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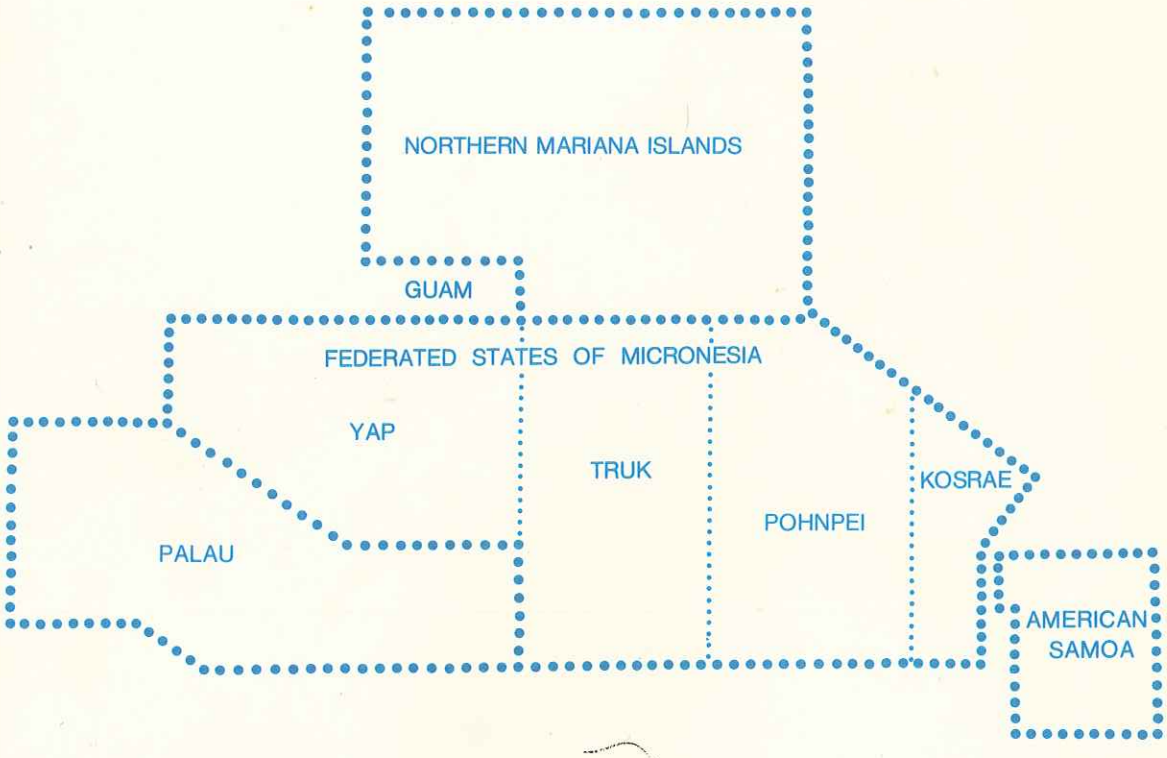
Water Resources Data Hawaii and other Pacific Areas Water Year 1988

Volume 2. Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, and American Samoa



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT HI-88-2
Prepared in cooperation with the Governments of Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, American Samoa, and with other agencies

CALENDAR FOR WATER YEAR 1988

1987

OCTOBER

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4	5	6	7	8	9	10
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1988

JANUARY

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AUGUST

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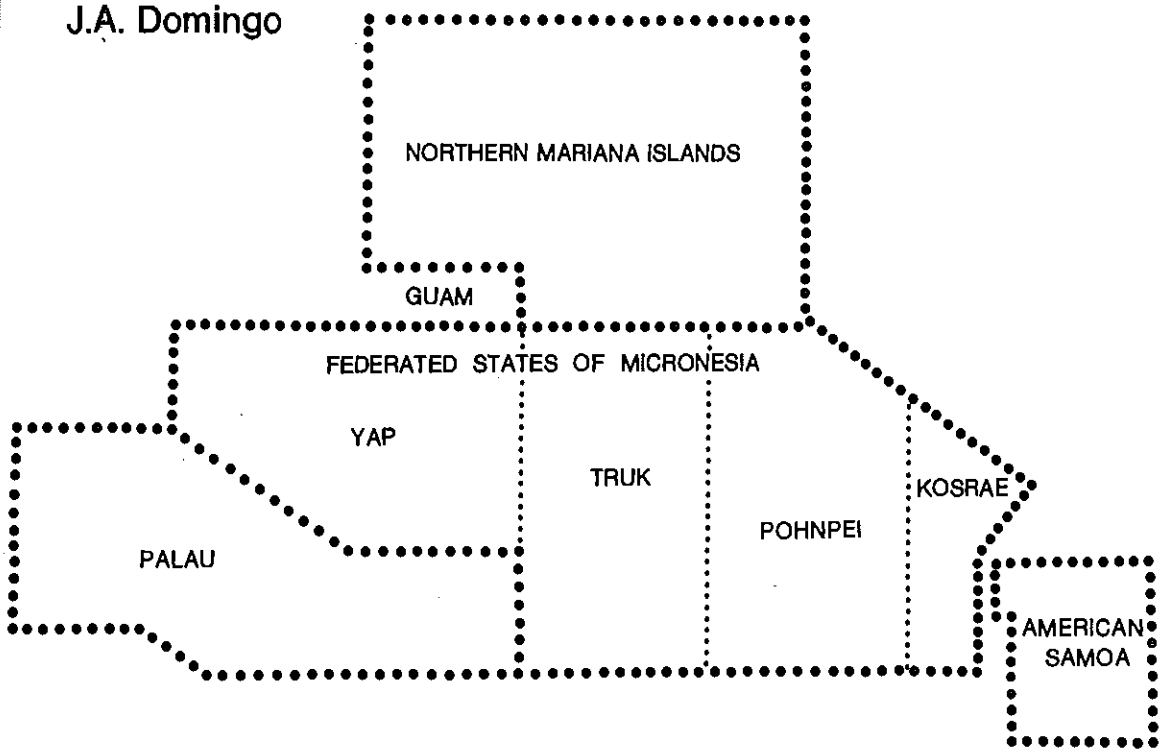
Water Resources Data Hawaii and other Pacific Areas Water Year 1988

Volume 2. Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, and American Samoa

by R.H. Nakahara, J.J.S. Yee, I. Yamashiro, G.A. Tateishi, and J.A. Domingo



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT HI-88-2
Prepared in cooperation with the Governments of Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, American Samoa, and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in Hawaii
and other Pacific Areas write to
District Chief, Water Resources Division
U.S. Geological Survey
677 Ala Moana Boulevard, Suite 415
Honolulu, Hawaii 96813

1990

PREFACE

This volume of the annual hydrologic data report of Hawaii and other Pacific Areas 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, and the Pacific Islands. 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. Hydrologic data for Hawaii and other Pacific Areas are contained in two volumes:

Volume 1. Hawaii
Volume 2. Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, and American Samoa.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey 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 individuals contributed significantly to the collection, processing, and tabulation of the data:

Gregg N. Ikehara	Florentin Yangilmau (Palau)
Thomas G. Kane III	Adrian Gimed (Yap)
Donald Baker	Siongau Esra (Truk)
Michael Siguenza	Waltick Panuel (Pohnpei)
Lodie P. Celebrado	Winner Alik (Kosrae)
Vaughn E. Kunishige	Frank Taotoai (American Samoa)

This report was prepared in cooperation with the Governments of Guam, Northern Mariana Islands, Federated States of Micronesia, Palau, American Samoa, and with other agencies under the general supervision of William Meyer, District Chief, Hawaii.

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(C)

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13. Type of Report & Period Covered

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15. Supplementary Notes

Prepared in cooperation with the Governments of Guam, Northern Mariana Islands Federated States of Micronesia, Palau Islands, American Samoa, and with other agencies.

16. Abstract (Limit: 200 words)

Volume 2 of water resources data for the 1988 water year for other Pacific areas consists of records of streamflow and stage of a lake and a reservoir; and water levels and water quality in wells. This report contains discharge records for 27 gaging stations; stage only record for 2 gaging stations; water temperature for 26 gaging stations; and water levels for 36 observations wells and water quality for 101 ground-water sites. Also included are 15 low-flow and 2 crest-stage partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating Governments and Federal agencies in other Pacific areas.

17. Document Analysis a. Descriptors

*Pacific area, *Hydrologic data, *Surface water, *Ground water, *Water quality, Flow rate, Gaging stations, Chemical analyses, Sediments, Reservoirs, Water temperatures, Sampling sites, Water levels.

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

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GAGING STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

Letters after station name designate type of data:
(d) discharge, (e) stage or gage height, (t) temperature, (c) chemical

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Letters after well number designate type of data:
(c) chemical, (t) water temperature, (w) water level

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MARIANA ISLANDS

ISLAND OF SAIPAN
(14-0641-01) 150659145415501 (ct) 79
(14-0642-01) 150649145421201 (ct) 79
(14-0642-02) 150655145420501 (ct) 79
(14-0642-03) 150656145420301 (ct) 79
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(14-0742-11) 150731145430870 (ct) 79
(14-0743-09) 150732145432070 (ct) 79
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(14-0743-11) 150730145431370 (ct) 79
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(14-0743-18) 150737145440670 (ct) 79
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(14-0743-22) 150731145440370 (ct) 79
(14-0743-23) 150738145435870 (ct) 79
(14-0743-24) 150743145435470 (ct) 80
(14-0743-25) 150740145435570 (ct) 80
(14-0743-26) 150733145435970 (ct) 80
(14-0743-27) 150722145434570 (ct) 80
(14-0743-28) 150729145435870 (ct) 80
(14-0743-29) 150729145435570 (ct) 80
(14-0843-02) 150905145435670 (ct) 80
(14-0843-04) 150843145434770 (ct) 80
(14-0943-07) 150948145431501 (ct) 80
(14-0943-08) 150956145431301 (ct) 80
(14-1044-03) 151029145455401 (ct) 80
(14-1045-08) 151026145454970 (ct) 80
(14-1045-09) 151032145460370 (ctw) 76
(14-1045-12) 151020145455201 (ct) 81
(14-1045-14) 151029145454770 (ct) 81
(14-1046-03) 151021145460870 (ct) 81
(14-1143-02) 151127145434270 (ct) 81
(14-1144-05) 151133145445770 (ct) 81
(14-1144-07) 151130145445970 (w) 78
(14-1244-08) 151248145443770 (ct) 81
(14-1244-09) 151250145444170 (ct) 81
(14-1244-16) 151255145443770 (ct) 81
(14-1244-18) 151256145443770 (ct) 81
(14-1344-18) 151309145443870 (ct) 81
(14-1344-26) 151339145444301 (ct) 81
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ISLAND OF GUAM
(18-2645-07) 132624144452771 (w) 82
(18-2647-01) 132615144470571 (w) 91
(18-2647-12) 132626144471771 (ctw) 92
(18-2648-02) 132644144480871 (w) 83
(18-2745-03) 132758144450571 (w) 93
(18-2745-07) 132742144452971 (w) 93
(18-2746-06) 132736144461671 (ctw) 94
(18-2846-01) 132824144484271 (w) 84
(18-2847-08) 132813144472771 (w) 85
(18-2848-03) 132806144481871 (ctw) 95
(18-3049-03) 133032144491871 (w) 86
(18-3049-05) 133047144500171 (w) 87
(18-3050-04) 133034144500871 (ctw) 96
(18-3148-02) 133115144484971 (w) 97
(18-3149-05) 133119144491771 (ctw) 88
(18-3150-10) 133120144505471 (w) 97
(18-3249-02) 133224144495271 (ctw) 90
(18-3651-05) 133628144513271 (w) 98

CAROLINE ISLANDS

PALAU ISLANDS
(20-2126-01) 072110134264070 (ct) 99
(20-2126-02) 072105134264670 (ct) 100
(20-2131-01) 072151134310970 (ct) 101

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YAP ISLANDS
(25-2904-01) 092919138045670 (ctw)..... 104
(25-2904-02) 092918138045470 (ctw)..... 105
(25-2905-01) 092915138050270 (ctw)..... 106
(25-2905-02) 092920138050270 (w)..... 102
(25-2905-03) 092616138050670 (ctw)..... 107
(25-2905-06) 092926138050470 (w)..... 108
(25-3109-01) 093158138095770 (ctw)..... 109
(25-3109-02) 093159138095870 (ctw)..... 110
(25-3109-03) 093157138095670 (ctw)..... 111
(25-3109-04) 093154138095370 (w)..... 112
(25-3209-01) 093204138095970 (w)..... 103
(25-3210-01) 093217138101270 (w)..... 112

TRUK ISLANDS
(30-2550-02) 072504151503370 (ct)..... 113
(30-2550-03) 072552151502070 (ct)..... 113
(30-2650-01) 072658151511970 (ct)..... 113
(30-2650-02) 072654151511870 (ct)..... 113
(30-2650-05) 072704151511070 (ct)..... 113
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(30-2750-01) 072708151511770 (ct)..... 113
(30-2750-02) 072707151511070 (ct)..... 113
(30-2750-03) 072708151512170 (ct)..... 113
(30-2751-01 072710151512570 (ct)..... 113

POHNPEI ISLANDS
(40-5509-03) 065510158092371 (ct)..... 114
(40-5611-03) 065648158115671 (ct)..... 115
(40-5612-02) 065653158120371 (ct)..... 116
(40-5612-03) 085653158120671 (ct)..... 117
(40-5713-02) 065705158130171 (ct)..... 118

KOSRAE ISLANDS
(44-1900-01) 051926163002670 (ct)..... 119
(44-1900-02) 051930163003170 (ct)..... 120
(44-1900-03) 051953163000970 (ct)..... 121
(44-1900-04) 051927163002870 (ct)..... 122
(44-2158-01) 052136162585670 (ct)..... 123
(44-2158-02) 052118162582970 (ct)..... 124
(44-2159-03) 052149162581470 (ct)..... 125

SAMOA ISLANDS

ISLAND OF TUTUILA
(90-1534-01) 141532170340101 (ct)..... 130
(90-1535-01) 141546170354690 (ct)..... 130
(90-1636-02) 141647170360490 (ct)..... 130
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(90-2045-03) 142055170455990 (w)..... 128
(90-2046-03) 142042170463001 (ct)..... 133
(90-2144-08) 142102170445490 (ct)..... 133
(90-2144-12) 142102170445601 (w)..... 129
(90-2145-03) 142102170455601 (ct)..... 133

WATER RESOURCES DATA FOR HAWAII AND OTHER PACIFIC AREAS, 1988

Volume 2

INTRODUCTION

Water resources data for the 1988 water year for Hawaii and other Pacific areas consist of records of stage, discharge, and water quality of streams, springs, and reservoir; and water-levels and water quality of walls. This report contains discharge records for 27 gaging stations; stage only records for 2 gaging stations; water temperature for 26 stations; and water levels for 38 observation wells and water quality for 101 ground-water sites. Also included are data for 15 low-flow and 2 crest-stage partial-record stations. Additional water data were collected at various sites, not part of the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State, Territorial, and Federal agencies in the Pacific areas.

Records of discharge and stsge of streams, and contents or stage of lakea and reservoirs were firat published in a series of U.S. Geological Survey water-supply papers entitled, "Surface Water Supply of the United States." Through September 30, 1960 (June 30, 1980, for Hawsii and other Pacific Areas), these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. The records for other Pacific areas were contained in one volume entitled "Surface Water Supply of Mariana, Caroline, and Samoa Ialands." Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitlsd "Ground Water Levels in the United States." Water-supply papers are available in the libraries of the principal cities in the United States or may be purchased from the Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, Virginia, 22202.

For water years 1961 through 1970, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1984 through 1970 were similarly released either in separate reports or in conjunction with streamflow records.

Beginning with the 1971 water year, water data for streamflow, water quality, and ground water are published in official Survey reports on a State-boundary basis. These official Survey reports carry 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 idsntified as "U.S. Geological Survey Water-Data Report HI-88-2."

In this volume, the spelling of names, drainage areas, and locations for most stations in Palau, Yap, Truk, Ponape, and Kosrae differ from those used in "Water Resources Data for Hawaii and other Pacific Areas", 1968 to 1980. These had been based on 1954 U.S. Army Map Service series W 856 maps with a scale of 1:25,000 snd 10-meter contours (International spheroid). The revised names and figures were based on the 1981 USGS maps with 1:10,000 scale and 5-meter contours (Clarke spheroid of 1866).

The 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 the back of the title page or by telephone (808) 541-2653.

COOPERATION

The U.S. Geological Survey has had cooperative agreements for the systematic collection of streamflow records with the Government of Guam since 1953, with the Government of American Samoa since 1957, and with the other Pacific Islands since 1968. Organizations that supplied data are acknowledged in station descriptions. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Government of Guam, Joseph P. Ada, Governor.
Government of Northern Mariana Islands, P. P. Tenorio, Governor.
Federated States of Micronesia, J. Haglelgam, President.
  State of Yap, Petrus Tun, Governor.
  State of Truk, Gideon Doone, Governor.
  State of Pohnpei, Resio Moses, Governor.
  State of Kosrae, Yosiwo George, Governor.
Republic of Palau, Lazarus Salii, President.
Government of American Samoa, A. P. Lutali, Governor.

Assistance in the form of funds or services was given by the Public Works, U.S. Navy, and the Corps of Engineers, U.S. Army.

SUMMARY OF HYDROLOGIC CONDITIONS

Basad on the records at six indax streams in the area covered by thia volume, as shown in figure 1; the annual mean runoff for 1988 water year was in the normal range at the indax stations on Guam and Pohnpei and deficient (flow in the lower 25 percent of record) at Palau, Yap, Kosrae, and American Samoa. Monthly mean flow was deficient at all these stations for the month of April.

Streamflow at the Ylig River near Yona, Guam (fig. 2) was normal for October through Decamber, February through April, June, and July; excessive (flow in the uppper 25 percent of record) for January; and deficient for May, August, and September. Annual mean runoff was 71 percent of the annual median.

At the Diongradid River (fig. 2) on the island of Babelthuap, Palau Islands, monthly mean was excessive for June; normal for October, November, March through May, and July; and deficient for December through February, August, and September. Annual mean runoff was 73 percent of the annual median.

On the island of Yap, Caroline Islands, streamflow at the Qaringeel Stresm (fig. 3) was normal for November, February, April through July, and September; and deficiant for the remaining months of the year. Annual mean discharge was 48 percent of the annual medien.

Streamflow at the Nsnpil River in Pohnpei (fig. 3) was excessive for October through December, and May; normal for January, March, April, and Septsmber; and deficient for February, June through August. Annual mean discharge was 93 percent of the annual median.

On the island of Kosrae, streamflow at the Melo River (fig. 4) was excessive for May; normal for October, February, March, and September; and deficient for November through January, April, and June through August. Annual mean discharge was 74 percent of the annual median.

At Tutuila, American Samoa, streamflow at Aasu (fig. 4) was excessive for March and July; normal for December, February, April, June, and September; and deficient for October, November, January, May, end August. Annual mean runoff was 74 percent of the annual median.

DEFINITION OF TERMS

Definition of terms related to streamflow, water-quality, and other hydrologic data are defined as follows:

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or 325,851 gallons or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

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, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as all the organisms which produce colonies withing 24 hours when incubated at 35°C ± 0.5°C on M-Endoagar (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

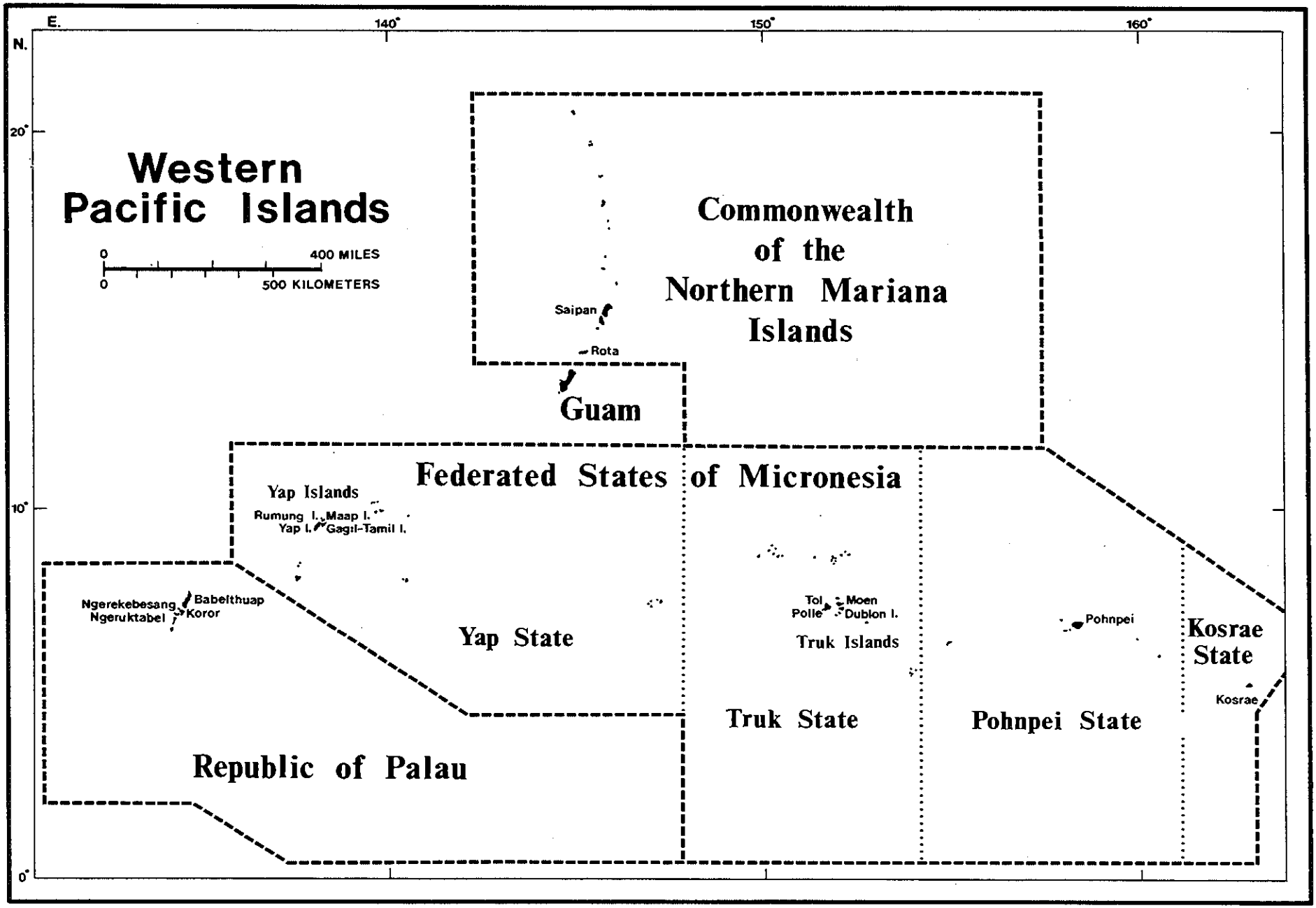
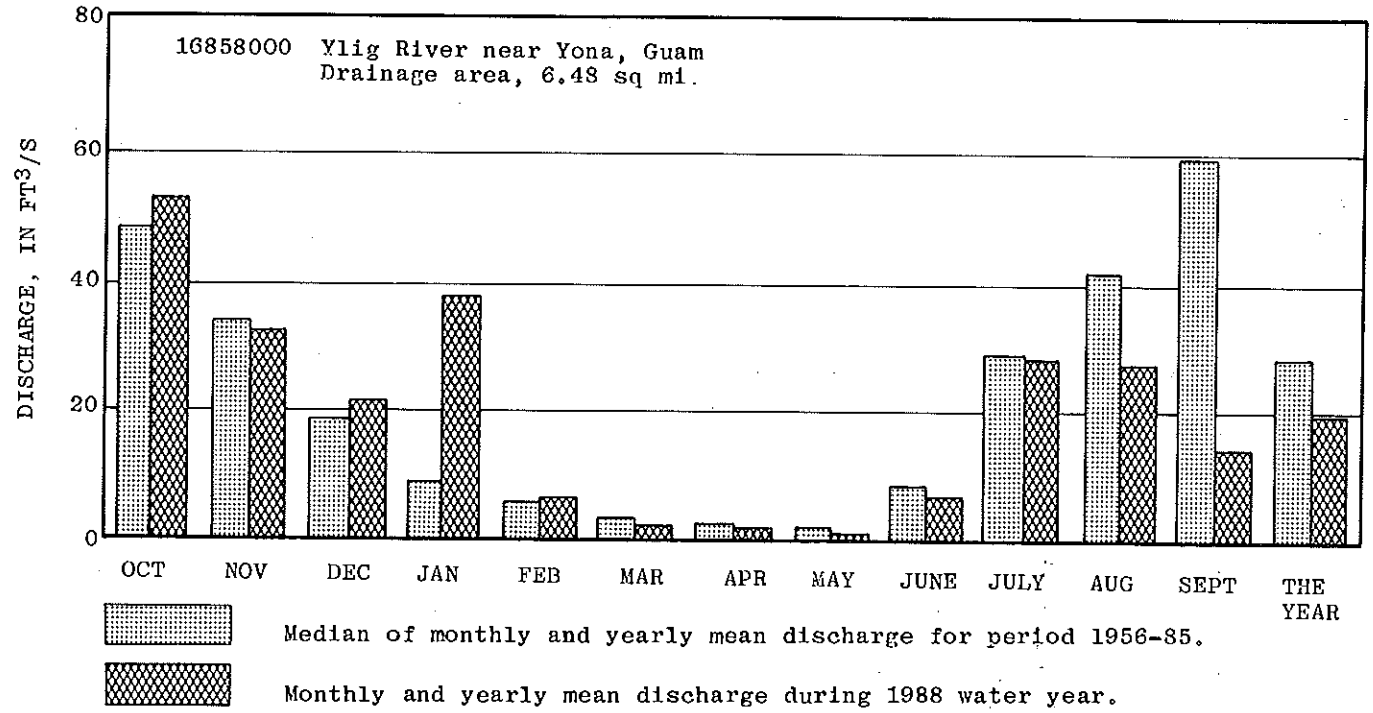


FIGURE 1.--LOCATIONS OF WESTERN PACIFIC ISLANDS.



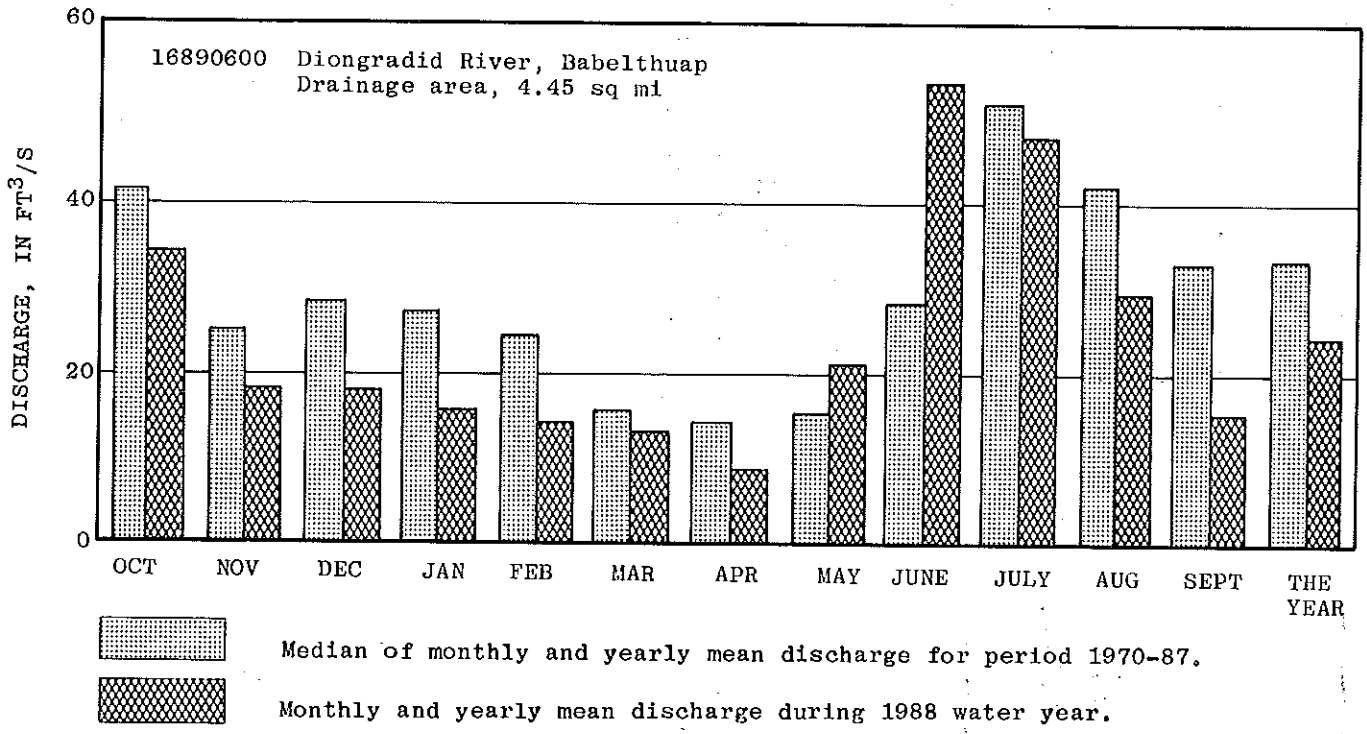
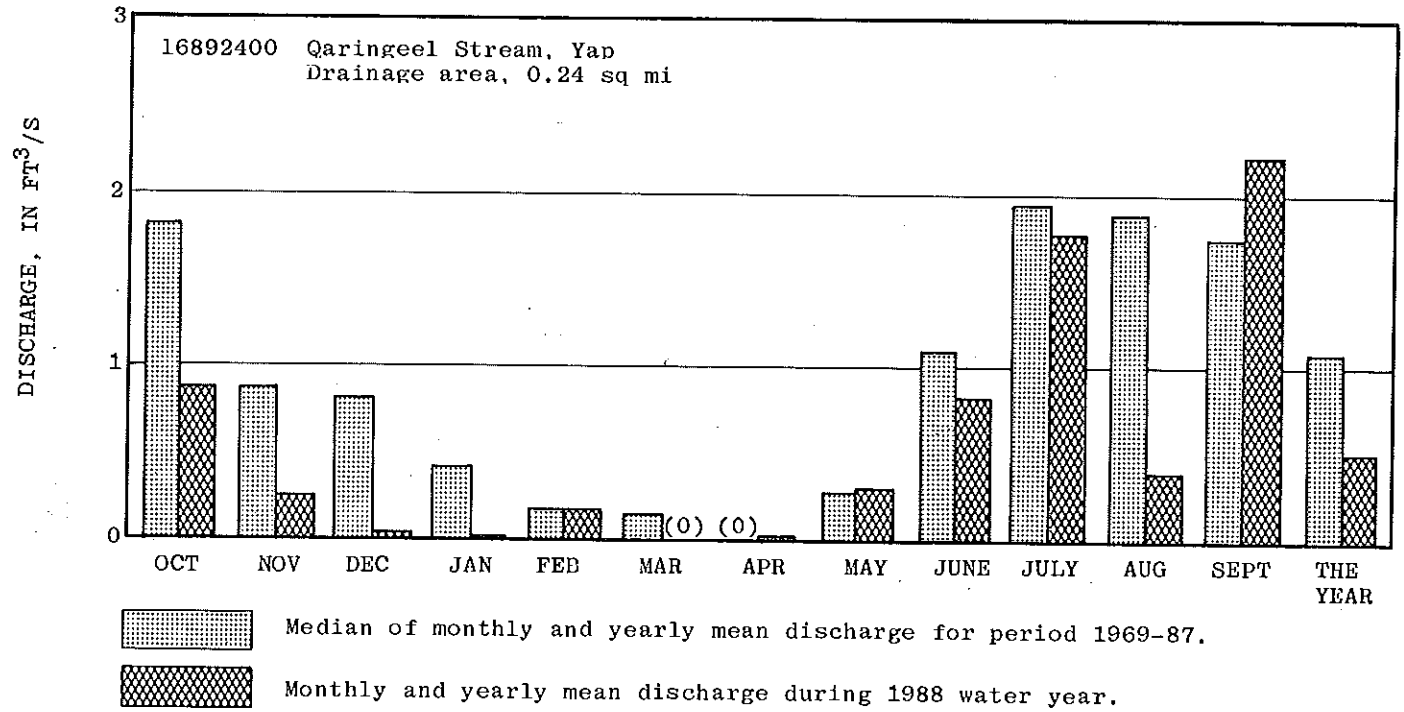


FIGURE 2.--DISCHARGE DURING 1988 WATER YEAR COMPARED WITH MEDIAN DISCHARGE FOR REPRESENTATIVE STREAMS ON GUAM AND BABELTHUAP.



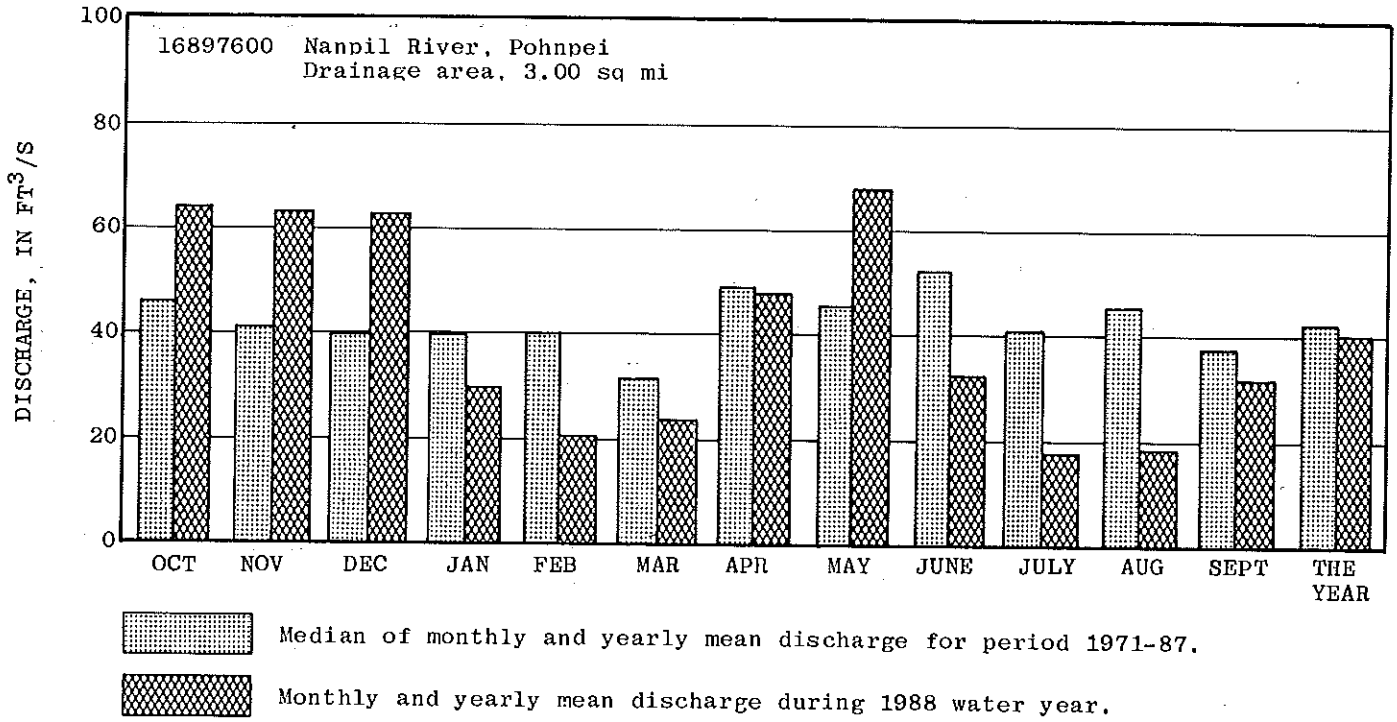
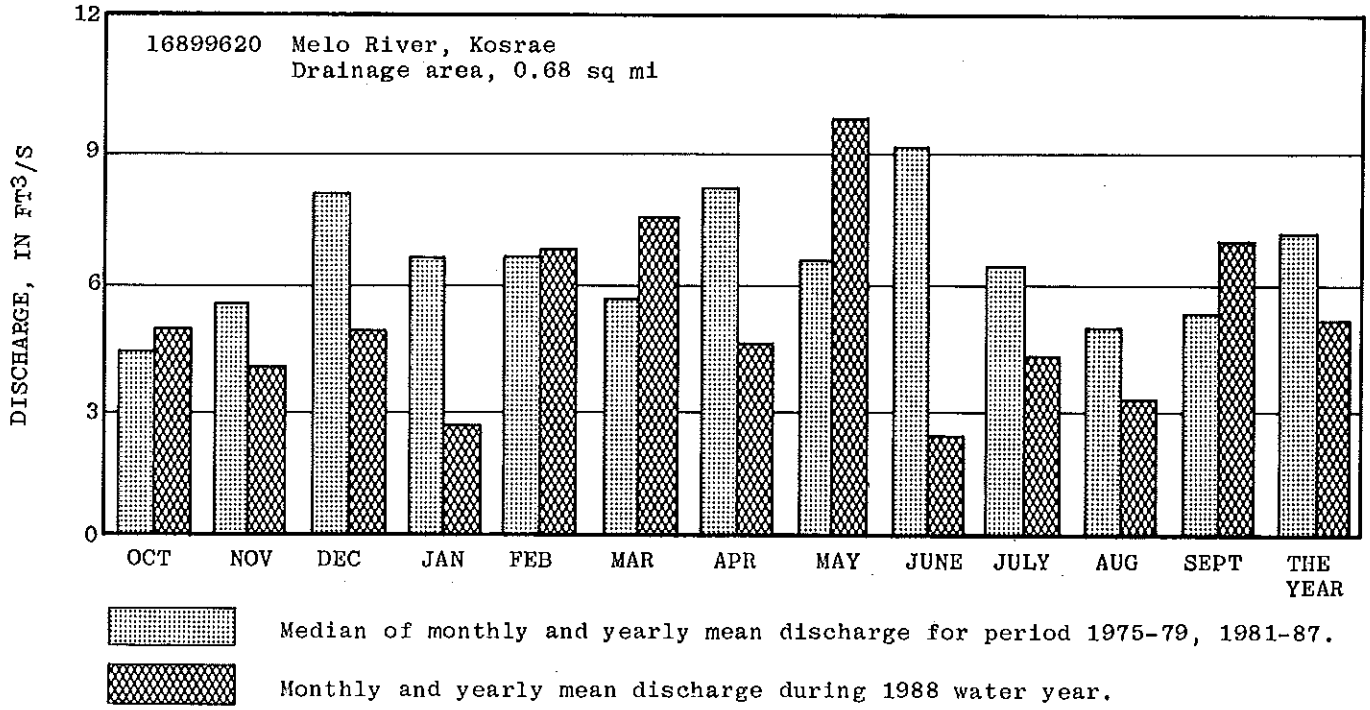


FIGURE 3.--DISCHARGE DURING 1988 WATER YEAR COMPARED WITH MEDIAN DISCHARGE FOR REPRESENTATIVE STREAMS ON YAP AND POHNPEI.



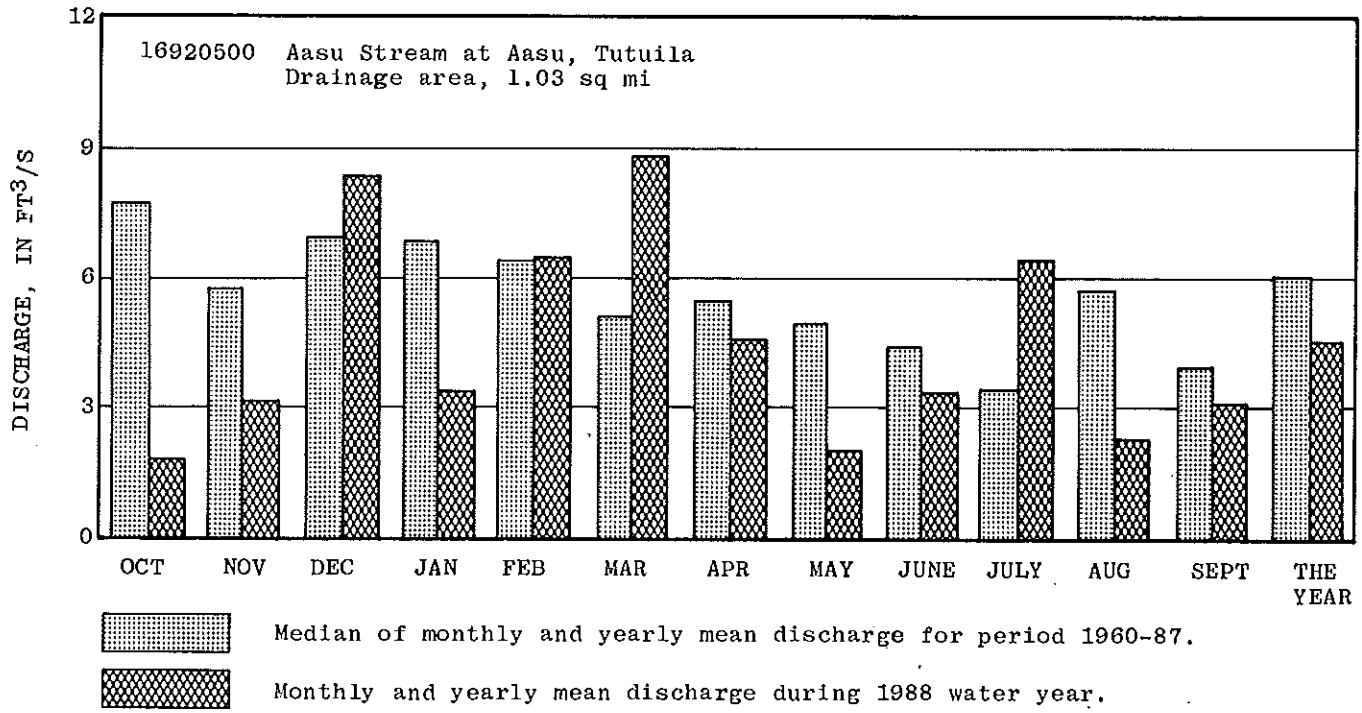


FIGURE 4.--DISCHARGE DURING 1988 WATER YEAR COMPARED WITH MEDIAN DISCHARGE FOR REPRESENTATIVE STREAMS ON KOSRAE AND TUTUILA.

Fecal coliform bacteria are bacteria that are present in the intestine 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 agar (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milliliter of of sample.

Fecal streptococcal bacteria are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacterial 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 ± 0.5°C on KF Streptococcus agar (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

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 time, expressed as the weight 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 g/m^3 (grams per cubic meter), and periphyton and benthic organisms in g/m^2 (grams per square meter).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for 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 mass of the living 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 is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

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 only 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.

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. 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 judge when the results should be reported as "total in bottom 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 of liters (L).

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, 1.9835 acre-feet, or 646,317 gallons or 2,447 cubic meters.

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

Coliform organisms are a group of bacteria used as an indicator of the sanitary quality of the water. The number of coliform colonies per 100 milliliters is determined by the immediate or delayed incubation membrane filter method.

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.

Continuing record station is a specified site which meets one or all conditions listed:

1. When chemical samples are collected daily or monthly for 10 or more months during the water year.

2. When water temperature records include observations taken one or more times daily.

3. When sediment discharge records include those periods for which sediment loads are computed and are considered to be representative of the runoff for the water year.

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

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

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

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.

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

Instantaneous discharge is the discharge at a particular instant of time. If this discharge is reported instead of the daily mean, the heading of the discharge column in the table is "DISCHARGE (CFS)."

Dissolved is that material in a representative water sample which passes through a 0.45 micrometer 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.

Drainage area of a stream at a specific 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 river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing 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 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.

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 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 8-digit number.

Microgram per gram ($\mu g/g$) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Microgram per liter ($\mu G/L$, $\mu g/L$) 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.

Milligram 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.

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 suspended sediment or bed material 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 material 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.

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

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

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.

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.

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).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge times milligrams per liter times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

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

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

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical 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 microsiemens). 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.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that 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 respresentative water-suspended sediment sample that is retained on a 0.45 micrometer 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 would be 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 a representative water-suspended sediment sample that is retained on a 0.45 micrometer 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 constituents.

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 substsnces. 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 would be required of all laboratoriss performing such anslyses because different digestion procedures are likely to produce different analytical results.

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 anelytical 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 determines all of the constituent in the sample.)

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 hsd 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 in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Turbidity of a sample is the reduction of transparency due to the presence of particulate matter. In this report it is expressed Nephelometric turbidity units (NTU).

WDR is used as an abbreviation for "Water-Data Reports" in the summary REVISIONS paragraph to refer to previously published State annual basic-data reports.

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 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.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

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

DOWNSTREAM ORDER AND STATION NUMBER

Records are listed in a downstream direction along the main stream, and stations on tributaries are listed between stations on the main stream in the order in which those tributaries enter the main stream. Stations on tributaries entering above all main-stream stations are listed before the first main-stream station. Stations on tributaries to tributaries are listed in a similar manner. In the lists of gaging stations and water-quality stations in the front of this report the rank of tributaries is indicated by indention, each indention representing one rank.

As an added means of identification, each gaging station, partial-record station, and water-quality 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 continuous-record gaging stations; therefore, the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Water-quality stations located at or near gaging stations or partial-record stations have the same number as the gaging or partial-record station. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station, such as 16858000 which appears just to the left of the station name includes the 2-digit number "16" plus the 6-digit downstream order number "858000." In this report, the records are listed in downstream order by islands. Locations of the stations are shown in figures 5-13.

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

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. See figure 14.

The local well-numbering system for Pacific Areas was restructured to contain eight digits based on a non-arbitrary, unique one-minute grid system. One-minute parallel lines for both latitude and longitude are drawn on the map resulting in one-minute grids. Each grid is designated by a four-digit number. The first two digits represent minutes of latitude for the grid and the second two digits represent minutes of longitude for that grid.

To distinguish wells within a minute grid, two digits are added following the 4-digit minute-grid numbers with a dash separator. These two-digit numbers are assigned with the oldest well dug within the grid as 01 and increase chronologically, with few exceptions, to the latest dug.

Since it is possible to have a same 6-digit number for wells on different islands, a 2-digit number distinguishing each of the islands or geographic areas is added in front of the 6-digit number with a dash separator. For example, in the number 18-2647-01, the first two digits designate an island of geographic area, then the 4-digit minute-grid numbers followed by a 2-digit sequential number. See figure 15.

