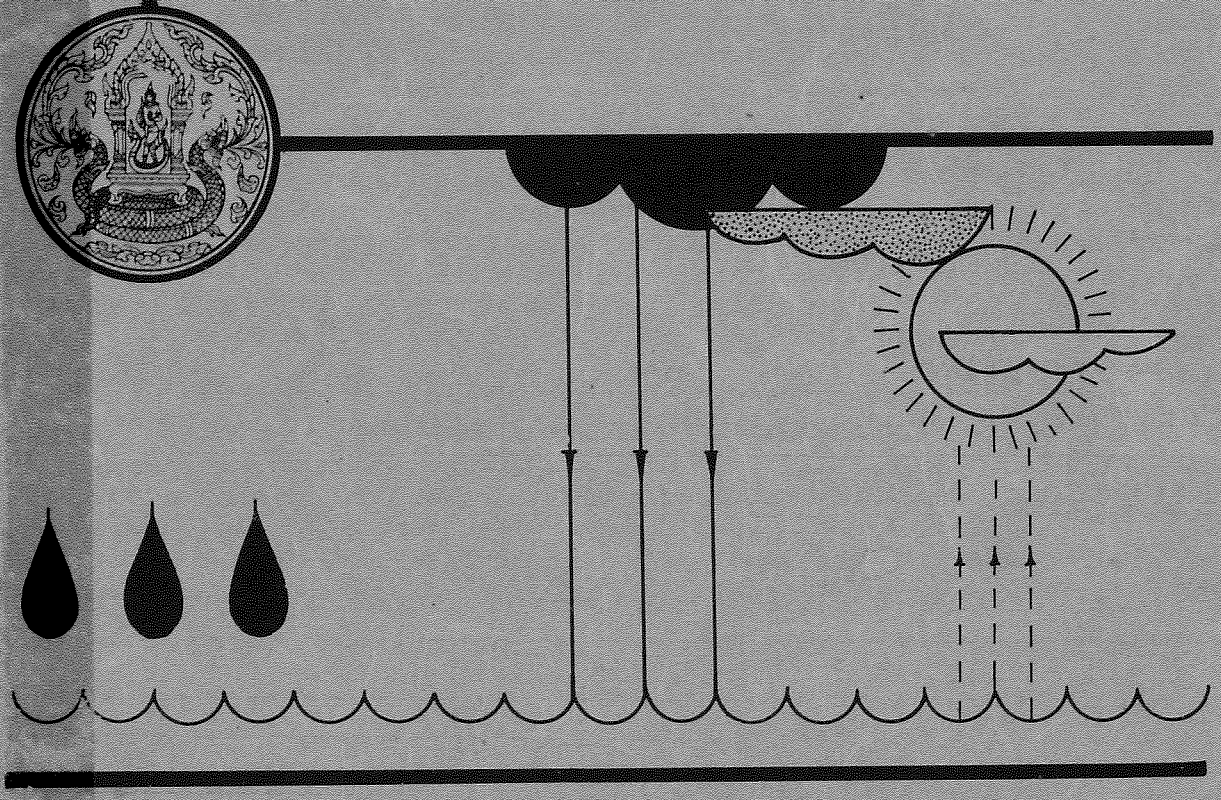
ต้นฉบับ 12

THAILAND
HYDROLOGICAL YEARBOOK

WATER YEAR 1969
VOLUME 12



ROYAL IRRIGATION DEPARTMENT
HYDROLOGY DIVISION
BANGKOK

138

Hydrology No. 496/78

Thailand

Hydrological Yearbook

Water Year 1969

Volume 12

Royal Irrigation Department
Hydrology Division
Bangkok

FOREWORD

The programme of yearbook publications was initiated in 1966. Great efforts have been made in editing as well as the setting up of standard for yearbook publication. The previously processed data have been reviewed and arranged in serial order or volumes to be published. The first issue was published in 1968 as Volume 8. It presents records, during the 1965 water year, of stage and discharge of 59 streams at 86 actual streamflow calibrating sites and at 27 previously calibrated ones. Up till now 11 volumes of yearbooks presenting streamflow data as early as 1912 up to 1968 totalling 1,738 station-years of record had been published.

This Volume 12, which is the twelfth issue of the series was prepared by the Data Processing Section. It presents records, during 1969 water year, of stage and discharge of 99 streams at 130 actual calibrating sites and at 52 previously or subsequently calibrating ones. Some remarks are made under each station description.

Hydrology Division

March 1979

ACKNOWLEDGEMENTS

The editorial staff of this hydrological yearbook publication feels particularly indebted to Mr. Boonchob Kanchanalak, former Senior Engineer Hydrologist of the Royal Irrigation Department, who had initiated and directed the editing work of yearbook publication in 1966. He made a great attempt in setting up procedure for yearbook publication and adopting engineering standard, method and steps for implementation upon which the further publication of the series will be based.

Special thanks are conveyed to the Budget Bureau, Office of the Prime Minister, who always renders great support to this work. Also others who gave valuable advices in improving the work standard are kindly pleased to accept our sincere thanks.

We also wish to express our sincere appreciation to the Chief of Public Relation and Printing Services Section, Program Coordination and Budget Division, and his efficient staff whose kind assistance and coordinated effort have contributed to the success of this Volume 12 issue.

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LOCATION MAP OF HYDROLOGIC OBSERVATION STATION IN 1969 WATER YEAR .. ..

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ILLUSTRATION OF STREAMFLOW GAGING ACTIVITIES

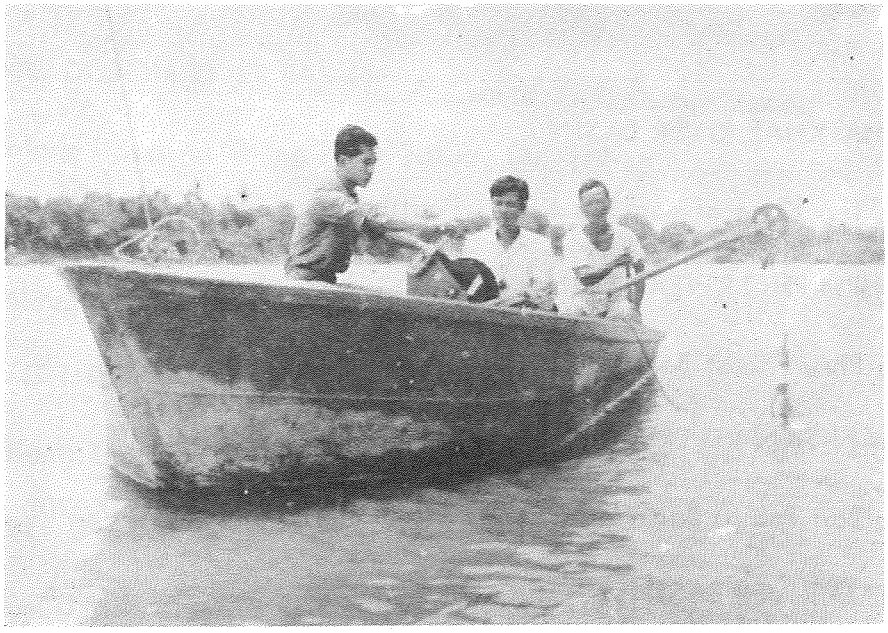


Figure 1. Close-up of Rating Operation

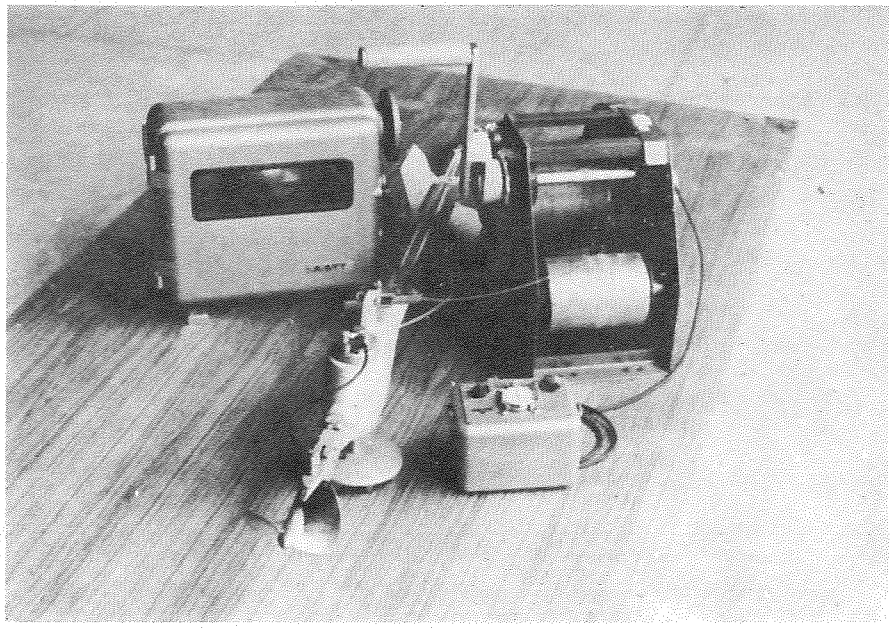


Figure 2. Standard Hydrologic Equipment



Figure 3. Standard bench mark

HYDROLOGICAL YEAR BOOK PUBLICATION

* * * * * * * *

Introduction

Great attempt has been made all along to expedite the engineering processing of the streamflow data to be ready for publication, and to translate the publication plan into implementation. Efforts from various working units as well as personnel concerned are pulled together to drive this work into reality. Publication of streamflow data has begun since 1966. The first yearbook publication came out as Volume 8 for the 1965 water year. It presents records of stage and discharge of 113 gaging stations in 59 streams.

Definition of terms and abbreviations

Table for converting Metric Units to English Units is on page XXI. Terms related to streamflow and other hydrologic data, as used in this report, are defined as follows:

CMS-day is the volume of water represented by a flow of 1 cubic meter per second for 24 hours. It is equivalent to 86,400 cubic meters, 0.0864 million cubic meter, or 3,050,784 cubic feet, or 70.07 acre-feet, and represents a runoff of 86.4 millimeters from 1 square kilometer.

Control designates of 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.

Cubic meter per second (cms) is the rate of stream discharge expressed in volume per a unit of time. One cubic meter per second is the rate of discharge representing a volume of 1 cubic meter passing a given point during 1 second.

Discharge is the volume of water (or more broadly, total fluids), that passes a given point within a given period of time.

Mean discharge is the arithmetic average of individual daily mean discharge during a specific period.

Momentary peak discharge is the peak discharge at a particular instant of time, at least once a year.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from rainfall would normally drains by gravity into the stream above the specified point. Figures of drainage area given herein are determined from Royal Thai Survey Department AMS map with scale of 1 to 50,000, unless otherwise noted. They include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Gage height (G.H.) is the water surface elevation above some arbitrary gage datum to which, in most cases, referred the Mean Sea Level (M.S.L.) Ko Lak datum, otherwise the arbitrary assumed datum (A.D.) being used.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. The term "staff gaging station" is applied only those gaging stations where only a gage height record is observed at an installed staff gage. If a water stage recorder is also installed, such a gaging station is referred as recording gaging station. In case of discharge measurements being practiced, it is referred as streamflow calibration or rating station.

Million cubic meter (mcm) is the volume of water expressed in millions of cubic meter.

One million cubic meter is the quantity of water required to cover 1 square kilometer to a depth of 1 meter and is equivalent to 811 acre-feet, or 408.6 cfs-day, or 264.2 million gallons.

Runoff in mcm shows the volume of approximately effective runoff from rainfall, passing a given point for a given period of time.

Annual runoff is the volume of approximately effective runoff from rainfall accumulated during the water year.

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

Rating tables giving the discharge for any gage height are prepared from stage-discharge relation curves or rating curves.

Water year is the 12-month period, April 1 through March 31, related to annual cycle of river flow during which the river begins to rise, reaching its flood stage and subsiding toward its cyclic minimum.

The water year is designated by the calendar year in which it begins and which includes 9 of 12 months. Thus, the year began April 1, 1969 is called the "1969 water year".

Order of listing of gaging data

In this format, gaging data are listed according to their code running number order. It has been found more convenient in locating the required data when the list is arranged in such manner. The station code name contains the letter standing for river name and number in running order according to the age of the station installed in that river. The station code, for example, for the Chao Phraya River at Wat Tha Hat installed in 1905 is C. 1, which is the first streamflow rating station ever built in this river.

Series of yearbook publications

The yearbook series in which the streamflow data had been published was issued as follows:

Volume	Water Years	No. of station - years	Date of Issuance
1	1912 - 1937	112	September 1976
2	1938 - 1947	103	September 1976
3	1948 - 1953	146	September 1976
4	1954 - 1956	178	September 1976
5	1957 - 1959	203	May 1974

Volume	Water Years	No. of station - years	Date of Issuance
6	1960 - 1962	213	October 1973
7	1963 - 1964	182	July 1969
8	1965	113	May 1967
9	1966	129	June 1975
10	1967	172	September 1976
11	1968	187	September 1976
12	1969	182	March 1979

The preparation of the manuscripts of the further Volumes is in progress. It is expected that they would be issued in serial order in the very near future.

STANDARD OF STREAMFLOW DATA PROCUREMENT

* * * * * * * *

Network design

The location of stream gaging stations is primarily based upon the urgent need at various damsites which is accessible. By the time of expansion of the network at later date, the area or basin of "blind spot" is put at first priority backing up by the following conditions:

(a) Accessibility.

(b) Geographical location.

(c) Mean annual rainfall.

(d) Vegetation cover determined from Army Map Service topographic map with 1:50,000 or 1:250,000 scale.

(e) Basin soil type.

(f) Type of surface rock.

Field work

The minimum standard of basic hydrologic data for observations and measurements are equal to those recommended in the United Nations ECAFE Flood Control series No. 6.

Water stage data are obtained by staff gage and by water stage recorder. Normally a vertical section staff gage is installed for manual observation with usual frequency of reading varies from 1 to 5 times of equal interval during the daytime. At some specific station where streamflow measurement camps are situated, the reading of water stage by night is also made, in addition, usually 1 to 3 times of equal interval. The standard bench mark is also established near the gage site. The 1.00-m standard enamelled staff gage sections with 1 cm graduation are used with zero reading, in most cases, referred to Mean Sea Level (M.S.L.) Ko Lak datum, otherwise the assumed datum being used. Few wire-weight gages are also adopted on highway bridges.

In some mountainous headwater area as well as in the estuary, additional installation of water stage recorder is made. A continuous record of water stage is obtained at such station. The German A. Ott type X has so for been adopted as our standard equipment. Some pneumatic recorder is also being used. Weekly visit to the gage for inspection and changing chart paper by the crew or gage observer is under practice.

At the streamflow gaging station, flow measurement by a current meter is periodically performed so that the calibration of stream section related to flow can be made through the development of stage-flow relationship or simply called "rating curve". Two types of the streamflow gaging station are under operation: with and without crew camp. Those without crew camp are under moving team and are capable for flow measurements of several stations. Those with crew camp are subject to less accessibility.

At station operated by a moving crew, at least twice a month during the monsoon period and once a month during the low flow period are expected for flow rating performance. The moving crew frequently fails to reach the stations while at their crest stages because of road damage and time available. At station with crew camp, daily rating performance may be expected, at least once whenever change of stage per day is over 30 centimeters. Fixed boat by cableway across the river is one of typical means of flow measurement by current meter for medium river, 100 m wide. For wider river, the boat is fixed in position by anchors.

The river cross section is requested to be made simultaneously during flow velocity measurement, so that shifting of the section could be determined. This request is lawful because there had been in the older day fashion of using cross section made during dry season for discharge computation.

The German A. Ott current meter has so far been adopted as standard equipment. The multiple-point method has been used as velocity measurement practice. At present the two-point method is carefully practiced.

Office data processing

The standard techniques used overseas are adopted in processing the data. In fact the standard methods of U.S. Geological Survey and U.S. Department of Agriculture (for small streams) are adopted as general basis.

Development of rating curve - Yearly mean rating curve is generally used as a tool in determining the daily flow. Periodically developed rating is frequently used when dictated by the conditions, so that the shifting control could be eliminated or reduced. Zero flow elevation of the rating section is determined by trial and error method with logarithmic plotting of the rating curve. Extension of the logarithmic rating line is frequently used to determine the channel flow at the overbank flow stage. The overbank flow is assessed by either direct velocity measurement or slope-area method whenever applicable.

Determination of daily mean flow - Application of the adjusted daily mean gage height to rating table gives the corresponding daily mean discharge from which the monthly and the yearly mean discharges are computed. Shifting adjustment for observed gage height is made when necessary. Shifting design is made basing on flood stages and times, if any. Other adjustments such as back water, rise and fall of flood, etc., which necessitate the use of other parametric factors, are also made, if any.

At some gaging stations where rises and falls of floods are immediate, hourly basis of gage height application to the rating curve is used to determine daily mean discharge.

At stations where rises and falls of streams are gentle, gage height data are usually obtained by manual reading.

It has been found that application of 1 to 5 times average reading (for daytime) gives an error of daily mean flow not more than 15% for mountainous streams, less than 10% for larger valley streams and not more than 5% for lower deltaic streams. Most of mountainous and valley streams are under recording operation, only deltaic streams that daytime reading are still used.

The daily mean gage heights are obtained by arithmetic mean of the observed data available. Adjusted gage heights due to shifting, which are applicable to rating curve for daily mean

flow computation, are practically made.

It is noted that the daily mean flow are mostly subject to upstream diversion. Headwater utilization of water by people diversions and state-owned diversions are expected in many river basins in this country. Consequently, the virgin flow is hardly determined. Daily mean values may be replaced by the monthly mean in the case of flow measured at tailwaters of existing reservoirs.

Time basis used for daily mean flow is from midnight to midnight.

Review of procedure for streamflow data processing.

Following are steps used for review the overall data before finalizing the process:

1) Checking of gage height data which are obtained either from staff gage or from water stage recorder, for the following cases:

a) Representability of daytime observation for the daily mean value, if the data are from staff gage reading.

b) Discrepancies of recording charts, if any.

c) Desirability of hourly-basis process for daily mean flow.

d) Datums of gage observation and of the rating curve used.

e) Location of gage from which data are taken and location of gage at which the rating curve is developed.

2) Checking of availability and goodness of field measurement notes.

3) Checking of differential magnitude of gage height during discharge measurement as to which arithmetic average or weighted average is desirable.

4) Checking stability of rating curve used.

5) Review of shifting control sample and design shifting, if any.

6) Adjustment of backwater, flood wave, etc., by rate of change of falls as index, if any.

7) Overall review of daily mean flow data as an end product.

8) Checking consistency of runoff volume among those observed at the upstream and downstream stations, taking into account intervening diversions of flow, if any.

Classification of streamflow data

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good", less than 10 percent; "fair", less than 15 percent; "poor", probably more than 15 percent.

Future plan for computerization

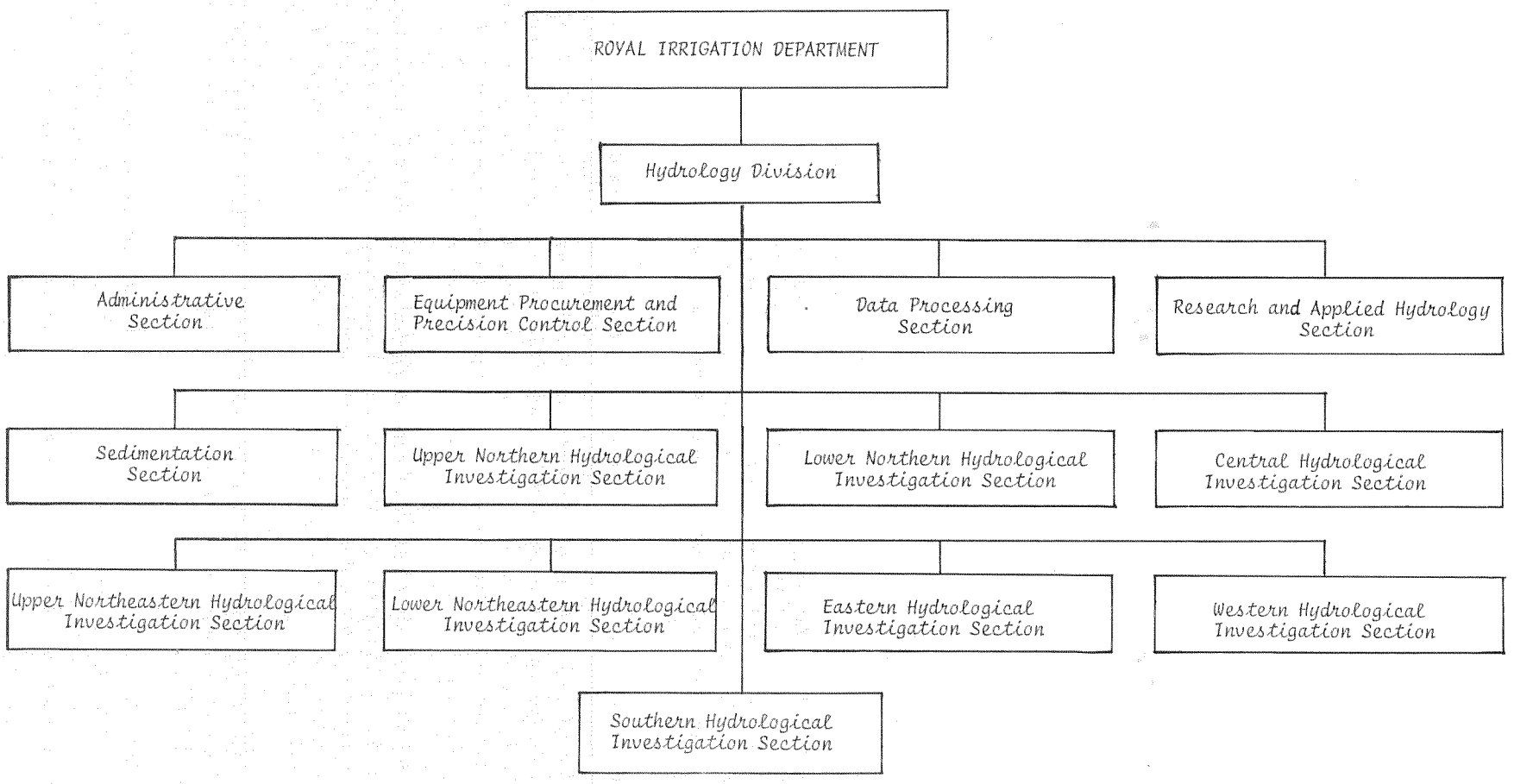
The Royal Irrigation Department (RID) has developed data system which includes computerization of storage, processing and retrieval of rainfall data since 1969. During the streamflow data system was being developed at RID in 1976, the National Economic and Social Development Board has made in agreement with the Asian Institute of Technology (AIT) to study on "Development of Water Resources Information System for Thailand". In the contract AIT will recommend a standardized procedure to various agencies for collecting and recording hydrometeorological and hydrological data and develop a computer based data storage and retrieval system to process, store, analyse and publish the data furnished by various agencies involved in data collection.

The Water Resources Information System for Thailand (WRIST) package has been designed to provide permanent computer media storage of hydrometeorological and hydrological data in such a form that it can be readily added to, altered or deleted and also called for analysis and presentation as required. The Indexed Sequencial Method has been used for mass storage of the data and the processing and storing system have been designed taking into consideration the data processing schemes followed by the agencies, the probable frequency of retrieval expected and also the order or grouping of data elements differently for different agencies so that the system is best suited and efficient in operation for the current requirements and anticipated uses by the agencies in Thailand. The system will process and store data agencywise. The system is also designed to allow for the inclusion of additional data types if the need arise in the future. IBM 370/145 Computer facility at the AIT Bangkok will be used to develop the WRIST package. Operating programs will be written in ANS COBOL language independent of machine hardware to facilitate machine to machine transferability of the package for medium scale computers. The system has the data retrieval facility in the form of monthly and yearly publication agencywise; raw data and analysed data either in the form of computer printouts or in the direct accessible forms like cards of tapes controlled by basin, sub-basin, region, station and data type. Data stored can also be available in the form of punched cards or punched card image on magnetic tapes so that they can be accessed by FORTRAN programs.

Organization

Streamflow data presented herein are from the hydrologic network operating by the Hydrology Division of the Royal Irrigation Department (RID). Field data collection and office data processing as well as yearbook publication are hydrologic activities undertaken by the Division.

The organization structure of the Division is diagrammatically shown below:-


ROYAL IRRIGATION DEPARTMENT
Hydrology Division
Administrative Section
Equipment Procurement and Precision Control Section
Data Processing Section
Research and Applied Hydrology Section
Sedimentation Section
Upper Northern Hydrological Investigation Section
Lower Northern Hydrological Investigation Section
Central Hydrological Investigation Section
Upper Northeastern Hydrological Investigation Section
Lower Northeastern Hydrological Investigation Section
Eastern Hydrological Investigation Section
Western Hydrological Investigation Section
Southern Hydrological Investigation Section

PARTICIPATION IN STREAM GAGING WORKS

* * * * * * * *

Among 22 water related government agencies, several of them operate streamflow gaging works according to their own purposes. In early 1949 the Hydrology Section was established in the Survey Division of the Royal Irrigation Department. The Section is responsible for its activity in hydrology as prerequisite for water resources development. The activity includes:

(1) Procurement of basic hydrologic data including precipitation, streamflow, sediment, evaporation, etc.

(2) Analyses and research to produce the facts governing the behavior of water, their occurrences, circulation and distribution in its varied forms, their properties and their interaction with other allied factors.

(3) Application to water resources development and management, utilizing basic data and the facts disclosed by analyses and research.

Just one year after the beginning of water storage work, in 1953 there were only 49 discharge stations and 114 stage stations as operated by the Hydrology Section. In February 1975 the Section was separated from the Survey Division and was raised the status to be the Hydrology Division of the Royal Irrigation Department. The present network of stream gaging works contains 221 discharge stations of which 147 are currently operated and 74 are previously calibrated with continuous stage observation while 145 were abandoned, and 315 stage stations are currently operated while 232 were abandoned.

After the onset of the Lower Mekong River Basin Development Scheme, the Hydrology Section was also established in the Investigation and Planning Division of the National Energy Administration which is a representative agency of Thai Government in the Lower Mekong Committee. During the period of November 1958 - May 1962, seven hydrologic stations were installed and operated by the Harza Engineering Company contracted by the Agency for International Development of the United States Government. At present the NEA operates about 90 discharge stations and 140 stage stations. A series of yearbooks has also been published.

The third agency which operates the stream gaging works is the Hydrometeorology Division of the Meteorological Department. With the technical and financial support from the World Meteorelogical Organization, this agency began the stream gaging works in 1967. Up till now, about 11 discharge stations and 32 stage stations are under operation. The stream gaging data are also included in their yearbook.

The last agency which operates the stream gaging works for the planning purpose is the Electricity Generating Authority of Thailand. They began to operate 15 discharge stations and 4 stage stations in 1971.

In addition, there are other agencies operating the stream gaging works for their own purposes such as watershed management and conservation program of the Royal Forestry Department. The Port Authority of Thailand carries on discharge measurement along the estuary of the Chao Phraya River for studying the sedimentation in the vicinity of the service area.

UNITS OF MEASURE AND CONVERSION FACTORS

The following factors may be used to convert the metric and Thai units published herein to the English units.

Multiply metric or Thai units	By	To obtain English units
	Length	
millimeters (mm)	.03973	inches (in)
meters (m)	39.37	inches (in)
	3.2808	feet (ft)
	1.0936	yards (yd)
	.1988	rods
kilometers (km)	.6214	miles (mi)
	Area	
square meters (m^2)	10.76	square feet (ft^2)
	1.196	square yards (yd^2)
	2.47×10^{-4}	acres
rai (1,600 m^2-Thai)	.3952	acres
hectares (ha)	2.4709	acres
square hectometers (hm^2)	2.4709	acres
square kilometers (km^2)	247.1	acres
	.3861	square miles (mi^2)
	Volume	
liters (l)	.2642	gallons (gal)
cubic decimeters (dm^3)	.2642	gallons (gal)
	.03531	cubic feet (ft^3)
cubic meters (m^3)	264.2	gallons (gal)
	2.642×10^{-4}	million gallons (10^6 gal)
	35.31	cubic feet (ft^3)
	4.086×10^{-4}	cfs-day (ft^3/s-day)
	8.11×10^{-4}	acre-feet (acre-ft)
cubic hectometers (hm^3)	264.2	million gallons (10^6 gal)
	408.6	cfs-day (ft^3/s-day)
	811	acre-feet (acre-ft)
million cubic meters (mcm)	811	acre-feet (acre-ft)
cubic kilometers (km^3)	811×10^3	acre-feet (acre-ft)
	Flow	
liters per second (l/s)	.03531	cubic feet per second (ft^3/s)
	15.85	gallons per minute (gpm)
cubic decimeters per second (dm^3/s)	.03531	cubic feet per second (ft^3/s)
	15.85	gallons per minute (gpm)
	22.82×10^{-3}	million gallons per day(mgd)

Multiply metric or Thai units	By	To obtain English units
	Flow (Cont.)	
cubic meters per second (m^3/s)	35.31	cubic feet per second (ft^3/s)
	15,850	gallons per minute (gpm)
	22.82	million gallons per day(mgd)

* * * * * * * *

Stream Gaging Data

Water Year 1969

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

2

WATER YEAR 1969
PING RIVER BASIN

Mae Ping River at Nawarat Bridge, Chiang Mai (P1)

Location: Lat. 18°-47'-09" N., Long. 99°-00'-29" E., on the left bank 100 meters downstream from Nawarat Bridge, Amphoe Muang, Chaing Mai.

Drainage Area: 6,355 sq.km.

Type of Gage: Water-Stage recorder

Zero Gage at Bottom at: +300.80 m. (M.S.L.)

Bench Mark: B.M. of Military Survey and Mapping Department

Location: On left bank at the abutment of Nawarat Bridge

Elevation: +306.867 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1921 – to date

Rating Operation:

Period of Rating: 1936-38, 1954-60, 1967 to date

Rated by Float: 1936-38

Rated by Current Meter: 1954-60, 1967 to date

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation

Overbank Flow Conditions: No overbank flow

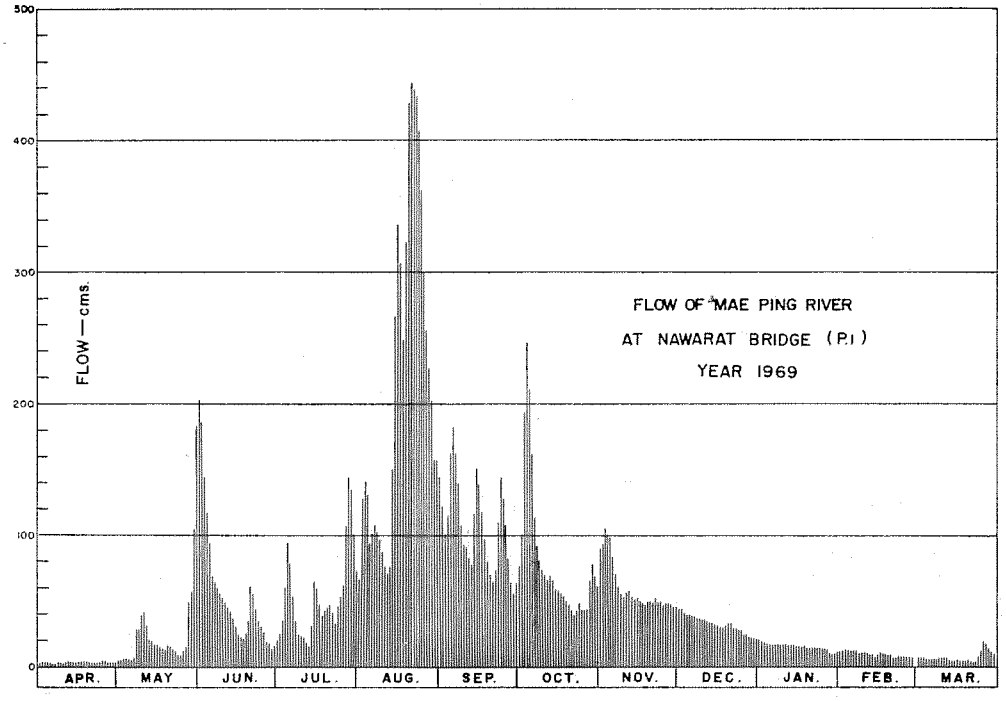
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by Mae Faek Weir for irrigation of about 11,200 hectares at above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	300.91	300.94	302.85	301.25	301.66	302.36	301.82	301.93	301.49	301.15	300.95	300.83
2	.92	.95	.63	.31	302.22	.16	302.09	.97	.49	.13	.95	.83
3	.92	.96	.28	.50	.32	.00	.79	302.07	.45	.11	.98	.83
4	.91	.98	.13	.82	.38	.16	303.18	.02	.44	.10	.99	.80
5	.90	.98	301.95	.97	301.96	.59	302.81	.00	.45	.09	.98	.80
6	300.90	300.97	301.72	301.70	302.05	302.69	302.25	301.82	301.44	301.09	300.96	300.80
7	.89	301.01	.69	.49	.09	.49	.08	.72	.43	.08	.95	.80
8	.91	.32	.64	.35	.05	.22	301.91	.65	.42	.07	.92	.81
9	.92	.31	.60	.26	301.99	.04	.81	.61	.41	.09	.93	.81
10	.93	.65	.58	.25	.90	301.95	.78	.59	.41	.09	.93	.82
11	300.95	301.47	301.53	301.23	301.82	301.93	301.74	301.62	301.40	301.07	300.92	300.82
12	.92	.29	.49	.17	.75	.83	.70	.62	.39	.08	.89	.81
13	.93	.21	.46	.15	.85	.80	.74	.59	.38	.08	.86	.77
14	.92	.20	.41	.47	302.62	302.21	.69	.57	.36	.07	.85	.75
15	.92	.15	.33	.71	303.48	.45	.63	.58	.36	.06	.90	.75
16	300.93	301.16	301.25	301.61	303.82	302.27	301.63	301.56	301.35	301.04	300.93	300.77
17	.94	.13	.23	.52	.61	.09	.61	.54	.34	.04	.90	.76
18	.93	.12	.22	.44	.12	301.91	.59	.53	.34	.09	.91	.76
19	.91	.11	.35	.51	.78	.83	.56	.56	.35	.04	.87	.76
20	.91	.16	.67	.52	304.42	.75	.52	.56	.37	.03	.89	.74
21	300.91	301.13	301.65	301.54	304.51	301.68	301.47	301.55	301.37	301.03	300.84	300.73
22	.92	.11	.53	.43	.48	.80	.44	.58	.34	.03	.84	.73
23	.93	.08	.42	.35	.45	302.19	.48	.55	.32	.03	.86	.74
24	.94	.05	.37	.55	.25	.39	.54	.56	.29	.03	.84	.87
25	.95	.02	.33	.61	303.87	.21	.48	.52	.27	.02	.83	.98
26	300.93	301.10	301.26	301.71	303.47	302.02	301.48	301.55	301.24	300.95	300.85	301.15
27	.93	.15	.17	302.21	.16	301.79	.50	.54	.23	.93	.84	.09
28	.93	.55	.17	.40	302.98	.66	.69	.53	.21	.92	.83	.01
29	.93	.64	.12	.31	.84	.61	.82	.51	.18	.92	–	300.94
30	.94	302.10	.18	.07	.50	.69	.72	.51	.18	.94	–	.92
31	–	.72	–	301.80	.50	–	.64	–	.17	.95	–	.87
Mean	300.92	301.25	301.57	301.59	302.90	302.06	301.81	301.65	301.35	301.04	300.90	300.83
Max.	300.95	302.72	302.85	302.40	304.51	302.69	303.18	302.07	301.49	301.15	300.99	301.15
Min.	300.89	300.94	301.12	301.15	301.66	301.61	301.44	301.51	301.17	300.92	300.83	300.73

WATER YEAR 1969 : Max. 304.51 m. Min. 300.89 m.

BM. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	2.50	4.00	202	23	61	140	78	90	44	20	12	7.08
2	3.00	4.50	174	28	123	116	108	94	44	19	12	7.08
3	3.00	5.00	130	44	135	97	195	105	40	18	13	7.08
4	2.50	6.00	112	78	142	116	246	100	39	18	13	6.00
5	2.00	6.00	92	94	93	169	197	97	40	17	13	6.00
6	2.00	5.50	67	65	103	182	126	78	39	17	12	6.00
7	1.60	7.55	64	44	108	156	107	67	38	17	12	6.00
8	2.50	29	59	31	103	123	88	60	37	17	10	6.36
9	3.00	28	54	24	96	102	77	55	36	17	11	6.36
10	3.50	60	52	23	86	92	73	53	36	17	11	6.72
11	4.50	42	47	22	78	90	69	57	35	17	10	6.72
12	3.00	26	44	17	70	79	65	57	35	17	9.24	6.36
13	3.50	20	41	16	81	75	69	53	34	17	8.16	5.04
14	3.00	19	36	42	173	122	64	51	32	17	7.80	4.40
15	3.00	16	29	66	287	151	58	52	32	16	9.60	4.40
16	3.50	17	23	55	336	129	58	50	31	15	11	5.04
17	4.00	15	22	46	306	108	55	48	30	15	9.60	4.72
18	3.50	14	21	39	238	88	53	47	30	17	10	4.72
19	2.50	13	31	45	331	79	50	50	31	15	8.52	4.72
20	2.50	17	62	46	429	70	46	50	33	15	9.24	4.08
21	2.50	15	60	48	444	63	42	49	33	15	7.44	3.76
22	3.00	13	47	38	439	75	39	52	30	15	7.44	3.76
23	3.50	11	37	31	434	119	43	49	29	15	8.16	4.08
24	4.00	9.75	33	49	402	144	48	50	27	15	7.44	8.52
25	4.50	8.10	29	55	344	122	43	46	26	14	7.08	13
26	3.50	12	24	66	286	100	43	49	25	12	8.80	20
27	3.50	16	17	122	244	74	44	48	24	11	7.44	17
28	3.50	49	17	145	219	61	64	47	23	10	7.08	14
29	3.50	59	14	134	201	55	78	45	22	10	–	11
30	4.00	109	18	105	157	64	67	45	22	11	–	10
31	–	186	–	75	157	–	59	–	21	12	–	8.52
Total	94.10	842.40	1,658	1,716	6,706	3,161	2,452	1,794	998	478	272.04	228.52
Mean	3.14	27.2	55.3	55.3	216	105	79.1	59.8	32.2	15.4	9.71	7.37
Max.	4.50	186	202	145	444	182	246	105	44	20	13	20
Min.	1.60	4.00	14	16	61	55	39	45	21	10	7.08	3.76
Runoff – MCM.	8.130	72.783	143.251	148.262	579.398	273.110	211.853	155.002	86.227	41.299	23.504	19.744

WATER YEAR 1969 : Max. 444 Min. 1.60 Mean 55.9 Annual Runoff 1,762.565 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 20	24.00	304.56	452				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

4

WATER YEAR 1969
PING RIVER BASIN

Mae Ping River at Tha Khae, Tak (P_{2A})

Location: Lat. 16°-51'-14" N., Long. 99°-07'-50" E., on right bank about 200 meters downstream from Kittikhachon I Bridge, at Ban Tha Khae, Amphoe Muang, Tak.

Drainage Area: 38,862 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 104.00 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: Near authomatic gage building

Elevation: + 115.321 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1952 to date

Rating Operation:

Period of Rating: 1952-67, 1971 to date

Rated by Float:

Rated by Current Meter: 1952-67, 1971 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation

Overbank Flow Conditions: No overbank flow

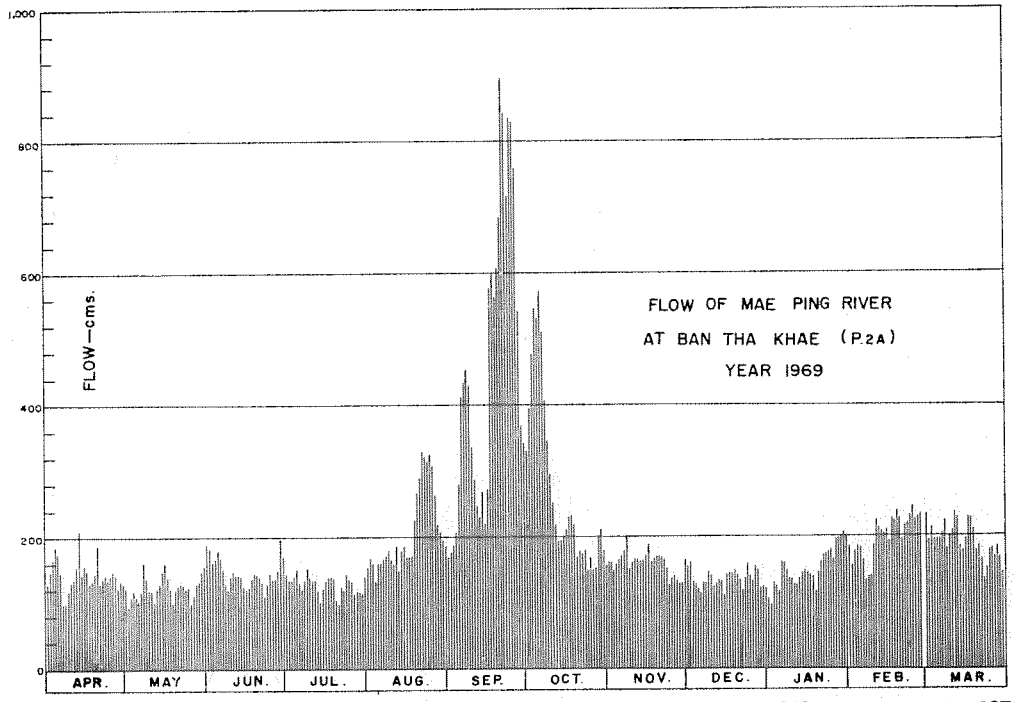
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1964-67. Flow regulated by Bhumiphol Dam reservoir since 1964. Upstream State diversions for irrigation of about 40,300 hectares. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	104.95	104.91	105.16	104.97	105.04	105.09	105.59	105.07	105.03	104.82	105.14	105.31
2	105.05	.77	.13	.96	.09	.13		.05	.07	.80	.04	.17
3	.10	.86	.06	.97	.05	.17		.01	104.96	.94	.13	.24
4	.15	.89	.09	.99	104.92	.24	106.07	.06	.93	.92	.15	.17
5	.06	.85	.13	105.02	105.06	.53	.03	.09	.91	.87	.14	.18
6	104.95	104.83	105.09	104.93	105.06	105.80	106.72	105.10	104.86	105.07	105.07	105.19
7	.81	.93	.01	.91	.08	.85	105.99	.14	.95	.06	104.95	.22
8	.82	105.06	104.92	.98	.10	.88	.75	.19	.95	.01	.98	.28
9	.92	104.93	.90	105.03	.13	.82	.58	.02	105.01	104.97	.99	.12
10	.95	.89	105.00	104.97	.08	.61	.46	.08	104.99	.97	105.16	.21
11	104.98	104.90	105.01	104.96	105.03	105.46	105.33	105.09	104.92	104.93	105.28	105.24
12	105.05	.81	104.98	.96	.15	.35	.23	.08	.95	.94	.24	.32
13	.23	.92	105.00	.88	.00	.28	.17	.07	.97	.99	.23	.26
14	104.98	.94	104.94	.82	.13	.42	.18	.08	.95	105.01	.21	.14
15	105.05	105.03	.91	.91	.15	.25	.21	.11	.85	.02	.23	.12
16	105.01	105.06	104.91	104.96	105.09	105.48	105.24	105.16	105.00	105.00	105.16	105.19
17	104.94	104.93	.93	.99	.10	106.13	.30	.07	.00	104.99	.29	.29
18	.96	.90	.98	.99	.10	.17	.31	.09	.01	.98	.28	.29
19	105.01	.81	105.00	.97	.32	.10	.21	.10	.02	.86	.33	.15
20	.16	.93	104.99	.84	.43	.20	.09	.10	104.99	105.03	.28	.12
21	104.93	104.93	104.98	104.81	105.50	106.38	105.13	105.09	104.97	105.08	105.18	105.15
22	.98	.94	.91	.92	.60	.68	.11	.09	.89	.11	.26	.08
23	.99	.92	.85	.91	.57	.56	.13	.03	.99	.11	.27	104.94
24	.96	.90	.94	.99	.55	.36	.02	104.93	105.05	.12	.31	105.03
25	105.00	.92	105.00	.96	.58	.58	.09	.98	104.97	.13	.35	.13
26	105.02	104.80	104.96	104.95	105.51	106.57	105.02	104.99	104.95	105.07	105.28	105.14
27	104.98	.88	.98	.87	.38	.29	.04	.95	105.04	.18	.30	.09
28	.90	.94	105.04	.90	.24	105.90	.21	.94	.01	.19	.37	.15
29	.96	.96	.19	.89	.22	.64	.23	.95	104.90	.20	–	.09
30	.92	105.04	.06	.87	.18	.62	.11	105.08	.92	.22	–	104.96
31	–	.05	–	.99	.14	–	.05	–	.90	.20	–	105.14
Mean	104.99	105.00		104.94	105.21	105.82		105.06	104.96	105.02	105.20	105.16
Max.	105.23	105.06	105.19	105.03	105.60	106.68	106.12	105.19	105.07	105.22	105.37	105.32
Min.	104.81	104.77	104.85	104.81	104.92	105.09	105.02	104.93	104.85	104.80	104.95	104.94

WATER YEAR 1969 : Max. 106.68 m. Min. 104.77 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	131	121	188	136	154	167	327	162	152	101	182	233
2	157	90	179	134	167	179	410	157	162	96	154	191
3	170	110	160	136	157	191	490	147	134	129	179	212
4	185	117	167	141	124	212	545	160	126	124	185	191
5	160	107	179	149	160	306	525	167	126	112	182	194
6	131	103	167	126	160	416	571	170	110	162	162	197
7	98	126	147	121	165	439	505	182	131	160	131	206
8	101	160	124	139	170	453	394	197	131	147	139	224
9	124	126	119	152	179	425	324	149	147	136	141	176
10	134	117	144	136	165	335	281	165	141	135	188	203
11	139	119	147	134	152	281	239	167	124	126	224	212
12	157	98	139	134	185	245	209	165	131	129	212	236
13	209	124	144	114	144	224	191	162	136	141	209	218
14	139	129	129	101	179	268	194	165	131	147	203	182
15	157	152	121	121	185	215	203	173	107	149	209	176
16	147	160	121	134	167	288	212	188	144	144	188	197
17	129	126	126	141	170	576	230	162	144	141	227	227
18	134	119	139	141	170	598	233	167	146	139	224	227
19	147	98	144	136	236	560	203	170	149	110	239	184
20	188	126	141	105	271	614	167	170	141	152	224	176
21	126	126	139	98	295	715	179	167	136	165	194	185
22	139	129	121	124	331	894	173	167	117	173	218	165
23	141	124	107	121	320	822	179	152	141	173	221	129
24	134	119	129	141	313	704	149	126	157	176	233	152
25	144	124	144	134	324	834	167	139	136	179	245	179
26	149	96	134	131	299	828	149	141	131	162	224	182
27	139	114	139	112	255	664	154	131	154	194	230	167
28	119	129	154	119	212	462	203	129	147	197	233	185
29	134	134	197	117	206	348	209	131	119	200	–	167
30	124	154	160	112	194	339	173	165	124	206	–	134
31	–	157	–	141	182	–	157	–	119	200	–	182
Total	4,286	3,834	4,349	3,981	6,391	13,602	8,345	4,793	4,189	4,706	5,600	5,890
Mean	143	124	145	128	206	453	269	160	135	152	200	190
Max.	209	160	188	152	331	894	571	188	162	206	245	236
Min.	98	90	107	98	124	167	149	126	107	96	131	129
Runoff – mcm.	370.310	331.258	375.754	343.958	552.182	1,175.213	721.008	414.115	361.930	406.598	483.840	508.896

WATER YEAR 1969 : Max. 894 Min. 90 Mean 192 Annual Runoff 6,045.062 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23	2.00	106.80	970				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

6

WATER YEAR 1969
PING RIVER BASIN

Mae Taeng River at Mae Taeng Bridge, Chiang Mai (P_{4A})

Location: Lat. 19°-07'-20" N., Long. 98°-56'-51" E., on left bank about 5 meters downstream from bridge on highway Chiang-Fang, Amphoe Mae Taeng, Chiang Mai.

Drainage Area: 1,902 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 333.745 m. (M.S.L.)

Bench Mark: B.M. - H.S./R.I.D. NO. 3

- Location: Near staff gage site
- Elevation: + 339.397 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1955 - to date

Rating Operation:

- Period of Rating: 1955-60, 1967 to date
- Rated by Float:
- Rated by Current Meter: 1955-60, 1967 to date

Stability of Channel Regimes: Rather stable, no shifting adjustment for flow computation

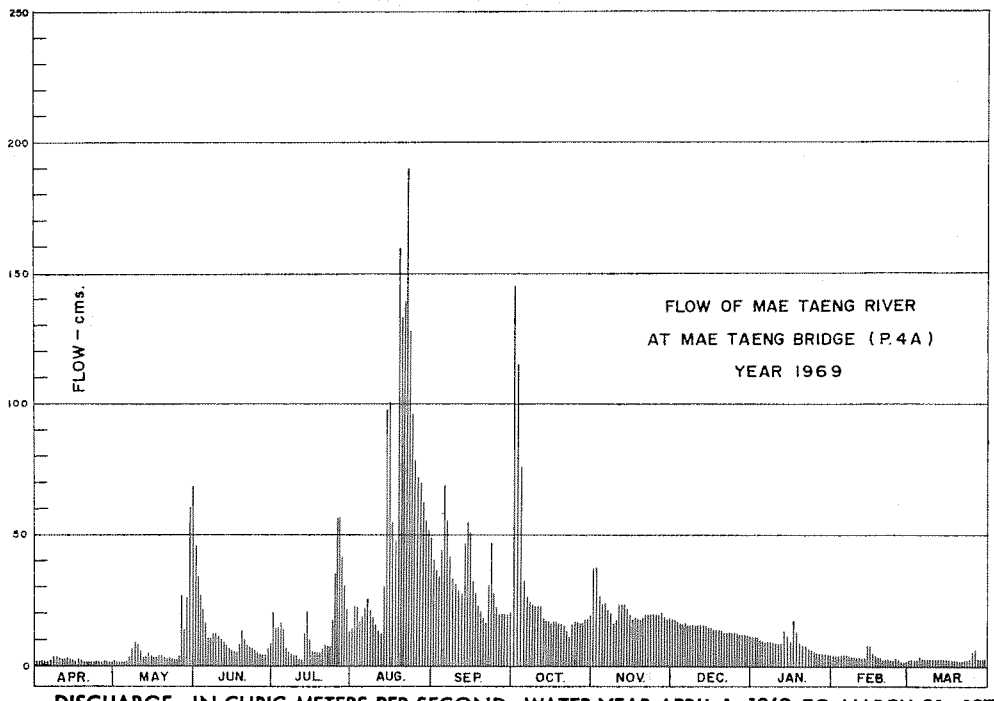
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage discharge relationship used is defined by discharge measurements made during 1969. Upstream State Diversions for irrigation of about 23,700 hectares at Mae Taeng Weir. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	333.83	333.86	335.18	334.59	334.42	335.04	334.74	334.92	334.53	334.35	334.13	334.04
2	.81	.85	334.91	.41	.64	334.94	335.75	.93	.52	.35	.12	.05
3	.82	.83	.71	.42	.64	.87	336.34	.94	.51	.33	.12	.04
4	.79	.79	.61	.49	.48	335.08	335.77	.76	.50	.32	.12	.04
5	.79	.79	.48	.43	.56	.45	.04	.67	.49	.31	.12	.08
6	333.78	333.78	334.30	334.16	334.61	335.29	334.75	334.66	334.50	334.31	334.12	334.05
7	.91	334.00	.30	.08	.69	.05	.69	.61	.49	.30	.12	.04
8	334.01	.17	.37	.02	.59	334.90	.65	.58	.49	.30	.11	.04
9	333.98	.24	.36	.01	.48	.83	.63	.51	.49	.29	.10	.06
10	.90	.22	.33	.00	.44	.84	.64	.54	.48	.28	.10	.05
11	333.87	334.10	334.31	333.89	334.40	334.71	334.63	334.66	334.48	334.28	334.09	334.04
12	.90	333.97	.24	.87	.33	.79	.63	.67	.48	.28	.09	.04
13	.94	.99	.18	334.30	.87	335.11	.51	.66	.47	.42	.08	.05
14	.91	334.05	.14	.59	335.81	.25	.48	.62	.47	.38	.25	.05
15	.87	.02	.10	.30	.87	.19	.48	.58	.46	.33	.25	.04
16	333.85	333.97	334.07	334.11	335.35	334.89	334.45	334.54	334.45	334.30	334.16	334.04
17	.87	.96	.07	.06	.13	.79	.47	.56	.44	.51	.13	.03
18	.84	.99	.18	.07	.73	.64	.47	.54	.43	.40	.09	.04
19	.84	334.02	.40	.05	336.48	.59	.46	.53	.42	.31	.09	.04
20	.83	333.97	.28	.10	.23	.53	.45	.55	.44	.27	.04	.03
21	333.83	333.92	334.20	334.20	336.29	334.48	334.43	334.59	334.41	334.25	334.05	334.04
22	.84	.93	.17	.18	.75	.78	.35	.58	.41	.23	.05	.04
23	.82	.93	.12	.17	.23	335.10	.31	.57	.40	.21	.04	.05
24	.83	.90	.10	.35	335.88	334.75	.45	.58	.40	.19	.05	.04
25	.84	.90	.07	.82	.63	.63	.47	.58	.39	.17	.07	.17
26	333.81	334.04	334.03	335.27	335.49	334.56	334.49	334.57	334.39	334.16	334.04	334.21
27	.82	.72	.03	.27	.49	.55	.46	.60	.38	.15	.03	.07
28	.84	.40	.03	.07	.43	.55	.48	.55	.38	.15	.01	.05
29	.82	.84	.15	334.88	.27	.55	.50	.54	.37	.14	-	.04
30	.77	335.32	.22	.68	.22	.55	.51	.54	.37	.14	-	.05
31	-	.45	-	.36	.16	-	.81	-	.36	.13	-	.05
Mean	333.85	334.13	334.29	334.36		334.84	334.69	334.62	334.44	334.27	334.10	334.05
Max.	334.01	335.45	335.18	335.27	336.75	335.45	336.34	334.94	334.53	334.51	334.25	334.21
Min.	333.77	333.78	334.03	333.87	334.33	334.48	334.31	334.51	334.36	334.13	334.01	334.03

WATER YEAR 1969 : Max. 336.75 m. Min. 333.77 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.56	1.92	51	21	15	43	28	37	18	11	4.54	2.20
2	1.32	1.80	36	15	23	38	91	37	18	11	4.26	2.45
3	1.44	1.56	26	15	23	34	145	38	17	11	4.26	2.20
4	1.12	1.12	22	17	17	45	90	28	17	10	4.26	2.20
5	1.12	1.12	17	15	20	69	43	24	16	9.94	4.26	3.20
6	1.04	1.04	11	7.44	22	58	28	24	17	9.44	4.26	2.45
7	2.56	4.00	11	5.60	26	44	26	21	16	9.60	4.26	2.20
8	4.20	7.68	13	4.40	21	36	24	20	16	9.60	3.98	2.20
9	3.68	9.52	13	4.20	17	32	23	17	16	9.29	3.70	2.70
10	2.40	8.96	12	4.00	16	33	23	18	16	8.98	3.70	2.45
11	2.06	6.00	11	2.28	14	26	23	24	16	8.98	3.45	2.20
12	2.40	3.52	9.52	2.04	12	30	23	24	16	8.98	3.45	2.20
13	3.04	3.84	7.92	11	34	47	18	24	16	14	3.20	2.45
14	2.56	5.00	6.96	21	96	56	17	22	16	12	8.05	2.45
15	2.04	4.40	6.00	11	101	52	17	20	15	11	8.05	2.20
16	1.80	3.52	5.40	6.24	62	35	16	18	15	9.60	5.38	2.20
17	2.04	3.36	5.40	5.20	48	30	17	19	14	17	4.54	1.95
18	1.68	3.84	7.92	5.40	90	23	17	18	14	13	3.45	2.20
19	1.68	4.40	14	5.00	160	21	16	18	14	9.94	3.45	2.20
20	1.56	3.52	11	6.00	134	19	16	19	14	8.67	2.20	1.95
21	1.56	2.72	8.40	8.40	140	17	15	20	13	8.05	2.45	2.20
22	1.68	2.88	7.68	7.92	190	30	13	20	13	7.43	2.45	2.20
23	1.44	2.88	6.48	7.68	134	47	11	20	13	6.81	2.20	2.45
24	1.56	2.40	6.00	13	102	28	16	20	13	6.22	2.45	2.20
25	1.68	2.40	5.40	32	82	23	17	20	13	5.66	2.95	5.66
26	1.32	4.80	4.60	57	72	20	17	20	13	5.38	2.20	6.81
27	1.44	27	4.60	57	72	20	16	21	12	5.10	1.95	2.95
28	1.68	14	4.60	45	68	20	17	19	12	5.10	1.45	2.45
29	1.44	33	7.20	35	57	20	18	18	12	4.82	–	2.20
30	0.96	60	8.96	25	54	20	18	18	12	4.82	–	2.45
31	–	69	–	13	50	–	31	–	12	4.54	–	2.45
Total	56.04	301.20	361.04	484.80	1,972	1,016	893	666	455	277.45	104.80	80.27
Mean	1.87	9.72	12.0	15.6	63.6	33.9	28.8	22.2	14.7	18.95	3.74	2.59
Max.	4.20	69	51	57	190	69	145	38	18	17	8.05	6.81
Min.	0.96	1.04	4.60	2.04	12	17	11	17	12	4.54	1.45	1.95
Runoff - MCM.	4.842	26.024	31.194	41.887	170.381	87.782	77.155	57.542	39.312	23.972	9.055	6.935

WATER YEAR 1969 : Max. 190 Min. 0.96 Mean 18.3 Annual Runoff 576.081 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 22	18.00	037.12	230				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

8

WATER YEAR 1969
PING RIVER BASIN

Mae Kuang River at Tha Sing Phitak Bridge, Lamphun (P_5)

Location: Lat. 18°-34'-32" N., Long. 99°-00'-44" E., on right bank about 10 meters downstream from Tha Sing Phithak Bridge, Amphoe Muang, Lamphun.

Drainage Area: 1,569 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 289.30 m. (M.S.L.)

Bench Mark: B.M. – H.S./R.I.D. No. 7

Location: On right bank near abutment of the bridge

Elevation: + 295.790 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1955 to date

Rating Operation:

Period of Rating: 1955-61, 1967 to date

Rated by Float:

Rated by Current Meter: 1955-61, 1967 to date

Stability of Channel Regimes: Stable, no shifting adjustment but periodic curves are used for flow computation.

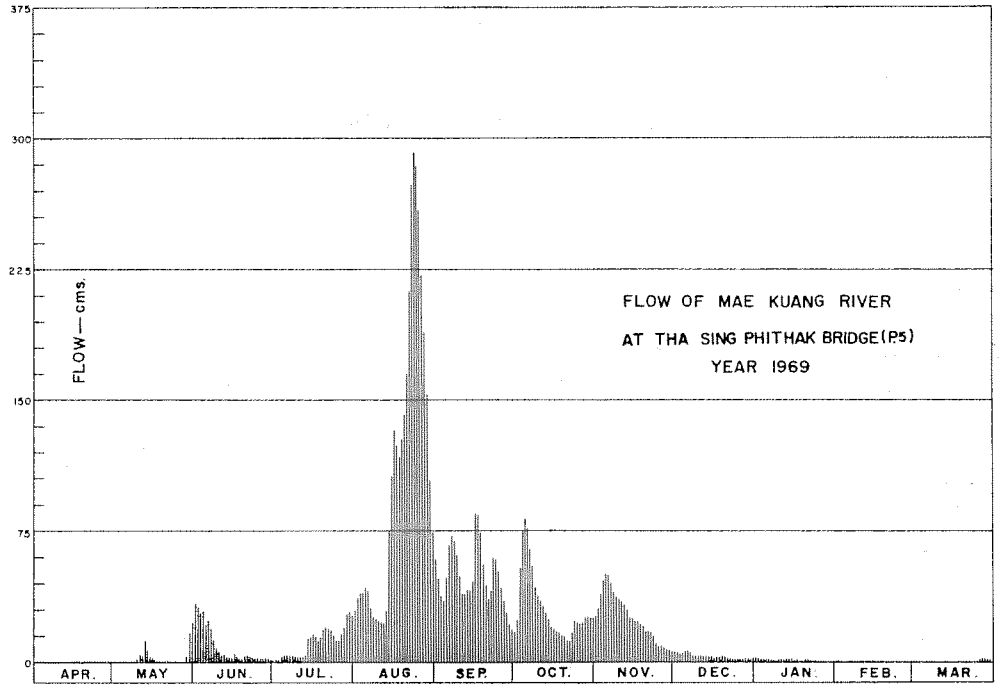
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurement made during 1969. Upstream State Diversions for irrigation of about 9,600 hectares at Mae Kuang Weir. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	289.36	289.37	290.63	289.52	290.52	291.21	290.15	290.44	289.80	289.54	289.35	289.24
2	.36	.37	.57	.52	.73	290.91	.46	.62	.77	.51	.35	.24
3	.36	.37	.48	.59	.79	.68	291.20	.82	.75	.50	.35	.22
4	.36	.37	.50	.75	.77	.63	.59	.99	.79	.49	.35	.22
5	.36	.37	.28	.79	.86	291.00	.69	291.03	.80	.50	.37	.24
6	289.36	289.37	290.35	289.82	290.77	291.42	291.53	290.97	289.79	289.48	289.40	289.25
7	.36	.37	.19	.81	.52	.52	.29	.88	.73	.46	.43	.27
8	.36	.37	.10	.78	.43	.40	.06	.75	.70	.51	.43	.26
9	.36	.38	.01	.76	.38	.22	290.78	.71	.70	.45	.42	.26
10	.36	.72	289.91	.74	.34	290.99	.70	.69	.67	.49	.42	.29
11	289.36	289.82	289.77	289.75	290.33	290.72	290.61	290.66	289.65	289.48	289.41	289.27
12	.36	.77	.79	.70	.34	.75	.55	.58	.66	.52	.40	.26
13	.36	290.11	.70	.87	.52	.83	.45	.47	.68	.54	.40	.28
14	.36	289.84	.65	290.14	291.42	.80	.33	.40	.64	.49	.40	.24
15	.36	.73	.65	.15	292.22	291.04	.23	.41	.62	.49	.42	.25
16	289.37	289.63	189.85	290.16	292.63	291.76	290.18	290.33	289.59	289.49	289.44	289.22
17	.37	.57	.62	.14	.47	.72	.16	.36	.61	.46	.43	.23
18	.37	.56	.59	.11	.36	.40	.12	.31	.61	.45	.37	.24
19	.37	.46	.62	.19	.58	.16	.09	.27	.63	.45	.35	.21
20	.37	.43	.79	.25	.89	290.87	.04	.20	.61	.48	.32	.18
21	289.37	289.42	289.80	290.25	293.22	290.68	289.99	290.20	289.59	289.48	289.31	289.19
22	.37	.43	.68	.23	294.10	.89	.98	.16	.50	.47	.31	.23
23	.37	.43	.65	.19	.73	291.23	290.19	.06	.48	.46	.29	.25
24	.37	.41	.66	.04	.92	.19	.37	289.97	.47	.44	.27	.29
25	.37	.40	.65	.00	.64	290.97	.33	.96	.49	.42	.25	.36
26	289.37	289.40	289.63	290.01	294.25	290.76	290.81	289.95	289.57	289.40	289.23	289.59
27	.37	.40	.59	.23	293.80	.57	.34	.90	.59	.39	.27	.59
28	.37	.50	.59	.24	.26	.41	.41	.85	.60	.39	.28	.52
29	.37	.93	.59	.49	292.55	.28	.43	.85	.58	.35	–	.49
30	.37	290.18	.56	.51	291.80	.18	.40	.81	.52	.35	–	.44
31	–	.35	–	.42	.51	–	.43	–	.50	.36	–	.38
Mean	289.36	289.57	289.88	290.00	292.02	290.97	290.53	290.39	289.63	289.46	289.36	289.30
Max.	289.37	290.35	290.63	290.51	294.92	291.76	291.69	291.03	289.80	289.54	289.44	289.59
Min.	289.36	289.37	289.56	289.52	290.33	290.18	289.98	289.81	289.47	289.35	289.23	289.18

WATER YEAR 1969 : Max. 294.92 m. Min. 289.18 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.38	0.41	34	1.12	30	59	17	27	6.20	2.28	0.60	0.12
2	0.38	0.41	32	1.12	38	45	27	34	5.66	1.92	0.60	0.12
3	0.38	0.41	28	1.54	40	36	58	42	5.30	1.80	0.60	0.060
4	0.38	0.41	29	3.25	40	34	77	49	6.02	1.71	0.60	0.060
5	0.38	0.41	21	3.77	43	49	82	51	6.20	1.80	0.72	0.12
6	0.38	0.41	24	4.26	40	68	74	48	6.02	1.62	0.90	0.15
7	0.38	0.41	18	4.08	30	73	62	44	4.94	1.44	1.17	0.21
8	0.38	0.41	12	3.64	26	68	52	39	4.40	1.92	1.17	0.18
9	0.38	0.44	8.54	3.38	25	59	40	37	4.40	1.35	1.08	0.18
10	0.38	2.86	5.95	3.12	23	49	37	36	3.98	1.71	1.08	0.27
11	0.38	4.26	3.51	3.25	23	38	33	35	3.70	1.62	0.99	0.21
12	0.38	3.51	3.77	2.60	23	39	31	32	3.84	2.04	0.90	0.18
13	0.38	12	2.60	5.16	30	42	27	28	4.12	2.28	0.90	0.24
14	0.38	4.62	2.10	14	68	41	23	25	3.56	1.71	0.90	0.12
15	0.38	2.99	2.10	15	109	51	19	26	3.28	1.71	1.08	0.15
16	0.41	1.90	4.80	16	133	85	18	23	2.88	1.71	1.26	0.060
17	0.41	1.42	1.80	14	123	83	17	24	3.14	1.44	1.17	0.090
18	0.41	1.36	1.54	12	117	68	16	22	3.14	1.35	0.72	0.12
19	0.41	0.80	1.80	18	130	56	15	21	3.42	1.35	0.60	0.030
20	0.41	0.65	3.77	20	148	44	14	18	3.14	1.62	0.42	0.00
21	0.41	0.60	3.90	20	168	36	12	18	2.88	1.62	0.36	0.00
22	0.41	0.65	2.40	19	228	44	12	17	1.80	1.53	0.36	0.090
23	0.41	0.65	2.10	18	276	60	18	13	1.62	1.44	0.27	0.15
24	0.41	0.55	2.20	14	291	58	24	9.95	1.53	1.26	0.21	0.27
25	0.41	0.50	2.10	12	268	48	23	9.70	1.71	1.08	0.15	0.66
26	0.41	0.50	1.90	13	239	39	22	9.45	2.64	0.90	0.090	2.88
27	0.41	0.50	1.54	19	206	32	23	8.20	2.88	0.84	0.21	2.88
28	0.41	1.00	1.54	20	170	26	26	7.20	3.00	0.84	0.24	2.04
29	0.41	6.45	1.54	29	128	21	26	7.20	2.76	0.60	–	1.71
30	0.41	17	1.36	29	87	18	25	6.40	2.04	0.60	–	1.26
31	–	24	–	26	73	–	26	–	1.80	0.66	–	0.78
Total	11.85	92.49	260.86	368.29	5,373	1,469	976	767.10	112.00	45.75	19.35	15.39
Mean	0.39	2.98	8.69	11.9	109	49.0	31.5	25.6	3.61	1.47	0.69	0.50
Max.	0.41	24	34	29	291	85	82	51	6.20	2.28	1.26	2.88
Min.	0.38	0.41	1.36	1.12	23	18	12	6.40	1.53	0.60	0.090	0.00
Runoff – MCM.	1.024	7.991	22.538	31.820	291.427	126.922	84.326	66.277	9.677	3.953	1.672	1.330

WATER YEAR 1969 : Max. 291 Min. 0.00 Mean 20.6 Annual Runoff 648.957 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 24	06.00	294.98	296				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

10

WATER YEAR 1969
PING RIVER BASIN

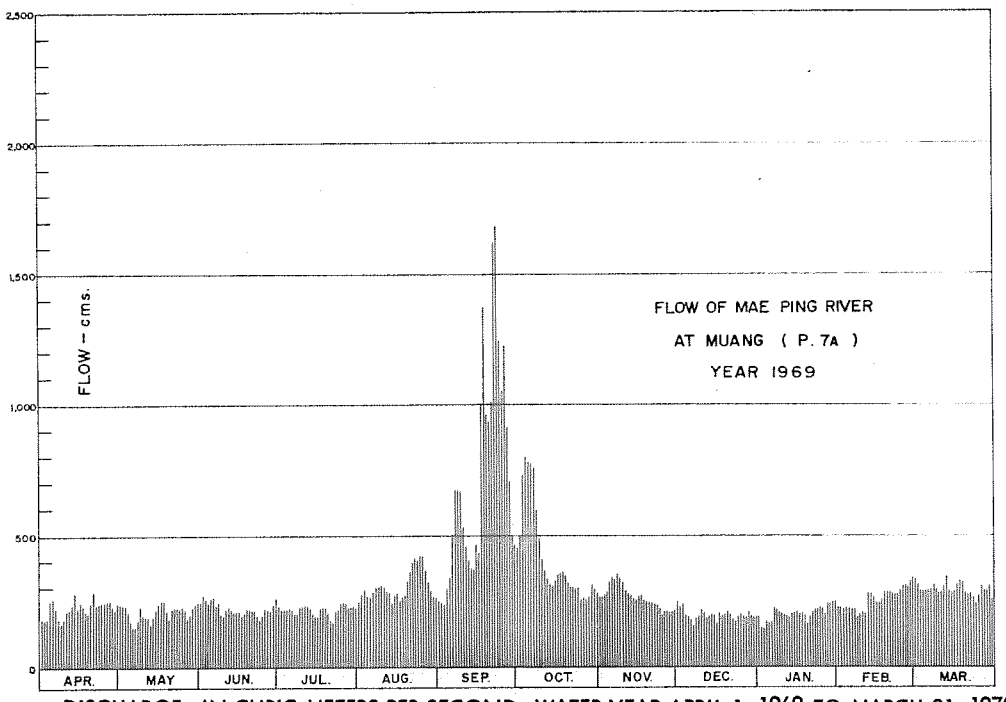
Mae Ping River at Muang Khamphaeng Phet (P_{7A})

Location:	Lat. 16°-28'-38" N., Long. 99°-31'-06" E., on right bank about 100 meters upstream from Khamphaeng Phet Bridge, at Ban Nakhon Chum, Amphoe Muang, Khamphaeng Phet.
Drainage Area:	42,700 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 72.00 m. (M.S.L.)
Bench Mark:	B.M. - H.S./R.I.D. No. 2
Location:	Near house of gage observer
Elevation:	+ 77.642 m. (M.S.L.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1960 to date
Rating Operation:	
Period of Rating:	1960-61, 1967 to date
Rated by Float:	
Rated by Current Meter:	1960-61, 1967 to date
Stability of Channel Regimes:	Unstable, shifting adjustment is included for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by Bhumiphol Dam reservoir and diverted for irrigation of about 40,300 hectares above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	73.91	73.99	74.14	74.12	74.06	74.18	74.78	74.08	74.02	73.84	74.05	74.32
2	.90	.99	.24	.07	.12	.14	.93	.07	73.94	.70	.05	.24
3	.92	74.02	.19	.05	.18	.12	75.43	.07	74.01	.67	.02	.16
4	74.16	73.93	.14	.05	.13	.33	.46	.10	73.85	.81	.04	.16
5	.20	.95	.21	.07	.02	.47	.41	.21	.85	.78	.03	.14
6	74.12	73.85	74.23	74.04	74.22	74.05	75.40	74.21	73.83	73.79	74.03	74.16
7	.01	.86	.12	.01	.14	.30	.36	.18	.74	.99	.02	.15
8	73.85	74.00	.17	73.95	.20	.28	.07	.23	.86	.95	73.91	.20
9	.86	.14	.00	74.05	.20	.25	74.82	.22	.87	.93	.96	.25
10	.98	73.99	73.97	.06	.22	74.99	.64	.21	.96	.91	.99	.09
11	74.03	73.95	74.07	74.05	74.21	74.78	74.50	74.11	73.93	73.90	73.95	74.09
12	.05	.96	.10	.04	.12	.61	.37	.08	.84	.89	74.23	.17
13	.13	.84	.06	.02	.26	.49	.28	.06	.88	.86	.22	.29
14	.27	.98	.03	73.95	.12	.43	.22	.03	.90	.93	.18	.13
15	.04	74.03	.02	.90	.23	.72	.28	.01	.90	.93	.12	.08
16	74.15	74.11	74.02	73.90	74.23	74.62	74.32	74.05	73.77	73.95	74.09	74.10
17	.09	.12	73.98	74.02	.16	75.45	.31	.11	.92	.91	.14	.19
18	.00	.12	74.03	.05	.19	76.41	.35	.03	.88	.93	.26	.24
19	73.99	73.97	.07	.06	.24	75.78	.30	.02	.91	.90	.23	.23
20	74.07	.84	.07	.02	.43	.59	.22	.02	.94	.78	.26	.09
21	74.19	73.99	74.05	73.89	74.53	75.75	74.15	74.03	73.91	73.94	74.23	74.06
22	.01	74.00	.06	.86	.63	76.65	.15	.01	.83	.99	.23	.08
23	.03	.01	73.99	74.00	.66	.74	.18	.03	.80	74.03	.21	73.99
24	.04	73.97	.91	73.98	.60	.19	.19	73.99	.88	.02	.22	.90
25	.04	74.00	74.01	74.05	.66	75.80	.04	.85	.91	.05	.26	.98
26	74.04	73.99	74.07	74.03	74.64	76.11	74.08	73.91	73.87	74.04	74.27	74.13
27	.09	.86	.05	.02	.49	75.86	.04	.91	.85	73.96	.21	.08
28	.06	.93	.04	73.93	.35	.40	.10	.88	.95	74.10	.28	.05
29	73.93	74.04	.12	.94	.23	.00	.22	.88	.89	.11	–	.11
30	74.03	.09	.23	.96	.23	74.82	.23	.91	.84	.13	–	.03
31	–	.14	–	.93	.21	–	.12	–	.86	.13	–	73.93
Mean	74.04	73.99	74.11	74.00	74.29	75.21	74.51	74.05	73.88	73.93	74.13	74.12
Max.	74.27	74.14	74.24	74.12	74.66	76.74	75.46	74.23	74.02	74.13	74.28	74.32
Min.	73.85	73.84	73.91	73.86	74.02	74.12	74.04	73.85	73.74	73.67	73.91	73.90

WATER YEAR 1969 : Max. 76.74 m. Min. 73.67 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	180	230	246	235	264	252	453	269	252	188	230	347
2	177	230	272	221	281	241	507	266	230	151	230	321
3	182	238	255	216	299	235	756	272	249	142	221	296
4	249	213	241	218	284	296	802	290	204	177	227	296
5	261	174	261	224	252	341	786	334	191	169	224	290
6	238	149	266	218	311	563	781	344	185	172	224	296
7	207	151	235	213	287	677	761	334	161	227	221	293
8	164	188	249	199	305	677	620	351	193	216	191	308
9	166	227	202	227	305	672	511	344	196	210	204	324
10	199	191	193	232	311	563	438	334	221	204	213	284
11	213	182	221	232	308	486	388	299	213	202	204	284
12	218	188	230	232	281	427	344	284	188	199	284	308
13	341	161	218	230	284	385	821	272	199	191	281	347
14	281	202	210	207	244	364	308	261	204	210	269	296
15	216	218	207	191	275	469	334	255	204	210	252	281
16	246	244	207	191	275	431	351	266	169	216	244	287
17	230	252	196	221	255	807	354	284	210	204	258	314
18	204	255	210	227	264	1,373	368	258	199	210	293	331
19	202	216	221	227	278	985	351	252	207	202	284	327
20	252	180	221	213	337	940	324	249	216	169	293	284
21	287	221	216	177	371	1,030	302	249	207	199	284	275
22	235	224	218	166	406	1,615	302	238	185	213	284	281
23	241	227	199	213	417	1,680	299	241	177	224	278	272
24	244	216	177	216	409	1,300	302	227	199	221	281	246
25	244	224	204	244	431	1,060	258	191	207	230	302	269
26	244	218	221	244	424	1,230	269	213	196	227	314	314
27	258	180	216	252	371	1,048	258	216	191	204	305	299
28	249	196	213	227	324	776	275	213	218	244	334	290
29	213	227	235	230	287	563	311	213	202	246	–	308
30	241	238	266	235	266	478	314	221	188	252	–	284
31	–	249	–	227	261	–	281	–	193	252	–	227
Total	6,782	6,509	6,726	6,805	9,667	21,964	13,029	8,040	6,254	6,381	7,229	9,179
Mean	226	210	224	219	312	732	420	268	208	206	258	296
Max.	287	255	272	252	431	1,680	802	351	252	252	334	347
Min.	164	149	177	166	244	235	258	191	161	142	191	227
Runoff - MCM.	585.965	562.378	581.126	587.952	835.229	1,897.690	1,125.706	694.656	540.346	551.318	624.586	793.066

WATER YEAR 1969 : Max. 1,680 Min. 142 Mean 297 Annual Runoff 9,380.016 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23	6.00	76.75	1,687				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

12

WATER YEAR 1969
PING RIVER BASIN

Mae Ping River at Wang Kra Chao, Tak (P_{12})

Location: Lat. 17°-14'-30" N., Long. 99°-00'-45" E., on right bank about 4 kilometers downstream from Yanhee Reservoir, at Wang Kra Chao, Amphoe Sam Ngao, Tak.

Drainage Area: 26,396 sq.km.

Type of Gage: Water-Stage recorder

Zero Gage at Bottom at: + 135.192 m. (M.S.L.)

Bench Mark: B.M. - H.S./R.I.D.

Location: 25 meters north of the gage site

Elevation: + 143.825 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1952 to date

Rating Operation:

Period of Rating: 1952 to date
Rated by Float: -
Rated by Current Meter: 1952 to date

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation

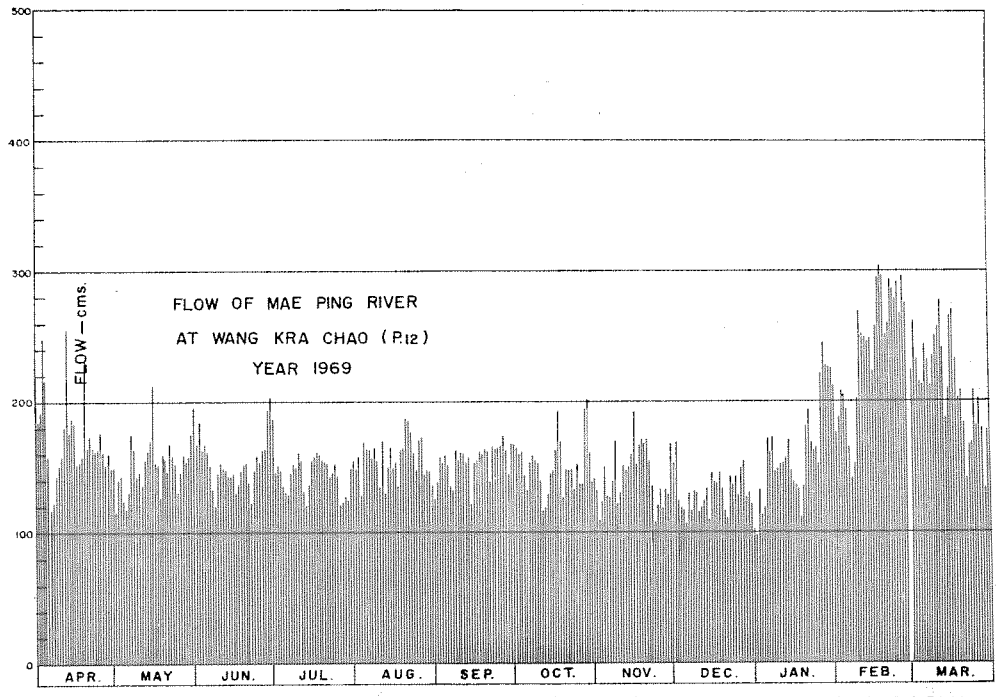
Overbank Flow Conditions: No overbank flow

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by Bhumiphol Dam reservoir, and State Diversions for irrigation of about 28,000 hectares. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	135.93	135.52	135.82	135.72	135.74	135.71	135.83	135.63	135.86	135.37	135.87	136.09
2	.93	.71	.93	.76	.80	.80	.81	.44	.56	.65	.97	.24
3	136.19	.72	.82	.74	.63	.77	.82	.59	.56	.51	136.03	.11
4	135.90	.57	.85	.67	.86	.81	.72	.76	.55	.57	.01	.05
5	.79	.55	.81	.63	.83	.76	.60	.62	.40	.87	135.93	.05
6	135.54	135.67	135.74	135.64	135.83	135.66	135.78	135.62	135.64	135.82	135.72	136.17
7	.57	.89	.64	.74	.80	.65	.81	.71	.51	.88	.70	.12
8	.74	.82	.54	.77	.84	.83	.79	.86	.65	.74	.81	.03
9	.78	.71	.74	.75	.75	.79	.78	.57	.64	.75	136.07	.15
10	.81	.74	.78	.82	.64	.82	.71	.66	.52	.77	.27	.20
11	135.94	135.60	135.75	135.78	135.86	135.81	135.54	135.76	135.57	135.77	136.19	136.22
12	136.22	.79	.75	.63	.58	.78	.57	.74	.60	.79	.19	.30
13	135.89	.83	.72	.57	.78	.80	.66	.77	.66	.87	.18	.03
14	.94	.84	.72	.73	.84	.54	.73	.83	.42	.71	.19	135.92
15	.92	136.05	135.73	.79	.75	.79	.75	.96	.73	.70	.05	136.07
16	135.77	135.78	136.64	135.81	135.78	135.79	135.86	135.73	135.69	135.68	136.26	136.25
17	.79	.77	.70	.82	.65	.82	.96	.85	.69	.66	.37	.27
18	.81	.57	.75	.80	.83	.81	.79	.87	.74	.47	.40	.08
19	136.13	.81	.77	.59	.84	.83	.60	.85	.61	.70	.36	.00
20	135.83	.79	.78	.57	.94	.82	.75	.87	.55	.91	.19	.03
21	135.88	135.74	135.67	135.77	135.93	135.65	135.74	135.75	135.48	135.97	136.24	135.89
22	.88	.85	.57	.71	.88	.84	.75	.66	.72	.83	.36	.66
23	.82	.77	.75	.75	.78	.83	.64	.45	.68	.83	.32	.85
24	.83	.78	.81	.78	.73	.84	.77	.55	.72	.84	.30	.86
25	.90	.61	.77	.71	.87	.85	.68	.65	.62	.74	.35	136.03
26	135.79	135.76	135.83	135.56	135.88	135.88	135.69	135.53	135.76	136.08	136.25	135.89
27	.76	.81	.82	.60	.72	.83	.97	.65	.79	.18	.37	136.00
28	.82	.78	.97	.62	.75	.69	136.00	.59	.60	.10	.28	135.89
29	.75	.81	136.01	.60	.74	.85	135.81	.85	.64	.12	-	.58
30	.76	.93	135.94	135.76	.68	.85	.69	.76	.57	.10	-	.88
31	-	.98	-	.79	.61	-	.71	-	.39	.02	-	136.01
Mean	135.85	135.76	135.77	135.71	135.78	135.78	135.75	135.70	135.62	135.81	136.15	136.03
Max.	136.22	136.05	136.01	135.82	135.94	135.85	136.00	135.96	135.86	136.18	136.40	136.27
Min.	135.54	135.52	135.54	135.56	135.58	135.54	135.54	135.44	135.39	135.37	135.70	135.58

WATER YEAR 1969 : Max. 136.40 m. Min. 135.37 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	184	114	161	143	146	141	163	129	169	98	171	223
2	184	141	184	150	157	157	159	104	119	132	194	261
3	248	143	161	146	129	152	161	123	119	112	208	228
4	177	120	167	134	169	159	143	150	117	120	203	213
5	155	117	159	129	163	150	124	127	100	171	184	213
6	116	134	146	130	163	133	153	127	130	161	143	243
7	120	175	130	146	157	132	159	141	112	173	139	230
8	146	161	116	152	165	163	155	169	132	146	159	208
9	155	141	146	148	148	155	153	120	130	148	218	238
10	159	146	153	161	130	161	141	133	114	152	269	250
11	187	124	148	153	169	159	116	150	120	152	248	256
12	256	155	148	129	121	153	120	146	124	155	248	277
13	175	163	143	120	153	157	133	152	133	171	245	208
14	187	165	143	145	165	116	145	163	102	141	248	182
15	182	213	145	155	148	155	148	192	145	139	213	218
16	151	153	130	159	153	155	169	145	138	136	266	264
17	155	152	139	161	132	161	192	167	138	133	296	269
18	159	120	148	157	163	159	155	171	146	108	304	221
19	233	159	152	123	165	163	124	167	125	139	293	201
20	163	155	153	120	187	161	148	171	117	180	248	208
21	173	146	134	152	184	132	146	148	109	194	261	175
22	163	167	120	141	173	165	148	133	143	163	293	133
23	161	152	148	148	153	163	130	105	136	163	282	167
24	163	153	159	153	145	165	152	117	143	165	277	169
25	177	125	152	141	171	167	136	132	127	146	291	208
26	155	150	163	119	173	173	138	115	150	221	264	175
27	150	159	161	124	143	163	194	132	155	245	296	201
28	161	153	194	127	148	138	201	123	124	225	272	175
29	148	159	203	124	146	167	159	167	130	230	–	121
30	150	184	187	150	136	167	138	150	120	225	–	173
31	–	196	–	155	125	–	141	–	99	206	–	203
Total	5,091	4,695	4,593	4,395	4,780	4,642	4,644	4,269	3,966	5,050	6,733	6,511
Mean	170	151	153	142	154	155	150	142	128	163	240	210
Max.	256	213	203	161	187	173	201	192	169	245	304	277
Min.	116	114	116	119	121	116	116	104	99	98	139	121
Runoff - mcm.	439.882	405.648	396.835	379.728	412.992	401.069	401.242	368.841	342.662	436.320	581.731	562.550

WATER YEAR 1969 : Max. 304 Min. 98 Mean 163 Annual Runoff 5,129.481 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Feb. 27	21.00	136.68	384				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

14

WATER YEAR 1969
PING RIVER BASIN

Mae Taeng River at Kaeng Kut, Chiang Mai (P_{13})

Location: Lat. 19°-12'-38" N., Long. 98°-52'-20" E., on left bank about 1 kilometer downstream from Ban Kut, Amphoe Mae Taeng, Chiang Mai.

