7.0	6.6	4.2	6.6	4.7	4.3	7.4	238
4	95	74	22	18	7.0	6.7	4.3	5.8	4.7	4.3	11	153
5	92	76	20	15	7.0	6.7	4.5	5.5	12	4.7	13	42
6	104	78	21	14	6.9	5.9	4.5	5.4	6.2	4.9	18	58
7	87	55	24	13	7.2	6.0	4.5	5.2	5.4	4.8	9.5	98
8	399	182	20	12	8.0	6.4	4.4	5.2	5.3	8.7	7.7	48
9	313	534	19	11	8.0	6.1	4.5	5.6	5.0	5.4	7.4	329
10	126	328	18	11	8.2	6.4	4.2	5.7	5.4	4.8	8.1	260
11	86	119	18	12	7.5	6.6	4.2	12	5.2	4.7	8.1	60
12	73	81	17	11	14	6.4	4.2	9.8	4.3	4.8	7.8	53
13	87	62	17	10	9.5	5.6	4.8	8.3	5.0	4.7	7.5	33
14	98	53	17	9.1	8.9	6.4	5.7	6.6	6.7	4.3	7.7	188
15	550	46	16	9.7	9.0	6.4	5.8	6.9	42	7.0	7.5	161
16	666	36	16	9.4	7.9	5.8	5.4	5.8	33	8.2	7.8	94
17	567	34	16	9.4	7.9	6.5	5.1	4.6	9.0	6.1	7.3	55
18	251	34	15	9.3	7.9	6.3	14	4.9	7.9	5.9	6.7	41
19	143	30	15	8.1	7.4	5.6	120	5.0	9.2	5.7	6.6	133
20	432	29	15	8.8	8.0	5.2	52	5.2	7.5	5.3	6.6	334
21	704	30	15	8.6	7.5	5.2	13	5.5	6.2	5.0	8.0	225
22	539	31	14	9.1	7.5	5.1	7.8	5.0	5.2	5.1	32	113
23	602	37	14	7.7	7.3	5.1	6.8	5.0	5.3	6.1	32	245
24	579	30	14	8.8	6.5	5.3	6.1	4.8	7.8	9.5	20	303
25	294	28	14	7.8	6.2	5.6	5.8	4.7	6.9	7.0	10	338
26	292	28	14	9.2	7.1	5.5	26	4.6	5.5	8.6	9.8	263
27	228	28	12	8.8	6.7	4.8	12	4.8	5.1	9.5	10	151
28	147	25	12	9.5	6.6	4.8	9.4	5.1	4.6	9.5	21	182
29	223	24	13	8.7	---	4.3	7.1	5.2	3.9	7.3	93	145
30	240	24	25	8.0	---	4.5	6.2	4.3	4.6	6.2	104	311
31	171	---	46	7.0	---	4.6	---	4.4	---	6.2	22	---
TOTAL	8939	2441	566	472.0	217.2	180.0	365.6	182.7	242.7	188.4	530.2	4681
MEAN	288	81.4	18.3	15.2	7.76	5.81	12.2	5.89	8.09	6.08	17.1	156
MAX	704	534	46	105	14	6.8	120	12	42	9.5	104	338
MIN	73	24	12	7.0	6.2	4.3	4.2	4.3	3.9	4.3	6.3	13
AC-FT	17730	4840	1120	936	431	357	725	362	481	374	1050	9280
CFSM	11.6	3.27	.73	.61	.31	.23	.49	.24	.32	.24	.69	6.27
IN.	13.35	3.65	.85	.71	.32	.27	.55	.27	.36	.28	.79	6.99

CAL YR 1989 TOTAL 27742.3 MEAN 76.0 MAX 953 MIN 5.4 AC-FT 55030 CFSM 3.05 IN. 41.45
WTR YR 1990 TOTAL 19005.8 MEAN 52.1 MAX 704 MIN 3.9 AC-FT 37700 CFSM 2.09 IN. 28.39

RIO BUCANA BASIN

50114390 RIO BUCANA AT HWY 14 BRIDGE NEAR PONCE, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--OCTOBER 1987 TO SEPTEMBER 1988 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
NOV. 16	0831	35.5	22.5	0831					
DEC. 05	1145	20.2	305	24.5					
JAN. 19	1125	9.30	309	23.5					
FEB. 08	1209	--	285	27.5					
MAR. 13	1520	6.22	308	27.0					
APR. 06	1347	4.62	304	28.0					

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 fair. Some low-flow regulation due to unknown activity upstream. Gage-height and precipitation satellite telemetry at station.

AVERAGE DISCHARGE.--26 years (1965-90), 18.9 ft³/s (0.535 m³/s), 29.10 in/yr (739 mm/yr), 13,690 acre-ft/yr (16.9 hm³/yr); median of yearly mean discharges, 18.6 ft³/s (0.53 m³/s), 13,500 acre-ft/yr (17 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft³/s (595 m³/s), Oct. 7, 1985, gage height, 20.2 ft (6.16 m), from floodmarks at downstream side of bridge, from rating curve extended above 150 ft³/s (4.25 m³/s) on basis of slope-area measurement of peak flow; minimum discharge, 1.0 ft³/s (0.028 m³/s), May 29, 1973.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s (22.6 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 20	1710	1,380	39.1	7.07	2.155	Sept. 25	1710	*1,470	41.6	*7.25	2.210
Sept. 24	1630	1,430	40.5	7.17	2.185						

Minimum discharge, 1.4 ft³/s (0.040 m³/s), Apr. 12,13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	44	11	13	3.7	3.0	1.9	11	2.7	2.3	2.2	2.7
2	48	37	11	15	3.7	3.0	1.9	8.0	2.5	2.2	2.3	5.1
3	38	34	11	11	3.6	2.9	2.0	3.5	2.5	2.1	3.2	42
4	31	31	10	7.4	3.7	2.8	1.8	2.9	8.1	2.1	8.3	17
5	27	36	10	6.3	3.7	2.9	1.8	2.7	7.6	2.1	19	5.8
6	55	31	10	5.9	3.6	2.9	1.8	2.5	2.6	2.2	7.2	9.5
7	42	28	10	5.8	3.5	3.0	1.7	2.4	2.1	2.2	3.3	15
8	77	50	9.4	5.3	4.0	3.0	1.6	2.6	2.1	2.3	3.4	28
9	54	90	9.3	5.4	4.1	2.8	1.6	2.6	1.9	2.0	2.6	66
10	35	51	9.0	5.4	4.0	2.8	1.5	3.1	1.9	2.0	4.1	30
11	28	33	8.7	5.3	3.8	2.6	1.6	3.9	1.9	2.3	2.8	9.3
12	31	27	8.6	5.3	4.1	2.7	1.5	2.8	1.9	2.3	2.1	6.5
13	30	23	8.5	5.1	4.1	2.7	2.0	3.7	2.2	2.2	2.0	5.0
14	25	21	8.2	4.8	3.7	2.9	2.6	2.7	2.3	2.2	2.3	71
15	99	19	8.0	4.9	3.4	2.7	1.7	2.6	38	3.3	1.8	100
16	96	19	8.0	4.9	3.3	2.5	1.7	2.6	10	3.6	1.6	44
17	87	19	7.8	4.8	3.4	3.1	8.3	2.5	4.2	2.4	3.0	16
18	56	17	7.5	4.7	3.4	3.7	5.6	2.5	3.3	2.2	5.6	11
19	43	16	7.5	4.6	3.3	2.5	43	2.5	4.7	3.1	2.2	27
20	149	15	7.4	4.7	3.2	2.4	13	2.4	3.2	2.4	1.8	57
21	98	15	7.3	4.5	3.2	2.3	4.1	2.4	2.5	2.2	2.0	56
22	83	14	7.2	4.4	3.3	2.2	2.9	2.5	2.1	2.2	5.6	43
23	105	13	7.1	4.4	3.1	2.4	2.6	2.4	4.3	5.3	3.8	42
24	90	13	6.7	4.6	3.1	2.4	2.6	2.5	6.9	6.0	2.6	135
25	60	13	6.8	4.2	3.0	2.6	9.9	2.5	7.7	4.0	2.4	176
26	53	13	6.6	4.9	2.9	2.2	9.4	2.5	3.6	5.7	1.9	49
27	46	12	6.1	4.6	2.9	2.1	7.5	2.8	2.8	5.6	1.6	42
28	59	12	6.0	4.3	3.1	2.2	3.9	2.8	2.5	2.6	14	76
29	60	11	25	4.0	---	2.2	3.2	2.9	2.4	2.2	18	49
30	67	11	12	3.9	---	2.2	3.0	2.7	2.4	2.2	8.5	113
31	51	---	20	3.8	---	2.0	---	2.9	---	2.0	3.2	---
TOTAL	1888	768	291.7	177.2	97.9	81.7	147.7	98.4	142.9	87.5	144.4	1348.9
MEAN	60.9	25.6	9.41	5.72	3.50	2.64	4.92	3.17	4.76	2.82	4.66	45.0
MAX	149	90	25	15	4.1	3.7	43	11	38	6.0	19	176
MIN	25	11	6.0	3.8	2.9	2.0	1.5	2.4	1.9	2.0	1.6	2.7
AC-FT	3740	1520	579	351	194	162	293	195	283	174	286	2680
CFSM	6.91	2.90	1.07	.65	.40	.30	.56	.36	.54	.32	.53	5.10
IN.	7.96	3.24	1.23	.75	.41	.34	.62	.42	.60	.37	.61	5.69

CAL YR 1989 TOTAL 9357.7 MEAN 25.6 MAX 270 MIN 2.2 AC-FT 18560 CFSM 2.91 IN. 39.47
WTR YR 1990 TOTAL 5274.3 MEAN 14.5 MAX 176 MIN 1.5 AC-FT 10460 CFSM 1.64 IN. 22.25

RIO PORTUGUES BASIN

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
20...	0915	34	289	8.20	21.5	2.6	8.9	101	12	K750	450
DEC											
06...	0950	9.7	316	8.40	21.5	0.70	12.9	145	14	390	K160
FEB 1990											
08...	0910	4.2	330	8.10	20.0	4.2	8.7	95	15	K150	240
APR											
12...	0850	1.6	323	8.10	22.0	1.5	9.4	108	18	240	250
JUN											
12...	0920	1.8	319	8.00	25.5	1.1	8.2	100	14	K150	290
AUG											
07...	0850	3.3	286	8.40	24.0	12	7.2	85	13	2400	2300

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
20...	130	0	41	6.5	9.8	0.4	1.3	130	<0.5	8.0	7.3
DEC											
06...	--	--	--	--	--	--	--	140	--	--	--
FEB 1990											
08...	--	--	--	--	--	--	--	150	--	--	--
APR											
12...	150	0	37	15	28	1	3.6	94	<0.5	18	37
JUN											
12...	190	0	46	18	44	1	3.0	150	<0.5	29	47
AUG											
07...	130	9	20	7.0	40	0.4	2.0	120	--	9.1	9.6

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
20...	0.10	22	174	16.1	4	1.39	0.01	1.4	0.02	0.28
DEC										
06...	--	--	--	--	<1	1.08	0.02	1.1	0.03	0.27
FEB 1990										
08...	--	--	--	--	24	--	<0.01	0.90	<0.01	--
APR										
12...	0.10	29	250	1.11	4	--	<0.01	0.50	0.01	--
JUN										
12...	0.10	25	302	1.45	<3	--	<0.01	0.30	0.02	--
AUG										
07...	0.10	20	171	1.55	13	0.89	0.01	0.90	0.04	0.36

K = non-ideal count

RIO PORTUGUES BASIN

50115000 RIO PORTUGUES NEAR PONCE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
20...	0.30	1.7	7.5	0.05	<1	<100	<10	<1	<1	10
DEC										
06...	0.30	1.4	6.2	0.05	--	--	--	--	--	--
FEB 1990										
08...	<0.20	--	--	0.04	--	--	--	--	--	--
APR										
12...	<0.20	--	--	0.04	2	<100	20	1	1	<10
JUN										
12...	<0.40	--	--	0.04	1	<100	60	<1	<1	10
AUG										
07...	0.40	1.3	5.8	0.04	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
20...	270	11	10	<0.10	<1	<1	<10	<0.010	1	0.02
DEC										
06...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
08...	--	--	--	--	--	--	--	--	--	--
APR										
12...	310	9	60	<0.10	<1	<1	10	<0.010	7	0.14
JUN										
12...	250	1	40	<0.10	<1	<1	<10	<0.010	5	0.16
AUG										
07...	--	--	--	--	--	--	--	--	--	--

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
23...	0915	83	265	8.10	23.0	15	9.0	103	18	3600	2300
DEC											
08...	0900	8.0	419	7.70	22.0	2.5	7.2	81	<10	K6500	400
FEB 1990											
09...	0920	3.8	519	7.70	21.5	1.0	6.6	73	<10	K13000	K1000
APR											
10...	0925	4.1	494	8.20	23.5	11	7.7	90	23	5400	430
JUN											
22...	0850	5.4	461	7.40	27.0	5.8	4.4	54	23	5700	K1500
AUG											
03...	0835	5.0	475	7.60	26.5	7.5	4.3	52	23	2800	K1700

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
23...	88	0	21	8.6	13	0.6	3.5	96	<0.5	12	8.3
DEC											
08...	--	--	--	--	--	--	--	140	--	--	--
FEB 1990											
09...	--	--	--	--	--	--	--	150	--	--	--
APR											
10...	150	0	40	11	42	2	3.4	140	<0.5	57	35
JUN											
22...	--	--	--	--	--	--	--	130	--	--	--
AUG											
03...	160	0	46	11	32	1	1.9	130	--	47	31

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
23...	0.10	22	146	32.7	29	1.29	0.01	1.3	0.03	0.17
DEC										
08...	--	--	--	--	2	0.48	0.02	0.50	0.06	0.34
FEB 1990										
09...	--	--	--	--	17	0.26	0.04	0.30	0.08	0.42
APR										
10...	0.20	22	292	3.23	22	--	0.02	<0.10	0.04	0.36
JUN										
22...	--	--	--	--	23	0.06	0.04	0.10	0.24	0.86
AUG										
03...	0.70	21	269	3.60	18	0.29	0.11	0.40	0.13	0.77

K = non-ideal count

RIO PORTUGUES BASIN

50116200 RIO PORTUGUES AT PONCE, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
23...	0.20	1.5	6.6	0.06	<1	<100	20	<1	<1	10
DEC										
08...	0.40	0.90	4.0	0.05	--	--	--	--	--	--
FEB 1990										
09...	0.50	0.80	3.5	0.07	--	--	--	--	--	--
APR										
10...	0.40	--	--	0.07	<1	<100	210	2	3	10
JUN										
22...	1.1	1.2	5.3	0.10	--	--	--	--	--	--
AUG										
03...	0.90	1.3	5.8	0.06	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
23...	1300	2	40	<0.10	<1	<1	<10	<0.010	1	0.03
DEC										
08...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
09...	--	--	--	--	--	--	--	--	--	--
APR										
10...	1100	6	70	<0.10	<1	<1	10	<0.010	<1	0.02
JUN										
22...	--	--	--	--	--	--	--	--	--	--
AUG										
03...	--	--	--	--	--	--	--	--	--	--

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).

WATER-DISCHARGE RECORDS

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.

AVERAGE DISCHARGE.--9 years (1982-90), 23.5 ft³/s (0.666 m³/s), 16.88 in/yr (429 mm/yr), 17,020 acre-ft/yr (21.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,700 ft³/s (416 m³/s), Sept. 12, 1982, gage height, 20.4 ft (6.2 m), from floodmarks, from rating curve extended above 100 ft³/s (2.83 m³/s) on basis of step-backwater analysis and indirect measurement of peak flow; minimum daily discharge, 0.97 ft³/s (0.027 m³/s), Aug. 21, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft³/s (22.6 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 19	1600	872	24.7	9.45	2.880	Sept. 25	1730	918	26.0	9.56	2.914
May 2	1525	910	25.8	9.54	2.908	Sept. 26	1800	*978	27.7	*9.70	2.956

Minimum daily discharge, 0.97 ft³/s (0.027 m³/s), Aug. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	106	32	13	12	3.6	2.8	2.0	90	2.4	3.4	50	37
2	82	28	13	13	3.3	2.6	1.8	190	2.5	3.3	25	76
3	58	27	13	9.9	3.3	2.5	1.8	50	2.6	3.4	7.9	93
4	50	29	13	9.2	3.0	2.5	1.9	21	3.6	3.6	11	60
5	47	39	12	9.1	2.9	2.3	2.3	12	2.7	3.3	43	23
6	70	37	12	9.6	2.6	2.0	2.1	8.6	2.5	3.3	28	17
7	59	45	11	9.4	2.5	2.2	2.1	7.3	33	3.3	9.9	27
8	56	108	10	8.3	3.6	2.5	2.2	10	29	3.7	5.8	44
9	51	54	9.7	8.6	3.2	2.0	2.3	7.8	9.4	3.0	4.9	58
10	43	40	9.7	9.1	3.2	1.9	2.2	6.4	5.2	2.6	8.4	30
11	62	83	9.7	9.6	2.5	2.2	1.9	5.8	4.0	2.4	3.2	20
12	42	63	10	10	2.8	2.3	1.9	11	3.4	2.1	2.1	21
13	66	42	10	11	2.9	2.0	1.4	16	3.4	2.0	1.9	14
14	47	34	9.3	10	3.0	5.4	1.8	9.7	6.0	1.8	1.8	37
15	38	30	9.7	10	2.9	2.3	2.1	8.4	87	3.0	1.4	72
16	64	28	10	10	2.5	2.6	1.9	7.3	37	5.3	1.2	49
17	57	25	11	9.1	2.5	7.5	3.3	6.6	19	4.1	1.5	27
18	46	23	12	8.4	3.9	12	1.9	5.4	e10	3.4	4.3	20
19	119	21	12	8.0	3.3	3.3	39	5.3	e3.9	2.8	1.4	17
20	125	20	12	8.1	2.9	2.9	29	4.8	e3.3	2.5	1.2	14
21	92	18	12	7.6	2.9	2.6	9.0	4.2	e60	2.0	.97	31
22	90	17	13	6.7	3.0	2.9	5.9	4.0	e5.0	5.6	16	38
23	79	16	14	6.0	2.6	2.9	5.7	3.6	e3.2	7.1	9.6	75
24	57	15	16	5.4	2.5	6.0	5.7	3.1	e3.2	21	3.4	93
25	44	17	16	5.2	2.3	6.1	14	2.8	e13	17	2.3	114
26	38	19	15	5.0	6.9	4.2	30	2.6	e7.0	14	1.8	123
27	34	17	14	6.6	3.6	3.7	15	2.6	e5.8	13	1.5	61
28	33	16	13	5.2	2.6	3.7	5.7	2.5	e4.6	6.4	1.4	49
29	63	14	26	4.5	---	3.4	5.2	3.1	4.1	5.1	6.6	39
30	51	14	20	4.0	---	2.6	4.9	2.5	4.0	4.5	3.5	108
31	37	---	11	3.7	---	2.4	---	2.6	---	3.7	1.3	---
TOTAL	1906	971	392.1	252.3	86.8	106.3	206.0	517.0	379.8	161.7	262.27	1487
MEAN	61.5	32.4	12.6	8.14	3.10	3.43	6.87	16.7	12.7	5.22	8.46	49.6
MAX	125	108	26	13	6.9	12	39	190	87	21	50	123
MIN	33	14	9.3	3.7	2.3	1.9	1.4	2.5	2.4	1.8	.97	14
AC-FT	3780	1930	778	500	172	211	409	1030	753	321	520	2950
CFSM	3.25	1.71	.67	.43	.16	.18	.36	.88	.67	.28	.45	2.62
IN.	3.75	1.91	.77	.50	.17	.21	.41	1.02	.75	.32	.52	2.93

CAL YR 1989 TOTAL 9088.8 MEAN 24.9 MAX 169 MIN 2.1 AC-FT 18030 CFSM 1.32 IN. 17.89
WTR YR 1990 TOTAL 6728.27 MEAN 18.4 MAX 190 MIN .97 AC-FT 13350 CFSM .98 IN. 13.24

e Estimated

RIO GUAYANILLA BASIN

50124200 RIO GUAYANILLA NEAR GUAYANILLA, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO SEPTEMBER 1985, OCTOBER 1987 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
NOV. 15	1037	32.2	375	24.5
DEC. 06	1209	13.8	375	26.0
JAN. 18	1115	7.73	375	26.0
MAR. 14	1438	4.67	333	29.5
APR. 04	1036	2.56	350	27.0
MAY 07	1333	6.94	450	32.0
JUNE 05	--	--	400	--
JULY 11	--	--	310	--
SEPT 06	--	--	375	--

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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
04...	0935	53	391	8.00	23.0	120	7.8	91	15	2700	2900
NOV											
29...	0855	12	466	7.80	22.0	10	8.2	92	24	K670	K120
JAN 1990											
31...	0925	1.4	714	7.40	24.0	2.1	5.9	69	21	K10	K10
APR											
17...	0850	e0.5	863	7.60	26.5	1.6	4.3	53	29	200	64
JUN											
06...	0855	1.2	846	7.10	28.0	1.0	5.4	69	31	K120	240
AUG											
09...	0840	1.7	618	7.60	27.5	6.0	5.3	67	36	K<100	K<100

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
04...	160	0	45	12	13	0.4	1.9	140	<0.5	32	13
NOV											
29...	--	--	--	--	--	--	--	170	--	--	--
JAN 1990											
31...	--	--	--	--	--	--	--	230	--	--	--
APR											
17...	270	0	75	19	66	2	7.0	220	<0.5	81	65
JUN											
06...	--	--	--	--	--	--	--	220	--	--	--
AUG											
09...	210	0	59	16	37	1	4.5	180	--	58	42

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
04...	0.10	19	220	31.3	224	1.18	0.02	1.2	0.04	0.26
NOV										
29...	--	--	.--	--	28	1.09	0.01	1.1	0.03	0.47
JAN 1990										
31...	--	--	--	--	4	2.27	0.13	2.4	1.2	0.50
APR										
17...	0.20	31	471	--	14	8.25	0.35	8.6	0.34	0.76
JUN										
06...	--	--	--	--	6	1.69	0.41	2.1	0.45	0.95
AUG										
09...	<0.10	23	347	1.61	28	3.28	0.02	3.3	0.08	0.52

e = estimated
K = non-ideal count

RIO GUAYANILLA BASIN

50124700 RIO GUAYANILLA AT CENTRAL RUFINA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
04...	0.30	1.5	6.6	0.26	<1	<100	<10	<1	19	<10
NOV										
29...	0.50	1.6	7.1	0.30	--	--	--	--	--	--
JAN 1990										
31...	1.7	4.1	18	0.20	--	--	--	--	--	--
APR										
17...	1.1	9.7	43	3.5	2	<100	180	<1	1	<10
JUN										
06...	1.4	3.5	15	2.9	--	--	--	--	--	--
AUG										
09...	0.60	3.9	17	1.4	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
04...	14000	10	440	<0.10	<1	<1	40	<0.010	3	0.11
NOV										
29...	--	--	--	--	--	--	--	--	--	--
JAN 1990										
31...	--	--	--	--	--	--	--	--	--	--
APR										
17...	340	2	240	<0.10	<1	<1	20	<0.010	<1	0.26
JUN										
06...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
JUN 1990										
06...	0855	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	0.06	<0.010	<0.010

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN 1990										
06...	<0.010	<0.01	<0.010	<0.010	0.030	<0.01	<0.01	<0.01	<0.01	<0.01

DATE	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 1990									
06...	<0.01	<0.10	<0.1	<1	<0.01	<0.01	<0.01	<0.01	<0.01

RIO YAUCO BASIN

50125780 LAGO LUCCHETTI AT DAMSITE, 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 September 1990.

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 hm^3) 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 type spillway with a clear length of 171 ft (52 m) and a crest elevation of 570 ft (174 m) , occupies the central portion of the dam. The spillway was designed for a maximum capacity of 62,800 ft^3/s (1,778 m^3/s) at a design head of 20 ft (6 m). The dam is owned by Puerto Rico Electric Power Authority. Gage-height and precipitation setellite telemetry at station.

EXTREMES OBSERVED FOR CURRENT PERIOD.--Maximum elevation, 561.07 ft (171.01 m), Jan. 20; minimum elevation, 532.35 ft (162.26 m), Aug. 31.

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
530	3,695	550	7,020
532	3,975	561	9,600
540	5,165	563	10,125

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				A	560.74	A	551.52	556.36	550.60	546.80	A	532.46
2				A	560.68	A	552.48	557.81	550.61	546.80	A	532.48
3				A	560.63	A	552.64	557.82	550.62	546.75	539.55	534.44
4				A	560.34	555.50	554.02	557.70	549.63	546.70	539.40	534.95
5				A	560.23	554.51	556.08	557.54	548.54	543.99	539.38	A
6				560.61	560.21	554.40	555.15	557.33	A	543.81	539.31	A
7			560.43	560.61	560.19	554.38	554.88	557.06	A	543.65	538.90	A
8			560.10	560.64	560.19	554.24	554.81	556.94	A	543.49	538.59	A
9			560.26	560.85	560.16	554.06	554.75	556.93	A	543.31	540.53	536.62
10			560.30	560.64	560.14	554.03	555.37	556.89	A	543.34	540.26	536.94
11			560.31	560.42	560.13	554.30	555.27	555.74	546.89	542.65	539.95	537.36
12			560.32	560.80	558.98	554.26	555.20	555.70	546.12	541.47	539.63	537.42
13			560.35	560.72	557.81	553.42	555.10	555.68	543.82	541.39	539.27	537.06
14			560.40	560.64	557.68	A	555.13	555.61	543.90	541.18	538.92	537.36
15			560.37	560.56	557.56	A	555.14	555.54	544.86	540.96	538.76	537.60
16			560.56	561.02	557.44	A	555.42	555.51	A	540.80	538.66	537.46
17			560.87	560.93	557.32	A	553.82	555.16	A	540.61	538.62	537.55
18			560.99	560.92	557.18	A	553.04	555.00	A	A	538.62	537.59
19			560.85	560.91	557.07	550.62	553.08	554.79	A	A	538.54	537.28
20			560.46	561.04	556.96	549.61	554.57	554.54	A	A	538.46	538.12
21			560.10	560.89	556.73	551.23	554.55	554.35	A	A	536.95	538.41
22			560.18	560.76	556.56	551.93	554.82	553.90	A	A	537.12	538.92
23			560.12	560.98	556.32	552.30	554.14	553.84	A	A	536.15	539.66
24			559.94	560.86	556.10	552.86	555.32	552.96	A	A	535.13	538.69
25			559.85	560.83	555.87	552.82	556.22	552.90	A	A	535.34	538.98
26			559.72	560.82	A	553.44	556.82	552.85	A	A	535.49	539.54
27			559.72	560.86	A	553.38	556.92	552.16	546.25	A	535.52	542.31
28			559.60	560.90	A	551.46	557.35	550.90	546.26	A	534.16	543.54
29			559.92	560.81	---	551.35	557.41	550.96	546.76	A	534.38	542.88
30			560.04	560.70	---	550.52	557.37	551.90	546.77	A	533.00	544.02
31			A	560.68	---	550.84	---	550.63	---	A	532.36	---
MEAN			---	---	---	---	554.95	554.94	---	---	---	---
MAX			---	---	---	---	557.41	557.82	---	---	---	---
MIN			---	---	---	---	551.52	550.63	---	---	---	---

A No gage-height record.

RIO LOCO BASIN

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
06...	1110	e100	270	7.90	25.0	32	7.0	83	<10	390	460
NOV											
29...	1010	NF	4350	7.60	25.0	2.8	5.8	69	49	570	K130
JAN 1990											
31...	1105	NF	9600	7.70	24.5	15	5.5	65	23	2800	420
APR											
17...	1025	NF	11300	7.80	28.0	3.4	3.4	43	190	2600	360
JUN											
06...	1010	NF	8100	7.20	28.5	1.8	2.6	33	180	270	370
AUG											
09...	0940	NF	11400	7.40	29.5	5.1	1.9	24	230	2600	2800

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
06...	120	0	25	15	11	0.4	1.9	100	<0.5	12	10
NOV											
29...	--	--	--	--	--	--	--	230	--	--	--
JAN 1990											
31...	--	--	--	--	--	--	--	210	--	--	--
APR											
17...	1400	0	120	270	1900	22	4.5	270	<0.5	450	3400
JUN											
06...	--	--	--	--	--	--	--	220	--	--	--
AUG											
09...	1300	0	120	250	1800	21	74	190	--	350	3800

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
06...	0.10	23	158	--	39	0.97	0.03	1.0	0.03	0.57
NOV										
29...	--	--	--	--	18	0.58	0.12	0.70	0.15	0.45
JAN 1990										
31...	--	--	--	--	40	0.27	0.03	0.30	0.07	0.73
APR										
17...	0.90	27	6330	--	28	0.29	<0.01	0.30	0.08	0.32
JUN										
06...	--	--	--	--	7	--	<0.01	<0.10	0.06	--
AUG										
09...	0.30	24	6530	--	13	--	0.02	<0.10	0.16	0.34

K = non-ideal count
e = estimate
NF = no-flow

RIO LOCO BASIN

50129700 RIO LOCO AT GUANICA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
06...	0.60	1.6	7.1	0.08	<1	<100	<10	<1	8	<10
NOV										
29...	0.60	1.3	5.8	0.24	--	--	--	--	--	--
JAN 1990										
31...	0.80	1.1	4.9	0.16	--	--	--	--	--	--
APR										
17...	0.40	0.70	3.1	0.11	1	100	910	3	28	20
JUN										
06...	<0.20	--	--	0.10	--	--	--	--	--	--
AUG										
09...	0.50	--	--	0.40	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
06...	2500	3	80	<0.10	<1	<1	<10	<0.010	8	0.10
NOV										
29...	--	--	--	--	--	--	--	--	--	--
JAN 1990										
31...	--	--	--	--	--	--	--	--	--	--
APR										
17...	470	3	100	<0.10	<1	<1	20	<0.010	4	0.55
JUN										
06...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
JUN 1990										
06...	1010	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN 1990										
06...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01

DATE	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 1990									
06...	<0.01	<0.10	<0.1	<1	<0.01	0.03	<0.01	<0.01	<0.01

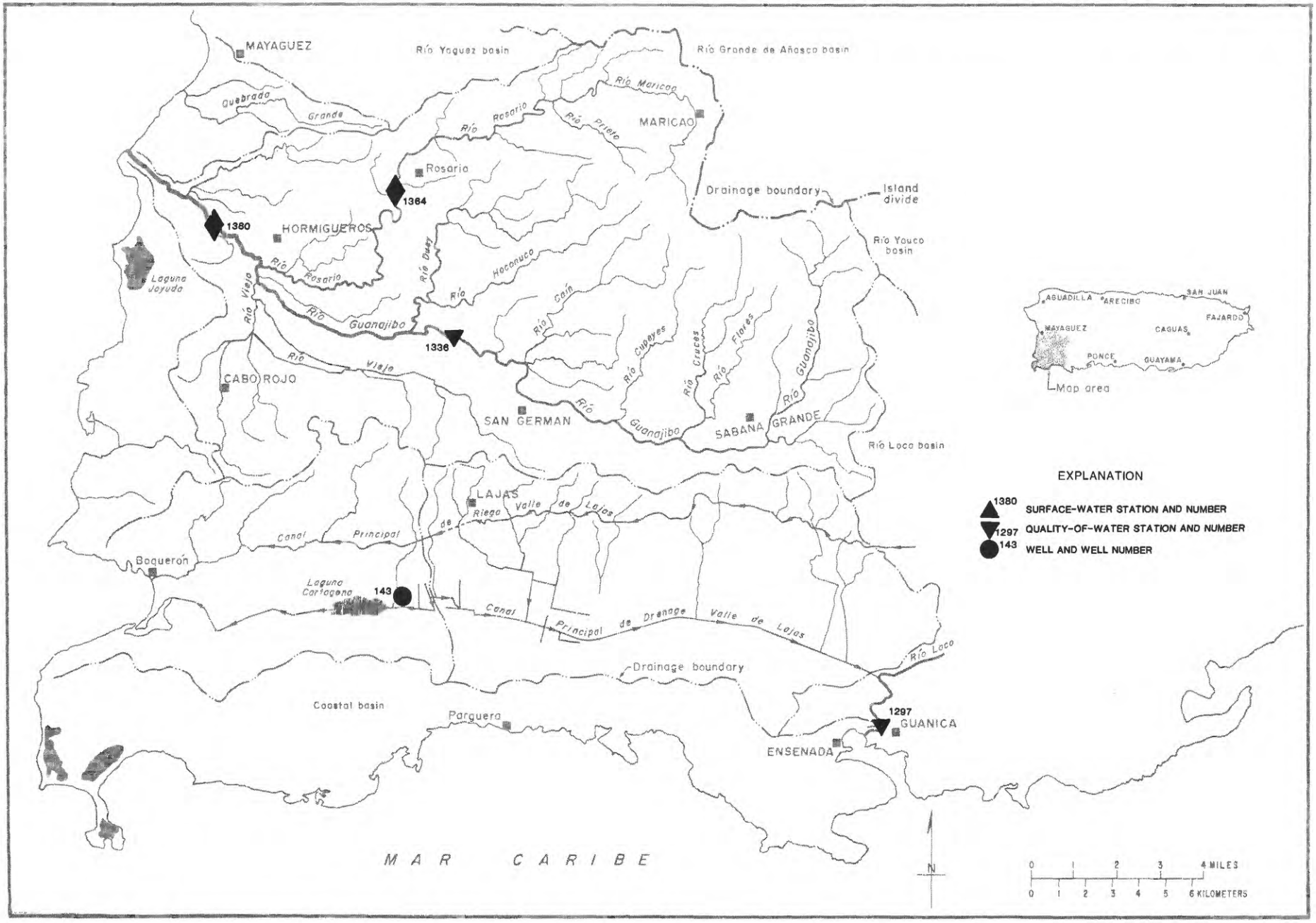

Figure 24.--Río Guanajibo basin.

RIO GUANAJIBO BASIN

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
06...	0955	200	440	7.70	25.5	2.9	7.4	90	14	K910	K180
NOV											
30...	1010	46	572	7.80	23.0	4.0	7.1	82	<10	260	K82
FEB 1990											
01...	1045	11	742	7.50	22.0	4.5	7.8	88	260	K1100	K91
APR											
18...	1125	6.1	805	7.80	26.5	8.4	4.2	52	31	K160	K100
JUN											
06...	1140	556	760	7.40	27.5	2.5	6.0	75	34	K1700	410
AUG											
10...	1145	8.9	684	8.00	27.5	5.6	5.6	70	24	200	210

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
06...	200	0	22	35	11	0.3	1.5	190	<0.5	19	12
NOV											
30...	--	--	--	--	--	--	--	240	--	--	--
FEB 1990											
01...	--	--	--	--	--	--	--	240	--	--	--
APR											
18...	270	0	34	46	51	1	3.8	170	<0.5	82	61
JUN											
06...	--	--	--	--	--	--	--	230	--	--	--
AUG											
10...	260	0	30	46	46	1	3.1	220	--	59	51

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
06...	0.10	33	249	134	5	0.47	0.03	0.50	0.13	0.67
NOV										
30...	--	--	--	--	39	0.49	0.01	0.50	0.03	0.57
FEB 1990										
01...	--	--	--	--	10	0.76	0.24	1.0	0.98	0.42
APR										
18...	0.20	34	442	7.28	26	0.29	0.01	0.30	0.08	0.32
JUN										
06...	--	--	--	--	1	1.59	0.21	1.8	1.2	0.30
AUG										
10...	0.20	34	401	9.67	8	1.75	0.15	1.9	0.30	0.30

K = non-ideal count

RIO GUANAJIBO BASIN

50133600 RIO GUANAJIBO NEAR SAN GERMAN, PR--Continued

WATER QUALITY DATA, WATER YEARS OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
06...	0.80	1.3	5.8	0.16	<1	<100	<10	1	10	10
NOV										
30...	0.60	1.1	4.9	0.14	--	--	--	--	--	--
FEB 1990										
01...	1.4	2.4	11	1.5	--	--	--	--	--	--
APR										
18...	0.40	0.70	3.8	0.11	1	<100	320	<1	9	10
JUN										
06...	1.5	3.3	15	1.2	--	--	--	--	--	--
AUG										
10...	0.60	2.5	11	0.94	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
06...	460	4	60	0.20	<1	<1	10	<0.010	5	0.04
NOV										
30...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
01...	--	--	--	--	--	--	--	--	--	--
APR										
18...	890	2	110	<0.10	<1	<1	20	<0.010	1	0.09
JUN										
06...	--	--	--	--	--	--	--	--	--	--
AUG										
10...	--	--	--	--	--	--	--	--	--	--

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 mi^2 (47.4 km^2).

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.

AVERAGE DISCHARGE.--5 years (1986-90), 53.8 ft^3/s (1.524 m^3/s), 39.92 in/yr (1,014 mm/yr), 38,980 acre-ft/yr (48.1 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,480 ft^3/s (212 m^3/s), Aug.24, 1988, gage height, 13.64 ft (4.16 m) from rating curve extended above 900 ft^3/s (25.5 m^3/s) on basis of step-backwater analysis; minimum discharge 8.6 ft^3/s (0.244 m^3/s), Mar. 11, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,500 ft^3/s (42.5 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Nov. 8	1515	1,910	54.1	8.59	2.618	Sept. 23	1645	*2,920	82.7	*9.92	3.024
Nov. 11	1630	1,640	46.4	8.10	2.469	Sept. 25	1830	1,750	49.6	8.31	2.533
June 7	1700	1,800	51.0	8.40	2.560						

Minimum discharge, 9.3 ft^3/s (0.263 m^3/s), July 21,22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	133	49	70	20	17	13	13	10	13	17	60
2	146	106	49	132	19	17	13	14	11	13	16	76
3	113	107	48	77	19	17	15	12	11	12	15	84
4	94	178	47	41	19	17	12	12	11	32	15	70
5	84	216	45	34	19	17	12	11	12	26	26	88
6	118	153	45	31	19	17	12	11	11	15	19	91
7	131	121	45	29	18	17	12	19	172	14	60	68
8	206	254	43	27	19	17	12	21	61	42	38	47
9	144	168	42	26	19	17	12	17	25	25	43	115
10	104	157	41	25	19	17	12	17	22	14	33	78
11	87	335	41	25	19	16	12	13	21	13	22	102
12	94	172	40	24	19	18	11	31	14	15	19	82
13	102	122	39	27	20	22	11	25	13	12	27	59
14	91	103	38	35	19	36	11	16	48	12	29	143
15	132	99	38	26	18	29	12	34	301	13	20	138
16	103	96	36	24	18	48	13	37	59	13	18	94
17	112	111	35	24	18	124	12	19	30	12	21	61
18	106	95	35	23	18	44	53	15	23	11	24	49
19	179	83	34	23	18	18	54	14	20	11	18	92
20	187	79	34	23	19	16	37	13	18	10	16	101
21	140	75	33	22	18	16	19	12	16	9.7	e15	88
22	177	73	33	22	18	16	15	12	26	10	e124	64
23	143	67	32	22	18	15	14	12	27	131	e42	258
24	106	65	32	22	17	15	13	12	19	84	30	159
25	92	62	31	22	19	15	45	11	17	42	100	202
26	108	60	30	22	19	15	48	11	15	27	62	138
27	106	57	29	22	18	14	20	11	14	21	31	168
28	135	53	38	22	17	12	16	11	14	18	106	138
29	247	49	34	22	---	12	14	11	13	17	80	90
30	130	49	76	21	---	13	13	11	13	16	46	98
31	168	---	146	20	---	14	---	11	---	14	33	---
TOTAL	4000	3498	1338	985	520	698	568	489	1067	717.7	1165	3101
MEAN	129	117	43.2	31.8	18.6	22.5	18.9	15.8	35.6	23.2	37.6	103
MAX	247	335	146	132	20	124	54	37	301	131	124	258
MIN	84	49	29	20	17	12	11	11	10	9.7	15	47
AC-FT	7930	6940	2650	1950	1030	1380	1130	970	2120	1420	2310	6150
CFSM	7.05	6.37	2.36	1.74	1.01	1.23	1.03	.86	1.94	1.27	2.05	5.65
IN.	8.13	7.11	2.72	2.00	1.06	1.42	1.15	.99	2.17	1.46	2.37	6.30

CAL YR 1989 TOTAL 27035.1 MEAN 74.1 MAX 488 MIN 9.2 AC-FT 53620 CFSM 4.05 IN. 54.96
WTR YR 1990 TOTAL 18146.7 MEAN 49.7 MAX 335 MIN 9.7 AC-FT 35990 CFSM 2.72 IN. 36.89

e Estimated

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 SEPTEMBER 1986

INSTRUMENTATION.--US D-49 SEDIMENT SAMPLER SINCE OCTOBER 1985. AUTOMATIC SEDIMENT SAMPLER SINCE 1986

REMARKS.--sediment samples were collected by a local observer once daily during low flow and more than once daily during high flow events for concentration and particle size analyses. Sediment samples are collected periodically by survey staff. Automatic sediment sampler set to collect samples above 200 cfs.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 8,150 mg/L October 7, 1985; Minimum daily mean, 1 mg/L January 28, 1990.
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.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 1,440 mg/L June 7, 1990; Minimum daily mean, 1.0 mg/L January 28, 1990.
SEDIMENT LOADS: Maximum daily, 3,920 tons (3,600 tonnes) September 24, 1990; Minimum daily 0.09 ton (0.08 tonne) few days.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
05...	0825	86	262	7.90	22.5	2.1	8.4	96	11	K1500	K13000
NOV											
29...	1140	50	281	8.40	22.0	1.2	10.8	123	10	K91	K150
FEB 1990											
02...	1010	20	281	8.10	21.0	1.0	10.0	111	16	K70	K60
APR											
19...	1045	30	184	7.90	24.0	92	4.8	57	16	K14000	2000
JUN											
08...	1015	48	194	7.60	24.0	33	8.1	96	27	K6300	33000
AUG											
10...	1015	31	190	8.10	24.0	90	93.0	93	29	K19000	29000

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
05...	120	0	22	15	7.2	0.3	1.6	110	<0.5	7.0	8.3
NOV											
29...	--	--	--	--	--	--	--	120	--	--	--
FEB 1990											
02...	--	--	--	--	--	--	--	130	--	--	--
APR											
19...	91	0	15	13	9.6	0.4	2.0	75	<0.5	8.0	8.0
JUN											
08...	--	--	--	--	--	--	--	80	--	--	--
AUG											
10...	84	0	17	10	6.3	0.3	1.8	80	--	6.0	8.0

K = non-ideal count

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

WATER QUALITY DATA, WATER YEARS OCTOBER 1989 TO SEPTEMBER 1990

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
05...	0.10	31	158	36.8	20	0.69	0.01	0.70	0.01	0.99
NOV										
29...	--	--	--	--	10	0.69	0.01	0.70	0.03	0.27
FEB 1990										
02...	--	--	--	--	18	--	<0.01	0.50	<0.01	--
APR										
19...	<0.10	21	122	29.9	80	1.05	0.05	1.10	0.09	0.31
JUN										
08...	--	--	--	--	37	1.18	0.02	1.20	0.04	0.46
AUG										
10...	0.20	21	118	9.99	210	0.73	0.07	0.80	0.15	0.45

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
05...	1.0	1.7	7.5	0.03	<1	<100	<10	<1	7	<10
NOV										
29...	0.30	1.0	4.4	0.04	--	--	--	--	--	--
FEB 1990										
02...	<0.20	--	--	0.03	--	--	--	--	--	--
APR										
19...	0.40	1.5	6.6	0.06	<1	100	30	<1	12	20
JUN										
08...	0.50	1.7	7.5	0.06	--	--	--	--	--	--
AUG										
10...	0.60	1.4	6.2	0.08	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
05...	310	3	20	<0.10	<1	<1	20	<0.010	3	0.01
NOV										
29...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
02...	--	--	--	--	--	--	--	--	--	--
APR										
19...	8100	2	130	<0.10	<1	<1	10	<0.010	1	0.12
JUN										
08...	--	--	--	--	--	--	--	--	--	--
AUG										
10...	--	--	--	--	--	--	--	--	--	--

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	115	258	86	133	169	73	49	4	.52
2	146	451	241	106	28	8.1	49	3	.45
3	113	114	36	107	93	35	48	3	.38
4	94	65	17	178	560	843	47	3	.38
5	84	15	3.5	216	612	696	45	3	.42
6	118	238	167	153	59	28	45	4	.48
7	131	303	195	121	10	3.3	45	4	.48
8	206	643	909	254	1060	2260	43	4	.45
9	144	20	8.7	168	297	148	42	3	.33
10	104	5	1.4	157	291	206	41	2	.22
11	87	5	1.2	335	1270	3190	41	2	.22
12	94	89	31	172	137	71	40	2	.22
13	102	49	15	122	28	9.5	39	2	.21
14	91	12	3.1	103	15	4.3	38	2	.20
15	132	298	256	99	13	3.4	38	2	.19
16	103	26	7.8	96	9	2.3	36	2	.18
17	112	97	40	111	96	49	35	2	.18
18	106	19	5.9	95	28	7.8	35	2	.18
19	179	564	925	83	7	1.7	34	2	.18
20	187	463	582	79	5	1.0	34	2	.18
21	140	166	73	75	5	1.0	33	2	.18
22	177	427	445	73	5	.96	33	2	.18
23	143	120	52	67	5	.91	32	2	.17
24	106	31	10	65	5	.87	32	2	.16
25	92	11	2.6	62	5	.83	31	2	.16
26	108	146	72	60	5	.80	30	2	.16
27	106	89	32	57	4	.69	29	2	.16
28	135	307	249	53	4	.56	38	26	5.0
29	247	967	1630	49	4	.53	34	28	3.0
30	130	228	86	49	4	.53	76	243	200
31	168	509	408	---	---	---	146	380	345
TOTAL	4000	---	6591.2	3498	---	7648.08	1338	---	560.22

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	70	85	22	20	2	.10	17	5	.25
2	132	459	419	19	2	.12	17	7	.32
3	77	60	19	19	2	.10	17	9	.41
4	41	15	1.7	19	2	.12	17	7	.34
5	34	14	1.3	19	2	.12	17	5	.22
6	31	12	.99	19	2	.10	17	4	.18
7	29	11	.80	18	3	.15	17	3	.14
8	27	9	.65	19	4	.23	17	3	.13
9	26	10	.67	19	5	.26	17	3	.13
10	25	10	.67	19	5	.25	17	3	.13
11	25	10	.61	19	6	.31	16	3	.12
12	24	7	.48	19	7	.38	18	3	.15
13	27	12	1.8	20	6	.31	22	10	.71
14	35	28	3.1	19	4	.22	36	46	11
15	26	13	.93	18	4	.20	29	18	1.9
16	24	8	.55	18	4	.20	48	92	39
17	24	7	.44	18	4	.20	124	1010	1540
18	23	6	.40	18	4	.20	44	47	10
19	23	5	.32	18	4	.23	18	8	.40
20	23	3	.22	19	5	.25	16	6	.28
21	22	2	.12	18	4	.19	16	5	.23
22	22	2	.12	18	3	.14	16	6	.24
23	22	2	.12	18	3	.14	15	7	.30
24	22	2	.12	17	3	.14	15	8	.32
25	22	2	.12	19	3	.16	15	8	.32
26	22	2	.12	19	4	.22	15	8	.32
27	22	2	.12	18	5	.25	14	6	.24
28	22	1	.09	17	5	.23	12	6	.19
29	22	2	.11	---	---	---	12	7	.22
30	21	2	.11	---	---	---	13	7	.25
31	20	2	.10	---	---	---	14	7	.29
TOTAL	985	---	476.88	520	---	5.52	698	---	1608.73

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	13	6	.20	13	10	.34	10	6	.17
2	13	7	.21	14	8	.29	11	6	.18
3	15	8	.27	12	4	.16	11	4	.13
4	12	6	.23	12	3	.10	11	5	.17
5	12	5	.15	11	3	.09	12	11	.36
6	12	5	.14	11	4	.12	11	10	.30
7	12	5	.14	19	16	2.8	172	1440	3220
8	12	5	.14	21	9	.65	61	91	21
9	12	5	.14	17	7	.41	25	83	6.3
10	12	5	.14	17	20	1.0	22	26	2.0
11	12	5	.14	13	10	.36	21	56	3.5
12	11	5	.14	31	44	14	14	33	1.3
13	11	5	.14	25	20	1.6	13	15	.51
14	11	5	.14	16	15	.69	48	255	188
15	12	5	.16	34	50	13	301	698	891
16	13	5	.18	37	95	11	59	92	19
17	12	5	.16	19	49	2.5	30	15	1.3
18	53	48	6.9	15	25	1.1	23	10	.62
19	54	62	17	14	18	.69	20	8	.45
20	37	29	3.9	13	18	.63	18	7	.33
21	19	7	.40	12	18	.59	16	6	.28
22	15	5	.22	12	14	.43	26	28	6.0
23	14	4	.16	12	12	.38	27	22	2.0
24	13	4	.13	12	12	.37	19	11	.61
25	45	110	57	11	17	.51	17	11	.49
26	48	117	19	11	26	.78	15	9	.36
27	20	15	.85	11	33	.97	14	6	.25
28	16	13	.55	11	28	.82	14	4	.16
29	14	11	.40	11	15	.43	13	4	.14
30	13	10	.35	11	5	.14	13	4	.14
31	---	---	---	11	5	.16	---	---	---
TOTAL	568	---	109.68	489	---	57.11	1067	---	4367.05

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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	4	.14	17	11	.52	60	150	61
2	13	4	.15	16	5	.21	76	119	30
3	12	5	.16	15	4	.18	84	153	51
4	32	51	16	15	5	.22	70	114	24
5	26	71	5.8	26	18	2.6	88	262	209
6	15	40	1.8	19	8	.50	91	186	76
7	14	25	.95	60	158	88	68	78	17
8	42	104	43	38	91	10	47	46	6.6
9	25	99	7.2	43	78	22	115	404	448
10	14	78	3.1	33	22	2.3	78	107	25
11	13	70	2.7	22	9	.55	102	283	204
12	15	48	2.1	19	6	.34	82	130	32
13	12	20	.63	27	17	1.8	59	61	10
14	12	16	.47	29	16	1.4	143	880	1500
15	13	14	.49	20	7	.38	138	347	142
16	13	15	.52	18	6	.29	94	170	49
17	12	15	.48	21	11	1.2	61	69	12
18	11	14	.44	24	20	1.5	49	50	7.1
19	11	12	.36	18	14	.65	92	251	162
20	10	12	.33	16	11	.48	101	335	217
21	9.7	12	.32	e15	e10	e.41	88	151	42
22	10	12	.34	e124	e530	e610	64	72	13
23	131	1130	2260	e42	e44	e10	258	1220	3920
24	84	153	55	30	18	1.7	159	456	217
25	42	41	4.3	100	360	264	202	870	1740
26	27	15	1.2	62	93	19	138	356	149
27	21	8	.49	31	34	3.2	168	640	837
28	18	8	.40	106	391	398	138	334	131
29	17	11	.49	80	177	92	90	142	36
30	16	12	.48	46	46	6.4	98	300	100
31	14	12	.48	33	21	2.2	---	---	---
TOTAL	717.7	---	2410.32	1165	---	1542.03	3101	---	10467.7
YEAR	18146.7		35844.52						

e Estimated

RIO GUANAJIBO BASIN

50136400 RIO ROSARIO NEAR HORMIGUEROS, PR--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. FALL DIAM. PERCENT FINER THAN .002 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .004 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .008 MM
JUN 1990							
14...	2345	362	2470	2410	15	23	36
JUL							
23...	1924	994	12400	33300	17	29	42
AUG							
09...	1900	270	4130	3000	24	42	61
SEP							
14...	1828	480	12800	16600	14	24	33

DATE	SED. SUSP. FALL DIAM. PERCENT FINER THAN .016 MM	SED. SUSP. FALL DIAM. PERCENT FINER THAN .031 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .250 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .500 MM	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN 1.00 MM
JUN 1990							
14...	49	65	80	93	98	98	100
JUL							
23...	53	68	88	96	100	100	100
AUG							
09...	77	86	98	99	100	100	100
SEP							
14...	46	60	88	97	99	100	100

SILT AND CLAY PERCENT OF SUSPENDED SEDIMENT

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SEDI-MENT, SUS-PENDED (MG/L)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM
APR 1990					
26...	1210	37	104	10	88
MAY					
15...	0700	16	115	5	94
16...	0700	40	330	36	99
JUN					
07...	1604	539	7000	10187	82
07...	1704	1680	10200	46267	84
08...	0700	60	90	15	97
11...	1030	22	78	5	90
14...	0145	719	2420	4698	90
14...	2230	214	1590	919	77
15...	1800	156	103	42	97
JUL					
04...	1800	16	500	22	89
SEP					
14...	1900	699	12000	22647	86
20...	1800	302	3200	2609	94
23...	1730	1330	9520	34186	86

RIO GUANAJIBO BASIN

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

AVERAGE DISCHARGE.--17 years (1974-90), 213 ft³/s (6.032 m³/s), 24.10 in/yr (612 mm/yr), 154,300 acre-ft/yr (190 hm³/yr); median of yearly mean discharges, 199 ft³/s (5.64 m³/s), 144,000 acre-ft/yr (178 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 128,000 ft³/s (3,620 m³/s), Sept. 16, 1975, gage height, 28.50 ft (8.687 m), site and datum then in use, from rating curve extended above 100 ft³/s (2.832 m³/s) on the basis of contracted-opening measurement of peak flow; minimum discharge, 4.6 ft³/s (0.130 m³/s), June 22, 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft³/s (56.6 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 2	0600	2,300	65.1	19.29	5.880	Nov. 8	2340	2,170	61.4	18.99	5.788
Oct. 9	0020	2,150	60.9	18.95	5.776	Nov. 12	0300	*2,300	65.1	*19.30	5.883
Nov. 5	2220	2,090	59.2	18.82	5.736	June 15	1200	2,230	63.2	19.14	5.834

Minimum discharge, 14 ft³/s (0.396 m³/s), June 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	932	510	143	186	39	27	29	34	17	54	42	107
2	1790	347	138	292	39	25	26	52	20	51	55	175
3	827	305	133	185	37	24	29	44	17	47	39	342
4	545	618	129	111	36	25	26	33	20	44	34	278
5	441	1400	125	92	35	24	26	30	21	69	57	155
6	531	993	124	84	36	23	23	26	18	48	64	310
7	515	604	123	80	36	23	25	24	134	41	49	289
8	905	942	118	75	36	22	23	60	117	42	79	145
9	1340	920	115	73	37	21	23	55	54	65	43	180
10	567	579	113	71	35	21	23	39	34	38	63	183
11	550	896	111	70	33	22	33	34	38	34	42	177
12	611	1350	108	69	35	22	24	38	27	34	40	224
13	980	504	106	67	35	26	22	55	24	31	39	175
14	764	379	103	112	33	66	20	38	54	31	55	256
15	503	e590	99	80	31	95	22	49	1740	32	42	339
16	698	e540	97	70	29	45	22	139	310	35	38	241
17	533	e310	95	68	28	172	23	69	161	38	38	178
18	392	284	92	62	28	160	55	48	122	44	49	161
19	650	243	91	60	28	60	102	40	103	33	38	177
20	823	231	90	56	28	48	109	35	90	31	36	301
21	654	214	87	57	26	42	48	32	83	29	37	268
22	802	201	87	54	26	38	32	30	78	29	159	233
23	780	188	84	51	25	36	26	27	97	96	97	544
24	530	177	83	51	24	39	23	24	86	183	69	833
25	383	172	80	61	25	39	144	23	73	74	114	450
26	327	171	78	50	37	37	227	22	69	56	141	465
27	373	163	77	46	34	41	128	21	65	49	83	361
28	374	156	76	45	28	37	60	19	61	41	120	580
29	669	150	116	43	---	33	43	18	59	37	261	346
30	402	146	159	42	---	32	36	17	57	34	178	553
31	403	---	214	40	---	31	---	17	---	33	99	---
TOTAL	20594	14283	3394	2503	899	1356	1452	1192	3849	1503	2300	9026
MEAN	664	476	109	80.7	32.1	43.7	48.4	38.5	128	48.5	74.2	301
MAX	1790	1400	214	292	39	172	227	139	1740	183	261	833
MIN	327	146	76	40	24	21	20	17	17	29	34	107
AC-FT	40850	28330	6730	4960	1780	2690	2880	2360	7630	2980	4560	17900
CFSM	5.54	3.97	.91	.67	.27	.36	.40	.32	1.07	.40	.62	2.51
IN.	6.38	4.43	1.05	.78	.28	.42	.45	.37	1.19	.47	.71	2.80

CAL YR 1989 TOTAL 101293 MEAN 278 MAX 1800 MIN 12 AC-FT 200900 CFSM 2.31 IN. 31.40
WTR YR 1990 TOTAL 62351 MEAN 171 MAX 1790 MIN 17 AC-FT 123700 CFSM 1.42 IN. 19.33

e Estimated

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
06...	0835	374	357	7.60	25.5	13	7.2	87	12	2000	3700
NOV											
30...	0840	145	452	7.60	23.0	21	7.0	81	10	260	450
FEB 1990											
01...	0910	40	471	7.80	21.5	27	7.7	77	16	K150	K1500
APR											
18...	0915	22	495	7.90	24.5	2.1	6.1	73	18	240	730
JUN											
07...	0955	17	466	7.60	26.5	8.7	7.5	91	27	370	610
AUG											
10...	0750	69	333	8.10	24.5	10	7.1	84	23	K6900	4700

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
06...	170	0	27	24	11	0.4	2.6	160	<0.5	14	11
NOV											
30...	--	--	--	--	--	--	--	200	--	--	--
FEB 1990											
01...	--	--	--	--	--	--	--	200	--	--	--
APR											
18...	210	0	32	31	20	0.6	1.9	200	<0.5	19	22
JUN											
07...	--	--	--	--	--	--	--	190	--	--	--
AUG											
10...	150	0	26	21	12	0.4	1.9	140	--	12	14

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
06...	0.10	29	215	217	24	0.47	0.03	0.50	0.06	0.64
NOV										
30...	--	--	--	--	51	0.73	0.07	0.80	0.05	0.35
FEB 1990										
01...	--	--	--	--	9	0.69	0.01	0.70	0.02	0.48
APR										
18...	<0.10	32	274	16.3	13	0.39	0.01	0.40	0.02	--
JUN										
07...	--	--	--	--	15	0.38	0.02	0.40	0.05	0.25
AUG										
10...	<0.10	28	199	37.2	7	0.57	0.03	0.60	0.07	0.23

K = non-ideal count

RIO GUANAJIBO BASIN

50138000 RIO GUANAJIBO NEAR HORMIGUEROS, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
06...	0.70	1.2	5.3	0.15	<1	<100	30	<1	10	30
NOV										
30...	0.40	1.2	5.3	0.17	--	--	--	--	--	--
FEB 1990										
01...	0.50	1.2	5.3	0.33	--	--	--	--	--	--
APR										
18...	<0.20	--	--	0.30	<1	<100	90	<1	3	<10
JUN										
07...	0.30	0.70	3.1	0.31	--	--	--	--	--	--
AUG										
10...	0.30	0.90	4.0	0.18	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
06...	1700	8	130	0.40	<1	<1	20	<0.010	3	0.05
NOV										
30...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
01...	--	--	--	--	--	--	--	--	--	--
APR										
18...	340	3	40	0.20	<1	<1	<10	<0.010	3	0.04
JUN										
07...	--	--	--	--	--	--	--	--	--	--
AUG										
10...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
JUN 1990										
07...	0955	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	0.01	<0.010	<0.010

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN 1990										
07...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01

DATE	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 1990									
07...	<0.01	<0.10	<0.1	<1	<0.01	0.44	<0.01	<0.01	<0.01

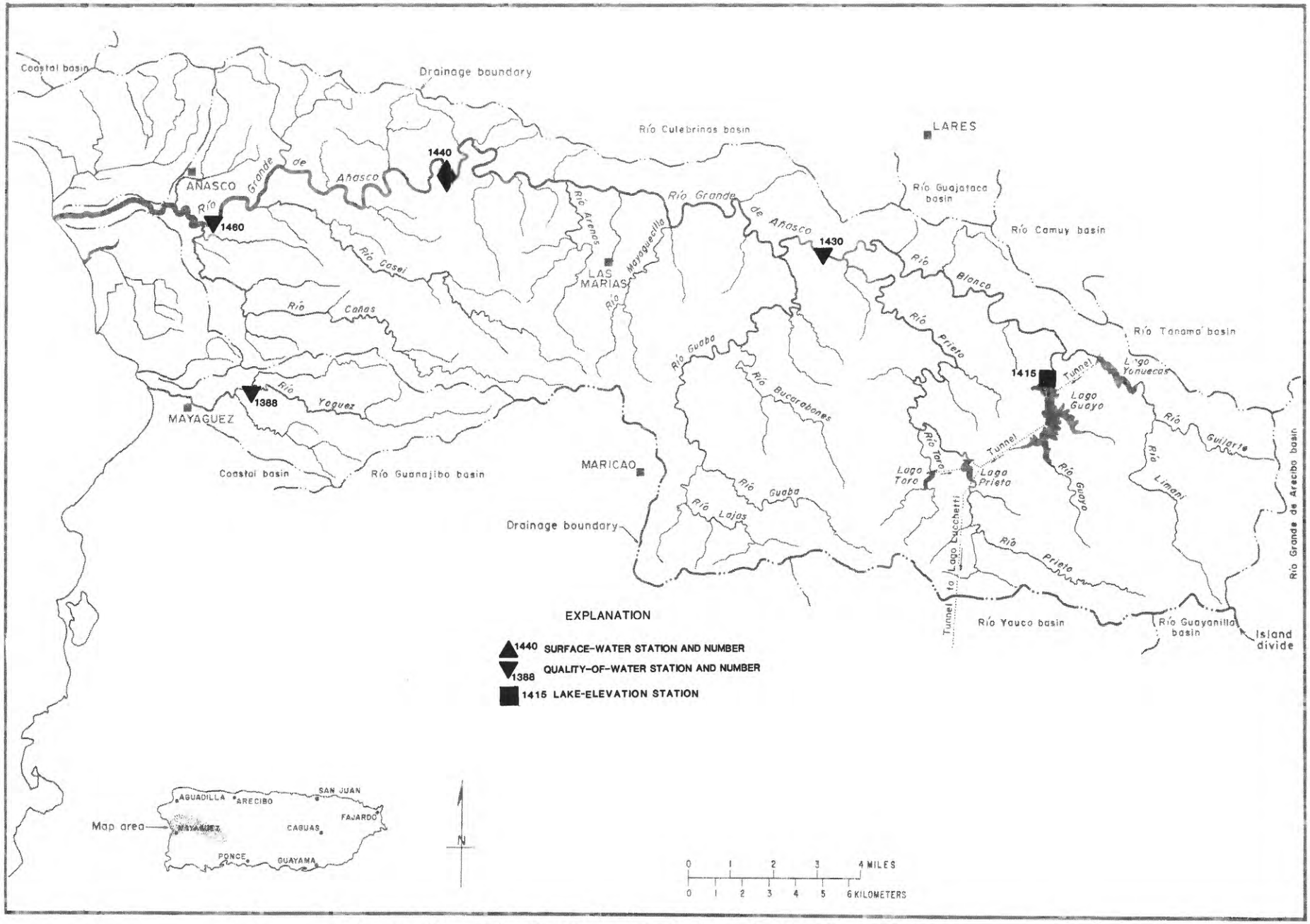

Figure 25.--Río Yagüez and Río Grande de Añasco basins.

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
05...	1125	21	282	7.90	24.0	4.5	8.0	94	<10	480	840
NOV											
30...	0650	11	300	7.70	20.5	1.3	8.0	88	<10	340	740
FEB 1990											
01...	0705	3.3	333	7.70	19.5	1.0	7.9	85	<10	240	K2100
APR											
18...	0705	1.9	357	7.80	22.5	2.0	7.7	88	<10	260	930
JUN											
07...	0730	1.8	328	7.40	23.0	1.5	7.2	82	19	450	2300
AUG											
09...	1145	3.9	289	8.20	26.0	9.3	8.5	104	22	K1200	K1600

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
05...	120	0	33	10	12	0.5	2.1	120	<0.5	6.0	8.6
NOV											
30...	--	--	--	--	--	--	--	140	--	--	--
FEB 1990											
01...	--	--	--	--	--	--	--	150	--	--	--
APR											
18...	180	0	40	20	83	3	5.0	150	<0.5	11	33
JUN											
07...	--	--	--	--	--	--	--	150	--	--	--
AUG											
09...	160	0	34	18	87	3	6.4	130	--	9.6	26

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
05...	0.10	31	178	10.1	<1	0.89	0.01	0.90	0.02	0.28
NOV										
30...	--	--	--	--	14	0.99	0.01	1.0	0.03	0.47
FEB 1990										
01...	--	--	--	--	6	--	<0.01	0.70	0.01	--
APR										
18...	0.10	31	312	1.60	10	0.49	0.01	0.50	0.02	0.48
JUN										
07...	--	--	--	--	3	--	<0.01	0.50	0.02	--
AUG										
09...	<0.10	29	286	3.07	8	0.59	<0.01	0.60	0.04	0.16

K = non-ideal count

50138800 RIO YAGÜEZ NEAR MAYAGÜEZ, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
05...	0.30	1.2	5.3	0.05	<1	<100	<10	<1	<1	10
NOV										
30...	0.50	1.5	6.6	0.05	--	--	--	--	--	--
FEB 1990										
01...	<0.20	--	--	0.10	--	--	--	--	--	--
APR										
18...	0.50	1.0	4.4	0.04	<1	100	40	<1	<1	10
JUN										
07...	<0.20	--	--	0.04	--	--	--	--	--	--
AUG										
09...	0.20	0.80	3.5	0.07	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
05...	420	7	10	<0.10	<1	<1	<10	<0.010	5	0.03
NOV										
30...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
01...	--	--	--	--	--	--	--	--	--	--
APR										
18...	160	2	20	0.10	<1	<1	<10	<0.010	3	0.05
JUN										
07...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE ANASCO BASIN

50141500 LAGO GUAYO NEAR CASTANER, 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.

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, 1460.63 ft (445.20 m), Oct. 2; minimum elevation recorded 1415.43 ft (431.42 m), June 2, but may have been less during period of no gage-height record June 2-5.

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 1989 TO SEPTEMBER 199[illegible]
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1460.39	1454.66	1450.75	1441.14	1438.32	1439.98	1436.06	A	1415.60	1423.23	1424.05	1433.90
2	1460.61	1453.33	1451.05	1441.45	1438.53	1440.17	1435.18	A	A	1423.37	1424.12	1434.24
3	1460.44	1451.93	1451.19	1441.89	1438.44	1440.10	1435.14	A	A	1423.40	1424.17	1437.45
4	1459.98	1450.47	1450.00	1442.20	1438.62	1440.17	1433.95	1423.53	A	1423.54	1424.28	1438.96
5	1459.12	1449.15	1448.98	1442.11	1438.84	1440.36	1431.99	1423.51	14 [illegible]9	1423.58	1424.46	1439.22
6	1458.20	1447.80	1448.18	1441.92	1439.04	1440.40	1431.96	1423.10	1415.95	1423.59	1424.53	1441.87
7	1457.05	1446.93	1446.60	1442.20	1439.25	1440.65	A	1423.36	1416.04	1423.74	1424.64	1442.57
8	1457.33	1445.99	1445.15	1442.37	A	A	A	1422.39	1416.04	1423.86	1424.73	1442.85
9	1456.45	1445.19	1444.96	1441.68	A	A	A	1422.42	1416.05	1423.93	1425.04	1442.99
10	1455.14	1445.08	1445.39	1440.50	A	A	A	1422.57	1416.05	1423.58	1425.16	1444.18
11	1454.00	1446.17	1444.67	1439.73	1439.88	A	A	1422.69	1416.06	1423.12	1425.27	1443.38
12	1453.18	1447.04	1444.39	1438.24	1440.58	A	A	1422.73	1416.06	1423.13	1425.35	1442.88
13	1452.52	1447.68	1444.00	1438.54	1440.78	1440.16	A	1422.80	1416.18	1423.20	1425.52	1442.40
14	1451.51	1448.18	1443.72	1438.93	1441.15	1440.34	A	1422.84	1416.04	1423.22	1425.51	1441.86
15	1450.43	1447.16	1443.49	1438.92	1441.38	1440.49	A	1421.88	1416.06	1423.23	1425.59	1442.04
16	1450.09	1447.81	1442.25	1437.68	1441.61	1440.60	A	1422.00	1420.82	1423.37	1425.66	1442.37
17	1450.77	1448.38	1442.18	1437.92	1441.80	1440.62	A	1420.52	1421.45	1423.48	1425.98	1441.52
18	1451.70	1448.14	1440.96	1438.19	1442.01	1440.64	A	1420.60	1421.88	1423.47	1426.33	1440.59
19	1451.87	1448.80	1441.10	1438.47	1442.22	1440.68	A	1420.68	1422.14	1423.21	1426.50	1439.97
20	1452.36	1448.29	1441.06	1438.04	1441.66	1440.71	A	1420.77	1421.37	1421.80	1426.63	1439.92
21	1454.54	1448.93	1440.26	1438.25	1441.19	1439.79	A	1420.86	1421.58	1421.83	1427.25	1439.56
22	1456.81	1449.53	1440.34	1438.52	1440.90	1439.32	A	1419.76	1422.60	1421.88	1428.24	1440.31
23	1458.05	1449.72	1440.54	1437.91	1439.48	1438.53	A	1419.78	1423.47	1422.59	1428.70	1444.17
24	1457.25	1449.74	1440.84	1438.14	1439.47	1437.66	A	1419.84	1424.12	1423.35	1428.92	1445.77
25	1456.10	1449.74	1440.93	1438.39	1439.46	1437.78	1430.11	1419.92	1424.51	1423.53	1431.07	1447.45
26	1454.84	1450.27	1440.24	1438.67	1439.66	1437.38	A	1420.00	1424.15	1423.56	1431.65	1447.90
27	1453.74	1450.04	1440.33	1438.86	1439.86	1437.20	A	1420.02	1423.56	1423.74	1431.87	1447.71
28	1453.85	1450.53	1440.51	1439.00	1439.92	1437.17	A	1419.36	1423.78	1423.83	1432.51	1447.57
29	1455.86	1450.43	1440.33	1437.82	---	1437.30	1428.96	1418.74	1423.16	1423.90	1432.87	1447.50
30	1456.55	1450.29	1440.44	1438.00	---	1437.28	A	1417.46	1423.21	1423.94	1433.14	1448.39
31	1455.59	---	1440.81	1438.23	---	1436.52	---	1417.45	---	1424.01	1433.64	---
MEAN	1455.36	1448.91	1443.73	1439.48	---	---	---	---	---	1423.33	1427.21	1442.38
MAX	1460.61	1454.66	1451.19	1442.37	---	---	---	---	---	1424.01	1433.64	1448.39
MIN	1450.09	1445.08	1440.24	1437.68	---	---	---	---	---	1421.80	1424.05	1433.90

A No gage-height record.