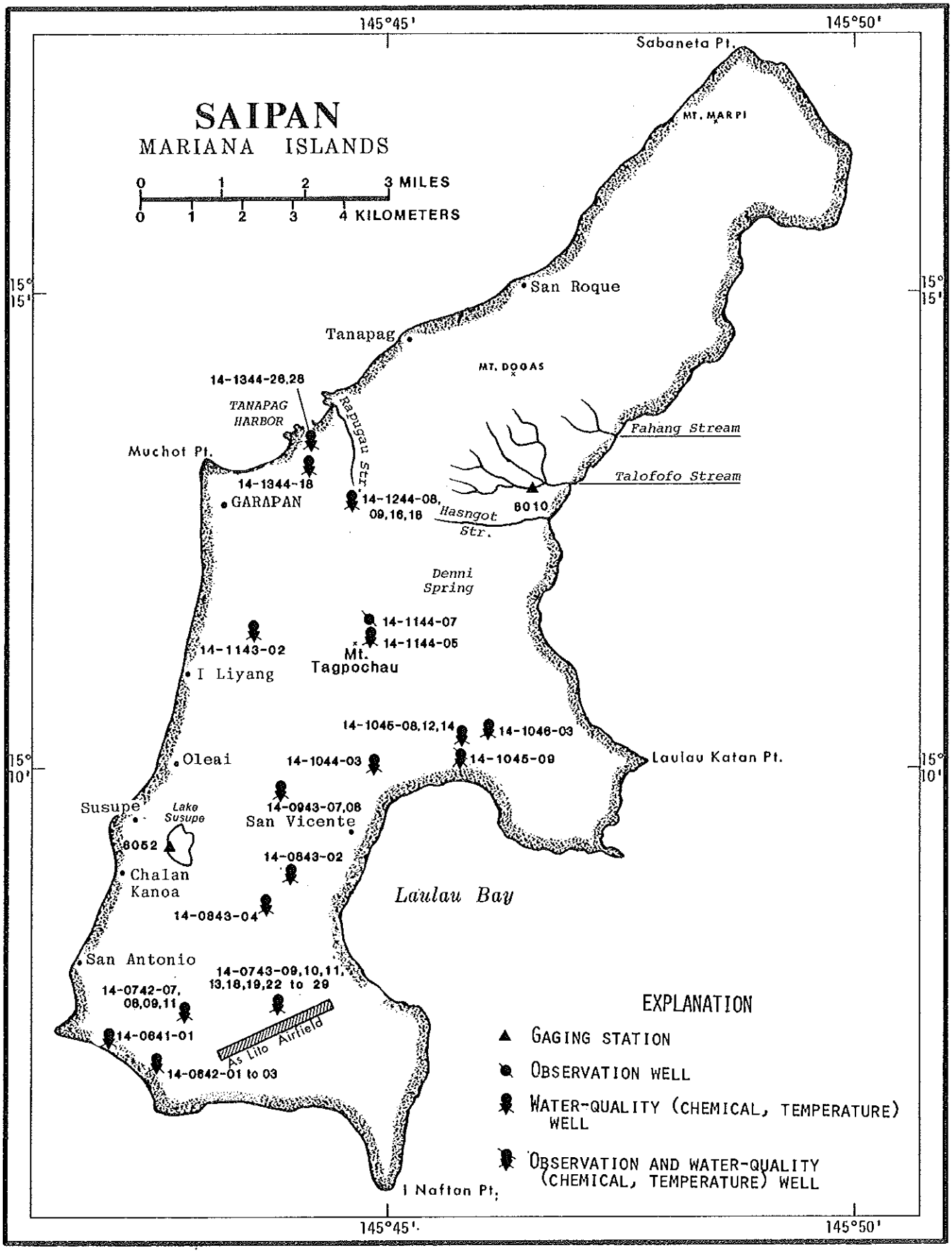


FIGURE 5.--LOCATIONS OF GAGING STATIONS, OBSERVATION WELLS, AND WATER-QUALITY SAMPLING SITES ON SAIPAN.

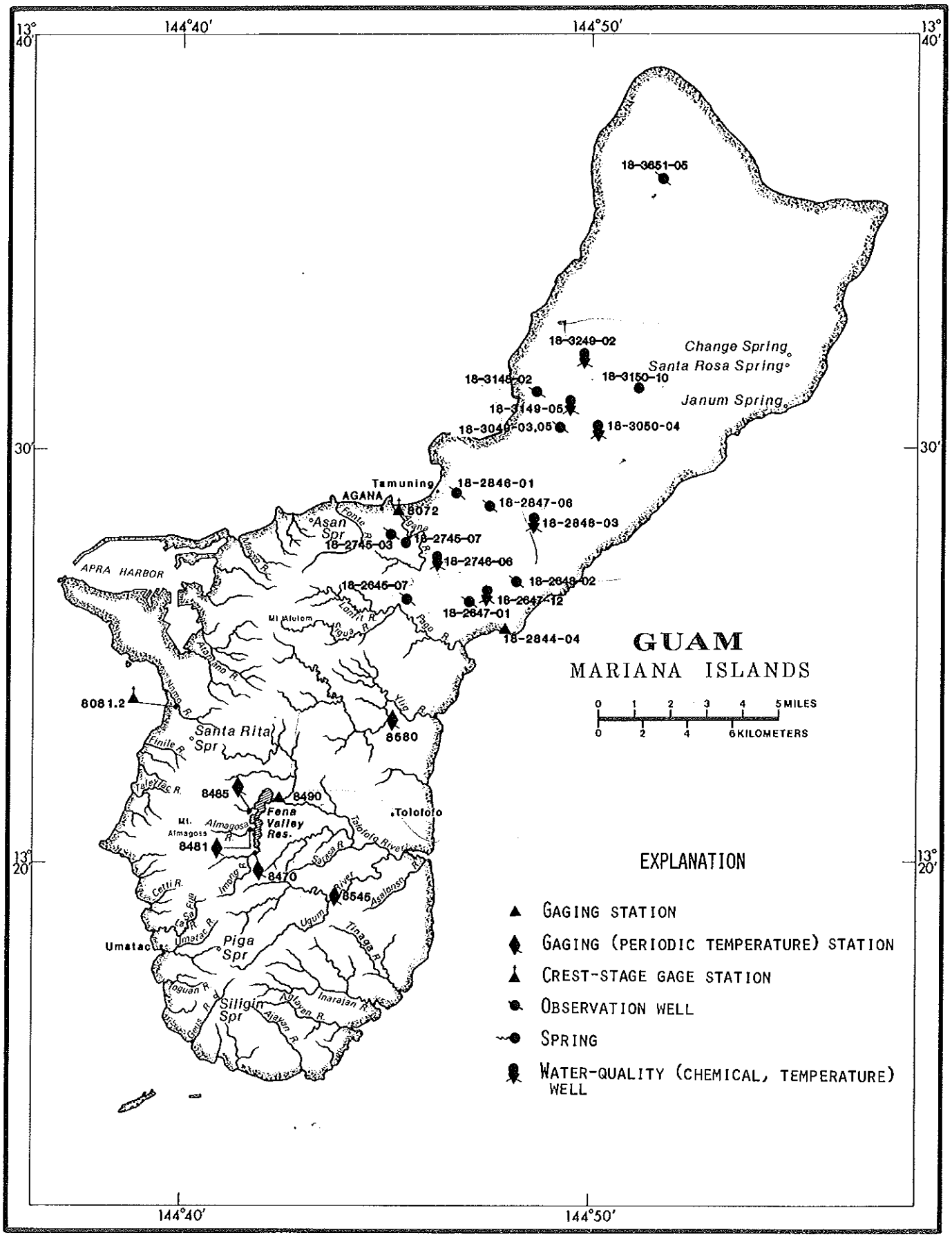


FIGURE 6.--LOCATIONS OF GAGING STATIONS, OBSERVATION WELLS, AND WATER-QUALITY SAMPLING SITES ON GUAM.

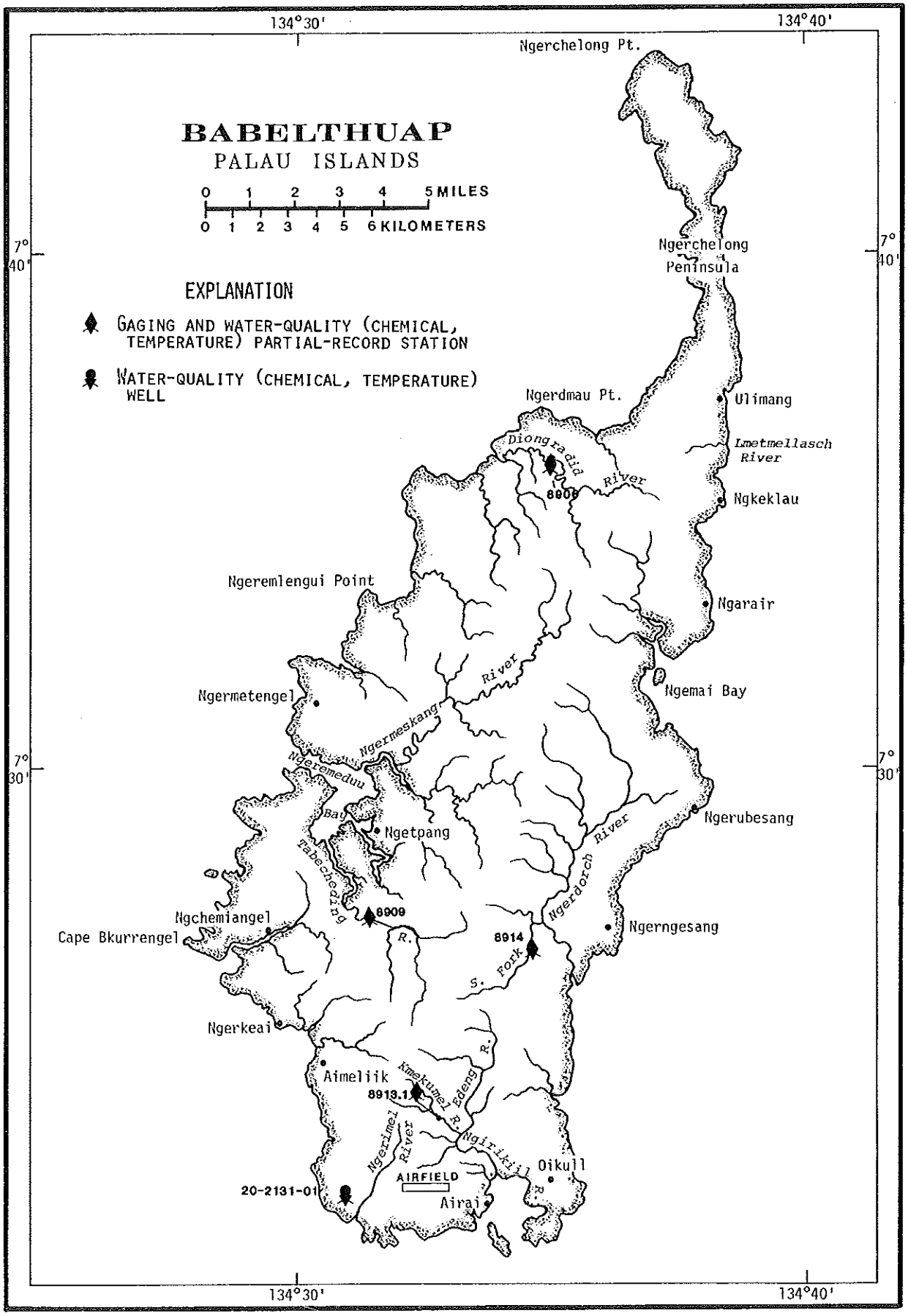


FIGURE 7.--LOCATIONS OF GAGING STATIONS, WELL, AND WATER-QUALITY SAMPLING SITES ON BABELTHUAP.

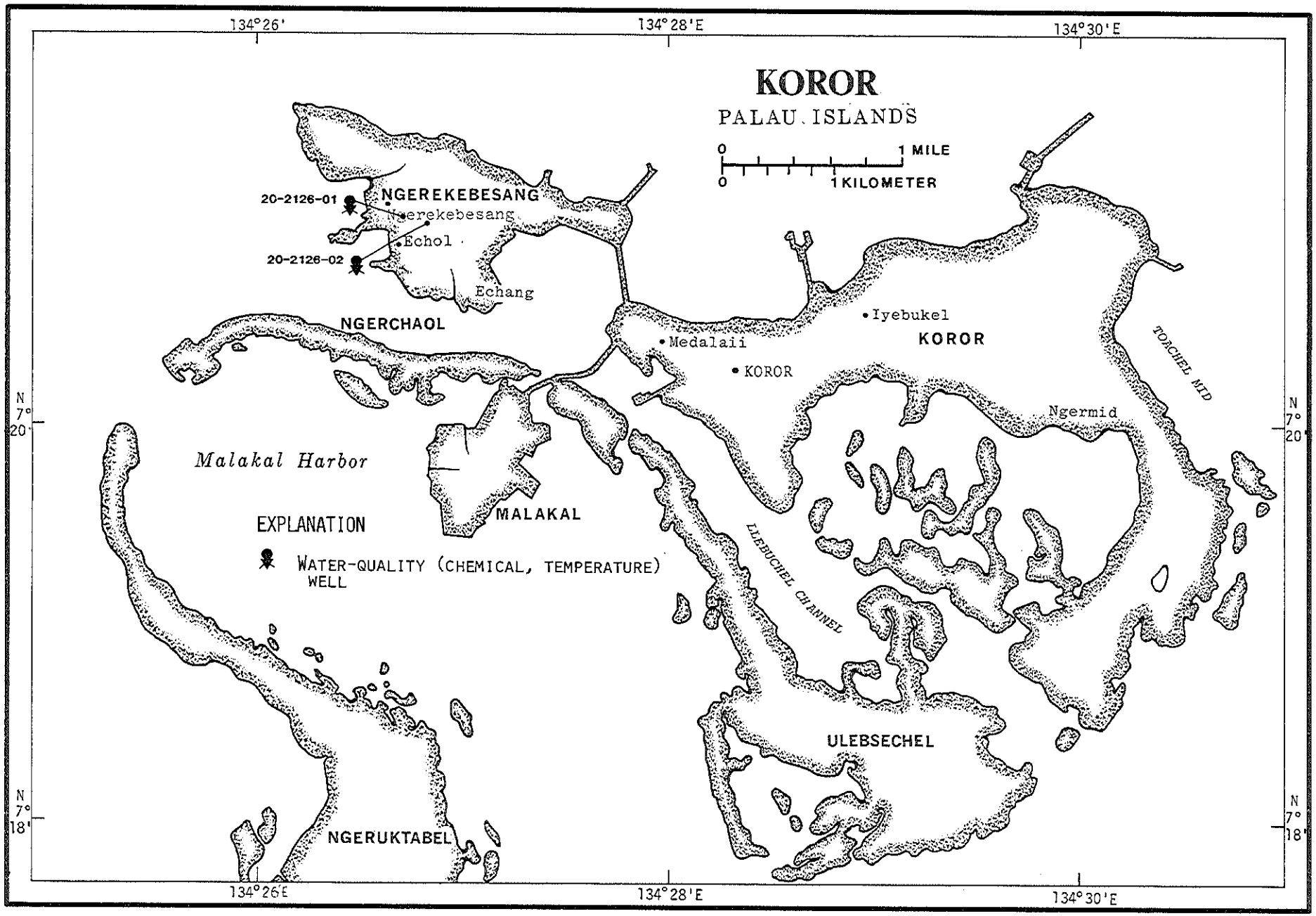


FIGURE 8.--LOCATIONS OF GROUND-WATER QUALITY SAMPLING SITES ON KOROR.

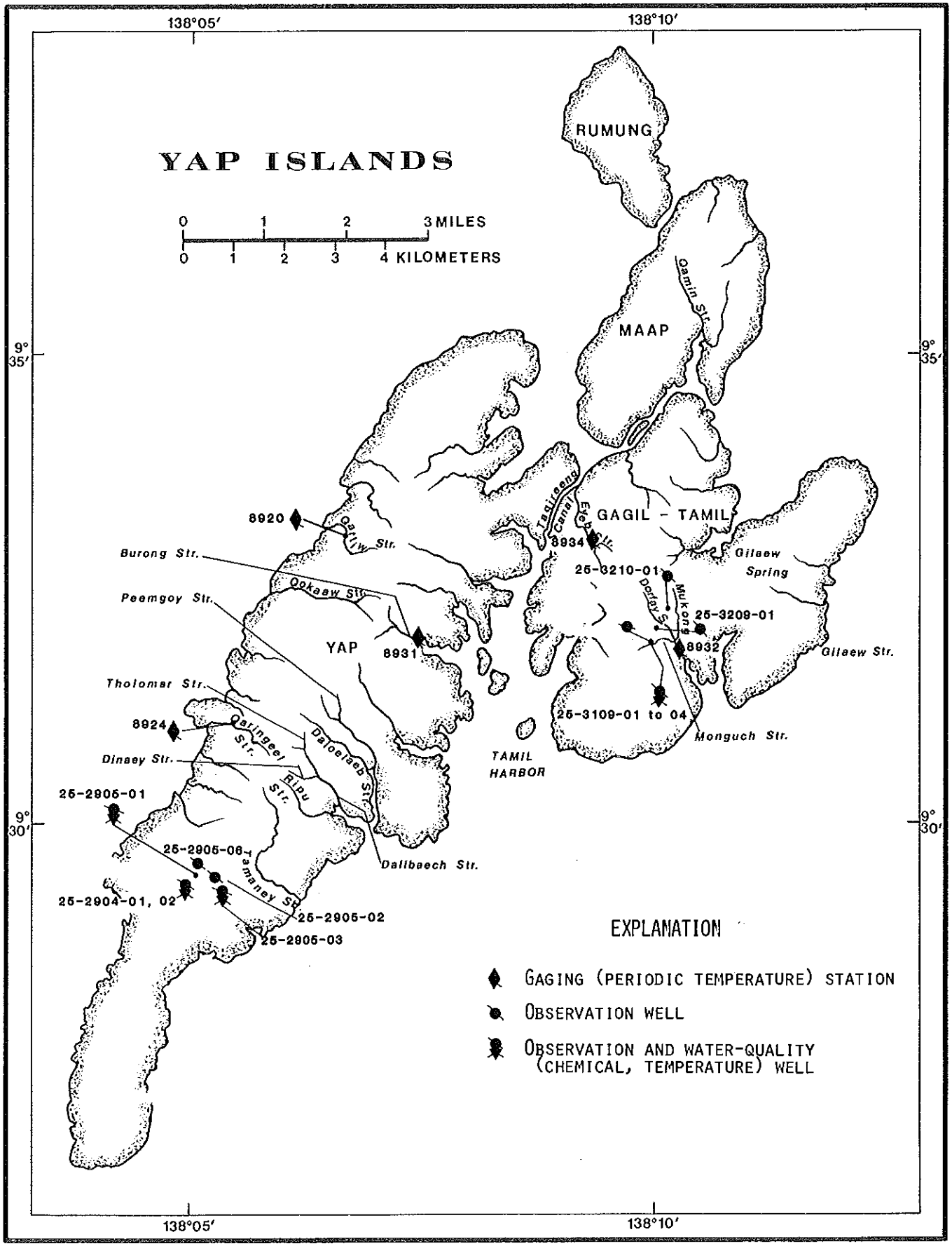


FIGURE 9.-- LOCATIONS OF GAGING STATIONS, OBSERVATION WELLS, AND WATER-QUALITY SAMPLING SITES ON YAP ISLANDS.

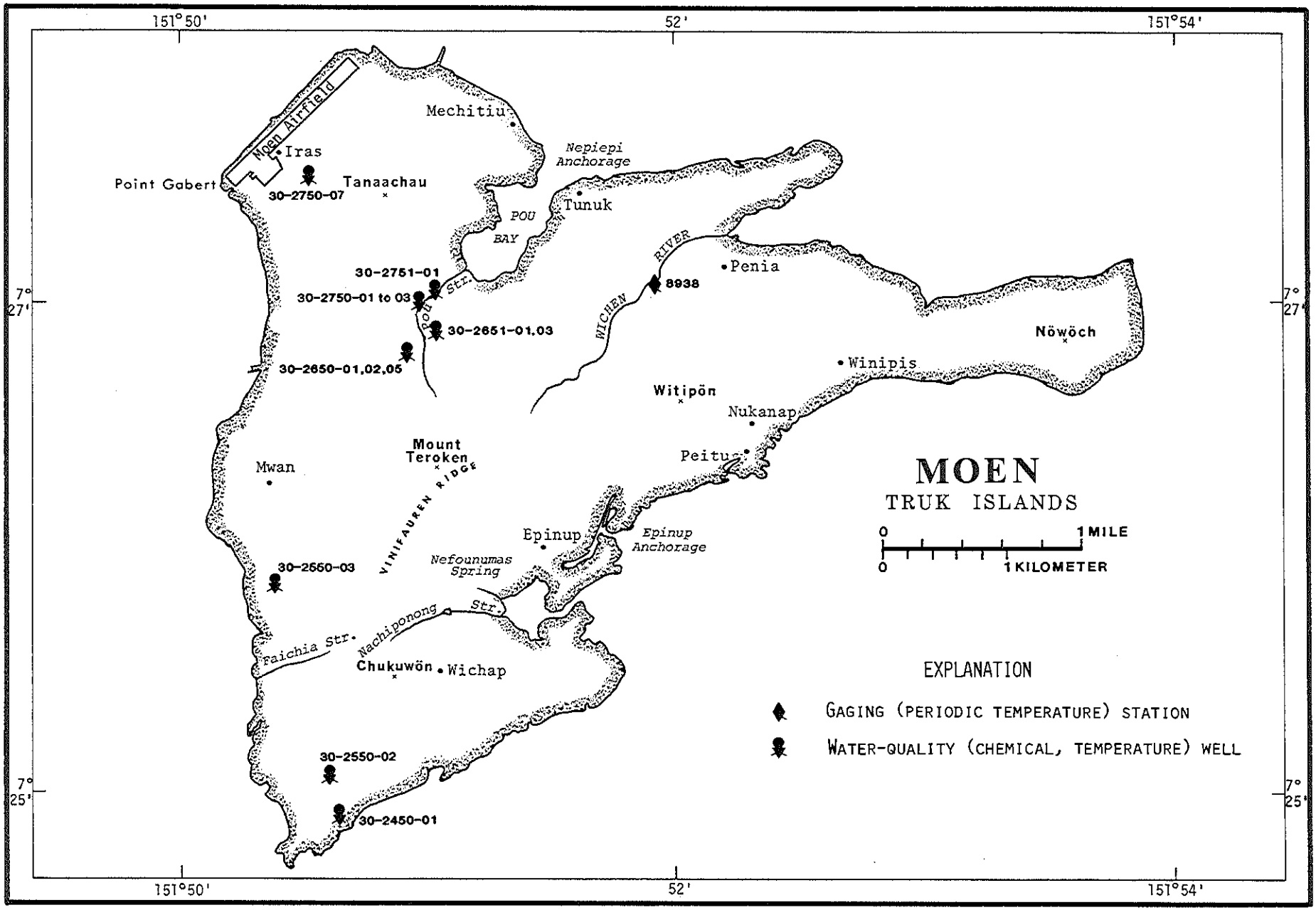


FIGURE 10.--LOCATIONS OF GAGING STATION, WELLS, AND WATER-QUALITY SAMPLING SITES ON MOEN.

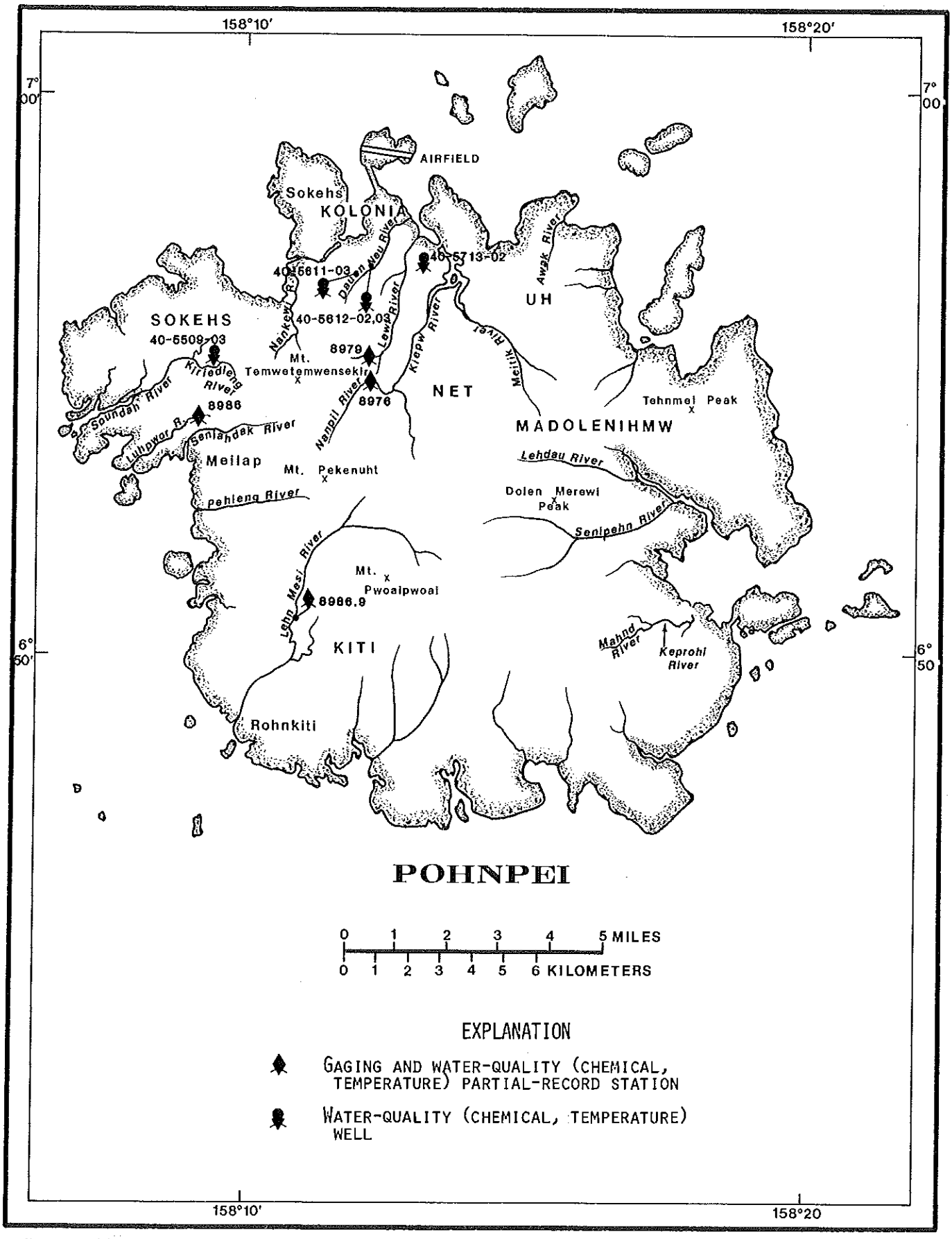


FIGURE 11.--LOCATIONS OF GAGING STATIONS AND WATER-QUALITY SAMPLING SITES ON POHNPEI.

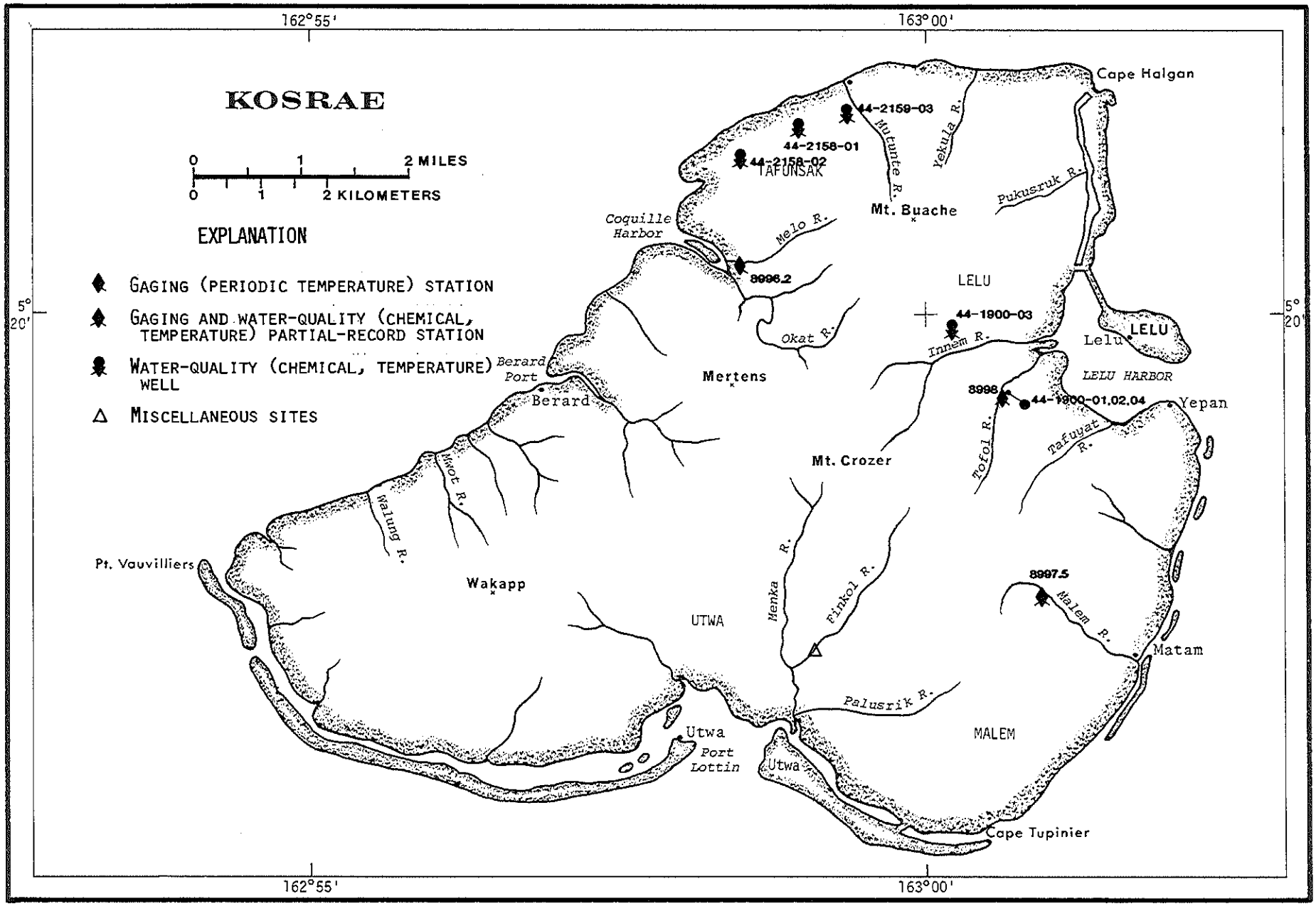


FIGURE 12.--LOCATIONS OF GAGING STATIONS AND WATER-QUALITY SAMPLING SITES ON KOSRAE.

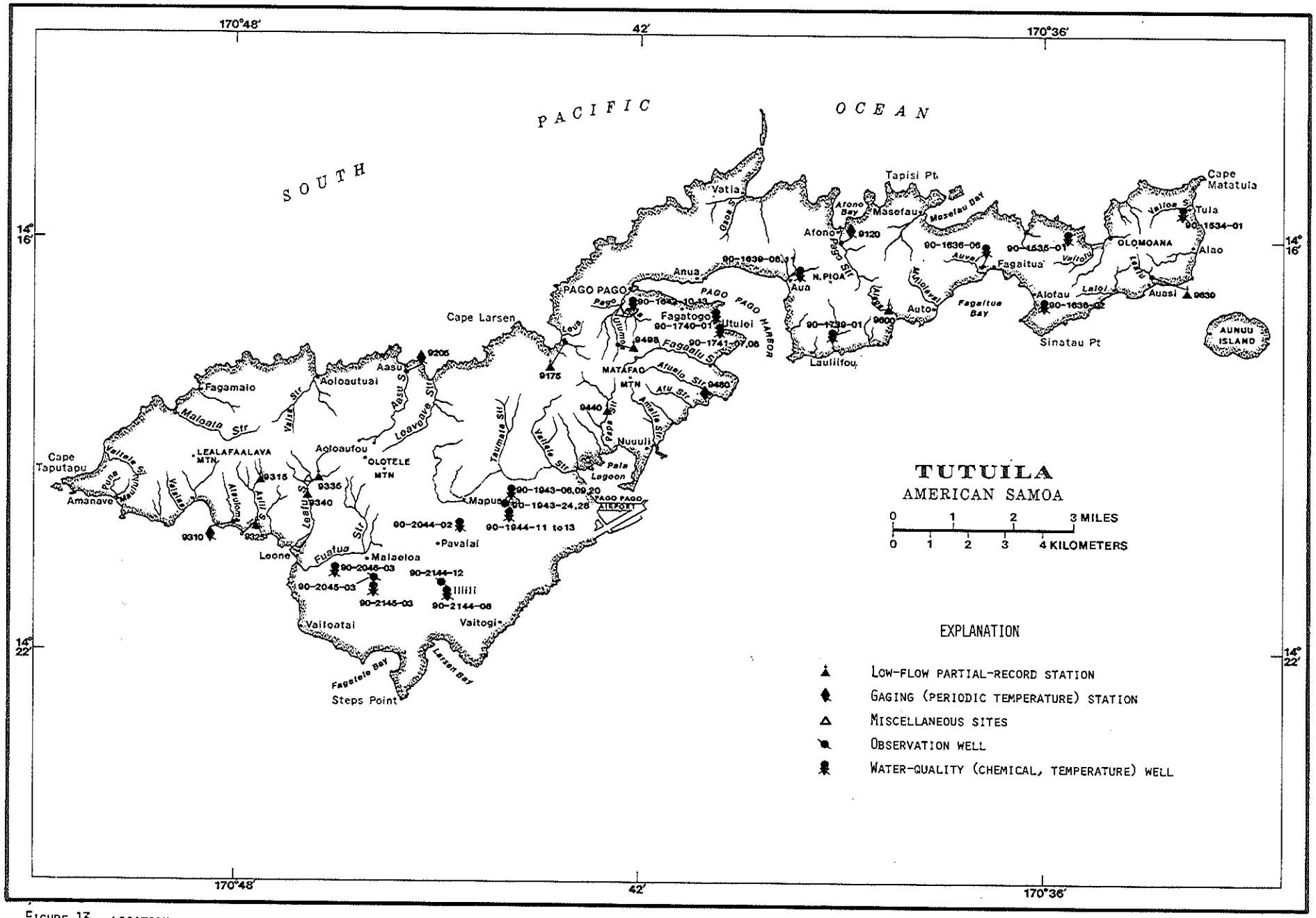


FIGURE 13.--LOCATIONS OF GAGING, LOW-FLOW PARTIAL-RECORD STATIONS, OBSERVATION WELLS, AND WATER-QUALITY SAMPLING SITES ON TUTUILA.

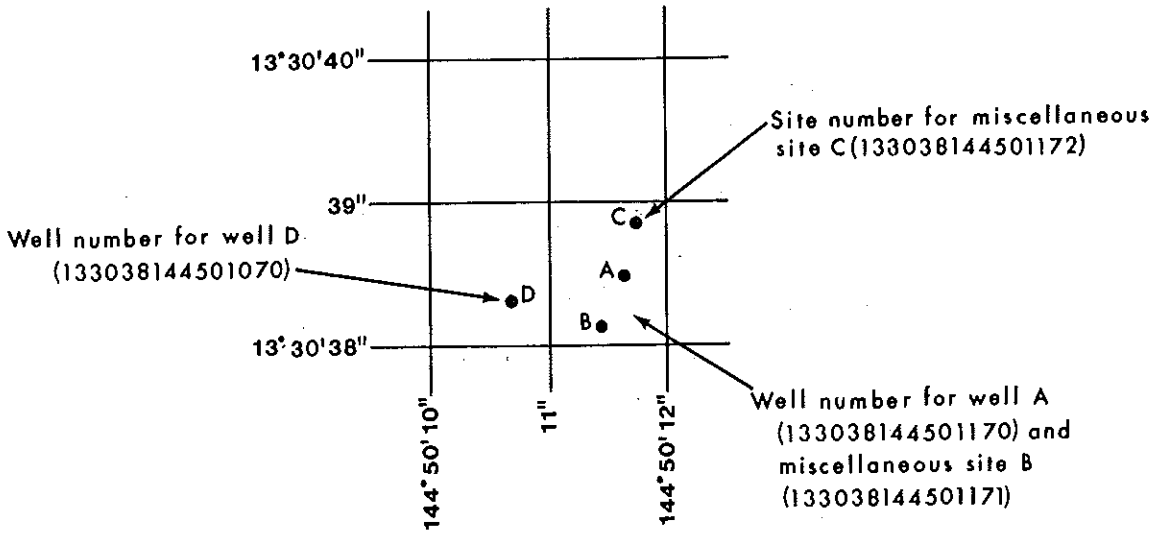


FIGURE 14.--SKETCH SHOWING SYSTEM FOR NUMBERING WELLS AND MISCELLANEOUS SITES.

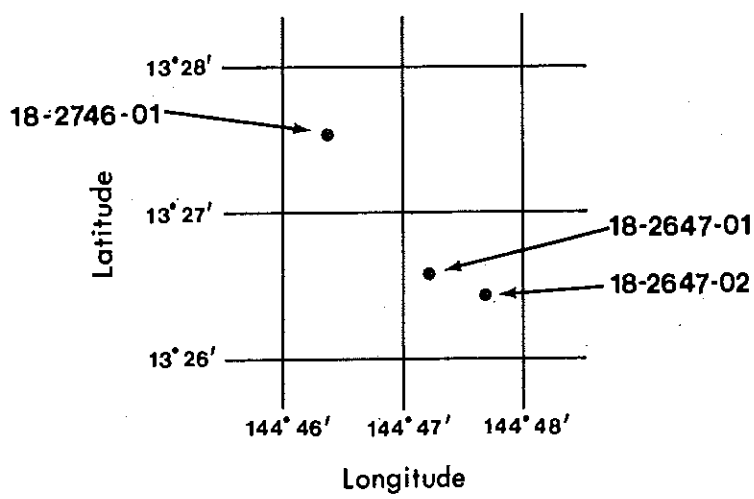


FIGURE 15.--SKETCH SHOWING LOCAL WELL NUMBERING SYSTEM.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard text books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A8.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharges are computed from the daily figures. 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 computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

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.

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 computed daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations, in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals, a table showing the daily discharge and monthly and yearly discharge is given. For gaging station on lakes and reservoirs, a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations 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 discharge were revised. If the drainage area has been revised, the report in which the revised figures was first published is given.

The type of gage currently in use, the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." In references to datum of gage, the phrase "mean sea level" denotes "Sea Level Datum of 1929" as used by the Topographic Division of the Geological Survey unless otherwise qualified.

Information pertaining to the accuracy of the discharge records and to conditions which affect the nstural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE", it is not given for stations having fewer than 5 complete years of record or for stations where changea in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the perlod of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtainsd by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations, peak discharges are listed with EXTREMES FOR THE CURRENT YEAR; if they are, all independent peaks, including the maximum for the year, above the selected base with time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yaarly summaries. In the monthly summsry 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 may be 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 cublc feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing sreas, or if the average annual rainfall over the drainags basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the dischsrge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected.

For most gaging station on lakes and reservoirs, the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is givsn. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

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 discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stsge stations. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such measurements are also given in special tables following the tables of partial-record stations.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stsbility of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 cfs; to tenths between 1.0 and 10 cfs; to whole numbers between 10 and 1,000 cfs; and to 3 significant figures above 1,000 cfs. The number of significant figures used is based solely on the magnitude of the figure.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, VA 22092, maintains an index of water-data sites not published by the Geological Survey. Information on records available at specific sites can be obtained upon request.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Publications

In each water-supply paper entitled, "Surface Water Supply of the United States" there is a list of numbers of preceding water-supply papers containing streamflow information for the area covered by that report. In addition, there is a list of numbers of water-supply papers containing detailed information on major floods in the area. Records for stations in Hawaii and other Pacific areas for the period October 1959 to September 1965, are in Water-Supply Paper 1937.

Two series of summary reports entitled, "Compilation of Records of Surface Waters of the United States" have been published; the first series covers the entire period of record through September 1950 (June 1950, for Hawaii), and the second series covers the period October 1950 to September 1960 (July 1950 to June 1960, for Hawaii and other Pacific areas). These reports contain summaries of monthly and annual discharge and monthend storage for all previously published records, as well as some records not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical. The yearly summary table for each gaging station lists the numbers of the water-supply papers in which daily records were published for that station. Records for stations in Hawaii and other Pacific areas are compiled in Water-Supply Paper 1319 through June 1950, in 1739 and 1751 for July 1950 to June 1960, in 1937 for October 1959 to September 1965, and 2137 for October 1966 to September 1970.

Special reports on major floods or droughts or of other hydrologic studies for the area have been issued in publications other than water-supply papers. Information relative to these reports may be obtained from the district office.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface water samples for analyses usually are collected at or near gaging stations. The water-quality records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives periods of record for the various types of water-quality data (chemical, specific conductance, biological determination, water temperatures, sediment discharge), period of record, and extremes of pertinent data, and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

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.

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.

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 (hourly values) may be obtained from the district office.

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. Large streams have a small diel 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.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single 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 time 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 loads 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 in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

Publications

The annual series of water-supply papers that contain information on quality of surface waters in Hawaii and other Pacific areas are listed below.

Water year	WSP No.	Water year	WSP No.	Water year	WSP No.
1964	1966	1967	2016	1970	2160
1965	1966	1968	2016		
1966	1996	1969	2150		

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

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.

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 figures 14 and 15.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either mean sea level (msl) or land-surface datum (lsd). Mean sea level is the datum plane on which the national network of precise levels is based; land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above mean sea level 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 fifth day and the end of each month (eom). To show the intraday variation in the ground-water levels caused by local pumping and tidal fluctuations, instantaneous maximum and minimum water levels are given with the mean water levels for the day.

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 in 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 or a few hundredths of a foot. For lesser depths to water, the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

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

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-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.

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. J. 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 and dispersion in streams by dye tracing, by E. F. Hubbard, F. A. Kilpatrick, L. A. Martens, and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1982. 44 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.

3-A15. Computation of water-surface profiles in open channels, by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.

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.

3-B1. Aquifer-test design, observation, and data analysis, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

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

3-B3. Type curves for selected problems of flow to wells in confined aquifers, by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 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.

3-B6. The principle of superposition and its application in ground-water hydraulics, by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.

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.

4-D1. Computation of rate and volume of stream depletion by wells, by C. T. Jenkins: USGS-TWRI Book 4, Chapter D1. 1970. 17 pages.

5-A1. Methods for determination of inorganic substances in water and fluvial sediments, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.

5-A2. Determination of minor elements in water by emission spectroscopy, by P. R. Barnstt and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. Methods for analysis of organic substances in water, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.

5-A4. Methods for collection and analysis of aquatic biological and microbiological samples, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.

5-A5. Methods for determination of radioactive substances in water and fluvial sediments, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-A6. Quality assurance practices for the chemical and biological analyses of water and fluvial sediments, by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.

5-C1. Laboratory theory and methods for sediment analysis, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

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.

7-C1. Finite difference model for aquifer simulation in two dimensions with results of numerical experiments, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

7-C2. Computer model of two-dimensional solute transport and dispersion in ground water, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

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.

8-A1. Methods of measuring water levels in deep wells, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.

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.

8-B2. Calibration and maintenance of vertical-axis type current meters, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

MARIANA ISLANDS, ISLAND OF SAIPAN

16801000 SOUTH FORK TALOFOFO STREAM

LOCATION.--Lat 15°12'48" N., long 145°46'17" E., Hydrologic Unit 20100006, on left bank 0.4 mi upstream from confluence with Middle and North Forks, 1.4 mi south of Ogso Dogas, and 2.2 mi southeast of Tanapag.

DRAINAGE AREA.--0.64 mi^2. Area at site used prior to Mar. 31, 1971, 0.73 mi^2.

PERIOD OF RECORD.--October 1968 to November 1988, October 1987 to September 1988. Low-flow records not equivalent prior to Mar. 31, 1971, due to undetermined amount of underflow between sites.

REVISED RECORDS.--WDR HI-78-2: 1978-77(M), WDR HI-82-2: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Mar. 31, 1971. Elevation of gage is 60 ft, from topographic map. Prior to Mar. 31, 1971, at site 0.2 mi downstream at different datum.

REMARKS.--Records fair except for estimated daily discharges which are poor. No diversion upstream.

AVERAGE DISCHARGE.--18 years (water years 1972-86, 1988), 1.30 ft^3/s (942 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,100 ft^3/s, Aug. 4, 1978, gage height, 8.15 ft, from rating curve extended above 59 ft^3/s on basis of slope-area measurements at gage heights 7.30 and 8.15 ft; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 105 ft^3/s Oct. 18, gage height, 3.28 ft, no peak greater than base discharge of 400 ft^3/s; minimum, 0.03 ft^3/s June 13-16.

DISCHARGE, IN 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	e.56	1.5	.62	.34	.34	e.10	e.15	e.07	e.06	.08	.73	.12
2	.50	1.2	.76	.38	.27	e.09	e.12	e.07	e.06	.08	1.1	.12
3	.50	e1.1	.62	.38	.30	e.08	e.10	e.07	e.06	.08	.76	.12
4	.54	e.96	.54	.38	.27	e.07	e.09	e.07	e.09	1.2	.82	.18
5	.46	e1.5	.54	.34	.24	e.20	e.09	e.07	e.08	2.9	.76	.46
6	.54	e1.1	.50	.34	.27	e.15	e.09	e.06	e.08	.50	.62	.18
7	.46	e1.8	.50	.34	.27	e.13	e.09	e.06	e.07	.24	.54	.30
8	.66	e2.6	.50	.30	.24	e.11	e.08	e.06	e.07	.18	.50	.24
9	1.8	e1.3	.50	.30	.24	e.10	e.08	e.08	e.06	.14	.50	.16
10	1.8	2.7	.50	.27	.24	e.09	e.08	e.06	e.06	.22	.38	.14
11	2.3	1.5	.58	.27	e.22	e.08	e.07	e.07	e.06	.16	.34	3.4
12	1.1	1.3	.50	3.3	e.20	e.07	e.07	e.08	e.05	.14	.34	3.7
13	.94	2.4	2.4	1.4	e.18	e.07	e.07	e.07	e.03	.12	.30	22
14	1.1	2.1	.70	.76	e.18	e.07	e.07	e.06	e.03	.11	.42	2.7
15	1.2	1.6	.62	.62	e.18	e.10	e.08	e.06	.03	.16	.27	1.5
16	.94	1.7	.58	.50	e.18	e.09	e.08	e.07	.03	.12	.24	1.1
17	4.2	1.3	.54	.46	e.17	e.09	e.08	e.07	.04	.11	.22	.94
18	26	1.2	.88	.42	e.16	e.08	e.07	e.07	.04	.10	.20	.76
19	8.7	1.1	.66	.58	e.14	e.07	e.07	e.06	.04	.10	.22	.66
20	3.4	1.0	.58	.50	e.12	e.07	e.07	e.07	.04	.10	.22	2.2
21	5.1	1.0	.54	.42	e.11	e.07	e.07	e.08	.31	.11	.20	2.4
22	2.9	1.1	.50	.42	e.10	e.06	e.07	e.07	.07	.12	.18	1.2
23	2.1	.94	.46	.38	e.08	e.06	e.07	e.06	.07	.10	.16	1.1
24	1.8	.88	.46	.38	e.07	e.06	e.06	e.06	.07	.11	.18	.94
25	1.6	.82	.46	.34	e.06	e.06	e.06	e.06	.08	.24	.16	.78
26	1.4	.70	.46	.30	e.20	e.05	e.06	e.06	.07	.27	.16	.66
27	1.2	.66	.42	.30	e.14	e.05	e.10	e.06	.07	.22	.20	.58
28	2.1	.70	.42	.30	e.11	e.05	e.08	e.06	.25	3.7	.20	.54
29	2.8	.66	.38	.27	e.10	e.05	e.07	e.06	.08	1.6	.16	.50
30	2.2	.66	.34	.24	---	e.05	e.07	e.06	.07	.76	.14	.50
31	2.0	---	.34	.24	---	e.05	---	e.06	---	.62	.14	---
TOTAL	82.90	38.88	18.40	15.77	5.38	2.52	2.41	2.02	2.22	14.69	11.36	50.16
MEAN	2.67	1.30	.59	.51	.19	.081	.080	.065	.074	.47	.37	1.67
MAX	26	2.7	2.4	3.3	.34	.20	.15	.08	.31	3.7	1.1	22
MIN	.46	.86	.34	.24	.06	.05	.06	.06	.03	.08	.14	.12
AC-FT	164	77	38	31	11	5.0	4.8	4.0	4.4	29	23	99

WTR YR 1988 TOTAL 246.71 MEAN .87 MAX 26 MIN .03 AC-FT 489

e Estimated

16805200 LAKE SUSUPE

LOCATION.--Lat 15°09'15" N., long 145°42'42" E., Hydrologic Unit 20100006, on west shore, at the end of Sugar Mill Road, 0.5 mi southeast from the Administration building, Northern Marianas Government.