Drainage Area: 1,765 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 441.31 m. (M.S.L.)

Bench Mark: B.M.-R.I.D. No. 6

Location: Near the gage site

Elevation: + 444.360 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1952 to date

Rating Operation:

Period of Rating: 1952 – 71
Rated by Float: –
Rated by Current Meter: 1952-71

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation

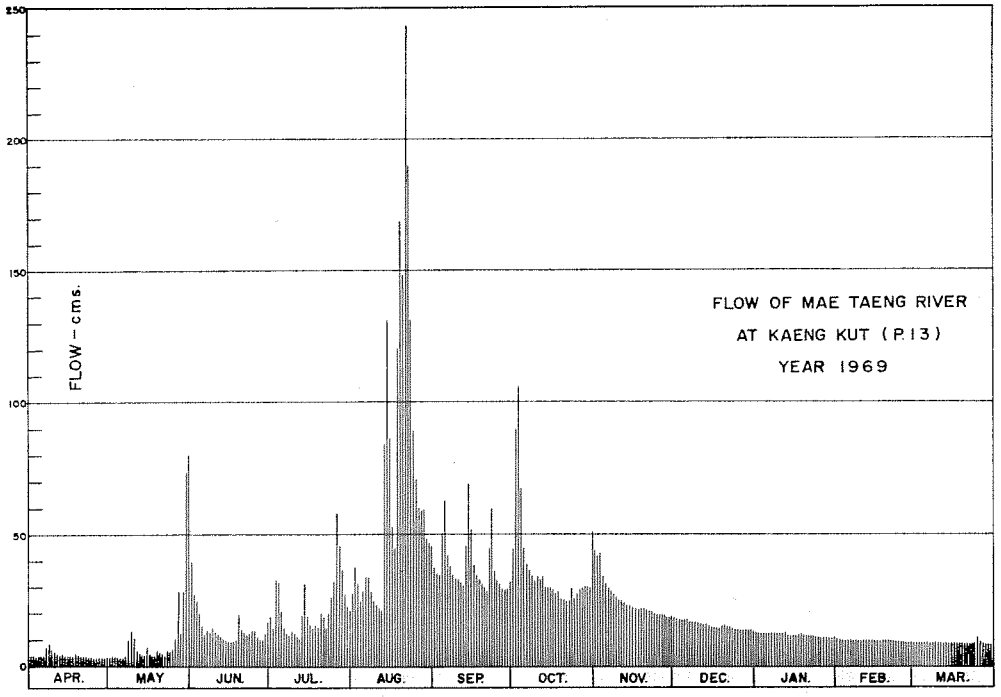
Overbank Flow Conditions: * No overbank flow

General Desctiption: Records fair. Stage-discharge relationshp used is defined by discharge measurements made during 1969. No upstream State Diversions for irrigation except those built by local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	44.87	441.86	442.66	442.23	442.40	442.73	442.79	442.83	442.26	442.08	441.97	441.87
2	.87	.88	.40	.17	.55	.69	443.28	.79	.25	.07	.96	.87
3	.87	.87	.35	.47	.45	.67	.43	.80	.24	.07	.96	.86
4	.87	.86	.28	.46	.35	.89	.10	.70	.24	.07	.96	.86
5	.87	.86	.17	.27	.42	443.05	442.87	.64	.23	.06	.95	.86
6	441.87	441.85	442.11	442.18	442.49	442.85	442.76	442.59	442.82	442.06	441.95	441.85
7	.97	.89	.14	.12	.49	.74	.71	.56	.81	.06	.95	.85
8	442.01	442.05	.13	.10	.43	.70	.67	.53	.20	.06	.94	.85
9	441.94	.14	.16	.15	.35	.66	.64	.50	.19	.06	.94	.84
10	.92	.08	.13	.12	.32	.63	.68	.47	.19	.05	.94	.84
11	441.90	441.96	442.11	442.09	442.31	442.63	442.63	442.45	442.18	442.05	441.93	441.84
12	.89	.92	.09	.07	.30	.60	.68	.43	.17	.07	.93	.84
13	.90	.89	.07	.28	.64	.85	.61	.41	.16	.05	.93	.83
14	.88	.89	.06	.44	443.58	443.11	.57	.40	.16	.03	.93	.83
15	.88	.99	.04	.25	.20	442.96	.57	.40	.15	.03	.92	.83
16	441.88	441.92	442.04	442.19	442.77	442.78	442.59	442.38	442.14	442.03	441.92	441.83
17	.88	.93	.04	.17	.64	.69	.54	.37	.14	.04	.92	.83
18	.89	.91	.07	.19	443.24	.64	.55	.36	.14	.06	.91	.83
19	.88	.94	.25	.17	.92	.62	.50	.39	.17	.03	.91	.82
20	.86	.94	.15	.25	.73	.58	.48	.36	.16	.02	.91	.82
21	441.86	441.92	442.12	442.23	443.92	442.56	442.46	442.34	442.15	442.02	441.90	441.82
22	.86	.90	.11	.17	444.50	.89	.47	.32	.13	.01	.90	.81
23	.85	.95	.13	.27	443.68	443.02	.59	.32	.12	.01	.90	.82
24	.85	.94	.14	.40	.34	442.73	.49	.31	.11	.00	.89	.87
25	.85	.97	.13	.45	.16	.63	.54	.31	.10	.00	.88	.99
26	441.84	442.10	442.08	442.81	443.03	442.60	442.58	442.30	442.10	441.99	441.88	441.89
27	.86	.40	.06	.68	.01	.58	.58	.29	.10	.99	.87	.85
28	.85	.12	.06	.59	.02	.56	.61	.28	.09	.98	.87	.83
29	.85	.38	.15	.43	442.89	.58	.60	.27	.09	.98	–	.82
30	.87	.99	.22	.33	.87	.63	.57	.26	.09	.98	–	.81
31	–	443.07	–	.27	.84	–	.92	–	.09	.97	–	.80
Mean	441.88	442.04	442.15	442.29	442.90	442.73	442.68	442.44	442.16	442.03	441.92	441.84
Max.	442.01	443.07	442.66	442.81	444.50	443.11	443.43	442.83	442.26	442.08	441.97	441.99
Min.	441.84	441.85	442.04	442.07	442.30	442.56	442.46	442.26	442.09	441.97	441.87	441.80

WATER YEAR 1969 : Max. 444.50 m. Min. 441.84 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	3.60	3.30	46	19	28	38	42	45	19	13	11	8.40
2	3.60	3.90	28	15	38	36	88	42	18	13	10	8.40
3	3.60	3.60	25	33	32	35	106	43	18	13	10	8.20
4	3.60	3.30	21	32	25	49	68	36	18	13	10	8.20
5	3.60	3.30	15	21	30	63	48	33	18	13	10	8.20
6	3.60	3.00	12	16	34	46	40	30	18	13	10	8.00
7	6.95	4.20	14	13	34	39	37	29	17	13	10	8.00
8	8.40	10	13	12	30	36	35	28	17	13	10	8.00
9	5.90	14	15	14	25	34	33	26	17	13	10	7.80
10	5.20	11	13	13	24	33	35	25	17	13	10	7.80
11	4.50	6.60	12	12	23	33	33	25	16	13	9.75	7.80
12	4.20	5.20	12	11	22	31	35	24	16	13	9.75	7.80
13	4.50	4.20	11	21	45	46	31	23	16	13	9.75	7.60
14	3.90	4.20	10	31	131	69	30	23	16	12	9.75	7.60
15	3.90	7.65	9.60	20	92	55	30	23	15	12	9.50	7.60
16	3.90	5.20	9.60	16	55	42	30	22	15	12	9.50	7.60
17	3.90	5.55	9.60	15	45	36	28	22	15	12	9.50	7.60
18	4.20	4.85	11	16	96	33	29	22	15	12	9.25	7.60
19	3.90	5.90	20	15	169	32	26	23	16	12	9.25	7.40
20	3.30	5.90	14	20	148	30	26	22	16	12	9.25	7.40
21	3.30	5.20	13	19	169	29	25	21	15	12	9.00	7.40
22	3.30	4.50	12	15	243	49	25	21	15	12	9.00	7.20
23	3.00	6.25	13	21	139	60	30	21	15	12	9.00	7.40
24	3.30	5.90	14	28	95	38	26	20	14	11	8.80	8.40
25	3.30	6.95	13	32	74	33	28	20	14	11	8.60	11
26	2.70	12	11	58	61	31	30	20	14	11	8.60	8.80
27	3.30	28	10	48	59	30	30	20	14	11	8.40	8.00
28	3.00	13	10	41	60	29	31	19	14	11	8.40	7.60
29	3.00	27	14	30	49	30	31	19	14	11	–	7.40
30	3.60	73	18	24	48	33	30	19	14	11	–	7.20
31	–	80	–	21	46	–	52	–	14	11	–	7.00
Total	119.45	376.65	448.80	702	2,169	1,178	1,168	766	490	378	266.05	244.40
Mean	3.98	12.1	15.0	22.6	27.1	39.3	37.7	25.5	15.8	12.2	9.50	7.88
Max.	8.40	80	46	58	243	69	106	45	19	13	11	11
Min.	2.70	3.00	9.60	11	22	29	25	19	14	11	8.40	7.00
Runoff – mcm.	10.320	32.542	38.776	60.653	187.402	101.779	100.915	66.182	42.336	32.659	22.987	21.116

WATER YEAR 1969 : Max. 243 Min. 2.70 Mean 22.7 Annual Runoff 717.720 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 22	12.00	444.88	297				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

16

WATER YEAR 1969
PING RIVER BASIN

Mae Chaem at Kaeng Ob Luang, Chiang Mai (P14)

Location: Lat. 18°-13'-49" N., Long. 98°-33" N., Long. 98°-33'-35" E., on right bank near the bridge on Hod-Mae Sariang highway at Kilometer marker 7.500, Amphoe Hod, Chiang Mai.

Drainage Area: 3,853 sq.km.

Type of Gage: Water-Stage recorder

Zero Gage at Bottom at: + 275.844 m. (M.S.L.)

Bench Mark: B.M.-H.S./R.I.D. No. 13

Location: Infront of the office of station P. 14

Elevation: + 282.079 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1953 to date

Rating Operation:

Period of Rating: 1953-60, 1968 to date

Rated by Float: -

Rated by Current Meter: 1953-60, 1968 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation

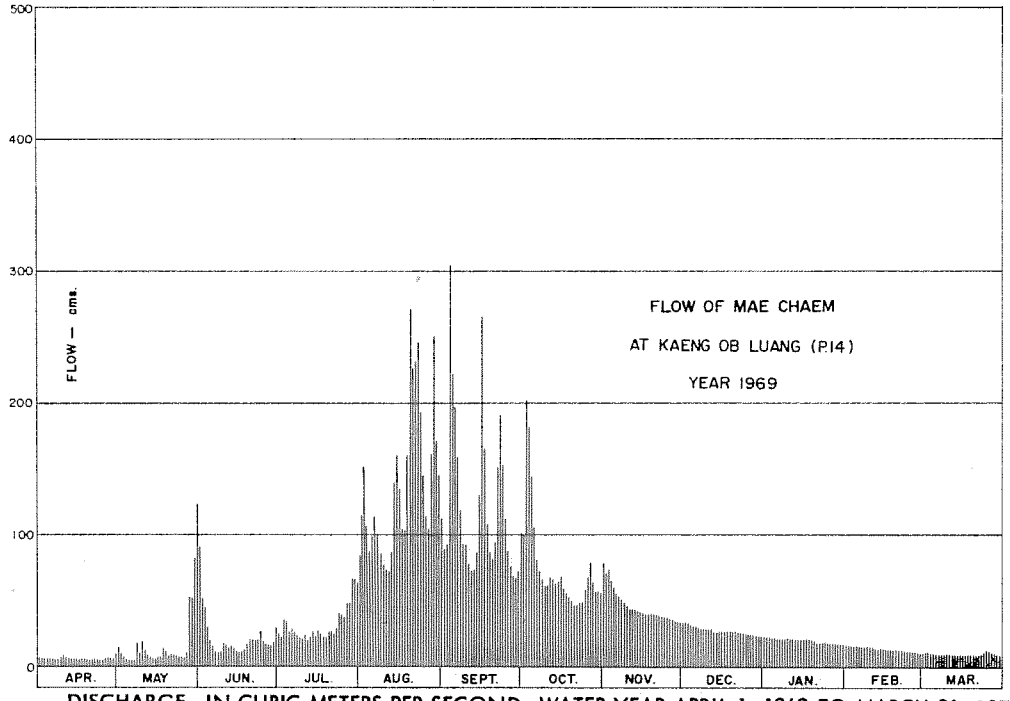
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State Diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	276.80	276.99	277.74	277.15	277.83	277.97	277.93	277.73	277.28	277.13	277.02	276.91
2	.80	.90	.47	.13	278.30	.82	.92	.65	.27	.13	.02	.91
3	.79	.83	.39	.30	277.94	.86	278.62	.69	.26	.13	.01	.91
4	.79	.79	.13	.27	.77	279.17	.47	.64	.25	.12	.01	.90
5	.79	.78	.03	.16	.86	278.65	.10	.56	.25	.11	.01	.90
6	276.79	276.76	276.97	277.21	278.03	278.56	277.86	277.53	277.24	277.11	277.01	276.90
7	.79	.77	.91	.19	277.94	.25	.74	.48	.23	.11	.00	.90
8	.79	277.04	.92	.14	.87	277.98	.66	.46	.23	.11	276.99	.89
9	.81	276.88	.94	.11	.78	.85	.61	.44	.21	.11	.99	.89
10	.86	277.07	277.05	.10	.70	.86	.57	.41	.21	.11	.99	.89
11	276.83	276.95	277.02	277.15	277.69	277.72	277.57	277.39	277.21	277.10	276.99	276.88
12	.82	.88	276.98	.08	.67	.67	.64	.39	.21	.10	.98	.87
13	.81	.83	277.01	.13	.89	.69	.61	.39	.19	.09	.97	.87
14	.81	.82	276.97	.18	278.33	.82	.56	.37	.19	.09	.97	.87
15	.81	.80	.92	.13	.35	278.21	.61	.37	.19	.08	.97	.87
16	276.79	276.85	276.89	277.19	278.07	278.97	277.65	277.35	277.19	277.09	276.96	276.87
17	.80	.83	.93	.15	277.88	.33	.54	.34	.19	.09	.95	.86
18	.80	.99	.96	.12	.96	277.98	.51	.35	.19	.09	.95	.86
19	.78	.93	277.05	.11	278.50	.80	.49	.35	.19	.08	.95	.86
20	.77	.86	.09	.18	279.00	.75	.45	.35	.19	.07	.95	.85
21	276.77	276.88	277.09	277.19	278.70	277.90	277.42	277.33	277.18	277.05	276.95	276.85
22	.77	.85	.08	.14	.80	278.51	.42	.33	.18	.05	.95	.85
23	.77	.86	.10	.21	.87	.55	.44	.32	.17	.06	.94	.88
24	.76	.84	.19	.36	.49	.23	.44	.32	.17	.06	.94	.92
25	.75	.83	.07	.33	.18	277.92	.54	.31	.16	.05	.93	.95
26	276.79	276.82	277.05	277.29	277.98	277.78	277.63	277.31	277.15	277.05	276.93	276.94
27	.81	.94	.04	.44	.92	.71	.74	.30	.15	.05	.92	.90
28	.83	277.49	.02	.45	278.49	.64	.58	.29	.14	.04	.92	.88
29	.80	.47	.07	.63	.89	.63	.53	.29	.14	.04	–	.87
30	.88	.68	.22	.63	.34	.69	.54	.28	.14	.04	–	.86
31	–	278.09	–	.58	.17	–	.51	–	.14	.03	–	.85
Mean	276.80	276.98	277.08	277.24	278.17	278.05	277.67	277.41	277.20	277.08	276.97	276.88
Max.	276.88	278.09	277.74	277.63	279.00	279.17	278.62	277.73	277.28	277.13	277.02	276.95
Min.	276.75	276.76	276.89	277.08	277.67	277.63	277.42	277.28	277.14	277.03	276.92	276.85

WATER YEAR 1969 : Max. 279.17 m. Min. 276.75 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	6.50	15	79	25	90	107	102	78	34	23	17	11
2	6.50	10	51	23	152	88	100	69	34	23	17	11
3	6.15	7.70	44	36	103	93	203	74	33	23	16	11
4	6.15	6.15	23	34	83	305	178	68	32	23	16	10
5	6.15	5.80	17	25	93	208	124	60	32	22	16	10
6	6.15	5.10	14	29	114	193	93	57	31	22	16	10
7	6.15	5.45	11	25	103	145	79	52	30	22	15	10
8	6.15	18	11	24	94	108	71	50	30	22	15	10
9	6.90	9.70	12	22	84	92	65	49	29	22	15	10
10	8.90	20	18	21	75	93	61	46	29	22	15	10
11	7.70	13	17	25	74	77	61	44	29	21	15	9.70
12	7.30	9.70	14	20	72	72	68	44	29	21	14	9.30
13	6.90	7.70	16	23	97	74	65	44	27	21	14	9.30
14	6.90	7.00	14	27	157	88	60	42	27	21	14	9.30
15	6.90	6.50	11	23	160	139	65	42	27	20	14	9.30
16	6.15	8.50	10	27	120	265	69	40	27	21	13	9.30
17	6.50	7.70	12	25	96	157	58	40	27	21	13	8.90
18	6.50	15	13	23	105	108	55	40	27	21	13	8.90
19	5.80	12	18	22	183	86	53	40	27	20	13	8.90
20	5.45	8.90	21	27	271	80	49	40	27	20	13	8.50
21	5.45	9.70	21	27	216	98	47	39	27	18	13	8.50
22	5.45	8.50	20	24	233	185	47	39	27	18	13	8.50
23	5.45	8.90	21	29	246	191	49	38	26	19	12	9.70
24	5.10	8.10	27	41	181	142	49	38	26	19	12	11
25	4.75	7.70	20	39	135	100	58	37	25	18	12	13
26	6.15	7.30	18	35	108	84	67	37	25	18	12	12
27	6.90	12	18	49	100	76	79	36	25	18	11	10
28	7.70	53	17	49	181	68	62	35	24	18	11	9.70
29	6.50	51	20	67	250	67	57	35	24	18	–	9.30
30	9.70	73	30	67	158	74	58	35	24	18	–	8.90
31	–	123	–	62	134	–	55	34	24	17	–	8.50
Total	194.95	561.40	638	995	4,268	3,663	2,307	1,387	865	630	390	303.50
Mean	6.50	18.1	21.3	32.1	138	122	74.4	46.2	27.9	20.3	13.9	9.79
Max.	9.70	123	79	67	271	305	203	78	34	23	17	13
Min.	4.75	5.10	10	20	72	67	47	34	24	17	11	8.50
Runoff – MCM.	16.844	48.505	55.123	85.968	368.755	316.483	199.325	119.837	74.736	54.432	33.696	26.222

WATER YEAR 1969 : Max. 305 Min. 4.75 Mean 44.4 Annual Runoff 1,399.926 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 29	10.00	279.81	449				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

18

WATER YEAR 1969
PING RIVER BASIN

Mae Ping River at Amphoe Khlong Khlung, Kamphaeng Phet (P_{15})

Location: Lat. 16°-12'-50" N., Long. 99°-43'-26" E., on right bank infront of Wat Si Phirom, Amphoe Khlong Khlung, Kamphaeng Phet.

Drainage Area: 43,805 sq.km.

Type of Gage: Staff gage

Zero Gate at Bottom at: + 51.555 m. (M.S.L.)

Bench Mark: B.M. 2 - H.S.

Location: Near staff gage site

Elevation: + 56.442 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 00.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1954-59, 1962 to date

Rating Operation:

Period of Rating: 1967 to date

Rated by Float: -

Rated by Current Meter: 1967 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation

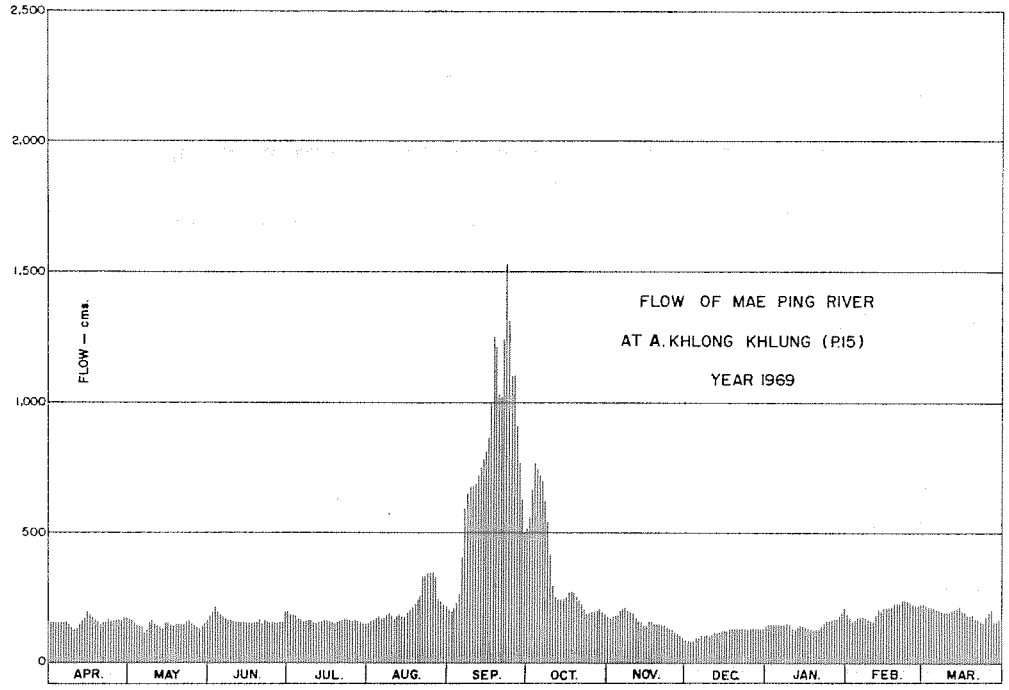
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1968-1969. Flow regulated by Bhumiphol Dam reservoir. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	53.65	53.69	53.75	53.81	53.65	53.83	54.73	53.73	53.35	53.00	53.80	53.90
2	.65	- .69	.80	.75	.67	.80	.82	.70	.35	.60	.75	.87
3	.65	.63	.85	.75	.70	.85	55.16	.73	.35	.60	.65	.87
4	.65	.63	.80	.75	.72	.90	.31	.75	.35	.60	.70	.85
5	.65	.60	.75	.70	.75	54.02	.25	.75	.40	.60	.73	.85
6	53.65	53.60	53.73	53.70	53.70	54.45	55.21	53.80	53.40	53.60	53.73	53.83
7	.65	.50	.70	.65	.72	.98	.16	.82	.45	.60	.73	.83
8	.62	.55	.70	.67	.75	55.07	54.96	.85	.45	.60	.70	.81
9	.55	.65	.68	.67	.78	.10	.68	.80	.45	.63	.70	.81
10	.53	.71	.65	.70	.73	.10	.46	.80	.45	.63	.65	.80
11	53.55	53.63	53.67	53.65	53.70	55.13	54.12	53.75	53.47	53.55	53.65	53.80
12	.65	.60	.67	.65	.75	.19	53.97	.72	.49	.55	.75	.82
13	.65	.60	.67	.67	.77	.26	.95	.70	.49	.60	.83	.82
14	.73	.55	.65	.67	.73	.33	.95	.65	.50	.60	.80	.85
15	.80	.65	.65	.69	.75	.41	.96	.60	.52	.60	.85	.85
16	53.75	53.65	53.65	53.70	53.79	55.52	54.00	53.55	53.52	53.58	53.85	53.79
17	.72	.62	.65	.68	.82	.85	.04	.65	.52	.55	.85	.79
18	.70	.62	.65	.65	.85	56.29	.06	.65	.55	.55	.87	.75
19	.65	.63	.65	.65	.90	.20	.04	.63	.55	.55	.90	.75
20	.63	.63	.70	.68	.95	55.84	.00	.63	.55	.55	.90	.75
21	53.65	53.63	53.65	53.70	54.02	55.82	53.95	53.61	53.55	53.55	53.92	53.70
22	.65	.63	.69	.70	.22	56.42	.85	.61	.55	.60	.95	.70
23	.70	.67	.67	.72	.22	.81	.80	.60	.55	.65	.95	.68
24	.68	.68	.65	.70	.25	.51	.75	.58	.55	.67	.93	.65
25	.68	.63	.65	.70	.25	55.97	.79	.55	.55	.70	.91	.73
26	53.70	53.60	53.65	53.68	54.27	56.00	53.79	53.55	53.55	53.70	53.90	53.78
27	.70	.57	.65	.70	.16	55.50	.81	.50	.55	.70	.90	.83
28	.68	.55	.65	.67	53.95	.31	.81	.45	.55	.71	.87	.67
29	.74	.60	.66	.66	.92	54.95	.83	.45	.55	.75	-	.67
30	.72	.63	.80	.65	.90	.66	.80	.38	.55	.80	-	.70
31	-	.68	-	.63	.85	-	.75	-	.55	.85	-	.75
Mean	53.66	53.62	53.69	53.68	53.87	55.33	54.25	53.65	53.49	53.62	53.81	53.78
Max.	53.80	53.71	53.85	53.81	54.27	56.81	55.31	53.85	53.55	53.85	53.95	53.90
Min.	53.53	53.50	53.65	53.63	53.65	53.80	53.75	53.38	53.35	53.55	53.75	53.65

WATER YEAR 1969 : Max. 56.81 m. Min. 53.35 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	154	164	181	199	154	205	520	175	86	142	196	226
2	154	164	196	181	159	196	556	166	86	142	181	217
3	154	149	211	181	166	211	698	175	86	142	154	217
4	154	149	196	181	172	226	764	181	86	142	166	211
5	154	142	181	166	181	263	738	181	96	142	175	211
6	154	142	175	166	166	414	720	196	96	142	175	205
7	154	118	166	154	172	620	698	202	107	142	175	205
8	147	130	166	159	181	659	612	211	107	142	166	199
9	130	154	161	159	190	672	500	196	107	149	166	199
10	125	169	154	166	175	672	418	196	107	149	154	196
11	130	149	159	154	166	685	297	181	111	130	154	196
12	154	142	159	154	181	712	247	172	116	130	181	202
13	154	142	159	159	187	742	241	166	116	142	205	202
14	175	130	154	159	175	774	241	154	118	142	196	211
15	196	154	154	164	181	811	244	142	123	142	211	211
16	181	154	154	166	193	862	256	130	123	137	211	193
17	172	147	154	161	202	1,025	270	154	123	130	211	193
18	166	147	154	154	211	1,247	277	154	130	130	217	181
19	154	149	154	154	226	1,200	270	149	130	130	226	181
20	149	149	166	161	241	1,020	256	149	130	130	226	181
21	154	149	154	166	263	1,010	241	144	130	130	232	166
22	154	149	164	166	331	1,317	211	144	130	142	241	166
23	146	159	159	172	331	1,527	196	142	130	154	241	161
24	161	161	154	166	342	1,365	181	137	130	159	235	154
25	161	149	154	166	342	1,085	193	130	130	166	229	175
26	166	142	154	161	349	1,100	193	130	130	166	226	190
27	166	135	154	166	310	852	199	118	130	166	226	205
28	161	130	154	159	241	764	199	107	130	169	217	159
29	178	142	156	156	232	608	205	107	130	181	–	159
30	172	149	196	154	226	493	196	92	130	196	–	166
31	–	161	–	149	211	–	181	–	130	211	–	181
Total	4,750	4,570	4,953	5,079	6,857	23,337	11,018	4,681	3,614	4,617	5,593	5,919
Mean	158	147	165	164	211	778	335	156	117	149	200	191
Max.	196	169	211	199	349	1,527	764	211	130	211	241	226
Min.	125	118	154	149	154	196	181	92	86	130	154	154
Runoff – mcm.	410.400	394.848	427.939	438.825	592.444	2,016.317	951.955	404.438	312.249	398.908	483.235	511.401

WATER YEAR 1969 : Max. 1,527 Min. 86 Mean 233 Annual Runoff 7,342.963 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23	15.00	56.82	1,533				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
PING RIVER BASIN

Mae Ping River at Amphoe Khanu Woralaksaburi, Kamphaeng Phet (P_{16})

Location: Lat. 16°-00'-42" N., Long. 99°-51'-51" E., on right bank about 100 meters infront of district office of Amphoe Khanu Woralaksaburi, Kamphaeng Phet.

Drainage Area: 45,677 sq.km.

Type of Gage: Water-Stage recorder

Zero Gage at Bottom at: + 41.78 m. (M.S.L.)

Bench Mark: B.M. - P. 16

Location: Near the gage site

Elevation: + 45.976 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1954-60, 1962-68, 1969 to date

Rating Operation:

Period of Rating: 1960, 1967 to date

Rated by Float: -

Rated by Current Meter: 1960, 1967 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

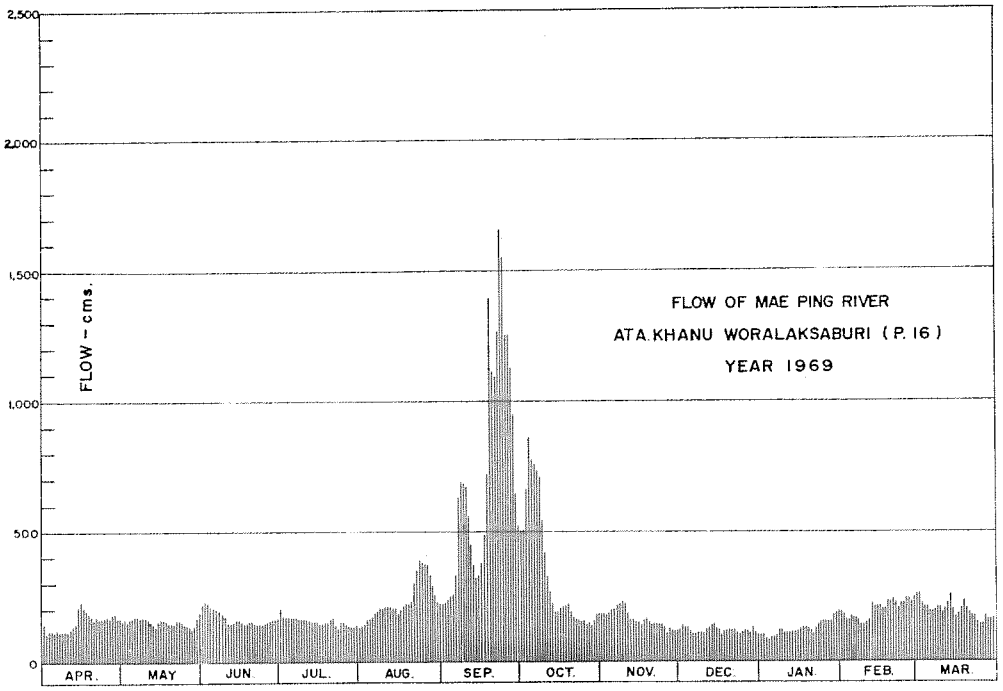
Overbank Flow Conditions: No overbank flow.

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Upstream State diversions for irrigation of about 40,300 hectares at Bhumiphol Dam reservoir. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	43.14	43.21	43.42	43.38	43.11	43.43	44.12	43.31	43.09	42.99	43.33	43.54
2	.01	.23	.45	.28	.16	.43	.11	.31	.16	.99	.32	.55
3	.02	.19	.45	.28	.22	.49	.44	.30	.11	.93	.24	.44
4	.02	.24	.39	.28	.23	.53	.81	.34	.11	.90	.23	.40
5	.01	.25	.37	.26	.28	.54	.70	.38	.02	.96	.27	.39
6	43.05	43.25	43.38	43.25	43.32	43.89	44.63	43.37	43.01	42.95	43.28	43.35
7	.04	.26	.35	.25	.34	44.37	.61	.42	.01	.97	.27	.35
8	.03	.24	.32	.24	.36	.49	.53	.44	.04	43.09	.20	.38
9	.04	.25	.29	.23	.38	.49	.21	.45	.04	.09	.13	.40
10	.03	.25	.25	.22	.39	.47	43.95	.44	.04	.04	.15	.39
11	43.08	43.23	43.16	43.22	43.39	44.23	43.73	43.32	43.09	43.04	43.19	43.31
12	.12	.21	.17	.22	.40	.03	.58	.24	.10	.04	.37	.40
13	.15	.17	.18	.21	.36	43.84	.45	.22	.15	.04	.42	.42
14	.37	.13	.19	.21	.41	.71	.34	.21	.17	.04	.40	.51
15	.46	.22	.19	.18	.30	.74	.33	.18	.09	.08	.39	.36
16	43.37	43.23	43.20	43.16	43.36	43.90	43.39	43.17	43.07	43.09	43.39	43.28
17	.35	.24	.17	.16	.41	44.03	.40	.23	42.98	.12	.38	.29
18	.31	.19	.17	.18	.44	.40	.40	.25	43.06	.10	.37	.40
19	.27	.17	.19	.20	.43	45.70	.46	.21	.06	.09	.47	.47
20	.20	.17	.18	.23	.46	.25	.36	.17	.06	.06	.47	.40
21	43.25	43.16	43.17	43.26	43.62	45.21	43.28	43.16	43.07	43.00	43.48	43.30
22	.23	.23	.16	.14	.72	.57	.24	.17	.06	.10	.42	.28
23	.22	.20	.15	.06	.88	46.10	.24	.16	.01	.17	.37	.28
24	.24	.19	.15	.19	.88	45.94	.20	.16	42.98	.20	.43	.20
25	.26	.17	.16	.20	.84	.48	.25	.11	43.02	.19	.44	.14
26	43.24	43.12	43.18	43.17	43.87	45.47	43.14	43.03	43.07	43.20	43.48	43.17
27	.28	.10	.19	.13	.81	.38	.19	.10	.05	.19	.49	.27
28	.32	.08	.23	.13	.68	.03	.14	.07	.04	.18	.45	.23
29	.22	.13	.23	.10	.58	44.57	.23	.03	.10	.29	-	.23
30	.16	.24	.23	.14	.49	.17	.31	.05	.04	.31	-	.24
31	-	.27	-	.12	.43	-	.29	-	42.97	.33	-	.25
Mean	43.18	43.20	43.24	43.20	43.47	44.50	43.68	43.23	43.06	43.09	43.35	43.34
Max.	43.46	43.27	43.45	43.38	43.88	46.10	44.81	43.45	43.17	43.33	43.49	43.55
Min.	43.01	43.08	43.15	43.06	43.11	43.43	43.14	43.03	42.97	42.90	43.13	43.14

WATER YEAR 1969 : Max. 46.10 m. Min. 42.90 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	142	159	221	208	134	224	510	187	130	106	193	262
2	110	164	231	178	146	224	505	187	146	106	190	265
3	113	154	231	178	162	245	665	184	134	94	167	228
4	113	167	211	178	164	258	862	196	134	88	164	214
5	110	170	205	173	178	262	802	208	113	100	176	211
6	120	170	208	170	190	240	764	205	110	98	178	199
7	118	173	199	170	196	630	753	221	110	102	176	199
8	115	167	190	167	202	691	712	228	118	130	156	208
9	118	170	181	164	208	691	553	231	118	130	139	214
10	115	170	170	162	211	680	426	228	118	118	144	211
11	127	164	146	162	211	562	332	190	130	118	154	187
12	137	159	149	162	214	466	275	167	132	118	205	214
13	144	149	151	159	202	378	231	162	144	118	221	221
14	205	139	154	159	217	324	196	159	149	118	214	251
15	234	162	154	151	184	336	193	151	130	127	211	202
16	205	164	156	146	202	404	211	149	125	130	211	178
17	199	167	149	146	217	466	214	164	104	137	208	181
18	187	154	149	151	228	644	214	170	122	132	205	214
19	176	149	154	156	224	1,396	234	159	122	130	238	238
20	156	149	151	164	234	1,120	202	149	122	122	238	214
21	170	146	149	173	290	1,096	178	146	125	108	241	184
22	164	164	146	142	328	1,313	167	149	122	132	221	178
23	162	156	144	122	395	1,660	167	146	110	149	205	178
24	167	154	144	154	395	1,552	156	146	104	156	224	156
25	173	149	146	156	378	1,258	170	134	113	154	228	142
26	167	137	151	149	391	1,252	142	115	125	156	241	149
27	178	132	154	139	364	1,198	154	132	120	154	245	176
28	190	127	164	139	342	988	142	125	118	151	231	164
29	162	139	164	132	275	732	164	115	132	181	–	164
30	164	167	164	142	245	534	187	120	118	187	–	167
31	–	176	–	137	224	–	181	–	102	193	–	170
Total	4,641	4,867	5,086	4,889	7,521	21,924	10,664	5,023	3,800	4,043	5,624	6,139
Mean	155	157	169	157	243	731	344	167	122	130	201	198
Max.	234	176	231	208	395	1,660	862	231	149	193	245	265
Min.	110	127	144	122	134	224	142	115	102	88	139	142
Runoff - mcm.	400.982	420.509	439.430	422.410	649.814	1,894.234	921.370	433.987	328.320	349.315	485.914	530.410

WATER YEAR 1969 : Max. 1,660 Min. 88 Mean 231 Annual Runoff 7,276.695 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23		46.10	1,660				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
PING RIVER BASIN

Mae Ping River at Amphoe Banphot Phisai, Nakhon Sawan (P_{17})

Location: Lat. 15°-56'-02" N., Long. 99°-58'-49" E., on right bank about 300 meters upstream from district office, Amphoe Banphot Phisai, Nakhon Sawan.

Drainage Area: 45,851 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 32.00 m. (M.S.L.)

Bench Mark: B.M. - H.S. - P. 17

Location: At the post of transmission line near gage site

Elevation: + 37.697 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1954 to date

Rating Operation:

Period of Rating: 1960, 1967 to date

Rated by Float: -

Rated by Current Meter: 1960, 1967 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

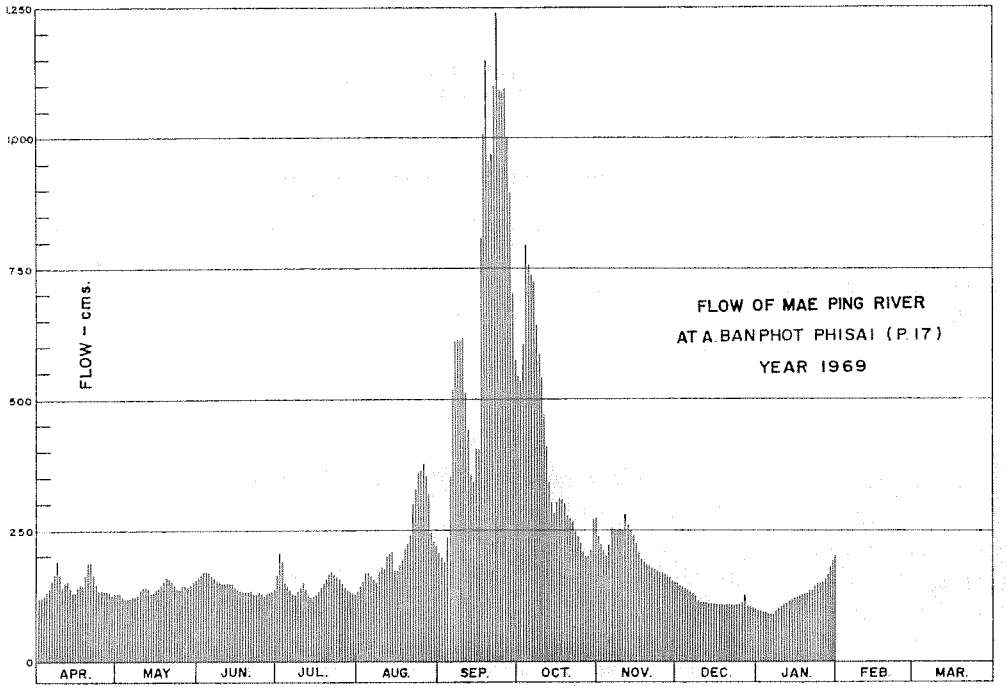
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Upstream State diversions for irrigation of about 40,300 hectares at Bhumiphol Dam reservoir. No adjustment made for virgin flow.

Remark: No records for period Feb. - Mar. 1970.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	34.65	34.70	34.84	34.85	34.74	35.03	36.12	35.15	34.80	34.54		
2	.65	.71	.87	35.03	.79	.00	.07	.09	.79	.53		
3	.69	.67	.89	34.98	.83	34.97	.17	.05	.77	.53		
4	.69	.64	.90	.81	.89	35.13	.76	.02	.75	.52		
5	.76	.65	.89	.78	.89	.25	.69	.09	.73	.51		
6	34.82	34.66	34.86	34.75	34.86	36.00	36.64	35.21	34.72	34.51		
7	.88	.68	.83	.71	.84	.28	.59	.20	.71	.50		
8	.96	.67	.82	.70	.81	.30	.46	.19	.70	.53		
9	.88	.69	.81	.73	.89	.29	.25	.20	.64	.56		
10	.75	.73	.80	.77	.94	.30	.13	.19	.62	.60		
11	34.78	34.73	34.79	34.81	34.92	36.08	35.94	35.29	34.62	34.61		
12	.81	.74	.80	.77	35.01	35.86	.71	.23	.62	.63		
13	.75	.73	.80	.70	.03	.57	.51	.20	.61	.64		
14	.71	.70	.79	.68	.04	.49	.38	.16	.61	.65		
15	.71	.72	.76	.69	34.91	.70	.30	.13	.61	.67		
16	34.76	34.74	34.74	34.70	34.90	35.68	35.38	35.05	34.61	34.67		
17	.78	.76	.72	.73	.94	36.60	.40	34.99	.60	.68		
18	.77	.79	.72	.77	35.00	37.21	.38	.97	.60	.70		
19	.86	.83	.71	.81	.07	.58	.37	.95	.60	.71		
20	.95	.85	.71	.86	.09	.15	.28	.95	.61	.71		
21	34.95	34.83	34.73	34.89	35.15	37.18	35.27	34.93	34.61	34.74		
22	.88	.81	.70	.90	.36	.39	.25	.92	.61	.74		
23	.79	.78	.69	.87	.47	.78	.19	.90	.60	.77		
24	.72	.74	.72	.86	.55	.74	.16	.90	.60	.79		
25	.73	.74	.71	.84	.56	.45	.11	.89	.62	.81		
26	34.72	34.77	34.69	34.81	35.61	37.46	35.04	34.88	34.63	34.80		
27	.72	.76	.70	.78	.55	.40	.01	.87	.69	.83		
28	.72	.76	.72	.75	.44	.17	.02	.85	.60	.86		
29	.69	.78	.72	.73	.20	36.70	.06	.83	.58	.91		
30	.70	.81	.75	.72	.13	.25	.25	.81	.57	.97		
31		.82		.71	.09		.27		.56	35.01		
Mean	34.77	34.74	34.77	34.79	35.08	36.30	35.65	35.04	34.64	34.68		
Max.	34.96	34.85	34.90	35.03	35.61	37.78	36.76	35.29	34.80	35.01		
Min.	34.65	34.64	34.69	34.68	34.74	34.97	35.01	34.81	34.56	34.50		

WATER YEAR 1969 : Max. 37.78 m. Min. m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	118	129	160	162	137	208	556	241	150	97		
2	118	131	167	208	148	200	538	224	148	95		
3	127	123	172	195	157	192	573	213	144	95		
4	127	116	174	152	172	235	796	205	139	94		
5	142	118	172	146	172	270	768	224	135	92		
6	155	121	164	139	164	514	749	258	133	92		
7	169	125	157	131	160	612	729	255	131	90		
8	190	123	155	129	152	619	678	252	129	95		
9	169	127	152	135	172	615	601	255	116	102		
10	139	135	150	144	184	619	559	252	112	108		
11	146	135	148	152	179	542	493	282	112	110		
12	152	137	150	144	203	465	414	264	112	114		
13	139	135	150	129	208	369	350	255	110	116		
14	131	129	148	125	211	343	310	244	110	118		
15	131	133	142	127	177	411	285	235	110	123		
16	142	137	137	129	174	405	310	213	110	123		
17	146	142	133	135	185	733	316	197	108	125		
18	144	148	133	144	200	983	310	192	108	129		
19	146	157	131	152	219	1,149	307	187	108	131		
20	187	162	131	164	224	957	279	187	110	131		
21	187	157	135	172	241	970	276	182	110	137		
22	169	152	129	174	304	1,062	270	179	110	137		
23	148	146	127	167	334	1,243	252	174	108	144		
24	135	137	133	164	363	1,224	244	174	108	148		
25	135	137	131	160	366	1,089	230	171	112	152		
26	133	144	127	152	382	1,094	211	169	114	150		
27	133	142	129	146	363	1,066	203	167	127	157		
28	133	142	133	139	328	966	205	162	108	164		
29	127	146	133	135	355	772	216	157	104	177		
30	129	152	139	133	325	691	270	152	103	192		
31		155		131	224		276		102	203		
Total	4,363	4,273	4,342	4,615	6,996	20,528	12,574	6,322	3,641	3,941		
Mean	145	138	145	149	226	684	406	211	121	127		
Max.	190	162	174	208	382	1,243	796	282	150	203		
Min.	118	116	127	125	137	192	203	152	102	90		
Runoff ~ mcm.	376.963	369.187	375.149	398.736	604.454	1,773.619	1,086.394	546.221	314.582	340.502		

WATER YEAR 1969 : Max. 1,234 Min. Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23	06.00	37.78	1,243				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
PING RIVER BASIN

Mae Ping River at Wutthikun Bridge, Tak (P_{18})

Location: Lat. 16°-40'-57" N., Long. 99°-16'-40" E., on right bank at Wutthikun Bridge on Phahon Yothin Highway, about 30 kilometers from Tak and 35 kilometers from Kamphaeng Phet, at Ban Wang Chao, Amphoe Muang, Kamphaent Phet.

Drainage Area: 40,273 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark:

- Location: -
- Elevation: -

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1954-55, 1957-59, 1962-70

Rating Operation:

- Period of Rating: 1954-55
- Rated by Float: -
- Rated by Current Meter: 1954-55

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow.

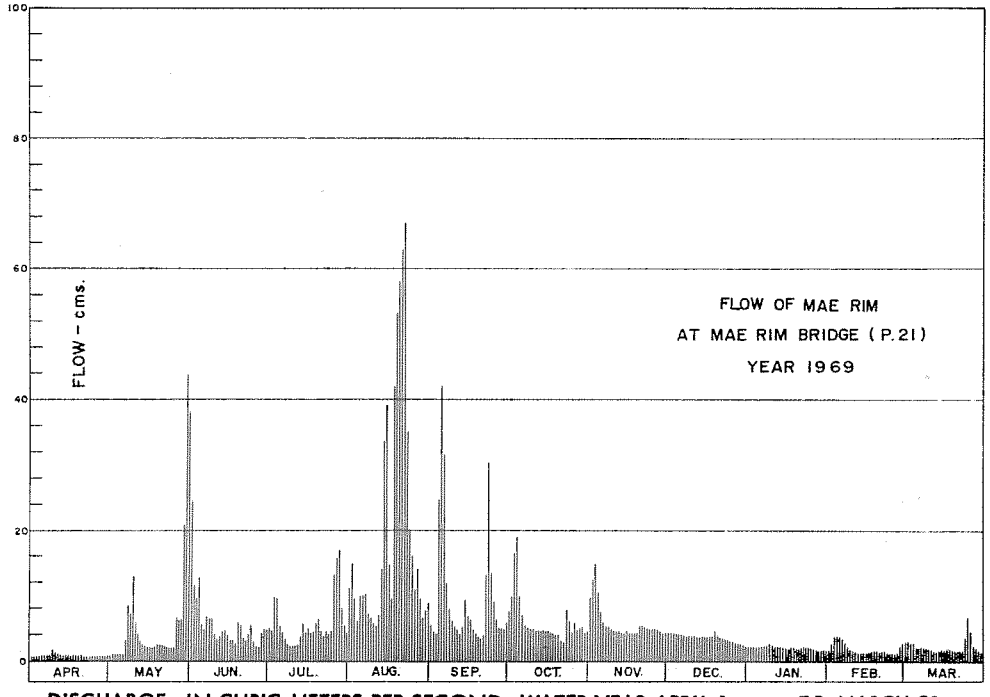
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1954-55. Flow regulated by Bhumiphol Dam reservoir and upstream state diversions for irrigation of about 40,300 hectares. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	2.96	3.05	3.39	3.25	3.21	3.18	3.70	3.06	3.02	2.83	3.26	3.45
2	3.14	2.96	.32	.08	.27	.22	.98	.06	2.96	.79	.23	.35
3	.16	.97	.37	.11	.27	.27	4.30	2.97	.90	.85	.17	.36
4	.34	3.03	.27	.15	.20	.32	.21	3.03	.88	.82	.26	.25
5	.22	2.96	.35	.13	.27	.61	.18	.09	.87	.86	.23	.27
6	3.14	2.93	3.31	3.09	3.27	4.05	4.23	3.10	2.86	2.99	3.18	3.27
7	2.99	3.07	.22	.08	.23	.17	.19	.10	.89	3.03	.06	.35
8	.96	.13	.12	.13	.29	.12	3.92	.13	.87	.01	.05	.30
9	3.01	.17	.09	.15	.28	.14	.75	.18	.92	2.97	.03	.26
10	.08	.03	.15	.14	.28	3.82	.65	.06	.95	.99	.23	.29
11	3.07	3.08	3.17	3.13	3.23	3.68	3.42	3.05	2.85	2.88	3.39	3.31
12	.17	.00	.18	.13	.32	.53	.28	.05	.88	.96	.38	.33
13	.36	.07	.18	.06	.20	.40	.22	.03	.86	.97	.38	.48
14	.22	.09	.18	.02	.30	.50	.23	.04	.86	3.02	.38	.30
15	.18	.12	.08	.05	.36	.50	.27	.03	.83	.02	.35	.17
16	3.18	3.33	3.11	3.10	3.26	3.57	3.28	3.12	2.91	3.03	3.29	3.31
17	.08	.15	.11	.10	.23	4.78	.30	.04	.86	2.99	.41	.40
18	.06	.10	.09	.12	.25	5.12	.37	.05	.91	.99	.42	.46
19	.06	.01	.17	.13	.43	4.93	.25	.04	.93	.90	.47	.30
20	.07	.10	.16	.06	.58	.71	.12	.04	.93	.98	.42	.20
21	3.09	3.11	3.15	2.99	3.67	4.63	3.15	3.05	2.92	3.12	3.31	3.23
22	.07	.13	.08	3.05	.80	5.26	.12	.05	.86	.14	.37	.15
23	.08	.12	.00	.09	.80	.13	.14	2.99	.86	.14	.42	.03
24	.07	.08	.07	.15	.70	4.67	.11	.89	.87	.15	.39	.15
25	.08	.10	.17	.14	.80	.75	.09	.91	.92	.19	.44	.16
26	3.16	3.03	3.15	3.12	3.72	4.88	3.03	2.95	2.89	3.12	3.48	3.30
27	.09	.05	.12	.10	.57	.70	.05	.93	.98	.25	.37	.18
28	.13	.08	.12	.13	.35	.08	.18	.93	3.05	.27	.48	.22
29	.05	3.13	.37	.07	.40	3.93	.23	.92	2.89	.29	-	.18
30	2.98	.20	.25	.07	.32	.75	.14	3.02	.87	.33	-	.02
31	-	.32	-	.16	.23	-	.05	-	.89	.32	-	.09
Mean	3.11	3.08	3.18	3.10	3.39	4.11	3.46	3.03	2.90	3.04	3.32	3.27
Max.	3.36	3.33	3.39	3.25	3.80	5.26	4.30	3.18	3.05	3.33	3.48	3.48
Min.	2.96	2.93	3.00	2.99	3.20	3.18	3.03	2.89	2.83	2.79	3.03	3.02

WATER YEAR 1969 : Max. 5.26 m. Min. 2.79 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, TO MARCH 31,

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.48	0.48	37	5.24	9.66	6.10	7.78	8.10	4.40	2.21	1.67	2.93
2	0.56	0.86	14	4.68	15	4.82	10	11	4.40	2.30	2.93	3.11
3	0.56	0.98	9.85	10	8.90	4.28	16	15	4.28	2.39	3.92	2.75
4	0.60	1.04	13	9.66	6.40	21	19	11	4.40	2.21	3.80	2.84
5	0.64	1.04	6.70	5.66	10	42	9.85	8.10	4.28	2.30	3.80	2.03
6	0.76	0.92	4.82	4.16	10	32	7.00	6.55	4.28	2.30	3.56	2.03
7	0.80	2.84	7.46	3.11	11	13	5.66	5.38	4.16	2.48	2.93	2.12
8	0.86	8.42	6.55	2.39	7.94	8.42	5.24	5.38	3.92	2.48	2.21	2.12
9	1.49	7.30	6.70	2.30	6.85	6.85	4.96	5.10	4.04	2.84	1.67	1.94
10	1.28	13	4.40	2.39	5.95	5.38	5.10	4.68	3.92	2.57	1.40	1.94
11	1.16	5.95	3.44	2.48	5.52	4.82	4.68	4.54	4.04	2.21	1.34	1.67
12	0.80	3.56	4.04	2.48	5.38	4.28	4.68	4.82	3.80	2.48	1.22	1.67
13	0.92	2.75	4.40	3.68	9.66	5.24	4.68	4.40	3.92	2.30	1.16	1.40
14	0.86	2.39	4.82	5.80	34	9.47	4.82	4.28	3.92	2.21	1.28	1.67
15	0.72	2.03	4.28	4.28	39	7.00	4.54	4.82	3.80	2.03	1.28	1.94
16	0.72	2.39	3.20	5.24	17	6.85	4.68	4.40	3.80	1.94	1.40	1.85
17	0.80	2.03	3.32	4.28	9.66	5.10	4.28	4.16	3.92	2.30	1.58	1.76
18	0.68	2.21	2.66	4.54	42	4.40	4.16	4.28	3.92	2.30	1.76	1.76
19	0.76	2.57	5.95	5.66	52	3.92	3.92	4.40	4.68	2.03	1.67	1.58
20	0.72	2.48	5.66	6.55	54	3.56	4.04	5.24	3.92	1.85	1.49	1.67
21	0.60	2.39	3.80	5.10	57	4.16	3.11	5.38	3.80	1.94	1.28	1.34
22	0.52	2.21	3.02	3.80	59	11	3.02	5.24	3.56	2.30	1.67	1.58
23	0.48	2.12	4.16	4.54	43	30	7.78	4.96	3.44	2.21	1.16	1.67
24	0.44	1.94	5.38	4.28	21	15	6.10	5.10	3.32	2.12	1.28	4.04
25	0.56	1.94	3.20	4.68	18	11	4.54	4.96	3.20	2.03	1.10	6.70
26	0.52	4.96	2.39	13	11	7.00	5.66	5.10	2.93	1.85	1.16	4.68
27	0.48	7.15	2.21	16	14	5.10	4.82	4.82	2.84	1.67	1.40	2.30
28	0.52	5.95	4.28	17	9.66	5.10	5.24	4.82	2.75	1.49	2.21	2.03
29	0.56	13	5.10	9.28	6.70	4.96	5.24	4.28	2.75	1.49		1.67
30	0.48	28	4.82	6.10	7.62	5.95	4.68	4.28	2.66	1.49		1.28
31		44		4.68	9.85		4.28		2.39	1.76		1.40
Total	21.33	178.90	190.61	183.04	616.75	297.76	188.54	174.57	115.44	66.08	53.33	69.47
Mean	0.71	5.77	6.35	5.90	19.9	9.92	6.11	5.82	3.72	2.13	1.90	2.24
Max.	1.49	44	37	17	59	41	19	15	4.68	2.84	3.92	6.70
Min.	0.44	0.48	2.21	2.30	5.38	3.56	3.02	4.16	2.39	1.49	1.10	1.28
Runoff - mcm.	1.843	15.457	16.469	15.815	53.287	25.726	16.376	15.083	9.974	5,709	4.608	6.002

WATER YEAR 1969 : Max. 59 Min. 0.44 Mean 5.91 Annual Runoff 186.349 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 22	12.00	322.47	61				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
PING RIVER BASIN

Mae Khan River at Mae Khan Bridge, Chiang Mai (P_{23})

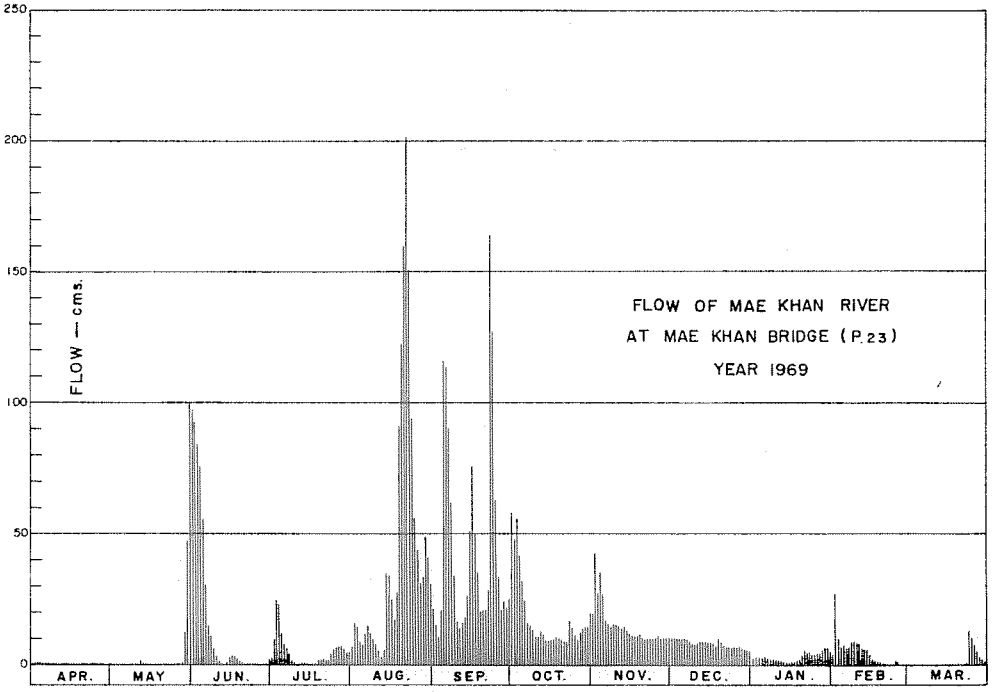
Location:	Lat. 18°-31'-37" N., Long. 98°-51'-42" E., on left bank at downstream side of Mae Khan Bridge, Amphoe San Pa Tong, Chiang Mai.
Drainage Area:	1,777 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 285.627 m. (M.S.L.)
Bench Mark:	B.M. – H.S./R.I.D. No. 8
Location:	On the left bank at Mae Khan Bridge
Elevation:	+ 291.767 m. (M.S.L.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1955 to date
Rating Operation:	
Period of Rating:	1955-60, 1967, 1969 to date
Rated by Float:	
Rated by Current Meter:	1955-60, 1967, 1969 to date
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversion for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	286.20	286.00	288.16	286.90	287.04	287.27	287.77	287.28	287.11	286.90	286.93	286.57
2	.18	285.98	.07	287.12	.21	.20	.64	.58	.11	.89	287.39	.57
3	.18	.98	.00	.35	.18	.10	.75	.38	.11	.91	.05	.57
4	.19	.97	287.94	.32	.06	.25	.53	.49	.11	.90	.02	.54
5	.20	.97	.62	.09	.03	288.34	.43	.38	.10	.91	.04	.52
6	286.20	285.97	287.21	287.04	287.16	288.31	287.29	287.23	287.10	286.91	287.01	286.52
7	.20	.97	.19	.00	.19	.07	.22	.19	.09	.88	.03	.52
8	.20	286.00	.11	286.89	.12	287.63	.19	.18	.08	.87	.07	.52
9	.20	.02	286.99	.83	.08	.40	.15	.21	.05	.88	.07	.51
10	.20	.14	.91	.79	.02	.22	.13	.20	.04	.84	.06	.50
11	286.20	286.80	286.80	286.76	286.98	287.17	287.12	287.18	287.05	286.84	287.05	286.50
12	.20	.86	.79	.75	.89	.22	.16	.18	.07	.83	.00	.49
13	.20	.78	.75	.77	.96	.25	.14	.19	.07	.82	.00	.48
14	.20	.61	.85	.78	287.49	.42	.09	.16	.07	.81	.00	.46
15	.24	.57	.92	.76	.48	.84	.08	.14	.07	.79	286.91	.46
16	286.20	286.56	286.91	286.78	287.32	287.96	287.11	287.12	287.06	286.81	286.86	286.47
17	.18	.54	.91	.76	.20	.63	.10	.13	.05	.82	.83	.46
18	.18	.41	.87	.74	.40	.44	.13	.12	.02	.86	.82	.45
19	.17	.38	.82	.86	288.28	.28	.10	.14	.09	.87	.81	.45
20	.17	.31	.78	.89	.45	.29	.09	.11	.06	.94	.80	.46
21	286.17	286.30	286.77	286.90	288.78	287.30	287.07	287.09	287.03	286.98	286.79	286.49
22	.17	.29	.76	.86	289.03	.44	.07	.09	.02	.96	.77	.47
23	.17	.30	.74	.84	288.48	288.74	.23	.10	.02	.97	.77	.55
24	.17	.31	.75	.97	287.82	.12	.18	.10	.02	.94	.77	287.15
25	.05	.31	.74	287.00	.70	287.59	.14	.11	.02	.94	.85	.11
26	286.04	286.31	286.72	287.01	287.60	287.41	287.09	287.12	287.02	286.95	286.76	287.04
27	.04	.34	.70	.03	.43	.28	.15	.11	.02	.95	.68	286.96
28	.04	.41	.68	.02	.50	.34	.18	.11	.00	287.00	.62	.90
29	.03	287.22	.73	286.99	.67	.29	.19	.10	286.98	.02	–	.86
30	.04	.56	.88	.96	.57	.40	.19	.11	.98	.02	–	.82
31	–	288.20	–	.97	.38	–	.28	–	.97	286.98	–	.78
Mean	286.16	286.43	287.03	286.93	287.50	287.54	287.22	287.19	287.05	286.90	286.92	286.62
Max.	286.24	288.20	288.16	287.35	289.03	288.74	287.77	288.58	287.11	287.02	287.39	287.15
Min.	286.03	285.97	286.68	286.74	286.89	287.10	287.07	287.09	286.97	286.79	286.62	286.45

WATER YEAR 1969 : Max. 289.03 m. Min. 286.45 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.00	96	2.70	7.60	20	58	20	10	2.70	3.69	0.00
2	0.00	0.00	87	11	16	15	47	42	10	2.50	27	0.00
3	0.00	0.00	80	25	14	10	56	27	10	3.03	8.00	0.00
4	0.00	0.00	74	23	8.40	18	38	35	10	2.70	6.80	0.00
5	0.00	0.00	45	9.60	7.20	116	30	27	10	3.03	7.60	0.00
6	0.00	0.00	16	7.60	13	113	21	17	10	3.03	6.40	0.00
7	0.00	0.00	15	6.00	15	87	16	15	9.60	2.30	7.20	0.00
8	0.00	0.00	10	2.50	11	46	15	14	9.20	2.10	8.80	0.00
9	0.00	0.00	5.67	1.30	9.20	28	13	16	8.00	2.30	8.80	0.00
10	0.00	0.00	3.03	0.56	6.80	16	11	15	7.60	1.50	8.40	0.00
11	0.00	0.70	0.70	0.14	5.34	14	11	14	8.00	1.50	8.00	0.00
12	0.00	1.90	0.56	0.00	2.50	16	13	14	8.80	1.30	6.00	0.00
13	0.00	0.42	0.00	0.28	4.68	18	12	15	8.80	1.10	6.00	0.00
14	0.00	0.00	1.70	0.42	35	29	9.60	13	8.80	0.90	6.00	0.00
15	0.00	0.00	3.36	0.14	34	65	9.20	12	8.80	0.56	3.03	0.00
16	0.00	0.00	3.03	0.42	23	76	10	11	8.40	0.90	1.90	0.00
17	0.00	0.00	3.03	0.14	15	46	10	11	8.00	1.10	1.30	0.00
18	0.00	0.00	2.10	0.00	28	31	11	11	6.80	1.90	1.10	0.00
19	0.00	0.00	1.10	1.90	109	20	10	12	9.60	2.10	0.90	0.00
20	0.00	0.00	0.42	2.50	129	21	9.60	10	8.40	4.02	0.70	0.00
21	0.00	0.00	0.28	2.70	169	21	8.80	9.60	7.20	5.34	0.56	0.00
22	0.00	0.00	0.14	1.90	201	31	8.80	9.60	6.80	4.68	0.28	0.00
23	0.00	0.00	0.00	1.50	133	164	17	10	6.80	5.01	0.28	0.00
24	0.00	0.00	0.00	5.01	63	92	14	10	6.80	4.02	0.28	13
25	0.00	0.00	0.00	6.00	52	43	12	10	6.80	4.02	1.70	10
26	0.00	0.00	0.00	6.40	43	29	9.60	11	6.80	4.35	0.14	7.60
27	0.00	0.00	0.00	7.20	30	20	13	10	6.80	4.35	0.00	4.68
28	0.00	0.00	0.00	6.80	35	24	14	10	6.00	6.00	0.00	2.70
29	0.00	16	0.00	5.67	49	21	15	10	5.34	6.80	–	1.90
30	0.00	40	0.00	4.68	41	28	15	10	5.34	6.80	–	1.10
31	0.00	100	2.30	5.01	27	–	20	–	5.01	5.34	–	0.42
Total	0.00	159.02	450.42	148.07	1,336.72	1,278	557.60	451.20	248.49	97.28	130.86	41.40
Mean	0.00	5.13	15.0	4.78	43.1	42.6	18.0	15.0	8.01	3.14	4.67	1.33
Max.	0.00	100	96	25	201	164	58	42	10	6.80	27	13
Min.	0.00	0.00	0.00	0.00	2.50	10	8.80	9.60	5.01	0.56	0.00	0.00
Runoff – mcm.	0.00	13.739	38.916	12.793	115.493	110.419	48.177	38.984	21.469	8.405	11.306	3.577

WATER YEAR 1969 : Max. 201 Min. 0.00 Mean 13.4 Annual Runoff 423.279 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23	19.00	289.29	236				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
PING RIVER BASIN

Mae Klang River at Mae Klang Bridge, Chiang Mai (P_{24})

Location: Lat. 18°-23'-15" N., Long. 98°-40'-51" E., on left bank upstream side of Mae Klong Bridge, Amphoe Chom Thong, Chiang Mai.

Drainage Area: 616 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. P. 24

Location: All the left abutment of Mae Klang Bridge

Elevation: + 2.149 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1955 to date

Rating Operation:

Period of Rating: 1955-60, 1966-73

Rated by Float:

Rated by Current Meter: 1955-60, 1966-73

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

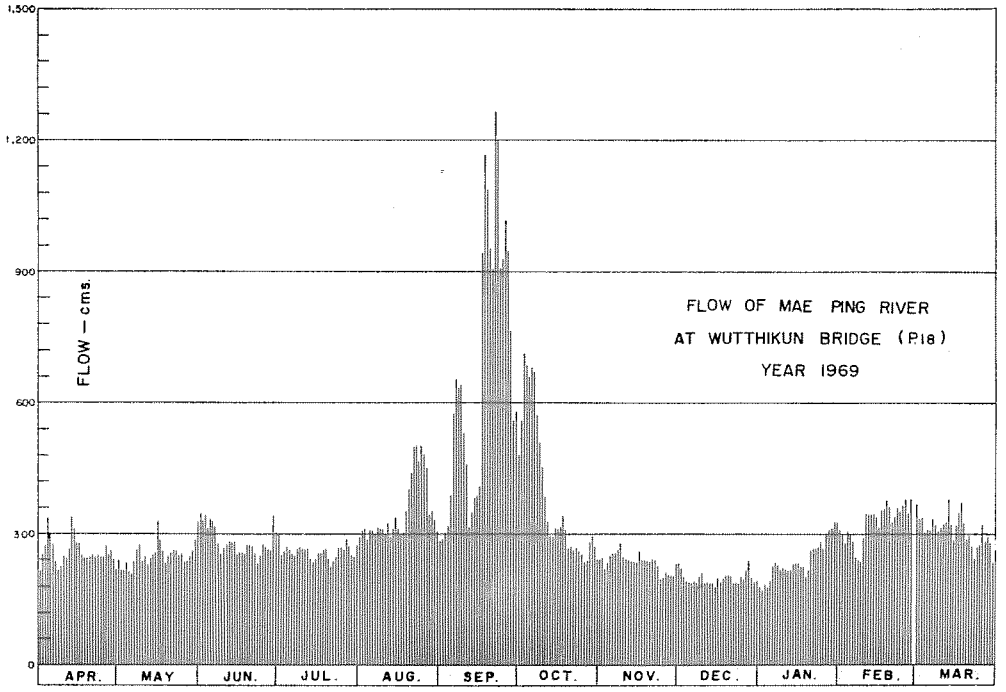
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.33	0.38	1.28	0.55	1.07	0.91	1.01	0.79	0.82	0.66	0.49	0.46
2	.33	.37	0.87	1.02	.06	.84	.58	2.43	.81	.66	.48	.45
3	.33	.36	.76	.38	0.89	.79	.85	1.64	.79	.66	.48	.44
4	.33	.35	.67	0.69	.78	2.58	.41	.58	.79	.65	.47	.42
5	.33	.34	.55	.61	.84	.24	.08	.19	.79	.64	.47	.42
6	0.32	0.34	0.74	0.54	1.00	2.20	0.98	1.01	0.76	0.64	0.47	0.41
7	.32	.34	.52	.48	0.95	1.62	.92	0.92	.78	.67	.47	.41
8	.40	.38	.47	.47	.99	.24	.90	.88	.77	.70	.47	.41
9	.42	.60	.56	.45	.89	.06	.86	.86	.76	.69	.46	.41
10	.38	.50	.53	.39	.86	0.91	.84	.82	.77	.64	.46	.40
11	0.38	0.43	0.50	0.38	0.84	0.85	0.81	0.80	0.77	0.63	0.45	0.40
12	.38	.39	.49	.39	.94	.79	1.31	.79	.76	.61	.45	.40
13	.38	.37	.61	.52	1.18	.97	.05	.79	.75	.60	.45	.40
14	.37	.36	.52	.49	.67	.86	0.84	.79	.71	.60	.45	.40
15	.36	.36	.39	.44	.11	1.86	1.26	.78	.71	.65	.46	.40
16	0.35	0.50	0.48	0.40	1.01	2.99	0.94	0.83	0.71	0.66	0.46	0.40
17	.34	.44	.39	.40	.15	1.80	.84	.82	.70	.69	.45	.40
18	.34	.40	.36	.40	.37	.34	.80	.84	.70	.70	.45	.41
19	.34	.37	.55	.45	.69	.12	.86	.80	.95	.67	.45	.40
20	.34	.35	.49	.54	.48	.30	.79	.84	.74	.62	.45	.40
21	0.34	0.35	0.59	0.49	1.62	1.29	0.76	0.84	0.72	0.61	0.45	0.40
22	.34	.38	.54	.44	2.29	2.34	.75	.85	.70	.60	.45	.40
23	.34	.37	.48	.59	1.50	.33	.76	.85	.69	.58	.45	.45
24	.33	.36	.66	.77	.14	1.50	.73	.84	.69	.56	.44	.92
25	.33	.35	.54	.59	.05	.24	.85	.83	.68	.52	.44	.75
26	0.33	0.35	0.50	0.71	0.98	1.11	0.78	0.82	0.69	0.50	0.44	0.51
27	.33	.53	.51	.59	.93	.04	.97	.81	.67	.49	.44	.49
28	.43	1.10	.61	.70	1.58	.00	.99	.81	.67	.49	.46	.48
29	.58	.56	.77	.74	2.19	.02	.87	.81	.67	.49	–	.47
30	.40	2.58	.68	.72	1.20	0.92	.83	.79	.67	.49	–	.46
31	–	.23	–	.80	0.98	–	.80	–	.67	.49	–	.45
Mean	0.36	0.58	0.59	0.58	1.20	1.40	0.97	0.95	0.74	0.61	0.46	0.45
Max.	0.58	2.58	1.28	1.38	2.29	2.99	1.85	2.43	0.95	0.70	0.49	0.92
Min.	0.32	0.34	0.36	0.38	0.78	0.79	0.73	0.78	0.67	0.49	0.44	0.40

WATER YEAR 1969 : Max. 2.99 m. Min. 0.56 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1960 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	214	240	348	302	289	279	462	243	232	179	305	369
2	267	214	325	249	309	292	573	243	214	169	295	335
3	273	217	342	258	309	309	713	217	198	184	276	338
4	332	234	309	270	286	325	672	234	192	176	305	302
5	292	214	335	264	309	427	659	252	189	187	295	309
6	267	206	322	252	309	603	681	255	187	223	279	309
7	223	246	292	249	295	655	663	255	194	234	243	335
8	214	264	261	264	315	633	548	264	189	229	240	319
9	229	276	252	270	312	642	481	279	203	217	234	305
10	249	234	270	267	312	509	443	243	212	223	295	315
11	246	249	276	264	295	454	359	240	184	220	348	322
12	276	226	279	264	325	308	312	240	192	214	345	328
13	338	246	279	243	286	352	292	234	187	217	345	380
14	292	252	279	232	319	387	295	237	187	232	345	319
15	279	261	249	240	338	387	309	234	179	232	335	276
16	279	328	258	255	305	412	312	261	200	234	315	322
17	249	270	258	255	295	957	319	237	187	223	355	352
18	243	255	252	261	302	1,167	342	240	200	223	359	373
19	243	229	276	264	362	1,046	302	237	206	198	376	319
20	246	255	273	243	416	917	261	237	206	220	359	286
21	252	258	270	223	450	873	270	240	203	261	322	295
22	246	264	249	240	501	1,264	261	240	187	267	342	270
23	249	261	226	252	501	1,174	267	223	187	267	359	234
24	246	249	246	270	462	895	258	195	189	270	348	270
25	249	255	276	267	501	940	252	200	203	282	366	273
26	273	234	270	261	470	1,016	234	212	195	261	380	319
27	252	240	261	255	412	911	240	206	220	302	342	279
28	264	249	261	264	335	616	279	206	240	309	380	292
29	240	264	342	246	352	552	295	203	195	315	–	279
30	220	286	302	246	325	481	267	232	189	328	–	232
31	–	325	–	273	295	–	240	–	195	325	–	252
Total	7,742	7,801	8,438	7,963	10,892	19,783	11,861	7,039	6,141	7,421	9,088	9,508
Mean	258	252	281	257	351	659	383	235	198	239	324	307
Max.	338	328	348	302	501	1,264	713	279	240	328	380	380
Min.	214	206	226	223	286	279	234	195	179	169	234	232
Runoff – MCM.	668.909	674.006	729.043	688.003	941.069	1,709.251	1,024.790	608.170	530.582	641.174	785.203	821.491

WATER YEAR 1969 : Max. 1.264 Min. 169 Mean 311 Annual Runoff 9,821.693 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 22	18.00	5.30	1,293				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
PING RIVER BASIN

Mae Ping River at Ban Tha Sala, Chiang Mai (P_{19A})

Location: Lat. 18°-25'-29" N., Long. 98°-42'-11" E., on left bank about 300 meters downstream from confluence with Li River, Amphoe Chom Thong, Chiang Mai.

Drainage Area: 14,023 sq.km.

Type of Gage: Water-Stage recorder

Zero Gage at Bottom at: + 271.351 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: Infront of Office of Station P. 19A

Elevation: + 275.682 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1958 to date

Rating Operation:

Period of Rating: 1958 to date

Rated by Float: -

Rated by Current Meter: 1958 to date

Stability of Channel Regimes: Unstable, shifting adjustment is included for flow computation.

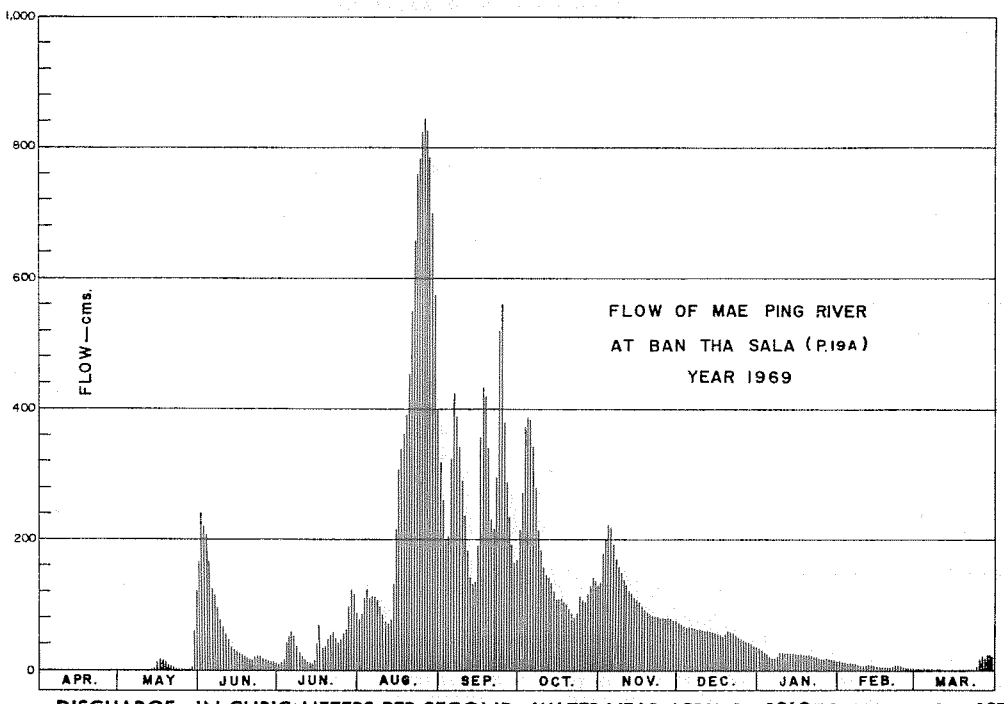
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurement made during 1969. Upstream State diversions for irrigation of about 28,000 hectates. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	271.95	271.89	274.05	272.30	273.01	274.28	273.89	273.49	273.02	272.70	272.39	272.39
2	.94	.89	273.93	.29	.11	.02	274.27	.75	272.99	.69	.35	.37
3	.94	.89	.89	.35	.32	273.80	.67	.90	.97	.67	.34	.35
4	.94	.88	.70	.74	.38	.83	.74	.99	.96	.51	.33	.34
5	.93	.88	.43	.77	.28	274.49	.72	.98	.97	.46	.31	.28
6	271.93	271.88	273.35	272.81	273.31	274.85	274.48	273.90	272.96	272.46	272.30	272.26
7	.92	.87	.30	.66	.30	.73	.23	.78	.95	.46	.29	.22
8	.92	.89	.09	.57	.24	.53	.00	.70	.94	.49	.28	.20
9	.92	.91	272.97	.52	.18	.24	273.80	.65	.94	.55	.25	.18
10	.92	.92	.90	.46	.11	273.99	.65	.56	.93	.54	.24	.17
11	271.92	271.92	272.81	272.41	273.03	273.76	273.59	273.50	273.92	272.53	272.30	272.15
12	.92	.91	.72	.36	272.99	.61	.57	.43	.91	.53	.30	.13
13	.92	.95	.70	.33	273.00	.54	.49	.41	.91	.53	.26	.12
14	.92	272.09	.68	.30	.41	.59	.43	.36	.89	.53	.23	.09
15	.92	.22	.65	.47	274.04	.89	.36	.34	.88	.53	.22	.07
16	271.91	272.27	278.62	272.96	274.48	274.68	273.37	273.29	272.87	272.52	272.19	272.05
17	.90	.28	.59	.75	.66	.91	.37	.24	.84	.51	.19	.04
18	.90	.25	.56	.59	.70	.83	.33	.23	.83	.50	.19	.02
19	.90	.21	.52	.56	.84	.29	.31	.19	.86	.50	.19	.01
20	.90	.16	.50	.65	275.15	.10	.26	.17	.92	.51	.20	271.99
21	271.90	272.12	272.51	272.71	275.43	274.03	273.20	273.15	272.91	272.50	272.24	271.99
22	.90	.08	.57	.71	.84	.41	.12	.16	.88	.49	.29	.98
23	.90	.04	.58	.69	276.12	275.24	.17	.16	.83	.49	.28	.97
24	.90	.02	.53	.65	.16	.39	.37	.14	.80	.47	.23	272.17
25	.89	.00	.46	.73	.21	274.69	.32	.13	.76	.44	.23	.60
26	271.89	271.99	272.43	272.76	276.26	274.88	273.30	273.13	272.75	272.43	272.29	272.63
27	.89	.99	.40	.88	.15	273.99	.40	.14	.74	.48	.34	.59
28	.90	272.01	.37	275.17	275.90	.76	.47	.13	.73	.46	.37	.59
29	.90	.20	.34	.30	.58	.63	.54	.09	.73	.45	-	.58
30	.89	273.00	.31	.27	.13	.70	.51	.03	.72	.43	-	.52
31	-	.61	-	.12	274.61	-	.45	-	.70	.41	-	.46
Mean	271.91	272.10	272.85	272.67	274.38	274.24	273.66	273.40	272.87	272.51	272.27	272.24
Max.	271.95	273.61	274.05	273.30	276.26	275.39	274.74	273.99	273.02	272.70	272.39	272.63
Min.	271.89	271.87	272.31	272.30	272.99	273.54	273.12	273.03	272.70	272.41	272.19	271.97

WATER YEAR 1969 : Max. 276.26 m. Min. 271.97 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.00	240	9.60	75	297	209	135	72	33	15	3.26
2	0.00	0.00	217	11	88	244	285	179	69	31	12	3.02
3	0.00	0.00	209	15	117	201	371	205	67	28	12	3.02
4	0.00	0.00	174	48	126	207	387	222	65	24	11	3.02
5	0.00	0.00	130	56	111	343	383	220	67	20	10	1.84
6	0.00	0.00	118	60	115	423	330	196	65	20	9.60	1.84
7	0.00	0.00	111	45	114	380	276	174	64	20	9.21	1.38
8	0.00	0.00	88	36	105	336	220	160	63	23	8.82	1.15
9	0.00	0.00	72	26	97	274	183	152	63	28	7.65	1.15
10	0.00	0.00	64	21	84	224	157	138	62	27	7.26	1.15
11	0.00	0.00	55	17	74	181	147	132	61	27	9.60	1.15
12	0.00	0.00	46	14	69	143	144	121	60	27	9.60	1.15
13	0.00	0.00	33	12	70	132	132	118	60	27	8.04	1.15
14	0.00	2.07	31	11	126	139	123	111	58	27	6.87	0.92
15	0.00	6.48	28	22	224	205	108	108	57	27	6.48	0.69
16	0.00	8.43	26	69	314	369	110	101	56	26	4.46	0.69
17	0.00	8 .82	24	47	354	432	110	94	53	25	4.46	0.69
18	0.00	7.65	21	32	365	413	104	93	52	24	4.46	0.46
19	0.00	7.09	18	43	396	268	101	88	55	24	4.46	0.23
20	0.00	3.74	17	52	463	230	94	85	61	25	5.70	0.00
21	0.00	2.78	17	58	540	217	87	83	60	22	7.26	0.00
22	0.00	1.84	22	58	661	310	80	84	57	21	9.21	0.00
23	0.00	0.92	24	47	765	520	87	84	52	21	8.82	0.00
24	0.00	0.46	19	43	794	563	114	81	49	20	6.87	2.54
25	0.00	0.00	20	51	827	365	107	80	48	17	3.26	17
26	0.00	0.00	17	54	843	276	104	80	46	17	2.54	22
27	0.00	0.00	15	67	807	228	118	81	44	20	2.78	20
28	0.00	0.23	13	104	727	185	132	80	41	19	2.07	23
29	0.00	5.70	12	123	628	162	143	75	39	18	–	24
30	0.00	71	10	118	498	174	138	74	37	17	–	21
31	–	159	–	89	369	–	129	–	35	16	–	20
Total	0.00	285.21	1,891	1,458.60	10,946	8,441	5,213	3,633	1,738	721	209.48	177.50
Mean	0.00	9.20	63.0	47.0	353	281	168	121	56.1	23.2	7.48	5.72
Max.	0.00	159	240	123	843	563	387	222	72	33	15	24
Min.	0.00	0.00	10	9.60	69	132	80	74	35	16	2.07	0.00
Runoff – mcm.	0.00	24.642	163.382	126.023	945.734	729.302	450.403	313.891	150.163	62.294	18.099	15.336

WATER YEAR 1969 : Max. 843 Min. 0.00 Mean 95.1 Annual Runoff 2,999.271 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 26	13.00	276.30	856				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
PING RIVER BASIN

Mae Rim at Mae Rim Bridge, Chiang Mai (P_{21})

Location: Lat. 18°-55'-29" N., Long. 98°-56'-34" E., on right bank about 100 meters downstream from Chiang Mai – Fang highway bridge, Amphoe Mae Rim, Chiang Mai.