RIO GRANDE DE AÑASCO BASIN

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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
11...	1515	107	272	8.00	26.5	3.4	8.0	100	27	K<10	K45
DEC											
11...	1030	35	201	7.80	22.0	1.1	8.3	94	12	K910	400
FEB 1990											
07...	1215	15	204	8.40	22.0	9.8	10.3	117	12	K27	K10
MAY											
03...	0920	8.5	313	8.20	24.5	1.5	9.6	114	<10	K30	K36
JUN											
25...	1050	11	293	8.30	28.5	3.0	8.8	114	23	350	K60
AUG											
16...	1240	25	271	8.40	27.5	5.0	9.0	113	16	K64	K63

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
11...	110	0	30	8.7	12	0.5	1.7	100	<0.5	17	9.3
DEC											
11...	--	--	--	--	--	--	--	120	--	--	--
FEB 1990											
07...	--	--	--	--	--	--	--	130	--	--	--
MAY											
03...	130	0	34	10	14	0.5	1.4	140	<0.5	19	8.8
JUN											
25...	--	--	--	--	--	--	--	110	--	--	--
AUG											
16...	110	11	30	8.3	12	0.5	1.9	98	--	19	11

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
11...	0.10	34	173	49.9	<1	--	<0.01	1.80	0.01	--
DEC										
11...	--	--	--	--	8	1.39	0.01	1.40	0.02	0.48
FEB 1990										
07...	--	--	--	--	6	--	<0.01	0.70	0.01	0.29
MAY										
03...	0.10	35	196	4.50	3	--	<0.01	<0.10	<0.01	--
JUN										
25...	--	--	--	--	2	0.18	0.02	0.20	0.02	0.58
AUG										
16...	<0.10	27	168	11.6	14	--	<0.01	0.30	<0.01	--

K = non-ideal count

RIO GRANDE DE AÑASCO BASIN

50143000 RIO GRANDE DE AÑASCO NEAR LARES, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
11...	<0.20	--	--	0.05	<1	<100	<10	<1	<1	<10
DEC										
11...	0.50	1.9	8.4	0.05	--	--	--	--	--	--
FEB 1990										
07...	0.30	1.0	4.4	0.03	--	--	--	--	--	--
MAY										
03...	0.30	--	--	0.02	<1	<100	30	<1	<1	<10
JUN										
25...	0.60	0.80	3.5	0.03	--	--	--	--	--	--
AUG										
16...	0.30	0.60	2.7	0.03	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
11...	390	5	40	<0.10	<1	<1	<10	<0.010	3	0.04
DEC										
11...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
07...	--	--	--	--	--	--	--	--	--	--
MAY										
03...	150	4	20	<0.10	<1	<1	<10	<0.010	2	0.04
JUN										
25...	--	--	--	--	--	--	--	--	--	--
AUG										
16...	--	--	--	--	--	--	--	--	--	--

RIO GRANDE DE ANASCO BASIN

50144000 RIO GRANDE DE ANASCO NEAR SAN SEBASTIAN, PR

LOCATION.--Lat 18°17'05", long 67°03'05", Hydrologic Unit 21010003, on right 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 discharges, 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.

AVERAGE DISCHARGE.--27 years (1964-90), 309 ft³/s (8.751 m³/s), 44.50 in/yr (1,130 mm/yr), 223,900 acre-ft/yr (276 hm³/yr); median of yearly mean discharges, 303 ft³/s (8.58 m³/s), 220,000 acre-ft/yr (271 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 140,000 ft³/s (3,960 m³/s), Sept. 16, 1975, gage height, 33.9 ft (10.33 m), from rating curve extended above 4,000 ft³/s (113 m³/s) on basis of slope-area measurement; minimum discharge, 31 ft³/s (0.878 m³/s), Apr. 19, 20, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft³/s (170 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 15	1800	9,110	258	8.91	2.716	Oct. 19	1700	*12,600	357	*10.45	3.185

Minimum discharge, 43 ft³/s (1.218 m³/s), May 7.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	989	471	221	223	96	76	60	55	68	74	132	256
2	1300	408	218	185	96	75	64	56	72	70	92	206
3	2030	388	214	219	95	74	93	53	67	67	91	1240
4	e1030	384	211	167	95	72	71	48	77	159	73	799
5	914	389	209	152	94	72	59	46	126	293	66	827
6	650	394	206	146	92	71	56	44	209	151	81	1010
7	578	361	204	142	93	72	60	46	94	139	74	939
8	1180	360	195	137	99	70	59	206	143	181	117	376
9	882	389	193	135	95	71	53	224	122	231	542	1250
10	589	425	191	135	94	79	50	143	72	103	275	1040
11	527	380	189	132	93	74	50	117	e94	78	135	635
12	559	352	184	132	97	80	49	77	e60	71	255	632
13	611	330	185	128	105	91	46	51	e120	63	242	913
14	534	318	181	197	102	89	48	51	e300	65	203	647
15	1400	309	179	142	105	91	51	45	e150	59	121	722
16	1290	301	188	125	88	78	50	90	e130	67	102	444
17	831	705	185	122	85	109	48	80	e250	64	93	621
18	592	351	174	118	84	114	47	67	e180	81	171	401
19	1610	276	172	117	92	80	105	62	e140	82	138	354
20	752	285	169	117	112	74	200	64	e120	80	99	982
21	1480	268	166	115	86	80	85	64	e110	64	89	890
22	1250	258	162	111	85	70	59	55	e100	58	378	465
23	861	248	159	110	84	77	49	52	e120	78	276	1770
24	779	244	159	109	80	82	45	52	e140	236	400	1890
25	586	242	161	108	76	66	57	52	e110	152	234	1470
26	573	241	156	110	78	62	290	50	90	122	261	1380
27	571	235	153	105	78	60	110	57	86	86	157	684
28	749	232	235	106	76	60	76	62	79	75	160	645
29	1050	226	217	102	---	60	64	58	74	68	224	469
30	698	224	169	100	---	73	59	69	74	64	194	694
31	551	---	186	98	---	63	---	85	---	275	185	---
TOTAL	27996	9994	5791	4145	2555	2365	2213	2281	3577	3456	5660	24651
MEAN	903	333	187	134	91.2	76.3	73.8	73.6	119	111	183	822
MAX	2030	705	235	223	112	114	290	224	300	293	542	1890
MIN	527	224	153	98	76	60	45	44	60	58	66	206
AC-FT	55530	19820	11490	8220	5070	4690	4390	4520	7090	6850	11230	48900
CFSM	9.58	3.53	1.98	1.42	.97	.81	.78	.78	1.26	1.18	1.94	8.71
IN.	11.04	3.94	2.28	1.64	1.01	.93	.87	.90	1.41	1.36	2.23	9.72

CAL YR 1989 TOTAL 130830 MEAN 358 MAX 2160 MIN 62 AC-FT 259500 CFSM 3.80 IN. 51.61
WTR YR 1990 TOTAL 94684 MEAN 259 MAX 2030 MIN 44 AC-FT 187800 CFSM 2.75 IN. 37.35

e Estimated

RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1963 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
OCT 1989											
13...	1515	519	208	7.40	25.5	52	7.8	95	20000	8600	89
JAN 1990											
09...	0930	130	233	8.20	22.0	1.1	8.9	100	3500	K100	110
MAY											
02...	0948	62	255	7.80	25.0	2.5	7.9	95	500	K50	110
JUL											
23...	1050	60	254	8.40	28.0	7.2	8.8	112	210	K40	110

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT 1989											
13...	0	22	8.3	8.3	0.4	2.7	85	10	6.4	0.10	30
JAN 1990											
09...	0	28	9.7	10	0.4	1.4	110	10	7.0	0.10	32
MAY											
02...	0	27	10	11	0.5	1.7	100	11	9.0	<0.10	32
JUL											
23...	0	28	9.5	11	0.5	1.6	110	12	7.6	0.30	32

DATE	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4)
OCT 1989											
13...	125	145	175	1.30	0.01	0.01	0.40	0.09	0.03	0.01	0.12
JAN 1990											
09...	167	169	58.6	0.92	0.03	0.04	0.20	0.06	0.06	0.05	0.15
MAY											
02...	149	167	28.3	0.40	0.03	0.04	0.30	0.04	0.03	0.03	0.09
JUL											
23...	160	165	27.1	0.20	0.04	0.05	0.20	0.04	0.02	0.03	0.09

DATE	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	LITHIUM DISSOLVED (UG/L AS LI)
OCT 1989											
13...	40	<1	33	<0.5	<1.0	2	<3	1	54	<1	<4
JAN 1990											
09...	50	<1	35	<0.5	<1.0	1	<3	<10	15	<10	<4
MAY											
02...	<10	<1	39	<0.5	<1.0	<1	<3	2	13	1	<4
JUL											
23...	60	<1	36	<0.5	2.0	<1	<3	3	62	23	<4

K = non-ideal count

RIO GRANDE DE AÑASCO BASIN

50144000 RIO GRANDE DE AÑASCO NEAR SAN SEBASTIAN, PR--Continued

(NATIONAL STREAM-QUALITY ACCOUNTING NETWORK STATION)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	ZINC, DISSOLVED (UG/L AS ZN)
OCT 1989									
13...	9	<0.1	<10	1	<1	<1.0	120	<6	19
JAN 1990									
09...	11	<0.1	<10	<10	<1	<1.0	140	<6	12
MAY									
02...	29	<0.1	<10	1	<1	<1.0	140	7	<3
JUL									
23...	22	<0.1	<10	2	<1	<1.0	150	7	3

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. PERCENT FINER THAN .062 MM
OCT 1989					
13...	1515	519	97	136	88
JAN 1990					
09...	0930	130	12	4.2	4
MAY					
02...	0948	62	49	8.2	51
JUL					
23...	1050	60	16	2.6	93

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 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
12...	0830	685	224	7.40	24.0	7.6	8.0	93	16	K2200	K1500
DEC											
12...	0915	224	239	7.50	23.0	1.4	8.4	96	14	K160	K60
FEB 1990											
06...	1130	109	239	7.90	23.0	1.0	8.7	99	11	K36	K20
MAY											
09...	1025	300	204	7.40	26.5	180	7.3	89	42	4300	8200
JUN											
27...	0930	86	235	7.40	27.0	11	6.7	82	15	210	580
AUG											
21...	0915	122	229	7.50	28.0	46	6.5	81	<10	K970	270

DATE	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
OCT 1989											
12...	92	0	23	8.4	9.3	0.4	1.7	93	<0.5	9.0	6.8
DEC											
12...	--	--	--	--	--	--	--	110	--	--	--
FEB 1990											
06...	--	--	--	--	--	--	--	110	--	--	--
MAY											
09...	81	0	22	6.4	8.0	0.4	2.3	73	<0.5	12	8.9
JUN											
27...	--	--	--	--	--	--	--	97	--	--	--
AUG											
21...	98	0	25	8.6	10.0	0.5	2.0	100	--	8.2	7.0

DATE	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
12...	0.10	30	144	266	3	1.09	0.01	1.10	0.01	0.19
DEC										
12...	--	--	--	--	<1	0.59	0.01	0.60	0.02	0.28
FEB 1990										
06...	--	--	--	--	3	0.29	0.01	0.30	0.01	0.19
MAY										
09...	<0.10	23	127	103	298	0.85	0.05	0.90	0.10	0.80
JUN										
27...	--	--	--	--	7	0.38	0.02	0.40	0.03	--
AUG										
21...	0.10	32	150	50.3	1	0.29	0.01	0.30	0.07	0.13

K = non-ideal count

RIO GRANDE DE AÑASCO BASIN

50146000 RIO GRANDE DE AÑASCO NEAR AÑASCO, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
12...	0.20	1.3	5.8	0.06	<1	<100	30	<1	<1	10
DEC										
12...	0.30	0.90	4.0	0.03	--	--	--	--	--	--
FEB 1990										
06...	0.20	0.50	2.2	0.02	--	--	--	--	--	--
MAY										
09...	0.90	1.8	8.0	0.07	<1	200	<10	<1	10	20
JUN										
27...	<0.20	--	--	0.05	--	--	--	--	--	--
AUG										
21...	0.20	0.50	2.2	0.04	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
12...	850	1	70	<0.10	<1	<1	<10	<0.010	3	0.05
DEC										
12...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
09...	12000	14	410	<0.10	<1	<1	30	0.010	<1	0.06
JUN										
27...	--	--	--	--	--	--	--	--	--	--
AUG										
21...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
JUN 1990										
27...	0930	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	0.02	<0.010	<0.010

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN 1990										
27...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01

DATE	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 1990									
27...	<0.01	<0.10	<0.1	<1	<0.01	0.04	<0.01	<0.01	<0.01

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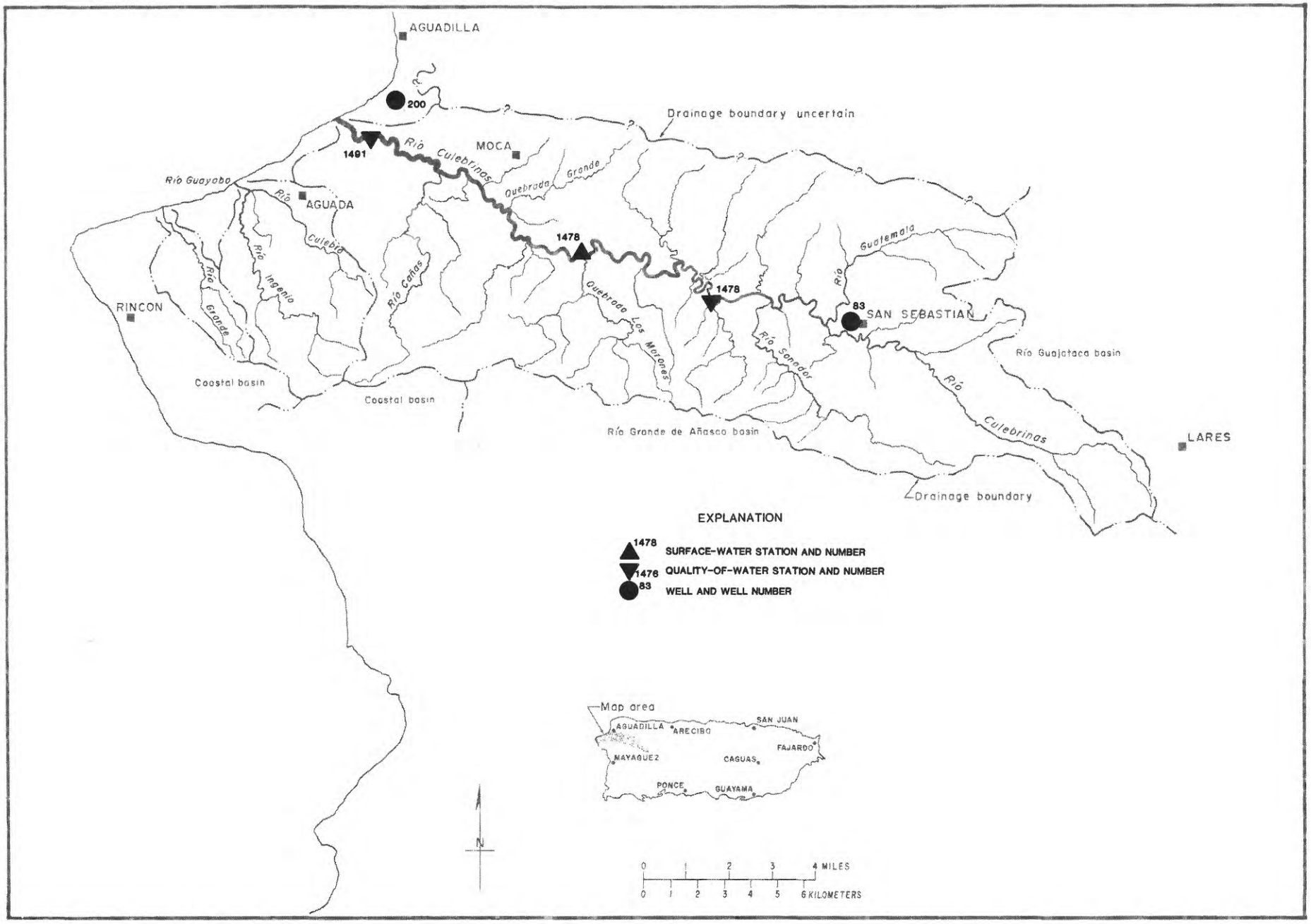

Figure 26.--Río Culebrinas basin.

RIO 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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
13...	0945	144	265	7.30	24.0	14	8.40	99	18	K16000	3000
DEC											
12...	1215	59	247	7.80	23.5	2.8	10.9	126	20	5600	450
FEB 1990											
06...	1400	23	300	8.40	25.0	2.5	10.6	126	23	3000	100
MAY											
08...	0915	38	162	7.00	25.0	230	6.2	74	28	K10000	4300
JUN											
25...	1315	62	331	7.80	27.0	10	7.9	98	21	K960	300
AUG											
21...	1200	60	229	8.10	28.5	4.7	7.6	96	12	4700	K1200

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
13...	110	8	35	4.9	11	0.5	2.5	100	<0.5	10	9.6
DEC											
12...	--	--	--	--	--	--	--	100	--	--	--
FEB 1990											
06...	--	--	--	--	--	--	--	120	--	--	--
MAY											
08...	51	0	16	2.8	9.8	0.6	2.1	47	<0.5	12	9.8
JUN											
25...	--	--	--	--	--	--	--	130	--	--	--
AUG											
21...	110	3	36	5.4	12	0.5	2.3	120	--	10	9.7

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
13...	0.10	30	163	63.4	9	1.36	0.04	1.40	0.09	0.41
DEC										
12...	--	--	--	--	<1	1.53	0.07	1.60	0.04	0.36
FEB 1990										
06...	--	--	--	--	2	1.13	0.07	1.20	0.08	0.42
MAY										
08...	0.40	20	98	10.0	316	1.12	0.08	1.20	0.15	0.55
JUN										
25...	--	--	--	--	7	0.83	0.07	0.90	0.05	0.25
AUG										
21...	0.10	34	170	34.0	17	1.06	0.04	1.10	0.09	0.31

K = non-ideal count

RIO CULEBRINAS BASIN

50147600 RIO CULEBRINAS NEAR SAN SEBASTIAN, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
13...	0.50	1.9	8.4	0.08	<1	<100	30	<1	<1	10
DEC										
12...	0.40	2.0	8.9	0.14	--	--	--	--	--	--
FEB 1990										
06...	0.50	1.7	7.5	0.21	--	--	--	--	--	--
MAY										
08...	0.70	1.9	8.4	0.10	<1	<100	30	<1	5	20
JUN										
25...	0.30	1.2	5.3	0.09	--	--	--	--	--	--
AUG										
21...	0.40	1.5	6.6	0.09	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
13...	760	2	60	<0.10	<1	<1	<10	<0.010	1	0.02
DEC										
12...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
08...	15000	4	190	<0.10	<1	<1	20	<0.010	<1	0.11
JUN										
25...	--	--	--	--	--	--	--	--	--	--
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).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1967 to current year.

GAGE.--Water-stage recorder and crest-stage gage. 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.

AVERAGE DISCHARGE.--23 years (1968-90), 298 ft³/s (8.439 m³/s), 56.84 in/yr (1,444 mm/yr), 215,900 acre-ft/yr (266 hm³/yr); median of yearly mean discharges, 285 ft³/s (8.07 m³/s), 206,000 acre-ft/yr (254 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69,000 ft³/s (1,950 m³/s), Sept. 16, 1975, gage height, 36.6 ft (11.2 m) from slope-area measurement, but may have been exceeded by flood of Oct. 23, 1974, from rating curve extended above 2,600 ft³/s (73.6 m³/s) on basis of slope-area and contracted-opening measurements of peak flow; minimum discharge, 16 ft³/s (0.453 m³/s), Apr. 17-19, 1979.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 11,300 ft³/s (320 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 2	1845	13,900	394	23.62	7.199	Oct. 19	2130	15,700	445	24.55	7.483
Oct. 3	2200	16,700	473	24.77	7.550	Oct. 22	2100	*17,100	484	*25.07	7.641
Oct. 15	2000	16,900	479	25.00	7.620	Oct. 26	1900	16,600	470	24.90	7.590

Minimum discharge, 23 ft³/s (0.651 m³/s), May 2-8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	319	230	110	119	49	41	40	24	98	70	215	86
2	2870	211	109	84	49	38	74	24	133	67	105	81
3	2600	198	114	82	49	40	93	24	54	65	133	83
4	1500	189	105	75	47	38	47	24	87	62	102	101
5	617	182	104	72	45	39	37	24	116	185	89	153
6	402	177	101	70	47	38	35	24	184	254	252	152
7	308	175	101	69	47	39	34	24	177	357	121	247
8	575	165	99	68	51	37	32	162	106	228	110	396
9	322	191	97	71	48	36	31	675	158	113	226	496
10	250	376	95	65	53	41	30	e1350	113	100	191	910
11	231	201	94	62	55	37	29	e226	81	353	213	379
12	267	151	92	60	57	43	31	e125	80	200	261	e223
13	233	144	91	59	95	49	63	e72	118	108	117	613
14	1270	142	90	59	60	46	40	e60	127	1310	117	359
15	3510	137	88	57	51	43	35	e53	1160	274	99	639
16	608	132	89	56	47	39	32	e48	191	151	91	288
17	529	800	92	58	45	37	32	47	548	123	86	325
18	350	422	87	55	45	35	44	45	671	437	312	890
19	3710	159	86	54	51	38	101	60	306	290	162	315
20	752	203	85	54	52	43	44	50	162	203	102	202
21	950	172	83	54	46	48	38	50	125	130	91	175
22	3570	140	81	56	45	42	32	42	109	113	125	156
23	696	162	79	55	45	92	29	39	101	104	184	225
24	362	155	79	53	41	103	28	39	149	477	167	153
25	928	129	77	53	41	48	27	37	120	211	117	181
26	3430	124	79	53	40	39	29	35	103	135	98	131
27	623	120	76	54	42	36	27	35	88	163	90	123
28	346	117	84	53	39	34	26	34	80	164	88	116
29	320	114	124	49	---	34	25	32	76	117	88	112
30	269	112	78	50	---	65	25	39	73	101	126	222
31	246	---	93	50	---	42	---	52	---	140	94	---
TOTAL	32963	5930	2862	1929	1382	1380	1190	3575	5694	6805	4372	8532
MEAN	1063	198	92.3	62.2	49.4	44.5	39.7	115	190	220	141	284
MAX	3710	800	124	119	95	103	101	1350	1160	1310	312	910
MIN	231	112	76	49	39	34	25	24	54	62	86	81
AC-FT	65380	11760	5680	3830	2740	2740	2360	7090	11290	13500	8670	16920
CFSM	14.9	2.78	1.30	.87	.69	.63	.56	1.62	2.67	3.08	1.98	3.99
IN.	17.22	3.10	1.50	1.01	.72	.72	.62	1.87	2.97	3.56	2.28	4.46

CAL YR 1989 TOTAL 97922 MEAN 268 MAX 3710 MIN 35 AC-FT 194200 CFSM 3.77 IN. 51.16
WTR YR 1990 TOTAL 76614 MEAN 210 MAX 3710 MIN 24 AC-FT 152000 CFSM 2.95 IN. 40.03

e Estimated

RIO CULEBRINAS BASIN

50147800 RIO CULEBRINAS AT HIGHWAY 404 NEAR MOCA, PR--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--WATER YEARS AUGUST 1981 TO CURRENT YEAR

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)	DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (UMHOS)	TEMPERATURE (DEG C)
OCT. 12	0916	211	198	26.0	APR. 11	0926	26.7	290	24.0
NOV. 15	0831	136	110	26.0					
DEC. 07	1010	101	170	25.0	JUNE 06	0920	141	210	23.0
JAN. 10	0921	64.5	216	26.0	JULY 18	1148	120	343	23.0
FEB. 14	0855	56.1	200	25.0	AUG. 15	1042	99	272	27.0
MAR. 15	0758	41.6	270	25.0	SEPT 13	1438	172	285	23.0

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 1989 TO SEPTEMBER 1990

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
OCT 1989											
12...	1345	254	297	7.60	25.5	24	5.3	64	22	K1500	K730
DEC											
12...	1600	138	283	7.70	24.5	4.6	7.8	92	30	200	460
FEB 1990											
07...	0915	38	288	7.40	27.0	6.8	2.7	33	13	K4400	55000
MAY											
09...	0820	330	200	6.90	25.0	900	5.4	64	100	K170000	90000
JUN											
27...	1237	148	390	7.60	27.5	24	5.4	67	53	600	500
AUG											
21...	1515	132	339	7.60	29.0	5.4	5.4	69	19	600	440

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFIDE TOTAL (MG/L AS S)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
OCT 1989											
12...	130	0	42	5.5	12	0.5	2.1	120	<0.5	10	11
DEC											
12...	--	--	--	--	--	--	--	120	--	--	--
FEB 1990											
07...	--	--	--	--	--	--	--	140	--	--	--
MAY											
09...	80	0	27	3.1	7.6	0.4	3.1	66	<0.5	17	10
JUN											
27...	--	--	--	--	--	--	--	150	--	--	--
AUG											
21...	150	25	52	6.0	13	0.5	3.3	130	--	7.9	14

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER DAY)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, ORGANIC TOTAL (MG/L AS N)
OCT 1989										
12...	0.10	30	185	127	48	1.18	0.02	1.2	0.06	0.44
DEC										
12...	--	--	--	--	26	0.79	0.01	0.80	0.07	0.83
FEB 1990										
07...	--	--	--	--	22	--	<0.01	0.30	0.02	--
MAY										
09...	<0.10	10	113	58.8	2510	1.63	0.07	1.7	0.16	1.5
JUN										
27...	--	--	--	--	61	0.59	0.01	0.60	0.14	1.3
AUG										
21...	0.10	26	200	72.6	35	0.68	0.02	0.70	0.11	0.39

K = non-ideal count

RIO CULEBRINAS BASIN

50149100 RIO CULEBRINAS NEAR AGUADA, PR--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	ARSENIC TOTAL (UG/L AS AS)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA)	BORON, TOTAL RECOVERABLE (UG/L AS B)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR)	COPPER, TOTAL RECOVERABLE (UG/L AS CU)
OCT 1989										
12...	0.50	1.7	7.5	0.11	<1	<100	50	<1	2	10
DEC										
12...	0.90	1.7	7.5	0.11	--	--	--	--	--	--
FEB 1990										
07...	<0.20	--	--	0.06	--	--	--	--	--	--
MAY										
09...	1.7	3.4	15	0.16	<1	300	30	<1	32	110
JUN										
27...	1.4	2.0	8.9	0.08	--	--	--	--	--	--
AUG										
21...	0.50	1.2	5.3	0.09	--	--	--	--	--	--

DATE	IRON, TOTAL RECOVERABLE (UG/L AS FE)	LEAD, TOTAL RECOVERABLE (UG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN)	MERCURY TOTAL RECOVERABLE (UG/L AS HG)	SELENIUM, TOTAL (UG/L AS SE)	SILVER, TOTAL RECOVERABLE (UG/L AS AG)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN)	CYANIDE TOTAL (MG/L AS CN)	PHENOLS TOTAL (UG/L)	METHYLENE BLUE ACTIVE SUBSTANCE (MG/L)
OCT 1989										
12...	2400	16	100	0.20	<1	<1	10	<0.010	3	0.06
DEC										
12...	--	--	--	--	--	--	--	--	--	--
FEB 1990										
07...	--	--	--	--	--	--	--	--	--	--
MAY										
09...	86000	24	1700	0.20	1	<1	130	<0.010	<1	0.21
JUN										
27...	--	--	--	--	--	--	--	--	--	--
AUG										
21...	--	--	--	--	--	--	--	--	--	--

PESTICIDE ANALYSES

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
JUN 1990										
27...	1237	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	0.11	<0.010	<0.010

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTACHLOR, TOTAL (UG/L)	HEPTACHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOTAL (UG/L)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
JUN 1990										
27...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01

DATE	PARATHION, TOTAL (UG/L)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L)	PERTHANE TOTAL (UG/L)	TOXAPHENE, TOTAL (UG/L)	TOTAL TRITHION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
JUN 1990									
27...	<0.01	<0.10	<0.1	<1	<0.01	0.15	<0.01	<0.01	<0.01

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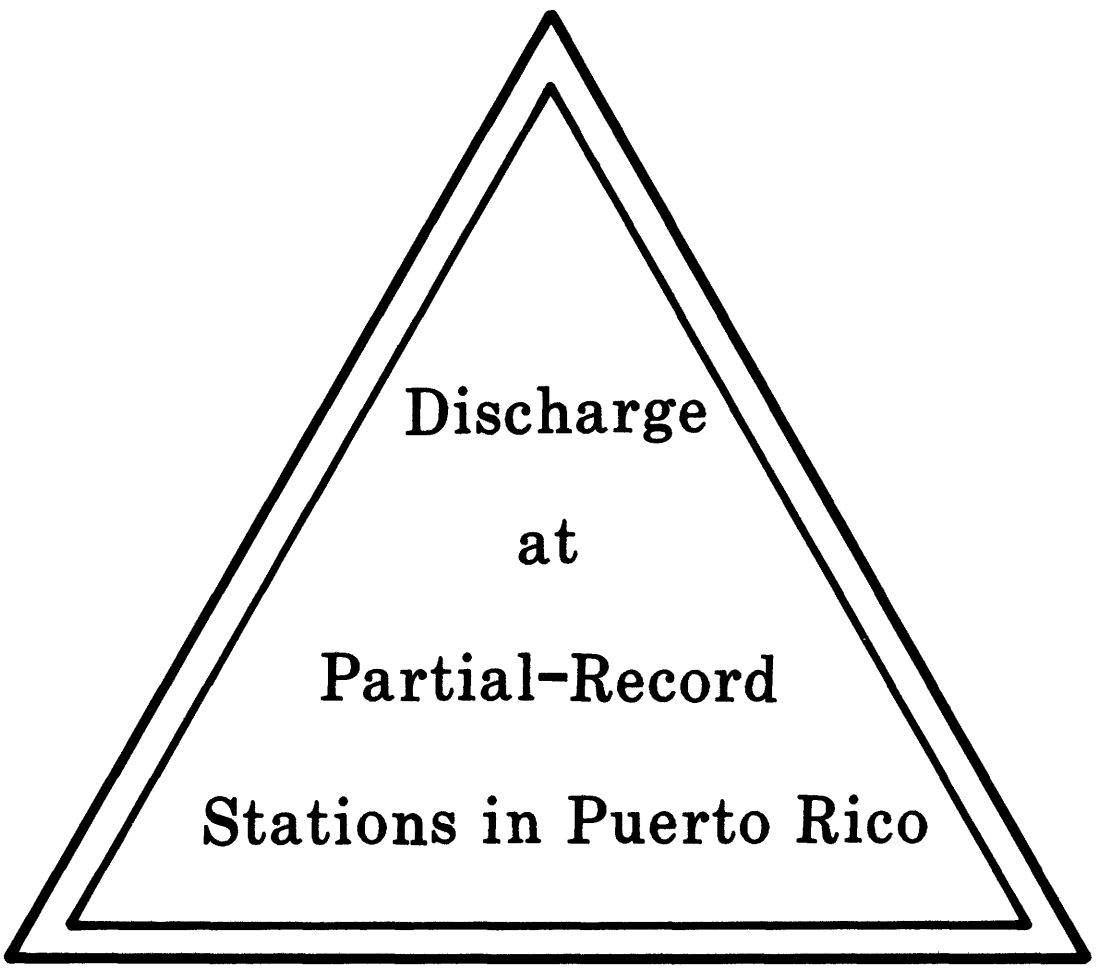
Discharge
at
Partial-Record
Stations in Puerto Rico

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 1990

PUBLICATION RECORD

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi^2 (km^2)	DATE	TIME	STREAM-FLOW ft^3/s (m^3/s)
		Río Melanía basin				
50095900	Quebrada Melanía near Jobos, PR	Lat 17°57'51", long 66°59'30". Hydrologic unit 21010004. 0.6 mi (1.0 km) upstream from bridge on Hwy 3.	2.75 (7.13)	3/12/90	1050	0.59 (0.017)
				4/09/90	1045	0.18 (0.005)
50097000	Quebrada Cimarrona near Jobos, PR	Lat 17°59'18", long 66°10'59". Hydrologic unit 21010004. Barrio Pozo Hondo, 2.4 mi (3.7 km) north from Puerto de Jobos, and 4.0 mi (6.4 km) northwest from Guayama Plaza.	3.09 (8.00)	3/12/90	1120	0.00
				4/09/90	1140	0.00
		Río Seco basin				
50097800	Río Seco near Central Guamaní, PR	Lat 17°58'06", long 66°10'52". Hydrologic unit 21010004. At Bridge on Hwy 3, .2 mi (0.3 (0.3 km) north of Central Guamaní, and 1.2 mi (1.9 km) northwest of Jobos.	11.2 (29.0)	3/12/90	1115	0.00
				4/09/90	1115	0.00
		Río Salinas (Nigua) basin				
50100200	Río Lapa near Rabo del Buey, PR	Lat 18°03'36", long 66°14'28". Hydrologic unit 21010004. Barrio Lapa, at Hwy 1, 1.6 mi (2.6 km) upstream from confluence with Río Majada, and 6.2 mi (10 km) southwest from Cayey Plaza.	10.0 (25.8)	3/12/90	1440	0.95 (0.027)
				4/09/90	1340	0.57 (0.016)
50100300	Río Jájome at Jájome, PR	Lat 18°03'49", long 66°09'38". Hydrologic unit 21010004. Barrio Jájome Bajo, at Hwy 708, 3.5 mi (5.6 km) south from Cayey Plaza.	4.56 (11.8)	3/12/90	1400	1.35 (0.038)
				4/09/90	1300	0.36 (0.010)
50100450	Río Majada at La Plena, PR	Lat 18°02'40", long 66°12'27". Hydrologic unit 21010004. Barrio Quebrada Yegua, at Hwy 712, 2.0 mi (3.2 km) northeast from Albergue Olímpico, and 5.5 mi (8.8 km) southwest fron Cayey Plaza.	16.7 (43.2))	3/12/90	1310	0.98 (0.028)
				4/09/90	1215	0.60 (0.017)
50100700	Río Majada at Rabo del Buey, PR	Lat 18°02'17", long 66°14'27". Hydrologic unit 21010004. Barrio Lapa, 0.2 mi (0.3 km) upstream from confluence with Río Lapa, 400 ft upstream from intersection of Hwy's 1 and 712, and 0.2 mi (0.3 km) nortwest from Albergue Olímpico.	22.2 (57.5)	3/12/90	1300	0.00
				4/09/90	1200	0.00

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 ft³/s (m³/s)
50102000	Río Salinas at Salinas, PR	Lat 17°58'42", long 66°18'17". Hydrologic unit 21010004. At Bridge on Hwy 1, and 0.4 mi (0.6 km) west from Salinas Plaza.	52.4 (136)	3/13/90	1250	0.00
				4/09/90	1400	0.00
		Río Jueyes basin				
50102400	Río Jueyes at Río Jueyes, PR	Lat 18°01'17", long 66°19'51". Hydrologic unit 21010004. Barrio Río Jueyes, at Hwy 154, 1.3 mi (2.1 km) upstream from Hwy 52, and 4.5 mi (7.2 km) Southeast from Coamo Plaza.	3.50 (9.06)	3/13/90	1215	0.00
				4/10/90	1350	0.00
50103000	Río Jueyes near Jauca, PR	Lat 17°58'45", long 66°20'20". Hydrologic unit 21010004. At bridge on Hwy 1, 1.8 mi (2.9 km) east of Jaucas, and 2.7 mi (4.3 km) west of Salinas Plaza.	8.56 (22.2)	3/13/90	1240	0.00
				4/09/90	1420	0.00
		Río Coamo basin				
50104000	Río Coamo near Pasto, PR	Lat 18°07'08", long 66°21'52". Hydrologic unit 21010004. Barrio Pasto, at Hwy 555, 2.6 mi (4.2 km) northwest from Coamo Plaza.	9.05 (23.4)	3/13/90	0820	5.69 (0.161)
				4/10/90	0900	3.77 (0.107)
50105400	Río Cuyón at La Guava, PR	Lat 18°05'20", long 66°16'17". Hydrologic unit 21010004. Barrio Algarrobo, at Hwy 717, 1.0 mi (1.6 km) southwest from Cerro Verdún, and 5.6 mi (9.0 km) east from Coamo Plaza.	4.33 (11.2)	3/13/90	1110	3.66 (0.104)
				4/10/90	1150	0.72 (0.020)
50105600	Río Cuyón near Coamo, PR	Lat 18°05'25", long 66°18'50". Hydrologic unit 21010004. Barrio Cuyón, at Hwy 14, 0.8 mi (1.3 km) southeast from Cerro Santa Ana, and 2.8 mi (4.5 km) northeast from Coamo Plaza.	18.1 (46.8)	3/13/90	1030	2.40 (0.068)
				4/10/90	1115	0.56 (0.016)
50105900	Quebrada Montería near Coamo, PR	Lat 18°05'13", long 66°21'04". Hydrologic unit 21010004. Barrio Pasto, at confluence with Río Cuyón, and 0.5 mi (0.8 km) northeast from Coamo Plaza.	7.12 (18.4)	3/13/90	0950	0.44 (0.012)
				4/10/90	1040	0.25 (0.007)
50106100	Río Coamo at Coamo, PR	Lat 18°05'00", long 66°21'16". Hydrologic unit 21010004. Coamo, at Hwy 14, 500 ft (152 m) downstream from confluence with Río Cuyón, and 0.2 mi (0.3 km) east from Coamo Plaza.	43.5 (113)	3/13/90	0910	5.72 (0.162)
				4/10/90	1030	4.53 (0.128)
50106600	Río de La Mina near Coamo, PR	Lat 18°05'04", long 66°23'22". Hydrologic Unit 21010004. Barrio Santa Catalina, at Hwy 150, 2.2 mi (3.5 km) west from Coamo Plaza.	2.62 (6.78)	3/14/90	1140	0.05 (0.001)
				4/11/90	1030	0.04 (0.001)
50106650	Río del Pasto near Coamo, PR	Lat 18°04'49", long 66°22'32". Hydrologic unit 21010004. Barrio San Idelfonso, at Hwy 150, 1.3 mi (2.1 km) west from Coamo Plaza.	1.80 (4.67)	3/14/90	1210	0.07 (0.002)
				4/11/90	1100	0.05 (0.001)

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 ft³/s (m³/s)
50106700	Río de La Mina at Coamo, PR	Lat 18°03'56", long 66°22'29". Hydrologic unit 21010004. Barrio San Idelfonso, at Hwy 14, 0.2 mi (0.3 km) upstream from confluence with Río Coamo, and 1.7 mi (2.7 km) from Coamo Plaza.	5.88 (15.2)	3/14/90	0930	0.17 (0.005)
				4/11/90	0845	0.08 (0.002)
50106820	Río Coamo at Baños de Coamo, PR	Lat 18°02'23", long 66°22'31". Hydrologic unit 21010004. Barrio San Idelfonso, at the end of Hwy 546, 3.3 mi (5.3 km) southwest from Coamo Plaza.	58.5 (152)	3/14/90	0840	9.17 (0.260)
				4/10/90	1230	4.52 (0.128)
50107000	Río Coamo near Santa Isabel, PR	Lat 17°58'36", long 66°25'10". Hydrologic unit 21010004. At bridge on Hwy 1 at Velázquez, 1.1 mi (1.8 km) northwest of Santa Isabel Plaza.	69.3 (179)	3/13/90	1300	0.00
				4/10/90	1410	0.00
		Río Descalabrado basin				
50107800	Río Descalabrado near Sanja Blanca, PR	Lat 18°05'24", long 66°24'30". Hydrologic unit 21010004. Barrio Santa Catalina, at Hwy 150, 2.0 mi (3.2 km) southeast from Lago Toa Vaca, and 3.4 mi (5.5 km) northwest from Coamo Plaza.	4.27 (11.0)	3/14/90	1100	0.22 (0.006)
				4/11/90	1000	0.04 (0.001)
50108200	Río Descalabrado at Las Ollas, PR	Lat 18°02'10", long 66°25'36". Hydrologic unit 21010004. Barrio Descalabrado, at Hwy 536, 0.6 mi (1.0 km) upstream from Hwy 52, and 2.2 mi (3.5 km) northwest from Cerro del Muerto.	13.9 (36.0)	3/14/90	1000	0.00
				4/11/90	0915	0.00
50108500	Río Descalabrado near Santa Isabel, PR	Lat 17°58'45", long 66°26'35". Hydrologic unit 21010004. At bridge on Hwy 1, 0.9 mi (1.4 km) upstream from mouth, and 3.1 mi (5.0 km) northwest of Santa Isabel.	18.1 (46.9)	3/13/90	1310	0.00
				4/10/90	1420	0.00
		Río Cañas basin				
50109000	Río Cañas near Juana Díaz, PR	Lat 18°02'41", long 66°27'26". Hydrologic unit 21010004. Barrio Río Cañas Arriba, at Hwy 14, 3.3 east from Juana Díaz Plaza.	2.88 (7.47)	3/14/90	1015	0.00
				4/11/90	0930	0.00
50109500	Río Cañas near Santa Isabel, PR	Lat 17°59'39", long 66°28'33". Hydrologic unit 21010004. At bridge on Hwy 1, 0.5 mi (0.8 km) from mouth, 0.6 mi (1.0 km) east of Pastillo, and 5.1 mi (8.2 km) northwest of Santa Isabel Plaza.	6.38 (16.5)	3/13/90	1320	0.00
				4/10/90	1435	0.00
		Río Jacaguas basin				
50110550	Río Jacaguas at Villalba, PR	Lat 18°07'37", long 66°29'42". Hydrologic unit 21010004. Barrio Hato Puerco Arriba, upstream from Water Treatment Plant, 100 ft (30 m) downstream from confluence with Quebrada Achiote, 0.2 mi (0.3 km) southwest from Villalba.	12.2 (31.7)	3/16/90	1250	29.3 (0.830)
				4/12/90	1230	37.0 (1.05)
50110700	Río Toa Vaca at Pedro García, PR	Lat 18°08'11", long 66°23'47". Hydrologic unit 21010004. Barrio Pedro García, 2.1 mi (3.4 km) southeast from intersection of Hwy's 143 and 155, and 4.1 mi (6.6 km) northeast Lago Toa Vaca.	3.09 (8.00)	3/20/90	1330	0.10 (0.003)
				4/12/90	1325	0.07 (0.002)

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 ft³/s (m³/s)
50110900	Río Toa Vaca upstream from Lago Toa Vaca, PR	Lat 18°07'36", long 66°27'25". Hydrologic unit 21010004. Barrio Caonillas Arriba, at Hwy 553, 0.5 mi (0.8 km) upstream Lago Toa Vaca, and 2.4 mi (3.9 km) east from Villalba.	14.2 (36.8)	3/21/90	1230	1.48 (0.042)
				4/12/90	1150	0.91 (0.026)
50111720	Quebrada Guanábana near Juana Díaz, PR	Lat 18°03'12", long 66°29'02". Hydrologic unit 21010004. Barrio Tijeras, at Hwy 14, 1.5 mi (2.4 km) east from Juana Díaz Plza.	1.72 (4.46)	3/13/90	1410	0.00
				3/14/90	1030	0.00
				4/11/90	1210	0.00
		Río Inabón basin				
50112400	Río Inabón at Real Anón, PR	Lat 18°07'22", long 66°34'20". Hydrologic unit 21010004. Barrio Anón, at Hwy 511, 1.0 mi (1.6 km) northeast from Cerro Santo Domingo, and 4.5 mi (7.2 km) northwest from Lago Guayabal.	6.00 (15.4)	3/15/90	0915	2.56 (0.072)
				4/11/90	0900	1.21 (0.034)
50112700	Río Guayo near Collores, PR	Lat 18°07'24", long 66°33'27". Hydrologic unit 21010004. Barrio Collores, at Hwy 5.17 about 400 ft (122 m) west from escuela Guaraguao 0.9 mi (1.4 km) northwest from intersection of Hwy's 517 and 5.12, and 3.5 mi (5.6 km) northwest from Lago Toa Vaca.	1.67 (4.34)	3/14/90	0815	0.75 (0.021)
				4/11/90	1025	0.28 (0.008)
50112750	Quebrada Indalecia at Collores, PR	Lat 18°06'33", long 66°32'20". Hydrologic unit 21010004. Barrio Collores, 200 ft (61 m) upstream from confluence with Río Guayo, 0.9 mi (1.4 km) northeast from Cerro Agustinillo, and 2.2 mi (3.5 km) northwest from Lago Guayabal.	3.52 (9.11)	3/14/90	0920	0.00
				4/11/90	1105	0.00
50112800	Río Guayo upstream from Diversion at Collores, PR	Lat 18°05'10", long 66°32'24". Hydrologic unit 21010004. Barrio Collores, 2.1 mi (3.4 km) southwest from Lago Guayabal, and 3.1 mi (5.0 km) northwest from Juana Díaz Plaza.	9.55 (24.7)	3/14/90	0945	1.32 (0.037)
				4/11/90	1120	0.64 (0.018)
		Río Bucaná basin				
50113790	Río San Patricio upstream from Lago Cerrillos, PR	Lat 18°07'12", long 66°36'27". Hydrologic unit 21010004. Barrio Maragüez, 1.5 mi (2.4 km) northwest from Cerro Santo Domingo, 3.6 mi (5.8 km) northwest from Lago Cerrillos, and 7.3 mi from (12 km) Degetau Plaza, Ponce.	5.84 (15.1)	3/20/90	0855	2.91 (0.082)
				4/10/90	0935	1.83 (0.052)
50113800	Río Cerrillos upstream from Lago Cerrillos, PR	Lat 18°07'01", long 66°36'17". Hydrologic unit 21010004. At barrio Maragüez, 1.3 mi (2.1 km) west from Cerro Santo Domingo, 3.3 mi (5.3 km) northwest from Lago Cerrillos, and 7.2 mi (12 km) from Degetau Plaza, Ponce.	11.9 (30.7)	3/13/90	1130	5.02 (0.142)
				4/10/90	1050	4.06 (0.115)
50114150	Quebrada Ausubo near Ponce, PR	Lat 18°03'09", long 66°35'08". Hydrologic unit 21010004. At Barrio Machuelo Arriba, 2.4 mi (3.9 km) west from Coto Laurel, 1.5 mi (2.4 km) south from Lago Cerrillos, and 3.8 mi (6.1 km) northeast from Degetau Plaza, Ponce.	1.18 (3.05)	3/12/90	1130	0.00
				4/10/90	1400	0.00

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 ft³/s (m³/s)
50114200	Río Bayagán near Ponce, PR	Lat 18°02'51", long 66°35'12". Hydrologic unit 21010004. At Barrio Machuelo Arriba, 2.5 mi (4.0 Km) west of Coto Laurel, 1.9 mi (3.0 km) south from Lago Cerrillos, and 3.0 mi (4.8 km) northeast from Degetau Plaza, Ponce.	3.82 (9.88)	3/12/90	1125	0.00
				4/10/90	1405	0.00
50114600	Río Bucaná at Ponce, PR	Lat 18°00'28", long 66°35'36". Hydrologic unit 21010004. At bridge on Hwy 1, 0.2 mi (0.3 km) east of intersection of Hwys 1 and 2, 1.5 mi (2.4 km) east of Degetau Plaza in Ponce, 3.1 mi (5.0 km) upstream from mouth.	27.3 (70.7)	3/16/90	0730	1.26 (0.036)
				4/10/90	1425	0.06 (0.002)
		Río Portugués basin				
50114900	Río Portugués near Tibes, PR	Lat 18°04'26", long 66°38'35". Hydrologic unit 21010004. At barrio Tibes, 0.5 mi (0.8 km) southwest from Cerro del Diablo, 6.0 mi (9.6 km) northeast from Peñuelas, and 6.2 mi (10 km) north from Ponce.	7.27 (18.8)	3/13/90	0910	2.94 (0.083)
				4/09/90	1120	3.61 (0.102)
50115400	Río Portugués near Ponce, PR	Lat 18°02'27", long 66°36'41". Hydrologic unit 21010004. At barrio Portugués, 1.0 mi (1.6 km) west from Jardines de Ponce, 0.4 mi (0.6 km) north from confluence with Río Chiquito, and 1.9 mi (3.0 km) north from Degetau Plaza, Ponce.	12.2 (31.6)	3/13/90	1030	1.59 (0.045)
				4/09/90	1315	2.45 (0.069)
50115450	Río Chiquito at Portugués, PR	Lat 18°04'11", long 66°37'00". Hydrologic unit 21010004. At barrio Portugués, 2.1 mi (3.4 km) northwest from Jardines de Ponce, 1.7 mi (2.7 km) southwest from Pico Pinto, and 2.8 mi (4.5 km) north from Degetau Plaza, Ponce.	3.12 (8.09)	3/13/90	1140	0.15 (0.004)
				4/09/90	1235	0.09 (0.002)
50115600	Río Chiquito near Ponce, PR	Lat 18°02'37", long 66°36'31'. Hydrologic unit 21010004. At barrio Portugués, 0.6 mi (1.0 km) west from Jardines de Ponce, 0.8 mi (1.3 km) South from Cerro El Gato, and 2.1 mi (3.4 km) north from Degetau Plaza, Ponce.	4.43 (11.5)	3/13/90	1210	0.09 (0.002)
				4/09/90	1045	0.00
50116500	Río Portugués at Hwy 2 By-Pass at Ponce, PR	Lat 17°59'52", long 66°36'52". Hydrologic unit 21010004. At bridge on Hwy 2 By-Pass, 1.1 mi (1.8 km) south of Degetau Plaza, and 2.0 mi (3.2 km) upstream from mouth.	20.5 (53.1)	3/12/90	1045	not
				4/09/90	1025	measured
		Río Matilde basin				
50116800	Río Cañas at Magueyes PR	Lat 18°04'26", long 66°39'07". Hydrologic unit 21010004. At barrio Magueyes, 2.4 mi (3.9 km) southwest from Cerro del Diablo, 4.7 mi (7.6 km) northwest from Peñuelas, and (6.4 km) northwest from Ponce.	4.00 (10.3)	3/12/90	0805	1.53 (0.043)
				4/09/90	0825	1.19 (0.034)
50116970	Río Cañas downstream from Las Américas Ave., PR	Lat 18°00'37", long 66°38'26". Hydrologic unit 21010004. 0.5 mi (0.8 km) upstream from confluence with Río Pastillo.	8.50 (22.0)	3/12/90	0935	4.77 (0.135)
				4/09/90	0940	5.98 (0.169)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS ft³/s (m³/s)
50117800	Río Pastillo at Pastillo, PR	Lat 18°02'53", long 66°39'52". Hydrologic unit 21010004. Barrio Quebrada Limón at Hwy 502, 0.8 mi (1.3 km) northwest of Hwy's 502 and 132 intersection, 0.9 mi (1.4 km) west of Magueyes and 3.1 mi (5.0 km) northwest from Ponce.	4.32 (11.2)	3/12/90	0940	0.26 (0.007)
				4/13/90	1320	0.07 (0.002)
50118300	Río Pastillo near Ponce, PR	Lat 18°00'31", long 66°38'39". Hydrologic unit 21010004. Canas Urbano, on bridge, 0.7 mi (1.1 km) downstream from Jardines del Caribe and 1.1 mi (1.7 km) west of Escuela Dr. Pila, Ponce.	10.6 (27.6)	3/12/90	0915	0.00
				4/13/90	1300	0.00
50119000	Río Matilde at Ponce, PR	Lat 17°59'53", long 66°38'06". Hydrologic unit 21010004. At Hwy 2, 1.1 mi (1.8 km) upstream from mouth.	20.5 (53.2)	3/12/90	0825	6.24 (0.177)
				4/13/90	1205	3.57 (0.101)
50119200	Quebrada del Agua at Playa de Ponce, PR	Lat 17°59'13", long 66°38'22". Hydrologic unit 21010004. 700 ft (213 m) upstream from confluence with Río Matilde.	6.45 (16.7)	3/12/90	1315	0.00
				4/13/90	1155	0.00
		Río Tallaboa basin				
50120550	Río Tallaboa near Quebrada Ceiba, PR	Lat 18°04'18", long 66°42'03". Hydrologic unit 21010004. Barrio Quebrada Ceiba, on bridge, 0.06 mi (0.1 km) west from Hwy 391, 1.2 mi (2.0 km) north from Tallaboa Alta and 1.7 mi (2.7 km) northeast from Peñuelas Plaza.	8.41 (21.8)	3/12/90	1055	3.13 (0.089)
				4/13/90	1425	2.51 (0.071)
50120700	Río Guayanés near Peñuelas, PR	Lat 18°04'03", long 66°43'36". Hydrologic unit 21010004. Barrio Jaguas, on Hwy 386, 0.2 mi (0.4 km) northeast from Hwy's 386 and 132 intersection, 0.6 mi (1.0 km) northeast from Peñuelas Plaza.	7.29 (18.9)	3/12/90	1305	1.15 (0.032)
				4/13/90	0955	0.94 (0.027)
50121000	Río Tallaboa at Peñuelas, PR	Lat 18°03'02", long 66°43'19". Hydrologic unit 21010004. 350 ft (106.7 m) downstream from Hwy 132 bridge, 0.6 mi (1.0 km) south of Peñuelas.	24.2 (62.7)	3/12/90	1140	5.03 (0.142)
				4/13/90	0850	3.58 (0.101)
50122000	Río Tallaboa at Tallaboa, PR	Lat 18°00'31", long 66°43'49". Hydrologic unit 21010004. At bridge at Hacienda Dolores, 700 ft (213 m) upstream from Hwy 127, 0.8 mi (1.3 km) northwest of Tallaboa, and 7.6 mi (12.2 km) west of Degetau Plaza, Ponce.	31.6 (81.7)	3/12/90	1410	3.65 (0.103)
				4/13/90	1055	2.75 (0.078)
		Río Macaná basin				
50122500	Río Macaná near Peñuelas, PR	Lat 18°03'40", long 66°46'12". Hydrologic unit 21010004. Barrio Macaná at Hwy's 131 and 132 intersection, 5.5 mi (8.8 km) northeast from Yauco, and 2.8 (4.5 km) northeast from Guayanilla Plaza.	2.77 (7.17)	3/13/90	0935	0.26 (0.007)
				4/14/90	0925	0.25 (0.007)
50122900	Río Macaná at Magas Arriba, PR	Lat 18°01'00", long 66°45'57". Hydrologic unit 21010004. 1.8 mi (2.8 km) east of Guayanilla Plaza, 200 ft (60 m) upstream from bridge on Hwy 2, and 0.6 mi (1.0 km) upstream from mouth.	8.98 (23.2)	3/13/90	0745	0.00
				4/14/90	0900	0.00

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS ft³/s (m³/s)
		Río Guayanilla basin				
50123100	Río Guayanilla at Pasto, PR	Lat 18°05'53", long 66°47'38". Hydrologic unit 21010004. At barrio Pasto, 1.8 mi (2.9 km) southeast from Pico Rodadero, 1.8 mi (2.9 km) west from Cerro El Peligro, and 5.2 mi (8.4 km) north from Guayanilla Plaza.	6.45 (16.7)	3/13/90	1040	2.88 (0.082)
				4/14/90	1010	2.11 (0.066)
50124600	Río Guayanilla near Central Rufina, PR	Lat 18°01'00", long 66°47'01". Hydrologic unit 21010004. At Guayanilla, 1.2 mi (1.9 km) upstream from mouth, 0.8 mi (1.3 km) northeast from Central Rufina, and 0.6 mi (1.0 km) southeast from Guayanilla Plaza.	23.0 (59.5)	3/13/90	0840	0.18 (0.005)
				4/14/90	0820	0.04 (0.001)
		Río Yauco basin				
50125000	Río Yauco near Lago Lucchetti Damsite, PR	Lat 18°06'40", long 66°52'38". Hydrologic unit 21010004. Barrio Vegas, 300 ft (91 m) from mouth, 1.5 mi (2.4 km) northwest from spillway, and 5.4 mi (8.7 km) northwest from Yauco Plaza.	8.05 (20.8)	3/13/90	1250	2.78 (0.079)
				4/14/90	1310	1.52 (0.043)
50125500	Río Naranjo near Lago Lucchetti Damsite, PR	Lat 18°06'20", long 66°51'37". Hydrologic unit 21010004. Barrio Naranjo at Hwy 128, 0.3 mi (0.5 km) from mouth and 0.9 mi (1.4 km) from spillway.	1.92 (4.97)	3/13/90	1150	0.10 (0.003)
				4/14/90	1240	0.09 (0.002)
50125600	Quebrada Grande near Lago Lucchetti Damsite, PR	Lat 18°06'20", long 66°50'56". Hydrologic unit 21010004. Barrio Naranjo, 0.6 mi (1.0 km) west from Hacienda Roig, 0.9 mi (1.4 km) from mouth, and 1.3 mi (2.1 km) from spillway.	2.83 (7.33)	3/13/90	1420	0.39 (0.011)
				4/14/90	1205	0.41 (0.012)
50125860	Río Duey at Duey, PR	Lat 18°05'44", long 66°50'06". Hydrologic unit 21010004. Barrio Duey, 0.8 mi (1.3 km) southeast from Hacienda Roig, 1.2 mi (1.9 km) east from Lago Lucchetti, and 4.1 mi (6.6 km) from Yauco Plaza.	4.55 (11.8)	3/14/90	1040	2.81 (0.080)
				4/14/90	1120	1.91 (0.054)
		Río Loco basin				
50128450	Quebrada Grande upstream from Lago Loco, PR	Lat 18°03'45", long 66°53'10". Hydrologic unit 21010004. Barrio Almácigo Alto, 800 ft (244 m) upstream from confluene with Río Loco, 1.2 mi (1.9 km) north from spillway, and 3.0 mi (4.8 km) northwest from Yauco Plaza.	2.72 (7.03)	3/15/90	1020	0.53 (0.015)
				4/16/90	0920	0.29 (0.008)
50128500	Río Loco upstream from Lago Loco, PR	Lat 18°03'22", long 66°53'08". Hydrologic unit 21010004. At barrio Susúa Alta, 0.2 mi (0.3 km) upstream from Lago Loco, 1.9 mi (3.0 km) northeast from Cerro La Torre, and 5.2 mi (8.4 km) southeast from Sabana Grande Plaza.	7.66 (19.8)	3/15/90	0915	0.89 (0.025)
				4/16/90	0850	0.17 (0.005)
50129200	Quebrada Susúa at Palomas, PR	Lat 18°01'19", long 66°52'28". Hydrologic unit 21010004. At bridge on Hwy 2, 0.5 mi (0.8 km) north of Palomas, and 1.9 mi (3.1 km) southwest of Yauco.	3.23 (8.37)	3/15/90	0725	0.25 (0.007)
				4/15/90	1220	0.16 (0.004)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS ft³/s (m³/s)
		Río Guanajibo basin				
50130400	Río Grande near Sabana Grande, PR	Lat 18°05'53", long 66°56'18". Hydrologic unit 21010003. Barrio Rín at Hwy 364, 0.5 mi (0.8 km) northeast from Capilla del Pozo de la Virgen, and 1.8 mi (2.9 km) northeast from Sabana Grande Plaza.	6.45 (16.7)	3/12/90	----	0.00
				4/09/90	0855	0.00
50130500	Río Guanajibo at La Pica, PR	Lat 18°04'11", long 66°57'29". Hydrologic unit 21010003. Barrio Rayo at Hwy 2, 1.0 mi (1.6 km) north from Cerro de de los Bonelli, and 0.8 mi (1.3 km) southeast from Sabana Grande Plaza.	14.7 (38.2)	3/12/90	0950	0.62 (0.018)
				4/09/90	0935	0.35 (0.010)
50130800	Río Flores near Sabana Grande,PR	Lat 18°04'02", long 66°58'25". Hydrologic unit 21010003. Barrio Santana at Hwy 2, 0.2 mi (0.3 km) east from Hwy's 2 and 363 intersection, and 0.9 mi (1.4 km) west from Sabana Grande Plaza.	1.98 (5.13)	3/12/90	----	0.00
				4/09/90	1020	0.00
50131010	Río Cruces near Sabana Grande, PR	Lat 18°04'54", long 66°58'37". Hydrologic unit 21010003. Barrio Santana at Hwy 2, 400 ft (122 m) west from Hwy 2 and 363 intersection, 1.1 mi (1.8 km) west from Sabana Grande Plaza.	4.68 (12.1)	3/12/90	----	1.03 (0.029)
				4/09/90	1025	0.89 (0.025)
50131800	Río Cupeyes near San Germán, PR	Lat 18°04'48", long 67°00'24". Hydrologic unit 21010003. Barrio Guamá, 0.2 mi (0.3 km) downstream from Hwy 2, and 2.5 mi (4.0 km) east from San Germán Plaza.	4.16 (10.8)	3/14/90	----	2.67 (0.076)
				4/09/90	1140	1.84 (0.052)
50132010	Río Guanajibo below San Germán, PR	Lat 18°05'28", long 67°02'38". Hydrologic unit 21010003. 0.5 mi (0.8 km) north of San Germán Plaza and 1500 ft (457m) downstream from Hwy 360 bridge.	36.1 (93.5)	3/16/90	0815	12.5 (0.354)
				4/09/90	0825	5.52 (0.156)
50133000	Río Caín near San Germán, PR	Lat 18°06'06", long 67°02'26". Hydrologic unit 21010003. Barrio Caín, at Hwy 361, 600 ft (183 m) upstream from Hwy 2, and 1.3 mi (2.1 km) north from San Germán Plaza.	6.32 (16.4)	3/14/90	----	2.91 (0.082)
				4/09/90	1240	0.32 (0.009)
50133800	Río Duey near Rosario, PR	Lat 18°08'57", long 67°03'15". Hydrologic unit 21010003. Barrio Duey Alto, 200 ft (61 m) downstream from Hwy 348, 100 ft (30 m) downstream from confluence with Río Nueve Pasos, and 2.0 mi (3.2 km) southeast from Rosario Plaza.	4.17 (10.8)	3/14/90	0925	2.91 (0.082)
				4/10/90	1335	1.43 (0.040)
50134600	Río Hoconuco near San Germán, PR	Lat 18°07'08", long 67°04'27". Hydrologic unit 21010003. Barrio Hoconuco Bajo, 0.2 mi (0.3 km) downstream from Hwy 358, 200 ft upstream from confluence with Río Duey, and 3.2 mi (5.1 km) northwest from San Germán Plaza.	5.18 (13.4)	3/14/90	not measured	
				4/10/10	0945	0.66 (0.019)
50135000	Río Hoconuco (Duey) near San Germán, PR	Lat 18°07'10", long 67°04'48'. Hydrologic unit 21010003. Barrio Duey Bajo, 200 ft (61 m) downstream from Hwy 2, and 3.4 mi (5.5 km) northwest from San Germán Plaza..	13.2 (34.3)	3/14/90	1240	6.73 (0.190)
				4/10/90	1020	2.29 (0.065)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS ft³/s (m³/s)
50135700	Río Maricao at Maricao, PR	Lat 18°11'22", long 66°59'37". Hydrologic unit 21010003. Barrio Maricao Afuera, at Hwy 357, 0.4 mi (0.6 km) east from Hacienda San Antonio, and 1.0 mi (1.6 km) northwest from Maricao Plaza.	3.80 (9.85)	3/14/90	0715	4.01 (0.114)
				4/10/90	1320	2.89 (0.082)
50135800	Río Rosario at Las Vegas, PR	Lat 18°11'13", long 67°01'52". Hydrologic unit 21010003. Barrio Montoso, at Hwy 119, 0.1 mi (0.2 km) southeast from intersection with Hwy 105, and 3.6 (5.8 km) northeast from Rosario Plaza.	8.33 (21.6)	3/14/90	----	11.7 (0.331)
				4/10/90	1210	6.46 (0.183)
50136400	Río Rosario near Hormigueros, PR	Lat 18°09'36", long 67°05'08". Hydrologic unit 21010003. At Bridge on Hwy 348, 0.5 mi (0.8 km) Southwest of Rosario Plaza.	18.3 (47.4)	3/12/90	1240	15.1 (0.428)
				4/10/90	1345	12.5 (0.354)
50136500	Río Rosario at Hwy 2 near Hormigueros, PR	Lat 18°07'35", long 67°05'39". Hydrologic unit 21010003. Barrio Benavente, at Hwy 2, 2.7 mi (4.3 km) southwest from Rosario, and 2.5 mi (4.0 km) southeast from Hormigueros Plaza.	22.8 (58.9)	3/14/90	0815	12.8 (0.362)
				4/10/90	1140	11.2 (0.317)
50137800	Río Viejo near Cabo Rojo, PR	Lat 18°06'04", long 67°07'48". Hydrologic unit 21010003. Barrio Bajura, at Hwy 103, 1.0 mi (1.6 km) northeast from intersection with Hwy 102, and 1.4 mi (2.2 km) from Cabo Rojo Plaza.	12.3 (31.9)	3/13/90	not measured	
				4/11/90	0745	3.12 (0.088)
		Quebrada Maga basin				
50138100	Quebrada Maga near Guanajibo, PR	Lat 18°09'18", long 67°08'07" Hydrologic unit 21010003. Barrio Guanajibo, 0.3 mi (0.5 km) southeast from Mayagüez Mall, and 1.2 mi (1.9 km) northwest from Hormigueros Plaza.	0.76 (1.96)	3/13/90	----	0.00
				4/11/90	1445	0.00
		Río Hondo basin				
50138200	Río Hondo near Guanajibo, PR	Lat 18°09'45", long 67°09'00". Hydrologic unit 21010003. Barrio Guanajibo, at Hwy 114, 1.8 mi (2.9 km) east from Cerro Cornelia, and 2.0 mi (3.2 km) northwest from Hormigueros Plaza.	3.16 (8.18)	3/13/90	1025	0.80 (0.023)
				4/11/90	0845	0.29 (0.008)
		Quebrada Sábalos basin				
50138300	Quebrada Sábalos near Mayagüez, PR	Lat 18°10'47", long 67°08'58". Hydrologic unit 21010003. Barrio Sábalos, at Hwy 2R, 2.9 mi (4.7 km) northwest from Hormigueros, and 1.7 mi (2.7 km) southwest from Mayagüez Plaza.	2.47 (6.40)	3/13/90	1100	0.38 (0.011)
				4/11/90	0930	0.43 (0.012)
		Río Yagüés basin				
50138900	Río Yagüés at Balboa, PR	Lat 18°12'13", long 67°07'55". Hydrologic unit 21010003. 1200 ft (366 m) upstream from bridge on Balboa St. and 1.6 mi (2.6 km) upstream from mouth.	12.2 (31.6)	3/13/90	1245	3.45 (0.098)
				4/11/90	1015	4.16 (0.118)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS ft³/s (m³/s)
		Río Grande de Añasco basin				
50140300	Río Guilarte near Adjuntas, PR	Lat 18°10'58", long 66°46'09". Hydrologic unit 21010003. Barrio Guilarte at Hwy 131, 0.4 mi (0.6 km) southwest from Hwy's 130 and 131 intersection, and 4.3 mi (6.9 km) east from Castañer.	2.62 (6.78)	3/15/90	1135	1.61 (0.046)
				4/12/90	1515	1.44 (0.041)
50140800	Río Limani near Yahuecas, PR	Lat 18°12'01", long 66°47'50". Hydrologic unit 21010003. Barrio Yahuecas, 200 ft (61 m) upstream with Río Guilarte, and 500 ft (152 m) southwest from Hwy's 129 and 135 intersection.	7.38 (19.1)	3/15/90	not measured	
				4/12/90	1350	2.64 (0.075)
50141400	Río Guayo at Guayo, PR	Lat 18°10'49", long 66°49'40". Hydrologic unit 21010003. Barrio Guayo at Hwy 131, 1.0 mi (1.6 km) upstream from Lago Guayo, 0.4 mi (0.6 km) southeast from Castañer.	4.15 (10.7)	3/15/90	0900	1.70 (0.048)
				4/12/90	1225	1.38 0.039)
50142000	Río Blanco at La Torre, PR	Lat 14°18'34", long 66°51'49". Hydrologic unit 21010003. Barrio La Torre, at Hwy 128, 2.7 mi (4.3 km) northwest from Lago Guayo, and 4.5 mi (7.2 km) northwest from Castañer.	33.2 (86.0)	3/15/90	1155	4.03 (0.114)
				4/13/90	1440	1.73 (0.049)
50142100	Quebrada de Los Plátanos at Marisol, PR	Lat 18°15'41", long 66°51'22". Hydrologic unit 21010003. Barrio Marisol, at Hwy 128, 0.3 mi (0.5 km) south from Hwy's 128 and 129 intersection.	0.57 (1.47)	3/15/90	1305	0.26 (0.007)
				4/13/90	1555	0.15 (0.004)
50142300	Río Prieto at Indiera Alta, PR	Lat 18°10'07", long 66°51'49". Hydrologic unit 21010003. Barrio Indiera Alta, at Hwy 128, 2.3 mi (3.7 km) southwest from Lago Guayo, and 2.2 mi (3.5 km) southwest from Castañer.	7.47 (19.3)	3/15/90	0855	5.43 (0.154)
				4/13/90	1245	2.16 (0.061)
50142710	Río Prieto at Río Prieto, PR	Lat 18°12'06', long 66°53'05". Hydrologic unit 21010003. Barrio Río Prieto, at Hwy 431, 3.7 mi (5.6 km) west from Lago Guayo, and 6.4 mi (10 km) northeast from Maricao Plaza.	15.1 (39.0)	3/15/90	1030	0.92 (0.026)
				4/12/90	----	0.65 (0.018)
50142900	Río Prieto at Pezuela, PR	Lat 18°15'17", long 66°54'25". Hydrologic unit 21010003. Barrio Pezuela, 400 ft (122 m) upstream from confluence with Río Grande de Añasco, and 3.4 mi (5.5 km) southwest from Lares Plaza.	26.1 (67.7)	3/15/90	1620	7.61 (0.216)
				4/11/90	----	5.61 (0.159)
50143000	Río Grande de Añasco near Lares, PR	Lat 18°15'28", long 66°55'05". Hydrologic unit 21010003. At bridge on Hwy 124, 0.7 mi (1.1 km) from confluence with Río Blanco and Río Prieto, and 3.7 mi (6.0 km) southwest from Lares Plaza.	26.3 (68.1)	3/15/90	1450	17.2 (0.487)
				4/11/90	----	9.08 (0.257)
				5/03/90	----	8.46 (0.240)
50143104	Río Lajas near Maricao, PR	Lat 18°10'54", long 66°57'39". Hydroloigc unit 21010003. Barrio Indiera Fría, at Hwy 105, 0.3 mi (0.5 km) upstream from confluence with Río Guaba, 0.7 mi (1.1 km) Maricao Plaza.	5.79 (15.0)	3/14/90	0730	6.36 (0.180)
				4/12/90	----	2.61 (0.074)