PERIOD OF RECORD.--February 1981 to current year.

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

REMARKS.--Water-level records good.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.89 ft, Dec. 4, 1986; lowest, 0.70 ft, June 13, 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 12, 1978, reached a stage of 7.6 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Highest water level, 3.48 ft, Sept. 13; lowest, 1.11 ft, May 8-11.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.71	2.74	2.40	2.10	2.12	1.73	1.38	1.17	1.25	1.50	2.89	2.62
2	2.69	2.70	2.44	2.13	2.12	1.70	1.37	1.16	1.30	1.53	2.91	2.59
3	2.66	2.66	2.43	2.13	2.11	1.69	1.36	1.15	1.32	1.53	2.88	2.58
4	2.63	2.63	2.41	2.14	2.12	1.69	1.35	1.14	1.37	1.60	2.86	2.57
5	2.60	2.61	2.41	2.14	2.10	1.68	1.35	1.14	1.41	1.78	2.83	2.58
6	2.57	2.63	2.39	2.13	2.09	1.66	1.34	1.13	1.41	1.88	2.78	2.54
7	2.59	2.60	2.39	2.11	2.07	1.65	1.33	1.12	1.42	1.90	2.75	2.53
8	2.60	2.59	2.39	2.10	2.06	1.63	1.31	1.11	1.42	1.93	2.73	2.53
9	2.63	2.61	2.37	2.08	2.04	1.62	1.31	1.11	1.40	1.97	2.72	2.51
10	2.70	2.63	2.38	2.06	2.02	1.60	1.30	1.11	1.41	2.06	2.72	2.50
11	2.68	2.64	2.34	2.03	2.00	1.59	1.29	1.11	1.40	2.09	2.70	2.54
12	2.65	2.63	2.33	2.18	1.98	1.57	1.27	1.12	1.39	2.11	2.69	2.93
13	2.63	2.67	2.39	2.39	1.96	1.56	1.28	1.14	1.39	2.13	2.68	3.42
14	2.64	2.68	2.38	2.43	1.95	1.55	1.28	1.14	1.39	2.17	2.66	3.47
15	2.64	2.65	2.37	2.42	1.94	1.55	1.29	1.13	1.38	2.19	2.64	3.42
16	2.63	2.65	2.35	2.40	1.93	1.54	1.29	1.13	1.39	2.21	2.62	3.38
17	2.62	2.64	2.32	2.37	1.91	1.53	1.28	1.12	1.39	2.24	2.59	3.32
18	2.84	2.62	2.32	2.35	1.90	1.52	1.27	1.12	1.38	2.25	2.57	3.24
19	3.20	2.60	2.33	2.35	1.88	1.50	1.25	1.12	1.37	2.25	2.59	3.18
20	3.27	2.56	2.31	2.34	1.87	1.50	1.25	1.13	1.38	2.26	2.61	3.11
21	3.27	2.53	2.29	2.32	1.87	1.48	1.25	1.13	1.40	2.27	2.62	3.13
22	3.32	2.52	2.27	2.30	1.85	1.47	1.24	1.14	1.45	2.27	2.61	3.08
23	3.22	2.55	2.25	2.28	1.85	1.46	1.24	1.14	1.46	2.27	2.58	3.08
24	3.14	2.54	2.23	2.28	1.83	1.45	1.22	1.14	1.48	2.28	2.57	3.08
25	3.05	2.54	2.23	2.26	1.81	1.43	1.20	1.14	1.47	2.39	2.54	3.03
26	2.96	2.51	2.23	2.23	1.79	1.42	1.19	1.13	1.49	2.49	2.58	2.98
27	2.90	2.49	2.20	2.21	1.77	1.41	1.20	1.12	1.50	2.53	2.84	2.96
28	2.85	2.48	2.18	2.19	1.75	1.42	1.19	1.13	1.50	2.67	2.67	2.93
29	2.87	2.45	2.16	2.16	1.73	1.40	1.17	1.14	1.50	2.84	2.68	2.89
30	2.85	2.42	2.14	2.15	---	1.40	1.17	1.14	1.49	2.87	2.66	2.87
31	2.79	---	2.13	2.12	---	1.39	---	1.17	---	2.86	2.64	---
MEAN	2.82	2.59	2.31	2.22	1.95	1.54	1.27	1.13	1.41	2.17	2.88	2.92
MAX	3.32	2.74	2.44	2.43	2.12	1.73	1.38	1.17	1.50	2.87	2.91	3.47
MIN	2.57	2.42	2.13	2.03	1.73	1.39	1.17	1.11	1.25	1.50	2.54	2.50

CAL YR 1987	MEAN	2.07	MAX	3.32	MIN	1.23
WTR YR 1988	MEAN	2.09	MAX	3.47	MIN	1.11

16847000 IMONG RIVER NEAR AGAT

LOCATION.--Lat 13°20'17" N., long 144°41'55" E., Hydrologic Unit 20100003, on left bank 500 ft upstream from Fena Valley Reservoir, 1.4 mi south of Fena Dam spillway, and 4.1 mi southeast of Agat School.

DRAINAGE AREA.--1.95 mi^2.

PERIOD OF RECORD.--March 1960 to March 1971. October 1971 to current year.

REVISED RECORDS.--WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 120 ft, from topographic map.

REMARKS.--Records good to fair except for estimated daily discharges which are poor. No diversion upstream. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--27 years (water years 1961-70, 1972-88), 9.91 ft^3/s (7,180 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,100 ft^3/s Sept. 27, 1978, gage height, 11.3 ft, from outside floodmarks, and from rating curve extended above 58 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.37 ft^3/s May 21, 22, 26, 1966.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 904 ft^3/s Aug. 14, gage height, 4.36 ft, no peak greater than base discharge of 1,400 ft^3/s; minimum, 1.4 ft^3/s May 30.

DISCHARGE, IN 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	2.8	5.1	6.8	4.8	4.8	3.1	2.5	2.0	1.9	2.8	e16	5.7
2	2.8	5.4	8.3	4.6	4.5	3.0	2.4	2.0	10	3.0	e23	5.2
3	2.8	5.7	6.3	4.4	4.3	3.0	2.4	2.1	11	4.9	e19	9.4
4	2.8	12	6.3	4.8	4.2	3.3	2.3	2.1	3.5	12	e26	8.1
5	2.8	19	6.8	4.8	4.1	3.0	2.3	1.9	3.3	14	e19	37
6	2.8	9.7	6.0	6.0	4.1	2.9	2.3	2.0	2.8	7.4	e15	14
7	2.6	8.3	15	5.4	4.0	3.4	2.3	2.2	4.1	e6.2	e13	10
8	3.2	5.4	7.8	4.4	3.8	3.1	2.3	1.9	3.2	e18	e14	7.8
9	2.8	14	6.8	4.4	3.9	3.0	2.3	2.0	4.4	e41	e22	7.2
10	2.8	9.2	7.8	4.4	3.7	2.9	2.2	1.9	11	e22	e15	7.2
11	2.8	8.3	8.3	4.1	3.8	2.9	2.2	1.9	7.7	e11	e12	8.9
12	2.8	8.3	8.8	64	3.7	2.9	2.5	1.9	4.0	e9.5	e11	8.1
13	2.4	5.7	15	39	3.7	2.8	2.7	1.9	4.5	e7.8	e24	6.5
14	2.4	8.3	7.8	12	3.6	2.8	2.3	1.9	3.8	20	e93	5.9
15	2.8	6.3	6.3	8.3	3.7	2.9	3.1	1.8	3.1	13	e32	8.2
16	2.6	5.4	6.3	6.8	3.6	2.8	2.4	1.9	3.4	e17	e13	7.1
17	3.2	11	5.7	6.2	3.8	2.8	2.3	1.8	2.9	e12	e10	21
18	8.3	8.8	6.0	5.9	3.5	2.8	2.3	1.7	3.1	e9.8	e8.6	9.4
19	65	37	9.2	5.8	3.4	2.9	2.3	2.0	5.7	e7.6	e7.8	7.0
20	25	35	7.8	5.5	3.3	2.7	2.5	1.9	4.5	e7.9	e11	6.1
21	13	13	7.3	6.4	3.3	2.7	2.2	1.7	15	e7.9	e6.4	6.1
22	42	46	6.3	5.5	3.4	2.7	2.3	2.0	11	e7.0	e6.3	5.9
23	16	16	5.7	5.2	3.3	2.7	2.2	1.9	5.6	e7.1	e8.2	5.5
24	9.7	10	5.4	5.0	3.1	2.8	2.2	2.2	4.0	e6.6	e5.6	5.3
25	7.8	8.8	5.4	5.4	3.7	2.6	2.1	1.7	3.2	e25	5.6	6.0
26	7.3	7.8	5.4	4.8	3.2	2.5	2.1	1.7	2.9	e28	15	5.2
27	8.8	8.8	5.1	4.6	3.1	2.5	2.4	1.6	2.7	e15	6.5	5.9
28	6.0	8.3	5.1	4.6	3.1	2.5	2.2	1.7	3.1	e18	7.6	5.2
29	6.0	8.3	6.0	4.5	3.1	2.6	1.9	1.7	6.3	e13	7.8	6.8
30	5.4	7.3	5.4	4.5	---	2.5	2.0	1.6	3.3	e11	6.5	33
31	5.1	---	5.1	4.4	---	2.5	---	1.9	---	e10	6.5	---
TOTAL	270.2	358.2	221.3	260.7	106.9	87.5	69.5	58.7	155.0	395.5	484.4	284.7
MEAN	8.72	11.9	7.14	8.41	3.89	2.82	2.32	1.89	5.17	12.8	15.6	9.49
MAX	65	46	15	64	4.8	3.4	3.1	2.2	15	41	93	37
MIN	2.4	5.1	5.1	4.1	3.1	2.5	1.9	1.6	1.9	2.8	5.6	5.2
AC-FT	536	710	439	517	212	174	138	116	307	784	961	565

CAL YR 1987	TOTAL	1764.2	MEAN	4.83	MAX	65	MIN	1.2	AC-FT	3500
WTR YR 1988	TOTAL	2752.6	MEAN	7.52	MAX	93	MIN	1.6	AC-FT	5460

e Estimated

16848100 ALMAGOSA RIVER NEAR AGAT

LOCATION.--Lat 13°20'43" N., long 144°41'36" E., Hydrologic Unit 20100003, on right bank 400 ft upstream from Fena Valley Reservoir and 3.5 mi southeast of Agat.

DRAINAGE AREA.--1.32 mi^2.

PERIOD OF RECORD.--April 1972 to current year.

REVISED RECORD.--WDR HI-75-1: Drainage area. WDR HI-76-1: 1972(P), 1973(M), 1974-75(P).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 155 ft, from topographic map.

REMARKS.--Records good. Up to 3.9 ft^3/s diverted upstream for domestic use. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--16 years, 5.86 ft^3/s (4,250 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,650 ft^3/s, Sept. 27, 1978, gage height, 7.78 ft, from rating curve extended above 46 ft^3/s on basis of slope-area measurement at gage height 7.32 ft; minimum, 0.13 ft^3/s June 27, July 11, 12, 14, 16, 17, 1979, June 3-9, 1984, June 23, 24, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 474 ft^3/s, Nov. 22, gage height, 4.47 ft, no peak greater than base discharge of 700 ft^3/s; minimum, 0.15 ft^3/s for many days.

DISCHARGE, IN 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	1.1	1.6	3.4	1.7	1.3	.84	.63	.27	.31	1.1	5.5	1.6
2	1.0	1.6	4.3	1.6	1.3	.83	.63	.27	4.2	1.3	7.8	1.5
3	1.0	1.8	4.1	1.4	1.2	.81	.58	.31	9.0	2.2	7.8	1.8
4	1.0	2.8	5.2	1.3	1.2	.88	.58	.31	3.4	5.3	11	1.6
5	.95	6.1	3.2	1.4	1.2	.85	.58	.27	1.7	7.7	12	5.4
6	1.0	3.9	2.8	1.9	1.2	.82	.58	.27	1.1	5.0	7.4	3.0
7	.89	3.0	9.6	1.6	1.1	.96	.58	.27	1.6	4.4	5.6	2.3
8	1.5	2.3	4.6	1.3	1.1	.88	.52	.24	1.5	19	4.3	1.8
9	1.1	6.1	3.8	1.2	1.1	.87	.52	.24	1.4	24	5.1	2.3
10	1.0	4.9	3.7	1.2	1.0	.79	.52	.24	4.0	25	5.9	2.1
11	1.2	4.5	4.4	1.2	1.0	.83	.52	.21	6.6	10	4.8	2.8
12	.89	3.7	5.2	34	.98	.89	.68	.21	3.1	5.4	3.8	2.3
13	.84	3.4	8.8	49	.98	.87	.74	.21	1.9	4.0	3.6	1.9
14	.74	5.4	5.8	15	.98	.86	.58	.21	1.3	14	27	1.7
15	.83	3.1	4.6	8.9	1.0	.85	.68	.21	1.1	15	6.9	2.9
16	.75	4.1	4.6	5.5	.98	.84	.52	.24	1.3	12	4.7	2.2
17	1.1	6.6	3.5	4.5	1.0	.84	.43	.21	1.0	8.0	4.0	7.0
18	3.6	5.0	3.5	3.8	.98	.83	.43	.21	1.1	5.5	3.1	3.9
19	43	14	7.0	3.4	.93	.95	.43	.27	1.2	4.0	2.5	2.9
20	28	26	8.0	3.0	.92	.79	.43	.27	1.1	3.4	3.1	2.2
21	13	11	6.0	3.1	.93	.79	.39	.21	2.2	2.9	2.2	2.0
22	31	55	5.5	2.7	.93	.88	.43	.24	2.2	2.3	2.1	2.0
23	16	21	4.8	2.2	1.1	.68	.39	.27	1.4	4.8	2.0	1.8
24	9.0	11	3.9	2.0	.90	.63	.39	.24	1.3	3.8	1.9	1.7
25	5.7	7.9	3.4	2.1	1.1	.88	.35	.21	1.1	20	2.0	1.9
26	4.3	5.9	3.1	1.7	.90	.63	.35	.18	1.1	19	2.4	1.7
27	3.8	5.5	2.7	1.5	.88	.63	.39	.24	1.0	13	2.0	1.7
28	2.8	5.2	2.7	1.5	.84	.63	.35	.18	1.2	20	2.4	1.6
29	2.4	4.6	2.8	1.3	.85	.63	.27	.18	1.4	12	1.9	2.0
30	2.0	3.7	2.2	1.3	---	.63	.27	.18	1.2	8.4	1.8	15
31	1.7	---	1.8	1.2	---	.63	---	.39	---	6.1	1.8	---
TOTAL	180.99	240.7	136.8	163.5	29.84	24.32	14.74	7.46	62.01	288.6	158.2	84.6
MEAN	5.84	8.02	4.41	5.27	1.03	.78	.49	.24	2.07	9.31	5.10	2.82
MAX	43	55	9.8	49	1.3	.96	.74	.39	9.0	25	27	15
MIN	.74	1.8	1.8	1.2	.84	.63	.27	.18	.31	1.1	1.8	1.5
AC-FT	359	477	271	324	59	48	29	15	123	572	314	168

CAL YR 1987	TOTAL	1030.18	MEAN	2.82	MAX	55	MIN	.13	AC-FT	2040
WTR YR 1988	TOTAL	1391.76	MEAN	3.80	MAX	55	MIN	.18	AC-FT	2760

16848500 MAULAP RIVER NEAR AGAT

LOCATION.--Lat 13°21'14" N., long 144°41'44" E., Hydrologic Unit 20100003, on right bank 100 ft from Fena Valley Reservoir and 3.2 mi southeast of Agat.

DRAINAGE AREA.--1.15 mi^2.

PERIOD OF RECORD.--January 1972 to current year.

REVISED RECORDS.--WRD Hawaii 1973: 1972. WRD HI-75-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 130 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are fair. No diversion upstream. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--16 years, 5.11 ft^3/s (3,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,420 ft^3/s Sept. 27, 1978, gage height, 9.2 ft, from rating curve extended above 23 ft^3/s, on basis of slope-area measurements at gage heights 8.21 ft and 9.2 ft; minimum, 0.31 ft^3/s June 28 to July 1, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 639 ft^3/s, Nov. 22, gage height, 5.43 ft, no other peak greater than base discharge of 600 ft^3/s; minimum, 0.44 ft^3/s May 30, 31.

DISCHARGE, IN 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	1.8	3.4	3.3	2.3	e2.0	e1.3	1.1	.75	.82	1.0	5.7	2.7
2	1.8	3.4	4.1	2.2	e2.0	e1.3	1.1	.80	6.1	1.2	6.5	2.5
3	1.7	3.3	3.2	2.3	e1.9	e1.3	1.1	.86	12	2.7	11	2.5
4	1.7	6.3	3.1	2.1	e1.9	e1.4	1.1	.81	2.6	7.1	12	2.6
5	1.6	7.5	3.2	2.4	e1.9	e1.3	1.0	.77	3.1	6.9	7.1	4.2
6	1.7	4.6	3.0	3.1	e1.9	e1.4	1.0	.83	1.7	4.3	5.6	3.1
7	1.7	4.1	12	2.4	e1.7	e1.5	.99	.92	2.5	5.5	4.9	2.6
8	3.4	3.7	3.7	2.1	e1.7	e1.4	.94	.79	2.0	19	4.7	2.5
9	2.1	9.9	3.4	2.1	e1.7	e1.3	.94	.82	1.6	13	5.7	2.5
10	1.7	5.2	3.5	2.0	e1.6	1.2	.91	.81	3.5	11	6.8	2.7
11	1.9	5.7	4.0	1.9	e1.6	1.2	.95	.71	3.6	5.6	5.0	5.3
12	1.6	4.4	5.1	62	e1.5	1.2	1.1	.71	2.5	4.5	4.3	3.1
13	1.5	5.0	6.9	13	e1.5	1.2	.98	.65	2.0	4.3	3.9	2.6
14	1.5	4.8	3.8	e6.6	e1.5	1.1	.79	.58	1.6	15	40	2.4
15	1.6	4.0	3.4	e4.3	e1.6	1.2	.95	.56	1.6	7.5	8.8	3.2
16	1.5	3.8	4.2	e3.3	e1.5	1.2	.82	.58	1.5	11	5.1	2.8
17	2.0	4.9	3.1	e3.1	e1.6	1.2	.78	.58	1.4	5.9	4.9	6.6
18	6.9	3.6	3.5	e2.9	e1.5	1.2	.74	.54	1.4	4.5	4.3	2.7
19	36	18	6.0	e2.8	e1.4	1.3	.75	.57	1.5	3.9	3.9	2.5
20	12	9.6	3.9	e2.7	e1.4	1.2	.80	.66	1.3	3.7	5.1	2.2
21	7.6	5.5	5.2	e3.1	e1.4	1.2	.72	.55	1.4	4.7	3.7	2.2
22	14	41	3.9	e2.7	e1.4	1.1	.75	.76	1.3	3.6	3.3	2.7
23	6.5	9.5	3.3	e2.6	e1.7	1.2	.74	.63	1.2	4.1	3.3	2.3
24	7.3	6.3	3.0	e2.6	e1.4	1.1	.75	.78	1.1	3.1	3.1	2.1
25	5.0	5.1	2.6	e2.7	e1.7	1.1	.75	.54	1.0	15	3.2	2.2
26	4.2	4.4	3.0	e2.5	e1.4	1.1	.80	.52	1.2	7.7	3.3	1.9
27	4.0	4.7	2.7	e2.3	e1.3	1.1	.81	.70	1.1	8.0	3.4	2.0
28	3.4	4.4	3.2	e2.3	e1.3	1.1	.76	.57	1.3	12	2.9	1.9
29	3.5	4.3	3.2	e2.0	e1.3	1.1	.70	.52	1.8	7.6	3.9	3.9
30	3.3	3.5	2.6	e2.0	---	1.1	.72	.49	1.1	5.8	3.0	18
31	3.0	---	2.4	e1.9	---	1.0	---	.97	---	5.2	3.8	---
TOTAL	149.7	204.1	121.7	152.3	46.3	37.6	26.34	21.33	66.82	214.6	190.0	100.5
MEAN	4.63	6.80	3.93	4.91	1.60	1.21	.86	.69	2.23	6.92	6.13	3.35
MAX	38	41	12	62	2.0	1.5	1.1	.97	12	19	40	18
MIN	1.5	3.3	2.4	1.9	1.3	1.0	.70	.49	.82	1.0	2.9	1.9
AC-FT	297	405	241	302	92	75	52	42	133	426	377	199

CAL YR 1987	TOTAL	1006.73	MEAN	2.76	MAX	49	MIN	.40	AC-FT	2000
WTR YR 1988	TOTAL	1331.29	MEAN	3.64	MAX	62	MIN	.49	AC-FT	2640

e Estimated

16849000 FENA DAM SPILLWAY NEAR AGAT

LOCATION.--Lat 13°21'28" N., long 144°42'12" E., Hydrologic Unit 20100003, on left bank 3.5 mi southeast of Agat and 5.8 mi southwest of Yona.

DRAINAGE AREA.--5.88 mi^2.

PERIOD OF RECORD.--September 1951 to July 1952, November 1952 to current year. Daily mean gage heights published since October 1973.

REVISED RECORDS.--WSP 2137: Drainage area. WDR HI-78-2: 1977(M, m).

GAGE.--Water-stage recorder and concrete-dam control. Datum of gage is 111.35 ft above mean sea level (from U.S. Navy construction plans).

REMARKS.--Gage-height records good. About 14 ft^3/s is diverted from Fena Valley Reservoir and tributary springs for military and civilian use. Discharge records represent flow over spillway only.

AVERAGE DISCHARGE.--20 years (1953-73), 17.9 ft^3/s (12,970 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, not determined, occurred Oct. 15, 1953 (gage height, at least 4.5 ft); no flow for many days each year. Minimum recorded gage height, -21.86 ft, Aug. 4, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 0.94 ft, Jan. 12; minimum, -16.10 ft, Oct. 17.

GAGE HEIGHT (FEET AT DATUM), WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	-14.85	-10.22	-2.94	-0.51	-0.34	-2.49	-5.70	-8.98	-12.50	-12.89	-5.13	-0.18
2	-14.82	-10.26	-2.86	-0.53	-0.36	-2.59	-5.83	-9.08	-12.45	-12.99	-4.95	-0.21
3	-15.02	-10.25	-2.79	-0.55	-0.41	-2.69	-5.94	-9.18	-11.98	-12.98	-4.70	-0.21
4	-15.10	-10.26	-2.70	-0.59	-0.45	-2.77	-6.06	-9.30	-11.17	-12.87	-4.40	-0.21
5	-15.18	-9.85	-2.66	-0.62	-0.51	-2.87	-6.18	-9.41	-11.76	-12.58	-3.95	.03
6	-15.27	-9.70	-2.66	-0.84	-0.56	-2.97	-6.29	-9.52	-11.82	-12.41	-3.77	.07
7	-15.35	-9.65	-2.35	-0.59	-0.62	-3.06	-6.40	-9.64	-11.84	-12.33	-3.64	.08
8	-15.42	-9.63	-2.15	-0.61	-0.69	-3.12	-6.52	-9.75	-11.88	-11.89	-3.54	.03
9	-15.45	-9.45	-2.10	-0.66	-0.77	-3.21	-6.63	-9.87	-11.95	-11.20	-3.37	.06
10	-15.54	-9.31	-2.06	-0.70	-0.85	-3.30	-6.75	-9.99	-11.96	-10.39	-3.17	.04
11	-15.60	-9.07	-1.95	-0.78	-0.92	-3.40	-6.87	-10.12	-11.31	-10.08	-2.99	.05
12	-15.68	-8.94	-1.85	-0.44	-1.01	-3.50	-6.96	-10.25	-11.80	-9.99	-2.89	.03
13	-15.78	-8.80	-1.58	.50	-1.11	-3.59	-7.05	-10.47	-11.84	-9.90	-2.85	.06
14	-15.88	-8.71	-1.45	.18	-1.19	-3.69	-7.18	-10.52	-11.88	-9.65	-1.93	.10
15	-15.97	-8.61	-1.37	.09	-1.27	-3.79	-7.25	-10.64	-11.96	-9.15	-0.90	.04
16	-16.02	-8.59	-1.29	.04	-1.35	-3.89	-7.32	-10.77	-12.04	-8.72	-0.74	.00
17	-16.06	-8.47	-1.27	.00	-1.42	-4.00	-7.42	-10.90	-12.13	-8.46	-0.62	-0.05
18	-15.92	-8.36	-1.24	-0.02	-1.50	-4.12	-7.57	-11.03	-12.22	-8.36	-0.56	-0.03
19	-14.67	-8.13	-1.11	-0.03	-1.58	-4.20	-7.72	-11.15	-12.30	-8.33	-0.51	.01
20	e-12.95	e-8.95	-0.95	-0.06	-1.68	-4.31	-7.82	-11.28	-12.35	-8.32	-0.45	-0.01
21	e-12.41	e-6.48	-0.82	-0.08	-1.77	-4.41	-7.92	-11.39	-12.35	-8.28	-0.41	-0.04
22	e-11.94	e-4.95	-0.71	-0.04	-1.85	-4.53	-8.02	-11.49	-12.22	-8.21	-0.37	-0.03
23	e-10.84	e-4.07	-0.66	-0.05	-1.92	-4.83	-8.13	-11.59	-12.25	-8.22	-0.34	-0.03
24	e-10.55	e-3.75	-0.83	-0.07	-2.01	-4.75	-8.22	-11.83	-12.32	-8.17	-0.35	-0.07
25	e-10.40	e-3.54	-0.60	-0.08	-2.05	-4.88	-8.32	-11.73	-12.41	-7.71	-0.37	-0.09
26	e-10.35	e-3.35	-0.58	-0.10	-2.13	-5.00	-8.42	-11.86	-12.50	-6.88	-0.30	-0.10
27	e-10.34	e-3.33	-0.55	-0.13	-2.22	-5.13	-8.54	-11.97	-12.59	-6.51	-0.28	-0.14
28	e-10.24	-3.17	-0.53	-0.16	-2.29	-5.24	-8.83	-12.07	-12.68	-5.91	-0.25	-0.17
29	e-10.25	-3.08	-0.48	-0.21	-2.39	-5.35	-8.78	-12.20	-12.69	-5.61	-0.24	-0.17
30	e-10.25	-2.99	-0.45	-0.28	---	-5.47	-8.87	-12.35	-12.78	-5.38	-0.22	.02
31	-10.30	---	-0.49	-0.32	---	-5.59	---	-12.44	---	-5.26	-0.19	---
MEAN	-13.69	-7.40	-1.46	-0.26	-1.28	-3.95	-7.31	-10.73	-12.13	-9.34	-1.88	-0.04
MAX	-10.24	-2.99	-0.45	.50	-0.34	-2.49	-5.70	-8.98	-11.17	-5.28	-0.19	.10
MIN	-16.06	-10.26	-2.94	-0.76	-2.39	-5.59	-8.87	-12.44	-12.78	-12.99	-5.13	-0.21

CAL YR 1987 MEAN -10.24 MAX .07 MIN -20.37
WTR YR 1988 MEAN -5.81 MAX .50 MIN -16.06

e Estimated

16854500 UGUM RIVER ABOVE TALOFOFO FALLS, NEAR TALOFOFO

LOCATION.--Lat 13°19'16" N., long 144°44'01" E., Hydrologic Unit 20100003, about 300 ft upstream from Talofofo Falls, 0.9 mi north of NASA Tracking Station, and 3.5 mi southwest of main intersection in Talofofo village.

DRAINAGE AREA.--5.76 mi^2.

PERIOD OF RECORD.--June 1977 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 130 ft, from topographic map.

REMARKS.--Records good. No diversion upstream. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--11 years, 24.4 ft^3/s (17,680 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,890 ft^3/s, Feb. 28, 1980, gage height, 14.2 ft, from flood-marks, from rating curve extended above 350 ft^3/s on basis of slope-area measurement at gage height 14.2 ft; minimum, 3.4 ft^3/s, June 27, 1978, July 14, 18, 19, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,110 ft^3/s, Jan. 12, gage height, 6.68 ft, no peak greater than base discharge of 1,300 ft^3/s; minimum, 4.0 ft^3/s, May 29 to June 1.

DISCHARGE, IN 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	12	15	19	13	15	9.5	9.5	5.9	5.1	6.8	28	16
2	12	15	21	13	14	9.5	9.5	5.9	12	6.4	46	16
3	12	16	19	12	14	9.5	8.8	5.9	24	27	37	17
4	11	15	17	12	13	9.5	8.8	6.1	8.8	32	52	16
5	11	32	20	13	13	9.5	8.8	5.2	8.2	45	43	148
6	11	19	18	18	12	9.5	8.8	5.9	6.8	23	28	56
7	11	18	24	17	12	10	8.8	6.1	7.0	15	24	37
8	12	15	19	14	12	10	8.5	5.7	7.0	42	25	24
9	11	31	18	13	12	9.5	8.2	5.2	8.8	97	44	20
10	11	22	18	12	11	9.5	8.0	5.0	10	87	30	21
11	11	20	29	12	11	9.5	7.8	4.9	12	25	23	24
12	11	17	24	175	11	9.5	7.8	4.9	8.5	18	20	21
13	11	18	48	131	11	9.5	7.8	4.9	8.2	17	40	18
14	10	17	23	39	11	9.5	7.8	4.9	8.0	39	58	17
15	11	18	19	28	11	9.5	7.8	4.7	7.5	30	38	22
16	11	15	19	22	10	9.5	8.0	4.9	7.3	34	26	19
17	12	31	17	20	11	9.5	7.8	4.7	8.6	24	22	55
18	19	34	17	19	10	9.5	7.8	4.5	8.8	19	20	25
19	105	184	25	18	10	10	7.5	4.7	16	18	19	20
20	59	104	24	17	10	10	7.5	5.2	11	17	22	18
21	35	43	20	21	10	10	7.3	4.7	17	17	19	17
22	120	78	17	18	10	9.5	7.8	4.5	12	15	19	17
23	41	43	15	17	9.5	9.5	7.3	4.7	9.5	15	19	17
24	27	31	15	18	9.5	9.5	7.0	5.0	7.8	14	17	17
25	22	28	15	18	11	9.5	7.0	4.7	8.8	49	17	18
26	19	24	14	15	10	9.5	6.8	4.4	6.4	58	23	17
27	18	28	14	15	9.5	10	6.8	4.4	5.9	27	17	21
28	18	24	15	15	9.5	10	6.8	4.4	5.9	35	17	18
29	17	24	19	14	9.5	10	6.8	4.2	20	25	17	20
30	18	20	15	15	---	9.5	8.1	4.0	8.8	20	18	105
31	15	---	14	14	---	9.5	---	4.0	---	19	21	---
TOTAL	720	971	609	794	322.5	296.5	234.8	154.2	267.7	692.2	845	877
MEAN	23.2	32.4	19.6	25.6	11.1	9.63	7.83	4.97	9.59	28.8	27.3	29.2
MAX	120	184	48	175	15	10	9.5	8.1	24	97	58	148
MIN	10	15	14	12	9.5	9.5	6.1	4.0	5.1	8.4	16	16
AC-FT	1430	1930	1210	1570	640	592	466	306	571	1770	1680	1740

CAL YR 1987	TOTAL	5054.9	MEAN	13.8	MAX	164	MIN	3.7	AC-FT	10030
WTR YR 1988	TOTAL	7005.9	MEAN	19.1	MAX	175	MIN	4.0	AC-FT	13900

16858000 YLIG RIVER NEAR YONA

LOCATION.--Lat 13°23'28" N., long 144°45'06" E., Hydrologic Unit 20100003, on right bank 2.2 mi upstream from mouth, 1.9 mi southwest of Yona, and 5.6 mi south of Agana.

DRAINAGE AREA.--6.48 mi^2.

PERIOD OF RECORD.--June 1952 to March 1986, April 1987 to current year.

REVISED RECORDS.--WSP 1937: 1957-58. WSP 2137: Drainage area.

GAGE.--Water-stage recorder and concrete control. Altitude of gage is 20 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion above station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--34 years, 27.9 ft^3/s (20,230 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,900 ft^3/s, Sept. 9, 1963, gage height, 19.77 ft, from flood-marks, from rating curve extended above 830 ft^3/s on basis of slope-area measurements at gage heights 11.24 ft and 15.87 ft, maximum gage height, 22.80 ft, Feb. 26, 1980; minimum, 0.07 ft^3/s, May 20, 1973, but may have been less during period of diversion from gage pool May 15 to June 20, 1966.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct. 22	0915	2,830	16.38	Jan. 12	2215	*3,350	*18.10

Minimum discharge, 0.46 ft^3/s, May 31.

DISCHARGE, IN 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	14	23	17	14	10	3.8	1.5	1.2	1.9	3.8	26	7.6
2	12	21	19	14	9.1	3.3	1.5	1.3	23	3.1	28	7.6
3	10	21	16	13	8.3	3.1	1.5	1.3	18	6.1	39	7.6
4	9.4	23	17	13	8.3	3.1	1.3	1.2	6.1	11	35	7.6
5	9.1	28	19	14	7.3	3.3	1.2	1.0	3.3	24	30	11
6	8.8	21	16	15	7.3	2.9	1.2	.94	2.0	20	28	8.6
7	8.8	17	79	16	e7.2	3.1	1.2	.94	3.4	12	27	7.3
8	10	16	22	14	e7.1	3.6	1.1	.94	6.6	25	29	11
9	10	31	19	12	e7.0	3.3	1.1	.94	3.1	26	103	9.4
10	10	21	17	13	e6.8	2.9	1.1	1.1	5.3	67	62	8.6
11	19	31	17	12	e6.2	2.6	1.1	1.4	16	20	35	29
12	9.7	21	23	537	e5.8	2.6	1.3	1.2	10	18	31	16
13	11	19	30	240	e5.6	2.5	1.8	.94	5.7	19	28	11
14	6.6	22	19	32	e5.5	2.5	1.8	.86	4.0	85	90	9.4
15	6.8	17	16	23	e5.4	2.4	1.5	.71	2.9	31	29	11
16	8.3	16	22	19	e5.4	2.4	2.0	.64	2.6	32	23	12
17	9.1	27	16	17	e6.1	2.2	1.4	.58	2.4	25	21	49
18	31	24	17	15	e5.2	2.1	1.2	.58	2.4	20	16	16
19	409	53	32	19	e4.9	2.1	1.2	.52	4.0	16	15	12
20	95	73	24	15	e4.8	2.2	1.3	.58	4.0	14	16	10
21	61	30	28	18	e5.2	2.2	1.8	.71	8.3	25	16	10
22	401	211	23	14	e5.2	2.2	1.6	.71	7.0	19	14	12
23	91	41	24	11	e4.7	2.1	1.5	.64	6.1	15	12	12
24	72	31	17	12	e4.6	1.9	1.5	1.3	5.7	14	11	10
25	65	27	16	14	e8.0	1.8	1.4	1.2	4.0	71	10	16
26	56	26	17	12	e5.1	1.8	1.4	.78	3.3	42	12	11
27	48	25	15	10	e4.4	1.8	1.4	.84	2.8	40	11	10
28	39	22	16	10	e4.2	1.5	1.5	.58	7.6	57	10	9.4
29	36	24	19	9.4	4.1	1.5	1.4	.58	33	38	9.4	12
30	28	19	15	9.1	---	1.5	1.2	.58	5.1	28	9.4	73
31	25	---	15	9.7	---	1.5	---	.52	---	26	8.6	---
TOTAL	1633.6	981	662	1198.2	176.8	75.8	42.0	27.11	209.6	853.0	836.4	439.1
MEAN	52.7	32.7	21.4	38.6	6.10	2.45	1.40	.87	6.99	27.5	27.0	14.6
MAX	409	211	79	537	10	3.8	2.0	1.4	33	85	103	73
MIN	8.3	16	15	9.1	4.1	1.5	1.1	.52	1.9	3.1	8.6	7.3
AC-FT	3240	1950	1310	2370	351	150	83	54	416	1690	1660	871

WTR YR 1988 TOTAL 7132.61 MEAN 19.5 MAX 537 MIN .52 AC-FT 14150

e Estimated

16890600 DIONGRADID RIVER, BABELTHUAP

LOCATION.--Lat 07°36'04" N., long 134°35'02" E., Hydrologic Unit 20100006, on right bank 0.3 mi upstream from left-bank tributary, 0.9 mi southeast of Ngetbong village school, and 2.4 mi upstream from confluence with Ngerchetang River.

DRAINAGE AREA.--4.45 mi^2.

PERIOD OF RECORD.--October 1969 to current year. Prior to October 1980, published as Adeiddo River.

REVISED RECORDS.--WDR HI-75-1: 1970(M), 1972-73(P). WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 15 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream.

AVERAGE DISCHARGE.--19 years, 31.9 ft^3/s (23,110 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,310 ft^3/s, Jan. 22, 1975, gage height, 15.44 ft, from rating curve extended above 410 ft^3/s on basis of field estimate at gage height 15.44 ft; minimum, 2.1 ft^3/s, Apr. 14-17, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 332 ft^3/s, June 20, gage height, 5.52 ft, no peak greater than base discharge of 600 ft^3/s; minimum, 4.6 ft^3/s, Apr. 29, 30.

DISCHARGE, IN 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	e30	e25	15	13	16	9.1	15	7.0	38	45	e35	e20
2	e30	e25	15	13	18	9.4	16	6.8	36	45	e30	e18
3	e45	e25	15	13	17	9.7	15	16	35	38	e25	e18
4	e60	e20	15	12	12	9.4	15	7.0	34	36	e20	e16
5	e80	e20	15	12	41	9.7	13	5.5	34	36	e18	e16
6	e50	e18	16	12	31	9.7	12	5.5	40	46	e16	e14
7	e45	e18	16	13	15	9.4	11	5.3	38	40	e35	e16
8	e40	e20	16	13	14	9.7	10	5.1	35	49	e25	e15
9	e35	e18	16	13	14	9.7	10	6.8	36	46	e20	e14
10	e35	e18	16	13	13	9.1	13	6.1	38	48	e18	e14
11	e40	e16	16	13	13	10	12	6.6	36	55	e55	e12
12	e35	e15	16	13	12	12	10	14	36	47	e40	e12
13	e35	15	16	13	12	13	10	16	36	58	e35	e10
14	e35	15	16	13	13	14	10	19	36	50	e30	e9.5
15	e30	19	16	13	13	15	9.1	19	36	44	e25	e9.0
16	e50	16	16	13	13	16	8.6	20	36	50	e25	e8.0
17	e45	15	16	13	13	16	8.4	20	36	42	e20	e10
18	e35	15	16	13	13	15	8.4	21	36	42	e20	e9.5
19	e30	15	16	22	12	14	8.1	24	42	46	e18	e12
20	e30	15	17	38	12	13	9.4	30	160	46	e26	e22
21	e30	15	19	21	12	13	9.8	28	65	69	e20	e12
22	e25	16	20	17	12	13	5.9	26	66	67	e60	e10
23	e25	16	19	18	12	12	5.1	27	57	52	e35	e9.5
24	e20	15	20	18	12	12	4.6	27	58	47	e30	e9.0
25	e25	16	15	19	12	11	5.9	28	136	63	e25	e50
26	e25	15	19	17	12	10	6.1	28	108	50	e35	e25
27	e20	16	28	19	17	17	4.8	35	75	44	e30	e18
28	e20	34	51	19	6.6	24	4.8	42	64	45	e25	e15
29	e18	16	20	20	7.7	20	4.6	55	57	42	e20	e12
30	e18	16	14	24	---	17	4.6	38	51	42	e20	e18
31	e35	---	13	21	---	16	---	60	---	42	e25	---
TOTAL	1076	538	554	504	420.3	397.9	280.4	652.7	1611	1472	861	453.5
MEAN	34.7	17.9	17.9	16.3	14.5	12.8	9.35	21.1	53.7	47.5	27.8	15.1
MAX	80	34	51	38	41	24	16	60	160	69	60	50
MIN	18	15	13	12	6.6	9.1	4.6	5.1	34	36	16	8.0
AC-FT	2130	1070	1100	1000	834	789	556	1290	3200	2920	1710	900

CAL YR 1987	TOTAL	9931.7	MEAN	27.2	MAX	159	MIN	5.9	AC-FT	19700
WTR YR 1988	TOTAL	6620.6	MEAN	24.1	MAX	160	MIN	4.8	AC-FT	17500

e Estimated

16890600 DIONGRADID RIVER, BABELTHUAP--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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)	TEMPER-ATURE AIR (DEG C)	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)
NOV									
12...	1315	15	--	--	26.0	--	--	--	--
DEC									
17...	1140	16	--	--	28.0	--	--	--	--
APR									
21...	1145	8.3	--	--	27.0	--	--	--	--
MAY									
11...	1400	6.9	--	--	26.0	--	--	--	--
JUN									
29...	0910	60	--	--	25.5	--	--	--	--
JUL									
16...	0915	52	69	7.00	25.5	25.5	15	0	2.9

DATE	TIME	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	ALKA-LINITY LAB (MG/L AS CACO3)
JUL								
16...	0915	1.9	3.1	31	0.4	0.20	4.0	16

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	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 AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL								
16...	1.4	<0.10	13	36	0.05	<0.100	76	8

< Actual value is known to be less than the value shown.

16890900 TABECHEDING RIVER, BABELTHUAP

LOCATION.--Lat 07°27'03" N., long 134°31'29" E., Hydrologic Unit 20100006, on left bank 0.2 mi downstream from waterfall, 1.5 mi upstream from boat landing, and 1.6 mi east of forestry station.

DRAINAGE AREA.--6.07 mi^2.

PERIOD OF RECORD.--October 1970 to current year. Prior to October 1980, published as Tabagaten River.

REVISED RECORDS.--WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 20 ft, from topographic map.

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

AVERAGE DISCHARGE.--18 years, 47.9 ft^3/s (34,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,580 ft^3/s Dec. 23, 1973, gage height, 8.79 ft, from rating curve extended above 290 ft^3/s; minimum, 0.57 ft^3/s Apr. 19, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 20	2230	1,250	6.64	June 25	2330	*1,500	*7.05

Minimum discharge, 4.8 ft^3/s Apr. 17.

DISCHARGE, IN 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	e15	10	31	153	42	e16	9.2	14	35	49	30	25
2	e15	9.5	27	70	27	e15	8.7	25	28	43	24	24
3	e18	e60	24	45	23	e15	7.9	42	29	40	30	20
4	e30	e45	24	38	22	e14	7.6	20	27	33	24	32
5	e50	e40	27	34	111	14	7.1	16	25	32	22	34
6	e25	e80	24	31	52	13	6.6	14	35	31	20	29
7	e20	33	28	28	e40	12	6.1	14	68	33	30	22
8	e20	88	23	26	e35	12	5.9	20	42	130	29	35
9	e18	34	36	45	e25	12	5.7	15	59	81	23	23
10	e18	121	28	31	e40	11	6.1	13	93	59	26	20
11	e18	65	23	25	e35	12	7.4	12	51	46	98	19
12	e15	46	21	24	e30	12	5.7	52	42	39	42	17
13	e15	79	20	23	e35	10	5.4	27	36	75	31	16
14	e14	85	22	22	e40	10	5.7	18	30	97	37	e15
15	e14	48	28	20	e40	11	5.9	20	29	68	28	e40
16	19	38	23	20	e35	9.9	5.2	34	30	124	27	e30
17	23	30	19	20	e30	9.2	8.2	22	30	62	30	e25
18	16	32	18	18	e30	8.7	8.4	22	30	52	30	e20
19	14	28	18	46	e25	7.9	7.9	25	30	81	24	e30
20	13	35	19	54	e25	7.4	31	82	223	55	22	42
21	13	56	18	33	e30	8.9	19	38	423	85	25	29
22	12	81	17	27	e25	6.9	12	31	136	74	98	25
23	12	36	19	25	e25	6.4	9.5	60	82	54	35	20
24	10	41	19	22	e20	6.4	8.2	37	62	48	28	28
25	10	33	17	20	e20	6.1	30	32	260	83	38	134
26	10	28	17	19	e18	5.9	31	31	318	52	30	39
27	10	29	22	19	e18	11	15	37	171	40	25	30
28	9.9	60	124	18	e16	29	11	31	100	37	23	25
29	9.9	35	54	17	e18	21	9.2	29	76	37	22	25
30	13	28	34	39	---	12	8.9	25	61	33	23	103
31	15	---	30	31	---	10	---	64	---	28	51	---
TOTAL	512.8	1431.5	854	1043	930	353.7	315.5	922	2861	1781	1026	976
MEAN	16.5	47.7	27.5	33.6	32.1	11.4	10.5	29.7	88.7	57.5	33.1	32.5
MAX	50	121	124	153	111	29	31	82	423	130	98	134
MIN	9.9	9.5	17	17	16	5.9	5.2	12	25	28	20	15
AC-FT	1020	2840	1690	2070	1840	702	826	1830	5260	3530	2040	1940

CAL YR 1987	TOTAL	17117.6	MEAN	46.9	MAX	650	MIN	3.7	AC-FT	33950
WTR YR 1988	TOTAL	12606.5	MEAN	35.0	MAX	423	MIN	5.2	AC-FT	25400

e Estimated

16890900 TABECHEDING RIVER, BABELTHUAP--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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)	TEMPER-ATURE AIR (DEG C)	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)
OCT									
15...	1135	12	--	--	27.0	--	--	--	--
NOV									
30...	1120	28	--	--	27.0	--	--	--	--
APR									
06...	1135	7.1	--	--	26.0	--	--	--	--
MAY									
10...	1025	14	--	--	28.0	--	--	--	--
JUN									
18...	1120	28	--	--	28.0	--	--	--	--
JUL									
14...	1145	62	46	7.20	24.5	26.0	16	0	2.7

DATE	TIME	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	ALKA-LINITY LAB (MG/L AS CACO3)
JUL								
14...	1145	2.3	3.4	31	0.4	0.20	3.2	18

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	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 AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL								
14...	2.1	<0.10	15	40	0.05	<0.100	53	8

< Actual value is known to be less than the value shown.

16891310 KMEKUMEL RIVER, BABELTHUAP

LOCATION.--Lat 07°23'14" N., long 134°32'42" E., Hydrologic Unit 20100006, 0.5 mi upstream from confluence with Edeng River and 1.1 mi north of Palau Mission Academy.

DRAINAGE AREA.--1.44 mi^2.

PERIOD OF RECORD.--September 1978 to current year. Low-flow partial-record station operated "at mouth" 1970-78. Prior to October 1980, published as Kumekumeyel River.

REVISED RECORDS.--WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 96.44 ft, from stadia survey.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream.

AVERAGE DISCHARGE.--10 years, 9.12 ft^3/s (6,610 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,560 ft^3/s Apr. 13, 1979, gage height, 10.53 ft, from rating curve extended above 106 ft^3/s on basis of slope-area measurement at gage height 10.53 ft; minimum, 0.18 ft^3/s Apr. 14-17, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharge greater than base discharge of 450 ft^3/s and maximum(*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 19	2330	656	7.33	No other peak greater than base discharge.			

Minimum, 2.0 ft^3/s Nov. 17.