Drainage Area: 515 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 319.69 m. (M.S.L.)

Bench Mark: B.M. – H.S./RID No. 4

Location: In the vicinity of gage observer's house

Elevation: + 321.928 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1954 to date

Rating Operation:

Period of Rating: 1954–1960

Rated by Float: –

Rated by Current Meter: 1954–1960

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow.

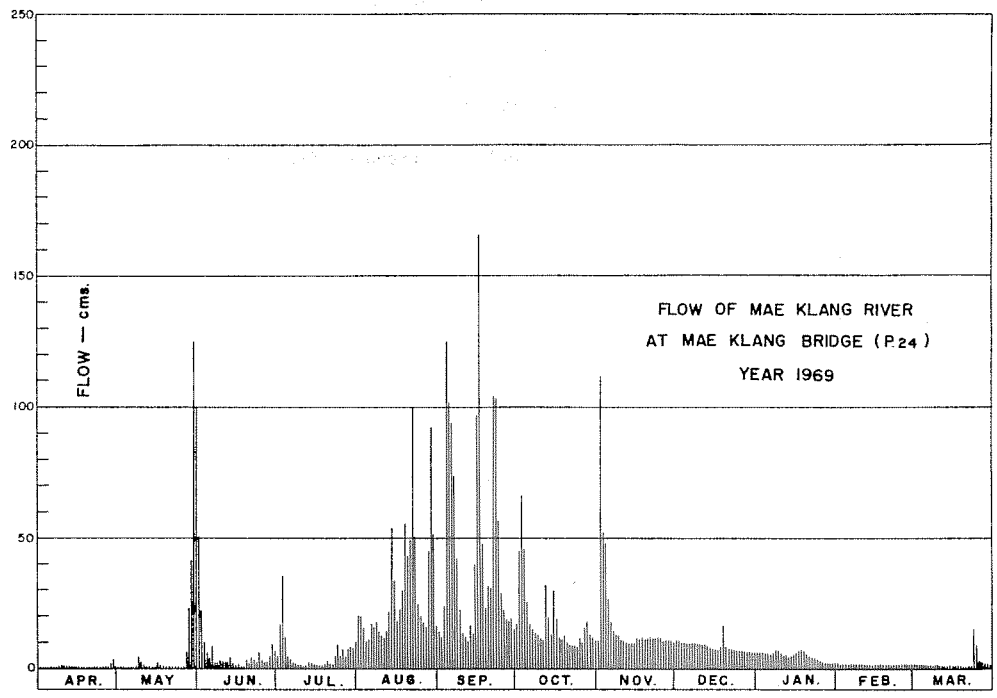
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurement made during 1955–59. No upstream State diversion for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	320.22	320.22	321.94	320.76	321.04	320.82	320.93	320.95	320.70	320.49	320.43	320.57
2	.24	.31	.26	.72	.31	.73	321.07	321.11	.78	.50	.57	.59
3	.24	.33	.05	321.07	.00	.69	.33	.29	.69	.51	.66	.55
4	.25	.34	.19	.04	320.84	321.50	.43	.09	.70	.49	.65	.56
5	.26	.34	320.86	320.79	321.07	322.05	.05	320.95	.69	.50	.65	.47
6	320.29	320.32	320.73	320.68	321.07	321.80	320.88	320.85	320.69	320.50	320.63	320.47
7	.30	.56	.91	.59	.09	.22	.79	.77	.68	.52	.57	.48
8	.31	.97	.85	.51	320.94	320.97	.76	.77	.66	.52	.49	.48
9	.41	.90	.86	.50	.87	.87	.74	.75	.67	.56	.43	.46
10	.38	321.20	.70	.51	.81	.77	.75	.72	.66	.53	.40	.46
11	320.36	320.81	320.62	320.52	320.78	320.73	320.72	320.71	320.67	320.49	320.39	320.43
12	.30	.63	.67	.52	.77	.69	.72	.73	.65	.52	.37	.43
13	.32	.55	.70	.64	321.04	.76	.72	.70	.66	.50	.36	.40
14	.31	.51	.73	.80	.85	321.03	.73	.69	.66	.49	.38	.43
15	.28	.47	.69	.69	.97	320.88	.71	.73	.65	.47	.38	.46
16	320.28	320.51	320.60	320.76	321.36	320.87	320.72	320.70	320.65	320.46	320.40	320.45
17	.30	.47	.61	.69	.04	.75	.69	.68	.66	.50	.42	.44
18	.27	.49	.54	.71	322.06	.70	.68	.69	.66	.50	.44	.44
19	.29	.53	.81	.79	.29	.66	.66	.70	.72	.47	.43	.42
20	.28	.52	.79	.85	.32	.63	.67	.76	.66	.45	.41	.43
21	320.25	320.51	320.65	320.75	322.36	320.68	320.59	320.77	320.65	320.46	320.38	320.39
22	.23	.49	.58	.65	.42	321.09	.58	.76	.63	.50	.43	.42
23	.22	.48	.68	.71	.07	.76	.93	.74	.62	.49	.36	.43
24	.21	.46	.77	.69	321.51	.31	.82	.75	.61	.48	.38	.67
25	.24	.46	.60	.72	.40	.12	.71	.74	.60	.47	.35	.86
26	320.23	320.74	320.51	321.19	321.09	320.88	320.79	320.75	320.57	320.45	320.36	320.72
27	.22	.89	.49	.35	.26	.75	.73	.73	.56	.43	.40	.50
28	.23	.81	.69	.36	.04	.75	.76	.73	.55	.41	.49	.47
29	.24	321.21	.75	.02	320.86	.74	.76	.69	.55	.41		.43
30	.22	.72	.73	320.82	.92	.81	.72	.69	.54	.41		.38
31		322.11		.72	321.05		.69		.51	.44		.40
Mean	320.27	320.67	320.78	320.78	321.34	320.97	320.80	320.79	320.64	320.48	320.45	320.49
Max.	320.41	322.11	321.94	321.36	322.42	322.05	321.43	321.29	320.72	320.56	320.66	320.86
Min.	320.21	320.22	320.49	320.50	320.77	320.63	320.58	320.68	320.51	320.41	320.35	320.38

WATER YEAR 1969 : Max. 322.42 m. Min. 320.21 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.64	1.04	31	3.60	21	14	18	10	11	6.38	2.37	1.98
2	0.64	0.96	13	19	20	12	48	112	11	6.38	2.24	1.85
3	0.64	0.88	9.42	36	14	10	66	52	10	6.38	2.24	1.72
4	0.64	0.80	6.66	7.22	10	125	38	48	10	6.10	2.11	1.46
5	0.64	0.72	3.60	4.98	12	96	21	26	10	5.82	2.11	1.46
6	0.56	0.72	8.78	3.38	18	93	17	18	9.42	5.82	2.11	1.33
7	0.56	0.72	2.94	2.24	16	51	15	15	10	6.66	2.11	1.33
8	1.20	1.04	2.11	2.11	18	29	14	13	9.74	7.50	2.11	1.33
9	1.46	4.70	3.82	1.85	14	20	13	13	9.42	7.22	1.98	1.33
10	1.04	2.50	3.16	1.12	13	14	12	11	9.74	5.82	1.98	1.20
11	1.04	1.59	2.50	1.04	12	12	11	11	9.74	5.54	1.85	1.20
12	1.04	1.12	2.37	1.12	16	10	32	10	9.42	4.98	1.85	1.20
13	1.04	0.96	4.98	2.94	26	17	20	10	9.10	4.70	1.85	1.20
14	0.96	0.88	2.94	2.37	54	13	12	10	7.82	4.70	1.85	1.20
15	0.88	0.88	1.12	1.72	23	68	30	10	7.82	6.10	1.98	1.20
16	0.80	2.50	2.24	1.20	18	166	16	12	7.82	6.38	1.98	1.20
17	0.72	1.72	1.12	1.20	25	63	12	11	7.50	7.22	1.85	1.20
18	0.72	1.20	0.88	1.20	36	34	11	12	7.50	7.50	1.85	1.33
19	0.72	0.96	3.60	1.85	55	23	13	11	16	6.66	1.85	1.20
20	0.72	0.80	2.37	3.38	42	32	10	12	8.78	5.26	1.85	1.20
21	0.72	0.80	4.48	2.37	51	31	9.42	12	8.14	4.98	1.85	1.20
22	0.72	1.04	3.38	1.72	100	104	9.10	12	7.50	4.70	1.85	1.20
23	0.72	0.96	2.24	4.48	43	103	9.42	12	7.22	4.26	1.85	1.85
24	0.64	0.88	6.38	9.74	24	43	8.46	12	7.22	3.82	1.72	15
25	0.64	0.80	3.38	4.48	20	29	12	12	6.94	2.94	1.72	9.10
26	0.64	0.80	2.50	7.82	17	23	10	11	7.22	2.50	1.72	2.72
27	0.64	3.16	2.72	4.48	15	20	17	11	6.66	2.37	1.72	2.37
28	1.59	22	4.98	7.50	48	18	18	11	6.66	2.37	1.98	2.24
29	4.26	47	9.74	8.78	92	19	13	11	6.66	2.37	–	2.11
30	1.20	125	6.94	8.14	27	15	12	10	6.66	2.37	–	1.98
31	–	95	–	11	17	–	11	–	6.66	2.37	–	1.85
Total	28.43	324.13	155.35	170.03	917	1,307	556.40	541	269.36	158.17	54.53	68.74
Mean	0.95	10.4	5.18	5.48	29.6	43.6	18.0	18.0	8.69	5.10	1.95	2.22
Max.	4.26	125	31	36	100	166	66	112	16	7.50	2.37	15
Min.	0.56	0.72	0.88	1.04	10	10	8.46	10	6.66	2.37	1.72	1.20
Runoff - mcm.	2.456	28.005	13.422	14.690	79.229	112.925	46.246	46.742	23.273	13.666	4.711	5.939

WATER YEAR 1969 : Max. 166 Min. 0.56 Mean 12.5 Annual Runoff 393.305 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 16	06.00	3.40	211				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
PING RIVER BASIN

Khlong Suan Mak at Ban Mai, Kamphaeng Phet (P_{26})

Location: Lat. 16°-26'-54" N., Long. 99°-25'-27" E., on right bank about 200 meters downstream from Tha Kra Dan Weir and about 15 kilometers upstream from confluence with Mae Ping River at Ban Mai, Amphoe Muang, Kamphaeng Phet.

Drainage Area: 968 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. P. 26

- Location: At about 10 meters east of P. 26 Station office
- Elevation: + 6.965 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1964 to date

Rating Operation:

- Period of Rating: 1964, 1967 to date
- Rated by Float: -
- Rated by Current Meter: 1964, 1967 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

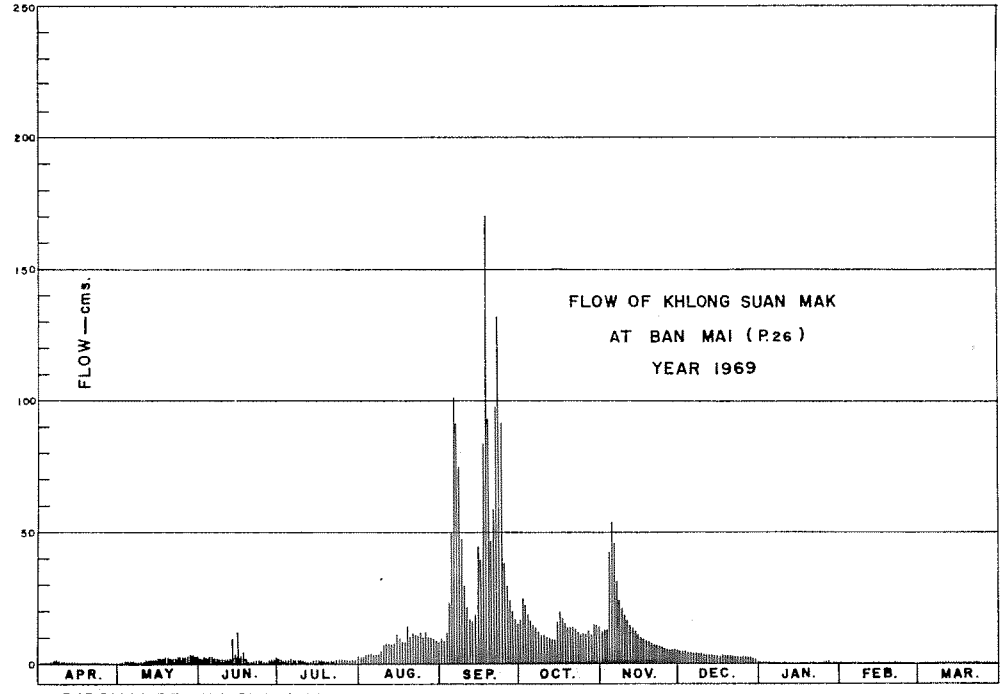
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1,1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	-0.18	-0.20	0.03	0.03	0.11	0.56	0.86	0.68	0.31	-0.16	-0.20	-0.22
2	.15	- .12	.11	.01	.13	.50	1.09	.70	.30	.16	.21	.22
3	.14	- .10	.09	.00	.17	.66	.02	.75	.29	.17	.21	.22
4	.16	- .12	.10	.02	.22	1.09	0.87	1.56	.28	.17	.21	.22
5	.13	- .12	.10	.05	.18	.87	.82	.79	.27	.18	.21	.22
6	-0.03	-0.12	0.07	0.01	0.17	2.74	0.77	1.61	0.26	-0.18	-0.21	-0.22
7	.05	- .12	.04	.00	.21	.32	.73	.29	.25	.17	.22	.22
8	.08	- .12	.01	- .05	.23	.02	.69	.09	.24	.16	.22	.22
9	.09	- .12	.02	- .05	.32	1.41	.64	0.99	.23	.16	.22	.22
10	.10	- .09	.02	- .06	.46	.11	.62	.89	.23	.16	.22	.22
11	-0.12	-0.06	0.04	-0.07	.48	0.90	0.61	0.82	0.22	-0.15	-0.22	-0.22
12	.13	- .03	.04	- .08	.46	.82	.58	.75	.22	.15	.22	.22
13	.14	0.00	.56	- .09	.46	.81	.55	.70	.21	.15	.23	.22
14	.14	.00	.00	- .01	.50	.95	.56	.66	.20	.15	.23	.22
15	.15	.02	.68	- .03	.62	1.58	.83	.61	.18	.14	.23	.22
16	-0.16	0.06	0.12	-0.04	0.56	1.44	0.96	0.57	0.14	-0.13	-0.23	-0.22
17	.17	.05	.24	- .04	.50	2.74	.86	.55	.16	.12	.23	.22
18	.17	.07	.02	- .07	.49	3.78	.79	.53	.16	.14	.23	.22
19	.17	.06	-0.07	- .07	.76	1.76	.75	.50	.15	.17	.23	.22
20	.17	.05	-0.09	- .06	.59	.62	.75	.48	.15	.15	.23	.22
21	-0.17	0.04	-0.08	-0.06	0.67	2.00	0.76	0.46	0.15	-0.16	-0.23	-0.23
22	.17	.06	- .06	- .05	.62	3.29	.73	.44	.13	.15	.23	.23
23	.17	.07	- .04	- .02	.61	2.64	.68	.41	.12	.14	.23	.23
24	.18	.08	- .06	0.00	.66	2.81	.64	.39	.12	.13	.23	.23
25	.19	.09	- .09	.00	.61	.37	.66	.37	.11	.11	.22	.23
26	-0.19	0.10	-0.08	-0.01	0.68	1.18	0.64	0.36	0.10	-0.11	-0.22	-0.23
27	.20	.12	0.02	- .04	.57	.04	.66	.36	.09	.13	.22	.23
28	.19	.16	.04	- .04	.57	0.92	.64	.35	.08	.16	.22	.23
29	.19	.15	.02	- .02	.55	.85	.79	.34	.07	.18	-	.23
30	.19	.11	.06	0.04	.53	.81	.80	.32	-0.00	.20	-	.23
31	-	.07	-	.10	.50	-	.75	-	- .16	.21	-	.23
Mean	-0.15	0.00	0.06	0.02	0.46	1.55	0.74	0.71	0.17	-0.15	-0.22	-0.22
Max.	-0.03	0.16	0.68	0.10	0.76	3.78	1.09	1.79	0.31	-0.11	-0.20	-0.22
Min.	-0.20	-0.20	-0.09	-0.09	0.11	0.50	0.55	0.32	-0.16	-0.21	-0.23	-0.23

WATER YEAR 1969 : Max. 3.78 m. Min. -0.23 m.

BM. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.31	0.20	1.80	1.80	2.61	9.30	17	12	4.96	0.42	0.20	0.12
2	0.47	0.64	2.61	1.60	2.83	8.17	25	13	4.80	0.42	0.16	0.12
3	0.53	0.75	2.40	1.50	3.27	12	22	14	4.68	0.36	0.16	0.12
4	0.42	0.64	2.50	1.70	3.84	25	17	43	4.56	0.36	0.16	0.12
5	0.58	0.64	2.50	2.00	3.38	57	16	54	4.44	0.31	0.16	0.12
6	1.27	0.64	2.20	1.60	3.27	101	14	46	4.32	0.31	0.16	0.12
7	1.12	0.64	1.90	1.50	3.72	79	13	32	4.20	0.36	0.12	0.12
8	0.90	0.64	1.60	1.12	3.96	64	12	25	4.08	0.42	0.12	0.12
9	0.82	0.64	1.70	1.12	5.12	37	11	21	3.96	0.42	0.12	0.12
10	0.75	0.82	1.70	1.05	7.42	26	11	18	3.96	0.42	0.12	0.12
11	0.64	1.05	1.90	0.97	7.76	18	10	16	3.84	0.47	0.12	0.12
12	0.58	1.27	1.90	0.90	7.42	16	9.70	14	3.84	0.47	0.12	0.12
13	0.53	1.50	9.30	0.82	7.42	16	9.10	13	3.72	0.47	0.08	0.12
14	0.53	1.50	1.50	1.42	8.10	20	9.30	12	3.60	0.47	0.08	0.12
15	0.47	1.70	12	1.27	11	44	16	10	3.38	0.53	0.08	0.12
16	0.42	2.10	2.72	1.20	9.30	38	20	9.50	2.94	0.58	0.08	0.12
17	0.36	2.00	4.08	1.20	8.10	107	17	9.10	3.16	0.64	0.08	0.12
18	0.36	2.20	1.70	0.97	7.93	170	15	8.70	3.16	0.53	0.08	0.12
19	0.36	2.10	0.97	0.97	14	62	14	8.10	3.05	0.36	0.08	0.12
20	0.36	2.00	0.82	1.05	9.90	46	14	7.76	3.05	0.47	0.08	0.12
21	0.36	1.90	0.90	1.05	12	64	14	7.42	3.05	0.42	0.08	0.08
22	0.36	2.10	1.05	1.12	11	132	13	7.08	2.83	0.47	0.08	0.08
23	0.36	2.20	1.20	1.35	10	96	12	6.57	2.72	0.53	0.08	0.08
24	0.31	2.30	1.05	1.50	12	54	11	6.24	2.72	0.58	0.08	0.08
25	0.25	2.40	0.82	1.50	10	36	12	5.92	2.61	0.69	0.12	0.08
26	0.25	2.50	0.90	1.42	12	28	11	5.76	2.50	0.69	0.12	0.08
27	0.20	2.72	1.70	1.20	9.50	23	12	5.76	2.40	0.58	0.12	0.08
28	0.25	3.16	1.90	1.20	9.50	19	11	5.60	2.30	0.42	0.12	0.08
29	0.25	3.05	1.70	1.35	9.10	17	15	5.44	2.20	0.31	–	0.08
30	0.25	2.61	2.10	1.90	8.70	15	15	5.12	1.50	0.20	–	0.08
31	–	2.20	–	2.50	8.10	–	14	–	0.42	0.16	–	0.08
Total	14.62	50.81	71.12	41.85	242.25	1,439.47	432.10	447.07	102.95	13.84	3.16	0.28
Mean	0.49	1.64	2.37	1.35	7.81	48.0	13.9	14.9	3.32	0.45	0.11	0.10
Max.	1.27	3.16	12	2.50	14	170	25	54	4.96	0.69	0.20	0.12
Min.	0.20	0.20	0.82	0.82	2.61	8.17	9.10	5.12	0.42	0.16	0.08	0.08
Runoff – mcm.	1.263	4.390	6.145	3.616	20.930	124.370	37.333	38.627	8.895	1.196	0.273	0.283

WATER YEAR 1969 : Max. 170 Min. 0.08 Mean 7.84 Annual Runoff 247.322 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 18	3.00	4.54	227				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
PING RIVER BASIN

Huai Mae Nai at Ban Pa Muang, Chiang Mai (P_{27})

Location: Lat. 18°-54'-23" N., Long. 98°-54'-59" E., on left bank near Wat Amphawan, Amphoe Mae Rim, Chiang Mai.

Drainage Area: 24 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S./R.I.D.

Location: Infront of P. 27 Station office

Elevation: + 4.45 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1965-70

Rating Operation:

Period of Rating: 1965-70

Rated by Float: -

Rated by Current Meter: 1965-70

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

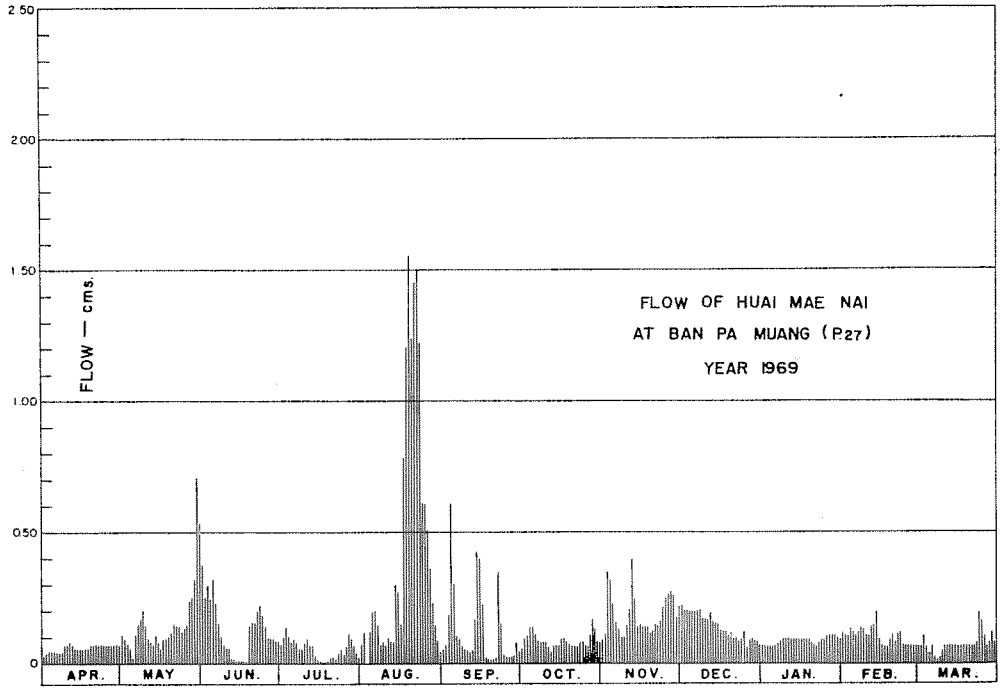
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by a series of small diversion dam built by local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.11	0.17	0.27	0.14	0.15	0.13	0.13	0.16	0.23	0.14	0.18	0.14
2	.12	.16	.24	.16	.18	.14	.16	.18	.22	.14	.17	.14
3	.12	.14	.26	.19	.18	.15	.17	.28	.22	.14	.17	.17
4	.12	.13	.23	.16	.18	.36	.19	.26	.22	.14	.19	.14
5	.12	.10	.27	.15	.22	.28	.19	.23	.22	.14	.18	.12
6	0.12	0.17	0.22	0.16	0.22	0.16	0.16	0.20	0.22	0.14	0.17	0.14
7	.12	.20	.20	.15	.18	.16	.15	.19	.22	.15	.18	.11
8	.12	.21	.17	.13	.14	.14	.15	.16	.22	.16	.19	.10
9	.14	.22	.14	.13	.15	.13	.15	.16	.21	.16	.18	.10
10	.14	.20	.13	.15	.14	.13	.15	.19	.21	.16	.17	.13
11	0.15	0.16	0.13	0.16	0.16	0.12	0.13	0.22	0.21	0.16	0.17	0.14
12	.14	.15	.10	.14	.15	.13	.12	.30	.22	.16	.20	.14
13	.13	.14	.10	.14	.15	.21	.14	.21	.20	.16	.20	.14
14	.13	.17	.09	.11	.26	.31	.14	.19	.20	.16	.22	.14
15	.13	.15	.09	.10	.25	.30	.14	.20	.20	.16	.15	.14
16	0.13	0.13	0.09	0.09	0.18	0.21	0.16	0.19	0.18	0.16	0.14	0.14
17	.13	.16	.09	.09	.42	.10	.16	.19	.18	.16	.14	.14
18	.13	.16	.09	.09	.51	.10	.15	.19	.18	.16	.14	.14
19	.14	.17	.19	.09	.56	.10	.14	.17	.18	.16	.16	.14
20	.14	.18	.20	.11	.50	.10	.14	.18	.18	.15	.17	.14
21	0.14	0.20	0.20	0.11	0.54	0.10	0.14	0.20	0.16	0.14	0.15	0.14
22	.14	.19	.22	.10	.55	.28	.14	.19	.16	.14	.17	.14
23	.14	.19	.23	.12	.39	.15	.15	.21	.15	.15	.18	.15
24	.14	.18	.21	.13	.36	.11	.15	.23	.16	.16	.14	.22
25	.14	.19	.19	.11	.36	.11	.14	.24	.18	.16	.14	.21
26	0.14	0.20	0.16	0.14	0.33	0.11	0.14	0.25	0.13	0.17	0.14	0.17
27	.14	.24	.16	.17	.28	.11	.17	.25	.16	.17	.14	.14
28	.14	.24	.16	.16	.23	.11	.21	.24	.16	.17	.14	.15
29	.14	.28	.15	.14	.19	.15	.18	.21	.15	.16	-	.18
30	.14	.39	.15	.12	.15	.12	.15	.23	.15	.16	-	.15
31	-	.34	-	.10	.12	-	.15	-	.14	-	-	.15
Mean	0.13	0.19	0.17	0.13	0.27	0.16	0.15	0.21	0.19	0.15	0.17	0.14
Max.	0.15	0.39	0.27	0.19	0.56	0.36	0.21	0.30	0.23	0.17	0.22	0.22
Min.	0.11	0.10	0.09	0.09	0.12	0.10	0.12	0.16	0.13	0.14	0.14	0.10

WATER YEAR 1969 : Max. 0.56 m. Min. 0.09 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.028	0.11	0.32	0.069	0.082	0.055	0.055	0.096	0.22	0.069	0.12	0.069
2	0.042	0.096	0.25	0.096	0.12	0.069	0.096	0.12	0.20	0.069	0.11	0.069
3	0.042	0.069	0.30	0.14	0.12	0.082	0.11	0.35	0.20	0.069	0.11	0.11
4	0.042	0.055	0.22	0.096	0.12	0.61	0.14	0.30	0.20	0.069	0.14	0.069
5	0.042	0.015	0.32	0.082	0.20	0.35	0.14	0.22	0.20	0.069	0.12	0.042
6	0.042	0.11	0.20	0.096	0.20	0.096	0.096	0.15	0.20	0.069	0.11	0.069
7	0.042	0.15	0.15	0.082	0.12	0.096	0.082	0.14	0.20	0.082	0.12	0.028
8	0.042	0.17	0.11	0.055	0.069	0.069	0.082	0.096	0.20	0.096	0.14	0.015
9	0.069	0.20	0.069	0.055	0.082	0.055	0.082	0.096	0.17	0.096	0.12	0.015
10	0.069	0.15	0.055	0.082	0.069	0.055	0.082	0.14	0.17	0.096	0.11	0.055
11	0.082	0.096	0.055	0.096	0.096	0.042	0.055	0.20	0.17	0.096	0.11	0.069
12	0.069	0.082	0.015	0.069	0.082	0.055	0.042	0.40	0.20	0.096	0.15	0.069
13	0.055	0.069	0.015	0.069	0.082	0.17	0.069	0.17	0.15	0.096	0.15	0.069
14	0.055	0.11	0.010	0.028	0.30	0.43	0.069	0.14	0.15	0.096	0.20	0.069
15	0.055	0.082	0.010	0.015	0.27	0.40	0.069	0.15	0.15	0.096	0.082	0.069
16	0.055	0.055	0.010	0.010	0.12	0.17	0.096	0.14	0.12	0.096	0.069	0.069
17	0.055	0.096	0.010	0.010	0.85	0.015	0.096	0.14	0.12	0.096	0.069	0.069
18	0.055	0.096	0.010	0.010	1.28	0.015	0.082	0.14	0.12	0.096	0.069	0.069
19	0.069	0.11	0.14	0.010	1.55	0.015	0.069	0.11	0.12	0.096	0.096	0.069
20	0.069	0.12	0.15	0.028	1.23	0.015	0.069	0.12	0.12	0.082	0.11	0.069
21	0.069	0.15	0.15	0.028	1.45	0.015	0.069	0.15	0.096	0.069	0.082	0.069
22	0.069	0.14	0.20	0.015	1.50	0.35	0.069	0.14	0.096	0.069	0.11	0.069
23	0.069	0.14	0.22	0.042	0.71	0.082	0.082	0.17	0.082	0.082	0.12	0.082
24	0.069	0.12	0.17	0.055	0.61	0.028	0.082	0.22	0.096	0.096	0.069	0.20
25	0.069	0.14	0.14	0.028	0.61	0.028	0.069	0.25	0.12	0.096	0.069	0.17
26	0.069	0.15	0.096	0.069	0.50	0.028	0.069	0.27	0.055	0.11	0.069	0.11
27	0.069	0.25	0.096	0.11	0.35	0.028	0.11	0.27	0.096	0.11	0.069	0.069
28	0.069	0.25	0.096	0.096	0.22	0.028	0.17	0.25	0.096	0.11	0.069	0.082
29	0.069	0.35	0.082	0.069	0.14	0.082	0.12	0.17	0.082	0.11	–	0.12
30	0.069	0.71	0.082	0.042	0.082	0.042	0.082	0.22	0.082	0.096	–	0.082
31	–	0.54	–	0.015	0.042	–	0.082	–	0.069	0.096	–	0.082
Total	1.769	4.981	3.751	1.767	13.256	3.575	2.685	5.528	4.350	2.774	2.962	2.366
Mean	0.059	0.16	0.12	0.057	0.43	0.12	0.087	0.18	0.14	0.089	0.10	0.076
Max.	0.082	0.71	0.32	0.14	1.55	0.61	0.17	0.40	0.22	0.11	0.20	0.20
Min.	0.028	0.015	0.010	0.010	0.042	0.015	0.042	0.096	0.055	0.069	0.069	0.015
Runoff – mcm.	0.153	0.430	0.324	0.153	1.145	0.309	0.232	0.478	0.376	0.240	0.256	0.204

WATER YEAR 1969 : Max. 1.55 Min. 0.010 Mean 0.136 Annual Runoff 4.300 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 17	18.00	1.32	6.62				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
PING RIVER BASIN

Huai Mae Nai at Ban Mae Nai, Chiang Mai (P_{27A})

Location: Lat. 18°-53'-18" N., Long. 98°-55'-00" E., on left bank about 3 kilometers upstream from station P. 27, Amphoe Mae Rim, Chiang Mai.

Drainage Area: 18 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S. P. 27A

Location: Near staff gage site

Elevation: + 3.263 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1967 to date

Rated by Float: –

Rated by Current Meter: 1967 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

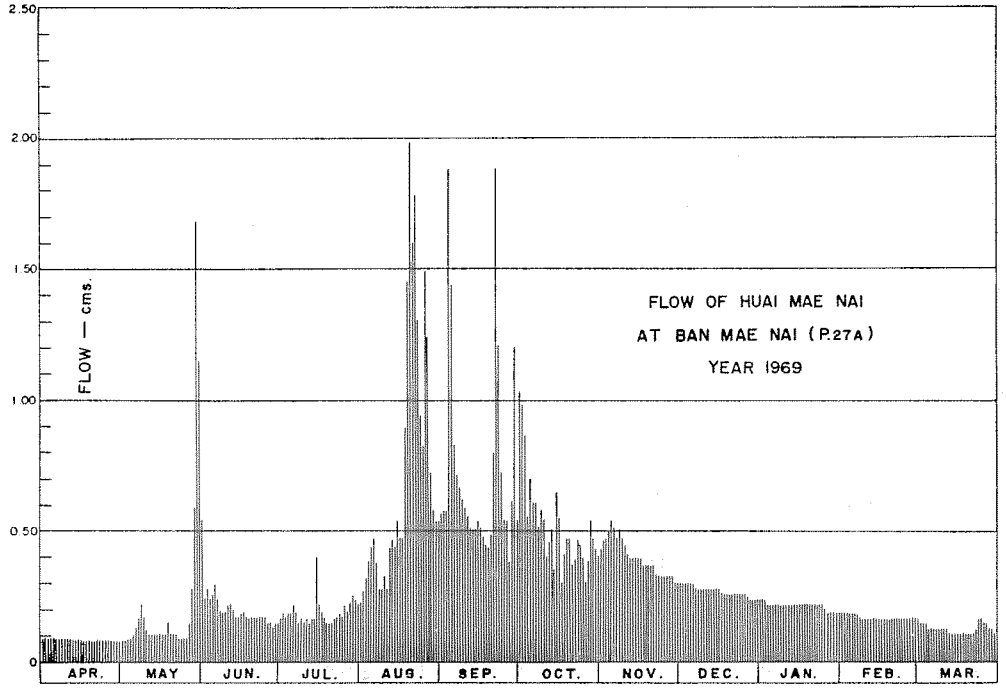
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by a series of small diversion dams built by the local residents. No adjustment is made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.20	0.19	0.29	0.24	0.27	0.38	0.47	0.34	0.30	0.27	0.25	0.24
2	.20	.19	.27	.25	.29	.38	.46	.35	.30	.27	.25	.23
3	.20	.19	.29	.24	.31	.38	.43	.35	.30	.26	.25	.23
4	.20	.20	.27	.25	.33	.57	.37	.36	.30	.26	.25	.23
5	.20	.20	.28	.25	.34	.48	.41	.37	.30	.26	.25	.22
6	0.20	0.21	0.30	0.26	0.35	0.42	0.39	0.36	0.30	0.26	0.25	0.22
7	.20	.23	.26	.25	.32	.41	.39	.35	.29	.26	.25	.22
8	.20	.25	.25	.23	.29	.40	.36	.36	.29	.26	.24	.22
9	.20	.26	.25	.24	.29	.39	.38	.35	.29	.26	.24	.22
10	.20	.23	.25	.23	.31	.38	.37	.34	.29	.26	.24	.22
11	0.20	0.23	0.26	0.24	0.29	0.37	0.33	0.33	0.29	0.26	0.24	0.22
12	.20	.21	.26	.23	.34	.36	.35	.33	.29	.26	.24	.22
13	.19	.21	.25	.24	.35	.36	.36	.33	.29	.26	.24	.21
14	.19	.21	.24	.24	.34	.36	.31	.33	.29	.26	.24	.21
15	.19	.21	.24	.33	.37	.37	.40	.33	.29	.26	.24	.21
16	0.19	0.21	0.25	0.26	0.35	0.36	0.35	0.33	0.29	0.26	0.24	0.21
17	.19	.21	.25	.25	.35	.35	.30	.32	.28	.26	.24	.21
18	.19	.21	.24	.24	.44	.34	.34	.32	.28	.26	.24	.21
19	.19	.23	.24	.23	.54	.34	.35	.32	.28	.26	.24	.21
20	.19	.21	.24	.23	.58	.36	.35	.32	.28	.26	.24	.21
21	0.19	0.21	0.24	0.23	0.54	0.44	0.32	0.32	0.28	0.26	0.24	0.21
22	.19	.21	.24	.24	.56	.57	.33	.31	.28	.26	.24	.21
23	.19	.20	.24	.24	.47	.43	.35	.31	.28	.26	.24	.22
24	.19	.20	.24	.25	.45	.40	.34	.31	.28	.26	.24	.24
25	.19	.20	.24	.24	.43	.37	.33	.31	.28	.26	.24	.24
26	0.19	0.20	0.23	0.26	0.53	0.37	0.30	0.31	0.28	0.25	0.24	0.23
27	.19	.24	.23	.25	.43	.32	.34	.31	.27	.25	.24	.23
28	.19	.31	.22	.27	.40	.40	.37	.31	.27	.25	.24	.22
29	.19	.40	.23	.28	.38	.50	.35	.30	.27	.25	–	.22
30	.19	.55	.23	.27	.37	.35	.34	.30	.27	.25	–	.21
31	–	.46	–	.26	.37	–	.33	–	.27	.25	–	.22
Mean	0.19	0.24	0.25	0.25	0.39	0.40	0.36	0.33	0.28	0.26	0.24	0.22
Max.	0.20	0.55	0.30	0.33	0.58	0.57	0.47	0.37	0.30	0.27	0.25	0.24
Min.	0.19	0.19	0.22	0.23	0.27	0.32	0.30	0.30	0.27	0.25	0.24	0.21

WATER YEAR 1969 : Max. 0.58 m. Min. 0.19 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.090	0.082	0.28	0.17	0.24	0.58	1.03	0.44	0.30	0.24	0.19	0.17
2	0.090	0.082	0.24	0.19	0.28	0.58	0.98	0.47	0.30	0.24	0.19	0.15
3	0.090	0.082	0.28	0.17	0.33	0.58	0.81	0.47	0.30	0.22	0.19	0.15
4	0.090	0.090	0.24	0.19	0.40	1.88	0.54	0.51	0.30	0.22	0.19	0.15
5	0.090	0.090	0.26	0.19	0.44	1.09	0.70	0.54	0.30	0.22	0.19	0.13
6	0.090	0.11	0.30	0.22	0.47	0.76	0.61	0.51	0.30	0.22	0.19	0.13
7	0.090	0.15	0.22	0.19	0.37	0.70	0.61	0.47	0.28	0.22	0.19	0.13
8	0.090	0.19	0.19	0.15	0.28	0.65	0.51	0.51	0.28	0.22	0.17	0.13
9	0.090	0.22	0.19	0.17	0.28	0.61	0.58	0.47	0.28	0.22	0.17	0.13
10	0.090	0.15	0.19	0.15	0.33	0.58	0.54	0.44	0.28	0.22	0.17	0.13
11	0.090	0.15	0.22	0.17	0.28	0.54	0.40	0.40	0.28	0.22	0.17	0.13
12	0.090	0.11	0.22	0.15	0.44	0.51	0.47	0.40	0.28	0.22	0.17	0.13
13	0.082	0.11	0.19	0.17	0.47	0.51	0.51	0.40	0.28	0.22	0.17	0.11
14	0.082	0.11	0.17	0.17	0.44	0.51	0.33	0.40	0.28	0.22	0.17	0.11
15	0.082	0.11	0.17	0.40	0.54	0.54	0.65	0.40	0.28	0.22	0.17	0.11
16	0.082	0.11	0.19	0.22	0.47	0.51	0.47	0.40	0.28	0.22	0.17	0.11
17	0.082	0.11	0.19	0.19	0.47	0.47	0.30	0.37	0.26	0.22	0.17	0.11
18	0.082	0.11	0.17	0.17	0.87	0.44	0.44	0.37	0.26	0.22	0.17	0.11
19	0.082	0.15	0.17	0.15	1.59	0.44	0.47	0.37	0.26	0.22	0.17	0.11
20	0.082	0.11	0.17	0.15	1.98	0.51	0.47	0.37	0.26	0.22	0.17	0.11
21	0.082	0.11	0.17	0.15	1.59	0.87	0.37	0.37	0.26	0.22	0.17	0.11
22	0.082	0.11	0.17	0.17	1.78	1.88	0.40	0.33	0.26	0.22	0.17	0.11
23	0.082	0.090	0.17	0.17	1.03	0.81	0.47	0.33	0.26	0.22	0.17	0.13
24	0.082	0.090	0.17	0.19	0.92	0.65	0.44	0.33	0.26	0.22	0.17	0.17
25	0.082	0.090	0.17	0.17	0.81	0.54	0.40	0.33	0.26	0.22	0.17	0.17
26	0.082	0.090	0.15	0.22	1.49	0.54	0.30	0.33	0.26	0.19	0.17	0.15
27	0.082	0.17	0.15	0.19	0.81	0.37	0.44	0.33	0.24	0.19	0.17	0.15
28	0.082	0.33	0.13	0.24	0.65	0.65	0.54	0.33	0.24	0.19	0.17	0.13
29	0.082	0.65	0.15	0.26	0.58	1.20	0.47	0.30	0.24	0.19	–	0.13
30	0.082	1.68	0.15	0.24	0.54	0.47	0.44	0.30	0.24	0.19	–	0.11
31	–	0.98	–	0.22	0.54	–	0.40	–	0.24	0.19	–	0.13
Total	2.556	6.816	5.83	5.95	21.71	20.97	16.09	11.99	8.40	6.68	4.90	4.03
Mean	0.085	0.22	0.19	0.19	0.70	0.70	0.52	0.40	0.27	0.21	0.17	0.13
Max.	0.090	1.68	0.30	0.40	1.98	1.88	1.03	0.54	0.30	0.24	0.19	0.17
Min.	0.082	0.082	0.13	0.15	0.24	0.37	0.30	0.30	0.24	0.19	0.17	0.11
Runoff - mcm.	0.221	0.589	0.504	0.514	1.876	1.812	1.390	1.036	0.726	0.577	0.423	0.348

WATER YEAR 1969 : Max. 1.98 Min. 0.082 Mean 0.32 Annual Runoff 10.016 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 29	15.00	0.64	2.75				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
PING RIVER BASIN

Mae Ngat River at Ban Mai, Chiang Mai (P_{28})

Location: Lat. 19°-10'-12" N., Long. 99°-03'-06" E., on left bank about 2 kilometers upstream from Mae Ngat Weir at Ban Mai, Amphoe Mae Taeng, Chiang Mai.

Drainage Area: 1,261 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. R.I.D.

Location: Near staff gage site

Elevation: + 6.692 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1966 to date

Rating Operation:

Period of Rating: 1966 to date

Rated by Float: -

Rated by Current Meter: 1966 to date

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation.

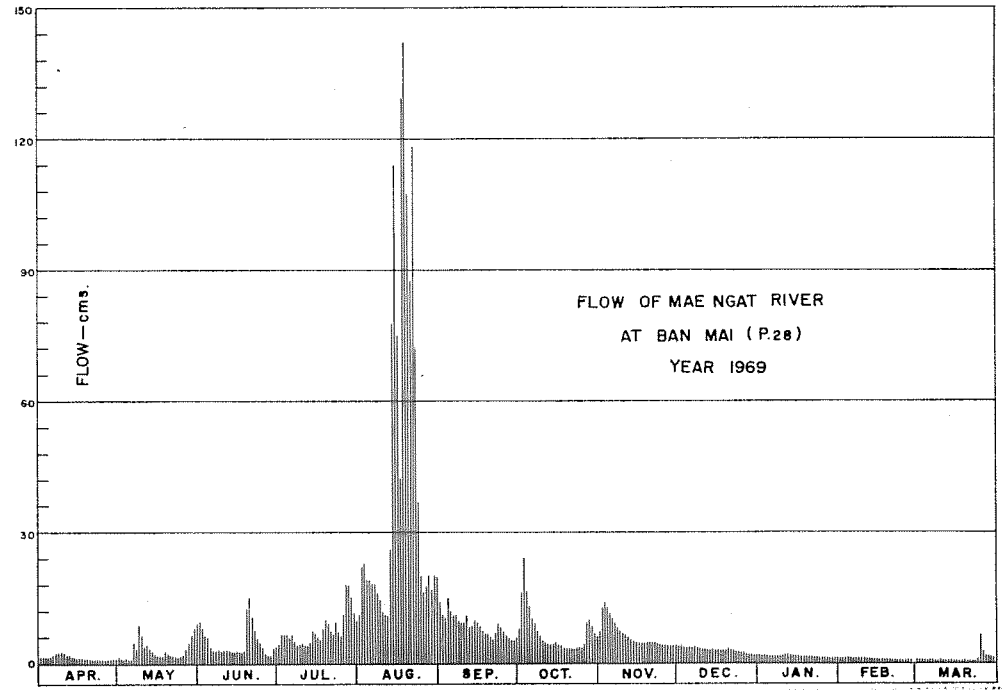
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by upstream diversions which built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.74	0.75	1.15	0.95	1.17	1.27	1.11	1.09	0.92	0.80	0.74	0.68
2	.74	.73	.07	1.04	.51	.20	.34	.27	.92	.80	.74	.68
3	.74	.72	.02	.04	.53	.17	.56	.30	.92	.80	.74	.68
4	.73	.71	0.96	.04	.44	.33	.39	.25	.91	.79	.74	.67
5	.76	.70	.90	.01	.44	.25	.27	.21	.91	.79	.74	.67
6	0.79	0.71	0.86	1.04	1.41	1.22	1.18	1.17	0.91	0.79	0.73	0.67
7	.80	.92	.85	0.97	.41	.19	.14	.13	.91	.79	.73	.67
8	.82	.84	.87	.93	.36	.17	.08	.10	.90	.79	.73	.66
9	.84	1.13	.85	.93	.32	.15	.00	.07	.89	.79	.73	.66
10	.82	.01	.85	.96	.25	.15	.98	.05	.89	.80	.73	.66
11	0.80	0.89	0.85	0.94	1.20	1.20	0.96	1.04	0.88	0.81	0.73	0.65
12	.79	.94	.88	.91	.21	.11	.94	.01	.88	.82	.73	.65
13	.77	.87	.84	.97	.45	.12	.94	0.99	.88	.81	.73	.65
14	.76	.83	.83	1.08	2.36	.17	.94	.98	.88	.80	.73	.65
15	.74	.80	.85	.05	.77	.14	.96	.97	.88	.79	.72	.65
16	0.73	0.78	0.84	1.01	2.25	1.12	0.94	0.96	0.87	0.78	0.72	0.65
17	.73	.78	.83	0.99	1.85	.08	.92	.96	.87	.78	.71	.65
18	.72	.78	.86	1.09	2.96	.04	.91	.96	.87	.78	.71	.65
19	.72	.84	1.25	.17	3.05	.05	.90	.96	.87	.78	.70	.65
20	.72	.80	.34	.14	2.65	.03	.90	.96	.91	.78	.70	.65
21	0.72	0.79	1.18	1.07	2.44	1.00	0.90	0.96	0.89	0.78	0.69	0.65
22	.71	.78	.09	.04	.82	.05	.88	.96	.88	.77	.69	.65
23	.71	.77	.01	.15	.16	.14	.90	.95	.86	.77	.69	.65
24	.70	.76	0.94	.06	1.68	.11	.91	.94	.85	.76	.69	.71
25	.68	.78	.88	.02	.43	.07	.90	.94	.84	.76	.69	1.04
26	0.68	0.82	0.83	1.22	1.36	1.03	0.94	0.94	0.84	0.76	0.69	0.86
27	.69	.87	.81	.41	.42	.01	1.15	.93	.83	.75	.69	.78
28	.70	.96	.78	.42	.45	0.99	.17	.93	.83	.75	.68	.76
29	.71	1.03	.89	.32	.36	.97	.10	.93	.81	.74		.75
30	.73	.09	.91	.24	.47	1.02	.04	.93	.80	.74		.73
31		.14		.16	.58		.02		.80	.74		.71
Mean	0.74	0.85	0.93	1.08	1.77	1.12	1.04	1.03	0.87	0.78	0.71	0.69
Max.	0.84	1.14	1.34	1.42	3.05	1.33	1.56	1.30	0.92	0.82	0.74	1.04
Min.	0.68	0.70	0.78	0.91	1.17	0.97	0.88	0.93	0.80	0.74	0.68	0.65

WATER YEAR 1969 : Max. 3.05 m. Min. 0.65 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.34	1.45	9.50	4.60	10	13	8.38	7.85	4.00	2.00	1.34	0.78
2	1.34	1.23	7.35	6.60	22	11	15	13	4.00	2.00	1 34	0.78
3	1.34	1.12	6.10	6.60	23	10	24	14	4.00	2.00	1.34	0.78
4	1.23	1.01	4.80	6.60	19	15	17	12	3.80	1.89	1.34	0.72
5	1.56	0.90	3.60	5.85	19	12	13	11	3.80	1.89	1.34	0.72
6	1.89	1.01	2.96	6.60	18	11	10	10	3.80	1.89	1.23	0.72
7	2.00	4.00	2.80	5.00	18	11	9.22	8.94	3.80	1.89	1.23	0.72
8	2.32	2.64	3.12	4.20	16	10	7.60	8.10	3.60	1.89	1.23	0.66
9	2.64	8.94	2.80	4.20	15	9.50	5.60	7.35	3.44	1.89	1.23	0.66
10	2.32	5.85	2.80	4.80	12	9.50	5.20	6.85	3.44	2.00	1.23	0.66
11	2.00	3.44	2.80	4.40	11	11	4.80	6.60	3.28	2.16	1.23	0.60
12	1.89	4.40	3.28	3.80	11	8.38	4.40	5.85	3.28	2.32	1.23	0.60
13	1.67	3.12	2.68	5.00	20	8.66	4.40	5.40	3.28	2.16	1.23	0.60
14	1.56	2.48	2.48	7.60	77	10	4.40	5.20	3.28	2.00	1.23	0.60
15	1.34	2.00	2.80	6.85	114	9.22	4.80	5.00	3.28	1.89	1.12	0.60
16	1.23	1.78	2.64	5.85	68	8.66	4.40	4.80	3.12	1.78	1.12	0.60
17	1.23	1.78	2.48	5.40	39	7.60	4.00	4.80	3.12	1.78	1.01	0.60
18	1.12	1.78	2.96	7.85	132	6.60	3.80	4.80	3.12	1.78	1.01	0.60
19	1.12	2.64	12	10	142	6.85	3.60	4.80	3.12	1.78	0.90	0.60
20	1.12	2.00	15	9.22	102	6.35	3.60	4.80	3.80	1.78	0.90	0.60
21	1.12	1.89	10	7.35	83	5.60	3.60	4.80	3.44	1.78	0.84	0.60
22	1.01	1.78	7.85	6.60	118	6.85	3.28	4.80	3.28	1.67	0.84	0.60
23	1.01	1.67	5.85	9.50	60	9.22	3.60	4.60	2.96	1.67	0.84	0.60
24	0.90	1.56	4.40	7.10	30	8.38	3.80	4.40	2.86	1.56	0.84	1.01
25	0.78	1.78	3.28	6.10	19	7.35	3.60	4.40	2.64	1.56	0.84	6.60
26	0.78	2.32	2.48	11	16	6.35	4.40	4.40	2.64	1.56	0.84	2.96
27	0.84	3.12	2.16	18	18	5.85	9.50	4.20	2.48	1.45	0.84	1.78
28	0.90	4.80	1.78	18	20	5.40	10	4.20	2.48	1.45	0.78	1.56
29	1.01	6.35	3.44	15	16	5.00	8.10	4.20	2.16	1.34		1.45
30	1.23	7.85	3.80	12	20	6.10	6.60	4.20	2.00	1.34		1.23
31		9.22		9.78	20		6.10		2.00	1.34		1.01
Total	41.84	95.91	139.95	241.45	1,313	261.42	219.78	195.34	99.24	55.49	30.49	32.60
Mean	1.39	3.09	4.66	7.79	42.3	8.71	7.08	6.51	3.20	1.79	1.09	1.05
Max.	2.64	9.22	15	18	142	15	24	14	4.00	2.32	1.34	6.60
Min.	0.78	0.90	1.78	4.20	10	5.00	3.28	4.20	2.00	1.34	0.78	0.60
Runoff — mcm.	3.615	8.287	12.092	20.861	113.443	22.587	18.989	16.877	8.574	4.794	2.634	2.817

WATER YEAR 1969 : Max. 142 Min. 0.60 Mean 7.47 Annual Runoff 235.570 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 19	08.00	3.34	172				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
PING RIVER BASIN

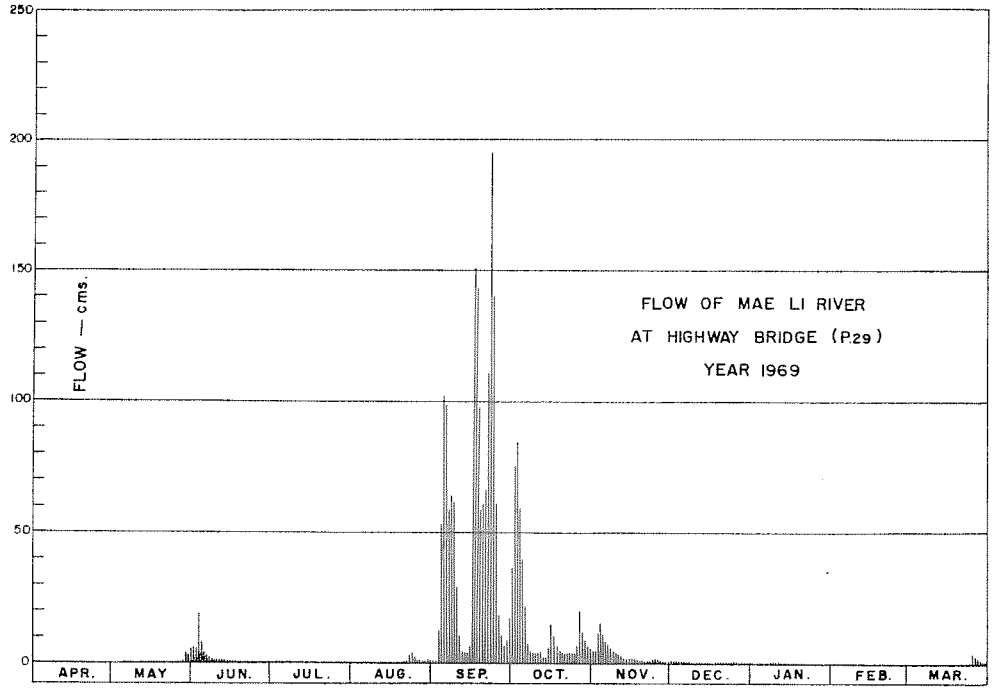
Mae Li River at Highway Bridge, Lumphun (P_{29})

Location:	Lat. 18°-18'-35" N., Long. 98°-49'-35" E., on right bank at Kaeo Sonthi Bridge, Amphoe Ban Hong, Lumphum.
Drainage Area:	1,970 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	B.M. - P29
Location:	Near Kaeo Sonthi Bridge
Elevation:	+ 2.483 m. (A.D.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1969 to date
Rating Operation:	
Period of Rating:	1969 to date
Rated by Float:	-
Rated by Current Meter:	1969 to date
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.
Remarks:	Stream gaging station began on May 4, 1969.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	Stream Gaging began		1.07	0.47	0.37	0.62	1.46	1.02	0.66	0.43	0.36	0.32
2	on May 4, 1969		.05	.44	.37	.55	.77	.01	.70	.43	.36	.32
3			.32	.40	.38	.83	.83	.22	.67	.42	.37	.32
4			.05	.39	.36	1.58	.62	.26	.65	.46	.38	.30
5		0.25	0.95	.38	.36	.92	.45	.19	.64	.49	.36	.31
6		0.28	0.87	0.38	0.36	1.90	1.26	1.15	0.60	0.45	0.37	0.32
7		.27	.80	.37	.36	.66	.15	.10	.58	.43	.35	.31
8		.30	.73	.37	.36	.70	.03	.05	.60	.43	.36	.30
9		.33	.70	.38	.36	.57	0.99	.03	.58	.44	.36	.29
10		.31	.67	.37	.35	.37	.95	0.99	.55	.42	.35	.29
11		0.30	0.67	0.38	0.36	1.20	0.94	0.94	0.54	0.43	0.33	0.28
12		.29	.65	.38	.36	.00	.99	.90	.55	.42	.33	.27
13		.30	.62	.37	.36	.00	.77	.87	.53	.43	.33	.26
14		.30	.59	.37	.36	0.96	.86	.77	.51	.42	.33	.25
15		.34	.55	.37	.36	1.12	1.10	.74	.49	.41	.32	.24
16		0.40	0.53	0.37	0.36	1.84	1.27	0.81	0.48	0.40	0.31	0.24
17		.39	.48	.38	.36	2.14	.19	.77	.47	.40	.32	.23
18		.37	.45	.37	.36	.10	.10	.72	.48	.40	.32	.22
19		.37	.47	.38	.37	1.65	.04	.66	.55	.40	.31	.22
20		.38	.51	.37	.38	.69	0.97	.66	.58	.40	.31	.22
21		0.39	0.50	0.37	0.55	1.72	0.92	0.64	0.57	0.39	0.32	0.20
22		.38	.47	.37	.51	.98	.93	.63	.54	.39	.32	.22
23		.34	.47	.36	.92	2.31	.97	.62	.52	.40	.32	.23
24		.35	.47	.39	.97	1.95	.95	.65	.48	.39	.32	.45
25		.33	.46	.37	.87	.53	.93	.70	.48	.38	.32	.97
26		0.35	0.45	0.38	0.64	1.32	1.12	0.68	0.48	0.39	0.31	0.84
27		.37	.45	.38	.68	.20	.33	.66	.43	.39	.32	.77
28		.70	.48	.38	.59	1.07	.22	.64	.40	.38	.31	.61
29		.99	.50	.38	.59	.13	.17	.63	.38	.37	-	.53
30		.89	.49	.38	.72	.28	.10	.65	.39	.36	-	.47
31		1.04	-	.38	.66	-	.06	-	.42	.37	-	.44
Mean			0.65	0.38	0.48	1.46	1.14	0.84	0.53	0.41	0.33	0.36
Max.		1.04	1.32	0.47	0.97	2.31	1.83	1.26	0.70	0.49	0.38	0.97
Min.		0.25	0.45	0.36	0.36	0.55	0.77	0.62	0.38	0.36	0.31	0.20

WATER YEAR 1969 : Max. 2.31 m. Min. 0.20 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	Stream Gaging		5.84	0.34	0.15	0.86	32	4.74	1.07	0.25	0.14	0.086
2	began on May 4, 69		5.40	0.27	0.15	0.58	75	4.52	1.28	0.25	0.14	0.086
3			19	0.19	0.16	2.26	85	12	1.12	0.23	0.15	0.086
4			5.40	0.18	0.14	47	52	15	1.02	0.32	0.16	0.060
5		0.030	3.63	0.16	0.14	102	31	10	0.97	0.38	0.14	0.073
6		0.048	2.66	0.16	0.14	98	15	8.75	0.76	0.29	0.15	0.086
7		0.042	1.96	0.15	0.14	58	8.75	6.50	0.69	0.25	0.12	0.073
8		0.060	1.48	0.15	0.14	64	4.96	5.40	0.76	0.25	0.14	0.060
9		0.099	1.28	0.16	0.14	46	4.17	4.96	0.69	0.27	0.14	0.054
10		0.073	1.12	0.15	0.14	23	3.63	4.17	0.58	0.23	0.12	0.054
11		0.060	1.12	0.16	0.14	11	3.50	3.50	0.54	0.25	0.099	0.048
12		0.054	1.02	0.16	0.14	4.30	4.17	2.96	0.58	0.23	0.099	0.042
13		0.060	0.86	0.15	0.14	4.30	1.76	2.66	0.51	0.25	0.099	0.036
14		0.060	0.72	0.15	0.14	3.76	2.56	1.76	0.44	0.23	0.099	0.030
15		0.11	0.58	0.15	0.14	7.40	6.50	1.55	0.38	0.21	0.086	0.024
16		0.19	0.51	0.15	0.14	87	15	2.06	0.36	0.19	0.073	0.024
17		0.18	0.36	0.16	0.14	151	10	1.76	0.34	0.19	0.086	0.018
18		0.15	0.29	0.15	0.14	141	6.50	1.42	0.36	0.19	0.086	0.012
19		0.15	0.34	0.16	0.15	58	5.18	1.07	0.58	0.19	0.073	0.012
20		0.16	0.44	0.15	0.16	63	3.90	1.07	0.69	0.19	0.073	0.012
21		0.18	0.40	0.15	0.58	67	3.23	0.97	0.65	0.18	0.086	0.000
22		0.16	0.34	0.15	0.44	116	3.36	0.92	0.54	0.18	0.086	0.012
23		0.11	0.34	0.14	3.23	195	3.90	0.86	0.47	0.19	0.086	0.018
24		0.12	0.34	0.18	3.90	112	3.63	1.02	0.36	0.18	0.086	0.290
25		0.099	0.32	0.15	2.66	41	3.36	1.28	0.36	0.16	0.086	3.90
26		0.12	0.29	0.16	0.97	19	7.40	1.18	0.36	0.18	0.073	1.36
27		0.15	0.29	0.16	1.18	11	20	1.07	0.25	0.18	0.086	1.76
28		1.28	0.36	0.16	0.72	6.00	12	0.97	0.19	0.16	0.073	0.81
29		4.17	0.40	0.16	1.72	7.85	9.65	0.92	0.16	0.15	–	0.51
30		2.86	0.38	0.16	1.42	16	6.50	1.02	0.18	0.14	–	0.34
31		5.18	–	0.16	1.07	–	5.62	–	0.23	0.15	–	0.27
Total		21.08	57.47	5.18	19.76	1,563.31	449.23	106.06	17.47	6.69	2.935	11.246
Mean		0.68	1.91	0.17	0.64	52.1	14.5	3.53	0.56	0.21	0.10	0.37
Max.		5.18	19	0.34	3.90	195	85	15	1.28	0.38	0.16	3.90
Min.		0.030	0.29	0.14	0.14	0.58	1.76	0.86	0.16	0.14	0.073	0.000
Runoff – mcm.		1.821	4.965	0.447	1.707	135.069	38.813	9.163	1.509	0.578	0.253	0.972

WATER YEAR 1969 : Max. 195 Min. 0.000 Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23	12.00	2.36	206				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
PING RIVER BASIN

Mae Kuang River at Ban Kiang Kha Mai, Chiang Mai (P_{30})

Location: Lat. 18°-56'-35" N., Long. 99°-08'-20" E., on right bank at Ban Kiang Kha Mai, Amphoe Doi Saket, Chiang Mai.

Drainage Area: 466 sq.km.

Type of Gage: Water-Stage recorder

Zero Gage at Bottom at: + 344.544 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: Infront of automatic gage building

Elevation: + 349.874 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1967 to date

Rated by Float: -

Rated by Current Meter: 1967 to date

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

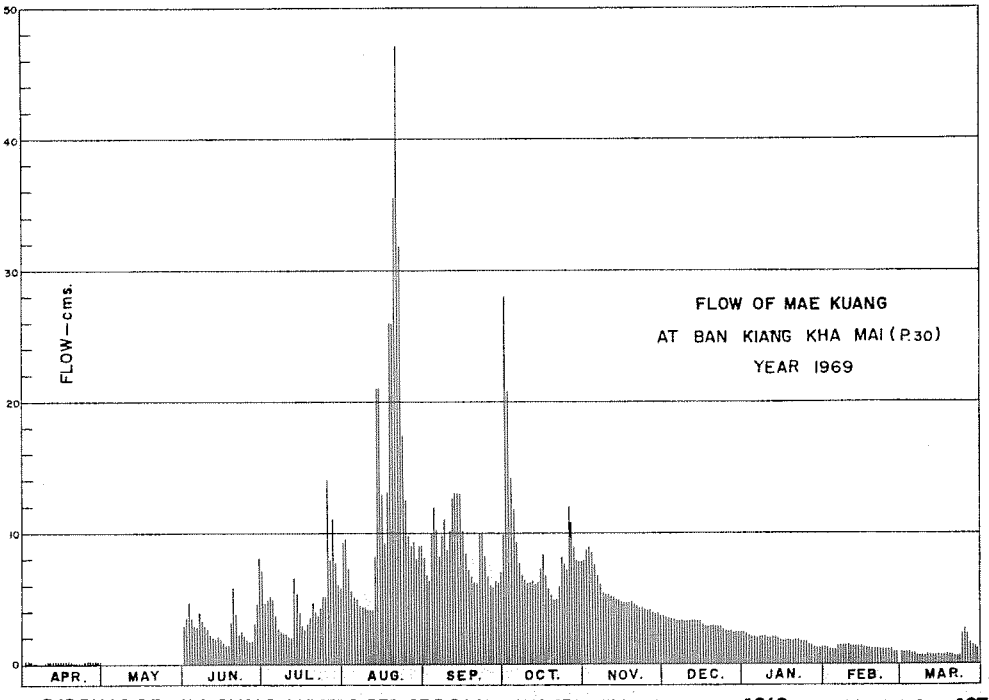
Remarks: No records on period May 1969.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	344.99		345.19	345.37	345.46	345.41	345.49	345.42	345.23	435.16	345.08	345.05
2	.98		.21	.26	.47	.36	346.01	.45	.22	.15	.08	.05
3	.99		345.28	.29	.37	.36	345.70	.45	.22	.14	.07	.05
4	.97		.21	.30	.32	.53	.62	.42	.22	.14	.07	.05
5	.97		.18	.29	.30	.54	.52	.39	.22	.13	.07	.04
6	344.97		345.18	345.22	345.29	345.48	345.44	345.36	345.21	345.13	345.09	345.04
7	.97		.24	.17	.27	.41	.40	.33	.21	.13	.10	.03
8	.97		.19	.16	.26	.52	.36	.31	.21	.14	.10	.03
9	.98		.19	.14	.26	.51	.35	.31	.21	.14	.10	.03
10	.98		.16	.15	.25	.43	.34	.31	.21	.13	.10	.03
11	344.98		345.14	345.13	345.26	345.47	345.34	345.30	345.20	345.13	345.09	345.04
12	.98		.13	.13	.25	.58	.35	.30	.20	.14	.09	.03
13	.98		.12	.36	.43	.60	.34	.29	.20	.13	.09	.03
14	.98		.14	.33	.83	.59	.35	.29	.20	.13	.09	.03
15	.99		.12	.25	.81	.53	.40	.28	.20	.12	.08	.03
16	344.98		345.10	345.18	345.56	345.46	345.43	345.28	345.19	345.12	345.08	345.03
17	.98		.09	.17	.44	.40	.34	.28	.19	.12	.08	.03
18	.98		.09	.20	.64	.37	.32	.28	.19	.12	.08	.03
19	.97		.52	.22	.96	.36	.30	.28	.19	.12	.07	.03
20	.97		.33	.28	.96	.34	.29	.27	.19	.12	.07	.03
21	344.97		345.18	345.24	346.24	345.34	345.29	345.26	345.19	345.12	345.07	345.02
22	.97		.14	.23	.42	.50	.32	.26	.18	.12	.07	.02
23	.97		.16	.26	345.82	.49	.42	.26	.18	.11	.07	.03
24	.99		.14	.30	.64	.39	.40	.25	.17	.11	.07	.14
25	.99		.12	.30	.52	.36	.34	.25	.16	.11	.07	.17
26	344.98		345.11	345.61	345.47	345.33	345.54	345.25	345.16	345.09	345.07	345.12
27	.98		.12	.38	.45	.33	.50	.24	.16	.09	.05	.10
28	.98		.20	.52	.46	.35	.43	.24	.15	.08	.05	.09
29	-		.29	.39	.41	.34	.41	.24	.16	.08	-	.08
30	-		.42	.33	.45	.39	.41	.23	.16	.08	-	.07
31	-		-	.30	.45	-	.41	-	.16	.08	-	.06
Mean				345.27	345.54	345.43	345.42	345.30	345.19	345.12	345.08	345.05
Max.	344.99		345.52	345.61	346.42	345.60	346.01	345.45	345.23	345.16	345.10	345.17
Min.	344.97		345.09	345.13	345.25	345.33	345.29	345.23	345.16	345.08	345.05	345.02

WATER YEAR 1969 : Max. 346.42 m. Min. 344.97 m.

M. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.32		2.99	6.83	9.23	7.83	10	8.11	3.75	2.51	1.32	0.97
2	0.24		3.35	4.35	9.51	6.59	28	8.95	3.55	2.35	1.32	0.97
3	0.32		4.75	4.95	6.83	6.59	17	8.95	3.55	2.19	1.20	0.97
4	0.16		3.35	5.15	5.63	11	14	8.11	3.55	2.19	1.20	0.97
5	0.16		2.83	4.95	5.15	12	11	7.31	3.55	2.03	1.20	0.86
6	0.16		2.83	3.55	4.95	9.79	8.67	6.59	3.35	2.03	1.43	0.86
7	0.16		3.95	2.67	4.55	7.83	7.55	5.87	3.35	2.03	1.55	0.74
8	0.16		2.99	2.51	4.35	11	6.59	5.39	3.35	2.19	1.55	0.74
9	0.24		2.99	2.19	4.35	11	6.35	5.39	3.35	2.19	1.55	0.74
10	0.24		2.51	2.35	4.15	8.39	6.11	5.39	3.35	2.03	1.55	0.74
11	0.24		2.19	2.03	4.35	9.51	6.11	5.15	3.15	2.03	1.43	0.86
12	0.24		2.03	2.03	4.15	13	6.35	5.15	3.15	2.19	1.43	0.74
13	0.24		1.87	6.59	8.39	13	6.11	4.95	3.15	2.03	1.43	0.74
14	0.24		2.19	5.87	21	13	6.35	4.95	3.15	2.03	1.43	0.74
15	0.32		1.87	4.15	21	11	7.55	4.75	3.15	1.87	1.32	0.74
16	0.24		1.55	2.83	12	9.23	8.39	4.75	2.99	1.87	1.32	0.74
17	0.24		1.43	2.67	8.67	7.55	6.11	4.75	2.99	1.87	1.32	0.74
18	0.24		1.43	3.15	15	6.83	5.63	4.75	2.99	1.87	1.32	0.74
19	0.16		11	3.55	26	6.59	5.15	4.75	2.99	1.87	1.20	0.74
20	0.16		5.87	4.75	26	6.11	4.95	4.55	2.99	1.87	1.20	0.74
21	0.16		2.83	3.95	38	6.11	4.95	4.35	2.99	1.87	1.20	0.63
22	0.16		2.19	3.75	47	10	5.63	4.35	2.83	1.87	1.20	0.63
23	0.16		2.51	4.35	21	10	8.11	4.35	2.83	1.71	1.20	0.74
24	0.32		2.19	5.15	15	7.31	7.55	4.15	2.67	1.71	1.20	2.19
25	0.32		1.87	5.15	11	6.59	6.11	4.15	2.51	1.71	1.20	2.67
26	0.24		1.71	14	9.51	5.87	12	4.15	2.51	1.43	1.20	1.87
27	0.24		1.87	7.07	8.95	5.87	10	3.95	2.51	1.43	0.97	1.55
28	0.24		3.15	11	9.23	6.35	8.39	3.95	2.35	1.32	0.97	1.43
29	0.24		4.95	7.31	7.83	6.11	7.83	3.95	2.51	1.32	–	1.32
30	0.24		8.11	5.87	8.95	7.31	7.83	3.75	2.51	1.32	–	1.20
31	–		–	5.15	8.95	–	7.83	–	2.51	1.32	–	1.09
Total	6.80		95.35	149.87	390.68	259.36	264.20	159.66	94.13	58.25	36.41	31.40
Mean	0.23		3.18	4.83	12.6	8.64	8.52	5.32	3.04	1.88	1.30	1.01
Max.	0.32		11	14	47	13	28	8.95	3.75	2.51	1.55	2.67
Min.	0.16		1.43	2.03	4.15	5.87	4.95	3.75	2.51	1.32	0.97	0.63
Runoff – MCM.	0.587		8.238	12.949	33.755	22.409	22.827	13.795	8.133	5.033	3.146	2.713

WATER YEAR 1969 : Max. 47 Min. 0.16 Mean 4.54 Annual Runoff 143.315 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 22	03.00	347.14	88				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
WANG RIVER BASIN

Mae Wang River at Kittikhachon II Bridge, Lampang (W_{1A})

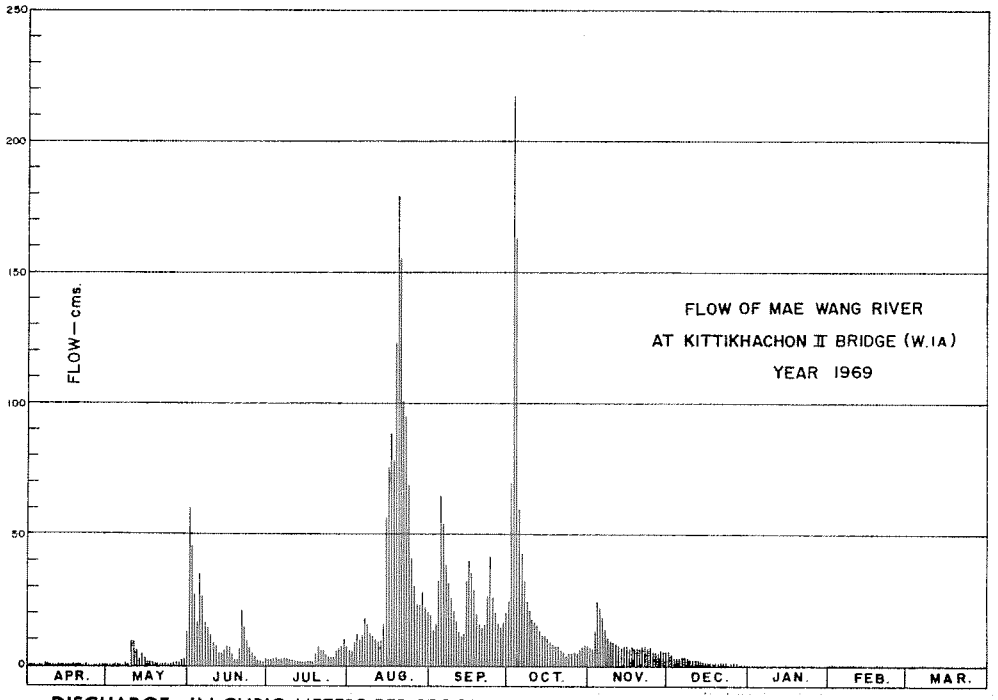
Location:	Lat. 18°-17'-24" N., Long. 99°-29'-55" E., on left bank about 300 meters upstream from Kittikchachon II Bridge, Amphoe Muang, Lampang.
Drainage Area:	3,481 sq.km.
Type of Gage:	Water-Stage recorder
Zero Gage at Bottom at:	+ 227.790 m. (M.S.L.)
Bench Mark:	B.M. - W.A.
Location:	Near staff gage site
Elevation:	+ 234.247 m. (M.S.L.)
Gage Reading Frequency:	Recording
Basis of Mean Daily Gage Records:	Arithmetic mean of 24 hoursly readings
Period of Available Gage Records:	1966 to date
Rating Operation:	
Period of Rating:	1967 to date
Rated by Float:	-
Rated by Current Meter:	1967 to date
Stability of Channel Regimes:	Unstable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.
Remarks:	Discharge record for periods of no flow are omitted.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	227.83	227.85	229.57	228.10	228.34	228.83	228.94	228.37	228.33	227.88	227.83	227.80
2	.83	.85	.29	.11	.35	.68	229.66	.36	.24	.89	.86	.80
3	.83	.85	228.91	.14	.53	.61	231.04	.62	.19	.89	.90	.80
4	.83	.85	.72	.16	.62	229.00	229.85	.97	.19	.89	.90	.80
5	.84	.85	229.17	.10	.51	.64	.48	.86	.18	.88	.90	.80
6	227.95	227.85	228.93	228.14	228.60	229.47	229.32	228.76	228.22	227.88	227.89	227.80
7	228.02	.84	.75	.15	.79	.21	.08	.63	.22	.88	.90	.80
8	227.97	228.03	.69	.12	.72	.07	228.95	.55	.20	.89	.89	.80
9	.94	227.93	.56	.12	.61	228.96	.86	.52	.14	.91	.90	.80
10	.92	228.51	.47	.09	.58	.86	.78	.48	.16	.90	.90	.80
11	227.92	228.51	228.43	228.03	228.52	228.74	228.74	228.45	228.16	227.89	227.89	227.80
12	.92	.29	.27	.01	.49	.66	.67	.45	.11	.88	.86	.80
13	.90	.15	.28	.01	.53	.59	.62	.40	.08	.88	.85	.80
14	.88	.29	.31	.00	.75	.64	.56	.42	.07	.87	.86	.80
15	.88	.16	.42	.03	229.54	229.14	.56	.41	.07	.86	.86	.80
16	227.91	228.08	228.41	228.03	229.80	229.25	228.52	228.35	228.06	227.85	227.85	227.79
17	.96	.04	.25	.05	.92	.12	.47	.41	.04	.85	.84	.79
18	.96	.02	.14	.03	.77	228.99	.45	.38	.03	.85	.85	.79
19	.95	227.99	.14	.28	230.34	.77	.41	.37	.02	.91	.83	.79
20	.93	.99	.38	.41	.78	.72	.41	.37	.02	.96	.84	.79
21	227.89	227.98	228.88	228.34	230.08	228.68	228.33	228.39	228.02	227.97	227.82	227.78
22	.86	.98	.66	.34	.00	.75	.28	.44	.04	.98	.81	.78
23	.86	.98	.52	.24	.00	229.06	.24	.39	.03	.97	.81	.80
24	.86	.99	.37	.18	229.44	.27	.27	.42	227.99	.95	.81	.84
25	.86	.98	.26	.16	.21	228.98	.27	.31	228.00	.98	.81	.86
26	227.86	228.01	228.18	228.20	229.04	228.82	228.31	228.30	227.99	227.93	227.80	227.83
27	.86	.01	.10	.32	228.93	.73	.29	.29	.98	.93	.80	.81
28	.85	.00	.05	.38	.91	.67	.38	.32	.92	.89	.80	.81
29	.85	.09	.09	.45	229.03	.73	.44	.30	.89	.85	-	.81
30	.86	.15	.12	.55	228.92	.84	.45	.33	.88	.85	-	.83
31	-	.67	-	.40	.84	-	.42	-	.88	.84	-	.80
Mean	227.89	228.06	228.51	228.18	229.11	228.92	228.74	228.45	228.07	227.90	227.85	227.80
Max.	228.02	228.67	229.57	228.55	230.78	229.64	231.04	228.97	228.33	227.98	227.90	227.86
Min.	227.83	227.84	228.05	228.00	228.34	228.59	228.24	228.29	227.88	227.84	227.80	227.78

WATER YEAR 1969 : Max. 231.04 m. Min. 227.78 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.060	0.10	60	2.00	5.72	19	24	6.26	5.54	0.16	0.060	0.00
2	0.060	0.10	42	2.13	5.90	14	67	6.08	3.98	0.18	0.12	
3	0.060	0.10	23	2.52	9.81	12	211	12	3.17	0.18	0.20	
4	0.060	0.10	15	2.78	12	27	82	25	3.17	0.18	0.20	
5	0.080	0.10	35	2.00	9.27	65	54	21	3.04	0.16	0.20	
6	0.060	0.10	23	2.52	12	53	44	17	3.64	0.16	0.18	
7	1.20	0.080	16	2.65	18	37	31	13	3.64	0.16	0.20	
8	0.76	1.30	14	2.26	15	30	24	10	3.30	0.18	0.18	
9	0.52	0.44	11	2.26	12	25	21	9.54	2.52	0.28	0.20	
10	0.36	9.27	8.34	1.90	11	21	17	8.56	2.78	0.20	0.20	
11	0.36	9.27	7.46	1.30	9.54	16	16	7.90	2.78	0.18	0.18	
12	0.36	4.83	4.49	1.10	8.76	13	14	7.90	2.13	0.16	0.12	
13	0.20	2.65	4.66	1.10	9.81	11	12	6.80	1.80	0.16	0.10	
14	0.16	4.83	5.18	1.00	16	13	11	7.24	1.70	0.14	0.12	
15	0.16	2.78	7.24	1.30	58	34	11	7.02	1.70	0.12	0.12	
16	0.28	1.80	7.02	1.30	78	40	9.54	5.90	1.60	0.10	0.10	
17	0.68	1.40	4.15	1.50	88	33	8.37	7.02	1.40	0.10	0.080	
18	0.68	1.20	2.52	1.30	75	26	7.90	6.44	1.30	0.10	0.10	
19	0.60	0.92	2.52	4.66	129	17	7.02	6.26	1.20	0.28	0.060	
20	0.44	0.92	6.44	7.02	179	15	7.02	6.26	1.20	0.68	0.080	
21	0.18	0.84	21	5.72	103	14	5.54	6.62	1.20	0.76	0.040	
22	0.12	0.84	13	5.72	95	16	4.66	7.68	1.40	0.84	0.020	
23	0.12	0.84	9.54	3.98	95	30	3.98	6.62	1.30	0.76	0.020	0.00
24	0.12	0.92	6.26	3.04	51	41	4.49	7.24	0.92	0.60	0.020	0.080
25	0.12	0.84	4.32	2.78	37	26	4.49	5.18	1.00	0.84	0.020	0.12
26	0.12	1.10	3.04	3.30	29	19	5.18	5.00	0.92	0.44	0.000	0.060
27	0.12	1.10	2.00	5.36	23	16	4.83	4.83	0.84	0.44	0.000	0.020
28	0.10	1.00	1.50	6.44	23	14	6.44	5.36	0.36	0.18	0.000	0.020
29	0.10	1.90	1.90	7.90	28	16	7.68	5.00	0.18	0.10	–	0.020
30	0.12	2.65	2.26	10	23	20	7.90	5.54	0.16	0.10	–	0.060
31	–	14	–	6.80	20	–	7.24	–	0.16	0.080	–	0.00
Total	8.90	68.32	363.84	105.64	1,288.81	733	741.28	256.25	60.03	9.00	2.92	0.38
Mean	0.30	2.20	12.1	3.41	41.6	24.4	23.9	8.54	1.94	0.29	0.10	0.012
Max.	1.20	14	60	10	179	65	211	25	5.54	0.84	0.20	0.12
Min.	0.060	0.080	1.50	1.00	5.72	11	3.98	4.83	0.16	0.080	0.00	0.00
Runoff – mcm.	0.769	5.903	31.436	9.127	111.353	63.331	64.046	22.140	5.186	0.778	0.252	0.033

WATER YEAR 1969 : Max. 211 Min. 0.00 Mean 9.97 Annual Runoff 314.355 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 3, 69	05.00	231.59	284				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
WANG RIVER BASIN

Mae Wang River at Siriyong Bridge, Lampang (W_{3A})

Location: Lat. 17°-38'-29" N., Long. 99°-14'-04" E., on right bank about 30 meters upstream from Siriyong Bridge, Amphoe Thoen, Lampang.