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 ft³/s (m³/s)
50143108	Río Guaba near Maricao, PR	Lat 18°11'02", long 66°57'30". Hydrologic unit 21010003. Barrio Bucarabones, at Hwy 105, 200 ft (61 m) upstream from confluence with Río Lajas, and 1.5 mi (2.4 km) from Maricao Plaza.	4.95 (12.8)	3/14/90	0840	4.42 (0.125)
				4/12/90	----	3.06 (0.087)
50143150	Río Bucarabones near Las Marías, PR	Lat 18°13'27", long 66°56'41". Hydrologic unit 21010003. Barrio Bucarabones, 400 ft (122 m) upstream from confluence with Río Guaba, and 3.7 mi (5.6 km) northeast from Maricao Plaza.	9.19 (23.8)	3/14/90	1330	0.69 (0.020)
				4/11/90	----	3.88 (0.110)
50143200	Río Guaba near Las Marías, PR	Lat 18°13'37", long 66°56'33". Hydrologic unit 21010003. Barrio Cerrote, at Hwy 124, 0.3 mi (0.5 km) downstream from confluence with Río Bucarabones, and 3.9 mi (6.3 km) northeast from Maricao Plaza.	25.4 (65.7)	3/14/90	1155	18.8 (0.532)
				4/11/90	----	14.2 (0.402)
50143400	Quebrada Las Cañas at Perchas, PR	Lat 18°16'23", long 66°56'36". Hydrologic unit 21010003. Barrio Perchas No 2, at Hwy 434, 800 ft (244 m) upstream from confluence with Río Grande de Añnasco, and 3.5 mi (5.6 km) from Las Marías Plaza.	3.08 (7.98)	3/15/90	1820	2.50 (0.071)
				4/13/90	1100	1.12 (0.032)
50143500	Río Mayagüecilla at Las Marías, PR	Lat 18°14'50", long 66°59'05". Hydrologic unit 21010003. Barrio Palma Escrita, at Hwy 124, 2.0 mi (3.2 km) upstream from confluence with Río Grande de Añasco, and 0.7 mi (1.1 km) southeast fron Las Marías Plaza.	3.30 (8.54)	3/14/90	1035	1.26 (0.036)
				4/11/90	----	1.46 (0.041)
50143800	Río Grande de Añasco near Las Marías, PR	Lat 18°16'41", long 66°58'48". Hydrologic unit 21010003. Barrio Guacio, at Hwy 119, 1.8 mi (2.9 km) northeast from Las Marías Plaza.	116 (299)	3/14/90	1615	71.6 (2.03)
				4/13/90	0820	35.6 (1.01)
50143900	Río Arenas at Las Marías, PR	Lat 18°15'10", long 66°59'57". Hydrologic unit 21010003. Barrio Maravillas, at Hwy 119, 0.5 mi (0.8 km) southwest from Las Marías Plaza.	2.79 (7.22)	3/14/90	1440	3.62 (0.102)
				4/11/90	----	2.40 (0.068)
50144200	Quebrada Cerro Gordo near Cerro Gordo, PR	Lat 18°17'09", long 66°04'09". Hydrologic unit 21010003. Barrio Corcovada, 600 (183 m) upstream from confluence with Río Grande de Añasco, and 5.7 mi (9.2 km) from Las Marías, and 4.8 mi (7.7 km) east from Añasco Plaza.	2.66 (6.89)	3/13/90	1330	2.09 (0.059)
				4/10/90	1440	1.32 (0.037)
50144900	Río Humata near El Espino, PR	Lat 18°17'18", long 67°06'24'. Hydrologic unit 21010003. Barrio Carreras, at Hwy 109, 0.3 mi (0.5 km) upstream from confluence with Río Grande de Añasco, and 2.4 mi (3.9 km) east from Añasco Plaza.	4.86 (12.6)	3/13/90	1130	2.43 (0.069)
				4/10/90	1115	1.61 (0.046)
50145000	Río Grande de Añasco at El Espino, PR	Lat 18°16'50", long 67°06'46". Hydrologic unit 21010003. Barrio Espino, at Hwy 406, 400 ft (249 m) east from intersection with Hwy 109, and 1.9 mi (3.1 km) from Añasco Plaza.	108 (280)-384	3/13/90	1025	106 (3.00)
				4/10/90	0931	58.0 (1.64)

Low-flow partial-record stations--Continued

STATION NUMBER	STATION NAME	LOCATION AND BASIN	DRAINAGE AREA mi² (km²)	DATE	TIME	STREAM FLOWS ft³/s (m³/s)
50145400	Río Casei near Mayagüez, PR	Lat 18°15'18", long 67°04'48". Hydrologic unit 21010003. Barrio Legüísamo, at Hwy 108, 4.6 mi (7.4 km) northeast from Mayaüéz, and 4.5 mi (7.2 km) southeast from Mayagüez Plaza.	8.17 (21.2)	3/13/90	1500	6.86 (0.194)
				4/11/90	0645	5.60 (0.159)
50146000	Río Grande de Añasco at Añasco Arriba, PR	Lat 18°16'31", long 66°07'37". Hydrologic unit 21010003. 0.8 mi (1.2 km) south of Añasco and 3.0 mi (4.8 km) upstream from mouth.	161 (416)	3/13/90	0820	102 (2.89)
				4/10/90	0800	28.4 (0.804)
50146002	Río Cañas at Río Cañas Arriba, PR	Lat 18°13'37", long 67°04'01". Hydrologic unit 21010003. Barrio Cañas Arriba, at Hwy 354, 0.2 mi (0.3 km) south from intersection with Hwy 355, and 5.1 mi (8.2 km) from Mayagüez Plaza.	3.58 (9.26)	3/13/90	1610	2.41 (0.068)
				4/12/90	0930	2.45 (0.069)
50146005	Río Cañas at Río Cañas Abajo, PR	Lat 18°14'38", long 67°07'17". Hydrologic unit, 21010003. Barrio Río Cañas Abajo, at Hwy 108, and 3.1 mi (5.0 km) northeast from Mayagüez Plaza.	11.2 (29.1)	3/13/90	1727	1.99 (0.056)
				4/12/90	----	3.03 (0.086)
50146075	Río Dagüey near Añasco, PR	Lat 18°17'19", long 67°08'08". Hydrologic unit 21010003. Barrio Carreras, at Hwy 405, 100 ft (30 m) east from intresection with Hwy 404, and 0.5 mi (0.8 m) northeast from Mayagüez Plaza.	1.06 (2.75)	3/13/90	0915	0.34 (0.010)
				4/10/90	1455	0.11 (0.003)
		Río Grande basin				
50146200	Río Grande near Rincón, PR	Lat 18°22'06", long 67°13'56". Hydrologic unit 21010003. At bridge on Hwy 115, 1.2 mi (1.9 km) upstream from mouth, and 2.2 mi (3.5 km) northeast of Rincón.	2.83 (7.33)	3/12/90	1315	0.53 (0.015)
				4/09/90	1000	0.19 (0.005)
		Río Ingenio basin				
50146300	Río Ingenio at Jagüey, PR	Lat 18°20'36", long 67°11'52". Hydrologic unit 21010003. Bario Jagüey, at unmunbered Hwy, 0.3 mi (0.5 km) from Hwy 411 intersection, and 2.7 mi (4.3 km) southwest from Aguada Plaza.	3.18 (8.22)	3/12/90	1535	0.92 (0.026)
				4/09/90	1235	0.96 (0.027)
50146400	Río Ingenio near Aguada, PR	Lat 18°22'48", long 67°12'35". Hydrologic unit 21010003. At bridge on unimproved road, 0.3 mi (0.5 km) upstream from confluence with Río Culebra, 0.7 mi (1.1 km) upstream from mouth of Río Guayabo, and 1.4 mi (2.3 km) west of Aguada.	7.00 (18.1)	3/12/90	1230	0.05 (0.001)
				4/09/90	0850	1.20 (0.034)
		Río Culebra basin				
50146600	Río Culebra near Aguada, PR	Lat 18°22'26", long 67°11'35". Hydrologic unit 21010003. At bridge on Hwy 411, 0.6 mi (1.0 km) south of Aguada, 1.5 mi (2.4 km) upstream from confluence with Río Ingenio, and 1.9 mi (3.1 km) upstream from mouth of Río Guayabo.	3.75 (9.70)	3/12/90	1430	0.95 (0.027)
				4/09/90	1120	0.70 (0.020)

DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS

The following table contains annual maximum discharge for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather record, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained, and discharge measurements may have been made for purposes of establishing the stage-discharge relation, but these are not published herein. The years given in the period of record represent years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1990

Station number	Station name	Location	Drainage area mi² (km²)	Period of record	Annual maximum Date	Annual maximum Gage height ft (m)	Annual maximum Discharge ft³/s (m³/s)
		Río Salinas Basin					
50100600	Quebrada Yeguas near Salinas, PR	Lat 18°01'57", long 66°13'30", Hydrologic Unit 21010004, on right bank, 350 ft (107 m) upstream bridge on Highway 712, 1.4 mi (2.2 km) southwest of La Plena, 1.6 mi (2.6 km) southeast of Camp Santiago and 1.7 mi (2.7 km) northwest of Guayama municipal limit.	2.66 (6.89)	1989-90		<6.88 (< 2.097)	<87.5 (<2.478)


Water-Quality at
Partial-Record
Stations in
Puerto
Rico

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

Water-quality partial-record stations are particcular 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 1989 TO SEPTEMBER 1990

DATE	TIME	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (IN)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)
RIO GUAJATACA BASIN									
50010720 LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS,PR (LAT 18°22'05"N LONG 066°54'36"W)									
NOV 1989									
20...	0925	1.00	325	7.60	28.5	84	8.2	105	K3
MAR 1990									
26...	1135	1.00	310	7.90	27.5	31	10.7	134	106
JUL									
19...	0930	1.00	277	7.20	29.5	87	8.6	114	84
RIO GRANDE DE ARECIBO BASIN									
50025110 LAGO DOS BOCAS NO.3 AT WEST BRANCH NR UTUADO,PR (LAT 18°19'15"N LONG 066°40'11"W)									
NOV 1989									
16...	0920	1.00	225	7.60	27.0	26	11.1	138	58
MAR 1990									
28...	0905	1.00	248	7.90	27.5	37	11.0	138	40
JUL									
16...	0915	1.00	231	--	30.0	56	6.5	89	124
RIO DE LA PLATA BASIN									
50039900 LAGO CARITE NO.3 ON RIO DE LA PLATA NR CAYEY,PR (LAT 18°05'04"N LONG 066°06'03"W)									
NOV 1989									
17...	0815	1.00	105	7.50	26.1	34	9.1	118	K5
MAR 1990									
06...	0850	1.00	114	7.10	23.3	66	8.7	98	55
JUL									
13...	0855	1.00	111	7.90	27.5	24	10.4	138	68
50044400 LAGO LA PLATA NO.5 NR MOUTH NR NARANJITO, PR (LAT 18°19'33"N LONG 066°12'28"W)									
NOV 1989									
15...	0825	1.00	384	8.00	26.9	16	14.1	176	54
MAR 1990									
22...	0910	1.00	288	8.10	26.3	22	15.2	188	28
JUL									
11...	0850	1.00	351	--	29.0	24	6.2	80	220
RIO GRANDE DE LOIZA BASIN									
50057500 LAGO LOIZA NO.4 NR MOUTH NR CAGUAS, PR (LAT 18°16'51"N LONG 066°00'35"W)									
NOV 1989									
14...	0850	1.00	336	7.30	28.2	19	8.3	105	K770
MAR 1990									
21...	1130	1.00	294	7.30	27.2	22	6.2	78	550
JUL									
12...	0915	1.00	284	--	30.5	24	4.3	56	K860

K = non-ideal count

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)
RIO GUAJATACA BASIN--Continued								
50010720 LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS,PR (LAT 18°22'05"N LONG 066°54'36"W)								
NOV 1989								
20...	K8	140	10	--	<0.01	<0.10	0.02	0.38
MAR 1990								
26...	K12	160	27	0.18	0.02	0.20	<0.01	--
JUL								
19...	20	110	8	--	<0.01	<0.10	0.02	0.58
RIO GRANDE DE ARECIBO BASIN--Continued								
50025110 LAGO DOS BOCAS NO.3 AT WEST BRANCH NR UTUADO,PR (LAT 18°19'15"N LONG 066°40'11"W)								
NOV 1989								
16...	48	73	5	0.78	0.02	0.80	0.01	0.29
MAR 1990								
28...	40	92	<1	0.38	0.02	0.40	0.03	0.37
JUL								
16...	45	88	<1	0.09	0.01	0.10	0.07	0.33
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 066°06'03"W)								
NOV 1989								
17...	K1	30	8	--	<0.01	<0.10	<0.01	--
MAR 1990								
06...	K18	38	6	--	<0.01	0.20	0.09	0.81
JUL								
13...	45	36	13	0.18	0.02	0.20	<0.01	--
50044400 LAGO LA PLATA NO.5 NR MOUTH NR NARANJITO, PR (LAT 18°19'33"N LONG 066°12'28"W)								
NOV 1989								
15...	36	148	9	0.38	0.02	0.40	0.01	0.39
MAR 1990								
22...	K15	100	12	0.86	0.04	0.90	<0.01	--
JUL								
11...	45	130	18	--	<0.01	<0.10	<0.01	--
RIO GRANDE DE LOIZA BASIN--Continued								
50057500 LAGO LOIZA NO.4 NR MOUTH NR CAGUAS, PR (LAT 18°16'51"N LONG 066°00'35"W)								
NOV 1989								
14...	92	100	<1	0.49	0.11	0.60	0.43	0.67
MAR 1990								
21...	54	85	26	0.59	0.11	0.70	1.3	0.0
JUL								
12...	80	89	8	0.28	0.12	0.40	1.3	0.80

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS N)	NITROGEN, TOTAL (MG/L AS NO3)	PHOSPHORUS TOTAL (MG/L AS P)	CHLOR-A PHYTOPLANKTON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTOPLANKTON CHROMO FLUOROM (UG/L)	PLANKTON BIOMASS ASH WT (MG/L)	PLANKTON BIOMASS DRY WT (MG/L)
RIO GUAJATACA BASIN--Continued								
50010720 LAGO GUAJATACA NO.3 NR MOUTH NR QUEBRADILLAS,PR (LAT 18°22'05"N LONG 066°54'36"W)								
NOV 1989								
20...	0.40	--	--	0.03	9.9	1.5	1.9	250
MAR 1990								
26...	0.50	0.70	3.1	0.03	8.9	0.80	8.4	260
JUL								
19...	0.60	--	--	0.07	3.0	0.10	3.0	240
RIO GRANDE DE ARECIBO BASIN--Continued								
50025110 LAGO DOS BOCAS NO.3 AT WEST BRANCH NR UTUADO,PR (LAT 18°19'15"N LONG 066°40'11"W)								
NOV 1989								
16...	0.30	1.1	4.9	0.05	20	0.70	1.2	220
MAR 1990								
28...	0.40	0.80	3.5	0.03	3.3	0.30	4.5	250
JUL								
16...	0.40	0.50	2.2	0.04	3.4	0.30	3.1	240
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 066°06'03"W)								
NOV 1989								
17...	<0.20	--	--	0.02	8.8	1.1	1.0	500
MAR 1990								
06...	0.90	1.1	4.9	0.02	13	2.6	5.4	250
JUL								
13...	0.40	0.60	2.7	0.04	17	5.9	6.1	250
50044400 LAGO LA PLATA NO.5 NR MOUTH NR NARANJITO, PR (LAT 18°19'33"N LONG 066°12'28"W)								
NOV 1989								
15...	0.40	0.80	3.5	0.17	52	1.5	2.4	280
MAR 1990								
22...	0.90	1.8	8.0	0.13	18	1.6	3.6	240
JUL								
11...	0.80	--	--	0.17	29	0.80	6.2	240
RIO GRANDE DE LOIZA BASIN--Continued								
50057500 LAGO LOIZA NO.4 NR MOUTH NR CAGUAS, PR (LAT 18°16'51"N LONG 066°00'35"W)								
NOV 1989								
14...	1.1	1.7	7.5	0.30	35	1.1	1.8	250
MAR 1990								
21...	0.80	1.5	6.6	0.47	4.0	<0.10	2.2	240
JUL								
12...	2.1	2.5	11	0.52	4.8	0.30	3.0	250

DATE	TIME	DEPTH AT SAMPLE LOCATION, TOTAL (FEET)	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (IN)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)
				RIO GUAJATACA BASIN--Continued						
50010790		LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18°23'56"N LONG 066°55'23"W)								
NOV 1989										
20...	1000	1.00	321	8.00	25.7	98	8.0	102	K4	K6
20...	1005	42.0	294	7.30	28.5	--	1.8	23	--	--
MAR 1990										
26...	1220	1.00	335	8.00	27.5	60	10.5	101	50	K2
26...	1215	64.0	291	7.70	25.6	--	2.5	30	--	--
JUL										
19...	1015	1.00	332	7.00	26.4	72	8.0	97	K5	K1
19...	1020	73.0	266	7.40	24.5	--	2.5	30	--	--
				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)								
NOV 1989										
21...	0930	1.00	137	7.50	24.0	60	8.6	110	K11	K3
21...	0945	80.0	153	7.00	21.5	--	2.0	26	--	--
MAR 1990										
29...	0935	1.00	155	7.70	23.3	58	7.7	96	--	--
29...	0945	60.0	162	7.90	22.1	--	--	55	--	--
JUL										
17...	1050	1.00	158	6.90	26.0	54	7.9	105	40	140
17...	1055	45.0	164	6.70	22.3	--	2.8	37	--	--
50027090		LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18°20'09"N LONG 066°40'04"W)								
NOV 1989										
16...	0950	1.00	208	7.90	26.8	45	9.6	120	40	K37
16...	0945	79.0	208	7.30	24.7	--	--	50	--	--
MAR 1990										
28...	0950	1.00	227	7.70	27.5	70	8.1	102	K5	K8
28...	0940	60.0	206	7.75	24.8	--	2.4	30	--	--
JUL										
16...	1015	1.00	228	7.00	30.5	54	6.4	85	220	63
16...	1030	81.0	233	6.70	62.5	--	1.1	14	--	--
				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)								
NOV 1989										
17...	0845	1.00	103	7.40	25.8	42	8.7	113	K4	K40
17...	0840	67.0	171	6.60	22.8	--	1.5	19	--	--
MAR 1990										
02...	0940	1.00	111	8.10	23.8	60	10.7	132	K2	K7
06...	0950	56.0	110	7.40	22.1	--	1.4	17	--	--
JUL										
13...	0935	1.00	114	8.60	28.0	24	9.9	133	--	64
13...	0925	52.0	162	7.20	22.5	--	2.2	30	--	--
50044950		LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18°20'18"N LONG 066°14'01"W)								
NOV 1989										
15...	0915	1.00	278	8.50	27.4	30	10.0	126	K8	110
15...	0910	38.0	180	7.20	24.0	--	1.2	15	--	--
MAR 1990										
22...	0810	1.00	290	7.80	25.3	34	8.2	100	K24	K38
22...	0800	81.0	264	7.50	23.6	--	2.4	29	--	--
JUL										
11...	0945	1.00	323	6.50	29.5	84	6.2	81	250	84
11...	0940	53.0	287	6.50	23.8	--	2.2	29	--	--
				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)								
NOV 1989										
14...	0805	1.00	321	7.20	27.5	24	3.6	45	K44	68
14...	0810	32.0	324	7.00	27.4	--	1.4	18	--	--
MAR 1990										
21...	1030	1.00	322	7.80	26.1	34	11.1	134	K230	K280
21...	1045	36.0	328	7.60	25.1	--	2.4	29	--	--
JUL										
12...	0830	1.00	283	6.1	30.0	40	7.3	95	K16	K14
12...	0835	20.0	287	6.3	29.3	--	2.6	34	--	--

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)
RIO GUAJATACA BASIN--Continued									
50010790 LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18°23'56"N LONG 066°55'23"W)									
NOV 1989									
20...	140	10	50	3.7	5.4	0.2	2.1	140	11
20...	150	35	55	3.8	5.6	0.2	2.1	123	11
MAR 1990									
26...	160	14	58	4.5	6.3	0.2	2.4	140	9.3
26...	140	28	51	4.2	6.2	0.2	2.3	140	10
JUL									
19...	150	1	54	3.9	6.2	0.2	2.0	170	9.4
19...	130	0	46	3.7	6.3	0.2	1.9	120	13
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)									
NOV 1989									
21...	61	0	18	3.8	6.7	0.4	1.8	54	3.0
21...	53	0	15	3.8	5.3	0.3	1.3	57	2.0
MAR 1990									
29...	65	2	18	4.8	6.3	0.3	1.1	55	2.2
29...	66	0	18	5.0	6.4	0.3	1.2	76	2.8
JUL									
17...	66	0	18	5.1	6.6	0.4	1.1	79	2.5
17...	66	0	18	5.0	6.5	0.3	1.3	77	<1.0
50027090 LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18°20'09"N LONG 066°40'04"W)									
NOV 1989									
16...	70	6	19	5.5	8.8	0.5	2.4	69	10
16...	74	4	20	5.9	10	0.5	1.9	64	14
MAR 1990									
28...	78	8	21	6.2	10	0.5	2.7	86	9.6
28...	92	6	25	7.2	12	0.5	2.5	76	14
JUL									
16...	90	2	24	7.4	12	0.5	2.1	84	15
16...	92	0	25	7.1	10	0.5	2.3	97	9.7
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)									
NOV 1989									
17...	38	1	8.6	4.0	7.8	0.6	1.0	30	<1.0
17...	26	0	4.6	3.6	8.8	0.7	0.70	67	2.0
MAR 1990									
02...	31	0	6.2	3.7	8.6	0.7	1.1	36	2.1
06...	30	0	6.1	3.6	8.9	0.7	0.90	33	2.7
JUL									
13...	30	0	6.0	3.7	9.4	0.7	0.90	33	2.6
13...	39	0	8.1	4.6	8.7	0.6	1.0	59	<1.0
50044950 LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18°20'18"N LONG 066°14'01"W)									
NOV 1989									
15...	63	7	15	6.2	12	0.7	2.9	92	10
15...	98	1	23	9.9	16	0.7	3.0	57	14
MAR 1990									
22...	100	10	22	10	15	0.5	2.7	110	13
22...	110	9	26	12	17	0.7	2.7	87	12
JUL									
11...	110	5	24	11	15	0.6	2.7	100	9.4
11...	120	0	27	13	19	0.8	1.7	120	15
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)									
NOV 1989									
14...	99	0	23	10	26	1	3.3	100	18
14...	100	1	24	9.7	26	1	3.2	100	14
MAR 1990									
21...	110	9	24	9.8	26	0.9	3.2	87	20
21...	100	10	24	9.8	26	1	3.0	90	19
JUL									
12...	90	2	21	9.0	25	1	3.3	96	17

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)
				RIO GUAJATACA BASIN--Continued					
50010790	LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18°23'56"N LONG 066°55'23"W)								
NOV 1989									
20...	7.3	0.20	7.5	165	11	--	<0.01	<0.10	0.01
20...	8.6	0.20	7.1	177	--	--	--	--	--
MAR 1990									
26...	11	<0.10	7.2	189	<1	--	0.01	<0.10	<0.01
26...	11	<0.10	5.8	174	--	--	--	--	--
JUL									
19...	11	0.40	7.3	188	8	--	<0.01	<0.10	0.02
19...	11	0.40	4.6	159	--	--	--	--	--
				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)								
NOV 1989									
21...	5.4	0.10	19	92	1	--	<0.01	<0.10	0.01
21...	5.1	0.10	19	86	--	--	--	--	--
MAR 1990									
29...	7.4	0.10	22	105	7	--	<0.01	<0.10	0.01
29...	7.0	0.20	22	105	--	--	--	--	--
JUL									
17...	7.6	<0.10	19	103	<1	--	0.01	<0.10	0.01
17...	7.4	<0.10	20	--	--	--	--	--	--
50027090	LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18°20'09"N LONG 066°40'04"W)								
NOV 1989									
16...	9.1	0.10	24	118	3	0.68	0.02	0.70	<0.01
16...	9.5	0.10	25	130	--	--	--	--	--
MAR 1990									
28...	12	0.10	23	128	<1	0.28	0.02	0.30	0.02
28...	14	<0.10	22	149	--	--	--	--	--
JUL									
16...	12	<0.10	21	145	3	--	<0.01	<0.10	0.05
16...	11	0.10	22	144	--	--	--	--	--
				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)								
NOV 1989									
17...	9.5	<0.10	20	65	2	--	0.01	<0.10	0.01
17...	9.0	0.10	18	--	--	--	--	--	--
MAR 1990									
02...	9.3	<0.10	17	72	24	--	<0.01	0.10	0.05
06...	11	<0.10	18	67	--	--	--	--	--
JUL									
13...	13	<0.10	20	73	51	0.08	0.02	0.10	0.02
13...	13	<0.10	18	--	--	--	--	--	--
50044950	LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18°20'18"N LONG 066°14'01"W)								
NOV 1989									
15...	14	0.10	19	111	6	0.29	0.01	0.30	<0.01
15...	16	0.10	18	156	--	--	--	--	--
MAR 1990									
22...	19	0.30	21	176	24	--	<0.01	<0.10	<0.01
22...	21	<0.10	20	--	--	--	--	--	--
JUL									
11...	21	<0.10	20	167	<1	--	<0.01	<0.10	<0.01
11...	24	0.50	21	193	--	--	--	--	--
				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)								
NOV 1989									
14...	44	0.10	25	210	<1	0.34	0.06	0.40	0.14
14...	23	0.10	25	186	--	--	--	--	--
MAR 1990									
21...	25	0.20	26	--	<1	0.43	0.07	0.50	0.21
21...	21	<0.10	25	186	--	--	--	--	--
JUL									
12...	25	0.10	25	178	1	0.13	0.07	0.20	0.06
12...	24	<0.10	26	177	--	--	--	--	--

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATION

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS TOTAL (MG/L AS P)	CHLOR-A PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	CHLOR-B PHYTO-PLANK-TON CHROMO FLUOROM (UG/L)	PLANK-TON BIOMASS ASH WT (MG/L)	PLANK-TON BIOMASS DRY WT (MG/L)
RIO GUAJATACA BASIN--Continued									
50010790 LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS,PR (LAT 18°23'56"N LONG 066°55'23"W)									
NOV 1989									
20...	0.39	0.40	--	--	0.01	4.1	0.30	0.70	240
20...	--	--	--	--	--	--	--	--	--
MAR 1990									
26...	0.59	0.40	--	--	0.01	3.5	0.10	4.4	250
26...	--	--	--	--	--	--	--	--	--
JUL									
19...	0.78	0.80	--	--	0.02	2.9	<0.10	5.7	490
19...	--	--	--	--	--	--	--	--	--
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)									
NOV 1989									
21...	0.29	0.30	--	--	0.02	4.4	0.30	0.70	250
21...	--	--	--	--	--	--	--	--	--
MAR 1990									
29...	0.19	0.20	--	--	<0.01	1.8	0.30	4.4	250
29...	--	--	--	--	--	--	--	--	--
JUL									
17...	0.59	0.60	--	--	0.01	2.9	0.10	3.6	240
17...	--	--	--	--	--	--	--	--	--
50027090 LAGO DOS BOCAS NO.1 NR DAM NR UTUADO,PR (LAT 18°20'09"N LONG 066°40'04"W)									
NOV 1989									
16...	--	0.30	1.0	4.4	0.02	12.0	<0.20	1.3	260
16...	--	--	--	--	--	--	--	--	--
MAR 1990									
28...	0.28	0.30	0.60	2.7	0.02	5.0	0.40	4.0	250
28...	--	--	--	--	--	--	--	--	--
JUL									
16...	0.15	0.20	--	--	0.03	4.3	0.30	3.6	240
16...	--	--	--	--	--	--	--	--	--
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)									
NOV 1989									
17...	0.29	0.30	--	--	<0.01	10.0	1.2	2.0	510
17...	--	--	--	--	--	--	--	--	--
MAR 1990									
02...	1.2	1.3	1.4	6.2	0.02	42.0	9.2	18	270
06...	--	--	--	--	--	--	--	--	--
JUL									
13...	3.2	3.2	3.3	15	0.10	140	63.0	95	350
13...	--	--	--	--	--	--	--	--	--
50044950 LAGO LA PLATA NO.3 NR DAM NR NARANJITO, PR (LAT 18°20'18"N LONG 066°14'01"W)									
NOV 1989									
15...	--	0.60	0.90	4.0	0.03	29.0	3.2	3.8	260
15...	--	--	--	--	--	--	--	--	--
MAR 1990									
22...	--	0.90	--	--	0.07	33.0	5.7	5.1	250
22...	--	--	--	--	--	--	--	--	--
JUL									
11...	--	0.40	--	--	0.03	4.0	0.20	5.1	240
11...	--	--	--	--	--	--	--	--	--
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)									
NOV 1989									
14...	0.56	0.70	1.1	4.9	0.19	20.0	1.3	2.3	250
14...	--	--	--	--	--	--	--	--	--
MAR 1990									
21...	0.29	0.50	1.0	--	0.19	12.0	0.30	2.6	230
21...	--	--	--	--	--	--	--	--	--
JUL									
12...	1.1	1.2	1.4	6.2	0.27	18.0	0.40	3.1	210
12...	--	--	--	--	--	--	--	--	--

DATE	TIME	PCB, TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	CHLORDANE, TOTAL (UG/L)	DDD, TOTAL (UG/L)	DDE, TOTAL (UG/L)	DDT, TOTAL (UG/L)	DIAZINON, TOTAL (UG/L)	DIELDRIN TOTAL (UG/L)	ENDOSULFAN, TOTAL (UG/L)
				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 1990 19...	1020	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	0.01	<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 1990 17...	1055	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01	<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 1990 16...	1015	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01	<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 1990 13...	0935	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010
50044950		LAGO LA PLATA NO.3 NR DAM NR NARANJITO, P.R. (LAT 18°20'18"N LONG 066°14'01"W)								
JUL 1990 11...	0945	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	<0.01	<0.010	<0.010
				RIO GRANDE DE LOIZA BASIN--Continued						
50058800		LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, P.R. (LAT 18°19'29"N LONG 066°00'47"W)								
JUL 1990 12...	0835	<0.1	<0.010	<0.1	<0.010	<0.010	<0.010	0.03	<0.010	<0.010

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	ENDRIN, TOTAL (UG/L)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	LINDANE TOTAL (UG/L)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOTAL (UG/L)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	MIREX, TOTAL (UG/L)
RIO GUAJATACA BASIN--Continued										
50010790 LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS, P.R. (LAT 18°23'56"N LONG 066°55'23"W)										
JUL 1990 19...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01
RIO GRANDE DE ARECIBO BASIN--Continued										
50020050 LAGO GARZAS NO.1 NR DAM NR ADJUNTAS, P.R. (LAT 18°08'21"N LONG 066°44'35"W)										
JUL 1990 17...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01
50027090 LAGO DOS BOCAS NO.1 NR DAM NR UTUADO, P.R. (LAT 18°20'09"N LONG 066°40'04"W)										
JUL 1990 16...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01
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 1990 13...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01
50044950 LAGO LA PLATA NO.3 NR DAM NR NARANJITO, P.R. (LAT 18°20'18"N LONG 066°14'01"W)										
JUL 1990 11...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01
RIO GRANDE DE LOIZA BASIN--Continued										
50058800 LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, P.R. (LAT 18°19'29"N LONG 066°00'47"W)										
JUL 1990 12...	<0.010	<0.01	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01

WATER-QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	PARA-THION, TOTAL (UG/L)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOTAL TRI-THION (UG/L)	2,4-D, TOTAL (UG/L)	2,4,5-T TOTAL (UG/L)	2, 4-DP TOTAL (UG/L)	SILVEX, TOTAL (UG/L)
				RIO GUAJATACA BASIN--Continued					
50010790	LAGO GUAJATACA NO.1 NR DAM NR QUEBRADILLAS, P.R. (LAT 18°23'56"N LONG 066°55'23"W)								
JUL 1990 19...	<0.01	<0.10	<0.1	<1	<0.01	<0.01	<0.01	<0.01	<0.01
				RIO GRANDE DE ARECIBO BASIN--Continued					
50020050	LAGO GARZAS NO.1 NR DAM NR ADJUNTAS, P.R. (LAT 18°08'21"N LONG 066°44'35"W)								
JUL 1990 17...	<0.01	<0.10	<0.1	<1	<0.01	0.02	<0.01	<0.01	<0.01
50027090	LAGO DOS BOCAS NO.1 NR DAM NR UTUADO, P.R. (LAT 18°20'09"N LONG 066°40'04"W)								
JUL 1990 16...	<0.01	<0.10	<0.1	<1	<0.01	<0.01	<0.01	<0.01	<0.01
				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 1990 13...	<0.01	<0.10	<0.1	<1	<0.01	<0.01	<0.01	<0.01	<0.01
50044950	LAGO LA PLATA NO.3 NR DAM NR NARANJITO, P.R. (LAT 18°20'18"N LONG 066°14'01"W)								
JUL 1990 11...	<0.01	<0.10	<0.1	<1	<0.01	0.02	<0.01	<0.01	<0.01
				RIO GRANDE DE LOIZA BASIN--Continued					
50058800	LAGO LOIZA NO.7 NR DAM NR TRUJILLO ALTO, P.R. (LAT 18°19'29"N LONG 066°00'47"W)								
JUL 1990 12...	<0.01	<0.10	<0.1	<1	<0.01	0.09	<0.01	<0.01	<0.01

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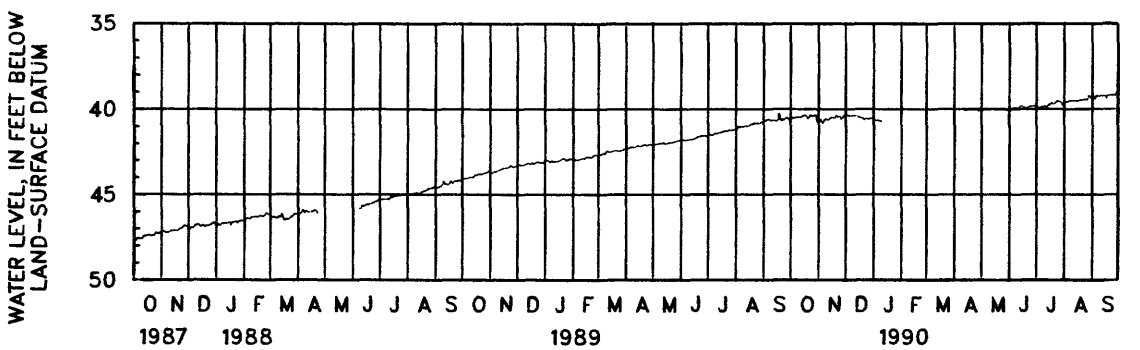
Ground-Water Records
for
Puerto Rico

182422067015100. Local number, 165.
LOCATION.--Lat 18°24'22", long 67°01'51".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Saltos # 1 (Mateo Perez).
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).
DATUM.--Elevation of land-surface datum is 689 ft (210 m) above mean sea level.
Measuring point: Hole on pump base, 0.80 ft (0.24 m) above land-surface datum. Prior 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, 38.86 ft (11.8 m) below land-surface datum, Sept. 29-30, 1990; 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 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

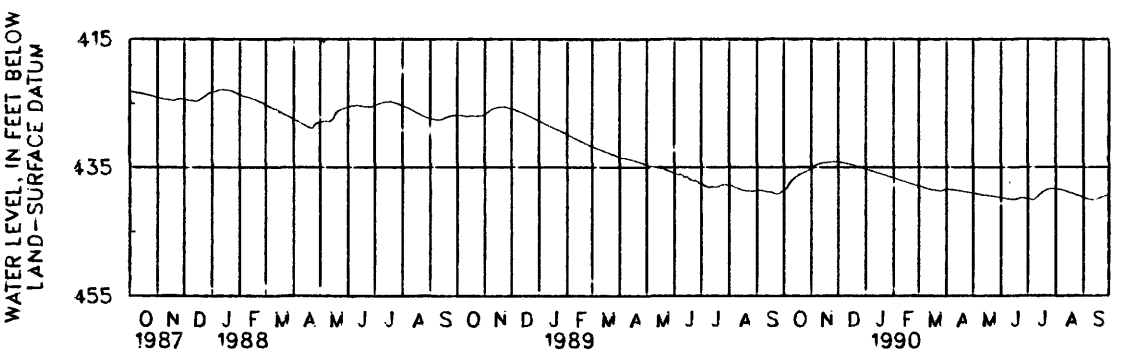
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40.55	40.59	40.36	40.57	---	---	---	40.00	40.02	39.82	39.68	39.34
2	40.52	40.73	40.39	40.60	---	---	---	40.01	40.02	39.94	39.60	39.23
3	40.50	40.62	40.37	40.63	---	---	---	40.06	39.97	39.90	39.60	39.24
4	40.47	40.61	40.33	40.64	---	---	---	40.01	39.93	39.89	39.58	39.37
5	40.50	40.75	40.37	40.66	---	---	---	39.98	39.91	39.92	39.56	39.26
6	40.53	40.83	40.39	40.64	---	---	---	39.95	39.93	39.86	39.54	39.20
7	40.48	40.65	40.40	40.65	---	---	---	39.99	39.94	39.85	39.50	39.22
8	40.45	40.58	40.37	40.68	---	---	---	40.03	39.91	39.84	39.53	39.24
9	40.45	40.59	40.36	40.73	---	---	---	40.02	39.90	39.85	39.51	39.22
10	40.47	40.57	40.32	40.71	---	---	---	40.00	39.97	39.80	39.49	39.20
11	40.47	40.57	40.37	---	---	---	40.06	39.98	39.94	39.81	39.51	39.20
12	40.45	40.62	40.40	---	---	---	40.05	39.99	39.88	39.85	39.51	39.20
13	40.46	40.57	40.40	---	---	---	40.07	39.99	39.83	39.82	39.48	39.21
14	40.39	40.51	40.42	---	---	---	40.07	39.98	39.79	39.74	39.50	39.21
15	40.37	40.48	40.46	---	---	---	40.03	39.98	39.81	39.69	39.51	39.22
16	40.36	40.46	40.44	---	---	---	39.99	39.99	39.82	39.73	39.51	39.23
17	40.34	40.47	40.45	---	---	---	40.00	40.00	39.89	39.68	39.49	39.35
18	40.36	40.51	40.49	---	---	---	40.02	39.98	39.91	39.60	39.45	39.22
19	40.42	40.52	40.52	---	---	---	40.03	39.98	39.89	39.65	39.45	39.20
20	40.54	40.41	40.51	---	---	---	40.03	39.96	39.91	39.69	39.47	39.18
21	40.46	40.36	40.56	---	---	---	39.98	39.95	39.90	39.70	39.45	39.17
22	40.41	40.44	40.59	---	---	---	39.94	39.95	39.88	39.64	39.43	39.16
23	40.36	40.44	40.57	---	---	---	39.97	39.97	39.84	39.57	39.43	39.17
24	40.34	40.41	40.54	---	---	---	40.01	40.02	39.80	39.51	39.44	39.19
25	40.42	40.39	40.52	---	---	---	40.00	39.99	39.85	39.54	39.43	39.16
26	40.39	40.56	40.57	---	---	---	39.98	39.97	39.82	39.53	39.43	39.17
27	40.38	40.49	40.58	---	---	---	40.08	39.91	39.79	39.54	39.40	39.17
28	40.34	40.47	40.52	---	---	---	40.07	39.98	39.82	39.57	39.22	39.05
29	40.32	40.39	40.51	---	---	---	40.05	40.06	39.78	39.59	39.25	39.03
30	40.53	40.33	40.52	---	---	---	40.03	40.04	39.78	39.71	39.25	38.95
31	40.74	---	40.53	---	---	---	---	40.02	---	39.70	39.37	---
LOW	40.74	40.83	40.59	---	---	---	---	40.06	40.02	39.94	39.68	39.37
HIGH	40.32	40.33	40.32	---	---	---	---	39.91	39.78	39.51	39.22	38.95



182647066552400. Local number, 202.
LOCATION.--Lat 18°26'47", long 66°55'24".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Carmelo Barreto Garcia 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).
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, 452.80 ft (138.01 m) below land-surface datum, June 26, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

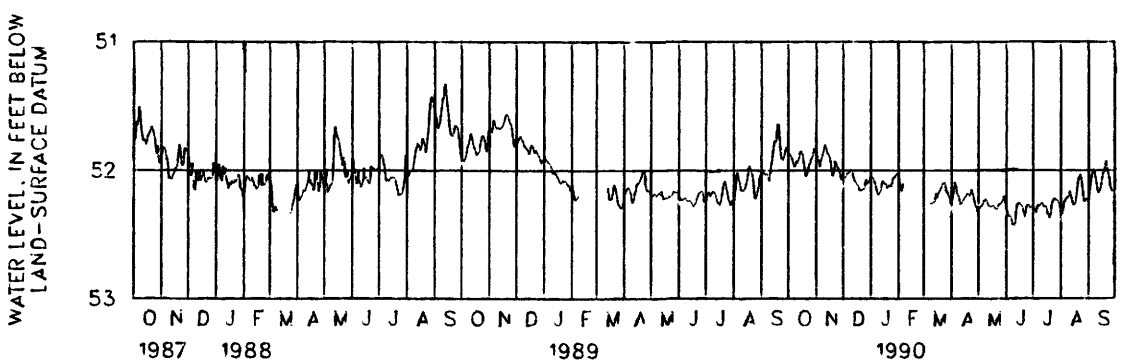
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	438.62	435.15	434.16	435.24	436.63	437.91	438.45	439.00	439.74	439.88	438.38	439.69
2	438.55	435.03	434.17	435.30	436.68	437.95	438.43	439.03	439.76	439.94	438.37	439.73
3	438.45	434.95	434.17	435.33	436.74	437.98	438.42	439.08	439.77	439.97	438.40	439.79
4	438.34	434.85	434.20	435.37	436.77	438.00	438.39	439.08	439.79	440.00	438.43	439.84
5	438.17	434.77	434.23	435.42	436.80	438.06	438.42	439.10	439.82	440.03	438.44	439.90
6	437.87	434.66	434.26	435.46	436.87	438.10	438.46	439.13	439.85	440.05	438.48	439.94
7	437.61	434.57	434.29	435.49	436.93	438.15	438.46	439.17	439.87	440.06	438.50	439.96
8	437.39	434.50	434.30	435.56	436.99	438.20	438.48	439.21	439.89	439.99	438.56	440.01
9	437.22	434.45	434.33	435.61	437.01	438.26	438.50	439.22	439.90	439.89	438.58	440.03
10	437.08	434.40	434.35	435.64	437.03	438.28	438.53	439.23	439.92	439.79	438.62	440.05
11	436.94	434.37	434.41	435.67	437.09	438.33	438.52	439.28	439.93	439.66	438.67	440.09
12	436.79	434.34	434.45	435.73	437.13	438.37	438.55	439.30	439.94	439.56	438.71	440.09
13	436.66	434.30	434.47	435.79	437.17	438.39	438.58	439.31	439.96	439.39	438.73	---
14	436.54	434.25	434.52	435.85	437.25	438.43	438.61	439.32	439.94	439.25	438.81	440.05
15	436.42	434.24	434.56	435.87	437.30	438.48	438.62	439.35	440.00	439.14	438.84	440.00
16	436.33	434.23	434.60	435.92	437.33	438.48	438.63	439.36	439.99	439.02	438.89	439.95
17	436.23	434.23	434.62	435.96	437.38	438.49	438.67	439.37	439.97	438.88	438.93	439.91
18	436.15	434.23	434.67	436.00	437.42	438.51	438.69	439.39	439.93	438.79	438.97	439.86
19	436.09	434.23	434.71	436.05	437.46	438.53	438.73	439.41	439.89	438.72	439.02	439.81
20	435.98	434.17	434.77	436.09	437.49	438.57	438.76	439.42	439.88	438.66	439.07	439.76
21	435.95	434.15	434.82	436.14	437.56	438.57	438.77	439.43	439.83	438.58	439.12	439.71
22	435.86	434.16	434.87	436.15	437.61	438.61	438.78	439.45	439.81	438.51	439.16	439.66
23	435.80	434.15	434.90	436.22	437.65	438.62	438.82	439.49	439.80	438.45	439.22	439.61
24	435.76	434.12	434.93	436.26	437.70	438.65	438.84	439.53	439.77	438.40	439.28	439.56
25	435.70	434.12	434.97	436.31	437.72	438.67	438.87	439.54	439.80	438.39	439.32	439.52
26	435.64	434.12	435.02	436.37	437.79	438.65	438.88	439.57	439.79	438.36	439.36	439.47
27	435.59	434.13	435.06	436.42	437.82	438.61	438.91	439.60	439.80	438.36	439.40	439.42
28	435.50	434.11	435.07	436.45	437.85	438.57	438.92	439.62	439.83	438.36	439.44	439.37
29	435.41	434.09	435.11	436.46	---	438.53	438.97	439.65	439.84	438.35	439.52	439.32
30	435.36	434.11	435.14	436.53	---	438.50	438.99	439.67	439.87	438.36	439.59	439.27
31	435.26	---	435.19	436.60	---	438.47	---	439.69	---	438.37	439.64	---
LOW	438.62	435.15	435.19	436.60	437.85	438.67	438.99	439.69	440.00	440.06	439.64	---
HIGH	435.26	434.09	434.16	435.24	436.63	437.91	438.39	439.00	439.74	438.35	438.37	---



182737066370900. Local number, 204.
LOCATION.--Lat 18°27'37", long 66°37'09".
Owner: Sucesi[n Marquez.
Name: Gilberto Rivera well.
AQUIFER.--Aymamon Limestone.
WELL CHARACTERISTICS.--Abandoned unused water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).
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, 52.52 ft (16.0 m) below land-surface datum, June 9, 10, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51.87	51.86	52.04	52.04	52.04	---	52.26	52.32	52.28	52.29	52.32	52.23
2	51.87	51.89	52.04	52.05	52.07	---	52.21	52.28	52.33	52.28	52.33	52.20
3	51.88	51.90	52.06	52.06	52.14	---	52.17	52.29	52.35	52.30	52.34	52.11
4	51.88	51.93	52.05	52.06	52.15	---	52.14	52.28	52.35	52.32	52.28	52.05
5	51.91	51.97	52.03	52.09	52.16	---	52.09	52.27	52.36	52.33	52.24	52.03
6	51.92	51.93	52.02	52.10	52.11	---	52.13	52.26	52.36	52.28	52.23	52.00
7	51.96	51.91	52.02	52.15	---	---	52.17	52.23	52.39	52.27	52.22	51.99
8	51.97	51.88	52.01	52.17	---	---	52.18	52.24	52.42	52.27	52.21	52.03
9	51.96	51.85	52.01	52.19	---	52.26	52.20	52.22	52.42	52.28	52.21	52.06
10	51.93	51.82	51.99	52.18	---	52.26	52.23	52.23	52.43	52.26	52.20	52.11
11	51.94	51.80	52.00	52.17	---	52.25	52.26	52.25	52.41	52.26	52.16	52.16
12	51.92	51.82	52.04	52.16	---	52.24	52.25	52.27	52.32	52.25	52.18	52.17
13	51.90	51.86	52.06	52.10	---	52.25	52.25	52.27	52.27	52.28	52.22	52.17
14	51.86	51.87	52.08	52.08	---	52.21	52.23	52.28	52.26	52.28	52.25	52.14
15	51.85	51.88	52.09	52.09	---	52.18	52.22	52.28	52.25	52.28	52.27	52.10
16	51.86	51.90	52.10	52.10	---	52.21	52.21	52.28	52.25	52.28	52.27	52.05
17	51.88	51.93	52.11	52.11	---	52.18	52.20	52.27	52.26	52.33	52.25	52.02
18	51.94	52.00	52.12	52.10	---	52.17	52.18	52.27	52.27	52.34	52.21	52.01
19	51.99	52.04	52.15	52.14	---	52.16	52.18	52.29	52.28	52.36	52.15	51.98
20	52.04	52.04	52.15	52.12	---	52.14	52.18	52.29	52.31	52.37	52.09	51.93
21	52.04	51.98	52.15	52.11	---	52.13	52.20	52.30	52.33	52.33	52.06	51.93
22	52.02	51.93	52.16	52.13	---	52.10	52.18	52.30	52.36	52.27	52.04	51.99
23	51.98	51.94	52.14	52.11	---	52.10	52.15	52.27	52.32	52.24	52.03	52.03
24	51.95	51.96	52.15	52.13	---	52.10	52.15	52.26	52.28	52.22	52.07	52.06
25	51.95	51.98	52.14	52.09	---	52.09	52.19	52.26	52.27	52.22	52.13	52.12
26	51.92	51.98	52.09	52.06	---	52.16	52.23	52.26	52.27	52.22	52.20	52.14
27	51.91	52.01	52.07	52.05	---	52.16	52.25	52.24	52.27	52.23	52.24	52.16
28	51.89	52.05	52.10	52.05	---	52.18	52.28	52.23	52.29	52.23	52.24	52.16
29	51.86	52.07	52.09	52.04	---	52.19	52.28	52.20	52.28	52.24	52.22	52.16
30	51.83	52.06	52.08	52.03	---	52.22	52.32	52.20	52.28	52.25	52.22	52.14
31	51.85	---	52.05	52.02	---	52.25	---	52.25	---	52.28	52.23	---
LOW	52.04	52.07	52.16	52.19	---	---	52.32	52.32	52.43	52.37	52.34	52.23
HIGH	51.83	51.80	51.99	52.02	---	---	52.09	52.20	52.25	52.22	52.03	51.93



182544066341500. Local numnber, 205.
LOCATION.--Lat 18°25'44", long 66°34'15".
Owner: U.S. Geological Survey.
Name: NC-05 Barceloneta near Cruce Davila.
AQUIFER.--Montebello Limestone.
WELL CHARACTERISTICS.--Artesian observation well, diameter 6 in (0.15 m), 0-2,564 ft (0-782 m) , cased 2.5 in (0.06 m), iron pipe 0-1,075 ft (0-328 m), open hole 1,075-2,564 ft (328-782 m). Depth 2,564 ft (782 m) measured.
DATUM.--Elevation of land surface datum is 312 ft (95.1 m) above mean sea level, from topographic map.
Measuring point: Top of shelter floor, 6.65 ft (2.03 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORDS.--December 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.16 ft (2.79 m) below land-surface datum, Aug. 18, 1987; lowest water level measured, 24.94 ft (7.60 m) below land-surface datum, Aug. 10, 1990.

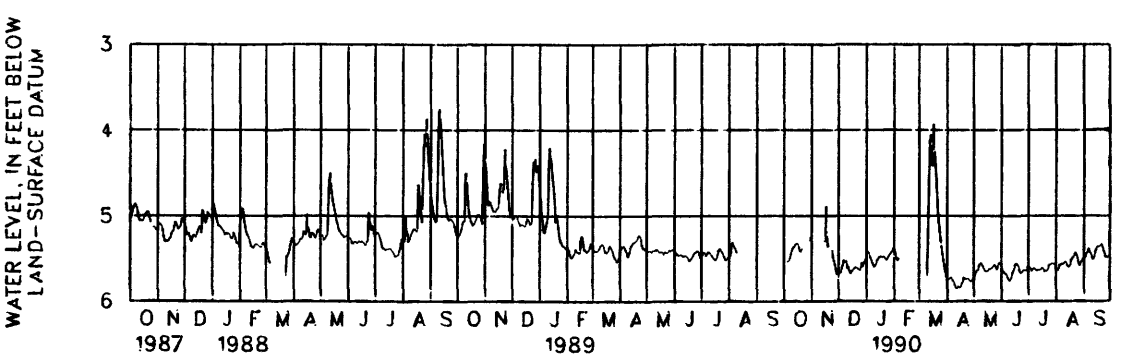
WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Oct. 4	15.87	Jan. 16	18.81	Apr. 13	20.54	July 9	23.99
Nov. 17	16.02	Feb. 7	19.60	May 9	21.75	Aug. 10	24.94
Dec. 12	17.73	Mar. 9	19.60	June 15	23.18	Sept. 7	24.83

182757066325600. Local number, 206.
LOCATION.--Lat 18°27'57", long 66°32'56".
Owner: P.R. Department of Agriculture.
Name: Plazuela No. 2.
AQUIFER.--Aymamon 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).
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, 5.89 ft (1.80 m) below land-surface datum, Apr. 11-12, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

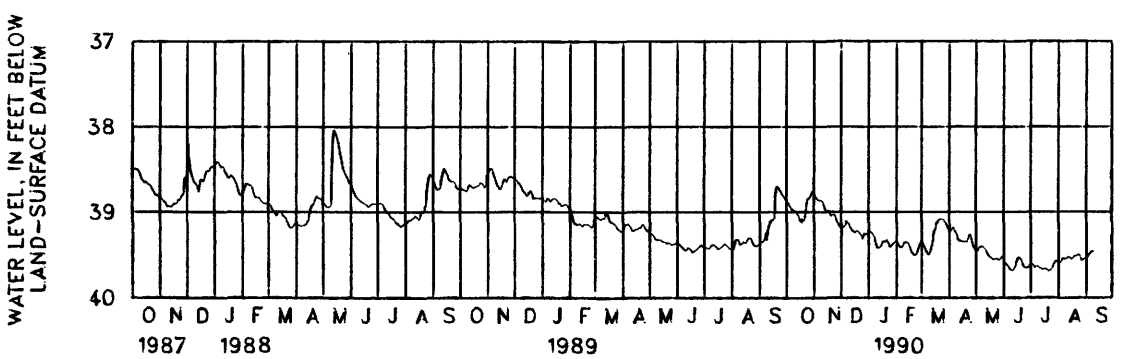
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	5.25	5.66	5.47	5.38	---	5.74	5.75	5.60	5.60	5.61	5.52
2	---	---	5.66	5.42	5.40	---	5.75	5.70	5.64	5.59	5.62	5.52
3	---	---	5.68	5.42	5.46	---	5.74	5.67	5.66	5.61	5.64	5.47
4	---	---	5.66	5.44	5.50	---	5.74	5.65	5.65	5.62	5.62	5.44
5	5.54	---	5.60	5.48	5.52	---	5.72	5.64	5.68	5.65	5.57	5.43
6	5.52	---	5.57	5.50	5.50	---	5.72	5.63	5.67	5.62	5.57	5.39
7	5.53	---	5.52	5.53	---	---	5.75	5.58	5.70	5.62	5.57	5.38
8	5.49	---	5.55	5.56	---	---	5.76	5.56	5.73	5.61	5.56	5.43
9	5.44	---	5.53	5.58	---	---	5.78	5.56	5.74	5.63	5.57	5.44
10	5.40	---	5.53	5.60	---	5.70	5.81	5.55	5.76	5.64	5.55	5.48
11	5.38	---	5.62	5.58	---	5.14	5.84	5.59	5.76	5.64	5.54	5.51
12	5.36	---	5.60	5.56	---	4.51	5.85	5.61	5.73	5.63	5.54	5.50
13	5.36	---	5.65	5.52	---	4.11	5.85	5.63	5.67	5.64	5.57	5.47
14	5.33	---	5.67	5.51	---	4.05	5.82	5.65	5.65	5.63	5.59	5.41
15	5.33	5.30	5.68	5.48	---	4.31	5.84	5.65	5.62	5.63	5.60	5.39
16	5.32	5.30	5.64	5.48	---	4.42	5.84	5.65	5.57	5.61	5.60	5.36
17	5.33	4.88	5.64	5.48	---	3.92	5.83	5.64	5.56	5.61	5.57	5.36
18	5.38	5.24	5.62	5.47	---	4.24	5.79	5.62	5.56	5.62	5.51	5.36
19	5.41	5.36	5.61	5.48	---	4.44	5.78	5.62	5.57	5.65	5.50	5.36
20	5.42	---	5.60	5.48	---	4.59	5.72	5.62	5.59	5.64	5.48	5.34
21	5.39	---	5.61	5.47	---	4.75	5.74	5.61	5.64	5.65	5.47	5.33
22	---	---	5.61	5.50	---	4.99	5.74	5.60	5.66	5.64	5.44	5.37
23	---	---	5.62	5.50	---	5.09	5.74	5.59	5.67	5.62	5.43	5.40
24	---	5.41	5.63	5.52	---	5.20	5.74	5.57	5.66	5.58	5.46	5.43
25	---	5.49	5.64	5.49	---	5.29	5.73	5.57	5.64	5.57	5.49	5.48
26	---	5.53	5.60	5.47	---	5.38	5.75	5.61	5.64	5.57	5.55	5.47
27	---	5.57	5.55	5.45	---	5.46	5.76	5.63	5.64	5.56	5.58	5.49
28	---	5.63	5.59	5.44	---	5.53	5.77	5.59	5.64	5.56	5.57	5.48
29	---	5.66	5.55	5.42	---	5.58	5.76	5.56	5.64	5.56	5.54	5.46
30	5.29	5.69	5.54	5.40	---	5.65	5.75	5.55	5.60	5.57	5.53	5.46
31	5.25	---	5.51	5.37	---	5.70	---	5.56	---	5.58	5.50	---
LOW	---	---	5.68	5.60	---	---	5.85	5.75	5.76	5.65	5.64	5.52
HIGH	---	---	5.51	5.37	---	---	5.72	5.55	5.56	5.56	5.43	5.33



182710066303700. Local number, 207.
LOCATION.--Lat 18°27'10", long 66°30'37".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Cantito La Luisa.
AQUIFER.--Aymamon 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).
DATUM.--Elevation of land-surface datum is about 59.0 ft (18.0 m) above mean sea level, from topographic map.
Measuring point: 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 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38.86	38.78	39.17	39.23	39.34	39.35	39.22	39.46	39.56	39.61	39.58	39.54
2	38.87	38.81	39.18	39.22	39.35	39.35	39.22	39.46	39.58	39.61	39.59	39.54
3	38.89	38.83	39.18	39.23	39.38	39.39	39.21	39.45	39.60	39.61	39.59	39.52
4	38.91	38.84	39.17	39.24	39.40	39.41	39.20	39.42	39.61	39.62	39.57	39.49
5	38.93	38.85	39.16	39.25	39.41	39.43	39.18	39.41	39.62	39.64	39.55	39.48
6	38.94	38.86	39.13	39.27	39.41	39.46	39.19	39.41	39.63	39.64	39.54	39.46
7	38.97	38.86	39.10	39.29	39.41	39.47	39.22	39.40	39.65	39.63	39.55	39.46
8	38.97	38.86	39.12	39.34	39.39	39.49	39.23	39.40	39.67	39.63	39.54	39.46
9	38.98	38.86	39.13	39.38	39.36	39.50	39.25	39.41	39.67	39.63	39.55	39.46
10	38.98	38.87	39.15	39.41	39.35	39.47	39.28	39.42	39.68	39.64	39.54	---
11	38.99	38.88	39.18	39.42	39.36	39.43	39.32	39.42	39.68	39.65	39.53	---
12	39.00	38.91	39.20	39.42	39.35	39.39	39.33	39.45	39.67	39.65	39.52	---
13	39.02	38.95	39.21	39.42	39.35	39.34	39.34	39.47	39.65	39.66	39.53	---
14	39.03	38.98	39.22	39.40	39.37	39.24	39.33	39.49	39.63	39.67	39.54	---
15	39.05	38.99	39.23	39.39	39.39	39.21	39.34	39.51	39.58	39.67	39.54	---
16	39.09	39.00	39.24	39.36	39.42	39.19	39.34	39.52	39.55	39.66	39.55	---
17	39.10	38.98	39.23	39.34	39.45	39.13	39.35	39.53	39.53	39.66	39.53	---
18	39.12	39.00	39.22	39.34	39.47	39.12	39.34	39.53	39.53	39.66	39.52	---
19	39.08	39.02	39.22	39.35	39.48	39.11	39.35	39.55	39.53	39.67	39.51	---
20	39.10	39.04	39.22	39.35	39.50	39.09	39.34	39.55	39.55	39.68	39.51	---
21	39.10	39.04	39.23	39.32	39.50	39.09	39.35	39.55	39.57	39.69	39.51	---
22	39.04	39.03	39.25	39.35	39.50	39.08	39.31	39.55	39.61	39.68	39.50	---
23	38.99	39.03	39.26	39.37	39.49	39.08	39.28	39.55	39.63	39.67	39.49	---
24	38.89	39.03	39.28	39.40	39.46	39.08	39.26	39.54	39.64	39.67	39.50	---
25	38.85	39.05	39.31	39.41	39.43	39.08	39.28	39.55	39.64	39.65	39.52	---
26	38.84	39.09	39.29	39.39	39.40	39.09	39.32	39.56	39.65	39.62	39.54	---
27	38.83	39.12	39.25	39.38	39.37	39.11	39.36	39.56	39.65	39.60	39.56	---
28	38.82	39.14	39.26	39.37	39.36	39.13	39.40	39.55	39.65	39.58	39.56	---
29	38.79	39.16	39.26	39.36	---	39.15	39.42	39.53	39.64	39.57	39.55	---
30	38.76	39.17	39.26	39.35	---	39.18	39.44	39.52	39.61	39.57	39.54	---
31	38.76	---	39.24	39.34	---	39.19	---	39.54	---	39.57	39.54	---
LOW	39.12	39.17	39.31	39.42	39.50	39.50	39.44	39.56	39.68	39.69	39.59	---
HIGH	38.76	38.78	39.10	39.22	39.34	39.08	39.18	39.40	39.53	39.57	39.49	---



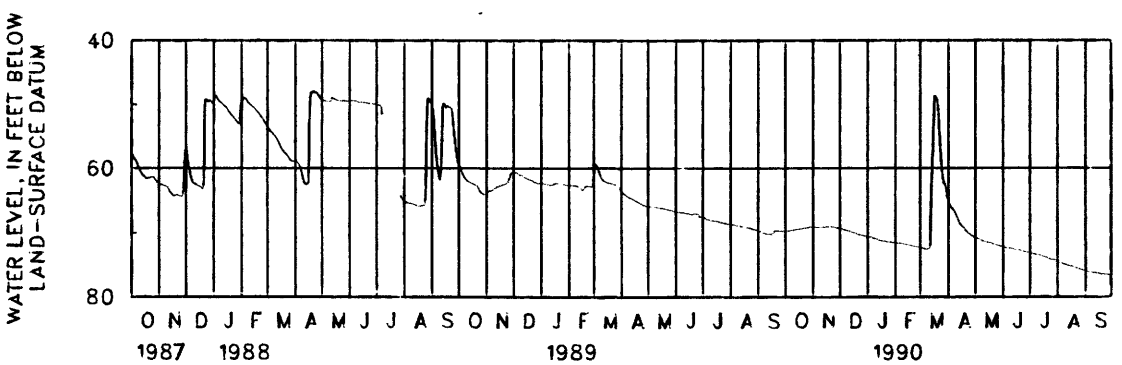
RIO GRANDE DE MANATI BASIN

182308066260400. Local number, 210.
LOCATION.--Lat 18°23'08", long 66°26'04".
Owner: Gelo Martinez.
Name: Gelo Martinez well.
AQUIFER.--Lares Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 8 in (0.20 m), cased 8 in (0.20 m).
DATUM.--Elevation of land-surface datum is about 574 ft (174.9 m) above mean sea level, from topographic map.
Measuring point: 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, 76.60 ft (23.3 m) below land-surface datum, Sept. 30, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69.72	69.03	69.30	70.60	71.61	72.35	65.08	70.72	72.24	73.11	74.51	75.96
2	69.72	69.06	69.33	70.65	71.62	72.38	65.58	70.80	72.26	73.15	74.55	76.00
3	69.72	69.09	69.36	70.68	71.63	72.41	65.80	70.86	72.30	73.22	74.60	76.04
4	69.70	69.12	69.41	70.69	71.63	72.44	66.01	70.90	72.33	73.26	74.65	76.07
5	69.68	69.16	69.47	70.69	71.63	72.47	66.14	70.96	72.36	73.31	74.72	76.10
6	69.65	69.17	69.51	70.77	71.63	72.50	66.28	71.02	72.39	73.34	74.78	76.13
7	69.63	69.16	69.55	70.82	71.66	72.54	66.47	71.09	72.39	73.38	74.83	76.16
8	69.60	69.11	69.60	70.85	71.69	72.56	66.70	71.14	72.43	73.41	74.88	76.19
9	69.58	69.10	69.64	70.88	71.72	72.57	66.94	71.24	72.45	73.44	74.94	76.22
10	69.56	69.10	69.67	70.93	71.75	72.57	67.22	71.29	72.47	73.47	74.97	76.23
11	69.53	69.10	69.71	70.96	71.78	72.56	67.60	71.32	72.49	73.48	75.02	76.25
12	69.51	69.10	69.75	71.02	71.82	71.77	67.93	71.35	72.52	73.51	75.08	76.27
13	69.48	69.12	69.83	71.07	71.85	65.15	68.25	71.38	72.57	73.58	75.13	76.28
14	69.46	69.15	69.88	71.13	71.88	60.62	68.58	71.44	72.60	73.63	75.17	76.31
15	69.44	69.16	69.93	71.18	71.91	56.09	68.77	71.48	72.64	73.65	75.20	76.33
16	69.41	69.12	69.97	71.25	71.94	51.56	68.92	71.52	72.65	73.69	75.22	76.36
17	69.39	69.06	70.02	71.29	71.97	48.72	69.04	71.53	72.67	73.73	75.25	76.39
18	69.37	69.03	70.06	71.32	72.00	48.87	69.14	71.54	72.68	73.81	75.29	76.41
19	69.34	69.03	70.13	71.34	72.03	49.24	69.15	71.54	72.69	73.86	75.34	76.44
20	69.32	69.03	70.17	71.37	72.06	49.70	69.56	71.71	72.71	73.89	75.39	76.45
21	69.29	69.03	70.24	71.39	72.10	50.96	69.73	71.75	72.81	73.98	75.45	76.46
22	69.27	69.05	70.29	71.42	72.13	53.80	69.86	71.80	72.85	74.02	75.51	76.48
23	69.25	69.09	70.32	71.44	72.16	56.45	69.99	71.83	72.88	74.05	75.55	76.49
24	69.22	69.12	70.35	71.45	72.19	58.88	70.13	71.88	72.90	74.09	75.60	76.51
25	69.20	69.15	70.37	71.45	72.22	60.26	70.24	71.91	72.94	74.15	75.65	76.53
26	69.17	69.17	70.41	71.46	72.25	61.62	70.33	71.96	72.97	74.20	75.68	76.54
27	69.15	69.19	70.44	71.48	72.28	62.20	70.43	72.00	73.00	74.22	75.74	76.56
28	69.13	69.23	70.47	71.49	72.31	62.40	70.51	72.04	73.04	74.22	75.78	76.57
29	69.10	69.25	70.50	71.50	---	62.64	70.60	72.09	73.06	74.23	75.83	76.59
30	69.08	69.27	70.53	71.52	---	63.49	70.67	72.15	73.09	74.23	75.87	76.60
31	69.05	---	70.57	71.59	---	64.37	---	72.20	---	74.45	75.92	---
LOW	69.72	69.27	70.57	71.59	72.31	72.57	70.67	72.20	73.09	74.45	75.92	76.60
HIGH	69.05	69.03	69.30	70.60	71.61	48.72	65.08	70.72	72.24	73.11	74.51	75.96

WTR YR 1990 MEAN 71.03 LOW 76.60 HIGH 48.72

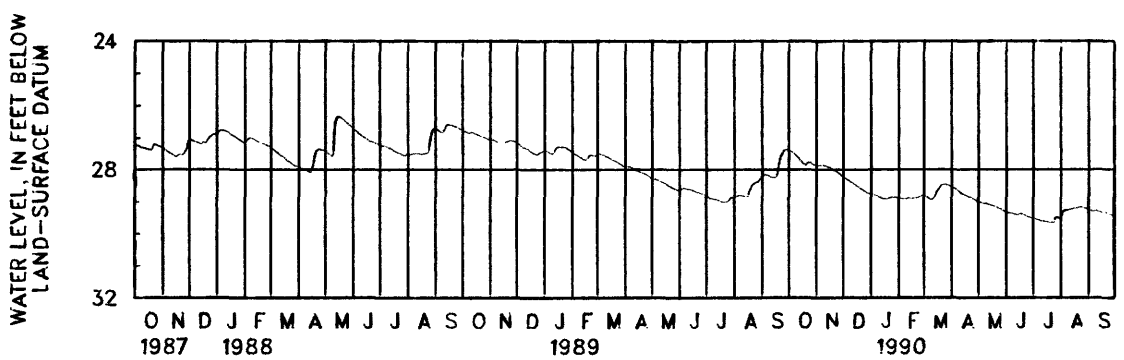


182647066201700. Local number, 70.
LOCATION.--Lat 18°26'47", long 66°20'17".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Sabana Hoyos.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 8 in (0.20 m), cased 0-90 ft (0-27.43 m), perforated. Depth 90 ft (27.43 m).
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, 31.10 ft (9.48 m) below land-surface datum, July 31, 1975.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANMTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.38	27.85	28.22	28.75	28.87	28.81	28.55	29.00	29.33	29.51	29.53	29.26
2	27.39	27.86	28.25	28.76	28.88	28.82	28.57	29.01	29.33	29.52	29.53	29.25
3	27.42	27.86	28.26	28.77	28.89	28.83	28.58	29.02	29.34	29.53	29.34	29.28
4	27.43	27.87	28.28	28.78	28.89	28.85	28.59	29.02	29.35	29.54	29.31	29.28
5	27.45	27.86	28.30	28.80	28.90	28.86	28.59	29.03	29.35	29.56	29.29	29.29
6	27.47	27.86	28.31	28.81	28.91	28.88	28.61	29.04	29.36	29.56	29.27	29.29
7	27.50	27.86	28.33	28.81	28.92	28.90	28.63	29.04	29.36	29.57	29.26	29.30
8	27.52	27.86	28.35	28.82	28.92	28.92	28.65	29.05	29.37	29.57	29.26	29.28
9	27.55	27.86	28.37	28.84	28.92	28.93	28.67	29.05	29.37	29.59	29.26	29.27
10	27.58	27.87	28.39	28.86	28.90	28.94	28.69	29.05	29.39	29.61	29.24	29.28
11	27.61	27.88	28.41	28.87	28.89	28.92	28.72	29.06	29.40	29.60	29.23	29.29
12	27.64	27.89	28.43	28.88	28.88	28.90	28.74	29.08	29.41	29.61	29.23	29.30
13	27.68	27.91	28.45	28.89	28.89	28.83	28.76	29.09	29.41	29.61	29.23	29.31
14	27.71	27.92	28.47	28.90	28.90	28.76	28.77	29.10	29.42	29.62	29.22	29.32
15	27.74	27.92	28.49	28.91	28.90	28.70	28.78	29.10	29.40	29.62	29.21	29.33
16	27.77	27.93	28.51	28.91	28.90	28.66	28.80	29.11	29.39	29.62	29.21	29.33
17	27.80	27.95	28.53	28.92	28.91	28.62	28.80	29.12	29.38	29.63	29.20	29.33
18	27.83	27.97	28.54	28.92	28.90	28.57	28.82	29.13	29.38	29.64	29.20	29.34
19	27.84	27.99	28.56	28.93	28.89	28.53	28.84	29.14	29.38	29.65	29.20	29.34
20	27.85	28.00	28.59	28.90	28.88	28.50	28.85	29.15	29.39	29.65	29.19	29.34
21	27.86	28.02	28.60	28.88	28.88	28.47	28.86	29.16	29.41	29.65	29.18	29.35
22	27.78	28.04	28.62	28.87	28.88	28.46	28.87	29.17	29.43	29.65	29.18	29.36
23	27.77	28.06	28.64	28.87	28.86	28.46	28.87	29.19	29.44	29.65	29.17	29.37
24	27.77	28.07	28.66	28.87	28.85	28.46	28.89	29.20	29.45	29.66	29.16	29.38
25	27.78	28.09	28.68	28.86	28.83	28.46	28.91	29.21	29.46	29.65	29.17	29.39
26	27.78	28.11	28.70	28.87	28.82	28.47	28.92	29.23	29.47	29.50	29.18	29.41
27	27.81	28.13	28.72	28.87	28.81	28.48	28.94	29.24	29.48	29.49	29.19	29.42
28	27.83	28.15	28.74	28.86	28.81	28.49	28.95	29.26	29.49	29.49	29.19	29.42
29	27.84	28.18	28.74	28.88	---	28.51	28.97	29.28	29.50	29.49	29.20	29.44
30	27.85	28.20	28.75	28.87	---	28.52	28.98	29.30	29.51	29.50	29.23	29.44
31	27.85	---	28.75	28.87	---	28.53	---	29.31	---	29.50	29.24	---
TOTAL	858.08	839.02	883.64	894.60	808.68	889.04	863.17	902.94	882.15	917.04	906.50	879.99
MEAN	27.68	27.97	28.50	28.86	28.88	28.68	28.77	29.13	29.40	29.58	29.24	29.33
MAX	27.86	28.20	28.75	28.93	28.92	28.94	28.98	29.31	29.51	29.66	29.53	29.44
MIN	27.38	27.85	28.22	28.75	28.81	28.46	28.55	29.00	29.33	29.49	29.16	29.25