DISCHARGE, IN 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	2.4	2.5	5.5	39	3.5	e3.5	3.0	8.5	9.7	e10	8.8	10
2	2.4	2.4	4.4	16	e3.5	e3.0	2.9	10	9.0	e10	7.9	9.2
3	7.5	3.4	3.9	9.0	e3.0	e3.0	2.7	9.2	9.5	e9.5	7.5	8.4
4	8.5	2.7	3.7	7.0	e3.0	e3.5	2.7	6.1	8.1	e9.0	7.0	12
5	16	2.4	4.1	5.9	e20	e3.5	2.6	5.5	7.9	e9.0	6.8	9.5
6	6.8	2.2	3.4	5.2	e10	e3.0	2.5	5.3	18	e8.5	6.4	8.8
7	5.0	2.5	3.9	4.8	e7.0	e3.0	2.5	5.2	24	e9.0	8.8	8.4
8	4.4	3.0	3.4	4.3	e6.5	3.4	2.4	16	18	e30	6.4	9.7
9	3.9	2.4	6.4	9.4	e6.0	3.4	2.4	7.7	14	e15	6.1	7.7
10	4.1	3.9	4.1	6.6	e7.0	3.2	3.0	7.5	13	e12	7.0	7.3
11	4.8	3.2	3.5	4.6	e6.0	3.7	2.7	6.8	11	e10	14	7.7
12	3.7	2.7	3.4	4.1	e5.5	3.5	2.5	11	9.7	e10	8.8	6.6
13	3.7	3.2	3.4	3.9	e5.5	3.2	2.5	8.1	8.8	e12	9.5	6.2
14	3.9	4.3	4.6	3.9	e7.0	3.4	2.4	6.6	e8.5	e15	16	6.1
15	3.5	2.7	3.7	3.5	e7.0	3.7	2.5	9.0	e8.5	e10	9.5	5.9
16	5.5	2.2	3.4	3.4	e6.5	3.5	2.2	12	e8.5	12	8.4	5.7
17	4.6	2.1	3.0	3.5	e6.0	3.0	5.0	7.9	e8.5	11	9.2	14
18	3.4	2.8	2.7	3.2	e6.0	2.9	3.0	8.8	e8.5	11	8.8	21
19	3.2	3.8	3.4	4.3	e5.0	2.6	2.4	10	e9.0	11	7.5	10
20	3.2	3.2	3.4	7.5	e5.0	2.5	5.4	13	e50	13	7.0	18
21	3.4	9.3	2.7	4.3	e5.5	2.5	4.6	15	e100	13	7.3	9.5
22	2.9	9.8	2.5	3.4	e5.0	2.5	3.0	16	e30	13	35	8.4
23	2.6	4.6	2.5	3.5	e5.0	2.4	2.6	24	e15	11	11	8.4
24	2.7	6.2	2.7	3.2	e4.0	2.2	2.5	16	e12	9.7	9.5	9.2
25	3.4	4.6	2.4	2.7	e4.0	2.2	9.7	12	e60	22	13	20
26	2.7	4.6	2.2	2.6	e3.5	2.2	5.7	12	e75	14	11	11
27	2.5	4.6	3.4	2.5	e3.5	4.4	3.9	12	e50	11	9.2	9.9
28	2.4	10	28	2.5	e3.0	12	3.2	9.7	e20	10	8.4	9.2
29	2.4	5.9	8.1	2.4	e3.0	5.0	2.9	8.6	e15	11	8.1	8.4
30	2.5	5.2	5.2	3.5	---	3.5	3.0	8.1	e12	9.0	7.5	8.1
31	4.9	---	4.1	3.7	---	3.2	---	14	---	8.4	15	---
TOTAL	132.9	122.4	141.1	183.4	165.5	106.6	98.4	321.6	851.2	369.1	306.4	294.3
MEAN	4.29	4.08	4.55	5.92	5.71	3.44	3.28	10.4	21.7	11.9	9.88	9.81
MAX	16	10	28	39	20	12	9.7	24	100	30	35	21
MIN	2.4	2.1	2.2	2.4	3.0	2.2	2.2	5.2	7.9	8.4	6.1	5.7
AC-FT	264	243	280	364	328	211	195	638	1290	732	608	584

CAL YR 1987	TOTAL	2873.98	MEAN	7.87	MAX	219	MIN	.68	AC-FT	5700
WTR YR 1988	TOTAL	2892.9	MEAN	7.90	MAX	100	MIN	2.1	AC-FT	5740

e Estimated

16891310 KMEKUMEL RIVER, BABELTHUAP--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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)	TEMPER-ATURE AIR (DEG C)	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)
OCT									
06...	1125	6.2	--	--	26.0	--	--	--	--
NOV									
20...	1030	2.3	--	--	26.0	--	--	--	--
APR									
05...	1100	1.1	--	--	26.0	--	--	--	--
MAY									
12...	1100	6.0	--	--	26.0	--	--	--	--
JUN									
14...	0945	5.5	--	--	26.0	--	--	--	--
JUL									
15...	1000	10	106	7.70	25.5	27.5	25	0	5.5

DATE	TIME	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	ALKA-LINITY LAB (MG/L AS CACO3)
JUL								
15...	1000	2.8	3.7	24	0.3	0.20	4.1	27

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	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 AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL								
15...	1.3	<0.10	18	52	0.07	<0.100	45	5

< Actual value is known to be less than the value shown.

16891400 SOUTH FORK NGERDORCH RIVER, BABELTHUAP

LOCATION.--Lat 07°26'19" N., long 134°34'28" E., Hydrologic Unit 20100006, on right bank 0.3 mi from left-bank tributary, 1.3 mi west of Rrai village, and 1.5 mi upstream from confluence with North Fork Ngerdorch River.

DRAINAGE AREA.--2.44 mi^2.

PERIOD OF RECORD.--March 1971 to current year. Prior to October 1980, published as South Fork Ngardok River.

REVISED RECORDS.--WDR HI-75-1: 1971(M), 1972, 1973(P), 1974. WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 25 ft, revised, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream.

AVERAGE DISCHARGE.--17 years, 18.8 ft^3/s (13,620 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,750 ft^3/s Dec. 13, 1974, gage height, 9.19 ft, from rating curve extended above 65 ft^3/s on basis of field estimate at gage height 7.57 ft; minimum, 0.48 ft^3/s Apr. 16-17, 1983.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 1	1700	1,010	4.42	June 19	2230	*1,660	*5.38

Minimum discharge, 2.6 ft^3/s Apr. 15-17, 19.

DISCHARGE, IN 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	8.7	e6.0	13	123	e20	e7.5	5.0	5.9	16	e20	13	12
2	5.0	e5.5	12	34	e12	e7.0	4.6	8.7	14	e18	12	11
3	5.9	e5.0	11	21	e10	e7.0	4.6	15	39	e18	13	9.3
4	5.9	e5.0	11	17	e9.0	e6.5	4.2	8.1	22	e15	10	12
5	15	e4.5	12	14	e50	e6.5	4.2	6.3	17	e15	9.9	11
6	7.5	e4.5	9.9	13	e25	e6.0	3.8	5.9	24	e12	9.3	9.3
7	e7.5	e4.5	10	12	e20	e6.0	3.4	5.4	36	e12	14	6.1
8	e7.0	e5.5	9.3	10	e15	e6.0	3.4	10	25	e60	10	7.5
9	e6.5	e5.0	14	20	e10	e6.0	3.1	7.1	28	e40	10	7.1
10	e8.5	e12	12	14	e20	5.9	4.2	5.9	40	e25	10	7.1
11	e7.0	e9.0	9.9	10	e15	8.7	3.8	12	30	e20	31	6.7
12	e6.0	8.7	8.7	9.9	e12	6.3	3.1	33	24	e15	17	6.7
13	e6.0	58	8.1	9.3	e15	5.4	2.8	15	23	e35	12	6.3
14	e6.5	29	10	e9.0	e18	5.4	2.8	9.9	19	e45	16	6.3
15	e6.0	14	10	e8.5	e18	5.9	2.8	12	19	e25	12	6.3
16	e7.0	10	9.3	e8.5	e15	5.4	2.6	18	17	e40	9.9	6.3
17	e7.0	8.7	8.1	e8.0	e12	5.0	2.6	11	19	e20	12	12
18	e5.5	8.7	7.5	e7.5	e12	4.6	3.1	10	18	e15	14	8.1
19	e5.0	10	8.1	e20	e10	4.6	2.8	20	128	17	10	e10
20	e5.0	11	8.1	e30	e10	4.2	6.3	33	186	19	9.3	e20
21	e5.5	14	7.5	e15	e12	4.2	5.4	18	41	25	10	e10
22	e5.0	21	7.1	e12	e10	4.2	3.8	17	e35	23	64	e9.0
23	e4.5	12	8.1	e10	e10	3.8	3.1	28	e30	18	22	e8.0
24	e4.5	14	7.1	e9.0	e9.0	3.4	3.1	18	e25	16	21	e8.5
25	e5.0	11	6.3	e8.5	e9.0	3.4	12	16	e100	46	21	e60
26	e5.0	12	6.3	e8.0	e8.5	3.4	8.1	14	e150	25	17	e20
27	e4.5	14	7.5	e8.0	e8.5	8.7	5.9	21	e75	19	16	12
28	e4.5	28	54	e7.5	e7.5	19	4.2	16	e50	18	14	10
29	e5.0	18	25	e7.0	e7.5	8.7	3.8	14	e30	19	12	9.9
30	e5.0	14	14	e18	---	5.9	3.4	13	e25	15	11	17
31	e10	---	12	e15	---	5.0	---	22	---	12	17	---
TOTAL	193.0	378.6	356.9	518.7	410.0	187.6	125.6	449.2	1305	720	479.4	347.5
MEAN	6.23	12.6	11.5	16.7	14.1	6.05	4.19	14.5	43.5	23.2	15.5	11.6
MAX	15	58	54	123	50	19	12	33	186	60	64	60
MIN	4.5	4.5	6.3	7.0	7.5	3.4	2.6	5.4	14	12	9.3	6.3
AC-FT	383	751	708	1020	813	372	249	891	2590	1430	951	689

CAL YR 1987	TOTAL	6234.2	MEAN	17.1	MAX	355	MIN	2.0	AC-FT	12370
WTR YR 1988	TOTAL	5469.5	MEAN	14.9	MAX	188	MIN	2.6	AC-FT	10850

e Estimated

16891400 SOUTH FORK NGERDORCH RIVER, BABELTHUAP--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

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)	TEMPER-ATURE AIR (DEG C)	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)
NOV									
11...	1230	4.8	--	--	25.0	--	--	--	--
APR									
19...	1105	1.5	--	--	27.0	--	--	--	--
JUL									
18...	1000	11	48	7.20	25.0	27.0	18	0	3.1

DATE	TIME	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	ALKA-LINITY LAB (MG/L AS CACO3)
JUL								
18...	1000	2.4	3.5	30	0.4	0.10	3.7	19

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	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 AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL								
18...	1.5	<0.10	16	42	0.06	<0.100	99	5

< Actual value is known to be less than the value shown.

16892000 QATLIW STREAM, YAP

LOCATION.--Lat 09°32'58" N., long 138°06'41" E., Hydrologic Unit 20100008, on right bank 90 ft below confluence with major tributary, 0.5 mi upstream from mouth, and 2.6 mi northwest of Colonia.

DRAINAGE AREA.--0.31 mi^2.

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

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 40 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.-- 6 YEARS (1983-88), 1.04 ft^3/s (753 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 874 ft^3/s June 21, 1982, gage height, 5.98 ft, from rating curve extended above 10 ft^3/s; no flow at times each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 199 ft^3/s Sept. 30, gage height, 3.33 ft, no peak greater than base discharge of 200 ft^3/s; minimum, no flow for many days.

DISCHARGE, IN 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	.08	2.1	.06	.00	.00	.00	.08	.04	.08	e.20	.34	.19
2	.02	.34	.04	.00	.00	.00	.01	.02	.04	e.08	.30	.16
3	.01	.82	.03	.00	.00	.00	.00	.00	.03	e.07	.88	.16
4	.01	.51	.03	.00	1.0	.00	.15	2.2	.00	e.07	3.8	.16
5	.08	.10	.01	.00	.70	.00	.04	.11	.00	e.07	.63	.23
6	.04	.10	.01	.00	.13	.00	.01	.02	.47	e.09	.19	.16
7	.05	.08	.00	.00	.01	.00	.00	.00	2.4	e.11	.11	.11
8	2.6	.03	.00	.00	.03	.00	.00	.00	.82	e.13	.08	.13
9	1.7	.02	.00	.00	.02	.00	.00	.00	.51	e3.0	.11	.18
10	.45	.01	.00	.00	.01	.00	.00	.00	.11	e.50	.11	.16
11	1.3	.01	.00	.00	.00	.00	.00	.00	.08	e5.6	.08	.16
12	.39	.02	.00	.00	.00	.00	.00	.00	.04	3.0	.10	.16
13	.10	.02	.01	.00	.00	.00	.00	.00	.03	.27	.13	.11
14	.05	.01	.01	.00	.00	.00	.00	.00	.03	1.3	3.2	.03
15	.03	.00	.00	.00	.00	.00	.00	.01	.04	11	.82	.10
16	.02	.00	.00	.00	.00	.00	.00	.01	e.14	4.5	.30	.23
17	.01	.01	.00	.00	.00	.00	.00	.01	e.15	2.4	3.4	3.1
18	.01	.01	.00	.00	.00	.00	.00	.01	e.15	2.7	.57	.45
19	.51	.00	.01	.00	.00	.00	.07	.02	e.50	1.2	.30	.23
20	.23	.00	.02	.00	.00	.00	.04	.11	e.60	1.7	.19	6.9
21	.04	.01	.01	.00	.00	.00	.02	3.8	e.18	5.7	.16	10
22	.02	.05	.00	.00	.00	.00	.01	.16	e.10	1.3	.16	5.5
23	.01	1.8	.00	.02	.00	.00	.01	1.4	e2.0	.27	.19	.82
24	.06	.19	.00	.01	.00	.00	.00	.19	e8.0	.23	.19	1.8
25	.13	.04	.00	.00	.00	.00	.00	.08	e1.0	.19	.16	6.2
26	.03	.02	.00	.00	.00	.00	.00	.04	e1.0	7.0	.39	1.8
27	.05	.10	.00	.00	.00	.00	.00	.03	e.30	.82	1.2	1.7
28	.03	2.1	.00	.00	.00	.00	.00	.03	e.20	1.6	.30	1.0
29	.05	1.3	.00	.00	.00	.00	.00	.03	e2.0	.45	.19	.88
30	.08	.19	.00	.03	---	.00	.02	.03	e.50	.30	.16	11
31	.27	---	.00	.02	---	.13	---	.04	---	.08	.13	---
TOTAL	8.46	9.97	.24	.08	1.90	.13	.46	8.17	21.48	55.93	18.87	53.79
MEAN	.27	.33	.008	.003	.088	.004	.015	.26	.72	1.80	.81	1.79
MAX	2.6	2.1	.06	.03	1.0	.13	.15	3.6	8.0	11	3.8	11
MIN	.01	.00	.00	.00	.00	.00	.00	.00	.00	.07	.08	.03
AC-FT	17	20	.5	.2	3.8	.3	.9	16	43	111	37	107

CAL YR 1987	TOTAL	399.92	MEAN	1.10	MAX	39	MIN	.00	AC-FT	793
WTR YR 1988	TOTAL	179.46	MEAN	.49	MAX	11	MIN	.00	AC-FT	356

e Estimated

16892400 QARINGEEL STREAM, YAP

LOCATION.--Lat 09°31'02" N., long 138°05'31" E., Hydrologic Unit 20100006, on right bank at Qaringeel and 0.3 mi southwest of Dalipeebinaew School.

DRAINAGE AREA.--0.24 mi^2.

PERIOD OF RECORD.--April 1968 to current year. Prior to October 1980, published as Aringel Stream.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 15 ft, from topographic map.

REMARKS.--Records fair. No diversion upstream. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--20 years, 1.07 ft^3/s (776 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 674 ft^3/s July 13, 1981, gage height, 7.82 ft, from rating curve extended above 20 ft^3/s; no flow at times.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
June 24	1230	208	4.98	Sept. 21	0400	*306	*5.67
July 14	0330	209	4.99				

No flow for many days.

DISCHARGE, IN 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	.02	.68	e.10	.01	.07	.00	.00	.05	.44	.08	.17	.76
2	.02	.21	e.06	.01	.03	.00	.00	.02	.09	.08	.17	.44
3	.02	.50	e.04	.01	.02	.00	.00	.01	.05	.04	.50	.17
4	.02	.44	e.03	.01	2.6	.00	.01	1.9	.03	.05	1.8	.41
5	.02	.17	e.03	.01	1.1	.00	.01	.38	.03	.08	.44	.41
6	.02	.11	e.03	.01	.30	.00	.01	.13	1.2	.13	.17	.21
7	.02	.07	e.03	.01	.13	.00	.01	.05	1.2	.13	.38	.11
8	.41	.06	e.03	.01	.09	.00	.00	.03	.76	1.0	.41	.42
9	.88	.05	.03	.01	.08	.00	.00	.02	e.60	7.5	.50	.27
10	.41	.04	.03	.01	.06	.00	.00	.01	e.30	.60	.44	.13
11	1.2	.03	.03	.01	.04	.00	.00	.01	e.15	1.2	.23	.07
12	.47	.60	.03	.01	.04	.00	.00	.01	e.11	1.2	.13	.03
13	.19	.60	.04	.01	.03	.00	.00	.01	e.10	3.6	.15	.03
14	.47	.35	.09	.00	.03	.00	.00	.01	e.10	9.1	1.5	.02
15	.47	.19	.05	.00	.03	.00	.00	.00	e.11	5.8	1.4	.03
16	.38	e.15	.03	.00	.03	.00	.00	.00	e.14	5.9	.98	.19
17	.06	e.05	.03	.00	.01	.00	.00	.00	e.15	1.7	.60	8.0
18	.03	e.03	.03	.00	.01	.00	.00	.00	e.16	1.8	.80	.60
19	.03	e.03	.03	.00	.01	.00	.00	.24	e.50	.84	.58	.23
20	.05	e.03	.04	.00	.01	.00	.00	.47	e.60	2.0	.27	3.5
21	.03	e.03	.03	.00	.01	.00	.00	4.4	e.20	5.5	.13	21
22	.02	e.05	.03	.00	.00	.00	.00	.44	e.10	.96	.09	e1.7
23	.02	e1.0	.02	.01	.00	.00	.00	.27	e1.0	.38	.08	e.44
24	.02	e.20	.02	.01	.00	.00	.00	.17	e12	.21	.08	e1.8
25	.02	e.05	.02	.01	.00	.00	.00	.07	1.5	.11	.03	10
26	.02	e.03	.01	.01	.00	.00	.00	.03	e1.8	3.9	.03	.92
27	.02	e.10	.01	.01	.00	.00	.00	.03	e.19	.50	.08	1.5
28	.02	e1.0	.01	.01	.00	.00	.00	.02	e.17	.41	.08	.88
29	.02	e.90	.01	.01	.00	.00	.00	.01	e1.0	.35	.05	5.4
30	.02	e.20	.01	.02	---	.00	.02	.01	e.13	.23	.03	7.5
31	.30	---	.01	.11	---	.00	---	.64	---	.11	.02	---
TOTAL	5.70	7.95	.99	.33	4.73	.00	.06	9.44	24.91	55.47	12.26	67.17
MEAN	.18	.26	.032	.011	.16	.00	.002	.30	.83	1.79	.40	2.24
MAX	1.2	1.0	.10	.11	2.6	.00	.02	4.4	12	9.1	1.6	21
MIN	.02	.03	.01	.00	.00	.00	.00	.00	.03	.04	.02	.02
AC-FT	11	16	2.0	.6	9.4	.00	.1	19	49	110	24	133

CAL YR 1987	TOTAL	287.29	MEAN	.79	MAX	38	MIN	.00	AC-FT	570
WTR YR 1988	TOTAL	189.01	MEAN	.52	MAX	21	MIN	.00	AC-FT	375

e Estimated

16693100 BURONG STREAM, YAP

LOCATION.--Lat 09°32'05" N., long 138°07'19" E., Hydrologic Unit 20100006, on left bank at Dugor, 0.25 mi upstream from mouth, and 0.5 mi northeast of Mount Gamuw.

DRAINAGE AREA.--0.23 mi^2.

PERIOD OF RECORD.--April 1966 to current year.

REVISED RECORDS.--WDR HI-79-2: Drainage area, 1966-78(P).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 15 ft, from topographic map.

REMARKS.--Records good. No diversion upstream. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--20 years, 0.910 ft^3/s (659 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 550 ft^3/s June 21, 1982, gage height, 5.45 ft, from rating curve extended above 15 ft^3/s; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 99 ft^3/s Sept. 20, gage height, 3.39 ft, no peak greater than base discharge of 100 ft^3/s; minimum, no fow for many days.

DISCHARGE, IN 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	.00	2.4	.22	.00	.00	.00	.00	.00	.00	.10	.30	.06
2	.00	.47	.11	.00	.00	.00	.00	.00	.00	.05	.24	.06
3	.00	.85	.09	.00	.00	.00	.00	.00	.00	.01	.27	.06
4	.00	.47	.09	.00	.70	.00	.00	.24	.00	.01	2.4	.05
5	.01	.18	.06	.00	.60	.00	.00	.03	.00	.01	.57	.04
6	.01	.11	.03	.00	.13	.00	.00	.00	.17	.04	.20	.03
7	.03	.10	.02	.00	.03	.00	.00	.00	1.4	.09	.13	.02
8	.49	.08	.01	.00	.01	.00	.00	.00	.57	.11	.10	.04
9	.80	.05	.01	.00	.00	.00	.00	.00	.44	3.5	.10	.32
10	.34	.04	.01	.00	.00	.00	.00	.00	.10	.50	.09	.16
11	.90	.04	.01	.00	.00	.00	.00	.00	.02	1.3	.07	.06
12	.44	.04	.01	.00	.00	.00	.00	.00	.00	2.9	.05	.04
13	.16	.06	.02	.00	.00	.00	.00	.00	.00	.40	.03	.02
14	.14	.06	.01	.00	.00	.00	.00	.00	.00	.30	1.6	.01
15	.10	.05	.01	.00	.00	.00	.00	.00	.00	5.0	.65	.00
16	.06	.02	.00	.00	.00	.00	.00	.00	.00	3.1	.37	.01
17	.05	.03	.00	.00	.00	.00	.00	.00	.00	1.9	1.3	2.3
18	.05	.03	.00	.00	.00	.00	.00	.00	.00	2.1	.37	.30
19	.04	.01	.01	.00	.00	.00	.00	.00	.48	1.0	.18	.10
20	.13	.01	.01	.00	.00	.00	.00	.00	.40	1.1	.11	3.3
21	.08	.02	.01	.00	.00	.00	.00	2.4	.13	4.6	.07	10
22	.06	.04	.00	.00	.00	.00	.00	.13	.04	1.4	.06	4.4
23	.03	.85	.00	.00	.00	.00	.00	2.9	.60	.44	.06	.44
24	.05	.24	.00	.00	.00	.00	.00	.24	7.4	.22	.05	1.8
25	.11	.10	.00	.00	.00	.00	.00	.06	.95	.16	.04	4.5
26	.08	.09	.00	.00	.00	.00	.00	.00	.90	5.6	.04	2.0
27	.09	.22	.00	.00	.00	.00	.00	.00	.20	.75	.05	1.4
28	.08	1.2	.00	.00	.00	.00	.00	.00	.14	.80	.08	.70
29	.06	.80	.00	.00	.00	.00	.00	.00	1.3	.50	.08	.50
30	.47	.37	.00	.00	---	.00	.00	.00	.30	.37	.06	5.5
31	1.0	---	.00	.00	---	.00	---	.00	---	.16	.01	---
TOTAL	5.86	9.03	.74	.00	1.47	.00	.00	6.00	15.54	38.52	9.73	38.28
MEAN	.19	.30	.024	.00	.051	.00	.00	.19	.52	1.24	.31	1.28
MAX	1.0	2.4	.22	.00	.70	.00	.00	2.9	7.4	5.6	2.4	10
MIN	.00	.01	.00	.00	.00	.00	.00	.00	.00	.01	.01	.00
AC-FT	12	18	1.5	.00	2.9	.00	.00	12	31	76	19	76

CAL YR 1987	TOTAL	290.06	MEAN	.79	MAX	51	MIN	.00	AC-FT	575
WTR YR 1988	TOTAL	125.15	MEAN	.34	MAX	10	MIN	.00	AC-FT	248

16893200 MUKONG STREAM, GAGIL-TAMIL

LOCATION.--Lat 09°32'05" N., long 138°10'18" E., Hydrologic Unit 20100006, on right bank 0.2 mi upstream from mouth and 0.9 mi south of U.S. Coast Guard LORAN station.

DRAINAGE AREA.--0.50 mi^2.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1972-75, December 1974 to June 1978, July to September 1978, stage-discharge relation indefinite due to blocked control. October 1978 to current year.

REVISED RECORDS.--WDR HI-79-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 5 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. At times some water is pumped from upstream for village use. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--12 years (water years 1978-78, 1979-88), 1.89 ft^3/s (1,370 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 153 ft^3/s June 21, 1982, gage height, 4.10 ft, from rating curve extended above 18 ft^3/s; minimum, 0.02 ft^3/s May 17-23, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 23 ft^3/s Sept. 20, gage height, 2.19 ft, no peak greater than base discharge of 50 ft^3/s; minimum, 0.15 ft^3/s Mar. 20, 21.

DISCHARGE, IN 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	1.2	2.0	.96	.28	.47	.28	1.0	.28	.69	.63	2.1	.89
2	.96	1.3	.82	.24	.37	.28	.63	.24	.57	.57	1.3	.89
3	1.2	2.2	.82	.24	.33	.28	.47	.21	.42	.52	1.4	.89
4	1.0	1.7	.89	.24	4.1	.28	.63	2.0	.37	.96	2.2	.82
5	1.6	1.3	.82	.28	2.6	.33	.47	1.2	.37	.69	1.4	.69
6	1.2	1.4	.75	.28	1.4	.28	.37	.82	.63	.82	1.2	1.0
7	1.3	1.2	.89	.24	.98	.28	.28	.69	1.5	.96	1.5	.82
8	1.6	1.0	.63	.24	.75	.28	.28	.57	1.2	1.1	1.2	.83
9	1.7	1.0	.63	.24	.69	.28	.24	.47	1.0	1.0	1.2	.69
10	1.3	.89	.63	.24	.63	.24	.24	.42	.83	.96	1.2	.57
11	3.4	.89	.57	.24	.63	.24	.21	.28	.52	.96	1.1	.47
12	2.3	1.0	.57	.24	.57	.24	.18	.24	.33	.89	1.0	.57
13	1.8	.96	.63	.24	.52	.21	.18	.24	.47	.89	1.0	.42
14	1.8	.96	.83	.24	.52	.18	.15	.21	.42	2.0	4.1	.37
15	1.3	.89	.63	.24	.37	.18	.15	.21	1.3	3.6	2.1	.37
16	1.1	1.2	.57	.24	.37	.18	.15	.24	.89	4.2	2.0	.63
17	1.0	1.2	.52	.24	.42	.18	.15	.24	.75	3.1	2.0	3.4
18	.96	.82	.52	.24	.90	.24	.18	.24	1.6	2.1	1.5	1.8
19	1.9	.75	.57	.28	.63	.28	.33	.33	1.4	1.9	1.3	e1.0
20	2.0	.82	.63	.24	.57	.24	.33	.57	1.4	2.7	1.2	e5.0
21	1.3	.89	.47	.28	.52	.24	.33	1.7	.96	3.3	1.1	e6.0
22	1.2	1.2	.47	.28	.52	.24	.28	.96	.75	2.3	1.2	e4.0
23	1.0	3.2	.47	.69	.47	.21	.28	.82	.69	1.6	1.1	e2.5
24	1.2	1.7	.47	.63	.47	.18	.24	.75	3.9	1.5	1.0	e3.0
25	1.2	1.2	.42	.37	.42	.18	.21	.63	2.0	1.2	1.1	e5.0
26	1.2	1.1	.37	.33	.42	e.18	.21	.52	1.3	4.1	1.0	e3.0
27	1.6	1.6	.33	.33	.33	e.18	.21	.52	.82	2.1	1.0	e2.7
28	1.1	2.1	.33	.28	.33	e.18	.18	.52	.89	1.8	.96	e2.4
29	1.1	1.5	.33	.28	.28	e.60	.21	.47	1.0	1.9	.75	e2.2
30	1.9	1.2	.28	.42	---	.89	.28	.42	.75	1.2	.75	e6.0
31	1.5	---	.28	.63	---	.75	---	.63	---	1.1	.82	---
TOTAL	44.92	39.17	17.70	9.48	21.56	8.81	9.05	17.64	29.52	52.65	42.78	58.52
MEAN	1.45	1.31	.57	.31	.74	.28	.30	.57	.98	1.70	1.38	1.95
MAX	3.4	3.2	.96	.69	4.1	.89	1.0	2.0	3.9	4.2	4.1	6.0
MIN	.96	.75	.28	.24	.28	.18	.15	.21	.33	.52	.75	.37
AC-FT	89	78	35	19	43	17	18	35	59	104	85	116

CAL YR 1987	TOTAL	534.09	MEAN	1.46	MAX	24	MIN	.10	AC-FT	1080
WTR YR 1988	TOTAL	351.80	MEAN	.96	MAX	6.0	MIN	.15	AC-FT	698

e Estimated

16693400 EYEB STREAM, GAGIL-TAMIL

LOCATION.--Lat 09°33'02" N., long 138°09'03" E., Hydrologic Unit 20100006, on left bank 0.6 mi southeast of the Tagireeng Canal bridge and 1.2 mi northwest of the Coast Guard LORAN Station.

DRAINAGE AREA.--0.32 mi^2.

PERIOD OF RECORD.--January 1962 to current year.

REVISED RECORDS.--WDR HI-85-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 15 ft, from topographic map.

AVERAGE DISCHARGE.--6 years, 1.50 ft^3/s (1,090 acre-ft/yr).

REMARKS.--Records fair. No diversion upstream. Periodic determinations of water temperature for the current year are published elsewhere in this report.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 490 ft^3/s June 21, 1962, gage height, 6.22 ft, from rating curve extended above 14 ft^3/s; minimum, 0.01 ft^3/s for many days in May 1963 and Apr. 24-26, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19 ft^3/s Sept. 20, gage height, 2.19 ft, no peak greater than base discharge of 150 ft^3/s; minimum, 0.04 ft^3/s Mar. 18, 19, and 26.

REVISIONS.--The maximum discharge for water year 1967 has been revised to 160 ft^3/s Aug. 12, gage height, 5.33 ft.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.65	1.1	.65	.22	.22	.11	.96	.16	.35	.52	2.3	.65
2	.46	.72	.65	.16	.19	.11	.40	.13	.26	.35	1.4	.52
3	.46	1.2	.65	.16	.19	.13	.28	.11	.19	.40	1.3	.52
4	.40	1.0	.80	.13	2.4	.16	.35	2.3	.16	.72	2.2	.65
5	.65	.65	.65	.13	1.6	.13	.30	1.3	.13	.52	1.4	.65
6	.52	.72	.52	.13	.88	.09	.19	.58	.46	.30	1.0	.65
7	.58	.65	.46	.13	.52	.07	.16	.52	1.3	.40	1.1	.56
8	.96	.58	.46	.13	.40	.07	.13	.35	.86	.52	.96	.65
9	1.3	.52	.40	.13	.35	.09	.13	.26	.72	.65	1.0	.58
10	.88	.52	.46	.13	.35	.09	.13	.22	.40	.65	.88	.46
11	1.9	.58	.46	.11	.35	.07	.13	.22	.30	.72	.80	.40
12	1.3	.56	.40	.11	.30	.07	.13	.19	.22	.72	.72	.35
13	.80	.58	.40	.16	.30	.07	.11	.16	.40	.56	.80	.40
14	.80	.60	.40	.16	.26	.07	.13	.16	.30	2.8	2.9	.35
15	.56	.72	.35	.16	.22	.05	.16	.19	.46	6.6	1.1	.35
16	.46	.80	.30	.16	.22	.07	.19	.22	.40	4.1	1.0	.40
17	.35	.72	.30	.13	.26	.05	.26	.22	.40	3.0	1.7	2.3
18	.35	.52	.35	.11	.28	.04	.22	.19	.52	2.5	.96	1.0
19	.85	.40	.46	.13	.22	.04	.40	.22	.56	2.3	.88	.46
20	1.1	.48	.58	.16	.19	.05	.40	.35	1.0	2.5	.72	2.0
21	.52	.58	.35	.19	.13	.07	.22	2.3	.72	3.0	.65	6.5
22	.52	.88	.30	.26	.13	.05	.19	.66	.40	2.1	.72	3.0
23	.40	2.3	.30	.56	.11	.05	.13	.52	.40	1.6	.72	1.6
24	.46	1.0	.26	.46	.13	.05	.11	.40	6.1	1.4	.65	2.3
25	.46	.80	.26	.30	.11	.07	.11	.26	1.8	1.3	.65	4.4
26	.35	.58	.26	.22	.11	.05	.09	.22	1.1	4.1	.56	4.3
27	.52	.96	.22	.19	.11	.05	.09	.26	.72	2.1	.72	2.9
28	.35	1.4	.22	.19	.11	.05	.11	.22	.65	1.7	.56	2.2
29	.35	.98	.22	.19	.11	.30	.11	.19	.58	1.4	.46	2.5
30	.52	.65	.22	.19	---	.40	.11	.16	.58	1.4	.40	6.2
31	.58	---	.22	.30	---	.65	---	.26	---	1.2	.40	---
TOTAL	20.18	23.93	12.53	5.91	10.93	3.42	6.41	13.72	22.48	52.15	31.65	49.82
MEAN	.65	.80	.40	.19	.36	.11	.21	.44	.75	1.68	1.02	1.66
MAX	1.9	2.3	.80	.58	2.4	.65	.96	2.3	6.1	6.6	2.9	6.5
MIN	.35	.40	.22	.11	.11	.04	.09	.11	.13	.30	.40	.35
AC-FT	40	47	25	12	22	6.8	13	27	45	103	63	99

CAL YR 1967	TOTAL	453.49	MEAN	1.24	MAX	46	MIN	.01	AC-FT	899
WTR YR 1968	TOTAL	253.13	MEAN	.69	MAX	6.6	MIN	.04	AC-FT	502

16893800 WICHEN RIVER AT ALTITUDE 18 M, MOEN

LOCATION.--Lat 07°27'01" N., long 151°51'56" E., Hydrologic Unit 20100006, on left bank at Peniesence, 0.3 mi upstream from mouth, and 1.4 mi west of Saint Xaviers Academy.

DRAINAGE AREA.--0.57 mi^2.

PERIOD OF RECORD.--April 1955 to March 1956 (published as "at Peniesence"), June 1968 to January 1980, May 1980 to May 1983, February 1984 to September 1988. Station discontinued, September 1988. All figures of discharge above 3 ft^3/s prior to April 1956, published in WSP 1751, are unreliable and should not be used.

REVISED RECORDS.--WSP 2137, WDR HI-79-2: Drainage area.

GAGE.--Water-stage recorder and concrete control since Mar. 29, 1973. Elevation of gage is 60 ft, from topographic map. Prior to Apr. 1, 1956, nonrecording gage at site 100 ft downstream at different datum.

REMARKS.--Records poor. No diversion upstream. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--17 years, 3.12 ft^3/s (2,260 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 910 ft^3/s June 4, 1972, gage height, 6.80 ft, from rating curve extended above 28 ft^3/s; minimum, 0.01 ft^3/s, Apr. 16-19, 1977, Apr. 8, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 165 ft^3/s, Dec. 10, gage height, 3.60 ft, no peak greater than base discharge of 200 ft^3/s; minimum, 0.04 ft^3/s, Feb. 19-23.

DISCHARGE, IN 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	e.94	e.90	e3.2	e.70	e.98	1.6	.35	.72	1.4	e.49	e6.0	e2.0
2	e1.0	e1.0	e3.7	e.90	.95	1.1	.26	14	1.2	e.51	3.0	e3.0
3	e1.3	e1.2	e4.0	e2.0	.85	.85	.26	18	18	e.54	2.2	e2.0
4	e3.0	e1.5	e3.3	e1.3	.42	.66	.22	21	7.6	e.56	1.8	e1.1
5	e5.0	e1.6	e2.3	e.50	.35	.57	.22	11	4.3	e.54	e1.4	e.86
6	e4.0	e1.8	e1.0	e.42	.30	.49	.19	4.3	2.4	e.52	e.80	e.80
7	e3.3	e2.0	e.86	e.38	.26	.42	.16	19	2.2	e.60	e.72	e1.4
8	e2.2	e1.4	e.90	e.50	.22	e.33	.16	6.0	4.0	e.80	e.90	e1.0
9	e1.2	e1.3	e.88	e.80	.19	e3.9	.16	3.3	2.4	e.92	e3.0	e.90
10	e.88	e1.3	e16	e1.0	.19	e2.6	.16	2.2	1.8	e10	e1.0	e.80
11	e.36	e3.0	e14	e.84	.22	e1.9	.16	1.4	1.3	e6.0	e.75	e.70
12	e.32	e4.4	e8.8	e.70	.26	e1.4	.30	1.1	1.1	e2.1	e1.1	e2.0
13	e.29	e5.0	e7.4	e.58	.19	e1.1	.22	.85	.85	e1.9	e.80	e1.4
14	e.26	e4.2	e1.9	e.56	.16	e.90	.16	.68	.75	e7.0	e.60	e5.0
15	e.25	e6.6	e1.3	e2.3	.16	e.72	.16	.57	.85	e4.0	e1.7	e3.0
16	e.27	e7.8	e1.1	e1.4	.16	e.56	.22	.42	.85	e1.5	e4.0	e2.0
17	e1.2	e6.6	e.94	e1.1	.13	e.43	.74	.75	.95	e2.4	e14	e3.6
18	e2.0	e6.4	e.80	e.80	.10	e.29	.30	.75	.85	e2.8	e7.0	e3.0
19	e3.0	e8.0	e.74	e.36	.07	e.17	.28	1.2	2.3	e2.1	e10	e2.0
20	e1.9	e10	e3.0	e.38	.07	e.13	1.2	1.1	1.4	e1.7	e5.0	e6.8
21	e.90	e9.0	e2.6	e3.0	.07	e.12	.66	.75	.85	e9.8	e3.0	e5.0
22	e.70	e6.0	e.98	e2.5	.07	e.11	.42	5.4	.85	e9.0	e4.0	e2.5
23	e.62	e4.6	e.80	e2.0	.07	e.10	.35	10	.75	e8.8	e2.0	e3.5
24	e.60	e4.0	e.74	e1.0	8.9	e.10	.66	3.0	.49	e7.2	e1.4	e8.0
25	e1.0	e5.0	e1.7	e1.2	7.2	e.10	1.1	1.9	.42	e5.5	e1.0	e15
26	e1.1	e4.2	e.60	e1.3	2.6	e2.4	.66	1.4	.42	e1.1	e20	e8.8
27	e1.2	e3.4	e.55	e1.5	2.4	e5.4	.35	5.4	.35	e.80	e10	e5.0
28	e1.3	e1.2	e.47	e1.3	2.4	e3.8	.28	2.2	.35	e.58	e3.0	e4.7
29	e2.6	e.74	e.43	e1.1	2.2	e.62	.26	1.4	.42	e.49	e2.6	e4.0
30	e1.0	e.62	e.39	e1.0	---	e.38	.22	2.2	e.47	e.43	e2.4	e5.0
31	e.80	---	e.43	e1.0	---	e.36	---	1.9	---	e4.0	e2.7	---
TOTAL	44.29	114.56	85.91	34.44	32.14	33.61	10.80	143.87	61.97	92.68	117.87	104.86
MEAN	1.43	3.82	2.77	1.11	1.11	1.08	.36	4.64	2.07	2.99	3.80	3.50
MAX	5.0	10	18	3.0	8.9	5.4	1.2	21	18	10	20	15
MIN	.25	.62	.39	.38	.07	.10	.16	.42	.35	.43	.60	.70
AC-FT	88	227	170	68	64	67	21	285	123	184	234	208

CAL YR 1987	TOTAL	1204.95	MEAN	3.30	MAX	48	MIN	.10	AC-FT	2390
WTR YR 1988	TOTAL	877.00	MEAN	2.40	MAX	21	MIN	.07	AC-FT	1740

e Estimated

16897600 NANPIL RIVER

LOCATION.--Lat 06°55'09" N., long 158°11'59" E., Hydrologic Unit 20100006, on left bank 0.1 mi upstream from diversion dam and 1.3 mi upstream from Kiepw River.

DRAINAGE AREA.--3.00 mi^2.

PERIOD OF RECORD.--March 1970 to current year. Prior to October 1980, published as Nanepil River.

REVISED RECORDS.--WDR HI-76-1: 1970(M), 1971-72(P), 1973(M), 1974(P), 1975(M). WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 370 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No diversion upstream.

AVERAGE DISCHARGE.--18 years, 44.5 ft^3/s (32,240 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,820 ft^3/s, Aug. 4, 1976, gage height, 9.68 ft, from rating curve extended above 168 ft^3/s on basis of slope-area measurement at gage height 9.68 ft; minimum, 0.54 ft^3/s, Apr. 19, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,350 ft^3/s, Dec. 13, gage height, 6.40 ft, no peak greater than base discharge of 3,200 ft^3/s; minimum, 4.3 ft^3/s, Mar. 8, 9.

DISCHARGE, IN 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	19	28	28	43	60	8.7	31	40	91	9.3	16	76
2	60	30	19	20	90	9.3	14	26	57	12	8.7	66
3	40	40	26	15	32	7.8	9.3	70	104	8.7	6.1	31
4	31	153	14	11	72	5.7	7.0	88	47	6.5	13	14
5	28	79	10	20	46	4.8	5.7	50	20	6.5	17	26
6	25	43	8.5	16	38	5.2	5.2	143	14	8.8	8.2	20
7	20	38	14	10	22	4.8	5.0	175	14	5.5	8.0	34
8	24	22	125	13	14	4.5	5.0	71	12	8.5	22	44
9	e18	19	78	42	9.6	4.7	7.4	155	7.2	28	29	16
10	e13	18	53	91	9.6	5.2	60	70	9.3	26	19	10
11	e13	23	78	42	9.3	4.7	49	108	29	27	12	9.8
12	e147	15	211	29	7.2	5.2	48	38	11	38	8.7	55
13	e190	11	491	25	5.9	6.1	25	21	31	43	15	22
14	35	9.1	71	58	5.2	6.5	28	37	70	20	11	19
15	e31	197	68	63	5.0	4.7	87	27	30	9.6	19	46
16	e280	25	36	35	4.8	9.3	44	18	98	19	20	26
17	e315	14	19	20	4.7	5.9	82	119	24	11	126	13
18	37	9.6	13	68	42	29	71	47	47	61	37	28
19	e30	244	9.6	28	11	9.1	148	24	17	33	21	22
20	e180	122	9.1	22	7.4	7.8	255	386	28	26	17	14
21	e125	44	9.8	17	7.0	38	146	62	15	20	22	23
22	37	30	9.8	30	5.2	20	30	25	12	34	12	21
23	24	25	10	14	5.0	132	18	36	20	14	e10	95
24	49	84	105	9.6	4.7	67	43	22	14	28	e8.7	34
25	34	54	72	8.0	5.0	101	92	41	72	12	e12	18
26	20	202	35	7.0	4.7	87	35	48	24	8.7	e10	41
27	27	56	20	5.9	7.6	42	30	55	16	6.8	e12	67
28	26	95	109	14	65	19	19	83	13	6.1	e8.4	24
29	53	122	62	47	14	12	22	35	16	8.5	7.8	38
30	24	60	22	52	---	8.9	24	28	9.8	5.2	9.6	22
31	32	---	126	44	---	67	---	20	---	12	25	---
TOTAL	1987	1911.7	1959.8	919.5	613.9	742.9	1445.6	2126	974.3	558.7	571.2	974.8
MEAN	64.1	63.7	63.2	29.7	21.2	24.0	48.2	68.8	32.5	18.0	18.4	32.5
MAX	315	244	491	91	90	132	255	366	104	61	126	95
MIN	13	9.1	8.5	5.9	4.7	4.5	5.0	18	7.2	5.2	6.1	9.8
AC-FT	3940	3790	3890	1820	1220	1470	2870	4220	1930	1110	1130	1930

CAL YR 1987	TOTAL	19889.6	MEAN	54.5	MAX	491	MIN	5.3	AC-FT	39450
WTR YR 1988	TOTAL	14785.4	MEAN	40.4	MAX	491	MIN	4.5	AC-FT	29330

e Estimated

CAROLINE ISLANDS, ISLAND OF POHNPEI

16897800 NANPIL RIVER--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB-ONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT									
22...	1255	35	--	--	24.0	28.0	--	--	--
DEC									
01...	1320	38	--	--	25.0	29.0	--	--	--
JAN									
15...	1150	--	28	8.80	25.0	28.0	8	1	1.6
FEB									
04...	1140	--	--	--	25.0	30.0	--	--	--
16...	1120	4.3	--	--	25.0	30.0	--	--	--
MAR									
03...	1235	8.2	--	--	25.0	31.0	--	--	--
APR									
28...	1025	20	--	--	24.0	28.0	--	--	--
MAY									
14...	1052	66	--	--	25.0	29.0	--	--	--
31...	1150	22	--	--	24.0	28.0	--	--	--
JUN									
30...	1135	10	--	--	25.0	29.0	--	--	--
AUG									
07...	0900	9.3	29	7.60	26.0	--	8	0	1.5
SEP									
08...	1150	41	--	--	25.0	29.0	--	--	--

DATE	TIME	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	ALKA-LINITY LAB (MG/L AS CACO3)
JAN								
15...	1150	0.90	2.7	42	0.4	0.20	4.6	7.0
AUG								
07...	0900	1.1	2.6	40	0.4	0.20	3.7	10

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	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 AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JAN								
15...	3.8	0.10	5.3	23	0.03	<0.100	50	2
AUG								
07...	2.1	<0.10	6.5	24	0.03	<0.100	80	2

< Actual value is known to be less than the value shown.

16897900 LEWI RIVER

LOCATION.--Lat 08°55'32" N., long 158°12'18" E., Hydrologic Unit 20100006, on right bank at road and pipeline crossing, 300 ft upstream from right-bank tributary, and 2.4 mi upstream from mouth.

DRAINAGE AREA.--0.46 mi^2.

PERIOD OF RECORD.--March 1970 to current year. Prior to October 1980, published as Lui River.

REVISED RECORDS.--WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 290 ft, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. No diversion upstream.

AVERAGE DISCHARGE.--18 years, 5.24 ft^3/s (3,800 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,320 ft^3/s, July 24, 1986, gage height, 6.32 ft, from rating curve extended above 37 ft^3/s, on basis of slope-area measurement at gage height 5.92 ft; minimum, 0.02 ft^3/s, Apr. 18, 19, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 504 ft^3/s, Dec. 12, gage-height, 4.48 ft, no other peak above base discharge of 500 ft^3/s; minimum, 0.24 ft^3/s, Feb. 24-27.