Drainage Area: 8,985 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Near the bridge of automatic gage building

Elevation: + 6.540 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1951-60, 1962 to date

Rating Operation:

Period of Rating: 1954-60, 1967 to date

Rated by Float: -

Rated by Current Meter: 1954-60, 1967 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation

Overbank Flow Conditions: No overbank flow

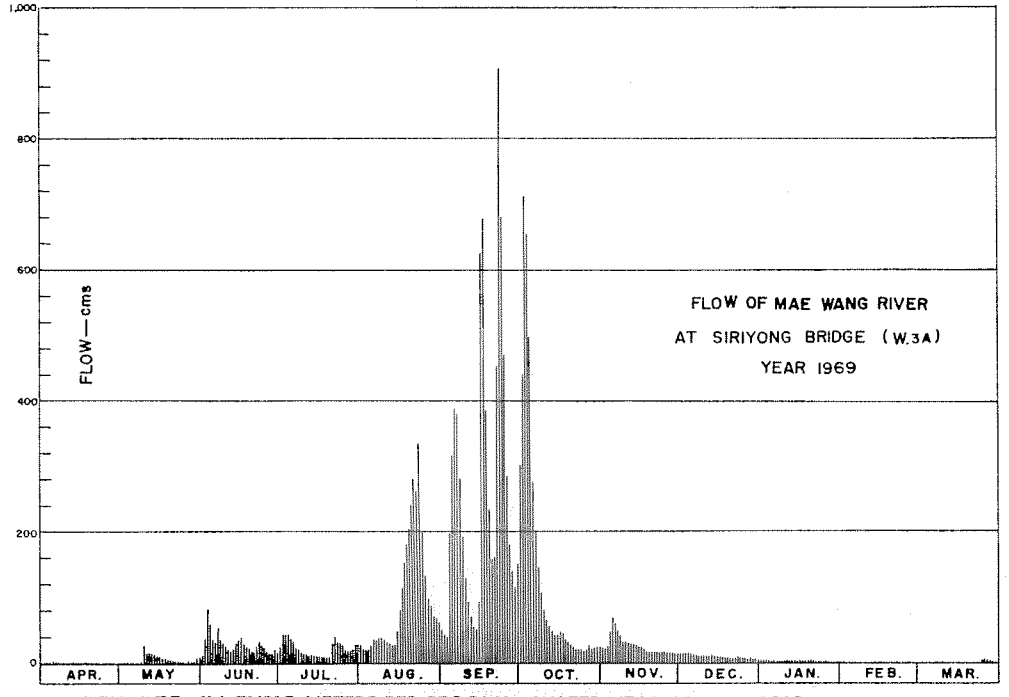
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Discharge record for periods of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.49	0.87	1.12	1.26	1.29	1.52	2.89	1.40	1.31	1.10	0.99	0.91
2	.59	.74	.53	.48	.23	.47	3.44	.40	.33	.09	.99	.90
3	.64	.65	.74	.45	.22	.43	4.18	.45	.32	.07	.98	.90
4	.64	.62	.52	.48	.25	2.47	3.72	.64	.31	.06	.98	.89
5	.64	.60	.36	.37	.34	.95	2.92	.75	.29	.05	.98	.89
6	0.65	0.58	1.34	1.35	1.41	3.12	2.54	1.70	1.28	1.05	0.97	0.89
7	.67	.56	.55	.26	.38	.09	.37	.63	.27	.05	.97	.89
8	.68	.59	.36	.22	.42	2.56	.07	.56	.27	.05	.97	.90
9	.68	.76	.32	.17	.43	.24	1.91	.50	.27	.06	.97	.89
10	.67	1.30	.26	.15	.38	.01	.80	.49	.27	.06	.97	.88
11	0.67	1.16	1.21	1.13	1.34	1.82	1.72	1.49	1.26	1.06	0.97	0.88
12	.67	.15	.20	.12	.33	.68	.66	.48	.26	.06	.97	.87
13	.65	.16	.25	.13	.31	.56	.62	.46	.26	.06	.97	.87
14	.65	.12	.34	.12	.33	.54	.56	.43	.25	.05	.97	.88
15	.65	.08	.37	.10	.48	.82	.57	.41	.23	.05	.97	.88
16	0.65	1.05	1.43	1.09	1.78	3.92	1.61	1.41	1.22	1.05	0.97	0.88
17	.65	.04	.30	.09	2.05	4.08	.59	.38	.21	.05	.97	.87
18	.65	.01	.25	.09	.25	2.92	.51	.34	.19	.05	.97	.86
19	.65	.01	.24	.06	.34	.45	.48	.33	.17	.05	.97	.85
20	.65	0.96	.17	.09	.59	.17	.44	.34	.17	.07	.97	.84
21	0.65	0.90	1.18	1.35	2.73	2.21	1.41	1.33	1.18	1.07	0.95	0.86
22	.65	.89	.29	.44	.61	3.64	.39	.32	.19	.04	.93	.86
23	.65	.87	.36	.34	.93	4.76	.38	.33	.19	.03	.92	.87
24	.65	.86	.29	.34	.51	3.76	.37	.34	.18	.03	.94	1.04
25	.65	.85	.24	.27	.13	2.99	.35	.32	.17	.03	.95	.17
26	0.69	0.85	1.19	1.22	1.96	2.51	1.37	1.32	1.15	1.03	0.94	1.13
27	.73	.86	.14	.21	.81	.23	.43	.31	.16	.03	.92	.02
28	.76	.89	.15	.21	.77	.05	.38	.31	.16	.03	.92	0.99
29	.82	.93	.23	.26	.66	1.91	.40	.30	.14	.03	-	.94
30	.84	1.04	.14	.33	.66	2.17	.43	.30	.12	.03	-	.92
31	-	.06	-	.32	.60	-	.42	-	.10	.01	-	.91
Mean	0.67	0.90	1.30	1.24	1.76	2.50	1.90	1.42	1.22	1.05	0.96	0.91
Max.	0.84	1.30	1.74	1.48	2.93	4.76	4.18	1.75	1.33	1.10	0.99	1.17
Min.	0.49	0.56	1.12	1.09	1.22	1.43	1.35	1.30	1.10	1.01	0.92	0.84

WATER YEAR 1969 : Max. 4.76 m. Min. 0.49 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.40	11	22	25	49	324	22	15	5.00	2.35	1.15
2	0.00	0.00	50	44	20	43	478	22	16	4.75	2.35	1.00
3	0.00	0.00	80	41	19	39	712	27	16	4.25	2.20	1.00
4	0.00	0.00	49	44	22	217	627	51	15	4.00	2.20	0.80
5	0.00	0.00	32	33	30	340	332	69	13	3.75	2.20	0.80
6	0.00	0.00	30	31	37	388	233	60	13	3.75	2.05	0.80
7	0.00	0.00	53	22	34	379	196	49	12	3.75	2.05	0.80
8	0.00	0.00	32	19	38	238	137	40	12	3.75	2.05	1.00
9	0.00	0.00	28	15	39	170	101	32	12	4.00	2.05	0.80
10	0.00	26	22	14	34	126	78	31	12	4.00	2.05	0.60
11	0.00	14	18	12	30	93	64	31	12	4.00	2.05	0.60
12	0.00	14	17	11	29	71	54	30	12	4.00	2.05	0.40
13	0.00	14	22	12	27	54	48	28	12	4.00	2.05	0.40
14	0.00	11	30	11	29	52	40	25	11	3.75	2.05	0.60
15	0.00	8.84	33	10	44	93	41	23	10	3.75	2.05	0.60
16	0.00	7.10	39	9.42	87	627	46	23	10	3.75	2.05	0.60
17	0.00	6.52	26	9.42	133	679	44	20	9.50	3.75	2.05	0.40
18	0.00	4.78	22	9.42	172	332	34	17	8.60	3.75	2.05	0.20
19	0.00	4.78	21	7.68	190	213	30	16	7.80	3.75	2.05	0.00
20	0.00	2.92	15	9.42	245	156	26	17	7.80	4.25	2.05	0.00
21	0.00	1.00	16	31	281	164	23	16	8.20	4.25	1.75	0.20
22	0.00	0.80	25	40	250	540	21	16	8.60	3.50	1.45	0.20
23	0.00	0.40	32	30	335	907	20	16	8.60	3.25	1.30	0.40
24	0.00	0.20	25	30	226	578	20	17	8.20	3.25	1.60	3.50
25	0.00	0.00	21	23	149	351	18	16	7.80	3.25	1.75	7.80
26	0.00	0.00	16	19	117	226	20	16	7.00	3.25	1.60	6.20
27	0.00	0.20	13	18	92	168	25	15	7.40	3.25	1.30	3.00
28	0.00	0.80	14	18	85	133	20	15	7.40	3.25	1.30	2.35
29	0.00	1.96	20	22	68	108	22	14	6.60	3.25	–	1.60
30	0.00	6.52	13	29	68	156	25	14	5.80	3.25	–	1.30
31	0.00	7.68	–	28	60	–	24	–	5.00	2.75	–	1.15
Total	0.00	133.90	825	674.36	3,015	7,690	3,883	788	317.30	116.25	54.10	40.25
Mean	0.00	4.32	27.5	21.7	97.2	256	125	26.3	10.2	3.75	1.93	1.30
Max.	0.00	26	80	44	335	907	712	69	16	5.00	2.35	7.80
Min.	0.00	0.00	11	768	19	39	18	14	5.00	2.75	1.30	0.00
Runoff – mcm.	0.00	11.569	71.280	58.265	260.496	664.416	335.491	68.083	27.415	10.044	4.674	3.478

WATER YEAR 1969 : Max. 907 Min. 0.00 Mean 48.00 Annual Runoff 1,515.211 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23, 69	06.00	4.87	945				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
WANG RIVER BASIN

Mae Wang River at Ban Wang Khrai, Tak (W_4)

Location: Lat. 17°-12'-58" N., Long. 99°-04'-42" E., on right bank about 120 meters upstream from the bridge at Ban Wang Khrai, 8 kilometers from Amphoe Sam Ngao and 6 kilometers from Phahon Yothin Highway, Amphoe Sam Ngao, Tak.

Drainage Area: 10,442 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 131.316 m. (M.S.L.)

Bench Mark: B.M. - R.I.D.

Location: At the fence of the camp of station W. 4

Elevation: + 137.182 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1952-1971

Rating Operation:

Period of Rating: 1952-1970

Rated by Float: -

Rated by Current Meter: 1952-1970

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation

Overbank Flow Conditions: No overbank flow

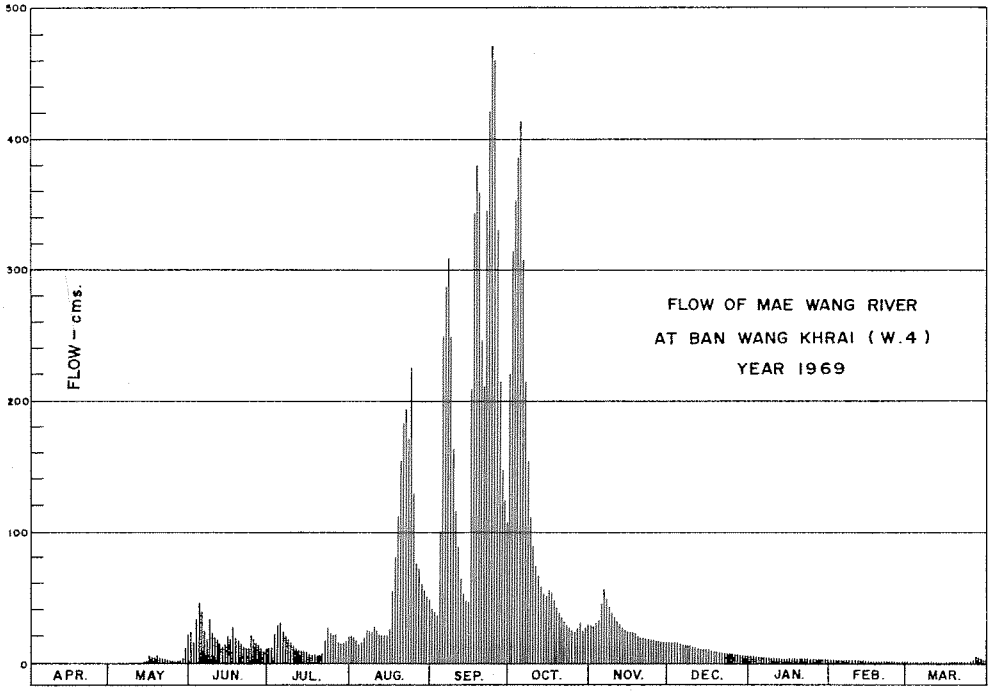
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Upstream State diversions for irrigation of about 12,320 hectares. No adjustment made for virgin flow.

Remarks: Drought for period April - May 15.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			132.79	132.45	132.73	133.32	135.58	133.00	132.67	132.32	132.19	132.04
2			.54	.45	.71	.18	136.80	132.98	.67	.31	.18	.03
3			133.02	.79	.60	.11	137.00	133.07	.67	.30	.17	.03
4			.34	.93	.55	.15	.19	.04	.66	.29	.16	.02
5			.15	.98	.57	136.02	.32	.25	.64	.28	.16	.01
6			132.85	132.79	132.63	136.54	136.92	133.59	132.63	132.27	132.16	132.01
7			.63	.71	.84	.81	.06	.51	.62	.26	.15	.01
8			133.05	.62	.82	.46	135.26	.37	.61	.26	.15	.01
9			132.80	.55	.81	.51	134.66	.25	.60	.25	.15	.00
10			.67	.49	.90	134.76	.25	.14	.58	.25	.15	.00
11			132.62	132.43	132.82	134.21	133.97	133.06	132.57	132.25	132.15	132.00
12			.53	.36	.74	133.82	.77	.02	.55	.25	.14	131.99
13			.46	.36	.73	.55	.62	132.97	.54	.25	.14	.99
14			.49	.37	.74	.39	.52	.93	.54	.25	.13	.98
15			.71	.35	.72	.36	.47	.88	.53	.25	.12	.97
16		132.21	132.64	132.27	132.82	134.54	133.57	132.87	132.52	132.25	132.12	131.96
17		.15	.89	.26	133.41	136.96	.56	.87	.50	.24	.12	.95
18		.13	.67	.25	134.08	137.20	.44	.85	.48	.24	.12	.95
19		.17	.59	.26	.56	.11	.29	.78	.47	.23	.11	.95
20		.08	.57	.25	.90	136.34	.21	.78	.44	.22	.10	.94
21		132.09	132.46	132.24	135.58	135.94	133.12	132.77	132.45	132.21	132.10	131.94
22		.04	.42	.43	.74	137.05	.04	.75	.42	.21	.09	.94
23		131.99	.43	.91	.48	.32	132.99	.74	.41	.21	.09	.94
24		.95	.74	.80	136.08	.49	.94	.73	.40	.21	.09	.96
25		.95	.64	.71	135.02	.46	.91	.73	.39	.21	.08	.94
26		131.89	132.55	132.79	134.01	137.19	132.87	132.71	132.38	132.21	132.06	131.94
27		.86	.48	.57	133.96	136.21	.95	.71	.37	.21	.06	132.32
28		.93	.39	.53	.68	135.33	133.06	.69	.35	.21	.05	.29
29		132.07	.35	.53	.62	134.86	132.93	.68	.35	.20	-	.20
30		.16	.44	.57	.45	.53	.95	.68	.35	.19	-	.15
31		.73	-	.70	.42	-	133.01	-	.33	.19	-	.12
Mean			132.66	132.54	133.57	135.46	134.20	132.95	132.50	132.24	132.12	132.02
Max.		132.73	133.34	132.98	136.08	137.49	137.32	133.59	132.67	132.32	132.19	132.32
Min.			132.35	132.24	132.55	133.11	132.87	132.68	132.33	132.19	132.05	131.94

WATER YEAR 1969 : Max. 137.49 m. Min. 131.94 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			24	12	21	45	186	29	16	5.48	2.86	1.12
2			15	12	21	39	309	28	16	5.24	2.72	1.04
3			33	24	17	36	339	32	16	5.00	2.58	1.04
4			46	29	15	38	380	31	16	4.80	2.44	0.96
5			35	31	16	235	414	40	15	4.60	2.44	0.88
6			26	24	18	275	330	57	15	4.40	2.44	0.88
7			18	21	26	309	224	53	14	4.20	2.30	0.88
8			34	18	25	266	156	46	14	4.20	2.30	0.88
9			24	15	24	176	115	40	14	4.00	2.30	0.80
10			19	13	28	122	91	36	13	4.00	2.30	0.80
11			18	11	25	89	76	32	12	4.00	2.30	0.80
12			15	9.28	22	69	66	30	12	4.00	2.16	0.74
13			12	9.28	21	55	58	28	11	4.00	2.16	0.74
14			13	9.56	22	48	53	26	11	4.00	2.02	0.68
15			21	9.00	21	47	51	24	11	4.00	1.88	0.62
16		5.53	18	6.91	25	108	56	24	11	4.00	1.88	0.56
17		4.25	28	6.68	49	332	55	24	10	3.80	1.88	0.50
18		3.83	19	6.45	82	380	49	23	9.64	3.80	1.88	0.50
19		4.67	17	6.68	109	359	42	20	9.36	3.60	1.74	0.50
20		2.88	16	6.45	131	252	39	20	8.52	3.40	1.60	0.44
21		3.04	12	6.22	181	212	35	20	8.24	3.20	1.60	0.44
22		2.24	11	11	194	347	31	19	7.96	3.20	1.52	0.44
23		1.49	11	28	172	414	29	19	7.68	3.20	1.52	0.44
24		1.05	22	24	225	471	27	18	7.40	3.20	1.52	0.56
25		1.05	18	21	139	461	25	18	7.16	3.20	1.44	0.44
26		0.40	15	24	79	378	24	17	6.92	3.20	1.28	0.44
27		0.10	13	16	75	238	27	17	6.68	3.20	1.28	5.48
28		0.83	10	15	62	161	32	17	6.20	3.20	1.20	4.80
29		2.72	9.00	15	59	128	26	16	6.20	3.00	–	3.00
30		4.46	12	16	51	108	27	16	6.20	2.86	–	2.30
31		21	–	20	50	–	30	–	5.72	2.86	–	1.88
Total		59.54	587	476.51	2,004	6,198	3,402	820	330.88	118.84	55.54	35.58
Mean		1.98	19.6	15.4	64.6	207	110	27.3	10.7	3.83	1.98	1.15
Max.		21	46	31	225	471	414	57	16	5.48	2.86	5.48
Min.		0.00	9.00	6.22	15	36	24	16	5.72	2.86	1.20	0.44
Runoff - RCM.		5.144	50.717	41.170	173.146	535.507	293.933	70.848	28.588	10.268	4.799	3.074

WATER YEAR 1969 : Max. 471 Min. 0.00 Mean 38.6 Annual Runoff 1,217.194 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept.24, 69	18.00	137.50	475				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
WANG RIVER BASIN

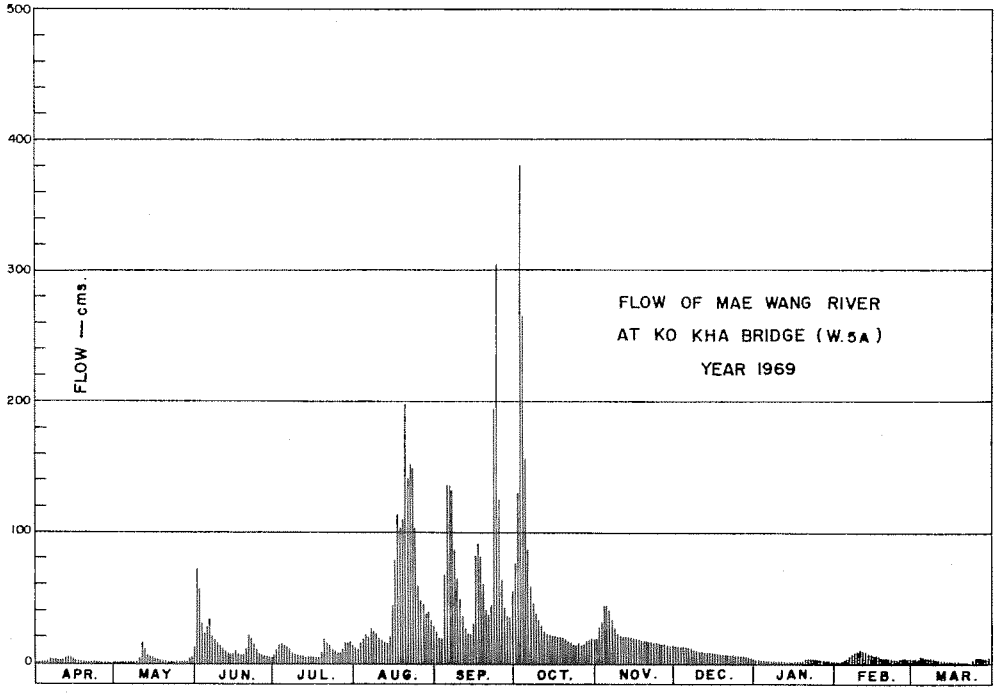
Mae Wang River at Ko Kha Bridge, Lampang (W_{5A})

Location:	Lat. 18°-11'-21" N., Long. 99°-24'-04" E., on left bank at abutment of Ko Kha bridge at Ban Ko Kha, Amphoe Ko Kha, Lampang.
Drainage Area:	5,278 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 215.700 m. (M.S.L.)
Bench Mark:	B.M. - H.S./R.I.D.
Location:	About 300 meters from the top gage in vicinity of gage observer's house
Elevation:	+ 219.805 m. (M.S.L.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1963-1974
Rating Operation:	
Period of Rating:	1967-1974
Rated by Float:	-
Rated by Current Meter:	1967-1974
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation
Overbank Flow Conditions:	No overbank flow
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	215.70	215.71	217.22	216.23	216.36	216.67	217.09	216.51	216.38	216.07	215.98	216.06
2	.70	.71	.07	.33	.36	.59	.96	.66	.37	.06	.98	.10
3	.70	.70	216.77	.44	.42	.52	218.90	.74	.37	.05	216.02	.06
4	.70	.70	.58	.46	.53	.91	217.95	.92	.37	.04	.06	.20
5	.72	.70	.71	.41	.62	217.72	.48	.90	.36	.03	.08	.14
6	216.10	215.70	216.79	216.43	216.55	217.71	217.28	216.81	216.35	216.02	216.19	216.06
7	.04	.70	.58	.29	.70	.46	.05	.73	.33	.01	.26	.13
8	.03	.70	.53	.23	.67	.23	216.91	.63	.31	.00	.31	.05
9	.06	.93	.45	.19	.60	.06	.79	.59	.29	215.99	.28	.05
10	215.94	216.09	.37	.20	.54	216.88	.71	.57	.27	.98	.34	215.99
11	215.93	216.49	216.35	216.17	216.52	216.74	216.67	216.55	216.27	215.98	216.33	216.01
12	216.15	.33	.27	.16	.48	.64	.62	.55	.28	.99	.30	215.96
13	.14	.21	.25	.16	.51	.59	.59	.54	.28	.99	.25	.92
14	.09	.14	.27	.15	.69	.63	.57	.54	.27	216.00	.24	.90
15	.00	.19	.20	.14	217.09	217.00	.56	.53	.26	215.99	.20	.88
16	215.92	216.11	216.33	216.14	217.37	217.36	216.55	216.52	216.25	215.98	216.17	215.99
17	.90	.06	.21	.12	.57	.38	.54	.52	.24	.98	.21	216.04
18	.73	.04	.18	.12	.47	.10	.53	.51	.23	.99	.17	.01
19	.74	.01	.21	.30	.57	216.92	.53	.48	.21	.99	.14	.00
20	.75	215.98	.26	.56	218.12	.83	.52	.47	.21	216.09	.13	.03
21	215.75	215.95	216.64	216.50	217.76	216.83	216.49	216.46	216.20	216.08	216.13	215.91
22	.71	.92	.53	.43	.85	217.82	.43	.45	.19	.10	.09	.88
23	.70	.89	.45	.36	.85	218.61	.41	.45	.18	.10	.08	.97
24	.70	.87	.33	.27	.34	217.87	.39	.45	.17	.09	.05	216.10
25	.70	.84	.23	.24	.10	.40	.47	.43	.16	.09	.12	.17
26	215.70	215.81	216.19	216.25	216.94	217.10	216.40	216.43	216.15	216.09	216.10	216.16
27	.70	.80	.17	.31	.92	216.93	.41	.42	.13	.07	.05	.11
28	.70	.85	.15	.44	.82	.80	.49	.41	.12	.07	.04	.09
29	.70	216.10	.14	.46	.88	.77	.52	.39	.11	.01	-	.11
30	.71	.14	.15	.51	.78	217.01	.52	.39	.10	215.99	-	.11
31	-	.34	-	.44	.71	-	.52	-	.08	.99	-	.11
Mean	215.84	215.96	216.42	216.30	216.96	217.10	216.80	216.55	216.24	216.03	216.15	216.04
Max.	216.15	216.49	217.22	216.56	218.12	218.61	218.90	216.92	216.38	216.10	216.34	216.20
Min.	215.70	215.70	216.14	216.12	216.36	216.52	216.39	216.39	216.08	215.98	215.98	215.88

WATER YEAR 1969 : Max. 218.90 m. Min. 215.70 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.050	73	6.90	11	26	60	17	12	3.40	1.80	3.20
2	0.00	0.050	58	10	11	21	172	26	12	3.20	1.80	4.00
3	0.00	0.00	33	15	14	18	382	31	12	3.00	2.40	3.20
4	0.00	0.00	21	15	18	44	170	45	12	2.80	3.20	6.00
5	0.01	0.00	29	13	23	136	104	43	11	2.60	3.60	4.80
6	4.00	0.00	34	14	19	134	80	36	11	2.40	5.80	3.20
7	2.80	0.00	21	8.70	28	101	56	30	10	2.20	7.80	4.60
8	2.60	0.00	18	6.90	26	74	44	24	9.40	2.00	9.40	3.00
9	3.20	1.30	15	5.80	22	57	34	21	8.70	1.90	8.40	3.00
10	1.40	3.80	12	6.00	19	41	29	20	8.10	1.80	11	1.90
11	1.30	17	11	5.40	18	31	26	19	8.10	1.80	10	2.20
12	5.00	10	8.10	5.20	16	24	23	19	8.40	1.90	9.00	1.60
13	4.80	6.30	7.50	5.20	17	21	21	19	8.40	1.90	7.50	1.20
14	3.80	4.80	8.10	5.00	27	24	20	19	8.10	2.00	7.20	1.00
15	2.00	5.80	6.00	4.80	60	52	29	18	7.80	1.90	6.00	0.90
16	1.20	4.20	10	4.80	90	89	19	18	7.50	1.80	5.40	1.90
17	1.00	3.20	6.30	4.40	115	92	19	18	7.20	1.80	6.30	2.80
18	0.15	2.80	5.60	4.40	102	61	18	17	6.90	1.90	5.40	2.20
19	0.20	2.20	6.30	9.00	115	45	18	16	6.30	1.90	4.80	2.00
20	0.25	1.80	7.80	20	200	37	18	16	6.30	3.80	4.60	2.60
21	0.25	1.50	24	17	141	37	17	15	6.00	3.60	4.80	1.10
22	0.050	1.20	18	14	154	150	14	15	5.80	4.00	3.80	0.90
23	0.00	0.95	15	11	150	306	13	15	5.60	4.00	3.60	1.70
24	0.00	0.85	10	8.10	87	157	13	15	5.40	3.80	3.00	4.00
25	0.00	0.70	6.90	7.20	61	94	16	14	5.20	3.80	4.40	5.40
26	0.00	0.55	5.80	7.50	47	61	13	14	5.00	3.80	4.00	5.20
27	0.00	0.50	5.40	9.40	45	46	13	14	4.60	3.40	3.00	4.20
28	0.00	0.75	5.00	15	37	35	17	13	4.40	3.40	2.80	3.80
29	0.00	4.00	4.80	15	41	33	18	13	4.20	2.20	–	4.20
30	0.050	4.80	5.00	17	34	53	18	13	4.00	1.90	–	4.20
31	–	11	–	15	29	–	18	–	3.60	1.90	–	4.20
Total	34.15	90.10	490.60	305.70	1,777	2,100	1,503	613	235.00	81.80	150.60	94.20
Mean	1.14	2.91	16.3	9.86	57.3	70.0	48.5	20.4	7.58	2.64	5.38	3.04
Max.	5.00	17	73	20	200	306	382	45	12	4.00	11	6.00
Min.	0.00	0.00	4.80	4.40	11	18	13	13	3.60	1.80	1.80	0.90
Runoff – mcm.	2.950	7.785	42.388	26.412	153.533	181.440	129.859	52.963	20.304	7.067	13.012	8.139

WATER YEAR 1969 : Max. 382 Min. 0.00 Mean 20.5 Annual Runoff 645.853 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 3, 69	09.00	219.28	495				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
WANG RIVER BASIN

Mae Wang River at Tail of Kiw Lom Dam, Lampang (W_{10A})

Location: Lat. 18°-31'-16" N., Long. 99°-37'-52" E., on left bank about 800 meters downstream from Kiu Lom Damsite, Amphoe Chae Hom, Lampang.

Drainage Area: 2,798 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 258.961 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: On right side of automatic gage building

Elevation: + 265.511 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1966 to date

Rating Operation:

Period of Rating: 1967 to date

Rated by Float:

Rated by Current Meter: 1967 to date

Stability of Channel Regimes: Stable, no shifting adjustment but periodic curves are used for flow.

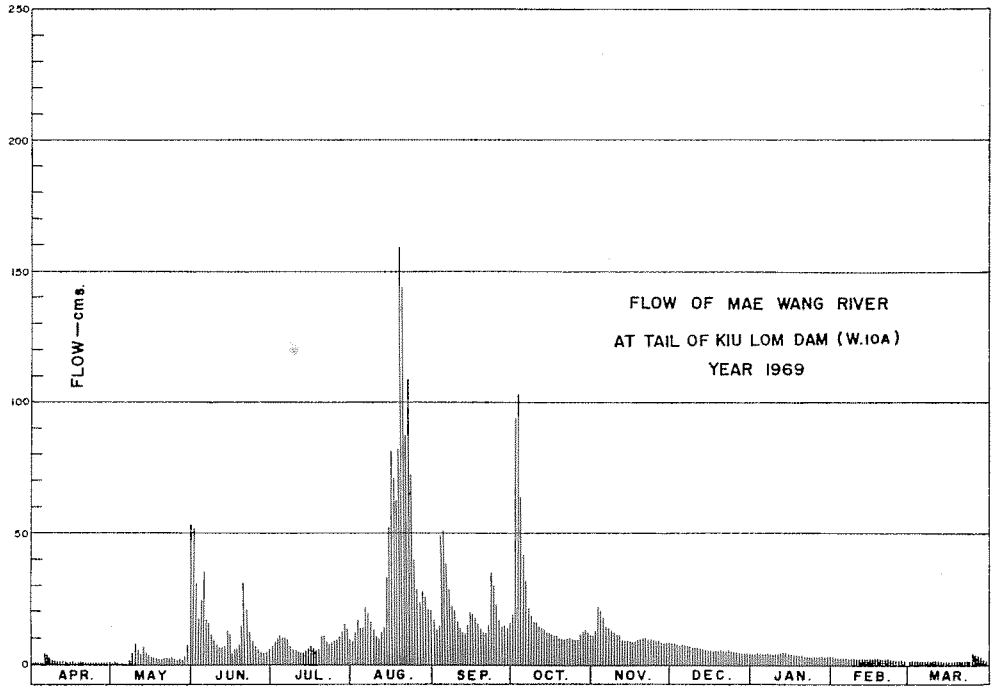
Overbank Flow Conditions: No overbank flow

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow is under construction of Kiu Lom Dam. Date presented is from actual flow at gage site, no adjustment made for virgin flow.

GAGE HEIGHT IN METER ( ), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	259.45	259.47	260.66	259.79	259.86	260.06	260.10	259.87	259.78	259.64	259.56	259.47
2	.45	.48	.28	.84	.98	259.97	261.19	.94	.78	.64	.55	.47
3	.45	.46	.04	.89	260.06	.98	.31	260.14	.77	.64	.54	.46
4	.45	.46	.20	.93	.00	260.62	260.57	.11	.76	.63	.54	.45
5	.70	.46	.39	.91	259.99	.65	.50	.02	.76	.63	.54	.45
6	259.65	259.46	260.04	259.90	260.15	260.39	260.28	259.96	259.75	259.63	259.54	259.45
7	.57	.46	.03	.87	.10	.22	.13	.94	.75	.62	.53	.45
8	.54	.62	259.93	.80	.14	.15	.05	.91	.75	.63	.53	.45
9	.52	.90	.86	.77	259.97	.14	.00	.89	.74	.63	.53	.45
10	.51	.96	.81	.75	.93	.05	.00	.87	.73	.62	.53	.45
11	259.50	259.73	259.78	259.73	259.91	259.99	259.96	259.86	259.72	259.63	259.53	259.42
12	.49	.67	.80	.71	.94	.95	.94	.82	.71	.63	.53	.42
13	.48	.79	.81	.71	260.01	.95	.92	.82	.70	.64	.53	.42
14	.47	.69	.97	.74	.44	260.01	.91	.82	.69	.63	.53	.42
15	.46	.63	.93	.80	.78	.11	.89	.81	.68	.63	.53	.42
16	259.46	259.60	259.68	259.82	261.05	260.10	259.88	259.80	259.68	259.61	259.52	259.42
17	.46	.57	.78	.77	260.82	.06	.87	.82	.68	.61	.52	.42
18	.45	.57	.75	.75	.80	.01	.87	.83	.68	.59	.52	.42
19	.45	.56	.86	.78	261.88	259.97	.84	.84	.68	.59	.52	.42
20	.45	.58	260.32	.92	.64	.95	.83	.84	.68	.58	.52	.42
21	259.44	259.58	260.12	259.93	261.00	259.94	259.83	259.84	259.68	259.57	259.52	259.42
22	.44	.58	.81	.88	.38	260.04	.82	.82	.68	.58	.51	.42
23	.44	.58	259.91	.82	260.84	.39	.84	.82	.67	.58	.50	.42
24	.44	.58	.84	.85	.46	.28	.83	.82	.67	.58	.50	.46
25	.44	.56	.78	.86	.34	.13	.82	.82	.66	.57	.49	.62
26	259.44	259.56	259.74	259.87	260.20	260.04	259.83	259.81	259.66	259.57	259.49	259.59
27	.44	.57	.71	.92	.16	.00	.90	.79	.66	.57	.48	.57
28	.46	.56	.70	.97	.29	.01	.93	.79	.65	.57	.47	.52
29	.46	.63	.71	260.04	.21	259.99	.92	.79	.65	.57	-	.46
30	.46	.84	.74	259.96	.13	260.03	.91	.79	.65	.56	-	.46
31	-	260.68	-	.87	.13	-	.88	-	.64	.56	-	.46
Mean	259.48	259.64	259.94	259.84	260.40	260.10	260.05	259.86	259.70	259.60	259.52	259.45
Max.	259.70	260.68	260.66	260.04	261.88	260.65	261.31	260.14	259.78	259.64	259.56	259.62
Min.	259.44	259.46	259.68	259.71	259.86	259.94	259.82	259.79	259.64	259.56	259.47	259.42

WATER YEAR 1969 : Max. 261.88 m. Min. 259.42 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.75	0.93	52	6.45	8.74	17	19	11	8.20	4.54	3.02	1.64
2	0.75	1.02	28	8.06	13	13	93	14	8.20	4.54	2.85	1.64
3	0.75	0.84	16	9.76	17	13	103	22	7.90	4.54	2.68	1.52
4	0.75	0.84	25	11	14	49	46	20	7.60	4.33	2.68	1.40
5	4.20	0.84	35	10	14	51	41	17	7.60	4.33	2.68	1.40
6	3.35	0.84	16	10	22	35	28	14	7.30	4.33	2.68	1.40
7	2.11	0.84	16	9.08	19	26	21	14	7.30	4.12	2.51	1.40
8	1.72	2.84	11	6.70	16	22	18	12	7.30	4.33	2.51	1.40
9	1.46	10	8.74	5.95	13	21	16	12	7.00	4.33	2.51	1.40
10	1.33	13	7.04	5.45	11	17	16	11	6.70	4.12	2.51	1.40
11	1.20	4.95	6.02	4.95	10	14	14	11	6.40	4.33	2.51	1.04
12	1.11	3.69	6.70	4.45	12	12	14	9.46	6.10	4.33	2.51	1.04
13	1.02	6.45	7.04	4.45	15	12	13	9.46	5.80	4.54	2.51	1.04
14	0.93	4.03	13	5.20	38	15	12	9.46	5.59	4.33	2.51	1.04
15	0.84	3.01	11	6.70	60	20	12	9.13	5.38	4.33	2.51	1.04
16	0.84	2.50	3.86	7.38	81	19	11	8.80	5.38	3.91	2.34	1.04
17	0.84	2.11	6.20	5.95	63	17	11	9.46	5.38	3.70	2.34	1.04
18	0.75	2.11	5.45	5.48	62	15	11	9.79	5.38	3.53	2.34	1.04
19	0.75	1.98	8.74	6.20	159	13	10	10	5.38	3.53	2.34	1.04
20	0.75	2.24	31	11	134	12	9.79	10	5.38	3.36	2.34	1.04
21	0.66	2.24	20	11	77	12	9.79	10	5.38	3.19	2.34	1.04
22	0.66	2.24	15	9.42	109	16	9.46	9.46	5.38	3.36	2.17	1.04
23	0.66	2.24	10	7.38	65	35	10	9.46	5.17	3.36	2.00	1.04
24	0.66	2.24	8.06	8.40	39	28	9.79	9.46	5.17	3.36	2.00	1.52
25	0.66	1.98	6.20	8.74	32	21	9.46	9.46	4.96	3.19	1.88	4.12
26	0.66	1.98	5.20	9.08	25	16	9.79	9.13	4.96	3.19	1.88	3.53
27	0.66	2.11	4.45	11	23	14	12	8.50	4.96	3.19	1.76	3.19
28	0.84	1.98	4.20	13	28	15	13	8.50	4.75	3.19	1.64	2.34
29	0.84	3.01	4.45	16	25	14	13	8.50	4.75	3.19	–	1.52
30	0.84	8.06	5.20	13	21	16	12	8.50	4.75	3.02	–	1.52
31	–	53	–	9.08	21	–	11	–	4.54	3.02	–	1.52
Total	33.34	146.14	396.55	260.28	1,246.74	600.00	638.08	334.53	186.04	118.66	66.55	47.38
Mean	1.11	4.71	13.2	8.39	40.2	20.0	20.6	11.1	6.00	3.82	2.37	1.52
Max.	4.20	53	52	16	159	51	103	22	8.20	4.54	3.02	4.12
Min.	0.66	0.84	3.86	4.45	8.74	12	9.46	8.50	4.54	3.02	1.64	1.04
Runoff - mcm.	2.880	12.626	34.261	22.488	107.718	51.840	55.130	28.903	16.073	10.252	5.749	4.093

WATER YEAR 1969 : Max. 159 Min. 0.66 Mean 11.2 Annual Runoff 352.018 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 19, 69	14.00	262.47	226				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
YOM RIVER BASIN

Mae Yom River at Muang Phrae (Y_1)

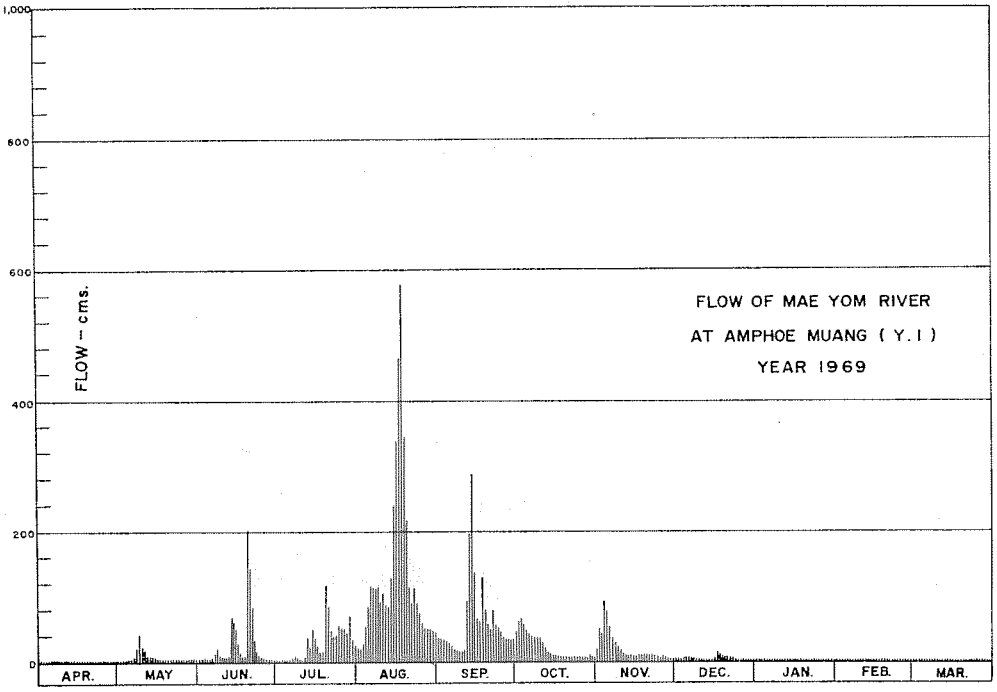
Location:	Lat. 18°-08'-32" N., Long. 100°-08'-07" E., on left bank infront of the district liquor factory near Wat Chetawan, Amphoe Muang, Phrae.
Drainage Area:	7,590 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 144.00 m. (M.S.L.)
Bench Mark:	B.M. – R.I.D. No. 1
Location:	on left bank about 23 meters downstream from gage site
Elevation:	+ 153.810 m. (M.S.L.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1930-1971
Rating Operation:	
Period of Rating:	1954, 1956-60
Rated by Float:	–
Rated by Current Meter:	1954, 1956-60
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation
Overbank Flow Conditions:	No overbank flow
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurement made during 1957-1960. Upstream State diversions for irrigation of about 24,000 hectares at Mae Yom Weir. No adjustment made for virgin flow.
Remarks:	Discharge record for periods of no flow are omitted.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	144.67	144.67	144 .78	144.87	145.58	145.84	146.00	145.56	145.00	144.84	144.7 0	144.66
2	.67	.76	145.11	.85	.49	.81	.15	146.02	144.99	.83	.69	.66
3	.67	.72	.18	.90	.64	.79	.23	145.95	.98	.82	.69	.66
4	.67	.72	.07	.94	.92	.78	.11	146.50	.97	.80	.69	.66
5	.66	.67	144.98	.90	146.35	.74	145.98	.36	145.09	.80	.69	.66
6	144.66	144.67	144.96	144.90	146.67	145.66	145.94	146.03	145.08	144.80	144.69	144.66
7	.65	.93	145.23	145.12	.75	.50	.89	145.87	.06	.89	.69	.68
8	.65	145.34	.54	.27	.70	.48	.87	.72	.03	.88	.68	.69
9	.65	.95	.28	.15	.74	.44	.85	.62	144.98	.86	.68	.70
10	.64	.61	.20	.00	.50	.41	.81	.44	.93	.86	.68	.69
11	144.64	145.56	145.08	144.93	146.63	145.45	145.75	145.32	144.95	144.85	144.67	144.67
12	.63	.26	.13	145.14	.47	146.43	.55	.29	.92	.85	.67	.67
13	.63	.16	.20	.82	.41	147.27	.39	.25	.92	.85	.67	.66
14	.62	.22	146.28	.56	.80	148.04	.33	.32	.90	.85	.67	.66
15	.62	.10	.13	146.04	147.63	147.12	.30	.23	.90	.86	.67	.66
16	144.62	145.02	145.70	145.82	148.26	146.25	145.28	145.20	144.99	144.86	144.67	144.65
17	.61	144.93	.40	.55	.94	.16	.19	.25	145.42	.76	.66	.65
18	.61	.88	.27	.40	149.64	.86	.18	.25	.32	.75	.66	.65
19	.61	.87	.30	.61	148.62	.47	.18	.22	.23	.75	.66	.65
20	.60	145.03	147.48	146.77	147.75	.25	.17	.24	.18	.75	.66	.65
21	144.60	144.98	146.95	146.56	146.73	146.03	145.14	145.25	145.12	144.75	144.66	144.65
22	.58	.93	145.96	145.99	.48	.37	.14	.24	.17	.74	.66	.65
23	.58	.88	.49	.88	.74	.14	.15	.20	.07	.74	.66	.64
24	.60	.86	.30	.93	.57	.07	.15	.19	144.93	.70	.66	.64
25	.60	.85	.10	146.11	.35	.00	.13	.01	.91	.70	.66	.64
26	144.61	144.85	145.05	146.06	146.13	145.87	145.11	145.15	144.90	144.70	144.66	144.64
27	.61	.83	.02	.08	.02	.84	.10	.21	.88	.70	.66	.65
28	.62	.83	.00	145.96	.02	.82	.07	.02	.87	.73	.66	.65
29	.62	.80	144.92	146.28	.03	.80	.29	.00	.86	.71	–	.67
30	.64	.80	.90	145.87	.00	.81	.20	144.99	.85	.70	–	.67
31	–	.79	–	.69	145.99	–	.17	–	.84	.69	–	.67
Mean	144.63	144.98	145.40	145.58	146.73	146.08	145.48	145.43	145.01	144.18	144.67	144.66
Max.	144.67	145.95	147.48	146.77	149.64	148.04	146.23	146.50	145.42	144.89	144.70	144.70
Min.	144.58	144.67	144.78	144.85	145.49	145.41	145.07	144.99	144.84	144.69	144.66	144.64

WATER YEAR 1969 : Max. 149.64 m. Min. 144.58 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.00	0.00	1.40	21	36	48	20	4.00	0.80	0.00	0.00
2			6.20	1.00	18	35	60	50	3.80	0.60		
3			7.60	2.00	24	33	66	44	3.60	0.40		
4			5.40	2.80	42	33	57	92	3.40	0.00		
5			3.60	2.00	77	30	46	78	5.80	0.00		
6		0.00	3.20	2.00	109	26	43	50	5.60	0.00		
7		2.60	8.60	6.40	117	18	39	38	5.20	1.80		
8		12	20	9.40	112	17	38	29	4.60	1.60		
9		44	9.60	7.00	116	16	37	23	3.60	1.20		
10		23	8.00	4.00	92	14	35	16	2.60	1.20		
11		20	5.60	2.60	105	16	31	11	3.00	1.00		
12		9.20	6.60	6.80	89	85	20	9.80	2.40	1.00		
13		7.20	8.00	35	83	174	14	9.00	2.40	1.00		
14		8.40	70	20	122	286	11	11	2.00	1.00		
15		6.00	58	51	224	156	10	8.60	2.00	1.20		
16		4.40	28	35	322	68	9.60	8.00	3.80	1.20		
17		2.60	14	20	443	61	7.80	9.00	15	0.00		
18		1.60	9.40	14	578	128	7.60	9.00	11			
19		1.40	10	23	386	89	7.60	8.40	8.60			
20		4.60	203	119	241	68	7.40	8.80	7.60			
21		3.60	137	98	115	50	6.80	9.00	6.40			
22		2.60	45	47	90	79	6.80	8.80	7.40			
23		1.60	18	39	116	59	7.00	8.00	5.40			
24		1.20	10	42	99	54	7.00	7.80	2.60			
25		1.00	6.00	57	77	48	6.60	4.20	2.20			
26		1.00	5.00	53	58	38	6.20	7.00	2.00			
27		0.60	4.40	54	50	36	6.00	8.20	1.60			
28		0.60	4.00	45	50	35	5.40	4.40	1.40		0.00	
29		0.00	2.40	70	50	34	9.80	4.00	1.20		–	
30	0.00	0.00	2.00	38	48	35	8.00	3.80	1.00		–	
31	–	0.00	–	27	47	–	7.40	–	0.80	0.00	–	0.00
Total	0.00	159.20	718.60	934.40	4,121	1,857	672.00	597.80	132.00	14.00	0.00	0.00
Mean	0.00	5.13	23.9	30.1	133	61.9	21.7	19.9	4.26	0.45	0.00	0.00
Max.	0.00	44	203	119	578	286	66	92	15	1.80	0.00	0.00
Min.	0.00	0.00	0.00	1.00	18	14	5.40	3.80	0.80	0.00	0.00	0.00
Runoff - RCM.	0.00	13.755	62.087	80.732	356.054	160.445	58.061	51.650	11.405	1.209	0.00	0.00

WATER YEAR 1969 : Max. 578 Min. 0.00 Mean 25.2 Annual Runoff 795.398 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 18, 69	06.00	149.85	623				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
YOM RIVER BASIN

Mae Yom River at Sawankhalok Bridge, Sukhothai (Y_{3A})

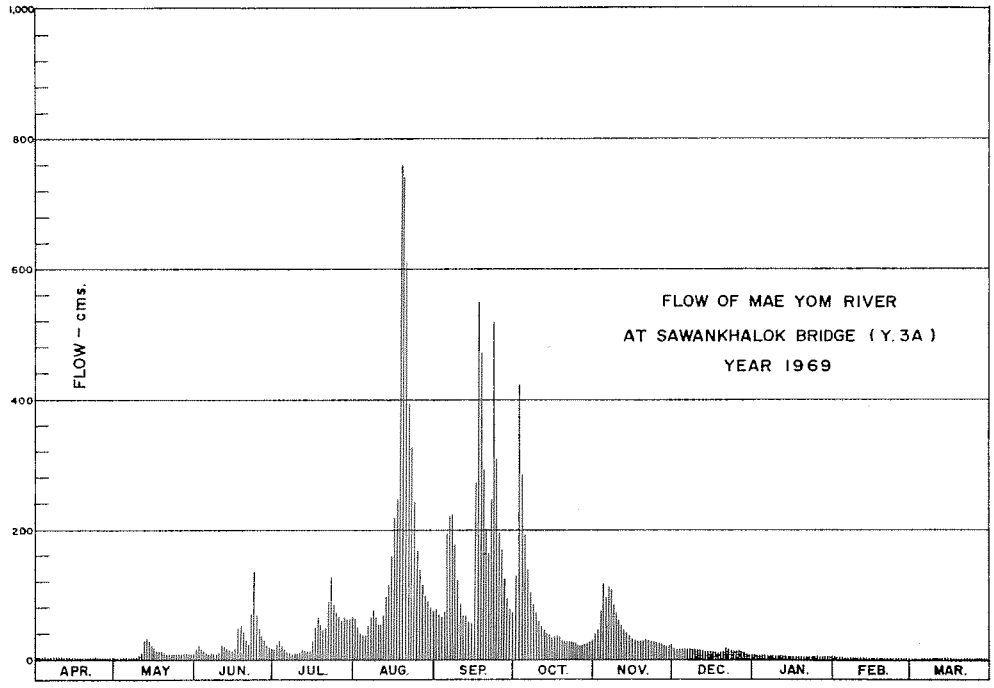
Location:	Lat. 17°-18'-29" N., Long. 99°-49'-43" E., on right bank about 100 meters downstream from Sawankhalok bridge, Amphoe Sawankhalok, Sukhothai.
Drainage Area:	13,583 sq.km.
Type of Gage:	Water-stage recorder
Zero Gage at Bottom at:	+ 51.00 m. (M.S.L.)
Bench Mark:	B.M. - H.S.
Location:	On left side of automatic gage building
Elevation:	+ 60.559 m. (M.S.L.)
Gage Reading Frequency:	Recording
Basis of Mean Daily Gage Height:	Arithmetic mean of 24 hourly readings
Period of Available Gage Records:	1967 to date
Rating Operation:	
Period of Rating:	1967 to date
Rated by Float:	-
Rated by Current Meter:	1967 to date
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. Upstream State diversions for irrigation of about 24,000 hectares. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	51.51	51.38	51.98	51.95	52.85	53.05	52.98	52.48	52.04	51.74	51.59	51.48
2	.50	.38	52.08	52.10	.64	52.94	54.43	.55	51.98	.73	.58	.48
3	.50	.38	51.92	.27	.50	.85	56.37	53.00	.96	.72	.58	.47
4	.50	.38	.85	.04	.42	53.00	55.18	.52	52.00	.72	.58	.47
5	.49	.38	.79	51.96	.41	54.28	54.32	.27	.00	.71	.57	.47
6	51.49	51.35	51.76	51.89	52.63	54.60	53.86	53.49	51.99	51.71	51.56	51.47
7	.49	.35	.83	.83	.86	.63	.48	.46	.97	.70	.55	.46
8	.48	.37	.80	.83	53.06	.16	.21	.21	.96	.73	.54	.46
9	.48	.37	.79	.84	52.87	53.56	.01	52.97	.97	.72	.53	.44
10	.48	.37	.88	.81	.70	.17	52.86	.78	.97	.69	.53	.44
11	51.48	51.36	52.11	51.89	52.70	52.90	52.74	52.65	51.96	51.68	51.53	51.45
12	.47	52.23	.06	.97	.90	.91	.59	.54	.94	.68	.53	.45
13	.46	.28	51.96	.93	53.36	.81	.51	.43	.90	.68	.51	.45
14	.46	.17	.91	.89	.56	.68	.43	.36	.88	.68	.52	.44
15	.46	.08	.91	.93	54.01	.81	.39	.31	.89	.68	.51	.43
16	51.44	51.95	52.04	52.28	54.53	54.37	52.34	52.28	51.88	51.68	51.50	51.42
17	.42	.86	.58	.65	.75	57.31	.41	.28	.86	.68	.50	.41
18	.42	.88	.69	.87	55.92	.03	.33	.25	.86	.67	.51	.40
19	.42	.80	.47	.64	58.68	55.46	.25	.24	.85	.66	.51	.40
20	.42	.74	.28	.51	.57	54.44	.22	.28	.89	.67	.51	.40
21	51.41	51.71	52.15	52.62	56.56	54.04	52.20	52.26	52.07	51.66	51.50	51.40
22	.40	.68	.89	53.25	55.93	.63	.18	.23	51.99	.65	.49	.40
23	.40	.67	53.72	.64	.30	57.09	.19	.22	.93	.65	.51	.42
24	.40	.62	.11	.20	54.49	55.74	.18	.21	.90	.64	.53	.43
25	.39	.64	52.66	52.97	.09	54.49	.16	.20	.87	.64	.51	.44
26	51.39	51.66	52.39	52.86	53.74	54.08	52.11	52.18	51.89	51.64	51.50	51.45
27	.38	.66	.26	.81	.40	53.65	.13	.14	.84	.64	.49	.59
28	.38	.67	.13	.86	53.30	.34	.17	.12	.80	.64	.48	.61
29	.38	.68	.04	.82	.15	.11	.21	.11	.77	.63	-	.58
30	.38	.73	51.98	.83	.10	52.96	.25	.12	.76	.61	-	.53
31	-	.75	-	.90	.00	-	.28	-	.75	.61	-	.50
Mean	51.44	51.66	52.20	52.41	53.94	54.07	52.84	52.54	51.91	51.67	51.52	51.45
Max.	51.51	52.28	53.72	53.64	58.68	57.31	56.37	53.52	52.04	51.74	51.59	51.61
Min.	51.38	51.35	51.76	51.81	52.41	52.68	52.11	52.11	51.75	51.61	51.48	51.40

WATER YEAR 1969 : Max. 58.68 m. Min. 51.35 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	2.20	0.60	16	16	65	78	74	43	20	8.20	3.80	1.80
2	2.00	0.60	21	22	52	71	202	47	17	7.90	3.60	1.80
3	2.00	0.60	15	30	44	65	422	75	16	7.60	3.60	1.70
4	2.00	0.60	12	20	39	75	283	116	18	7.60	3.60	1.70
5	1.90	0.60	9.70	16	39	187	191	96	18	7.30	3.40	1.70
6	1.90	0.00	8.80	14	52	219	146	113	18	7.30	3.20	1.70
7	1.90	0.00	11	11	66	222	112	111	17	7.00	3.00	1.60
8	1.80	0.40	10	11	79	175	91	91	16	7.90	2.80	1.60
9	1.80	0.40	9.70	12	66	119	76	73	17	7.60	2.60	1.44
10	1.80	0.40	13	10	56	88	66	61	17	6.70	2.60	1.44
11	1.80	0.20	22	14	56	68	58	53	16	6.40	2.60	1.50
12	1.70	28	20	17	74	69	49	46	16	6.40	2.60	1.50
13	1.60	31	16	15	103	63	45	40	14	6.40	2.20	1.50
14	1.60	25	14	14	119	55	40	36	13	6.40	2.40	1.44
15	1.60	21	14	15	160	63	37	33	14	6.40	2.20	1.30
16	1.40	16	20	31	212	196	34	31	13	6.40	2.00	1.20
17	1.20	12	49	53	235	549	39	31	12	6.40	2.00	1.10
18	1.20	13	55	66	368	510	34	29	12	6.10	2.20	1.00
19	1.20	10	42	52	760	314	29	29	12	5.80	2.20	1.00
20	1.20	8.20	31	45	742	203	28	31	14	6.10	2.20	1.00
21	1.10	7.30	24	51	447	163	27	30	21	5.80	2.00	1.00
22	1.00	6.40	67	94	370	222	26	28	18	5.50	1.90	1.00
23	1.00	6.10	134	127	296	519	26	28	15	5.50	2.20	1.20
24	1.00	4.60	83	90	208	347	26	27	14	5.20	2.60	1.30
25	0.80	5.20	54	73	168	208	25	27	13	5.20	2.20	1.40
26	0.80	5.80	37	66	136	167	22	26	14	5.20	2.00	1.50
27	0.60	5.80	30	63	106	127	23	24	12	5.20	1.90	3.80
28	0.60	6.10	23	66	98	101	25	23	10	5.20	1.80	4.30
29	0.60	6.40	20	63	86	83	27	22	9.10	4.90	–	3.60
30	0.69	7.90	17	64	82	72	29	23	8.80	4.30	–	2.60
31	–	8.50	–	68	75	–	31	–	8.50	4.30	–	2.00
Total	41.90	238.70	898.20	1,309	5,459	5,398	2,343	1,443	453.40	194.20	71.40	52.72
Mean	1.40	7.70	29.9	42.2	176	180	75.6	48.1	14.6	6.26	2.55	1.70
Max.	2.20	31	134	127	760	549	422	116	21	8.20	3.80	4.30
Min.	0.60	0.00	8.80	11	39	55	22	22	8.50	4.30	1.80	1.00
Runoff - MCM.	3.620	20.624	77.604	113.098	471.657	466.387	202.435	124.675	39.173	16.778	6.168	4.555

WATER YEAR 1969 : Max. 760 Min. 0.00 Mean 49.0 Annual Runoff 1,546.777 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 19,69	22.00	59.74	932				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
YOM RIVER BASIN

Mae Yom River at Talat Thani, Sukhothai (Y4)

Location: Lat. 17°-00'-18" N., Long. 99°-49'-31" E., on left bank infront of the house of Governor, Amphoe Muang, Sukhothai.

Drainage Area: 17,731 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 44.00 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: At about 22 meters from the top gage

Elevation: + 47.579 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1950 to date

Rating Operation:

Period of Rating: 1954-56, 1967-70

Rated by Float: -

Rated by Current Meter: 1954-56, 1967-70

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation

Overbank Flow Conditions: No overbank flow

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. Upstream State diversions for irrigation of about 24,000 hectares. No adjustment made for virgin flow.

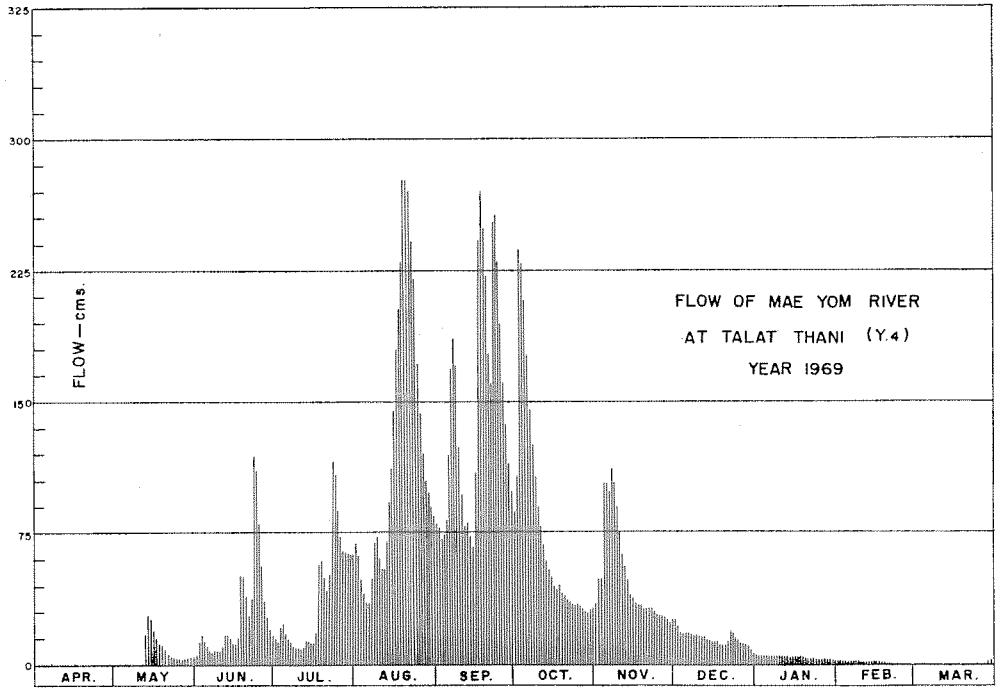
Remarks: Estimate gage height on October 19-27, December 29-30.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	44.28	44.12	44.72	45.20	46.74	46.96	47.11	45.91	45.61	44.73	44.47	44.30
2	.28	.11	45.11	.13	.55	.94	.63	46.26	.45	.71	.45	.30
3	.27	.11	.31	.49	.22	.79	48.83	.27	.34	.70	.44	.30
4	.27	.10	.12	.53	45.99	.87	.77	47.44	.32	.70	.43	.29
5	.27	.09	.00	.29	.85	47.17	.58	.44	.33	.70	.43	.29
6	44.27	44.08	44.90	45.16	45.92	48.33	48.30	47.33	45.35	44.69	44.42	44.28
7	.27	.08	.82	.06	46.29	.54	47.97	.59	.33	.68	.41	.27
8	.26	.07	.91	44.96	.74	.37	.64	.41	.31	.67	.40	.26
9	.26	.06	.88	.94	.83	47.97	.34	.10	.29	.71	.40	.25
10	.24	.12	.86	.94	.55	.56	.10	46.80	.29	.70	.39	.24
11	44.23	44.22	45.01	44.88	46.38	47.21	46.90	46.56	45.27	44.65	44.39	44.24
12	.23	.29	.34	45.03	.40	46.95	.69	.38	.25	.65	.39	.23
13	.26	45.51	.28	.18	47.08	47.00	.52	.21	.22	.64	.39	.22
14	.26	.68	.15	.14	.43	46.78	.38	.04	.16	.63	.38	.22
15	.25	.51	.06	.05	.78	.69	.28	45.96	.13	.63	.38	.21
16	44.22	45.38	45.07	45.16	48.34	47.65	46.17	45.88	45.13	44.66	44.37	44.21
17	.20	.16	.25	.70	.62	48.85	.11	.87	.11	.65	.37	.20
18	.19	.03	46.31	46.49	.76	.92	.18	.85	.09	.65	.36	.20
19	.17	.00	.29	.52	.93	.85	.07	.79	.07	.64	.36	.20
20	.17	44.89	45.96	.21	.93	.62	45.99	.81	.05	.63	.35	.20
21	44.15	44.78	45.67	46.06	48.92	48.36	45.95	45.84	45.14	44.62	44.34	44.20
22	.15	.68	.47	.36	.86	.29	.91	.79	.42	.60	.33	.20
23	.14	.63	47.70	47.66	.78	.88	.87	.75	.32	.59	.33	.25
24	.13	.58	.54	.54	.51	.89	.89	.73	.22	.58	.33	.35
25	.12	.52	46.86	.03	.27	.65	.86	.72	.15	.57	.32	.33
26	44.11	44.50	46.29	46.79	48.03	48.40	45.84	45.70	45.10	44.56	44.32	44.31
27	.15	.55	45.85	.64	47.69	.12	.77	.66	.09	.55	.31	.30
28	.15	.58	.66	.63	.42	47.72	.75	.60	.02	.54	.31	.36
29	.14	.62	.44	.63	.33	.50	.75	.55	44.94	.52	-	.45
30	.13	.62	.30	.62	.12	.25	.81	.61	.86	.50	-	.43
31	-	.66	-	.61	.05	-	.82	-	.76	.50	-	.40
Mean	44.21	44.59	45.54	45.86	47.43	47.83	46.67	46.22	45.20	44.63	44.38	44.27
Max.	44.28	45.68	47.70	47.66	48.93	48.92	48.83	47.59	45.61	44.73	44.47	44.45
Min.	44.11	44.06	44.72	44.88	45.85	46.79	45.75	45.55	44.76	44.50	44.31	44.20

WATER YEAR 1969 : Max. 48.93 m. Min. 44.06 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.90	0.14	5.80	15	69	79	86	36	26	5.95	2.70	1.00
2	0.90	0.095	13	13	61	78	114	49	21	5.65	2.50	1.00
3	0.85	0.095	17	22	47	71	237	49	18	5.50	2.40	1.00
4	0.85	0.050	13	23	39	75	221	104	18	5.50	2.30	0.95
5	0.85	0.040	11	17	34	89	190	104	18	5.50	2.30	0.95
6	0.85	0.030	8.50	14	36	164	161	98	18	5.35	2.20	0.90
7	0.85	0.030	7.30	12	50	186	136	112	18	5.20	2.10	0.85
8	0.80	0.020	8.70	10	69	168	115	102	17	5.05	2.00	0.80
9	0.80	0.010	8.20	9.30	73	136	98	86	17	5.65	2.00	0.75
10	0.70	0.14	7.90	9.30	61	110	86	71	17	5.50	1.90	0.70
11	0.65	0.60	11	8.20	54	91	76	61	16	4.75	1.90	0.70
12	0.65	0.95	18	11	55	78	66	54	16	4.75	1.90	0.65
13	0.80	23	17	14	85	81	59	47	16	4.60	1.90	0.60
14	0.80	28	14	13	103	71	54	40	14	4.45	1.80	0.60
15	0.75	23	12	12	124	66	50	38	13	4.45	1.80	0.55
16	0.60	19	12	14	165	115	45	35	13	4.90	1.70	0.55
17	0.50	14	16	29	196	243	43	34	13	4.75	1.70	0.50
18	0.45	11	51	58	220	271	46	34	12	4.75	1.60	0.50
19	0.36	11	50	59	276	243	41	32	12	4.60	1.60	0.50
20	0.36	8.35	38	47	276	195	39	32	11	4.45	1.50	0.50
21	0.27	6.70	28	41	271	167	37	33	13	4.30	1.40	0.50
22	0.27	5.20	22	53	247	160	36	32	20	4.00	1.30	0.50
23	0.23	4.45	119	116	224	253	34	30	18	3.90	1.30	0.75
24	0.18	3.80	109	109	182	256	35	29	15	3.80	1.30	1.50
25	0.14	3.20	74	83	159	200	34	29	14	3.70	1.20	1.30
26	0.095	3.00	50	71	141	171	33	28	12	3.60	1.20	1.10
27	0.27	3.50	34	64	118	147	31	27	12	3.50	1.10	1.00
28	0.27	3.80	27	64	103	120	30	25	11	3.40	1.10	1.60
29	0.23	4.30	21	64	98	107	30	24	9.30	3.20	–	2.50
30	0.18	4.30	17	63	87	93	32	26	7.90	3.00	–	2.30
31	–	4.90	–	63	84	–	33	–	6.40	3.00	–	2.00
Total	16.405	186.70	840.40	1,200.80	3,807	4,284	2,328	1,501	461.60	140.70	49.70	29.60
Mean	0.547	6.02	28.0	38.7	123	143	75.1	50.0	14.9	4.54	1.77	0.955
Max.	0.90	28	119	116	276	271	237	112	26	5.95	2.70	2.50
Min.	0.095	0.010	5.80	8.20	34	71	30	24	6.40	3.00	1.10	0.50
Runoff – MCM.	1.417	16.131	72.611	103.749	328.925	370.138	201.139	129.686	39.882	12.156	4.294	2.557

WATER YEAR 1969 : Max. 276 Min. 0.010 Mean 40.7 Annual Runoff 1,282.686 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 21, 69	06.00	48.93	276				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
YOM RIVER BASIN

Mae Yom River at Pho Thale, Phichit (Y_5)

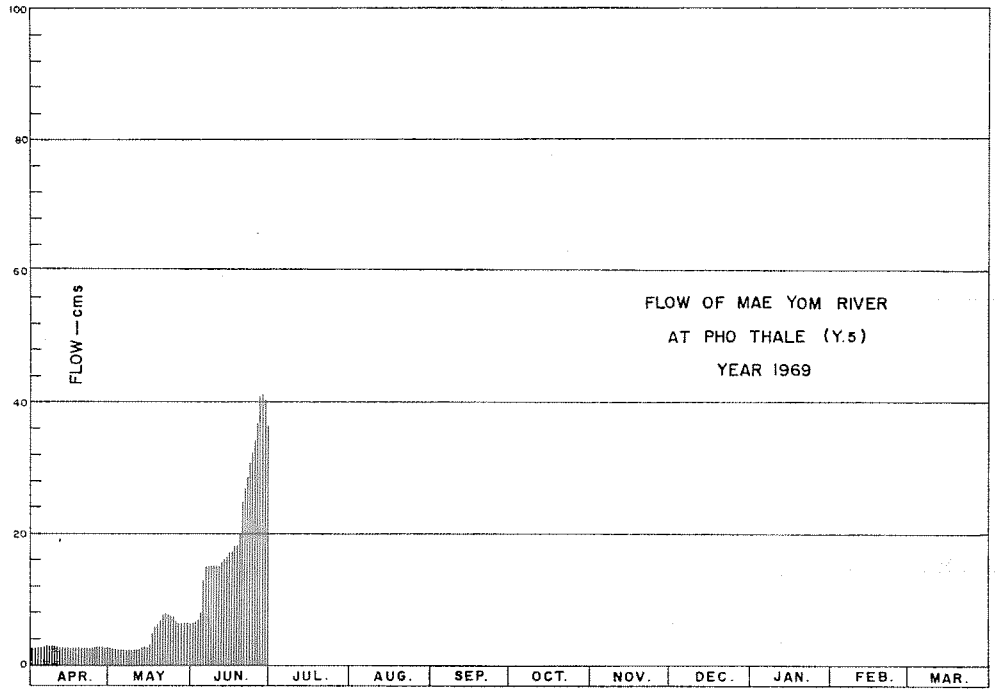
Location:	Lat. 16°-05'-35" N., Long. 100°-15'-48" E., on left bank infront of Amphoe Pho Thale office, Phichit.
Drainage Area:	22,344 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 22.852 m. (M.S.L.)
Bench Mark:	B.M. - R.I.D.
Location:	At mango tree infront of Amphoe Pho Thale office
Elevation:	+ 30.640 m. (M.S.L.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1951-69, 1970 to date
Rating Operation:	
Period of Rating:	1967
Rated by Float:	-
Rated by Current Meter:	1967
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation for year without actual ratings.
Overbank Flow Conditions:	No overbank flow
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1967. Upstream State diversions for irrigation of about 24,000 hectares. No adjustment made for virgin flow.
Remarks:	No record on periods July - March.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1960 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	22.90	22.91	23.19									
2	.90	.90	.20									
3	.90	.90	.21									
4	.90	.89	.24									
5	.91	.89	.53									
6	22.93	22.88	23.66									
7	.94	.87	.67									
8	.93	.86	.66									
9	.93	.86	.66									
10	.93	.87	.66									
11	22.91	22.88	23.67									
12	.91	.89	.67									
13	.91	.90	.69									
14	.91	.91	.71									
15	.91	.92	.73									
16	22.91	22.94	23.75									
17	.91	23.09	.77									
18	.91	.16	.80									
19	.91	.20	.89									
20	.91	.22	24.02									
21	22.91	23.28	24.16									
22	.91	.29	.22									
23	.91	.28	.29									
24	.91	.27	.36									
25	.92	.26	.41									
26	22.92	23.20	24.47									
27	.92	.20	.62									
28	.92	.19	.62									
29	.92	.19	.57									
30	.92	.19	.46									
31	-	.19	-									
Mean	22.91	23.05	23.88									
Max.	22.94	23.29	24.62									
Min.	22.90	22.86	23.19									

WATER YEAR 1969 : Max. m. Min. m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	2.50	2.61	6.26									
2	2.50	2.50	6.40									
3	2.50	2.50	6.56									
4	2.50	2.42	7.04									
5	2.61	2.42	12									
6	2.83	2.34	15									
7	2.94	2.26	15									
8	2.83	2.18	15									
9	2.83	2.18	15									
10	2.83	2.26	15									
11	2.61	2.34	15									
12	2.61	2.42	15									
13	2.61	2.50	16									
14	2.61	2.61	16									
15	2.61	2.72	17									
16	2.61	2.94	17									
17	2.61	4.86	18									
18	2.61	5.84	18									
19	2.61	6.40	20									
20	2.61	6.72	24									
21	2.61	7.68	27									
22	2.61	7.84	29									
23	2.61	7.68	31									
24	2.61	7.52	33									
25	2.72	7.36	35									
26	2.72	6.40	37									
27	2.72	6.40	41									
28	2.72	6.26	41									
29	2.72	6.26	40									
30	2.72	6.26	36									
31	–	6.26	–									
Total	79.73	138.94	639.26									
Mean	2.66	4.48	21.3									
Max.	2.94	7.84	41									
Min.	2.50	2.18	6.26									
Runoff – MCM.	6.889	12.004	55.232									

WATER YEAR 1969 : Max. Min. Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
YOM RIVER BASIN

Mae Yom River at above Kaeng Luang, Sukhothai (Y_6)

Location: Lat. 17°-26'-03" N., Long. 99°-47'-40" E., on left bank about 150 meters upstream from Kaeng Luang, Amphoe Si Satchanalai, Sukhothai.

Drainage Area: 12,658 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 59.00 m. (M.S.L.)

Bench Mark: B.M. - H.S. - Y. 6

- Location: Near the gage site
- Elevation: + 68.928 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1952 to date

Rating Operation:

- Period of Rating: 1952 to date
- Rated by Float: -
- Rated by Current Meter: 1952 to date

Stability of Channel Regimes: Rather stable, no shifting adjustment for flow computation.