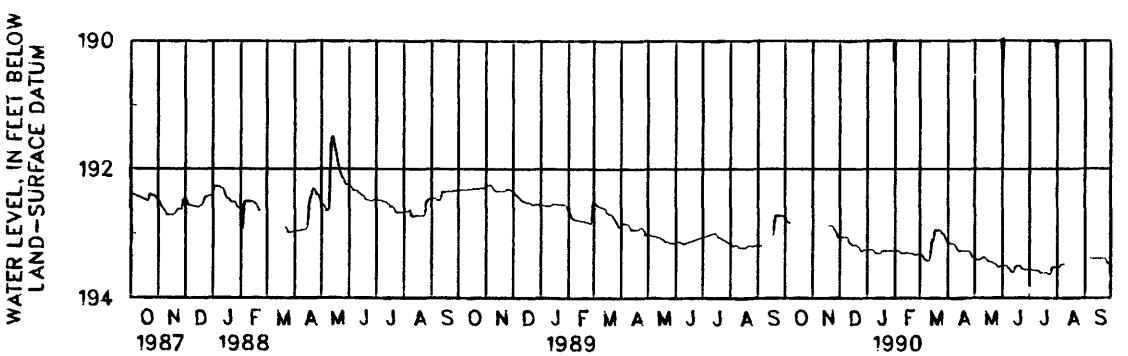
WTR YR 1990 MEAN 28.84 LOW 29.66 HIGH 27.38



182615066235300. Local number, 211.
LOCATION.--Lat 18°26'15", long 66°23'53".
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).
DATUM.--Elevation of land-surface datum is about 215 ft (65.5 m) above mean sea level, from topographic map.
Measuring point: 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, 193.63 ft (59.02 m) below land-surface datum, July 21-25, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	192.75	---	193.06	193.26	193.27	193.32	193.15	193.41	193.50	193.56	193.52	---
2	192.76	---	193.06	193.26	193.27	193.32	193.15	193.41	193.50	193.56	193.52	---
3	192.80	---	193.06	193.26	193.27	193.32	193.15	193.41	193.50	193.56	193.52	---
4	192.82	---	193.06	193.25	193.27	193.35	193.16	193.41	193.50	193.56	193.52	---
5	192.82	---	193.06	193.25	193.27	193.37	193.16	193.41	193.50	193.57	193.49	---
6	192.83	---	193.06	193.25	193.28	193.40	193.16	193.41	193.50	193.57	193.48	---
7	192.84	---	193.06	193.25	193.30	193.40	193.16	193.40	193.53	193.57	193.48	193.39
8	---	---	193.06	193.26	193.31	193.42	193.17	193.40	193.54	193.57	193.48	193.39
9	---	---	193.06	193.28	193.31	193.42	193.17	193.38	193.55	193.58	193.48	193.39
10	---	---	193.06	193.30	193.31	193.42	193.21	193.38	193.57	193.58	---	193.39
11	---	---	193.11	193.31	193.31	193.42	193.23	193.37	193.60	193.58	---	193.39
12	---	---	193.14	193.31	193.31	193.37	193.26	193.37	193.60	193.58	---	193.39
13	---	---	193.16	193.31	193.30	193.27	193.27	193.39	193.60	193.61	---	193.39
14	---	---	193.16	193.31	193.30	193.13	193.27	193.40	193.59	193.61	---	193.39
15	---	---	193.18	193.31	193.30	193.09	193.27	193.42	193.52	193.61	---	193.39
16	---	---	193.18	193.31	193.30	193.09	193.27	193.43	193.52	193.61	---	193.39
17	---	192.87	193.18	193.27	193.31	192.97	193.27	193.44	193.50	193.61	---	193.39
18	---	192.87	193.18	193.27	193.31	192.95	193.27	193.44	193.50	193.61	---	193.39
19	---	192.88	193.18	193.27	193.31	192.95	193.27	193.44	193.50	193.61	---	193.39
20	---	192.88	193.18	193.27	193.31	192.95	193.27	193.44	193.50	193.61	---	193.39
21	---	192.88	193.20	193.27	193.31	192.95	193.27	193.46	193.50	193.61	---	193.39
22	---	192.88	193.21	193.27	193.33	192.95	193.27	193.46	193.53	193.63	---	193.39
23	---	192.88	193.22	193.27	193.33	192.95	193.27	193.47	193.55	193.63	---	193.39
24	---	192.91	193.25	193.27	193.33	192.95	193.27	193.47	193.55	193.63	---	193.40
25	---	192.94	193.27	193.27	193.33	193.00	193.27	193.48	193.55	193.63	---	193.44
26	---	192.95	193.27	193.27	193.33	193.00	193.29	193.50	193.56	193.53	---	193.45
27	---	192.98	193.27	193.27	193.32	193.01	193.32	193.52	193.56	193.52	---	193.47
28	---	193.02	193.26	193.27	193.32	193.03	193.36	193.52	193.56	193.52	---	193.47
29	---	193.05	193.26	193.27	---	193.07	193.37	193.52	193.56	193.52	---	193.47
30	---	193.06	193.26	193.27	---	193.09	193.38	193.51	193.56	193.52	---	193.47
31	---	---	193.26	193.27	---	193.12	---	193.50	---	193.52	---	---
LOW	---	---	193.27	193.31	193.33	193.42	193.38	193.52	193.60	193.63	---	---
HIGH	---	---	193.06	193.25	193.27	192.95	193.15	193.37	193.50	193.52	---	---

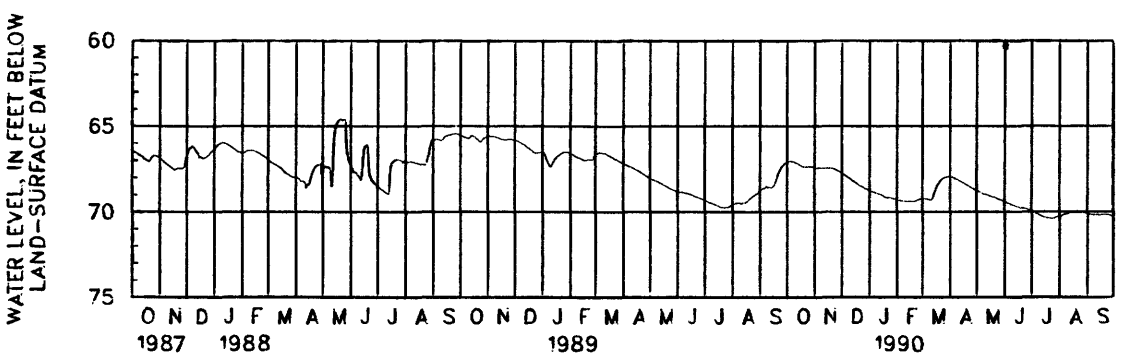


182515066194000. Local number, 212.
LOCATION.--Lat 18°25'15", long 66°19'40".
Owner: U.S. Geological Survey.
Name: Ponderosa TW-1.
AQUIFER.--Aguada Limestone-Cibao Formation.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-136 ft (0-41.1 m), perforated 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).
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, 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, 74.63 ft (22.75 m) below land-surface datum, Oct. 27,28, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	67.11	67.41	67.73	68.74	69.31	69.24	67.94	68.74	69.39	69.96	70.27	70.11
2	67.09	67.42	67.77	68.77	69.32	69.23	67.94	68.78	69.42	69.98	70.27	70.12
3	67.08	67.43	67.79	68.79	69.32	69.24	67.97	68.81	69.44	70.01	70.25	70.13
4	67.06	67.44	67.83	68.81	69.33	69.24	67.97	68.83	69.46	70.04	70.21	70.14
5	67.06	67.46	67.88	68.83	69.33	69.24	68.01	68.85	69.50	70.06	70.17	70.15
6	67.06	67.43	67.92	68.85	69.35	69.24	68.04	68.88	69.52	70.09	70.14	70.16
7	67.06	67.42	67.94	68.87	69.36	69.26	68.06	68.91	69.53	70.12	70.13	70.17
8	67.07	67.43	67.98	68.88	69.38	69.28	68.07	68.94	69.57	70.15	70.12	70.18
9	67.08	67.43	68.01	68.91	69.38	69.29	68.10	68.95	69.58	70.18	70.11	70.17
10	67.10	67.45	68.04	68.93	69.38	69.30	68.13	68.97	69.60	70.20	70.09	70.16
11	67.14	67.46	68.07	68.94	69.38	69.30	68.15	68.97	69.62	70.24	70.07	70.16
12	67.15	67.47	68.12	68.95	69.38	69.28	68.19	68.98	69.63	70.26	70.05	70.16
13	67.19	67.47	68.16	68.97	69.37	69.17	68.22	69.01	69.65	70.28	70.03	70.16
14	67.22	67.46	68.20	68.99	69.37	69.00	68.25	69.03	69.68	70.29	70.02	70.17
15	67.24	67.45	68.23	69.00	69.38	68.84	68.27	69.05	69.70	70.30	70.02	70.18
16	67.27	67.43	68.27	69.03	69.38	68.71	68.30	69.06	69.70	70.30	70.02	70.17
17	67.31	67.43	68.30	69.08	69.39	68.58	68.33	69.09	69.71	70.33	70.02	70.16
18	67.34	67.45	68.33	69.11	69.39	68.46	68.36	69.11	69.76	70.35	70.01	70.16
19	67.36	67.45	68.37	69.14	69.39	68.37	68.41	69.14	69.76	70.36	70.00	70.16
20	67.36	67.45	68.40	69.16	69.38	68.29	68.43	69.13	69.76	70.37	69.99	70.16
21	67.37	67.46	68.44	69.16	69.37	68.21	68.46	69.15	69.78	70.36	69.99	70.16
22	67.37	67.48	68.48	69.16	69.35	68.15	68.49	69.16	69.78	70.37	69.99	70.16
23	67.37	67.51	68.50	69.16	69.34	68.09	68.52	69.20	69.79	70.38	69.99	70.16
24	67.36	67.53	68.54	69.17	69.29	68.05	68.55	69.24	69.80	70.39	70.00	70.16
25	67.36	67.56	68.55	69.18	69.27	68.02	68.58	69.26	69.80	70.39	70.01	70.17
26	67.35	67.58	68.58	69.21	69.26	68.00	68.61	69.27	69.83	70.37	70.01	70.19
27	67.36	67.61	68.63	69.22	69.25	67.98	68.65	69.29	69.85	70.33	70.01	70.21
28	67.36	67.64	68.65	69.23	69.24	67.97	68.67	69.30	69.87	70.31	70.03	70.23
29	67.37	67.67	68.67	69.24	---	67.96	68.69	69.32	69.89	70.28	70.05	70.25
30	67.38	67.69	68.68	69.25	---	67.95	68.72	69.35	69.93	70.27	70.06	70.26
31	67.40	---	68.72	69.34	---	67.95	---	69.38	---	70.27	70.08	---
LOW	67.40	67.69	68.72	69.34	69.39	69.30	68.72	69.38	69.93	70.39	70.27	70.26
HIGH	67.06	67.41	67.73	68.74	69.24	67.95	67.94	68.74	69.39	69.96	69.99	70.11

WTR YR 1990 MEAN 68.96 LOW 70.39 HIGH 67.06

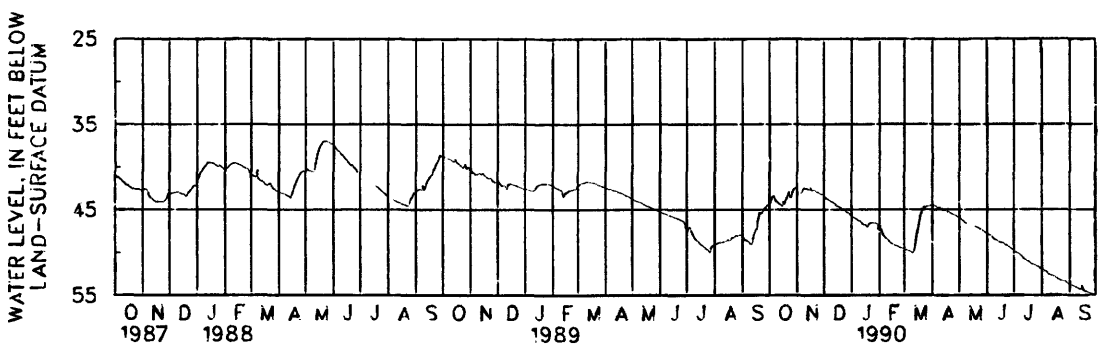


RIO CIBUCO BASIN

182330066185700. Local number, 213.
LOCATION.--Lat 18°23'30", long 66°18'57".
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).
DATUM.--Elevation of land-surface datum is about 394 ft (120 m) above mean sea level, from topographic map.
Measuring point: 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, 55.00 ft (16.8 m) below land-surface datum, Sept. 30, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44.39	42.89	43.31	45.70	46.93	49.55	44.53	45.89	47.83	49.73	51.97	53.72
2	44.30	42.96	43.51	45.83	46.90	49.64	44.45	45.97	47.92	49.83	51.97	53.75
3	44.06	42.93	43.62	45.89	46.92	49.69	44.47	46.08	47.96	49.96	52.03	53.82
4	43.60	43.01	43.66	45.92	47.63	49.70	44.50	46.10	47.94	49.99	52.14	53.85
5	43.49	43.08	43.75	45.98	47.83	49.78	44.54	46.25	48.00	50.02	52.19	53.89
6	43.43	43.04	43.82	46.08	48.03	49.80	44.63	46.30	48.07	50.12	52.23	53.92
7	43.36	42.85	43.87	46.12	48.13	49.83	44.75	46.43	48.19	50.19	52.32	53.97
8	43.94	42.57	43.89	46.20	48.29	49.86	44.75	46.55	48.34	50.24	52.44	54.03
9	44.01	42.45	44.05	46.23	48.37	49.98	44.74	46.57	48.45	50.37	52.56	54.06
10	44.04	42.47	44.10	46.32	48.38	50.06	44.73	---	48.52	50.42	52.61	54.15
11	44.19	42.61	44.10	46.33	48.58	50.00	44.86	---	48.54	50.63	52.63	54.18
12	44.27	42.51	44.18	46.43	48.67	49.73	44.92	---	48.61	50.70	52.73	54.25
13	44.36	42.65	44.26	46.60	48.76	49.13	44.95	---	48.66	50.80	52.71	54.32
14	44.42	42.57	44.33	46.68	48.87	48.33	44.99	---	48.70	50.80	52.77	54.35
15	44.50	42.73	44.50	46.77	48.96	47.72	45.00	---	48.80	50.87	52.79	53.90
16	44.55	42.43	44.49	46.81	49.00	47.31	45.08	---	48.81	51.02	52.85	54.33
17	44.05	42.73	44.62	46.80	49.06	46.76	45.19	---	48.84	51.05	52.96	54.40
18	44.34	42.73	44.62	46.97	49.14	46.18	45.17	46.85	48.84	51.08	52.99	54.50
19	43.94	42.73	44.72	47.04	49.21	45.65	45.28	46.97	48.89	51.18	53.09	54.54
20	43.69	42.70	44.77	46.71	49.23	45.39	45.30	47.02	48.94	51.28	53.17	54.57
21	43.52	42.75	44.84	46.58	49.26	45.00	45.33	47.06	49.11	51.36	53.22	54.60
22	43.22	42.84	44.93	46.53	49.29	44.89	45.42	47.08	49.13	51.38	53.28	54.64
23	42.89	42.92	45.03	46.52	49.32	44.65	45.48	47.15	49.16	51.41	53.31	54.70
24	43.47	42.95	45.11	46.49	49.44	44.65	45.55	47.23	49.20	51.42	53.32	54.77
25	43.52	42.99	45.16	46.49	49.45	44.69	45.57	47.29	49.31	51.49	53.37	54.79
26	43.52	43.05	45.28	46.56	49.49	44.59	45.63	47.41	49.36	51.54	53.39	54.80
27	42.87	43.13	45.33	46.59	49.48	44.57	45.69	47.43	49.42	51.62	53.37	54.82
28	42.65	43.20	45.34	46.57	49.49	44.56	45.73	47.49	49.54	51.65	53.46	54.88
29	42.54	43.20	45.36	46.55	---	44.50	45.79	47.55	49.56	51.75	53.54	54.95
30	42.45	43.21	45.52	46.76	---	44.51	45.85	47.65	49.69	51.84	53.64	54.98
31	42.34	---	45.63	47.30	---	44.53	---	47.67	---	51.93	53.69	---
LOW	44.55	43.21	45.63	47.30	49.49	50.06	45.85	---	49.69	51.93	53.69	54.98
HIGH	42.34	42.43	43.31	45.70	46.90	44.50	44.45	---	47.83	49.73	51.97	53.72

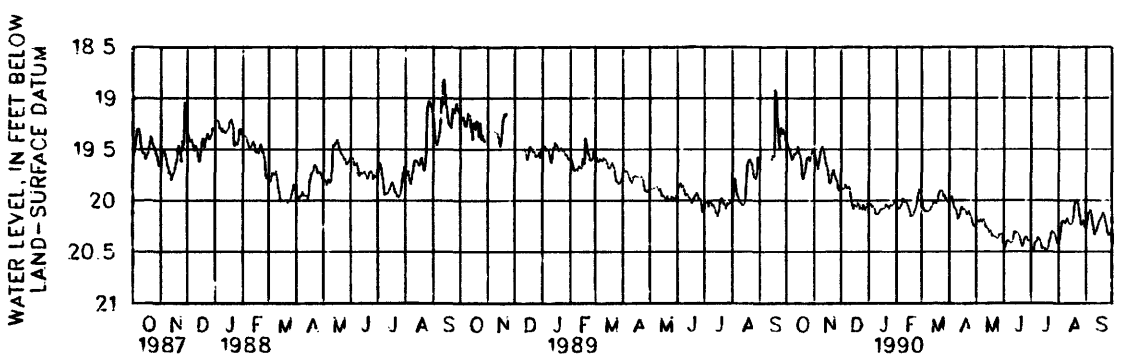


182746066170800. Local number, 214.
LOCATION.--Lat 18°27'46", long 66°17'08".
Owner: Dorado Beach Hotel.
Name: Dorado Beach No. 7.
AQUIFER.--Aymamon Limestone.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 18 in (0.46 m). Depth 100 ft (30.5 m).
DATUM.--Elevation of land-surface datum is about 39.0 ft (11.9 m) above mean sea level, from topographic map.
Measuring point: Hole on side of casing, 1.10 ft (0.34 m) above land-surface datum.
REMARKS.--Recording observation well. Water levels affected by nearby pumping well.
PERIOD OF RECORD.-- November 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 18.23 ft (5.56 m) below land-surface datum, Nov. 16, 1985; lowest water level recorded, 20.58 ft (6.27 m) below land-surface datum, June 22, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.43	19.49	19.85	20.01	20.03	19.94	20.03	20.24	20.43	20.41	20.41	20.26
2	19.43	19.58	19.88	20.02	20.07	20.01	20.00	20.20	20.45	20.43	20.41	20.24
3	19.49	19.60	19.89	20.05	20.08	20.08	19.99	20.20	20.46	20.46	20.37	20.17
4	19.49	19.65	19.88	20.03	20.07	20.08	19.96	20.19	20.43	20.50	20.29	20.12
5	19.52	19.69	19.88	20.06	20.08	20.10	19.96	20.21	20.39	20.47	20.21	20.12
6	19.56	19.62	19.84	20.05	20.05	20.11	20.03	20.19	20.39	20.41	20.20	20.09
7	19.60	19.58	19.87	20.05	20.04	20.10	20.07	20.18	20.39	20.41	20.20	20.10
8	19.59	19.52	19.88	20.08	19.98	20.11	20.07	20.21	20.41	20.39	20.20	20.18
9	19.58	19.49	19.88	20.13	19.98	20.11	20.10	20.19	20.41	20.36	20.22	20.24
10	19.54	19.47	19.86	20.13	20.01	20.09	20.13	20.18	20.41	20.36	20.19	20.29
11	19.55	19.50	19.88	20.13	20.01	20.09	20.18	20.20	20.40	20.38	20.17	20.33
12	19.53	19.54	19.96	20.13	20.00	20.06	20.16	20.26	20.35	20.39	20.20	20.29
13	19.52	19.60	20.01	20.11	20.03	20.06	20.13	20.25	20.30	20.44	20.22	20.30
14	19.47	19.64	20.05	20.09	20.05	20.03	20.09	20.27	20.32	20.47	20.23	20.26
15	19.54	19.66	20.08	20.08	20.08	20.00	20.06	20.28	20.30	20.46	20.23	20.23
16	19.54	19.71	20.04	20.08	20.11	20.02	20.06	20.31	20.31	20.46	20.23	20.20
17	19.58	19.75	20.05	20.08	20.15	20.02	20.09	20.29	20.32	20.48	20.20	20.18
18	19.66	19.82	20.06	20.07	20.15	20.03	20.08	20.29	20.33	20.46	20.15	20.16
19	19.76	19.83	20.06	20.08	20.14	20.00	20.09	20.34	20.35	20.49	20.05	20.15
20	19.79	19.81	20.02	20.04	20.15	19.95	20.11	20.35	20.39	20.48	20.02	20.12
21	19.77	19.74	20.04	20.04	20.11	19.92	20.14	20.34	20.42	20.45	20.02	20.12
22	19.72	19.70	20.08	20.06	20.09	19.90	20.12	20.35	20.45	20.39	19.99	20.17
23	19.63	19.70	20.07	20.05	20.06	19.90	20.10	20.36	20.42	20.37	20.00	20.21
24	19.58	19.75	20.07	20.08	20.01	19.91	20.13	20.35	20.38	20.32	20.09	20.25
25	19.59	19.77	20.09	20.05	19.96	19.90	20.14	20.37	20.36	20.30	20.15	20.31
26	19.57	19.79	20.04	20.04	19.92	19.96	20.17	20.37	20.35	20.30	20.22	20.33
27	19.61	19.81	20.05	20.05	19.89	19.94	20.21	20.33	20.36	20.31	20.24	20.34
28	19.57	19.88	20.09	20.05	19.92	19.98	20.24	20.33	20.39	20.32	20.22	20.32
29	19.54	19.90	20.06	20.03	---	19.97	20.25	20.33	20.39	20.35	20.19	20.31
30	19.52	19.88	20.07	20.01	---	20.00	20.25	20.32	20.39	20.38	20.20	20.28
31	19.51	---	20.03	19.99	---	20.01	---	20.36	---	20.42	20.26	---
LOW	19.79	19.90	20.09	20.13	20.15	20.11	20.25	20.37	20.46	20.50	20.41	20.34
HIGH	19.43	19.47	19.84	19.99	19.89	19.90	19.96	20.18	20.30	20.30	19.99	20.09

WTR YR 1990 MEAN 20.08 LOW 20.50 HIGH 19.43

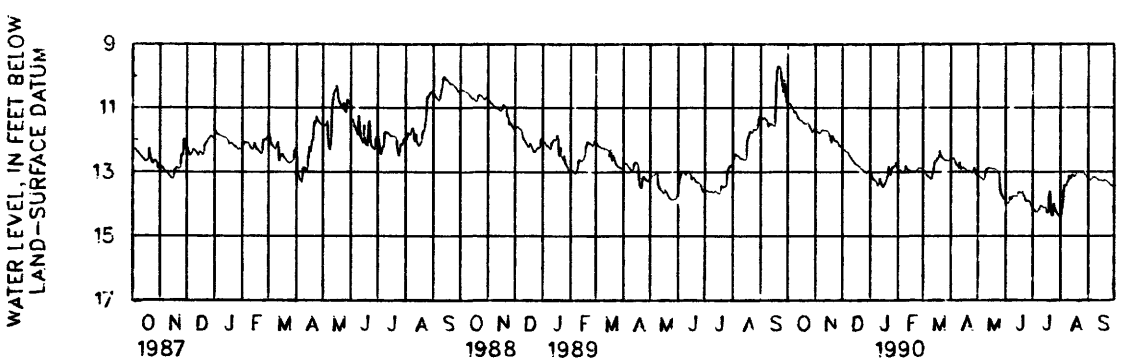


182530066135400. Local number, 216.
LOCATION.--Lat 18°25'30", long 66°13'54".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Pozo Navy-Campanillas.
AQUIFER.--Aguada Limestone.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m) 0-106 ft (0-32.3 m), cased 16 in (0.41 m) 0-20 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).
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.
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, 14.72 ft (4.49 m) below land-surface datum, Apr. 28, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10.85	11.67	12.26	12.93	13.05	12.93	12.63	13.12	13.94	14.15	14.42	13.22
2	10.85	11.66	12.29	12.97	12.96	12.96	12.65	13.12	13.96	14.16	14.44	13.25
3	10.89	11.70	12.32	13.16	12.94	13.00	12.58	13.14	13.98	14.18	14.14	13.25
4	10.89	11.77	12.33	13.21	12.94	13.03	12.56	13.16	13.98	14.21	14.08	13.25
5	10.97	11.78	12.35	13.22	12.97	13.09	12.58	13.19	13.95	14.25	13.55	13.24
6	10.99	11.80	12.38	13.24	12.99	13.12	12.70	13.21	13.78	14.25	13.41	13.17
7	11.05	11.76	12.37	13.26	13.01	13.14	12.76	13.24	13.87	14.25	13.42	13.17
8	11.15	11.71	12.42	13.29	12.96	13.18	12.79	13.26	13.81	14.18	13.41	13.17
9	11.12	11.70	12.49	13.37	12.91	13.17	12.83	13.14	13.77	14.16	13.31	13.17
10	11.14	11.69	12.53	13.42	12.79	13.23	12.88	12.95	13.76	14.06	13.27	13.18
11	11.18	11.72	12.57	13.36	12.88	13.17	12.70	12.92	13.75	14.06	13.11	13.22
12	11.29	11.71	12.62	13.21	12.90	13.02	12.89	12.90	13.75	14.08	13.22	13.24
13	11.34	11.69	12.65	13.21	12.95	12.88	12.91	12.88	13.75	14.10	13.20	13.27
14	11.36	11.74	12.69	13.39	12.96	12.70	12.87	12.86	13.77	14.12	13.09	13.27
15	11.39	11.71	12.74	13.43	12.97	12.66	12.86	12.87	13.65	14.11	13.10	13.26
16	11.41	11.80	12.75	13.47	12.99	12.65	12.87	12.89	13.63	14.10	13.12	13.27
17	11.40	11.90	12.77	13.37	12.99	12.57	12.90	12.90	13.63	14.27	13.14	13.28
18	11.45	12.01	12.79	13.34	12.99	12.59	12.93	12.88	13.64	14.28	13.12	13.28
19	11.49	12.09	12.81	13.27	12.98	12.50	12.96	12.90	13.67	14.27	12.98	13.27
20	11.48	11.86	12.83	13.14	12.99	12.34	12.96	12.90	13.61	13.70	12.98	13.25
21	11.51	11.95	12.86	13.09	12.99	12.50	12.97	12.92	13.75	13.59	13.01	13.26
22	11.50	11.99	12.90	12.82	12.96	12.54	12.96	12.93	13.75	14.28	13.01	13.29
23	11.47	12.03	12.92	13.07	12.92	12.56	12.98	12.99	13.90	14.36	12.99	13.31
24	11.47	12.05	12.94	13.08	12.89	12.59	13.02	13.03	13.93	14.35	13.02	13.34
25	11.54	12.05	12.98	12.93	12.88	12.62	13.05	13.07	13.91	13.99	13.04	13.37
26	11.60	12.08	12.98	12.84	12.88	12.65	12.97	13.60	13.90	14.18	13.01	13.40
27	11.66	12.17	13.01	12.84	12.88	12.64	12.86	13.67	13.91	14.21	13.02	13.43
28	11.74	12.19	13.04	12.82	12.90	12.65	12.92	13.72	13.94	14.26	13.06	13.43
29	11.77	12.21	12.99	12.79	---	12.65	13.06	13.78	14.03	14.30	13.09	13.48
30	11.71	12.23	12.97	12.70	---	12.65	13.11	13.82	14.11	14.35	13.13	13.50
31	11.66	---	12.97	12.85	---	12.57	---	13.86	---	14.40	13.18	---
LOW	11.77	12.23	13.04	13.47	13.05	13.23	13.11	13.86	14.11	14.40	14.44	13.50
HIGH	10.85	11.66	12.26	12.70	12.79	12.34	12.56	12.86	13.61	13.59	12.98	13.17

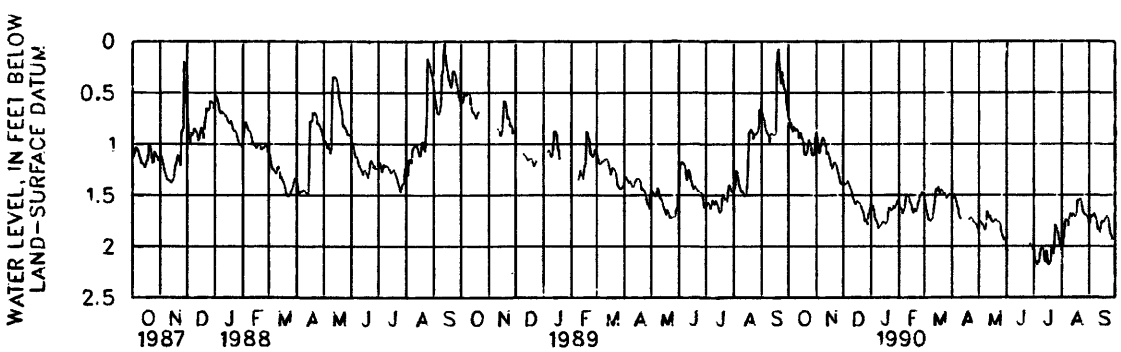
WTR YR 1990 MEAN 12.95 LOW 14.44 HIGH 10.85



182655066142400. Local number, 217.
LOCATION.--Lat 18°26'55", long 66°14'24".
Owner: U.S. Geological Survey.
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).
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.
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, 2.20 ft (0.67 m) below land-surface datum, July 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.71	.89	1.37	1.59	1.59	1.50	1.51	1.79	2.03	2.02	2.01	1.77
2	.76	.97	1.39	1.60	1.63	1.55	1.51	1.75	2.05	2.13	2.11	1.78
3	.84	1.01	1.39	1.61	1.63	1.63	1.53	1.76	---	2.15	1.95	1.71
4	.79	1.09	1.40	1.65	1.63	1.66	1.49	1.77	---	2.16	1.88	1.70
5	.86	1.06	1.38	1.71	1.68	1.70	1.52	1.79	---	2.18	1.76	1.71
6	.88	1.00	1.36	1.74	1.64	1.74	1.57	1.79	---	2.14	1.74	1.69
7	.83	.96	1.38	1.75	1.65	1.74	1.61	1.82	---	2.16	1.74	1.68
8	.84	.94	1.41	1.78	1.55	1.75	1.63	1.84	---	2.07	1.75	1.71
9	.87	.94	1.43	1.82	1.51	1.75	1.69	1.80	---	2.03	1.80	1.73
10	.85	.97	1.45	1.81	1.50	1.73	1.72	1.66	---	2.01	1.72	1.79
11	.86	1.01	1.50	1.80	1.51	1.72	1.73	1.66	---	2.02	1.68	1.84
12	.87	1.03	1.53	1.79	1.51	1.63	---	1.72	---	2.03	1.70	1.83
13	.94	1.10	1.56	1.77	1.57	1.56	---	1.71	---	2.13	1.71	1.86
14	.90	1.08	1.58	1.76	1.57	1.46	---	1.70	---	2.15	1.68	1.81
15	.89	1.10	1.59	1.76	1.60	1.44	---	1.75	---	2.04	1.69	1.76
16	.94	1.14	1.56	1.76	1.65	1.46	---	1.76	---	2.13	1.71	1.75
17	.95	1.17	1.56	1.78	1.67	1.42	---	1.77	---	2.17	1.70	1.76
18	1.01	1.21	1.57	1.77	1.65	1.47	---	1.75	---	2.18	1.67	1.75
19	1.10	1.24	1.58	1.76	1.63	1.48	---	1.74	---	2.15	1.55	1.73
20	1.10	1.22	1.58	1.66	1.66	1.45	1.74	1.74	---	2.14	1.55	1.72
21	1.11	1.19	1.62	1.62	1.65	1.45	1.73	1.74	---	2.00	1.55	1.70
22	1.08	1.18	1.65	1.63	1.58	1.46	1.72	1.76	---	2.00	1.54	1.72
23	1.02	1.19	1.67	1.65	1.56	1.49	1.72	1.76	---	2.08	1.54	1.75
24	.96	1.22	1.70	1.64	1.52	1.48	1.74	1.76	---	1.95	1.61	1.84
25	1.00	1.27	1.76	1.63	1.50	1.48	1.76	1.78	---	1.78	1.65	1.88
26	1.01	1.29	1.74	1.60	1.48	1.53	1.77	1.86	---	1.83	1.67	1.90
27	1.10	1.34	1.75	1.63	1.47	1.51	1.77	1.89	1.98	1.83	1.69	1.93
28	1.11	1.39	1.78	1.61	1.48	1.51	1.79	1.91	1.98	1.87	1.70	1.92
29	1.11	1.39	1.68	1.59	---	1.49	1.81	1.94	1.99	1.93	1.69	1.92
30	1.05	1.39	1.68	1.56	---	1.49	1.83	1.92	2.03	1.97	1.71	1.92
31	.94	---	1.62	1.55	---	1.50	---	1.95	---	2.00	1.73	---
LOW	1.11	1.39	1.78	1.82	1.68	1.75	---	1.95	---	2.18	2.11	1.93
HIGH	.71	.89	1.36	1.55	1.47	1.42	---	1.66	---	1.78	1.54	1.68

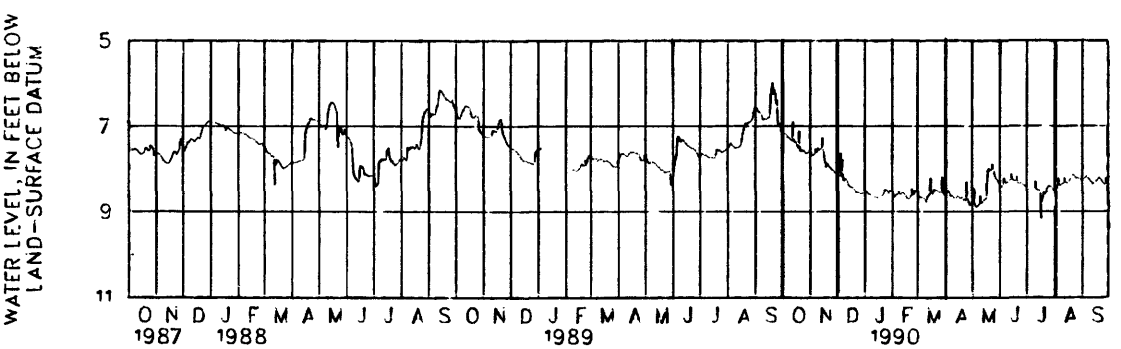


182623066111000. Local number, 218.
LOCATION.--Lat 18°26'23", long 66°11'10".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Levittown No. 7.
AQUIFER.--Alluvial deposits-Aymamon Limestone.
WELL CHARACTERISTICS.--Drilled water-table well.
DATUM.--Elevation of land surface datum is about 10.0 ft (3.05 m) above mean sea level, from topographic map.
Measuring point: Hole on pump base, 1.55 ft (0.47 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, 5.94 ft (1.81 m) below land-surface datum, Sept. 20, 1989; lowest water level recorded, 9.77 ft (2.98 m) below land-surface datum, Mar. 23, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.16	7.57	8.11	8.52	8.55	8.55	8.61	8.79	8.38	8.44	8.52	8.28
2	7.16	7.60	8.17	8.53	8.58	8.60	8.56	8.81	8.40	8.45	8.54	8.27
3	7.19	7.63	8.18	8.53	8.65	8.66	8.54	8.44	8.42	8.48	8.46	8.24
4	7.17	7.68	8.17	8.55	8.64	8.67	8.51	8.84	8.41	8.49	8.48	8.22
5	7.17	7.68	7.63	8.58	8.60	8.66	8.51	8.88	8.38	8.49	8.44	8.20
6	7.20	7.64	8.19	8.59	8.59	8.68	8.58	8.89	8.22	8.50	8.23	8.18
7	7.25	7.53	7.78	8.58	8.59	8.68	8.63	8.87	8.30	8.50	8.39	8.18
8	7.27	7.60	8.22	8.60	8.53	8.69	8.62	8.86	8.33	8.49	8.38	8.22
9	7.27	7.61	8.27	8.60	8.56	8.69	8.63	8.82	8.32	8.48	8.39	8.25
10	7.30	7.51	8.25	8.60	8.59	8.73	8.67	8.63	8.31	8.45	8.35	8.27
11	7.31	7.56	8.23	8.63	8.58	8.77	8.68	8.80	8.31	8.30	8.35	8.31
12	7.35	7.54	8.26	8.63	8.55	8.65	8.68	8.79	8.29	8.48	8.35	8.31
13	6.89	7.54	8.30	8.65	8.55	8.63	8.68	8.77	8.26	8.50	8.22	8.35
14	7.35	7.52	8.37	8.66	8.57	8.59	8.66	8.72	8.13	8.50	8.34	8.34
15	7.38	7.27	8.41	8.67	8.60	8.59	8.63	8.73	8.24	8.50	8.34	8.35
16	7.36	7.55	8.41	8.66	8.64	8.22	8.66	8.70	8.27	8.50	8.34	8.33
17	7.40	7.71	8.43	8.66	8.68	8.52	8.68	8.69	8.26	9.18	8.32	8.29
18	7.47	7.85	8.43	8.66	8.68	8.58	8.70	8.33	8.28	8.76	8.28	8.28
19	7.51	7.97	8.45	8.64	8.69	8.52	8.66	8.03	8.29	8.64	8.24	8.25
20	7.10	7.86	8.45	8.63	8.68	8.49	8.67	8.00	8.19	8.54	8.20	8.22
21	7.59	7.90	8.49	8.61	8.63	8.50	8.72	8.04	8.32	8.59	8.18	8.21
22	7.58	7.91	8.54	8.57	8.61	8.52	8.73	8.02	8.35	8.56	8.15	8.26
23	7.57	7.97	8.55	8.52	8.47	8.49	8.70	8.02	8.36	8.52	8.14	8.27
24	7.57	7.97	8.54	8.49	8.60	8.53	8.74	7.89	8.32	8.46	8.18	8.31
25	7.57	8.01	8.54	8.49	8.58	8.53	8.31	8.02	8.34	8.42	8.22	8.34
26	7.58	8.03	8.55	8.50	8.51	8.56	8.73	8.12	8.35	8.40	8.22	8.35
27	7.62	8.03	8.58	8.56	8.52	8.53	8.78	8.18	8.36	8.40	8.22	8.38
28	7.65	8.07	8.57	8.56	8.52	8.55	8.84	8.22	8.39	8.42	8.22	8.22
29	7.62	8.10	8.56	8.51	---	8.18	8.85	8.25	8.40	8.44	8.23	8.42
30	7.61	8.10	8.56	8.52	---	8.56	8.83	8.29	8.42	8.47	8.24	8.42
31	7.61	---	8.57	8.52	---	8.59	---	8.32	---	8.50	8.25	---
LOW	7.65	8.10	8.58	8.67	8.69	8.77	8.85	8.89	8.42	9.18	8.54	8.42
HIGH	6.89	7.27	7.63	8.49	8.47	8.18	8.31	7.89	8.13	8.30	8.14	8.18

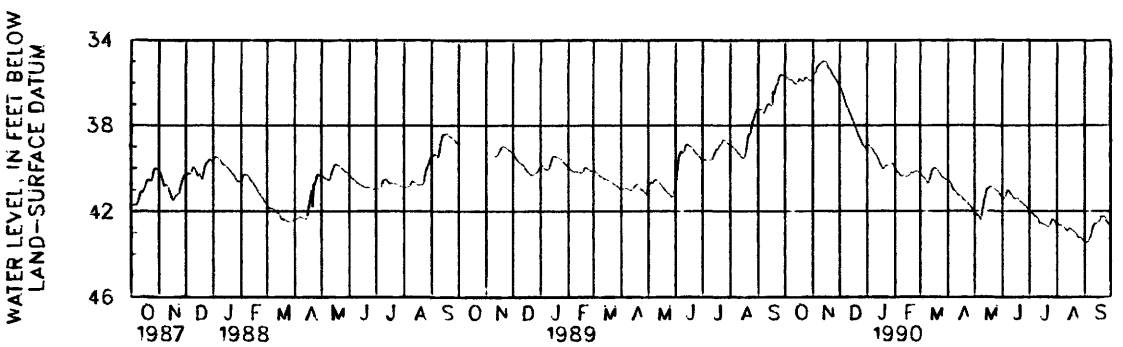
WTR YR 1990 MEAN 8.31 LOW 9.18 HIGH 6.89



182441066082600. Local number, 219.
LOCATION.--Lat 18°24'41", long 66°08'26".
Owner: 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).
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, 43.32 ft (13.20 m) below land-surface datum, Mar. 15, 1987.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35.66	35.68	36.16	38.98	39.95	40.25	40.53	41.98	41.35	41.93	42.60	43.48
2	35.68	35.55	36.28	38.92	40.06	40.31	40.57	42.04	41.38	41.97	42.61	43.48
3	35.71	35.56	36.32	38.92	40.15	40.33	40.61	42.14	41.38	42.03	42.63	43.51
4	35.73	35.57	36.37	38.95	40.17	40.35	40.65	42.17	41.34	42.08	42.64	43.48
5	35.78	35.47	36.54	39.01	40.17	40.42	40.76	42.21	41.29	42.11	42.67	43.49
6	35.85	35.32	36.69	39.05	40.25	40.47	40.88	42.23	41.11	42.14	42.67	43.38
7	35.84	35.23	36.85	39.08	40.34	40.49	40.97	42.31	41.02	42.20	42.67	43.27
8	35.83	35.19	36.98	39.15	40.36	40.54	41.01	42.38	41.02	42.24	42.71	43.15
9	35.86	35.13	37.09	39.24	40.38	40.65	41.04	42.15	41.06	42.27	42.76	43.00
10	35.91	35.10	37.14	39.31	40.35	40.70	41.08	41.87	41.16	42.29	42.80	42.80
11	35.97	35.04	37.24	39.35	40.32	40.64	41.11	41.72	41.19	42.36	42.86	42.72
12	36.02	35.00	37.36	39.42	40.33	40.48	41.19	41.45	41.25	42.50	42.92	---
13	36.05	35.00	37.46	39.52	40.39	40.29	41.25	41.30	41.32	42.55	42.92	---
14	36.04	34.99	37.54	39.63	40.41	40.12	41.26	41.08	41.39	42.53	42.85	---
15	36.04	35.00	37.68	39.76	40.37	40.05	41.25	40.98	41.41	42.53	42.82	---
16	35.90	35.01	37.74	39.83	40.35	40.02	41.25	40.94	41.39	42.59	42.84	---
17	35.82	35.08	37.88	39.88	40.33	39.99	41.32	40.92	41.40	42.58	42.87	---
18	35.84	35.20	37.99	39.99	40.30	39.98	41.41	40.88	41.39	42.60	42.90	---
19	35.88	35.32	38.12	40.02	40.22	40.02	41.47	40.86	41.40	42.62	42.94	---
20	35.89	35.33	38.23	40.00	40.17	40.07	41.50	40.84	41.47	42.66	42.98	---
21	35.93	35.36	38.33	39.91	40.21	40.12	41.51	40.85	41.54	42.71	43.00	---
22	35.92	35.49	38.47	39.87	40.22	40.18	41.51	40.88	41.56	42.71	43.06	---
23	35.80	35.57	38.53	39.89	40.16	40.24	41.56	40.91	41.59	42.71	43.14	---
24	35.75	35.65	38.61	39.87	40.14	40.30	41.65	40.97	41.62	42.63	43.22	---
25	35.75	35.71	38.72	39.84	40.11	40.36	41.70	41.01	41.69	42.50	43.27	---
26	35.77	35.75	38.82	39.88	40.14	40.42	41.74	41.03	41.72	42.40	43.27	---
27	35.83	35.82	38.91	39.89	40.17	40.43	41.81	41.04	41.74	42.38	43.25	---
28	35.87	35.92	38.95	39.84	40.21	40.48	41.86	41.08	41.79	42.39	43.28	---
29	35.91	35.98	38.97	39.78	---	40.50	41.89	41.17	41.84	42.44	43.35	---
30	35.94	36.05	39.05	39.79	---	40.53	41.93	41.24	41.91	42.49	43.39	---
31	35.84	---	39.08	39.89	---	40.53	---	41.31	---	42.56	43.45	---
LOW	36.05	36.05	39.08	40.02	40.41	40.70	41.93	42.38	41.91	42.71	43.45	---
HIGH	35.66	34.99	36.16	38.92	39.95	39.98	40.53	40.84	41.02	41.93	42.60	---

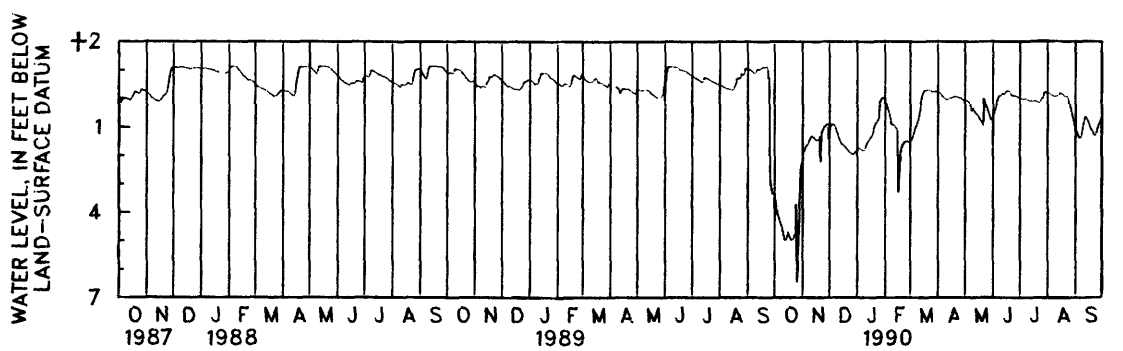


182413066044000. Local number, 220.
LOCATION.--Lat 18°24'13", long 66°04'40".
Owner: P.R. Aqueduct and Sewer Authority.
Name: Parque San Luis Rey-Américo Miranda
AQUIFER.--Surficial Deposits-Cibao Formation.
WELL CHARACTERISTICS.--Drilled unused artesian well, diameter 10 in (0.25 m), cased 8 in (0.20 m) 0-166 ft (0-50.6 m), perforated 39-166 ft (11.9-50.6 m). Depth 166 ft (50.6 m).
DATUM.--Elevation of land-surface datum is about 16.4 ft (5.0 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.--Recording observation well. Water levels affected by nearby pumping well.
PERIOD OF RECORD.--February 1986 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +2.99 ft (+0.91 m) above land-surface datum, Feb. 6, May 8-9, 1986; lowest water level recorded, 6.48 ft (1.98 m) below land-surface datum, Oct. 26, 1989

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.35	2.09	1.04	1.77	+.01	1.50	+.22	.04	.63	+.03	+.19	1.05
2	3.48	1.94	.96	1.74	.08	1.49	+.22	.04	.51	+.01	+.18	1.14
3	3.82	1.84	.93	1.75	.23	1.45	+.19	.08	.41	.02	+.18	1.21
4	4.08	1.79	.90	1.76	.36	1.34	+.18	.10	.33	.03	+.15	1.30
5	4.10	1.68	.90	1.78	.47	1.22	+.12	.12	.19	.04	+.13	1.37
6	4.26	1.65	.90	1.81	.59	1.10	+.08	.14	.07	.00	+.12	1.36
7	4.35	1.62	.95	1.82	.69	1.00	+.05	.26	+.02	.00	+.10	1.37
8	4.46	1.50	1.05	1.85	.90	.94	+.02	.43	+.08	.02	+.09	1.22
9	4.49	1.44	1.15	1.82	.92	.83	+.01	.42	+.08	.03	+.06	1.04
10	4.68	1.37	1.23	1.74	.91	.71	.03	.34	+.09	.05	+.07	.84
11	4.83	1.33	1.32	1.65	.92	.58	.03	.42	+.15	.05	+.09	.70
12	4.95	1.32	1.40	1.58	.96	.38	.04	.47	+.17	.08	+.08	.64
13	4.99	1.33	1.47	1.52	1.03	.13	.01	.53	+.15	.09	+.09	.68
14	4.98	1.38	1.54	1.48	1.05	+.03	+.01	.53	+.13	.08	+.16	.75
15	4.84	1.43	1.60	1.43	1.17	+.12	+.03	.58	+.21	.09	+.19	.84
16	4.70	1.45	1.61	1.36	3.33	+.22	+.02	.65	+.24	.11	+.17	.92
17	4.81	1.48	1.64	1.33	2.50	+.27	+.01	.72	+.26	.08	+.15	1.01
18	4.89	1.46	1.67	1.28	2.05	+.28	+.06	.75	+.26	.09	+.14	1.08
19	4.95	1.43	1.70	1.17	1.82	+.28	+.06	.81	+.25	.08	+.10	1.11
20	5.00	1.34	1.74	.98	1.68	+.30	+.07	.87	+.21	.10	+.09	1.18
21	4.93	2.25	1.78	.91	1.62	+.27	+.07	.94	+.15	.13	+.06	1.25
22	4.95	1.28	1.82	.86	1.57	+.25	+.07	+.01	+.10	.15	+.07	1.30
23	4.82	1.14	1.86	.85	1.52	+.28	+.05	.09	+.11	.15	+.08	1.30
24	4.76	1.07	1.88	.75	1.51	+.28	+.01	.21	+.09	.10	.00	1.18
25	3.70	1.01	1.90	.70	1.49	+.23	+.04	.32	+.10	.03	.16	1.05
26	6.48	.97	1.93	.24	1.49	+.22	+.04	.41	+.08	.00	.29	.94
27	5.46	.95	1.96	.10	1.53	+.23	+.01	.49	+.07	.00	.42	.87
28	4.46	.90	1.96	.04	1.53	+.23	.03	.59	+.05	+.17	.55	.79
29	3.45	.93	1.90	+.01	---	+.22	.05	.68	+.04	+.21	.68	.73
30	2.45	1.43	1.87	+.02	---	+.24	.06	.76	+.02	+.22	.81	.67
31	2.29	---	1.87	+.02	---	+.24	---	.71	---	+.20	.94	---
LOW	6.48	2.25	1.96	1.85	3.33	1.50	.06	.94	.63	.15	.94	1.37
HIGH	2.29	.90	.90	+.02	+.01	+.30	+.22	+.01	+.26	+.22	+.19	.64

WTR YR 1990 MEAN .96 LOW 6.48 HIGH +.30



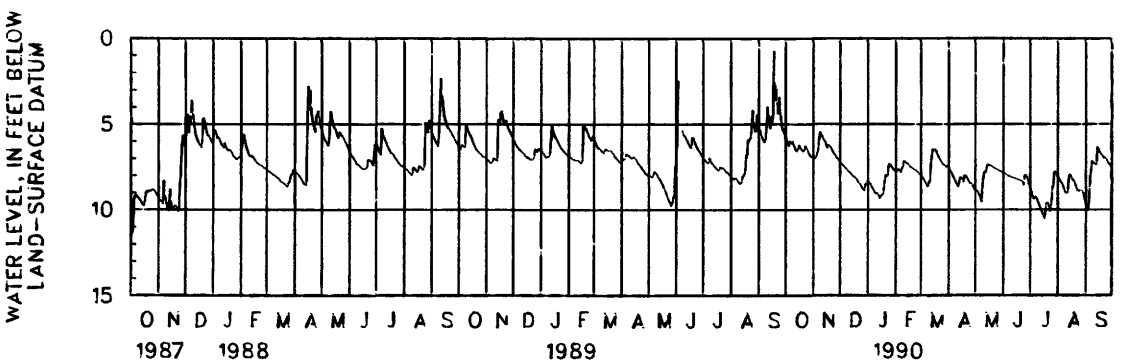
+ Above land-surface datum.

182436066031200. Local number, 221.
LOCATION.--Lat 18°24'36", long 66°03'12".
Owner: P.R. Highway Authority
Name: Hyde Park TW-10.
AQUIFER.--Surficial Deposits-Cibao Formation.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m) 0-107 ft (0-32.6 m), perforated 19-107 ft (5.79-32.6 m). Depth 107 ft (32.6 m).
DATUM.--Elevation of land-surface datum is about 82.0 ft (25.0 m) above mean sea level, from topographic map. Measuring point: Hole on side of casing, 0.70 ft (0.21 m) above land-surface datum. Prior July 28, 1986, top of shelter floor, 3.14 ft (0.96 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, 0.62 ft (0.19 m) below land-surface datum, Sept. 18, 1989; lowest water level recorded, 15.59 ft (4.75 m) below land-surface datum, Apr. 5, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.67	6.86	7.22	8.35	7.79	8.01	7.54	8.90	7.84	8.69	8.02	9.65
2	5.81	6.89	7.29	8.35	7.84	8.03	7.63	8.89	7.88	8.85	8.14	9.86
3	6.00	7.00	7.34	8.41	7.74	8.11	7.71	8.88	7.90	9.04	8.21	10.03
4	6.11	7.00	7.39	8.51	7.62	8.21	7.79	8.98	7.92	9.25	8.33	10.01
5	6.28	6.83	7.44	8.64	7.66	8.31	7.90	9.07	7.96	9.36	8.43	9.00
6	5.99	6.68	7.49	8.75	7.74	8.42	8.02	9.23	8.03	9.35	8.45	8.00
7	6.07	6.52	7.56	8.83	7.83	8.49	8.12	9.42	8.05	9.26	8.68	7.63
8	6.14	5.83	7.61	8.93	7.58	8.63	8.24	9.55	8.06	9.27	8.76	7.17
9	6.00	5.47	7.67	9.01	7.46	8.64	8.37	8.57	8.08	9.46	8.97	7.22
10	6.18	5.61	7.72	9.07	7.19	8.38	8.48	8.11	8.10	9.62	9.03	7.26
11	6.34	5.66	7.78	9.02	7.15	8.34	8.56	7.85	8.12	9.74	9.01	7.31
12	6.47	5.80	7.83	9.02	7.20	7.44	8.65	7.78	8.14	9.85	9.01	7.31
13	6.55	5.94	7.88	9.18	7.30	6.88	8.38	7.78	8.16	10.03	8.18	7.37
14	6.60	5.97	7.96	9.32	7.26	6.47	8.14	7.42	8.18	10.13	7.96	6.33
15	6.42	6.06	8.03	9.22	7.31	6.53	8.14	7.38	8.20	10.25	7.97	6.46
16	6.23	6.28	8.07	9.17	7.41	6.52	8.17	7.40	8.22	10.37	8.09	6.57
17	6.31	6.42	8.08	9.12	7.49	6.47	8.25	7.42	8.24	10.53	8.23	6.67
18	6.43	6.21	8.14	9.10	7.54	6.58	8.38	7.43	8.26	10.05	8.30	6.75
19	6.51	6.25	8.19	8.71	7.53	6.72	8.01	7.45	8.27	9.61	8.32	6.77
20	6.54	6.32	8.27	8.28	7.60	6.84	8.00	7.48	8.29	9.61	8.49	6.87
21	6.63	6.38	8.37	7.98	7.65	6.93	8.08	7.55	8.31	9.62	8.63	6.97
22	6.53	6.53	8.43	7.99	7.65	7.04	8.17	7.58	8.33	9.83	8.76	6.93
23	6.27	6.63	8.50	8.04	7.70	7.11	8.27	7.61	8.45	10.08	8.90	6.96
24	6.33	6.71	8.57	7.42	7.73	7.21	8.39	7.63	8.58	9.90	8.90	7.04
25	6.46	6.78	8.67	7.32	7.79	7.30	8.45	7.66	7.99	9.35	8.90	7.13
26	6.57	6.84	8.75	7.35	7.83	7.36	8.45	7.68	7.99	8.61	8.86	7.25
27	6.72	6.94	8.82	7.47	7.90	7.37	8.48	7.72	8.04	8.61	8.86	7.33
28	6.81	7.00	8.87	7.54	7.97	7.44	8.62	7.75	8.14	7.79	8.89	7.39
29	6.89	7.06	8.53	7.63	---	7.45	8.72	7.76	8.32	7.79	9.02	7.46
30	6.90	7.13	8.47	7.67	---	7.53	8.80	7.79	8.54	7.85	9.22	7.52
31	6.94	---	8.51	7.74	---	7.42	---	7.82	---	7.93	9.42	---
LOW	6.94	7.13	8.87	9.32	7.97	8.64	8.80	9.55	8.58	10.53	9.42	10.03
HIGH	5.67	5.47	7.22	7.32	7.15	6.47	7.54	7.38	7.84	7.79	7.96	6.33

WTR YR 1990 MEAN 7.86 LOW 10.53 HIGH 5.47



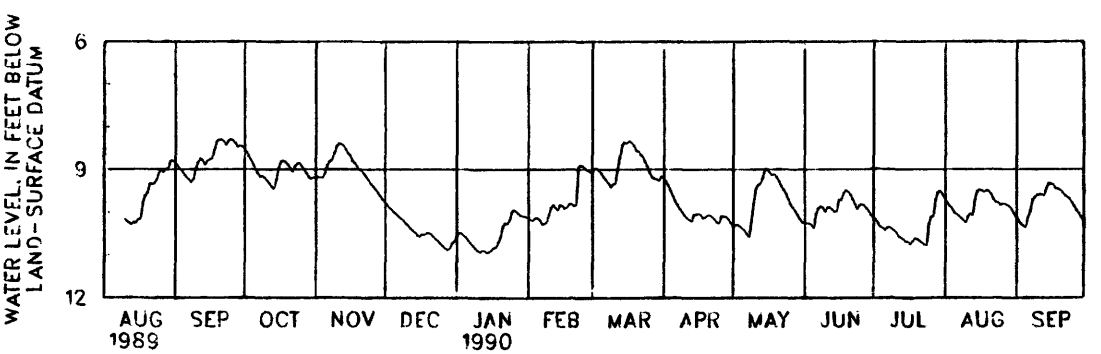
RIO HONDO TO RIO PUERTO NUEVO BASINS

182511066045401. Local number, PN-2.
LOCATION.--Lat 18°25'11, long 66°04'54".
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).
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, 8.26 ft (2.52 m) below land-surface datum, Sept. 25, 1989; lowest water level recorded, 10.95 ft (3.34 m) below land-surface datum, Jan. 14-15, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.53	9.19	9.76	10.56	10.13	9.09	9.18	10.35	10.24	10.14	9.69	10.13
2	8.60	9.18	9.83	10.48	10.18	8.97	9.29	10.29	10.26	10.17	9.78	10.20
3	8.70	9.18	9.89	10.49	10.19	8.97	9.38	10.30	10.26	10.27	9.85	10.28
4	8.78	9.19	9.94	10.54	10.13	9.03	9.51	10.33	10.29	10.34	9.91	10.32
5	8.90	9.08	10.00	10.59	10.13	9.09	9.64	10.38	10.37	10.37	10.01	10.36
6	9.01	8.89	10.05	10.66	10.18	9.19	9.76	10.42	10.01	10.42	10.04	10.09
7	9.09	8.81	10.11	10.72	10.28	9.24	9.84	10.51	9.89	10.35	10.09	9.97
8	9.17	8.78	10.15	10.78	10.27	9.32	9.94	10.58	9.86	10.35	10.14	9.69
9	9.15	8.59	10.20	10.84	10.23	9.41	10.00	10.16	9.89	10.39	10.19	9.65
10	9.20	8.44	10.27	10.90	10.04	9.34	10.08	9.74	9.99	10.43	10.25	9.58
11	9.26	8.39	10.31	10.93	9.87	9.32	10.14	9.42	9.88	10.48	10.07	9.58
12	9.33	8.40	10.38	10.89	9.82	9.01	10.18	9.35	9.88	10.58	10.03	9.58
13	9.41	8.45	10.42	10.90	9.89	8.69	10.21	9.33	9.93	10.60	10.07	9.61
14	9.45	8.54	10.48	10.94	9.94	8.41	10.04	9.17	9.99	10.64	9.68	9.42
15	9.22	8.63	10.55	10.92	9.82	8.36	10.05	8.98	9.97	10.70	9.50	9.31
16	8.95	8.68	10.57	10.88	9.85	8.39	10.03	8.99	9.70	10.70	9.47	9.34
17	8.81	8.81	10.51	10.82	9.91	8.33	10.06	9.08	9.71	10.76	9.50	9.35
18	8.79	8.86	10.53	10.81	9.88	8.37	10.14	9.13	9.54	10.68	9.53	9.45
19	8.83	8.95	10.49	10.69	9.80	8.45	10.12	9.11	9.49	10.61	9.48	9.45
20	8.89	9.02	10.49	10.57	9.80	8.57	10.07	9.19	9.52	10.63	9.51	9.49
21	8.98	9.03	10.52	10.31	9.85	8.58	10.06	9.29	9.60	10.68	9.58	9.54
22	9.05	9.11	10.58	10.25	9.82	8.66	10.11	9.40	9.71	10.72	9.70	9.61
23	8.91	9.18	10.64	10.27	8.92	8.70	10.16	9.48	9.83	10.76	9.76	9.65
24	8.86	9.25	10.68	10.16	8.90	8.83	10.24	9.58	9.92	10.77	9.77	9.69
25	8.85	9.35	10.74	9.96	8.93	8.94	10.26	9.70	9.83	10.26	9.84	9.78
26	8.92	9.40	10.79	9.93	8.98	9.09	10.08	9.82	9.81	10.10	9.80	9.86
27	9.00	9.47	10.85	9.99	9.02	9.19	10.09	9.89	9.84	10.08	9.80	9.96
28	9.09	9.55	10.88	10.04	9.06	9.21	10.10	9.97	9.91	9.69	9.84	10.03
29	9.18	9.63	10.84	10.08	---	9.23	10.17	10.07	9.97	9.52	9.87	10.12
30	9.22	9.70	10.71	10.09	---	9.26	10.25	10.15	10.07	9.50	9.94	10.20
31	9.19	---	10.68	10.10	---	9.16	---	10.24	---	9.59	10.04	---
LOW	9.45	9.70	10.88	10.94	10.28	9.41	10.26	10.58	10.37	10.77	10.25	10.36
HIGH	8.53	8.39	9.76	9.93	8.90	8.33	9.18	8.98	9.49	9.50	9.47	9.31

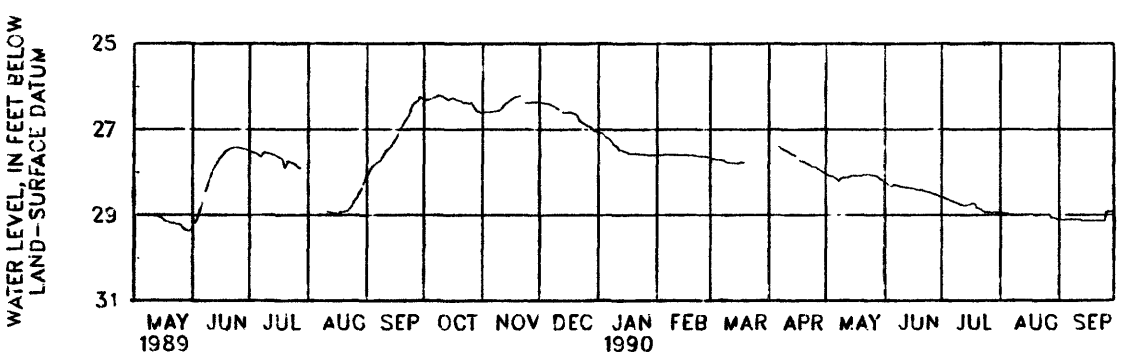
WTR YR 1990 MEAN 9.77 LOW 10.94 HIGH 8.33



182435066052700. Local number, PN-5.
LOCATION.--Lat 18°24'35", long 66°05'27".
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).
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, 26.20 ft (7.98 m) below land-surface datum, Nov. 21-22, 1989; lowest water level recorded, 29.38 ft (8.95 m) below land-surface datum, May 30, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.30	26.60	26.36	27.06	27.60	27.65	---	28.01	28.23	28.57	28.94	29.09
2	26.31	26.59	26.37	27.07	27.60	27.69	---	28.06	28.24	28.59	28.94	29.10
3	26.31	26.59	26.38	27.08	27.60	27.69	---	28.08	28.29	28.61	28.95	29.11
4	26.30	26.59	26.39	27.14	27.60	27.70	---	28.09	28.32	28.63	28.95	29.11
5	26.28	26.59	26.39	27.19	27.58	27.70	---	28.09	28.33	28.64	28.95	29.10
6	26.26	26.58	26.40	27.20	27.58	27.71	27.40	28.12	28.28	28.66	28.99	29.10
7	26.25	26.57	26.43	27.23	27.58	27.71	27.43	28.17	28.30	28.68	28.99	29.10
8	26.22	26.57	26.45	27.29	27.59	27.72	27.45	28.20	28.31	28.70	28.99	29.10
9	26.21	26.56	26.47	27.35	27.59	27.76	27.48	28.15	28.33	28.71	28.99	29.10
10	26.22	26.55	26.51	27.38	27.59	27.77	27.50	28.12	28.34	28.73	28.99	29.10
11	26.24	26.51	26.53	27.41	27.59	27.77	27.52	28.12	28.34	28.75	28.99	29.10
12	26.26	26.45	---	27.48	27.60	27.78	27.55	28.12	28.36	28.76	28.99	29.10
13	26.28	26.40	26.60	27.48	27.60	27.78	27.58	28.12	28.36	28.78	28.99	29.13
14	26.31	26.38	26.60	27.51	27.60	27.79	27.59	28.09	28.37	28.77	28.99	29.13
15	26.29	26.34	26.60	27.52	27.60	27.79	27.62	28.08	28.37	28.76	28.99	29.13
16	26.27	26.31	26.60	27.53	27.60	27.80	---	28.08	28.38	28.75	28.99	29.13
17	26.27	26.29	26.60	27.57	27.61	27.76	27.73	28.08	28.39	28.73	28.98	29.13
18	26.31	26.25	26.61	27.57	27.61	27.77	27.74	28.08	28.41	28.72	28.98	29.13
19	26.32	26.24	26.63	27.57	27.61	27.78	27.75	28.08	28.41	28.75	28.98	29.13
20	26.33	26.23	26.64	27.57	27.61	---	27.77	28.08	28.41	28.84	28.98	29.13
21	26.35	26.21	26.68	27.57	27.62	---	27.80	28.06	28.42	28.84	28.98	29.13
22	26.38	26.33	26.80	27.57	27.62	---	27.82	28.05	28.44	28.87	28.98	29.13
23	26.37	26.39	26.82	27.58	27.62	---	27.84	28.05	28.45	28.90	28.98	29.13
24	26.38	26.38	26.86	27.58	27.63	---	27.88	28.05	28.46	28.93	28.98	29.13
25	26.40	26.38	26.87	27.58	27.63	---	27.87	28.06	28.47	28.93	28.98	29.14
26	26.36	26.37	26.91	27.59	27.64	---	27.88	28.07	28.49	28.93	28.98	28.92
27	26.45	26.36	26.92	27.60	27.64	---	27.92	28.07	28.51	28.94	28.98	28.92
28	26.52	26.36	26.94	27.60	27.65	---	27.94	28.09	28.52	28.94	29.06	28.92
29	26.57	26.36	27.00	27.60	---	---	27.98	28.12	28.54	28.93	29.06	28.92
30	26.58	26.36	27.03	27.60	---	---	28.00	28.17	28.56	28.93	29.07	28.92
31	26.61	---	27.05	27.60	---	---	---	28.19	---	28.94	29.09	---
LOW	26.61	26.60	---	27.60	27.65	---	---	28.20	28.56	28.94	29.09	29.14
HIGH	26.21	26.21	---	27.06	27.58	---	---	28.01	28.23	28.57	28.94	28.92

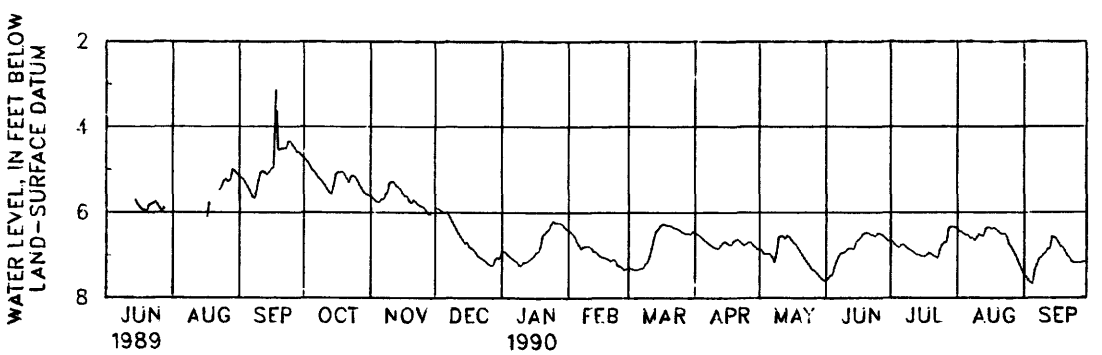


RIO HONDO TO RIO PUERTO NUEVO BASINS

182445066043401. Local number, PN-6.
LOCATION.--Lat 18°24'45", long 66°04'34".
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).
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 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, 7.71 ft (2.35 m) below land-surface datum, Sept. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

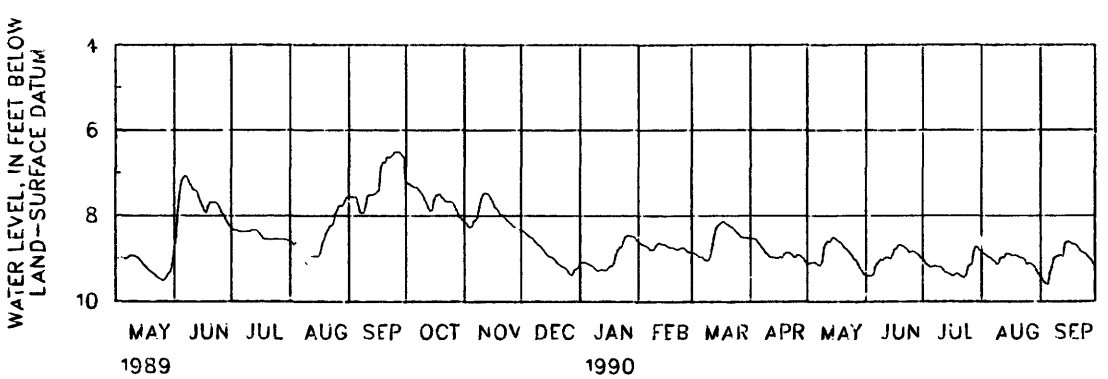
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.71	5.62	5.88	6.95	6.42	7.30	6.47	6.86	7.61	6.65	6.38	7.44
2	4.77	5.66	5.90	6.91	6.45	7.30	6.51	6.87	7.53	6.69	6.44	7.50
3	4.83	5.72	5.92	6.94	6.50	7.33	6.53	6.97	7.48	6.75	6.45	7.59
4	4.91	5.76	5.97	7.00	6.56	7.34	6.58	6.97	7.46	6.79	6.50	7.64
5	5.01	5.76	5.99	7.05	6.68	7.35	6.63	6.97	7.26	6.82	6.53	7.67
6	5.05	5.69	5.99	7.09	6.77	7.33	6.67	6.97	7.12	6.75	6.53	7.35
7	5.12	5.69	6.03	7.13	6.85	7.31	6.71	7.05	7.01	6.75	6.60	7.22
8	5.20	5.57	6.12	7.16	6.80	7.30	6.75	7.17	6.95	6.80	6.59	7.09
9	5.24	5.53	6.23	7.24	6.79	7.20	6.79	6.93	6.94	6.85	6.65	7.05
10	5.31	5.30	6.31	7.25	6.78	7.17	6.82	6.56	6.92	6.88	6.58	6.99
11	5.38	5.28	6.42	7.17	6.79	7.02	6.84	6.55	6.85	6.91	6.51	6.94
12	5.46	5.29	6.50	7.17	6.83	6.82	6.85	6.55	6.84	6.95	6.54	6.85
13	5.54	5.38	6.58	7.15	6.92	6.57	6.76	6.62	6.84	6.99	6.55	6.85
14	5.57	5.41	6.65	7.11	6.92	6.43	6.71	6.54	6.86	6.99	6.38	6.56
15	5.37	5.46	6.73	7.07	6.98	6.39	6.68	6.57	6.69	7.02	6.35	6.58
16	5.11	5.56	6.70	7.02	7.03	6.30	6.72	6.65	6.64	7.03	6.35	6.62
17	5.06	5.62	6.82	6.94	7.05	6.27	6.76	6.72	6.60	7.03	6.39	6.72
18	5.06	5.62	6.84	6.92	7.06	6.28	6.76	6.75	6.51	6.99	6.36	6.80
19	5.05	5.75	6.88	6.80	7.08	6.30	6.67	6.84	6.48	6.94	6.39	6.82
20	5.11	5.78	6.95	6.54	7.11	6.30	6.64	6.92	6.47	6.97	6.44	6.91
21	5.21	5.70	7.02	6.49	7.14	6.32	6.63	7.00	6.49	7.02	6.49	7.02
22	5.30	5.76	7.06	6.43	7.10	6.36	6.69	7.08	6.52	7.04	6.51	7.05
23	5.16	5.81	7.09	6.39	7.12	6.37	6.74	7.15	6.53	7.07	6.49	7.16
24	5.14	5.85	7.12	6.26	7.25	6.39	6.77	7.22	6.56	6.86	6.58	7.18
25	5.18	5.86	7.17	6.20	7.26	6.42	6.73	7.30	6.49	6.74	6.76	7.18
26	5.26	5.89	7.22	6.25	7.29	6.46	6.69	7.35	6.49	6.70	6.81	7.18
27	5.36	5.96	7.25	6.24	7.34	6.48	6.69	7.38	6.52	6.69	6.92	7.18
28	5.44	6.04	7.24	6.25	7.33	6.50	6.77	7.44	6.57	6.36	7.00	7.17
29	5.53	6.04	7.10	6.26	---	6.49	6.81	7.50	6.62	6.33	7.13	7.15
30	5.58	---	7.05	6.33	---	6.51	6.86	7.56	6.67	6.33	7.24	7.15
31	5.59	---	7.09	6.39	---	6.44	---	7.59	---	6.35	7.35	---
LOW	5.59	---	7.25	7.25	7.34	7.35	6.86	7.59	7.61	7.07	7.35	7.67
HIGH	4.71	---	5.88	6.20	6.42	6.27	6.47	6.54	6.47	6.33	6.35	6.56