DISCHARGE, IN 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	1.3	e2.7	e2.9	3.2	e3.7	.81	3.3	2.1	4.4	2.7	1.6	3.1
2	7.6	e2.3	2.2	1.7	e4.6	.67	1.3	2.5	7.6	2.8	1.2	4.4
3	4.1	e2.3	2.1	1.4	2.5	.60	.81	4.6	13	2.2	1.1	2.5
4	3.3	e7.8	1.5	1.0	3.3	.56	.53	6.4	5.3	1.5	2.9	1.1
5	2.6	e5.6	1.2	2.2	2.9	.53	.42	4.1	2.9	1.3	1.6	1.5
6	1.9	e3.6	1.1	1.4	4.1	.56	.38	15	2.1	1.0	.81	1.9
7	1.3	e3.5	1.3	.95	2.3	.49	.35	26	2.1	.74	1.9	2.6
8	1.7	e2.7	8.8	1.1	1.5	.48	.28	7.8	1.5	.88	3.7	4.6
9	1.4	e2.4	11	1.9	1.0	.60	.46	19	1.3	3.2	2.8	1.5
10	1.0	e2.0	6.0	9.7	.95	.74	1.2	9.0	1.3	3.9	1.9	1.2
11	1.1	e2.0	5.6	4.0	.81	.53	2.8	14	3.7	3.2	1.2	1.5
12	6.9	e1.6	23	e2.3	.56	.46	3.7	4.4	1.4	2.5	.88	e5.8
13	9.8	e1.5	51	e2.0	.49	.67	1.5	2.8	4.6	2.7	2.6	e4.6
14	4.1	e1.2	8.3	e4.3	.46	.67	.95	3.9	7.1	1.3	1.4	e2.3
15	2.7	e9.8	7.6	e5.0	.42	.42	3.4	2.7	2.8	.95	2.0	e4.8
16	18	e2.7	4.4	3.1	.46	1.4	3.6	1.9	11	2.0	3.2	e3.0
17	20	e1.8	2.6	1.9	.53	.60	5.1	10	4.1	1.1	17	1.0
18	4.6	e1.3	1.9	e5.2	1.9	.67	6.8	4.4	5.5	4.4	5.5	2.5
19	2.8	e12	1.6	2.6	.67	.60	12	2.2	3.3	2.5	3.2	1.9
20	9.8	e5.8	1.5	2.0	.46	.49	24	34	2.9	1.9	4.1	1.4
21	6.8	e3.9	1.3	1.5	.38	3.6	26	9.0	2.7	1.8	3.9	2.9
22	3.1	e2.8	1.3	1.3	.35	1.9	3.1	3.7	1.9	3.8	1.9	2.3
23	2.1	e2.5	1.1	.95	.31	8.8	1.6	7.6	2.2	1.5	1.6	9.4
24	5.7	e4.2	6.0	.74	.28	5.6	3.4	3.4	8.8	3.4	1.2	3.4
25	4.4	e3.1	5.8	.67	.28	8.0	4.3	6.0	15	1.6	1.5	1.8
26	4.0	e10	3.3	.56	.24	9.0	2.2	7.8	4.3	1.2	1.3	8.1
27	4.4	e3.9	1.9	.56	.48	3.4	1.7	5.3	2.7	.95	1.5	6.2
28	3.3	e3.8	5.5	1.6	5.1	1.5	1.4	8.0	2.2	.74	.95	3.1
29	e3.6	e4.9	5.5	3.4	1.3	.95	2.1	4.3	2.6	.74	.81	6.2
30	e2.7	e4.0	1.9	4.0	---	.87	1.5	3.9	1.6	.60	.88	3.7
31	e3.2	---	7.8	2.7	---	3.7	---	4.3	---	1.6	1.0	---
TOTAL	147.1	117.7	187.0	75.13	42.31	59.65	120.18	240.1	129.9	80.50	77.13	100.3
MEAN	4.75	3.92	6.03	2.42	1.46	1.92	4.01	7.75	4.33	1.95	2.49	3.34
MAX	20	12	51	9.7	5.1	9.0	26	34	15	4.4	17	9.4
MIN	1.0	1.2	1.1	.56	.24	.42	.28	1.9	1.3	.80	.81	1.0
AC-FT	292	233	371	149	84	118	238	476	258	120	153	199

CAL YR 1987	TOTAL	2003.50	MEAN	5.49	MAX	56	MIN	.35	AC-FT	3970
WTR YR 1988	TOTAL	1357.00	MEAN	3.71	MAX	51	MIN	.24	AC-FT	2690

e Estimated

16697900 LEWI RIVER--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB ONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT									
23...	1015	3.2	--	--	24.0	28.0	--	--	--
DEC									
01...	1100	3.3	--	--	24.0	28.0	--	--	--
JAN									
15...	1100	--	40	6.90	25.0	28.0	13	1	2.1
FEB									
04...	1300	--	--	--	25.0	29.0	--	--	--
16...	1240	1.3	--	--	25.0	30.0	--	--	--
MAR									
03...	1040	0.67	--	--	26.0	30.0	--	--	--
APR									
28...	1120	1.4	--	--	25.0	29.0	--	--	--
MAY									
14...	1414	4.5	--	--	26.5	29.0	--	--	--
31...	1005	4.4	--	--	24.0	28.0	--	--	--
JUN									
16...	1030	2.2	--	--	24.0	28.0	--	--	--
30...	1240	1.5	--	--	25.0	29.0	--	--	--
JUL									
26...	1215	1.2	--	--	25.0	29.0	--	--	--
AUG									
07...	1040	1.8	48	7.10	28.0	--	14	1	2.0
SEP									
06...	1030	4.3	--	--	25.0	29.0	--	--	--

DATE	TIME	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	ALKA-LINITY LAB (MG/L AS CACO3)
JAN								
15...	1100	1.8	2.6	32	0.3	0.30	4.9	12
AUG								
07...	1040	2.1	2.8	30	0.3	0.30	4.8	13

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	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 AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JAN								
15...	4.4	0.10	8.9	33	0.04	<0.100	97	7
AUG								
07...	3.4	<0.10	8.7	33	0.04	0.140	220	16

< Actual value is known to be less than the value shown.

16898600 LUHPWOR RIVER

LOCATION.--Lat 08°54'09" N., long 158°09'07" E., Hydrologic Unit 20100006, on left bank about 300 ft upstream from 50-ft waterfall, 0.2 mi downstream from highway bridge, and 0.2 mi west of Pwakorokot Hill.

DRAINAGE AREA.--0.72 mi^2.

PERIOD OF RECORD.--September 1972 to current year. Prior to October 1980, published as Lupwor River.

REVISED RECORDS.--WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 145 ft, from topographic map.

REMARKS.--Records fair. No diversion upstream.

AVERAGE DISCHARGE.--16 years, 8.78 ft^3/s (8,360 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,090 ft^3/s, Aug. 4, 1976, gage height, 8.28 ft, from rating curve extended above 47 ft^3/s, on basis of estimate of peak flow; minimum, 0.13 ft^3/s, May 4, 5, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 580 ft^3/s, Nov. 15, gage-height, 5.25 ft, no peak above base discharge of 750 ft^3/s; minimum, 0.81 ft^3/s, Mar. 15.

DISCHARGE, IN 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	5.8	5.2	7.3	8.4	8.3	2.3	7.3	4.9	6.2	3.4	3.2	11
2	11	4.9	5.8	4.3	12	2.3	4.3	4.3	8.5	3.3	2.3	9.6
3	7.8	5.4	5.8	3.4	8.8	1.8	3.1	9.7	19	3.0	1.8	7.8
4	7.1	17	4.2	3.0	10	1.4	2.4	14	10	2.3	2.3	4.7
5	6.2	13	3.3	2.8	8.0	1.2	1.8	9.6	8.2	2.1	3.7	6.2
6	8.3	8.0	3.0	2.4	8.5	1.4	1.8	22	4.5	2.2	2.1	5.2
7	7.1	7.8	3.2	2.0	5.8	1.1	1.4	32	4.0	1.8	2.0	6.0
8	6.0	6.0	14	2.0	4.3	1.0	1.2	17	3.1	2.3	3.7	9.9
9	5.2	5.6	12	3.8	3.7	1.1	1.2	24	2.4	3.8	16	4.7
10	7.3	4.5	8.8	7.1	3.3	1.1	3.1	16	2.2	4.5	8.5	4.0
11	8.3	4.5	11	e4.3	3.1	1.1	4.9	19	4.2	6.4	4.5	4.2
12	16	3.8	43	e2.9	2.7	.96	6.0	9.9	2.2	8.5	3.2	12
13	28	3.2	81	e3.7	2.4	1.1	4.0	6.8	5.6	8.5	4.0	6.4
14	9.3	2.7	16	e7.2	2.1	1.2	3.6	7.8	10	4.3	3.0	5.4
15	14	30	11	e7.9	1.9	.86	7.3	5.2	5.1	3.1	3.2	19
16	22	6.0	7.3	3.2	1.7	1.1	8.6	4.0	8.5	4.0	3.6	9.3
17	49	4.3	5.1	5.4	1.6	.96	11	13	5.6	2.7	13	6.2
18	10	3.4	4.0	12	4.0	2.4	10	7.8	5.1	6.8	6.4	12
19	7.3	31	3.3	7.3	2.3	1.2	29	5.6	4.0	7.3	4.9	7.1
20	12	17	3.1	5.8	1.7	1.1	53	40	8.5	8.4	4.3	6.0
21	9.9	9.9	2.8	4.5	1.6	3.6	32	16	7.8	5.4	4.5	6.8
22	7.1	7.1	2.8	4.5	1.4	3.0	17	7.8	4.5	6.4	3.4	7.3
23	5.8	5.8	2.5	3.4	1.1	18	11	7.3	6.0	4.3	2.8	20
24	12	9.9	11	3.1	1.1	12	13	5.1	4.5	4.9	3.0	11
25	6.6	8.0	8.5	2.8	1.1	16	18	5.1	8.5	3.8	2.6	11
26	5.2	25	5.2	2.5	1.1	15	8.8	4.5	4.9	3.0	4.5	12
27	5.8	9.3	3.7	2.4	1.7	10	6.8	4.5	4.0	2.5	8.8	13
28	5.1	9.0	9.0	3.0	8.0	5.1	5.1	6.0	3.7	2.1	3.7	9.3
29	8.0	12	7.6	5.2	3.0	3.7	4.5	4.5	4.5	2.1	3.0	10
30	4.5	10	4.3	7.3	---	2.8	4.2	4.3	3.7	1.6	3.7	7.8
31	5.6	---	12	6.0	---	15	---	3.4	---	3.1	4.2	---
TOTAL	321.3	289.1	321.6	141.2	114.3	130.88	283.2	340.9	177.0	125.9	137.9	264.9
MEAN	10.4	9.64	10.4	4.55	3.94	4.22	9.44	11.0	5.90	4.06	4.45	8.83
MAX	49	31	81	12	12	18	53	40	19	8.5	16	20
MIN	4.5	2.7	2.5	2.0	1.1	.86	1.2	3.4	2.2	1.8	1.8	4.0
AC-FT	637	573	638	280	227	260	562	676	351	250	274	525

CAL YR 1987	TOTAL	3549.0	MEAN	9.72	MAX	94	MIN	1.0	AC-FT	7040
WTR YR 1988	TOTAL	2648.18	MEAN	7.24	MAX	81	MIN	.86	AC-FT	5250

e Estimated

16898800 LUHPWOR RIVER--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB OANTE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
DEC									
02...	1000	5.9	--	--	25.0	29.0	--	--	--
JAN									
15...	1400	--	61	7.90	25.0	29.0	17	0	4.0
FEB									
19...	1215	2.2	--	--	25.0	30.0	--	--	--
MAR									
02...	1515	2.0	--	--	25.0	30.0	--	--	--
APR									
27...	1035	6.6	--	--	25.0	29.0	--	--	--
MAY									
15...	1129	4.6	--	--	27.0	29.5	--	--	--
JUN									
01...	1005	4.4	--	--	24.0	28.0	--	--	--
29...	1115	4.0	--	--	24.0	28.0	--	--	--
JUL									
27...	1445	2.4	--	--	25.0	29.0	--	--	--
AUG									
09...	1040	--	104	7.50	27.5	--	20	0	4.2
SEP									
07...	1035	5.5	--	--	24.0	28.0	--	--	--

DATE	TIME	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	ALKA-LINITY LAB (MG/L AS CACO3)
JAN								
15...	1400	1.7	2.8	24	0.3	0.40	4.5	20
AUG								
09...	1040	2.3	2.8	23	0.3	0.30	3.6	20

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	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 AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JAN								
15...	3.5	0.10	10	39	0.05	<0.100	89	5
AUG								
09...	2.7	<0.10	13	42	0.06	0.120	410	7

< Actual value is known to be less than the value shown.

16898690 LEHN MESI RIVER

LOCATION.--Lat 06°50'41" N., long 158°11'02" E., Hydrologic Unit 20100006, on left bank 3.2 mi upstream from mouth, 1.7 mi southwest of Mount Tolenpwoaipwoai, and 4.5 mi south of Mount Temwetemwensekir.

DRAINAGE AREA.--2.31 mi^2.

PERIOD OF RECORD.--November 1981 to current year.

REVISED RECORDS.--WDR HI-85-2: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage ia 260 ft, from topographic map.

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

AVERAGE DISCHARGE.--6 years (water years 1983-88) 81.9 ft^3/s (59,340 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,740 ft^3/s, May 8, 1982, gage height, 10.14 ft, from rating curve extended above 126 ft^3/s; minimum, 4.5 ft^3/s for several days in April and May, 1983.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/a)	Gage height (ft)
Oct. 20	2000	*5,270	*8.62	Nov. 4	1500	3,980	7.65

Minimum discharge, 16.0 ft^3/s Mar. 8.

DISCHARGE, IN 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	43	75	e118	97	132	27	68	112	75	34	69	104
2	110	64	e96	55	152	36	41	68	86	51	40	104
3	107	66	78	67	137	28	29	89	147	45	30	72
4	86	611	61	51	155	22	24	112	80	33	30	43
5	76	136	53	85	97	18	22	92	51	30	30	64
6	76	87	47	70	172	19	21	192	44	32	24	147
7	67	136	60	48	69	17	19	226	45	26	24	97
8	100	76	212	49	50	16	19	150	37	47	45	81
9	92	67	149	83	43	17	28	147	29	97	54	46
10	146	84	149	113	43	21	132	108	28	90	42	33
11	105	69	148	86	42	19	127	129	68	80	30	28
12	101	63	277	64	48	24	123	72	31	135	28	194
13	216	63	712	72	32	28	80	47	79	115	28	68
14	102	64	140	117	26	34	93	88	157	58	22	99
15	76	217	108	127	24	21	201	63	62	43	23	85
16	193	75	74	75	23	32	100	51	86	48	37	62
17	264	69	55	53	23	24	144	172	59	46	204	43
18	87	68	53	140	112	50	129	78	106	114	64	64
19	66	271	53	83	38	44	344	50	59	82	58	54
20	421	237	53	74	36	38	339	261	52	68	48	70
21	165	e160	53	81	30	72	192	122	47	56	43	67
22	96	e120	55	90	23	46	69	69	39	60	30	53
23	67	e108	55	58	21	184	49	114	134	41	28	82
24	123	e146	189	49	20	106	85	73	67	60	29	79
25	91	e120	121	49	22	154	175	120	100	43	28	71
26	75	e320	75	39	20	165	86	87	62	33	39	152
27	90	e140	59	29	22	78	70	143	47	28	47	198
28	86	e135	133	53	122	48	45	138	55	26	34	70
29	109	e178	117	156	36	36	45	76	60	35	36	105
30	76	e148	56	127	---	30	86	69	41	23	36	60
31	69	---	182	96	---	69	---	58	---	56	41	---
TOTAL	3581	4173	3791	2436	1770	1523	2985	3376	2033	1735	1321	2495
MEAN	116	139	122	78.6	61.0	49.1	99.5	109	67.8	56.0	42.6	83.2
MAX	421	611	712	156	172	184	344	261	157	135	204	198
MIN	43	63	47	29	20	16	19	47	28	23	22	28
AC-FT	7100	8280	7520	4830	3510	3020	5920	6700	4030	3440	2620	4950

CAL YR 1987	TOTAL	39714	MEAN	109	MAX	712	MIN	17	AC-FT	78770
WTR YR 1988	TOTAL	31219	MEAN	85.3	MAX	712	MIN	16	AC-FT	61920

e Estimated

CAROLINE ISLANDS, ISLAND OF POHNPEI

16898690 LEHN MESI RIVER--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB ONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT 27...	1545	76	--	--	25.0	30.0	--	--	--
MAY 16...	1330	48	--	--	27.0	31.0	--	--	--
JUN 23...	1313	85	--	--	25.0	28.0	--	--	--
JUL 11...	1511	68	--	--	25.0	27.0	--	--	--
AUG 08...	1235	34	48	7.60	25.0	--	18	--	2.7

DATE	TIME	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	ALKA-LINITY LAB (MG/L AS CACO3)
AUG 08...	1235	2.8	2.8	25	0.3	0.30	3.1	19

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	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 AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
AUG 08...	1.3	<0.10	12	36	0.05	<0.100	45	<1

< Actual value is known to be less than the value shown.

16899620 MELO RIVER

LOCATION.--Lat 05°20'30" N., long 162°58'33" E., Hydrologic Unit 20100006, on left bank 0.5 mi upstream from mouth and 1.3 mi southwest of Mount Mutunte.

DRAINAGE AREA.--0.68 mi^2.

PERIOD OF RECORD.--October 1974 to September 1979, June 1980 to current year.

REVISED RECORDS.--WRD HI-81-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 20 ft, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--13 years (water years 1975-79, 1981-88), 6.70 ft^3/s (4,850 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 784 ft^3/s Mar. 22, 1976, gage height, 5.78 ft, from rating curve extended above 17 ft^3/s; minimum, 0.11 ft^3/s for several days in April 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 248 ft^3/s, May 14, gage height, 3.28 ft, no peak greater than base discharge of 300 ft^3/s; minimum, 1.2 ft^3/s, May 14.

DISCHARGE, IN 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	e2.5	1.5	2.0	2.4	5.0	e3.0	e8.0	6.6	3.8	1.6	4.5	e5.1
2	e2.3	1.3	1.6	2.2	8.3	e1.3	e5.8	4.1	3.2	8.0	3.0	e2.4
3	e3.3	1.2	1.6	2.1	15	e2.5	e5.4	3.2	4.5	2.5	2.5	e2.8
4	e3.0	1.2	1.6	2.0	5.9	e1.8	e4.4	3.0	3.0	1.8	2.4	e3.0
5	e3.6	1.8	2.5	1.8	15	e1.6	e3.4	9.1	2.5	1.6	2.0	e3.8
6	e3.4	2.1	4.3	1.7	23	e2.3	e3.0	8.8	4.3	1.7	1.7	e20
7	e3.8	1.3	3.0	1.3	8.4	e1.5	e2.7	8.1	2.6	2.1	2.1	e30
8	e3.5	1.2	5.2	3.2	9.4	e1.4	e2.6	16	2.2	5.2	3.8	e7.0
9	e2.5	3.4	18	2.1	17	e1.7	e2.6	9.4	2.1	2.2	6.4	e4.2
10	e11	2.1	5.7	2.4	13	e2.3	e4.1	6.4	2.4	1.8	e11	e3.7
11	e21	2.1	7.2	1.8	9.1	e1.6	e3.7	6.2	2.2	1.8	e2.6	e5.4
12	e9.3	2.5	5.7	1.7	7.8	e1.5	e3.3	5.0	1.6	18	e1.5	e6.6
13	e6.4	5.0	15	1.5	5.7	e1.7	e2.3	6.2	2.2	5.5	e1.7	e4.6
14	e5.0	3.4	12	4.8	5.9	e2.3	e4.3	44	2.8	3.2	e1.6	e13
15	e5.0	2.2	6.9	5.5	10	e15	e3.3	16	1.6	2.5	e1.4	12
16	e16	1.8	5.5	2.6	5.5	e6.8	e2.6	10	1.3	2.8	e2.6	8.4
17	e6.3	1.6	4.3	2.1	4.5	e5.2	e2.4	8.8	1.2	6.3	e1.5	3.6
18	e4.4	5.1	3.8	11	e3.0	e4.2	e2.1	7.2	4.5	5.0	e8.7	3.2
19	e3.5	22	3.6	5.0	e2.1	e3.5	e1.8	8.1	e1.8	8.8	e4.7	3.8
20	e4.1	9.4	3.0	3.4	e2.1	e9.6	e16	12	e1.2	4.5	e1.5	2.5
21	e5.7	5.0	2.6	2.6	e2.0	e19	e8.3	13	e1.5	3.2	e1.4	2.1
22	e3.3	14	3.4	2.4	e2.0	e15	e4.8	9.1	e2.2	2.5	e3.0	3.2
23	e2.2	9.1	3.6	2.0	e1.8	e17	e8.0	6.7	e4.9	5.5	e12	4.3
24	e1.9	5.2	2.6	2.2	e1.8	e20	e5.5	10	e2.1	5.2	e2.0	7.2
25	e5.6	3.8	2.4	2.1	e1.5	e28	e4.2	15	e1.9	2.8	e6.4	3.2
26	e4.1	4.3	9.8	1.8	e2.0	e18	e4.2	13	e1.9	2.6	e3.0	6.9
27	e3.0	3.2	4.5	1.6	e5.2	e13	e5.3	14	e1.4	2.4	e1.3	15
28	e2.2	2.6	3.0	1.3	e3.0	e9.6	e4.3	8.1	3.9	2.5	e1.4	14
29	e2.0	2.1	3.0	1.3	e2.7	e7.0	3.6	6.7	1.8	2.5	e2.0	6.2
30	e1.8	2.5	2.4	2.5	---	e5.2	5.9	6.2	1.5	3.4	e3.0	4.3
31	e1.5	---	2.6	4.5	---	e12	---	4.5	---	13	e2.8	---
TOTAL	153.2	123.8	152.4	84.9	197.5	234.6	137.9	304.5	74.1	132.5	105.5	211.5
MEAN	4.94	4.13	4.92	2.74	6.81	7.57	4.60	9.82	2.47	4.27	3.40	7.05
MAX	21	22	18	11	23	28	16	44	4.9	18	12	30
MIN	1.5	1.2	1.6	1.3	1.5	1.3	1.8	3.0	1.2	1.6	1.3	2.1
AC-FT	304	246	302	168	392	465	274	604	147	263	209	420

CAL YR 1987	TOTAL	1968.89	MEAN	5.39	MAX	47	MIN	.46	AC-FT	3910
WTR YR 1988	TOTAL	1912.4	MEAN	5.23	MAX	44	MIN	1.2	AC-FT	3790

e Estimated

18899750 MALEM RIVER

LOCATION.--Lat 05°17'35" N., long 163°00'54" E., Hydrologic Unit 20100006, on left bank 0.9 mi upstream from mouth and 2.0 mi southeast of Mount Finkol.

DRAINAGE AREA.--0.76 mi^2.

PERIOD OF RECORD.--July 1971 to March 1981, March 1982 to current year.

REVISED RECORDS.--WDR HI-81-2: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 95 ft, from stadia survey.

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

AVERAGE DISCHARGE.--15 years (1972-80, 1983-88), 8.69 ft^3/s (4,850 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,550 ft^3/s, Mar. 22, 1978, gage height, 6.20 ft, from rating curve extended above 110 ft^3/s; minimum, 0.07 ft^3/s, Apr. 30, May 1, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 328 ft^3/s, May 14, gage height, 4.52 ft, no peak greater than base discharge of 350 ft^3/s; minimum, 0.31 ft^3/s, Jan. 6.

DISCHARGE, IN 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	5.9	2.2	3.2	1.3	3.0	2.0	5.5	11	2.2	2.6	5.1	4.5
2	5.3	2.0	2.6	1.0	7.6	1.4	3.8	3.6	1.5	9.0	3.8	3.5
3	7.6	1.9	2.2	.90	12	1.5	3.5	2.6	2.9	2.3	2.4	3.0
4	6.8	1.8	2.1	.76	4.5	1.3	2.7	2.1	1.6	1.8	2.7	2.7
5	8.4	2.4	3.7	.69	16	1.1	2.3	1.5	1.3	1.3	4.1	3.2
6	7.7	3.3	7.9	.76	37	1.4	2.0	9.2	2.1	1.7	3.2	23
7	8.8	1.8	4.3	1.1	8.0	.90	1.8	4.2	1.7	1.6	2.6	43
8	8.2	1.7	7.4	1.8	5.9	.83	1.7	9.6	1.9	2.9	4.4	7.0
9	5.7	4.1	25	1.1	16	.97	1.7	6.4	1.7	1.9	7.3	4.3
10	19	3.9	6.8	1.8	9.9	1.4	2.7	4.1	1.5	1.3	10	3.2
11	31	3.6	8.2	1.0	6.1	.97	2.4	4.1	1.4	1.6	3.0	3.9
12	15	3.9	7.9	1.4	4.7	.83	2.2	3.2	1.3	26	2.9	6.8
13	9.6	11	24	1.0	3.8	.97	1.5	3.6	1.6	6.4	3.3	4.1
14	7.3	5.3	19	12	4.1	1.4	3.2	60	1.9	4.5	3.2	12
15	7.3	3.6	8.5	6.8	5.1	23	2.2	13	2.2	6.4	3.3	7.3
16	24	3.6	5.9	1.8	3.0	11	1.7	8.0	1.8	9.3	4.7	5.7
17	9.9	3.9	4.7	2.0	2.6	7.7	1.8	7.7	1.6	10	4.9	3.6
18	8.4	5.1	3.9	32	2.4	3.3	1.3	7.7	2.9	10	8.1	3.9
19	4.9	16	3.5	7.7	2.0	2.2	1.2	7.0	1.5	18	7.3	4.9
20	6.5	8.7	3.0	4.1	1.8	13	24	8.0	1.1	7.5	5.7	3.9
21	12	5.9	3.3	3.0	1.8	30	8.1	11	1.2	4.9	4.5	3.0
22	4.9	14	6.5	2.7	1.7	23	4.4	7.7	2.0	3.9	9.6	3.2
23	3.3	12	4.3	1.9	1.7	24	7.3	4.9	3.6	14	13	4.1
24	2.9	5.5	2.4	1.9	1.3	29	4.3	5.5	2.1	12	5.7	7.5
25	12	4.3	e2.6	1.9	1.3	43	3.3	12	1.9	4.5	6.3	5.3
26	7.8	7.4	e15	1.8	1.6	16	3.2	7.9	1.9	3.9	3.6	12
27	4.5	6.4	e3.4	1.7	4.5	10	4.0	4.9	1.4	3.5	3.3	16
28	3.3	3.9	e2.4	1.6	1.8	6.6	2.7	3.9	2.9	2.9	3.6	23
29	3.3	3.0	e1.9	1.4	2.0	4.9	2.2	3.7	1.8	2.6	3.3	6.1
30	2.7	4.6	1.4	2.7	---	4.1	4.9	4.3	1.5	2.3	3.6	4.1
31	2.3	---	1.4	3.5	---	13	---	2.7	---	18	3.8	---
TOTAL	264.1	158.8	198.4	105.11	173.2	280.77	111.4	245.1	55.8	196.6	152.3	237.6
MEAN	8.52	5.23	8.40	3.39	5.97	9.08	3.71	7.91	1.86	6.34	4.91	7.92
MAX	31	16	25	32	37	43	24	60	3.6	26	13	43
MIN	2.3	1.7	1.4	.69	1.3	.83	1.2	1.5	1.1	1.3	2.4	2.7
AC-FT	524	311	394	208	344	557	221	486	111	390	302	471

CAL YR 1987	TOTAL	2458.41	MEAN	6.74	MAX	65	MIN	.93	AC-FT	4880
WTR YR 1988	TOTAL	2177.18	MEAN	5.95	MAX	60	MIN	.69	AC-FT	4320

e Estimatsd

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TEMPER-ATURE AIR (DEG C)	HARD-NESS TOTAL (MG/L AS CACO3)	HARD-NESS NONCARB ONATE (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
MAY									
07...	1012	3.9	--	--	26.0	32.5	--	--	--
AUG									
11...	1000	3.0	96	8.00	26.5	--	43	0	7.9

DATE	TIME	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	ALKA-LINITY LAB (MG/L AS CACO3)
AUG								
11...	1000	5.7	4.7	19	0.3	0.60	5.0	44

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	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 AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
AUG								
11...	1.8	0.10	23	75	0.10	<0.100	56	3

< Actual value is known to be less than the value shown.

16899800 TOFOL RIVER

LOCATION.--Lat 05°19'10" N., long 163°00'24" E., Hydrologic Unit 20100006, on left bank 25 ft downstream from right-bank tributary, 0.9 mi upstream from mouth, and 1.3 mi northeast of Mount Finkol.

DRAINAGE AREA.--0.53 mi^2.

PERIOD OF RECORD.--June 1971 to September 1979, March 1980 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 98 ft, from stadia survey.

REMARKS.--Records fair. Water is diverted through 8-in pipe from dam upstream for domestic use.

AVERAGE DISCHARGE.--16 years (1971-79, 1981-88), 5.35 ft^3/s (3,880 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,560 ft^3/s, Nov. 10, 1981, gage height, 5.97 ft, from rating curve extended above 79 ft^3/s; minimum, 0.01 ft^3/s, Apr. 1, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 387 ft^3/s, Sept. 6, gage height, 3.91 ft, no peak greater than base discharge of 450 ft^3/s; minimum, 0.14 ft^3/s, Nov. 4.

DISCHARGE, IN 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	2.5	.26	1.2	e.35	2.0	.70	e5.5	5.7	1.5	.62	2.2	.94
2	1.9	.24	.88	e.31	3.3	.28	e3.3	2.0	1.4	4.1	1.4	.50
3	3.1	.20	.78	e.28	6.2	.89	e2.0	1.5	2.7	.54	.94	.58
4	1.2	.18	.54	e.26	1.8	.42	e1.6	1.0	1.2	.48	.62	.58
5	1.6	.38	1.7	e.24	9.5	.62	1.2	1.7	.88	.50	.58	.58
6	1.5	.50	2.6	e.28	24	.88	1.0	7.7	1.7	.62	.38	22
7	.58	.16	1.9	e.38	4.7	.82	.82	2.2	.88	.70	.38	24
8	.70	.14	4.3	e.61	3.8	.70	.70	7.3	.62	1.7	.76	3.1
9	1.2	2.8	15	.42	e10	.70	.70	3.8	.62	.58	.88	1.9
10	4.2	.58	3.1	.62	e6.6	.70	1.0	2.2	.54	.30	1.5	1.3
11	13	.22	6.6	.50	e3.9	.46	1.2	2.5	.58	.46	.54	.76
12	4.3	.20	3.8	.58	e3.0	.62	1.1	1.6	.46	21	.30	1.8
13	2.7	2.6	12	.50	e2.3	.62	.66	1.9	1.2	2.7	.34	.66
14	1.9	1.1	7.3	5.6	e1.5	.62	2.3	19	1.3	1.1	.30	8.5
15	1.5	.42	4.0	2.2	e1.8	22	1.5	10	.88	.82	.28	5.9
16	10	.20	2.9	.54	e1.2	8.7	.70	8.8	.66	2.5	.62	4.0
17	2.8	.18	2.1	.28	e.86	4.6	.54	6.4	.82	5.2	.30	2.5
18	1.6	.54	1.8	22	e.62	1.1	.54	5.2	1.6	5.5	2.8	2.2
19	1.5	12	1.4	3.3	e.52	.66	.42	5.5	.42	5.5	1.0	2.6
20	3.6	3.3	1.1	1.6	e.48	7.0	18	7.8	.58	2.6	.30	1.4
21	5.0	1.5	.82	1.1	e.48	18	3.1	8.1	.70	1.5	.28	.94
22	1.9	12	1.2	.88	e.47	16	2.8	5.5	1.5	1.1	.58	1.1
23	1.4	5.9	.94	.46	.42	18	6.3	3.8	.50	2.7	1.7	1.7
24	1.1	3.1	.50	.38	.38	21	2.8	5.5	.54	4.0	.42	5.0
25	4.0	1.9	.54	.38	.34	37	2.5	9.5	.70	1.5	1.4	1.4
26	1.9	2.7	2.7	.30	.50	e18	2.0	8.8	.54	.94	.62	6.2
27	1.2	2.1	.66	.30	2.5	e9.8	1.6	3.9	.46	.76	.28	8.0
28	.70	1.5	.54	.28	.62	e5.4	1.1	2.8	.76	.94	.28	12
29	1.0	1.1	.42	.39	.62	e3.2	.94	2.8	.50	.72	.46	4.7
30	.54	3.0	.38	.82	---	e2.2	2.3	2.7	.70	1.4	.62	3.5
31	.38	---	.37	1.2	---	e11	---	1.9	---	12	.58	---
TOTAL	80.50	61.00	84.05	47.12	94.01	212.69	70.22	154.9	27.44	85.06	23.82	130.34
MEAN	2.60	2.03	2.71	1.52	3.24	6.86	2.34	5.00	.91	2.74	.76	4.34
MAX	13	12	15	22	24	37	18	19	2.7	21	2.8	24
MIN	.38	.14	.37	.24	.34	.28	.42	1.0	.42	.30	.26	.50
AC-FT	160	121	167	93	186	422	139	307	54	169	47	259

CAL YR 1987	TOTAL	1309.23	MEAN	3.59	MAX	53	MIN	.14	AC-FT	2600
WTR YR 1988	TOTAL	1070.95	MEAN	2.93	MAX	37	MIN	.14	AC-FT	2120

e Estimated

16899800 TOFOL RIVER--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO
AUG											
12...	1500	124	6.80	27.0	61	0	13	7.0	5.5	16	0.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	CHLORIDE, DISSOLVED (MG/L AS CL)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG											
12...	1.2	4.4	65	3.3	0.10	33	107	0.14	<0.100	54	3

< Actual value is known to be less than the value shown.

16912000 PAGO STREAM AT AFONO

LOCATION.--Lat 14°16'03" S., long 170°39'02" W., Hydrologic Unit 20100001, on left bank 0.2 mi south of Afono and 0.3 mi upstream from mouth.

DRAINAGE AREA.--0.60 mi^2.

PERIOD OF RECORD.--October 1958 to current year. Prior to July 1960, published as Afono Stream at Afono.

REVISED RECORDS.--WSP 1937: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 30 ft, from topographic map.

REMARKS.--Records good. About 0.06 ft^3/s is diverted upstream for domestic use in Afono. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--29 years (water years 1960-88), 3.38 ft^3/s (2,450 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,350 ft^3/s July 5, 1969, gage height, 5.49 ft, from rating curve extended above 61 ft^3/s; minimum, 0.11 ft^3/s Sept. 15, 16, 1983.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 288 ft^3/s Mar. 4, gage height, 3.56 ft, no other peak greater than base discharge of 210 ft^3/s; minimum, 0.11 ft^3/s Nov. 22, 23.

DISCHARGE, IN 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	.15	.13	.22	.78	2.1	9.7	.70	.43	.25	.37	.49	.23
2	.14	.13	.82	.62	.96	4.2	4.4	.43	.25	.37	.37	.22
3	.15	.13	.22	1.4	.70	2.4	1.7	.58	.55	1.3	3.6	.22
4	.16	.19	.16	1.2	.55	43	4.2	.49	.43	10	3.9	.45
5	.16	1.4	.15	.70	.62	31	24	.43	.47	2.4	1.7	.70
6	.20	1.8	.14	.55	.86	28	5.3	.55	2.5	2.0	2.0	.25
7	.17	1.3	.36	.93	4.8	7.9	8.5	.85	1.2	2.1	3.4	.23
8	.17	1.3	.22	.62	3.2	4.9	4.0	.49	.78	3.2	1.6	.22
9	.69	.49	.17	.49	2.2	3.4	7.5	.56	.43	1.7	1.1	.22
10	.37	.25	.16	.37	2.1	2.8	3.8	.49	.32	1.7	1.4	3.8
11	.22	.20	.16	.37	1.2	2.2	2.5	.43	.28	1.4	1.1	11
12	.17	.17	.79	.32	.87	1.9	1.9	.43	.25	.96	.87	4.1
13	.16	.17	6.5	.32	.70	1.7	1.8	.37	.25	.70	.78	1.3
14	.15	.16	5.3	.81	.70	1.3	2.0	.32	.22	.55	.62	.78
15	.15	.15	13	5.5	.49	1.2	1.6	.37	.23	.89	.49	.55
16	.15	.14	5.7	1.8	.43	1.1	1.6	.37	.32	1.4	.37	.49
17	.14	.16	2.0	.96	.62	1.0	1.3	.73	.22	6.3	.37	.43
18	.15	.16	4.8	.62	5.2	1.3	1.0	1.0	.20	2.2	.37	.37
19	4.2	.14	2.1	.49	9.0	.96	.96	.49	.22	1.1	.37	.37
20	1.5	.14	1.0	.43	6.3	2.2	.96	.55	.22	.78	.32	.43
21	.25	.14	29	.32	2.8	1.1	.78	.55	.20	.62	.28	.82
22	.20	.13	26	.32	1.7	1.1	.70	.55	1.2	2.1	.28	.43
23	.17	.15	20	.25	1.3	.87	.62	.43	.96	9.9	.25	.32
24	.19	.63	7.0	.32	1.0	.70	.70	.43	.78	2.2	.28	.28
25	.16	.23	3.8	.37	3.4	.62	.70	.74	6.4	1.3	.32	.43
26	.16	.22	2.7	2.0	4.1	.55	.78	1.2	1.8	.96	.25	3.0
27	.15	.17	2.2	.78	6.4	.55	.55	.87	1.0	.96	.23	.62
28	.14	.16	1.8	2.9	4.0	.62	.49	.55	.62	.78	.25	.43
29	.14	.20	1.3	1.7	2.7	1.2	.49	.55	.43	.62	.25	.37
30	.13	.22	1.0	5.1	---	1.2	.43	.37	.32	.55	.23	.28
31	.13	---	.87	2.4	---	.87	---	.28	---	.49	.22	---
TOTAL	11.17	10.98	139.64	35.74	71.00	161.54	85.96	16.88	23.30	61.90	28.06	33.14
MEAN	.36	.37	4.50	1.15	2.45	5.21	2.87	.54	.78	2.00	.91	1.10
MAX	4.2	1.8	29	5.5	9.0	43	24	1.2	6.4	10	3.9	11
MIN	.13	.13	.14	.25	.43	.55	.43	.28	.20	.37	.22	.22
AC-FT	22	22	277	71	141	320	171	33	46	123	56	66

CAL YR 1987	TOTAL	877.19	MEAN	2.40	MAX	68	MIN	.13	AC-FT	1740
WTR YR 1988	TOTAL	879.29	MEAN	1.86	MAX	43	MIN	.13	AC-FT	1350

16920500 AASU STREAM AT AASU

LOCATION.--Lat 14°17'51" S., long 170°45'30" W., Hydrologic Unit 20100001, on right bank at Aasu and 200 ft upstream from mouth.

DRAINAGE AREA.--1.03 mi^2.

PERIOD OF RECORD.--October 1958 to current year.

REVISED RECORDS.--WSP 1937: Drainage area. WSP 2137: 1959-60(P), 1961(M), 1962-65(P).

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 5 ft, by hand levels from high-tide mark.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Small diversion upstream for domestic use. Recording rain gage located at station. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--29 years (water years 1960-88), 6.07 ft^3/s (4,400 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 498 ft^3/s Sept. 7, 1972, gage height, 5.18 ft, from rating curve extended above 20 ft^3/s on basis of slope-area measurement at gage height 4.57 ft; minimum, 0.12 ft^3/s Oct. 21, 23, 24, 27, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 118 ft^3/s Mar. 5, gage height, 3.05 ft, no peak greater than base discharge of 180 ft^3/s; minimum, 0.68 ft^3/s Oct. 2.

DISCHARGE, IN 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	.87	1.4	1.7	5.2	e3.5	e10	2.4	1.9	1.7	2.8	2.8	1.5
2	.74	1.7	1.7	4.3	e3.0	e7.0	3.5	2.2	1.9	2.8	2.7	1.6
3	.88	1.8	1.4	5.4	e2.5	e5.0	4.2	2.2	7.5	5.1	3.2	1.6
4	1.6	5.4	1.2	3.8	e2.3	e25	7.4	2.1	4.9	19	2.7	2.0
5	.87	11	1.1	2.8	e3.0	e50	10	1.9	3.0	8.3	2.9	2.5
6	.87	5.5	1.0	2.0	e5.0	e25	7.4	1.8	4.0	6.7	3.8	1.8
7	1.6	6.7	1.2	3.7	e20	e20	8.0	2.1	3.6	6.4	3.5	1.3
8	1.4	6.4	1.0	2.7	e9.5	e15	8.9	1.8	3.0	7.7	3.0	1.2
9	4.4	4.3	.85	2.4	e7.0	e13	10	1.6	2.7	12	2.7	1.4
10	3.6	4.0	.87	2.2	e5.0	e10	8.4	1.5	2.7	9.8	3.5	9.3
11	2.7	3.4	1.0	2.5	e6.4	9.2	6.7	1.5	2.5	7.8	2.8	11
12	1.8	3.2	1.3	4.0	e5.0	8.4	5.8	3.5	2.4	6.7	2.5	5.2
13	1.4	3.0	7.6	3.6	e4.0	7.4	5.2	1.8	2.4	6.1	2.7	3.6
14	1.3	2.8	13	3.2	e3.4	6.4	6.6	1.5	2.2	5.5	2.4	3.0
15	1.2	2.7	16	7.5	e3.0	5.8	4.9	1.4	2.5	5.8	2.2	3.0
16	1.1	2.5	12	3.4	e2.8	5.2	4.9	1.5	2.8	5.9	2.1	2.8
17	1.1	2.7	13	2.5	e3.0	5.5	4.3	2.7	2.2	9.8	1.9	2.7
18	1.2	2.7	18	2.4	e4.5	4.6	3.6	2.6	2.1	5.8	1.8	2.7
19	4.0	2.4	9.8	2.2	e7.0	4.1	3.2	1.7	2.1	4.6	1.8	2.5
20	2.5	2.1	8.2	2.2	e16	5.7	3.2	2.1	1.9	4.0	1.8	2.8
21	2.5	1.9	22	1.9	e7.0	3.8	2.8	1.9	1.8	3.6	1.7	2.8
22	1.8	1.8	31	1.9	e4.5	5.3	2.5	2.0	5.0	6.3	1.7	2.4
23	1.6	1.8	20	4.1	e4.0	3.8	2.4	1.8	4.3	12	1.8	2.4
24	1.4	1.9	16	3.0	e3.5	3.2	2.4	1.9	3.6	6.4	1.7	2.3
25	1.3	1.6	13	2.8	e18	3.0	2.5	1.8	8.8	4.9	1.8	3.6
26	1.2	1.5	11	2.8	e7.0	2.7	2.2	2.2	4.6	4.3	1.8	4.7
27	1.2	1.3	9.2	3.1	e16	2.7	2.1	1.9	3.6	5.2	1.5	2.6
28	1.4	1.2	7.8	4.0	e8.0	2.7	1.9	2.4	3.0	4.0	1.5	2.4
29	3.7	1.2	6.7	3.8	e7.0	2.5	1.8	2.2	3.0	3.8	1.4	2.9
30	1.7	1.2	5.8	e5.0	---	2.4	1.8	1.8	2.8	3.2	1.8	2.7
31	1.5	---	4.9	e4.0	---	2.2	---	2.2	---	3.0	1.3	---
TOTAL	54.43	91.1	257.42	104.2	190.9	276.4	139.0	81.3	98.6	199.1	70.2	92.1
MEAN	1.76	3.04	8.30	3.36	6.58	8.92	4.63	1.98	3.29	6.42	2.26	3.07
MAX	4.4	11	31	7.5	20	50	10	3.5	8.6	19	3.8	11
MIN	.88	1.2	.87	1.9	2.3	2.2	1.8	1.4	1.7	2.8	1.3	1.2
AC-FT	108	181	511	207	379	548	276	122	196	395	139	183

CAL YR 1987	TOTAL	1932.02	MEAN	5.29	MAX	31	MIN	.68	AC-FT	3830
WTR YR 1988	TOTAL	1634.75	MEAN	4.47	MAX	50	MIN	.88	AC-FT	3240

e Estimated

16931000 ATAULOMA STREAM AT AFAO

LOCATION.--Lat 14°20'10" S., long 170°48'02" W., Hydrologic Unit 20100001, on left bank at Afao, 100 ft upstream from highway bridge, and 300 ft upstream from mouth.

DRAINAGE AREA.--0.24 mi^2.

PERIOD OF RECORD.--October 1956 to current year.

REVISED RECORDS.--WSP 1937: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 20 ft, by hand levels from high-tide mark.

REMARKS.--Records good. No diversion upstream. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--29 years (water years 1960-88), 1.44 ft^3/s (1,040 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 815 ft^3/s Oct. 28, 1979, gage height, 4.47 ft, from rating curve extended above 30 ft^3/s; minimum, 0.04 ft^3/s Oct. 24-26, 28-31, Nov. 1, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 180 ft^3/s Mar. 5, gage height, 262 ft, no other peak greater than base discharge of 180 ft^3/s; minimum, 0.07 ft^3/s Dec. 5.

DISCHARGE, IN 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	.15	.11	.23	.51	.27	2.1	.40	.34	.36	.84	.36	.24
2	.13	.11	.13	.27	.24	1.0	.67	.33	.52	.64	.33	.24
3	.11	.11	.10	.30	.21	.69	2.0	.27	7.0	1.0	.33	.24
4	.13	.18	.09	.24	.30	7.3	1.8	.24	1.8	4.3	.40	.32
5	.10	.59	.09	.27	.24	19	2.0	.21	1.6	1.3	.33	.46
6	.10	1.3	.08	.24	.28	14	1.0	.27	4.2	1.0	.69	.24
7	.12	.44	.09	.52	2.0	4.5	.80	.27	1.0	1.7	.87	.24
8	.11	.33	.09	.30	.54	2.1	1.1	.21	.69	2.9	.54	.24
9	.18	.17	.10	.24	.33	1.6	1.2	.21	.49	2.6	.40	.27
10	.31	.11	.10	.21	.27	1.3	1.0	.21	.40	2.7	.44	4.0
11	.15	.11	.09	.21	.27	.94	.74	.21	.36	1.6	.40	4.2
12	.11	.11	.17	.17	.30	.69	.59	.45	.30	.74	.33	2.2
13	.11	.11	2.8	.15	.24	.74	.49	.36	.30	.59	.30	.74
14	.10	.13	5.3	.38	.24	.79	.44	.24	.30	.54	.30	.59
15	.10	.13	6.0	1.6	.21	.59	.40	.21	.27	.64	.27	.36
16	.09	.11	1.8	.44	.19	.59	.40	.24	.30	.64	.27	.33
17	.09	.13	.85	.27	.30	.79	.36	.26	.24	3.2	.24	.36
18	.11	.11	1.3	.34	.48	.54	.33	.27	.24	1.1	.24	.27
19	1.1	.11	.54	.24	.80	.61	.30	.19	.24	.74	.24	.24
20	.17	.13	.33	.24	4.2	1.3	.30	.30	.24	.69	.24	.27
21	.11	.13	7.8	.19	.94	.54	.27	.30	.21	.64	.21	.33
22	.11	.15	8.0	.19	.54	1.1	.27	.27	1.9	1.1	.21	.24
23	.10	.13	5.0	.17	.52	.74	.24	.21	1.2	2.2	.21	.27
24	.10	.13	2.0	.19	.46	.54	.24	.33	.69	.94	.21	.50
25	.10	.13	.80	.34	4.5	.44	.27	.40	2.9	.54	.24	1.3
26	.11	.13	.74	.25	1.3	.40	.30	1.6	1.0	.49	.21	1.0
27	.11	.13	.59	.24	4.4	.36	.24	.87	.74	.60	.19	.66
28	.10	.11	.36	.40	1.4	.40	.24	.95	.44	.50	.21	.44
29	.43	.11	.33	.27	1.3	.40	.24	.40	.36	.44	.19	.44
30	.11	.11	.27	.74	---	.33	.24	.30	.36	.36	.21	.36
31	.11	---	.24	.40	---	.36	---	.60	---	.36	.21	---
TOTAL	5.06	5.89	46.41	10.52	27.27	66.78	18.87	11.54	30.85	37.63	9.82	21.59
MEAN	.16	.20	1.50	.34	.94	2.15	.63	.37	1.03	1.21	.32	.72
MAX	1.1	1.3	8.0	1.6	4.5	19	2.0	1.8	7.0	4.3	.87	4.2
MIN	.09	.11	.08	.15	.19	.33	.24	.19	.21	.36	.19	.24
AC-FT	10	12	92	21	54	132	37	23	61	75	19	43

CAL YR 1987	TOTAL	329.16	MEAN	.90	MAX	26	MIN	.08	AC-FT	653
WTR YR 1988	TOTAL	292.23	MEAN	.80	MAX	19	MIN	.06	AC-FT	580

16948000 AFUELO STREAM AT MATUU

LOCATION.--Lat 14°18'07" S., long 170°41'07" W., Hydrologic Unit 20100001, on left bank 0.2 mi northwest of Matuu and 0.3 mi upstream from mouth.