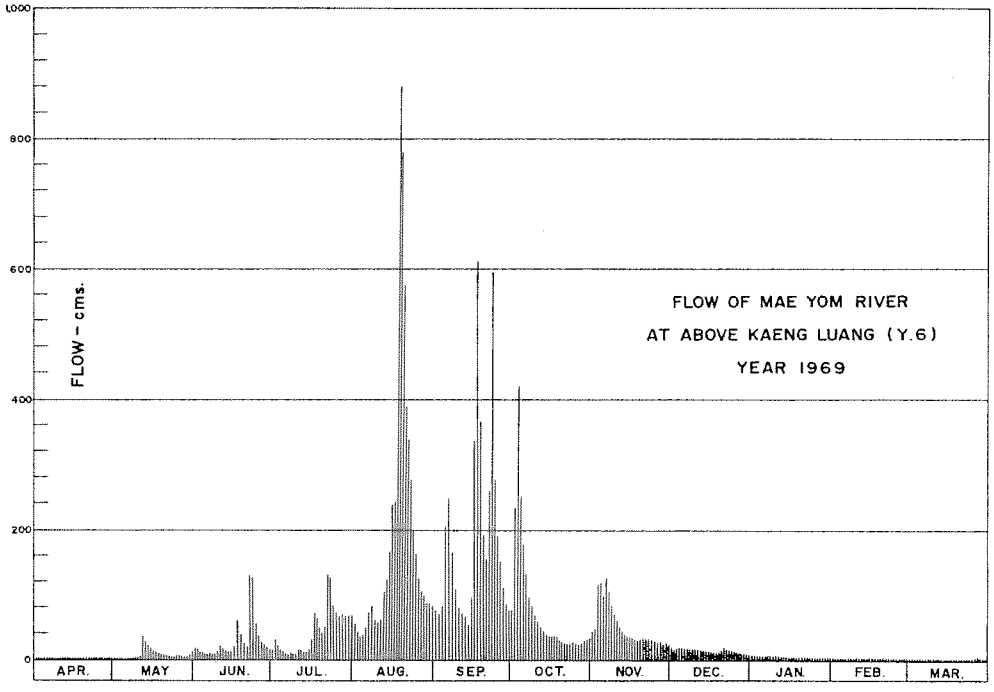
Overbank Flow Conditions: No overbank flow

General Description: Records good. Stage discharge relationship used is defined by discharge measurements made during 1969. Upstream State diversions for irrigation of about 24,000 hectares. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	59.56	59.42	60.19	60.04	60.86	61.07	61.06	60.68	60.16	52.82	59.69	59.60
2	.56	.41	.15	.41	.67	60.94	62.57	.64	.12	.83	.68	.58
3	.55	.40	.01	.25	.55	.92	63.24	61.37	.16	.82	.68	.58
4	.55	.40	59.97	.11	.50	61.15	62.36	.40	.17	.81	.68	.58
5	.52	.45	.90	.06	.56	62.08	61.87	.23	.15	.81	.67	.57
6	59.52	59.56	59.93	59.97	60.77	62.34	61.55	61.47	60.14	59.80	59.66	59.56
7	.52	.58	.96	.93	61.00	.15	.31	.36	.14	.82	.65	.55
8	.52	.57	.92	.96	.07	61.71	.12	.15	.13	.85	.65	.55
9	.51	.54	.94	.94	60.86	.34	60.97	60.95	.13	.80	.64	.54
10	.51	.54	60.05	.90	.77	.08	.85	.82	.13	.78	.63	.54
11	59.53	59.69	60.25	60.10	60.79	60.90	60.73	60.71	60.12	59.78	59.63	59.54
12	.54	60.52	.11	.09	61.17	.97	.64	.61	.09	.77	.63	.53
13	.51	.32	.03	.02	.36	.83	.58	.52	.05	.77	.63	.53
14	.48	.23	.05	.02	.54	.72	.51	.49	.05	.78	.63	.53
15	.49	.09	.08	.18	.91	61.01	.48	.45	.05	.78	.62	.53
16	59.47	59.98	60.18	60.49	62.29	62.24	60.46	60.45	60.03	59.78	59.62	59.53
17	.47	.99	.85	.93	.32	64.00	.51	.41	.02	.78	.63	.53
18	.49	.94	.68	.87	63.34	63.50	.43	.39	.01	.77	.63	.52
19	.47	.89	.47	.64	65.07	62.52	.36	.43	.01	.76	.63	.51
20	.49	.83	.32	.59	64.18	61.96	.34	.44	.09	.77	.62	.51
21	59.49	59.79	60.21	60.78	63.16	61.73	60.32	60.42	60.22	59.76	59.61	59.50
22	.46	.76	61.50	61.50	62.97	62.49	.30	.41	.13	.76	.62	.50
23	.45	.72	.47	.47	.44	63.94	.32	.40	.08	.76	.64	.57
24	.42	.70	60.99	.12	.02	62.56	.34	.38	.06	.75	.63	.55
25	.43	.76	.63	60.98	61.74	61.97	.30	.35	.04	.75	.62	.53
26	59.47	59.75	60.41	60.90	64.49	61.72	60.26	60.32	60.02	59.74	59.61	59.67
27	.49	.73	.31	.89	.28	.42	.30	.30	59.94	.74	.60	.72
28	.48	.74	.18	.91	.23	.21	.35	.27	.89	.73	.60	.68
29	.44	.78	.12	.89	.11	.05	.41	.32	.86	.72	-	.64
30	.42	.80	.07	.88	.11	60.96	.40	.29	.84	.71	-	.61
31	-	.96	-	.98	.03	-	.46	-	.83	.70	-	.59
Mean	59.49	59.77	60.30	60.51	61.65	61.75	60.83	60.65	60.06	59.77	59.64	59.56
Max.	59.56	60.52	61.50	61.50	65.07	64.00	63.24	61.47	60.22	59.85	59.69	59.72
Min.	59.42	59.40	59.90	59.90	60.50	60.72	60.26	60.27	59.83	59.70	59.60	59.60

WATER YEAR 1969 : Max. 65.07 m. Min. 59.40 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.10	0.10	20	14	65	84	83	50	19	6.50	3.30	1.50
2	1.10	0.05	18	32	50	73	285	47	17	6.75	3.10	1.30
3	1.00	0.00	12	23	40	71	420	116	19	6.50	3.10	1.30
4	0.80	0.00	11	16	37	92	251	119	19	6.25	3.10	1.30
5	0.70	0.25	8.50	14	41	208	178	100	18	6.25	2.90	1.20
6	0.70	1.10	9.55	11	58	247	136	127	18	6.00	2.70	1.10
7	0.70	1.30	11	9.55	78	218	109	115	18	6.50	2.50	1.00
8	0.70	1.20	9.20	11	84	156	89	92	17	7.25	2.50	1.00
9	0.60	0.90	9.90	9.90	65	112	75	73	17	6.00	2.30	0.90
10	0.60	0.90	14	8.50	58	85	64	62	17	5.55	2.10	0.90
11	0.80	3.30	23	16	59	69	54	53	17	5.50	2.10	0.90
12	0.90	38	16	16	94	75	47	45	16	5.25	2.10	0.80
13	0.80	26	13	13	115	63	43	38	14	5.25	2.10	0.80
14	0.40	22	14	13	135	54	38	36	14	5.50	2.10	0.80
15	0.45	16	15	20	183	79	36	34	14	5.50	1.90	0.80
16	0.35	11	20	36	239	232	35	34	13	5.50	1.90	0.80
17	0.35	12	64	72	244	610	38	32	13	5.50	2.10	0.80
18	0.45	9.90	50	66	444	482	33	30	12	5.25	2.10	0.70
19	0.35	8.25	35	47	932	276	29	33	12	5.00	2.10	0.60
20	0.45	6.75	26	43	660	190	27	33	16	5.25	1.90	0.60
21	0.45	5.75	21	58	402	159	26	32	21	5.00	1.70	0.50
22	0.30	5.00	130	130	362	271	25	32	17	5.00	1.90	0.50
23	0.25	4.00	127	127	263	594	26	31	15	5.00	2.30	1.20
24	0.10	3.50	77	89	199	283	27	30	14	4.75	2.10	1.00
25	0.15	5.00	46	76	160	192	25	28	14	4.75	1.90	0.80
26	0.35	4.75	32	69	129	158	23	26	13	4.50	1.70	2.90
27	0.45	4.25	26	68	106	121	25	25	9.90	4.50	1.50	4.00
28	0.40	4.50	20	70	100	98	28	24	8.25	4.25	1.50	3.10
29	0.20	5.50	17	68	88	82	32	26	7.50	4.00	–	2.30
30	0.10	6.00	15	67	88	74	31	24	7.00	3.75	–	1.70
31	–	11	–	76	81	–	35	–	6.75	3.50	–	1.40
Total	15.85	218.25	910.15	1,388.95	5,659	5,508	2,373	1,547	453.40	166.00	62.60	38.50
Mean	0.528	7.04	30.3	44.8	182	184	76.5	51.6	14.6	5.35	2.23	1.24
Max.	1.10	38	130	130	932	610	420	127	21	7.25	3.30	4.00
Min.	0.10	0.00	8.50	8.50	37	63	23	24	6.75	3.50	1.50	0.50
Runoff - mcm.	1.369	18.857	78.637	120.005	488.938	475.891	205.027	133.661	39.174	14.342	5.409	3.326

WATER YEAR 1969 : Max. 932 Min. 0.00 Mean 50.2 Annual Runoff 1,584.636 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 19, 69	18.00	65.39	1,041				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
YOM RIVER BASIN

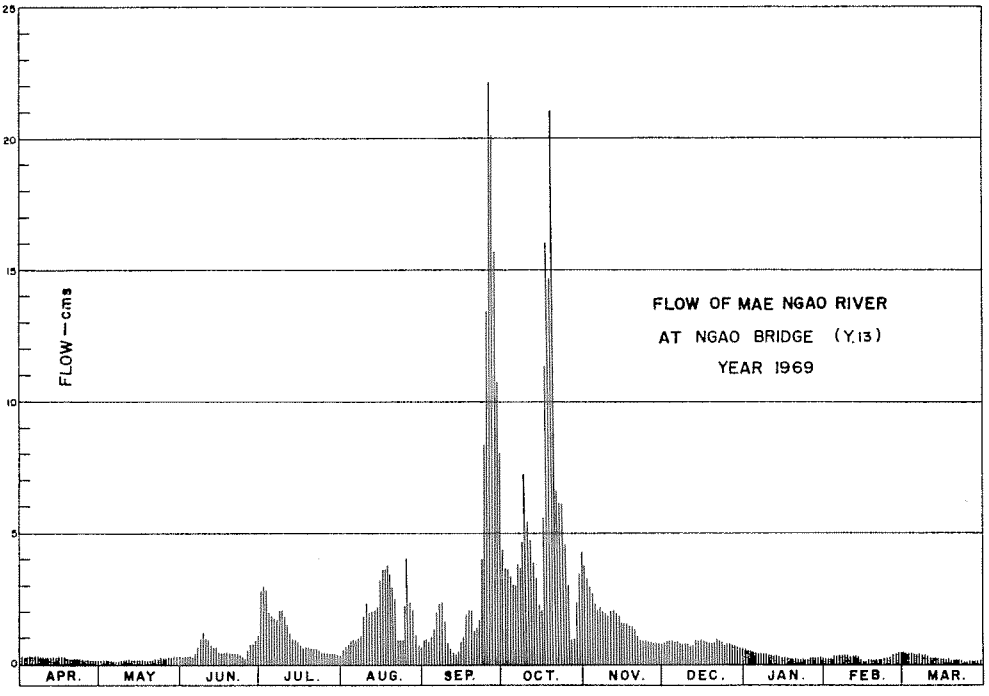
Mae Ngao River at Ngao Bridge, Lampang (Y_{13})

Location:	Lat. 18°-45'-06" N., Long. 99°-58'-53" E., on left bank at downstream side of Ngao Bridge, Amphoe Ngao, Lampang.
Drainage Area:	382 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 266.79 m. (M.S.L.)
Bench Mark:	B.M. – R.I.D. No. 14
Location:	About 100 meters upstream from gage site
Elevation:	+ 272.896 m. (M.S.L.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1957 to date
Rating Operation:	
Period of Rating:	1957-58, 1969 to date
Rated by Float:	–
Rated by Current Meter:	1957-58, 1969 to date
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation
Overbank Flow Conditions:	No overbank flow
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1957-58. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	266.94	266.88	266.93	267.24	267.02	267.09	267.31	267.28	267.07	267.02	266.92	267.01
2	.94	.88	.95	.25	.04	.09	.29	.26	.09	.01	.93	266.99
3	.95	.89	.94	.24	.06	.07	.29	.24	.09	.01	.93	.99
4	.95	.88	.94	.18	.09	.12	.27	.22	.09	.00	.96	.98
5	.95	.87	.93	.17	.09	.14	.25	.20	.08	266.99	.96	.97
6	266.95	266.87	266.99	267.16	267.08	267.19	267.25	267.19	267.08	266.99	266.96	266.97
7	.94	.88	267.05	.16	.10	.21	.30	.20	.07	.99	.96	.97
8	.94	.88	.09	.19	.11	.21	.29	.19	.06	.98	.96	.97
9	.92	.89	.12	.19	.18	.13	.42	.18	.06	.98	.96	.96
10	.92	.89	.09	.17	.21	.05	.37	.17	.06	.97	.94	.94
11	266.92	266.89	267.09	267.14	267.18	267.01	267.35	267.19	267.05	266.96	266.95	266.93
12	.92	.90	.04	.11	.19	266.99	.32	.19	.07	.95	.96	.93
13	.93	.90	.03	.09	.19	.99	.29	.18	.09	.95	.94	.93
14	.93	.90	.03	.09	.20	267.02	.26	.17	.09	.95	.89	.92
15	.92	.90	266.99	.07	.26	.09	.19	.15	.09	.94	.89	.92
16	266.92	266.89	266.99	267.04	267.29	267.11	267.19	267.15	267.08	266.92	266.89	266.92
17	.92	.89	.99	.04	.29	.18	.65	.15	.08	.92	.90	.91
18	.91	.89	.99	.04	.30	.19	.54	.14	.07	.93	.90	.91
19	.91	.89	.97	.03	.27	.19	.73	.14	.07	.93	.90	.89
20	.91	.89	.98	.02	.24	.12	.56	.13	.08	.93	.90	.89
21	266.91	266.90	266.98	267.02	267.21	267.13	267.41	267.10	267.10	266.93	266.90	266.89
22	.91	.91	.97	.02	.09	.16	.39	.09	.09	.92	.92	.89
23	.91	.91	.97	.01	.09	.29	.39	.09	.07	.92	.92	.87
24	.90	.91	.93	266.99	.09	.48	.32	.08	.05	.91	.93	.87
25	.90	.91	.92	.99	.31	.61	.27	.08	.07	.91	.93	.87
26	266.90	266.92	267.02	266.99	267.24	267.74	267.24	267.07	267.07	266.91	266.97	266.87
27	.89	.93	.05	.98	.20	.68	.09	.07	.06	.94	.99	.87
28	.89	.93	.05	.98	.19	.56	.10	.07	.05	.93	.99	.89
29	.89	.94	.08	.97	.08	.52	.23	.06	.04	.93	–	.89
30	.89	.94	.11	.96	.06	.40	.29	.06	.04	.93	–	.89
31	–	.95	–	.96	.04	–	.32	–	.04	.92	–	.89
Mean	266.92	266.93	267.01	267.00	267.16	267.22	267.33	267.14	267.07	266.95	266.93	266.92
Max.	266.95	266.95	267.12	267.25	267.31	267.74	267.73	267.28	267.10	267.02	266.99	267.01
Min.	266.89	266.87	266.92	266.96	267.02	266.99	267.09	267.06	267.04	266.91	266.89	266.87

WATER YEAR 1969 : Max. 276.74 m. Min. 266.87 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.32	0.16	0.29	2.84	0.60	0.95	4.06	3.48	0.85	0.60	0.26	0.55
2	0.32	0.16	0.35	3.00	0.70	0.95	3.64	3.16	0.95	0.55	0.29	0.47
3	0.35	0.18	0.32	2.84	0.80	0.85	3.64	2.84	0.95	0.55	0.29	0.47
4	0.35	0.16	0.32	1.96	0.95	1.24	3.32	2.52	0.95	0.50	0.38	0.44
5	0.35	0.14	0.29	1.84	0.95	1.48	3.00	2.20	0.90	0.47	0.38	0.41
6	0.35	0.14	0.47	1.72	0.90	2.08	3.00	2.08	0.90	0.47	0.38	0.41
7	0.32	0.16	0.75	1.72	1.00	2.36	3.80	2.20	0.85	0.44	0.38	0.41
8	0.32	0.16	0.95	2.08	1.12	2.36	3.64	2.08	0.80	0.44	0.38	0.41
9	0.26	0.18	1.24	2.08	1.96	1.36	7.04	1.96	0.80	0.44	0.38	0.38
10	0.26	0.18	0.95	1.84	2.36	0.75	5.62	1.84	0.80	0.41	0.32	0.32
11	0.26	0.18	0.95	1.48	1.96	0.55	5.10	2.08	0.75	0.38	0.35	0.29
12	0.26	0.20	0.70	1.12	2.08	0.47	4.32	2.08	0.75	0.38	0.38	0.29
13	0.29	0.20	0.65	0.95	2.08	0.47	3.64	1.96	0.95	0.38	0.32	0.29
14	0.29	0.20	0.65	0.95	2.20	0.60	3.16	1.84	0.95	0.35	0.18	0.26
15	0.26	0.20	0.47	0.85	3.16	0.95	2.08	1.60	0.95	0.32	0.18	0.26
16	0.26	0.18	0.47	0.70	3.64	1.12	2.08	1.60	0.90	0.26	0.18	0.26
17	0.26	0.18	0.47	0.70	3.64	1.96	16	1.60	0.90	0.26	0.20	0.23
18	0.23	0.18	0.47	0.70	3.80	2.08	11	1.48	0.85	0.29	0.20	0.23
19	0.23	0.18	0.41	0.65	3.32	2.08	21	1.48	0.85	0.29	0.20	0.18
20	0.23	0.18	0.44	0.60	2.84	1.24	12	1.36	0.90	0.29	0.20	0.18
21	0.23	0.20	0.44	0.60	2.36	1.36	6.72	1.00	1.00	0.29	0.20	0.18
22	0.23	0.23	0.41	0.60	0.95	1.72	6.14	0.95	0.95	0.26	0.26	0.18
23	0.23	0.23	0.41	0.55	0.95	3.64	6.14	0.95	0.85	0.26	0.26	0.14
24	0.20	0.23	0.29	0.47	0.95	8.96	4.32	0.90	0.75	0.23	0.29	0.14
25	0.20	0.23	0.26	0.47	4.06	14	3.32	0.90	0.85	0.23	0.29	0.14
26	0.20	0.26	0.60	0.47	2.84	22	2.84	0.85	0.85	0.23	0.41	0.14
27	0.18	0.29	0.75	0.44	2.20	18	0.95	0.85	0.80	0.32	0.47	0.14
28	0.18	0.29	0.75	0.44	2.08	12	1.00	0.85	0.75	0.29	0.47	0.18
29	0.18	0.32	0.90	0.41	0.90	10	2.68	0.80	0.70	0.29	–	0.18
30	0.18	0.32	1.12	0.38	0.75	6.40	3.64	0.80	0.70	0.29	–	0.18
31	–	0.35	–	0.38	0.70	–	4.32	–	0.70	0.26	–	0.18
Total	7.78	6.45	16.54	35.83	58.80	123.98	163.21	50.29	26.40	10.96	8.48	8.52
Mean	0.259	0.208	0.551	1.15	1.90	4.13	5.26	1.67	0.851	0.353	0.302	0.275
Max.	0.35	0.35	1.24	3.00	4.06	22	21	3.48	1.00	0.60	0.47	0.55
Min.	0.18	0.14	0.26	0.38	0.60	0.47	0.95	0.80	0.70	0.23	0.18	0.14
Runoff – MCM.	0.672	0.557	1.429	3.096	5.080	10.712	14.101	4.345	2.280	0.946	0.732	0.736

WATER YEAR 1969 : Max. 22 Min. 0.14 Mean 1.42 Annual Runoff 44.689 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 19, 69	12.00	267.79	25				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
YOM RIVER BASIN

Mae Yom River at Ban Don Rabiang, Sukhothai (Y_{14})

Location: Lat. 17°-35'-42" N., Long. 99°-43'-08" E., on left bank about 50 meters from highway No. 101 (Si Satchanalai – Den Chai) and about 44 kilometers from Amphoe Si Satchanalai, Amphoe Si Satchanalai, Sukhothai.

Drainage Area: 12,131 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 65.10 m. (M.S.L.)

Bench Mark: B.M. – H.S. No. 1

- **Location:** Infront of Y. 14 station office
- **Elevation:** + 77.575 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1964 to date

Rating Operation:

- **Period of Rating:** 1964 to date
- **Rated by Float:** –
- **Rated by Current Meter:** 1964 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

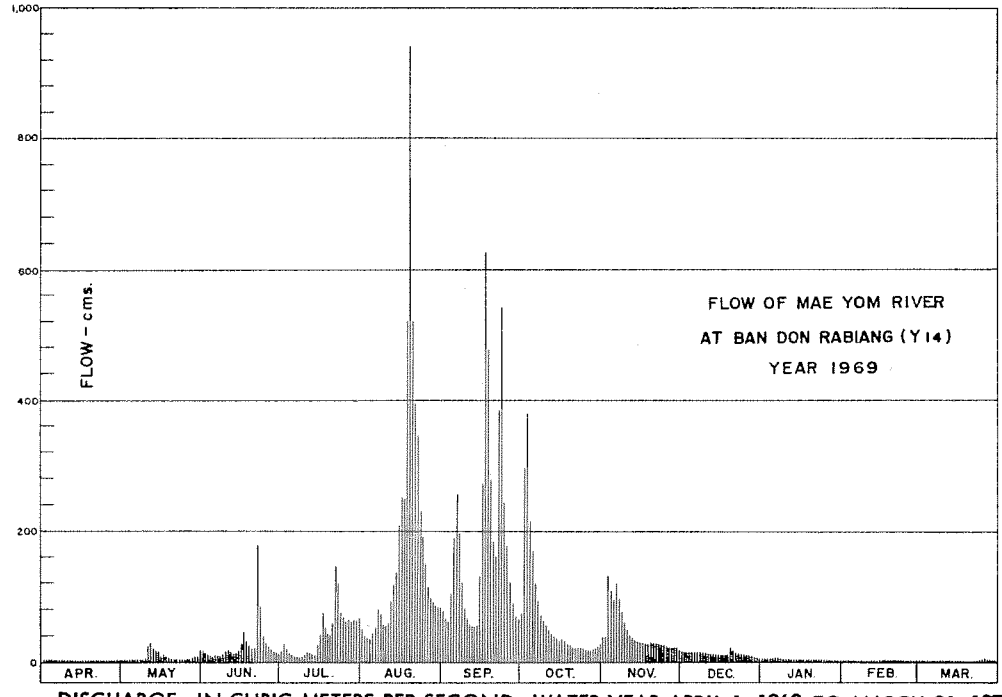
Overbank Flow Conditions: No overbank flow

General Description: Records good. Flow is diverted for irrigation of about 24,000 hectares above the gage site. Stage-discharge relationship used is defined by discharge measurements made during 1969. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	65.63	65.52	66.21	66.09	66.72	66.98	67.11	66.58	66.13	65.89	65.77	65.68
2	.62	.52	.09	.40	.54	.82	68.98	.56	.12	.89	.77	.68
3	.62	.57	.04	.23	.46	.82	69.49	67.57	.16	.89	.77	.68
4	.64	.60	65.99	.10	.44	67.43	68.43	.37	.15	.89	.76	.67
5	.60	.66	.94	.04	.57	68.19	67.87	.23	.15	.88	.75	.67
6	65.60	65.64	66.01	66.01	66.75	68.64	67.52	67.47	66.14	65.88	65.74	65.66
7	.59	.62	65.99	.00	67.01	.28	.19	.30	.14	.92	.74	.65
8	.59	.62	.97	65.99	66.94	67.68	66.96	.00	.14	.91	.73	.65
9	.59	.61	66.04	.98	.72	.19	.81	66.80	.13	.87	.73	.65
10	.58	.63	.20	66.04	.67	66.92	.72	.67	.12	.86	.73	.64
11	65.58	66.34	66.20	66.13	66.73	66.78	66.58	66.57	66.11	65.86	65.72	65.64
12	.58	.44	.10	.09	67.20	.77	.51	.48	.09	.86	.72	.64
13	.57	.25	.06	.06	.41	.64	.46	.41	.06	.87	.73	.63
14	.56	.19	.07	.08	.69	.61	.41	.38	.08	.87	.72	.63
15	.55	.18	.19	.33	68.21	67.40	.38	.36	.07	.87	.71	.63
16	65.55	66.01	66.43	66.50	68.64	68.53	66.43	66.37	66.05	65.87	65.73	65.62
17	.55	.04	.67	.95	.61	70.76	.40	.33	.04	.86	.73	.62
18	.55	65.98	.43	.71	70.14	69.84	.34	.32	.04	.85	.72	.62
19	.55	.93	.34	.53	72.31	68.66	.30	.36	.06	.86	.71	.61
20	.54	.89	.23	.55	70.72	.02	.28	.35	.26	.85	.71	.60
21	65.54	65.85	66.26	66.88	69.63	67.78	66.27	66.33	66.17	65.85	65.71	65.60
22	.53	.82	67.99	67.73	.43	69.09	.25	.32	.11	.85	.73	.61
23	.53	.80	.36	.45	68.62	70.44	.27	.32	.08	.85	.74	.62
24	.53	.84	66.76	66.99	.17	68.65	.26	.30	.05	.84	.72	.63
25	.52	.85	.45	.87	67.82	.06	.23	.29	.08	.84	.71	.78
26	65.52	65.81	66.32	66.79	67.47	67.72	66.21	66.26	66.02	65.83	65.70	65.85
27	.53	.80	.24	.82	.24	.34	.21	.24	65.98	.82	.69	.79
28	.53	.83	.16	.78	.15	.08	.24	.25	.94	.82	.69	.74
29	.52	.87	.11	.82	.04	66.90	.31	.28	.91	.81	–	.72
30	.53	.92	.09	.81	.03	.84	.32	.21	.90	.80	–	.70
31	–	66.19	–	.88	66.99	–	.41	–	.89	.78	–	.69
Mean	65.56	65.86	66.30	66.50	67.77	67.73	66.78	66.58	66.08	65.86	65.73	65.66
Max.	65.64	66.44	67.99	67.73	72.31	70.76	69.49	67.57	66.26	65.92	65.77	65.85
Min.	65.52	65.52	65.94	65.98	66.44	66.61	66.21	66.21	65.89	65.78	65.69	65.60

WATER YEAR 1969 : Max. 72.31 m. Min. 65.52 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.16	0.16	20	13	58	78	89	47	15	6.05	3.26	1.76
2	1.04	0.16	13	34	44	66	305	45	15	6.05	3.26	1.76
3	1.04	0.56	11	21	38	66	381	133	17	6.05	3.26	1.76
4	1.28	0.80	9.27	14	37	119	232	113	16	6.05	3.08	1.64
5	0.80	1.52	7.62	11	46	203	166	100	16	5.80	2.90	1.64
6	0.80	1.28	10	10	60	259	128	123	16	5.80	2.72	1.52
7	0.72	1.04	9.27	9.60	81	214	96	106	16	6.96	2.72	1.40
8	0.72	1.04	8.61	9.27	75	145	77	80	16	6.63	2.54	1.40
9	0.72	0.92	11	8.94	58	96	65	64	15	5.55	2.54	1.40
10	0.64	1.16	19	11	54	74	58	54	15	5.30	2.54	1.28
11	0.64	29	19	15	58	62	47	46	14	5.30	2.36	1.28
12	0.64	37	14	13	97	62	42	40	13	5.30	2.36	1.28
13	0.56	22	12	12	117	51	38	35	12	5.55	2.54	1.16
14	0.48	18	13	13	146	49	35	33	13	5.55	2.36	1.16
15	0.40	18	18	28	205	116	33	31	13	5.55	2.18	1.16
16	0.40	10	36	41	259	245	36	32	12	5.55	2.54	1.04
17	0.40	11	54	76	255	600	34	28	11	5.30	2.54	1.04
18	0.40	8.94	36	57	489	438	29	28	11	5.05	2.36	1.04
19	0.40	7.29	29	43	942	262	26	31	12	5.30	2.18	0.92
20	0.32	6.05	21	44	593	182	25	30	23	5.05	2.18	0.80
21	0.32	5.05	23	70	404	156	24	28	17	5.05	2.18	0.80
22	0.24	4.30	179	150	372	321	22	28	14	5.05	2.54	0.92
23	0.24	3.80	112	121	257	541	24	28	13	5.05	2.72	1.04
24	0.24	4.80	61	79	200	260	23	26	12	4.80	2.36	1.16
25	0.16	5.05	38	70	160	187	21	25	13	4.80	2.18	3.44
26	0.16	4.05	28	63	123	149	20	23	10	4.55	2.00	5.05
27	0.24	3.80	22	66	101	110	20	22	8.94	4.30	1.88	3.62
28	0.24	4.55	17	62	92	86	22	22	7.62	4.30	1.88	2.72
29	0.16	5.55	14	66	82	72	27	25	6.63	4.05	–	2.36
30	0.24	6.96	13	65	82	67	28	20	6.30	3.80	–	2.00
31	–	18	–	70	79	–	35	–	6.05	3.44	–	1.88
Total	15.80	241.83	877.77	1,365.81	5,665	5,336	2,208	1,446	405.54	162.93	70.16	51.43
Mean	0.532	7.80	29.2	44.0	183	178	71.2	48.2	13.1	5.25	2.50	1.66
Max.	1.28	37	179	150	942	600	381	133	23	6.96	3.26	5.05
Min.	0.16	0.16	7.62	8.94	37	49	20	20	6.05	3.44	1.88	0.80
Runoff - mcm.	1.379	20.894	75.839	118.006	489.456	460.858	190.771	124.934	35.039	14.077	6.062	4.443

WATER YEAR 1969 : Max. 942 Min. 0.16 Mean 48.9 Annual Runoff 1,541.918 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 19, 69	12.00	72.54	1,000				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
YOM RIVER BASIN

Mae Yom River at Kong Krailat, Sukhothai (Y_{15})

Location: Lat. 16°-55'-47" N., Long. 99°-57'-41" E., on left bank about 5 kilometers from Amphoe Kong Krailat along the road to Ban Kong, Amphoe Kong Krailat, Sukhothai.

Drainage Area: 19,936 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. Y. 15

Location: About 30 meters southwest of gage site

Elevation: + 6.387 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1967

Rated by Float: -

Rated by Current Meter: 1967

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

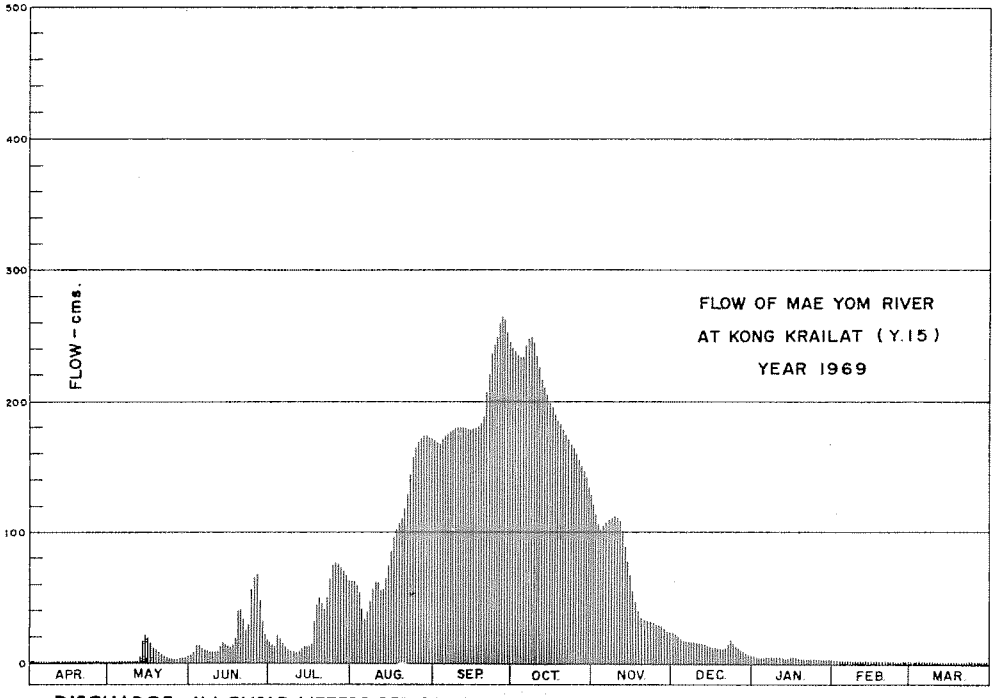
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1967. Upstream State diversions for irrigation of about 24,000 hectares. No adjustment made for virgin flow.

Remarks: Discharge record for periods of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.33	0.05	0.91	1.57	3.67	6.81	7.88	5.60	2.12	0.94	0.63	0.24
2	.31	.03	1.06	.50	.73	.76	.88	.34	.04	.92	.60	.22
3	.30	.03	.48	.52	.66	.74	.82	.16	1.84	.91	.58	.19
4	.28	.02	.54	.96	.36	.82	.79	.02	.73	.89	.56	.18
5	.27	.00	.38	.86	2.83	.89	.79	.09	.73	.89	.55	.15
6	0.25	0.00	1.24	1.61	2.54	6.90	7.91	5.19	1.76	0.89	0.54	0.12
7	.24	.00	.14	.45	.74	.92	.97	.24	.73	.89	.52	.09
8	.23	.00	.14	.31	3.15	.96	.99	.29	.70	.88	.51	.06
9	.23	.00	.16	.23	.50	.98	.94	.31	.69	.88	.49	.05
10	.23	.00	.14	.21	.70	7.00	.84	.29	.66	.89	.48	.02
11	0.22	0.00	1.19	1.18	3.66	7.00	7.75	5.18	1.65	0.86	0.47	0.00
12	.20	.02	.39	.18	.48	.00	.65	4.97	.63	.85	.48	.00
13	.17	.39	.63	.38	.51	.00	.54	.68	.60	.82	.51	.00
14	.20	1.76	.59	.50	.84	6.98	.45	.25	.55	.83	.52	.00
15	.26	.98	.44	.44	4.17	.96	.37	3.80	.46	.85	.50	.00
16	0.22	1.89	1.36	1.42	4.50	7.00	7.29	3.39	1.45	0.85	0.48	0.00
17	.17	.67	.41	.72	.81	.01	.20	.02	.45	.88	.47	.00
18	.14	.40	.97	2.44	5.00	.04	.14	2.79	.41	.86	.46	.00
19	.12	.30	2.80	3.13	.14	.08	.08	.64	.37	.84	.47	.00
20	.09	.23	.86	.30	.27	.18	.01	.54	.35	.78	.46	.00
21	0.07	1.13	2.52	3.05	5.54	7.42	6.99	2.52	1.36	0.78	0.44	0.00
22	.07	.06	.12	2.90	.92	.67	.90	.50	.60	.79	.43	.00
23	.06	0.93	.33	3.24	6.25	.84	.82	.43	.75	.79	.40	.05
24	.05	.84	3.46	.81	.54	.89	.74	.36	.63	.78	.37	.34
25	.04	.79	3.80	4.11	.71	.98	.63	.33	.49	.76	.33	.44
26	0.02	0.71	3.88	4.21	6.81	8.09	6.53	2.31	1.41	0.75	0.32	0.44
27	.03	.71	.48	.16	.87	.15	.43	.28	.36	.73	.30	.44
28	.05	.78	2.82	.08	.89	.11	.29	.19	.28	.70	.27	.48
29	.08	.83	.19	3.98	.90	.05	.18	.10	.17	.70	-	.53
30	.06	.86	1.18	.85	.89	7.96	.01	.07	.06	.67	-	.59
31	-	.87	-	.71	.86	-	5.84	-	0.98	.64	-	.52
Mean	0.16	0.68	1.92	2.42	4.78	7.27	7.21	3.76	1.55	0.82	0.46	0.16
Max.	0.33	1.98	3.88	4.21	6.90	8.15	7.99	5.60	2.12	0.94	0.63	0.59
Min.	0.02	0.00	0.91	1.18	2.54	6.74	5.84	2.07	0.98	0.64	0.27	0.00

WATER YEAR 1969 : Max. 8.15 m. Min. 0.00 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.65	0.00	5.63	15	63	170	240	123	25	6.02	2.80	0.32
2	0.55		7.64	14	64	168	240	114	24	5.76	2.50	0.26
3	0.50		14	14	62	167	236	108	20	5.63	2.30	0.18
4	0.44		15	22	54	171	233	104	18	5.40	2.10	0.16
5	0.41		12	20	41	174	233	105	18	5.40	2.00	0.10
6	0.35		10	16	34	175	243	109	18	5.40	1.90	0.04
7	0.32		8.76	13	38	176	248	110	18	5.40	1.70	0.00
8	0.29		8.76	11	49	178	250	112	17	5.30	1.60	
9	0.29		9.04	10	58	179	246	113	17	5.30	1.45	
10	0.29		8.76	9.74	64	180	237	112	16	5.40	1.40	
11	0.26		9.46	9.32	62	180	230	109	16	5.10	1.35	
12	0.20	0.00	12	9.32	57	180	220	102	16	5.00	1.40	
13	0.14	0.95	16	12	58	180	214	93	15	4.70	1.60	
14	0.20	18	15	14	67	179	207	79	15	4.80	1.70	
15	0.38	23	13	13	77	178	202	66	13	5.00	1.50	
16	0.26	21	12	13	87	180	196	55	13	5.00	1.40	
17	0.14	17	13	17	97	180	191	44	13	5.30	1.35	
18	0.08	12	22	32	103	182	188	40	13	5.10	1.30	
19	0.04	11	40	48	107	184	184	36	12	4.90	1.35	
20	0.00	10	41	52	111	190	180	34	12	4.30	1.30	
21	0.00	8.62	33	46	121	205	179	33	12	4.30	1.20	
22		7.64	25	42	134	224	175	33	15	4.40	1.15	
23		5.89	31	51	146	237	171	32	18	4.40	1.00	0.00
24		4.90	57	67	158	241	167	30	16	4.30	0.85	0.70
25		4.40	66	75	165	249	161	30	14	4.10	0.65	1.20
26		3.60	69	78	170	259	157	29	13	4.00	0.60	1.20
27		3.60	57	77	173	264	153	29	12	3.80	0.50	1.20
28		4.30	40	74	174	261	148	27	11	3.50	0.41	1.40
29		4.80	27	71	175	255	144	25	9.18	3.50	–	1.80
30	0.00	5.10	9.32	68	174	247	137	24	7.64	3.20	–	2.40
31	–	5.20	–	64	173	–	131	–	6.54	2.90	–	1.70
Total	5.79	171.00	707.37	1,077.38	3,116	5,993	6,141	2,061	463.36	146.61	40.36	12.66
Mean	0.19	5.51	23.6	34.7	100	200	198	68.7	14.9	4.72	1.44	0.408
Max.	0.65	23	69	78	175	264	250	123	25	6.02	2.80	2.40
Min.	0.00	0.00	5.63	9.32	34	167	131	24	6.54	2.90	0.41	0.00
Runoff - mcm.	0.500	14.774	61.116	93.085	269.222	517.795	530.582	178.070	40.034	12.667	3.487	1.093

WATER YEAR 1969 : Max. 264 Min. 0.00 Mean 54.6 Annual Runoff 1,722.429 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 27, 69	12.00	8.15	264				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
YOM RIVER BASIN

Mae Yom River at Bang Rakam, Phitsanulok (Y_{16})

Location: Lat. 16°-45'-35" N., Long. 100°-07'-40" E., on right bank about 700 meters upstream from Mae Yom bridge, Amphoe Bang Rakam, Phitsanulok.

Drainage Area: 20,841 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.) which is equal to + 31.920 m. (M.S.L.)

Bench Mark: B.M. – R.I.D. Y. 16

Location: About 30 meters north of the sanitary office

Elevation: + 41.553 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1967

Rated by Float: –

Rated by Current Meter: 1967

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: Overbank flow exists almost every year but hardly to be determined. Records are channel flow only.

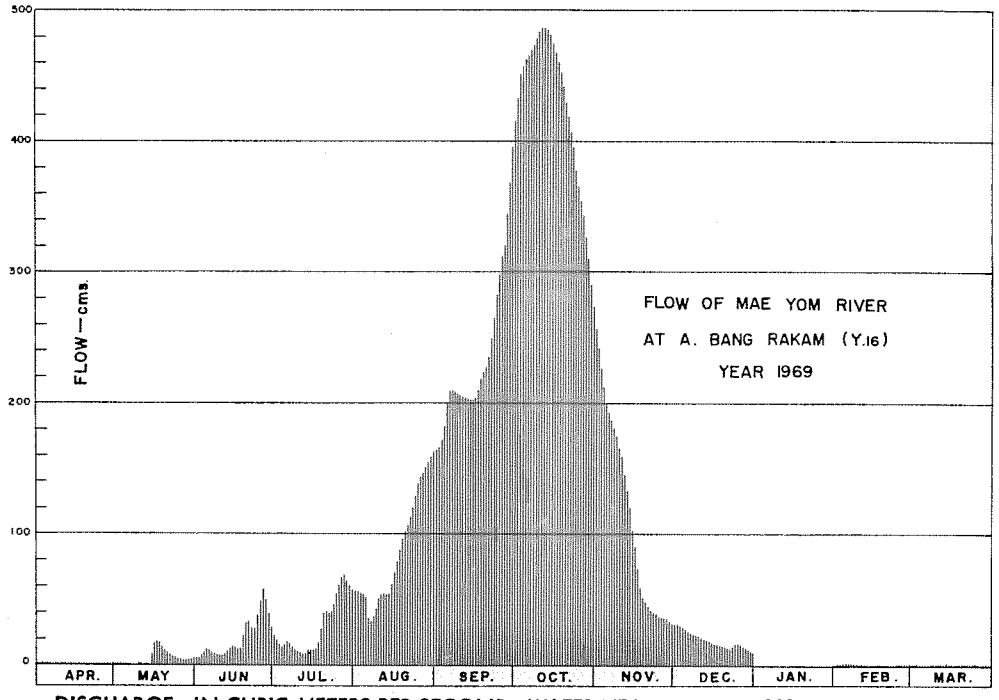
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1967. Upstream State diversions for irrigation of about 24,000 hectares. No adjustment made for virgin flow.

Remarks: No gage-height record January 1-31.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.43	0.26	0.81	1.60	2.73	4.88	8.28	6.28	2.01		0.66	0.43
2	.44	.26	.84	.44	.73	.89	.49	.04	.01		.66	.42
3	.45	.25	1.00	.36	.73	.96	.60	5.81	1.98		.65	.40
4	.46	.25	.20	.37	.67	5.22	.60	.59	.92		.63	.39
5	.44	.25	.24	.51	.61	.46	.73	.43	.87		.62	.38
6	0.42	0.26	1.18	1.52	2.25	5.58	8.75	5.32	1.81		0.62	0.37
7	.40	.25	.12	.45	.12	.59	.77	.24	.76		.61	.37
8	.40	.25	.06	.32	.21	.56	.82	.14	.74		.60	.36
9	.40	.26	.04	.22	.38	.54	.87	.05	.72		.60	.36
10	.39	.30	.03	.17	.60	.54	.92	4.93	.69		.59	.35
11	0.39	0.21	1.02	1.12	2.68	5.51	8.96	4.79	1.65		0.58	0.35
12	.39	.26	.06	.09	.69	.50	.97	.58	.61		.57	.35
13	.38	.25	.20	.11	.66	.48	.95	.32	.58		.56	.33
14	.37	.36	.32	.22	.69	.47	.92	.03	.57		.56	.32
15	.36	1.25	.33	.27	.85	.47	.88	3.70	.45		.57	.30
16	0.36	1.46	1.24	1.20	3.08	5.51	8.81	3.32	1.43		0.57	0.31
17	.38	.52	.19	.25	.30	.62	.74	.00	.42		.56	.29
18	.38	.41	.27	.53	.51	.77	.65	2.76	.40		.54	.27
19	.37	.26	.70	.99	.68	.82	.55	.59	.39		.54	.27
20	.35	.17	2.04	2.29	.75	.87	.44	.46	.36		.53	.26
21	0.34	1.10	2.04	2.35	3.84	6.01	8.30	2.39	1.34		0.52	0.26
22	.33	.03	1.94	.30	.97	.22	.17	.36	.31		.51	.26
23	.31	0.94	.78	.33	4.16	.44	.02	.32	.43		.50	.27
24	.30	.87	2.05	.54	.33	.69	7.85	.27	.50		.48	.28
25	.29	.82	.46	.75	.48	.86	.69	.22	.47		.47	.27
26	0.28	0.78	2.64	2.93	4.53	7.02	7.50	2.19	1.40		0.46	0.35
27	.28	.73	.76	3.04	.61	.22	.39	.18	.35		.45	.50
28	.28	.72	.47	.04	.66	.50	.22	.16	.29		.45	.49
29	.28	.78	.12	2.93	.73	.80	.04	.09	.26		–	.46
30	.27	.80	1.83	.86	.82	8.07	6.76	.04	.18		–	.44
31	–	.80	–	.77	.84	–	.52	–	.10		–	.53
Mean	0.36	0.68	1.53	1.86	3.38	5.97	8.29	3.75	1.55		0.55	0.35
Max.	0.46	1.52	2.76	3.04	4.84	8.07	8.97	6.28	2.01		0.66	0.50
Min.	0.27	0.25	0.81	1.09	2.12	4.88	6.52	2.04	1.10		0.45	0.26

WATER YEAR 1969 : Max. 8.97 m. Min. 0.25 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.94	0.15	4.53	20	56	165	419	256	31		2.88	0.94
2	1.01	0.15	4.92	16	56	165	439	240	31		2.88	0.88
3	1.07	0.12	7.30	14	56	170	450	224	30		2.77	0.75
4	1.14	0.12	11	14	54	186	458	210	28		2.56	0.70
5	1.01	0.12	12	18	52	201	463	199	27		2.46	0.65
6	0.88	0.15	11	18	38	209	465	192	25		2.46	0.60
7	0.75	0.12	9.48	16	34	210	467	187	24		2.35	0.60
8	0.75	0.12	8.38	13	37	208	472	181	23		2.25	0.55
9	0.75	0.15	8.02	11	43	207	477	175	23		2.25	0.55
10	0.70	0.25	7.84	10	51	207	482	168	22		2.16	0.50
11	0.70	0.17	7.66	9.48	54	205	486	159	21		2.08	0.50
12	0.70	0.15	8.38	8.92	55	204	487	147	20		1.99	0.50
13	0.65	0.12	11	9.29	54	203	485	132	19		1.91	0.40
14	0.60	0.55	13	11	55	202	482	116	19		1.91	0.35
15	0.55	12	14	12	61	202	478	100	16		1.99	0.25
16	0.55	16	12	11	71	205	471	82	16		1.99	0.30
17	0.65	18	11	12	81	212	464	67	15		1.91	0.22
18	0.65	15	12	18	91	222	455	58	15		1.74	0.17
19	0.60	12	22	30	99	225	445	51	15		1.74	0.17
20	0.50	10	31	40	102	228	434	46	14		1.65	0.15
21	0.45	9.10	33	42	107	237	420	43	14		1.57	0.15
22	0.40	7.84	29	40	113	252	408	42	13		1.48	0.15
23	0.30	6.34	24	41	123	268	395	41	16		1.40	0.17
24	0.25	5.31	32	49	132	287	379	39	17		1.27	0.20
25	0.22	4.66	46	57	141	300	366	37	17		1.20	0.17
26	0.20	4.18	53	64	144	312	349	36	15		1.14	0.50
27	0.20	3.63	58	69	149	327	341	36	14		1.07	1.40
28	0.20	3.52	46	69	151	349	327	36	13		1.07	1.33
29	0.20	4.18	34	64	156	375	313	33	12		–	1.14
30	0.17	4.40	26	62	161	399	292	32	11		–	1.01
31	–	4.40	–	58	162	–	274	–	9.10		–	1.65
Total	17.74	143.00	607.51	926.69	2,739	7,142	13,133	3,365	585.10		54.13	17.60
Mean	0.59	4.61	20.2	29.9	88.3	238	423	112	18.9		1.93	0.56
Max.	1.14	18	58	69	162	399	487	256	31		2.88	1.40
Min.	0.17	0.12	4.53	8.92	34	165	274	32	9.10		1.07	0.15
Runoff – mcm.	1.533	12.355	52.489	80.066	236.650	617.069	1,134.691	290.736	50.553		4.676	1.520

WATER YEAR 1969 : Max. 4.87 Min. 0.12 Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 12,69	01.00	8.97	487				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
YOM RIVER BASIN

Mae Yom River at Amphoe Sam Ngam, Phichit (Y_{17})

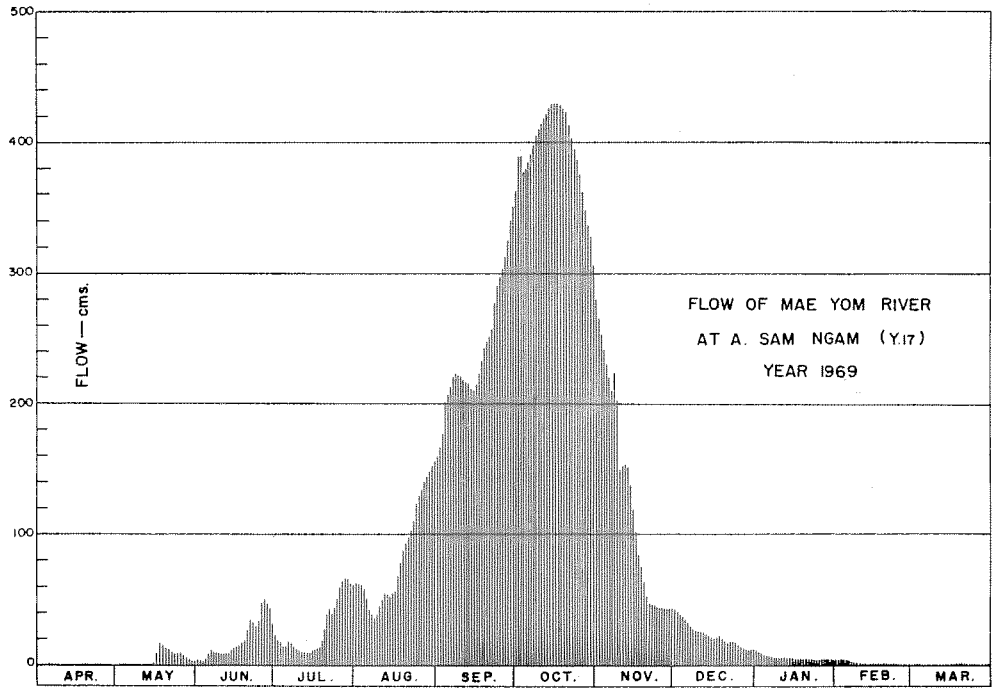
Location:	Lat. 16°-30'-50" N., Long. 100°-12'-40" E., on left bank infront of Amphoe Sam Ngam, Phichit.
Drainage Area:	21,415 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 0.00 m. (A.D.) which is equal to + 31.490 m. (M.S.L.)
Bench Mark:	B.M. - R.I.D. Y. 17
Location:	About 6 meters downstream from gage site
Elevation:	+ 37.838 m. (M.S.L.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1967 to date
Rating Operation:	
Period of Rating:	1967
Rated by Float:	-
Rated by Current Meter:	1967
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation for years without actual ratings.
Overbank Flow Conditions:	Overbank flow exists almost every year but hardly to be determined. Records are channel flow only.
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1967. Upstream State diversions for irrigation of about 24,000 hectares. No adjustment made for virgin flow.
Remarks:	Discharge record for periods of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.32	0.25	0.58	1.10	1.97	3.48	5.48	4.79	1.57	0.84	0.64	0.41
2	.31	.25	.51	.04	.94	.57	.56	.62	.56	.82	.63	.40
3	.35	.25	.53	0.99	.95	.75	.56	.51	.50	.79	.62	.39
4	.37	.24	.59	.88	.84	4.01	.51	.38	.46	.76	.60	.38
5	.37	.24	.75	.90	.72	.09	.54	.24	.40	.73	.58	.37
6	0.35	0.24	0.84	1.02	1.55	4.16	5.56	4.15	1.35	0.70	0.54	0.37
7	.35	.24	.80	0.99	.52	.24	.58	.08	.29	.69	.50	.36
8	.34	.23	.78	.88	.44	.26	.61	.24	.24	.68	.48	.36
9	.33	.23	.77	.84	.52	.23	.63	3.72	.23	.67	.46	.35
10	.33	.27	.75	.83	.66	.22	.65	.31	.22	.66	.43	.35
11	0.32	0.33	0.73	0.80	1.76	4.18	5.66	3.35	1.21	0.66	0.42	0.34
12	.32	.34	.73	.78	.82	.16	.68	.37	.20	.65	.41	.34
13	.31	.32	.77	.77	.80	.14	.70	.34	.17	.65	.40	.34
14	.31	.29	.85	.77	.77	.10	.71	.12	.15	.65	.44	.33
15	.30	.32	.90	.81	.81	.08	.72	2.80	.10	.64	.47	.33
16	0.30	0.26	0.92	0.83	1.87	4.20	5.72	2.59	1.09	0.64	0.46	0.33
17	.30	1.00	.96	.85	2.11	.32	.72	.35	.12	.65	.44	.32
18	.29	0.98	.99	.89	.30	.44	.71	.18	.16	.65	.44	.32
19	.29	.92	1.05	1.02	.44	.51	.70	1.98	.10	.63	.44	.31
20	.29	.84	.23	.34	.53	.54	.70	.79	.03	.63	.43	.31
21	0.28	0.86	1.40	1.54	2.59	4.61	5.66	1.68	1.01	0.62	0.43	0.31
22	.28	.77	.38	.57	.68	.77	.63	.65	.03	.62	.43	.32
23	.28	.76	.30	.50	.79	.91	.59	.63	.01	.62	.43	.34
24	.27	.78	.29	.60	.98	.98	.57	.62	.01	.61	.44	.36
25	.27	.75	.48	.76	3.06	5.04	.53	.61	0.98	.61	.44	.37
26	0.27	0.72	1.72	1.94	3.14	5.11	5.45	1.61	0.95	0.61	0.43	0.38
27	.26	.65	.74	.98	.20	.17	.39	.60	.91	.60	.43	.38
28	.26	.58	.66	2.01	.26	.27	.32	.60	.88	.60	.42	.37
29	.26	.56	.57	.00	.33	.34	.29	.59	.87	.59	-	.37
30	.25	.55	.23	1.94	.38	.42	.22	.59	.86	.58	-	.36
31	-	.53	-	.93	.44	-	4.93	-	.85	.56	-	.36
Mean	0.30	0.51	1.02	1.22	2.29	4.44	5.55	2.85	1.14	0.65	0.47	0.35
Max.	0.37	1.00	1.74	2.01	3.44	5.42	5.72	4.79	1.57	0.84	0.64	0.41
Min.	0.25	0.23	0.51	0.77	1.44	3.48	4.93	1.59	0.85	0.56	0.40	0.31

WATER YEAR 1969 : Max. 5.72 m. Min. 0.23 m.

BM. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.24	0.00	4.50	21	63	161	369	271	43	12	5.94	1.37
2	0.12		3.10	19	62	168	388	255	42	11	5.68	1.20
3	0.60		3.50	17	62	182	388	245	39	10	5.42	1.08
4	0.84		4.70	13	56	202	376	234	37	9.30	4.90	0.96
5	0.84		9.00	13	50	209	383	222	35	8.40	4.50	0.84
6	0.60		12	12	42	215	388	214	32	7.50	3.70	0.84
7	0.60		10	17	40	222	392	208	30	7.24	2.90	0.72
8	0.48		9.90	13	36	223	400	222	27	6.98	2.56	0.72
9	0.36		9.60	12	40	221	405	179	27	6.72	2.22	0.60
10	0.36	0.00	9.00	11	47	220	410	149	26	6.46	1.71	0.60
11	0.24	0.36	8.40	10	52	216	413	152	26	6.46	1.54	0.48
12	0.24	0.48	8.40	9.90	55	215	418	153	25	6.20	1.37	0.48
13	0.12	0.24	9.60	9.60	54	213	423	151	24	6.20	1.20	0.48
14	0.12	0.00	12	9.60	53	210	426	135	23	6.20	1.88	0.36
15	0.00	0.24	13	11	55	208	428	113	21	5.94	2.39	0.36
16	0.00	9.30	14	11	58	218	428	99	21	5.94	2.22	0.36
17		17	16	12	71	228	428	85	22	6.20	1.88	0.24
18		17	17	13	82	239	426	75	24	6.20	1.88	0.24
19		14	16	18	90	245	423	64	21	5.68	1.88	0.12
20		12	27	32	96	248	423	54	19	5.68	1.71	0.12
21		12	35	41	99	254	413	48	18	5.42	1.71	0.12
22		9.60	34	43	105	262	405	47	19	5.42	1.71	0.24
23		9.30	30	39	112	284	395	46	18	5.42	1.71	0.48
24		9.90	29	44	125	292	390	45	18	5.16	1.88	0.72
25		9.00	38	52	131	299	381	45	17	5.16	1.88	0.84
26		8.10	50	62	136	307	363	45	15	5.16	1.71	0.96
27		6.20	51	64	141	315	351	44	14	4.90	1.71	0.96
28		4.50	47	66	145	330	339	44	13	4.90	1.54	0.84
29		4.10	43	65	150	342	333	44	13	4.70	–	0.84
30	0.00	3.90	27	62	154	357	322	44	12	4.50	–	0.72
31	–	3.50	–	61	158	–	287	–	12	4.10	–	0.72
Total	5.76	150.72	603.70	889.10	2,620	7,305	12,141	3,732	733	201.14	71.33	19.61
Mean	0.19	4.86	20.1	28.7	84.5	243	392	124	23.6	6.48	2.54	0.632
Max.	0.84	17	51	66	158	357	428	271	43	12	5.94	1.37
Min.	0.00	0.00	3.10	9.60	36	161	287	44	12	4.10	1.54	0.12
Runoff – mcm.	0.497	13.022	52.159	76.818	226.368	631.152	1,048.982	322.444	63.331	17.378	6.162	1.694

WATER YEAR 1969 : Max. 428 Min. 0.00 Mean 78.0 Annual Runoff 2,460.011 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 15, 69	12.00	5.72	428				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
YOM RIVER BASIN

Nam Ngim at Ban Hae, Chiang Rai (Y_{19})

Location: Lat. 19°-18'-10" N., Long. 100°-23'-35" E., on left bank about 200 meters downstream from Confluence with Huai Nam Kha and about 300 meters upstream from Ban Hae Weir, Amphoe Pong, Chiang Rai.

Drainage Area: 155 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 346.316 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: Near the gage site

Elevation: + 350.401 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1968 to date

Rating Operation:

Period of Rating: 1968-1971

Rated by Float: -

Rated by Current Meter: 1968-1971

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by local residents. No adjustment made for virgin flow.

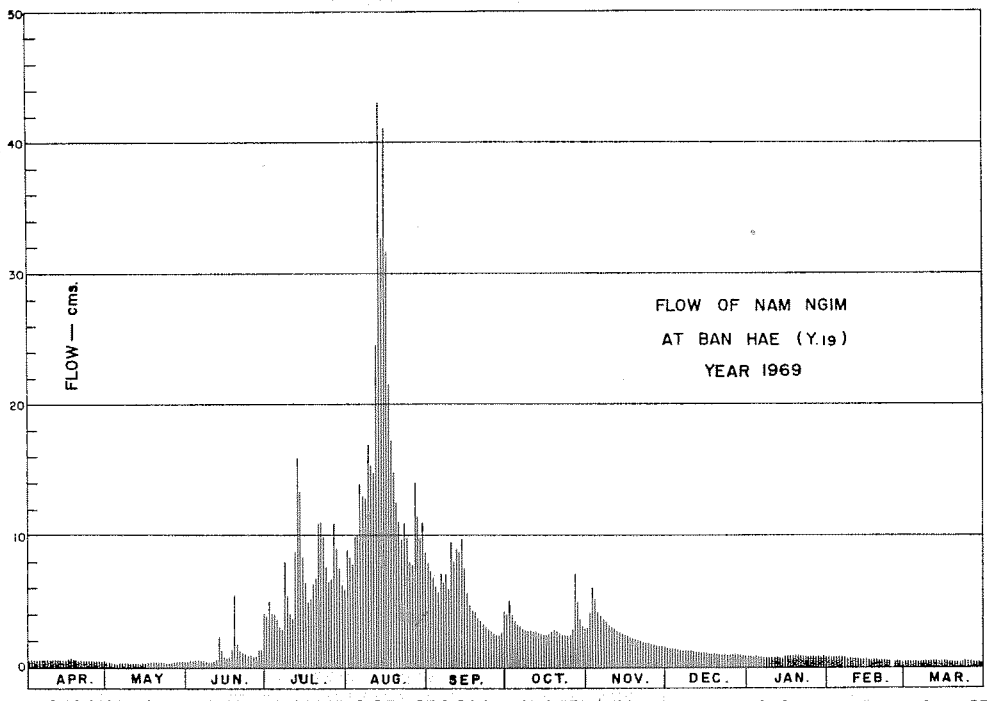
Remarks: No gage-height record February 1-28, but flow being estimated from discharge hydrograph by method of ground-water recession.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	346.61	246.57	346.62	346.95	347.20	347.15	347.07	347.02	346.87	346.78		346.69
2	.61	.57	.61	347.02	.17	.13	.12	.09	.86	.77		.69
3	.61	.57	.61	346.96	.15	.10	.07	.15	.86	.77		.69
4	.61	.56	.61	.96	.24	.08	.05	.10	.86	.77		.69
5	.61	.56	.63	.94	.24	.06	.02	.08	.85	.77		.69
6	346.61	346.55	346.61	346.90	347.38	347.12	347.01	347.06	346.85	346.76		346.69
7	.61	.55	.59	.87	.34	.09	.00	.05	.85	.76		.69
8	.62	.57	.58	347.16	.35	.12	346.99	.03	.85	.76		.69
9	.62	.57	.58	.04	.45	.06	.99	.02	.84	.76		.69
10	.63	.57	.57	346.97	.42	.22	.99	.01	.84	.75		.69
11	346.63	346.55	346.58	346.93	347.39	347.16	346.99	347.00	346.84	346.76		346.68
12	.63	.55	.64	347.19	.63	.20	.98	346.99	.83	.76		.68
13	.62	.54	.85	.44	.94	.19	.98	.98	.82	.75		.68
14	.62	.53	.72	.27	.78	.23	.97	.97	.82	.75		.68
15	.61	.54	.66	.14	.91	.17	.97	.96	.82	.77		.68
16	346.62	346.55	346.65	347.07	347.66	347.13	346.97	346.96	346.82	346.78		346.68
17	.64	.59	.69	.01	.54	.11	.97	.95	.81	.78		.68
18	.62	.59	.80	.03	.44	.09	.99	.94	.81	.78		.68
19	.61	.57	347.04	.09	.38	.08	347.00	.94	.81	.78		.67
20	.60	.59	346.79	.11	.32	.05	346.98	.93	.81	.78		.66
21	346.60	346.58	346.74	347.28	347.28	347.04	346.97	346.93	346.80	346.78		346.66
22	.59	.56	.72	.27	.22	.03	.96	.92	.80	.78		.66
23	.59	.56	.71	.22	.27	.01	.96	.91	.80	.77		.66
24	.60	.56	.69	.14	.26	.00	.96	.91	.79	.77		.68
25	.60	.55	.70	.09	.16	346.99	.96	.91	.79	.77		.68
26	346.60	346.59	346.67	347.11	347.13	346.98	347.01	346.90	346.79	346.77		346.67
27	.60	.67	.67	.28	.37	.97	.18	.90	.79	.77		.66
28	.60	.61	.74	.18	.28	.96	.07	.89	.78	.76		.66
29	.60	.59	.75	.13	.23	.99	.03	.88	.78	.77		.66
30	.59	.59	.96	.08	.24	347.09	.01	.88	.78	.77		.66
31	-	.62	-	.05	.19	-	.00	-	.78	.76		.65
Mean	346.61	346.57	346.69	347.09	347.37	347.09	347.01	346.97	346.82	346.77		346.67
Max.	346.64	346.67	347.04	347.44	347.94	347.23	347.18	347.15	346.87	346.78		346.69
Min.	346.59	346.53	346.57	346.87	347.13	346.96	346.96	346.88	346.78	346.75		346.65

WATER YEAR 1969 : Max. 347.94 m. Min. 346.53 m.

BM. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.51	0.37	0.55	3.87	9.00	7.82	4.05	3.23	1.53	0.90	0.80	0.49
2	0.51	0.37	0.51	5.13	8.29	7.35	5.19	4.38	1.46	0.86	0.80	0.49
3	0.51	0.37	0.51	4.05	7.82	6.65	4.05	6.16	1.46	0.86	0.80	0.49
4	0.51	0.34	0.51	4.05	10	6.27	3.72	4.54	1.46	0.86	0.77	0.49
5	0.51	0.34	0.60	3.70	10	5.87	3.23	4.21	1.38	0.86	0.76	0.49
6	0.51	0.31	0.51	3.00	14	7.12	3.06	3.88	1.38	0.81	0.75	0.49
7	0.51	0.31	0.43	2.63	13	6.46	2.90	3.72	1.38	0.81	0.74	0.49
8	0.55	0.37	0.40	8.06	13	7.12	2.79	3.39	1.38	0.81	0.72	0.49
9	0.55	0.37	0.40	5.51	17	5.89	2.79	3.23	1.30	0.81	0.70	0.49
10	0.60	0.37	0.37	4.22	15	9.53	2.79	3.06	1.30	0.76	0.70	0.49
11	0.60	0.31	0.40	3.52	14	8.06	2.79	2.90	1.30	0.81	0.70	0.46
12	0.60	0.31	0.64	8.76	24	9.00	2.69	2.79	1.23	0.81	0.70	0.46
13	0.55	0.28	2.38	16	43	8.76	2.67	2.67	1.15	0.76	0.70	0.46
14	0.55	0.25	1.09	11	32	9.79	2.56	2.56	1.15	0.76	0.67	0.46
15	0.51	0.28	0.74	7.59	41	6.81	2.56	2.44	1.15	0.86	0.65	0.46
16	0.55	0.31	0.69	6.08	26	5.51	2.56	2.44	1.15	0.90	0.63	0.46
17	0.64	0.43	0.87	4.94	20	4.86	2.56	2.33	1.08	0.90	0.62	0.46
18	0.55	0.43	1.76	5.32	16	4.38	2.79	2.22	1.08	0.90	0.60	0.46
19	0.51	0.37	5.51	6.46	14	4.21	2.90	2.22	1.08	0.90	0.60	0.43
20	0.46	0.43	1.68	6.88	12	3.72	2.67	2.10	1.08	0.90	0.60	0.40
21	0.46	0.40	1.26	11	11	3.56	2.56	2.10	1.00	0.90	0.58	0.40
22	0.43	0.34	1.09	11	9.53	3.39	2.44	1.99	1.00	0.90	0.57	0.40
23	0.43	0.34	1.00	9.53	11	3.06	2.44	1.87	1.00	0.86	0.55	0.40
24	0.46	0.34	0.87	7.59	10	2.90	2.44	1.87	0.95	0.86	0.53	0.46
25	0.46	0.31	0.92	6.46	8.06	2.79	2.44	1.87	0.95	0.86	0.52	0.46
26	0.46	0.43	0.78	6.88	7.35	2.67	3.06	1.76	0.95	0.86	0.50	0.43
27	0.46	0.78	0.78	11	14	2.56	7.13	1.76	0.95	0.86	0.50	0.43
28	0.46	0.51	1.26	8.53	11	2.44	4.05	1.68	0.90	0.81	0.50	0.40
29	0.46	0.43	1.34	7.35	9.79	2.78	3.39	1.61	0.90	0.86	–	0.40
30	0.43	0.43	4.05	6.27	11	4.38	3.06	1.61	0.90	0.86	–	0.40
31	–	0.55	–	5.70	8.76	–	2.90	–	0.90	0.81	–	0.37
Total	15.30	11.78	33.90	212.08	470.60	165.71	97.21	82.59	35.88	26.28	18.26	13.93
Mean	0.51	0.38	1.13	6.84	15.2	5.52	3.13	2.75	1.16	0.85	0.652	0.45
Max.	0.64	0.78	5.51	16	43	9.79	7.13	6.16	1.53	0.90	0.80	0.49
Min.	0.43	0.25	0.37	2.63	7.35	2.44	2.44	1.61	0.90	0.81	0.50	0.37
Runoff – MCM.	1.322	1.018	2.929	18.324	40.660	14.317	8.399	7.136	3.100	2.270	1.578	1.203

WATER YEAR 1969 : Max. 43 Min. 0.25 Mean 3.24 Annual Runoff 102.256 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 15, 69	02.00	348.17	59				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Nan River at Forestry Office, Nan (N_1)

Location: Lat. 18°-46'-23" N., Long. 100°-46'-51" E., or right bank infront of the Forestry Office, Amphoe Muang, Nan.

Drainage Area: 4,609 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 192.180 m. (M.S.L.)

Bench Mark: B.M. - R.I.D.

Location: Near the gage site

Elevation: B.M. 1 + 199.362 m. (M.S.L.) B.M. 2 + 198.922 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Records: 1922-56, 1962 to date.

Rating Operation:

Period of Rating: 1954-1956

Rated by Float:

Rated by Current Meter: 1954-1956

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

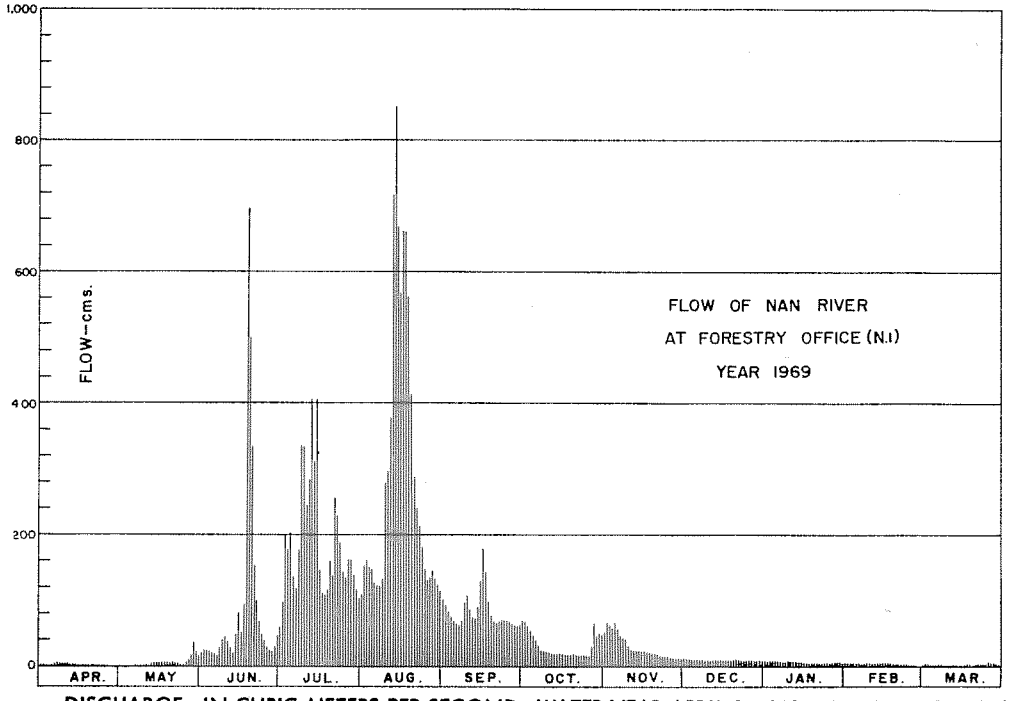
Overbank Flow Conditions: No overbank flow.

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1954-56. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	192.77	192.68	193.33	193.84	194.26	194.18	193.92	193.73	193.16	193.08	193.01	190.80
2	.76	.68	.38	194.19	.56	.11	.89	.88	.16	.08	.01	.78
3	.76	.68	.35	.84	.61	.02	.84	.85	.15	.08	.01	.77
4	.76	.68	.31	.69	.55	193.95	.76	.80	.15	.08	.00	.76
5	.76	.68	.24	.86	.52	.90	.67	.86	.15	.07	.00	.76
6	192.85	192.62	193.28	194.45	194.38	193.85	193.57	193.76	193.15	193.06	192.99	192.76
7	.85	.62	.24	.20	.36	.83	.47	.65	.14	.05	.99	.75
8	.85	.62	.44	.56	.36	.91	.39	.62	.14	.05	.98	.74
9	.85	.62	.59	195.55	.42	194.17	.37	.59	.14	.05	.98	.73
10	.85	.67	.63	.54	195.28	.24	.34	.46	.14	.05	.98	.73
11	192.84	192.70	193.53	195.06	195.37	194.05	193.31	193.42	193.14	193.05	192.98	192.73
12	.80	.70	.39	.24	.58	193.93	.30	.38	.14	.05	.98	.72
13	.78	.85	.29	.87	196.87	.90	.29	.37	.14	.05	.98	.72
14	.78	.85	.64	.35	197.30	194.10	.28	.35	.14	.05	.97	.71
15	.76	.86	194.00	.86	196.68	.41	.28	.34	.14	.05	.97	.71
16	192.76	192.88	193.71	194.48	196.44	194.72	193.28	193.34	193.14	193.03	192.97	192.70
17	.76	.88	.78	.27	.76	.45	.27	.32	.14	.03	.97	.71
18	.73	.95	194.57	.23	.76	.10	.27	.31	.14	.02	.97	.72
19	.72	.99	196.87	.31	.18	193.96	.26	.30	.14	.02	.95	.73
20	.72	.97	195.65	.61	195.89	.90	.26	.28	.14	.01	.93	.74
21	192.72	192.95	194.66	194.42	195.38	193.87	193.25	193.26	193.14	193.01	192.91	192.74
22	.72	.91	.19	195.16	.06	.89	.24	.24	.14	.01	.89	.74
23	.72	.85	193.87	194.98	194.94	.90	.24	.22	.13	.01	.87	.74
24	.72	.80	.67	.67	.75	.90	.24	.20	.11	.01	.85	.82
25	.72	.82	.55	.47	.54	.90	.23	.19	.10	.01	.83	.93
26	192.70	192.91	193.43	194.43	194.41	193.88	193.23	193.18	193.10	193.01	192.83	192.91
27	.68	193.05	.37	.62	.45	.86	.49	.17	.10	.01	.82	.89
28	.68	.25	.34	.62	.52	.83	.86	.16	.09	.01	.81	.84
29	.68	.53	.46	.47	.44	.82	.64	.16	.08	.01		.80
30	.68	.31	.72	.34	.37	.85	.72	.16	.08	.01		.77
31		.20		.18	.30		.69		.08	.01		.76
Mean	192.76	192.86	193.78	194.72	195.17	194.01	193.45	193.42	193.13	193.03	192.94	192.76
Max.	192.85	193.53	196.87	195.87	197.30	194.72	193.92	193.88	193.16	193.08	193.00	192.93
Min.	192.68	192.62	193.24	193.84	194.26	193.82	193.23	193.16	193.08	193.01	192.81	192.70

WATER YEAR 1969 : Max. 197.30 m. Min. 192.68 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	3.05	1.70	23	63	110	101	72	53	13	9.90	6.92	3.50
2	2.90	1.70	26	102	153	93	69	68	13	9.90	6.92	3.20
3	2.90	1.70	24	199	161	83	63	64	13	9.90	6.92	3.05
4	2.90	1.70	22	174	151	75	56	59	13	9.90	6.50	2.90
5	2.90	1.70	17	202	147	70	48	66	13	9.47	6.50	2.90
6	4.25	0.80	20	136	125	64	40	56	13	9.05	6.35	2.90
7	4.25	0.80	17	103	122	62	32	46	12	8.62	6.35	2.75
8	4.25	0.80	30	153	122	71	26	44	12	8.62	6.20	2.60
9	4.25	0.80	41	335	131	100	25	41	12	8.62	6.20	2.45
10	4.25	1.55	45	333	280	108	24	31	12	8.62	6.20	2.45
11	4.10	2.00	37	257	298	86	22	28	12	8.62	6.20	2.45
12	3.50	2.00	26	272	342	73	21	26	12	8.62	6.20	2.30
13	3.20	4.25	20	407	698	70	20	25	12	8.62	6.20	2.30
14	3.20	4.25	45	294	851	92	20	24	12	8.62	6.05	2.15
15	2.90	4.40	81	405	633	130	20	24	12	8.20	6.05	2.15
16	2.90	4.70	51	140	555	179	20	24	12	7.77	6.05	2.00
17	2.90	4.70	57	112	660	136	19	23	12	7.77	6.05	2.15
18	2.45	5.75	154	107	660	92	19	22	12	7.35	6.05	2.30
19	2.30	6.35	698	116	481	77	19	21	12	7.35	5.75	2.45
20	2.30	6.05	357	161	412	70	19	20	12	6.92	5.45	2.60
21	2.30	5.75	169	131	300	67	18	19	12	6.92	5.15	2.60
22	2.30	5.15	102	256	237	69	17	17	12	6.92	4.85	2.60
23	2.30	4.25	67	223	216	70	17	16	12	6.92	4.55	2.60
24	2.30	3.50	48	171	184	70	17	15	11	6.92	4.25	3.80
25	2.30	3.80	38	139	150	70	17	15	11	6.92	3.95	5.45
26	2.00	5.15	29	133	130	68	17	14	11	6.92	3.95	5.15
27	0.00	8.62	25	162	136	66	34	14	11	6.92	3.80	4.85
28	0.00	18	24	162	147	62	66	13	10	6.92	3.65	4.10
29	0.00	37	31	139	134	61	45	13	9.90	6.92		3.50
30	0.00	22	52	120	124	64	52	13	9.90	6.92		3.05
31		15		101	115		50		9.90	6.92		2.90
Total	79.15	185.92	2,376	5,788	8,965	2,499	1,004	914	365.70	248.56	159.26	92.15
Mean	2.64	5.99	79.2	187	289	83.3	32.4	30.5	11.8	8.02	5.69	2.97
Max.	4.25	37	698	407	851	179	72	68	13	9.90	6.92	5.45
Min.	0.00	0.80	17	63	110	61	17	13	9.90	6.92	3.65	2.00
Runoff - mcm.	6.838	16.063	205.286	500.083	774.576	215.914	86.746	78.970	31.596	21.475	13.760	7.962

WATER YEAR 1969 : Max. 851 Min. 0.00 Mean 62.1 Annual Runoff 1,959.270 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 14	04.00	197.44	905				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

NanRiver at Tha-It, Uttaradit, (N_{2A})

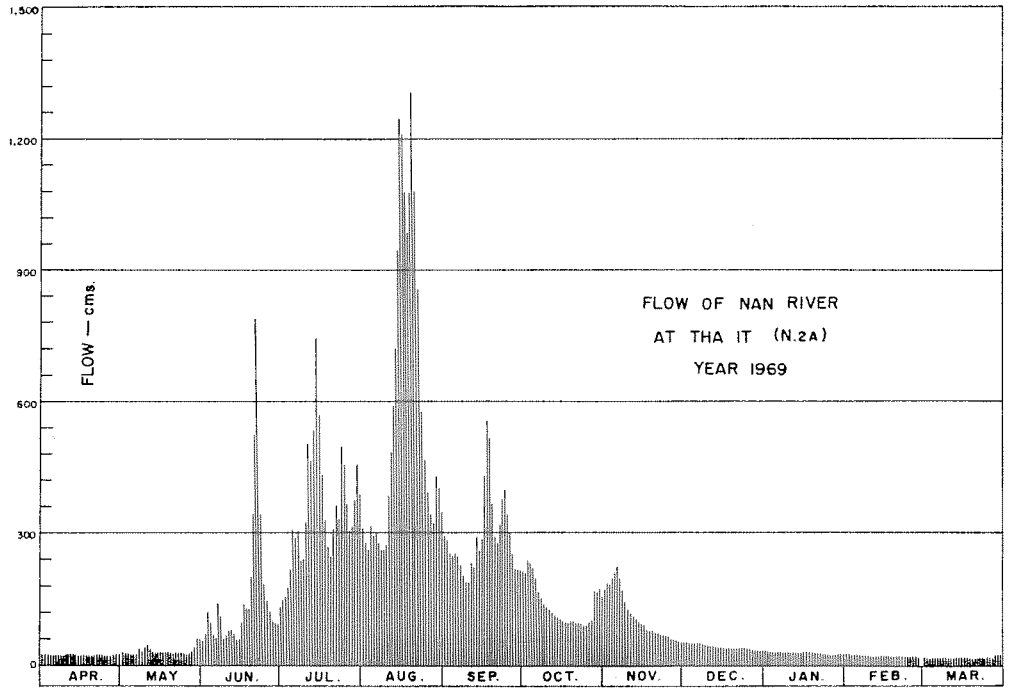
Location:	Lat. 17°-37'-13" N., Long. 100°-06'-19" E., on right bank at downstream infront of Muang Uttaradit Kindergarten, Amphoe Muang, Uttaradit.
Drainage Area:	16,863 sq.km.
Type of Gage:	Water-stage recorder
Zero Gage at Bottom at:	+ 53.00 m. (M.S.L.)
Bench Mark:	B.M. - H.S.
Location:	At Uttaradit Kindergarten, north of railway station.
Elevation:	+ 62.154 m. (M.S.L.)
Gage Reading Frequency:	Recording
Basis of Mean Daily Gage Height:	Arithmetic mean of 24 hourly readings
Period of Available Gage Records:	1962 to date
Rating Operation:	
Period of Rating:	1963, 1965 to date
Rated by Float:	-
Rated by Current Meter:	1963, 1965 to date
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.
Remarks:	Gage-height for period April 1 - June 7 being corrected from N23 Station which is 23 kilometers at upstream.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	53.15	53.21	53.64	54.59	55.68	55.53	55.09	54.79	53.68	53.35	53.20	53.05
2	.14	.25	.86	.55	.44	.43	.08	.89	.66	.34	.20	.04
3	.13	.19	54.35	.77	.40	.31	.26	.85	.65	.33	.20	.03
4	.11	.13	.06	.92	.73	.33	.20	55.00	.65	.32	.20	.02
5	.10	.17	53.80	55.68	.59	.35	.13	.09	.65	.32	.16	.02
6	53.11	53.18	53.74	55.55	55.64	55.29	54.90	55.16	53.65	53.32	53.16	53.02
7	.14	.25	54.53	.66	.49	.16	.70	54.91	.65	.30	.15	.02
8	.11	.44	.15	.34	.39	54.99	.60	.67	.58	.30	.15	.02
9	.12	.27	53.68	.15	.41	.91	.50	.52	.57	.30	.12	.01
10	.16	.47	.78	.53	.45	.92	.45	.39	.57	.30	.10	.01
11	53.19	53.56	53.92	56.67	56.19	55.22	54.40	54.31	53.56	53.30	53.11	53.01
12	.19	.39	.95	.55	.99	.16	.34	.24	.54	.30	.12	.01
13	.16	.30	.83	.37	57.18	.60	.31	.18	.54	.30	.11	.00
14	.14	.24	.68	57.64	58.34	.36	.27	.12	.53	.29	.11	.00
15	.12	.23	.75	.16	59.27	.53	.21	.09	.52	.28	.11	52.99
16	53.13	53.25	54.34	56.60	59.10	56.06	54.16	54.06	53.50	53.34	53.11	52.99
17	.13	.26	.52	.06	58.54	.89	.13	53.93	.49	.32	.11	.99
18	.11	.29	.34	55.65	.45	.70	.14	.94	.49	.32	.11	.99
19	.10	.26	.45	.38	59.45	55.96	.16	.92	.49	.30	.11	.99
20	.09	.19	55.82	.29	.23	.58	.16	.89	.48	.30	.11	.99
21	53.10	53.17	57.79	55.72	58.30	55.44	54.12	53.87	53.48	53.29	53.10	52.99
22	.14	.25	56.64	.99	57.39	.77	.11	.85	.48	.28	.10	.99
23	.17	.24	55.62	.77	56.95	56.11	.10	.83	.49	.24	.10	53.00
24	.14	.25	.04	56.64	.57	.17	.08	.82	.49	.23	.09	.12
25	.11	.25	54.69	.29	.33	55.85	.05	.82	.46	.22	.09	.10
26	53.09	53.18	54.48	55.96	56.05	55.52	54.25	53.74	53.44	53.20	53.09	53.08
27	.14	.19	.30	.64	55.82	.29	.31	.72	.43	.20	.08	.03
28	.15	.30	.11	.76	.65	.10	.77	.72	.41	.20	.06	.15
29	.20	.51	.08	56.12	56.33	.13	.73	.70	.39	.20		.18
30	.17	.74	.01	.46	.09	.13	.80	.69	.39	.20		.12
31		.72		.02	55.73		.63		.38	.20		.10
Mean	53.13	53.30	54.43	55.85	56.75	55.53	54.49	54.22	53.52	53.28	53.12	53.03
Max.	53.20	53.74	57.79	57.64	59.45	56.89	55.26	55.16	53.68	53.35	53.20	53.18
Min.	53.09	53.13	53.64	54.55	55.39	54.91	54.05	53.69	53.38	53.20	53.06	52.99

WATER YEAR 1969 : Max. 59.45 m. Min. 52.99 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1,1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	23	26	52	149	308	283	215	175	55	33	25	18
2	22	28	72	144	268	287	213	188	54	33	25	17
3	22	25	121	172	262	248	240	182	53	32	25	17
4	21	22	92	192	316	251	231	202	53	32	25	17
5	20	24	67	308	292	254	220	215	53	32	23	17
6	21	24	61	286	301	244	189	225	53	32	23	17
7	22	28	142	304	276	225	163	190	53	30	23	17
8	21	39	101	252	260	201	150	159	49	30	23	17
9	21	29	55	223	264	190	138	140	48	30	21	16
10	23	41	65	283	270	192	132	126	48	30	20	16
11	25	47	78	505	404	234	127	117	47	30	21	16
12	25	36	81	478	582	225	120	110	46	30	21	16
13	23	30	69	440	630	294	117	104	46	30	21	16
14	22	27	55	749	948	256	113	98	45	30	21	16
15	21	27	62	625	1,247	283	107	95	44	29	21	15
16	22	28	120	489	1,189	378	102	92	43	33	21	15
17	22	28	140	378	1,009	557	99	79	42	32	21	15
18	21	30	120	302	981	512	100	80	42	32	21	15
19	20	28	132	259	1,308	358	102	78	42	30	21	15
20	20	25	333	244	1,233	291	102	75	42	30	21	15
21	20	24	789	315	951	268	98	73	42	30	20	15
22	22	28	498	364	735	324	97	71	42	29	20	15
23	24	27	297	324	572	388	96	69	42	27	20	16
24	22	28	208	498	482	400	94	68	42	27	20	21
25	21	28	162	424	432	338	91	68	40	26	20	20
26	20	24	136	358	376	281	111	61	39	25	20	19
27	22	25	116	301	333	244	117	60	38	25	19	17
28	23	30	97	322	302	216	172	60	37	25	18	23
29	25	44	94	390	432	220	167	58	36	25		24
30	24	61	87	459	384	220	176	56	36	25		21
31		60		370	316		154		35	25		20
Total	660	971	4,502	10,907	17,663	8,642	4,353	3,374	1,387	909	600	534
Mean	22.0	31.3	150	352	570	288	140	112	44.7	29.3	21.4	17.2
Max.	25	61	789	749	1,308	557	240	225	55	33	25	24
Min.	20	22	52	144	260	190	91	56	35	25	18	15
Runoff - mcm.	57.024	83.894	388.972	942.364	1,526.083	746.669	376.099	291.514	119.836	78.537	51.840	46.137

WATER YEAR 1969 : Max. 1,308 Min. 15 Mean 149 Annual Runoff 4,708.972 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 19	15.00	59.50	1,325				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

NanRiver at Ban Wang Phaniat, Uttaradit (N_4)

Location: Lat. 17°-16'-20" N., Long. 100°-04'-52" E., on left bank about 2.5 kilometers downstream from Amphoe Phichai office, Ban Wang Phaniat, Amphoe Phichai, Uttaradit.

Drainage Area: 19,384 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 44.00 m. (M.S.L.)

Bench Mark: B.M. – H.S.

Location: Near the gage site

Elevation: + 53.327 m. (M.S.L.)

Gage Reading Frequency: 3-time daily readings at 06.00, 12.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 3 readings which is adequate to represent mean daily value.