182437066040501. Local number, PN-7.
LOCATION.--Lat 18°24'37", long 66°04'05".
Owner: U.S. Geological Survey, WRD.
Name: Parque de las Fuentes No. 2.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 4 in (0.10 m), 0-34 ft (0-10.4 m), perforated 24-34 ft (7.31-10.4 m). Depth 34 ft (10.4 m).
DATUM.--Elevation of land-surface datum is about 16 ft (4.88 m) above mean sea level, from topographic map.
Measuring point: Hole on well shaft, 2.97 ft (0.90 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, 6.50 ft (1.98 m) below land-surface datum, Sept. 27, 1989; lowest water level recorded, 9.59 ft (2.92 m) below land-surface datum, Sept. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.21	8.15	8.32	9.11	8.59	8.86	8.52	9.11	9.39	9.01	8.84	9.42
2	7.24	8.16	8.36	9.09	8.64	8.86	8.53	9.11	9.40	9.06	8.88	9.48
3	7.26	8.24	8.38	9.09	8.67	8.89	8.53	9.10	9.40	9.13	8.90	9.55
4	7.29	8.26	8.44	9.09	8.68	8.91	8.55	9.09	9.40	9.16	8.94	9.58
5	7.32	8.24	8.47	9.12	8.70	8.96	8.62	9.08	9.37	9.20	8.97	9.59
6	7.34	8.12	8.50	9.14	8.74	8.96	8.67	9.11	9.18	9.19	8.98	9.32
7	7.33	8.10	8.52	9.16	8.79	8.97	8.74	9.15	9.12	9.18	9.04	9.19
8	7.39	8.03	8.59	9.19	8.79	9.03	8.78	9.16	9.06	9.17	9.06	8.99
9	7.45	7.78	8.63	9.24	8.78	9.04	8.86	9.06	9.02	9.19	9.13	8.97
10	7.51	7.60	8.68	9.28	8.70	9.03	8.89	8.73	9.04	9.19	9.12	8.94
11	7.62	7.50	8.71	9.28	8.65	8.92	8.95	8.64	8.99	9.21	8.98	8.93
12	7.70	7.47	8.75	9.26	8.63	8.67	8.97	8.59	8.97	9.27	8.97	8.92
13	7.82	7.47	8.82	9.26	8.66	8.45	8.97	8.61	8.98	9.32	8.98	8.94
14	7.88	7.51	8.87	9.27	8.66	8.27	8.98	8.53	9.00	9.33	8.89	8.65
15	7.87	7.60	8.93	9.27	8.67	8.22	8.98	8.50	8.90	9.36	8.88	8.61
16	7.63	7.67	8.96	9.22	8.70	8.19	8.98	8.53	8.78	9.39	8.90	8.60
17	7.52	7.79	8.96	9.17	8.73	8.15	8.96	8.58	8.77	9.41	8.93	8.63
18	7.52	7.83	8.99	9.17	8.74	8.13	8.98	8.60	8.70	9.38	8.92	8.67
19	7.49	7.88	9.04	9.09	8.74	8.17	8.89	8.63	8.68	9.35	8.92	8.66
20	7.57	7.99	9.10	8.90	8.76	8.20	8.86	8.70	8.69	9.37	8.94	8.69
21	7.60	7.98	9.14	8.79	8.78	8.23	8.86	8.75	8.72	9.41	8.97	8.74
22	7.67	8.02	9.17	8.73	8.78	8.26	8.87	8.78	8.75	9.43	8.98	8.81
23	7.67	8.07	9.20	8.72	8.75	8.28	8.90	8.83	8.79	9.45	8.99	8.85
24	7.67	8.11	9.21	8.59	8.74	8.34	8.96	8.89	8.86	9.38	9.05	8.87
25	7.67	8.15	9.25	8.49	8.75	8.39	8.97	8.95	8.84	9.18	9.13	8.89
26	7.69	8.20	9.32	8.46	8.79	8.43	8.91	9.02	8.83	9.15	9.11	8.95
27	7.79	8.25	9.37	8.46	8.84	8.49	8.91	9.04	8.86	9.14	9.11	8.99
28	7.87	8.27	9.39	8.47	8.85	8.50	8.96	9.15	8.89	8.82	9.15	9.04
29	8.02	---	9.27	8.48	---	8.51	8.99	9.23	8.93	8.73	9.19	9.12
30	8.04	8.32	9.24	8.50	---	8.52	9.07	9.29	8.99	8.74	9.28	9.17
31	8.09	---	9.22	8.56	---	8.52	---	9.37	---	8.80	9.36	---
LOW	8.09	---	9.39	9.28	8.85	9.04	9.07	9.37	9.40	9.45	9.36	9.59
HIGH	7.21	---	8.32	8.46	8.59	8.13	8.52	8.50	8.68	8.73	8.84	8.60

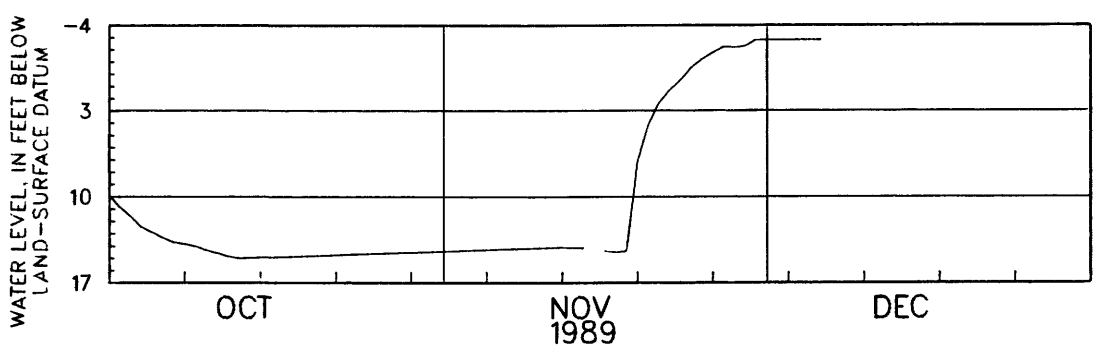


RIO HONDO TO RIO PUERTO NUEVO BASINS

182443066041500. Local number, PN-8a.
LOCATION.--Lat 18°24'43", long 66°04'15".
Owner: U.S. Geological Survey, WRD.
Name: Parque Luis Muñoz Marin 1A.
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation well, cased 4.0 in (0.10 m), 0-193 ft (0-58.84 m), 4.0 in (0.10 m), perforated pipe 193-203 ft (58.84-61.89 m). Depth 203 ft (61.89 m).
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, 3.25 ft (0.99 m) above land-surface datum.
REMARKS.--Observation well. Automatic digital recording installed on September 30, 1989.
PERIOD OF RECORD.--September 30, 1989 to December 6, 1989, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +2.79 ft (+0.85 m) above land-surface datum, Nov. 30, to Dec. 6, 1989; lowest water level recorded, 15.05 ft (4.59 m) below land-surface datum, Oct. 12, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.91	14.42	+2.79	---	---	---	---	---	---	---	---	---
2	10.88	14.39	+2.79	---	---	---	---	---	---	---	---	---
3	11.62	14.35	+2.79	---	---	---	---	---	---	---	---	---
4	12.51	14.32	+2.79	---	---	---	---	---	---	---	---	---
5	12.93	14.29	+2.79	---	---	---	---	---	---	---	---	---
6	13.36	14.26	+2.79	---	---	---	---	---	---	---	---	---
7	13.71	14.23	---	---	---	---	---	---	---	---	---	---
8	13.84	14.20	---	---	---	---	---	---	---	---	---	---
9	14.03	14.17	---	---	---	---	---	---	---	---	---	---
10	14.34	14.14	---	---	---	---	---	---	---	---	---	---
11	14.58	14.11	---	---	---	---	---	---	---	---	---	---
12	14.85	14.08	---	---	---	---	---	---	---	---	---	---
13	15.00	14.13	---	---	---	---	---	---	---	---	---	---
14	14.97	14.15	---	---	---	---	---	---	---	---	---	---
15	14.94	---	---	---	---	---	---	---	---	---	---	---
16	14.91	14.42	---	---	---	---	---	---	---	---	---	---
17	14.88	14.50	---	---	---	---	---	---	---	---	---	---
18	14.85	14.41	---	---	---	---	---	---	---	---	---	---
19	14.82	7.11	---	---	---	---	---	---	---	---	---	---
20	14.79	4.11	---	---	---	---	---	---	---	---	---	---
21	14.76	2.34	---	---	---	---	---	---	---	---	---	---
22	14.73	1.31	---	---	---	---	---	---	---	---	---	---
23	14.69	.46	---	---	---	---	---	---	---	---	---	---
24	14.66	+.55	---	---	---	---	---	---	---	---	---	---
25	14.63	+1.22	---	---	---	---	---	---	---	---	---	---
26	14.60	+1.75	---	---	---	---	---	---	---	---	---	---
27	14.57	+2.22	---	---	---	---	---	---	---	---	---	---
28	14.54	+2.16	---	---	---	---	---	---	---	---	---	---
29	14.51	+2.27	---	---	---	---	---	---	---	---	---	---
30	14.48	+2.79	---	---	---	---	---	---	---	---	---	---
31	14.45	---	---	---	---	---	---	---	---	---	---	---
LOW	15.00	---	---	---	---	---	---	---	---	---	---	---
HIGH	9.91	---	---	---	---	---	---	---	---	---	---	---

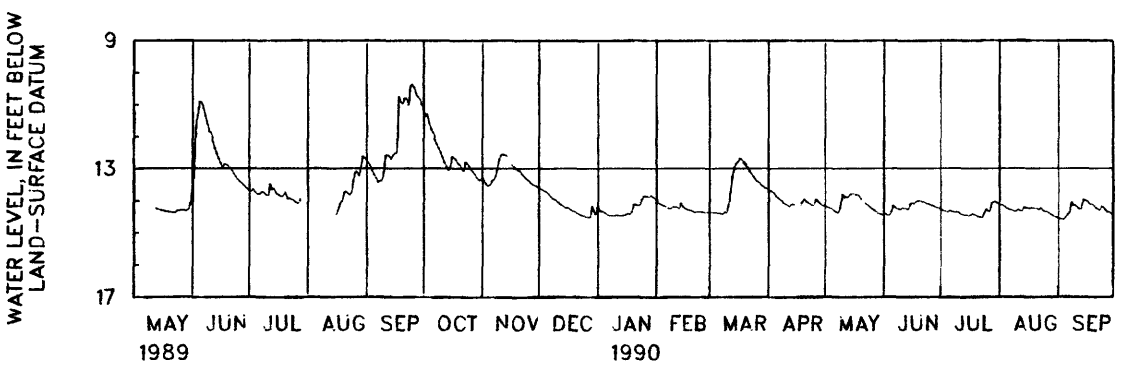


+ Above land-surface datum

182443066041502. Local number, PN-8c.
LOCATION.--Lat 18°24'43", long 66°04'15".
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 (0-10.06 m), perforated 33-40 ft (10.06-12.2 m). Depth 40 ft (12.2 m).
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, 10.35 ft (3.15 m) below land-surface datum, Sept. 25, 1989; lowest water level recorded, 14.58 ft (4.44 m) below land-surface datum, Sept. 2,3,4, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.16	13.24	13.61	14.18	14.00	14.35	13.65	14.16	14.46	14.24	14.11	14.55
2	11.37	13.39	13.64	14.30	14.07	14.37	13.69	14.20	14.41	14.30	14.13	14.57
3	11.29	13.49	13.67	14.33	14.10	14.37	13.71	14.22	14.46	14.32	14.14	14.58
4	11.61	13.54	13.70	14.35	14.13	14.37	13.77	14.24	14.45	14.34	14.19	14.58
5	11.80	13.51	13.75	14.40	14.16	14.38	13.86	14.27	14.35	14.36	14.24	14.51
6	11.88	13.38	13.81	14.44	14.19	14.39	13.92	14.32	14.15	14.31	14.27	14.42
7	12.12	13.35	13.89	14.46	14.25	14.40	13.96	14.36	14.22	14.35	14.29	14.36
8	12.25	13.24	13.94	14.47	14.23	14.42	14.01	14.39	14.23	14.36	14.31	14.04
9	12.37	12.99	13.97	14.47	14.24	14.35	14.08	14.20	14.26	14.37	14.35	14.15
10	12.52	12.70	14.01	14.47	14.18	14.38	14.11	13.80	14.28	14.35	14.32	14.15
11	12.68	12.58	14.05	14.45	14.19	14.12	14.14	13.91	14.22	14.40	14.28	14.21
12	12.83	12.55	14.11	14.47	14.20	13.66	14.19	13.88	14.24	14.43	14.32	14.26
13	12.96	12.57	14.14	14.47	14.26	13.24	14.12	13.90	14.26	14.45	14.33	14.28
14	13.06	12.59	14.19	14.47	14.07	12.95	14.11	13.80	14.28	14.45	14.20	13.97
15	12.95	---	14.22	14.45	14.19	12.83	14.14	13.79	14.10	14.46	14.22	14.00
16	12.62	12.81	14.21	14.43	14.23	12.78	---	13.79	14.07	14.48	14.23	14.02
17	12.65	12.91	14.26	14.41	14.27	12.67	14.19	13.82	14.10	14.45	14.25	14.08
18	12.73	12.95	14.30	14.43	14.30	12.73	14.19	13.82	14.02	14.42	14.22	14.11
19	12.85	13.00	14.33	14.35	14.30	12.80	14.02	13.86	14.00	14.44	14.23	14.11
20	12.88	13.08	14.35	14.11	14.34	12.88	13.95	13.96	14.01	14.48	14.25	14.17
21	13.01	13.08	14.39	14.13	14.37	12.98	14.04	---	14.04	14.51	14.27	14.24
22	13.09	13.19	14.42	14.15	14.36	13.09	14.07	14.07	14.05	14.52	14.28	14.26
23	12.79	13.25	14.45	14.17	14.35	13.17	14.10	14.12	14.08	14.53	14.23	14.30
24	12.85	13.31	14.47	13.95	14.35	13.26	14.15	14.17	14.11	14.38	14.32	14.18
25	12.94	13.36	14.49	13.86	14.36	13.34	14.16	14.22	14.10	14.27	14.35	14.21
26	13.03	13.41	14.51	13.86	14.37	13.40	13.95	14.26	14.15	14.32	14.34	14.29
27	13.11	13.47	14.52	13.87	14.37	13.43	14.02	14.30	14.17	14.34	14.39	14.36
28	13.19	13.50	14.51	13.89	14.37	13.52	14.08	14.35	14.19	14.07	14.43	14.35
29	13.29	13.53	14.17	13.84	---	13.53	14.12	14.40	14.22	14.04	14.46	14.41
30	13.35	13.56	14.35	13.90	---	13.61	14.16	14.42	14.24	14.04	14.49	14.47
31	13.37	---	14.44	13.93	---	13.61	---	14.43	---	14.08	14.52	---
LOW	13.37	---	14.52	14.47	14.37	14.42	---	---	14.46	14.53	14.52	14.58
HIGH	11.16	---	13.61	13.84	14.00	12.67	---	---	14.00	14.04	14.11	13.97



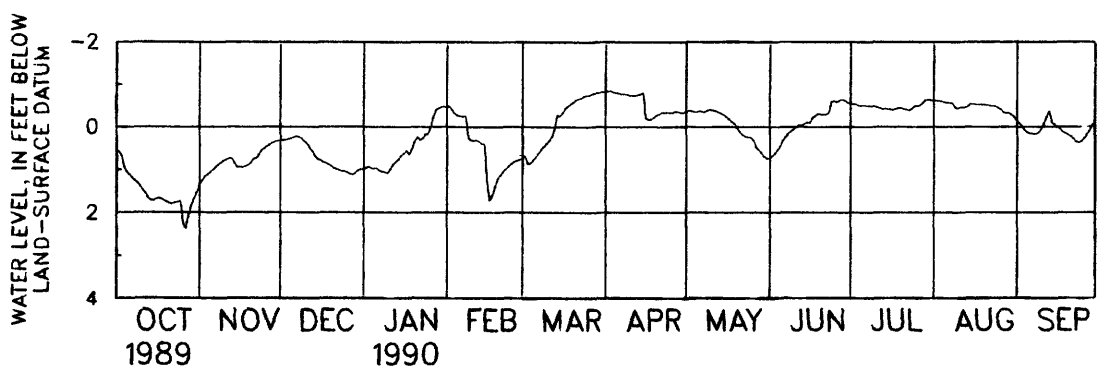
RIO HONDO TO RIO PUERTO NUEVO BASINS

182417066042700. Local number, PN-10.
LOCATION.--Lat 18°24'17", long 66°04'27".
Owner: U.S. Geological Survey, WRD.
Name: Las Americas 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).
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.--Observation well. Automatic digital recording installed on September 30, 1989.
PERIOD OF RECORD.--October 1989 to September 1990.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, +0.72 ft (+0.22 m) above land-surface datum, June 24, 1990; lowest water level recorded, 2.48 ft (0.76 m) below land-surface datum, Oct. 26-27, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.52	1.36	.31	1.00	+.45	.74	+.82	+.37	.74	+.54	+.62	+.14
2	.59	1.25	.31	.96	+.49	.68	+.84	+.38	.68	+.54	+.62	+.08
3	.68	1.16	.30	.93	+.39	.88	+.85	+.37	.62	+.53	+.61	+.01
4	.97	1.11	.28	.98	+.30	.85	+.81	+.35	.53	+.50	+.60	.09
5	1.06	1.06	.26	.98	+.27	.78	+.80	+.35	.44	+.49	+.58	.14
6	1.12	1.00	.24	.98	+.25	.70	+.79	+.37	.30	+.50	+.57	.16
7	1.19	.94	.21	1.03	+.23	.62	+.77	+.35	.22	+.49	+.56	.16
8	1.26	.89	.24	1.05	+.26	.52	+.77	+.35	.16	+.49	+.55	.17
9	1.31	.84	.28	1.06	.29	.46	+.76	+.39	.10	+.48	+.45	.14
10	1.39	.79	.34	1.09	.32	.38	+.73	+.40	.06	+.48	+.43	.05
11	1.47	.76	.40	.99	.32	.31	+.74	+.39	.00	+.47	+.46	+.08
12	1.55	.74	.51	.87	.31	.21	+.73	+.37	+.05	+.44	+.46	+.24
13	1.67	.74	.57	.82	.34	.04	+.75	+.34	+.04	+.41	+.45	+.37
14	1.71	.86	.69	.76	.40	+.28	+.77	+.31	+.07	+.43	+.50	+.10
15	1.72	.95	.75	.67	.40	+.25	+.80	+.28	+.11	+.41	+.54	+.06
16	1.68	.94	.78	.62	1.29	+.34	+.18	+.23	+.09	+.41	+.53	.00
17	1.66	.95	.83	.55	1.74	+.44	+.17	+.17	+.22	+.39	+.52	.04
18	1.68	.92	.85	.64	1.59	+.49	+.17	+.12	+.25	+.42	+.52	.11
19	1.72	.90	.88	.51	1.37	+.54	+.22	+.08	+.31	+.44	+.52	.15
20	1.75	.84	.92	.33	1.20	+.58	+.27	.03	+.29	+.44	+.51	.18
21	1.78	.75	.97	.23	1.13	+.63	+.29	.13	+.29	+.41	+.51	.22
22	1.79	.74	.99	.31	1.03	+.66	+.33	.19	+.29	+.40	+.49	.29
23	1.76	.65	1.02	.26	.99	+.68	+.33	.23	+.32	+.38	+.49	.35
24	1.75	.55	1.04	.17	.91	+.72	+.34	.24	+.60	+.43	+.48	.37
25	1.73	.50	1.04	.17	.86	+.74	+.32	.25	+.60	+.48	+.44	.33
26	2.28	.45	1.07	.01	.82	+.74	+.33	.32	+.58	+.49	+.40	.25
27	2.37	.41	1.10	+.25	.79	+.77	+.36	.49	+.62	+.50	+.33	.17
28	2.05	.37	1.12	+.41	.77	+.79	+.35	.54	+.63	+.57	+.32	.08
29	1.83	.34	1.08	+.44	---	+.80	+.33	.63	+.62	+.63	+.32	+.05
30	1.67	.32	1.02	+.47	---	+.81	+.33	.71	+.56	+.64	+.28	+.13
31	1.52	---	.99	+.48	---	+.83	---	.75	---	+.63	+.23	---
LOW	2.37	1.36	1.12	1.09	1.74	.88	+.17	.75	.74	+.38	+.23	.37
HIGH	.52	.32	.21	+.48	+.49	+.83	+.85	+.40	+.63	+.64	+.62	+.37

WTR YR 1990 MEAN .19 LOW 2.37 HIGH +.85

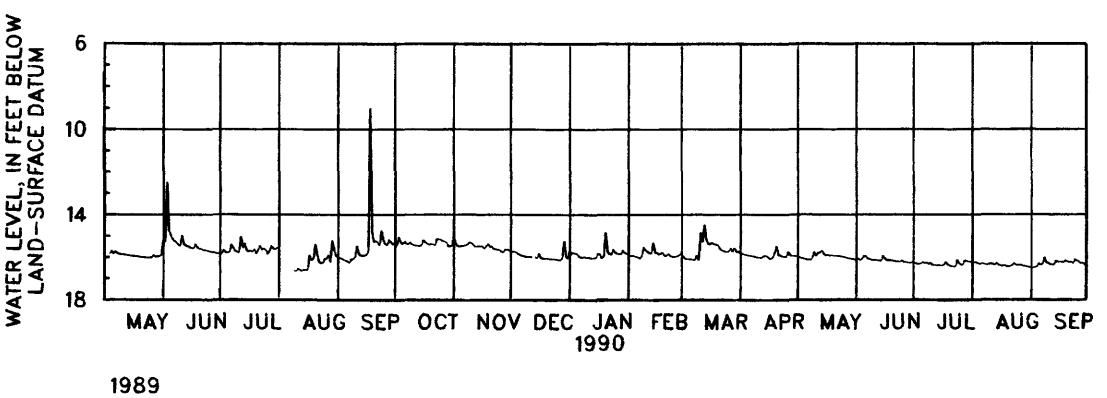


+ Above land-surface datum

182349066032600. Local number, PN-13.
LOCATION.--Lat 18°23'49", long 66°03'26".
Owner: U.S. Geological Survey, WRD.
Name: Jardin 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).
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, 8.75 ft (2.67 m) below land-surface datum, Sept. 18, 1989; lowest water level recorded, 16.66 ft (5.08 m) below land-surface datum, Aug. 9-10, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

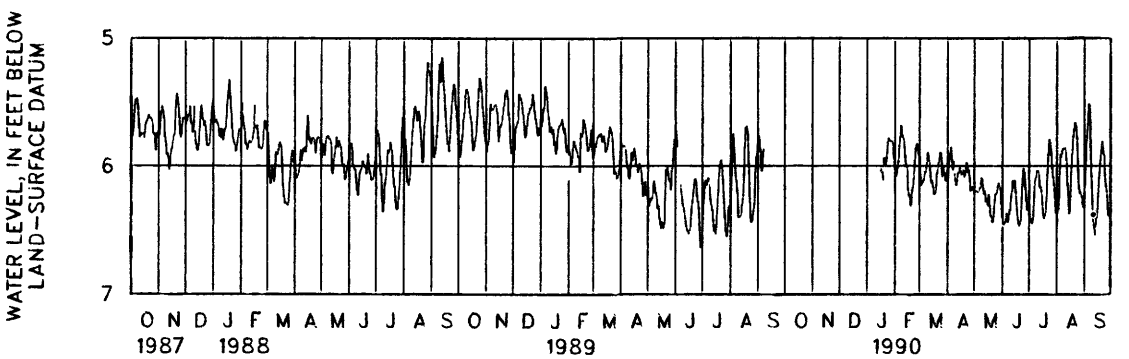
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.30	15.01	15.72	15.68	15.89	15.81	15.81	15.95	16.13	16.20	16.24	16.50
2	15.43	15.41	15.73	15.82	15.94	15.99	15.84	16.01	16.06	16.29	16.24	16.50
3	15.02	15.47	15.74	15.78	15.93	16.06	15.86	16.03	16.15	16.31	16.23	16.47
4	15.32	15.49	15.76	15.80	15.94	16.07	15.89	16.06	16.08	16.31	16.28	16.45
5	15.35	15.47	15.85	15.83	15.97	16.09	15.91	16.09	15.94	16.29	16.32	16.29
6	15.25	15.48	15.88	15.97	16.01	16.10	15.92	16.10	15.95	16.23	16.29	16.37
7	15.37	15.44	15.93	15.99	16.04	16.11	15.93	16.10	16.07	16.28	16.32	16.31
8	15.37	15.41	15.94	15.99	15.93	16.13	15.95	16.12	16.08	16.25	16.33	16.02
9	15.31	15.30	15.96	15.97	15.50	15.91	15.98	15.97	16.13	16.32	16.36	16.26
10	15.40	15.30	15.97	16.02	15.67	16.12	16.00	15.75	16.14	16.26	16.32	16.27
11	15.43	15.39	15.97	15.99	15.75	14.81	16.01	15.91	16.13	16.36	16.29	16.35
12	15.45	15.49	15.99	16.03	15.79	15.28	16.02	15.79	16.15	16.37	16.34	16.36
13	15.45	15.50	---	16.04	15.82	14.48	15.95	15.76	16.16	16.38	16.35	16.36
14	15.48	15.48	16.02	16.03	15.28	15.22	15.93	15.70	16.18	16.37	16.28	16.16
15	15.43	15.48	16.04	16.01	15.80	15.39	15.95	15.86	15.93	16.38	16.38	16.22
16	15.19	15.49	15.81	15.83	15.78	15.39	16.05	15.92	16.07	16.38	16.40	16.22
17	15.29	15.58	16.03	15.85	15.85	15.32	16.08	15.89	16.14	16.35	16.42	16.22
18	15.37	15.47	16.05	16.04	15.82	15.39	16.01	15.92	16.13	16.22	16.38	16.23
19	15.42	15.36	16.04	15.96	15.78	15.41	15.79	15.91	16.14	16.35	16.45	16.17
20	15.38	15.50	16.04	14.80	15.92	15.42	15.48	15.93	16.16	16.40	16.44	16.21
21	15.39	15.49	16.06	15.81	15.93	15.60	15.90	15.93	16.18	16.43	16.43	16.25
22	15.43	15.60	16.07	15.84	15.84	15.66	15.92	15.94	16.19	16.43	16.38	16.22
23	15.13	15.62	16.09	15.85	15.93	15.70	15.95	15.94	16.20	16.44	16.29	16.30
24	15.13	15.64	16.09	15.63	15.96	15.73	15.98	15.96	16.21	16.13	16.38	16.10
25	15.18	15.65	16.10	15.79	15.97	15.74	15.97	15.98	16.15	16.28	16.39	16.17
26	15.23	15.73	16.12	15.83	15.97	15.72	15.74	16.00	16.22	16.36	16.36	16.22
27	15.26	15.76	16.13	15.85	15.93	15.57	15.89	16.04	16.22	16.35	16.39	16.29
28	15.30	15.64	16.04	15.85	15.88	15.73	15.93	16.05	16.25	16.16	16.43	16.26
29	15.49	15.64	15.23	15.68	---	15.57	15.94	16.08	16.26	16.17	16.44	16.33
30	15.48	15.65	15.97	15.80	---	15.75	15.95	16.09	16.25	16.20	16.45	16.38
31	15.45	---	16.04	15.83	---	15.74	---	16.11	---	16.22	16.48	---
LOW	15.49	15.76	---	16.04	16.04	16.13	16.08	16.12	16.26	16.44	16.48	16.50
HIGH	15.02	15.01	---	14.80	15.28	14.48	15.48	15.70	15.93	16.13	16.23	16.02



182515065594100. Local number, 222.
LOCATION.--Lat 18°25'15", long 65°59'41".
Owner: U.S. Geological Survey.
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).
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, 4.42 ft (1.35 m) below land-surface datum, Aug. 31, 1986; 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 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	5.97	5.93	6.11	6.20	6.41	6.35	6.37	6.22
2	---	---	---	---	6.05	6.10	6.03	6.20	6.45	6.40	6.36	6.10
3	---	---	---	---	6.08	6.15	5.94	6.19	6.46	6.41	6.33	5.85
4	---	---	---	---	6.01	6.11	5.90	6.20	6.44	6.44	6.11	5.76
5	---	---	---	---	5.96	6.13	5.85	6.21	6.42	6.45	5.90	5.65
6	---	---	---	---	5.84	6.10	5.97	6.19	6.37	6.34	5.93	5.51
7	---	---	---	---	5.77	6.04	6.03	6.17	6.44	6.19	5.88	5.53
8	---	---	---	---	5.68	6.05	5.96	6.17	6.41	6.10	5.86	5.86
9	---	---	---	---	5.77	5.98	6.07	6.09	6.34	6.09	5.87	6.09
10	---	---	---	---	5.77	5.89	6.12	6.11	6.34	6.03	5.85	6.30
11	---	---	---	---	5.79	5.96	6.15	6.19	6.23	6.04	5.87	6.43
12	---	---	---	---	5.87	5.96	6.11	6.22	6.19	6.04	5.96	6.48
13	---	---	---	---	5.98	6.09	6.05	6.19	6.11	6.17	6.15	6.54
14	---	---	---	---	5.99	6.13	6.05	6.28	6.17	6.16	6.24	6.41
15	---	---	---	---	6.01	6.11	6.01	6.25	6.11	6.20	6.38	6.40
16	---	---	---	6.04	6.19	6.17	6.05	6.31	6.21	6.30	6.34	6.28
17	---	---	---	6.02	6.24	6.22	6.07	6.22	6.30	6.39	6.15	6.14
18	---	---	---	6.05	6.22	6.22	6.06	6.31	6.38	6.41	5.99	6.03
19	---	---	---	6.11	6.32	6.20	6.03	6.39	6.45	6.38	5.86	5.93
20	---	---	---	5.93	6.29	6.06	6.09	6.40	6.47	6.36	5.76	5.86
21	---	---	---	5.97	6.18	6.04	6.05	6.44	6.45	6.20	5.71	5.80
22	---	---	---	5.99	6.16	5.98	5.97	6.44	6.42	6.01	5.66	5.90
23	---	---	---	5.93	6.09	5.94	5.97	6.33	6.22	5.90	5.70	5.91
24	---	---	---	5.81	5.95	5.89	6.06	6.22	6.07	5.79	5.79	6.08
25	---	---	---	5.78	5.85	5.90	6.03	6.22	6.01	5.82	5.97	6.16
26	---	---	---	5.80	5.83	6.09	6.13	6.21	6.04	5.92	6.18	6.20
27	---	---	---	5.80	5.82	5.99	6.20	6.16	6.19	6.02	6.21	6.34
28	---	---	---	5.81	5.91	6.08	6.18	6.13	6.28	6.09	6.21	6.39
29	---	---	---	5.80	---	6.05	6.16	6.15	6.35	6.15	6.24	6.38
30	---	---	---	5.83	---	6.12	6.19	6.19	6.29	6.25	6.29	6.34
31	---	---	---	5.94	---	6.10	---	6.30	---	6.36	6.32	---
LOW	---	---	---	---	6.32	6.22	6.20	6.44	6.47	6.45	6.38	6.54
HIGH	---	---	---	---	5.68	5.89	5.85	6.09	6.01	5.79	5.66	5.51

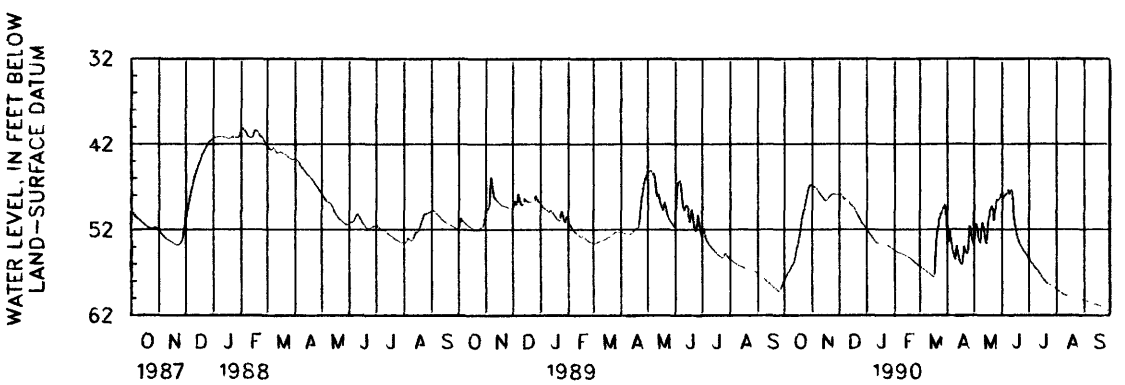


175858066100200. Local number, 6.
LOCATION.--Lat 17°58'58", long 66°10'02".
Owner: Doctor Bruno.
Name: Juana 5.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 16 in (0.41 m). Depth 173 ft (52.74 m) reported, 110 ft (33.54 m) measured.
DATUM.--Elevation 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 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57.86	46.90	47.82	51.92	54.43	56.29	51.95	53.73	48.29	55.35	58.93	60.24
2	57.65	46.93	47.79	52.06	54.50	56.35	53.01	52.31	48.35	55.50	59.02	60.27
3	57.45	47.00	47.86	52.22	54.57	56.41	53.38	51.31	48.40	55.65	59.11	60.30
4	57.26	47.04	48.01	52.37	54.61	56.49	52.10	51.38	48.03	55.80	59.17	60.35
5	57.08	47.12	48.19	52.53	54.65	56.57	52.69	52.34	47.82	55.93	59.25	60.38
6	56.89	47.25	48.37	52.68	54.69	56.66	53.65	52.92	47.92	56.10	59.32	60.44
7	56.70	47.42	48.45	52.84	54.70	56.75	54.29	53.31	47.75	56.26	59.38	60.48
8	56.51	47.60	48.45	53.00	54.74	56.83	54.77	53.54	47.33	56.42	59.50	60.53
9	56.32	47.79	48.43	53.16	54.77	56.92	55.17	52.25	47.84	56.57	59.55	60.57
10	56.14	47.91	48.51	53.30	54.82	56.98	55.48	51.15	47.79	56.57	59.59	60.60
11	55.97	48.03	48.66	53.41	54.87	57.06	54.38	51.17	47.45	56.73	59.63	60.65
12	55.75	48.18	48.83	53.49	54.93	57.13	53.87	52.27	47.39	56.90	59.67	60.69
13	55.27	48.36	49.00	53.53	54.99	57.21	54.65	52.92	48.56	57.06	59.72	60.66
14	54.66	48.51	49.13	53.55	55.06	57.30	55.21	53.36	49.96	57.22	59.77	60.69
15	54.07	48.59	49.22	53.56	55.12	57.40	55.60	53.56	50.90	57.37	59.82	60.73
16	53.78	48.63	49.31	53.58	55.17	57.50	55.87	52.07	51.60	57.53	59.88	60.77
17	53.23	48.62	49.43	53.59	55.22	57.57	56.05	50.93	52.17	57.68	59.93	60.81
18	52.60	48.48	49.60	53.56	55.29	56.82	56.12	50.44	52.64	57.83	59.99	60.86
19	51.93	48.31	49.79	53.48	55.37	54.78	54.93	49.57	53.04	57.97	60.05	60.91
20	51.27	48.15	49.97	53.49	55.49	53.07	53.95	49.34	53.38	58.11	60.09	60.97
21	50.57	48.04	50.15	53.56	55.59	52.16	54.36	49.22	53.65	58.21	60.13	61.02
22	50.04	47.97	50.32	53.65	55.69	51.57	54.61	49.68	53.86	58.28	60.16	61.08
23	49.56	47.88	50.51	53.73	55.80	50.72	54.76	50.93	54.04	58.35	60.18	61.14
24	49.05	47.82	50.68	53.81	55.87	50.57	54.85	50.37	54.21	58.39	60.19	61.19
25	48.53	47.83	50.87	53.87	55.95	50.10	53.34	49.33	54.37	58.45	60.18	61.25
26	47.99	47.89	51.04	53.94	56.04	49.88	51.55	48.45	54.54	58.51	60.17	61.30
27	47.47	47.96	51.20	54.00	56.13	49.48	51.69	48.55	54.69	58.56	60.17	61.35
28	47.09	47.95	51.36	54.06	56.23	49.32	52.66	48.60	54.85	58.62	60.19	61.40
29	46.84	47.92	51.49	54.14	---	49.03	53.16	48.45	55.02	58.68	60.21	61.44
30	46.78	47.85	51.63	54.24	---	49.68	53.49	48.09	55.19	58.75	60.21	61.49
31	46.83	---	51.77	54.34	---	50.28	---	47.84	---	58.84	60.22	---
LOW	57.86	48.63	51.77	54.34	56.23	57.57	56.12	53.73	55.19	58.84	60.22	61.49
HIGH	46.78	46.90	47.79	51.92	54.43	49.03	51.55	47.84	47.33	55.35	58.93	60.24

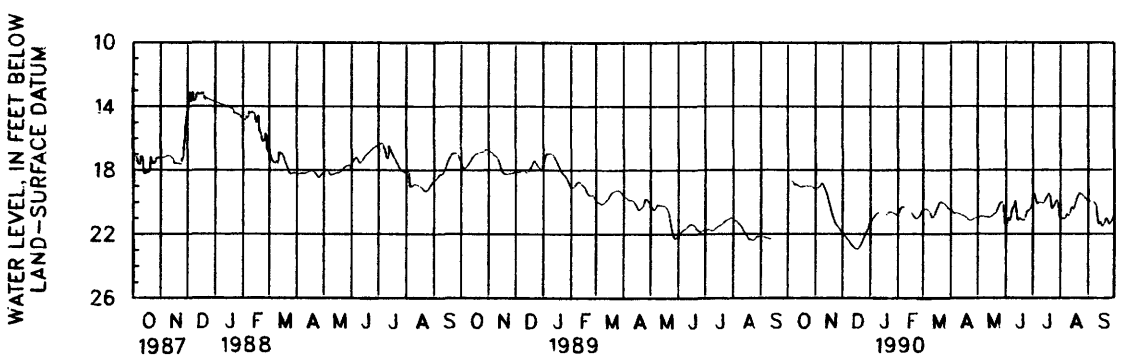
WTR YR 1990 MEAN 53.93 LOW 61.49 HIGH 46.78



180415065513900. Local number, 96.
LOCATION.--Lat 18°04'15", long 65°51'39".
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).
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 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	19.17	21.90	21.23	20.79	20.49	20.51	20.95	21.67	19.86	21.02	19.92
2	---	19.17	21.97	21.16	20.67	20.47	20.55	20.92	21.48	19.57	21.02	19.93
3	---	19.14	22.04	21.10	20.56	20.44	20.59	20.91	21.08	19.45	21.03	19.94
4	---	19.10	22.12	21.04	20.42	20.43	20.67	20.89	20.96	19.74	20.99	19.95
5	18.62	19.06	22.18	20.95	20.32	20.44	20.70	20.87	21.15	19.95	21.04	19.92
6	18.71	19.00	22.26	20.88	20.30	20.47	20.70	20.86	21.14	20.09	21.04	19.92
7	18.76	18.87	22.31	20.81	20.29	20.51	20.69	20.88	20.87	20.07	20.94	20.00
8	18.89	18.80	22.38	20.75	20.29	20.59	20.69	20.89	20.45	20.03	20.78	20.07
9	18.94	18.84	22.48	20.70	20.30	20.71	20.71	20.91	20.36	20.00	20.75	20.11
10	18.90	18.99	22.56	20.67	20.32	20.87	20.73	20.92	20.28	19.99	20.85	20.20
11	18.89	19.15	22.63	20.66	20.36	20.95	20.75	20.92	20.00	20.01	20.81	20.90
12	18.92	19.27	22.71	---	---	20.94	20.77	20.94	19.92	20.04	20.63	21.23
13	18.97	19.38	22.75	---	---	20.86	20.78	20.95	20.64	20.08	20.42	21.37
14	19.01	19.61	22.81	---	20.51	20.75	20.81	20.94	21.10	20.04	20.29	21.29
15	19.06	19.81	22.86	---	20.58	20.62	20.84	20.92	21.12	19.93	20.39	21.22
16	19.06	20.02	22.90	20.69	20.66	20.47	20.87	20.89	20.99	19.78	20.46	21.45
17	19.02	20.23	22.92	20.73	20.75	20.33	20.91	20.84	21.02	19.66	20.25	21.48
18	19.01	20.45	22.93	20.74	20.83	20.20	20.95	20.79	21.03	19.56	20.02	21.41
19	19.01	20.66	22.90	20.76	20.91	20.08	21.00	20.75	21.13	19.47	19.82	21.27
20	19.00	20.84	22.79	20.78	20.96	20.00	21.07	20.72	21.10	19.45	19.67	21.12
21	18.99	21.01	22.69	20.67	20.99	19.99	21.11	20.66	21.13	19.70	19.53	21.00
22	19.00	21.16	22.58	20.62	20.99	20.00	21.14	20.55	21.08	20.30	19.44	21.05
23	18.97	21.29	22.46	20.60	20.98	20.03	21.12	20.43	20.84	20.40	19.46	21.18
24	19.01	21.38	22.31	20.59	20.94	20.07	21.10	20.28	20.64	20.33	19.50	21.31
25	19.02	21.46	22.17	20.61	20.85	20.11	21.08	20.15	20.56	20.22	19.53	21.38
26	19.01	21.52	22.06	20.63	20.74	20.17	21.05	20.05	20.50	20.07	19.59	21.27
27	18.99	21.58	21.91	20.68	20.63	20.23	21.02	20.00	20.51	19.96	19.66	21.17
28	19.07	21.67	21.80	20.71	20.54	20.30	20.98	19.98	20.43	19.87	19.72	21.06
29	19.10	21.76	21.68	20.74	---	20.37	20.97	20.02	20.32	19.90	19.76	20.94
30	19.12	21.84	21.53	20.77	---	20.42	20.96	20.62	20.16	20.34	19.81	20.85
31	19.13	---	21.34	20.79	---	20.47	---	21.34	---	20.87	19.91	---
LOW	---	21.84	22.93	---	---	20.95	21.14	21.34	21.67	20.87	21.04	21.48
HIGH	---	18.80	21.34	---	---	19.99	20.51	19.98	19.92	19.45	19.44	19.92

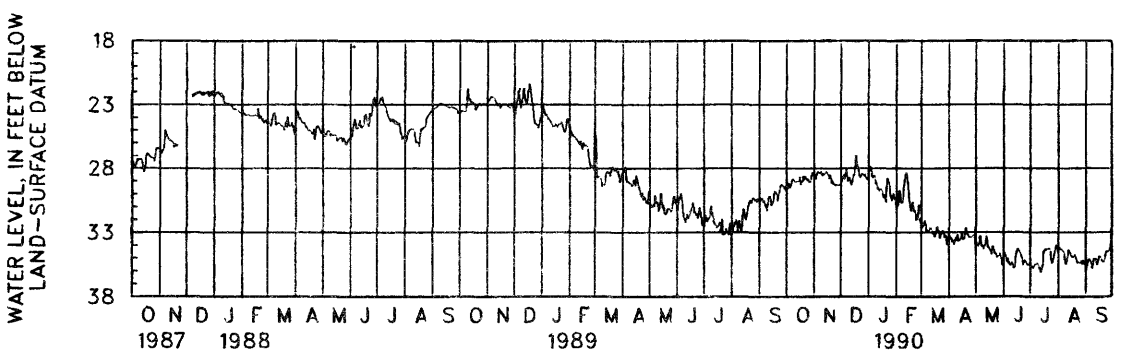


175829066232200. Local number, 87.
LOCATION.--Lat 17°58'29", long 66°23'22".
Owner: Francisco Alomar.
Name: Alomar 1.
AQUIFER.--Alluvium of Quaternary Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 20 in (0.51 m), iron cased. Depth 112 ft (34.14 m).
DATUM.--Elevation of land-surface 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 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29.39	28.65	29.27	28.38	31.19	32.49	33.26	33.88	35.45	35.47	34.44	35.72
2	29.30	28.58	28.96	28.09	30.83	32.64	33.18	33.76	34.58	35.40	34.13	35.90
3	29.56	28.82	28.70	27.84	30.83	32.50	33.52	33.93	34.61	35.66	34.27	35.35
4	29.18	28.45	28.52	28.14	29.72	32.24	33.37	34.09	34.86	35.73	34.35	35.14
5	29.51	28.24	28.83	28.68	29.72	32.05	33.73	33.88	35.29	35.82	34.26	35.02
6	29.24	28.29	28.40	28.72	30.69	32.49	33.58	33.27	35.02	35.53	34.42	35.15
7	28.97	28.42	28.07	28.57	30.70	32.84	33.93	33.79	35.40	35.50	34.47	35.34
8	28.79	28.30	28.62	28.61	30.61	32.81	33.60	34.04	35.41	35.47	34.49	35.85
9	28.92	28.21	28.99	29.20	29.50	32.97	33.37	34.13	35.62	35.37	35.16	35.43
10	29.00	28.59	28.75	29.23	28.96	32.82	33.67	34.30	35.39	35.47	35.48	34.99
11	29.09	28.37	28.73	29.58	28.49	32.60	33.15	34.00	35.33	35.85	35.25	35.19
12	29.04	28.47	29.17	29.63	28.33	32.66	33.70	34.00	35.56	35.75	34.81	35.03
13	28.97	28.48	29.30	29.76	28.83	32.76	33.63	33.29	35.84	36.15	34.33	35.41
14	29.09	28.33	28.89	29.62	29.33	33.04	33.58	33.66	35.67	35.87	34.50	35.52
15	28.98	28.23	28.46	29.60	30.56	33.08	33.34	34.17	34.86	35.46	34.59	35.09
16	28.67	28.38	28.53	29.73	31.03	33.33	32.98	34.19	34.52	34.37	34.86	34.84
17	29.26	28.52	27.86	30.17	31.34	33.28	33.60	34.34	34.28	34.43	34.95	34.86
18	28.98	28.81	26.98	30.30	30.83	32.84	33.55	34.45	34.28	34.25	34.96	34.91
19	29.05	28.51	27.76	30.07	30.62	32.54	33.42	34.71	34.48	34.40	35.06	35.22
20	28.61	28.64	27.85	30.65	31.35	32.85	32.64	34.08	34.59	34.27	34.72	35.24
21	28.91	29.22	28.21	29.38	31.24	32.82	32.62	34.14	34.86	34.30	34.96	35.33
22	28.63	28.96	28.64	28.68	31.42	33.46	33.14	34.53	34.97	34.24	35.28	35.26
23	28.62	29.27	28.71	28.99	32.05	33.04	33.24	34.65	35.52	34.26	35.37	34.73
24	28.97	29.25	28.53	29.18	31.94	33.15	33.37	34.67	35.25	35.18	35.33	34.47
25	28.80	29.38	28.39	30.11	31.76	32.85	33.37	34.93	35.14	35.39	35.38	34.51
26	28.99	29.20	28.47	30.25	30.83	32.87	33.36	34.88	35.30	35.38	35.43	34.46
27	29.10	29.27	28.63	30.51	32.01	33.40	33.41	34.85	35.32	34.75	35.19	34.47
28	29.03	29.34	28.45	30.08	32.18	33.27	33.25	34.64	35.55	34.55	35.50	34.22
29	28.54	29.32	28.68	29.96	---	33.20	33.22	34.82	35.51	34.16	35.16	33.93
30	28.37	29.28	28.86	30.39	---	33.98	33.41	35.06	35.50	33.96	35.27	33.76
31	28.31	---	28.75	30.40	---	33.84	---	35.56	---	34.26	35.51	---
LOW	29.56	29.38	29.30	30.65	32.18	33.98	33.93	35.56	35.84	36.15	35.51	35.90
HIGH	28.31	28.21	26.98	27.84	28.33	32.05	32.62	33.27	34.28	33.96	34.13	33.76

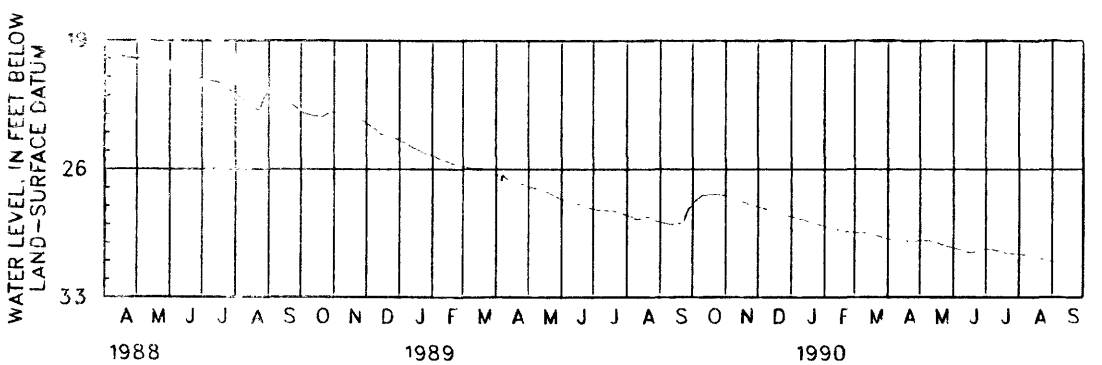
WTR YR 1990 MEAN 32.25 LOW 36.15 HIGH 26.98



180002066132200. Local number, HW-TW-01.
LOCATION.--Lat 18°00'02", long 66°13'22".
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).
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, 19.82 ft (6.04 m) below land-surface datum, Apr. 14, 1988; lowest water level recorded, 31.06 ft (9.47 m) below land-surface datum, Sept. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

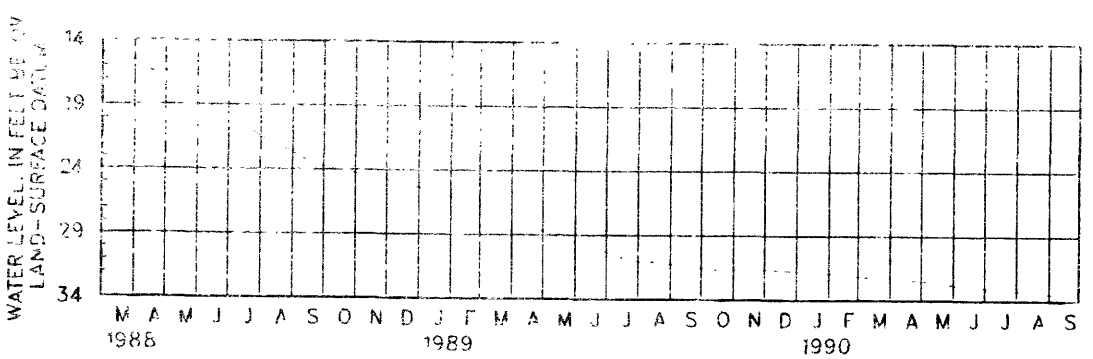
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.96	27.42	28.04	28.57	29.11	29.45	29.80	29.89	30.28	30.35	30.63	31.02
2	27.87	27.42	28.06	28.59	29.13	29.46	29.80	29.88	30.30	30.35	30.63	31.03
3	27.76	27.44	28.07	28.61	29.15	29.46	29.81	29.88	30.32	30.35	30.65	31.04
4	27.70	27.46	28.09	28.62	29.17	29.46	29.82	29.88	30.35	30.35	30.66	31.05
5	27.66	27.47	28.11	28.64	29.19	29.46	29.83	29.88	30.35	30.35	30.67	---
6	27.60	27.50	28.13	28.66	29.20	29.46	29.84	29.88	30.37	30.37	30.68	---
7	27.56	27.51	28.14	28.68	29.22	29.46	29.85	29.89	30.39	30.38	30.69	---
8	27.51	27.53	28.16	28.69	29.23	29.46	29.86	29.89	30.41	30.39	30.70	---
9	27.48	27.56	28.18	28.71	29.23	29.46	29.87	29.89	30.43	30.39	30.71	---
10	27.44	27.58	28.20	28.73	29.24	29.47	29.87	29.89	30.46	30.41	30.72	---
11	27.44	27.61	28.21	28.74	29.27	29.48	29.89	29.90	30.49	30.41	30.73	---
12	27.40	27.64	28.23	28.76	29.27	29.49	29.89	29.92	30.49	30.44	30.74	---
13	27.40	27.67	28.25	28.78	29.29	29.50	29.89	29.94	30.49	30.47	30.75	---
14	27.40	27.69	28.26	28.80	29.29	29.50	29.89	29.95	30.50	30.48	30.77	---
15	27.40	27.71	28.28	28.81	29.32	29.51	29.90	29.96	30.54	30.52	30.78	---
16	27.39	27.75	28.30	28.83	29.32	29.53	29.90	29.98	30.54	30.53	30.79	---
17	27.38	27.78	28.32	28.85	29.32	29.55	29.91	30.00	30.54	30.54	30.80	---
18	27.38	27.81	28.33	28.86	29.32	29.57	29.91	30.05	30.53	30.55	30.81	---
19	27.38	27.81	28.35	28.91	29.33	29.59	29.92	30.06	30.53	30.55	30.82	---
20	27.38	27.83	28.37	28.93	29.37	29.61	29.92	30.07	30.51	30.56	30.84	---
21	27.37	27.85	28.38	28.94	29.38	29.61	29.92	30.09	30.49	30.56	30.86	---
22	27.37	27.87	28.40	28.96	29.40	29.63	29.92	30.12	30.47	30.57	30.87	---
23	27.37	27.89	28.42	28.97	29.41	29.65	29.92	30.15	30.46	30.57	30.89	---
24	27.37	27.91	28.44	28.98	29.41	29.66	29.92	30.16	30.43	30.58	30.91	---
25	27.37	27.94	28.45	29.00	29.41	29.69	29.92	30.18	30.41	30.59	30.93	---
26	27.37	27.95	28.47	29.02	29.42	29.70	29.91	30.19	30.39	30.60	30.94	---
27	27.37	27.97	28.49	29.04	29.43	29.71	29.90	30.20	30.38	30.61	30.96	---
28	27.38	27.99	28.50	29.05	29.45	29.74	29.90	30.23	30.36	30.61	30.98	---
29	27.39	28.01	28.52	29.06	---	29.76	29.90	30.25	30.35	30.62	30.99	---
30	27.40	28.02	28.54	29.08	---	29.77	29.89	30.25	30.35	30.62	31.01	---
31	27.41	---	28.56	29.10	---	29.78	---	30.27	---	30.62	31.02	---
LOW	27.96	28.02	28.56	29.10	29.45	29.78	29.92	30.27	30.54	30.62	31.02	---
HIGH	27.37	27.42	28.04	28.57	29.11	29.45	29.80	29.88	30.28	30.35	30.63	---



180017066132100 Local number, HW-TW-02.
LOCATION.--Lat 18°00'17", long 66°13'21".
Owner: U.S. Geological Survey, WRD.
Name: HW-TW-02.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-74 ft (0-22.6 m), cased 4 in (0.10 m), 0-70 ft (0-21.3 m), screened 60-65 ft (18.3-19.8 m). Depth 74 ft (22.6 m).
DATUM.--Elevation of land-surface datum is 224 ft (68.3 m) above mean sea level.
Measuring point: Hole on side of 4 in (0.10 m) casing, 3.15 ft (0.96 m) above land-surface datum. Prior October 13, 1988, top of shelter floor, 3.60 ft (1.10 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--March 30, 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 15.44 ft (4.71 m) below land-surface datum, Mar. 30, 1988; lowest water level recorded, 33.50 ft (10.2 m) below land-surface datum, Sept. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

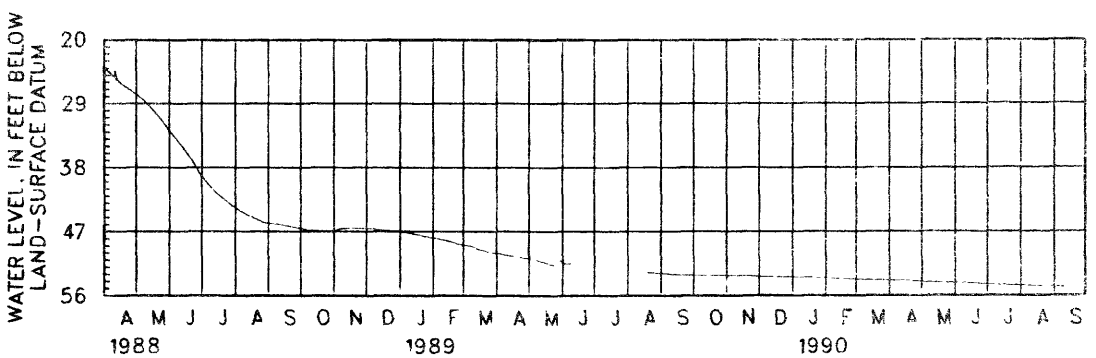
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
[illegible]	31.54	31.64	31.65	31.77	31.94	32.14	--	32.48	32.77	32.99	33.23	33.48
[illegible]	31.55	31.64	31.66	31.77	31.96	32.14	--	32.49	32.77	33.00	33.24	33.48
[illegible]	31.55	31.65	31.66	31.78	31.96	32.15	---	32.50	32.78	33.01	33.25	33.49
[illegible]	31.56	31.64	31.66	31.78	31.97	32.15	---	32.51	32.78	33.02	33.26	33.50
5	31.57	31.64	31.66	31.78	31.97	32.16	---	32.49	32.79	33.03	33.27	---
6	31.59	31.64	31.67	31.79	31.98	32.16	---	32.51	32.79	33.04	33.27	---
7	31.60	31.64	31.67	31.79	31.99	32.17	---	32.51	32.79	33.04	33.28	---
8	31.60	31.64	31.67	31.80	32.00	32.17	---	32.52	32.80	33.05	33.29	---
9	31.61	31.63	31.67	31.80	32.01	32.18	---	32.54	32.80	33.06	33.30	---
10	31.61	31.63	31.68	31.81	32.01	32.18	---	32.56	32.82	33.08	33.30	---
11	31.62	31.63	31.68	31.81	32.02	32.19	32.36	32.58	32.83	33.08	33.31	---
12	31.62	31.63	31.68	31.83	32.02	32.19	32.36	32.61	32.84	33.09	33.32	---
13	31.63	31.62	31.70	31.83	32.04	32.20	32.37	32.64	32.85	33.10	33.32	---
14	31.64	31.62	31.70	31.84	32.04	32.21	32.37	32.65	32.86	33.10	33.33	---
15	31.64	31.62	31.70	31.84	32.06	32.20	32.39	32.65	32.87	33.11	33.34	---
16	31.63	31.62	31.70	31.84	32.06	32.21	32.39	32.66	32.88	33.12	33.35	---
17	31.64	31.62	31.71	31.84	32.06	32.21	32.40	32.67	32.89	33.13	33.36	---
18	31.64	31.62	31.71	31.85	32.07	32.22	32.40	32.68	32.90	33.13	33.37	---
19	31.65	31.62	31.71	31.88	32.08	32.23	32.41	32.68	32.90	33.14	33.37	---
20	31.65	31.63	31.72	31.87	32.08	32.23	32.41	32.70	32.91	33.15	33.38	---
21	31.64	31.63	31.72	31.87	32.09	32.25	32.41	32.70	32.91	33.16	33.39	---
22	31.65	31.63	31.72	31.89	32.09	32.25	32.42	32.71	32.92	33.17	33.39	---
23	31.65	31.63	31.73	31.89	32.09	---	32.43	32.73	32.93	33.18	33.40	---
24	31.65	31.63	31.73	31.90	32.10	---	32.44	32.73	32.93	33.18	33.41	---
25	31.64	31.63	31.73	31.90	32.10	---	32.44	32.75	32.94	33.18	33.42	---
26	31.64	31.63	31.74	31.91	32.11	---	32.45	32.75	32.95	33.19	33.43	---
27	31.65	31.64	31.74	31.92	32.12	---	32.45	32.75	32.96	33.20	33.43	---
28	31.65	31.65	31.75	31.93	32.12	---	32.46	32.76	32.97	33.21	33.44	---
29	31.67	31.65	31.75	31.93	--	--	32.46	32.76	32.98	33.21	33.45	---
30	31.64	31.65	31.75	31.92	---	--	32.47	32.76	32.98	33.22	33.46	---
31	31.66		31.76	31.91	---	--	---	32.77	---	33.23	33.47	---
Low	31.66	31.65	31.76	31.91	32.13	--	--	32.77	32.98	33.23	33.47	---
High	31.64	31.62	31.70	31.77	31.94	--	--	32.48	32.77	32.99	33.23	---



180001066122000 Local number, HW-TW-03.
LOCATION.--Lat 18°00'01", long 66°12'20".
Owner: U.S. Geological Survey, WRD.
Name: HW-TW-03.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-60 ft (0-18.3 m), cased 4 in (0.10 m), 0-59 ft (0-18.0 m), screened 53-58 ft (16.2-17.7 m). Depth 60 ft (18.3 m).
DATUM.--Elevation of land-surface datum is 271 ft (82.6 m) above mean sea level.
Measuring point: Hole on side of 4 in (0.10 m) casing, 3.11 ft (0.95 m) above land-surface datum. Prior October 14, 1988, top of shelter floor, 3.42 ft (1.04 m) above land-surface datum.
REMARKS.--Recording observation well. Aquifer test on Dec. 7, 1988 and May 24-25, 1989.
PERIOD OF RECORD.--March 31, 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 23.68 ft (7.22 m) below land-surface datum, Mar. 31, 1988; lowest water level recorded, 54.79 ft (16.7 m) below land-surface datum, Sept. 9-10, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

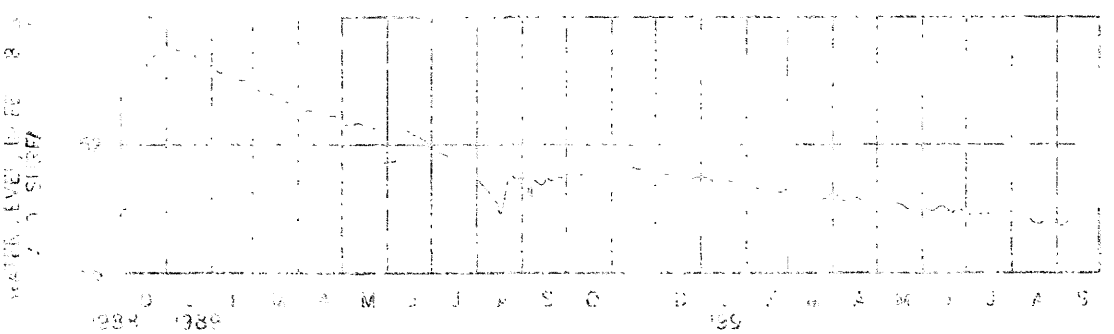
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	53.17	53.17	53.32	53.41	53.53	53.70	53.86	54.04	54.23	54.41	54.59	54.76
2	53.17	53.17	53.32	53.41	53.54	53.71	53.87	54.06	54.22	54.42	54.59	54.76
3	53.16	53.18	53.33	53.42	53.55	53.72	53.87	54.07	54.23	54.43	54.60	54.76
4	53.17	53.19	53.33	53.42	53.55	53.73	53.87	54.14	54.25	54.44	54.60	54.77
5	53.17	53.19	53.34	53.43	53.55	53.73	53.89	54.14	54.25	54.44	54.61	54.77
6	53.18	53.19	53.34	53.43	53.57	53.73	53.89	54.14	54.26	54.45	54.63	54.77
7	53.17	53.19	53.34	53.43	53.58	53.74	53.89	54.13	54.26	54.46	54.63	54.78
8	53.17	53.19	53.35	53.43	53.59	53.74	53.90	54.13	54.27	54.46	54.63	54.78
9	53.17	53.19	53.35	53.44	53.59	53.75	53.90	54.14	54.27	54.46	54.64	54.79
10	53.17	53.19	53.36	53.44	53.60	53.76	53.90	54.14	54.29	54.48	54.64	54.79
11	53.17	53.20	53.37	53.44	53.61	53.77	53.90	54.14	54.29	54.48	54.65	---
12	53.17	53.20	53.37	53.44	53.63	53.76	53.84	54.15	54.29	54.49	54.65	---
13	53.17	53.20	53.37	53.45	53.63	53.77	53.85	54.15	54.30	54.49	54.66	---
14	53.17	53.21	53.36	53.45	53.63	53.78	53.85	54.16	54.30	54.49	54.66	---
15	53.16	53.22	53.37	53.46	53.64	53.78	53.86	54.15	54.31	54.49	54.67	---
16	53.16	53.22	53.37	53.45	53.64	53.79	53.87	54.15	54.32	54.50	54.68	---
17	53.16	53.22	53.38	53.45	53.65	53.79	53.89	54.16	54.32	54.50	54.68	---
18	53.16	53.23	53.38	53.43	53.65	53.80	53.90	54.17	54.32	54.51	54.69	---
19	53.16	53.23	53.38	53.43	53.66	53.80	53.92	54.18	54.33	54.52	54.69	---
20	53.16	53.23	53.39	53.43	53.66	53.81	53.93	54.17	54.33	54.53	54.70	---
21	53.16	53.25	53.39	53.45	53.66	53.82	53.94	54.18	54.34	54.53	54.70	---
22	53.17	53.25	53.40	53.45	53.67	53.82	53.94	54.19	54.36	54.54	54.71	---
23	53.17	53.26	53.39	53.45	53.67	53.82	53.96	54.19	54.36	54.54	54.71	---
24	53.17	53.26	53.39	53.46	53.68	53.83	53.98	54.19	54.37	54.53	54.71	---
25	53.17	53.27	53.40	53.47	53.68	53.84	53.98	54.20	54.38	54.54	54.72	---
26	53.17	53.28	53.40	53.49	53.69	53.83	54.00	54.20	54.39	54.56	54.74	---
27	53.17	53.28	53.40	53.49	53.69	53.84	54.00	54.21	54.39	54.55	54.72	---
28	53.17	53.30	53.39	53.50	53.70	53.84	54.02	54.21	54.40	54.54	54.72	---
29	53.17	53.30	53.40	53.51	---	53.85	54.02	54.21	54.40	54.57	54.73	---
30	53.17	53.31	53.40	53.52	---	53.85	54.02	54.21	54.40	54.58	54.73	---
31	53.17	---	53.41	53.52	---	53.86	---	54.21	---	54.58	54.75	---
LOW	53.18	53.31	53.41	53.52	53.70	53.86	54.04	54.22	54.39	54.55	54.71	---
HIGH	53.16	53.17	53.32	53.41	53.53	53.70	53.84	54.04	54.22	54.41	54.58	---



180001065122002 Local number, MW-TW-03C.
LOCATION.--Lat 18°00'01", long 65°12'20".
Owner: U.S. Geological Survey, WRD.
Name: MW-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).
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, 48.87 ft (14.9 m) below land-surface datum, Jan. 8, 1989; lowest water level recorded, 54.55 ft (16.6 m) below land-surface datum, Sept. 4, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	52.9e	52.73	52.83	52.99	53.18	53.36	53.53	53.72	53.96	54.10	54.30	54.47
2	5[illegible]	52.69	52.82	52.97	53.19	53.35	53.56	53.76	53.98	54.14	54.32	54.46
3	[illegible]	52.70	52.81	53.01	53.22	53.37	53.56	53.81	54.00	54.17	54.34	54.49
4	[illegible]	[illegible]	[illegible]	53.02	53.25	53.39	53.59	53.83	54.01	54.19	54.35	54.53
5	[illegible]	[illegible]	[illegible]	[illegible]	53.27	53.43	53.67	53.86	54.02	54.20	54.35	54.52
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	53.72	53.87	54.05	54.19	54.36	54.46
7	[illegible]	[illegible]	52.90	[illegible]	[illegible]	[illegible]	53.75	53.90	54.07	54.20	54.35	54.45
8	[illegible]	[illegible]	52.96	[illegible]	[illegible]	[illegible]	53.76	53.92	54.06	54.20	54.33	54.42
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	53.76	53.92	54.05	54.18	54.31	54.40
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	53.91	54.05	54.20	54.28	---
11	[illegible]	[illegible]	52.9e	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
12	[illegible]	[illegible]	52.98	[illegible]	[illegible]	[illegible]	53.70	[illegible]	[illegible]	54.16	[illegible]	---
13	[illegible]	[illegible]	52.96	[illegible]	[illegible]	[illegible]	53.68	[illegible]	[illegible]	[illegible]	[illegible]	---
14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
LOW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---
HIGH	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	---

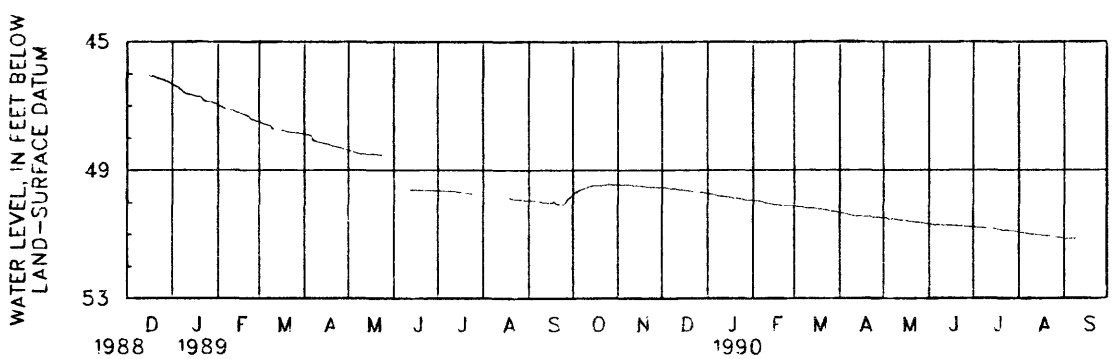


RIO SALINAS TO RIO JACAGUAS BASINS

180001066122004 Local number, HW-TW-03E.
LOCATION.--Lat 18°00'01", long 66°12'20".
Owner: U.S. Geological Survey, WRD.
Name: HW-TW-03E.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-70 ft (0.27.4 m), cased 4 in (0.10 m), 0-89 ft (0-27.1 m), screened 79-89 ft (24.1-27.1 m). Depth 90 ft (27.4 m).
DATUM.--Elevation of land-surface datum is 271 ft (82.6 m) above mean sea level.
Measuring point: Top of shelter floor, 3.08 ft (0.94 m) above land-surface datum.
REMARKS.--Recording observation well. Aquifer test performed on May 24, 25, and 26, 1989.
PERIOD OF RECORD.--December 15, 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 46.05 ft (14.0 m) below land-surface datum, Dec. 15-16, 1988; lowest water level recorded, 51.15 ft (15.6 m) below land-surface datum, Sept. 10, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