DRAINAGE AREA.--0.25 mi^2.

PERIOD OF RECORD.--March 1958 to current year. Prior to July 1980, published as Matuu Stream at Matuu.

REVISED RECORDS.--WSP 1937: Drainage area. WSP 2137: 1958-65.

GAGE.--Water-stage recorder. Elevation of gage is 80 ft, from topographic map.

REMARKS.--Records good. Small diversion upstream for domestic use since September 1972. Periodic determinations of water temperature for the current year are published elsewhere in this report.

AVERAGE DISCHARGE.--30 years, 1.45 ft^3/s (1,050 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 535 ft^3/s May 3, 1985, gage height, 4.70 ft, from rating curve extended above 26 ft^3/s on basis of slope-area measurement of peak flow; minimum, 0.01 ft^3/s Sept. 16, 17, 20-28, 28, 29, 1975, Apr. 5-7, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 152 ft^3/s July 18, gage height 2.85 ft, no peak greater than base discharge of 160 ft^3/s; minimum, 0.02 ft^3/s for many days.

DISCHARGE, IN 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	.02	.02	.02	.75	.28	5.6	.09	.08	.10	.14	.09	.08
2	.02	.02	.09	.21	.14	1.3	1.2	.07	1.1	.14	.10	.04
3	.02	.02	.04	1.1	.14	.55	.52	.22	4.7	1.6	1.3	.06
4	.05	.07	.05	.64	.14	17	2.2	.13	1.7	7.6	.79	.22
5	.02	1.1	.02	.17	.09	16	5.6	.08	.36	1.2	.66	.23
6	.02	.98	.03	.14	.29	12	1.4	.05	2.8	1.3	.95	.08
7	.11	1.2	.05	.44	3.1	3.0	2.4	.05	.55	1.1	2.6	.05
8	.12	.70	.03	.17	1.2	1.2	1.0	.04	.49	1.6	.41	.08
9	1.3	.14	.03	.10	.65	.75	7.0	.05	.25	1.5	.41	.05
10	.46	.06	.02	.07	.16	.55	2.3	.05	.17	1.3	.73	4.7
11	.14	.02	.03	.07	.17	.36	.65	.04	.18	.50	.30	3.7
12	.04	.03	.12	.06	.11	.33	.33	.09	.11	.25	.17	1.0
13	.05	.02	2.3	.04	.15	.30	.21	.50	.10	.17	.13	.21
14	.02	.02	4.7	.36	.45	.19	.19	.16	.09	.13	.10	.13
15	.02	.02	5.8	2.8	.36	.14	.14	.09	.26	.35	.10	.07
16	.02	.02	1.8	.30	.13	.17	.65	.11	.22	5.5	.10	.05
17	.03	.03	1.7	.14	1.1	.28	.21	1.7	.10	6.4	.09	.08
18	.02	.07	4.1	.09	4.1	.36	.14	.88	.09	.85	.08	.07
19	2.2	.02	.65	.08	3.3	.19	.11	.14	.11	.39	.08	.08
20	.52	.02	.21	.06	3.9	.44	.10	.15	.07	.25	.08	.08
21	.09	.03	19	.05	1.1	.14	.07	.28	.22	.21	.10	.16
22	.05	.02	16	.05	.50	.38	.07	.13	1.4	1.4	.08	.08
23	.02	.03	7.0	.07	.35	.16	.10	.10	.53	3.2	.07	.07
24	.02	.06	2.1	.05	.27	.10	.08	.19	1.7	.50	.07	.06
25	.02	.04	.75	.15	3.7	.11	.10	.72	4.3	.23	.13	.46
26	.02	.03	.56	.79	2.4	.08	.25	1.4	.55	.16	.09	.48
27	.02	.03	.33	.48	4.0	.09	.06	.59	.25	.22	.09	.11
28	.02	.03	.19	2.5	1.6	.09	.05	2.4	.19	.11	.05	.06
29	.05	.02	.14	.50	1.2	.10	.05	.98	.16	.10	.10	.06
30	.02	.02	.11	3.7	---	.11	.05	.25	.11	.09	.07	.05
31	.02	---	.10	.80	---	.11	---	.14	---	.09	.05	---
TOTAL	5.55	4.89	68.07	16.95	35.08	62.18	27.52	11.80	22.94	38.58	10.37	12.59
MEAN	.18	.16	2.20	.55	1.21	2.01	.92	.38	.76	1.24	.33	.42
MAX	2.2	1.2	19	3.7	4.1	17	7.0	2.4	4.7	7.6	2.6	4.7
MIN	.02	.02	.02	.04	.09	.08	.05	.04	.07	.09	.05	.04
AC-FT	11	9.7	135	34	70	123	55	23	46	77	21	25

CAL YR 1987	TOTAL	390.44	MEAN	1.07	MAX	35	MIN	.02	AC-FT	774
WTR YR 1988	TOTAL	316.52	MEAN	.88	MAX	19	MIN	.02	AC-FT	628

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 usable in low-flow or flood-flow 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 base flow 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.

Records collected at partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low flow and high flow are given in a third table.

Low-flow partial-record stations

Measurements of streamflow in the area covered by this report made at low-flow partial-record stations are given in the following table. Most of 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 a nearby stream where continuous records are available, will give a picture of the low-flow potentiality of the stream. The column headed "Period of record" shows the water years in which measurements were made at the same, or practically the same, site.

Discharge measurements made at low-flow partial-record stations during water year 1988

Station No.	Station name	Location	Drainage area mi^2	Period of record	Measurements: Date	Measurements: Discharge (ft^3/s)
		Caroline Islands, Island of Pohnpei				
16898300	Dausn Neu River	Lat 06°56'47" N., long 158°11'55" E., 0.48 mi southwest of Ponape Island Central School and 1.7 mi upstream from bridge at mouth.	0.75	1970-75≠, 1975-76, 1981-82, 1984-85, 1988	6-08-88	4.1
16898500	Nankewi River	Lat 06°58'03" N., long 158°10'46" E., at highway bridge, 350 ft west of Sekere School.	1.48	1971-73, 1975-77, 1981-84, 1988	5-17-88	10
16898550	Kiriedleng River	Lat 06°55'17" N., long 158°09'48" E, at small right-bank tributary, 300 ft downstream from road bridge, and 1.4 mi northwest of Mount Temwetsmwensekir.	.73	1972-73, 1975-77, 1981-84, 1988	5-17-88	4.3
16898900	Keprohi River	Lat 06°50'40" N., long 158°17'57" E., 150 ft upstream from road bridge and 0.46 mi northeast of Ponape Agriculture Trade School.	2.05	1981-85, 1988	6-08-88	34
16899100	Lehdau (formerly Lataw) River	Lat 06°52'59" N., long 158°16'15" E., 0.1 mi upstream from left-bank tributary, 0.4 mi northeast of Merewi Hill, and 1.4 mi upstream from mouth.	2.44	1971, 1973, 1976-77, 1980-81, 1983, 1985, 1988	6-08-88	17
		Caroline Islands, Island of Kosrae				
16899780	Tafuyat River	Lat 05°18'38" N., long 162°00'47" E., at old Japanese Dam, 0.75 mi upstream from mouth, and 1.5 mi east of Mount Finkol.	.27	1974-75, 1977-83, 1988	6-07-88	1.1
16899830	Innem River	Lat 05°19'48" N., long 163°00'27" E., at concrete road bridge, 0.5 mi upstream from mouth, and 1.4 mi southeast of Mount Mununte.	1.82	1971-74, 1978-83, 1988	5-10-88	14

≠ Operated as a continuous-record gaging station.

Discharge measurements made at low-flow partial-record stations during water year 1988--Continued

Station No.	Station name	Location	Drainage area mi^2	Period of record	Measurements Date	Measurements Discharge (ft^3/s)
		Samoa Islands, Island of Tutuila				
16917500	Leele Stream at mouth, at Fagasa	Lat 14°17'28" S., long 170°43'09" W., at Fagasa and 200 ft upstream from mouth.	.23	1966-76≠, 1977, 1981-88	9-27-88	0.24
16931500	Asili Stream at alt. 330 ft, near Asili	Lat 14°19'34" S., long 170°47'38" W., 1.3 mi northwest of Leone, 1.5 mi southwest of Aoloaufou, and 0.8 mi upstream from mouth.	.32	1977-86≠, 1987-88	9-28-88	.47
16932500	Asili Stream at Asili	Lat 14°20'04" S., long 170°47'40" W., 100 ft upstream from highway bridge at Asili and 0.1 mi upstream from mouth.	.66	1958-59≠, 1960-61, 1963-65, 1967-69, 1974-77, 1981-85, 1987-88	9-28-88	1.1
16933500	Leafu Stream at alt. 370 ft, near Leone	Lat 14°19'31" S., long 170°46'50" W., 900 ft upstream from village stream intake, 1.0 mi southwest of Aoloaufou, and 1.1 mi north of Leone.	.31	1977-86≠, 1987-88	9-28-88	1.8
16934000	Leafu Stream near Leone	Lat 14°19'47" S., long 170°46'55" W., 30 ft upstream from reservoir, 0.9 mi upstream from mouth, and 1.0 mi north of Leone.	.69	1959-64, 1968-69, 1971-74, 1976-77, 1981-88	9-28-88	.88
16944000	Papa Stream near Nuuuli	Lat 14°18'31" S., long 170°42'29" W., 0.3 mi upstream from Tauese Stream and 0.9 mi northwest of Nuuuli.	.57	1959-61, 1963-64, 1967-68, 1974-78, 1981-88	9-27-88	.69
16960000	Alega Stream at Alega	Lat 14°16'58" S., long 170°38'19" W., 300 ft upstream from left-bank tributary, 0.2 mi northwest of Alega, and 0.3 mi upstream from mouth.	.19	1958-76≠, 1977-78, 1981-88	9-22-88	.50
16963900	Leafu Stream near Auaai	Lat 14°18'27" S., long 170°34'26" W., 35 ft upstream from upper village intake, 0.1 mi north of Auasi, and 0.2 mi upstream from mouth.	.11	1972-86≠, 1987-88	9-22-88	.04

≠ Operated as a continuous-record gaging station.

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 or 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 records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods 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 water years for which the annual maximum has been determined.

Annual maximum discharge at crest-stage partial-record stations during water year 1988

Station no.	Station name	Location	Drainage area mi^2	Period of record	Annual maximum Date	Annual maximum Gage height (ft)	Annual maximum Discharge (ft^3/s)
		Mariana Islands, Island of Guam					
16807200	Agana River at Agana	Lat 13°28'23"N., long 144°45'13"E., upstream side of road bridge East Agana, 0.2 mi southeast of Leary Junction, and 0.5 mi northeast of Government House, Agana.	8.60	1973-88	1-12-88		e130
16806120	Namo River near Santa Rosa	Lat 13°23'44"N., long 144°39'57"E., upstream of weir, 0.75 mi south of Camp Roxas, and 0.75 mi northwest of Santa Rita.	1.56	1980-88	8-15-88		930

e Estimated

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Discharge measurements made at miscellaneous sites during water year 1988

Stream	Tributary to	Location	Drainage area mi^2	Measured previously (water years)	Measurements Date	Measurements Discharge (ft^3/s)
		Caroline Islands, Island of Kosrae				
Taf River	Fincol River	Lat 05°17'14" N., long 162°59'07" E., 30 ft above bridge and 1.9 mi Northeast of Utwe Harbor.	--	--	8-08-88	3.00
		Samoa Islands, Island of Tutuila				
Fitiuli Stream	Vaipito Stream	Lat 14°16'59" S., long 170°42'16" W., 0.5 mi SE of Pago Pago Bay and 0.55 mi West of Mt. Sione.	--	--	6-28-88 7-13-88	.43 .49
Vaipito Stream	Pago Pago Bay	Lat 14°16'57" S., long 170°42'17" W., 0.4 mi upstream from mouth and 50 ft above the confluence with Fitiuli Stream.	--	--	8-28-88	1.3

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

CAROLINE ISLANDS, ISLAND OF POHNPEI

16898300 DAUEN NEU RIVER (LAT 06°56'57" LONG 158°12'5")

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TEMPERATURE AIR (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARBONATE (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO
JAN												
15...	1545	102	7.50	26.0	29.0	43	1	11	3.8	3.2	14	0.2

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	CHLORIDE, DISSOLVED (MG/L AS CL)	ALKALINITY LAB (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN											
15...	0.20	4.8	42	4.5	0.10	8.1	61	0.08	<0.100	88	12

< Actual value is known to be less than the value shown.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

MARIANA ISLANDS, ISLAND OF GUAM

16847000 - IMONG RIVER NR AGAT, GUAM (LAT 13 20 17 N LONG 144 41 55 E)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
MAR, 1988				
10...	1300	3.2	28.5	27.0
JUL				
14...	1045	12	27.0	25.5
AUG, 1988				
24...	1205	5.3	--	28.0

16848100 - ALMAGOSA RIVER NEAR AGAT, GUAM (LAT 13 20 43 N LONG 144 41 36 E)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
MAR, 1988				
10...	1515	0.82	28.5	27.5
JUN				
02...	1445	0.32	27.0	27.0
JUL, 1988				
14...	1245	8.3	27.0	25.5
AUG				
24...	1120	1.8	32.5	28.0

16848500 - MAULAP RIVER NEAR AGAT, GUAM (LAT 13 21 14 N LONG 144 41 44 E)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
MAR, 1988				
10...	1740	1.2	28.5	27.0
JUN				
02...	1545	0.66	31.0	28.0
JUL, 1988				
14...	1410	17	27.0	25.5
AUG				
24...	1320	2.9	28.5	27.5

16854500 - UGUM RIVER AB TALOFOFO FALLS, NR TALOFOFO, GUAM (LAT 13 19 16 N LONG 144 44 01 E)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
APR, 1988				
20...	1540	5.8	28.5	27.5
JUN, 1988				
01...	1310	4.1	28.0	27.0

16858000 - YLIG RIVER, NR YONA, GUAM (LAT 13 23 28 N LONG 144 45 06 E)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
APR, 1988				
20...	1335	1.4	28.0	27.0
JUL				
07...	1335	12	28.5	27.0
AUG, 1988				
11...	1135	34	28.5	27.0
SEP				
08...	1045	7.0	30.0	27.5

CAROLINE ISLANDS, YAP ISLANDS

16692000 - QATLIW STREAM, YAP, YAP ISLANDS (LAT 09 32 58 N LONG 138 06 41 E)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
OCT, 1987				
23...	1405	0.0	27.5	26.5
FEB, 1988				
17...	1030	0.0	27.5	26.0
MAY				
10...	1125	0.0	27.5	26.0
24...	1120	0.19	27.5	26.0
JUL, 1988				
11...	1410	0.17	28.0	26.0
AUG				
12...	1030	0.08	27.5	26.0

16892400 - QARINGEEL STREAM, YAP, YAP ISLANDS (LAT 09 31 02 N LONG 138 05 31 E)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
MAY, 1988				
24...	1225	0.12	--	26.5
JUN				
16...	0950	0.38	27.5	25.5
JUL, 1988				
11...	1250	0.31	28.5	26.5
AUG				
11...	1400	0.17	28.0	27.5

16893100 - BURONG STREAM, YAP, YAP ISLANDS (LAT 09 32 05 N LONG 138 07 19 E)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
OCT, 1987				
20...	1300	0.13	28.5	27.5
MAY, 1988				
24...	0955	0.30	26.0	27.5
JUL, 1988				
07...	1455	0.09	27.5	26.5
AUG				
16...	0935	0.22	--	26.0

CAROLINE ISLANDS, YAP ISLANDS--Continued

16893200 - MUKONG STREAM, GAGIL-TAMIL, YAP ISLANDS (LAT 09 32 05 N LONG 138 10 18 E)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
OCT, 1987				
20...	0940	2.0	28.0	26.0
NOV				
10...	0950	0.85	27.5	26.5
DEC				
01...	0950	1.0	28.0	26.5
JAN, 1988				
04...	1150	0.29	27.5	26.5
26...	1055	0.33	27.5	26.5
FEB				
16...	1045	0.35	28.0	26.5
MAR				
07...	1030	0.25	27.5	26.5
29...	1355	0.77	26.5	27.0
APR, 1988				
14...	1155	0.14	29.5	27.0
MAY				
05...	1040	1.2	28.5	26.5
23...	1500	0.74	27.5	28.0
JUN				
13...	1235	0.55	28.5	27.5
JUL				
06...	1110	0.65	28.5	27.0
AUG				
18...	1140	1.3	28.0	27.5
SEP				
15...	0940	0.35	27.5	26.5

16893400 - EYEB STREAM, GAGIL-TAMIL, YAP ISLANDS (LAT 09 33 02 N LONG 138 09 03 E)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
OCT, 1987				
20...	1150	0.92	28.5	27.5
NOV				
11...	1025	0.51	28.0	26.5
DEC				
01...	1120	0.63	28.0	27.0
JAN, 1988				
04...	0950	0.13	27.5	26.5
26...	1350	0.25	27.5	26.0
FEB				
16...	1250	0.18	28.0	26.5
MAR				
07...	1220	0.07	28.5	27.0
29...	1330	0.47	27.5	26.5
APR, 1988				
14...	1345	0.14	29.0	27.5
MAY				
06...	0930	0.57	28.5	28.5
20...	1310	0.48	27.5	27.0
JUN				
14...	1025	0.26	28.5	26.5
JUL				
07...	1350	0.34	28.5	27.0
AUG				
18...	0925	0.66	27.5	26.5
SEP				
15...	1140	0.38	27.5	26.5

CAROLINE ISLANDS, TRUK ISLANDS

16893800 - WICHEN RIVER AT ALT 18M, MOEN, TRUK ISLANDS (LAT 07 27 01 N LONG 151 51 56 E)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
MAR				
30...	1700	0.40	30.5	27.5
MAY				
20...	1000	1.6	31.0	27.5

CAROLINE ISLANDS, ISLAND OF KOSRAE

16899620 - MELO RIVER, KOSRAE (LAT 05 20 30 N LONG 162 58 33 E)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
MAY, 1986				
09...	1525	8.7	29.0	26.0

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

SAMOA ISLANDS, ISLAND OF TUTUILA

16912000 - PAGO STREAM AT AFONO, TUTUILA (LAT 14 16 03 S LONG 170 39 02 W)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
OCT, 1987				
20...	0935	1.5	26.0	--
NOV				
24...	0930	0.17	24.0	23.0
DEC				
24...	0740	7.5	25.5	24.0
JAN, 1988				
26...	0810	1.5	27.0	25.0
FEB				
26...	0900	3.0	28.0	26.0
MAR				
10...	1005	2.7	26.0	24.0
28...	0930	0.49	24.0	23.0
APR, 1988				
28...	0855	0.57	26.0	24.0
JUN				
01...	0840	0.28	26.0	24.0
JUL				
06...	0835	2.3	27.0	26.0
AUG				
09...	0910	1.1	26.0	25.0
SEP				
09...	0735	0.21	26.0	24.0

16920500 - AASU STREAM AT AASU, TUTUILA (LAT 14 17 51 S LONG 170 45 30 W)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
OCT, 1987				
01...	0855	0.74	26.0	24.0
NOV				
05...	0840	12	26.0	24.0
JAN, 1988				
11...	0855	2.4	26.0	24.0
FEB				
11...	0900	5.6	26.0	25.0
MAR				
11...	0915	9.5	26.0	22.0
16...	0840	4.9	27.0	24.0
18...	0615	4.6	25.0	24.5
APR, 1988				
20...	0830	3.2	26.0	24.0
MAY				
05...	0830	1.8	26.0	24.0
AUG				
05...	0900	2.6	26.0	25.0
SEP				
13...	0815	3.7	26.0	24.0

16931000 - ATAULOMA STREAM AT AFAO, TUTUILA (LAT 14 20 10 S LONG 170 48 02 W)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
OCT, 1987				
07...	0830	0.09	26.0	24.0
NOV				
10...	0830	0.12	25.0	23.0
DEC				
16...	0810	2.0	25.0	24.0
JAN, 1988				
12...	0815	0.19	24.0	22.0
FEB				
16...	0920	0.18	26.0	25.0
MAR				
02...	0855	1.0	28.0	24.0
17...	1215	0.65	24.0	22.0
APR, 1988				
19...	0850	0.34	26.0	24.0
MAY				
19...	0835	0.21	26.0	24.0
JUN				
21...	0850	0.25	28.0	26.0
JUL				
29...	1300	0.54	26.0	24.5
AUG				
30...	0940	0.24	28.0	26.0
SEP				
30...	0855	0.32	27.0	25.0

16948000 - AFUELO STREAM AT MATUU, TUTUILA (LAT 14 18 07 S LONG 170 41 07 W)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	TEMPER-ATURE AIR (DEG C)	TEMPER-ATURE WATER (DEG C)
OCT, 1987				
07...	0955	0.09	26.0	24.0
NOV				
10...	0930	0.08	25.0	23.0
DEC				
15...	0730	0.35	25.0	24.0
JAN, 1988				
20...	0925	0.09	24.0	23.0
28...	1010	4.4	27.0	25.0
FEB				
23...	0955	0.39	26.0	25.0
MAR, 1988				
25...	0740	0.14	24.0	23.0
APR				
26...	1025	0.20	26.0	24.0
MAY				
26...	0910	2.8	26.0	24.0
AUG				
03...	0905	0.15	25.0	24.0
SEP				
09...	0945	0.07	28.0	26.0

MARIANA ISLANDS, ISLAND OF GUAM

132833144445371. Local number, 18-2844-04 Tide Gage of Agana.

LOCATION.--Lat 13°28'33" N., long 144°44'53" E., Hydrologic Unit 20100003, at Agana Boat Basin. Owner: Government of Guam.

WELL CHARACTERISTICS.--Twelve-inch PVC stilling well, 14 ft deep.

DATUM.--Altitude of land-surface datum is 6.40 ft. Measuring point: Top of PVC pipe, 8.19 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, April 1, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.44 ft above mean sea level, Aug. 27, 1984; lowest, -2.47 ft, Dec. 14, 1985.

TIDE STAGES, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	-0.11	.04	-0.23	-0.22	.02	.30	.38	.49	.58	.69	.51
2	.07	.00	.00	-0.16	-0.23	.09	.36	.38	.49	.60	.66	.49
3	.15	.05	-0.08	-0.26	-0.15	.08	.36	.37	.45	.67	.60	.45
4	.18	.12	.05	-0.33	-0.22	.11	.39	.35	.48	.65	.58	.46
5	.25	.18	-0.09	-0.28	-0.18	.08	.25	.34	.49	.65	.44	.51
6	.31	.23	-0.09	-0.25	-0.05	.12	.25	.27	.56	.68	.43	.65
7	.37	.20	-0.17	-0.25	-0.03	.11	.22	.20	.58	.63	.45	.60
8	.45	.15	-0.10	-0.28	-0.09	.03	.22	.25	.59	.58	.39	.71
9	.42	.07	-0.16	-0.17	-0.05	.01	.12	.35	.60	.49	.36	.72
10	.36	.04	-0.05	-0.20	-0.05	.01	.20	.41	.57	.39	.29	.73
11	.34	.03	-0.05	.00	.05	-0.01	.28	.51	.57	.34	.34	.79
12	.33	.01	.02	1.52	-0.02	.05	.33	.50	.51	.29	.34	1.15
13	.40	.03	-0.02	.12	.11	.16	.44	.48	.46	.26	.37	1.07
14	.33	-0.02	-0.12	-0.05	.05	.17	.44	.43	.45	.33	.36	.84
15	.33	-0.07	-0.02	-0.13	.12	.24	.36	.35	.48	.30	.38	.80
16	.34	.02	.00	-0.10	.09	.23	.33	.35	.49	.34	.43	.74
17	.46	.12	.07	-0.18	.11	.26	.27	.36	.46	.34	.44	.76
18	.73	.03	-0.04	-0.16	.15	.30	.27	.37	.44	.44	.45	.72
19	1.00	.00	-0.08	-0.19	.09	.29	.30	.42	.45	.47	.43	.75
20	.76	.03	-0.10	-0.22	-0.02	.28	.24	.40	.47	.47	.40	.72
21	.43	.08	-0.06	-0.16	.09	.29	.28	.41	.50	.51	.37	.73
22	.45	.08	-0.16	-0.07	-0.11	.31	.25	.44	.51	.53	.37	.77
23	.17	-0.01	-0.24	-0.08	-0.15	.29	.23	.46	.52	.53	.40	.80
24	.18	-0.16	-0.28	-0.10	.08	.28	.31	.43	.56	.52	.43	.84
25	.01	-0.04	-0.27	-0.17	-0.01	.29	.33	.44	.60	.58	.48	.91
26	-0.06	-0.18	-0.24	-0.08	.00	.37	.34	.47	.57	.51	.50	.91
27	-0.09	-0.08	-0.22	-0.13	-0.06	.40	.41	.48	.54	.60	.60	.92
28	-0.14	-0.09	-0.24	-0.14	.00	.41	.43	.43	.49	.67	.69	.79
29	-0.17	-0.05	-0.26	-0.13	-0.02	.35	.44	.46	.53	.72	.62	.76
30	-0.13	-0.10	-0.26	-0.21	---	.41	.43	.45	.57	.68	.70	.67
31	-0.14	---	-0.26	-0.18	---	.38	---	.43	---	.71	.60	---
MEAN	.26	.02	-0.11	-0.10	-0.02	.21	.31	.40	.52	.52	.47	.74
MAX	1.00	.23	.07	1.52	.15	.41	.44	.51	.60	.72	.70	1.15
MIN	-0.17	-0.18	-0.28	-0.33	-0.23	-0.01	.12	.20	.44	.26	.29	.45

MARIANA ISLANDS, ISLAND OF SAIPAN

151032145460370. Local number, 14-1045-09 Hakmang Well 78.

LOCATION.--Lat 15°10'22" N., long 145°45'51" E., Hydrologic Unit 20100006, 0.8 mi west-southwest of the Hakmang Communication station and 2.3 mi northeast of San Vicente Village. Owner: Government of the Northern Mariana Islands.

AQUIFER.--Tagpochau Limestone.

WELL CHARACTERISTICS.--Drilled artesian well, depth 369 ft, diameter 12 in.

DATUM.--Elevation of land-surface datum is 229 ft. Measuring point: Top of casing, about 230 ft above maan sea level.

PERIOD OF RECORD.--Water-level recorder, March 1973 to May 1976, March 1977 to September 1978, December 1980 to September 1987, February to September 1988.

EXTREMES FOR PERIOD OF RECORD.--Highest daily water level, 20.18 ft above mean sea level, Sept. 13, 1988; lowest daily, 14.86 ft above mean sea level, Sept. 4, 1988.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					---	17.76	17.56	16.48	16.22	16.00	15.37	14.98
2					---	17.78	17.56	16.48	16.19	16.00	15.37	14.98
3					---	17.75	17.58	16.47	16.24	16.00	15.38	14.93
4					17.98	17.85	17.59	16.46	16.43	16.00	15.50	14.86
5					17.93	17.81	17.56	18.49	18.21	16.01	15.37	15.07
6					17.96	17.81	17.54	16.44	16.17	16.02	15.32	15.55
7					17.96	17.79	17.54	16.44	16.16	16.01	15.31	15.68
8					17.96	17.74	17.52	16.44	18.07	15.95	15.29	15.78
9					17.97	17.68	17.40	16.49	16.04	15.87	15.25	15.82
10					17.95	17.65	17.22	16.51	18.01	15.83	15.22	15.88
11					17.94	17.57	17.17	18.52	16.00	15.78	15.21	16.34
12					17.94	17.56	17.13	16.51	15.97	15.76	15.24	16.63
13					17.92	17.53	17.08	16.48	16.17	15.72	15.18	20.18
14					17.91	17.53	17.11	16.45	16.12	15.71	15.19	15.98
15					17.91	17.53	17.05	16.42	18.23	15.66	15.19	15.93
16					17.90	17.47	17.00	16.43	16.20	15.62	15.31	15.91
17					17.88	17.43	16.97	16.42	16.16	15.58	15.30	15.89
18					17.87	17.45	18.94	16.40	16.13	15.61	15.21	15.89
19					17.86	17.41	16.91	16.40	16.10	15.55	15.19	15.86
20					17.84	17.47	16.82	16.38	16.11	15.55	15.14	16.03
21					17.83	17.43	16.77	16.35	16.07	15.96	15.12	15.98
22					17.82	17.47	16.73	18.33	16.08	15.71	15.12	15.86
23					17.81	17.36	16.68	16.30	16.07	15.56	15.10	15.86
24					17.81	17.30	16.83	18.27	16.05	15.47	15.09	15.86
25					17.81	17.37	16.59	16.26	16.03	15.45	15.09	15.88
26					17.80	17.37	18.54	16.26	16.03	15.39	15.05	15.69
27					17.77	17.49	16.55	18.21	16.00	15.38	15.07	15.90
28					17.75	17.53	16.53	16.22	15.95	15.87	15.11	15.87
29					17.77	17.54	16.52	16.22	16.04	15.47	15.11	15.86
30					---	17.57	16.51	18.22	16.05	15.40	15.12	15.83
31					---	17.58	---	16.24	---	15.39	15.05	---
MEAN					---	17.57	17.04	16.39	16.11	15.71	15.21	15.90
MAX					---	17.85	17.59	16.52	16.43	16.02	15.50	20.18
MIN					---	17.30	16.51	16.21	15.95	15.38	15.05	14.86

151032145460370 - 14-1045-09 Hakmang Well 78, SAIPAN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
SEP				
30...	1240	3350	29.0	875

MARIANA ISLANDS, ISLAND OF SAIPAN

151130145445970. Local number, 14-1144-07 Akgak Well 31.

LOCATION.--Lat 15°11'30" N., long 145°44'59" E., Hydrologic Unit 20100006, 1.2 mi south of Capitol Hill and 2.5 mi north of San Vicente Village. Owner: Government of the Northern Mariana Islands.

AQUIFER.--Tagpochau Limestone.

WELL CHARACTERISTICS.--Drilled perched water-table well, depth 290 ft, diameter 12 in.

DATUM.--Elevation of land-surface datum is 615 ft. Measuring point: Top of casing, 615.37 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, July 1982 to current year.

REMARKS.--Records good except for estimated daily water levels, Oct. 1-5, Mar. 23 to Apr. 13, July 6 to Aug. 11, and Sept. 14-30.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 434.54 ft above mean sea level, Feb. 21, 1987; lowest, 371.34 ft above mean sea level, July 21, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e400.40	397.74	394.96	391.71	393.37	387.48	e383.10	379.58	378.65	378.15	e377.80	377.64
2	e400.20	397.58	394.86	391.55	393.56	387.29	e383.10	379.72	378.72	378.11	e377.90	377.75
3	e400.00	397.48	395.10	391.40	393.63	387.08	e383.20	379.48	379.17	378.10	e377.90	377.83
4	e399.85	397.45	395.14	391.25	393.67	386.98	e383.20	379.28	379.87	378.10	e378.05	377.89
5	399.48	397.45	394.88	391.10	393.69	386.71	e383.00	379.42	379.38	376.10	e377.90	377.93
6	399.60	397.37	394.69	390.95	393.82	386.51	e382.70	379.54	378.98	e378.30	e377.90	377.92
7	399.40	397.23	394.54	390.80	393.90	386.32	e382.40	379.58	378.82	e378.20	e377.90	377.87
8	399.20	397.12	394.40	390.65	393.89	386.15	e382.00	379.64	378.70	e378.10	e377.90	377.86
9	399.01	397.03	394.29	390.50	393.89	385.95	e381.90	379.68	378.61	e378.10	e377.85	377.98
10	398.86	396.93	394.12	390.35	393.90	385.70	e381.80	379.44	378.56	e378.05	e377.75	378.02
11	398.80	396.82	394.34	390.20	393.80	385.40	e381.60	379.24	378.51	e378.05	e377.90	377.88
12	398.67	396.71	395.20	390.53	392.89	385.19	e381.30	379.15	378.52	e378.05	377.86	377.87
13	398.47	396.60	394.90	390.94	392.41	384.98	e381.20	379.04	378.58	e378.02	377.87	378.21
14	398.43	396.50	394.55	390.24	391.82	384.75	380.99	378.99	378.57	e378.02	377.85	e378.85
15	398.22	396.40	394.31	390.46	391.42	384.51	380.81	378.93	378.43	e378.00	377.77	e379.70
16	398.02	396.30	394.09	391.00	391.01	384.25	380.59	379.00	378.35	e378.00	377.67	e380.55
17	397.82	396.20	393.90	391.40	390.65	384.03	380.40	379.05	378.30	e378.00	377.61	e381.30
18	397.70	396.28	393.74	391.58	390.31	383.82	380.30	378.91	378.26	e378.00	377.60	e381.60
19	399.10	396.35	393.60	391.50	390.01	383.60	380.15	378.93	378.24	e378.00	377.59	e381.50
20	400.30	396.12	393.45	391.80	389.78	383.39	379.99	378.83	378.22	e378.00	377.58	e381.30
21	399.88	396.00	393.31	392.03	389.48	383.18	379.83	378.83	378.22	e378.50	377.56	e381.10
22	399.56	395.89	393.14	392.25	389.19	382.95	379.73	378.80	378.20	e378.30	377.55	e381.00
23	399.07	395.79	393.00	392.40	388.94	e382.75	379.65	378.77	378.19	e378.15	377.53	e380.90
24	398.69	395.69	392.84	392.25	388.70	e382.60	379.53	378.84	378.19	e378.10	377.52	e381.20
25	398.41	395.60	392.70	391.54	388.48	e382.70	379.46	378.67	378.17	e378.00	377.51	e380.80
26	398.18	395.49	392.54	391.80	388.30	e382.80	379.37	378.65	378.10	e378.00	377.50	e380.70
27	397.98	395.39	392.40	392.12	388.09	e383.00	379.31	378.63	378.06	e377.90	377.48	e380.65
28	397.76	395.29	392.28	392.87	387.87	e383.10	379.24	378.58	378.08	e378.25	377.47	e380.60
29	398.24	395.18	392.12	393.52	387.67	e383.10	379.27	378.57	378.11	e378.05	377.46	e380.50
30	398.44	395.06	392.01	394.19	---	e383.20	379.43	378.56	378.23	e377.85	377.46	e380.50
31	397.99	---	391.88	393.18	---	e383.30	---	378.56	---	377.80	377.51	---
MEAN	398.89	396.43	393.78	391.55	391.32	384.61	380.95	379.06	378.50	378.08	377.70	379.51
MAX	400.40	397.74	395.20	394.19	393.90	387.48	383.20	379.72	379.87	378.50	377.90	381.60
MIN	397.70	395.06	391.88	390.20	387.67	382.60	379.24	378.56	378.06	377.80	377.46	377.64

e Estimated

MARIANA ISLANDS, ISLAND OF SAIPAN

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
150659145415501	14-0641-01	15 06 59 N	145 41 55 E	09-26-88	1655	7510	29.0	2230
150649145421201	14-0642-01	15 06 49 N	145 42 12 E	09-26-88	1615	6600	31.0	1850
150655145420501	14-0642-02	15 06 55 N	145 42 05 E	09-25-88	1630	8500	29.0	2490
150656145420301	14-0642-03	15 06 56 N	145 42 03 E	09-26-88	1645	6500	29.0	1970
150737145431070	14-0742-07	15 07 30 N	145 42 58 E	04-13-88	1300	4730	28.0	1300
				06-15-88	1310	5700	28.0	1400
				08-11-88	1220	5720	28.0	1600
150744145430370	14-0742-08	15 07 37 N	145 42 54 E	04-13-88	1310	4900	28.0	1400
				06-15-88	1320	5500	28.0	1400
				08-11-88	1250	5940	29.0	1600
150731145430870	14-0742-11	15 07 26 N	145 42 55 E	11-10-87	1150	4560	27.5	1300
				08-11-88	1210	9980	28.5	3000
150732145432070	14-0743-09	15 07 26 N	145 43 07 E	04-13-88	1245	16400	28.0	5100
				08-15-88	1300	7000	28.0	1800
				08-11-88	1140	18000	28.0	5900
150728145431470	14-0743-10	15 07 23 N	145 43 00 E	11-10-87	1030	4940	27.5	1400
150730145431370	14-0743-11	15 07 24 N	145 43 00 E	11-10-87	1040	4588	27.5	1300
				04-13-88	1250	6750	28.0	1900
				06-15-88	1305	7100	28.0	1800
				08-11-88	1150	7130	28.0	2000
150736145430070	14-0743-13	15 07 36 N	145 43 02 E	04-13-88	1305	a2390	28.0	560
				06-15-88	1315	2730	28.0	680
				08-11-88	1235	3240	28.0	750
150737145440870	14-0743-18	15 07 28 N	145 43 52 E	11-10-87	0955	2378	28.0	600
				04-13-88	1220	a3470	28.0	850
				08-15-88	1230	3270	28.0	780
150749145434170	14-0743-19	15 07 46 N	145 43 34 E	11-10-87	0845	a3310	28.0	850
				04-13-88	1200	a3470	28.0	880
				06-15-88	1155	3600	28.0	900
				08-11-88	1100	3640	28.5	900
150731145440370	14-0743-22	15 07 25 N	145 43 47 E	11-10-87	0930	2650	28.0	890
				04-13-88	1210	2620	28.0	750
				06-15-88	1220	3100	28.0	750
150738145435870	14-0743-23	15 07 30 N	145 43 43 E	11-10-87	0915	1900	27.5	480

a Laboratory conductance.

MARIANA ISLANDS, ISLAND OF SAIPAN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
150743145435470	14-0743-24	15 07 35 N	145 43 40 E	11-10-87	0855	3356	28.0	900
				08-11-88	1020	4190	28.5	1100
150740145435570	14-0743-25	15 07 32 N	145 43 41 E	06-15-88	1205	2780	28.0	640
				08-11-88	1030	2730	28.5	650
150733145435970	14-0743-28	15 07 27 N	145 43 44 E	11-10-87	0920	2020	28.0	480
150722145434570	14-0743-27	15 07 19 N	145 43 45 E	11-10-87	0940	1020	28.0	160
				04-13-88	1215	932	28.0	150
				06-15-88	1220	1100	28.0	140
				08-11-88	1045	1030	28.0	140
150729145435870	14-0743-28	15 07 29 N	145 43 58 E	11-10-87	0950	4040	28.0	1100
				04-13-88	1215	a6120	28.0	1700
				06-15-88	1225	7500	28.0	1900
				08-11-88	0955	7400	29.0	2000
150729145435570	14-0743-29	15 07 29 N	145 43 55 E	11-10-87	1000	3160	28.5	840
				04-13-88	1225	a4330	28.0	1200
				06-15-88	1235	4720	28.0	1200
150905145435670	14-0843-02	15 08 59 N	145 43 41 E	11-10-87	0810	a2710	28.5	650
				08-11-88	0815	2570	28.5	600
150843145434770	14-0843-04	15 08 43 N	145 43 47 E	11-10-87	0830	a4590	29.0	1200
				04-13-88	1155	a4600	28.0	1200
				06-15-88	1145	4810	28.5	1200
				08-11-88	0845	4490	29.5	1200
150948145431501	14-0943-07	15 09 48 N	145 43 15 E	09-29-88	1430	5800	31.0	1600
150958145431301	14-0943-08	15 09 56 N	145 43 13 E	09-29-88	1410	855	29.0	82
151029145455401	14-1044-03	15 10 14 N	145 44 09 E	09-30-88	1110	910	28.0	40
151026145454970	14-1045-08	15 10 26 N	145 45 49 E	11-10-87	1315	4420	28.0	1200
				02-03-88	1055	2160	28.0	500
				04-14-88	1205	2100	27.5	560
				08-14-88	1135	9100	28.0	2800
				08-11-88	1440	10500	28.0	3500
				09-21-88	0345	13000	28.5	4100
				09-22-88	1110	12800	28.0	4000
				09-23-88	1330	13000	28.5	4100
				09-25-88	1025	13200	28.5	4100
				09-27-88	1900	13000	29.0	4200
				09-28-88	0255	13000	28.0	4200
				09-29-88	1215	4550	29.0	1200
				09-30-88	1200	13200	28.5	4100

a Laboratory Conductance.

MARIANA ISLANDS, ISLAND OF SAIPAN--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
151020145455201	14-1045-12	15 10 20 N	145 45 52 E	04-14-88	1245	1800	27.5	440
				06-14-88	1215	3180	28.0	720
				09-29-88	1225	3750	29.0	980
				09-30-88	1210	5600	29.0	1600
151029145454770	14-1045-14	15 10 29 N	145 45 47 E	02-04-88	1035	1740	28.0	368
				08-11-88	1430	2390	28.0	560
				09-29-88	1300	3400	29.0	880
151021145460870	14-1046-03	15 10 21 N	145 46 08 E	11-10-87	1330	2940	27.5	790
				02-03-88	1000	2660	28.0	730
				08-11-88	1510	3580	27.5	920
				09-07-88	0845	a1960	25.5	400
				09-28-88	0145	9500	31.0	2900
				09-29-88	1250	2300	29.0	540
151127145434270	14-1143-02	15 11 20 N	145 43 27 E	04-14-88	1420	a1880	27.5	420
				06-15-88	1345	2140	28.0	460
				08-11-88	1820	2020	29.0	460
151133145445770	14-1144-05	15 11 33 N	145 44 57 E	11-10-87	1410	504	26.5	22
				04-13-88	1035	456	27.0	22
				06-14-88	1105	480	27.0	24
151246145443770	14-1244-08	15 12 42 N	145 44 22 E	11-10-87	1545	a7610	27.5	2200
151250145444170	14-1244-09	15 12 45 N	145 44 25 E	11-10-87	1535	5580	28.5	2200
151255145443770	14-1244-16	15 12 55 N	145 44 35 E	08-11-88	1645	3500	27.0	900
151256145443770	14-1244-18	15 12 58 N	145 44 37 E	11-10-87	1520	a2980	27.0	780
151309145443870	14-1344-18	15 13 08 N	145 44 39 E	06-14-88	1245	2890	28.0	680
151339145444301	14-1344-26	15 13 39 N	145 44 43 E	09-23-88	1100	2150	29.0	424
				09-23-88	1120	2200	28.5	678
				09-24-88	1105	2650	31.0	636
151320145444101	14-1344-28	15 13 20 N	145 44 41 E	09-22-88	0940	3100	31.0	800

a Laboratory Conductance.

MARIANA ISLANDS, ISLAND OF GUAM

132624144452771. Local number, 18-2645-07 Ordot Well A-20.

LOCATION.--Lat 13°26'24" N., long 144°45'27" E., Hydrologic Unit 20100003, at Ordot School, 1.4 mi west of junction of Routes 4 and 10, Ordot. Owner: Government of Guam.

AQUIFER.--Mariana Limestone and Alutom formation.

WELL CHARACTERISTICS.--Drilled parabasal water-teble well, depth reported 120 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 137 ft. Measuring point: Top of casing, 141.74 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, January 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highast water level, 54.03 ft above mean sea level, Oct. 21, 1980; lowast, 32.76 ft above mean sea level, June 21, 22, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41.08	42.62	43.24	42.37	42.74	39.96	37.38	35.58	34.24	33.68	35.35	37.49
2	40.96	42.67	43.21	42.30	42.69	39.85	37.32	35.52	34.18	33.68	35.40	37.49
3	40.89	42.71	43.15	42.24	42.66	39.75	37.25	35.47	34.17	33.66	35.47	37.43
4	40.85	42.71	43.11	42.17	42.60	39.64	37.18	35.41	34.14	33.66	35.52	37.46
5	40.82	42.70	43.05	42.09	42.54	39.54	37.11	35.36	34.12	33.66	35.58	37.45
6	40.79	42.72	42.98	42.01	42.47	39.44	37.06	35.33	34.10	33.65	35.67	37.43
7	40.75	42.75	42.90	41.86	42.40	39.35	36.98	35.30	34.08	33.64	35.77	37.42
8	40.69	42.78	42.84	41.84	42.32	39.25	36.92	35.25	34.07	33.64	35.84	37.42
9	40.64	42.83	42.84	41.76	42.24	39.16	36.86	35.17	34.06	33.64	35.90	37.40
10	40.56	42.84	42.80	41.66	42.15	39.07	36.79	35.12	34.02	33.63	35.97	37.34
11	40.48	42.85	42.83	41.60	42.06	39.00	36.73	35.08	33.99	33.63	36.05	37.27
12	40.41	42.84	42.82	41.59	41.95	38.91	36.68	35.03	33.98	33.63	36.17	37.22
13	40.37	42.85	42.80	41.53	41.83	38.83	36.63	34.97	33.95	33.69	36.35	37.13
14	40.33	42.83	42.79	41.39	41.76	38.74	36.58	34.93	33.93	33.81	36.60	37.07
15	40.29	42.82	42.85	41.39	41.64	38.68	36.51	34.89	33.89	33.95	36.79	37.04
16	40.25	42.80	42.89	41.49	41.52	38.58	36.43	34.85	33.86	34.10	36.84	37.02
17	40.21	42.76	42.91	41.66	41.41	38.52	36.39	34.80	33.85	34.26	37.02	36.96
18	40.16	42.69	42.91	41.84	41.30	38.43	36.32	34.75	33.83	34.43	37.15	36.94
19	40.10	42.64	42.88	42.03	41.20	38.35	36.27	34.72	33.82	34.61	37.23	36.95
20	40.03	42.59	42.85	42.20	41.09	38.28	38.21	34.68	33.80	34.77	37.30	37.04
21	40.10	42.56	42.80	42.32	40.97	38.19	36.16	34.64	33.78	34.91	37.38	37.15
22	40.30	42.57	42.77	42.47	40.83	38.12	36.10	34.61	33.77	35.02	37.45	37.26
23	40.58	42.61	42.77	42.57	40.71	38.06	36.04	34.55	33.76	35.08	37.49	37.33
24	40.92	42.70	42.77	42.65	40.62	37.99	35.98	34.51	33.74	35.13	37.51	37.37
25	41.24	42.83	42.77	42.72	40.46	37.91	35.91	34.47	33.74	35.16	37.52	37.37
26	41.53	42.92	42.73	42.76	40.37	37.85	35.85	34.44	33.73	35.17	37.52	37.36
27	41.76	43.01	42.69	42.80	40.26	37.77	35.81	34.40	33.71	35.19	37.52	37.35
28	42.00	43.10	42.65	42.82	40.17	37.68	35.75	34.36	33.71	35.20	37.52	37.32
29	42.20	43.16	42.65	42.82	40.10	37.62	35.70	34.33	33.69	35.21	37.51	37.27
30	42.36	43.21	42.64	42.80	---	37.54	35.64	34.31	33.68	35.25	37.49	37.25
31	42.52	---	42.64	42.77	---	37.46	---	34.28	---	35.30	37.49	---
MEAN	40.84	42.79	42.86	42.15	41.55	38.63	36.48	34.87	33.91	34.32	36.66	37.27
MAX	42.52	43.21	43.24	42.82	42.74	39.96	37.38	35.58	34.24	35.30	37.52	37.49
MIN	40.03	42.56	42.64	41.39	40.10	37.46	35.64	34.28	33.68	33.63	35.35	36.94

MARIANA ISLANDS, ISLAND OF GUAM

132644144480871. Local number, 18-2646-02 BPM Well 1.

LOCATION.--Lat 13°28'44" N., long 144°48'08" E., Hydrologic Unit 20100003, on lot number 2287, 0.2 mi southeast of junction of Routes 15 and 10, Mangilao. Owner: Ana P. Diaz.