Period of Available Gage Records: 1946 to date

Rating Operation:

Period of Rating: 1965 to date

Rated by Float: –

Rated by Current Meter: 1965 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

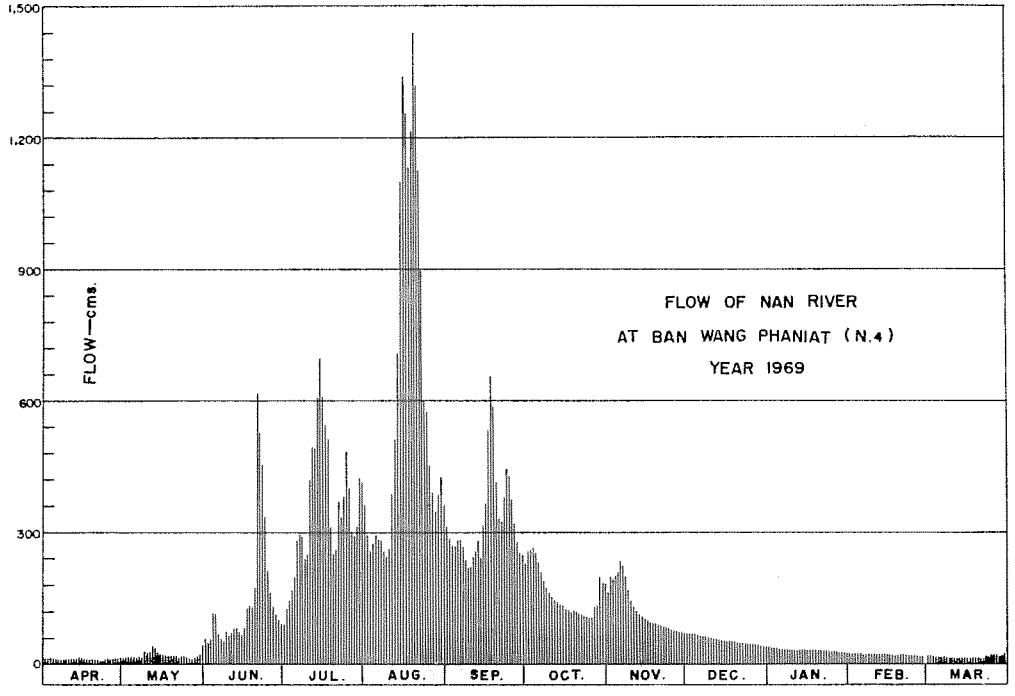
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	45.04	45.05	45.67	45.96	47.66	47.53	46.98	46.55	45.78	45.44	45.27	45.14
2	.04	.10	.56	46.31	.33	.35	47.18	.83	.78	.42	.26	.14
3	.05	.12	.60	.45	.16	.26	.21	.81	.78	.42	.26	.11
4	.04	.13	46.21	.64	.31	.23	.23	.86	.77	.41	.25	.11
5	.02	.06	.16	.88	.42	.34	.16	.93	.76	.40	.24	.11
6	45.02	45.11	45.76	47.34	47.35	47.33	47.00	47.05	45.74	45.40	45.24	45.10
7	.01	.10	.67	.43	.34	.30	46.85	46.96	.72	.39	.24	.10
8	.02	.06	.60	.33	.18	.11	.73	.76	.71	.39	.23	.10
9	.03	.35	.84	.06	.10	46.96	.64	.52	.69	.38	.22	.09
10	.03	.21	.71	.08	.18	.93	.56	.39	.68	.39	.22	.09
11	45.03	45.27	45.78	48.11	47.33	47.11	46.50	46.30	45.67	45.39	45.22	45.08
12	.07	.48	.88	.52	48.49	.18	.44	.23	.66	.38	.22	.08
13	.09	.37	.88	.48	.77	.33	.40	.18	.64	.38	.22	.06
14	.10	.24	.79	49.14	49.75	.59	.37	.13	.63	.38	.23	.06
15	.08	.23	.71	.48	51.33	.55	.34	.09	.62	.38	.23	.06
16	45.02	45.22	45.90	48.90	51.80	47.81	46.28	46.06	45.60	45.38	45.22	45.05
17	.01	.18	46.31	.71	.47	48.80	.25	.03	.60	.38	.22	.04
18	.02	.14	.33	.59	.05	49.30	.22	.01	.59	.38	.21	.04
19	.01	.16	.30	47.37	.51	48.66	.27	45.99	.58	.37	.21	.04
20	.00	.17	.71	.12	52.11	.01	.24	.96	.56	.36	.21	.03
21	45.00	45.12	49.09	47.19	51.53	47.62	46.19	45.94	45.56	45.35	45.20	45.03
22	.00	.09	48.45	.85	50.59	.59	.17	.92	.55	.34	.20	.02
23	.02	.15	.21	.60	49.61	.94	.17	.91	.54	.33	.19	.13
24	.04	.15	47.22	.94	48.88	48.25	.15	.89	.54	.32	.19	.13
25	.04	.05	46.84	48.44	.91	.13	.12	.87	.53	.32	.18	.19
26	45.03	45.02	46.46	47.99	48.18	47.74	46.13	45.86	45.52	45.31	45.17	45.18
27	.06	.03	.32	.44	47.89	.44	.32	.84	.50	.30	.16	.16
28	.07	.09	.16	.40	.66	.23	.35	.82	.49	.30	.15	.12
29	.09	.10	.06	.62	.93	.14	.81	.81	.48	.29		.23
30		.15	45.97	48.13	48.14	48.14	.70	.80	.46	.28		.24
31		.48		.07	47.84		.72		.46	.27		.22
Mean	45.04	45.17	46.30	47.70	48.83	47.61	46.54	46.24	45.62	45.36	45.22	45.10
Max.	45.10	45.48	49.09	49.48	52.11	49.30	47.23	47.05	45.78	45.44	45.27	45.24
Min.	45.00	45.02	45.56	45.96	47.10	46.93	46.12	45.80	45.46	45.27	45.15	45.02

WATER YEAR 1969 : Max. 52.11 m. Min. 45.00 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	13	13	59	89	337	314	223	159	70	39	26	18
2	13	16	49	129	280	283	256	200	70	38	26	18
3	13	17	53	146	252	269	261	197	70	38	26	17
4	13	18	116	172	278	264	264	205	69	37	25	17
5	12	14	111	208	295	282	252	215	68	36	24	17
6	12	17	68	282	283	280	226	234	66	36	24	16
7	11	16	59	297	282	275	203	220	64	35	24	16
8	12	14	53	280	256	244	185	190	63	35	24	16
9	12	32	76	236	242	220	172	156	61	34	23	15
10	12	23	63	239	256	215	161	139	60	35	23	15
11	12	26	70	419	280	244	153	128	59	35	23	15
12	14	42	81	497	491	256	145	120	58	34	23	15
13	15	34	81	489	548	280	140	114	57	34	23	14
14	16	24	71	628	760	324	136	108	56	34	24	14
15	15	24	63	697	1,190	317	133	103	55	34	24	14
16	12	23	83	574	1,340	364	126	100	53	34	23	13
17	11	21	129	535	1,234	554	122	96	53	34	23	13
18	12	18	132	511	1,106	657	118	94	52	34	23	13
19	11	20	128	287	1,247	525	124	92	51	34	23	13
20	11	20	182	245	1,438	400	121	89	49	33	23	12
21	11	17	613	257	1,253	330	115	87	49	32	22	12
22	11	15	484	371	975	324	112	85	48	31	22	12
23	12	19	438	326	727	387	112	84	48	30	21	18
24	13	19	262	387	570	445	110	82	48	30	21	18
25	13	13	202	482	576	423	106	78	47	30	21	21
26	12	12	148	396	432	351	108	77	46	29	20	21
27	14	12	130	298	378	299	130	76	44	28	20	20
28	14	15	111	292	337	264	134	74	43	28	19	17
29	14	16	100	330	385	249	197	73	42	27		24
30	15	19	90	423	425	249	181	72	41	27		24
31		42		411	369		184		41	26		23
Total	381	631	4,305	10,928	18,822	9,888	5,010	3,747	1,701	1,021	643	511
Mean	12.7	20.3	143	352	607	330	162	125	54.9	32.9	22.9	16.5
Max.	16	42	613	697	1,438	657	264	234	70	39	26	24
Min.	11	12	49	89	242	215	106	72	41	26	19	12
Runoff - mcm.	32.918	54.518	371.952	944.179	1,626.221	854.323	432.864	323.741	146.966	88.214	55.555	44.150

WATER YEAR 1969 : Max. 1,438 Min. 11 Mean 158 Annual Runoff 4,975.603 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 20	06.00	52.11	1,438				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Nan River at Amphoe Muang, Phitsanulok (N_{5A})

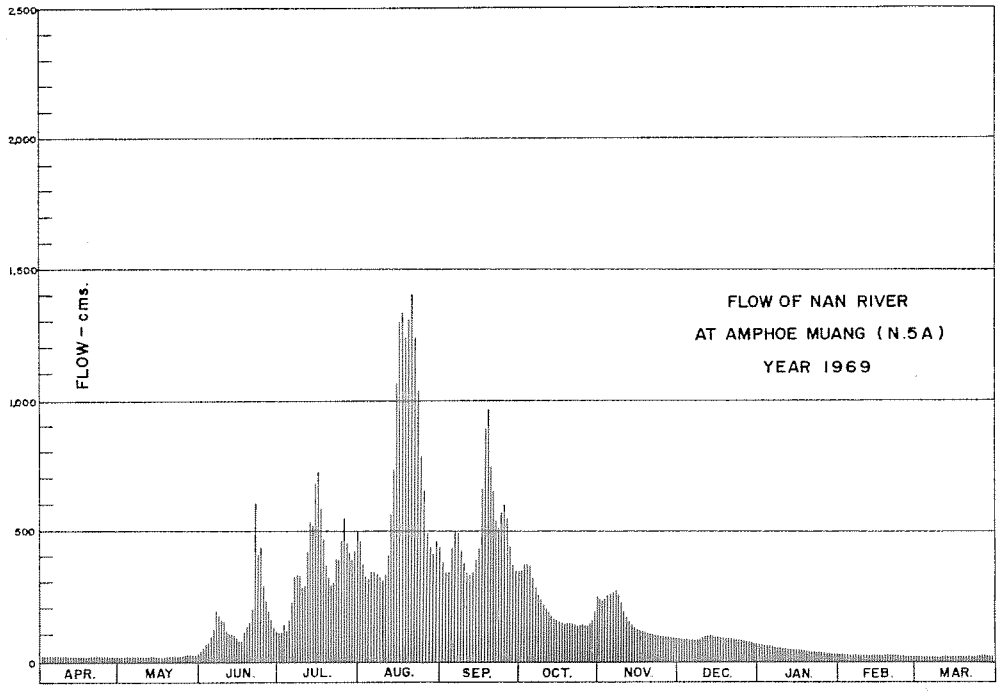
Location:	Lat. 16°-49'-15" N., Long. 100°-15'-49" E., on left bank near Post Office, and about 1 kilometer upstream from gaging station N5, Amphoe Muang, Phitsanulok.
Drainage Area:	25,286 sq.km.
Type of Gage:	Water-stage recorder
Zero Gage at Bottom at:	+ 34.570 m. (M.S.L.)
Bench Mark:	B.M. - H.S.
Location:	Near automatic gage building
Elevation:	+ 45.227 m. (M.S.L.)
Gage Reading Frequency:	Recording
Basis of MeanDaily Gage Height:	Arithmetic mean of 24 hourly readings
Period of Available Gage Records:	1963 to date
Rating Operation:	
Period of Rating:	1966 to date
Rated by Float:	-
Rated by Current Meter:	1966 to date
Stability of Channel Regimes:	Unstable, no shifting adjustment but periodic curves are used for flow computation.
Overbank Flow Conditions:	Overbank flow exists almost every year but hardly to be determined. Records are channel flow only.
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	34.44	34.38	34.94	36.03	39.40	38.95	38.27	37.43	35.78	35.45	34.82	34.62
2	.45	.40	35.28	.11	38.91	.55	.36	.34	.76	.40	.82	.60
3	.43	.41	.45	.45	.34	.27	.57	.45	.75	.38	.80	.58
4	.41	.42	.44	.15	.04	.33	.55	.53	.73	.35	.80	.58
5	.39	.45	.93	.58	.18	.92	.43	.55	.72	.32	.80	.57
6	34.37	34.47	36.23	37.35	38.36	39.45	38.13	37.62	35.11	35.31	34.80	34.57
7	.36	.47	.99	38.15	.26	.52	.01	.68	.68	.30	.80	.56
8	.35	.44	.81	.24	.26	.36	37.70	.57	.67	.28	.80	.56
9	.35	.44	.58	.18	.07	38.94	.47	.29	.82	.27	.80	.55
10	.36	.44	.58	37.82	.02	.46	.26	36.96	.86	.25	.80	.54
11	34.37	34.41	36.12	37.86	38.27	38.22	37.12	36.73	35.93	35.20	34.77	34.53
12	.36	.36	35.98	39.08	.83	.19	36.93	.58	.97	.18	.74	.52
13	.35	.37	36.00	.70	40.17	.21	.83	.48	.95	.17	.73	.51
14	.39	.39	35.92	.62	.92	.51	.72	.32	.93	.15	.73	.49
15	.43	.34	.75	40.61	42.14	.75	.65	.25	.90	.12	.72	.49
16	34.41	34.38	35.56	40.84	43.46	39.20	36.59	36.20	35.87	35.11	34.72	34.48
17	.38	.40	.62	.28	.76	40.60	.51	.15	.83	.09	.72	.47
18	.37	.43	36.21	39.52	.45	41.61	.45	.10	.84	.08	.72	.46
19	.37	.47	.45	38.73	.25	.82	.45	.07	.83	.06	.71	.46
20	.37	.51	.51	.17	.77	.12	.47	.03	.81	.03	.70	.46
21	34.37	34.52	37.25	37.85	44.01	40.25	36.50	36.00	35.77	35.01	34.69	34.45
22	.35	.53	40.15	.97	43.54	39.74	.43	35.95	.73	34.99	.68	.44
23	.34	.54	38.80	38.72	42.61	.58	.37	.95	.70	.97	.67	.44
24	.33	.55	39.04	.70	41.61	.91	.36	.90	.68	.94	.66	.46
25	.33	.56	38.17	39.31	40.72	40.13	.49	.87	.65	.93	.66	.60
26	34.35	34.61	37.41	39.76	40.05	39.84	36.41	35.84	35.63	34.92	34.66	34.62
27	.36	.62	36.95	.38	39.60	.39	.37	.80	.60	.90	.65	.71
28	.36	.61	.54	38.94	.05	38.84	.39	.79	.57	.89	.63	.71
29	.37	.60	.29	.70	38.83	.49	.68	.78	.57	.87		.71
30	.37	.64	.11	.94	39.15	.36	.83	.79	.54	.87		.71
31		.74		39.50	.31		37.49		.52	.85		.73
Mean	34.37	34.48	38.49		40.33	39.32	37.09	36.53	35.75	35.12	34.73	34.55
Max.	34.45	34.74	40.15	40.84	44.01	41.82	38.57	37.68	35.97	35.45	34.82	34.73
Min.	34.33	34.34	34.94	36.03	38.02	38.19	36.36	35.78	35.52	34.85	34.63	34.44

WATER YEAR 1969 : Max. 44.01 m. Min. 34.33 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	16	14	37	108	492	429	341	244	90	66	31	22
2	16	14	56	115	423	376	352	234	88	63	31	21
3	16	15	66	145	350	341	379	246	87	62	30	20
4	15	15	66	118	314	349	376	255	86	60	30	20
5	14	16	100	157	331	425	361	257	85	58	30	20
6	13	17	126	235	352	499	325	265	85	58	30	20
7	13	17	197	327	340	510	310	272	83	57	30	20
8	13	16	179	338	340	486	274	260	82	56	30	20
9	13	16	157	331	317	428	249	229	82	55	30	19
10	13	16	157	287	311	365	226	194	95	54	30	19
11	13	15	116	292	341	335	210	171	100	51	28	19
12	13	13	104	447	413	332	191	157	104	50	27	18
13	13	13	106	537	611	334	181	148	102	49	27	18
14	14	14	100	525	742	371	170	134	100	48	27	17
15	15	13	87	686	979	402	163	127	98	46	26	17
16	15	14	74	727	1,272	464	158	123	96	46	26	17
17	14	14	78	630	1,341	684	151	118	93	45	26	17
18	13	15	124	510	1,269	873	145	114	94	44	26	16
19	13	17	145	400	1,223	915	145	112	93	43	26	16
20	13	18	151	329	1,344	779	147	108	92	41	25	16
21	13	18	224	291	1,401	624	150	106	89	40	25	16
22	13	19	607	305	1,290	543	144	102	86	39	24	16
23	13	19	409	399	1,080	519	138	102	84	38	24	16
24	12	19	442	396	873	569	137	98	83	37	24	16
25	12	20	329	479	706	604	149	96	80	36	24	21
26	13	22	242	546	591	558	142	94	79	36	24	22
27	13	22	193	489	522	491	138	91	77	35	23	26
28	13	22	154	428	443	414	140	90	75	34	22	26
29	13	21	131	396	413	369	166	90	75	33		26
30	13	23	115	428	457	352	181	90	73	33		26
31		27		507	479		251		71	32		27
Total	405	534	5,072	11,908	21,360	14,740	6,590	4,727	2,717	1,445	756	610
Mean	13.5	17.2	169	384	721	491	212	157	87.6	46.6	27.0	19.7
Max.	16	27	607	727	1,401	915	379	272	104	66	31	27
Min.	12	13	37	108	311	332	137	90	71	32	22	16
Runoff - mcm.	34.992	46.137	438.220	1,028.851	1,845.504	1,273.536	569.376	408.412	234.748	124.848	65.318	52.704

WATER YEAR 1969 : Max. 1,401 Min. 12 Mean 194 Annual Runoff 6,122.649 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 21	06.00	44.03	1,406				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
NAN RIVER BASIN

Nan River at Amphoe Tha Pla, Uttaradit (N_{6A})

Location: Lat. 17°-47'-50" N., Long. 100°-31'-56" E., on right bank about 600 meters upstream from office of Amphoe Tha Pla, Uttaradit.

Drainage Area: 13,173 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 73.00 m. (M.S.L.)

Bench Mark: B.M. – R.I.D. No. 1

- Location: On right bank near gage site
- Elevation: + 90.517 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1954-1970

Rating Operation:

- Period of Rating: 1965-70
- Rated by Float: –
- Rated by Current Meter: 1965-70

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

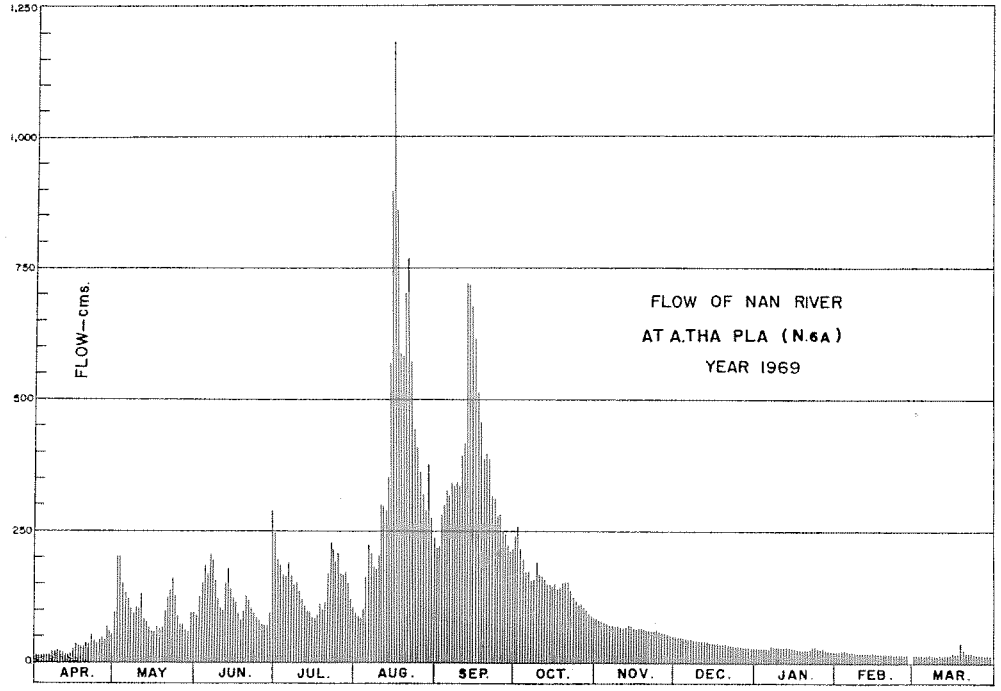
Overbank Flow Conditions: No overbank flow

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	74.49	74.64	75.03	76.01	77.08	76.86	76.40	76.13	75.14	74.82	74.66	74.53
2	.48	.53	.46	.31	76.99	.77	.57	.05	.14	.81	.65	.53
3	.47	.44	.36	.55	77.37	.73	.52	.27	.13	.79	.65	.51
4	.48	.41	.27	77.31	.32	.76	.49	.42	.12	.77	.64	.50
5	.48	.40	.08	.21	.19	.72	.27	.72	.11	.77	.64	.49
6	74.47	74.39	75.04	77.48	77.12	76.53	76.08	76.36	75.10	74.79	74.62	74.49
7	.47	.50	.00	.07	76.95	.47	.09	.10	.07	.78	.62	.50
8	.49	.47	74.92	76.72	.96	.35	75.95	75.93	.06	.77	.63	.50
9	.50	.81	75.22	77.49	77.04	.28	.88	.79	.05	.77	.63	.50
10	.53	75.18	.50	78.58	.67	.32	.81	.70	.05	.78	.63	.49
11	74.55	74.85	75.57	78.63	78.73	76.66	75.75	75.62	75.04	74.79	74.62	74.49
12	.53	.64	.41	.33	.96	.56	.74	.58	.02	.79	.62	.48
13	.51	.55	.21	79.71	79.59	.79	.71	.53	.00	.80	.61	.48
14	.49	.56	.29	.36	81.49	.69	.67	.49	74.99	.79	.61	.47
15	.48	.60	76.07	78.62	.78	.84	.61	.46	.99	.79	.61	.47
16	74.47	74.60	76.24	77.92	80.78	77.97	75.58	75.44	74.98	74.80	74.60	74.46
17	.46	.53	.04	.38	.36	78.44	.54	.42	.97	.76	.61	.47
18	.45	.51	75.93	76.93	81.22	77.57	.52	.37	.96	.77	.62	.46
19	.45	.47	77.41	.82	.74	.01	.51	.35	.96	.76	.60	.46
20	.44	.48	80.14	77.29	80.59	76.86	.52	.34	.96	.75	.59	.46
21	74.43	74.62	79.27	77.80	79.81	76.87	75.51	75.33	74.96	74.73	74.59	74.45
22	.42	.54	77.64	.38	78.89	.96	.53	.31	.97	.73	.59	.45
23	.43	.49	76.71	78.25	.32	77.30	.46	.27	.95	.73	.58	.50
24	.38	.45	.34	.21	77.88	.30	.48	.26	.95	.73	.58	.54
25	.38	.43	75.99	77.75	.03	.02	.61	.23	.92	.72	.57	.54
26	74.38	74.49	75.81	77.42	77.41	76.67	75.68	75.22	74.89	74.71	74.57	74.60
27	.44	.58	.63	.27	.14	.54	76.17	.21	.88	.71	.56	.75
28	.57	.62	.54	.70	.48	.47	.16	.18	.87	.70	.55	.72
29	.46	75.15	.53	78.21	.53	.38	.21	.16	.85	.68		.65
30	.44	.28	.88	77.87	.25	.40	.01	.16	.84	.66		.60
31		.22		.26	76.99		75.92		.82	.66		.55
Mean	74.47	74.63	75.98	77.64	78.47	76.84	75.87	75.61	74.99	74.75	74.61	74.52
Max.	74.57	75.28	80.14	79.71	81.78	78.44	76.57	76.72	75.14	74.82	74.66	74.75
Min.	74.38	74.39	74.92	76.01	76.95	76.28	75.46	75.16	74.82	74.66	74.55	74.45

WATER YEAR 1969 : Max. 81.78 m. Min. 74.38 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	15	23	51	142	279	246	188	156	60	35	25	17
2	15	17	87	177	264	234	208	146	60	34	24	17
3	14	13	78	206	325	229	202	172	59	32	24	16
4	15	11	71	316	317	233	199	190	59	31	23	16
5	15	11	55	300	296	228	172	228	58	31	23	15
6	14	11	52	344	285	204	150	183	57	32	22	15
7	14	16	49	277	258	196	151	152	55	32	22	16
8	15	14	43	228	260	182	135	133	54	31	23	16
9	16	34	67	345	270	174	128	119	53	31	23	16
10	17	63	90	544	376	178	121	110	53	32	23	15
11	18	37	97	554	576	220	115	102	52	32	22	15
12	17	23	82	495	626	207	114	98	51	32	22	15
13	16	18	66	805	775	237	111	93	49	33	22	15
14	15	19	42	719	1,302	224	107	89	48	32	22	14
15	15	21	149	552	1,390	243	101	87	48	32	22	14
16	14	21	169	420	1,095	429	98	85	47	33	21	14
17	14	17	145	327	976	516	94	83	47	31	22	14
18	13	16	133	255	1,223	359	92	79	46	31	22	14
19	13	14	332	241	1,377	268	91	77	46	31	21	14
20	13	15	916	312	1,040	246	92	76	46	30	20	14
21	12	22	698	398	831	247	91	75	46	29	20	13
22	12	18	371	327	611	260	93	74	47	29	20	13
23	12	15	226	479	493	314	87	71	45	29	20	16
24	10	13	181	472	412	314	88	70	45	29	20	18
25	10	12	140	389	271	269	101	67	43	28	19	18
26	10	15	121	333	332	221	108	67	40	28	19	21
27	13	20	103	309	288	205	160	66	39	28	19	30
28	19	22	94	381	344	196	159	63	39	27	18	28
29	14	61	93	472	352	186	165	62	37	26		24
30	13	71	128	411	306	188	142	62	36	25		21
31		67		308	264		132		35	25		18
Total	423	750	4,929	11,838	17,814	7,453	3,995	3,135	1,500	941	603	522
Mean	14.1	24.2	164	382	575	248	129	104	48.4	30.3	21.5	16.8
Max.	19	71	916	805	1,390	516	208	228	60	35	25	30
Min.	10	11	42	142	258	174	87	62	35	25	18	13
Runoff - mcm.	36.547	64.800	425.865	1,022.803	1,539.129	643.939	345.168	270.864	129.600	81.302	52.099	45.101

WATER YEAR 1969 : Max. 1,390 Min. 10 Mean 148 Annual Runoff 4,657.219 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 15	06.00	81.92	1,433				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
NAN RIVER BASIN

Nan River at Muang Phichit (N9)

Location: Lat. 16°-26'-31" N., Long. 100°-21'-11" E., on right bank infront of Phichit Phitthaya School, Amphoe Muang, Phichit.

Drainage Area: 29,153 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 26.00 m. (M.S.L.)

Bench Mark: B.M. - R.I.D. No. 4

Location: On right bank about 78 meters downstream from gage site

Elevation: + 37.273 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1934 to date

Rating Operation:

Period of Rating: 1965-67, 1973 to date

Rated by Float:

Rated by Current Meter: 1965-67, 1973 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: Overbank flow exists almost every year but hardly to be determined. Records are channel flow only.

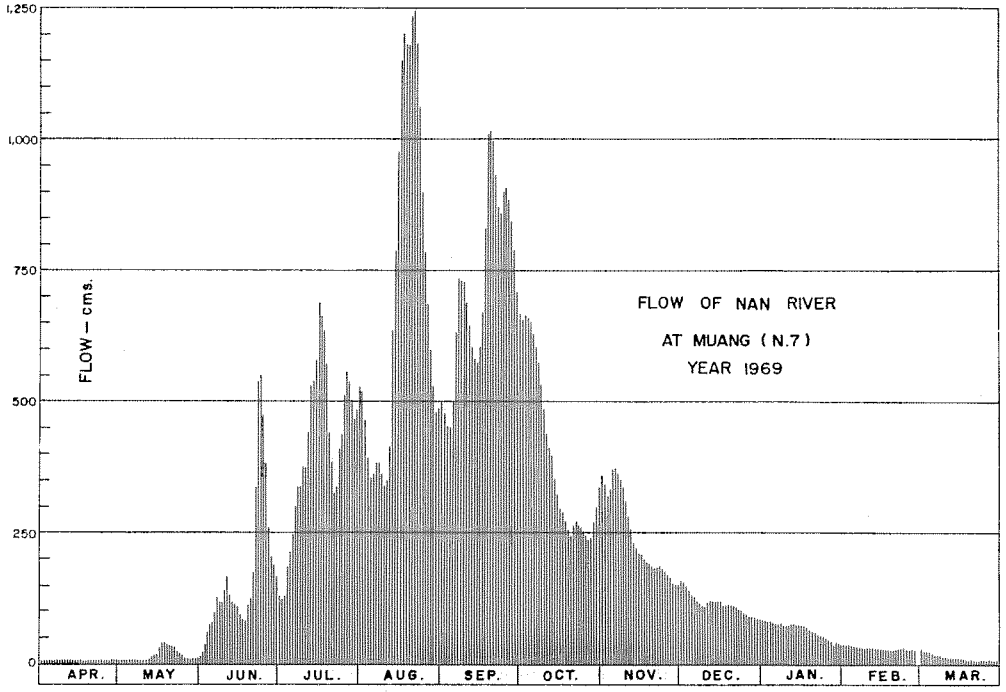
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1965-67. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	26.00	26.00	26.31	28.20	31.98	31.77	32.98	30.59	28.60	27.60	26.81	26.54
2	.00	.00	.55	.11	.82	.54	.92	.46	.56	.58	.80	.52
3	.00	.00	27.07	.27	.32	.37	.99	.22	.46	.57	.79	.50
4	.00	.00	.44	29.00	30.86	.32	.95	.38	.37	.55	.77	.48
5	.00	.00	.49	.20	.51	.71	.93	.69	.25	.53	.75	.38
6	26.00	26.01	27.76	29.50	30.57	32.42	32.75	30.70	28.23	27.50	26.75	26.35
7	.00	.04	28.19	30.05	.79	33.24	.49	.62	.14	.49	.74	.33
8	.00	.05	.08	.40	.79	.49	.23	.51	.09	.47	.70	.30
9	.00	.05	.06	.43	.68	.47	31.90	.42	.00	.46	.69	.26
10	.00	.06	.31	.74	.41	.19	.58	.16	.04	.44	.70	.21
11	26.00	26.11	28.71	30.72	30.49	32.99	31.24	29.86	28.10	27.46	26.72	26.20
12	.00	.19	.27	31.47	31.07	.61	.06	.59	.11	.47	.71	.19
13	.00	.27	.06	.99	.56	.47	30.90	.40	.13	.50	.68	.15
14	.00	.35	.02	32.02	33.80	.28	.52	.30	.14	.49	.60	.14
15	.00	.36	27.96	.23	.94	.45	.22	.21	.12	.46	.62	.15
16	26.00	26.60	27.77	33.02	35.12	32.90	30.01	29.17	28.10	27.43	26.63	26.17
17	.00	.88	.60	.17	.80	33.39	29.94	.06	.00	.42	.61	.16
18	.00	.90	.59	32.86	.95	34.50	.75	.00	.00	.38	.59	.10
19	.00	.85	.96	31.93	.87	35.15	.60	28.99	27.97	.30	.56	.08
20	.00	.79	28.17	.13	.89	.19	.51	.94	.99	.28	.57	.04
21	26.00	26.76	28.67	30.72	36.07	34.95	29.73	28.90	27.97	27.22	26.61	26.02
22	.00	.67	30.12	.26	.10	.56	.79	.92	.94	.16	.63	.00
23	.00	.46	32.04	.42	35.77	.36	.72	.94	.90	.10	.64	.00
24	.00	.38	.15	31.03	.21	.31	.69	.89	.84	.08	.65	.00
25	.00	.24	31.41	.33	34.45	.60	.60	.83	.79	.00	.62	.00
26	26.00	26.17	30.63	31.89	33.67	34.63	29.48	28.71	27.75	26.98	26.60	26.00
27	.00	.10	29.57	32.19	32.99	.35	.45	.67	.74	.96	.59	.00
28	.00	.08	.11	31.99	.43	.07	.53	.50	.70	.82	.55	.00
29	.00	.09	28.97	.61	31.85	33.66	.89	.50	.69	.89		.00
30	.00	.16	.75	.38	.59	.18	30.15	.53	.64	.87		.00
31		.21		.68	.68		.45		.62	.83		.00
Mean	26.00	26.28	28.56	30.93	32.94	33.34	31.16	29.49	28.03	27.30	26.67	26.17
Max.	26.00	26.90	32.15	33.17	36.10	35.19	32.99	30.70	28.60	27.60	26.81	26.54
Min.	26.00	26.00	26.31	28.11	30.41	31.32	29.45	28.50	27.62	26.82	26.55	26.00

WATER YEAR 1969 : Max. 36.10 m. Min. 26.00 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	7.00	7.00	16	128	528	501	661	360	160	84	37	26
2	7.00	7.00	26	121	508	473	653	345	157	83	37	25
3	7.00	7.00	51	134	446	452	663	318	149	82	36	24
4	7.00	7.00	74	194	391	446	657	336	142	81	35	23
5	7.00	7.00	77	212	351	493	654	371	132	80	34	19
6	7.00	7.25	95	242	357	586	630	372	130	78	34	18
7	7.00	8.00	127	299	383	697	595	363	123	77	34	17
8	7.00	8.25	119	338	383	732	561	351	120	76	32	16
9	7.00	8.25	117	341	370	729	518	340	113	75	32	15
10	7.00	8.50	137	377	339	690	478	311	116	74	32	13
11	7.00	9.80	169	375	348	663	437	278	120	75	33	12
12	7.00	12	134	464	416	611	415	251	121	76	32	12
13	7.00	15	117	530	475	592	395	232	123	78	31	11
14	7.00	18	114	534	777	567	352	222	123	77	28	11
15	7.00	18	110	561	798	590	318	213	122	75	29	11
16	7.00	28	96	667	1,004	650	295	209	120	73	29	12
17	7.00	41	84	687	1,160	704	287	199	113	73	28	11
18	7.00	42	84	645	1,200	886	267	194	113	70	28	9.50
19	7.00	39	110	522	1,178	1,010	252	193	111	65	26	9.00
20	7.00	36	126	424	1,183	1,018	243	187	112	64	27	8.00
21	7.00	35	166	375	1,234	970	265	185	111	60	28	7.50
22	7.00	31	307	322	1,243	897	271	187	108	57	29	7.00
23	7.00	22	536	340	1,152	863	264	189	105	53	30	7.00
24	7.00	19	550	412	1,022	855	261	184	101	52	30	7.00
25	7.00	14	457	448	877	904	252	179	97	47	29	7.00
26	7.00	12	364	517	757	909	240	169	94	46	28	7.00
27	7.00	9.50	249	556	663	861	237	166	94	45	28	7.00
28	7.00	9.00	204	530	587	817	245	152	91	38	26	7.00
29	7.00	9.25	191	481	511	756	281	152	90	41		7.00
30	7.00	11	172	454	479	688	310	154	87	40		7.00
31		13		490	490		344		86	38		7.00
Total	168.00	518.80	5,179	12,720	21,610	21,610	12,301	7,362	3,584	2,033	862	380
Mean	5.60	16.7	173	410	697	720	397	245	116	65.6	30.8	12.2
Max.	7.00	42	550	687	1,243	1,018	663	372	160	84	37	26
Min.	7.00	7.00	16	121	339	446	237	152	86	38	26	7.00
Runoff – mcm.	14.515	44.824	447.466	1,099.008	1,867.104	1,867.104	1,062.806	636.077	309.658	175.651	74.477	32.832

WATER YEAR 1969 : Max. 1,243 Min. 7.00 Mean 242 Annual Runoff 7,631.522 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 22	18.00	36.12	1,249				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
NAN RIVER BASIN

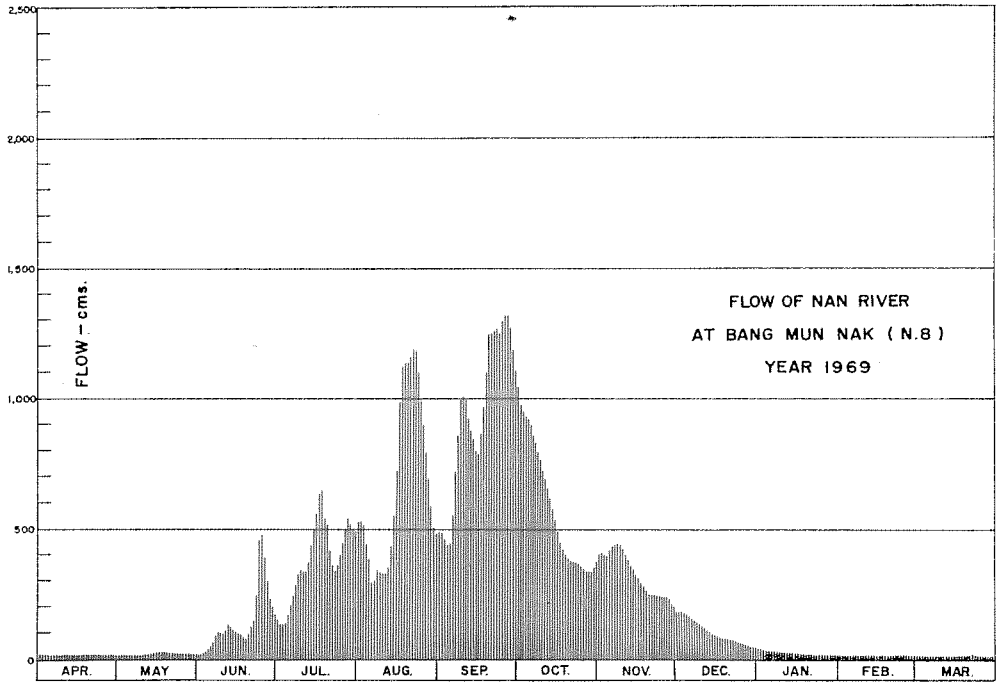
Nan River at Bang Mun Nak, Phichit (N_8)

Location:	Lat. 16°-01'-50" N., Long. 100°-22'-53" E., on left bank about 100 meters upstream from Bang Mun Nak market, Amphoe Bang Mun Nak, Phichit.
Drainage Area:	32,878 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 19.80 m. (M.S.L.)
Bench Mark:	B.M. - H.S. N. 8
Location:	Infront of gage observer s house
Elevation:	+ 30.523 m. (M.S.L.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1951 to date
Rating Operation:	
Period of Rating:	1965-67, 1973 to date
Rated by Float:	-
Rated by Current Meter:	1965-67, 1973 to date
Stability of Channel Regimes:	Stable, no shifting for flow computation for year without actual ratings.
Overbank Flow Conditions:	Overbank flow exists almost every year but hardly to be determined. Records are channel flow only.
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1965-67. No upstream State diversions for irrigation except those built by the local reaisents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	20.58	20.47	20.64	22.80	26.05	25.80	28.86	25.20	23.14	21.22	20.76	20.63
2	.54	.47	.63	.58	.10	.80	.61	.24	.14	.17	.76	.63
3	.53	.47	.75	.51	.00	.63	.46	.15	.13	.13	.76	.62
4	.51	.47	21.08	.65	25.53	.43	.37	.15	.04	.09	.75	.62
5	.49	.47	.33	23.04	.03	.45	.31	.32	22.94	.06	.75	.61
6	20.52	20.47	21.46	23.35	24.25	26.03	28.24	25.43	22.87	21.03	20.74	20.61
7	.55	.47	.83	.74	.30	27.15	.02	.45	.82	20.99	.74	.60
8	.53	.47	22.16	24.22	.68	28.09	27.84	.47	.74	.96	.74	.60
9	.51	.47	.18	.50	.66	.56	.67	.47	.64	.95	.73	.59
10	.49	.49	.11	.69	.59	.69	.47	.40	.54	.94	.73	.59
11	20.47	20.50	22.22	24.68	24.51	28.62	27.25	25.23	22.44	20.92	20.72	20.58
12	.46	.57	.62	.55	.59	.34	.00	.03	.34	.90	.72	.58
13	.46	.67	.42	.80	.90	.08	26.69	24.83	.25	.90	.71	.56
14	.48	.75	.26	25.46	25.65	27.93	.46	.72	.16	.89	.71	.56
15	.49	.84	.20	.88	26.58	.64	.31	.58	.08	.88	.70	.55
16	20.49	20.91	22.12	26.26	27.65	27.58	25.96	24.44	22.01	20.88	20.70	20.55
17	.50	.98	.01	.75	28.60	.99	.60	.28	21.97	.87	.69	.54
18	.51	.96	21.82	.84	29.09	28.65	.41	.14	.92	.87	.68	.54
19	.52	.88	.79	.52	.16	29.23	.26	.04	.87	.86	.68	.54
20	.51	.80	22.17	.02	.15	.48	.10	23.88	.82	.86	.67	.54
21	20.50	20.74	22.53	25.44	29.24	29.51	24.97	23.80	21.77	20.85	20.67	20.53
22	.49	.70	.78	24.91	.33	.52	.94	.80	.72	.84	.67	.53
23	.48	.70	24.21	.59	.30	.56	.94	.80	.63	.83	.66	.53
24	.48	.70	25.52	.74	.11	.50	.87	.78	.58	.83	.66	.53
25	.47	.69	.77	25.12	28.79	.63	.79	.74	.53	.82	.65	.52
26	20.47	20.65	25.26	25.45	28.32	29.70	24.71	23.72	21.48	20.82	20.65	20.52
27	.47	.62	24.52	.93	27.61	.70	.63	.69	.43	.81	.64	.52
28	.47	.62	23.87	26.18	26.95	.61	.60	.64	.38	.80	.64	.51
29	.47	.63	.36	.08	.45	.43	.60	.48	.34	.79	-	.51
30	.47	.62	.04	25.94	.02	.14	.72	.26	.29	.78	-	.51
31	-	.64	-	.87	25.79	-	.98	-	.26	.77	-	.50
Mean	20.50	20.64	22.55	24.91	26.71	28.18	26.31	24.50	22.14	20.91	20.70	20.56
Max.	20.58	20.98	25.77	26.84	29.33	29.70	28.86	25.47	23.14	21.22	20.76	20.63
Min.	20.47	20.47	20.63	22.51	24.25	25.43	24.60	23.26	21.26	20.77	20.64	20.50

WATER YEAR 1969 : Max. 29.70 m. Min. 20.47 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	15	12	18	154	530	491	1,062	411	184	45	22	17
2	14	12	17	135	540	491	998	416	184	42	22	17
3	14	12	22	131	520	468	964	404	183	40	22	17
4	13	12	37	141	455	441	943	404	175	37	22	17
5	13	12	50	175	390	444	929	426	166	36	22	16
6	14	12	58	205	298	526	915	441	160	34	22	16
7	14	12	81	244	304	705	867	444	156	32	22	16
8	14	12	102	294	348	881	833	447	149	31	22	16
9	13	12	103	326	345	994	803	447	140	31	21	16
10	13	13	99	349	337	1,018	764	436	132	30	21	16
11	12	13	106	348	328	1,001	722	415	125	29	21	15
12	12	15	138	332	337	936	680	390	117	28	21	15
13	12	19	123	361	374	879	626	366	109	28	20	15
14	12	22	110	445	469	850	590	352	102	28	20	15
15	13	26	104	499	608	801	566	336	98	27	20	14
16	13	29	100	558	801	792	510	318	93	27	20	14
17	13	32	93	639	996	861	464	301	91	27	20	14
18	13	31	80	657	1,127	1,008	438	284	89	27	19	14
19	14	27	77	599	1,147	1,167	419	274	85	26	19	14
20	13	24	102	524	1,144	1,249	398	257	80	26	19	14
21	13	22	132	442	1,170	1,255	382	250	76	26	19	14
22	13	20	152	375	1,198	1,259	379	250	73	26	19	14
23	12	20	281	337	1,188	1,272	379	250	68	25	18	14
24	12	20	454	354	1,133	1,252	371	248	65	25	18	14
25	12	20	486	400	1,043	1,295	360	244	62	25	18	14
26	12	18	419	444	932	1,320	351	242	59	25	18	14
27	12	17	328	504	798	1,320	342	239	56	24	18	14
28	12	17	256	547	672	1,288	338	234	54	24	18	13
29	12	17	206	536	588	1,233	338	218	51	24	–	13
30	12	17	175	506	524	1,141	352	196	48	23	–	13
31	–	18	–	498	489	–	384	–	46	23	–	13
Total	386	565	4,509	12,059	21,133	28,133	18,467	9,940	3,276	901	563	458
Mean	12.9	18.2	150	389	682	955	596	331	106	29.1	20.1	14.8
Max.	15	32	486	657	1,198	1,320	1,062	447	184	45	22	17
Min.	12	12	17	131	298	441	338	196	46	23	18	13
Runoff - mcm.	33.350	48.816	389.578	1,041.898	1,825.891	2,474.323	1,595.549	858.816	283.046	77.846	48.643	39.571

WATER YEAR 1969 : Max. 1,320 Min. 12 Mean 276 Annual Runoff 8,717.328 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 26	24.00	29.74	1,335				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Nan River at Amphoe Taphan Hin, Phichit (N_{10})

Location: Lat. 16°-13'-03" N., Long. 100°-25'-20" E., on right bank about 1 kilometer downstream from Wat Theva-Prasat, Tambon Huai Ket, Amphoe Taphan Hin, Phichit.

Drainage Area: 30,760 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 22.41 m. (M.S.L.)

Bench Mark: B.M. - H.S. No. 1

Location: On right bank along the gage line

Elevation: + 33.173 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1954-73

Rating Operation:

Period of Rating: 1965-67

Rated by Float:

Rated by Current Meter: 1965-67

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation for year without actual ratings.

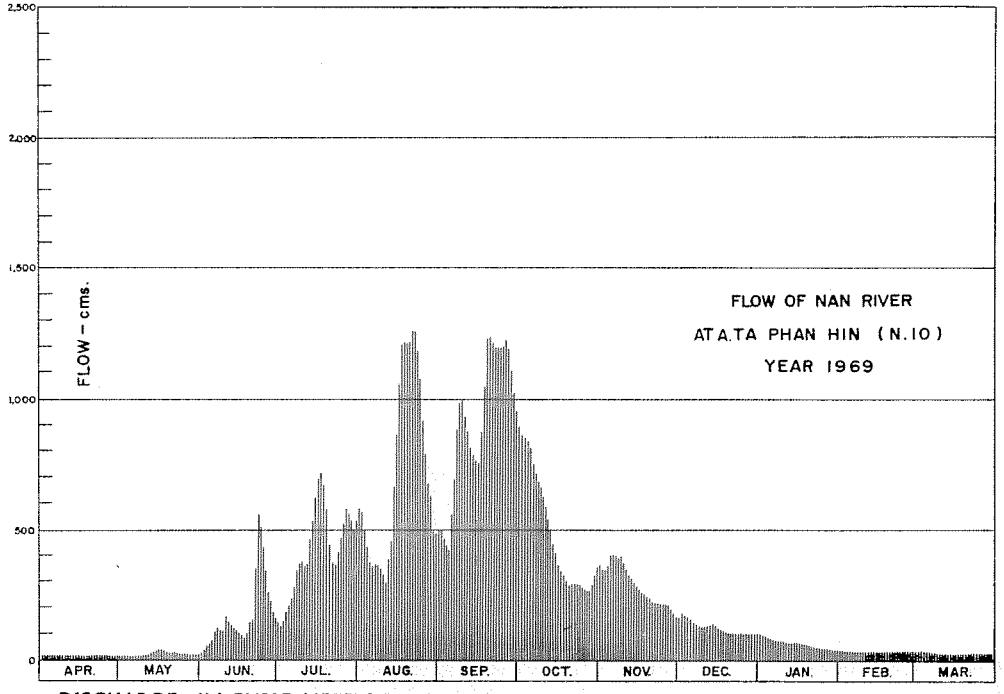
Overbank Flow Conditions: Overbank flow exists almost every year but hardly to be determined. Records are channel flow only.

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1965-67. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	23.09	22.99	23.24	25.01	28.67	28.19	30.53	27.11	25.27	24.39	23.51	23.37
2	.06	.99	.37	34.25	.53	27.99	.34	.02	.38	.36	.50	.36
3	.06	23.01	.58	25.01	.11	.75	.27	26.95	.31	.28	.49	.35
4	.05	.03	.89	.48	27.61	.55	.16	27.11	.27	.24	.49	.34
5	.08	.02	.98	.71	.13	28.09	.10	.37	.17	.20	.48	.33
6	23.08	23.04	24.13	26.00	27.05	29.19	29.91	27.40	25.06	24.15	23.48	23.32
7	.06	.06	.68	.43	.15	30.26	.58	.37	24.98	.10	.48	.31
8	.04	.09	.72	.94	.14	.77	.45	.29	.89	.05	.47	.29
9	.02	.09	.59	27.16	26.98	.96	.26	.37	.82	.03	.47	.28
10	.00	.09	.86	.20	27.00	.89	.03	.21	.80	.01	.48	.27
11	22.98	23.15	25.17	27.06	26.49	30.53	28.70	27.00	24.81	24.01	23.46	23.25
12	.98	.23	.04	.13	27.25	.27	.41	26.77	.84	.00	.45	.24
13	23.00	.31	24.85	.89	.86	29.99	27.98	.62	.88	23.99	.45	.23
14	.00	.36	.70	28.44	28.95	.83	.71	.50	.91	.97	.45	.22
15	22.99	.50	.62	.71	29.92	.69	.49	.41	.86	.95	.44	.21
16	23.01	23.55	24.50	29.30	31.01	30.02	27.06	26.30	24.76	23.91	23.44	23.20
17	.02	.51	.33	.51	.75	.65	26.85	.17	.69	.89	.43	.20
18	.03	.43	.16	.22	.90	31.35	.69	.06	.65	.86	.42	.19
19	.02	.34	.54	28.67	.85	.89	.55	25.99	.63	.82	.42	.19
20	.00	.33	.98	.09	.87	.94	.41	.89	.61	.78	.41	.18
21	23.01	23.35	25.13	27.56	32.05	31.85	26.45	25.83	24.58	23.76	23.41	23.18
22	.00	.34	26.04	.11	.03	.80	.50	.84	.54	.71	.40	.17
23	22.99	.28	28.16	.09	31.83	.80	.45	.81	.49	.68	.40	.17
24	.99	.24	.48	.54	.43	.79	.39	.78	.49	.67	.39	.17
25	.99	.19	27.99	.76	30.92	.82	.35	.70	.48	.64	.39	.16
26	23.00	23.14	27.11	28.21	30.18	31.91	26.31	25.71	24.47	23.61	23.39	23.16
27	22.96	.16	26.28	.66	29.49	.80	.24	.73	.46	.58	.38	.17
28	.98	.10	25.81	.56	28.85	.56	.25	.59	.45	.54	.38	.18
29	.99	.16	.45	.30	.31	.23	.41	.36	.44	.53		.19
30	.99	.20	.19	.12	.01	30.86	.68	.23	.44	1.52		.20
31		.20		.31	.09		27.00		.45	.51		.23
Mean	23.01	23.21	25.12	27.45	29.21	30.37	27.85	26.42	24.77	23.89	23.44	23.23
Max.	23.09	23.55	28.48	29.51	32.05	31.94	30.53	27.40	25.38	24.39	23.51	23.37
Min.	22.96	22.99	23.24	24.85	26.49	27.55	26.24	25.23	24.44	23.51	23.38	23.16

WATER YEAR 1969 : Max. 31.94 m. Min. 22.96 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	19	15	26	149	586	514	915	370	172	98	40	32
2	18	15	32	134	564	486	877	359	183	96	39	32
3	18	16	44	149	502	452	863	350	176	91	38	31
4	17	17	63	192	434	426	841	370	172	88	38	31
5	19	16	70	214	372	500	830	403	163	85	38	30
6	19	17	80	244	362	668	795	406	153	81	38	30
7	18	18	120	290	374	861	735	403	146	78	38	29
8	17	19	124	349	373	964	712	392	138	74	37	28
9	16	19	113	376	354	1,004	680	403	132	73	37	28
10	15	19	135	380	356	989	643	382	130	78	37	27
11	15	22	163	364	296	915	590	356	131	72	37	26
12	15	25	152	372	387	863	546	329	134	71	36	26
13	15	29	134	472	467	809	484	311	137	70	36	25
14	15	32	122	551	630	780	447	297	140	69	36	25
15	15	39	116	592	797	755	418	288	135	67	36	24
16	16	42	106	687	1,014	815	364	275	127	65	36	24
17	16	40	94	723	1,187	939	338	262	121	63	35	24
18	17	35	82	673	1,227	1,091	319	250	118	61	35	23
19	16	31	109	586	1,213	1,224	303	243	116	58	35	23
20	15	30	146	500	1,219	1,238	288	241	115	56	34	23
21	16	31	160	427	1,269	1,213	292	226	112	55	34	23
22	15	31	248	370	1,264	1,200	297	227	109	52	34	23
23	15	28	509	367	1,208	1,200	292	224	105	50	34	23
24	15	26	557	425	1,110	1,197	285	221	105	49	33	23
25	15	23	486	454	995	1,205	281	213	105	47	33	22
26	15	21	370	516	845	1,230	277	214	104	46	33	22
27	14	22	273	584	719	1,200	269	216	103	44	33	23
28	15	19	224	569	614	1,140	270	202	102	41	33	23
29	15	22	189	530	531	1,064	288	181	102	41		23
30	15	24	165	504	488	983	318	169	102	40		24
31		24		531	500		356		102	40		25
Total	481	767	5,212	13,274	22,257	27,925	15,213	8,783	3,990	1,999	1,003	795
Mean	16.0	24.7	174	428	718	931	491	293	129	64.5	35.8	25.6
Max.	19	42	557	723	1,269	1,238	915	406	183	98	40	32
Min.	14	15	26	134	296	426	269	169	102	40	33	22
Runoff - MCM.	41.558	66.269	450.317	1,146.874	1,923.005	2,412.720	1,314.403	758.851	344.736	172.714	86.659	68.688

WATER YEAR 1969 : Max. 1,269 Min. 14 Mean 279 Annual Runoff 8,786.794 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 21	18.00	32.09	1,281				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Nan River at Ban Hat Phai, Uttaradit (N_{12A})

Location: Lat. 17°-44'-10" N., Long. 100°-32'-28" E., on right bank about 4 kilometers downstream from Sirikit Damsite, along the road Phasom – Silaat at Ban Hat Phai, Amphoe Tha Pla, Uttaradit.

Drainage Area: 15,718 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 69.00 m. (M.S.L.)

Bench Mark: B.M. – R.I.D.

Location: On right bank infront of N12A Station Office

Elevation: B.M. 1 + 84.00 m. (M.S.L.) B.M. 2 + 83.655 m. (M.S.L.)

Gage Reading Frequency: 16-time daily readings at 03.00, 06.00-18.00, 21.00 and 24.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 16 readings

Period of Available Gage Records: 1966 to date

Rating Operation:

Period of Rating: 1966 to date

Rated by Float: –

Rated by Current Meter: 1966 to date

Stability of Channel Regimes: Stable, no shifting adjustment but periodic curves and used for flow computation.

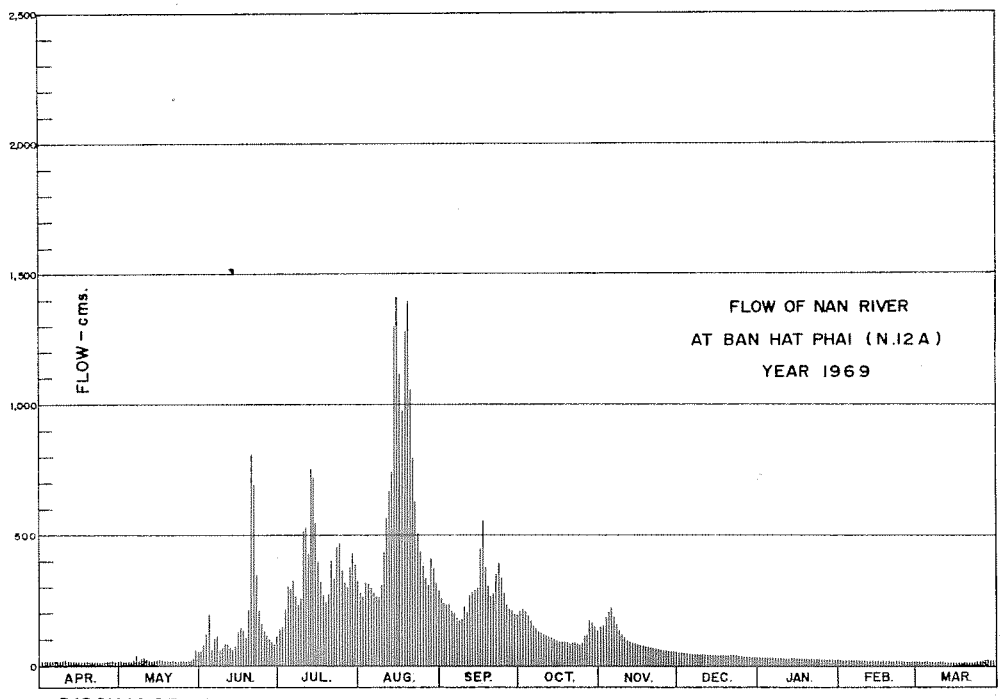
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	69.96	70.09	70.52	71.38	72.38	72.27	71.82	71.51	70.54	70.26	70.07	69.95
2	.93	.01	.89	.52	.25	.14	72.00	.51	.53	.26	.06	.95
3	.92	69.93	71.17	.86	.61	.08	71.96	.75	.52	.25	.06	.95
4	.91	.93	.83	72.58	.59	.10	.88	.84	.51	.25	.05	.94
5	.90	70.03	70.62	.46	.47	71.91	.67	72.02	.49	.25	.05	.93
6	69.96	69.89	71.06	72.70	72.44	71.88	71.50	71.78	70.48	70.22	70.05	69.93
7	.91	70.43	.13	.38	.25	.72	.39	.49	.47	.19	.05	.93
8	.92	.03	70.61	.07	.24	.64	.30	.30	.46	.21	.04	.92
9	.96	.21	.62	.29	.32	.70	.23	.17	.45	.21	.04	.92
10	70.02	.50	.83	73.69	.68	72;04	.16	.08	.45	.21	.04	.93
11	70.01	70.29	70.87	73.81	73.89	71.92	71.10	71.01	70.43	70.21	70.04	69.92
12	69.97	.16	.78	.28	74.13	72.31	.08	70.94	.42	.20	.04	.91
13	.95	.04	.60	74.71	.62	.29	.05	.89	.41	.22	.03	.90
14	.95	.01	.66	.64	76.33	.44	.01	.86	.40	.21	.03	.90
15	.93	.03	71.23	73.91	.65	.49	70.96	.83	.39	.21	.03	.89
16	69.95	70.04	71.41	73.26	75.84	73.55	70.93	70.80	70.38	70.22	70.04	69.90
17	.92	.05	.33	72.67	.43	.91	.92	.78	.37	.20	.03	.89
18	.90	.11	.15	.28	76.15	.11	.96	.74	.37	.18	.03	.88
19	.88	69.98	72.40	.15	.61	72.50	.90	.73	.36	.17	.02	.88
20	.89	.92	74.94	.45	75.79	.27	.88	.70	.36	.15	.01	.88
21	69.95	70.05	74.48	73.18	74.95	72.34	70.90	70.69	70.36	70.15	70.02	69.86
22	70.00	.01	72.91	72.67	.18	.71	.89	.66	.38	.15	.03	.88
23	69.97	69.98	.10	73.39	73.69	73.14	.88	.65	.36	.13	.01	70.08
24	.90	70.10	71.64	.54	.41	72.90	.83	.63	.34	.13	.01	69.99
25	.87	69.97	.35	.10	.13	.48	.93	.61	.33	.12	69.99	.99
26	69.86	69.93	71.15	72.69	72.79	72.14	71.13	70.60	70.31	70.11	69.97	69.97
27	.90	70.01	.00	.52	.55	71.94	.23	.59	.31	.10	.96	70.12
28	70.04	.13	70.90	.93	73.15	.99	.65	.58	.30	.09	.96	.11
29	69.92	.11	.88	73.32	.12	.83	.58	.56	.29	.08		.07
30	70.04	.63	71.14	.21	72.68	.82	.48	.55	.28	.08		.02
31		.57		72.70	.44		.31		.27			69.97
Mean	69.94	70.10	71.41	72.88	73.73	72.32	71.24	70.99	70.40	70.18	70.03	69.30
Max.	70.04	70.63	74.94	74.71	76.65	73.91	72.00	72.02	70.54	70.26	70.07	70.12
Min.	69.86	69.89	70.52	71.38	72.24	71.64	70.83	70.55	70.27	70.08	69.96	69.86

WATER YEAR 1969 : Max. 76.65 m. Min. 69.86 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	16	22	54	147	287	269	199	155	56	33	21	15
2	14	18	90	157	266	248	226	155	55	33	21	15
3	14	14	121	204	324	239	219	189	53	32	21	15
4	13	14	200	319	320	242	207	202	53	32	20	15
5	13	19	63	300	301	212	178	229	50	32	20	14
6	16	13	109	338	296	207	161	193	49	30	20	14
7	13	46	117	287	266	185	148	160	48	28	20	14
8	14	19	62	237	264	174	137	137	47	30	20	14
9	16	30	63	272	277	182	129	121	46	30	20	14
10	19	52	83	512	335	232	120	111	46	30	20	14
11	18	35	88	536	555	213	113	103	46	30	20	14
12	16	27	78	431	611	276	111	95	45	29	20	13
13	15	20	61	762	737	272	107	90	44	30	19	13
14	15	18	66	742	1,297	296	103	87	43	30	19	13
15	14	19	129	559	1,413	304	98	83	42	30	19	13
16	15	20	150	428	1,122	484	94	80	42	30	20	13
17	14	20	141	333	986	559	93	78	41	29	19	13
18	13	24	119	271	1,232	404	98	74	41	28	19	12
19	12	17	290	250	1,399	306	91	73	40	27	19	12
20	13	14	827	298	1,105	269	89	70	40	26	13	12
21	15	20	701	415	829	280	91	69	40	26	19	12
22	17	18	372	333	623	340	90	66	42	26	19	12
23	16	17	242	452	512	408	89	65	40	25	18	22
24	13	23	174	482	456	370	83	64	39	25	18	17
25	12	16	135	402	407	303	84	62	38	24	17	17
26	12	14	121	336	352	248	117	61	37	24	16	16
27	13	18	103	309	314	216	129	60	37	23	16	24
28	20	25	91	375	410	223	175	59	36	22	16	24
29	14	24	89	438	405	200	165	57	35	22		21
30	20	64	120	420	334	199	159	56	35	22		19
31		58		338	296		138		34			16
Total	445	758	5,059	11,683	18,331	8,360	4,051	3,104	1,340	838	534	472
Mean	14.8	24.4	169	377	591	279	131	103	43.2	27.9	19.1	15.2
Max.	20	64	827	762	1,413	559	226	229	56	33	21	24
Min.	12	13	54	147	264	174	83	56	34	22	16	12
Runoff - mcm.	38.448	65.491	437.098	1,009.411	1,583.798	722.304	350.006	268.186	115.776	72.403	46.137	40.781

WATER YEAR 1969 : Max. 1,413 Min. 12 Mean 151 Annual Runoff 4,749.840 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 15	03.00	76.76	1,454				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Nan River at Ban San, Nan (N_{13})

Location: Lat. 18°-32'-06" N., Long. 100°-46'-06" E., on right bank infront of Wat Phranet, BanSan, Amphoe Sa, Nan.

Drainage Area: 8,993 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 176.65 m. (M.S.L.)

Bench Mark: B.M. - H.S./R.I.D.

- Location: At the foot of the big tree near gage site
- Elevation: + 186.634 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1959 to date

Rating Operation:

- Period of Rating: 1959-1966
- Rated by Float: -
- Rated by Current Meter: 1959-1966

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

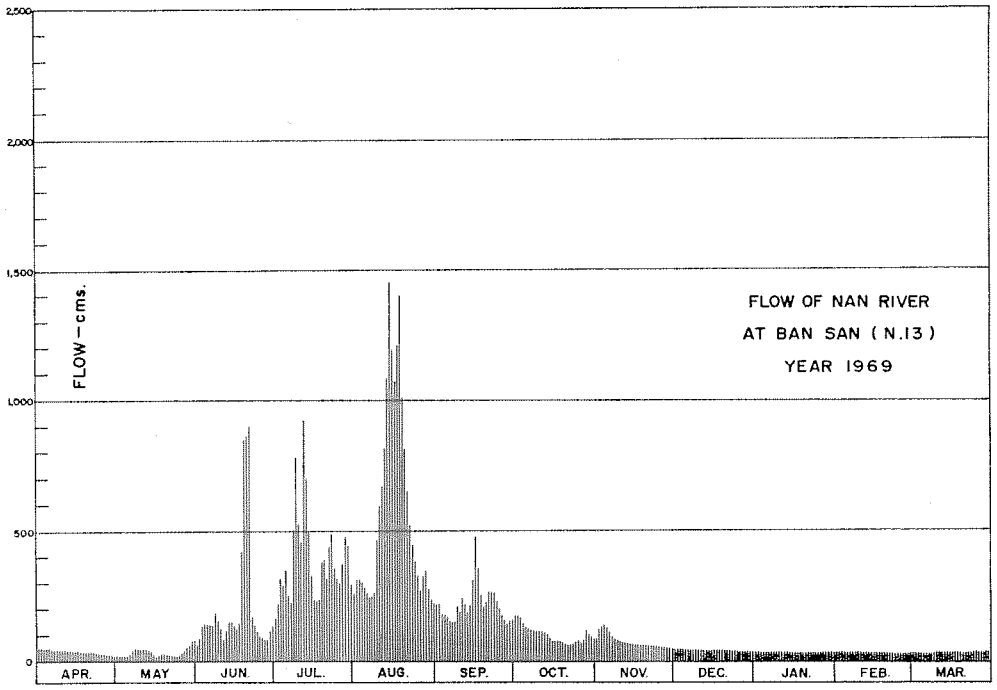
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1959-66. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	177.21	176.95	177.35	178.08	178.62	178.42	178.17	177.56	177.17	177.05	177.06	177.02
2	.21	.95	.82	.21	.93	.37	.16	.80	.16	.05	.06	.02
3	.21	.93	.95	.98	.93	.19	.12	.88	.15	.05	.06	.01
4	.19	.93	.95	.83	.88	.17	177.97	.92	.13	.05	.06	.01
5	.19	.93	.94	179.09	.78	.15	.87	.92	.13	.05	.06	.01
6	177.17	176.96	177.93	178.73	178.60	178.05	177.80	177.77	177.13	177.05	177.06	177.01
7	.17	177.19	.93	.44	.60	177.99	.78	.65	.13	.05	.06	.00
8	.13	.22	178.23	.65	.65	178.00	.77	.56	.13	.05	.06	.00
9	.13	.21	.04	180.92	179.03	.40	.77	.53	.13	.05	.05	176.99
10	.13	.19	177.88	.19	180.07	.27	.77	.48	.13	.05	.04	177.04
11	177.12	177.19	177.45	179.58	180.40	178.60	177.76	177.43	177.13	177.05	177.04	177.07
12	.11	.18	.83	181.43	.60	.43	.74	.40	.13	.05	.03	.07
13	.11	.16	178.01	180.89	181.93	.24	.71	.38	.13	.08	.04	.07
14	.09	.05	.03	.00	183.12	.51	.51	.37	.12	.07	.03	.08
15	.09	176.94	177.96	179.32	182.58	179.17	.45	.36	.12	.08	.03	.08
16	177.09	176.89	177.85	178.72	181.97	179.67	177.45	177.35	177.12	177.09	177.03	177.08
17	.09	.91	178.04	.52	182.40	.09	.44	.34	.12	.09	.03	.08
18	.07	177.00	179.07	.54	.96	178.61	.42	.34	.11	.09	.00	.07
19	.05	.01	181.17	179.21	.05	.39	.41	.33	.11	.09	.00	.07
20	.05	176.97	.26	.31	181.23	.49	.34	.32	.10	.08	.01	.06
21	177.03	176.94	179.33	178.95	180.46	178.70	177.32	177.30	177.10	177.05	177.02	177.05
22	.01	.96	178.43	179.48	179.87	.69	.32	.29	.09	.05	.01	.04
23	.01	.93	.04	.71	.52	.75	.32	.27	.09	.05	.01	.03
24	.00	.93	177.80	.26	.27	.51	.40	.27	.08	.05	176.99	.04
25	176.99	.99	.69	178.98	178.99	.36	.50	.24	.07	.05	177.00	.07
26	176.99	177.07	177.59	178.87	178.75	178.15	177.41	177.22	177.06	177.05	177.01	177.08
27	.97	.17	.54	179.25	.98	.04	.53	.22	.05	.05	.01	.06
28	.97	.23	.52	.69	179.10	177.98	.80	.21	.05	.06	.02	.01
29	176.93	.41	.81	.55	178.77	178.04	.68	.20	.05	.06		.00
30	.94	.54	.90	.03	.57	.05	.61	.18	.05	.06		176.99
31		.56		178.72	.48		.56		.05	.06		.99
Mean	177.08	177.08	178.18	179.26	179.97	178.42	177.64	177.44	177.11	177.06	177.03	177.04
Max.	177.21	177.56	181.26	181.43	183.12	179.67	178.17	177.92	177.17	177.09	177.06	177.08
Min.	176.93	176.89	177.35	178.08	178.48	177.99	177.32	177.18	177.05	177.05	176.99	176.99

WATER YEAR 1969 : Max. 183.12 m. Min. 176.89 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	51	25	65	165	254	219	179	86	47	35	36	32
2	51	25	123	186	317	211	178	120	46	35	36	32
3	51	23	144	328	317	182	171	133	45	35	36	31
4	49	23	144	296	306	179	147	139	43	35	36	31
5	49	23	142	352	286	176	131	139	43	35	36	31
6	47	26	141	276	250	160	120	115	43	35	36	31
7	47	49	141	222	250	150	117	97	43	35	36	30
8	43	52	189	260	260	152	115	86	43	35	36	30
9	43	51	158	789	339	216	115	83	43	35	35	29
10	43	49	133	604	575	195	115	78	43	35	34	34
11	42	49	75	460	654	250	114	73	43	35	34	37
12	41	48	125	926	706	221	110	70	43	35	33	37
13	41	46	154	781	1,066	190	106	68	43	38	34	37
14	39	35	157	558	1,451	239	81	67	42	37	33	38
15	39	24	146	402	1,267	369	75	66	42	38	33	38
16	39	19	128	274	1,078	479	75	65	42	39	33	38
17	39	21	158	236	1,206	352	74	64	42	39	33	38
18	37	30	347	239	1,396	252	72	64	41	39	30	37
19	35	31	854	378	1,101	214	71	63	41	39	30	37
20	35	27	879	400	870	230	64	62	40	38	31	36
21	33	24	405	321	670	270	62	60	40	35	32	35
22	31	26	221	438	527	268	62	59	39	35	31	34
23	31	23	158	488	446	280	62	57	39	35	31	33
24	30	23	120	389	391	239	70	57	38	35	29	34
25	29	29	103	328	330	210	80	54	37	35	30	37
26	29	37	89	304	280	176	71	52	36	35	31	38
27	27	47	84	387	328	158	83	52	35	35	31	36
28	27	53	82	484	354	149	120	51	35	36	32	31
29	23	71	122	453	284	158	101	50	35	36		30
30	24	84	136	339	245	160	91	48	35	36		29
31		86		274	229		86		35	36		29
Total	1,145	1,179	5,923	12,337	18,033	6,704	3,118	2,278	1,262	1,116	928	1,050
Mean	38.2	38.0	197	398	582	223	100	75.9	40.7	36.0	33.1	33.9
Max.	51	86	879	926	1,451	479	179	139	47	39	36	38
Min.	23	19	65	165	229	149	62	48	35	35	29	29
Runoff - mcm.	98.928	101.866	511.747	1,065.917	1,558.051	579.226	269.395	196.819	109.037	96.422	80.179	90.730

WATER YEAR 1969 : Max. 1,451 Min. 19 Mean 151 Annual Runoff 4,758.307 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 14	12.00	183.33	1,527				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Nan River at Amphoe Chum Saeng, Nakohn Sawan (N_{14})

Location: Lat. 15°-53'-41" N., Long. 100°-18'-44" E., on right bank infront of the previous office of Amphoe Chumsaeng, Tambon Phikul, Nakhon Sawan.

Drainage Area: 33,197 sq.km.

Type of Gage: Staff-gage

Zero Gage at Bottom at: + 18.00 m. (M.S.L.)

Bench Mark: B.M. - R.I.D. No. 2

Location: About 45 meters from the fence of Amphoe Chumsaeng

Elevation: + 27.589 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1954-1970

Rating Operation:

Period of Rating: 1965-1967

Rated by Float: -

Rated by Current Meter: 1965-1967

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: Overbank flow exists almost every year but hardly to be determined. Records are channel flow only.

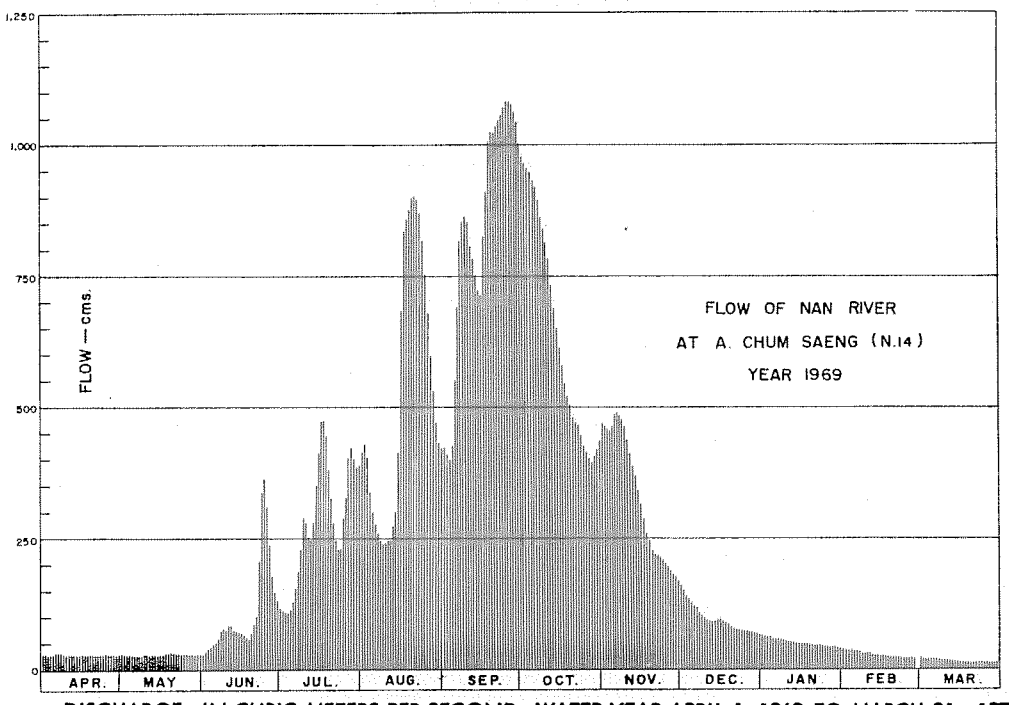
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1965. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	18.95	18.91	18.94	20.65	23.42	23.49	26.46	23.80	21.22	19.81	19.20	18.66
2	.93	.89	19.00	.58	.56	.51	.36	.77	.07	.79	.17	.65
3	.90	.87	.15	.54	.40	.37	.32	.74	20.99	.75	.15	.64
4	.87	.86	.27	.56	22.91	.32	.29	.70	.89	.72	.14	.64
5	.89	.83	.39	.67	.62	.54	.26	.78	.81	.69	.12	.63
6	19.00	18.82	19.47	20.95	22.41	24.36	26.20	23.90	20.75	19.67	19.09	18.61
7	.01	.80	.69	21.40	.31	25.17	.14	.93	.64	.63	.07	.59
8	18.99	.81	.97	.68	.15	.70	.04	.90	.56	.60	.03	.58
9	.94	.82	20.08	22.15	.06	.85	25.88	.84	.47	.57	.01	.56
10	.89	.83	19.96	.52	.12	.89	.74	.75	.39	.54	18.99	.55
11	18.88	18.84	20.16	22.35	22.15	25.83	25.63	23.57	20.33	19.51	18.95	18.53
12	.88	.85	.14	.09	.15	.62	.47	.35	.31	.49	.92	.50
13	.88	.85	19.99	.19	.40	.50	.23	.19	.30	.47	.89	.49
14	.87	.86	.94	.77	.67	.34	24.96	.03	.32	.45	.86	.47
15	.87	.89	.91	23.08	23.40	.20	.84	22.86	.35	.44	.83	.45
16	18.87	18.91	19.88	23.52	24.68	25.19	24.62	22.64	20.35	19.44	18.80	18.43
17	.88	.94	.79	.84	25.51	.64	.43	.44	.28	.43	.78	.40
18	.88	.98	.68	.83	.80	26.12	.24	.24	.22	.42	.76	.39
19	.89	19.03	.68	.44	.90	.49	.12	.12	.19	.41	.73	.37
20	.89	.03	20.00	22.96	.98	.58	.03	.01	.13	.40	.72	.35
21	18.89	18.98	20.28	22.50	26.07	26.58	23.87	21.89	20.09	19.39	18.70	18.34
22	.90	.94	.53	.20	.06	.62	.80	.85	.05	.38	.70	.33
23	.90	.93	21.75	21.97	.02	.67	.78	.81	.02	.37	.69	.32
24	.92	.94	22.90	22.01	25.90	.72	.68	.77	.01	.35	.68	.31
25	.93	.96	23.08	.43	.63	.77	.54	.72	19.99	.34	.68	.30
26	18.93	18.96	22.42	22.87	25.27	26.80	23.43	21.64	19.97	19.32	18.68	18.29
27	.93	.93	21.90	23.35	24.85	.80	.36	.58	.96	.30	.67	.28
28	.92	.92	.36	.49	.43	.77	.30	.50	.93	.28	.67	.28
29	.93	.91	.05	.39	.01	.72	.39	.42	.91	.27		.27
30	.92	.91	20.81	.23	23.65	.62	.49	.34	.88	.24		.26
31		.92		.23	.50		.62		.84	.22		.26
Mean	18.91	18.90	20.34	22.34	23.97	25.63	24.79	22.74	20.34	19.47	18.88	18.44
Max.	19.01	19.03	23.08	23.84	26.07	26.80	26.46	23.93	21.22	19.81	19.20	18.66
Min.	18.87	18.80	18.94	20.54	22.06	23.32	23.30	21.34	19.84	19.22	18.67	18.26

WATER YEAR 1969 : Max. 26.80 m. Min. 18.26 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	29	28	29	114	411	421	994	468	158	65	39	21
2	29	28	31	110	430	423	970	463	146	64	38	20
3	28	27	37	107	408	404	961	458	139	62	37	20
4	27	27	42	108	339	397	954	452	131	61	37	20
5	28	26	47	116	302	428	946	465	126	59	36	20
6	31	26	50	136	277	559	932	484	121	58	35	19
7	31	25	59	173	265	710	918	489	114	56	34	19
8	31	25	73	199	247	820	895	484	108	55	32	18
9	29	26	79	247	238	853	860	474	102	54	31	18
10	28	26	73	290	244	862	829	460	97	53	31	17
11	27	26	84	270	247	849	805	432	94	51	29	17
12	27	26	82	241	247	802	770	401	93	51	29	16
13	27	26	74	252	276	776	722	379	92	50	28	16
14	27	27	72	320	308	744	668	356	93	49	27	15
15	27	28	70	363	408	716	645	332	95	49	26	15
16	27	28	69	425	616	714	606	305	95	49	25	15
17	27	29	64	474	778	807	571	281	91	48	24	14
18	27	30	59	473	842	914	538	257	87	48	24	14
19	28	32	59	414	864	1,002	519	244	85	47	23	13
20	28	32	75	346	882	1,023	505	232	82	47	23	13
21	28	30	91	288	902	1,023	479	220	79	47	22	13
22	28	29	105	253	900	1,033	468	216	77	46	22	13
23	28	29	206	228	891	1,046	465	212	76	46	22	12
24	29	29	338	232	864	1,059	449	208	75	45	21	12
25	29	30	363	280	805	1,072	428	203	74	45	21	12
26	29	30	278	334	730	1,080	412	195	73	44	21	12
27	29	29	221	401	647	1,080	402	189	73	43	21	12
28	29	29	169	421	571	1,072	394	182	71	42	21	12
29	29	28	144	407	502	1,059	407	175	70	42		11
30	29	28	126	384	444	1,033	421	168	69	41		11
31		29		384	422		439		67	40		11
Total	850	868	3,269	8,790	16,307	24,781	20,372	9,884	2,953	1,557	779	471
Mean	28.3	28.0	109	283	526	826	657	329	95.2	50.2	27.8	15.1
Max.	31	32	363	474	902	1,080	994	489	158	65	39	21
Min.	27	25	29	107	238	397	394	168	67	40	21	11
Runoff – MCM.	73.440	74.995	282.442	759.456	1,408.925	2,141.078	1,760.141	853.978	255.139	134.525	67.306	40.694

WATER YEAR 1969 : Max. 1,080 Min. 11 Mean 249 Annual Runoff 7,852.118 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept.26	15.00	26.81	1,083				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Nam Pat at Ban Fai, Uttaradit (N_{16})

Location: Lat. 17°-44'-24" N., Long. 100°-42'-00" E., on left bank about 3 kilometers upstream from Amphoe Nam Pat, Tambon Ban Fai, Uttaradit.