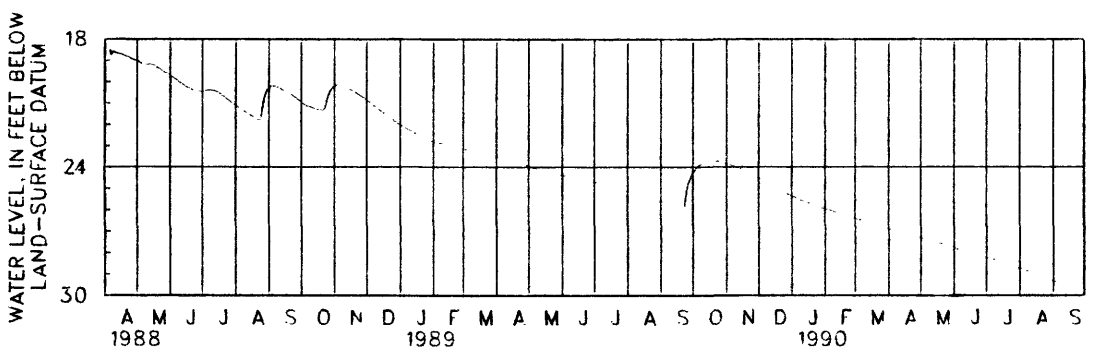
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49.76	49.44	49.53	49.72	49.93	50.11	50.31	50.48	50.67	50.78	50.93	51.12
2	49.73	49.43	49.54	49.72	49.93	50.11	50.33	50.48	50.68	50.78	50.94	51.12
3	49.68	49.44	49.54	49.73	49.94	50.12	50.33	50.48	50.68	50.78	50.95	51.12
4	49.66	49.44	49.54	49.74	49.95	50.13	50.35	50.52	50.71	50.79	50.95	51.13
5	49.63	49.44	49.55	49.75	49.95	50.13	50.36	50.52	50.71	50.79	50.96	51.13
6	49.61	49.44	49.56	49.76	49.96	50.14	50.37	50.52	50.71	50.79	50.98	51.13
7	49.59	49.44	49.57	49.78	49.97	50.14	50.39	50.52	50.70	50.79	50.98	51.13
8	49.57	49.44	49.57	49.79	49.99	50.15	50.39	50.52	50.70	50.80	50.98	51.14
9	49.56	49.45	49.57	49.80	50.00	50.17	50.41	50.53	50.71	50.80	50.99	51.14
10	49.55	49.45	49.58	49.80	50.00	50.17	50.41	50.54	50.71	50.82	50.99	---
11	49.53	49.46	49.59	49.80	50.01	50.17	50.43	50.55	50.71	50.82	51.00	---
12	49.51	49.47	49.59	49.81	50.04	50.17	50.44	50.55	50.71	50.83	51.00	---
13	49.50	49.47	49.60	49.82	50.04	50.17	50.43	50.56	50.71	50.83	51.01	---
14	49.49	49.47	49.61	49.82	50.04	50.17	50.43	50.56	50.71	50.83	51.02	---
15	49.48	49.47	49.61	49.83	50.06	50.18	50.42	50.56	50.72	50.83	51.02	---
16	49.47	49.47	49.62	49.83	50.06	50.19	50.43	50.57	50.72	50.84	51.03	---
17	49.47	49.48	49.62	49.84	50.07	50.19	50.43	50.58	50.73	50.85	51.03	---
18	49.47	49.49	49.63	49.87	50.07	50.20	50.45	50.58	50.73	50.85	51.04	---
19	49.47	49.50	49.64	49.86	50.08	50.21	50.45	50.59	50.72	50.86	51.04	---
20	49.47	49.50	49.64	49.87	50.09	50.21	50.45	50.60	50.74	50.86	51.05	---
21	49.47	49.52	49.65	49.87	50.09	50.22	50.44	50.61	50.74	50.88	51.05	---
22	49.46	49.52	49.66	49.88	50.09	50.23	50.44	50.61	50.74	50.88	51.05	---
23	49.45	49.52	49.66	49.88	50.09	50.23	50.46	50.62	50.74	50.88	51.06	---
24	49.44	49.52	49.66	49.89	50.10	50.24	50.46	50.62	50.75	50.87	51.08	---
25	49.43	49.52	49.67	49.90	50.10	50.27	50.46	50.63	50.75	50.89	51.08	---
26	49.43	49.52	49.68	49.92	50.10	50.28	50.46	50.63	50.75	50.89	51.09	---
27	49.44	49.52	49.68	49.92	50.10	50.28	50.46	50.64	50.75	50.90	51.09	---
28	49.44	49.53	49.68	49.92	50.10	50.28	50.47	50.64	50.76	50.90	51.09	---
29	49.44	49.53	49.69	49.92	---	50.29	50.48	50.65	50.77	50.90	51.10	---
30	49.44	49.53	49.70	49.93	---	50.30	50.48	50.66	50.78	50.91	51.11	---
31	49.44	---	49.70	49.92	---	50.31	---	50.67	---	50.92	51.11	---
LOW	49.76	49.53	49.70	49.93	50.10	50.31	50.48	50.67	50.78	50.92	51.11	---
HIGH	49.43	49.43	49.53	49.72	49.93	50.11	50.31	50.48	50.67	50.78	50.93	---



180000066125200 Local number, HW-TW-04.
LOCATION.--Lat 18°00'00", long 66°12'52".
Owner: U.S. Geological Survey, WRD.
Name: HW-TW-04.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-48.5 ft (0-14.8 m) cased 4 in (0.10 m), 0-48 ft (0-14.6 m), screened 42-47 ft (12.8-14.3 m). Depth 48.5 ft (14.8 m).
DATUM.--Elevation of land-surface datum is 177 ft (53.9 m above mean sea level.
Measuring point: Hole on side of casing, 2.69 ft (0.82 m) above land-surface datum. Prior October 13, 1989 top of shelter floor, 3.50 ft (1.07 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--April 5, 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 18.39 ft (5.60 m) below land-surface datum, Apr. 5, 1988; lowest water level recorded, 29.40 ft (8.96 m) below land-surface datum, Sept. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24.29	23.83	24.50	25.34	25.93	26.40	26.89	27.30	27.76	28.23	28.73	29.31
2	24.21	23.84	24.54	25.36	25.95	26.42	26.91	27.31	27.78	28.23	28.74	29.32
3	24.13	23.86	24.56	25.38	25.97	26.43	26.93	27.34	27.80	28.23	28.77	29.34
4	24.06	23.88	24.59	25.41	25.99	26.44	26.94	27.39	27.85	28.26	28.79	29.38
5	24.01	23.90	24.62	25.43	25.99	26.46	26.96	27.39	27.85	28.26	28.79	29.40
6	23.95	23.92	24.65	25.46	26.02	26.47	26.98	27.39	27.85	28.28	28.81	---
7	23.91	23.93	24.68	25.49	26.04	26.49	27.00	27.39	27.85	28.30	28.82	---
8	23.88	23.95	24.71	25.51	26.05	26.50	27.03	27.39	27.85	28.32	28.82	---
9	23.85	23.97	24.73	25.53	26.07	26.52	27.05	27.41	27.87	28.33	28.84	---
10	23.82	23.99	24.76	25.55	26.09	26.54	27.06	27.42	27.90	28.39	28.86	---
11	23.79	24.02	24.80	25.57	26.10	26.55	27.09	27.43	27.92	28.40	28.87	---
12	23.77	24.04	24.81	25.59	26.12	26.57	27.10	27.44	27.92	28.42	28.90	---
13	23.75	24.06	24.84	25.61	26.14	26.58	27.10	27.46	27.95	28.44	28.91	---
14	23.74	24.08	24.88	25.63	26.15	26.60	27.10	27.48	27.96	28.46	28.93	---
15	23.73	24.10	24.91	25.64	26.18	26.61	27.10	27.49	27.98	28.47	28.94	---
16	23.72	24.13	24.93	25.66	26.18	26.64	27.10	27.50	28.02	28.50	28.96	---
17	23.71	24.15	24.96	25.68	26.20	26.64	27.10	27.51	28.02	28.50	28.98	---
18	23.71	24.18	24.99	25.70	26.21	26.66	27.12	27.54	28.02	28.52	29.00	---
19	23.71	24.20	25.01	25.72	26.23	26.67	27.14	27.55	28.05	28.54	29.02	---
20	23.71	24.23	25.04	25.74	26.25	26.69	27.16	27.56	28.05	28.55	29.04	---
21	23.71	24.24	25.07	25.76	26.27	26.71	27.17	27.56	28.08	28.57	29.05	---
22	23.71	24.27	25.10	25.77	26.28	26.72	27.19	27.59	28.11	28.58	29.08	---
23	23.71	24.30	25.12	25.78	26.30	26.74	27.20	27.61	28.11	28.60	29.10	---
24	23.72	24.32	25.15	25.81	26.31	26.75	27.22	27.61	28.13	28.61	29.12	---
25	23.73	24.34	25.18	25.83	26.33	26.77	27.24	27.63	28.15	28.63	29.15	---
26	23.74	24.37	25.20	25.84	26.35	26.79	27.25	27.65	28.17	28.65	29.17	---
27	23.75	24.40	25.23	25.86	26.36	26.81	27.27	27.67	28.17	28.66	29.18	---
28	23.76	24.43	25.25	25.88	26.38	26.83	27.27	27.69	28.17	28.68	29.21	---
29	23.78	24.45	25.28	25.89	---	26.85	27.27	27.71	28.20	28.69	29.23	---
30	23.79	24.48	25.30	25.91	---	26.86	27.29	27.72	28.20	28.71	29.26	---
31	23.81	---	25.32	25.93	---	26.87	---	27.74	---	28.72	29.28	---
LOW	24.29	24.48	25.32	25.93	26.38	26.87	27.29	27.74	28.20	28.72	29.28	---
HIGH	23.71	23.83	24.50	25.34	25.93	26.40	26.89	27.30	27.76	28.23	28.73	---

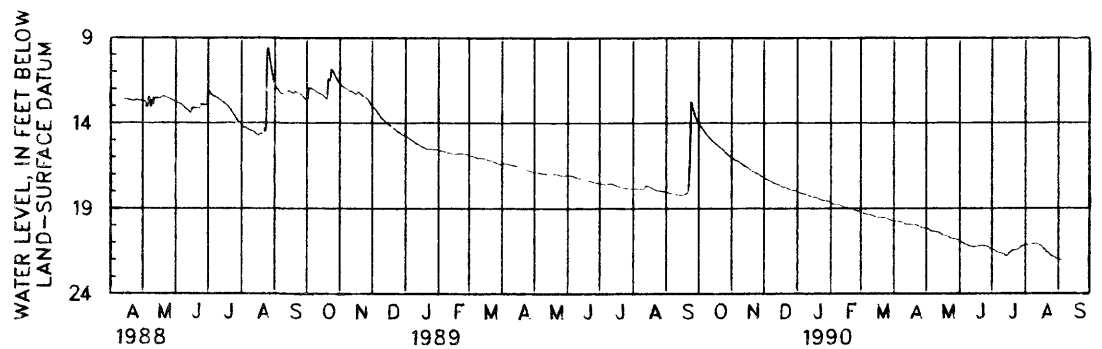


RIO SALINAS TO RIO JACAGUAS BASINS

175947066130601 Local number, HW-TW-05B.
LOCATION.--Lat 17°59'47", long 66°13'06".
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).
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, 9.40 ft (2.86 m) below land-surface datum, Aug. 25, 1988; lowest water level recorded, 22.14 ft (6.75 m) below land-surface datum, Sept. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

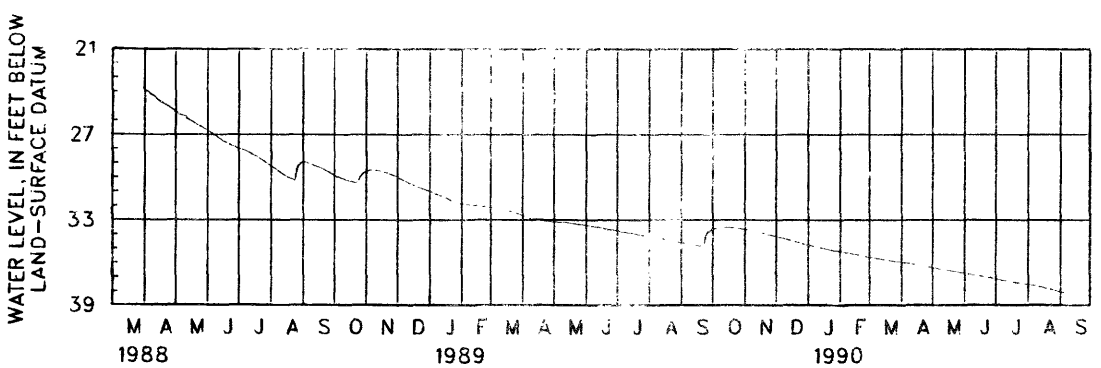
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.99	16.02	17.19	18.01	18.65	19.18	19.73	20.15	20.93	21.39	21.16	21.98
2	14.08	16.05	17.22	18.05	18.70	19.20	19.73	20.17	20.95	21.41	21.15	21.99
3	14.17	16.11	17.29	18.07	18.71	19.27	19.74	20.19	20.98	21.42	21.15	22.01
4	14.26	16.16	17.31	18.09	18.73	19.29	19.74	20.25	21.02	21.45	21.16	22.05
5	14.34	16.21	17.34	18.11	18.74	19.30	19.74	20.32	21.04	21.52	21.15	---
6	14.45	16.21	17.36	18.13	18.75	19.32	19.75	20.32	21.07	21.56	21.12	---
7	14.52	16.24	17.38	18.14	18.76	19.32	19.78	20.33	21.14	21.58	21.09	---
8	14.61	16.27	17.42	18.15	18.77	19.33	19.78	20.35	21.16	21.60	21.08	---
9	14.70	16.34	17.48	18.17	18.78	19.35	19.81	20.35	21.18	21.61	21.06	---
10	14.77	16.38	17.50	18.19	18.79	19.37	19.81	20.36	21.20	21.62	21.06	---
11	14.86	16.40	17.53	18.20	18.81	19.38	19.92	20.36	21.21	21.64	21.06	---
12	14.93	16.48	17.54	18.26	18.87	19.40	19.92	20.39	21.23	21.66	21.05	---
13	14.99	16.52	17.56	18.29	18.90	19.46	19.92	20.40	21.24	21.73	21.10	---
14	15.04	16.55	17.59	18.31	18.91	19.47	19.92	20.46	21.26	21.76	21.14	---
15	15.10	16.58	17.62	18.32	18.93	19.48	19.92	20.49	21.27	21.77	21.18	---
16	15.15	16.62	17.68	18.33	18.94	19.50	19.92	20.53	21.24	21.74	21.20	---
17	15.21	16.67	17.71	18.34	18.95	19.50	19.94	20.56	21.22	21.61	21.25	---
18	15.26	16.72	17.73	18.35	18.96	19.50	19.95	20.57	21.21	21.57	21.35	---
19	15.33	16.76	17.74	18.37	18.98	19.50	19.96	20.57	21.20	21.53	21.38	---
20	15.37	16.79	17.75	18.39	18.99	19.51	19.97	20.59	21.20	21.46	21.42	---
21	15.42	16.82	17.77	18.41	19.00	19.52	19.97	20.61	21.19	21.44	21.54	---
22	15.46	16.88	17.79	18.47	19.03	19.53	19.97	20.63	21.19	21.43	21.58	---
23	15.51	16.92	17.81	18.49	19.09	19.54	20.01	20.73	21.19	21.43	21.60	---
24	15.57	16.94	17.87	18.51	19.11	19.55	20.03	20.75	21.19	21.43	21.65	---
25	15.64	16.96	17.89	18.52	19.12	19.57	20.10	20.76	21.21	21.40	21.75	---
26	15.71	17.01	17.91	18.54	19.13	19.59	20.10	20.77	21.22	21.37	21.78	---
27	15.78	17.06	17.93	18.54	19.15	19.60	20.11	20.78	21.24	21.32	21.80	---
28	15.84	17.10	17.94	18.55	19.16	19.66	20.12	20.80	21.27	21.23	21.83	---
29	15.90	17.13	17.95	18.56	---	19.68	20.14	20.82	21.35	21.20	21.90	---
30	15.95	17.15	17.96	18.57	---	19.70	20.14	20.82	21.37	21.19	21.93	---
31	15.98	---	17.98	18.59	---	19.72	---	20.86	---	21.16	21.96	---
LOW	15.98	17.15	17.98	18.59	19.16	19.72	20.14	20.86	21.37	21.77	21.96	---
HIGH	13.99	16.02	17.19	18.01	18.65	19.18	19.73	20.15	20.93	21.16	21.05	---



180006066123700 Local number, HW-TW-07.
LOCATION.--Lat 18°00'06", long 66°12'37".
Owner: U.S. Geological Survey, WRD.
Name: HW-TW-07.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-88 ft (0-26.8 m), cased 4 in (0.10 m), 0-82 ft (0-25.0 m), screened 69-77 ft (21.0-29.5 m). Depth 88 ft (26.8 m).
DATUM.--Elevation of land-surface datum is 240 ft (73.2 m) above mean sea level.
Measuring point: Hole on side of casing, 2.99 ft (0.91 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 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 23.79 ft (7.25 m) below land-surface datum, Apr. 1, 1988; lowest water level recorded, 38.12 ft (11.62 m) below land-surface datum, Sept. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33.64	33.66	34.15	34.75	35.20	35.61	35.95	36.33	36.74	37.12	37.52	38.04
2	33.62	33.67	34.16	34.77	35.20	35.62	35.97	36.34	36.76	37.13	37.54	38.06
3	33.60	33.69	34.18	34.78	35.20	35.62	35.98	36.37	36.77	37.16	37.54	38.08
4	33.58	33.70	34.20	34.79	35.24	35.63	35.99	36.38	36.79	37.17	37.56	38.10
5	33.57	33.71	34.22	34.81	35.27	35.64	36.01	36.39	36.80	37.19	37.57	38.12
6	33.55	33.73	34.23	34.83	35.31	35.65	36.02	36.41	36.81	37.21	37.59	---
7	33.54	33.74	34.26	34.85	35.34	35.67	36.02	36.43	36.83	37.22	37.61	---
8	33.52	33.75	34.28	34.86	35.32	35.69	36.04	36.45	36.84	37.23	37.61	---
9	33.51	33.76	34.30	34.87	35.33	35.71	36.05	36.46	36.85	37.24	37.63	---
10	33.51	33.78	34.33	34.89	35.34	35.72	36.07	36.48	36.87	37.26	37.63	---
11	33.51	33.80	34.36	34.90	35.35	35.74	36.07	36.49	36.88	37.27	37.65	---
12	33.51	33.82	34.36	34.93	35.36	35.75	36.10	36.50	36.89	37.29	37.67	---
13	33.52	33.84	34.38	34.95	35.38	35.76	36.11	36.51	36.90	37.30	37.68	---
14	33.52	33.85	34.40	34.96	35.40	35.77	36.12	36.52	36.91	37.30	37.70	---
15	33.52	33.87	34.42	34.97	35.41	35.78	36.13	36.53	36.92	37.31	37.72	---
16	33.52	33.88	34.43	34.99	35.42	35.79	36.14	36.54	36.93	37.33	37.73	---
17	33.52	33.89	34.45	35.00	35.43	35.80	36.15	36.56	36.94	37.35	37.77	---
18	33.52	33.90	34.48	35.01	35.45	35.81	36.17	36.57	36.95	37.36	37.78	---
19	33.52	33.92	34.50	35.04	35.46	35.82	36.18	36.58	36.96	37.37	37.81	---
20	33.53	33.92	34.52	35.06	35.48	35.83	36.19	36.58	36.98	37.39	37.82	---
21	33.53	33.94	34.54	35.07	35.50	35.84	36.20	36.59	36.99	37.40	37.84	---
22	33.54	33.97	34.57	35.08	35.51	35.85	36.21	36.61	37.02	37.42	37.86	---
23	33.55	34.00	34.59	35.11	35.52	35.86	36.23	36.63	37.03	37.43	37.87	---
24	33.56	34.02	34.61	35.12	35.54	35.88	36.25	36.64	37.04	37.43	37.88	---
25	33.56	34.04	34.62	35.13	35.56	35.89	36.27	36.65	37.05	37.44	37.91	---
26	33.58	34.05	34.64	35.15	35.57	35.90	36.28	36.66	37.06	37.45	37.92	---
27	33.60	34.08	34.66	35.15	35.59	35.91	36.29	36.67	37.07	37.46	37.94	---
28	33.61	34.10	34.68	35.16	35.60	35.92	36.30	36.69	37.08	37.47	37.96	---
29	33.62	34.11	34.70	35.17	---	35.92	36.31	36.70	37.09	37.48	37.98	---
30	33.64	34.13	34.71	35.17	---	35.93	36.32	36.71	37.10	37.49	38.01	---
31	33.65	---	34.74	35.19	---	35.94	---	36.72	---	37.50	38.03	---
LOW	33.65	34.13	34.74	35.19	35.60	35.94	36.32	36.72	37.10	37.50	38.03	---
HIGH	33.51	33.66	34.15	34.75	35.20	35.61	35.95	36.33	36.74	37.12	37.52	---

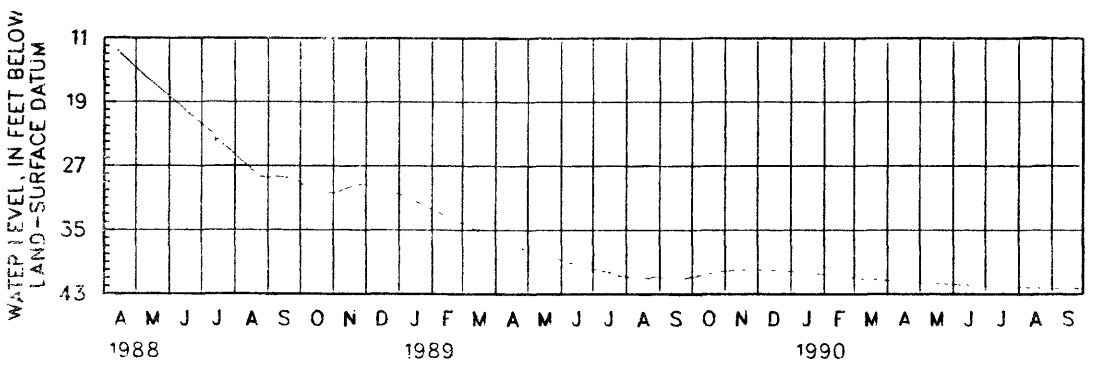


[illegible] 1400' [illegible] HW-TW-C8
LOCATION.--Lat 17°59'39", long 66°12'26"
Owner: U.S. Geological Survey, PRD.
Name: HW-TW-C8
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0 49 ft (0-14.9 m), cased 4 in (0.10 m), 0-49 ft (0 14.9 m), screened 43-48 ft (13.1-14.6 m). Depth 49 ft (14.9 m).
DATUM.--Elevation of land-surface datum is 172 ft (52.1 m) above mean sea level.
Measuring point: Hole on side of [illegible], 2.83 ft (0.86 m) above land-surface datum. Prior October 7, 1988 top of shelter floor, 3.55 ft (1.08 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--April 13, 1988 to curret year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 12.55 ft (3.82 m) below land-surface datum, Apr. 13, 1988. Lowest water level recorded, 42.27 ft (12.9 m) below land-surface datum, Sept. 4-5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40.81	40.11	39.[illegible]	40.15	40.56	40.93	41.28	41.53	41.76	41.96	42.12	42.25
2	40.80	40.09	39.97	40.15	40.58	40.95	41.29	41.55	41.76	41.96	42.12	42.26
3	40.79	40.09	39.97	40.16	40.61	40.96	41.30	41.55	41.77	41.97	42.12	42.26
4	40.77	40.07	39.97	40.18	40.62	40.97	41.31	41.56	41.77	41.97	42.13	42.27
5	40.75	40.06	39.97	40.18	40.63	40.98	41.33	41.57	41.78	41.97	42.14	42.26
6	40.72	40.06	39.98	40.19	40.65	40.99	41.33	41.57	41.78	41.99	42.14	42.26
7	40.70	40.01	39.98	40.20	40.68	41.00	41.34	41.58	41.79	41.99	42.14	42.26
8	40.68	40.00	39.98	40.21	40.70	41.01	41.34	41.59	41.79	42.00	42.15	42.26
9	40.65	40.00	39.98	40.22	40.72	41.03	41.35	41.60	41.80	42.01	42.15	42.26
10	40.62	40.00	39.99	40.23	40.72	41.02	41.36	41.61	41.80	42.01	42.16	42.26
11	40.58	39.99	39.99	40.25	40.75	41.05	41.36	41.61	41.81	42.02	42.17	42.26
12	40.55	39.98	39.99	40.27	40.77	41.07	41.37	41.61	41.82	42.03	42.17	42.25
13	40.52	39.99	40.00	40.28	40.79	41.08	41.39	41.62	41.82	42.03	42.17	42.25
14	40.49	39.98	40.00	40.29	40.78	41.08	41.39	41.63	41.83	42.04	42.18	42.25
15	40.47	39.98	40.03	40.30	40.79	41.09	41.40	41.64	41.83	42.04	42.19	42.26
16	40.44	39.99	40.03	40.30	40.81	41.10	41.41	41.64	41.84	42.04	42.19	42.25
17	40.42	39.99	40.05	40.31	40.82	41.12	41.42	41.65	41 84	42.04	42.19	42.26
18	40.41	39.98	40.05	40.33	40.81	41.13	41.43	41.65	41.85	42.05	42.20	42.25
19	40.38	39.98	40.05	40.34	40.82	41.13	41.43	41.67	41.85	42.05	42.20	42.25
20	40 35	39.97	40.05	40.37	40.83	41.15	41.44	41.67	41.85	42.06	42.20	42.26
21	40.34	39.97	40.06	40.38	40.84	41.15	41.45	41.68	41.86	42.06	42.20	42.25
22	40.31	39.97	40.07	40.39	40.83	41.16	41.46	41.69	41.87	42.07	42.20	42.25
23	40.29	39.97	40.08	40.40	40.84	41.17	41.46	41.70	41.88	42.08	42.20	42.26
24	40.27	39.97	40.09	40.43	40.87	41.19	41.47	41.71	41.88	42.09	42.21	42.25
25	40.24	39.97	40.09	40.44	40.88	41.20	41.48	41.72	41.89	42.09	42.22	42.25
26	40.21	39.96	40.10	40.45	40.89	41.21	41.49	41.73	41.89	42.09	42.22	42.24
27	40.20	39.97	40.11	40.48	40.91	41.22	41.50	41.73	41.90	42.10	42.22	42.25
28	40.18	39.97	40.12	40.49	40.93	41.23	41.51	41.74	41.92	42.10	42.22	42.24
29	40.16	39.98	40.13	40.51	---	41.24	41.51	41.74	41.92	42.11	42.23	42.24
30	40.14	39.97	40.13	40.52	---	41.26	41.53	41.74	41.94	42.11	42.23	42.25
31	40.13	---	40.14	40.55	---	41.26	---	41.75	---	42.11	42.24	---
LOW	40.81	40.11	40.14	40.55	40.93	41.26	41.53	41.75	41.94	42.11	42.24	42.27
HIGH	40.13	39.96	39.97	40.15	40.56	40.93	41.28	41.53	41.76	41.96	42.12	42.24

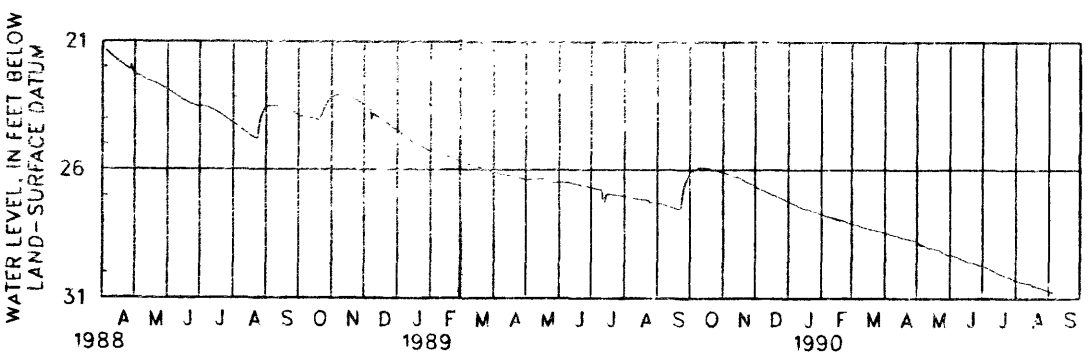
WTR YR 1990 MEAN 41.17 LOW 42.27 HIGH 39.96



175950066125200 Local number, HW-TW-10.
LOCATION.--Lat 17°59'50", long 66°12'52".
Owner: U.S. Geological Survey, WRD.
Name: HW-TW-10.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-55 ft (0-16.8 m), cased 4 in (0.10 m), 0-54 ft (0-16.4 m), screened 48-53 ft (14.6-16.2 m). Depth 55 ft (16.8 m).
DATUM.--Elevation of land-surface datum is 159 ft (48.5 m) above mean sea level.
Measuring point: Hole on side of casing, 2.98 ft (0.91 m) above land-surface datum. Prior October 14, 1988 top of shelter floor, 3.61 ft (1.10 m) above land-surface datum
REMARKS.--Recording observation well. Pumping test on Dec. 8, 1988, May 22, 1989, and July 13, 1989.
PERIOD OF RECORD.--April 5, 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 21.39 ft (6.52 m) below land-surface datum, Apr. 5, 1988; lowest water level recorded, 30.76 ft (9.38 m) below land-surface datum, Sept. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.17	26.08	26.61	27.21	27.70	28.07	28.42	--	29.30	29.73	30.28	30.69
2	26.10	26.09	26.63	27.23	27.72	28.08	28.43	---	29.31	29.74	30.29	30.71
3	26.07	26.11	26.67	27.24	27.74	28.09	28.46	---	29.31	29.75	30.31	30.73
4	26.05	26.12	26.69	27.26	27.76	28.10	28.47	28.90	29.33	29.77	30.32	30.74
5	26.03	26.15	26.71	27.28	27.77	28.12	28.48	28.91	29.34	29.78	30.34	30.76
6	26.01	26.16	26.73	27.29	27.78	28.12	28.49	28.90	29.36	29.80	30.35	---
7	25.99	26.17	26.75	27.31	27.79	28.14	28.50	28.92	29.37	29.81	30.36	---
8	25.95	26.19	26.77	27.34	27.80	28.16	28.50	28.94	29.39	29.86	30.36	---
9	25.91	26.21	26.78	27.37	---	28.18	28.52	28.95	29.41	29.87	30.36	---
10	25.90	26.23	26.80	27.39	---	28.20	28.53	28.98	29.43	29.89	30.38	---
11	25.90	26.24	26.83	27.42	--	28.21	28.54	29.01	29.45	29.91	30.39	---
12	25.89	26.25	26.86	27.44	--	28.23	28.53	29.02	29.47	29.93	30.39	---
13	25.90	26.26	26.87	27.45	-	28.23	28.54	29.03	29.49	29.96	30.40	---
14	25.90	26.26	26.88	27.47	--	28.24	28.58	29.04	29.50	29.97	30.41	---
15	25.91	26.27	26.90	27.48	-	28.25	28.60	29.04	29.53	29.99	30.43	---
16	25.91	26.30	26.92	27.49	27.90	28.27	28.62	29.05	29.55	30.02	30.44	---
17	25.91	26.31	26.95	27.51	27.91	28.28	28.63	29.06	29.56	30.03	30.49	---
18	25.92	26.34	26.97	27.52	27.96	28.29	28.64	29.07	29.57	30.04	30.51	---
19	25.92	26.36	26.98	27.51	27.93	28.30	28.65	29.08	29.57	30.06	30.51	---
20	25.92	26.38	26.99	27.52	27.94	28.31	28.65	29.09	29.58	30.08	30.52	---
21	25.99	26.40	27.01	27.54	27.96	28.31	28.66	29.09	29.59	30.09	30.54	---
22	26.00	26.44	27.03	27.56	27.96	28.32	28.67	29.11	29.60	30.10	30.54	---
23	26.01	26.45	27.04	27.57	27.98	28.34	28.68	29.14	29.61	30.11	30.56	---
24	26.02	26.47	27.06	27.58	28.02	28.35	28.68	29.18	29.62	30.13	30.57	---
25	26.02	26.48	27.07	27.59	28.03	28.36	28.69	29.20	29.64	30.15	30.58	---
26	26.03	26.51	27.09	27.61	28.04	28.37	28.70	29.22	29.65	30.16	30.60	---
27	26.04	26.53	27.12	27.63	28.05	28.37	28.71	29.24	29.67	30.17	30.62	---
28	26.05	26.54	27.13	27.64	28.06	28.36	28.72	29.26	29.69	30.20	30.63	---
29	26.06	26.57	27.14	27.65	-	28.40	28.72	29.29	29.70	30.22	30.65	---
30	26.07	26.59	27.18	27.66	-	28.40	---	29.30	29.71	30.25	30.67	---
31	26.08	---	27.20	27.68	-	28.40	---	29.29	---	30.26	30.69	---
LOW	26.17	26.59	27.20	27.68	-	28.40	---	---	29.71	30.26	30.69	---
HIGH	25.89	26.08	26.61	27.21	--	28.07	---	--	29.30	29.73	30.28	---

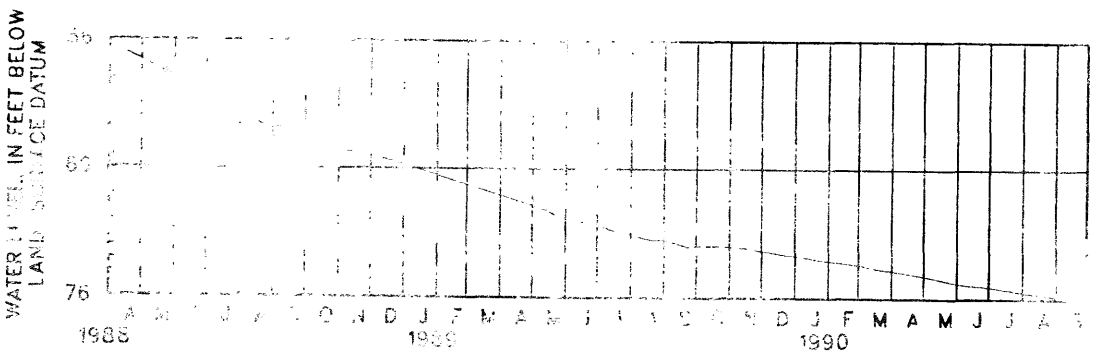


RIO SALINAS

180012066125500 Local number, HW-TW-11.
LOCATION.--Lat 18°00'12", long 66°12'55".
Owner: U.S. Geological Survey, WRD.
Name: HW-TW-11.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-94.9 ft (0-28.9 m), cased 4 in (0.10 m), 0-94 ft (0-28.6 m), screened 79-89 ft (24.1-27.1 m). Depth 94.9 ft (28.9 m).
DATUM.--Elevation of land-surface datum is 240 ft (73.2 m) above mean sea level.
Measuring point: Hole on side of casing, 3.04 ft (0.96 m) above land-surface datum. Prior October 13, 19[illegible] top of shelter floor, 3.74 ft (1.14 m) above land-surface datum.
REMARKS.--Recording observation well. Aquifer test performed on Dec. 9, 1988 and May 23, 1989.
PERIOD OF RECORD.--April 14, 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 57.00 ft (17.4 m) below land-surface datum, Ap[illegible] 14 1988; lowest water level recorded, 75.85 ft (23.1 m) below land-surface datum, Sept. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

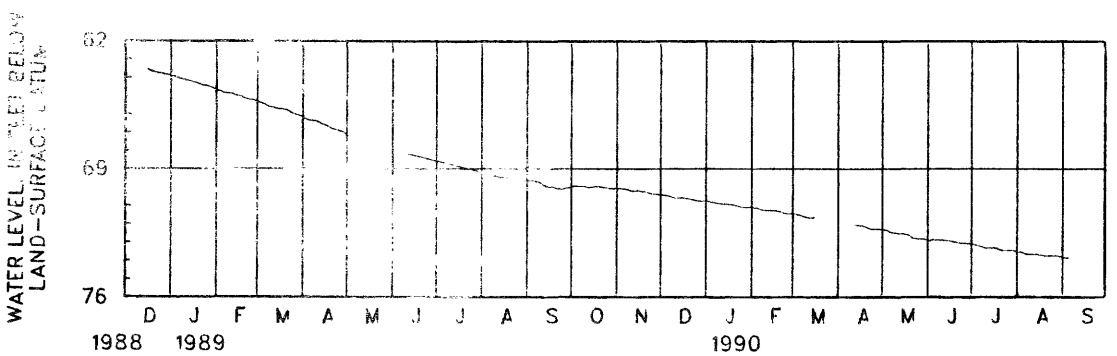
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	71.98	72.03	72.35	72.72	73.08	73.41	73.82	74.25	74.78	75.08	75.4[illegible]	75.8[illegible]
2	71.98	72.03	72.36	72.73	73.09	73.41	73.84	74.25	74.80	75.05	75.[illegible]	75.81
3	71.96	72.04	72.37	72.74	73.10	73.42	73.85	74.26	74.81	75.07	75.45	75.82
4	71.96	72.04	72.39	72.75	73.11	73.44	73.87	74.29	74.84	75.07	75.[illegible]	75.84
5	71.96	72.05	72.40	72.76	73.12	73.45	73.88	74.30	74.84	75.09	75.48	75.85
6	71.96	72.05	72.41	72.77	73.13	73.47	73.90	74.32	74.84	75.10	75.49	---
7	71.96	72.05	72.42	72.78	73.15	73.48	73.91	74.34	74.85	75.11	75.51	---
8	71.95	72.06	72.43	72.79	73.15	73.50	73.93	74.35	74.87	75.11	75.51	---
9	71.95	72.07	72.45	72.81	73.16	73.52	73.94	74.36	74.88	75.13	75.52	---
10	71.95	72.08	72.46	72.82	73.16	73.54	73.95	74.38	74.89	75.15	75.53	---
11	71.95	72.09	72.48	72.83	73.17	73.56	73.96	74.40	74.90	75.16	75.55	---
12	71.95	72.10	72.48	72.84	73.19	73.57	73.98	74.42	74.91	75.17	[illegible]	---
13	71.96	72.11	72.49	72.86	73.21	73.59	73.99	74.44	74.92	75.19	75.58	---
14	71.96	72.12	72.51	72.87	73.22	73.60	74.00	74.47	74.92	75.21	75.59	---
15	71.96	72.13	72.52	72.89	73.24	73.61	74.01	74.48	74.93	75.22	75.60	
16	71.96	72.14	72.54	72.90	73.24	73.63	74.03	74.50	74.94	75.23	75.61	---
17	71.96	72.15	72.56	72.91	73.25	73.65	74.04	74.51	74.95	75.23	75.62	---
18	71.96	72.17	72.57	72.93	73.26	73.66	74.05	74.54	74.94	75.24	75.63	---
19	71.96	72.19	72.59	72.94	73.27	73.68	74.07	74.56	74.95	75.26	75.64	---
20	71.97	72.21	72.59	72.96	73.29	73.69	74.08	74.58	74.96	75.27	75.65	---
21	71.98	72.21	72.60	72.97	73.31	73.71	74.09	74.59	74.97	75.28	75.66	---
22	71.98	72.23	72.63	72.99	73.33	73.72	74.10	74.61	74.97	75.29	75.68	---
23	71.99	72.25	72.63	72.99	73.34	73.73	74.12	74.63	74.97	75.30	75.69	---
24	71.99	72.26	72.64	73.00	73.35	73.74	74.14	74.64	74.98	75.32	75.70	---
25	72.00	72.28	72.65	73.02	73.36	73.75	74.14	74.66	74.99	75.33	75.71	---
26	72.00	72.29	72.67	73.02	73.37	73.77	74.15	74.68	75.00	75.34	75.71	---
27	72.00	72.30	72.68	73.03	73.38	73.78	74.18	74.69	75.02	75.36	75.72	---
28	72.00	72.32	72.69	73.04	73.40	[illegible]	74.20	74.71	75.03	75.38	75.74	---
29	72.01	72.33	72.69	73.04	---	[illegible]	74.21	74.72	75.03	75.39	75.77	---
30	72.02	72.34	72.69	73.05	---	[illegible]	74.22	74.75	75.03	75.41	75.78	---
31	72.02	---	72.71	73.07	---	---	---	74.76	---	75.41	75.79	---
LOW	72.02	72.34	72.71	73.07	[illegible]	[illegible]	74.22	74.76	75.03	75.41	75.79	---
HIGH	71.95	72.03	72.35	[illegible]	[illegible]	[illegible]	[illegible]	74.23	74.78	75.04	75.42	---



180012066125502 Local number, HW-TW-11C.
LOCATION.--lat 18°00'12", long 66°12'55".
Owner: U.S. Geological Survey, WRD.
Name: HW-TW-11C.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in (0.15 m), 0-95.0 ft (0-29.0 m) diameter 2.9 in (0.07m), 95-200 ft (29.0-61.0 m), cased 4 in (0.10 m), 0-95 ft (0-29.0 m), open hole 95-200 ft (29.0-61.0 m). Depth 200 ft (61.0 m).
DATUM.--Elevation of land-surface datum is 240 ft (73.2 m) above mean sea level.
Measuring point: Top of shelter floor, 3.56 ft (1.08 m) above land-surface datum.
REMARKS.--Recording observation well. Pumping test on May 23-24, 1989.
PERIOD OF RECORD.--December 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 63.51 ft (19.4 m) below land-surface datum, Dec. 15, 1988; lowest water level recorded, 73.87 ft (22.5 m) below land-surface datum, Sept. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	70.05	70.06	70.74	70.75	71.03	71.42	---	72.29	72.86	73.10	73.51	73.82
2	69.98	70.05	70.68	70.75	71.03	71.43	---	72.31	72.90	73.12	73.54	73.84
3	69.95	70.06	70.61	70.77	71.03	71.45	---	72.33	72.93	73.14	73.53	73.85
4	69.93	70.08	70.57	70.77	71.03	71.47	---	72.32	72.85	73.16	73.54	73.86
5	70.02	70.09	70.57	70.77	71.03	71.49	---	72.38	72.85	73.19	73.57	73.87
6	69.92	70.07	70.57	70.77	71.16	71.51	---	72.34	72.86	73.20	---	---
7	69.95	70.10	70.56	70.77	71.20	71.53	---	72.44	72.86	73.21	---	---
8	69.96	70.12	70.57	70.77	71.22	71.56	---	72.46	72.86	73.24	73.67	---
9	69.98	70.14	70.57	70.77	71.23	71.61	---	2.48	72.86	73.26	73.66	---
10	69.97	70.19	70.58	70.77	71.24	71.62	---	72.49	72.89	73.32	73.66	---
11	69.96	70.20	70.58	70.80	71.24	71.64	---	72.50	72.89	73.32	73.66	---
12	70.00	70.21	70.58	70.82	71.24	71.66	72.06	72.51	72.89	73.32	73.66	---
13	70.00	70.21	70.58	70.83	71.24	71.67	72.06	72.52	72.90	73.32	73.65	---
14	70.00	70.20	70.57	70.90	71.24	71.67	72.06	72.52	72.91	73.32	73.65	---
15	69.99	70.19	70.57	70.90	71.24	71.67	72.06	72.53	72.91	73.31	73.67	---
16	69.98	70.19	70.57	70.82		71.64	72.08	72.55	72.92	73.31	73.69	---
17	69.98	70.20	70.59	70.[illegible]		---	72.09	72.57	72.95	73.33	73.69	---
18	69.98	70.23	70.61	[illegible]		---	72.11	72.59	72.97	73.34	73.71	---
19	69.97	70.24	70.62	70.96	.30	---	72.14	72.63	72.97	73.38	73.74	---
20	69.97	70.22	70.63	70.[illegible]	71.32	---	72.17	72.67	73.00	73.39	73.74	---
21	69.98	70.26	70.65		71.34	---	72.20	72.74	73.02	73.44	73.74	---
22	69.99	70.28	70.67		71.38	---	72.24	72.77	73.02	73.44	73.74	---
23	70.01	70.32	70.69	.03	71.40	---	72.27	72.79	73.03	73.45	73.74	---
24	70.02	70.33	70.70	1.05	71.42	---	72.28	72.80	73.06	73.44	73.74	---
25	70.04	70.36	[illegible]	71.07	71.42	---	72.28	72.80	73.06	73.44	73.74	---
26	70.05	70.38	.73	71.09	71.44	---	72.29	72.81	73.06	73.44	73.74	---
27	70.06	70.39	70.74	71.09	71.43	---	72.28	72.80	73.06	73.44	73.73	---
28	70.07	70.39	70.74	71.10	71.43	---	72.28	72.82	73.07	73.44	73.73	---
29	70.07	70.39	70.75	71.09	---	---	72.28	72.82	73.07	73.45	73.76	---
30	70.06	0.39	70.75	71.09	---	---	72.29	72.83	73.08	73.46	73.77	---
31	70.04	---	70.75	71.08	---	---	---	72.84	---	73.50	73.79	---
LOW	70.08	70.39	70.75	71.10	71.44	---	---	72.84	73.08	73.50	---	---
HIGH	69.93	[illegible]	70.40	70.75	71.09	---	---	72.29	72.85	73.10	---	---

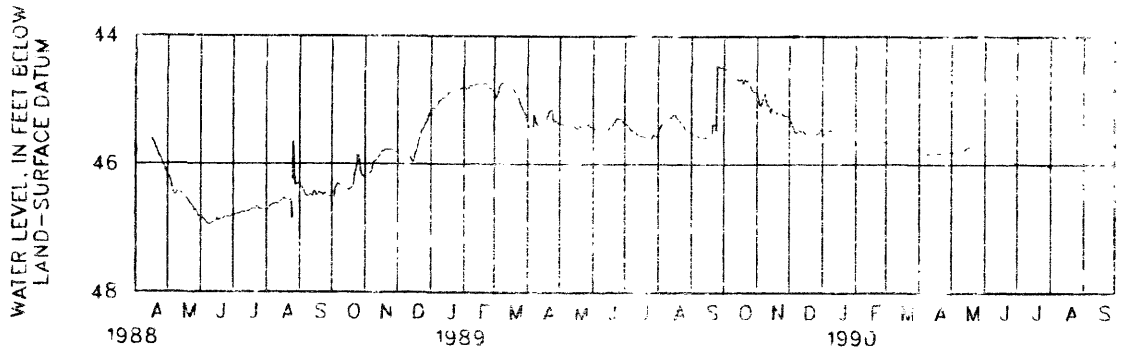


RIO SALINAS TO RIO [illegible] BASINS

175957066123400 Local number, HW-TW-13.
LOCATION.--Lat 17°59'57", long 66°12'34".
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).
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, 44.44 ft (13.5 m) below land-surface datum, Sept. 24-25, 1989; lowest water level recorded, 46.95 ft (14.3 m) below land-surface datum, June 8, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

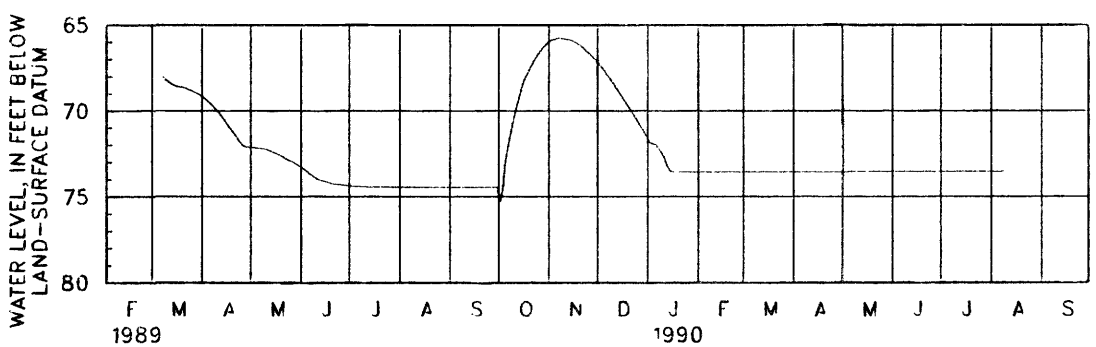
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44.49	44.86	45.26	45.51	45.55	45.65	45.76	45.81	45.84	45.98	46.04	46.06
2	44.53	44.90	45.28	45.53	45.56	45.66	45.77	45.81	45.85	45.98	46.04	46.06
3	44.51	45.01	45.35	45.53	45.56	45.66	45.77	45.81	45.85	45.98	46.04	46.05
4	44.50	45.07	45.39	45.51	45.57	45.66	45.77	45.82	45.86	45.98	46.04	46.05
5	44.52	45.08	45.42	45.50	45.57	45.67	45.78	45.82	45.86	45.98	46.04	46.04
6	44.54	45.03	45.49	45.48	45.58	45.67	45.79	45.82	45.87	45.98	46.04	---
7	44.54	45.08	45.50	45.49	45.59	45.67	45.81	45.82	45.87	45.98	46.04	---
8	44.56	44.97	45.50	45.46	45.60	45.67	45.82	45.81	45.87	45.98	46.04	---
9	44.57	44.89	45.50	45.47	45.60	45.68	45.83	45.81	45.87	45.99	46.04	---
10	44.59	45.01	45.46	45.48	45.61	45.69	45.83	45.81	45.87	45.99	46.04	---
11	44.59	45.07	45.46	45.46	45.62	45.69	45.83	45.81	45.88	45.99	46.05	---
12	44.61	45.08	45.50	45.46	45.62	45.69	45.84	45.81	45.89	46.00	46.05	---
13	44.63	45.10	45.48	45.47	45.63	45.69	45.83	45.79	45.89	46.00	46.05	---
14	44.68	45.19	45.45	45.49	45.64	45.69	45.83	45.76	45.89	46.00	46.05	---
15	44.68	45.12	45.50	45.49	45.65	45.69	45.82	45.75	45.89	46.00	46.06	---
16	44.69	45.10	45.51	45.51	45.65	45.70	45.82	45.73	45.89	46.00	46.07	---
17	44.67	45.13	45.52	45.51	45.65	45.70	45.82	45.73	45.90	46.01	46.08	---
18	44.66	45.16	45.52	45.50	45.65	45.70	45.82	45.72	45.90	46.00	46.08	---
19	44.74	45.21	45.54	45.50	45.65	45.70	45.82	45.71	45.91	46.00	46.08	---
20	44.70	45.20	45.54	45.50	45.66	45.70	45.82	45.70	45.91	46.00	46.08	---
21	44.67	45.16	45.54	45.50	45.66	45.70	45.82	45.70	45.91	46.00	46.08	---
22	44.70	45.13	45.55	45.51	45.66	45.71	45.82	45.71	45.92	46.01	46.08	---
23	44.70	45.14	45.54	45.51	45.66	45.71	45.82	45.72	45.92	46.01	46.08	---
24	44.68	45.18	45.54	45.52	45.66	45.71	45.82	45.73	45.93	46.02	46.08	---
25	44.72	45.23	45.55	45.54	45.66	45.71	45.82	45.74	45.94	46.02	46.08	---
26	44.80	45.22	45.53	45.54	45.66	45.71	45.82	45.75	45.95	46.02	46.08	---
27	44.82	45.23	45.53	45.55	45.66	45.71	45.82	45.76	45.96	46.02	46.08	---
28	44.84	45.24	45.52	45.55	45.66	45.71	45.81	45.80	45.96	46.02	46.08	---
29	44.87	45.23	45.50	45.55	---	45.74	45.81	45.81	45.97	46.02	46.08	---
30	44.87	45.25	45.48	45.55	---	45.75	45.81	45.82	45.97	46.02	46.08	---
31	44.88	---	45.47	45.55	---	45.76	---	45.83	---	46.02	46.08	---
LOW	44.49	45.25	45.26	45.46	45.55	45.65	45.76	45.84	45.82	45.98	46.04	46.04
HIGH	44.19	44.86	45.26	45.46	45.55	45.65	45.76	45.79	45.84	45.98	46.04	46.04



175946066102000 Local number, HW-TW-14.
LOCATION.--Lat 17°59'46", long 66°10'20".
Owner: U.S. Geological Survey, WRD.
Name: HW-TW-14.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-79 ft (0-24.4 m), cased 4 in (0.10 m), 0-79 ft (0-24.1 m), screened 71-78 ft (21.6-23.8 m). Depth 79 ft (24.1 m).
DATUM.--Elevation of land-surface datum is 205 ft (62.5 m) above mean sea level.
Measuring point: Hole on side of casing, 3.02 ft (0.92 m) above land-surface datum. Prior October 7, 1988, top of shelter floor, 3.67 ft (1.12 m) above land-surface datum.
REMARKS.--Recording Observation well. Well dry at 73.56 ft (22.4 m).
PERIOD OF RECORD.--December 1987 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 41.1 ft (12.5 m) below land-surface datum, Dec. 17, 1987; lowest water level recorded, 75.35 ft (23.0 m) below land-surface datum, Oct. 2, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

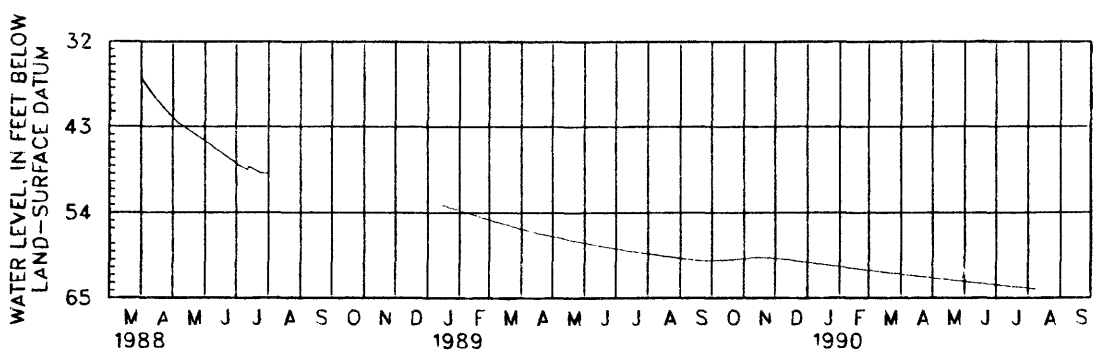
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	74.77	65.99	67.17	71.61	73.56	73.56	73.56	73.54	73.54	73.54	73.54	---
2	75.29	65.92	67.27	71.78	73.56	73.56	73.56	73.54	73.54	73.54	73.54	---
3	74.85	65.87	67.38	71.89	73.56	73.56	73.56	73.54	73.54	73.54	73.54	---
4	74.27	65.85	67.50	71.92	73.56	73.56	73.56	73.54	73.54	73.54	73.54	---
5	73.11	65.82	67.62	71.94	73.56	73.56	73.56	73.54	73.54	73.54	73.54	---
6	72.55	65.79	67.76	71.99	73.56	73.56	73.56	73.54	73.54	73.54	73.54	---
7	72.04	65.77	67.89	72.12	73.56	73.56	73.56	73.54	73.54	73.54	73.54	---
8	71.54	65.77	68.01	72.24	73.56	73.56	73.56	73.54	73.54	73.54	73.54	---
9	71.08	65.79	68.14	72.38	73.56	73.56	73.56	73.54	73.54	73.54	73.54	---
10	70.65	65.80	68.26	72.53	73.56	73.56	73.56	73.54	73.54	73.54	---	---
11	70.23	65.81	68.41	72.71	73.56	73.56	73.56	73.54	73.54	73.54	---	---
12	69.82	65.83	68.57	73.02	73.56	73.56	73.56	73.54	73.54	73.54	---	---
13	69.45	65.86	68.71	73.19	73.56	73.56	73.56	73.54	73.54	73.54	---	---
14	69.09	65.87	68.84	73.37	73.56	73.56	73.56	73.54	73.54	73.54	---	---
15	68.76	65.91	68.99	73.53	73.56	73.56	73.56	73.54	73.54	73.54	---	---
16	68.43	65.94	69.12	73.55	73.56	73.56	73.56	73.54	73.54	73.54	---	---
17	68.13	66.00	69.27	73.56	73.56	73.56	73.56	73.54	73.54	73.54	---	---
18	67.97	66.06	69.42	73.56	73.56	73.56	73.56	73.54	73.54	73.54	---	---
19	67.79	66.13	69.57	73.56	73.56	73.56	73.56	73.54	73.54	73.54	---	---
20	67.59	66.17	69.71	73.56	73.56	73.56	73.56	73.54	73.54	73.54	---	---
21	67.41	66.23	69.86	73.56	73.56	73.56	73.56	73.54	73.54	73.54	---	---
22	67.25	66.33	70.02	73.56	73.56	73.56	73.56	73.54	73.54	73.54	---	---
23	67.08	66.42	70.17	73.56	73.56	73.56	73.56	73.54	73.54	73.54	---	---
24	66.92	66.51	70.31	73.56	73.56	73.56	73.56	73.54	73.54	73.54	---	---
25	66.77	66.59	70.47	73.56	73.56	73.56	73.56	73.54	73.54	73.54	---	---
26	66.64	66.68	70.63	73.56	73.56	73.56	73.56	73.54	73.54	73.54	---	---
27	66.50	66.78	70.79	73.56	73.56	73.56	73.56	73.54	73.54	73.54	---	---
28	66.37	66.87	70.95	73.56	73.56	73.56	73.56	73.54	73.54	73.54	---	---
29	66.26	66.96	71.10	73.56	---	73.56	73.56	73.54	73.54	73.54	---	---
30	66.16	67.05	71.27	73.56	---	73.56	73.56	73.54	73.54	73.54	---	---
31	66.08	---	71.42	73.56	---	73.56	---	73.54	---	73.54	---	---
LOW	75.29	67.05	71.42	73.56	73.56	73.56	73.56	73.56	73.54	73.54	---	---
HIGH	66.08	65.77	67.17	71.61	73.56	73.56	73.56	73.54	73.54	73.54	---	---



175955066103000 Local number, HW-TW-15.
LOCATION.--Lat 17°59'55", long 66°10'30".
Owner: U.S. Geological Survey, WRD.
Name: HW-TW-15.
AQUIFER.--Fractured, volcanic rock, water-table aquifer.
WELL CHARACTERISTICS.--Drilled observation well, diameter 7 in (0.18 m), 0-85 ft (0-25.9 m), cased 4 in (0.10 m), 0-85 ft (0-25.9 m), screened 70-80 ft (21.3-24.4 m). Depth 85 ft (25.9 m).
DATUM.--Elevation of land-surface datum is 269 ft (82.0 m) above mean sea level.
Measuring point: Hole on side of casing, 3.12 ft (0.95 m) above land-surface datum. Prior October 7, 1988, top of shelter floor, 3.60 ft (1.10 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--March 30, 1988 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 36.20 ft (11.0 m) below land-surface datum, Mar. 30, 1988; lowest water level recorded, 63.83 ft (19.4 m) below land-surface datum, Aug. 9, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60.15	59.91	59.90	60.40	60.92	61.39	61.90	62.41	62.87	63.28	63.72	---
2	60.15	59.90	59.90	60.42	60.94	61.40	61.94	62.43	62.89	63.29	63.73	---
3	60.15	59.89	59.91	60.43	60.96	61.42	61.96	62.45	62.91	63.30	63.74	---
4	60.14	59.88	59.91	60.44	60.98	61.44	61.97	62.46	62.92	63.32	63.76	---
5	60.14	59.86	59.93	60.46	60.99	61.46	61.99	62.48	62.94	63.33	63.77	---
6	60.13	59.85	59.94	60.48	61.01	61.48	62.03	62.50	62.95	63.36	63.79	---
7	60.13	59.80	59.95	60.50	61.04	61.50	62.04	62.51	62.97	63.36	63.80	---
8	60.12	59.79	59.97	60.52	61.05	61.52	62.06	62.52	62.99	63.38	63.82	---
9	60.12	59.77	59.98	60.53	61.07	61.53	62.07	62.53	63.00	63.39	63.83	---
10	60.11	59.77	59.99	60.60	61.07	61.54	62.08	62.54	63.02	63.40	---	---
11	60.11	59.76	60.00	60.61	61.09	61.57	62.09	62.56	63.03	63.41	---	---
12	60.10	59.76	60.02	60.62	61.10	61.59	62.10	62.56	63.04	63.43	---	---
13	60.09	59.76	60.03	60.64	61.12	61.61	62.12	62.57	63.06	63.45	---	---
14	60.09	59.75	60.04	60.65	61.14	61.64	62.13	62.58	63.07	63.46	---	---
15	60.08	59.75	60.06	60.66	61.15	61.65	62.14	62.59	63.08	63.49	---	---
16	60.08	59.75	60.09	60.67	61.17	61.67	62.17	62.60	63.09	63.50	---	---
17	60.07	59.76	60.12	60.69	61.19	61.68	62.18	62.62	63.11	63.52	---	---
18	60.07	59.76	60.14	60.70	61.20	61.69	62.19	62.63	63.12	63.52	---	---
19	60.06	59.76	60.16	60.72	61.22	61.74	62.20	62.64	63.13	63.53	---	---
20	60.05	59.76	60.18	60.75	61.25	61.76	62.22	62.70	63.14	63.54	---	---
21	60.04	59.76	60.20	60.75	61.29	61.77	62.24	62.74	63.15	63.55	---	---
22	60.03	59.77	60.21	60.77	61.31	61.78	62.25	62.75	63.16	63.56	---	---
23	60.01	59.78	60.22	60.79	61.31	61.78	62.26	62.75	63.17	63.56	---	---
24	60.00	59.78	60.25	60.80	61.33	61.80	62.28	62.76	63.18	63.57	---	---
25	59.99	59.79	60.27	60.81	61.34	61.81	62.30	62.77	63.20	63.58	---	---
26	59.98	59.80	60.29	60.83	61.36	61.81	62.31	62.79	63.21	63.60	---	---
27	59.96	59.82	60.31	60.86	61.37	61.83	62.33	62.80	63.22	63.61	---	---
28	59.95	59.87	60.32	60.87	61.38	61.83	62.35	62.81	63.23	63.64	---	---
29	59.93	59.88	60.34	60.88	---	61.84	62.37	62.82	63.25	63.65	---	---
30	59.92	59.89	60.37	60.89	---	61.86	62.40	62.84	63.26	63.66	---	---
31	59.92	---	60.38	60.91	---	61.87	---	62.85	---	63.69	---	---
LOW	60.15	59.91	60.38	60.91	61.38	61.87	62.40	62.85	63.26	63.69	---	---
HIGH	59.92	59.75	59.90	60.40	60.92	61.39	61.90	62.41	62.87	63.28	---	---



180206066135500. Local number, RM # 5.
LOCATION.--Lat 18°02'06", long 66°13'55".
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).
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.--Observation well. Automatic digital recording installed on March 9, 1989.
PERIOD OF RECORD.--March 9, 1989 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 9.39 ft (2.86 m) below land-surface datum, Sept. 24, 1989; lowest water level recorded, 19.87 ft (6.06 m) below land-surface datum, June 14, 1990.

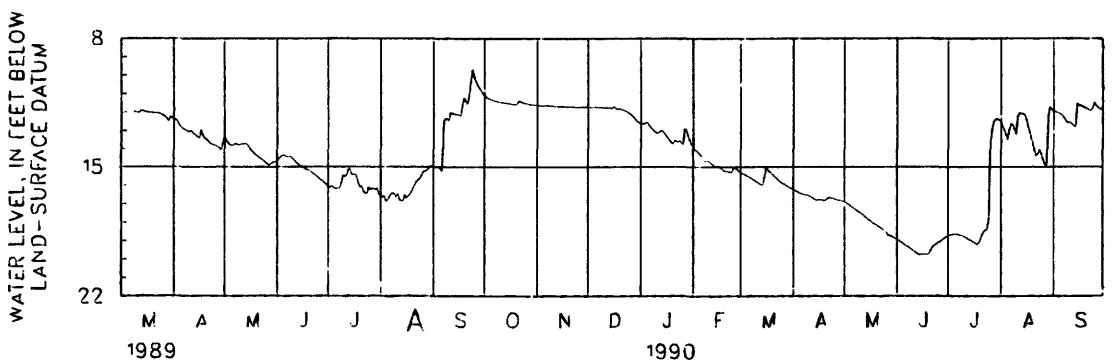
WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	12.39	13.33	14.71	16.03	16.57	14.96
2	---	---	---	---	---	---	12.40	13.54	14.55	16.13	16.66	14.97
3	---	---	---	---	---	---	12.43	13.68	14.45	16.01	16.57	14.97
4	---	---	---	---	---	---	12.66	13.78	14.37	16.10	16.85	15.02
5	---	---	---	---	---	---	12.77	13.81	14.36	16.16	16.86	15.11
6	---	---	---	---	---	---	12.85	13.83	14.40	16.18	16.63	15.22
7	---	---	---	---	---	---	12.92	13.73	14.44	16.18	16.48	12.44
8	---	---	---	---	---	---	12.95	13.74	14.43	16.14	16.43	12.34
9	---	---	---	---	---	11.99	13.03	13.81	14.44	15.83	16.46	12.35
10	---	---	---	---	---	12.00	13.08	13.77	14.52	15.44	16.62	12.44
11	---	---	---	---	---	12.01	13.00	13.75	14.62	15.52	16.46	12.00
12	---	---	---	---	---	12.01	13.09	13.74	14.72	15.44	16.77	12.07
13	---	---	---	---	---	11.91	13.19	13.73	14.81	15.14	16.84	12.08
14	---	---	---	---	---	11.93	13.26	13.74	14.88	15.12	16.84	12.11
15	---	---	---	---	---	11.98	13.34	13.87	14.95	15.40	16.51	12.12
16	---	---	---	---	---	11.99	13.41	14.01	14.99	15.44	16.68	12.16
17	---	---	---	---	---	12.01	12.96	14.11	15.08	15.38	16.60	12.20
18	---	---	---	---	---	12.02	13.28	14.20	15.13	15.55	16.49	11.63
19	---	---	---	---	---	12.03	13.41	14.30	15.16	15.94	16.34	11.23
20	---	---	---	---	---	12.04	13.47	14.37	15.20	16.11	16.16	11.40
21	---	---	---	---	---	12.04	13.56	14.45	15.25	16.07	15.96	11.55
22	---	---	---	---	---	12.04	13.66	14.51	15.32	16.37	15.80	11.04
23	---	---	---	---	---	12.05	13.74	14.58	15.40	16.44	15.70	10.29
24	---	---	---	---	---	12.09	13.77	14.65	15.47	16.44	15.63	9.70
25	---	---	---	---	---	12.14	13.80	14.74	15.54	16.11	15.45	10.15
26	---	---	---	---	---	12.20	13.84	14.82	15.63	16.23	15.27	10.36
27	---	---	---	---	---	12.26	13.88	14.87	15.70	16.20	15.22	10.55
28	---	---	---	---	---	12.36	13.97	14.86	15.77	16.18	15.19	10.72
29	---	---	---	---	---	12.48	14.06	14.79	15.86	16.24	15.10	10.84
30	---	---	---	---	---	12.23	13.67	14.73	15.95	16.16	15.00	11.00
31	---	---	---	---	---	12.31	---	14.72	---	16.49	14.94	---
LOW	---	---	---	---	---	---	14.06	14.87	15.95	16.49	16.86	15.22
HIGH	---	---	---	---	---	---	12.39	13.33	14.36	15.12	14.94	9.70

180206066135500. Local number, RM # 5.--continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11.10	11.62	11.72	12.62	13.92	15.27	16.21	16.87	18.93	18.73	12.43	11.92
2	11.18	11.63	11.73	12.59	14.05	15.34	16.27	16.93	18.99	18.69	12.65	11.95
3	11.24	11.65	11.72	12.65	14.10	15.39	16.32	16.99	19.05	18.66	12.88	11.99
4	11.29	11.65	11.73	12.57	14.20	15.44	16.37	17.05	19.12	18.65	13.13	12.03
5	11.33	11.65	11.73	12.56	14.31	15.48	16.42	17.12	19.17	18.64	13.36	12.09
6	11.36	11.64	11.74	12.72	14.41	15.54	16.45	17.20	19.24	18.64	12.80	12.15
7	11.39	11.64	11.74	12.83	---	15.59	16.50	17.26	19.29	18.64	12.48	12.28
8	11.42	11.65	11.74	12.93	14.69	15.65	16.49	17.33	19.35	18.70	12.54	12.41
9	11.44	11.65	11.75	13.02	14.70	15.71	16.52	17.40	19.42	18.71	12.76	12.56
10	11.46	11.66	11.76	13.11	14.70	15.78	16.55	17.47	19.49	18.75	13.04	12.55
11	11.48	11.67	11.76	13.14	14.75	15.84	16.60	17.53	19.55	18.79	12.02	12.56
12	11.49	11.67	11.77	13.08	14.82	15.91	16.65	17.59	19.62	18.85	11.86	12.67
13	11.50	11.69	11.77	13.01	14.89	15.96	16.71	17.68	19.69	18.91	11.88	12.74
14	11.52	11.69	11.78	13.02	14.96	15.99	16.77	17.75	19.77	18.97	11.88	12.80
15	11.53	11.69	11.80	13.17	15.01	15.51	16.79	17.84	19.74	19.02	12.05	11.51
16	11.54	11.70	11.73	13.30	14.95	15.05	16.79	17.91	19.74	19.07	12.36	11.66
17	11.56	11.70	11.72	13.41	15.04	15.16	16.78	17.97	19.73	19.13	12.73	11.64
18	11.58	11.70	11.84	13.54	15.10	15.24	16.78	18.05	19.73	19.20	13.05	11.70
19	11.58	11.71	11.85	13.66	15.19	15.32	16.84	18.10	19.74	19.11	13.40	11.75
20	11.58	11.71	11.81	13.72	15.22	15.41	16.82	18.16	19.69	18.94	13.77	11.80
21	11.42	11.71	11.87	13.55	15.23	15.50	16.71	18.23	19.48	18.65	14.06	11.85
22	11.42	11.71	11.89	13.60	15.27	15.59	16.66	18.28	19.33	18.48	14.33	11.90
23	11.47	11.72	11.93	13.64	15.27	15.68	16.69	18.34	19.25	18.37	14.19	11.94
24	11.51	11.73	11.98	13.57	15.27	15.79	16.69	18.41	19.19	18.32	14.01	11.80
25	11.53	11.73	12.04	13.68	15.04	15.86	16.72	18.49	19.11	17.74	14.24	11.50
26	11.55	11.72	12.11	13.76	15.06	15.90	16.78	18.55	19.05	13.56	14.56	11.64
27	11.57	11.72	12.18	12.89	15.11	15.96	16.81	18.71	18.98	12.76	14.77	11.77
28	11.60	11.73	12.27	12.98	15.20	16.02	16.81	18.71	18.92	12.42	14.98	11.83
29	11.60	11.73	12.40	13.32	---	16.07	16.81	18.77	18.84	12.30	12.11	11.88
30	11.60	11.71	12.49	13.56	---	16.12	16.84	18.82	18.78	12.28	11.67	11.69
31	11.61	---	12.56	13.76	---	16.16	---	18.87	---	12.33	11.84	---
LOW	11.61	11.73	12.56	13.76	---	16.16	16.84	18.87	19.77	19.20	14.98	12.80
HIGH	11.10	11.62	11.72	12.56	---	15.05	16.21	16.87	18.78	12.28	11.67	11.50



180104066152300. Local number, RM # 10.
LOCATION.--Lat 18°01'04", long 66°15'23".
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).
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.--Observation well. Automatic digital recording installed on March 13, 1989.
PERIOD OF RECORD.--March 13, 1989 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 27.73 ft (8.45 m) below land-surface datum, Sept. 30, 1989; lowest water level recorded, 34.85 ft (10.6 m) below land-surface datum, Sept. 10-11, 1989.