AQUIFER.--Coralline Limestone, probably Miocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth reported 235 ft, casing diameter 12 in.

DATUM.--Elevation of land-surface datum ia 210 ft. Measuring point: Top of casing, 209.86 ft, revised, above mean sea level.

PERIOD OF RECORD.--
Occasional measurements: February 1972 to December 1973.
Water level recorder: January 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.45 ft above mean sea level, May 22, 1976; lowest, 1.89 ft above mean ses level, Feb. 11, 12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.70	2.49	2.47	2.24	2.40	2.51	2.83	2.67	2.70	2.75	2.91	2.76
2	2.67	2.48	2.46	2.25	2.37	2.54	2.81	2.66	2.73	2.77	2.90	2.75
3	2.65	2.50	2.46	2.25	2.37	2.58	2.82	2.66	2.75	2.76	2.88	2.76
4	2.65	2.52	2.44	2.23	2.37	2.80	2.82	2.65	2.76	2.79	2.85	2.75
5	2.66	2.55	2.44	2.21	2.37	2.61	2.83	2.64	2.76	2.78	2.81	2.74
6	2.67	2.57	2.42	2.23	2.38	2.63	2.81	2.63	2.77	2.77	2.76	2.74
7	2.69	2.60	2.42	2.23	2.41	2.63	2.79	2.61	2.76	2.77	2.74	2.75
8	2.71	2.62	2.41	2.24	2.44	2.63	2.77	2.58	2.78	2.79	2.73	2.79
9	2.73	2.61	2.41	2.24	2.45	2.62	2.75	2.59	2.77	2.80	2.70	2.83
10	2.75	2.59	2.42	2.26	2.46	2.63	2.72	2.60	2.76	2.76	2.67	2.64
11	2.74	2.57	2.46	2.29	2.47	2.62	2.71	2.63	2.76	2.73	2.65	2.85
12	2.74	2.56	2.49	2.41	2.49	2.60	2.72	2.64	2.76	2.71	2.65	2.88
13	2.74	2.54	2.49	2.59	2.50	2.61	2.72	2.84	2.75	2.69	2.64	2.94
14	2.74	2.52	2.48	2.60	2.51	2.63	2.72	2.65	2.73	2.68	2.64	2.96
15	2.73	2.49	2.45	2.62	2.52	2.66	2.74	2.66	2.72	2.66	2.63	2.95
16	2.72	2.47	2.46	2.62	2.53	2.66	2.74	2.67	2.72	2.64	2.64	2.93
17	2.73	2.49	2.48	2.61	2.54	2.68	2.74	2.68	2.72	2.65	2.65	2.95
18	2.78	2.49	2.49	2.57	2.54	2.71	2.74	2.69	2.70	2.67	2.64	2.95
19	2.87	2.49	2.47	2.53	2.55	2.74	2.72	2.71	2.68	2.70	2.64	2.95
20	2.95	2.47	2.45	2.52	2.55	2.76	2.70	2.71	2.67	2.72	2.64	2.95
21	2.93	2.48	2.44	2.51	2.53	2.79	2.66	2.70	2.67	2.71	2.62	2.97
22	2.88	2.53	2.42	2.54	2.53	2.82	2.64	2.69	2.67	2.72	2.65	2.98
23	2.88	2.54	2.40	2.56	2.51	2.84	2.61	2.68	2.67	2.73	2.64	2.99
24	2.85	2.52	2.36	2.57	2.51	2.83	2.60	2.66	2.68	2.73	2.65	3.00
25	2.81	2.50	2.34	2.54	2.53	2.63	2.60	2.64	2.70	2.73	2.66	3.02
26	2.74	2.51	2.33	2.51	2.53	2.82	2.60	2.64	2.71	2.74	2.70	3.02
27	2.68	2.52	2.33	2.49	2.53	2.83	2.62	2.65	2.72	2.75	2.72	3.02
28	2.62	2.53	2.30	2.48	2.51	2.84	2.64	2.64	2.71	2.79	2.75	3.01
29	2.57	2.51	2.28	2.47	2.51	2.85	2.66	2.65	2.70	2.82	2.78	2.98
30	2.54	2.48	2.26	2.45	---	2.85	2.67	2.67	2.72	2.87	2.79	2.97
31	2.52	---	2.25	2.42	---	2.85	---	2.66	---	2.90	2.78	---
MEAN	2.73	2.52	2.41	2.43	2.48	2.70	2.72	2.65	2.72	2.75	2.71	2.90
MAX	2.95	2.62	2.49	2.62	2.55	2.85	2.83	2.71	2.78	2.90	2.91	3.02
MIN	2.52	2.47	2.25	2.21	2.37	2.51	2.60	2.58	2.67	2.64	2.62	2.74

MARIANA ISLANDS, ISLAND OF GUAM

132824144464271. Local number, 18-2846-01 ACEORP Tunnel.

LOCATION.--Lat 13°28'54" N., long 144°46'42" E., Hydrologic Unit 20100003, behind Navy Telephone Exchange, 0.35 mi southwest of junction of Routes 1 and 14, Tamuning. Owner: U.S. Navy, Public Works Department.

AQUIFER.--Mariana Limestone.

WELL CHARACTERISTICS.--Dug basal water-table well consisting of an inclined shaft, three skimming tunnels, and a large pump room. Tunnels 1 and 2 are 150 ft each and tunnel 3 is 700 ft in length.

DATUM.--Elevation of land-surface datum is 180 ft. Measuring point: Top of wooden recorder shelf, 9.28 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, October 1954 to May 1965, March 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.95 ft above mean sea level, May 22, 1976; lowest, 1.70 ft above mean sea level, Feb. 12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.54	2.30	2.30	2.08	2.20	2.37	2.60	2.46	2.54	2.58	2.85	2.59
2	2.49	2.30	2.31	2.10	2.18	2.40	2.59	2.48	2.62	2.60	2.82	2.59
3	2.45	2.32	2.31	2.12	2.19	2.43	2.62	2.48	2.69	2.63	2.75	2.58
4	2.47	2.36	2.34	2.09	2.19	2.45	2.66	2.49	2.68	2.63	2.70	2.55
5	2.48	2.42	2.37	2.08	2.20	2.45	2.65	2.48	2.64	2.62	2.62	2.56
6	2.48	2.45	2.33	2.10	2.27	2.45	2.62	2.46	2.63	2.61	2.58	2.53
7	2.52	2.48	2.30	2.11	2.30	2.49	2.61	2.43	2.62	2.60	2.57	2.55
8	2.56	2.49	2.29	2.10	2.30	2.47	2.60	2.40	2.59	2.60	2.55	2.62
9	2.60	2.48	2.30	2.13	2.27	2.45	2.58	2.42	2.57	2.59	2.58	2.67
10	2.61	2.44	2.32	2.15	2.31	2.44	2.56	2.48	2.54	2.59	2.51	2.68
11	2.59	2.42	2.32	2.17	2.35	2.43	2.54	2.48	2.55	2.52	2.49	2.72
12	2.60	2.44	2.31	2.45	2.34	2.43	2.59	2.54	2.56	2.49	2.51	2.87
13	2.59	2.42	2.29	2.97	2.35	2.46	2.61	2.53	2.54	2.46	2.50	3.00
14	2.56	2.37	2.28	2.75	2.36	2.48	2.63	2.52	2.52	2.48	2.50	3.00
15	2.55	2.32	2.27	2.60	2.37	2.49	2.61	2.50	2.53	2.45	2.50	2.98
16	2.55	2.31	2.34	2.51	2.36	2.48	2.59	2.50	2.55	2.45	2.50	2.92
17	2.54	2.36	2.33	2.43	2.38	2.51	2.59	2.51	2.55	2.45	2.51	2.89
18	2.64	2.38	2.30	2.36	2.42	2.53	2.57	2.52	2.54	2.47	2.49	2.89
19	2.80	2.35	2.27	2.34	2.44	2.58	2.55	2.51	2.51	2.50	2.48	2.85
20	3.04	2.36	2.25	2.31	2.42	2.60	2.51	2.50	2.50	2.51	2.47	2.85
21	3.07	2.38	2.28	2.35	2.44	2.61	2.47	2.48	2.49	2.50	2.48	2.83
22	3.10	2.45	2.25	2.36	2.45	2.63	2.45	2.48	2.49	2.53	2.45	2.84
23	3.00	2.46	2.24	2.40	2.36	2.65	2.42	2.47	2.49	2.54	2.45	2.84
24	2.85	2.42	2.20	2.36	2.39	2.63	2.41	2.46	2.49	2.57	2.48	2.85
25	2.77	2.40	2.19	2.31	2.39	2.62	2.40	2.44	2.51	2.57	2.50	2.85
26	2.68	2.37	2.18	2.33	2.41	2.63	2.40	2.45	2.54	2.60	2.53	2.86
27	2.54	2.37	2.17	2.35	2.40	2.66	2.41	2.47	2.54	2.67	2.57	2.87
28	2.44	2.37	2.14	2.30	2.38	2.86	2.46	2.47	2.53	2.74	2.60	2.84
29	2.40	2.33	2.14	2.27	2.37	2.64	2.47	2.48	2.53	2.84	2.64	2.82
30	2.35	2.30	2.13	2.24	---	2.64	2.47	2.49	2.53	2.86	2.65	2.79
31	2.33	---	2.13	2.21	---	2.64	---	2.50	---	2.87	2.63	---
MEAN	2.62	2.39	2.26	2.30	2.34	2.53	2.54	2.48	2.55	2.58	2.56	2.78
MAX	3.10	2.49	2.37	2.97	2.45	2.66	2.66	2.54	2.69	2.87	2.85	3.00
MIN	2.33	2.30	2.13	2.08	2.18	2.37	2.40	2.40	2.49	2.45	2.45	2.53

MARIANA ISLANDS, ISLAND OF GUAM

132813144472771. Local number, 18-2847-06 Barrigada Well 2 (A-16).

LOCATION.--Lat 13°28'13" N., long 144°47'27" E., Hydrologic Unit 20100003, at Carbullido School, 0.6 mi west of junction of Routes 8 and 10, Barrigada. Owner: Public Utility Agency of Guam.

AQUIFER.--Mariana Limestone, probably Pliocene age.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth reported 215 ft, diameter 12 in.

DATUM.--Elevation of land-surface datum is 207 ft. Measuring point: Top of casing, 208.00 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, June 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.71 ft above mesn aea level, May 22, 1976; lowest, 2.83 ft above mean sea level, Feb. 11, 12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.58	3.40	3.34	3.12	3.25	3.36	3.59	3.42	3.55	3.54	3.83	3.58
2	3.56	3.38	3.34	3.14	3.23	3.37	3.58	3.42	3.59	3.56	3.82	3.56
3	3.53	3.38	3.36	3.15	3.22	3.40	3.60	3.42	3.65	3.58	3.79	3.56
4	3.51	3.38	3.34	3.13	3.22	3.42	3.62	3.43	3.70	3.59	3.71	3.54
5	3.50	3.39	3.36	3.11	3.22	3.43	3.61	3.44	3.68	3.57	3.65	3.53
6	3.51	3.44	3.35	3.12	3.26	3.44	3.60	3.42	3.65	3.57	3.60	3.52
7	3.51	3.48	3.33	3.13	3.31	3.46	3.60	3.41	3.62	3.57	3.58	3.53
8	3.52	3.51	3.35	3.13	3.33	3.46	3.61	3.39	3.61	3.58	3.55	3.57
9	3.56	3.50	3.35	3.14	3.32	3.45	3.59	3.39	3.60	3.60	3.54	3.61
10	3.58	3.48	3.36	3.16	3.34	3.43	3.55	3.41	3.59	3.58	3.55	3.63
11	3.58	3.46	3.38	3.17	3.36	3.41	3.56	3.43	3.58	3.57	3.55	3.64
12	3.59	3.44	3.38	3.31	3.38	3.42	3.60	3.47	3.59	3.53	3.56	3.73
13	3.58	3.44	3.37	3.37	3.38	3.43	3.64	3.48	3.58	3.51	3.55	3.86
14	3.58	3.44	3.36	3.37	3.39	3.45	3.65	3.48	3.57	3.49	3.55	3.91
15	3.58	3.40	3.34	3.75	3.40	3.47	3.63	3.48	3.57	3.48	3.55	3.89
16	3.58	3.37	3.34	3.62	3.40	3.48	3.62	3.47	3.55	3.46	3.55	3.90
17	3.58	3.37	3.36	3.55	3.40	3.48	3.61	3.49	3.55	3.46	3.55	3.84
18	3.59	3.37	3.36	3.48	3.42	3.51	3.60	3.50	3.54	3.47	3.55	3.86
19	3.82	3.37	3.34	3.43	3.44	3.56	3.58	3.50	3.51	3.51	3.49	3.82
20	4.08	3.36	3.32	3.39	3.43	3.58	3.52	3.50	3.50	3.54	3.45	3.81
21	4.10	3.37	3.32	3.39	3.44	3.59	3.46	3.50	3.49	3.55	3.47	3.81
22	4.05	3.42	3.31	3.41	3.46	3.61	3.43	3.50	3.49	3.55	3.45	3.79
23	4.05	3.48	3.28	3.45	3.40	3.63	3.41	3.49	3.49	3.56	3.43	3.81
24	3.96	3.46	3.24	3.43	3.40	3.63	3.39	3.47	3.49	3.57	3.46	3.81
25	3.88	3.43	3.22	3.39	3.42	3.62	3.38	3.45	3.51	3.59	3.48	3.82
26	3.76	3.42	3.22	3.38	3.41	3.61	3.37	3.46	3.53	3.61	3.50	3.82
27	3.65	3.41	3.20	3.40	3.40	3.64	3.38	3.46	3.54	3.62	3.53	3.83
28	3.58	3.40	3.19	3.36	3.37	3.67	3.40	3.47	3.53	3.68	3.57	3.80
29	3.51	3.39	3.15	3.33	3.36	3.66	3.41	3.47	3.53	3.74	3.60	3.78
30	3.45	3.37	3.14	3.30	---	3.61	3.42	3.49	3.53	3.81	3.61	3.75
31	3.42	---	3.13	3.26	---	3.62	---	3.51	---	3.83	3.61	---
MEAN	3.66	3.42	3.30	3.32	3.36	3.51	3.53	3.46	3.56	3.58	3.57	3.73
MAX	4.10	3.51	3.38	3.75	3.46	3.67	3.65	3.51	3.70	3.83	3.83	3.91
MIN	3.42	3.36	3.13	3.11	3.22	3.36	3.37	3.39	3.49	3.46	3.43	3.52

MARIANA ISLANDS, ISLAND OF GUAM

133032144491871. Local number, 18-3049-03 Harmon Loop School Well M-10A.

LOCATION.--Lat 13°30'32" N., long 144°49'18" E., Hydrologic Unit 20100003, at Harmon Loop School, Dededo.
Owner: Public Utility Agency of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth reported 288 ft, casing diameter 8 in.

DATUM.--Elevation of land-surface datum is 227 ft. Measuring point: Top of casing, 228.62 ft above mean sea level.

REMARKS.--Well was abandoned in 1973 because of oil taste and high iron content.

PERIOD OF RECORD.--Water-level recorder, January 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.61 ft above mean sea level, May 23, 1976; lowest, 1.94 ft above mean sea level, Feb. 10-12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.82	2.55	2.48	2.27	2.33	2.46	2.80	2.60	2.67	2.75	3.12	2.79
2	2.76	2.54	2.51	2.28	2.32	2.48	2.60	2.60	2.73	2.77	3.10	2.77
3	2.73	2.55	2.50	2.28	2.32	2.51	2.81	2.61	2.80	2.79	3.05	2.77
4	2.74	2.55	2.52	2.28	2.32	2.52	2.81	2.61	2.82	2.79	2.99	2.75
5	2.74	2.57	2.55	2.26	2.32	2.53	2.80	2.61	2.82	2.78	2.92	2.74
6	2.75	2.62	2.51	2.28	2.39	2.54	2.78	2.59	2.82	2.77	2.86	2.74
7	2.75	2.65	2.49	2.28	2.43	2.56	2.78	2.56	2.81	2.77	2.84	2.75
8	2.76	2.68	2.47	2.29	2.44	2.55	2.77	2.53	2.79	2.78	2.82	2.77
9	2.77	2.67	2.49	2.29	2.42	2.55	2.74	2.54	2.79	2.80	2.80	2.82
10	2.77	2.64	2.49	2.29	2.45	2.55	2.72	2.56	2.79	2.78	2.76	2.85
11	2.78	2.62	2.49	2.29	2.46	2.55	2.71	2.58	2.79	2.75	2.73	2.90
12	2.79	2.61	2.49	2.45	2.47	2.55	2.74	2.66	2.79	2.71	2.74	3.02
13	2.81	2.60	2.47	2.83	2.47	2.55	2.76	2.67	2.79	2.68	2.73	3.13
14	2.82	2.56	2.47	2.85	2.49	2.58	2.77	2.66	2.77	2.67	2.74	3.17
15	2.84	2.54	2.46	2.74	2.49	2.59	2.77	2.64	2.78	2.67	2.74	3.16
16	2.84	2.52	2.46	2.63	2.49	2.60	2.75	2.64	2.78	2.66	2.74	3.12
17	2.80	2.54	2.49	2.56	2.49	2.62	2.74	2.64	2.78	2.68	2.73	3.05
18	2.91	2.56	2.48	2.51	2.52	2.67	2.74	2.65	2.77	2.71	2.72	3.04
19	3.12	2.54	2.44	2.48	2.54	2.72	2.72	2.66	2.75	2.74	2.72	3.03
20	3.30	2.52	2.42	2.45	2.54	2.75	2.68	2.66	2.74	2.76	2.72	3.01
21	3.32	2.53	2.43	2.46	2.55	2.76	2.64	2.65	2.74	2.77	2.72	3.00
22	3.30	2.55	2.43	2.48	2.56	2.77	2.61	2.65	2.75	2.77	2.72	2.99
23	3.27	2.58	2.40	2.53	2.51	2.78	2.59	2.65	2.76	2.79	2.70	3.00
24	3.14	2.56	2.36	2.51	2.51	2.77	2.56	2.63	2.76	2.79	2.71	3.01
25	3.08	2.54	2.34	2.49	2.52	2.78	2.53	2.61	2.77	2.80	2.72	3.02
26	2.99	2.53	2.32	2.50	2.50	2.78	2.53	2.61	2.78	2.82	2.74	3.03
27	2.83	2.53	2.31	2.52	2.49	2.79	2.53	2.62	2.79	2.89	2.76	3.04
28	2.74	2.53	2.28	2.48	2.47	2.80	2.54	2.62	2.77	3.01	2.78	3.03
29	2.66	2.50	2.27	2.43	2.46	2.79	2.57	2.63	2.77	3.09	2.80	3.01
30	2.61	2.48	2.27	2.40	---	2.79	2.61	2.65	2.76	3.12	2.81	2.98
31	2.58	---	2.27	2.35	---	2.81	---	2.65	---	3.13	2.80	---
MEAN	2.87	2.57	2.43	2.44	2.46	2.65	2.70	2.62	2.77	2.80	2.80	2.95
MAX	3.32	2.68	2.55	2.85	2.56	2.81	2.81	2.67	2.82	3.13	3.12	3.17
MIN	2.58	2.48	2.27	2.26	2.32	2.46	2.53	2.53	2.67	2.66	2.70	2.74

MARIANA ISLANDS, ISLAND OF GUAM

133047144500171. Local number, 18-3049-05 Well M-11.

LOCATION.--Lat 13°30'49" N., long 144°49'58" E., Hydrologic Unit 20100003, at intersection of Harmon Loop School Road and Route 1 at Dededo. Owner: Public Utility Agency of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth reported 325 ft, casing diameter 8 in.

DATUM.--Elevation of land-surface datum is 294 ft. Measuring point: Top of casing, 295.82 ft above mean sea level.

PERIOD OF RECORD.--Water-level recorder, July 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.90 ft above mean sea level, Aug. 27, 1986; lowest, 2.46 ft above mean sea level, Feb. 12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.56	3.36	3.22	2.94	3.02	3.05	3.32	3.18	3.23	3.34	3.75	3.41
2	3.50	3.34	3.22	2.94	2.99	3.07	3.31	3.18	3.26	3.35	3.71	3.38
3	3.43	3.32	3.22	2.95	2.97	3.09	3.33	3.19	3.29	3.37	3.59	3.38
4	3.42	3.31	3.23	2.92	2.98	3.10	3.36	3.19	3.32	3.39	3.55	3.37
5	3.41	3.32	3.24	2.90	2.95	3.11	3.35	3.18	3.32	3.38	3.53	3.35
6	3.41	3.33	3.23	2.90	3.02	3.11	3.33	3.16	3.35	3.37	3.52	3.36
7	3.41	3.35	3.21	2.89	3.04	3.13	3.32	3.15	3.36	3.36	3.51	3.36
8	3.41	3.36	3.17	2.89	3.06	3.13	3.31	3.13	3.36	3.36	3.50	3.36
9	3.43	3.37	3.16	2.90	3.05	3.12	3.27	3.13	3.41	3.37	3.47	3.41
10	3.43	3.37	3.17	2.94	3.06	3.11	3.23	3.13	3.47	3.37	3.42	3.40
11	3.43	3.36	3.20	2.94	3.06	3.10	3.22	3.16	3.45	3.33	3.39	3.47
12	3.44	3.35	3.20	3.06	3.07	3.10	3.25	3.20	3.47	3.33	3.39	3.52
13	3.47	3.35	3.19	3.33	3.07	3.10	3.27	3.20	3.47	3.30	3.42	3.66
14	3.53	3.33	3.19	3.38	3.09	3.12	3.31	3.20	3.46	3.29	3.50	3.76
15	3.55	3.29	3.16	3.36	3.08	3.13	3.31	3.20	3.44	3.31	3.52	3.76
16	3.54	3.24	3.19	3.36	3.09	3.13	3.30	3.19	3.41	3.39	3.56	3.73
17	3.53	3.24	3.21	3.32	3.09	3.15	3.30	3.19	3.40	3.48	3.55	3.63
18	3.56	3.26	3.21	3.26	3.10	3.17	3.29	3.20	3.37	3.53	3.52	3.61
19	3.75	3.24	3.18	3.22	3.12	3.20	3.27	3.21	3.34	3.52	3.49	3.65
20	4.07	3.23	3.15	3.19	3.12	3.22	3.24	3.21	3.33	3.51	3.46	3.67
21	4.45	3.23	3.15	3.18	3.12	3.25	3.22	3.20	3.33	3.48	3.42	3.65
22	4.45	3.24	3.16	3.18	3.13	3.28	3.19	3.20	3.32	3.46	3.39	3.61
23	4.62	3.25	3.15	3.21	3.10	3.29	3.17	3.19	3.32	3.44	3.39	3.59
24	4.67	3.25	3.14	3.20	3.09	3.29	3.15	3.19	3.32	3.44	3.38	3.80
25	4.40	3.25	3.12	3.16	3.10	3.29	3.15	3.18	3.32	3.44	3.38	3.61
26	4.16	3.28	3.10	3.14	3.10	3.28	3.14	3.17	3.33	3.47	3.38	3.64
27	3.92	3.26	3.09	3.16	3.09	3.32	3.15	3.18	3.34	3.51	3.38	3.68
28	3.76	3.27	3.07	3.13	3.07	3.33	3.16	3.18	3.33	3.55	3.40	3.64
29	3.84	3.24	3.03	3.11	3.06	3.32	3.16	3.19	3.33	3.59	3.43	3.61
30	3.49	3.23	3.00	3.08	---	3.32	3.18	3.20	3.34	3.67	3.45	3.58
31	3.41	---	2.97	3.05	---	3.34	---	3.21	---	3.75	3.44	---
MEAN	3.72	3.29	3.16	3.10	3.07	3.19	3.25	3.18	3.38	3.43	3.48	3.55
MAX	4.67	3.37	3.24	3.38	3.13	3.34	3.36	3.21	3.47	3.75	3.75	3.76
MIN	3.41	3.23	2.97	2.89	2.95	3.05	3.14	3.13	3.23	3.29	3.38	3.35

MARIANA ISLANDS, ISLAND OF GUAM

133119144491771. Local number, 18-3149-05 Wettengel Exploratory Well Ex-7.

LOCATION.--Lat 13°31'17" N., long 144°49'17" E., Hydrologic Unit 20100003, 200 ft east of junction of Routes 1 and 3, Wettengel. Owner: Government of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 698 ft, borehole diameter 8 in., casing diameter 6 in., cased to 10 ft.

DATUM.--Elevation of land-surface datum is 283 ft. Measuring point: Top of 6-inch diameter surface casing, 283.31 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, August 1981 to May 1983.
Water-level recorder, June 1983 to current year.
WATER QUALITY: 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.26 ft above mean sea level, Sept. 13, 1987; lowest, 2.78 ft above mean sea level, June 6, 7, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.48	3.14	3.13	2.92	3.03	3.07	3.46	3.25	3.35	3.41	3.70	3.52
2	3.41	3.15	3.14	2.93	3.02	3.10	3.47	3.27	3.51	3.42	3.67	3.45
3	3.39	3.17	3.12	2.95	3.02	3.13	3.47	3.30	3.49	3.45	3.62	3.45
4	3.39	3.20	3.16	2.94	3.02	3.16	3.50	3.32	3.42	3.48	3.56	3.43
5	3.39	3.20	3.20	2.92	3.02	3.18	3.47	3.31	3.40	3.45	3.50	3.42
6	3.38	3.24	3.16	2.93	3.08	3.22	3.45	3.30	3.41	3.45	3.45	3.42
7	3.40	3.28	3.13	2.92	3.10	3.26	3.43	3.27	3.44	3.46	3.43	3.43
8	3.39	3.28	3.12	2.92	3.10	3.25	3.42	3.25	3.43	3.43	3.42	3.49
9	3.41	3.28	3.13	2.94	3.10	3.24	3.40	3.26	3.42	3.42	3.40	3.55
10	3.42	3.28	3.14	2.95	3.13	3.24	3.36	3.27	3.42	3.40	3.37	3.58
11	3.42	3.24	3.15	2.97	3.18	3.24	3.37	3.29	3.40	3.35	3.37	3.63
12	3.42	3.24	3.14	3.18	3.17	3.23	3.40	3.34	3.39	3.32	3.28	3.78
13	3.43	3.23	3.13	3.50	3.19	3.24	3.43	3.36	3.38	3.28	3.38	3.92
14	3.44	3.20	3.13	3.44	3.21	3.25	3.44	3.36	3.37	3.27	3.40	3.93
15	3.45	3.16	3.13	3.33	3.21	3.28	3.44	3.35	3.38	3.26	3.42	3.92
16	3.45	3.15	3.14	3.26	3.21	3.28	3.43	3.37	3.38	3.26	3.44	3.86
17	3.44	3.17	3.16	3.20	3.23	3.29	3.44	3.34	3.37	3.26	3.46	3.78
18	3.52	3.18	3.14	3.21	3.27	3.31	3.43	3.35	3.36	3.30	3.46	3.77
19	3.75	3.17	3.10	3.14	3.29	3.38	3.41	3.35	3.34	3.32	3.46	3.74
20	3.93	3.15	3.07	3.11	3.29	3.37	3.36	3.36	3.33	3.33	3.46	3.74
21	3.94	3.17	3.09	3.13	3.31	3.40	3.32	3.34	3.33	3.34	3.45	3.73
22	3.90	3.20	3.08	3.15	3.32	3.41	3.30	3.33	3.34	3.35	3.45	3.72
23	3.81	3.21	3.05	3.18	3.25	3.43	3.27	3.32	3.34	3.36	3.43	3.73
24	3.88	3.19	3.02	3.17	3.26	3.44	3.26	3.31	3.35	3.36	3.44	3.74
25	3.61	3.18	3.00	3.15	3.24	3.43	3.25	3.30	3.36	3.38	3.45	3.75
26	3.48	3.16	2.99	3.18	3.15	3.44	3.24	3.31	3.38	3.41	3.47	3.77
27	3.39	3.15	2.98	3.17	3.13	3.45	3.24	3.32	3.38	3.46	3.48	3.77
28	3.29	3.16	2.96	3.13	3.10	3.47	3.26	3.31	3.36	3.55	3.53	3.76
29	3.25	3.14	2.96	3.10	3.08	3.45	3.27	3.31	3.35	3.66	3.55	3.73
30	3.21	3.13	2.95	3.08	---	3.46	3.26	3.32	3.39	3.70	3.59	3.70
31	3.18	---	2.95	3.05	---	3.48	---	3.33	---	3.71	3.58	---
MEAN	3.49	3.19	3.09	3.10	3.16	3.31	3.37	3.32	3.39	3.41	3.47	3.67
MAX	3.94	3.28	3.20	3.50	3.32	3.48	3.50	3.37	3.51	3.71	3.70	3.93
MIN	3.18	3.13	2.95	2.92	3.02	3.07	3.24	3.25	3.33	3.26	3.28	3.42

133119144491771 - 18-3149-05 WETTENGEL EXP WELL EX-7, GUAM--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
DEC					
18...	1035	290	2150	28.0	480
18...	1105	390	2080	27.5	450
18...	1135	410	2070	27.5	460
18...	1200	415	2090	27.0	460
18...	1225	420	2350	27.0	520
18...	1255	430	44700	27.0	16000
18...	1320	450	49700	27.0	16000
FEB					
25...	1030	290	1900	27.5	420
25...	1055	390	1810	27.0	330
25...	1120	410	1710	27.0	340
25...	1215	415	1760	27.0	340
25...	1240	420	3030	27.0	700
25...	1305	430	45400	27.0	16000
25...	1330	450	50000	27.0	18000
JUN					
08...	1040	290	959	28.0	160
08...	1110	390	916	27.5	150
08...	1140	410	1025	27.0	200
08...	1205	415	9950	27.0	3000
08...	1330	420	33900	27.0	12000
08...	1400	430	45300	27.0	16000
08...	1425	450	49700	27.0	16000
SEP					
01...	1000	290	a1060	---	140
01...	1025	390	954	---	110
01...	1045	410	945	---	110
01...	1130	415	939	---	100
01...	1200	420	985	---	120
01...	1225	430	a47500	---	17000
01...	1250	450	a50900	---	19000

a Laboratory Conductance.

MARIANA ISLANDS, ISLAND OF GUAM

133224144495271. Local number, 18-3249-02 Finegayan Exploratory Well Ex-10.

LOCATION.--Lat 13°32'24" N., long 144°49'52" E., Hydrologic Unit 20100003, near NAVCAMS Housing area.
Owner: Government of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 704.5 ft, uncased hole diameter 8 in.

DATUM.--Elevation of land-surface datum is 348 ft. Measuring point: Top of surface casing, 348.54 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, September 1981 to May 1984.
Water-level recorder, June 1984 to current year.
WATER QUALITY: 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.78 ft above mean sea level, Sept. 12, 13, 1987; lowest measured, 1.97 ft above mean sea level, Feb. 24, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.95	2.61	2.58	2.35	2.37	2.52	2.92	2.76	2.73	2.89	3.14	2.86
2	2.87	2.62	2.64	2.37	2.37	2.55	2.93	2.76	2.76	2.94	3.10	2.86
3	2.86	2.64	2.80	2.38	2.37	2.61	2.95	2.79	2.87	2.94	3.04	2.85
4	2.88	2.68	2.64	2.37	2.38	2.65	2.99	2.78	2.88	2.96	2.99	2.83
5	2.88	2.68	2.67	2.36	2.38	2.67	2.93	2.77	2.87	2.95	2.90	2.81
6	2.89	2.73	2.62	2.37	2.44	2.69	2.89	2.73	2.87	2.94	2.86	2.79
7	2.89	2.75	2.59	2.38	2.45	2.72	2.89	2.71	2.87	2.97	2.84	2.81
8	2.89	2.77	2.58	2.39	2.47	2.72	2.88	2.67	2.88	2.94	2.83	2.88
9	2.90	2.78	2.60	2.41	2.48	2.69	2.84	2.69	2.86	2.91	2.81	2.92
10	2.91	2.73	2.60	2.46	2.50	2.86	2.80	2.72	2.86	2.89	2.75	2.94
11	2.91	2.72	2.61	2.48	2.55	2.66	2.84	2.74	2.85	2.84	2.73	2.99
12	2.94	2.73	2.80	2.69	2.56	2.66	2.87	2.80	2.85	2.79	2.75	3.14
13	2.95	2.71	2.59	3.06	2.57	2.88	2.90	2.80	2.84	2.77	2.73	3.29
14	2.96	2.67	2.60	2.90	2.57	2.72	2.88	2.77	2.83	2.77	2.73	3.29
15	2.98	2.63	2.59	2.75	2.57	2.75	2.87	2.76	2.85	2.80	2.73	3.25
16	2.92	2.63	2.59	2.87	2.57	2.75	2.85	2.75	2.86	2.73	2.74	3.18
17	2.90	2.66	2.60	2.61	2.59	2.76	2.84	2.75	2.84	2.73	2.76	3.08
18	3.01	2.70	2.58	2.57	2.62	2.79	2.83	2.77	2.82	2.76	2.75	3.07
19	3.20	2.65	2.56	2.54	2.66	2.85	2.80	2.77	2.79	2.79	2.75	3.03
20	3.44	2.64	2.53	2.53	2.65	2.89	2.76	2.74	2.78	2.79	2.75	3.05
21	3.46	2.65	2.55	2.55	2.87	2.88	2.72	2.68	2.78	2.80	2.75	3.03
22	3.36	2.68	2.54	2.60	2.66	2.91	2.70	2.69	2.79	2.83	2.75	3.03
23	3.20	2.68	2.50	2.63	2.60	2.89	2.68	2.68	2.83	2.83	2.75	3.04
24	3.08	2.65	2.46	2.63	2.62	2.87	2.67	2.67	2.84	2.81	2.76	3.06
25	3.00	2.67	2.47	2.60	2.63	2.86	2.66	2.65	2.85	2.83	2.78	3.08
26	2.89	2.64	2.46	2.81	2.57	2.88	2.67	2.67	2.87	2.87	2.79	3.11
27	2.79	2.64	2.41	2.63	2.56	2.92	2.67	2.88	2.86	2.92	2.81	3.12
28	2.71	2.64	2.42	2.54	2.55	2.93	2.72	2.67	2.85	3.00	2.87	3.10
29	2.69	2.60	2.42	2.45	2.55	2.91	2.74	2.68	2.85	3.13	2.90	3.07
30	2.64	2.80	2.43	2.40	---	2.92	2.77	2.69	2.88	3.19	2.92	3.03
31	2.63	---	2.43	2.38	---	2.95	---	2.70	---	3.18	2.91	---
MEAN	2.95	2.67	2.55	2.54	2.54	2.77	2.82	2.73	2.84	2.89	2.83	3.02
MAX	3.46	2.77	2.67	3.06	2.87	2.95	2.99	2.80	2.88	3.19	3.14	3.29
MIN	2.63	2.60	2.41	2.35	2.37	2.52	2.86	2.85	2.73	2.73	2.73	2.79

133224144495271 - 18-3249-02 FINEGAYAN EXP WELL EX-10, GUAM--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
DEC					
22...	1105	365	514	27.5	38
22...	1135	400	650	27.5	80
22...	1200	430	708	27.5	100
22...	1225	450	3230	27.0	900
22...	1310	460	11100	27.0	3500
22...	1330	470	30000	27.0	10000
22...	1400	480	43100	27.0	16000
FEB					
29...	1115	365	884	28.0	150
29...	1140	400	622	27.5	65
29...	1205	430	689	27.0	88
29...	1230	450	3490	27.0	900
29...	1300	460	11100	27.0	3500
29...	1325	470	30300	27.0	10000
29...	1350	480	44200	27.0	16000
JUN					
09...	1100	365	615	27.5	41
09...	1130	400	496	27.5	53
09...	1155	430	539	27.5	70
09...	1220	450	a3400	27.5	900
09...	1255	460	9570	27.0	2800
09...	1320	470	30000	27.0	10000
09...	1350	480	43900	27.0	15000
SEP					
02...	1025	365	488	28.5	28
02...	1055	400	599	28.5	55
02...	1120	430	622	28.0	62
02...	1145	450	3550	28.0	900
02...	1210	460	13900	28.0	4200
02...	1245	470	32200	28.0	11000
02...	1310	480	45500	28.0	16000

a Laboratory conductance.

132615144470571. Local number, 18-2647-01 Father Duenas Well.

LOCATION.--Lat 13°26'15" N., long 144°47'05" E., Hydrologic Unit 20100003, at Father Duenas Memorial School, Chalan Pago-Ordot. Owner: Government of Guam.

AQUIFER.--Mariana Limestone.

WELL CHARACTERISTICS.--Drilled parabasal water-table well, casing diameter 8 in.

DATUM.--Elevation of land-surface datum is 179 ft. Measuring point: Top of casing, 179.86 ft above mean sea level.

PERIOD OF RECORD.--Occasional measurements, March 1973 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.37 ft above mean sea level, Oct. 24, 1980; lowest measured, 6.08 ft above mean sea level, Aug. 5, 1980.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	7.41	JAN 4	6.16	MAR 8	7.49	MAY 6	7.29	JUL 1	7.10	AUG 30	7.14
NOV 5	7.66	FEB 2	7.49	MAR 31	7.52	JUN 13	7.08	JUL 28	7.02	SEP 29	7.39
DEC 3	6.48										

132626144471771. Local number, 18-2647-12 Exploratory Well Ex-4.

LOCATION.--Lat 13°26'26" N., long 144°47'17" E., Hydrologic Unit 20100003, in Tai Mangilao near Father Duenas Memorial High School. Owner: Government of Guam.

AQUIFER.--Argillaceous member of the Marianas Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 400 ft, borehole diameter 8 in., casing diameter 6 in., cased to 400 ft.

DATUM.--Elevation of land-surface datum is 152 ft. Measuring point: Top of casing, 153.71 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, March 1981 to April 1982, February 1983 to current year.
Water-level recorder, May to November 1982.
WATER QUALITY: 1981, 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.86 ft above mean sea level, Sept. 2, 1986; lowest, measured, 4.82 ft above mean sea level, Aug. 23, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	5.68	DEC 4	5.65	FEB 2	5.68	MAY 4	5.40	JUL 1	5.24	AUG 30	5.35
NOV 5	5.85	DEC 4	5.70	MAR 8	5.55	MAY 24	5.31	JUL 28	5.33	SEP 29	5.64
DEC 3	5.71	JAN 4	5.33	MAR 31	5.60	JUN 1	5.28	AUG 17	5.32		

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
DEC					
04...	1005	170	705	27.0	54
04...	1030	340	718	26.5	58
04...	1120	350	741	26.5	64
04...	1150	360	748	26.5	66
04...	1225	370	837	26.5	94
04...	1255	380	18100	26.5	5900
04...	1330	390	37600	26.5	14000
FEB					
17...	1035	170	797	28.0	70
17...	1100	340	1840	27.5	400
17...	1130	350	1910	27.5	430
17...	1155	360	2070	27.5	480
17...	1220	370	2080	27.0	490
17...	1250	380	20100	27.0	6500
17...	1320	390	38400	27.0	14000
MAY					
24...	1120	170	701	28.5	35
24...	1145	340	1640	28.0	340
24...	1240	350	4010	28.0	1200
24...	1300	360	6450	27.5	1900
24...	1330	370	8930	27.5	2600
24...	1350	380	22700	27.5	7500
24...	1410	390	40100	27.5	14000
AUG					
17...	1115	170	765	28.0	32
17...	1135	340	4050	27.5	1000
17...	1200	350	4750	27.5	1300
17...	1225	360	6770	27.5	2000
17...	1245	370	8650	27.5	2600
17...	1310	380	25700	27.5	8800
17...	1330	390	41300	27.5	14000

132758144450571. Local number, 18-2745-03 Agana Well 147.

LOCATION.--Lat 13°27'58" N., long 144°45'05" E., Hydrologic Unit 20100003, on Route 4, 0.6 mi south of junction of Routes 1 and 4 in Agana. Owner: Government of Guam.

AQUIFER.--Mariana Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, depth when drilled, 186 ft, when measured in May 1973, 29 ft, casing diameter 6 in.

DATUM.--Elevation of land-surface datum is 33 ft. Measuring point: Top of casing, 33.22 ft above mean sea level.

PERIOD OF RECORD.--Occasional measurements, August 1955 to May 1960, January 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 31.42 ft above mean sea level, Oct. 14, 1955; lowest measured, 6.83 ft above mean sea level, June 20, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	10.87	JAN 4	11.25	MAR 8	10.96	MAY 4	10.36	JUL 1	10.15	AUG 30	10.07
NOV 5	11.81	FEB 2	11.32	MAR 31	10.63	JUN 1	10.32	JUL 28	10.11	SEP 29	9.96
DEC 3	11.61										

132742144452971. Local number, 18-2745-07 Agana Springs.

LOCATION.--Lat 13°27'56" N., long 144°45'07" E., Hydrologic Unit 20100003, near Sinajana on the edge of Agana Swamp.

AQUIFER.--Mariana Limestone.

WELL CHARACTERISTICS.--Basal ground water issues from an opening in the Mariana Limestone. The water level is measured in a pool with a concrete spillway.

DATUM.--Elevation of land-surface datum is 10 ft. Measuring point: Edge of concrete spillway, 8.80 ft above mean sea level.

PERIOD OF RECORD.--Occasional measurements, April 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Lowest water level measured, 6.04 ft above mean sea level, June 8, 1984.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	8.34	JAN 4	8.47	MAR 8	8.20	MAY 4	7.38	JUL 1	6.92	AUG 30	7.64
NOV 5	f	FEB 2	8.75	MAR 31	7.85	JUN 1	7.01	JUL 28	7.46	SEP 29	7.80
DEC 3	f										

f Water overflowing spillway.

MARIANA ISLANDS, ISLAND OF GUAM

132736144461671. Local number, 18-2746-06 Chochogo Well Ex-1.

LOCATION.--Lat 13°27'36" N., long 144°46'18" E., Hydrologic Unit 20100003, near San Miguel School, Chochogo.

AQUIFER.--Mariana Limestone: Agana argillaceous member.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 597 ft, casing diameter 6 in, caeed to 300 ft.

DATUM.--Elevation of land-surface datum is 94 ft. Measuring point: Top of PVC casing, 96.50 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, November 1980 to current year.
WATER QUALITY: 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.24 ft above mean sea level, Sept. 2, 1986; lowest measured, 6.14 ft above mean sea level, June 22, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	7.15	JAN 4	6.89	MAR 8	7.82	MAY 25	6.43	JUL 28	6.86	AUG 30	6.85
NOV 6	7.15	FEB 2	7.30	MAR 31	6.78	JUN 1	6.41	AUG 25	6.81	SEP 29	7.10
DEC 3	7.58	FEB 18	7.00	MAY 4	6.52	JUL 1	6.46				

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
DEC					
21...	0925	110	821	27.5	80
21...	0945	250	1150	27.5	190
21...	1005	270	1370	27.0	250
21...	1030	300	11400	27.0	3500
21...	1050	330	20800	27.0	6800
21...	1115	340	25000	27.0	8200
21...	1135	350	27300	27.0	9200
21...	1150	375	35000	27.0	12000
21...	1220	400	39600	27.0	14000
21...	1250	450	47200	27.0	17000
21...	1315	550	49400	27.0	18000
FEB					
18...	1000	110	797	27.0	85
18...	1015	250	2020	26.5	460
18...	1035	270	2230	26.5	540
18...	1055	300	13100	26.5	4000
18...	1115	330	20700	26.5	6800
18...	1135	340	25200	26.5	8400
18...	1155	350	28100	26.5	9600
18...	1215	375	36400	26.5	13000
18...	1235	400	41700	26.5	15000
18...	1300	450	49500	26.5	18000
18...	1330	550	50100	26.5	18000
MAY					
25...	0940	110	946	27.5	120
25...	0955	250	3610	27.0	1000
25...	1010	270	4460	27.0	1300
25...	1030	300	17100	27.0	5200
25...	1045	330	23500	27.0	7600
25...	1110	340	27000	27.0	9000
25...	1130	350	30500	27.0	10000
25...	1145	375	37100	27.0	13000
25...	1205	400	49900	27.0	18000
25...	1230	450	50200	27.0	18000
25...	1255	550	51000	27.0	18000
AUG					
25...	0840	110	603	27.5	60
25...	0900	250	a2390	27.0	570
25...	0925	270	e3640	27.0	920
25...	0945	300	16300	27.0	5200
25...	1010	330	23300	27.0	7800
25...	1030	340	26200	27.0	9000
25...	1115	350	28000	27.0	9800
25...	1145	375	33900	27.0	12000
25...	1205	400	40200	27.0	15000
25...	1230	450	46100	27.0	18200
25...	1300	550	47100	27.0	18000

a Laboratory conductance.

MARIANA ISLANDS, ISLAND OF GUAM

132806144481871. Local number, 18-2848-03 Barrigada Exploratory Well Ex-9.

LOCATION.--Lat 13°28'08" N., long 144°48'18" E., Hydrologic Unit 20100003, near P.C. Lujan Elementary School Radio Barrigada. Owner: Government of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 513 ft, borehole diameter 8 in.

DATUM.--Elevation of land-surface datum is 238 ft. Measuring point: Top of aurface casing, 239.41 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Water-level recorder, July 1985 to February 19, 1987.
Occasional measurements, September 1981 to June 1985, March 1987 to current year.
WATER QUALITY: 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.93 ft above mean sea level, Aug. 26, 1986; loweat, measured, 2.29 ft above mean sea level, Feb. 18, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	3.01	DEC 7	2.74	FEB 23	2.77	MAY 4	3.04	JUL 1	3.15	AUG 30	3.13
NOV 5	2.88	JAN 4	2.52	MAR 8	2.93	MAY 26	2.91	JUL 28	3.13	SEP 29	3.26
DEC 3	2.78	FEB 2	2.63	MAR 31	3.11	JUN 2	3.04	AUG 26	3.07		

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
DEC					
07...	1205	260	1550	29.0	310
07...	1230	340	1700	29.0	370
07...	1300	345	5690	29.0	1700
07...	1330	350	11100	28.5	3400
07...	1400	360	27600	28.5	9400
07...	1430	380	41900	28.5	15000
07...	1500	400	47800	28.5	18000
07...	1530	450	51600	28.5	19000
FEB					
23...	0935	260	1590	28.0	330
23...	1000	340	1710	28.0	370
23...	1025	345	5350	28.0	1600
23...	1055	350	11800	27.5	3800
23...	1115	360	28700	27.5	9800
23...	1140	380	42400	27.5	15000
23...	1205	400	48100	27.5	17000
23...	1230	450	51700	27.5	19000
MAY					
26...	0935	260	1540	29.0	270
26...	1000	340	4330	28.5	1400
26...	1020	345	7230	28.5	2100
26...	1040	350	13100	28.5	3800
26...	1135	360	31800	28.5	11000
26...	1155	380	42600	28.0	15000
26...	1220	400	48800	28.0	18000
26...	1240	450	51900	28.0	19000
AUG					
26...	0920	260	1760	28.5	330
26...	0945	340	6480	28.5	1800
26...	1010	345	8420	28.5	2400
26...	1035	350	14900	28.5	4500
26...	1055	360	32300	28.0	11000
26...	1120	380	43000	28.0	16000
26...	1150	400	48100	28.0	18000
26...	1215	450	51300	28.0	19000

MARIANA ISLANDS, ISLAND OF GUAM

133034144500871. Local number, 18-3050-04 Macheche Rd. Well Ex-6.

LOCATION.--Lat 13°30'34" N., long 144°50'08" E., Hydrologic Unit 20100003, in Macheche area, Dededo.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 407 ft, uncased hole diameter 12 in. Well deepened to 462 ft on Aug. 7, 1981.