Drainage Area: 2,088 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: About 20 meters from the top gage

Elevation: + 6.310 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1957-58, 1962 to date

Rating Operation:

Period of Rating: 1963-65

Rated by Float: -

Rated by Current Meter: 1963-65

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

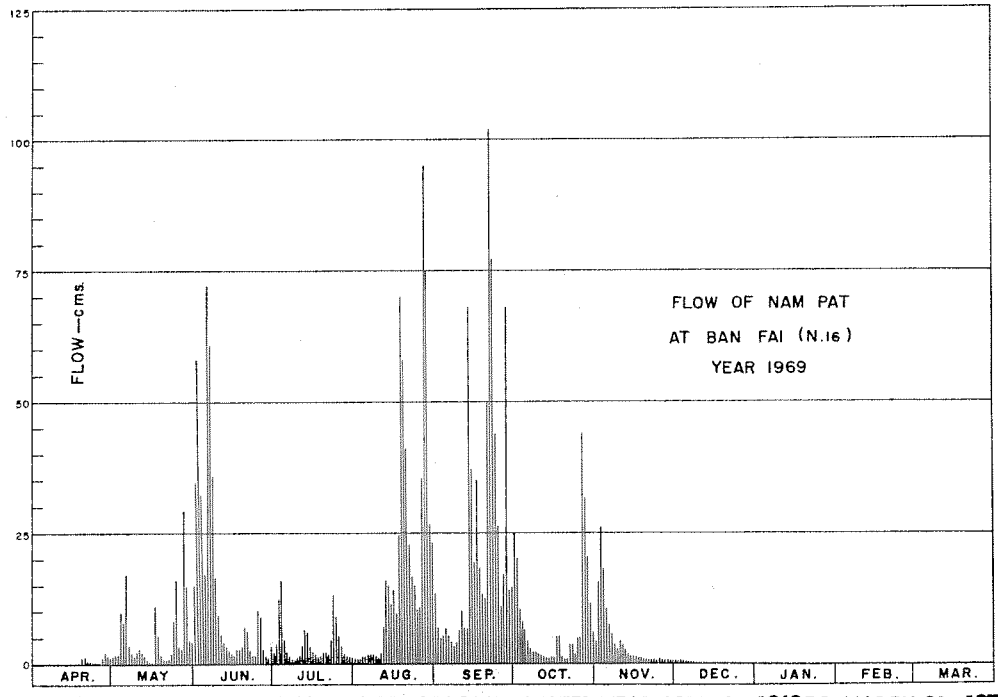
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1963-65. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Record for periods of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.21	0.50	1.12	0.55	0.44	0.93	1.30	0.65	0.39	0.26	0.20	0.20
2	.21	.52	.83	.48	.42	.78	.22	1.04	.39	.26	.20	.20
3	.21	.54	.65	1.00	.41	.72	0.97	.32	.38	.26	.20	.19
4	.23	.93	.24	.10	.49	.75	.89	.11	.38	.25	.20	.19
5	.24	.83	0.99	0.71	.50	.81	.81	0.90	.38	.25	.20	.18
6	0.25	1.12	2.00	0.55	0.54	0.74	0.70	0.84	0.37	0.25	0.21	0.18
7	.25	0.64	1.81	.47	.54	.68	.61	.77	.36	.25	.20	.17
8	.24	.53	.26	.42	.52	.63	.57	.66	.35	.24	.20	.16
9	.23	.48	.06	.39	.48	.68	.55	.60	.35	.24	.20	.16
10	.23	.59	0.84	.45	.45	.80	.53	.70	.34	.24	.19	.15
11	0.22	0.62	0.73	0.50	0.57	0.94	0.50	0.65	0.33	0.24	0.19	0.15
12	.22	.52	.67	.64	.85	.82	.48	.60	.33	.25	.20	.15
13	.21	.44	.62	.80	1.09	.68	.45	.54	.32	.26	.20	.15
14	.21	.39	.59	.78	.07	1.95	.45	.50	.32	.26	.21	.16
15	.20	.34	.53	.62	0.95	.24	.47	.49	.31	.25	.20	.17
16	0.20	0.35	0.50	0.56	1.05	1.14	0.47	0.47	0.30	0.25	0.20	0.17
17	.30	.95	.61	.51	0.88	.50	.73	.46	.30	.25	.20	.18
18	.29	.73	.60	.47	1.03	.15	.74	.45	.30	.24	.21	.18
19	.46	.50	.63	.50	.98	.02	.46	.44	.29	.24	.20	.19
20	.50	.42	.82	.56	.78	.01	.42	.43	.29	.24	.20	.19
21	0.42	0.38	0.78	0.56	1.40	1.75	0.45	0.43	0.29	0.24	0.20	0.20
22	.37	.43	.58	.50	.24	2.32	.66	.42	.28	.23	.20	.20
23	.33	.45	.50	.73	.09	1.90	.66	.42	.28	.23	.19	.20
24	.31	.84	.47	1.03	.07	.54	.55	.43	.28	.23	.19	.21
25	.30	1.10	.94	0.84	0.93	.25	.74	.45	.28	.22	.20	.21
26	0.34	0.63	0.89	0.71	0.97	0.98	0.72	0.43	0.28	0.22	0.20	0.20
27	.44	.57	.58	.60	1.34	.98	1.64	.42	.27	.22	.20	.20
28	.55	1.39	.49	.54	2.25	1.95	.38	.42	.27	.22	.20	.24
29	.50	.04	.42	.49	1.50	.05	.18	.41	.27	.22		.24
30	.45	0.72	.64	.48	.29	.04	0.97	.40	.26	.21		.22
31		.56		.46	.25		.73		.26	.21		.20
Mean	0.30	0.65	0.88	0.61	1.09	1.12	0.74	0.53	0.32	0.24	0.20	0.18
Max.	0.55	1.39	2.00	1.10	2.25	2.32	1.64	1.32	0.39	0.26	0.21	0.24
Min.	0.20	0.34	0.42	0.39	0.41	0.63	0.42	0.40	0.26	0.21	0.19	0.15

WATER YEAR 1969 : Max. 2.32 m. Min. 0.15 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.02	1.50	17	2.05	1.02	9.96	25	3.50	0.65	0.12	0.00	0.00
2	0.02	1.72	58	1.34	0.86	6.08	21	14	0.65	0.12		
3	0.02	1.94	45	12	0.78	4.82	11	26	0.60	0.12		
4	0.06	9.96	22	16	1.42	5.45	8.75	16	0.60	0.10		
5	0.08	7.25	12	4.61	1.50	6.75	6.75	9.00	0.60	0.10	0.00	
6	0.10	17	72	2.05	1.94	5.24	4.40	7.50	0.55	0.10	0.02	
7	0.10	3.32	56	1.26	1.94	4.04	2.78	5.87	0.50	0.10	0.00	
8	0.08	1.83	23	0.86	1.72	3.14	2.27	3.68	0.45	0.08		
9	0.06	1.34	14	0.65	1.34	4.04	2.05	2.60	0.45	0.08		
10	0.06	2.49	7.50	1.10	1.10	6.50	1.83	4.40	0.40	0.08		
11	0.04	2.96	5.03	1.50	2.27	10	1.50	3.50	0.35	0.08		
12	0.04	1.72	3.86	3.32	7.75	7.00	1.34	2.60	0.35	0.10		
13	0.02	1.02	2.96	6.50	16	4.04	1.10	1.94	0.30	0.12	0.00	
14	0.02	0.65	2.49	6.08	15	68	1.10	1.50	0.30	0.12	0.02	
15	0.00	0.40	1.83	2.96	11	22	1.26	1.42	0.25	0.10	0.00	
16	0.00	0.45	1.50	2.16	14	18	1.26	1.26	0.20	0.10		
17	0.20	11	2.78	1.61	8.50	35	5.03	1.18	0.20	0.10	0.00	
18	0.18	5.03	2.60	1.26	13	18	5.24	1.10	0.20	0.08	0.02	
19	1.18	1.50	3.14	1.50	70	13	1.18	1.02	0.18	0.08	0.00	
20	1.50	0.86	7.00	2.16	54	12	0.86	0.94	0.18	0.08		
21	0.86	0.60	6.08	2.16	30	52	1.10	0.94	0.18	0.08		
22	0.55	0.94	2.38	1.50	22	102	3.68	0.86	0.16	0.06		
23	0.35	1.10	1.50	5.03	16	63	3.68	0.86	0.16	0.06		0.00
24	0.25	7.50	1.26	13	15	38	1.61	0.94	0.16	0.06		0.02
25	0.20	16	10	7.50	9.96	23	5.24	1.10	0.16	0.04		0.02
26	0.40	3.14	8.75	4.61	11	11	4.82	0.94	0.16	0.04		0.00
27	1.02	2.27	2.35	2.60	27	11	44	0.86	0.14	0.04		0.00
28	2.05	29	1.42	1.94	95	68	29	0.86	0.14	0.04	0.00	0.08
29	1.50	14	0.86	1.42	35	14	20	0.78	0.14	0.04		0.08
30	1.10	4.82	3.32	1.34	24	14	11	0.70	0.12	0.02		0.04
31		2.16		1.18	23		5.03		0.12	0.02		0.00
Total	12.06	155.47	397.64	113.86	533.10	659.06	234.86	117.85	9.60	2.46	0.06	0.24
Mean	0.40	5.01	13.2	3.67	17.2	22.0	7.58	3.93	0.31	0.08	0.002	0.00
Max.	2.05	29	72	16	95	102	44	26	0.65	0.12	0.02	0.08
Min.	0.00	0.40	0.86	0.65	0.78	3.14	0.86	0.70	0.12	0.02	0.00	0.00
Runoff – mcm.	1.042	13.433	34.356	9.837	46.060	56.943	20.292	10.182	0.829	0.212	0.005	0.020

WATER YEAR 1969 : Max. 102 Min. 0.00 Mean 6.13 Annual Runoff 193.211 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 22	01.00	2.58	130				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

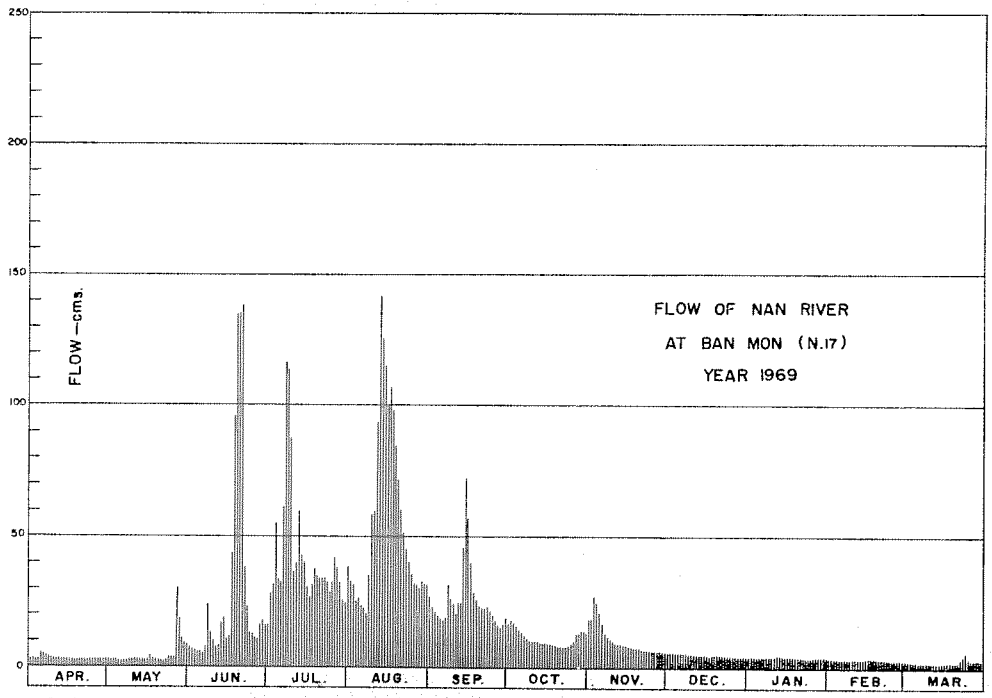
Nan River at Ban Mon, Nan (N_{17})

Location:	Lat. 19°-24'-34" N., Long. 100°-52'-05" E., on left bank at Ban Mon, Amphoe Thung Chang, Nan.
Drainage Area:	1,156 Sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	B.M. - H.S.
Location:	Near the gage site
Elevation:	+ 13.390 m. (A.D.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of MeanDaily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1963 to date
Rating Operation:	
Period of Rating:	1969-1973
Rated by Float:	-
Rated by Current Meter:	1967-1973
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation
Overbank Flow Conditions:	No overbank flow
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.26	0.19	0.51	0.78	1.28	1.03	0.80	0.86	0.47	0.36	0.29	0.23
2	.26	.19	.50	1.09	.17	0.97	.85	.85	.46	.36	.29	.23
3	.26	.18	.47	.13	.15	.92	.81	1.05	.46	.36	.29	.23
4	.26	.18	.45	.54	.00	.89	.77	0.99	.46	.36	.29	.22
5	.43	.18	.48	.19	.04	.87	.73	.88	.45	.35	.29	.22
6	0.42	0.18	0.43	1.08	0.96	0.84	0.70	0.78	0.45	0.35	0.28	0.22
7	.35	.18	.49	.71	.96	.85	.68	.72	.45	.36	.28	.22
8	.31	.18	.99	2.36	.90	1.15	.66	.68	.44	.36	.28	.21
9	.26	.24	.71	.32	1.24	.03	.64	.64	.44	.38	.28	.21
10	.24	.24	.62	1.75	.60	0.98	.64	.62	.43	.36	.27	.21
11	0.24	0.26	0.53	1.20	1.60	0.90	0.63	0.60	0.43	0.36	0.27	0.20
12	.23	.25	.55	.32	2.15	1.00	.62	.59	.42	.29	.27	.20
13	.23	.23	.82	.62	.64	.00	.61	.58	.42	.39	.27	.20
14	.23	.24	.87	.33	.43	.50	.60	.57	.41	.38	.26	.20
15	.23	.23	.66	.30	.36	.80	.60	.56	.41	.36	.26	.20
16	0.22	0.23	0.58	1.13	2.15	1.40	0.60	0.55	0.40	0.35	0.26	0.20
17	.22	.36	1.23	.03	.25	.20	.59	.54	.40	.35	.26	.20
18	.22	.21	2.08	.16	.11	.07	.58	.54	.40	.34	.26	.19
19	.22	.20	.57	.27	1.90	.00	.57	.53	.42	.34	.26	.19
20	.22	.19	.57	.18	.74	0.95	.56	.53	.44	.34	.26	.19
21	0.21	0.18	2.60	1.20	1.58	0.94	0.55	0.52	0.42	0.33	0.26	0.19
22	.21	.18	1.33	.19	.45	.93	.55	.51	.40	.33	.25	.24
23	.21	.26	0.90	.19	.36	.95	.56	.50	.39	.33	.25	.35
24	.21	.34	.71	.14	.30	.92	.58	.50	.39	.32	.24	.43
25	.20	.30	.71	.06	.20	.88	.60	.49	.39	.32	.24	.40
26	0.20	0.32	0.67	1.18	1.14	0.83	0.63	0.48	0.38	0.32	0.23	0.33
27	.20	1.10	.67	.33	.14	.80	.72	.48	.38	.31	.23	.30
28	.20	0.80	.82	.23	.10	.77	.72	.47	.37	.30	.23	.28
29	.19	.61	.83	.10	.17	.79	.73	.47	.37	.29		.26
30	.19	.61	.80	.00	.14	.86	.74	.47	.37	.29		.24
31		.59		0.98	.14		.70		.37	.29		.22
Mean	0.24	0.31	0.94	1.29	1.49	1.00	0.65	0.62	0.41	0.34	0.26	0.24
Max.	0.43	1.10	2.60	2.36	2.64	1.80	0.85	1.05	0.47	0.39	0.29	0.43
Min.	0.19	0.18	0.43	0.78	0.90	0.77	0.55	0.47	0.37	0.29	0.23	0.19

WATER YEAR 1969 : Max. 2.64 m. Min. 0.19 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	3.22	2.65	6.77	16	39	26	16	19	5.97	4.27	3.71*	2.20*
2	3.22	2.65	6.50	29	33	23	18	18	5.80	4.27	3.73*	2.20*
3	3.22	2.58	5.97	31	32	21	17	27	5.80	4.27	3.82*	2.20*
4	3.22	2.58	5.62	55	25	20	15	24	5.80	4.27	3.24*	2.10*
5	5.27	2.58	6.15	34	27	19	14	20	5.62	4.15	3.24*	2.10*
6	5.09	2.58	5.27	29	23	18	13	16	5.62	4.15	3.34*	2.10*
7	4.15	2.58	6.32	66	23	18	12	13	5.62	4.27	3.35*	2.10*
8	3.68	2.58	24	116	20	32	11	12	5.44	4.27	3.45*	1.95*
9	3.22	3.06	13	113	37	26	10	10	5.44	4.50	3.45*	1.95*
10	3.06	3.06	9.86	69	59	24	10	9.86	5.27	4.27	3.23*	1.95*
11	3.06	3.22	7.30	35	59	20	10	9.18	5.27	4.27	3.23*	1.98*
12	2.97	3.14	7.84	41	99	25	9.86	8.91	5.09	4.62	3.17*	1.98*
13	2.97	2.97	17	60	142	25	9.52	8.64	5.09	4.62	3.17*	1.98*
14	2.97	3.06	19	42	123	52	9.18	8.38	4.92	4.50	3.54*	1.98*
15	2.97	2.97	11	40	116	72	9.18	8.11	4.92	4.27	3.54*	1.98*
16	2.89	2.97	8.64	31	99	46	9.18	7.84	4.74	4.15	3.47*	1.98*
17	2.89	2.97	36	26	107	35	8.91	7.57	4.74	4.15	3.30*	1.98*
18	2.89	2.80	93	33	96	28	8.64	7.57	4.74	4.12*	3.35*	1.93*
19	2.89	2.72	135	38	80	25	8.38	7.30	5.09	4.12*	3.35*	1.93*
20	2.89	2.65	135	34	68	23	8.11	7.30	5.44	4.07*	3.35*	1.93*
21	2.80	2.58	138	35	57	22	7.84	7.04	5.09	3.93*	3.35*	1.93*
22	2.80	2.58	42	34	47	22	7.84	6.77	4.74	3.88*	3.14*	2.42*
23	2.80	3.22	20	34	44	23	8.11	6.50	4.62	3.88*	3.14*	4.04*
24	2.80	4.03	13	32	40	21	8.64	6.50	4.62	3.81*	2.42*	5.48*
25	2.72	3.56	13	28	35	20	9.18	6.32	4.62	3.97*	2.48*	3.17*
26	2.72	3.80	11	34	32	18	10	6.15	4.50	3.98*	2.41*	2.49*
27	2.72	30	11	42	32	16	13	6.15	4.50	4.17*	2.36*	2.36*
28	2.72	17	17	36	30	15	13	5.97	4.39	4.02*	2.36*	2.86*
29	2.65	9.52	18	30	33	16	14	5.97	4.39	3.89*		2.52*
30	2.65	9.52	16	25	32	19	14	5.97	4.39	3.82*		2.18*
31		8.91		24	32		13		4.39	3.71*		2.30*
Total	94.12	152.39	858.24	1,292	1,723	770	345.57	313.00	156.67	128.64	89.75	72.25
Mean	3.14	4.91	28.6	41.7	55.6	25.7	11.1	10.4	5.05	4.15	3.20	2.33
Max.	5.27	30	138	116	142	72	18	27	5.97	4.62	3.82	5.48
Min.	2.65	2.58	5.27	16	20	15	7.84	5.97	4.39	3.71	2.36	1.93
Runoff – mcm.	8.132	13.166	74.152	111.629	148.867	66.528	29.857	27.043	13.536	11.114	7.754	6.242

WATER YEAR 1969 : Max. 142 Min. 1.93 Mean 16.4 Annual Runoff 518.022 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 13	06.00	2.73	150				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Khwae Noi at Ban Yang, Phitsanulok (N_{22})

Location: Lat. 17°-01'-57" N., Long. 100°-22'-23" E., on left bank about 1 kilometer downstream from District Forestry Office, Phitsanulok.

Drainage Area: 4,761 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 43.037 m. (M.S.L.)

Bench Mark: B.M. N. 22

- Location: Near the gage site
- Elevation: + 51.143 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1963 to date

Rating Operation:

- Period of Rating: 1963 to date
- Rated by Float: -
- Rated by Current Meter: 1963 to date

Stability of Channel Regimes: Unstable, shifting adjustment is included for flow, computation.

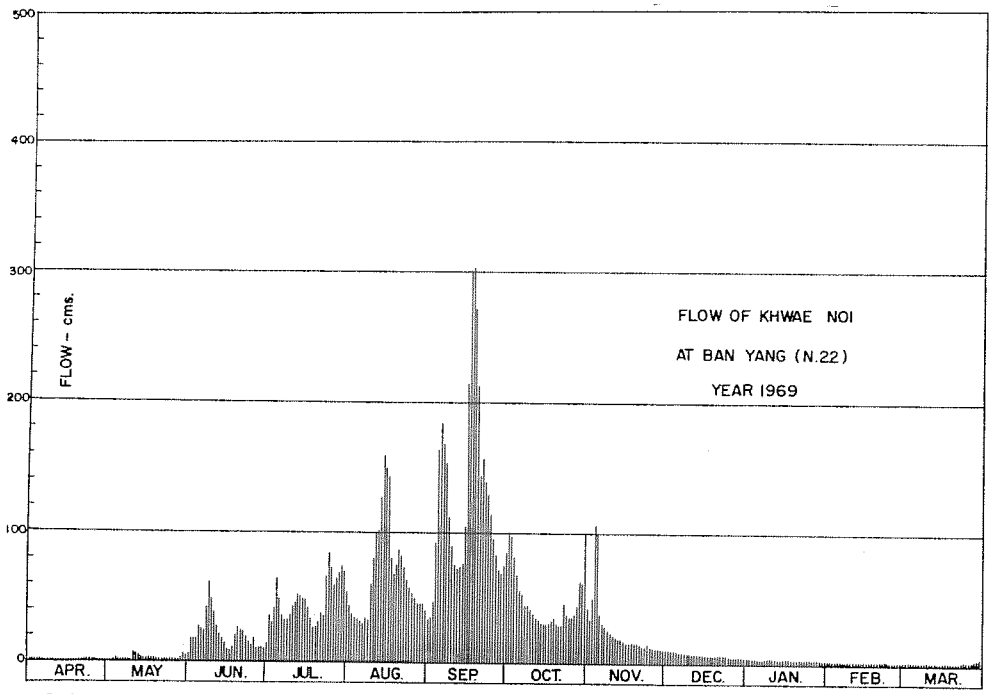
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	43.36	43.33	43.75	43.95	44.87	44.54	45.62	44.70	43.94	43.73	43.60	43.51
2	.38	.31	44.09	44.61	.69	.58	.89	.55	.93	.72	.60	.51
3	.37	.32	.10	.46	.57	.82	.81	.99	.93	.72	.59	.51
4	.36	.32	.22	.76	.58	46.02	.50	.93	.92	.72	.58	.50
5	.34	.50	.52	45.20	.56	47.46	.26	.77	.91	.71	.58	.50
6	43.36	43.53	44.43	44.81	44.49	47.56	45.10	44.62	43.90	43.71	43.57	43.49
7	.37	.47	.37	.57	.42	.19	44.99	.51	.90	.71	.57	.48
8	.37	.44	.93	.56	.57	46.86	.78	.46	.89	.70	.57	.48
9	.37	.42	45.21	.52	.52	.20	.81	.38	.88	.70	.56	.48
10	.35	.41	44.89	.62	45.06	45.72	.73	.35	.87	.69	.56	.47
11	43.36	43.79	44.65	44.74	45.55	45.40	44.67	44.29	43.87	43.69	43.56	43.47
12	.35	.71	.41	.72	.89	.24	.61	.27	.86	.69	.56	.47
13	.34	.65	.24	.84	.97	.37	.56	.25	.85	.68	.56	.46
14	.32	.61	.09	.77	46.45	.38	.52	.23	.84	.68	.56	.46
15	.32	.56	43.95	.68	.83	.86	.51	.21	.84	.68	.57	.46
16	43.41	43.50	43.88	44.65	46.76	47.66	44.50	44.19	43.83	43.69	43.57	43.45
17	.41	.57	.83	.47	.72	48.12	.47	.18	.82	.69	.57	.45
18	.41	.57	.96	.32	45.96	.15	.48	.16	.82	.68	.58	.45
19	.40	.53	44.35	.27	.88	47.67	.55	.13	.81	.68	.57	.44
20	.43	.51	.49	.25	46.11	.19	.47	.12	.80	.67	.56	.44
21	43.48	43.44	44.40	44.39	46.25	46.48	44.41	44.11	43.80	43.67	43.55	43.44
22	.46	.40	.39	.54	45.86	.79	.42	.08	.79	.67	.55	.45
23	.45	.39	.25	.55	.45	.48	.80	.07	.78	.66	.54	.48
24	.44	.38	.08	45.20	.21	.41	.61	.04	.78	.66	.54	.60
25	.43	.36	43.99	.46	.03	.05	.56	.02	.77	.66	.54	.55
26	43.42	43.35	44.13	45.30	44.98	45.75	44.55	43.90	43.77	43.65	43.53	43.52
27	.40	.35	43.98	44.98	.85	.55	.63	.98	.76	.64	.53	.54
28	.41	.40	.97	.13	.71	.38	.79	.97	.75	.64	.52	.58
29	.38	.57	.97	.23	.67	.34	45.14	.96	.75	.63	-	.66
30	.38	.77	.93	.31	.75	.45	.08	.95	.74	.62	-	.66
31	-	.66	-	.17	.71	-	.86	-	.74	.61	-	.57
Mean	43.39	43.49	44.25	44.61	45.32	46.22	44.86	44.28	43.83	43.67	43.56	43.50
Max.	43.48	43.79	45.21	45.30	46.83	48.15	45.89	44.99	43.94	43.73	43.60	43.66
Min.	43.32	43.31	43.75	43.95	44.42	44.54	44.41	43.90	43.74	43.61	43.52	43.44

WATER YEAR 1969 : Max. 48.15 m. Min. 43.31 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.40	1.10	7.40	15	51	33	85	38	11	5.32	4.12	3.00
2	1.60	0.90	18	36	42	35	101	32	11	5.14	4.12	3.00
3	1.50	1.00	19	30	35	45	98	52	11	5.14	3.96	3.00
4	1.40	1.00	19	42	35	106	73	107	10	5.14	3.80	2.88
5	1.20	3.00	29	65	34	166	64	98	10	4.96	3.80	2.88
6	1.40	3.48	26	45	32	184	55	35	9.40	4.96	3.64	2.76
7	1.50	2.64	24	34	29	163	54	30	9.40	4.96	3.64	2.52
8	1.50	2.28	47	34	35	147	54	28	9.20	4.78	3.64	2.52
9	1.30	2.04	62	32	33	109	45	25	9.20	4.78	3.48	2.52
10	1.30	1.92	45	36	58	86	41	24	8.80	5.14	3.48	2.40
11	1.40	8.20	35	43	83	74	39	22	8.80	5.14	3.48	2.40
12	1.30	6.60	25	44	101	72	36	20	8.60	5.14	3.48	2.40
13	1.20	5.50	20	52	102	74	34	19	8.40	4.96	3.48	2.28
14	1.00	4.78	18	50	133	75	32	19	8.20	4.96	3.48	2.28
15	1.00	3.96	12	48	159	104	30	17	8.20	4.96	3.64	2.28
16	1.92	3.00	10	48	148	252	30	16	7.60	5.14	3.64	2.16
17	1.92	4.12	9	41	141	300	31	16	7.40	5.14	3.64	2.16
18	1.92	4.12	12	31	80	303	32	16	7.40	4.96	3.80	2.28
19	1.80	3.48	23	26	67	247	35	16	7.20	4.96	3.64	2.16
20	2.16	3.16	28	27	76	199	31	16	7.00	4.78	3.48	2.16
21	2.76	2.28	25	32	87	139	29	15	7.40	4.78	3.64	2.16
22	2.52	1.80	25	38	82	157	29	13	7.20	4.78	3.64	2.28
23	2.40	1.70	20	36	73	133	46	13	7.00	4.60	3.48	2.64
24	2.28	1.60	17	69	62	128	37	15	7.00	4.60	3.48	4.44
25	2.16	1.40	13	84	55	112	35	13	6.80	4.60	3.48	3.64
26	2.04	1.30	19	74	54	94	35	9.40	6.80	4.44	3.32	3.16
27	1.80	1.30	11	56	50	81	38	12	5.86	4.28	3.32	3.48
28	1.92	1.80	12	64	45	71	45	12	5.68	4.28	3.16	4.12
29	1.60	4.12	12	70	45	69	63	12	5.68	4.12	–	5.50
30	1.60	7.80	11	75	45	75	60	11	5.14	3.96	–	5.50
31	–	5.68	–	67	40	–	101	–	5.14	4.28	–	3.96
Total	50.80	97.06	653.40	1,444	2,112	3,833	1,508	771.40	247.30	149.18	100.96	90.92
Mean	1.69	3.13	21.8	46.6	68.1	127	48.6	25.7	7.98	4.81	3.60	2.93
Max.	2.76	8.20	62	84	159	303	101	107	11	5.32	4.12	5.50
Min.	1.00	0.90	7.40	15	29	33	29	9.40	5.14	3.96	3.16	2.16
Runoff – mcm.	4.389	8.386	56.454	124.762	182.477	331.171	130.291	66.649	21.367	12.889	8.723	7.855

WATER YEAR 1969 : Max. 303 Min. 0.90 Mean 30.3 Annual Runoff 915.413 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 17,69	06.00	48.64	353				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Nan River at Ban Phra Fang, Uttaradit (N_{23})

Location: Lat. 17°-38'-16" N., Long. 100°-14'-02" E., on right bank about 1 kilometer upstream from Wat Phra Fang and is about 1.5 kilometers away from Phra Fang – Ngin Ngarm road, Amphoe Muang, Uttaradit.

Drainage Area: 16,336 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 56.452 m. (M.S.L.)

Bench Mark: B.M. – H.S.

Location: About 9 meters from the top gage

Elevation: + 69.923 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1963 to date

Rating Operation:

Period of Rating: 1964-1973

Rated by Float: –

Rated by Current Meter: 1964-1973

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

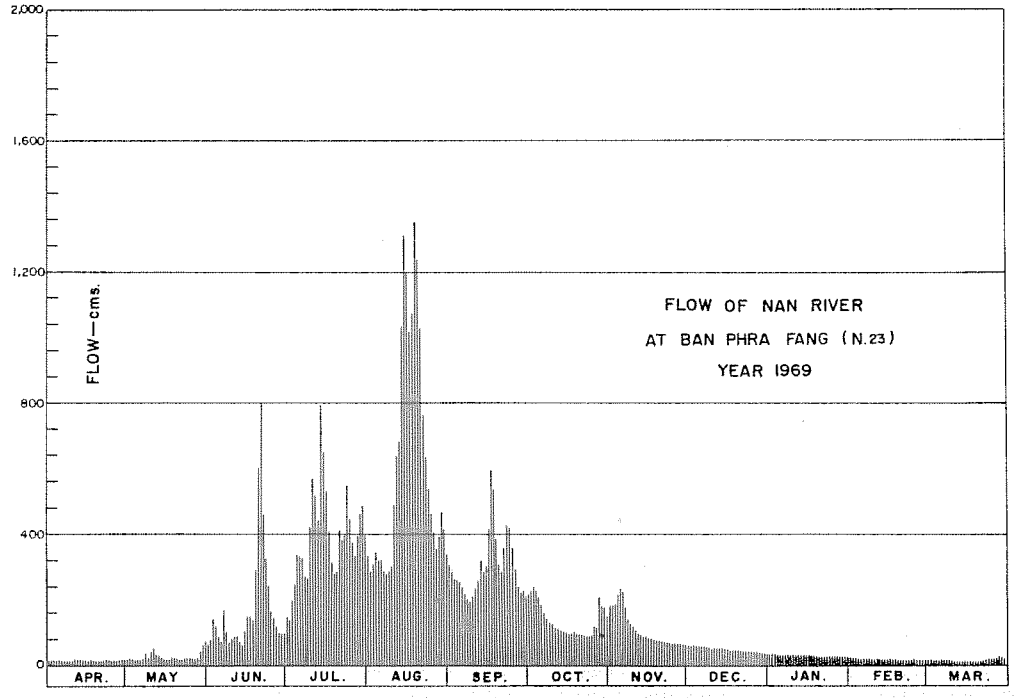
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	57.09	57.15	57.60	58.40	59.47	59.36	58.87	58.60	57.62	57.38	57.24	57.14
2	.08	.20	.82	.32	.28	.24	.92	.57	.61	.37	.23	.13
3	.07	.13	58.32	.75	.41	.12	.99	.65	.60	.37	.23	.13
4	.05	.07	.02	59.09	.61	.14	.90	.81	.59	.36	.22	.12
5	.04	.11	57.76	.57	.44	.05	.75	.97	.59	.36	.22	.11
6	57.05	57.12	57.70	59.55	59.49	58.93	58.57	58.91	57.58	57.35	57.22	57.11
7	.08	.20	58.51	.51	.31	.82	.41	.60	.57	.34	.21	.11
8	.05	.39	57.84	.16	.21	.71	.29	.33	.56	.34	.21	.10
9	.06	.22	.64	.14	.29	.69	.23	.18	.55	.34	.21	.10
10	.10	.42	.85	.10	.41	.87	.18	.10	.54	.34	.21	.10
11	57.13	57.51	57.88	60.74	60.43	59.00	58.12	58.03	57.54	57.35	57.21	57.09
12	.13	.34	.86	.42	61.04	.12	.07	57.98	.53	.34	.20	.09
13	.10	.25	.72	59.79	.31	.47	.05	.92	.52	.34	.20	.09
14	.08	.18	.57	61.67	62.77	.22	.02	.88	.51	.34	.20	.08
15	.06	.17	.97	60.99	63.48	.40	57.98	.86	.50	.34	.20	.08
16	57.07	57.20	58.39	60.42	62.94	60.21	57.95	57.84	57.49	57.35	57.20	57.08
17	.07	.21	.37	59.83	.48	.86	.93	.82	.48	.34	.20	.07
18	.05	.24	.16	.44	.75	.34	.98	.80	.48	.33	.20	.07
19	.04	.21	.89	.22	63.62	59.64	.94	.77	.47	.32	.19	.06
20	.03	.13	60.74	.28	.04	.34	.91	.76	.47	.31	.19	.06
21	57.04	57.11	61.72	59.98	62.10	59.24	57.91	57.74	57.47	57.30	57.19	57.05
22	.08	.19	60.27	.80	61.42	.75	.89	.73	.47	.29	.19	.08
23	.11	.18	59.36	.88	60.82	60.06	.88	.71	.46	.29	.18	.16
24	.08	.19	58.82	60.64	.44	59.98	.88	.69	.45	.28	.18	.19
25	.05	.20	.47	.11	.19	.61	.90	.68	.44	.28	.17	.16
26	57.03	57.12	58.26	59.78	59.91	59.26	58.13	57.67	57.43	57.27	57.16	57.15
27	.08	.13	.06	.50	.63	.04	.09	.66	.42	.27	.15	.21
28	.09	.25	57.93	.77	.77	58.89	.78	.65	.41	.26	.14	.28
29	.14	.46	.92	60.21	60.23	.92	.54	.64	.40	.26	–	.24
30	.11	.70	.97	.33	59.95	.78	.60	.63	.39	.25	–	.21
31	–	.68	–	59.81	.50	–	.37	–	.38	.25	–	.17
Mean	57.06	57.24	58.63	59.78	60.41	59.30	58.52	58.04	57.50	57.32	57.19	57.12
Max.	57.14	57.70	61.72	61.67	63.62	60.86	58.99	58.97	57.62	57.38	57.24	57.28
Min.	57.03	57.07	57.57	58.32	59.21	58.69	57.88	57.63	57.38	57.25	57.14	57.05

WATER YEAR 1969 : Max. 63.62 m. Min. 57.03 m.

BM. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	15	18	59	150	319	299	219	178	61	37	25	18
2	15	22	81	140	285	278	227	174	60	36	24	17
3	14	17	140	201	308	259	238	186	59	36	24	17
4	13	14	104	254	344	262	224	210	59	34	23	17
5	12	16	75	337	313	248	201	235	59	34	23	17
6	13	17	69	333	322	229	174	226	58	33	23	17
7	15	22	165	326	290	211	152	178	57	33	23	17
8	13	38	83	266	274	195	137	142	56	33	23	16
9	13	23	63	262	287	192	130	124	55	33	23	16
10	16	41	84	438	308	219	124	114	54	33	23	16
11	17	51	88	568	504	240	116	106	54	33	23	15
12	17	33	85	502	636	259	110	100	53	33	22	15
13	16	25	71	378	700	319	108	92	52	33	22	15
14	15	21	57	787	1,088	275	104	88	51	33	22	15
15	13	20	98	624	1,309	306	100	85	49	33	22	15
16	14	22	149	502	1,139	460	96	83	48	33	22	15
17	14	23	147	385	1,004	594	94	81	47	33	22	14
18	13	25	121	313	1,082	486	100	79	47	32	22	14
19	12	23	222	275	1,353	349	95	76	46	31	21	13
20	12	17	568	285	1,169	295	91	75	46	30	21	13
21	12	16	799	414	898	278	91	73	46	29	21	13
22	15	21	472	379	727	370	89	72	46	29	21	15
23	16	21	299	395	595	430	88	70	45	29	21	19
24	15	21	211	547	506	414	88	68	44	28	21	21
25	13	22	160	440	456	344	90	67	43	28	20	19
26	12	17	133	376	400	282	118	66	42	27	19	18
27	15	17	109	324	349	246	113	65	41	27	18	23
28	15	25	94	374	374	222	205	64	40	26	18	28
29	18	45	92	460	464	227	170	63	39	26	–	25
30	16	69	98	484	408	205	178	62	38	25	–	23
31	–	67	–	381	324	–	147	–	37	25	–	20
Total	429	829	4,996	11,900	18,533	8,993	4,217	3,302	1,532	965	612	536
Mean	14.3	26.7	166	384	598	300	136	110	49.4	31.1	21.8	17.0
Max.	18	69	799	787	1,353	594	238	235	61	37	25	28
Min.	12	14	57	140	274	192	88	62	37	25	18	13
Runoff – mcm.	37.065	71.626	431.654	1,028.160	1,601.251	776.995	364.348	285.292	132.364	83.376	52.877	46.310

WATER YEAR 1969 : Max. 1,353 Min. 12 Mean 156 Annual Runoff 4,911.322 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 19, 69	08.00	63.70	1,379				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Khlong Khek at Ban Wang Nok Aen, Phitsanulok (N_{24})

Location: Lat. 16°-50'-35" N., Long. 100°-31'-20" E., on right bank about 2 kilometers downstream from Sakurothayan Fall. Amphoe Wong Thong, Phitsanulok.

Drainage Area: 1,861 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Near the gage site

Elevation: + 12.845 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1965 to date

Rating Operation:

Period of Rating: 1965 to date

Rated by Float: -

Rated by Current Meter: 1965 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

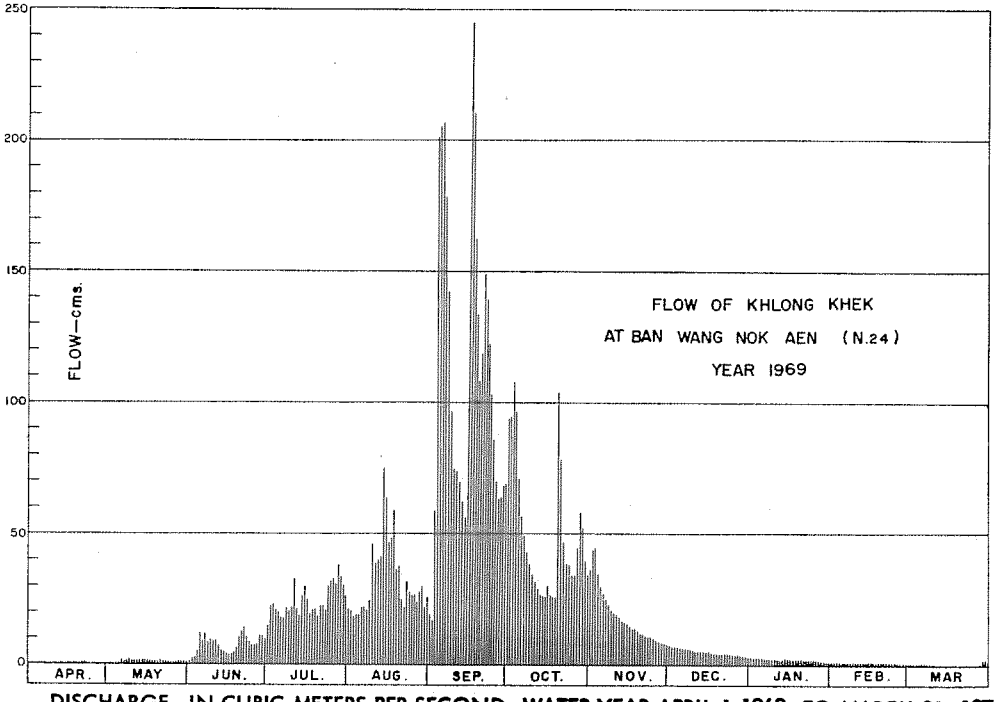
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Near hourly gage height and discharge for periods Sept. 2 - 27.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.58	0.52	0.73	1.87	2.04	1.97	4.58	2.62	1.35	0.95	0.75	0.65
2	.59	.52	.85	2.13	.03	.88	.58	.98	.33	.93	.74	.65
3	.59	.52	.96	.15	1.93	3.46	.98	3.01	.31	.93	.73	.64
4	.58	.52	1.20	.06	2.01	7.47	.23	2.62	.30	.93	.73	.62
5	.57	.54	.58	.01	1.96	7.56	3.66	.43	.28	.92	.72	.65
6	0.56	0.72	1.34	1.90	2.16	7.57	3.34	2.30	1.26	0.92	0.71	0.63
7	.55	.70	.59	.88	.06	6.44	.09	.21	.25	.91	.71	.61
8	.54	.74	.37	2.10	.05	5.33	2.89	.13	.22	.90	.71	.61
9	.53	.83	.46	.01	.24	4.55	.74	.07	.22	.90	.70	.61
10	.52	.79	.43	.10	3.06	3.98	.59	.02	.21	.90	.70	.60
11	0.52	0.75	1.43	2.53	2.74	3.99	2.47	1.96	1.20	0.89	0.71	0.59
12	.52	.74	.30	.08	.83	.85	.39	.90	.18	.88	.74	.58
13	.52	.78	.21	1.86	.82	.67	.31	.86	.16	.90	.72	.59
14	.55	.78	.13	2.29	4.04	.40	.29	.83	.14	.89	.70	.59
15	.56	.76	.06	.43	3.57	.41	.27	.80	.14	.88	.69	.58
16	0.57	0.74	1.02	2.19	3.10	7.61	2.44	1.76	1.13	0.88	0.72	0.58
17	.63	.71	.06	1.96	.09	8.42	.25	.73	.10	.87	.72	.57
18	.65	.67	.11	2.06	.50	6.71	.25	.70	.10	.88	.72	.56
19	.62	.67	.21	.06	2.63	5.43	.26	.65	.10	.87	.71	.55
20	.60	.71	.56	1.91	.76	4.89	4.87	.62	.09	.86	.69	.55
21	0.58	0.76	1.66	2.15	2.27	5.45	3.54	1.58	1.08	0.85	0.70	0.54
22	.57	.71	.72	.13	.23	6.16	2.98	.56	.06	.84	.69	.56
23	.56	.68	.48	.05	.50	5.74	.75	.54	.05	.83	.68	.57
24	.55	.68	.38	.41	.36	.00	.76	.52	.04	.82	.67	.58
25	.55	.65	.30	.50	.30	4.39	.57	.48	.04	.81	.66	.58
26	0.54	0.64	1.35	2.55	2.29	3.94	2.57	1.45	1.03	0.80	0.65	0.58
27	.54	.67	.38	.41	.14	.62	3.02	.42	.02	.79	.64	.57
28	.54	.69	.52	.73	.33	.66	.48	.40	.00	.78	.65	.60
29	.53	.71	.54	.50	.44	.80	.23	.38	0.99	.78	-	.85
30	.53	.70	.41	.41	.06	.84	2.78	.36	.98	.77	-	.81
31	-	.70	-	.23	.27	-	.60	-	.97	.76	-	.77
Mean	0.56	0.69	1.31	2.18	2.32	4.90	3.05	1.89	1.14	0.86	0.70	0.61
Max.	0.65	0.83	1.72	2.73	4.04	8.42	4.98	3.01	1.35	0.95	0.75	0.85
Min.	0.52	0.52	0.73	1.86	1.93	1.88	2.25	1.36	0.97	0.76	0.64	0.54

WATER YEAR 1969 : Max. 8.42 m. Min. 0.52 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.48	0.12	1.51	17	21	19	94	35	7.95	3.25	1.65	0.95
2	0.54	0.12	2.40	23	21	*17	94	44	7.65	3.07	1.58	0.95
3	0.54	0.12	3.34	23	18	65	108	45	7.35	3.07	1.51	0.88
4	0.48	0.12	5.80	21	20	201	81	35	7.20	3.07	1.51	0.74
5	0.42	0.24	12	20	19	206	64	30	6.92	2.98	1.44	0.95
6	0.36	1.44	7.80	18	23	207	54	27	6.64	2.98	1.37	0.81
7	0.30	1.30	12	17	21	160	47	25	6.50	2.89	1.37	0.67
8	0.24	1.58	8.25	22	21	120	42	23	6.08	2.80	1.37	0.67
9	0.18	2.24	10	20	25	93	38	21	6.08	2.80	1.30	0.67
10	0.12	1.93	9.18	22	46	74	34	20	5.94	2.80	1.30	0.60
11	0.12	1.65	9.18	33	38	74	31	19	5.80	2.72	1.37	0.54
12	0.12	1.58	7.20	22	40	70	29	18	5.58	2.64	1.57	0.48
13	0.12	1.86	5.94	17	42	64	27	17	5.36	2.80	1.44	0.54
14	0.30	1.86	5.03	27	75	56	27	16	5.14	2.72	1.30	0.54
15	0.36	1.72	4.30	30	61	57	26	16	5.14	2.64	1.23	0.48
16	0.42	1.58	3.90	24	47	212	30	15	5.03	2.64	1.44	0.48
17	0.81	1.37	4.30	19	47	245	26	14	4.70	2.56	1.44	0.42
18	0.95	1.09	4.81	21	59	171	26	14	4.70	2.64	1.44	0.36
19	0.74	1.09	5.94	21	35	124	26	13	4.70	2.56	1.37	0.30
20	0.60	1.37	11	18	38	105	104	12	4.60	2.48	1.23	0.30
21	0.48	1.72	13	23	26	124	60	12	4.50	2.40	1.30	0.24
22	0.42	1.37	14	23	25	149	44	11	4.30	2.32	1.23	0.36
23	0.36	1.16	10	21	32	134	38	11	4.20	2.24	1.16	0.42
24	0.30	1.16	8.40	30	28	109	38	11	4.10	2.16	1.09	0.48
25	0.30	0.95	7.20	32	27	87	34	10	4.10	2.08	1.02	0.48
26	0.24	0.88	7.95	33	27	72	34	9.50	4.00	2.00	0.95	0.48
27	0.24	1.09	8.40	30	23	*63	45	9.02	3.90	1.93	0.88	0.42
28	0.24	1.23	11	38	28	64	58	8.70	3.70	1.86	0.95	0.60
29	0.18	1.37	11	32	30	68	51	8.40	3.61	1.86	–	2.40
30	0.18	1.30	8.86	30	21	69	39	8.10	3.52	1.79	–	2.08
31	–	1.30	–	25	26	–	34	–	3.43	1.72	–	1.79
Total	11.14	37.91	233.69	752	1,010	3,279	1,483	557.72	162.42	78.46	36.82	22.08
Mean	0.371	1.22	7.78	24.2	32.5	109	47.8	18.6	5.24	2.53	1.31	0.712
Max.	0.95	2.24	14	38	75	245	108	45	7.95	3.25	1.65	2.40
Min.	0.12	0.12	1.51	17	18	17	26	8.10	3.43	1.72	0.88	0.24
Runoff – mcm.	0.962	3.275	20.191	64.973	87.264	283.306	128.131	48.187	14.033	6.779	3.181	1.908

WATER YEAR 1969 : Max. 245 Min. 0.12 Mean 20.9 Annual Runoff 622.190 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 17, 69	0.70	8.70	259				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YHAR 1969
NAN RIVER BASIN

Khlong Ta Yom at Ban Wat Ta Yom, Phitsanulok (N_{25})

Location: Lat. 16°-36'-10" N., Long. 100°-26'-49" E., on left bank at the bridge on highway No. 112 (Wang Thong – Phichit) Ban Wat Ta Yom, Amphoe Bang Krathum, Phitsanulok.

Drainage Area: 875 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S./R.I.D. No. 1

Location: On left bank along the gage site

Elevation: + 5.554 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1965-1973

Rating Operation:

Period of Rating: 1965, 1967-1971

Rated by Float: –

Rated by Current Meter: 1965, 1967-1971

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

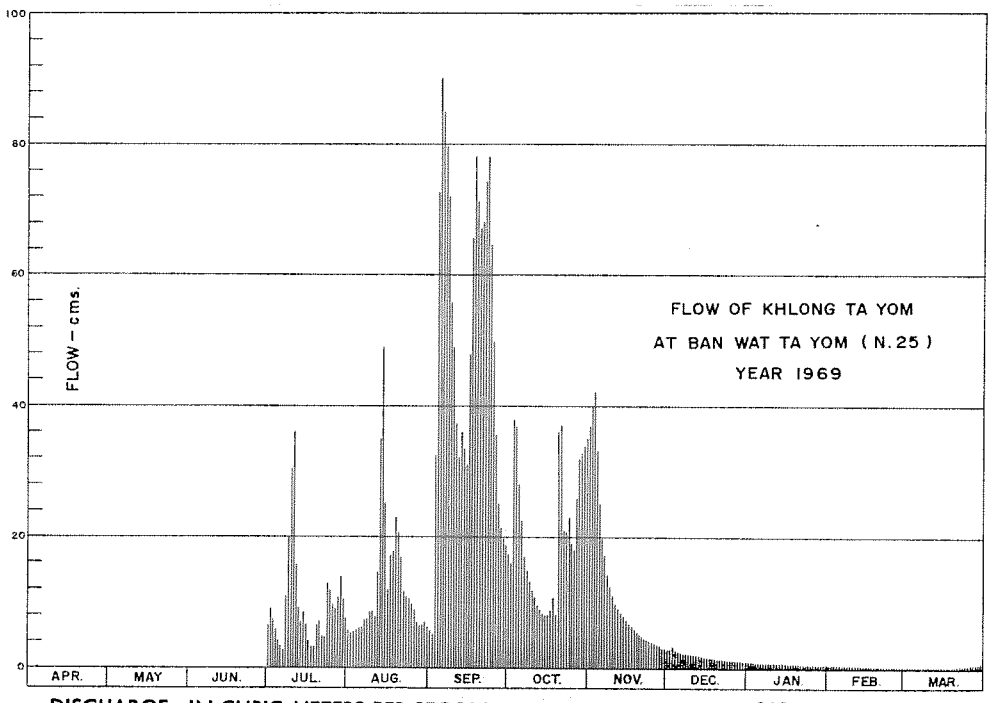
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: No gage-height and discharge record April – June.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1				1.75	1.66	1.67	2.73	3.97	1.32	0.99	0.86	0.76
2				2.04	.63	.61	.60	4.19	.30	.99	.85	.75
3				1.87	.64	2.08	4.14	.39	.38	.98	.85	.75
4				.70	.66	5.08	.05	3.97	.25	.98	.84	.75
5				.48	.69	.43	3.62	.27	.24	.97	.84	.75
6				1.32	1.70	5.41	3.19	2.86	1.23	0.97	0.83	0.75
7				.27	.81	.38	2.84	.60	.22	.96	.83	.75
8				2.12	.85	.33	.60	.44	.21	.96	.83	.76
9				.81	.95	.03	.41	.28	.19	.95	.83	.76
10				3.55	.97	4.88	.28	.17	.18	.95	.82	.76
11				4.01	1.86	4.20	2.15	2.06	1.16	0.94	0.82	0.75
12				2.76	2.24	3.73	.06	1.99	.15	.94	.82	.75
13				1.99	3.79	4.00	1.99	.93	.14	.93	.81	.75
14				.80	4.73	3.99	.91	.87	.12	.93	.81	.75
15				.97	3.14	.69	.89	.81	.12	.92	.81	.74
16				1.71	2.28	4.46	1.92	1.77	1.10	0.92	0.81	0.73
17				.43	.66	5.20	.95	.72	.10	.92	.82	.73
18				.33	.74	.33	2.19	.69	.09	.91	.81	.73
19				.36	3.14	.30	1.90	.63	.08	.91	.81	.73
20				.74	2.96	.22	3.97	.59	.08	.91	.81	.73
21				1.82	2.70	5.23	4.05	1.54	1.07	0.90	0.79	0.73
22				.58	.26	.30	2.99	.49	.06	.90	.77	.85
23				.55	.19	.33	.97	.48	.06	.89	.78	.85
24				2.35	.19	.26	3.12	.46	.05	.89	.79	.85
25				.27	1.94	4.84	2.85	.45	.04	.88	.78	.85
26				2.09	1.82	4.01	2.78	1.43	1.04	0.87	0.76	0.85
27				.01	.67	3.40	3.50	.40	.03	.86	.77	.87
28				.14	.56	.06	.73	.38	.03	.85	.77	.88
29				.46	.55	2.90	.78	.36	.00	.85		1.53
30				.25	.58	.81	.85	.33	.00	.85		.22
31				1.90	.52		.91		.00	.85		.06
Mean				2.01	2.20	4.30	2.90	2.15	1.03	0.92	0.81	0.82
Max.				4.01	4.73	5.43	4.14	4.39	1.38	0.99	0.86	1.53
Min.				1.27	1.52	1.61	1.89	1.33	1.00	0.85	0.76	0.73

WATER YEAR 1969 : Max. 5.43 m. Min. 0.73 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1				6.65	5.80	5.90	18	36	3.04	1.00	0.44	0.12
2				9.64	5.50	5.36	16	39	2.90	1.00	0.40	0.10
3				7.80	5.60	11	38	42	3.49	0.96	0.40	0.10
4				6.20	5.80	69	37	36	2.55	0.96	0.36	0.10
5				4.26	6.10	90	30	26	2.48	0.91	0.36	0.10
6				3.04	6.20	87	24	19	2.41	0.91	0.32	0.10
7				2.74	7.20	84	19	16	2.34	0.96	0.32	0.10
8				11	7.60	77	16	14	2.27	0.96	0.32	0.12
9				19	8.65	59	14	12	2.14	0.82	0.32	0.12
10				29	8.87	53	12	11	2.08	0.82	0.28	0.12
11				36	7.78	39	11	9.86	1.96	0.78	0.28	0.10
12				18	12	32	9.86	9.09	1.90	0.78	0.28	0.10
13				9.18	33	36	9.09	8.43	1.84	0.73	0.24	0.10
14				7.10	49	36	8.21	7.80	1.72	0.73	0.24	0.10
15				8.90	23	31	8.00	7.20	1.72	0.69	0.24	0.08
16				6.30	12	44	8.32	6.89	1.60	0.69	0.24	0.06
17				3.83	17	65	8.65	6.38	1.60	0.69	0.28	0.06
18				3.12	18	78	11	6.10	1.54	0.64	0.24	0.06
19				3.32	23	74	8.10	5.50	1.49	0.64	0.24	0.06
20				6.56	21	67	36	5.12	1.49	0.64	0.24	0.06
21				7.36	17	68	37	4.72	1.43	0.60	0.18	0.06
22				5.04	12	74	21	4.32	1.38	0.60	0.14	0.40
23				4.80	11	78	21	4.26	1.38	0.56	0.16	0.40
24				13	11	73	23	4.08	1.32	0.56	0.18	0.40
25				12	8.54	51	19	4.00	1.27	0.52	0.16	0.40
26				10	7.30	36	18	3.84	1.27	0.48	0.12	0.40
27				9.31	5.90	27	29	3.60	1.21	0.44	0.14	0.48
28				11	4.88	22	32	3.49	1.21	0.40	0.14	0.52
29				14	4.80	20	33	3.32	1.05	0.40		4.64
30				12	5.04	19	34	3.11	1.05	0.40		2.34
31				8.10	4.56		35		1.05	0.40		1.38
Total				308.25	375.12	1,511.26	644.23	362.05	55.18	21.67	7.26	13.28
Mean				9.94	12.1	50.4	20.8	12.1	1.78	0.70	0.26	0.43
Max.				36	49	90	38	42	3.49	1.00	0.44	4.64
Min.				2.74	4.56	5.36	8.00	3.11	1.05	0.40	0.12	0.06
Runoff - MCM.				26.633	32.410	130.573	55.661	31.281	4.767	1.872	0.627	1.147

WATER YEAR 1969 : Max. 90 Min. 0.06 Mean 9.04 Annual Runoff 285.146 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 5	09.00	5.44	92				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
NAN RIVER BASIN

Nan River at Amphoe Tron, Uttaradit (N_{26})

Location: Lat. 17°-29'-00" N., Long. 100°-06'-58" E., on right bank about 500 meters upstream from Tron Railway Station, opposite to district office of Amphoe Tron, Uttaradit.

Drainage Area: 17,350 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S. No. 1

- Location: Infront of the gage observer's house
- Elevation: + 9.594 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1965 to date

Rating Operation:

- Period of Rating: 1965 to date
- Rated by Float: -
- Rated by Current Meter: 1965 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

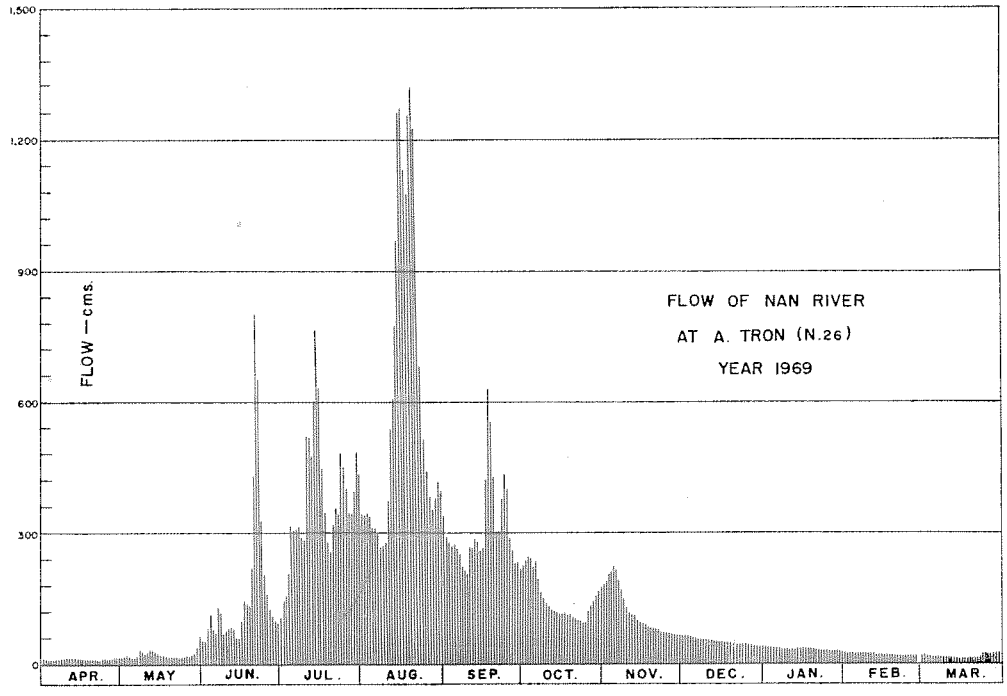
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.28	0.35	0.91	1.45	3.02	2.98	2.33	2.03	1.02	0.71	0.53	0.41
2	.27	.39	.86	.79	.00	.74	.29	.09	.01	.69	.52	.41
3	.26	.42	1.20	.87	.05	.66	.45	.22	.00	.69	.51	.40
4	.25	.38	.49	2.37	2.97	.59	.43	.25	0.99	.68	.51	.40
5	.26	.32	.15	.87	.83	.63	.30	.32	.98	.67	.50	.39
6	0.27	0.30	1.09	2.76	2.85	2.56	2.40	2.25	0.97	0.67	0.50	0.39
7	.28	.34	.65	.85	.74	.48	.00	.07	.96	.65	.51	.37
8	.30	.60	.58	.84	.59	.29	1.90	1.89	.95	.65	.49	.37
9	.31	.57	.01	.63	.62	.23	.79	.75	.94	.64	.49	.36
10	.32	.50	.17	.70	.67	.20	.72	.62	.93	.64	.48	.36
11	0.32	0.58	1.20	3.93	3.28	2.60	1.63	1.55	0.91	0.63	0.48	0.36
12	.31	.64	.20	.91	4.09	.59	.62	.49	.91	.64	.47	.36
13	.31	.58	.15	.65	.53	.72	.59	.39	.89	.65	.47	.35
14	.30	.53	0.95	4.99	5.60	.65	.54	.36	.89	.66	.46	.35
15	.30	.45	.94	.61	6.85	.54	.52	.34	.87	.67	.46	.34
16	0.29	0.40	1.48	4.01	6.87	2.60	1.52	1.31	0.86	0.67	0.46	0.33
17	.28	.40	.76	3.33	.23	3.79	.53	.28	.86	.66	.45	.33
18	.27	.39	.68	2.91	.02	4.42	.49	.24	.85	.65	.45	.33
19	.27	.37	.68	.57	.85	3.87	.51	.21	.84	.64	.45	.32
20	.25	.36	2.48	.52	7.01	.24	.45	.19	.84	.62	.45	.32
21	0.24	0.34	5.16	2.97	6.21	2.79	1.40	1.18	0.83	0.61	0.44	0.31
22	.26	.33	4.59	3.12	5.32	.81	.38	.14	.82	.60	.44	.32
23	.28	.35	3.01	2.98	4.54	3.24	.37	.12	.81	.60	.43	.37
24	.29	.36	2.40	3.72	.00	.51	.34	.11	.81	.60	.43	.48
25	.28	.36	.13	.53	3.65	.41	.44	.10	.80	.59	.43	.49
26	0.27	0.41	1.75	3.23	3.40	2.72	1.60	1.09	0.79	0.59	0.42	0.44
27	.32	.36	.55	.02	.17	.57	.69	.07	.78	.58	.41	.40
28	.34	.41	.43	.03	.05	.36	.76	.05	.76	.57	.41	.52
29	.37	.46	.36	.37	.21	.40	.86	.04	.75	.56		.54
30	.32	.79	.31	.75	.41	.27	.94	.03	.73	.55		.52
31		1.01		.41	.29		.99		.71	.54		.49
Mean	0.29	0.45	1.71	3.12	4.16	2.81	1.76	1.49	0.87	0.63	0.47	0.39
Max.	0.37	1.01	5.16	4.99	7.01	4.42	2.45	2.32	1.02	0.71	0.53	0.54
Min.	0.24	0.30	0.86	1.45	2.59	2.20	1.34	1.03	0.71	0.54	0.41	0.31

WATER YEAR 1969 : Max. 7.01 m. Min. 0.24 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	12	15	54	107	342	334	225	180	64	39	26	19
2	11	17	50	147	338	291	234	189	63	37	25	19
3	11	19	81	158	347	278	244	207	62	37	25	18
4	10	17	112	231	333	266	241	212	61	37	25	18
5	11	14	76	315	307	273	220	223	60	36	24	17
6	11	13	70	295	311	262	236	212	59	36	24	17
7	12	15	130	311	291	249	176	186	58	34	25	16
8	13	31	122	309	266	218	162	161	57	34	23	16
9	13	29	63	273	271	209	147	142	57	34	23	16
10	14	24	78	284	279	204	138	126	56	34	23	16
11	14	30	81	521	390	268	128	118	54	33	23	16
12	13	34	81	516	556	266	126	112	54	34	22	16
13	13	30	76	464	653	288	123	101	52	34	22	15
14	13	26	57	760	912	276	117	98	52	35	22	15
15	13	21	57	670	1,264	258	115	95	51	36	22	15
16	12	18	111	538	1,270	268	115	92	50	36	22	14
17	12	18	143	400	1,084	492	116	89	50	35	21	14
18	11	17	134	322	1,026	628	112	85	49	34	21	14
19	11	16	134	263	1,264	508	114	82	48	34	21	14
20	10	16	249	255	1,315	383	107	80	48	32	21	14
21	10	15	800	333	1,079	300	102	79	47	32	20	13
22	11	14	666	360	840	304	100	75	47	31	20	14
23	12	15	340	334	655	383	99	73	46	31	20	16
24	12	16	236	478	536	436	95	72	46	31	20	23
25	12	17	194	440	464	416	95	71	45	30	20	23
26	11	19	142	390	414	288	124	70	44	30	19	20
27	14	16	118	342	369	263	135	68	44	30	19	20
28	15	19	105	343	347	230	143	66	42	29	19	25
29	16	22	98	408	377	236	156	66	41	28		27
30	14	44	92	484	416	215	168	65	40	27		25
31		63		416	392		175		39	27		23
Total	367	680	4,750	11,467	18,708	9,290	4,588	3,495	1,586	1,027	617	548
Mean	12.2	21.9	158	370	603	309	148	116	51.2	33.1	22.0	17.7
Max.	16	63	800	760	1,315	628	244	223	64	39	26	27
Min.	10	13	50	107	265	204	95	65	39	27	19	13
Runoff – mcm.	31.708	58.752	410.400	990.748	1,616.371	802.656	396.403	301.968	137.030	88.732	53.308	47.347

WATER YEAR 1969 : Max. 1,315 Min. 10 Mean 156 Annual Runoff 4,935.427 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 15	18.00	7.03	1,321				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

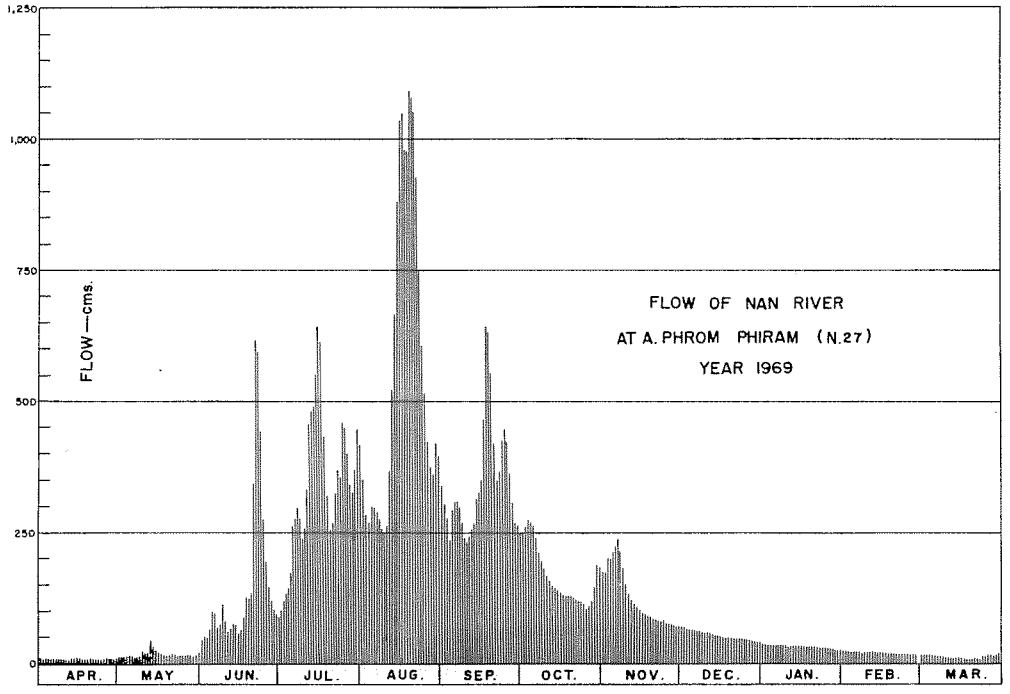
Nan River at Amphoe Phrom Phirom, Phitsanulok (N_{27})

Location:	Lat. 17°-01'-37" N., Long. 100°-12'-12" E., on left bank about 200 meters downstream from Phrom Phiram railway station, Amphoe Phrom Phiram, Phitsanulok.
Drainage Area:	19,549 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 38.20 m. (M.S.L.)
Bench Mark:	B.M. – H.S.
Location:	Near the gage site
Elevation	+ 48.244 m. (M.S.L.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1965 to date
Rating Operation:	
Period of Rating:	1965 to date
Rated by Float:	–
Rated by Current Meter:	1965 to date
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	38.42	38.47	39.13	39.81	42.77	42.35	41.49	40.81	39.59	39.09	38.81	38.65
2	.44	.44	.29	40.12	.19	.03	.55	.81	.58	.08	.80	.63
3	.46	.47	.23	.37	41.75	41.86	.64	41.07	.56	.06	.79	.62
4	.44	.51	.44	.47	.64	.75	.75	.02	.55	.05	.78	.61
5	.42	.53	.95	.85	.96	.90	.68	.17	.55	.05	.77	.60
6	38.40	38.45	39.79	41.65	41.95	42.04	41.54	41.26	39.53	39.04	38.76	38.59
7	.38	.38	.54	.81	.88	.04	.30	.41	.51	.03	.76	.58
8	.37	.47	.44	.93	.78	41.89	.08	.11	.48	.02	.75	.57
9	.39	.47	40.14	.66	.59	.59	40.93	40.84	.45	.01	.75	.56
10	.39	.76	39.69	.37	.55	.37	.80	.51	.43	38.99	.75	.56
11	38.39	38.71	39.46	41.87	41.65	41.37	40.71	40.36	39.41	38.99	38.74	38.54
12	.39	.77	.42	43.19	42.57	.58	.61	.25	.40	39.00	.74	.53
13	.45	.99	.71	.35	43.70	.65	.53	.14	.38	.01	.73	.53
14	.48	.89	.65	.47	44.50	42.08	.49	.08	.36	38.99	.73	.52
15	.45	.78	.47	44.57	46.06	.18	.44	.01	.34	.99	.73	.52
16	38.42	38.67	39.36	44.34	47.16	42.35	40.39	39.97	39.32	39.00	38.72	38.50
17	.39	.63	.76	43.59	.22	43.29	.36	.93	.30	38.99	.72	.50
18	.37	.58	40.27	42.81	46.80	44.55	.32	.90	.29	.99	.71	.49
19	.37	.58	.27	.11	.79	.45	.35	.87	.29	.98	.71	.40
20	.38	.60	.23	41.68	47.48	43.52	.34	.84	.27	.97	.70	.48
21	38.36	38.64	42.30	41.52	47.46	42.71	40.28	39.80	39.25	38.95	38.70	38.47
22	.34	.58	44.34	42.05	46.69	.34	.23	.77	.24	.93	.70	.46
23	.33	.50	43.75	.52	45.65	.54	.23	.75	.23	.91	.69	.47
24	.34	.54	42.34	.34	44.61	43.00	.21	.73	.23	.90	.69	.60
25	.39	.58	41.49	43.18	43.81	.13	.13	.70	.22	.90	.69	.58
26	38.40	38.54	40.81	43.10	43.29	42.80	40.02	39.68	39.21	38.83	38.68	38.67
27	.38	.55	.43	42.69	42.79	.33	.12	.66	.19	.87	.68	.67
28	.41	.58	.21	.23	.54	41.94	.25	.64	.17	.86	.66	.64
29	.40	.53	.00	.14	.46	.63	.61	.63	.16	.85		.61
30	.44	.58	39.88	.63	.92	.64	.95	.61	.13	.84		.72
31		.57		43.09	.76		.89		.11	.83		.76
Mean	38.40	38.59	40.29	42.21	43.80	42.33	40.72	40.24	39.35	38.97	38.73	38.57
Max.	38.48	39.99	44.34	44.57	47.48	44.55	41.75	41.41	39.59	39.09	38.81	38.76
Min.	38.33	38.38	39.13	39.81	41.55	41.37	40.02	39.61	39.11	38.83	38.66	38.40

WATER YEAR 1969 : Max. 47.48 m. Min. 38.33 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	9.80	11	42	87	400	347	246	175	71	39	25	18
2	9.60	9.00	51	111	328	309	252	175	70	39	25	17
3	10	11	48	132	275	289	263	201	69	38	24	17
4	9.60	12	60	141	263	275	275	196	68	37	24	16
5	9.80	13	97	179	300	293	268	211	68	37	23	16
6	8.00	10	85	264	299	309	251	221	66	37	23	16
7	7.80	7.80	67	282	291	309	225	237	65	36	23	15
8	7.60	11	60	297	279	292	202	205	63	36	22	15
9	8.00	11	113	265	257	252	187	178	61	35	22	14
10	8.00	23	77	233	252	233	174	145	60	34	22	14
11	8.00	20	62	289	264	233	165	131	59	34	22	14
12	8.00	23	59	455	375	256	155	122	58	35	22	13
13	10	43	79	476	523	264	147	113	56	35	21	13
14	11	29	75	492	636	315	143	107	55	34	21	13
15	10	24	62	644	866	327	139	102	54	34	21	13
16	9.80	19	55	613	1,035	347	134	99	53	35	21	12
17	8.00	17	83	509	1,046	469	131	95	52	34	21	12
18	7.60	15	124	405	976	641	128	93	51	34	20	12
19	7.60	15	124	318	977	629	130	91	51	34	20	11
20	7.80	15	120	268	1,089	499	130	89	50	33	20	11
21	7.40	18	341	249	1,058	392	124	86	49	32	20	11
22	7.00	15	613	311	962	346	120	84	48	31	20	10
23	6.80	12	530	369	804	371	120	82	48	30	20	11
24	7.00	14	346	346	651	430	119	80	48	30	20	16
25	8.00	15	246	458	538	447	112	78	47	30	20	15
26	8.00	14	175	443	496	404	103	77	47	29	19	19
27	7.80	14	138	390	403	345	111	76	45	28	19	19
28	8.40	15	119	333	371	298	122	74	44	28	18	16
29	8.00	13	101	321	351	262	155	74	44	27		18
30	9.60	15	92	383	420	263	189	73	42	27		21
31		15		447	398		183		41	26		23
Total	254	499.80	4,244	10,505	17,196	10,451	5,203	3,770	1,703	1,028	598	461
Mean	8.47	16.1	14.1	339	555	348	168	126	54.9	33.2	21.3	14.9
Max.	11	43	613	644	1,089	641	275	237	71	39	25	23
Min.	6.80	7.80	42	87	252	233	103	73	41	26	18	10
Runoff - mcm.	21.946	43.183	366.682	907.632	1,485.734	902.966	449.539	325.728	147.139	88.819	51.667	39.830

WATER YEAR 1969 : Max. 1,089 Min. 6.80 Mean 153 Annual Runoff 4,830.866 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 20	18.00	47.60	1,170				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Khlong Tron at Ban Nam Lai, Uttaradit (N_{28})

Location: Lat. 17°-34'-10" N., Long. 100°-27'-04" E., on left bank at Ban Nam Lai, Amphoe Nam Pat, Uttaradit.

Drainage Area: 478 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Near the gage site

Elevation: + 6.039 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1967-1970

Rated by Float: -

Rated by Current Meter: 1967-1970

Stability of Channel Regimes: Stable, shifting adjustment is included for flow computation.

Overbank Flow Conditions: No overbank flow

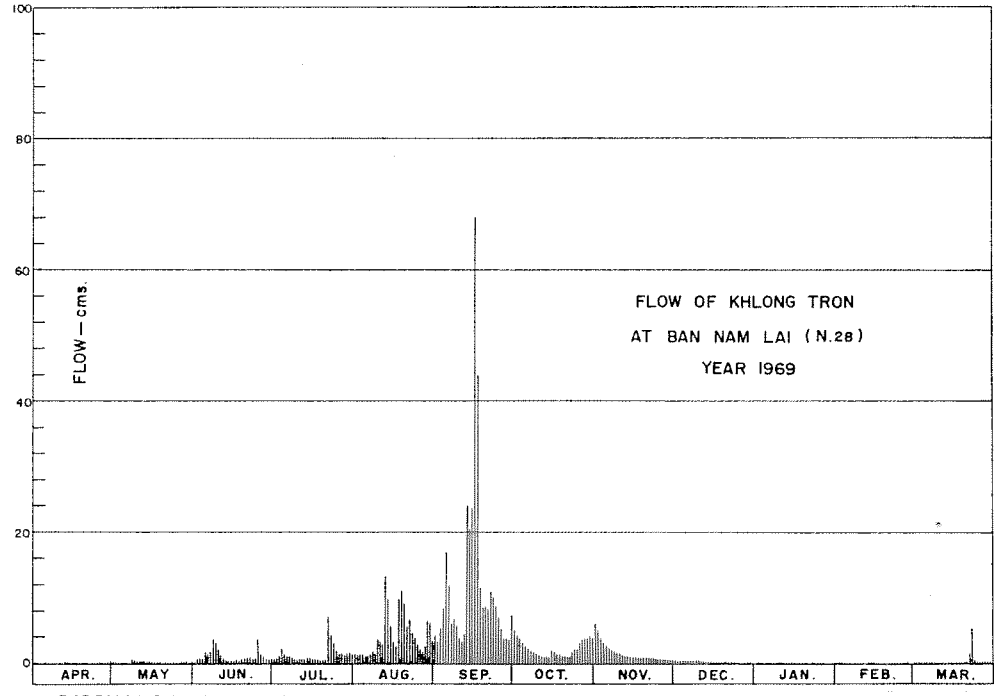
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Discharge record for periods of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.34	0.46	0.51	0.57	0.68	1.10	1.16	1.28	0.54	0.43	0.40	0.40
2	.34	.43	.62	.59	.67	0.88	.09	.18	.53	.43	.40	.40
3	.33	.40	.63	.68	.68	1.29	.05	.04	.55	.43	.40	.47
4	.33	.38	.89	.90	.67	.47	0.97	0.95	.54	.43	.39	.46
5	.33	.36	.69	.74	.65	2.02	.92	.89	.53	.43	.39	.43
6	0.32	0.34	0.83	0.63	0.64	1.73	0.87	0.84	0.52	0.43	0.39	0.38
7	.32	.36	1.07	.66	.70	.26	.84	.79	.52	.42	.38	.35
8	.30	.63	.00	.60	.75	.39	.81	.77	.52	.42	.38	.35
9	.27	.53	0.77	.57	.76	.29	.78	.75	.52	.42	.37	.35
10	.22	.48	.66	.55	1.04	.06	.75	.73	.51	.42	.37	.35
11	0.20	0.53	0.59	0.60	0.97	1.05	0.71	0.71	0.50	0.41	0.37	0.34
12	.19	.48	.55	.54	.93	.22	.68	.67	.50	.44	.37	.34
13	.19	.46	.52	.56	1.78	2.34	.68	.66	.50	.45	.37	.34
14	.18	.43	.51	.66	.46	.13	.68	.66	.49	.46	.36	.34
15	.17	.40	.49	.61	.17	.23	.81	.65	.49	.46	.36	.34
16	0.16	0.39	0.47	0.57	0.96	3.81	0.78	0.65	0.49	0.45	0.36	0.34
17	.16	.37	.47	.55	.84	2.33	.73	.64	.49	.45	.36	.34
18	.15	.36	.49	.53	1.59	1.83	.72	.64	.48	.45	.36	.34
19	.15	.36	.60	.51	.65	.59	.68	.63	.46	.46	.36	.34
20	.15	.35	.69	.54	.53	.58	.65	.62	.47	.45	.36	.34
21	0.15	0.34	0.65	0.53	1.21	1.48	0.65	0.61	0.47	0.45	0.37	0.34
22	.14	.33	.62	1.35	.34	.63	.65	.61	.46	.44	.37	.34
23	.14	.31	.57	.06	.14	.54	.77	.60	.45	.44	.37	1.24
24	.14	.30	.53	0.92	.10	.39	.83	.59	.45	.43	.38	0.51
25	.14	.34	1.03	.78	0.94	.29	.86	.58	.45	.43	.38	.38
26	0.13	0.37	0.76	0.71	0.86	1.16	0.99	0.58	0.44	0.43	0.39	0.37
27	.13	.36	.64	.65	.78	.06	1.03	.57	.44	.43	.40	.39
28	.13	.39	.57	.65	.93	.10	.04	.57	.44	.43	.40	.39
29	.43	.40	.54	.73	1.32	.02	.03	.56	.44	.42		.38
30	.53	.41	.58	.73	.29	.45	.08	.55	.43	.41		.37
31		.41		.69	.01		.03		.43	.40		.36
Mean	0.23	0.40	0.55	0.67	1.13	1.56	0.85	0.71	0.48	0.43	0.37	0.40
Max.	0.53	0.63	1.07	1.35	1.78	3.81	1.16	1.28	0.55	0.46	0.40	1.24
Min.	0.13	0.30	0.47	0.51	0.65	0.88	0.68	0.55	0.43	0.40	0.36	0.34

WATER YEAR 1969 : Max. 3.81 m. Min. 0.13 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.14	0.28	0.57	1.34	4.19	4.64	6.21	0.51	0.22	0.10	0.10
2	0.00	0.09	0.60	0.65	1.28	2.33	4.01	5.11	0.48	0.22	0.10	0.10
3	0.00	0.08	0.65	1.10	1.34	6.10	3.65	3.83	0.54	0.22	0.10	0.24
4	0.00	0.06	1.77	2.56	1.28	8.16	2.96	3.04	0.51	0.22	0.09	0.22
5	0.00	0.04	0.95	1.52	1.05	17	2.56	2.56	0.48	0.22	0.09	0.16
6	0.00	0.02	1.77	0.90	1.10	12	2.19	2.19	0.45	0.22	0.09	0.08
7	0.00	0.04	3.65	1.05	1.46	5.77	1.98	1.84	0.45	0.20	0.09	0.05
8	0.00	0.65	3.04	0.75	1.77	6.87	1.77	1.70	0.45	0.20	0.08	0.05
9	0.00	0.33	1.40	0.60	1.52	5.77	1.52	1.58	0.45	0.20	0.07	0.05
10	0.00	0.22	0.80	0.54	3.65	3.56	1.34	1.46	0.42	0.20	0.07	0.05
11	0.00	0.33	0.51	0.75	3.04	3.47	1.10	1.34	0.39	0.18	0.07	0.04
12	0.00	0.22	0.39	0.51	2.72	5.00	0.95	1.10	0.39	0.24	0.07	0.04
13	0.00	0.18	0.30	0.60	13	24	0.95	1.05	0.39	0.26	0.07	0.04
14	0.00	0.12	0.28	1.10	8.04	20	0.95	1.05	0.36	0.33	0.06	0.04
15	0.00	0.08	0.24	0.85	4.82	25	1.98	1.00	0.36	0.33	0.06	0.04
16	0.00	0.07	0.20	0.65	2.96	68	1.77	1.00	0.36	0.30	0.06	0.04
17	0.00	0.05	0.20	0.57	2.05	27	1.46	0.95	0.36	0.30	0.06	0.04
18	0.00	0.04	0.24	0.51	9.70	12	1.40	0.95	0.33	0.30	0.06	0.04
19	0.00	0.04	0.54	0.45	11	8.28	1.16	0.95	0.28	0.33	0.06	0.04
20	0.00	0.03	0.95	0.54	8.92	8.66	1.00	0.90	0.30	0.30	0.06	0.04
21	0.00	0.02	0.75	0.51	5.22	8.04	1.00	0.85	0.30	0.24	0.07	0.04
22	0.00	0.01	0.80	7.09	6.65	11	1.00	0.85	0.28	0.22	0.07	0.04
23	0.00	0.00	0.57	4.10	4.55	9.44	1.70	0.80	0.26	0.22	0.07	5.44
24	0.00	0.00	0.45	2.88	4.19	7.56	2.12	0.75	0.26	0.20	0.08	0.33
25	0.00	0.02	3.65	1.84	2.80	6.43	2.33	0.70	0.26	0.20	0.08	0.08
26	0.00	0.05	1.58	1.40	2.19	4.46	3.38	0.70	0.24	0.20	0.09	0.07
27	0.00	0.04	0.90	1.50	1.64	3.56	3.74	0.65	0.24	0.20	0.10	0.09
28	0.00	0.07	0.65	1.16	2.72	3.92	3.83	0.65	0.24	0.20	0.10	0.09
29	0.09	0.08	0.48	1.64	6.43	3.20	3.74	0.60	0.24	0.14		0.08
30	0.28	0.09	0.60	1.64	6.10	7.56	4.19	0.57	0.22	0.12		0.07
31		0.09		1.40	3.38		3.74		0.22	0.10		0.06
Total	0.37	3.30	29.19	41.48	127.91	338.33	70.11	46.93	11.02	7.03	2.17	7.89
Mean	0.012	0.11	0.97	1.34	1.03	11.3	2.26	1.56	0.35	0.226	0.08	0.25
Max.	0.28	0.65	3.65	7.09	13	68	4.64	6.21	0.54	0.33	0.10	5.44
Min.	0.00	0.00	0.20	0.45	1.05	2.33	0.95	0.57	0.22	0.10	0.06	0.04
Runoff - MCM.	0.00	0.285	2.522	3.583	11.051	29.231	6.057	4.054	0.952	0.607	0.187	0.681

WATER YEAR 1969 : Max. 68 Min. 0.00 Mean 1.87 Annual Runoff 59.247 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 16	08.00	4.70	106				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Nam Pat at Ban Na Phrai, Uttaradit (N_{31})

Location: Lat. 18°-03'-35" N., Long. 100°-56'-05" E., on left bank at Ban Na Phrai Amphoe Fak Tha, Uttaradit.

Drainage Area: 676 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Near the gage site

Elevation: + 5.137 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1968-1973

Rating Operation:

Period of Rating: 1969-1970

Rated by Float: -

Rated by Current Meter: 1969-1970

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

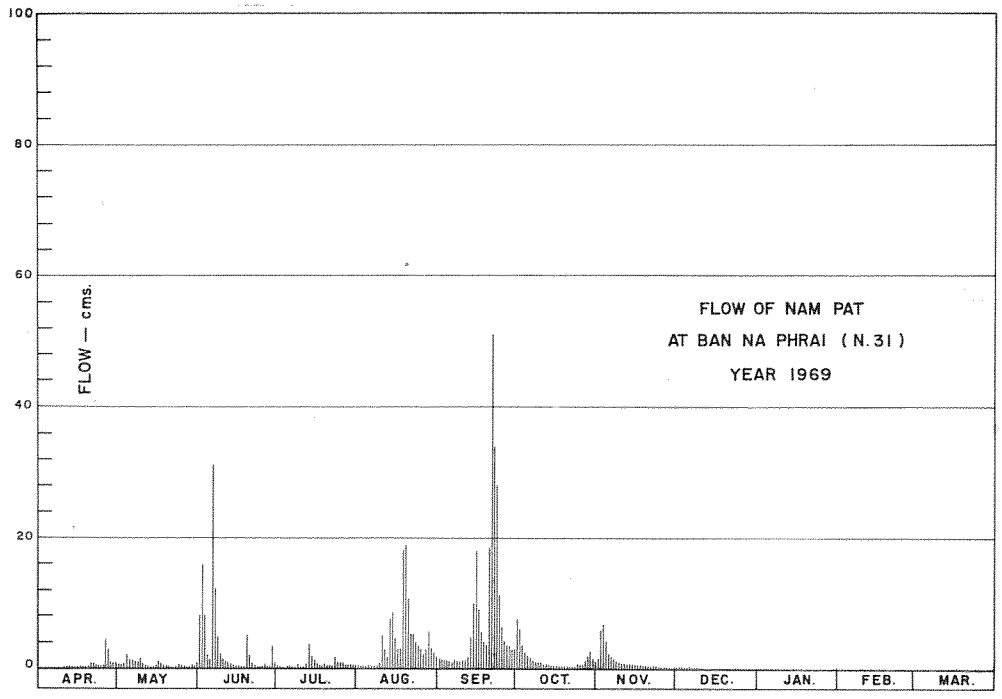
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: * Mean hourly gauge-height and discharge on periods September 19-27.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.32	0.42	0.84	0.43	0.45	0.55	0.82	0.55	0.40	0.35	0.35	0.32
2	.32	.38	1.04	.40	.45	.54	.76	.77	.40	.35	.35	.32
3	.32	.37	0.74	.39	.45	.52	.66	.80	.40	.35	.35	.31
4	.32	.61	.60	.48	.45	.52	.61	.71	.39	.35	.35	.31
5	.33	.52	.51	.44	.45	.52	.57	.61	.39	.35	.33	.31
6	0.34	0.51	1.32	0.39	0.45	0.50	0.54	0.56	0.39	0.33	0.33	0.31
7	.34	.50	0.78	.39	.45	.53	.52	.53	.37	.33	.33	.31
8	.35	.45	.72	.38	.45	.52	.50	.50	.37	.33	.33	.31
9	.35	.56	.61	.45	.48	.51	.49	.49	.37	.33	.33	.31
10	.35	.49	.53	.40	.74	.52	.49	.47	.37	.33	.33	.31
11	0.35	0.43	0.51	0.39	0.66	0.52	0.45	0.46	0.37	0.33	0.33	0.31
12	.35	.41	.47	.48	.57	.56	.45	.46	.36	.33	.33	.30
13	.39	.40	.46	.69	.82	.73	.45	.46	.36	.33	.33	.30
14	.39	.38	.43	.57	.85	.84	.43	.45	.36	.33	.33	.30
15	.38	.36	.41	.53	.72	1.07	.42	.45	.38	.33	.33	.30
16	0.37	0.50	0.41	0.47	0.63	0.89	0.42	0.44	0.38	0.33	0.33	0.30
17	.37	.47	.40	.45	.64	.79	.42	.43	.38	.33	.33	.30
18	.40	.44	.40	.42	1.09	.71	.42	.42	.38	.34	.33	.30
19	.39	.41	.74	.45	.10	.67	.42	.42	.38	.34	.33	.30
20	.47	.37	.55	.45	0.95	.85	.42	.42	.36	.33	.33	.30
21	0.45	0.35	0.48	0.44	0.75	1.52	0.42	0.42	0.36	0.33	0.33	0.30
22	.43	.35	.43	.43	.75	.37	.42	.42	.36	.34	.33	.30
23	.43	.36	.40	.56	.70	.23	.42	.42	.36	.34	.32	.30
24	.42	.44	.40	.49	.67	0.90	.49	.41	.37	.34	.32	.30
25	.42	.43	.40	.49	.65	.78	.47	.41	.37	.34	.32	.30
26	0.72	0.40	0.46	0.49	0.60	0.71	0.47	0.41	0.37	0.33	0.32	0.30
27	.66	.40	.41	.45	.65	.67	.54	.41	.36	.33	.32	0.29
28	.52	.41	.41	.45	.76	.67	.55	.41	.36	.33	.32	.29
29	.44	.43	.62	.45	.66	.64	.63	.41	.35	.33	-	.29
30	.49	.42	.46	.45	.60	.64	.54	.41	.35	.33	-	.29
31	-	.47	-	.44	.57	-	.50	.41	.35	.33	-	.29
Mean	0.40	0.43	0.56	0.46	0.61	0.74	0.51	0.49	0.37	0.33	0.33	0.30
Max.	0.72	0.61	1.32	0.69	1.10	1.52	0.82	0.80	0.40	0.35	0.35	0.32
Min.	0.32	0.35	0.40	0.38	0.45	0.51	0.42	0.41	0.35	0.33	0.32	0.29

WATER YEAR 1969 : Max. 1.52 m. Min. 0.29 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.03	0.46	8.32	0.53	0.69	1.67	7.56	1.67	0.30	0.15	0.15	0.06
2	0.03	0.24	16	0.30	0.69	1.55	5.70	5.98	0.30	0.15	0.15	0.06
3	0.03	0.21	5.16	0.27	0.69	1.32	3.34	6.80	0.30	0.15	0.15	0.03
4	0.03	2.44	2.26	0.92	0.69	1.32	2.44	4.33	0.27	0.15	0.15	0.03
5	0.06	1.32	1.20	0.61	0.69	1.32	1.91	2.44	0.27	0.15	0.09	0.03
6	0.09	1.20	31	0.27	0.69	1.08	1.55	1.79	0.27	0.09	0.09	0.03
7	0.09	1.08	6.25	0.27	0.69	1.43	1.32	1.43	0.21	0.09	0.09	0.03
8	0.12	0.96	4.61	0.24	0.69	1.32	1.08	1.08	0.21	0.09	0.09	0.03
9	0.12	1.79	2.44	0.69	0.92	1.20	1.00	1.00	0.21	0.09	0.09	0.03
10	0.12	1.00	1.43	0.30	5.16	1.32	1.00	0.85	0.21	0.09	0.09	0.03
11	0.12	0.53	1.20	0.27	3.34	1.32	0.69	0.77	0.21	0.09	0.09	0.03
12	0.12	0.39	0.85	0.92	1.91	1.79	0.69	0.77	0.18	0.09	0.09	0.00
13	0.27	0.30	0.77	3.88	7.56	4.88	0.69	0.77	0.18	0.09	0.09	0.00
14	0.27	0.24	0.53	1.91	8.70	8.32	0.52	0.69	0.24	0.09	0.09	0.00
15	0.24	0.18	0.39	1.43	4.61	18	0.46	0.69	0.24	0.09	0.09	0.00
16	0.21	1.08	0.39	0.84	2.80	10	0.46	0.61	0.24	0.09	0.09	0.00
17	0.21	0.85	0.30	0.69	2.98	6.53	0.46	0.53	0.24	0.09	0.09	0.00
18	0.30	0.61	0.30	0.45	18	4.33	0.46	0.46	0.24	0.12	0.09	0.00
19	0.27	0.39	5.16	0.69	19	*3.67	0.46	0.46	0.24	0.12	0.09	0.00
20	0.85	0.21	1.67	0.69	12	*12	0.46	0.46	0.18	0.09	0.09	0.00
21	0.69	0.15	0.85	0.61	5.43	*51	0.46	0.46	0.18	0.09	0.09	0.00
22	0.53	0.15	0.53	0.53	5.43	*37	0.46	0.46	0.18	0.12	0.09	0.00
23	0.46	0.18	0.30	1.79	4.06	*27	0.46	0.46	0.18	0.12	0.06	0.00
24	0.46	0.61	0.30	1.00	0.52	*11	1.00	0.38	0.21	0.12	0.06	0.00
25	0.46	0.53	0.30	1.00	3.16	*6.58	0.79	0.38	0.21	0.12	0.06	0.00
26	4.61	0.30	0.77	1.00	2,26	*4.57	0.79	0.38	0.21	0.09	0.06	0.00
27	3.34	0.30	0.39	0.69	3.16	*3.66	1.55	0.38	0.18	0.09	0.06	0.00
28	1.32	0.39	0.39	0.69	5.70	3.52	1.67	0.38	0.18	0.09	0.06	0.00
29	0.61	0.53	2.62	0.69	3.34	2.98	2.80	0.38	0.15	0.00	–	0.00
30	1.00	0.46	0.77	0.69	2.26	2.98	1.55	0.38	0.15	0.09	–	0.00
31	–	0.85	–	0.61	1.91	–	1.00	–	0.15	0.09	–	0.00
Total	17.06	19.93	97.45	25.47	132.73	234.66	44.79	37.62	6.72	3.27	2.58	0.39
Mean	0.57	0.64	3.25	0.82	4.28	7.82	1.44	1.25	0.22	0.10	0.09	0.03
Max.	4.61	2.44	31	3.88	19	51	7.56	6.80	0.30	0.15	0.15	0.06
Min.	0.03	0.15	0.30	0.27	0.69	1.08	0.46	0.38	0.15	0.09	0.06	0.00
Runoff - mcm.	1.474	1.722	8.420	2.201	11.468	20.275	3.870	3.250	0.581	0.282	0.223	0.034

WATER YEAR 1969 : Max. 51 Min. 0.00 Mean 1.70 Annual Runoff 53.799 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 21	06.00	2.40	154.20				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Nam Pat at Ban Wang Bang, Uttaradit (N_{33})

Location: Lat. 17°-43'-05" N., Long. 100°-34'-32" E., on right bank about 4.5 kilometers upstream from Confluence with Nan River at Ban Wang Bang, Tambon Saen To, Amphoe Nam Pat, Uttaradit.