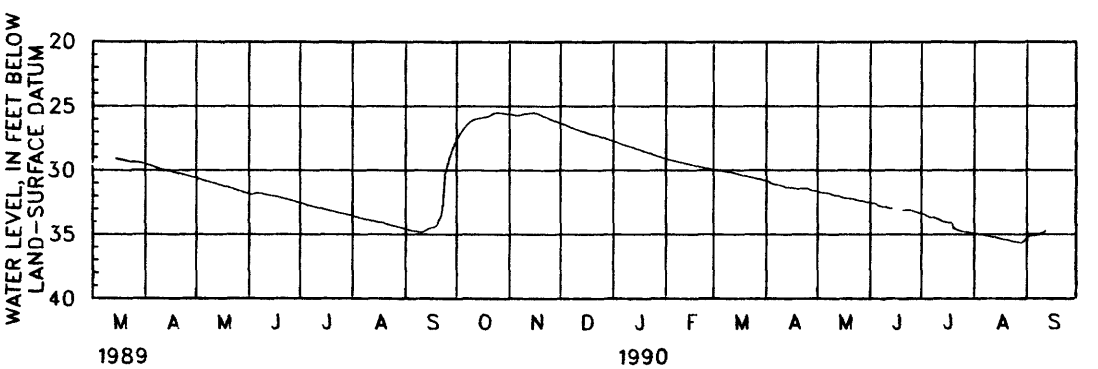
WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	29.52	30.61	31.83	32.54	33.55	34.57
2	---	---	---	---	---	---	29.55	30.65	31.88	32.57	33.58	34.60
3	---	---	---	---	---	---	29.58	30.68	31.88	32.61	33.62	34.65
4	---	---	---	---	---	---	29.61	30.73	31.82	32.64	33.65	34.68
5	---	---	---	---	---	---	29.65	30.77	31.77	32.69	33.69	34.71
6	---	---	---	---	---	---	29.70	30.81	31.77	32.73	33.73	34.73
7	---	---	---	---	---	---	29.75	30.85	31.77	32.76	33.76	34.76
8	---	---	---	---	---	---	29.79	30.88	31.77	32.79	33.80	34.79
9	---	---	---	---	---	---	29.83	30.92	31.81	32.83	33.82	34.81
10	---	---	---	---	---	---	29.87	30.95	31.86	32.86	33.86	34.85
11	---	---	---	---	---	---	29.91	30.99	31.89	32.89	33.90	34.81
12	---	---	---	---	---	---	29.94	31.01	31.90	32.92	33.93	34.76
13	---	---	---	---	---	29.06	29.96	31.06	31.93	32.95	33.96	34.68
14	---	---	---	---	---	29.07	30.00	31.10	31.95	32.98	33.99	34.59
15	---	---	---	---	---	29.08	30.03	31.14	31.97	33.02	34.02	34.53
16	---	---	---	---	---	29.11	30.07	31.18	32.02	33.05	34.06	34.49
17	---	---	---	---	---	29.14	30.10	31.21	32.05	33.08	34.07	34.45
18	---	---	---	---	---	29.17	30.15	31.25	32.07	33.12	34.06	34.42
19	---	---	---	---	---	29.19	30.17	31.29	32.11	33.15	34.06	34.34
20	---	---	---	---	---	29.22	30.21	31.33	32.14	33.17	34.18	34.11
21	---	---	---	---	---	29.26	30.24	31.37	32.17	33.21	34.21	33.85
22	---	---	---	---	---	29.28	30.27	31.41	32.20	33.24	34.24	33.59
23	---	---	---	---	---	29.32	30.31	31.45	32.23	33.27	34.28	32.70
24	---	---	---	---	---	29.33	30.35	31.50	32.26	33.32	34.31	30.50
25	---	---	---	---	---	29.34	30.39	31.54	32.31	33.35	34.33	30.00
26	---	---	---	---	---	29.35	30.43	31.58	32.34	33.36	34.36	29.45
27	---	---	---	---	---	29.36	30.47	31.63	32.38	33.39	34.40	28.96
28	---	---	---	---	---	29.38	30.51	31.65	32.42	33.42	34.43	28.54
29	---	---	---	---	---	29.40	30.54	31.71	32.48	33.44	34.47	28.20
30	---	---	---	---	---	29.44	30.58	31.75	32.50	33.48	34.51	27.88
31	---	---	---	---	---	29.48	---	31.78	---	33.51	34.54	---
LOW	---	---	---	---	---	---	30.58	31.78	32.50	33.51	34.54	34.85
HIGH	---	---	---	---	---	---	29.52	30.61	31.77	32.54	33.55	27.88

180104066152300. Local number, RM # 10.--continued

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

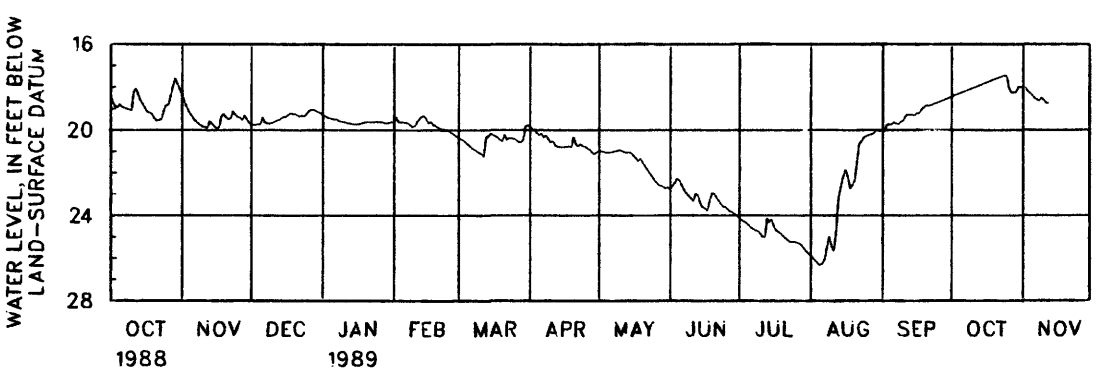
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27.57	25.60	26.29	27.72	29.09	29.93	30.83	31.63	32.50	33.36	34.89	35.32
2	27.33	25.62	26.34	27.76	29.13	29.95	30.86	31.68	32.55	33.39	34.92	35.21
3	27.13	25.65	26.39	27.81	29.17	29.97	30.96	31.73	32.56	33.41	34.92	35.14
4	26.95	25.67	26.44	27.86	29.20	30.00	31.04	31.74	32.58	33.52	34.98	35.10
5	26.79	25.69	26.49	27.90	29.23	30.03	31.07	31.74	32.66	33.58	35.04	35.09
6	26.63	25.69	26.55	27.96	29.26	30.04	31.11	31.76	32.75	33.65	35.04	35.09
7	26.45	25.66	26.63	28.01	29.28	30.06	31.12	31.77	32.79	33.66	35.08	35.07
8	26.31	25.63	26.68	28.05	29.33	30.09	31.14	31.80	32.82	33.67	35.12	35.00
9	26.19	25.59	26.73	28.10	29.35	30.12	31.17	31.85	32.84	33.70	35.14	34.94
10	26.10	25.57	26.77	28.13	29.37	30.14	31.22	31.92	32.85	33.77	35.17	34.88
11	26.02	25.55	26.83	28.17	29.40	30.16	31.23	31.95	32.89	33.83	35.20	34.83
12	25.98	25.53	26.88	28.21	29.43	30.19	31.31	31.96	32.95	33.86	35.22	34.76
13	25.94	25.50	26.93	28.25	29.47	30.21	31.33	31.96	32.98	33.94	35.23	---
14	25.91	25.49	26.95	28.30	29.50	30.24	31.33	32.00	32.98	33.99	35.27	---
15	25.89	25.49	26.99	28.34	29.53	30.30	31.33	32.09	---	34.03	35.30	---
16	25.87	25.48	27.04	28.38	29.56	30.33	31.37	32.14	---	34.05	35.33	---
17	25.84	25.54	27.08	28.43	29.59	30.35	31.41	32.16	---	34.08	35.39	---
18	25.81	25.59	27.13	28.47	29.63	30.39	31.42	32.18	---	34.09	35.40	---
19	25.79	25.65	27.17	28.52	29.66	30.42	31.45	32.17	---	34.08	35.41	---
20	25.74	25.70	27.20	28.56	29.70	30.46	31.45	32.19	33.15	34.56	35.43	---
21	25.68	25.77	27.23	28.60	29.73	30.49	31.41	32.21	33.11	34.57	35.46	---
22	25.59	25.82	27.26	28.64	29.76	30.53	31.41	32.22	33.09	34.65	35.51	---
23	25.51	25.87	27.31	28.69	29.78	30.55	31.41	32.27	33.09	34.70	35.54	---
24	25.50	25.92	27.35	28.74	29.81	30.58	31.41	32.31	33.09	34.74	35.57	---
25	25.48	25.98	27.39	28.80	29.84	30.61	31.41	32.34	33.11	34.75	35.59	---
26	25.48	26.02	27.43	28.85	29.86	30.65	31.46	32.38	33.18	34.78	35.60	---
27	25.48	26.09	27.47	28.89	29.88	30.68	31.53	32.39	33.21	34.80	35.62	---
28	25.49	26.15	27.52	28.94	29.90	30.70	31.55	32.41	33.26	34.82	35.65	---
29	25.53	26.20	27.57	28.97	---	30.73	31.56	32.45	33.32	34.84	35.66	---
30	25.56	26.24	27.62	29.02	---	30.77	31.59	32.49	33.36	34.87	35.57	---
31	25.59	---	27.66	29.06	---	30.79	---	32.49	---	34.87	35.43	---
LOW	27.57	26.24	27.66	29.06	29.90	30.79	31.59	32.49	---	34.87	35.66	---
HIGH	25.48	25.48	26.29	27.72	29.09	29.93	30.83	31.63	---	33.36	34.89	---



180153066302800. Local number, JAC-1.
LOCATION.--Lat 18°01'53", long 66°30'28".
Owner: U.S. Geological Survey, WRD.
Name: JAC-TW1
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 7 in (0.18 m), 0-69 ft (0-0.21.0 m), cased 4.0 in (0.10 m), 0-69 ft (0-21.0 m), screened 64-69 ft (19.5-21 m), concrete sealed 0-15 ft (0-4.57 m). Depth 69 ft (21.0 m).
DATUM.--Elevation of land-surface datum is about 78.7 ft (24.0 m) above mean sea level, from topographic map.
Measuring point: Hole on side of casing, 3.75 ft (1.14 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--October 1988 to November 12, 1989, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 17.41 ft (5.31 m) below land-surface datum, Oct. 25, 1989; lowest water level recorded, 26.34 ft (8.03 m) below land-surface datum, Aug. 5, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18.45	18.02	---	---	---	---	---	---	---	---	---	---
2	18.40	18.01	---	---	---	---	---	---	---	---	---	---
3	18.36	18.19	---	---	---	---	---	---	---	---	---	---
4	18.32	18.29	---	---	---	---	---	---	---	---	---	---
5	18.27	18.39	---	---	---	---	---	---	---	---	---	---
6	18.23	18.53	---	---	---	---	---	---	---	---	---	---
7	18.19	18.59	---	---	---	---	---	---	---	---	---	---
8	18.14	18.64	---	---	---	---	---	---	---	---	---	---
9	18.10	18.50	---	---	---	---	---	---	---	---	---	---
10	18.06	18.61	---	---	---	---	---	---	---	---	---	---
11	18.02	18.74	---	---	---	---	---	---	---	---	---	---
12	17.97	18.76	---	---	---	---	---	---	---	---	---	---
13	17.93	---	---	---	---	---	---	---	---	---	---	---
14	17.89	---	---	---	---	---	---	---	---	---	---	---
15	17.84	---	---	---	---	---	---	---	---	---	---	---
16	17.80	---	---	---	---	---	---	---	---	---	---	---
17	17.76	---	---	---	---	---	---	---	---	---	---	---
18	17.71	---	---	---	---	---	---	---	---	---	---	---
19	17.67	---	---	---	---	---	---	---	---	---	---	---
20	17.63	---	---	---	---	---	---	---	---	---	---	---
21	17.59	---	---	---	---	---	---	---	---	---	---	---
22	17.54	---	---	---	---	---	---	---	---	---	---	---
23	17.50	---	---	---	---	---	---	---	---	---	---	---
24	17.46	---	---	---	---	---	---	---	---	---	---	---
25	17.49	---	---	---	---	---	---	---	---	---	---	---
26	18.12	---	---	---	---	---	---	---	---	---	---	---
27	18.26	---	---	---	---	---	---	---	---	---	---	---
28	18.27	---	---	---	---	---	---	---	---	---	---	---
29	18.24	---	---	---	---	---	---	---	---	---	---	---
30	17.98	---	---	---	---	---	---	---	---	---	---	---
31	18.00	---	---	---	---	---	---	---	---	---	---	---
LOW	18.45	---	---	---	---	---	---	---	---	---	---	---
HIGH	17.46	---	---	---	---	---	---	---	---	---	---	---



180153066302801. Local number, JAC-2.
LOCATION.--Lat 18°01'53", long 66°30'28".
Owner: U.S. Geological Survey, WRD.
Name: JAC-TW2
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 7 in (0.18 m) cased 4.0 in (0.10 m), 0-49 ft (0-14.9 m), screened 44-49 ft (13.4-14.9 m), concrete sealed 0-40 ft (0-12.2 m). Depth 49 ft (14.9 m).
DATUM.--Elevation of land-surface datum is about 78.7 ft (24.0 m) above mean sea level, from topographic map.
Measuring point: Hole on side of casing, 3.35 ft (1.02 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--March 1989 to October 25, 1989, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.14 ft (5.53 m) below land-surface datum, Oct. 25, 1989; lowest water level measured, 26.17 ft (7.98 m) below land-surface datum, Sept. 21, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
INSTANTANEOUS OBSERVATION

Date	Water level
Oct. 25	18.14

180124066310200. Local number, JAC-3.
LOCATION.--Lat 18°01'24", long 66°31'02".
Owner: U.S. Geological Survey, WRD.
Name: JAC-TW5
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 7 in (0.18 m) cased 4.0 in (0.10 m), 0-50 ft (0-15.2 m), screened 45-50 ft (13.7-15.2 m), concrete sealed 0-10 ft (0-3.05 m). Depth 50 ft (15.2 m).
DATUM.--Elevation of land-surface datum is about 63 ft (19.2 m) above mean sea level, from topographic map.
Measuring point: Hole on side of casing , 2.98 ft (0.91 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--March 1989 to October 25, 1989, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.28 ft (7.40 m) below land-surface datum, Oct. 25, 1989; lowest water level measured, 28.54 ft (8.70 m) below land-surface datum, Apr. 24, 1989.

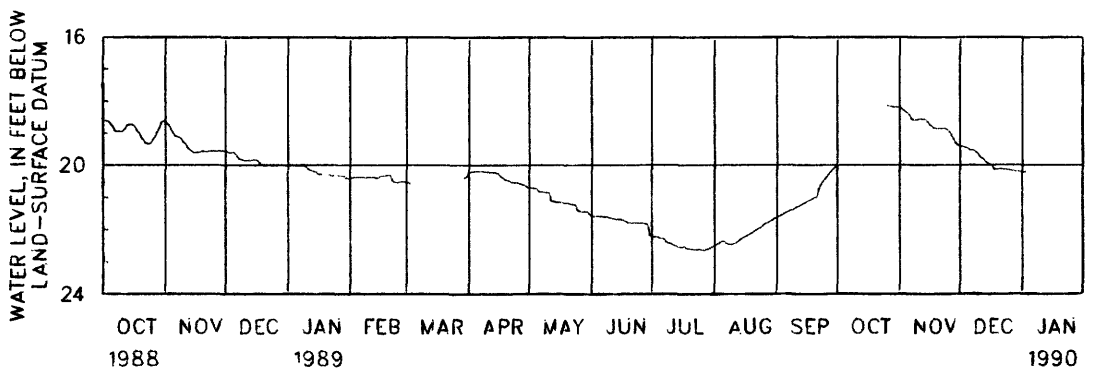
WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
INSTANTANEOUS OBSERVATION

Date	Water level
Oct. 25	24.28

180057066311300. Local number, JAC-4.
LOCATION.--Lat 18°00'57", long 66°31'13".
Owner: U.S. Geological Survey, WRD.
Name: JAC-TW6
AQUIFER.--Alluvium.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 7 in (0.18 m), cased 4.0 in (0.10 m), 0-49 ft (0-14.9 m), screened 44-49 ft (13.4-14.9 m). Depth 49 ft (14.9 m).
DATUM.--Elevation of land-surface datum is about 47.6 ft (14.5 m) above mean sea level, from topographic map.
Measuring point: Hole on side of casing, 3.90 ft (1.19 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--October 1988 to January 4, 1990, discontinued.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 18.15 ft (5.53 m) below land-surface datum, Oct. 25-26, 1989; lowest water level recorded, 23.0 ft (7.01 m) below land-surface datum, Aug. 10, 11-12, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

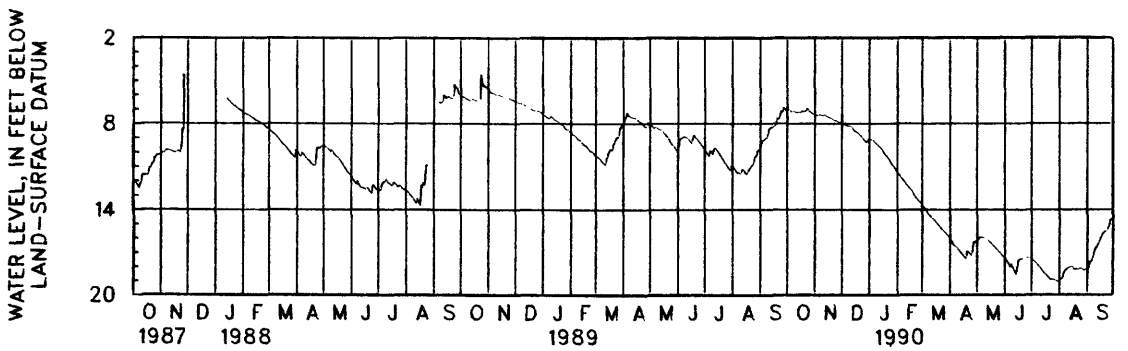
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	18.19	19.40	20.21	---	---	---	---	---	---	---	---
2	---	18.22	19.42	20.22	---	---	---	---	---	---	---	---
3	---	18.28	19.43	20.21	---	---	---	---	---	---	---	---
4	---	18.34	19.45	---	---	---	---	---	---	---	---	---
5	---	18.37	19.47	---	---	---	---	---	---	---	---	---
6	---	18.43	19.53	---	---	---	---	---	---	---	---	---
7	---	18.56	19.53	---	---	---	---	---	---	---	---	---
8	---	18.58	19.53	---	---	---	---	---	---	---	---	---
9	---	18.59	19.60	---	---	---	---	---	---	---	---	---
10	---	18.57	19.64	---	---	---	---	---	---	---	---	---
11	---	18.55	19.75	---	---	---	---	---	---	---	---	---
12	---	18.55	19.79	---	---	---	---	---	---	---	---	---
13	---	18.55	19.83	---	---	---	---	---	---	---	---	---
14	---	18.59	19.91	---	---	---	---	---	---	---	---	---
15	---	18.65	19.95	---	---	---	---	---	---	---	---	---
16	---	18.74	19.98	---	---	---	---	---	---	---	---	---
17	---	18.78	20.02	---	---	---	---	---	---	---	---	---
18	---	18.85	20.14	---	---	---	---	---	---	---	---	---
19	---	18.85	20.14	---	---	---	---	---	---	---	---	---
20	---	18.85	20.12	---	---	---	---	---	---	---	---	---
21	---	18.85	20.12	---	---	---	---	---	---	---	---	---
22	---	18.85	20.12	---	---	---	---	---	---	---	---	---
23	---	18.85	20.13	---	---	---	---	---	---	---	---	---
24	---	18.86	20.14	---	---	---	---	---	---	---	---	---
25	---	18.90	20.15	---	---	---	---	---	---	---	---	---
26	18.15	18.97	20.16	---	---	---	---	---	---	---	---	---
27	18.15	19.08	20.17	---	---	---	---	---	---	---	---	---
28	18.17	19.20	20.17	---	---	---	---	---	---	---	---	---
29	18.18	19.32	20.19	---	---	---	---	---	---	---	---	---
30	18.18	19.38	20.20	---	---	---	---	---	---	---	---	---
31	18.19	---	20.21	---	---	---	---	---	---	---	---	---
LOW	---	19.38	20.21	---	---	---	---	---	---	---	---	---
HIGH	---	18.19	19.40	---	---	---	---	---	---	---	---	---



180133066503300. Local number, 132.
LOCATION.--Lat 18°01'33", long 66°50'33".
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).
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.
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 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.05	7.35	7.93	9.13	11.33	13.61	16.00	16.25	17.38	17.48	19.08	18.28
2	6.95	7.40	7.97	9.13	11.43	13.71	16.10	16.26	17.47	17.52	18.82	18.23
3	7.02	7.41	8.01	9.09	11.53	13.81	16.23	16.00	17.54	17.56	18.87	17.99
4	7.10	7.41	8.05	9.09	11.58	13.88	16.38	15.93	17.63	17.62	18.89	17.65
5	7.13	7.41	8.08	9.15	11.66	13.96	16.46	15.93	17.72	17.68	18.69	17.63
6	7.16	7.33	8.13	9.22	11.73	14.08	16.51	15.93	17.87	17.75	18.42	17.55
7	7.11	7.37	8.14	9.27	11.83	14.18	16.56	15.93	18.04	17.81	18.33	---
8	7.14	7.40	8.14	9.34	11.91	14.28	16.63	15.95	17.82	17.88	18.23	---
9	7.15	7.40	8.16	9.41	12.01	14.38	16.70	15.97	17.94	17.94	18.17	---
10	7.21	7.44	8.16	9.46	12.09	14.48	16.78	16.01	18.06	18.04	18.14	16.74
11	7.20	7.46	8.18	9.52	12.14	14.52	16.83	16.04	18.18	18.12	18.09	16.66
12	7.23	7.33	8.21	9.58	12.22	14.58	16.90	16.07	18.32	18.21	18.04	16.56
13	7.24	7.42	8.31	9.65	12.30	14.64	16.98	16.12	18.43	18.29	18.01	16.45
14	7.15	7.46	8.41	9.72	12.37	14.71	17.07	16.18	18.54	18.38	17.99	16.34
15	7.23	7.50	8.48	9.77	12.46	14.76	17.15	16.24	18.08	18.48	17.98	16.19
16	7.24	7.54	8.53	9.87	12.53	14.81	17.23	16.30	17.64	18.49	18.01	16.00
17	7.10	7.55	8.52	10.01	12.61	14.89	17.31	16.35	17.52	18.58	18.17	15.90
18	7.10	7.60	8.59	10.10	12.67	14.97	17.36	16.42	17.47	18.61	18.21	15.76
19	7.15	7.63	8.65	10.18	12.79	15.05	17.45	16.49	17.47	18.69	18.18	15.65
20	7.13	7.65	8.68	10.26	12.92	15.12	16.91	16.56	17.47	18.78	18.18	15.57
21	7.05	7.68	8.75	10.29	13.02	15.23	16.91	16.63	17.46	18.85	18.18	15.52
22	7.14	7.72	8.82	10.39	13.13	15.30	16.98	16.69	17.45	18.92	18.22	15.51
23	6.95	7.75	8.87	10.49	13.18	15.36	17.08	16.76	17.45	18.86	18.19	15.51
24	6.95	7.78	8.90	10.57	13.29	15.43	17.16	16.83	17.38	18.91	18.11	15.26
25	7.09	7.81	9.02	10.70	13.33	15.50	17.21	16.88	17.38	18.89	18.12	15.21
26	7.14	7.82	9.11	10.80	13.42	15.56	16.85	16.94	17.36	18.93	18.16	14.93
27	7.19	7.85	9.19	10.89	13.51	15.64	16.30	17.02	17.36	18.94	18.20	14.67
28	7.24	7.88	9.24	10.93	13.54	15.71	16.27	17.10	17.37	18.98	18.24	14.67
29	7.28	7.90	9.31	11.03	---	15.77	16.24	17.17	17.41	19.01	18.29	14.62
30	7.28	7.92	9.22	11.14	---	15.86	16.24	17.25	17.45	19.04	18.18	14.45
31	7.32	---	9.13	11.25	---	15.93	---	17.32	---	19.05	18.21	---
LOW	7.32	7.92	9.31	11.25	13.54	15.93	17.45	17.32	18.54	19.05	19.08	---
HIGH	6.95	7.33	7.93	9.09	11.33	13.61	16.00	15.93	17.36	17.48	17.98	---



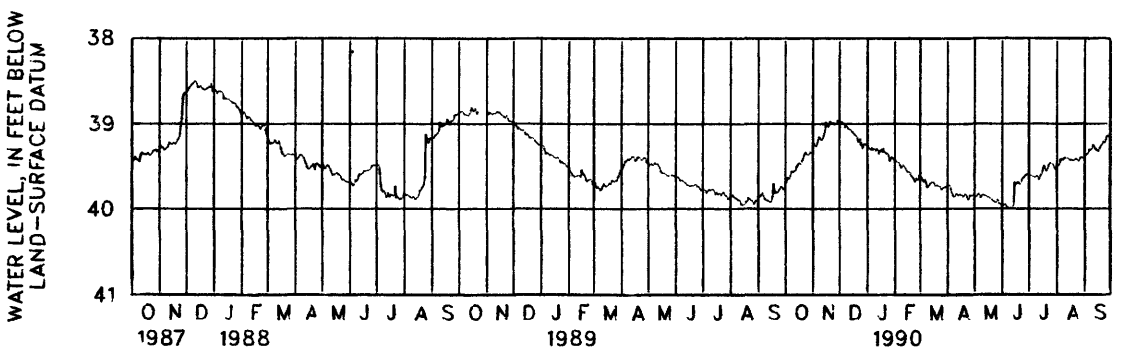
+ Above land-surface datum.

180132067033800. Local number, 143.
LOCATION.--Lat 18°01'32", long 67°03'38".
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).
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, 40.0 ft (12.2 m) below land-surface datum, June 9, 10, 11, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39.73	39.27	38.99	39.26	39.42	39.61	39.73	39.83	39.96	39.58	39.54	39.41
2	39.68	39.23	38.99	39.26	39.43	39.63	39.73	39.84	39.97	39.60	39.47	39.37
3	39.66	39.25	38.98	39.28	39.44	39.62	39.72	39.86	39.95	39.60	39.49	39.35
4	39.63	39.26	38.97	39.29	39.45	39.66	39.72	39.84	39.94	39.61	39.48	39.36
5	39.64	39.27	38.99	39.31	39.45	39.68	39.77	39.83	39.94	39.62	39.42	39.35
6	39.65	39.22	39.00	39.28	39.45	39.68	39.81	39.82	39.97	39.62	39.43	39.30
7	39.61	39.19	39.04	39.31	39.49	39.65	39.84	39.84	39.99	39.62	39.41	39.31
8	39.56	39.15	39.02	39.29	39.52	39.69	39.85	39.87	39.98	39.63	39.43	39.31
9	39.56	39.17	39.02	39.29	39.51	39.75	39.86	39.85	39.99	39.61	39.41	39.30
10	39.57	39.18	39.04	39.31	39.48	39.73	39.84	39.84	40.00	39.61	39.40	39.25
11	39.57	39.20	39.06	39.32	39.49	39.73	39.82	39.83	40.00	39.62	39.40	39.27
12	39.55	39.18	39.06	39.29	39.51	39.71	39.82	39.84	39.99	39.66	39.40	39.25
13	39.55	39.14	39.06	39.31	39.53	39.69	39.84	39.85	39.98	39.65	39.40	39.30
14	39.50	39.11	39.07	39.36	39.55	39.69	39.85	39.84	39.95	39.60	39.40	39.30
15	39.49	39.08	39.10	39.31	39.57	39.68	39.83	39.85	39.68	39.60	39.42	39.32
16	39.47	38.98	39.09	39.33	39.57	39.70	39.83	39.86	39.69	39.55	39.43	39.31
17	39.46	39.00	39.11	39.30	39.56	39.68	39.84	39.86	39.71	39.52	39.42	39.33
18	39.46	39.03	39.13	39.33	39.58	39.72	39.85	39.87	39.69	39.49	39.42	39.29
19	39.48	39.04	39.14	39.29	39.61	39.73	39.86	39.88	39.68	39.52	39.43	39.27
20	39.43	38.99	39.14	39.33	39.61	39.72	39.84	39.88	39.70	39.55	39.43	39.25
21	39.41	38.97	39.18	39.34	39.63	39.72	39.83	39.89	39.71	39.56	39.43	39.25
22	39.37	38.99	39.22	39.36	39.65	39.73	39.83	39.91	39.69	39.53	39.41	39.21
23	39.35	38.99	39.20	39.35	39.68	39.73	39.86	39.90	39.66	39.49	39.42	39.22
24	39.33	38.99	39.18	39.34	39.68	39.73	39.89	39.92	39.64	39.46	39.42	39.23
25	39.35	39.01	39.25	39.38	39.64	39.77	39.89	39.93	39.64	39.46	39.43	39.18
26	39.36	39.00	39.26	39.43	39.66	39.77	39.84	39.92	39.62	39.46	39.44	39.15
27	39.37	39.00	39.29	39.44	39.65	39.75	39.84	39.89	39.60	39.47	39.40	39.14
28	39.35	39.00	39.24	39.40	39.61	39.75	39.84	39.91	39.61	39.48	39.39	39.14
29	39.33	38.96	39.24	39.39	---	39.74	39.85	39.94	39.59	39.50	39.39	39.14
30	39.35	38.96	39.24	39.41	---	39.75	39.84	39.94	39.59	39.52	39.40	39.13
31	39.34	---	39.25	39.42	---	39.73	---	39.95	---	39.54	39.40	---
LOW	39.73	39.27	39.29	39.44	39.68	39.77	39.89	39.95	40.00	39.66	39.54	39.41
HIGH	39.33	38.96	38.97	39.26	39.42	39.61	39.72	39.82	39.59	39.46	39.39	39.13

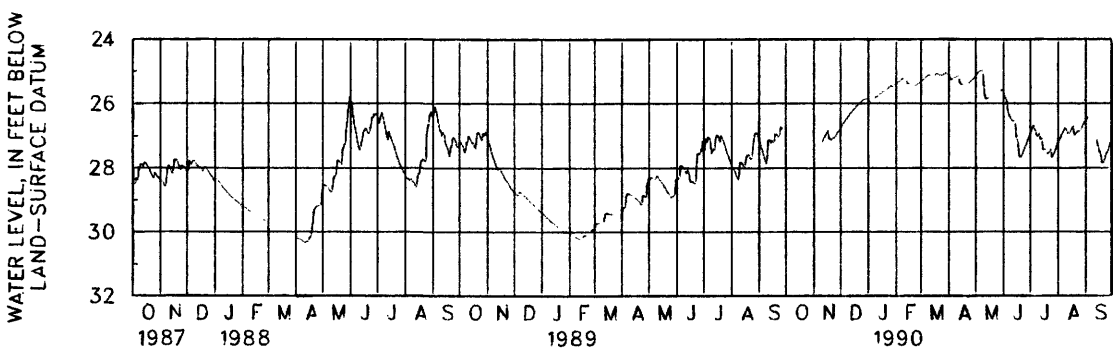
WTR YR 1990 MEAN 39.50 LOW 40.00 HIGH 38.96



182018066593200. Local number, 83.
LOCATION.--Lat 18°20'18", long 66°59'32".
Owner: P.R. Energy and Power Authority.
Name: San Sebastian Well.
AQUIFER.--San Sebastian Formation.
WELL CHARACTERISTICS.--Drilled observation well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 300 ft (91.4 m).
DATUM.--Elevation of land-surface datum is about 230 ft (70.1 m) above mean sea level, from topographic map.
Measuring point: Shelter floor on top of 6 in (0.15 m) casing, 2.75 ft (0.84 m) above land-surface datum.
Prior November 1985, top of casing, 2.40 ft (0.73 m) above land-surface datum.
REMARKS.--Recording observation well. Formerly published as 182032066591800.
PERIOD OF RECORD.--May 1967 to January 16, 1985. November 1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 21.95 ft (6.69 m) below land-surface datum, May 8, 1986; lowest water level recorded, 40.20 ft (12.25 m) below land-surface datum, Jan. 29, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	26.73	25.93	25.40	25.30	25.10	25.15	25.58	26.94	27.22	26.55
2	---	---	26.69	25.94	25.38	25.29	25.11	25.10	25.83	26.85	27.17	26.49
3	---	---	26.67	25.94	25.35	25.28	25.26	25.06	25.85	26.78	27.10	26.44
4	---	---	26.62	25.92	25.33	25.26	25.27	25.04	25.84	26.71	27.04	26.44
5	---	---	26.57	25.91	25.32	25.23	25.25	25.01	26.02	26.66	26.96	---
6	---	---	26.53	25.89	25.28	25.19	25.24	25.00	26.25	26.79	26.91	---
7	---	---	26.49	25.87	25.24	25.18	25.23	24.97	26.38	26.83	26.87	---
8	---	---	26.46	25.83	25.24	25.15	25.20	25.00	26.40	27.00	26.78	---
9	---	27.28	26.42	25.80	25.24	25.11	25.18	25.00	26.43	27.01	26.74	---
10	---	27.23	26.39	25.79	25.25	25.14	25.16	25.48	26.51	26.98	26.81	---
11	---	27.16	26.34	25.79	25.23	25.13	25.16	25.78	26.53	26.92	26.83	---
12	---	27.09	26.29	25.76	25.25	25.13	25.14	25.84	26.53	27.09	26.93	---
13	---	27.03	26.28	25.73	25.35	25.17	25.35	25.86	26.55	27.11	26.93	27.04
14	---	26.99	26.25	25.70	25.38	25.18	25.39	25.85	26.54	27.07	26.90	27.32
15	---	26.94	26.20	25.69	25.39	25.18	25.41	25.82	27.02	27.42	26.85	27.32
16	---	26.89	26.17	25.67	25.41	25.14	25.41	25.81	27.08	27.44	26.79	27.51
17	---	26.83	26.16	25.65	25.42	25.12	25.41	25.79	27.13	27.43	26.74	27.49
18	---	27.08	26.11	25.64	25.43	25.09	25.40	25.78	27.46	27.40	26.69	27.68
19	---	27.10	26.08	25.62	25.44	25.07	25.42	25.79	27.64	27.48	26.98	27.84
20	---	27.10	26.06	25.60	25.45	25.08	25.43	25.79	27.67	27.56	26.98	27.84
21	---	27.15	26.03	25.57	25.43	25.13	25.43	25.79	27.66	27.55	26.93	27.81
22	---	27.09	26.00	25.57	25.43	25.13	25.42	25.78	27.59	27.51	26.89	27.72
23	---	27.04	25.99	25.52	25.43	25.12	25.39	25.75	27.52	27.46	26.84	27.62
24	---	27.08	25.96	25.50	25.42	25.15	25.36	25.73	27.44	27.41	26.88	27.55
25	---	27.04	25.92	25.48	25.41	25.13	25.33	25.71	27.38	27.67	26.88	27.51
26	---	26.98	25.90	25.44	25.38	25.10	25.31	25.69	27.30	27.66	26.83	27.44
27	---	26.92	25.88	25.46	25.37	25.09	25.28	25.67	27.24	27.58	26.79	27.35
28	---	26.88	25.87	25.49	25.35	25.06	25.25	25.64	27.15	27.51	26.72	27.25
29	---	26.86	25.88	25.48	---	25.04	25.21	25.60	27.08	27.43	26.65	27.18
30	---	26.81	25.87	25.45	---	25.08	25.18	25.57	27.00	27.34	26.61	27.11
31	---	---	25.84	25.41	---	25.10	---	25.59	---	27.25	26.57	---
LOW	---	---	26.73	25.94	25.45	25.30	25.43	25.86	27.67	27.67	27.22	---
HIGH	---	---	25.84	25.41	25.23	25.04	25.10	24.97	25.58	26.66	26.57	---

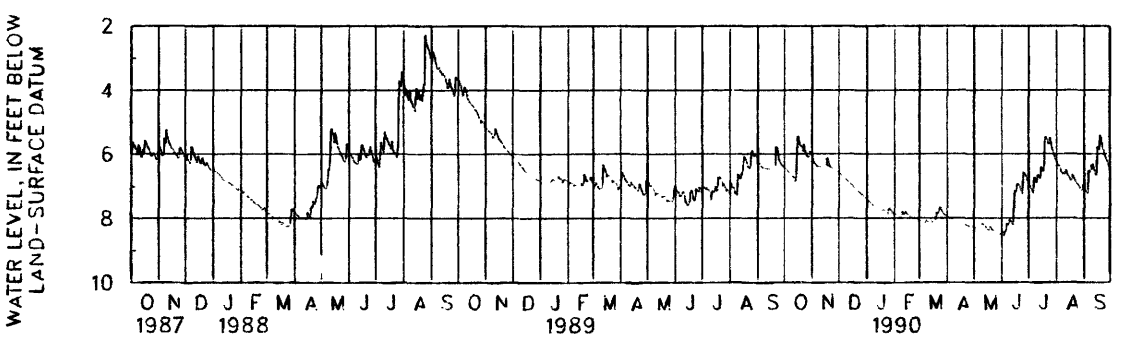


182442067091700. Local number, 200 .
LOCATION.--Lat 18°24'42", long 67°09'17".
Owner: Carmelo Sanchez
Name: Aguadilla Cement Well.
AQUIFER.--Surficial deposits.
WELL CHARACTERISTICS.--Abandoned water-table industrial well, diameter 4 in (0.10 m), cased 0-20 ft (0-6.10 m), perforated 11-20 ft (3.35-6.10 m). Depth 20 ft (6.10 m).
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, 8.56 ft (2.61 m) below land-surface datum, June 4, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.40	6.05	e6.58	e7.40	7.83	8.06	7.92	8.28	8.51	6.91	6.25	7.04
2	6.44	6.13	e6.61	e7.43	7.86	8.07	7.97	8.28	8.41	7.00	6.32	7.09
3	6.46	6.30	e6.63	e7.46	7.86	8.07	7.98	8.29	8.45	7.05	6.38	7.13
4	6.50	6.26	e6.66	e7.48	7.86	8.07	7.99	8.29	8.54	7.08	6.35	7.19
5	6.54	6.30	e6.69	e7.51	7.90	8.10	8.02	8.28	8.41	7.16	6.39	7.23
6	6.55	6.37	e6.71	e7.54	7.92	8.12	8.03	8.28	8.36	7.22	6.55	6.51
7	6.60	6.39	e6.74	e7.56	7.99	8.12	8.03	8.28	8.16	6.73	6.56	6.56
8	6.62	6.40	e6.77	e7.59	7.99	8.15	8.04	8.28	8.19	6.75	6.61	6.52
9	6.66	6.41	e6.79	e7.61	7.96	8.06	8.08	8.25	8.20	6.87	6.64	6.33
10	6.69	6.40	e6.82	e7.64	7.79	8.09	8.09	8.17	8.05	6.91	6.56	6.47
11	6.71	6.38	e6.85	7.65	7.82	8.12	8.10	8.18	8.08	6.65	6.65	6.31
12	6.74	6.42	e6.87	7.66	7.90	8.13	8.12	8.18	8.11	6.65	6.48	6.45
13	6.83	6.43	e6.90	7.66	7.82	8.08	8.10	8.18	8.17	6.74	6.62	6.53
14	6.85	6.44	e6.93	7.67	7.78	8.04	8.10	8.27	8.22	6.78	6.67	6.63
15	6.12	6.45	e6.95	7.68	7.86	8.10	8.12	8.30	7.20	6.37	6.70	6.68
16	5.45	e6.46	e6.98	7.69	7.87	8.13	8.15	8.35	7.13	6.47	6.75	5.76
17	5.46	e6.46	e7.00	7.71	7.88	8.14	8.17	8.38	7.17	6.55	6.83	5.79
18	5.70	e6.11	e7.03	7.72	7.91	8.15	8.18	8.37	6.92	6.50	6.83	5.86
19	5.73	e6.18	e7.06	7.74	7.96	8.17	8.19	8.27	6.96	5.61	6.63	5.40
20	5.75	e6.38	e7.08	7.75	7.98	7.98	8.25	8.28	6.94	5.46	6.70	5.52
21	5.78	e6.37	e7.11	7.72	7.98	7.82	8.19	8.35	7.03	5.48	6.79	5.70
22	5.91	e6.41	e7.14	7.77	8.00	7.87	8.19	8.37	7.11	5.56	6.84	5.81
23	5.69	e6.42	e7.16	7.78	8.01	7.83	8.22	8.39	7.15	5.68	6.88	5.90
24	5.94	e6.44	e7.19	7.78	8.01	7.65	8.24	8.39	7.23	5.69	6.93	6.05
25	5.96	e6.45	e7.22	7.86	8.01	7.68	8.25	8.40	6.55	5.48	6.94	6.12
26	6.04	e6.45	e7.24	7.70	8.04	7.75	8.26	8.39	6.60	5.69	6.98	6.17
27	6.08	e6.47	e7.27	7.70	8.05	7.80	8.27	8.39	6.60	5.83	7.04	6.25
28	6.09	e6.50	e7.30	7.73	8.05	7.85	8.25	8.41	6.69	5.89	7.07	6.34
29	6.09	e6.53	e7.32	7.79	---	7.90	8.25	8.41	6.79	5.99	7.10	6.39
30	5.91	e6.55	e7.35	7.81	---	7.91	8.27	8.49	6.83	6.08	7.14	6.47
31	5.94	---	e7.38	7.87	---	7.90	---	8.50	---	6.18	6.94	---
LOW	6.85	6.55	7.38	7.87	8.05	8.17	8.27	8.50	8.54	7.22	7.14	7.23
HIGH	5.45	6.05	6.58	7.40	7.78	7.65	7.92	8.17	6.55	5.46	6.25	5.40

WTR YR 1990 MEAN 7.21 LOW 8.54 HIGH 5.40



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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 Atlantic Ocean, and 2.5 mi (4.0 km) northwest of Fort Christian, Charlotte Amalie.

DRAINAGE AREA.--0.49 mi² (1.27 km²).

WATER-DISCHARGE RECORDS

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.

AVERAGE DISCHARGE.--12 years (1964-66, 1980, 1983-90), 0.34 ft³/s (0.010 m³/s), 9.42 in/yr (239 mm/yr), 246 acre-ft/yr (0.303 hm³/yr); median of yearly mean discharges, 0.38 ft³/s (0.01 m³/s), 275 acre-ft/yr (0.34 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,650 ft³/s (46.7 m³/s), Apr. 18, 1983, gage height, 7.00 ft (2.134 m), from floodmarks, from rating curve extended above 1.0 ft³/s (0.03 m³/s) on basis of critical-depth analysis and slope-area measurement of peak flow; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft³/s (1.42 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Oct. 8	1345	84	2.38	2.74	0.835	May 9	1130	*95	2.69	*2.83	0.862

Minimum daily discharge, 0.01 ft³/s (0.0003 m³/s), many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.34	.05	.01	.02	.01	.02	.03	.01	e.01	.04	.01	.01
2	.17	.02	.01	.03	.01	.02	.03	.01	e.01	.05	.01	.03
3	.06	.02	.01	.10	.01	.02	.05	.01	e.01	.05	.01	.02
4	.05	.01	.01	.02	.01	.02	.03	.01	e.01	.06	.02	.02
5	.04	.03	.01	.01	.01	.02	.03	.01	e.01	.07	.02	.02
6	.03	.01	.01	.01	.01	.02	.03	.01	e.01	.08	.02	.01
7	.03	.03	.01	.01	.02	.02	.02	.01	e.01	.08	.01	.02
8	4.6	.05	.01	.01	.02	.03	.02	.01	e.01	.05	.02	.02
9	.18	.03	.01	.01	.03	.03	.02	4.1	e.01	.04	.02	.01
10	.04	.02	.01	.01	.03	.03	.02	.10	e.01	.04	.01	.01
11	.02	.02	.01	.01	.03	.03	.01	.05	e.01	.03	.02	.01
12	.03	.01	.01	.01	.02	.05	.01	.03	e.01	.03	.02	.09
13	.03	.01	.01	.02	.02	.10	.02	.03	e.01	.03	2.5	.02
14	.03	.01	.01	.01	.03	.06	.02	.03	e.02	.04	.45	.14
15	.02	.01	.01	.01	.02	.05	.01	.03	e.01	.03	.05	.97
16	.02	.01	.01	.01	.02	.06	.01	.03	e.02	.02	.03	.04
17	.02	.01	.01	.01	.02	.04	.01	.03	e.01	.03	.02	.03
18	.02	.01	.01	.01	.02	.04	.02	e.02	e.01	.02	.03	.02
19	.02	.01	.01	.01	.02	.04	.02	e.01	.14	.03	.03	.02
20	.01	.01	.01	.03	.02	.04	.03	e.01	.06	.02	.03	.02
21	.05	.01	.01	.02	.02	.05	.02	e.01	.04	.02	.02	.02
22	.02	.01	.01	.02	.02	.04	.01	e.01	.03	.02	.03	.01
23	.02	.01	.01	.04	.02	.04	.01	e.01	.02	.02	.02	.01
24	.02	.01	.01	.02	.02	.04	.01	e.01	.03	.08	.02	.01
25	.01	.01	.01	.02	.02	.04	.01	e.01	.03	.02	.02	.01
26	.01	.01	.01	.02	.02	.04	.01	e.01	.04	.02	.02	.01
27	.01	.01	.01	.01	.02	.03	.01	e.01	.05	.01	.01	.01
28	.01	.01	.01	.01	.02	.03	.01	e.01	.04	.01	.01	.01
29	.02	.01	.01	.01	---	.04	.01	e.01	.04	.01	.01	.01
30	.01	.01	.01	.02	---	.07	.01	e.01	.03	.01	.01	.01
31	.01	---	.01	.01	---	.05	---	e.01	---	.01	.01	---
TOTAL	5.95	0.48	0.31	0.56	0.54	1.21	0.55	4.66	0.75	1.07	3.51	1.64
MEAN	.19	.016	.010	.018	.019	.039	.018	.15	.025	.035	.11	.055
MAX	4.6	.05	.01	.10	.03	.10	.05	4.1	.14	.08	2.5	.97
MIN	.01	.01	.01	.01	.01	.02	.01	.01	.01	.01	.01	.01
AC-FT	12	1.0	.6	1.1	1.1	2.4	1.1	9.2	1.5	2.1	7.0	3.3
CFSM	.39	.03	.02	.04	.04	.08	.04	.31	.05	.07	.23	.11
IN.	.45	.04	.02	.04	.04	.09	.04	.35	.06	.08	.27	.12

CAL YR 1989 TOTAL 280.69 MEAN .77 MAX 90 MIN .01 AC-FT 557 CFSM 1.57 IN. 21.31
WTR YR 1990 TOTAL 21.23 MEAN .058 MAX 4.6 MIN .01 AC-FT 42 CFSM .12 IN. 1.61

e Estimated

50276000 TURPENTINE RUN AT MARIENDAL, ST. THOMAS, VI

LOCATION.--Lat 18°19'48", long 64°52'58", Hydrologic Unit 21020001, on right bank, at Mariendal, 1.0 mi (1.6 km) upstream from mouth, and 3.3 mi (5.3 km) southeast of Fort Christian, Charlotte Amalie.

DRAINAGE AREA.--2.97 mi^2 (7.69 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1963 to April 1969, October 1978 to September 1980, June 1982 to July 1986, July 1986 to current year (high-water discharges only).

GAGE.--Crest-stage gage. Elevation of gage is 40 ft (12 m), from topographic map.

REMARKS.--Records poor, peak discharges only.

AVERAGE DISCHARGES.--10 years (1964-68, 1979-80, 1983-85), 1.22 ft^3/s (0.034 m^3/s), 5.58 in/yr (142 mm/yr), 884 acre-ft/yr (1.09 hm^3/yr); median of yearly mean discharges, 0.54 ft^3/s (0.015 m^3/s), 390 acre-ft/yr (0.48 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,710 ft^3/s (275 m^3/s), Apr. 18, 1983, gage height, 11.09 ft (3.380 m), from floodmark, from rating curve extended above 500 ft^3/s (14.2 m^3/s) on basis of slope area measurement and step-backwater analysis; no flow many days from 1963 to 1969, and in 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s (2.83 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
Aug. 13	1845	*57	1.61	*1.80	0.549						

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).

WATER-DISCHARGE RECORDS

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.

AVERAGE DISCHARGE.--12 years (1964-67, 1983-90), 0.097 ft³/s (0.003 m³/s), 3.56 in/yr (90 mm/yr) 70.28 acre-ft/yr (0.087 hm³/yr); median of yearly mean discharges, 0.04 ft³/s (0.001 m³/s), 29.0 acre-ft/yr (0.04 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 946 ft³/s (26.8 m³/s), Apr. 18, 1983, gage height, 5.33 ft (1.625 m), from floodmark, from rating curve extended above 1.0 ft³/s (0.028 m³/s) on basis of step-backwater analysis and slope-area measurement of peak flow; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10 ft³/s (0.283 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Sept. 24	1245	*3.80	0.108	*1.82	0.555						

Minimum daily discharge, no flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	.05	.01	.01	e.00	.01	.01	.01	.01	.02	.02	.01
2	.24	.04	.01	.03	.00	.01	.01	.02	.01	.02	.03	.01
3	.23	.04	.01	.01	.00	.02	.01	.03	.01	.03	.03	.01
4	.22	.04	.01	.01	.00	.02	.01	.03	.01	.04	.04	.01
5	.18	.05	.00	.00	.00	.01	.01	.03	.00	.04	.02	.01
6	.18	.05	.00	.00	.00	.00	.00	.04	.00	.05	.04	.01
7	.16	.07	.00	.00	.00	.00	.00	.04	.00	.06	.06	.01
8	.16	.11	.00	.00	.00	.00	.00	.04	.00	.06	.03	.02
9	.14	.10	.01	.00	.01	.01	.00	.03	.00	.07	.01	.02
10	.12	.09	.01	.00	.00	.00	.00	.02	.00	.06	.01	.02
11	.11	.09	.01	.00	.00	.01	.01	.02	.00	.05	.01	.01
12	.10	.08	.01	.00	.00	.01	.01	.03	.01	.04	.01	.01
13	.09	.05	.01	.00	.00	.02	.02	.05	.01	.05	.22	.01
14	.07	.05	.01	.00	.00	.01	.01	.04	.01	.05	.06	.02
15	.07	.05	.01	.00	.01	.00	.01	.02	.02	.06	.02	.02
16	.06	.04	.01	.00	.01	.01	.01	.04	.01	.07	.01	.02
17	.06	.05	.01	.00	.00	.00	.00	.06	.02	.07	.02	.01
18	.05	.06	.01	.00	.00	.00	.01	.05	.01	.08	.02	.01
19	.05	.06	.01	.00	.00	.01	.00	.05	.01	.08	.01	.00
20	.05	.06	.00	.00	.00	.01	.02	.03	.01	.06	.01	.00
21	.05	.03	.00	.00	.00	.01	.05	.03	.02	.02	.01	.00
22	.05	.02	.00	.00	.00	.00	.05	.01	.01	.02	.01	.00
23	.05	.03	.00	.00	.00	.00	.07	.01	.01	.01	.01	.01
24	.04	.03	.00	.00	.00	.01	.09	.01	.01	.01	.01	.17
25	.05	.03	.00	.00	.00	.01	.10	.01	.02	.00	.01	.02
26	.07	.03	.00	.00	.00	.01	.05	.01	.01	.00	.01	.00
27	.07	.01	.00	.01	.01	.01	.02	.01	.01	.01	.01	.00
28	.06	.00	.01	.20	.01	.01	.01	.01	.02	.01	.01	.00
29	.05	.00	.01	e.49	---	.01	.02	.01	.02	.01	.01	.00
30	.05	.01	.01	e.08	---	.01	.02	.01	.02	.01	.01	.01
31	.05	---	.01	e.00	---	.01	---	.01	---	.02	.01	---
TOTAL	3.18	1.42	0.19	0.84	0.05	0.25	0.63	0.81	0.30	1.18	0.79	0.45
MEAN	.10	.047	.006	.027	.002	.008	.021	.026	.010	.038	.025	.015
MAX	.25	.11	.01	.49	.01	.02	.10	.06	.02	.08	.22	.17
MIN	.04	.00	.00	.00	.00	.00	.00	.01	.00	.00	.01	.00
AC-FT	6.3	2.8	.4	1.7	.1	.5	1.2	1.6	.6	2.3	1.6	.9
CFSM	.28	.13	.02	.07	.00	.02	.06	.07	.03	.10	.07	.04
IN.	.32	.14	.02	.08	.01	.03	.06	.08	.03	.12	.08	.05

CAL YR 1989 TOTAL 78.46 MEAN .21 MAX 25 MIN .00 AC-FT 156 CFSM .58 IN. 7.89
WTR YR 1990 TOTAL 10.09 MEAN .028 MAX .49 MIN .00 AC-FT 20 CFSM .07 IN. 1.01

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).

WATER-DISCHARGE RECORDS

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.

AVERAGE DISCHARGE.--13 years (1964-68, 1983-90), 0.187 ft³/s (0.005 m/³s), 1.21 in/yr (31 mm/yr), 135 acre-ft/yr (0.166 hm³/yr); median of yearly mean discharges, 0.09 ft³/s (0.002 m³/s), 65 acre-ft/yr (0.08 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 430 ft³/s (12.18 m³/s), Nov.27, 1987, gage height, 4.14 ft (1.262 m); no flow many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft³/s (0.71 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
Nov. 8	1430	*42	1.19	*2.21	0.674

No other peak greater than base discharge.

No flow many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	.97	e.84	e1.6	.57	.45	.24	.22	.03	.03	.00	.02
2	2.3	.99	e.84	e.90	.56	.52	.24	.24	.04	.02	.00	.03
3	2.3	.94	e.84	e.90	.55	.40	.24	.24	.03	.03	.00	.06
4	3.3	.89	e.80	e.90	.55	.32	.24	.22	e.03	.03	.00	.06
5	3.9	.93	e.80	e.80	.55	.33	.24	.22	e.03	.01	.00	.04
6	2.8	.94	e.82	e.76	.55	.38	.25	.22	e.04	.05	.00	.04
7	2.5	.88	e.84	e.76	.55	.46	.26	.22	e.04	.04	.00	.04
8	2.5	5.3	e.78	e.74	.53	.44	.23	.22	.04	.03	.00	.05
9	2.3	1.7	e.76	e.70	.52	.44	.22	.22	.05	.02	.00	.05
10	2.1	1.2	e.76	e.74	.52	.47	.22	.24	.05	.02	.00	.04
11	2.0	1.2	e.78	e.72	.50	.46	.22	.20	.03	.02	.00	.05
12	1.9	1.1	e.76	e.68	.46	.34	.23	.17	.03	.02	.00	.07
13	2.0	1.1	e.72	e.66	.46	.34	.24	.16	.03	.01	.02	.05
14	2.5	1.1	e.72	e.66	.46	.33	.23	.13	.03	.01	.02	.06
15	1.7	1.1	e.72	e.68	.44	.32	.23	.12	.05	.01	.01	.05
16	1.5	1.1	e.74	e.74	.43	.31	.22	.11	.04	.01	.00	.09
17	1.4	1.1	e.78	e.68	.41	.31	.22	.10	.03	.01	.01	.07
18	1.2	1.1	e.80	e.62	.43	.31	.22	.08	.04	.01	.01	.07
19	1.2	1.1	.81	e.64	.35	.31	.22	.07	.04	.01	.01	.07
20	1.1	1.1	.84	e.62	.36	.31	.21	.06	.04	.01	.00	.07
21	1.1	1.1	.89	e.64	.39	.28	.22	.04	.03	.01	.00	.05
22	1.2	1.0	.95	e.66	.39	.32	.20	.03	.03	.01	.08	.02
23	1.1	1.0	.99	e.80	.39	.31	.20	.03	.03	.01	.07	.02
24	1.1	1.0	1.1	.71	.38	.27	.21	.03	.02	.01	.03	.03
25	1.1	.99	1.0	.67	.34	.26	.23	.03	.02	.00	.03	.03
26	1.0	.99	1.0	.64	.33	.26	.25	.03	.03	.01	.02	.03
27	.99	e.99	1.1	.60	.35	.26	.23	.02	.02	.01	.01	.02
28	1.0	e.94	1.1	.50	.40	.26	.22	.02	.02	.01	.03	.02
29	1.5	e.89	1.2	.47	---	.26	.20	.02	.01	.01	.04	.02
30	1.1	e.84	e1.5	.50	---	.26	.20	.03	.02	.00	.03	.03
31	1.0	---	e3.0	.57	---	.26	---	.03	---	.00	.02	---
TOTAL	55.19	35.58	29.58	22.26	12.72	10.55	6.78	3.77	0.97	0.48	0.44	1.35
MEAN	1.78	1.19	.95	.72	.45	.34	.23	.12	.032	.015	.014	.045
MAX	3.9	5.3	3.0	1.6	.57	.52	.26	.24	.05	.05	.08	.09
MIN	.99	.84	.72	.47	.33	.26	.20	.02	.01	.00	.00	.02
AC-FT	109	71	59	44	25	21	13	7.5	1.9	1.0	.9	2.7
CFSM	.85	.56	.45	.34	.22	.16	.11	.06	.02	.01	.01	.02
IN.	.98	.63	.52	.39	.23	.19	.12	.07	.02	.01	.01	.02

CAL YR 1989 TOTAL 185.21 MEAN .51 MAX 19 MIN .00 AC-FT 367 CFSM .24 IN. 3.28
WTR YR 1990 TOTAL 179.67 MEAN .49 MAX 5.3 MIN .00 AC-FT 356 CFSM .23 IN. 3.18

e Estimated

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Ground-Water Records for U.S. Virgin Islands

ST. CROIX, U.S. VIRGIN ISLANDS

174225064471900. Local number, 1.
LOCATION.--Lat 17°42'25", long 64°47'19".
Owner: Virgin Islands Government.
Name: Fairplains 6 (FP6).
AQUIFER.--Alluvium and marl.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).
DATUM.--Elevation of land-surface datum is about 20 ft (6.10 m) above mean sea level, from topographic map.
Measuring point: Top of pump concrete base, 2.20 ft (0.67 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumping.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.64 ft (4.77 m) below land-surface datum, Mar. 25, 1982; lowest water level measured, a59.26 ft (18.1 m) below land-surface datum, Apr. 25, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 16	19.10	May 24	a24.13	Aug. 6	a58.60	Aug. 28	a57.89
Apr. 25	a59.26	July 5	a57.72				

a Pumping.

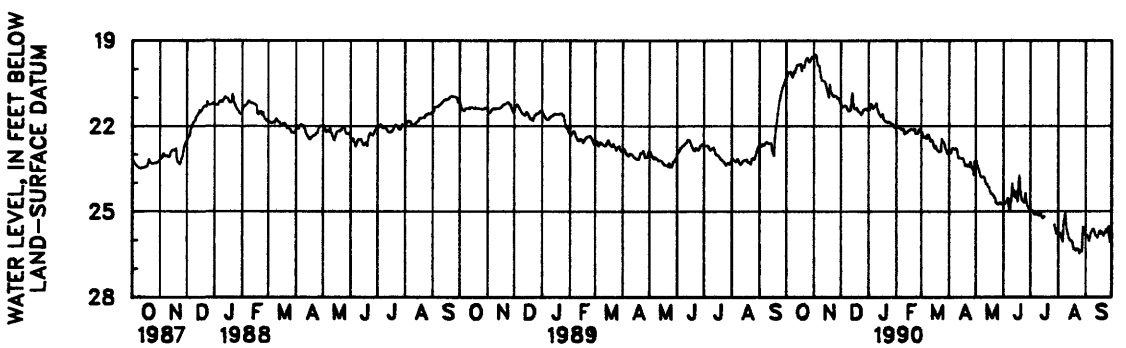
GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS

174225064472000. Local number, 2.
LOCATION.--Lat 17°42'25", long 64°47'20".
Owner: U.S. Government, 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).
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, 19.45 ft (5.93 m) below land-surface datum, Nov. 4, 1989; 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 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

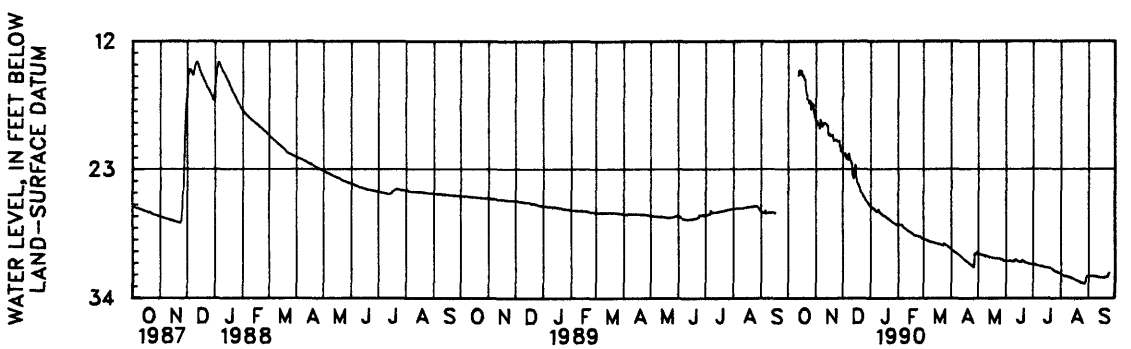
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.42	19.61	21.23	21.42	22.05	---	22.86	23.24	24.76	24.94	25.76	25.82
2	20.27	19.56	21.28	21.43	22.05	22.23	22.91	23.24	24.74	24.95	25.75	25.84
3	20.15	19.49	21.33	21.27	22.05	22.41	22.96	23.38	24.69	24.97	25.76	25.84
4	20.12	19.57	21.31	21.21	22.05	22.41	22.83	23.48	24.65	25.01	25.88	25.91
5	20.12	19.82	21.30	21.32	22.07	22.40	22.79	23.57	24.64	25.06	25.94	26.04
6	20.10	19.89	21.27	21.38	22.10	22.38	22.80	23.71	24.52	25.10	26.05	25.88
7	20.22	19.89	21.29	21.33	22.13	22.44	22.79	23.79	24.90	25.07	25.39	25.73
8	20.29	20.11	21.37	21.30	22.11	22.29	22.83	23.81	24.98	25.10	25.25	25.67
9	20.19	20.29	21.44	21.27	22.10	22.31	22.78	23.80	24.72	25.06	25.04	25.61
10	20.07	20.40	21.48	21.20	22.28	22.39	22.82	23.79	24.55	25.12	25.50	25.62
11	20.11	20.41	21.47	21.40	22.20	22.53	23.02	23.83	24.00	25.13	25.69	25.74
12	19.95	20.42	21.41	21.51	22.25	22.48	23.15	23.96	24.47	25.14	25.81	25.85
13	19.86	20.43	21.07	21.58	22.22	22.49	23.11	24.06	24.23	25.03	25.95	25.85
14	19.86	20.50	20.83	21.62	22.18	22.57	23.13	24.03	24.43	25.18	26.00	25.92
15	19.86	20.64	21.18	21.66	22.15	22.72	23.14	24.13	24.51	25.23	26.03	25.85
16	19.84	20.76	21.38	21.59	22.15	22.77	23.14	24.14	24.30	25.17	26.02	25.74
17	19.82	20.88	21.40	21.58	22.11	22.69	23.15	24.27	24.66	25.19	26.09	25.67
18	20.08	20.99	21.39	21.76	22.10	22.81	23.28	24.37	24.08	---	26.22	25.78
19	19.91	20.52	21.35	21.81	22.11	22.84	23.39	24.36	23.73	---	26.32	25.71
20	19.87	20.80	21.43	21.83	22.13	22.88	23.37	24.41	24.20	---	26.33	25.78
21	19.95	20.82	21.49	21.86	22.12	22.91	23.39	24.43	24.49	---	26.36	25.86
22	19.77	20.92	21.51	21.86	22.10	22.90	23.41	24.51	24.61	---	26.35	25.79
23	19.66	20.97	21.54	21.85	22.27	22.88	23.37	24.56	24.63	---	26.31	25.73
24	19.62	20.94	21.59	21.85	22.25	22.44	23.43	24.69	24.67	---	26.33	25.62
25	19.61	20.94	21.53	21.86	22.27	22.59	23.26	24.73	24.66	---	26.46	25.73
26	19.73	20.95	21.45	21.90	22.20	22.56	23.39	24.74	24.34	---	26.40	25.58
27	19.76	21.02	21.41	21.92	22.10	22.66	23.49	24.73	24.71	---	26.37	25.52
28	19.71	21.01	21.39	21.93	22.22	22.77	23.54	24.68	24.81	25.47	26.40	26.09
29	19.63	21.03	21.39	21.98	---	22.86	23.72	24.69	24.86	25.61	25.53	25.79
30	19.56	21.14	21.42	22.04	---	22.99	23.23	24.74	24.94	25.78	25.73	25.62
31	19.60	---	21.45	22.06	---	22.95	---	24.74	---	25.78	25.82	---
LOW	20.42	21.14	21.59	22.06	22.28	---	23.72	24.74	24.98	---	26.46	26.09
HIGH	19.56	19.49	20.83	21.20	22.05	---	22.78	23.24	23.73	---	25.04	25.52



1742430644751OO. Local number, 3.
LOCATION.--Lat 17°42'43", long 64°47'51".
Owner: U.S. Government, 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).
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. Drilled by US Virgin Island Water and Power Authority on June 21, 23, and July 7, 1989.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.73 ft (4.18 m) below land-surface datum, Dec. 12, 1988; lowest water level recorded, 32.80 ft (10.0 m) below land-surface datum, Aug. 28, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	18.85	21.63	26.14	27.75	28.93	29.81	30.13	30.80	31.10	31.93	32.10
2	---	18.87	21.80	26.20	27.72	28.93	29.88	30.19	30.80	31.10	32.00	32.10
3	---	19.16	21.82	26.28	27.72	28.98	29.95	30.23	30.80	31.10	32.05	32.11
4	---	19.04	21.61	26.32	27.74	29.01	30.01	30.26	30.80	31.14	32.08	32.11
5	---	19.52	22.10	26.37	27.72	29.04	30.08	30.28	30.81	31.18	32.10	32.12
6	---	18.67	21.80	26.48	27.85	29.10	30.12	30.30	30.81	31.20	32.12	32.12
7	---	19.20	22.20	26.53	27.94	29.13	30.18	30.34	30.82	31.22	32.13	32.13
8	---	19.31	21.63	26.61	28.01	29.17	30.23	30.37	30.83	31.25	32.16	32.13
9	---	19.14	22.11	26.58	28.07	29.18	30.30	30.38	30.83	31.26	32.18	32.14
10	---	18.99	22.31	26.41	28.13	29.22	30.34	30.39	30.86	31.28	32.20	32.16
11	---	19.02	22.53	26.64	28.19	29.22	30.38	30.43	30.71	31.30	32.21	32.19
12	14.95	19.06	23.57	26.76	28.23	29.24	30.46	30.45	30.70	31.30	32.24	32.22
13	14.47	19.19	23.80	26.77	28.28	29.27	30.53	30.47	30.77	31.32	32.28	32.23
14	14.82	19.24	22.84	26.85	28.34	29.30	30.61	30.51	30.85	31.37	32.31	32.24
15	14.48	20.14	22.61	26.94	28.38	29.32	30.67	30.52	30.89	31.37	32.35	32.24
16	14.57	19.92	23.77	26.98	28.45	29.34	30.74	30.53	30.88	31.39	32.41	32.25
17	15.02	20.00	24.15	26.99	28.52	29.36	30.80	30.55	30.91	31.37	32.45	32.25
18	14.94	20.19	24.31	27.00	28.57	29.38	30.86	30.57	30.92	31.40	32.48	32.25
19	15.22	20.16	24.50	27.10	28.62	29.40	30.92	30.58	30.72	31.43	32.51	32.23
20	15.35	20.04	24.63	27.17	28.64	29.42	30.99	30.60	30.81	31.44	32.55	32.19
21	16.38	20.64	24.90	27.23	28.67	29.43	31.05	30.60	30.88	31.46	32.58	32.16
22	16.67	20.49	25.01	27.29	28.69	29.46	31.11	30.60	30.94	31.50	32.61	32.15
23	17.04	20.47	25.11	27.34	28.71	29.49	31.17	30.60	30.97	31.57	32.65	31.90
24	17.04	20.50	25.28	27.41	28.73	29.30	31.24	30.61	30.99	31.67	32.68	31.86
25	17.29	20.56	25.41	27.46	28.74	29.44	31.31	30.62	31.02	31.71	32.72	---
26	17.13	20.62	25.50	27.53	28.78	29.48	31.37	30.70	31.07	31.73	32.74	---
27	17.92	20.57	25.65	27.58	28.86	29.50	30.14	30.70	31.07	31.76	32.77	---
28	17.31	21.04	25.77	27.63	28.90	29.56	30.16	30.71	31.09	31.79	32.80	---
29	17.44	21.48	25.85	27.69	---	29.62	30.18	30.80	31.12	31.82	32.27	---
30	18.20	21.23	25.97	27.74	---	29.68	30.03	30.80	31.13	31.85	32.10	---
31	18.56	---	26.03	27.73	---	29.75	---	30.80	---	31.88	32.09	---
LOW	---	21.48	26.03	27.74	28.90	29.75	31.37	30.80	31.13	31.88	32.80	---
HIGH	---	18.67	21.61	26.14	27.72	28.93	29.81	30.13	30.70	31.10	31.93	---



174245064475800. Local number, 4.
LOCATION.--Lat 17°42'45", long 64°47'58".
Owner: Virgin Islands Government.
Name: Golden Grove - 1 (PW1).
AQUIFER.--Alluvium and marl.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m), 0-104 ft (0-31.70 m), perforated 64-104 ft (19.51-31.70 m). Depth 104 ft (31.70 m).
DATUM.--Elevation of land-surface datum is about 40 ft (12.2 m) above mean sea level, from topographic map.
Measuring point: Lower edge of 1 in. (0.02 m) pipe at pump base, 3.40 ft (1.04 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumping.
PERIOD OF RECORD.--January 1983 to current year.
EXTREMES FOR PERIOD OF RECORD: Highest water level measured, a20.76 ft (6.33 m) below land-surface datum, Jan. 19, 1988; lowest water level measured, a58.30 ft (17.77 m) below land-surface datum, September 27, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Mar. 16	30.40	Apr. 27	a47.89	June 26	47.73	Aug. 28	a43.38
26	30.24	May 29	a31.85	Aug. 7	a40.39		

a Pumping.