DATUM.--Elevation of land-surface datum is 309 ft. Measuring point: Top of surface casing, 309.41 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, February 1978 to current year.
WATER QUALITY: 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.09 ft above mean sea level, Aug. 16, 1978; lowest measured, 2.61 ft above mean sea level, Feb. 2, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	3.43	DEC 8	3.04	FEB 24	3.08	MAY 4	3.27	JUL 1	3.37	AUG 31	3.32
NOV 5	3.21	JAN 4	2.87	MAR 8	3.14	JUN 1	3.33	JUL 28	3.47	SEP 29	3.51
DEC 3	3.12	FEB 2	2.93	MAR 31	3.39	JUN 7	3.38	AUG 30	3.35		

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SAMPLING DEPTH (FEET)	SPECIFIC CONDUCTANCE (US/CM)	TEMPERATURE (DEG C)	CHLORIDE, DISSOLVED (MG/L AS CL)
DEC					
08...	1230	330	418	27.0	21
08...	1310	430	409	---	16
08...	1340	440	a369	---	16
08...	1415	445	a367	---	15
08...	1450	450	a34300	---	12000
08...	1520	455	a48000	---	18000
FEB					
24...	1115	330	459	27.0	38
24...	1140	430	399	26.5	20
24...	1205	440	394	26.5	20
24...	1235	445	498	26.5	50
24...	1300	450	46000	26.5	17000
24...	1330	455	49000	26.5	18000
JUN					
07...	1025	330	507	27.0	54
07...	1055	430	365	26.5	27
07...	1120	440	363	26.5	33
07...	1145	445	800	26.0	180
07...	1210	450	47300	26.0	17000
07...	1235	455	49800	26.0	18000
AUG					
31...	0925	330	470	27.5	26
31...	0955	430	423	27.5	20
31...	1020	440	377	27.5	18
31...	1045	445	28100	27.5	10000
31...	1110	450	43900	27.5	17000
31...	1135	455	45700	---	18000

a Laboratory conductance.

MARIANA ISLANDS, ISLAND OF GUAM

133115144484971. Local number, 18-3148-02 Harmon Well 1 (107).

LOCATION.--Lat 13°31'15" N., long 144°48'49" E., Hydrologic Unit 20100003, 500 ft north of junction of Routes 1 and 16, Dededo. Owner: Government of Guam.

AQUIFER.--Mariana Limestone.

WELL CHARACTERISTICS.--Drilled basel water-table well, sounded depth 289 ft, diameter 10 in.

DATUM.--Elevation of land-surface datum is 268 ft. Measuring point: Top of casing, 267.96 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Water-level recorder, March 1973 to May 1983.
Occasional measurements, June 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 4.34 ft above mean sea level, May 22, 1976; lowest, 1.84 ft above mean sea level, Feb. 12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	2.79	JAN 4	2.11	MAR 8	2.54	MAY 4	2.77	JUL 1	2.93	AUG 30	2.84
NOV 5	2.52	FEB 2	2.21	MAR 31	2.80	JUN 1	2.88	JUL 28	2.99	SEP 29	2.88
DEC 3	2.43										

133120144505471. Local number, 18-3150-10 Ghura-Dededo Monitoring Well.

LOCATION.--Lat 13°31'20" N., long 144°50'54" E., Hydrologic Unit 20100003, in the Dededo Well Field, PUAG, Dededo. Owner: Government of Guam.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 785 ft, uncased hole diameter 12 in.

DATUM.--Elevation of land-surface datum is 393 ft. Measuring point: Top of surface casing, 393.90 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Water-level recorder, November 1982 to February 1983.
Occasional measurements, March 1980 to August 1982, March 1983 to current year.
WATER QUALITY: 1979 to 1986.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.85 ft above mean sea level, July 13, 1987; lowest measured, 1.40 ft above mean sea level, Dec. 17, 1982.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	2.21	JAN 4	1.63	MAR 31	2.14	JUN 1	2.11	JUL 28	2.16	AUG 30	2.06
NOV 5	2.00	FEB 2	1.70	MAY 4	2.04	JUL 1	2.14	AUG 12	2.01	SEP 29	2.16
DEC 3	1.80	MAR 8	1.91								

MARIANA ISLANDS, ISLAND OF GUAM

133628144513271. Local number, 18-3651-05 Northwest Field Exploratory Well Ex-8.

LOCATION.--Lat 13°36'28" N., long 144°51'32" E., Hydrologic Unit 20100003, in old Air Force Housing area in Northwest Field.

AQUIFER.--Barrigada Limestone.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 658 ft, diameter 8 in.

DATUM.--Elevation of land-surface datum is 461 ft. Measuring point: Top of surface casing 462.49 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, September 1981 to current year.
WATER QUALITY: 1982 to 1986.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.34 ft above mean sea level, July 13, 1987; lowest, 1.88 ft above mean sea level, Feb. 28, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	2.79	JAN 4	2.24	MAR 8	2.51	MAY 4	2.62	JUL 1	2.72	AUG 31	2.65
NOV 5	2.58	FEB 2	2.31	MAR 31	2.75	JUN 1	2.65	JUL 28	2.74	SEP 29	2.76
DEC 3	2.48										

072110134264070 - 20-2126-01 NGEREKABESANG WELL F, PALAU

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS (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)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO
JUL 17...	1030	352	6.7	28.5	100	22	12	34	40	1

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL 17...	6.6	144	7.7	24	0.10	64	259	<0.100	1600	260

< Actual value is known to be less than the value shown.

072105134264670 - 20-2126-02 NGEREKABESANG WELL 3, PALAU

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS (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)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO
JUL 17...	1000	290	7.2	29	62	9.8	9.1	32	47	2

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL 17...	14	137	2.6	8.5	0.20	4.4	167	<0.100	3300	700

< Actual value is known to be less than the value shown.

072151134310970 - 20-2131-01 AIRAI WELL 6, BABELTHUAP, PALAU

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS (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)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO
JUL 15...	1430	255	7.0	27.5	98	27	7.3	16	27	0.7

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL 15...	0.70	130	4.7	5.2	<0.10	65	206	<0.100	2200	190

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, YAP ISLANDS

092920138050270. Local number, 25-2905-02 Timlang Well 2, Yap.

LOCATION.--Lat 09°29'18" N., long 138°05'01" E., Hydrologic Unit 20100006, 800 ft south of the Communication Station, and 300 ft west of the U.S. Weather Bureau Station.

AQUIFER.--Tamil Volcanics.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 80 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 39 ft. Measuring point: Top of casing, 40.43 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, July 1982 to September 1987.
Water level recorder, October 1987 to September 1988.
WATER QUALITY: 1984, 1985.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 37.38 ft above mean sea level, Aug. 31, 1987; lowest measured, 11.36 ft above mean sea level, May 13, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29.44	28.80	30.02	25.42	21.09	19.80	16.16	14.03	19.94	e28.4	e34.3	29.24
2	29.37	29.30	29.89	25.28	20.91	19.60	16.18	13.91	19.61	e28.2	e34.5	29.29
3	29.25	29.34	29.74	25.12	20.74	19.59	16.21	13.86	19.66	e30.1	e34.9	29.30
4	29.09	29.60	29.81	24.63	21.04	19.45	16.13	14.10	20.18	e30.7	e35.1	29.18
5	28.90	29.81	29.44	24.59	22.11	19.38	15.66	15.19	21.34	e30.9	e35.0	28.97
6	28.73	29.84	29.27	24.35	22.60	19.37	15.67	15.50	21.62	e31.8	e34.5	26.95
7	28.68	29.81	29.01	24.14	22.64	19.16	15.81	15.55	e22.4	e32.1	e34.2	29.10
8	28.55	29.75	28.80	23.91	22.66	18.96	15.48	15.94	e22.8	f32.4	e34.0	29.14
9	29.03	29.59	28.58	23.79	22.54	18.80	15.17	15.87	e22.9	33.44	e34.2	28.88
10	29.22	29.62	28.86	23.68	22.48	18.67	15.07	15.93	e22.8	33.66	e34.2	28.71
11	f30.7	29.41	29.05	23.28	22.38	18.54	15.19	15.85	e22.7	33.64	e33.7	26.53
12	e31.1	29.24	29.00	23.18	22.28	18.42	14.76	15.45	e22.7	33.48	e33.2	28.34
13	e31.8	28.99	28.85	23.01	22.23	18.29	14.82	15.50	e22.6	33.65	e33.8	28.17
14	f32.0	28.94	28.64	22.80	22.14	18.15	14.54	15.50	22.31	34.77	e33.9	27.98
15	31.85	28.92	28.42	22.63	21.89	17.86	14.70	15.63	22.09	e35.8	e33.3	27.82
16	31.78	28.77	28.29	22.51	21.72	17.76	14.54	15.50	21.80	e36.4	e33.8	27.94
17	31.54	28.82	28.18	22.33	21.58	17.78	14.14	15.26	21.72	e38.4	f32.9	30.60
18	31.28	29.08	27.97	22.21	21.42	17.60	14.27	15.10	21.85	e38.6	32.85	31.71
19	30.99	29.03	27.83	22.03	21.31	17.49	14.59	15.21	21.98	f36.5	32.64	31.68
20	30.74	28.99	27.68	21.85	21.29	17.34	14.37	16.52	22.10	36.22	32.38	31.47
21	30.50	28.90	27.46	21.83	21.25	17.28	14.41	17.93	22.18	f36.7	32.09	e33.5
22	30.22	28.77	27.25	21.42	21.03	17.13	14.39	19.76	22.19	f36.7	31.78	e33.9
23	29.91	29.58	27.06	21.37	20.79	17.02	14.48	20.21	22.16	35.97	31.70	e33.8
24	29.78	29.93	26.84	21.36	20.65	16.96	14.54	20.24	f25.1	e35.4	31.52	e35.1
25	29.49	29.93	28.88	21.19	20.39	16.59	14.00	20.26	e27.3	e35.1	31.19	e35.7
26	29.27	30.04	28.48	21.00	20.35	16.57	13.97	20.22	e28.7	e34.8	30.83	e35.4
27	29.07	30.20	26.37	20.87	20.29	18.47	13.87	20.12	e28.9	e34.6	30.51	e36.2
28	28.87	30.06	28.15	20.74	20.26	f16.3	13.78	20.03	e29.0	e34.5	30.28	e36.4
29	28.65	29.96	25.93	20.54	20.03	f16.2	13.73	20.08	e28.9	e34.5	29.82	e37.1
30	28.48	29.99	25.75	20.63	---	f16.3	13.88	19.98	e28.7	e34.0	29.80	e37.7
31	28.55	---	25.57	21.07	---	16.22	---	19.85	---	e33.8	29.28	---
MEAN	29.90	29.43	28.02	22.66	21.45	17.90	14.81	16.91	23.27	33.90	32.77	31.33
MAX	32.0	30.20	30.02	25.42	22.66	19.80	18.21	20.26	29.0	36.7	35.1	37.7
MIN	28.48	26.77	25.57	20.54	20.03	16.2	13.73	13.86	19.81	28.2	29.28	27.82

e Estimated
f Partial record.

CAROLINE ISLANDS, YAP ISLANDS

093204138095970. Local number, 25-3209-01 Dorfay 6-in Well, Gagil-Tamil.

LOCATION.--Lat 09°32'04" N., long 138°09'59" E., Hydrologic Unit 20100006, 0.8 mi northeast of the Tamilang Elementary School and 0.8 mi south of the Coast Guard LORAN Station.

AQUIFER.--Tamil Volcanics.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 170 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 29 ft. Measuring point: Top of casing, 30.92 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, July 1982 to April 1983.
Water-level recorder, May 1983 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 21.05 ft above mean sea level, Sept. 30, 1988; lowest, 15.67 ft above mean sea level, June 10, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.15	19.90	e19.8	e19.0	18.92	f18.4	18.48	18.15	19.17	19.88	19.97	19.47
2	19.12	19.71	e19.6	e18.5	f18.5	18.72	18.20	18.19	19.19	19.87	19.97	19.56
3	18.65	19.96	e19.5	18.41	f18.6	f18.6	18.53	18.20	18.98	19.96	20.01	19.55
4	18.95	19.76	19.51	18.61	19.00	18.54	18.50	18.67	19.06	19.74	20.21	19.50
5	19.20	19.98	19.48	18.73	19.72	18.70	18.91	18.91	19.02	19.89	20.30	19.58
6	18.98	19.73	19.61	f18.9	19.77	f18.4	18.95	19.05	19.25	20.03	19.78	19.77
7	19.10	19.63	19.67	18.52	19.34	f18.5	18.95	19.10	19.34	19.69	19.74	19.89
8	19.36	19.68	e19.1	18.66	19.46	f18.5	19.07	19.03	19.35	19.50	19.77	19.66
9	19.73	19.67	e19.3	f18.6	19.56	f18.3	18.53	18.98	19.51	19.90	19.81	19.30
10	19.71	19.68	e19.6	18.62	19.58	f18.3	18.68	18.93	19.50	20.00	19.79	19.37
11	19.65	19.26	e19.5	f18.6	19.21	f18.1	18.73	18.95	19.46	19.94	19.90	19.52
12	19.95	19.24	e19.3	18.53	19.26	16.30	18.89	19.09	19.32	19.34	19.70	19.35
13	19.82	19.35	e19.2	f18.5	19.22	18.44	18.68	18.73	19.43	19.74	19.55	19.44
14	19.95	19.53	e19.3	18.44	19.23	17.91	18.23	18.66	19.54	19.73	19.90	19.26
15	19.98	19.61	e19.2	18.49	19.18	17.81	18.49	18.86	19.42	20.32	20.14	19.28
16	19.72	19.28	e19.3	18.49	19.06	18.00	18.58	18.83	19.54	20.23	20.24	19.30
17	19.58	19.26	e19.3	18.52	19.27	17.79	18.66	18.66	19.67	20.21	20.34	19.82
18	19.58	e19.5	e19.3	18.65	18.97	18.07	18.09	18.90	19.83	20.21	19.69	19.13
19	19.51	e19.4	e19.2	18.73	19.25	17.78	18.45	18.59	19.99	20.33	19.73	19.61
20	19.86	e19.2	18.95	f18.4	18.99	17.87	18.78	18.73	19.82	20.18	19.52	19.44
21	19.54	e19.3	19.19	18.40	18.88	17.81	18.52	19.08	19.94	20.41	19.70	19.07
22	19.83	e19.2	19.28	18.63	19.03	17.97	18.68	19.35	19.86	20.53	19.90	20.45
23	19.73	e19.6	e19.3	f18.6	19.15	17.42	18.71	19.41	19.89	20.31	e19.7	20.45
24	19.40	e19.6	e19.2	18.43	18.80	17.71	18.11	19.52	20.25	20.16	e19.5	20.35
25	19.75	e19.8	e18.9	18.71	18.89	17.62	18.28	19.48	19.88	20.09	e19.8	20.17
26	19.33	e19.5	e18.8	f18.7	f18.9	17.68	18.37	19.18	20.10	20.30	e19.6	20.44
27	19.60	e19.7	e18.8	18.57	18.86	17.28	18.34	19.25	20.12	20.50	e19.5	20.46
28	19.69	e20.0	e18.8	18.77	18.92	17.37	18.33	19.22	19.90	20.12	e19.6	20.53
29	19.78	e19.8	e18.8	f18.5	f18.8	17.56	18.49	19.15	19.89	19.96	e19.5	20.50
30	19.54	e19.9	e18.9	18.52	---	17.98	18.04	19.15	19.94	19.98	e19.6	20.83
31	19.69	---	e19.0	18.91	---	18.17	---	19.35	---	19.92	e19.6	---
MEAN	19.53	19.59	19.25	18.60	19.11	18.04	18.54	18.94	19.61	20.03	19.80	19.77
MAX	19.98	20.0	19.8	19.0	19.77	18.72	19.07	19.52	20.25	20.53	20.34	20.83
MIN	18.65	19.2	18.8	18.40	18.5	17.28	18.04	18.15	18.98	19.34	19.5	19.07

e Estimated
f Partial record.

CAROLINE ISLANDS, YAP ISLANDS

092919138045670. Local number, 25-2904-01 Yugamanman Well 1 (Fraq-Lamaer), Yap.

LOCATION.--Lat 09°29'19" N., long 138°04'57" E., Hydrologic Unit 20100006, 800 ft southwest of the Communication Station, and 800 ft northwest of the U.S. Weather Bureau station.

AQUIFER.--Tamil Volcanics.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 92 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 42 ft. Measuring point: Top of casing, 42.68 ft above mean sea lavel.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, July 1982 to current year.
WATER QUALITY: 1984 to 1986, 1988.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.09 ft above mean aea level, Sept. 23, 1983; lowest measured, 12.04 ft above mean sea level, Apr. 26, 1988.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	26.00	DEC 23	24.80	FEB 24	19.65	APR 26	12.04	JUL 28	29.04
NOV 26	28.86	JAN 29	15.77	MAR 17	18.41	MAY 20	16.00	AUG 31	25.28

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)
JUL 19...	1445	111	7.3	29	<0.02	<0.01	0.30	0.30

DATE	ALKALINITY LAB (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)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 19...	46	1.4	6.9	<0.10	<0.01	<0.100	<3	<1

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, YAP ISLANDS

092918138045470. Local number, 25-2904-02 Yugamanman Well 2 (Faraq-Lamaer), Yap.

LOCATION.--Lat 09°29'18" N., long 138°04'54" E., Hydrologic Unit 20100008, 1,000 ft southwest of the Communication Station, and 1,000 ft northwest of the U.S. Weather Bureau Station.

AQUIFER.--Tamil Volcanics.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 84 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 37 ft. Measuring point: Top of casing, 38.83 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, July 1982 to current year.
WATER QUALITY: 1984 to 1986, 1988.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.75 ft above mean sea level, Aug. 8, 1983; lowest measured, 12.00 ft above mean sea level, Apr. 26, 1988.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	25.03	DEC 23	24.06	FEB 24	19.38	APR 26	12.00	JUL 28	27.06
NOV 26	25.67	JAN 29	16.79	MAR 17	16.14	MAY 20	16.06	AUG 31	24.41

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
JUL 19...	1500	113	7.2	29.0	42	8.2	5.3	8.2	30	0.5

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 19...	0.40	47	1.8	7.8	<0.10	40	100	0.100	8	<1

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, YAP ISLANDS

092915138050270. Local number, 25-2905-01 Timlang Well 1, Yap.

LOCATION.--Lat 09°29'15" N., long 138°05'02" E., Hydrologlic Unit 20100006, 900 ft south of the Communication Station, and 300 ft southwest of the U.S. Weather Bureau Station.

AQUIFER.--Tamil Volcanics.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 70 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 41 ft. Measuring point: Top of casing, 42.65 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, July 1982 to current year.
WATER QUALITY: 1968, 1988.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 39.50 ft above mean sea level, Aug. 31, 1987; lowest measured, 11.19 ft above mean sea level, May 13, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	31.58	DEC 23	29.19	MAR 17	17.43	MAY 20	13.84	AUG 31	27.89
NOV 26	31.18	FEB 24	23.12	APR 26	13.96	JUL 28	36.96		

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
JUL 19...	1400	78	5.2	29.0	16	2.6	2.3	8.2	53	0.9

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 19...	0.30	5.0	12	11	<0.10	3.5	44	0.160	1200	30

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, YAP ISLANDS

092616138050670. Local number 25-2905-03 Timlang Well 3, Yap

LOCATION.--Lat 09°29'16" N., long 136°05'05" E., Hydrologic Unit 20100006, 800 ft south-southeast of the Communicatio Station, and 100 ft southeast of the U.S. Weather Bureau Station.

AQUIFER.--Tamil Volcanics.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 88 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 43 ft. Measuring point: Top of casing, 44.22 ft above mean sea level.

REMARKS.--Water level affected by pumping of nearby well.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, September 1962 to current year.
WATER QUALITY: 1982, 1984, 1986, 1988.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 39.12 ft above mean sea level, Aug. 31, 1987; lowest measured, 12.76 ft above mean sea level, May 13, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	30.67	DEC 23	28.92	FEB 24	23.03	APR 26	12.85	JUL 28	33.89
NOV 26	31.26	JAN 26	22.82	MAR 17	19.53	MAY 20	17.27		

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
JUL 19...	1415	80	5.3	30.0	15	2.6	2.1	7.8	53	0.9

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 19...	0.20	5.0	7.9	9.6	<0.10	4.7	39	0.810	750	31

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, YAP ISLANDS

092926138050470. Local number, 25-2905-06 Communication Well 2, Yap.

LOCATION.--Lat 09°29'25" N., long 138°05'03" E., Hydrologic Unit 20100008, 75 ft north of the Communication Station.

AQUIFER.--Tamil Volcanics.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 81 ft, diameter 2 in.

DATUM.--Elevation of lsnd-surface datum is 39 ft. Measuring point: Top of casing, 39.40 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, December 1981 to current year.
WATER QUALITY: 1982.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 33.40 ft abova mean sea level, June 8, 1982; lowest measured, 9.90 ft above mean sea level, May 27, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	26.24	DEC 23	24.75	FEB 24	20.35	APR 26	14.28	JUL 28	29.88
NOV 28	26.94	JAN 29	21.30	MAR 17	17.46	MAY 20	18.50	AUG 31	26.45

CAROLINE ISLANDS, YAP ISLANDS

093158138095770. Local number 25-3109-01 Monguch Well 1, Gagil-Tamil.

LOCATION.--Lat 09°31'59" N., long 138°09'58" E., Hydrologic Unit 20100006, 0.6 mi northeast of the Tamilang Elementary School, and 1.0 mi south of the Coast Guard LORAN Station.

AQUIFER.--Tamil Volcanics.

WELL CHARACTERISTICS.--Drilled observation well, depth reported 85 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 19.5 ft. Measuring point: Top of casing, 21.38 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, July 1982 to current year.
WATER QUALITY: 1982, 1988.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, overflowing casing for many days each year; lowest measured, 17.12 ft above mean sea level, May 25, 1987.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	21.00	DEC 22	20.87	FEB 24	20.73	APR 26	19.30	JUL 19	f	AUG 31	20.11
NOV 27	20.98	JAN 26	20.38	MAR 17	18.78	MAY 20	20.14	JUL 27	f		

f Water overflowing casing.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
JUL 20...	1015	83	7.2	28.5	23	3.6	3.5	9.8	46	0.9

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 20...	1.5	31	1.7	7.0	<0.10	68	114	<0.100	<3	<1

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, YAP ISLANDS

093159138095870. Local number, 25-3109-02 Monguch Well 2, Gagil-Tamil.

LOCATION.--Lat 09°31'59" N., long 138°09'58" E., Hydrologic Unit 20100006, 0.6 mi north of the Tamilang Elementary School, and 1.0 mi south of the Coast Guard LORAN Station.

AQUIFER.--Tamil Volcanice.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 95 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 24 ft. Measuring point: Top of casing, 26.47 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, July 1982 to current year.
WATER QUALITY: 1986, 1988.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 24.88 ft above mean sea level, July 30, 1987; lowest measured, 18.15 ft above mean sea level, May 25, 1987.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

WATER DATE	LEVEL	WATER DATE	LEVEL	WATER DATE	LEVEL	WATER DATE	LEVEL	WATER DATE	LEVEL
OCT 28	23.57	DEC 22	23.45	FEB 24	23.21	APR 26	21.31	JUL 27	24.60
NOV 27	23.51	JAN 26	22.70	MAR 17	20.78	MAY 20	22.30	AUG 31	21.60

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
JUL 20...	1130	85	7.3	28.0	29	5.0	4.0	6.5	32	0.5

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 20...	1.3	31	1.6	7.2	0.10	55	99	<0.100	<3	<1

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, YAP ISLANDS

093157138095670. Local number, 25-3109-03 Thilung Well 1 (Monguch 3), Gagil-Tamil.

LOCATION.--Lat 09°31'57" N., long 138°09'56" E., Hydrologic Unit 20100006, 0.6 mi north of the Tamilang Elementary School, and 1.1 mi south of the Coast Guard LORAN Station.

AQUIFER.--Tamil Volcanics.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 115 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 26 ft. Measuring point: Top of casing, 28.16 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, July 1982 to current year.
WATER QUALITY: 1988.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.87 ft above mean sea level, Dec. 28, 1985; lowest measured, 19.38 ft above mean sea level, May 25, 1987.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	25.40	DEC 22	25.23	FEB 24	24.92	APR 26	22.88	JUL 27	26.57
NOV 27	25.31	JAN 26	24.35	MAR 17	22.20	MAY 20	23.89	AUG 31	*7.56

* Well being pumped.

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
JUL 20...	1015	83	7.2	28.0	23	3.6	3.5	9.8	46	0.9

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL 20...	1.5	31	1.7	7.0	<0.10	68	114	<0.100	<3	<1

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, YAP ISLANDS

093154138095370. Local number, 25-3109-04 Thilung Well 2 (Monguch 4), Gagil-Tamil.

LOCATION.--Lat 09°31'54" N., long 138°09'53" E., Hydrologic Unit 20100006, 0.5 mi north of the Tamilang Elementary School, and 1.1 mi south of the Coast Guard LORAN Station.

AQUIFER.--Tamil Volcanics.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 105 ft, diameter 6 in.

DATUM.--Elevation of land-surface datum is 33 ft. Measuring point: Top of casing, 34.82 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, July 1982 to current year.
WATER QUALITY: 1986.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 30.58 ft above mean sea level, Aug. 20, 1985; lowest measured, 21.19 ft above mean sea level, May 25, 1987.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	27.70	DEC 22	27.40	FEB 24	27.07	APR 26	24.82	JUL 27	29.10
NOV 27	27.58	JAN 26	26.36	MAR 17	24.09	MAY 20	25.82	AUG 31	25.81

093217138101270. Local number, 25-3210-01 Mukong Well, Gagil-Tamil.

LOCATION.--Lat 09°32'17" N., long 138°10'12" E., Hydrologic Unit 20100006, 0.6 mi south of the Coast Guard LORAN Station, and 1.1 mi north-northeast of the Tamilang Elementary School.

AQUIFER.--Coral formation in the Tamil-Volcanics.

WELL CHARACTERISTICS.--Drilled water-table well, depth reported 120 ft, diameter 6 in.

DATUM.--Elevation of land-aurface datum is 24 ft. Measuring point: Top of casing, 25.83 ft above mean sea level.

PERIOD OF RECORD.--
WATER LEVEL: Occasional measurements, July 1982 to current year.
WATER QUALITY: 1984, 1986.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.51 ft above mean sea level, Aug. 26, 1987; lowest measured, 12.68 ft above mean sea leval, May 12, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 18	15.28	DEC 22	14.78	FEB 24	14.54	APR 26	13.93	JUL 27	15.47
NOV 27	15.31	JAN 26	15.10	MAR 17	13.90	MAY 20	14.33	AUG 31	15.01

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE OF SAMPLE	TIME	SPE-CIFIC CON-DUC-TANCE (US/CM)	TEMPER-ATURE (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
072504151503370	30-2550-02 W18 MOEN	07 25 04 N	151 50 33 E	03-30-88	1200	285	29.0	7.0
072552151502070	30-2550-03 TH-3 MOEN	07 25 52 N	151 50 20 E	03-30-88	1230	335	30.5	10
072658151511970	30-2650-01 W1 MOEN	07 28 46 N	151 50 56 E	01-18-88	0909	167	28.5	13
				03-30-88	0840	177	28.0	13
072654151511870	30-2850-02 W2 MOEN	07 26 50 N	151 50 55 E	01-18-88	0926	166	28.5	13
				03-30-88	0900	160	28.0	12
072704151511070	30-2650-05 W10 MOEN	07 26 57 N	151 50 46 E	01-18-88	1213	207	31.0	22
				03-30-88	1107	285	28.5	38
072702151512570	30-2651-01 W7 MOEN	07 28 54 N	151 51 01 E	01-18-88	1019	301	29.0	23
072706151512470	30-2851-03 W12 MOEN	07 26 58 N	151 51 00 E	01-18-88	1036	328	30.0	34
				03-30-88	1025	355	28.5	18
072708151511770	30-2750-01 W3 MOEN	07 27 02 N	151 50 54 E	03-30-88	0920	235	28.5	15
072707151511070	30-2750-02 W11 MOEN	07 27 01 N	151 50 46 E	01-18-88	1201	137	30.5	9.0
				03-30-88	1117	261	29.0	38
072708151512170	30-2750-03 W13 MOEN	07 27 01 N	151 50 56 E	01-18-88	0952	229	29.5	18
				03-30-88	0940	240	28.5	18
072710151512570	30-2751-01 W15 MOEN	07 27 03 N	151 51 01 E	01-18-88	1056	177	29.5	12
				03-30-88	1050	197	28.5	12

CAROLINE ISLANDS, ISLAND OF POHNPEI

065510158092371 - 40-5509-03 PALIKIR WELL P-3, POHNPEI

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
AUG										
09...	0930	117	7.6	28.5	5 4	12	5.9	4.7	16	0.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG										
09...	1.0	59	1.1	2.6	0.10	55	118	<0.100	6	<1

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, ISLAND OF POHNPEI

065648158115671 - 40-5611-03 KOLONIA K-5 WELL, POHNPEI

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
AUG										
06...	1335	160	7.7	28.5	73	11	11	5.7	15	0.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG										
06...	0.60	67	9.0	3.9	0.10	32	114	<0.100	10	2

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, ISLAND OF POHNPEI

065653158120371 - 40-5612-02 KOLONIA K-4 WELL, POHNPEI

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
AUG										
06...	1240	296	7.4	29.0	120	25	13	20	28	0.8

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG										
06...	1.2	112	41	4.9	<0.10	29	201	<0.100	110	64

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, ISLAND OF POHNPEI

065653158120871 - 40-5612-03 KOLONIA K-7 WELL, POHNPEI

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
JAN										
15...	1515	148	6.7	26.0	64	9.8	9.6	4.6	14	0.3
AUG										
06...	1200	141	6.8	28.0	65	9.6	10	4.9	14	0.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN										
15...	1.0	65	2.3	5.9	0.20	30	100	0.210	12	<1
AUG										
06...	0.80	64	2.5	5.8	0.10	29	101	0.190	21	<1

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, ISLAND OF POHNPEI

065705158130171 - 40-5713-02 KOLONIA K-10, POHNPEI

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
JAN 15...	1000	242	6.5	27.0	120	19	18	8.6	14	0.3

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN 15...	2.1	125	18	13	0.20	51	210	<0.100	5100	100

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, ISLAND OF KOSRAE

051926163002670 - 44-1900-01 TOFOL WELL 4, KOSRAE

WATER QUALITY DATA, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
AUG										
11...	1115	240	7.6	28.5	120	25	13	13	20	0.5

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG										
11...	1.9	99	4.0	5.7	0.20	33	155	<0.100	270	23

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, ISLAND OF KOSRAE

051930163003170 - 44-1900-02 TOFOL WELL 8, KOSRAE

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
AUG 11...	1200	280	8.1	28.5	91	10	16	28	38	1

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG 11...	7.7	142	0.60	8.7	0.30	1.7	158	<0.100	180	100

< Actual value is known to be less than the value shown.

051953163000970 - 44-1900-03 INNEM WELL 3, KOSRAE

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS (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)	PERCENT SODIUM	SODIUM AD-SORP-TION RATIO
AUG 11...	1245	180	7.5	28.0	84	18	9.4	7.6	17	0.4

DATE	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY LAB (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)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
AUG 11...	1.4	87	2.8	4.5	0.10	36	133	<0.100	580	190

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, ISLAND OF KOSRAE

051927163002870 - 44-1900-04 TOFOL WELL 7, KOSRAE

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
AUG 11...	1120	328	7.7	29.0	170	29	23	13	15	0.4

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG 11...	3.4	162	0.60	5.6	0.10	33	207	<0.100	1500	400

< Actual value is known to be less than the value shown.

CAROLINE ISLANDS, ISLAND OF KOSRAE

052136162585870 - 44-2158-01 TAFUNSAK WELL G, KOSRAE

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
AUG										
11...	1500	254	8.9	28.0	9	2.7	0.58	57	93	8

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG										
11...	0.6	93	17	13	0.40	28	177	0.530	1400	34

CAROLINE ISLANDS, ISLAND OF KOSRAE

052118182582970 - 44-2158-02 TAFUNSAK WELL I, KOSRAE

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
AUG										
12...	1000	182	8.1	29.0	84	17	10	11	22	0.5

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG										
12...	1.3	90	3.5	8.1	0.10	26	131	0.210	32	2

CAROLINE ISLANDS, ISLAND OF KOSRAE

052149162591470 - 44-2159-03 TAFUNSAK WELL D, KOSRAE

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	PERCENT SODIUM	SODIUM ADSORPTION RATIO
AUG										
12...	1030	301	7.6	30.0	160	28	23	6.3	8	0.2

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (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)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG										
12...	0.6	186	1.1	8.8	0.10	26	209	<0.100	3600	300

< Actual value is known to be less than the value shown.

SAMOA ISLANDS, ISLAND OF TUTUILA

141945170435401. Local number, 90-1943-24 Tafunafou Observation Well 1.

LOCATION.--Lat 14°19'45" S., long 170°43'54" W., Hydrologic Unit 20100001, 120 ft northwest of Tafunafou village cross road intersection, and 0.7 mi southeast of High School in Mapusaga. Owner: Government of American Samoa.

AQUIFER.--Basalt lava flows of the Leone Volcanica.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 78 ft, casing diameter 4 inch.

DATUM.--Elevation of land-aurface datum is 73 ft. Measuring point: Top of 4-inch casing, 75.18 ft above mean sea level.

REMARKS.--Water level affected by pumping of nearby well.

PERIOD OF RECORD.--Occasional measurements, October 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level 20.38 ft above mean aea level, may be caused by oascading water in the well following heavy rain, May 13, 1977; loweat 7.37 ft below mean sea level, July 13, 1978.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	1.53	DEC 7	1.18	FEB 1	1.14	APR 4	1.42	JUN 6	0.18	AUG 8	-0.68
19	1.33	21	2.44	22	1.68	25	2.39	20	-.92	SEP 19	-2.42
NOV 3	.83	JAN 4	1.63	MAR 7	13.12	MAY 2	.78	JUL 11	1.83		
23	.30	25	.95	23	1.60	23	-1.04	25	.11		

SAMOA ISLANDS, ISLAND OF TUTUILA

141948170435701. Local number, 90-1943-28 Tafunafou Observation Well 5.

LOCATION.--Lat 14°19'48" S., long 170°43'57" W., Hydrologic Unit 20100001, 1,000 ft southeast of Tafunafou village, and 1.5 mi northwest of Pago Pago International Airport. Owner: Government of American Samoa.

AQUIFER.--Basalt lava flows of the Leone Volcanics.

WELL CHARACTERISTICS.--Drilled basal water-table well, sounded depth 106 ft, casing diameter 4 in.

DATUM.--Elevation of lsnd-surface datum is 83 ft. Measuring point: Top of 4-inch casing, 85.32 ft above mean sea level.

REMARKS.--Water level affected by pumping of nearby well.

PERIOD OF RECORD.--Occasional meaaurements, October 1976 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 11.32 ft above mean sea level, may be caused by cascading water in the well following heavy rain, July 28, 1981; lowest 4.23 ft below mean sea level, Aug. 15, 1977.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	0.58	DEC 7	0.85	FEB 1	1.01	APR 4	2.07	JUN 6	2.05	AUG 8	1.60
19	-.82	21	2.09	22	2.00	25	.92	20	1.92	SEP 19	.81
NOV 3	-1.02	JAN 4	1.39	MAR 7	6.36	MAY 2	.78	JUL 11	1.34		
23	.97	25	.79	23	1.93	23	1.58	25	2.22		

SAMOA ISLANDS, ISLAND OF TUTUILA

142055170455990. Local number, 90-2045-03 Malaeloa Well 92 (Revised).

LOCATION.--Lat 14°20'55" S., long 170°45'59" W., Hydrologic Unit 20100001, 0.4 mi southeast of Malaeloa School, adn 0.6 west of Olovalu Crater. Owner: Government of American Samoa.

AQUIFER.--Lava flows and cinders of the Leone Volcanics underlain by beach sand.

WELL CHARACTERISTICS.--Drilled bassl water-table well, depth 191 ft, casing diameter 8 in.

DATUM.--Elevation of land surface datum is 163 ft. Measuring point: Top of 8-inch casing, 163.74 ft above mean sea level.

REMARKS.--Water level affected by pumping of nearby well.

PERIOD OF RECORD.--Occasional measurements, September 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.77 ft above mean sea level, January 28, 1985; lowest 0.86 ft above mean sea level, November 3, 1988.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	0.97	DEC 7	1.54	FEB 1	1.81	APR 4	1.86	JUN 6	1.74	AUG 8	1.72
19	.94	21	1.71	22	1.80	25	2.04	20	2.18	SEP 19	1.44
NOV 3	.88	JAN 4	2.73	MAR 7	4.84	MAY 2	1.84	JUL 11	2.74		
23	1.00	25	1.59	23	2.72	23	1.94	25	2.24		

SAMOA ISLANDS, ISLAND OF TUTUILA

142102170445801. Local number, 90-2144-12 Iliili test well 115.

LOCATION.--Lat 14°21'02" S., long 170°44'56" W., Hydrologic Unit 20100001, 800 ft northwest of Iliili village church, and 0.5 mi northeast of Futiga village school.

AQUIFER.--Basalt lava flows of the Leone Volcanics underlain by calcareous coastal deposits.

WELL CHARACTERISTICS.--Drilled basal water-table well, well depth 243 ft, casing diameter 4 inch.

DATUM.--Elevation of land-surface datum is 218 ft. Measuring point: Top of 4-inch casing, 216.94 ft above mean sea level.

REMARKS.--Water level affected by pumping of nearby well.

PERIOD OF RECORD.--Occasional measurements, February 1981 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 6.89 ft above mean sea level, June 15, 1982; lowest 2.56 ft above mean sea level, May 31, 1983.

WATER LEVEL, IN FEET ABOVE MEAN SEA LEVEL, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 6	4.76	DEC 7	4.49	FEB 1	4.95	APR 4	4.67	JUN 6	4.06	AUG 8	4.60
19	4.62	21	5.07	22	5.18	25	4.26	20	4.58	SEP 19	4.61
NOV 3	4.94	JAN 4	5.17	MAR 7	6.39	MAY 2	4.72	JUL 11	5.74		
23	4.28	25	5.16	23	4.67	23	4.35	25	4.70		

SAMOA ISLANDS, ISLAND OF TUTUILA

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
141532170340101	90-1534-01 TULA, TW W104	14 15 32 S	170 34 01 W	10-19-87	0925	725	27.0	160
				11-23-87	0900	750	28.0	160
				03-23-88	0815	690	27.0	160
				04-25-88	1030	600	26.0	120
				05-23-88	1405	a665	27.0	150
				08-27-88	1330	650	27.0	140
				07-11-88	0920	650	26.0	--
				08-22-88	1450	650	26.0	150
141546170354890	90-1535-01 SAILELE 130 (Revised)	14 15 48 S	170 35 46 W	11-23-87	0820	a2590	27.0	700
				03-23-88	0815	1800	27.0	460
				04-25-88	0940	1800	27.0	460
				05-23-88	1310	2020	27.5	590
				07-11-88	0835	1900	27.0	--
				08-22-88	1345	a1760	28.0	440
				09-19-88	1420	a1740	26.0	440
141647170360490	90-1636-02 ALOFAU 32 (Revised)	14 16 14 S	170 36 04 W	02-01-88	0820	a2830	25.0	752
				03-23-88	0835	2900	27.0	780
				04-25-88	1005	2200	26.0	660
				05-23-88	1340	a3320	27.0	980
				08-27-88	1255	3550	27.0	1000
				07-11-88	0850	3500	26.0	--
				08-22-88	1410	3500	27.0	1100
141625170385990	90-1636-06 FAGAITUA 125 (Revised)	14 18 25 S	170 38 59 W	07-11-88	0950	4000	26.0	--
				08-22-88	1330	4000	26.0	1100
				09-19-88	1350	a4400	26.0	1300
141623170393801	90-1639-08 AUA W97	14 16 23 S	170 39 38 W	07-11-88	0805	1400	27.0	350
				08-22-88	1305	1300	27.0	350
				09-19-88	1320	a1320	28.0	340
141624170393290	90-1639-11 AUA W99 (Revised)	14 16 24 S	170 39 32 W	10-19-87	0845	1400	27.5	400
				11-23-87	0730	1450	28.0	380
				02-01-88	0720	a1490	25.0	399
				03-23-88	0700	a1500	26.0	400
				04-25-88	0900	1400	27.0	390
				05-23-88	1230	1500	28.0	400
				06-06-88	1320	1500	28.0	400
141651170421190	90-1642-10 PAGO PAGO 104 (Revised)	14 16 51 S	170 42 11 W	06-30-88	1300	200	27.0	10
141659170421690	90-1642-13 FITIULI 107 (Revised)	14 16 59 S	170 42 16 W	07-14-88	0730	145	26.0	9.0

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SAMOA ISLANDS, ISLAND OF TUTUILA

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
141718170390790	90-1739-01 LAULII 98 (Revised)	14 17 18 S	170 39 07 W	09-19-88	1335	a169	26.0	10
141703170405301	90-1740-01 UTULEI DW3 TUTU	14 17 03 S	170 40 53 W	10-19-87	1525	950	27.0	220
				11-23-87	1010	900	27.0	190
				02-01-88	0925	700	25.0	140
				03-23-88	0945	560	27.0	91
				04-25-88	1345	600	26.5	110
				05-23-88	1125	650	28.0	130
				06-06-88	1200	625	26.0	100
				07-11-88	1055	600	26.0	--
				08-22-88	1200	a880	27.0	180
141728170411190	90-1741-07 FAGATOGO W101 (Revised)	14 17 08 S	170 41 33 W	10-19-87	1100	140	26.0	10
				11-23-87	0945	140	25.5	9.5
				02-01-88	0905	120	25.0	4.0
				03-23-88	0930	140	26.5	9.0
				04-25-88	1130	a135	26.0	9.0
				05-23-88	1145	140	26.0	9.0
				06-08-88	1220	140	27.0	8.0
				07-11-88	1035	130	26.0	--
141708170413490	90-1741-08 FAGATOGO 102 (Revised)	14 17 08 S	170 41 34 W	08-22-88	1220	110	26.0	9.0
				09-19-88	1230	a138	28.0	10
141945170435301	90-1943-06 TAFUNAFOU W33	14 19 45 S	170 43 53 W	10-19-87	1155	1000	28.0	240
				11-23-87	1040	1500	25.5	370
				02-01-88	1030	1000	26.5	240
				03-23-88	1055	480	26.0	98
				04-25-88	0915	700	26.0	160
				05-23-88	0810	1300	27.0	360
				08-08-88	0730	1200	28.0	320
				07-11-88	1120	750	27.0	--
				08-22-88	0815	a1730	28.0	450
				09-19-88	0850	a1880	26.0	480
141948170435690	90-1943-09 TAFUNAFOU W53 (Revised)	14 19 48 S	170 43 56 W	06-28-88	1000	2600	28.5	880
141928170435201	90-1943-20 TAFUNAFOU W81	14 19 28 S	170 43 52 W	10-19-87	1130	480	28.0	100
				11-23-87	1130	650	28.5	140
				02-01-88	1015	a250	26.0	48
				03-23-88	1025	160	26.0	15
				04-25-88	0840	170	28.0	19
				05-23-88	0825	320	26.5	55
				06-06-88	0855	220	26.0	39
				07-11-88	1225	140	26.0	--
				08-22-88	0950	340	26.5	68
				09-19-88	0950	400	26.0	74

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SAMOA ISLANDS, ISLAND OF TUTUILA

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
141952170440201 90-1944-11	TAFUNAFOU W61	14 19 52 S	170 44 02 W	10-19-87	1215	a909	26.0	220
				11-23-87	1105	a1140	26.0	270
				02-01-88	1055	900	26.5	222
				03-23-88	1115	745	26.0	170
				04-25-88	0955	750	26.0	170
				05-23-88	0730	825	28.5	200
				06-06-88	0805	900	28.0	200
				07-11-88	1150	900	26.0	--
				08-22-88	0930	850	28.0	220
				09-19-88	0925	1200	26.0	270
141951170440101 90-1944-12	TAFUNAFOU W80	14 19 51 S	170 44 01 W	10-19-88	1210	1400	26.0	320
				11-23-87	1055	1600	26.0	400
				02-01-88	1045	1500	26.0	389
				03-23-88	1110	1100	27.0	280
				04-25-88	0945	1300	28.0	310
				05-23-88	0740	1500	26.5	380
				06-06-88	0755	1600	26.0	420
				07-11-88	1140	1400	27.0	--
				08-22-88	0920	1700	26.0	480
				09-19-88	0915	a1970	26.0	520
141929170441401 90-1944-13	MALAEIMI W67	14 19 29 S	170 44 14 W	10-19-87	1250	195	26.0	12
				11-23-87	1145	190	26.5	13
				02-01-88	1115	190	28.0	12
				03-23-88	1150	180	28.0	10
				04-25-88	1200	190	26.0	10
				05-23-88	0840	185	28.0	10
				06-08-88	0910	180	26.0	9.5
				07-11-88	1240	170	26.0	--
				08-22-88	1005	200	26.0	10
				09-19-88	1005	200	25.5	10
142002170444201 90-2044-02	ILIILI W84	14 20 02 S	170 44 42 W	10-19-87	1435	1400	26.5	300
				11-23-87	1350	1300	27.0	300
				02-01-88	1315	1500	27.0	350
				03-23-88	1340	a1470	27.0	340
				04-25-88	1015	1400	26.5	340
				05-23-88	1040	1800	27.0	430
				06-06-88	1105	1900	26.0	440
				07-11-88	1430	1300	27.0	--
				08-22-88	1115	1400	27.0	340
				09-19-88	1130	1800	27.0	390

a Laboratory conductance.

SAMOA ISLANDS, ISLAND OF TUTUILA

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

STATION NUMBER	LOCAL IDENT-I-FIER	LAT-I-TUDE	LONG-I-TUDE	DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)
142042170463001	90-2046-03 MALAELOA W70	14 20 42 S	170 46 15 W	10-19-87	1405	380	26.0	35
				11-23-87	1315	410	27.0	48
				02-01-88	1240	360	27.0	30
				03-23-88	1305	320	26.0	18
				04-25-88	1140	280	26.0	18
				05-23-88	1010	340	27.0	31
				06-06-88	1045	a350	28.0	28
				07-11-88	1400	320	26.0	--
				08-22-88	1050	340	27.0	24
				09-19-88	1105	a350	25.5	25
142102170445490	90-2144-08 ILIILI W79 (Revised)	14 21 02 S	170 44 54 W	10-19-87	1415	705	27.0	100
				11-23-87	1325	725	27.0	120
				02-01-88	1300	750	27.0	120
				03-23-88	1320	700	27.0	120
				05-23-88	1030	700	27.0	120
				06-06-88	1100	725	26.0	120
				07-11-88	1415	700	26.0	--
				08-22-88	1100	700	27.0	120
				09-19-88	1115	800	26.0	120
142102170455801	90-2145-03 PUAPUA W119	14 21 02 S	170 45 58 W	10-19-87	1335	1800	27.0	460
				11-23-87	1245	1800	27.0	460
				02-01-88	1210	1400	27.5	330
				03-23-88	1240	800	27.0	150
				04-25-88	1040	950	27.0	190
				05-23-88	0940	1500	27.0	350
				06-06-88	1015	a1630	26.0	390

a Laboratory conductance.

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October 1, 1978

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

POSTAGE AND FEES PAID
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