GROUND-WATER LEVELS

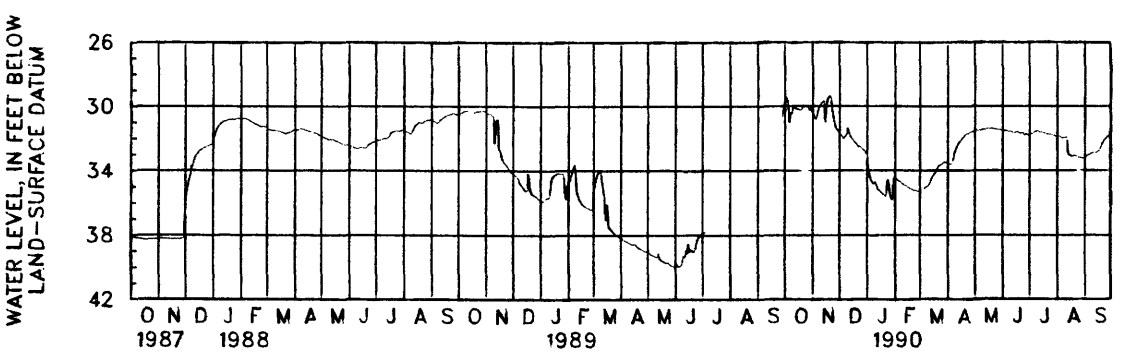
ST. CROIX, U.S. VIRGIN ISLANDS

174303064484400. Local number, 6.
LOCATION.--Lat 17°43'03", long 64°48'44".
Owner: U.S. Government, Virgin Islands Government.
Name: Adventure 28.
AQUIFER.--Alluvium of Pleistocene age and marl of Oligocene age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 4 in (0.10 m), cased 4 in (0.10 m). Depth 97 ft (29.6 m).
DATUM.--Elevation of land-surface datum is about 80 ft (24.39 m) above mean sea level, from topographic map.
Measuring point: Upper edge of hole at 4 in (0.10 m) casing, 2.00 ft (0.61 m) above land-surface datum. Prior June 20, 1983, top of 4 in (0.10 m) casing, 0.90 ft (0.27 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--August 1973 to March 1974, discontinued. March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 24.90 ft (7.59 m) below land-surface datum, Mar. 25, 1982; lowest water level recorded, 40.18 ft (12.25 m) below land-surface datum, Aug. 5, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29.67	30.39	31.68	33.00	34.36	35.33	33.52	31.51	31.57	31.78	31.85	33.16
2	29.43	30.51	31.74	34.07	34.47	35.29	33.54	31.49	31.54	31.73	31.84	33.13
3	29.49	30.62	31.79	34.09	34.53	35.24	33.57	31.50	31.52	31.69	31.85	33.09
4	29.67	30.73	31.85	34.43	34.62	35.21	33.56	31.46	31.49	31.70	31.86	33.04
5	30.21	30.81	31.96	34.59	34.65	35.19	33.59	31.50	31.49	31.69	31.94	33.02
6	31.00	30.55	31.99	34.66	34.66	35.09	33.49	31.47	31.50	31.63	31.95	32.98
7	30.46	30.25	31.86	34.77	34.70	35.03	33.23	31.46	31.58	31.55	31.96	32.95
8	30.41	30.05	31.82	34.85	34.77	35.01	33.00	31.45	31.53	31.55	31.96	32.90
9	30.40	29.99	31.71	34.81	34.80	34.98	32.80	31.45	31.53	31.52	31.95	32.87
10	30.08	29.87	31.34	34.66	34.83	34.95	32.63	31.42	31.54	31.51	31.93	32.85
11	29.94	29.77	31.53	34.94	34.87	34.86	32.50	31.41	31.55	31.54	31.90	32.85
12	30.06	29.76	31.73	35.06	34.92	34.75	32.38	31.41	31.61	31.58	31.93	32.85
13	30.14	29.70	31.90	35.17	34.95	34.60	32.29	31.41	31.65	31.60	32.90	32.85
14	30.15	29.68	31.94	35.21	34.98	34.44	32.22	31.37	31.64	31.59	33.02	32.85
15	30.16	31.01	32.01	35.28	35.03	34.39	32.13	31.37	31.64	31.61	33.05	32.81
16	30.20	29.91	32.09	35.35	35.04	34.28	32.06	31.36	31.58	31.62	33.06	32.75
17	30.21	29.69	32.17	35.37	35.09	34.18	31.99	31.35	31.58	31.65	33.09	32.71
18	30.23	29.48	32.26	35.43	35.11	34.12	31.92	31.33	31.56	31.64	33.10	32.59
19	30.24	29.41	32.29	35.49	35.13	34.05	31.86	31.37	31.66	31.67	33.10	32.46
20	30.17	29.36	32.37	35.53	35.14	33.89	31.80	31.35	31.68	31.71	33.05	32.31
21	29.98	29.43	32.46	35.57	35.20	33.74	31.76	31.35	31.66	31.73	33.06	32.26
22	29.98	29.87	32.52	35.62	35.21	33.66	31.72	31.38	31.66	31.78	33.09	32.12
23	29.98	30.37	32.48	34.70	35.24	33.66	31.70	31.38	31.62	31.76	33.13	32.09
24	29.93	30.71	32.47	34.54	35.21	33.63	31.69	31.40	31.61	31.73	33.14	32.03
25	29.97	30.96	32.53	34.92	35.24	33.60	31.64	31.43	31.79	31.74	33.15	31.95
26	30.04	31.20	32.59	35.45	35.29	33.54	31.59	31.46	31.75	31.76	33.17	31.85
27	30.09	31.32	32.68	35.65	35.28	33.47	31.55	31.42	31.72	31.77	33.18	31.85
28	30.21	31.45	32.72	35.73	35.30	33.45	31.55	31.44	31.74	31.79	33.21	31.81
29	30.22	31.52	32.78	35.81	---	33.45	31.57	31.46	31.74	31.85	33.21	31.57
30	30.07	31.59	32.87	34.91	---	33.45	31.54	31.46	31.83	31.87	33.21	31.41
31	30.30	---	32.93	34.46	---	33.50	---	31.47	---	31.86	33.20	---
LOW	31.00	31.59	32.93	35.81	35.30	35.33	33.59	31.51	31.83	31.87	33.21	33.16
HIGH	29.43	29.36	31.34	33.00	34.36	33.45	31.54	31.33	31.49	31.51	31.84	31.41

WTR YR 1990 MEAN 32.41 LOW 35.81 HIGH 29.36



174525064460600. Local number, 7.
LOCATION.--Lat 17°45'25", long 64°46'06".
Owner: Virgin Islands Government.
Name: Concordia 14.
AQUIFER.--Sand and gravel.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).
Depth 85 ft (25.91 m).
DATUM.--Elevation of land-surface datum is about 40 ft (12.2 m) above mean sea level, from topographic map.
Measuring point: Top of 0.50 in (0.01 m) pipe on top of pump concrete base, 2.30 ft (0.70 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumpage.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.07 ft (3.07 m) below land-surface datum, Mar. 4, 1989; lowest water level measured, a48.20 ft (a14.7 m) below land-surface datum, Aug. 24, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 12	14.36	Mar. 26	a28.32	May 24	a39.90	Aug. 6	a45.40
Feb. 22	a29.10	Apr. 26	29.26	June 25	a44.16	29	a48.20

174527064460100. Local number, 8.
LOCATION.--Lat 17°45'27", long 64°46'01".
Owner: Virgin Islands Government.
Name: Concordia 1 (Main pump house).
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).
Depth 82 ft (25.0 m).
DATUM.--Elevation of land-surface datum is about 40 ft (12.2 m) above mean sea level, from topographic map.
Measuring point: Top of 6 in (0.15 m) casing, 2.20 ft (0.67 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumpage.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.03 ft (4.28 m) below land-surface datum, Jan. 19, 1988; lowest water level measured, a48.29 ft (a14.7 m) below land-surface datum, Aug. 29, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 12	a20.76	Mar. 26	a33.49	May 25	a44.89	Aug. 6	a48.00
Jan. 22	a30.36	Apr. 26	29.68	June 25	a44.90	29	a48.29

a Pumping.

174532064460300. Local number, 9.
LOCATION.--Lat 17°45'32", long 64°46'03".
Owner: Virgin Islands Government.
Name: Concordia 7.
AQUIFER.--Limestone of Tertiary Age.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 0-81 ft (0-24.7 m). Depth 81 ft (24.7 m).
DATUM.--Elevation of land-surface datum is 35 ft (10.7 m) above mean sea level, from topographic map.
Measuring point: Hole in pump base, 2.20 ft (0.67 m) above land-surface datum. Previous to Mar. 25, 1982, hole in pump base 2.50 ft (0.76 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumping.
PERIOD OF RECORD.--June 1962 to October 1968, discontinued. March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.75 ft (0.53 m) below land-surface datum, May 11, 1966; lowest water level measured, 57.40 ft (17.5 m) below land-surface datum, Mar. 5, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 12	8.58	Mar. 26	a23.79	May 24	a26.45	Aug. 6	a42.36
Feb. 22	a23.92	Apr. 26	13.20	June 25	a38.47	Aug. 29	a40.29

174329064454700. Local number, 10.
LOCATION.--Lat 17°43'29", long 64°45'47".
Owner: Virgin Islands Government.
Name: Barren Spot 5 (PWD-5).
AQUIFER.--Alluvium and marl.
WELL CHARACTERISTICS.--Drilled production water-table well, diameter 6 in (0.15 m), cased 0-130 ft (0-39.63 m), perforated 71-130 ft (21.64-39.63 m). Depth 130 ft (39.63 m).
DATUM.--Elevation of land-surface datum is about 75 ft (22.86 m) above mean sea level, from topographic map.
Measuring point: Hole on top of pump base, 2.00 ft (0.61 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumping.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 61.86 ft (18.86 m) below land-surface datum, Mar. 26, 1982; lowest water level measured, a79.81 ft (a24.33 m) below land-surface datum, June 25, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
May 21	a77.53	June 25	a79.81	Aug. 6	a79.31	Aug. 29	a79.06

a Pumping.

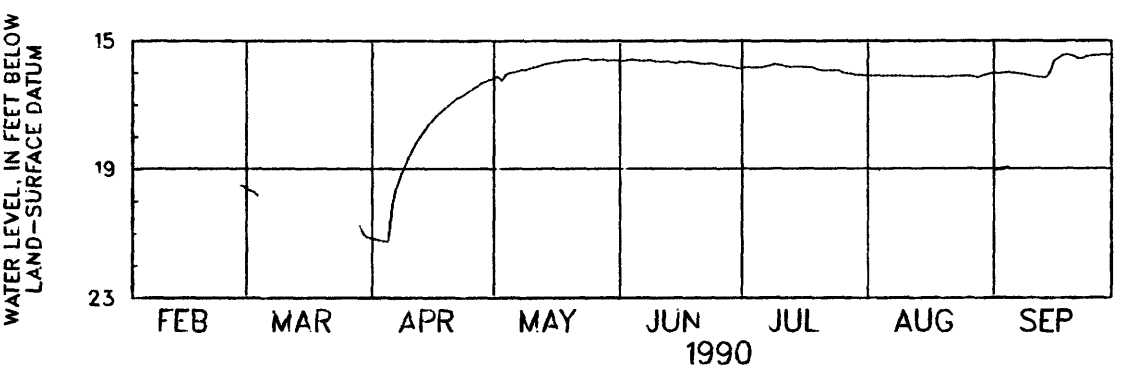
GROUND-WATER LEVELS

ST. CROIX, U.S. VIRGIN ISLANDS

174303064481100. Local number, 11.
LOCATION.--Lat 17°43'03", long 64°18'11".
Owner: U.S. Virgin Islands Water and Power Authority
Name: WAPA-02 at Adventure well field.
AQUIFER.--Alluvium and Kingshill Limestone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 0-60 ft (0-18.3 m), screened 20-40 ft (6.09-12.2 m). Depth 100 ft (30.5 m).
DATUM.--Elevation of land-surface datum is about 50 ft (15.2 m) above mean sea level, from topographic map.
Measuring point: Top of shelter floor, 2.00 ft (0.61 m) above land-surface datum.
REMARKS.--Drilled on April 24 1989. Automatic digital recorded installed on February 27, 1990.
PERIOD OF RECORD.--February 27, 1990 to September 30, 1990.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 15.41 ft (4.70 m) below land-surface datum, Sept. 30, 1990; lowest water level recorded, 21.31 ft (6.49 m) below land-surface datum, Apr. 3, 1990..

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	19.59	21.16	16.16	15.63	15.86	16.09	16.00
2	---	---	---	---	---	19.67	21.18	16.11	15.61	15.83	16.09	16.02
3	---	---	---	---	---	19.70	21.21	16.24	15.60	15.83	16.09	16.01
4	---	---	---	---	---	19.83	21.24	16.05	15.58	15.83	16.09	16.00
5	---	---	---	---	---	---	21.25	16.00	15.60	15.83	16.09	15.98
6	---	---	---	---	---	---	20.11	15.98	15.62	15.83	16.09	16.00
7	---	---	---	---	---	---	19.59	15.95	15.63	15.79	16.09	16.02
8	---	---	---	---	---	---	19.21	15.91	15.61	15.77	16.09	16.04
9	---	---	---	---	---	---	18.92	15.90	15.62	15.73	16.10	16.07
10	---	---	---	---	---	---	18.64	15.85	15.64	15.75	16.11	16.09
11	---	---	---	---	---	---	18.38	15.82	15.65	15.77	16.11	16.13
12	---	---	---	---	---	---	18.17	15.79	15.65	15.80	16.11	16.14
13	---	---	---	---	---	---	17.98	15.75	15.64	15.82	16.11	16.14
14	---	---	---	---	---	---	17.80	15.71	15.68	15.81	16.11	16.14
15	---	---	---	---	---	---	17.61	15.70	15.70	15.81	16.11	15.95
16	---	---	---	---	---	---	17.45	15.67	15.65	15.82	16.11	15.61
17	---	---	---	---	---	---	17.31	15.65	15.68	15.83	16.12	15.55
18	---	---	---	---	---	---	17.21	15.62	15.64	15.83	16.12	15.45
19	---	---	---	---	---	---	17.10	15.61	15.67	15.87	16.12	15.43
20	---	---	---	---	---	---	17.00	15.60	15.70	15.91	16.12	15.47
21	---	---	---	---	---	---	16.89	15.60	15.73	15.93	16.12	15.51
22	---	---	---	---	---	---	16.79	15.60	15.72	15.93	16.10	15.55
23	---	---	---	---	---	---	16.73	15.57	15.71	15.93	16.10	15.55
24	---	---	---	---	---	---	16.65	15.57	15.72	15.93	16.10	15.48
25	---	---	---	---	---	---	16.56	15.60	15.76	15.93	16.10	---
26	---	---	---	---	---	---	16.48	15.60	15.77	16.01	16.10	15.46
27	---	---	---	---	19.50	20.91	16.41	15.58	15.78	16.03	16.12	15.46
28	---	---	---	---	19.52	---	16.31	15.58	15.79	16.03	16.16	15.44
29	---	---	---	---	---	20.75	16.27	15.62	15.83	16.07	16.09	15.45
30	---	---	---	---	---	21.04	16.22	15.61	15.87	16.07	16.07	15.41
31	---	---	---	---	---	21.12	---	15.61	---	16.08	16.03	---
LOW	---	---	---	---	---	---	21.25	16.24	15.87	16.08	16.16	---
HIGH	---	---	---	---	---	---	16.22	15.57	15.58	15.73	16.03	---

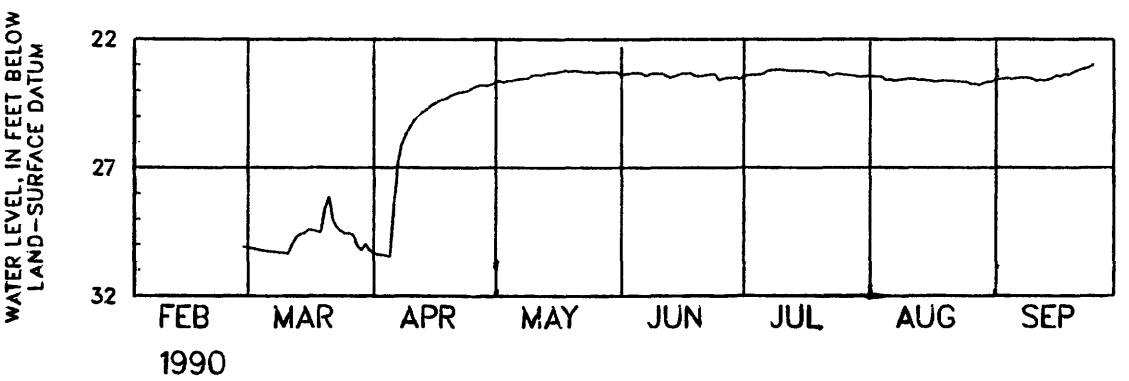


ST. CROIX, U.S. VIRGIN ISLANDS

174308064482800. Local number, 12.
LOCATION.--Lat 17°43'08", long 64°48'28".
Owner: U.S. Virgin Islands Water and Power Authority.
Name: WAPA-03 at Adventure well field.
AQUIFER.--Kingshill Limestone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 0-110 ft (0-33.5 m), screened 50-90 ft (15.2-27.4 m). Depth 110 ft (33.5 m).
DATUM.--Elevation of land-surface datum is about 60 ft (18.3 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.--Drilled on April 28 1989. Automatic digital recorded installed on February 28, 1990.
PERIOD OF RECORD.--February 28, 1990 to September 30, 1990.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 22.96 ft (7.00 m) below land-surface datum, Sept. 30, 1990; lowest water level recorded, 30.46 ft (9.28 m) below land-surface datum, Apr. 5, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	30.12	30.32	23.67	23.41	23.47	23.43	23.57
2	---	---	---	---	---	30.15	30.38	23.62	23.35	23.40	23.44	23.55
3	---	---	---	---	---	30.19	30.40	23.67	23.33	23.38	23.46	23.54
4	---	---	---	---	---	30.22	30.42	23.61	23.30	23.38	23.46	23.51
5	---	---	---	---	---	30.25	30.46	23.62	23.30	23.37	23.59	23.56
6	---	---	---	---	---	30.26	28.37	23.57	23.32	23.33	23.57	23.51
7	---	---	---	---	---	30.28	26.76	23.54	23.42	23.22	23.60	23.49
8	---	---	---	---	---	30.29	26.04	23.53	23.35	23.20	23.59	23.50
9	---	---	---	---	---	30.31	25.65	23.51	23.33	23.18	23.56	23.50
10	---	---	---	---	---	30.33	25.36	23.40	23.34	23.18	23.54	23.53
11	---	---	---	---	---	30.34	25.11	23.38	23.34	23.20	23.54	23.61
12	---	---	---	---	---	29.97	24.96	23.40	23.43	23.22	23.54	23.58
13	---	---	---	---	---	29.69	24.81	23.35	23.49	23.23	23.59	23.60
14	---	---	---	---	---	29.58	24.71	23.32	23.44	23.22	23.57	23.56
15	---	---	---	---	---	29.54	24.56	23.31	23.38	23.21	23.60	23.51
16	---	---	---	---	---	29.41	24.49	23.29	23.33	23.23	23.60	23.40
17	---	---	---	---	---	29.44	24.39	23.26	23.33	23.24	23.65	23.44
18	---	---	---	---	---	29.48	24.34	23.21	23.31	23.23	23.62	23.35
19	---	---	---	---	---	29.52	24.29	23.26	23.42	23.27	23.60	23.38
20	---	---	---	---	---	28.56	24.18	23.23	23.44	23.29	23.60	23.29
21	---	---	---	---	---	28.13	24.12	23.23	23.42	23.30	23.61	23.21
22	---	---	---	---	---	29.08	24.06	23.26	23.39	23.43	23.63	23.17
23	---	---	---	---	---	29.34	24.04	23.29	23.36	23.38	23.64	23.13
24	---	---	---	---	---	29.48	24.01	23.27	23.36	23.34	23.65	23.08
25	---	---	---	---	---	29.56	23.93	23.27	23.61	23.36	23.66	23.00
26	---	---	---	---	---	29.56	23.84	23.32	23.53	23.38	23.74	---
27	---	---	---	---	---	29.62	23.79	23.27	23.49	23.40	23.73	---
28	---	---	---	---	30.10	30.05	23.79	23.28	23.50	23.41	23.78	---
29	---	---	---	---	---	30.20	23.81	23.28	23.47	23.46	23.69	---
30	---	---	---	---	---	29.99	23.75	23.27	23.56	23.46	23.65	22.97
31	---	---	---	---	---	30.22	---	23.28	---	23.45	23.64	---
LOW	---	---	---	---	---	30.34	30.46	23.67	23.61	23.47	23.78	---
HIGH	---	---	---	---	---	28.13	23.75	23.21	23.30	23.18	23.43	---

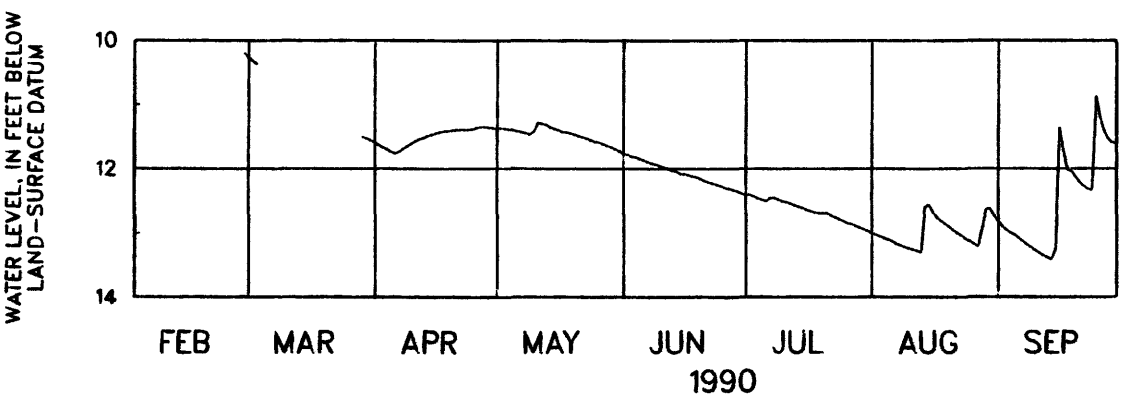


ST. CROIX, U.S. VIRGIN ISLANDS

174316064480800. Local number, 13.
LOCATION.--Lat 17°43'16", long 64°48'08".
Owner: U.S. Virgins 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).
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.--Drilled on June 12, 1989. Automatic digital recorded installed on February 28, 1990.
PERIOD OF RECORD.--February 28, 1990 to September 30, 1990.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 10.21 ft (3.11 m) below land-surface datum, Feb. 28, 1990; lowest water level recorded, 13.41 ft (4.09 m) below land-surface datum, Sept. 13-14, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	10.26	11.59	11.37	11.77	12.40	13.00	12.82
2	---	---	---	---	---	10.32	11.63	11.37	11.78	12.40	13.03	12.90
3	---	---	---	---	---	10.37	11.67	11.38	11.81	12.43	13.05	12.96
4	---	---	---	---	---	---	11.70	11.39	11.82	12.46	13.08	13.00
5	---	---	---	---	---	---	11.74	11.40	11.85	12.48	13.10	13.03
6	---	---	---	---	---	---	11.76	11.42	11.87	12.50	13.13	13.08
7	---	---	---	---	---	---	11.74	11.43	11.90	12.45	13.17	13.13
8	---	---	---	---	---	---	11.69	11.45	11.92	12.45	13.19	13.18
9	---	---	---	---	---	---	11.65	11.47	11.93	12.48	13.22	13.22
10	---	---	---	---	---	---	11.61	11.42	11.96	12.51	13.24	13.27
11	---	---	---	---	---	---	11.57	11.28	11.98	12.52	13.26	13.31
12	---	---	---	---	---	---	11.54	11.30	12.00	12.54	13.28	13.35
13	---	---	---	---	---	---	11.52	11.32	12.03	12.57	13.30	13.38
14	---	---	---	---	---	---	11.49	11.36	12.04	12.59	12.58	13.41
15	---	---	---	---	---	---	11.47	11.38	12.08	12.61	12.56	13.25
16	---	---	---	---	---	---	11.45	11.40	12.08	12.64	12.68	11.35
17	---	---	---	---	---	---	11.43	11.43	12.10	12.66	12.77	11.74
18	---	---	---	---	---	---	11.42	11.43	12.12	12.68	12.82	12.03
19	---	---	---	---	---	---	11.41	11.45	12.13	12.69	12.86	12.04
20	---	---	---	---	---	---	11.40	11.47	12.16	12.69	12.91	12.13
21	---	---	---	---	---	---	11.39	11.49	12.19	12.69	12.96	12.22
22	---	---	---	---	---	---	11.39	11.51	12.21	12.73	13.00	12.27
23	---	---	---	---	---	---	11.39	11.53	12.23	12.76	13.04	12.32
24	---	---	---	---	---	---	11.39	11.56	12.25	12.79	13.09	12.33
25	---	---	---	---	---	---	11.38	11.58	12.27	12.82	13.13	10.86
26	---	---	---	---	---	---	11.36	11.59	12.30	12.85	13.17	11.22
27	---	---	---	---	---	---	11.35	11.62	12.31	12.86	13.21	11.43
28	---	---	---	---	10.21	---	11.35	11.65	12.33	12.89	---	11.54
29	---	---	---	---	---	11.51	11.36	11.67	12.35	12.92	12.62	11.60
30	---	---	---	---	---	11.53	11.37	11.70	12.39	12.94	12.62	11.60
31	---	---	---	---	---	11.56	---	11.73	---	12.97	12.74	---
LOW	---	---	---	---	---	---	11.76	11.73	12.39	12.97	---	13.41
HIGH	---	---	---	---	---	---	11.35	11.28	11.77	12.40	---	10.86

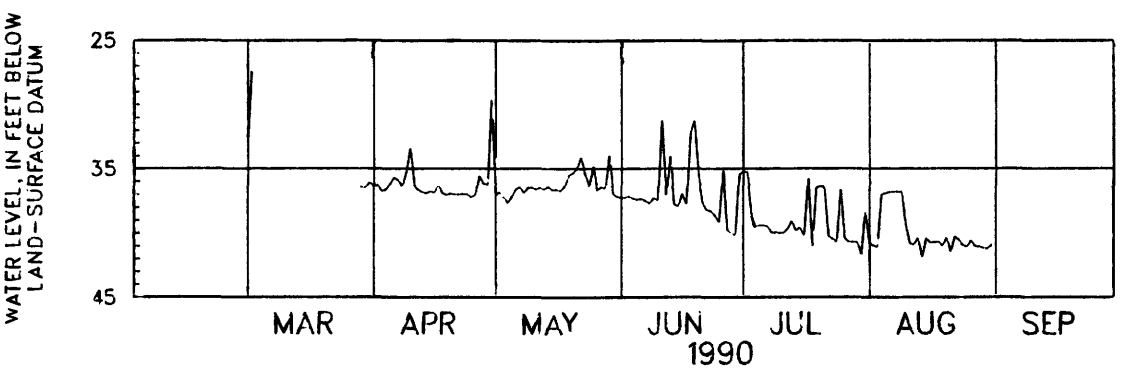


ST. CROIX, U.S. VIRGIN ISLANDS

174247064475701. Local number, 14.
LOCATION.--Lat 17°42'47", long 64°47'57".
Owner: U.S. Virgins Islands Water and Power Authority.
Name: WAPA 21a at Golden Grove well field.
AQUIFER.--Alluvial, Kingshill Limestone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 0-70 ft (0-21.3 m), screened 15-70 ft (4.57-21.3 m). Depth 100 ft (30.5 m), well collapsed to 70 ft (21.3 m).
DATUM.--Elevation of land-surface datum is about 52 ft (15.8 m) above mean sea level, from topographic map.
Measuring point: Top of shelter floor, 3.25 ft (0.99 m) above land-surface datum.
REMARKS.--Drilled on June 23, 1989. Automatic digital recorded installed on February 28, 1990. Water levels affected by nearby pumping well.
PERIOD OF RECORD.--February 28, 1990 to September 30, 1990.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 27.46 ft (8.40 m) below land-surface datum, Mar. 2, 1990; lowest water level recorded, 41.61 ft (12.7 m) below land-surface datum, Aug. 21, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	33.18	36.37	37.17	37.26	35.80	40.78	41.14
2	---	---	---	---	---	27.95	36.30	36.81	37.24	35.81	40.99	41.13
3	---	---	---	---	---	32.57	36.74	37.24	37.14	39.07	41.07	41.13
4	---	---	---	---	---	30.90	36.65	37.65	37.33	40.01	36.97	41.12
5	---	---	---	---	---	31.14	36.18	37.17	37.39	39.85	36.89	41.12
6	---	---	---	---	---	31.39	35.68	36.59	37.33	39.81	36.81	41.11
7	---	---	---	---	---	31.64	35.91	36.42	37.51	39.87	36.80	41.11
8	---	---	---	---	---	31.89	36.35	36.87	37.69	40.34	36.80	41.10
9	---	---	---	---	---	32.14	35.21	36.46	37.30	40.28	36.79	41.10
10	---	---	---	---	---	32.39	33.35	36.45	37.43	40.28	39.41	41.09
11	---	---	---	---	---	32.64	36.35	36.60	31.17	40.21	40.87	41.09
12	---	---	---	---	---	32.89	36.64	36.45	37.08	39.85	40.90	41.08
13	---	---	---	---	---	33.14	36.82	36.58	33.99	39.22	40.37	41.08
14	---	---	---	---	---	33.39	36.91	36.38	37.82	39.97	41.90	41.07
15	---	---	---	---	---	33.63	36.78	36.65	37.93	39.69	40.38	41.07
16	---	---	---	---	---	32.81	36.84	36.61	36.95	40.26	40.73	41.06
17	---	---	---	---	---	32.58	36.22	36.71	37.74	35.76	40.69	41.06
18	---	---	---	---	---	32.83	36.96	36.36	32.16	41.05	40.67	41.05
19	---	---	---	---	---	33.08	37.03	35.49	31.20	36.41	40.98	41.05
20	---	---	---	---	---	33.33	36.92	35.32	35.63	36.33	40.35	41.04
21	---	---	---	---	---	33.57	37.00	34.90	37.65	36.43	41.50	41.04
22	---	---	---	---	---	33.11	37.00	34.10	38.21	40.36	40.24	41.03
23	---	---	---	---	---	33.27	36.95	35.48	38.28	40.46	40.53	41.03
24	---	---	---	---	---	28.49	36.98	36.33	38.63	40.70	40.99	41.02
25	---	---	---	---	---	32.82	37.22	34.81	39.11	36.59	41.07	41.02
26	---	---	---	---	---	31.12	37.03	36.69	35.85	40.50	40.58	40.78
27	---	---	---	---	---	32.23	35.57	36.41	40.56	40.69	41.05	40.32
28	---	---	---	---	---	31.28	36.20	36.52	40.72	40.70	41.06	40.47
29	---	---	---	---	---	36.46	36.24	33.90	40.83	40.71	41.16	36.94
30	---	---	---	---	---	36.47	29.49	37.02	36.03	41.64	41.21	39.84
31	---	---	---	---	---	36.07	---	37.18	---	38.29	40.94	---
LOW	---	---	---	---	---	36.47	37.22	37.65	40.83	41.64	41.90	41.14
HIGH	---	---	---	---	---	27.95	29.49	33.90	31.17	35.76	36.79	36.94

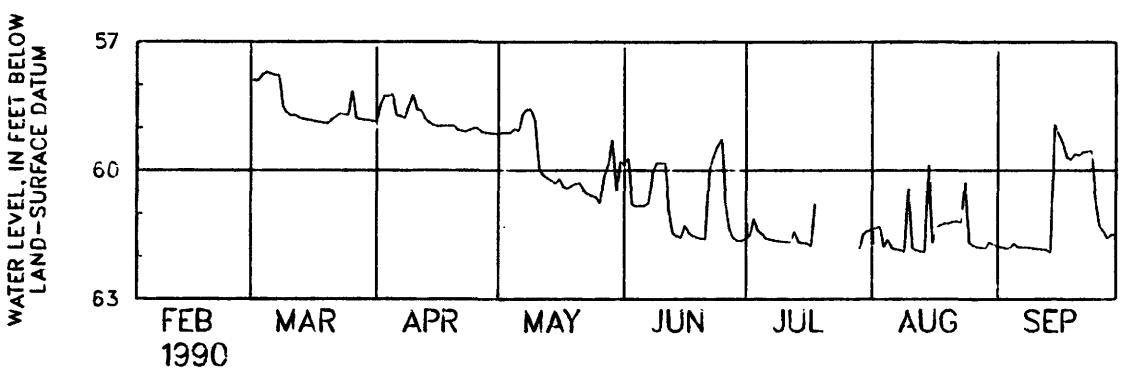


ST. CROIX, U.S. VIRGIN ISLANDS

174319064454401. Local number, 15.
LOCATION.--Lat 17°43'19", long 64°45'44".
Owner: U.S. Virgins Islands Water and Power Authority.
Name: WAPA 23a at Barren Spot well field.
AQUIFER.--Post Kingshill Limestone.
WELL CHARACTERISTICS.--Drilled observation well, diameter 4 in (0.10 m), cased 0-110 ft (0-33.5 m), screened 70-110 ft (21.3-33.5 m). Depth 110 ft (33.5 m).
DATUM.--Elevation of land-surface datum is about 65 ft (19.8 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.--Drilled on August 9, 1989. Automatic digital recorded installed on February 28, 1990.
PERIOD OF RECORD.--February 28, 1990 to September 30, 1990.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 57.7 ft (17.6 m) below land-surface datum, Mar. 5, 1990; lowest water level recorded, 61.97 ft (18.9 m) below land-surface datum, Sept. 14, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	57.90	58.86	59.15	59.87	61.58	61.37	61.77
2	---	---	---	---	---	57.90	58.44	59.12	59.72	61.51	61.34	61.79
3	---	---	---	---	---	57.90	58.25	59.12	60.81	61.12	61.31	61.81
4	---	---	---	---	---	57.76	58.26	59.12	60.83	61.41	61.79	61.81
5	---	---	---	---	---	57.71	58.23	59.02	60.82	61.48	61.61	61.70
6	---	---	---	---	---	57.75	58.73	59.08	60.82	61.59	61.82	61.79
7	---	---	---	---	---	57.78	58.73	58.67	60.76	61.61	61.84	61.79
8	---	---	---	---	---	57.78	58.78	58.57	60.00	61.63	61.86	61.79
9	---	---	---	---	---	58.53	58.48	58.57	59.82	61.65	61.88	61.80
10	---	---	---	---	---	58.66	58.24	58.85	59.83	61.66	60.41	61.82
11	---	---	---	---	---	58.72	58.59	59.97	59.83	61.66	61.83	61.83
12	---	---	---	---	---	58.71	58.60	60.11	60.98	61.68	61.87	61.84
13	---	---	---	---	---	58.77	58.80	60.18	61.49	61.42	61.89	61.85
14	---	---	---	---	---	58.80	58.89	60.24	61.53	61.68	61.90	61.91
15	---	---	---	---	---	58.82	58.94	60.30	61.56	61.69	59.86	58.91
16	---	---	---	---	---	58.83	58.97	60.20	61.28	61.70	61.71	59.17
17	---	---	---	---	---	58.86	58.96	60.40	61.46	61.76	61.31	59.38
18	---	---	---	---	---	58.87	58.96	60.42	61.53	60.79	61.27	59.72
19	---	---	---	---	---	58.89	58.96	60.36	61.56	---	61.23	59.75
20	---	---	---	---	---	58.90	58.95	60.31	61.59	---	61.23	59.61
21	---	---	---	---	---	58.81	59.06	60.30	61.59	---	61.19	59.65
22	---	---	---	---	---	58.74	59.08	60.48	59.96	---	61.19	59.57
23	---	---	---	---	---	58.67	59.09	60.55	59.66	---	61.19	59.56
24	---	---	---	---	---	58.69	59.05	60.59	59.42	---	60.26	59.54
25	---	---	---	---	---	58.70	59.01	60.62	59.27	---	61.70	60.66
26	---	---	---	---	---	58.14	59.02	60.75	60.78	---	61.76	61.30
27	---	---	---	---	---	58.79	59.10	60.12	61.40	---	61.79	61.42
28	---	---	---	---	---	58.80	59.12	59.85	61.59	---	61.80	61.59
29	---	---	---	---	---	58.82	59.13	59.28	61.64	61.82	61.81	61.49
30	---	---	---	---	---	58.82	59.14	60.49	61.64	61.47	61.67	61.49
31	---	---	---	---	---	58.85	---	59.78	---	61.40	61.73	---
LOW	---	---	---	---	---	58.90	59.14	60.75	61.64	---	61.90	61.91
HIGH	---	---	---	---	---	57.71	58.23	58.57	59.27	---	59.86	58.91



ST. THOMAS, U.S. VIRGIN ISLANDS

182050064580400. Local number, 1.
LOCATION.--Lat 18°20'50", long 64°58'04".
Owner: U.S. Government, Virgin Islands Government.
Name: USGS-8 (Family well - Thatch Farm).
AQUIFER.--Volcanic rocks of Cretaceous age.
WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m) 0-25 ft (0-7.62 m), open hole 25-80 ft (7.62-24.4 m). Depth 80 ft (24.4 m).
DATUM.--Elevation of land-surface datum is 80 ft (24.4 m) above mean sea level, from topographic map.
Measuring point: Top of 6 in (0.15 m) casing, 2.50 ft (0.76 m) above land-surface datum. Prior to Mar. 23, 1982, top of 6 in (0.15 m) casing, 1.30 ft (0.40 m) above land-surface datum.
REMARKS.--Non-potable public-water supply and observation well.
PERIOD OF RECORD.--October 1963 to August 1969, discontinued. March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.33 ft (0.71 m) below land-surface datum, Nov. 20, 1984; lowest water level measured, a60.26 ft (18.37 m) below land-surface datum, Mar. 8, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 19	10.03	Apr. 23	34.78	June 18	a49.31	Aug. 21	a59.10
Mar. 13	26.72	May 18	41.45	July 18	a58.57	Sept. 25	a51.34

182138064543100. Local number, 2.
LOCATION.--Lat 18°21'38", long 64°54'31".
Owner: Mahogany Run Resort.
Name: Mahogany 15.
AQUIFER.--Fractured rocks.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 145 ft (44.21 m).
DATUM.--Elevation of land-surface datum is 120 ft (36.6 m) above mean sea level, from topographic map.
Measuring point: Top of 6 in (0.15 m) casing, 1.20 ft (0.36 m) below land-surface datum.
REMARKS.--Observation well. Water levels affected by nearby pumping well.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.45 ft (3.79 m) below land-surface datum, July 1, 1986; lowest water level measured, 88.62 ft (27.01 m) below land-surface datum, Oct. 4, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 20	17.47	Apr. 19	29.89	June 18	39.18	Aug. 21	42.38
Mar. 13	25.45	May 18	34.81	July 18	41.60	Sept. 21	42.39

182138064542500. Local number, 3.
LOCATION.--Lat 18°21'38", long 64°54'25".
Owner: Mahogany Run Resort.
Name: Mahogany 16.
AQUIFER.--Fractured rocks.
WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 145 ft (44.21 m).
DATUM.--Elevation of land-surface datum is 130 ft (39.6 m) above mean sea level, from topographic map.
Measuring point: Top of 6 in (0.15 m) casing, 1.30 ft (0.40 m) below land-surface datum.
REMARKS.--Water levels affected by nearby pumping well.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.25 (3.12 m) below land-surface datum Jan. 21, 1988; lowest water level measured, a103.85 ft (31.65 m) below land-surface datum, Oct. 4, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 20	28.29	Apr. 19	35.74	June 18	44.03	Aug. 21	46.49
Mar. 13	31.52	May 18	39.98	July 18	45.96	Sept. 21	46.55

a Pumping.

182136064541900. Local number, 4.
LOCATION.--Lat 18°21'36", long 64°54'19".
Owner: Mahogany Run Resort
Name: Mahogany 17.
AQUIFER.--Fractured rock.
WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Depth 145 ft (44.21 m).
DATUM.--Elevation of land-surface datum is 140 ft (42.7 m) above mean sea level, from topographic map.
Measuring point: Top of 6 in (0.15 m) casing at land-surface datum.
REMARKS.--Public water supply. Water levels affected by nearby pumping well.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.49 ft (5.33 m) below land-surface datum, Dec. 11 1985; lowest water level measured, a60.40 ft (18.41 m) below land-surface datum, Sept. 10, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 20	25.52	Apr. 19	38.09	June 18	43.18	Aug. 21	43.80
Mar. 13	34.27	May 18	40.91	July 18	44.19	Sept. 21	43.90

182029064535200. Local number, 5.
LOCATION.--Lat 18°20'29", long 64°53'52".
Owner: Virgin Islands Government, V.I. Housing Authority.
Name: Donoe 3.
AQUIFER.--Volcanic rock undifferentiated. Fracture at 165 ft (50.3 m), from drilling log.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), cased 0-20 ft (0-6.10 m), open hole 20-400 ft (6.10-122 m). Depth 400 ft (122 m).
DATUM.--Elevation of land-surface datum is about 235 ft (71.6 m) above mean sea level, from topographic map.
Measuring point: Top of 6 in (0.15 m) casing, 2.30 ft (0.70 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.15 ft (8.88 m) below land-surface datum, Sept. 28, 1989; lowest water level measured, 90.98ft (27.73m) below land-surface datum, Apr. 30, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level
Dec. 19	70.02	Mar. 13	62.75	May 18	67.60

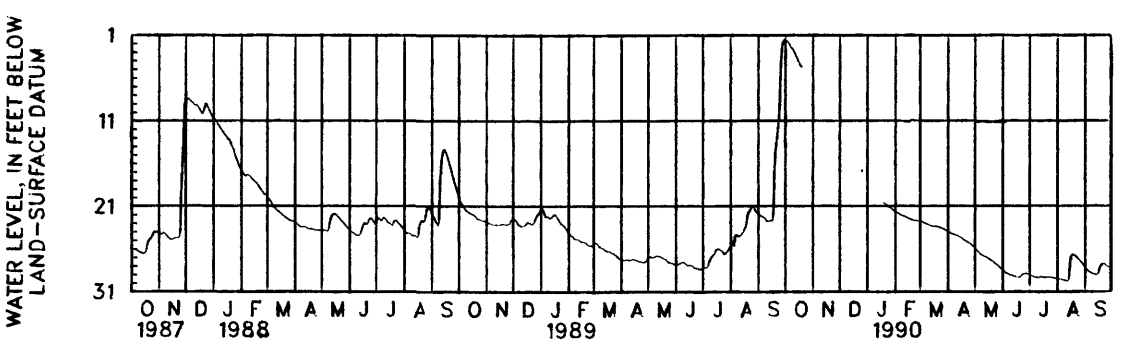
a Pumping.

ST. THOMAS, U.S. VIRGIN ISLANDS

182038064550300. Local number, 6.
LOCATION.--Lat 18°20'38", long 64°55'03".
Owner: U.S. Government, 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).
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 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.59	---	---	---	21.60	22.75	23.94	25.90	28.44	28.99	29.45	28.12
2	1.61	---	---	---	21.67	22.78	24.01	26.00	28.53	29.04	29.50	28.24
3	1.69	---	---	---	21.74	22.82	24.06	26.12	28.62	29.10	29.53	28.36
4	1.80	---	---	---	21.81	22.86	24.12	26.23	28.71	29.15	29.54	28.50
5	1.97	---	---	---	21.87	22.91	24.17	26.36	28.79	29.20	29.56	28.59
6	2.14	---	---	---	21.95	22.97	24.23	26.47	28.85	29.26	29.59	28.65
7	2.31	---	---	---	22.01	23.01	24.24	26.58	28.90	29.28	29.62	28.72
8	2.52	---	---	---	22.06	23.06	24.28	26.65	28.94	29.29	29.65	28.79
9	2.56	---	---	---	22.09	23.11	24.31	26.73	28.99	29.30	29.66	28.84
10	2.76	---	---	---	22.12	23.16	24.36	26.77	29.03	29.33	29.68	28.87
11	2.99	---	---	---	22.15	23.21	24.42	26.77	29.06	29.34	29.70	28.89
12	3.24	---	---	---	22.19	23.25	24.47	26.86	29.10	29.31	29.73	28.92
13	3.46	---	---	---	22.24	23.30	24.52	26.88	29.13	29.28	29.75	28.96
14	3.70	---	---	---	22.29	23.32	24.59	26.97	29.17	29.26	29.43	28.99
15	3.91	---	---	---	22.35	23.32	24.62	27.03	29.20	29.28	27.88	28.98
16	4.11	---	---	---	22.40	23.33	24.68	27.10	29.24	29.29	27.05	28.70
17	4.34	---	---	---	22.45	23.33	24.77	27.17	29.27	29.30	26.76	28.31
18	4.57	---	---	---	22.50	23.34	24.84	27.24	29.30	29.31	26.65	28.01
19	4.73	---	---	20.59	22.54	23.36	24.92	27.33	29.32	29.32	26.66	27.84
20	4.69	---	16.20	20.68	22.57	23.38	25.01	27.37	29.29	29.30	26.70	27.76
21	---	---	16.26	20.76	22.61	23.42	25.09	27.45	29.19	29.26	26.76	27.73
22	---	---	16.29	20.79	22.65	23.45	25.13	27.53	29.06	29.26	26.93	27.75
23	---	---	16.33	20.90	22.67	23.49	25.19	27.62	28.96	29.28	27.01	27.80
24	---	---	16.46	20.99	22.68	23.53	25.26	27.71	28.89	29.30	27.11	27.88
25	---	---	16.70	21.08	22.69	23.58	25.34	27.80	28.86	29.32	27.22	27.95
26	---	---	16.94	21.16	22.71	23.61	25.43	27.89	28.85	29.34	27.33	28.01
27	---	---	---	21.24	22.73	23.67	25.49	27.98	28.84	29.35	27.44	28.06
28	---	---	---	21.32	22.74	23.72	25.61	28.08	28.86	29.37	27.57	28.12
29	---	---	---	21.41	---	23.78	25.70	28.16	28.89	29.38	27.71	28.18
30	---	---	---	21.49	---	23.83	25.79	28.26	28.94	29.40	27.85	28.26
31	---	---	---	21.55	---	23.90	---	28.34	---	29.42	27.99	---
LOW	---	---	---	---	22.74	23.90	25.79	28.34	29.32	29.42	29.75	28.99
HIGH	---	---	---	---	21.60	22.75	23.94	25.90	28.44	28.99	26.65	27.73



182010064472600. Local number, 1.
LOCATION.--Lat 18°20'10", long 64°47'26".
Owner: U.S. Government, National Park Services.
Name: NPS-2 (Cruz Bay).
AQUIFER.--Volcanic rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled unused water-table well, diameter 6 in (0.15 m), 4 in (0.10 m) cased, 0-20 ft (0-6.10 m), open hole 20-99 ft (6.10-30.2 m). Depth 99 ft (30.2 m).
DATUM.--Elevation of land-surface datum is 60 ft (18.3 m) above mean sea level, from topographic map.
Measuring point: Top of 4 in (0.10 m) casing, 4.10 ft (1.25 m) above old land-surface datum after 1.40 ft (0.43 m) land fill and 2.70 ft (0.82 m) casing extension occurred. Prior to June 29, 1983, top of 4 in (0.10 m) casing, 1.40 ft (0.43 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumping nearby well.
PERIOD OF RECORD.--May 1964, discontinued. June 30, 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, +1.41ft (0.43 m) above land-surface datum, May 1, 1986; lowest water level measured, 42.56 ft (12.98 m) below land-surface datum, Aug. 30, 1967.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 19	13.00	Apr. 20	26.71	June 19	29.97	Aug. 24	16.56
Mar. 14	23.43	May 19	28.69	July 20	30.92	Sept. 19	23.94

182109064460300. Local number, 2.
LOCATION.--Lat 18°21'09", long 64°46'03".
Owner: U.S. Government, National Park Service.
Name: NPS-5 (Trunk Bay).
AQUIFER.--Volcanic rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled water-table production well, diameter 6 in (0.15 m), cased 0-12 ft (0-3.66 m), open hole 12-60 ft (3.66-18.3 m). Depth 60 ft (18.3 m).
DATUM.--Elevation of land-surface datum is 60 ft (18.3 m) above mean sea level, from topographic map.
Measuring point: Top of 6 in (0.15 m) casing, 0.70 ft (0.21 m) above land-surface datum. Prior to Mar. 24, 1982 top of 6 in (0.15 m) casing, 1.00 ft (0.30 m) above land-surface datum.
REMARKS.--Active water supply well for recreation facilities at Trunk Bay.
PERIOD OF RECORD.--August 1964 to December 1969, discontinued. March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.83 ft (3.91 m) below land-surface datum, Jan. 24, 1985; lowest water level measured, a57.29 ft (17.47 m) below land-surface datum, Nov. 27, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 19	a30.10	Apr. 20	27.40	June 19	a35.40	Aug. 24	38.53
Mar. 14	23.80	May 19	35.79	July 20	35.11	Sept. 19	38.12

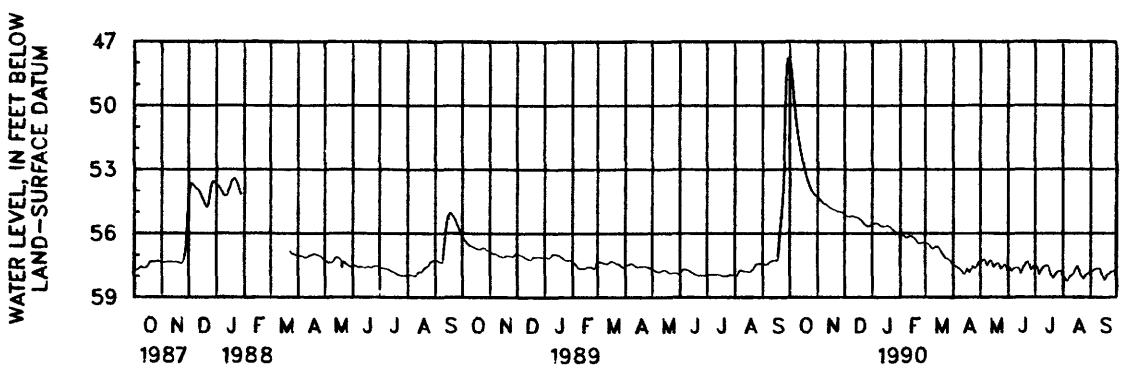
a Pumping.
+ Above land-surface datum.

182116064451000. Local number, 3.
LOCATION.--Lat 18°21'16", long 64°45'10".
Owner: U.S. Government, National Park Service.
Name: NPS-6 (Cinnamon Bay).
AQUIFER.--Volcanic rocks of Cretaceous Age.
WELL CHARACTERISTICS.--Drilled water-table abandoned production well, diameter 6-in (0.15 m), cased 0-51 ft (0-15.55 m), open hole 51-70 ft (15.55-21.34 m). Depth 70 ft (21.34 m).
DATUM.--Elevation of land-surface datum is about 60 ft (18.3 m) above mean sea level, from topographic map.
Measuring point: Hole on 6 in (0.15 m) casing, 2.00 ft (0.61 m) above land-surface datum. Prior to June 29, 1983, top of 6 in (0.15 m) casing at land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--August 1964 to December 1969, discontinued. March 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 41.12 ft (12.54 m) below land-surface datum, Aug. 15, 1969; lowest water level recorded, 63.15 ft (19.25 m) below land-surface datum, July 1, 1968.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47.90	54.28	55.12	55.57	56.05	56.44	57.45	57.32	57.74	57.51	57.95	57.82
2	48.15	54.33	55.15	55.56	56.05	56.44	57.49	57.30	57.67	57.49	58.04	57.81
3	48.55	54.37	55.19	55.54	56.06	56.45	57.52	57.29	57.63	57.49	58.11	57.79
4	48.97	54.42	55.20	55.53	56.08	56.48	57.55	57.27	57.60	57.62	58.18	57.74
5	49.44	54.47	55.20	55.52	56.12	56.52	57.57	57.23	57.75	57.79	58.21	57.71
6	49.88	54.51	55.21	55.52	56.15	56.58	57.58	57.20	57.69	57.92	58.23	57.69
7	50.29	54.57	55.21	55.53	56.18	56.64	57.63	57.32	57.64	57.81	58.13	57.66
8	50.66	54.60	55.19	55.58	56.21	56.68	57.65	57.43	57.62	57.71	58.05	57.65
9	50.97	54.62	55.18	55.61	56.19	56.72	57.69	57.50	57.61	57.64	58.00	57.65
10	51.29	54.64	55.17	55.65	56.17	56.70	57.74	57.39	57.61	57.60	57.98	57.65
11	51.60	54.66	55.20	55.67	56.14	56.66	57.80	57.32	57.61	57.57	57.95	57.65
12	51.86	54.69	55.23	55.67	56.12	56.62	57.86	57.29	57.61	57.53	57.93	57.65
13	52.11	54.73	55.24	55.67	56.12	56.61	57.89	57.28	57.60	57.51	57.92	57.84
14	52.32	54.77	55.24	55.67	56.12	56.65	57.91	57.27	57.71	57.51	57.81	57.95
15	52.52	54.80	55.24	55.67	56.17	56.60	57.82	57.43	57.84	57.50	57.70	58.06
16	52.72	54.83	55.27	55.66	56.20	56.67	57.72	57.56	57.88	57.50	57.61	58.15
17	52.88	54.85	55.30	55.64	56.23	56.74	57.66	57.52	57.72	57.63	57.56	58.19
18	53.06	54.86	55.33	55.63	56.27	56.82	57.74	57.48	57.59	57.79	57.52	58.06
19	53.23	54.88	55.36	55.66	56.33	56.88	57.82	57.44	57.52	57.93	57.67	57.98
20	53.39	54.90	55.41	55.69	56.39	56.94	57.73	57.41	57.46	58.02	57.79	57.94
21	53.52	54.93	55.46	55.73	56.44	57.01	57.72	57.39	57.40	58.10	57.92	57.92
22	53.65	54.95	55.51	55.77	56.46	57.07	57.62	57.39	57.35	58.03	57.99	57.90
23	53.77	54.98	55.56	55.80	56.48	57.12	57.53	57.54	57.33	57.97	58.06	57.85
24	53.85	54.98	55.59	55.83	56.47	57.17	57.57	57.66	57.32	57.92	58.13	57.81
25	53.97	54.98	55.63	55.86	56.45	57.17	57.61	57.60	57.47	57.85	58.03	57.79
26	54.02	54.98	55.66	55.89	56.44	57.18	57.64	57.56	57.60	57.80	57.97	57.78
27	54.09	55.00	55.67	55.94	56.44	57.23	57.54	57.52	57.70	57.78	57.94	57.77
28	54.15	55.02	55.67	55.97	56.44	57.26	57.47	57.48	57.63	57.78	57.92	57.75
29	54.19	55.05	55.64	56.00	---	57.31	57.40	57.45	57.58	57.76	57.89	57.70
30	54.23	55.07	55.61	56.03	---	57.36	57.35	57.57	57.53	57.75	57.85	57.65
31	54.26	---	55.58	56.05	---	57.42	---	57.71	---	57.75	57.84	---
LOW	54.26	55.07	55.67	56.05	56.48	57.42	57.91	57.71	57.88	58.10	58.23	58.19
HIGH	47.90	54.28	55.12	55.52	56.05	56.44	57.35	57.20	57.32	57.49	57.52	57.65

WTR YR 1990 MEAN 56.43 LOW 58.23 HIGH 47.90

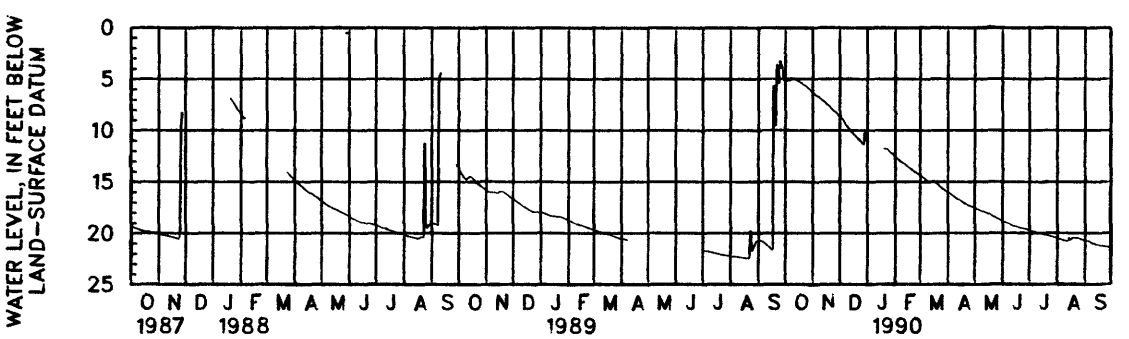


ST. JOHN, U.S. VIRGIN ISLANDS

182042064454500. Local number, 5.
LOCATION.--Lat 18°20'42", long 64°45'45".
Owner: Virgin Islands Government.
Name: DPW-6. (Sussanaberg)
AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 70 ft (21.3 m).
DATUM.--Elevation of land-surface datum is about 640 ft (195 m) above mean sea level, from topographic map. Measuring point: Top of 6 in (0.15 m) casing, 1.60 ft (0.49 m) above land-surface datum. Prior to June 28, 1983, top of 6 in (0.15 m) casing, 1.30 ft (0.40 m) above land-surface datum.
REMARKS.--Recording observation well.
PERIOD OF RECORD.--September 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.33 ft (0.40 m) below land-surface datum, May 18, 1986; lowest water level recorded, 22.78 ft (6.94 m) below land-surface datum, Oct. 5, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.18	6.26	8.74	11.07	12.50	14.34	16.02	17.52	18.81	19.72	20.50	20.72
2	5.16	6.33	8.78	11.10	12.58	14.43	16.06	17.58	18.84	19.76	20.53	20.74
3	5.14	6.42	8.81	---	12.68	14.49	16.12	17.63	18.88	19.78	20.55	20.75
4	5.11	6.52	8.85	---	12.74	14.53	16.18	17.67	18.92	19.81	20.57	20.76
5	5.14	6.58	8.99	---	12.81	14.62	16.24	17.68	18.95	19.84	20.60	20.76
6	5.15	6.63	9.13	---	12.92	14.67	16.30	17.71	18.99	19.86	20.64	20.77
7	5.08	6.72	9.27	---	13.00	14.75	16.36	17.75	19.04	19.86	20.66	20.94
8	5.03	6.75	9.41	---	13.05	14.84	16.43	17.80	19.07	19.88	20.68	20.94
9	5.01	6.85	9.55	---	13.12	14.90	16.51	17.84	19.11	19.91	20.70	20.95
10	4.98	6.91	9.63	---	13.15	14.93	16.55	17.85	19.14	19.93	20.71	21.00
11	5.01	7.00	9.75	---	13.22	14.95	16.61	17.87	19.19	19.95	20.73	21.03
12	5.05	7.08	9.85	---	13.26	14.97	16.65	17.91	19.23	19.98	20.74	21.05
13	5.07	7.15	9.97	---	13.34	14.99	16.70	17.95	19.27	20.00	20.75	21.09
14	5.10	7.19	10.09	---	13.41	15.00	16.76	17.99	19.29	20.02	20.45	21.11
15	5.17	7.27	10.19	---	13.49	14.89	16.80	18.02	19.32	20.04	20.66	21.13
16	5.22	7.38	10.26	---	13.57	14.87	16.85	18.08	19.33	20.08	20.63	21.15
17	5.26	7.45	10.37	---	13.61	14.95	16.92	18.12	19.36	20.10	20.53	21.17
18	5.32	7.51	10.47	---	13.69	15.03	16.99	18.14	19.40	20.12	20.46	21.20
19	5.38	7.58	10.56	---	13.78	15.11	17.03	18.18	19.46	20.14	20.44	21.21
20	5.39	7.63	10.63	11.81	13.83	15.19	17.10	18.26	19.48	20.19	20.43	21.25
21	5.48	7.75	10.73	11.79	13.90	15.27	17.13	18.31	19.50	20.22	20.43	21.26
22	5.55	7.88	10.84	11.77	13.98	15.35	17.18	18.35	19.51	20.24	20.43	21.28
23	5.58	7.97	10.90	11.80	14.02	15.44	17.26	18.40	19.52	20.26	20.42	21.30
24	5.64	8.06	10.97	11.87	14.07	15.52	17.29	18.44	19.54	20.29	20.47	21.32
25	5.70	8.12	11.08	11.97	14.11	15.59	17.33	18.48	19.57	20.31	20.49	21.32
26	5.80	8.20	11.18	12.06	14.19	15.66	17.35	18.52	19.59	20.33	20.52	21.32
27	5.90	8.32	11.29	12.14	14.24	15.72	17.39	18.57	19.61	20.36	20.56	21.34
28	5.93	8.39	11.35	12.19	14.29	15.78	17.43	18.62	19.64	20.38	20.61	21.36
29	6.01	8.48	10.22	12.25	---	15.85	17.46	18.67	19.67	20.42	20.64	21.36
30	6.12	8.58	10.82	12.34	---	15.91	17.49	18.72	19.70	20.44	20.67	21.37
31	6.20	---	10.95	12.43	---	15.96	---	18.75	---	20.46	20.71	---
LOW	6.20	8.58	11.35	---	14.29	15.96	17.49	18.75	19.70	20.46	20.75	21.37
HIGH	4.98	6.26	8.74	---	12.50	14.34	16.02	17.52	18.81	19.72	20.42	20.72



ST. JOHN, U.S. VIRGIN ISLANDS

182044064454600. Local number, 6.
LOCATION.--Lat 18°20'44", long 64°45'46".
Owner: Virgin Islands Government.
Name: DPW-5
AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 145 ft (44.2 m).
DATUM.--Elevation of land-surface datum is about 640 ft (195 m) above mean sea level, from topographic map. Measuring point: Top of 6 in (0.15 m) casing, 1.40 ft (0.43 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumping.
PERIOD OF RECORD.--September 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.85ft (5.74m) below land-surface datum, July 2, 1986; lowest water level measured, a107.4 ft (32.7 m) below land-surface datum, Sept. 19, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 19	24.93	Apr. 20	31.13	July 20	36.18	Sept. 20	40.68
Mar. 14	28.00	May 19	32.75	Aug. 24	38.92		

182044064454800. Local number, 7.
LOCATION.--Lat 18°20'44, long 64°45'48".
Owner: Virgin Islands Government.
Name: DPW-4
AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 60 ft (18.3 m).
DATUM.--Elevation of land-surface datum is about 640 ft (195 m) above mean sea level, from topographic map. Measuring point: Top of 6 in (0.15 m) casing, 0.60 ft (0.18 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.48 ft (4.41 m) below land-surface datum, July 2, 1986; lowest water level measured, a50.66 ft (15.44 m) below land-surface datum, Jan. 22, 1987.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 19	16.92	Apr. 20	30.88	June 19	24.15	Aug. 24	a43.58
Mar. 14	18.52	May 19	22.25	July 20	a44.88	Sept. 20	29.15

182044064454900. Local number, 8.
LOCATION.--Lat 18°20'44", long 64°45'49".
Owner: Virgin Islands Government.
Name: DPW-3.
AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m). Sounded depth 110 ft (33.5 m).
DATUM.--Elevation of land-surface datum is about 640 ft (195 m) above mean sea level, from topographic mpa. Measuring point: Top of 6 in (0.15 m) casing, 1.80 ft (0.55 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.17ft (3.71 m) below land-surface datum, July 2, 1986; lowest water level measured, 69.58 ft (21.21 m) below land-surface datum, Feb. 27, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 19	13.53	Apr. 20	16.89	June 19	19.80	Aug. 24	23.39
Mar. 14	14.79	May 19	18.13	July 20	a54.40		

a Pumping.

182044064455000. Local number, 9.
LOCATION.--Lat 18°20'44", long 64°45'50".
Owner: Virgin Islands Government.
Name: DPW-2.
AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).
Sounded depth 65 ft (19.8 m).
DATUM.--Elevation of land-surface datum is about 640 ft (195 m) above mean sea level, from topographic map.
Measuring point: Top of 6 in (0.15 m) casing, 2.00 ft (0.61 m) above land-surface datum.
REMARKS.--Observation well.
PERIOD OF RECORD.--September 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.93 ft (4.55 m) below land-surface datum, Dec. 19, 1989; lowest water level measured, 52.84 ft (16.1 m) below land-surface datum, Mar 22, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 19	14.93	Apr. 20	21.02	June 19	26.10	Aug. 24	a52.75
Mar. 14	17.46	May 19	23.14	July 20	a49.88	Sept. 20	36.52

182044064455200. Local number, 10.
LOCATION.--Lat 18°20'44", long 64°45'52".
Owner: Virgin Islands Government.
Name: DPW-1.
AQUIFER.--Louisenhoj Formation.
WELL CHARACTERISTICS.--Drilled public supply water-table well, diameter 6 in (0.15 m), cased 6 in (0.15 m).
Sounded depth 60 ft (18.3 m).
DATUM.--Elevation of land-surface datum about 640 ft (195 m) above mean sea level.
Measuring point: Top of 6 in (0.15 m) casing, 2.00 ft (0.61 m) above land-surface datum.
REMARKS.--Observation well. Water levels affected by pumping.
PERIOD OF RECORD.--September 1982 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.54 ft (4.13 m) below land-surface datum, Dec. 19, 1989; lowest water level measured, 38.92 ft (11.86 m) below land-surface datum, Feb. 27, 1986

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATIONS

Date	Water level	Date	Water level	Date	Water level	Date	Water level
Dec. 19	13.54	Apr. 20	18.15	June 19	23.53	Aug. 24	32.45
Mar. 14	16.05	May 19	20.96	July 20	26.04	Sept. 20	34.38

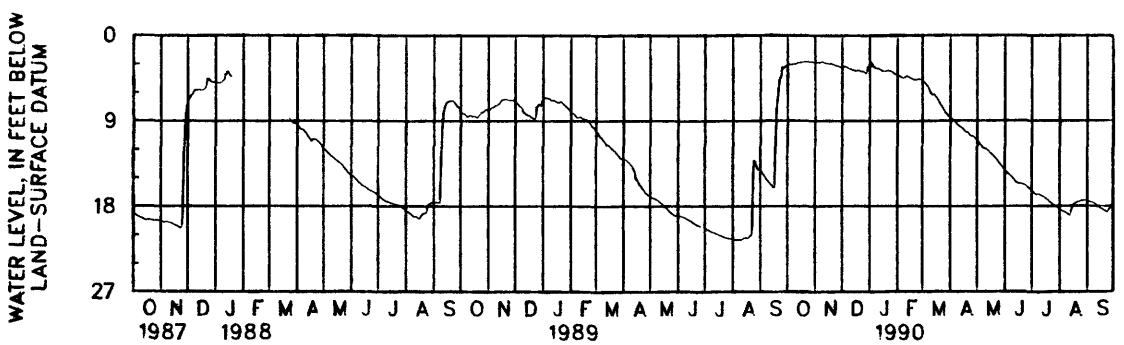
ST. JOHN, U.S. VIRGIN ISLANDS

181956064464500. Local number, 11.
LOCATION.--Lat 18°19'56", long 64°46'45".
Owner: 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).
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, 25.25 ft (7.70 m) below land-surface datum, Oct. 2, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS OBSERVATION AT 1200

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.11	2.82	3.36	3.44	4.16	4.73	8.66	11.06	14.20	16.37	18.26	17.41
2	3.08	2.83	3.39	3.36	4.16	4.83	8.75	11.19	14.28	16.44	18.34	17.44
3	3.06	2.84	3.26	2.83	4.21	4.93	8.82	11.36	14.38	16.53	18.41	17.47
4	3.04	2.87	3.25	3.09	4.34	5.04	8.90	11.47	14.48	16.63	18.47	17.52
5	3.09	2.82	3.30	3.26	4.37	5.16	8.97	11.55	14.59	16.71	18.51	17.55
6	3.06	2.85	3.33	3.34	4.43	5.25	9.02	11.65	14.66	16.77	18.54	17.58
7	3.03	2.89	3.38	3.35	4.48	5.37	9.16	11.77	14.73	16.75	18.59	17.64
8	3.01	2.73	3.44	3.45	4.47	5.60	9.28	11.88	14.82	16.75	18.64	17.69
9	2.99	2.77	3.51	3.53	4.43	5.84	9.39	11.94	14.93	16.75	18.69	17.73
10	2.99	2.79	3.47	3.50	4.34	6.04	9.49	11.91	15.04	16.76	18.76	17.78
11	2.99	2.85	3.55	3.42	4.26	6.18	9.56	11.93	15.15	16.81	18.82	17.86
12	2.92	2.89	3.57	3.53	4.29	6.27	9.64	12.02	15.27	16.87	18.89	17.93
13	2.88	2.90	3.62	3.60	4.34	6.31	9.67	12.10	15.38	16.93	18.96	18.01
14	2.87	2.93	3.65	3.66	4.41	6.16	9.77	12.19	15.48	16.97	18.51	18.09
15	2.86	2.96	3.65	3.75	4.47	6.32	9.87	12.29	15.57	17.03	18.21	18.16
16	2.86	2.96	3.69	3.75	4.52	6.46	9.93	12.40	15.58	17.10	18.01	18.20
17	2.84	2.97	3.76	3.75	4.55	6.58	10.04	12.48	15.60	17.19	17.86	18.24
18	2.82	2.98	3.69	3.75	4.65	6.74	10.17	12.56	15.60	17.24	17.74	18.28
19	2.80	2.96	3.60	3.76	4.65	6.89	10.22	12.65	15.63	17.33	17.66	18.35
20	2.78	3.00	3.67	3.71	4.67	7.09	10.16	12.74	15.65	17.42	17.60	18.42
21	2.80	3.05	3.73	3.60	4.67	7.27	10.29	12.86	15.68	17.51	17.55	18.48
22	2.76	3.09	3.81	3.66	4.71	7.40	10.42	12.97	15.72	17.58	17.51	18.56
23	2.78	3.14	3.83	3.75	4.66	7.55	10.54	13.08	15.77	17.67	17.49	18.60
24	2.76	3.15	3.74	3.72	4.60	7.69	10.59	13.20	15.83	17.75	17.47	18.58
25	2.78	3.17	3.80	3.74	4.58	7.85	10.61	13.34	15.89	17.83	17.43	18.41
26	2.76	3.21	3.86	3.84	4.61	8.03	10.60	13.46	15.95	17.88	17.40	18.25
27	2.79	3.26	3.95	3.88	4.65	8.16	10.65	13.59	16.01	17.92	17.38	18.14
28	2.79	3.29	4.03	3.96	4.67	8.26	10.78	13.70	16.09	17.97	17.37	18.06
29	2.79	3.31	3.64	4.05	---	8.37	10.91	13.82	16.18	18.06	17.38	17.98
30	2.80	3.33	3.25	4.11	---	8.49	11.00	13.94	16.27	18.13	17.37	17.92
31	2.81	---	3.40	4.15	---	8.59	---	14.07	---	18.20	17.40	---
LOW	3.11	3.33	4.03	4.15	4.71	8.59	11.00	14.07	16.27	18.20	18.96	18.60
HIGH	2.76	2.73	3.25	2.83	4.16	4.73	8.66	11.06	14.20	16.37	17.37	17.41

WTR YR 1990 MEAN 9.62 LOW 18.96 HIGH 2.73



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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54×10^{1}	millimeters (mm)
	2.54×10^{-2}	meters (m)
feet (ft)	3.048×10^{-1}	meters (m)
miles (mi)	1.609×10^{0}	kilometers (km)
	Area	
acres	4.047×10^{3}	square meters (m^2)
	4.047×10^{-1}	square hectometers (hm^2)
	4.047×10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590×10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785×10^{0}	liters (L)
	3.785×10^{0}	cubic decimeters (dm^3)
	3.785×10^{-3}	cubic meters (m^3)
million gallons	3.785×10^{3}	cubic meters (m^3)
	3.785×10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832×10^{1}	cubic decimeters (dm^3)
	2.832×10^{-2}	cubic meters (m^3)
cfs-days	2.447×10^{3}	cubic meters (m^3)
	2.447×10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233×10^{3}	cubic meters (m^3)
	1.233×10^{-3}	cubic hectometers (hm^3)
	1.233×10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832×10^{1}	liters per second (L/s)
	2.832×10^{1}	cubic decimeters per second (dm^3/s)
	2.832×10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309×10^{-2}	liters per second (L/s)
	6.309×10^{-2}	cubic decimeters per second (dm^3/s)
	6.309×10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381×10^{1}	cubic decimeters per second (dm^3/s)
	4.381×10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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