Drainage Area: 2,463 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 79.00 m. (M.S.L.)

Bench Mark: B.M. - R.I.D.

Location: Near the gage site

Elevation: + 87.268 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1966 to date

Rating Operation:

Period of Rating: 1966 to date

Rated by Float: -

Rated by Current Meter: 1966 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

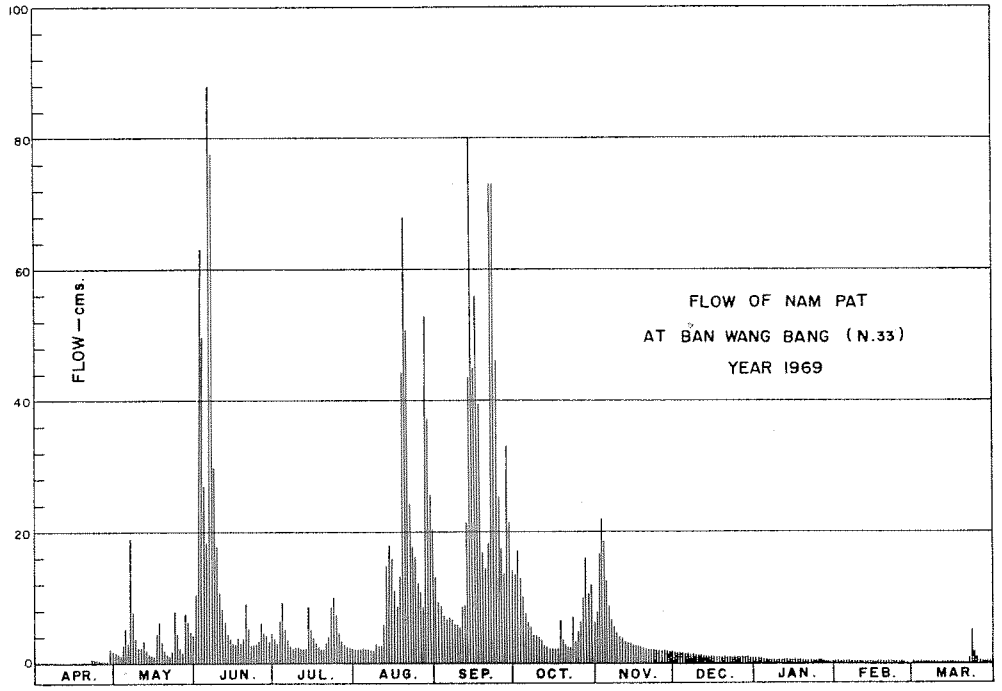
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	79.30	79.64	80.43	79.91	79.73	80.52	80.55	80.09	79.67	79.52	79.39	79.35
2	.28	.60	81.23	.81	.72	.33	.74	.72	.66	.51	.39	.32
3	.30	.56	.67	80.11	.73	.32	.59	.91	.65	.49	.39	.33
4	.28	.84	80.82	.36	.74	.21	.37	.77	.64	.49	.38	.33
5	.27	80.05	.59	.05	.71	.17	.24	.48	.64	.47	.34	.33
6	79.24	79.71	81.98	79.87	79.74	80.21	80.13	80.30	79.63	79.46	79.39	79.32
7	.26	80.82	.81	.79	.70	.17	.07	.17	.62	.47	.38	.31
8	.27	.04	80.89	.74	.70	.12	79.96	.07	.63	.46	.37	.33
9	.30	79.85	.74	.75	.83	.11	.96	.00	.61	.44	.35	.31
10	.32	.75	.39	.88	.78	.06	.92	79.94	.58	.45	.36	.31
11	79.31	79.75	80.29	79.74	79.78	80.32	79.88	79.89	79.57	79.45	79.39	79.33
12	.29	.87	.10	.72	80.08	.14	.80	.86	.57	.44	.36	.32
13	.28	.68	79.98	.75	.67	.99	.78	.85	.56	.47	.35	.32
14	.26	.61	.89	80.32	.79	81.89	.75	.84	.56	.47	.37	.31
15	.25	.56	.85	.05	.71	.24	.75	.82	.54	.47	.39	.32
16	79.26	79.52	79.84	79.91	80.45	81.57	79.73	79.80	79.55	79.47	79.37	79.33
17	.25	80.02	.93	.84	.28	.40	.73	.79	.53	.47	.40	.33
18	.24	.15	.84	.78	.48	80.95	80.17	.77	.55	.46	.38	.31
19	.23	79.82	.88	.72	81.66	.70	79.88	.75	.54	.45	.38	.28
20	.22	.68	80.34	.71	.74	.61	.81	.74	.54	.44	.38	.29
21	79.40	79.60	79.98	79.85	81.19	80.79	79.75	79.72	79.53	79.43	79.38	79.29
22	.49	.54	.79	.94	80.84	81.80	.74	.72	.54	.44	.40	.33
23	.47	.70	.82	80.33	.72	.81	80.20	.72	.54	.44	.37	80.04
24	.44	80.27	.83	.40	.71	.29	79.84	.71	.54	.42	.35	79.64
25	.42	79.88	.88	.19	.51	80.89	80.00	.70	.54	.43	.34	.49
26	79.37	79.70	80.13	79.96	80.45	80.66	80.22	79.70	79.54	79.42	79.37	79.43
27	.39	.62	79.99	.85	.26	.50	.51	.70	.54	.40	.34	.41
28	.39	80.24	.94	.81	81.53	81.16	.71	.69	.53	.39	.32	.39
29	.71	.14	.82	.78	.09	80.65	.39	.68	.55	.40		.41
30	.64	.01	.99	.75	80.98	.60	.51	.68	.53	.39		.42
31		79.88		.75	.81		.20		.53	.39		.39
Mean	79.37	79.84	80.32	79.92	79.92	80.74	80.09	79.95	79.57	79.45	79.37	79.37
Max.	79.71	80.82	81.98	80.40	81.74	81.89	80.74	80.91	79.67	79.52	79.40	80.04
Min.	79.22	79.52	79.79	79.71	79.70	80.06	79.73	79.68	79.53	79.39	79.32	79.28

WATER YEAR 1969 : Max. 81.98 m. Min. 79.22 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.10	1.64	10	3.80	2.21	12	13	5.60	1.82	0.92	0.37	0.25
2	0.08	1.40	36	2.80	2.14	8.85	17	17	1.76	0.86	0.37	0.16
3	0.10	1.16	63	5.82	2.21	8.70	13	22	1.70	0.76	0.37	0.19
4	0.08	3.10	19	9.30	2.28	7.05	9.45	18	1.64	0.76	0.34	0.19
5	0.07	5.20	13	5.20	2.07	6.54	7.50	11	1.64	0.68	0.22	0.19
6	0.04	2.07	88	3.40	2.28	7.05	6.06	8.40	1.58	0.64	0.37	0.16
7	0.06	19	74	2.63	2.00	6.54	5.40	6.54	1.52	0.68	0.34	0.13
8	0.07	5.10	21	2.28	2.00	5.94	4.30	5.40	1.58	0.64	0.31	0.19
9	0.10	3.20	17	2.35	3.00	5.82	4.30	4.70	1.46	0.56	0.25	0.13
10	0.16	2.35	10	3.50	2.56	5.30	3.90	4.10	1.28	0.60	0.28	0.13
11	0.13	2.35	8.25	2.28	2.56	8.70	3.50	3.60	1.22	0.60	0.37	0.19
12	0.09	3.40	5.70	2.14	5.50	6.18	2.70	3.30	1.22	0.56	0.28	0.16
13	0.08	1.88	4.50	2.35	15	25	2.56	3.20	1.16	0.68	0.25	0.16
14	0.06	1.46	3.60	8.70	18	80	2.35	3.10	1.16	0.68	0.31	0.13
15	0.05	1.16	3.20	5.20	16	37	2.35	2.90	1.04	0.68	0.37	0.16
16	0.06	0.92	3.10	3.80	11	56	2.21	2.70	1.10	0.68	0.31	0.19
17	0.05	4.90	4.00	3.10	8.10	45	2.21	2.63	0.98	0.68	0.40	0.19
18	0.04	6.30	3.10	2.56	11	23	6.54	2.49	1.10	0.64	0.34	0.13
19	0.03	2.90	3.50	2.14	62	16	3.50	2.35	1.04	0.60	0.34	0.08
20	0.02	1.88	9.00	2.07	68	14	2.80	2.28	1.04	0.56	0.34	0.09
21	0.40	1.40	4.50	3.20	34	18	2.35	2.14	0.98	0.52	0.34	0.09
22	0.76	1.04	2.63	4.10	20	73	2.28	2.14	1.04	0.56	0.40	0.19
23	0.68	2.00	2.90	8.85	17	73	6.90	2.14	1.04	0.56	0.31	5.10
24	0.56	7.95	3.00	10	16	40	3.10	2.07	1.04	0.48	0.25	1.64
25	0.48	3.50	3.50	6.78	12	21	4.70	2.00	1.04	0.52	0.22	0.76
26	0.31	2.00	6.06	4.30	11	15	7.20	2.00	1.04	0.48	0.31	0.52
27	0.37	1.52	4.60	3.20	7.80	12	12	2.00	1.04	0.40	0.22	0.44
28	0.37	7.50	4.10	2.80	53	33	16	1.94	0.98	0.37	0.16	0.37
29	2.07	6.18	2.90	2.56	29	15	10	1.88	1.10	0.40		0.44
30	1.64	4.80	4.60	2.35	24	14	12	1.88	0.98	0.37		0.48
31		3.50		2.35	19		6.90		0.98	0.37		0.37
Total	9.11	112.76	437.74	125.91	482.71	698.67	198.06	151.48	38.30	18.49	8.74	13.60
Mean	0.303	3.63	14.6	4.06	15.6	23.3	6.39	5.05	1.23	0.596	0.314	0.44
Max.	2.07	19	88	10	68	80	17	22	1.82	0.92	0.40	5.10
Min.	0.02	0.92	2.63	2.14	2.14	5.30	2.21	1.88	0.98	0.37	0.16	0.08
Runoff - mcm.	0.787	9.742	37.821	10.879	41.706	60.365	17.112	13.087	3.309	1.597	0.755	1.175

WATER YEAR 1969 : Max. 88 Min. 0.02 Mean 6.29 Annual Runoff 198.335 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
June 6	15.00	83.00	211				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
NAN RIVER BASIN

Khwae Noi at Tambon Nong Krathao, Phitsanulok (N_{36})

Location: Lat. 17°-04'-59" N., Long. 100°-49'-55" E., on left bank about 50 meters upstream from Belly Bridge along the road Lom Sak – Nakhon Thai, Tambon Nong Krathao, Amphoe Nakhon Thai, Phitsanulok.

Drainage Area: 1,663 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S.

Location: Along the measuring line

Elevation: + 6.154 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1971 to date

Rated by Float: –

Rated by Current Meter: 1971 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

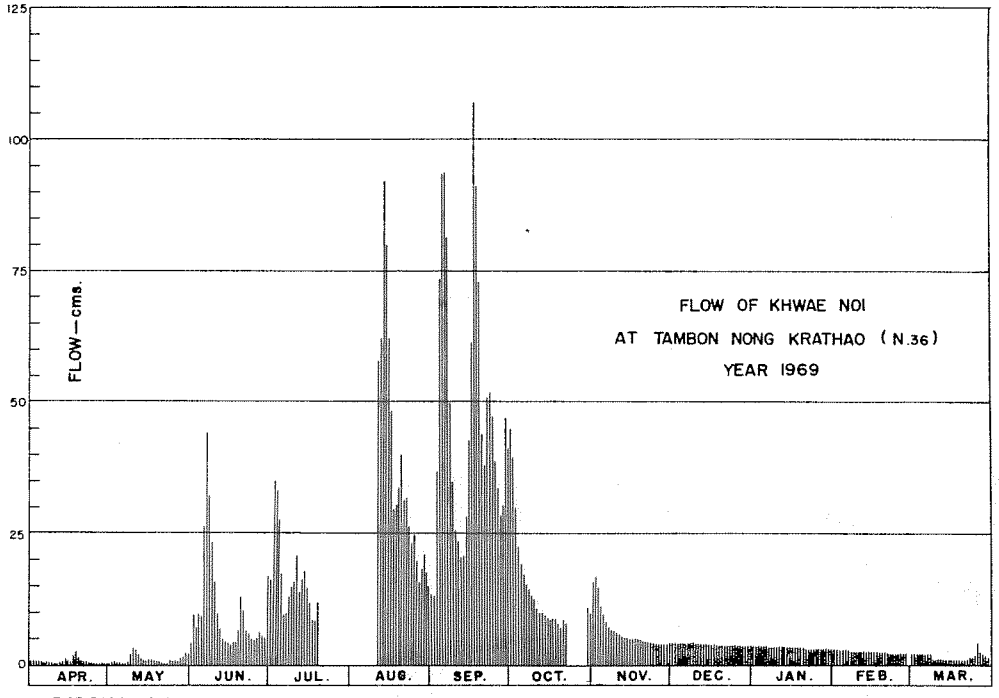
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1971-1973. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: No gage-height record July 20-31.August 1-11.October 23-30.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.52	0.43	0.99	1.98		1.71	3.51	1.98	0.98	0.92	0.86	0.75
2	.52	.46	1.45	.53		.58	.08	2.01	.98	.92	.85	.74
3	.47	.48	.21	3.00		3.19	2.54	1.81	.98	.92	.85	.73
4	.46	.46	.47	2.88		5.54	.30	.62	.98	.92	.85	.73
5	.47	.44	.44	1.93		.56	.13	.47	.98	.92	.85	.73
6	0.45	0.41	2.64	1.53		5.48	1.99	1.39	0.98	0.92	0.78	0.73
7	.45	.40	3.46	.42		4.13	.89	.29	.98	.91	.78	.73
8	.44	.46	2.82	.75		3.42	.79	.24	.98	.91	.78	.73
9	.44	.72	2.24	.87		2.78	.71	.21	.98	.91	.78	.57
10	.43	.86	1.85	.94		.47	.63	.19	.97	.90	.78	.56
11	0.42	0.81	1.41	2.26		2.36	1.53	1.15	0.96	0.90	0.78	0.55
12	.44	.63	.18	1.75	4.12	.20	.51	.11	.96	.90	.78	.55
13	.58	.55	.04	.93	.56	.29	.48	.09	.96	.90	.78	.55
14	.55	.51	0.98	2.06	5.48	.84	.45	.08	.96	.90	.78	.55
15	.48	.47	.95	1.84	4.45	3.48	.41	.07	.95	.90	.78	.55
16	0.45	0.57	0.90	1.56	3.88	4.41	1.39	1.07	0.95	0.89	0.78	0.55
17	.71	.54	.96	.39	.07	6.01	.42	.07	.95	.89	.78	.55
18	.77	.49	.97	.36	2.72	5.14	.39	.06	.94	.89	.77	.55
19	.56	.46	1.25	.68	.99	3.79	.31	.05	.94	.89	.77	.54
20	.48	.44	.71		3.25	.25	.26	.03	.94	.89	.77	.54
21	0.47	0.43	1.53		2.82	3.12	1.38	1.02	0.94	0.88	0.76	0.54
22	.45	.43	.20		.87	.81	.32	.01	.94	.88	.76	.54
23	.43	.45	.12		.55	.84		0.99	.94	.88	.76	.63
24	.41	.48	.02		.39	.33		.98	.94	.88	.76	.60
25	.39	.49	.03		.49	.14		.96	.94	.88	.76	.72
26	0.39	0.49	1.08		2.10	2.87		0.96	0.93	0.88	0.76	0.98
27	.39	.48	.18		1.91	.66		.96	.93	.88	.75	.74
28	.39	.57	.08		2.12	.83		.96	.92	.88	.75	.67
29	.39	.66	.06		.25	3.59		.97	.92	.87	–	.64
30	.39	.76	2.01		1.87	.34	1.58	.97	.92	.86	–	.61
31	–	.72	–		.87	–	.49	–	.92	.86	–	.58
Mean	0.47	0.53	1.44	1.88	2.96	3.47	1.77	1.19	0.95	0.89	0.78	0.64
Max.	0.77	0.86	3.46	3.00	5.48	6.01	3.51	2.01	0.98	0.92	0.86	0.75
Min.	0.39	0.40	0.90	1.36	1.87	1.58	1.26	0.96	0.92	0.86	0.75	0.54

WATER YEAR 1969 : Max. 6.01 m. Min. 0.27 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.90	0.45	4.41	16		13	45	16	4.32	3.78	3.28	2.40
2	0.90	0.60	9.40	10		11	36	17	4.32	3.78	3.20	2.32
3	0.65	0.70	6.52	35		38	26	14	4.32	3.78	3.20	2.24
4	0.60	0.60	9.64	32		93	22	11	4.32	3.78	3.20	2.24
5	0.65	0.50	9.28	16		94	19	9.64	4.32	3.78	3.20	2.24
6	0.55	0.35	28	10		92	17	8.68	4.32	3.78	2.64	2.24
7	0.55	0.30	44	9.04		58	15	7.48	4.32	3.69	2.64	2.24
8	0.50	0.60	31	13		43	14	6.88	4.32	3.69	2.64	2.24
9	0.50	2.16	21	15		30	13	6.52	4.32	3.69	2.64	1.15
10	0.45	3.28	15	16		25	12	6.30	4.23	3.60	2.64	1.10
11	0.40	2.88	8.92	21		23	10	5.90	4.14	3.60	2.64	1.05
12	0.50	1.51	6.20	13	58	20	10	5.50	4.14	3.60	2.64	1.05
13	1.20	1.05	4.86	16	68	21	9.76	5.31	4.14	3.60	2.64	1.05
14	1.05	0.85	4.32	18	92	31	9.40	5.22	4.14	3.60	2.64	1.05
15	0.70	0.65	4.05	14	66	44	8.92	5.13	4.05	3.60	2.64	1.05
16	0.55	1.15	3.60	11	53	65	8.68	5.13	4.05	3.52	2.64	1.05
17	2.08	1.00	4.14	8.64	36	107	9.04	5.13	4.05	3.52	2.64	1.05
18	2.56	0.75	4.23	8.32	29	83	8.68	5.04	3.96	3.52	2.56	1.05
19	1.00	0.60	7.00	12	33	51	7.72	4.95	3.96	3.52	2.56	1.00
20	0.70	0.50	13		40	40	7.12	4.77	3.96	3.52	2.56	1.00
21	0.65	0.45	10		31	37	8.56	4.68	3.96	3.44	2.48	1.00
22	0.55	0.45	6.40		32	51	7.84	4.59	3.96	3.44	2.48	1.00
23	0.45	0.55	5.60		26	52		4.41	3.96	3.44	2.48	1.51
24	0.35	0.70	4.68		23	41		4.32	3.96	3.44	2.48	1.30
25	0.27	0.75	4.77		25	37		4.14	3.96	3.44	2.48	2.16
26	0.27	0.75	5.22		18	32		4.14	3.87	3.44	2.48	4.32
27	0.27	0.70	6.20		15	28		4.14	3.87	3.44	2.40	2.32
28	0.27	1.15	5.22		19	31		4.14	3.78	3.44	2.40	1.79
29	0.27	1.72	5.04		21	47		4.23	3.78	3.36	–	1.58
30	0.27	2.48	17		15	41	11	4.23	3.78	3.28	–	1.37
31	–	2.16	–		15	–	9.88	–	3.78	3.28	–	1.20
Total	20.70	32.34	310.60	294.36	715	1,385	345.60	198.60	126.36	110.39	74.96	50.36
Mean	0.69	1.04	10.3	15.5	35.7	46.2	14.4	6.62	4.08	3.56	2.68	1.62
Max.	2.56	3.28	44	35	92	107	45	17	4.32	3.78	3.28	2.40
Min.	0.27	0.30	3.60	8.32	15	11	7.12	4.14	3.78	3.28	2.40	1.00
Runoff – MCM.	1.788	2.794	26.836	25.433	61.776	119.664	29.860	17.159	10.917	9.538	6.476	4.351

WATER YEAR 1969 : Max. 107 Min. 0.27 Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 17	15.00	6.11	109				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Nam Khan at Ban Pa Khai, Phitsanulok (N_{38})

Location: Lat. 16°-58'-22" N., Long. 100°-50'-55" E., on right bank about 8 kilometers from Phitsanulok – Nakhon Thai road, at Ban Pa Khai, Amphoe Nakhon Thai, Phitsanulok.

Drainage Area: 243 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: –

Location: –

Elevation: –

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1967-1972

Rating Operation:

Period of Rating: 1967-1970

Rated by Float: –

Rated by Current Meter: 1967-1970

Stability of Channel Regimes: Stable, shifting adjustment is included for flow computation.

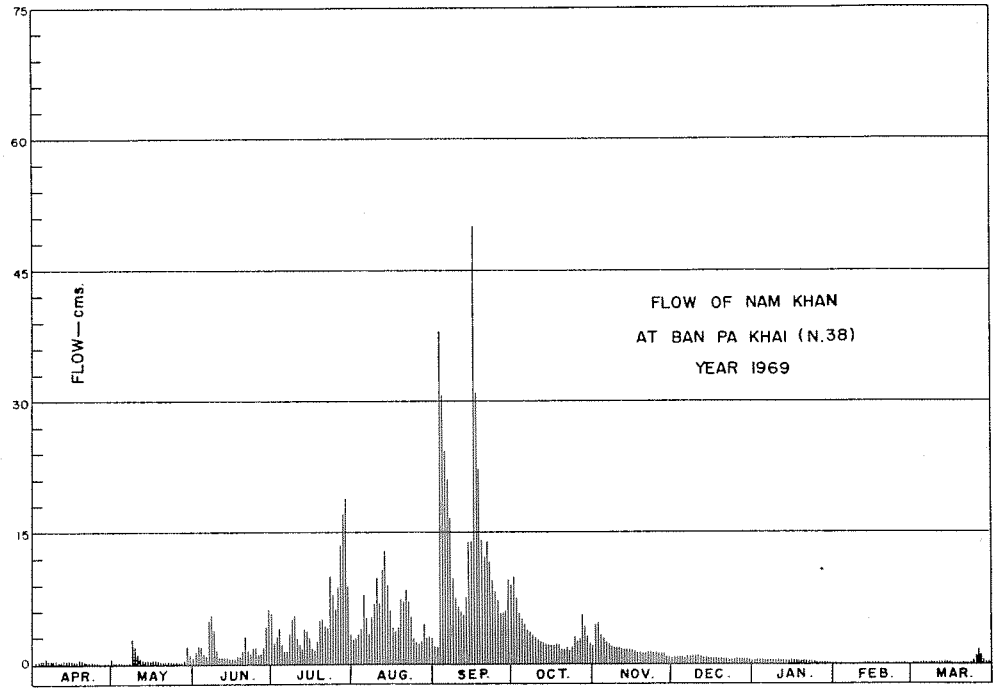
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.45	0.45	0.82	1.04	1.17	0.88	2.09	1.33	0.68	0.55	0.50	0.46
2	.47	.44	.98	.16	.25	.88	1.73	.36	.67	.55	.50	.46
3	.51	.43	.92	.38	.27	3.84	.55	.15	.67	.55	.50	.46
4	.49	.43	.76	.08	.36	.19	.50	.05	.67	.55	.50	.46
5	.60	.43	.74	0.89	.87	2.72	.38	0.99	.66	.55	.50	.46
6	0.49	0.43	1.47	0.89	1.42	2.61	1.31	0.95	0.65	0.55	0.50	0.46
7	.48	.42	.53	1.33	.25	.08	.27	.91	.65	.55	.49	.46
8	.48	1.12	.16	.53	.58	1.73	.23	.89	.65	.55	.49	.45
9	.47	0.87	0.66	.59	.83	.57	.17	.88	.65	.55	.49	.46
10	.46	.73	.66	.18	2.06	.46	.13	.87	.64	.55	.50	.46
11	0.50	0.56	0.66	0.97	1.68	1.38	1.09	0.86	0.64	0.55	0.53	0.46
12	.50	.53	.65	.88	2.19	.31	.07	.83	.63	.55	.56	.46
13	.50	.50	.61	1.27	.33	.69	.05	.81	.63	.55	.57	.46
14	.49	.48	.60	.23	1.94	2.18	.02	.81	.63	.55	.54	.45
15	.48	.52	.59	.09	.61	.19	.02	.80	.63	.55	.54	.45
16	0.47	0.55	0.59	0.86	1.39	4.32	1.02	0.79	0.62	0.55	0.54	0.44
17	.54	.48	.71	.85	.28	3.13	.11	.79	.62	.54	.53	.44
18	.56	.47	.65	1.10	.44	2.40	.00	.76	.61	.54	.52	.44
19	.50	.47	.87	.42	.82	.11	0.98	.75	.61	.54	.51	.44
20	.46	.47	1.19	.50	.76	.02	.95	.75	.61	.53	.51	.44
21	0.44	0.47	0.82	1.40	1.92	2.12	1.03	0.73	0.60	0.53	0.50	0.44
22	.43	.47	.74	.40	.67	.17	0.91	.72	.59	.53	.49	.44
23	.43	.46	.92	2.16	.33	1.87	1.07	.71	.59	.53	.47	.44
24	.43	.46	.92	1.95	.07	.87	.19	.70	.59	.53	.47	.55
25	.42	.46	.77	.64	.02	.77	.11	.69	.59	.53	.47	.75
26	0.41	0.46	0.78	2.02	0.97	1.58	1.18	0.69	0.59	0.52	0.47	0.98
27	.40	.45	.97	.50	1.08	.59	.57	.69	.58	.52	.47	.64
28	.40	.53	1.30	.64	.34	.65	.32	.69	.58	.52	.47	.56
29	.43	.96	.63	.80	.08	2.01	.15	.69	.58	.51	–	.52
30	.50	.69	.12	1.44	.13	1.94	.04	.69	.57	.51	–	.51
31	–	.61	–	.25	.09	–	0.97	–	.57	.51	–	.49
Mean	0.47	0.54	0.89	1.43	1.49	2.07	1.20	0.84	0.62	0.54	0.50	0.50
Max.	0.60	1.12	1.63	2.80	2.33	4.32	2.09	1.36	0.68	0.55	0.57	0.98
Min.	0.40	0.42	0.59	0.85	0.97	0.88	0.91	0.69	0.57	0.51	0.47	0.44

WATER YEAR 1969 : Max. 4.32 m. Min. 0.47 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.26	0.26	1.40	2.17	2.81	1.84	10	4.52	0.85	0.50	0.13	0.17
2	0.30	0.24	2.12	2.81	3.28	1.84	6.92	4.73	0.82	0.50	0.13	0.17
3	0.40	0.22	1.84	4.18	3.40	38	5.52	3.34	0.82	0.50	0.13	0.17
4	0.35	0.22	1.16	2.38	3.98	30	5.16	2.75	0.82	0.50	0.13	0.17
5	0.63	0.22	1.09	1.48	7.94	22	4.32	2.43	0.78	0.50	0.13	0.17
6	0.35	0.22	5.16	1.48	4.39	21	3.85	2.22	0.98	0.50	0.13	0.17
7	0.33	0.19	5.60	3.85	3.28	13	3.60	2.03	0.98	0.50	0.12	0.17
8	0.33	2.87	3.10	5.24	5.52	9.11	3.34	1.93	0.98	0.50	0.12	0.15
9	0.30	1.61	0.82	5.67	7.57	7.57	2.99	1.88	0.98	0.50	0.12	0.17
10	0.28	1.05	0.82	2.93	9.85	6.59	2.75	1.84	0.94	0.50	0.13	0.17
11	0.37	0.53	0.82	2.22	6.26	5.88	2.54	1.79	0.94	0.50	0.19	0.17
12	0.37	0.45	0.78	1.79	11	5.45	2.43	1.65	0.82	0.50	0.26	0.17
13	0.37	0.37	0.66	3.98	13	8.70	2.33	1.57	0.82	0.50	0.28	0.17
14	0.35	0.33	0.63	3.72	8.61	14	2.17	1.57	0.82	0.50	0.22	0.15
15	0.33	0.42	0.60	2.87	5.74	14	2.17	1.52	0.82	0.50	0.22	0.15
16	0.30	0.50	0.60	1.70	4.18	50	2.17	1.48	0.78	0.50	0.22	0.13
17	0.47	0.33	0.98	1.65	3.47	29	2.38	1.40	0.72	0.47	0.19	0.13
18	0.53	0.30	0.78	2.93	4.52	17	1.84	1.27	0.69	0.47	0.17	0.13
19	0.37	0.30	1.61	5.02	7.48	13	1.74	1.24	0.69	0.47	0.15	0.13
20	0.28	0.30	3.28	5.24	6.92	12	1.61	1.24	0.69	0.42	0.15	0.13
21	0.24	0.30	1.40	4.18	8.42	14	1.98	1.44	0.69	0.42	0.13	0.13
22	0.22	0.30	1.09	3.92	7.01	11	1.44	1.40	0.63	0.42	0.12	0.13
23	0.22	0.28	1.84	10	4.46	8.23	2.17	1.35	0.63	0.42	0.12	0.13
24	0.22	0.28	1.84	7.85	2.81	8.23	3.10	1.31	0.63	0.30	0.12	0.37
25	0.19	0.28	1.20	5.45	2.54	7.29	2.64	1.27	0.63	0.30	0.12	0.94
26	0.17	0.28	1.24	8.70	2.27	5.74	3.04	1.27	0.63	0.28	0.12	1.74
27	0.15	0.26	2.08	14	2.87	5.81	5.67	1.27	0.60	0.28	0.12	0.55
28	0.15	0.45	3.98	17	4.52	6.26	3.92	0.88	0.60	0.28	0.12	0.33
29	0.22	2.03	6.35	19	2.87	9.64	2.87	0.88	0.60	0.26	–	0.24
30	0.37	0.91	2.87	4.52	3.16	8.90	2.27	0.88	0.58	0.15	–	0.22
31	–	0.66	–	3.28	2.93	–	1.93	–	0.55	0.15	–	0.17
Total	9.42	16.96	57.74	161.21	167.06	405.08	100.86	54.35	23.51	13.09	4.29	8.07
Mean	0.31	0.55	1.92	5.20	5.39	13.5	3.25	1.81	0.76	0.42	0.15	0.26
Max.	0.63	2.87	6.35	19	13	50	10	4.73	0.98	0.50	0.28	1.74
Min.	0.15	0.19	0.60	1.48	2.27	1.84	1.44	0.88	0.55	0.15	0.12	0.13
Runoff – MCM.	0.813	1.465	4.988	13.928	14.433	34.998	8.714	4.695	2.031	1.131	0.371	0.697

WATER YEAR 1969 : Max. 50 Min. 0.12 Mean 2.80 Annual Runoff 88.269 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 16	18.00	5.40	70				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
NAN RIVER BASIN

Nam Phai at Ban Na Nam Phai, Uttaradit (N_{41})

Location: Lat. 17°-49'-38" N., Long. 100°-48'-30" E., on left bank at Ban Na Nam Phai about 2 kilometers before. Confluence with Nam Pat, Amphoe Nam Pat, Uttaradit.

Drainage Area: 223 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Near the staff gage

Elevation: + 3.938 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1969-1971

Rating Operation:

Period of Rating: 1969-1970

Rated by Float: -

Rated by Current Meter: 1969-1970

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

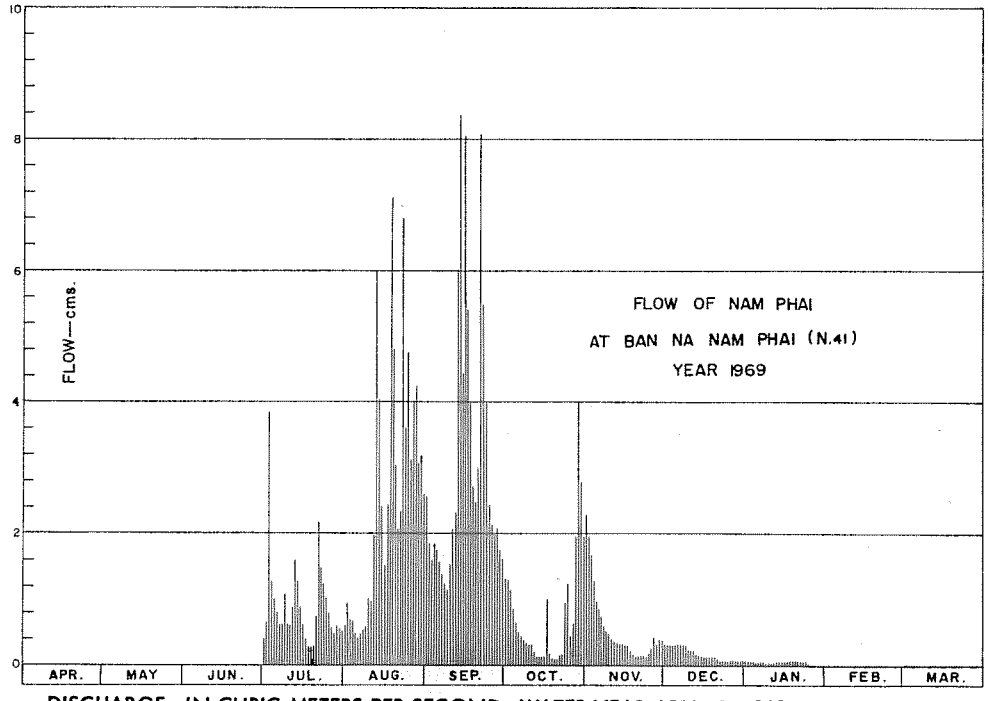
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by local residents. No adjustment made for virgin flow.

Remarks: Stream gaging station began on July 1, 1969. Discharge record for periods of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1				0.65	0.70	0.91	0.80	0.89	0.63	0.54	0.50	0.42
2	Stream gaging began on			.71	.75	.85	.80	.86	.63	.54	.49	.42
3	July 1, 1969			.99	.71	.82	.77	.84	.63	.54	.48	.42
4				.79	.71	.85	.74	.80	.63	.53	.47	.42
5				.76	.67	.84	.70	.76	.63	.53	.47	.42
6				0.73	0.65	0.82	0.68	0.74	0.63	0.53	0.46	0.42
7				.70	.67	.80	.66	.72	.63	.53	.45	.42
8				.70	.68	.79	.65	.70	.63	.53	.45	.42
9				.77	.70	.77	.64	.68	.63	.52	.46	.42
10				.71	.76	.82	.63	.67	.61	.52	.46	.42
11				0.69	0.74	0.87	0.63	0.65	0.61	0.52	0.44	0.43
12				.74	.82	.80	.60	.64	.61	.53	.44	.43
13				.83	1.08	1.08	.57	.64	.58	.53	.42	.44
14				.79	0.99	.16	.57	.63	.58	.53	.43	.44
15				.74	.90	.01	.57	.63	.57	.53	.43	.44
16				0.70	0.83	1.15	0.55	0.63	0.57	0.53	0.48	0.44
17				.66	.78	.04	.76	.63	.57	.53	.48	.45
18				.62	1.02	0.97	.58	.61	.57	.54	.48	.45
19				.62	.12	.92	.55	.58	.57	.54	.48	.43
20				.62	0.96	.90	.55	.57	.57	.54	.47	.43
21				0.65	0.87	0.95	0.55	0.57	0.55	0.53	0.46	0.42
22				.88	.87	1.15	.58	.57	.54	.53	.45	.42
23				.81	1.11	.03	.59	.57	.54	.53	.45	.45
24				.79	0.96	0.95	.75	.57	.54	.53	.45	.54
25				.76	1.03	.90	.79	.60	.54	.52	.45	.54
26				0.72	0.92	0.88	0.65	0.62	0.54	0.50	0.45	0.52
27				.69	1.00	.86	.68	.66	.54	.50	.43	.52
28				.67	.01	.87	.83	.63	.54	.51	.42	.50
29				.70	0.94	.84	1.00	.65	.54	.51		.50
30				.69	.95	.83	0.91	.65	.54	.51		.48
31				.68	.91		.85		.54	.50		.48
Mean				0.73	0.85	0.91	0.68	0.66	0.58	0.52	0.46	0.45
Max.				0.99	1.12	1.16	1.00	0.89	0.63	0.54	0.50	0.54
Min.				0.62	0.65	0.77	0.55	0.57	0.54	0.50	0.42	0.42

WATER YEAR 1969 : Max. 1.16 m. Min. m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1				0.40	0.60	2.56	1.30	2.29	0.32	0.08	0.00	0.00
2				0.67	0.95	1.85	1.30	1.96	0.32	0.08		
3	Stream gaging			3.84	0.67	1.52	1.09	1.74	0.32	0.08		
4	began on July 1, 1969			1.23	0.67	1.85	0.88	1.30	0.32	0.06		
5				1.02	0.48	1.74	0.60	1.02	0.32	0.06		
6				0.81	0.40	1.52	0.52	0.88	0.32	0.06		
7				0.60	0.48	1.30	0.44	0.74	0.32	0.06		
8				0.60	0.52	1.23	0.40	0.60	0.32	0.06		
9				1.09	0.60	1.09	0.36	0.52	0.32	0.04		
10				0.67	1.02	1.52	0.32	0.48	0.24	0.04		
11				0.56	*0.88	2.07	0.32	0.40	0.24	0.04		
12				0.88	1.52	1.30	0.20	0.36	0.24	0.06		
13				1.63	6.00	6.00	0.14	0.36	0.16	0.06		
14				1.23	3.84	8.36	0.14	0.32	0.16	0.06		
15				0.88	2.40	4.25	0.14	0.32	0.14	0.06		
16				0.60	1.63	8.05	0.10	0.32	0.14	0.06		
17				0.44	1.16	5.00	1.02	0.32	0.14	0.06		
18				0.28	4.50	3.52	0.16	0.24	0.14	0.08		
19				0.28	7.12	2.72	0.10	0.16	0.14	0.08		
20				0.28	3.36	2.40	0.10	0.14	0.14	0.08		
21				0.40	2.07	3.20	0.10	0.14	0.10	0.06		
22				2.18	2.07	8.05	0.16	0.14	0.08	0.06		
23				1.41	6.81	4.75	0.18	0.14	0.08	0.06		0.00
24				1.23	3.36	3.20	0.95	0.14	0.08	0.06		0.08
25				1.02	4.75	2.40	1.23	0.20	0.08	0.04		0.08
26				0.74	2.72	2.18	0.40	0.28	0.08	0.00		0.04
27				0.56	4.00	1.96	0.52	0.44	0.08	0.00		0.04
28				0.48	4.25	2.07	1.63	0.32	0.08	0.02	0.00	0.00
29				0.60	3.04	1.74	4.00	0.40	0.08	0.02		0.00
30				0.56	3.20	1.63	2.56	0.40	0.08	0.02		0.00
31				0.52	2.56		1.85		0.08	0.00		0.00
Total				27.69	77.63	91.03	23.21	17.07	5.66	1.60	0.00	0.24
Mean				0.89	2.50	3.03	0.75	0.57	0.18	0.05	0.00	0.01
Max.				3.84	7.12	8.36	4.00	2.29	0.32	0.08	0.00	0.08
Min.				0.28	0.40	1.09	0.10	0.14	0.08	0.00	0.00	0.00
Runoff - RCM.				2.392	6.707	7.865	2.005	1.475	0.489	0.138	0.000	0.021

WATER YEAR 1969 : Max. 8.36 Min. 0.00 Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 13	18.00	2.19	86				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
CHAO PHYA RIVER BASIN

Chao Phya River at Muang Nakhon Sawan (C_2)

Location: Lat. 15°-40'-15" N., Long. 100°-06'-45" E., on left bank about 3 kilometers downstream from Dechatiwong bridge, Amphoe Muang, Nakhon Sawan.

Drainage Area: 110,569 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: Gage readings are already m. (M.S.L.)

Bench Mark: B.M. - H.S./R.I.D.

Location: About 20 meters west of gage site

Elevation: B.M. C2 + 25.628 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1914 to date

Rating Operation:

Period of Rating: 1956 to date

Rated by Float: -

Rated by Current Meter: 1956 to date

Stability of Channel Regimes: Fairly stable, no shifting adjustment for flow computation.

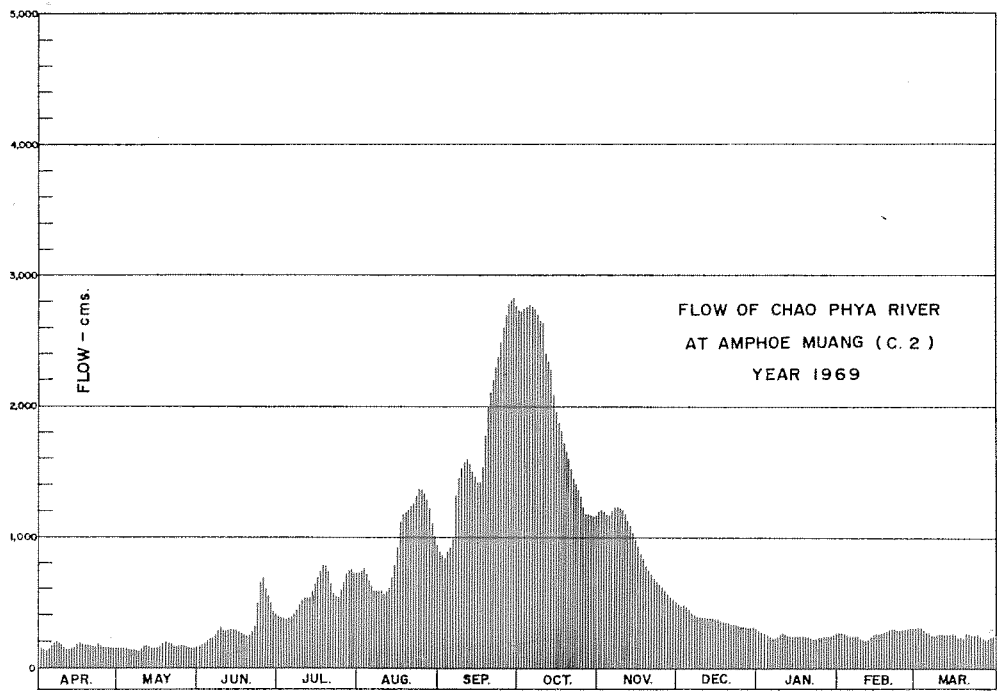
Overbank Flow Conditions: No overbank flow

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. Upstream State diversions for irrigation of about 91,000 hectares. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	17.87	17.89	17.98	18.99	20.22	20.73	24.21	21.53	19.37	18.60	18.56	18.65
2	.83	.87	18.04	.99	.27	.64	.20	.51	.35	.53	.57	.68
3	.76	.88	.11	.92	.29	.59	.23	.49	.41	.52	.54	.71
4	.82	.85	.22	.87	.21	.67	.23	.47	.36	.45	.47	.62
5	.99	.75	.27	.91	.03	.72	.27	.48	.27	.37	.41	.53
6	18.10	17.76	18.33	18.98	19.86	20.95	24.25	21.53	19.18	18.38	18.41	18.51
7	.14	.81	.41	19.15	.72	21.51	.23	.57	.08	.34	.43	.46
8	.06	.76	.60	.23	.74	22.02	.17	.57	.02	.41	.42	.45
9	17.97	.75	.63	.39	.74	.21	.11	.55	18.97	.47	.35	.48
10	.82	.86	.54	.48	.72	.34	23.95	.51	.97	.52	.27	.48
11	17.77	17.97	18.51	19.56	19.70	22.41	23.82	21.44	18.99	18.50	18.24	18.51
12	.79	.98	.57	.56	.74	.37	.73	.33	19.01	.46	.28	.42
13	.85	.89	.60	.55	.85	.22	.62	.22	18.97	.44	.41	.45
14	.89	.89	.55	.72	20.18	.13	.35	.09	.96	.41	.48	.48
15	.99	.86	.52	.85	.57	21.99	.16	20.95	.95	.40	.51	.54
16	18.13	17.91	18.49	20.06	20.85	22.01	23.00	20.79	18.97	18.40	18.54	18.50
17	.04	18.03	.45	.25	21.30	.17	22.86	.65	.94	.41	.53	.36
18	.02	.09	.39	.38	.45	.50	.68	.50	.87	.41	.55	.33
19	.02	.16	.37	.38	.50	23.10	.55	.32	.89	.39	.56	.45
20	17.94	.10	.41	.26	.55	.28	.43	.21	.86	.38	.61	.55
21	17.91	18.04	18.57	20.06	21.57	23.44	22.26	20.14	18.80	18.33	18.65	18.54
22	.90	17.95	.70	19.75	.62	.58	.08	.06	.80	.28	.67	.47
23	18.06	.94	19.13	.61	.78	.75	21.97	19.98	.80	.37	.62	.44
24	17.98	.98	.83	.58	.90	.92	.86	.89	.78	.41	.56	.49
25	.90	.99	.96	.78	.91	24.05	.79	.82	.73	.45	.60	.38
26	17.86	17.97	19.77	19.93	21.84	24.16	21.50	19.74	18.72	18.45	18.64	18.27
27	.86	.93	.57	20.14	.73	.26	.45	.64	.74	.45	.69	.26
28	.90	.93	.37	.24	.57	.30	.45	.60	.70	.41	.69	.32
29	.92	.88	.19	.26	.27	.32	.44	.55	.67	.40		.37
30	.91	.87	.06	.20	.00	.24	.39	.44	.69	.46		.34
31		.92		.20	20.83		.44		.68	.53		.37
Mean	17.93	17.92	18.70	19.68	20.76	22.55	22.96	20.72	18.95	18.43	18.51	18.46
Max.	18.13	18.16	19.96	20.38	21.91	24.32	24.27	21.57	19.41	18.60	18.69	18.71
Min.	17.76	17.75	17.98	18.87	19.70	20.59	21.39	19.44	18.67	18.28	18.24	18.32

WATER YEAR 1969 : Max. 24.32 m. Min. 17.75 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	147	150	166	387	735	907	2,734	1,209	488	290	281	302
2	139	147	177	387	751	875	2,726	1,201	482	275	283	310
3	127	148	190	370	757	857	2,751	1,193	499	272	277	317
4	138	143	210	357	732	885	2,751	1,185	485	257	261	295
5	168	125	220	367	676	903	2,785	1,189	464	240	248	275
6	188	127	232	385	625	986	2,768	1,209	437	242	248	270
7	195	136	248	428	584	1,201	2,751	1,226	410	234	253	259
8	181	127	290	450	590	1,422	2,702	1,226	395	248	250	257
9	165	125	297	493	590	1,507	2,653	1,217	382	261	236	264
10	138	145	277	518	584	1,567	2,527	1,201	382	272	220	264
11	129	165	270	539	578	1,601	2,430	1,174	387	268	214	270
12	132	166	283	539	590	1,582	2,366	1,131	392	259	222	250
13	143	150	290	536	622	1,511	2,290	1,088	382	255	248	257
14	150	150	279	584	723	1,470	2,113	1,038	380	248	264	264
15	168	145	272	622	850	1,409	1,998	986	377	246	270	277
16	193	154	266	686	950	1,417	1,906	928	382	246	277	268
17	177	175	257	744	1,119	1,488	1,831	878	375	248	275	238
18	174	186	244	786	1,177	1,645	1,737	826	357	248	279	232
19	174	199	240	786	1,197	1,963	1,670	766	362	244	281	232
20	159	188	248	748	1,217	2,070	1,611	732	355	242	292	279
21	154	177	283	686	1,226	2,171	1,530	710	340	232	302	277
22	152	161	315	592	1,247	2,263	1,448	686	340	222	307	261
23	181	159	423	553	1,316	2,380	1,400	661	340	240	295	255
24	166	166	616	545	1,369	2,504	1,351	634	335	248	281	266
25	152	168	655	601	1,373	2,605	1,321	613	322	257	290	242
26	145	165	598	646	1,343	2,694	1,197	590	320	257	300	220
27	145	157	542	710	1,294	2,776	1,177	561	325	257	312	218
28	152	157	488	741	1,226	2,810	1,177	550	315	248	312	230
29	156	148	439	748	1,107	2,827	1,174	536	307	246		240
30	154	147	405	729	1,005	2,760	1,154	507	312	259		234
31		156		729	945		1,174		310	275		240
Total	4,742	4,812	9,720	17,992	29,096	53,056	61,203	27,651	11,736	7,836	7,578	8,063
Mean	158	155	324	580	938	1,768	1,974	922	378	253	271	260
Max.	193	199	655	786	1,373	2,827	2,785	1,226	499	290	312	317
Min.	127	125	166	357	578	857	1,154	507	307	222	214	218
Runoff - MCM.	409.709	415.757	839.808	1,554.509	2,513.894	4,584.038	5,287.939	2,289.046	1,013.990	677.030	654.739	696.643

WATER YEAR 1969 : Max. 2,827 Min. 125 Mean 667 Annual Runoff 21,037.104mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 28	21.00	24.32	2,827				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
CHAO PHYA RIVER BASIN

Chao Phya River at Ban Bang Kaeo, Ang Thong (C_7)

Location: Lat. 14°-35'-05" N., Long. 100°-27'-12" E., on left bank infront of police station, Amphoe Muang, Ang Thong.

Drainage Area: Flood plain

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.900 m. (M.S.L.)

Bench Mark: B.M. – R.I.D. No. 8

Location: Near the gage site

Elevation: + 6.496 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1930 to date

Rating Operation:

Period of Rating: 1955

Rated by Float: –

Rated by Current Meter: 1955

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow.

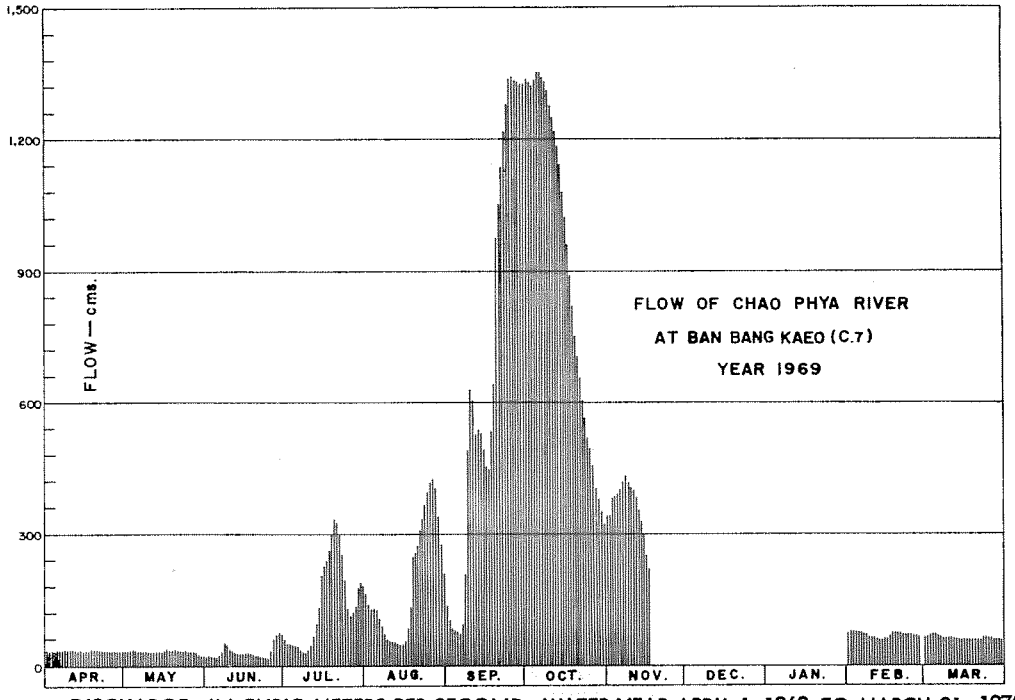
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1955. Flow regulated by Chao Phya Diversion Dam. No adjustment made for virgin flow.

Remarks: No gage height record June 5-10, 21-24, and no records November 18 – January 31, 1970.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.18	1.16	0.92	1.47	2.53	2.35	6.70	3.71			1.75	1.63
2	.19	.17	.91	.42	.33	.06	.71	.70			.79	.65
3	.20	.19	.91	.42	.32	1.86	.69	.99			.80	.68
4	.20	.20	.91	.40	.32	.80	.69	.99			.80	.74
5	.20	.18		.35	.27	.78	.71	4.03			.78	.72
6	1.21	1.18		1.30	2.06	1.72	6.73	4.09			1.76	1.67
7	.22	.19		.23	1.85	2.02	.73	.14			.72	.62
8	.23	.16		.11	.69	.98	.71	.22			.70	.59
9	.22	.16		.14	.55	4.70	.70	.17			.64	.59
10	.22	.16		.29	.52	5.07	.66	.09			.62	.60
11	1.22	1.15	1.17	1.53	1.49	4.97	6.61	4.06			1.62	1.59
12	.21	.15	.08	.76	.46	.64	.56	3.98			.58	.58
13	.18	.15	.04	2.02	.41	.70	.50	.87			.53	.57
14	.18	.15	.06	.48	.40	.65	.44	.68			.57	.55
15	.17	.18	.09	.96	.43	.48	.35	.51			.57	.55
16	1.17	1.20	1.09	3.08	1.55	4.29	6.21	3.25			1.64	1.55
17	.17	.20	.08	.17	.89	.30	.08	.01			.71	.54
18	.20	.20	.05	.37	2.55	.86	5.90				.79	.54
19	.20	.19	.00	.62	3.25	5.30	.69				.78	.54
20	.21	.19	0.94	.71	.42	6.12	.50				.78	.54
21	1.21	1.19		3.63	3.53	6.28	5.32				1.78	1.54
22	.21	.19		.44	.66	.40	.10				.72	.54
23	.19	.18		.05	.86	.53	4.86				.73	.59
24	.19	.19		2.61	4.01	.64	.75				.74	.61
25	.20	.18	1.07	.29	.10	.71	.58				.73	.58
26	1.20	1.14	1.42	2.14	4.18	6.72	4.43				1.68	1.57
27	.18	.13	.64	.31	.14	.71	.24				.65	.56
28	.15	.13	.75	.47	3.89	.70	.03				.62	.55
29	.14	0.98	.74	.75	.63	.70	3.93				–	.55
30	.15	.93	.57	.81	.31	.69	.75				–	.54
31		.93	–	.72	2.87	–	.64				–	.53
Mean	1.19	1.15		2.29	2.63	4.69	5.72				1.70	1.59
Max.	1.23	1.20	1.75	3.71	4.18	6.72	6.73				1.80	1.74
Min.	1.14	0.93		1.11	1.40	1.72	3.64				1.53	1.53

WATER YEAR 1969 : Max. 6.73 m. Min. m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	33	32	20	52	155	133	1,328	334			74	64
2	33	32	19	48	131	102	1,335	332			77	66
3	34	33	19	48	129	83	1,321	386			78	68
4	34	34	19	47	129	78	1,321	386			78	73
5	34	33	*20	43	124	76	1,335	394			76	72
6	35	33	*25	40	102	72	1,350	406			75	68
7	35	33	*35	36	82	98	1,350	416			72	64
8	36	32	*50	29	69	215	1,335	433			70	61
9	35	32	*40	30	58	538	1,328	423			65	61
10	35	32	*35	39	56	627	1,302	406			64	62
11	35	31	32	56	53	602	1,269	400			64	61
12	35	31	27	75	51	524	1,237	384			60	60
13	33	31	25	98	48	538	1,200	363			56	60
14	33	31	26	149	47	526	1,164	328			60	58
15	32	33	27	212	49	488	1,111	299			60	58
16	32	34	27	230	58	448	1,032	256			65	58
17	32	34	27	243	86	450	964	219			71	57
18	34	34	25	275	157	576	875				77	57
19	34	33	23	318	256	688	807				76	57
20	35	33	21	334	283	984	748				76	57
21	35	33	*20	319	302	1,071	694				76	57
22	35	33	*16	287	325	1,140	635				72	57
23	33	33	*15	225	361	1,219	576				72	61
24	33	33	*15	163	390	1,288	550				73	63
25	34	33	26	126	408	1,335	510				72	60
26	34	30	48	110	425	1,342	477				68	60
27	33	30	65	128	416	1,335	437				66	59
28	31	30	74	147	367	1,328	394				64	58
29	30	22	73	182	319	1,328	375				–	58
30	31	20	60	190	266	1,321	341				–	57
31	–	20	–	179	199	–	321				–	56
Total	1,008	968	954	4,458	5,901	20,553	29,022				1,958	1,888
Mean	33.6	31.2	31.8	144	190	685	936				69.9	60.9
Max.	36	34	74	334	425	1,342	1,350				78	73
Min.	30	20	15	29	47	72	321				56	56
Runoff – MCM.	87.091	83.635	82.426	385.171	509.846	1,775.779	2,507.50				169.171	163.123

WATER YEAR 1969 : Max. 1,350 Min. 15 Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 6	06.00	6.73	1,350				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
CHAO PHYA RIVER BASIN

Chao Phya River at Wat Pho Ngam, Chai Nat (C_{13})

Location: Lat. 15°-09'-57" N., Long. 100°-11'-32" E., on left bank about 1.5 kilometers downstream from Chao Phya Diversion Dam, Amphoe Sanphya, Chai Nat.

Drainage Area: 120,693 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 6.50 m. (M.S.L.)

Bench Mark: B.M. C.13

- Location: Along the gage line
- Elevation: + 15.634 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1947-1970

Rated Operation:

- Period of Rating: 1951-59, 1961-62, 1965-68
- Rated by Float:
- Rated by Current Meter: 1951-59, 1961-62, 1965-68

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

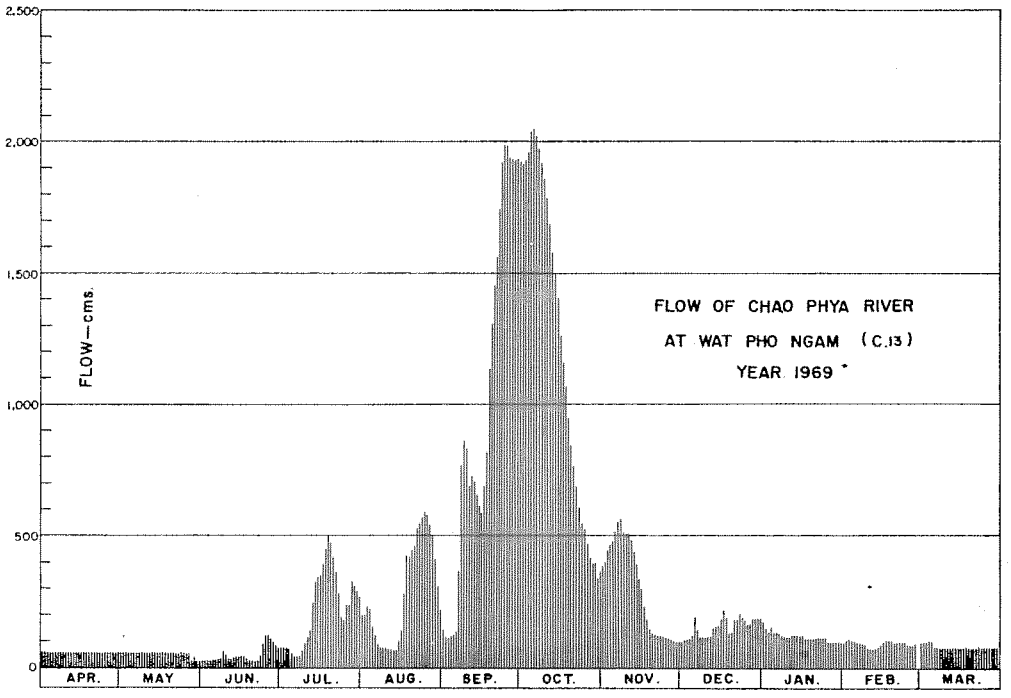
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1965-68. Flow regulated by Chao Phya Diversion Dam at above gage site which diverted for irrigation of about 979,000 hectares. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	6.90	6.90	6.60	7.10	7.88	7.60	13.45	8.90	7.30	7.77	7.25	7.25
2	.90	.90	.60	.10	.96	.37	.43	.97	.33	.61	.30	.25
3	.90	.90	.60	.10	8.10	.35	.47	9.20	.35	.55	.35	.25
4	.90	.90	.60	.06	.05	.40	.55	.25	.35	.65	.31	.30
5	.90	.90	.60	6.79	7.68	.45	.68	.30	.45	.50	.28	.23
6	6.90	6.90	6.63	6.75	7.44	7.53	13.70	9.45	7.90	7.55	7.25	7.10
7	.90	.90	.65	.75	.21	8.68	.63	.59	.55	.50	.25	.10
8	.90	.90	.70	.78	.10	10.32	.48	.60	.40	.43	.20	.09
9	.90	.90	.96	7.02	.10	.70	.43	.40	.40	.40	.18	.09
10	.90	.90	.82	.22	.06	.58	.25	.40	.40	.40	.03	.09
11	6.90	6.90	6.68	7.36	7.02	9.95	13.08	9.40	7.40	7.40	7.03	7.09
12	.90	.90	.66	.58	.02	10.23	12.90	.25	.43	.45	.03	.08
13	.90	.90	.73	8.22	.02	.17	.65	.05	.65	.45	.07	.08
14	.90	.90	.75	.60	.06	9.96	.46	8.90	.68	.45	.08	.08
15	.90	.90	.75	.69	.33	.80	.22	.55	.70	.45	.17	.08
16	6.90	6.90	6.75	8.71	7.60	9.67	11.93	8.35	7.85	7.45	7.27	7.08
17	.90	.90	.75	.93	8.23	10.13	.60	.03	8.05	.35	.33	.08
18	.90	.90	.70	9.22	9.07	.58	.30	7.75	7.85	.35	.28	.10
19	.90	.90	.60	.37	.05	11.58	10.85	.56	.45	.35	.28	.07
20	.90	.90	.60	.26	.16	12.02	.60	.50	.55	.35	.20	.05
21	6.90	6.90	6.60	9.00	9.21	12.44	10.32	7.45	7.84	7.35	7.25	7.05
22	.90	.90	.60	8.73	.49	.72	.05	.45	.85	.39	.25	.10
23	.90	.90	.75	.27	.56	13.20	9.75	.43	.97	.40	.25	.10
24	.90	.90	7.12	7.89	.64	.48	.55	.40	.88	.40	.25	.08
25	.90	.90	.43	.81	.72	.58	.45	.40	.83	.40	.16	.08
26	6.90	6.90	7.46	8.11	9.65	13.57	9.25	7.35	7.73	7.25	7.15	7.08
27	.90	.86	.37	.15	.50	.47	.00	.33	.75	.25	.15	.08
28	.90	.62	.25	.62	.30	.47	8.93	.30	.85	.25	.20	.08
29	.90	.73	.15	.50	8.95	.47	.80	.25	.85	.25		.08
30	.90	.60	.10	.43	.42	.48	.65	.30	.85	.25		.08
31		.60		.28	7.99		.79		.85	.25		.08
Mean	6.90	6.86	6.81	7.96	8.24	10.73	11.52	8.37	7.49	7.41	7.21	7.11
Max.	6.90	6.90	7.46	9.37	9.72	13.58	13.70	9.60	8.05	7.77	7.35	7.30
Min.	6.90	6.60	6.60	6.75	7.02	7.35	8.65	7.25	7.30	7.25	7.03	7.05

WATER YEAR 1969 : Max. 13.70 m. Min. 6.60 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	56	56	27	79	191	145	1,920	390	103	172	97	97
2	56	56	27	79	205	113	1,910	405	107	146	103	97
3	56	56	27	79	230	110	1,930	458	110	138	110	97
4	56	56	27	74	221	117	1,970	471	110	152	104	103
5	56	56	27	45	157	124	2,037	484	124	131	101	95
6	56	56	30	41	123	135	2,047	523	194	138	97	79
7	56	56	31	41	92	342	2,011	559	138	131	97	79
8	56	56	36	44	79	756	1,935	562	117	121	91	78
9	56	56	63	69	79	865	1,910	510	117	117	89	78
10	56	56	48	93	74	830	1,820	510	117	117	71	78
11	56	56	34	111	69	653	1,738	510	117	117	71	78
12	56	56	32	142	69	730	1,656	471	121	124	71	77
13	56	56	39	252	69	714	1,547	423	152	124	75	77
14	56	56	41	325	69	656	1,470	390	157	124	77	77
15	56	56	41	344	107	614	1,378	315	160	124	87	77
16	56	56	41	348	145	580	1,272	275	185	124	99	77
17	56	56	41	397	253	702	1,154	217	221	110	107	77
18	56	56	36	463	428	830	1,053	168	185	110	101	79
19	56	56	27	502	423	1,147	910	139	125	110	101	75
20	56	56	27	474	449	1,304	836	131	138	110	91	73
21	56	56	27	412	461	1,463	756	124	184	110	97	73
22	56	56	27	353	533	1,578	680	124	185	116	97	79
23	56	56	41	261	552	1,795	601	121	207	117	97	79
24	56	56	81	192	572	1,935	549	117	191	117	97	77
25	56	56	121	179	593	1,985	523	117	182	117	86	77
26	56	56	125	232	575	1,980	471	110	165	97	85	77
27	56	52	113	239	536	1,930	412	107	168	97	85	77
28	56	29	97	329	484	1,930	397	103	185	97	91	77
29	56	39	85	305	401	1,930	397	97	185	97		77
30	56	27	79	291	289	1,935	335	103	185	97		77
31		27		263	210		366		185	97		77
Total	1,680	1,630	1,498	7,058	8,738	29,928	37,962	9,034	4,820	3,699	2,575	2,495
Mean	56.0	52.5	49.9	227	281	997	1,224	301	155	119	91.9	80.5
Max.	56	56	125	502	593	1,985	2,047	562	221	172	110	103
Min.	56	27	27	41	69	110	335	97	103	97	71	73
Runoff - mcm.	145.152	140.832	129.427	609.811	754.963	2,585.779	3,279.916	780.537	416.448	319.597	222.480	215.568

WATER YEAR 1969 : Max. 2,047 Min. 27 Mean 304 Annual Runoff 9,600.509 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 6	12.00	13.70	2,047				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
CHAO PHYA RIVER BASIN

Chao Phya River at Wat Chula Mani, Ayutthaya (C_{15})

Location: Lat. 14°-25'-35" N., Long. 100°-29'-11" E., on left bank infront of Wat Chula Mani and about 100 meters upstream from confluence with Khlong Bang Ban, Amphoe Bang Ban, Ayutthaya.

Drainage Area: Flood plain

Type of Gage: Staff gage

Zero Gage at Bottom at: - 0.20 m. (M.S.L.)

Bench Mark: B.M. C.15 about 15 meters from B.M.-H.S./R.I.D.No.9

Location: North of Wat Chula Mani

Elevation: + 4.301 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1950 to date

Rating Operation:

Period of Rating: 1955

Rated by Float: -

Rated by Current Meter: 1955

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation for year without actual ratings.

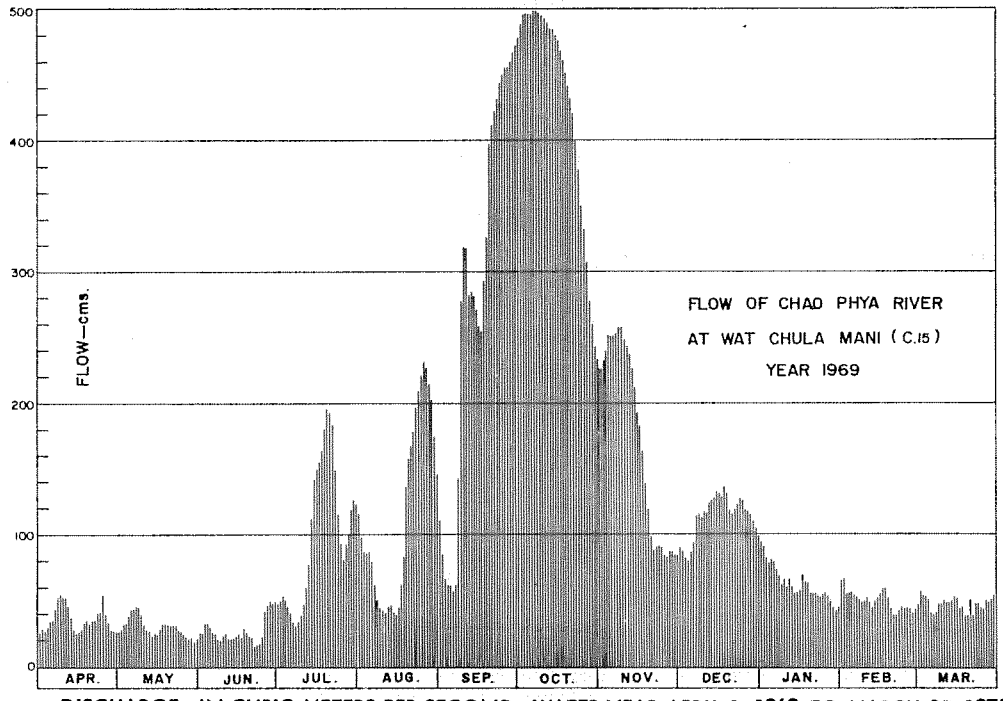
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1955. Flow regulated by Chao Phya Diversion Dam at Chai Nat. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.36	0.38	0.36	0.70	1.53	1.41	4.46	2.63	1.27	1.31	0.96	0.70
2	.42	.42	.35	.76	.30	.13	.51	.67	.23	.26	.97	.85
3	.39	.49	.49	.80	.20	0.94	.55	.73	.16	.12	.81	.80
4	.45	.47	.49	.73	.23	.91	.55	.85	.14	.12	.83	.79
5	.49	.57	.44	.68	.24	.90	.55	.84	.23	.16	.84	.75
6	0.49	0.66	0.35	0.55	1.07	0.85	4.55	2.85	1.27	1.12	0.80	0.61
7	.64	.66	.35	.49	0.90	.92	.56	.87	.54	.04	.80	.60
8	.81	.68	.28	.44	.75	1.53	.56	.90	.57	1.00	.74	.63
9	.81	.67	.26	.51	.67	2.98	.55	.90	.52	0.91	.74	.70
10	.79	.56	.33	.58	.64	3.37	.54	.81	.58	.98	74	.72
11	0.78	0.44	0.36	0.76	0.62	3.36	4.52	2.77	1.57	0.89	0.79	0.74
12	.62	.40	.27	.92	.69	.09	.50	.72	.65	.97	.71	.71
13	.51	.39	.29	1.15	.69	.12	.48	.60	.67	.88	.67	.73
14	.38	.32	.30	.50	.61	.09	.48	.47	.71	.82	.75	.75
15	.35	.37	.31	.85	.60	2.99	.46	.31	.76	.84	.80	.78
16	0.39	0.33	0.35	1.95	0.70	2.91	4.43	2.19	1.73	0.87	0.85	0.77
17	.41	.41	.29	.99	.91	.87	.39	1.97	.71	1.01	.88	.64
18	.50	.48	.41	2.11	1.33	3.23	.34	.77	.79	0.94	.89	.68
19	.53	.49	.37	.27	.90	.48	.28	.53	.72	.94	.73	.57
20	.47	.49	.31	.36	2.06	.96	.21	.33	.58	.83	.66	.59
21	0.52	0.46	0.30	2.33	2.15	4.06	4.13	1.23	1.57	0.84	0.58	0.74
22	.54	.46	.12	.19	.24	.12	.03	.27	.61	.83	.59	.53
23	.62	.47	.19	1.91	.40	.18	3.90	.28	.64	.80	.64	.72
24	.60	.40	.19	.55	.51	.25	.74	.26	.70	.79	.67	.71
25	.80	.39	.29	.28	.61	.28	.56	.19	.69	.83	.66	.67
26	0.58	0.34	0.63	1.13	2.68	4.31	3.42	1.17	1.61	0.83	0.67	0.66
27	.46	.30	.70	.30	.63	.31	.26	.22	.60	.79	.67	.74
28	.36	.27	.75	.41	.52	.35	.05	.23	.56	.73	.62	.73
29	.40	.30	.70	.61	.35	.39	2.91	.19	.51	.66	-	.77
30	.39	.24	.75	.69	.10	.42	.78	.20	.44	.63	-	.82
31	-	.29	-	.65	1.76	-	.63	-	.36	.69	-	.82
Mean	0.53	0.43	0.39	1.33	1.51	2.99	4.09	2.07	1.54	0.92	0.75	0.71
Max.	0.81	0.68	0.75	2.36	2.68	4.42	4.56	2.90	1.79	1.31	0.97	0.85
Min.	0.35	0.24	0.12	0.44	0.60	0.85	2.63	1.17	1.14	0.63	0.58	0.53

WATER YEAR 1969 : Max. 4.56 m. Min. 0.12 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	26	27	26	47	113	102	481	226	91	94	66	47
2	29	29	25	51	93	79	490	230	87	90	67	57
3	27	33	33	54	85	64	497	238	82	79	55	54
4	31	32	33	49	87	62	497	252	80	79	56	53
5	33	38	30	46	88	61	497	251	87	82	57	50
6	33	44	25	37	75	57	497	252	91	79	54	40
7	43	44	25	33	61	63	499	254	114	72	54	40
8	55	46	21	30	50	113	499	258	116	69	50	42
9	55	45	20	35	45	268	497	258	112	62	50	47
10	53	38	24	39	43	318	495	247	117	67	50	48
11	53	30	26	51	41	317	492	242	116	60	53	50
12	41	28	21	63	46	282	488	236	124	67	48	48
13	35	27	21	81	46	285	485	222	126	60	45	49
14	27	23	22	110	41	282	485	208	129	55	50	50
15	25	26	23	143	40	269	481	190	134	57	54	53
16	27	24	25	195	47	259	476	178	131	59	57	52
17	29	29	21	157	62	254	469	155	129	70	60	43
18	34	33	29	169	95	300	461	135	137	64	60	46
19	36	33	26	186	148	333	451	113	130	64	49	38
20	32	33	23	196	164	400	440	95	118	56	44	39
21	35	32	22	193	174	415	427	87	116	57	39	50
22	36	32	14	178	183	425	411	91	120	56	39	36
23	41	32	17	149	200	435	392	91	123	54	43	48
24	40	28	17	114	212	446	370	90	128	53	45	48
25	54	27	21	91	223	451	344	84	127	56	44	45
26	39	24	42	79	232	456	325	83	120	56	45	44
27	32	22	47	93	226	456	304	87	119	53	45	50
28	26	21	50	102	213	462	276	87	115	49	41	49
29	28	22	47	120	195	469	259	84	111	44	–	52
30	27	19	50	127	168	474	244	85	105	42	–	55
31	–	21	–	124	134	–	226	–	98	46	–	55
Total	1,082	942	826	3,100	3,630	8,657	13,255	5,109	3,533	1,951	1,420	1,478
Mean	36.1	30.4	27.5	100	117	288	427	170	114	62.9	50.7	47.7
Max.	55	46	50	196	232	474	499	258	137	94	67	57
Min.	25	19	14	30	40	57	226	83	80	42	39	36
Runoff - mcm.	93.485	81.389	71.366	267.840	313.632	747.965	1,145.232	441.418	305.251	168.566	122.688	127.699

WATER YEAR 1969 : Max. 499 Min. 14 Mean 123 Annual Runoff 3,886.531 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 7, 69	06.00	4.56	499				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
CHAO PHYA RIVER BASIN

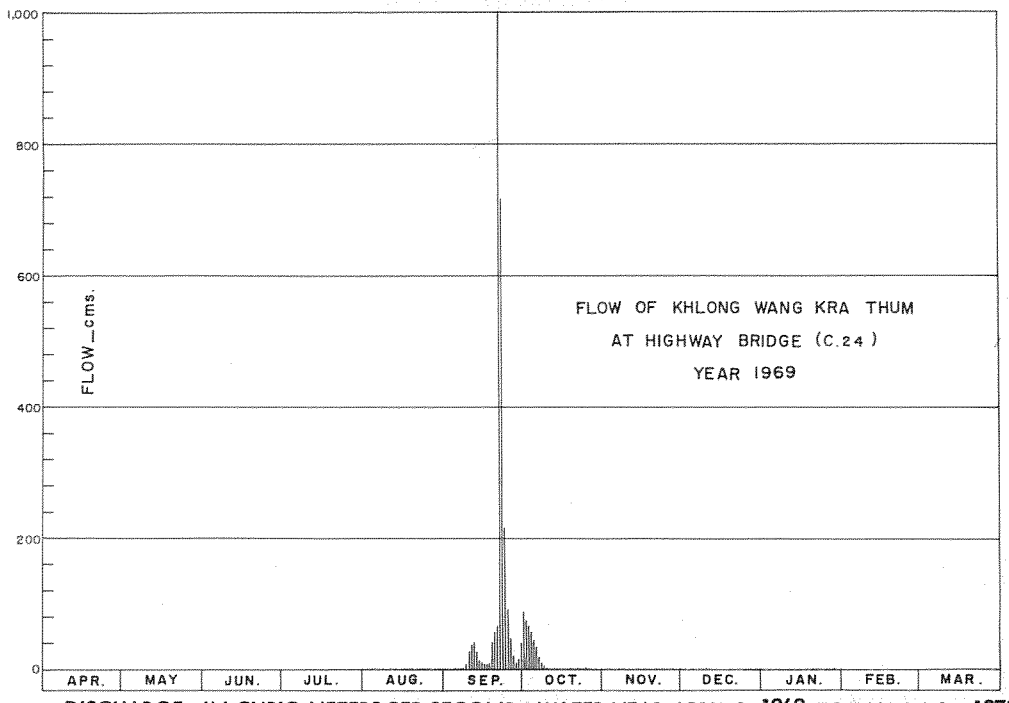
Khlong Wang Kra Thum at highway bridge, Lop Buri (C_{24})

Location:	Lat. 15°-06'-07" N., Long. 100°-42'-58" E., on left bank at the bridge on Phahon Yothin highway, 2.5 kilometers from Amphoe Khok Samrong, Lop Buri.
Drainage Area:	1,281 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 20.30 m. (M.S.L.)
Bench Mark:	B.M. - H.S.
Location:	Near abutment of Wang Kra Thum bridge
Elevation:	+ 26.380 m. (M.S.L.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1966 to date
Rating Operation:	
Period of Rating:	1966-67
Rated by Float:	-
Rated by Current Meter:	1966-67
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation for year without actual ratings.
Overbank Flow Conditions:	No overbank flow.
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1967. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.
Remarks:	Records for period of no flow are omitted.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1					21.05	21.13	24.54	21.54	20.91	20.66	20.34	20.05
2					20.93	.07	.47	20.78	.90	.64	.31	.04
3					.83	.05	.41	.80	.88	.62	.28	.04
4					.78	.05	.31	.89	.87	.60	.27	.02
5					.72	.09	.18	.96	.87	.59	.26	.02
6					20.66	21.18	23.87	20.91	20.89	20.58	20.24	20.00
7					.61	.47	.31	.84	.92	.57	.24	.00
8					.55	.90	22.88	.71	.92	.56	.22	19.99
9					.48	23.26	.61	.57	.90	.56	.21	.99
10					.44	.93	.24	.43	.89	.54	.21	.98
11					20.39	24.04	21.94	21.27	20.88	20.53	20.20	19.96
12					.43	.12	.61	.07	.87	.52	.19	.95
13					.48	23.71	.69	.19	.86	.51	.18	.94
14					.54	.21	.53	21.35	.85	.49	.17	.93
15					.64	22.87	.27	20.42	.83	.49	.17	.93
16					20.68	22.88	21.33	20.47	20.82	20.48	20.16	19.92
17					.67	.91	.25	.50	.82	.47	.16	.90
18					.65	23.10	.40	.41	.80	.46	.16	.90
19					.61	24.11	.66	21.29	.78	.45	.15	.89
20					.57	.32	.76	.30	.77	.44	.15	.88
21					20.52	24.47	21.77	21.31	20.77	20.42	20.14	19.86
22					.50	25.26	.76	.26	.75	.40	.13	.85
23					.58	24.83	.70	.20	.74	.39	.13	.83
24					21.18	.67	22.30	.12	.73	.38	.10	.80
25					.18	.51	.06	.05	.72	.38	.10	.78
26					21.40	24.12	22.14	21.02	20.72	20.37	20.08	19.77
27					.45	23.56	21.75	20.99	.69	.36	.07	.75
28					.45	.04	.90	.97	.69	.35	.06	.74
29					.43	.60	.87	.95	.68	.35	-	.73
30					.29	24.17	.79	.93	.67	.35	-	.73
31					.22	-	.58	-	.65	.34	-	.72
Mean					20.80	23.15	22.35	20.95	20.81	20.48	20.18	19.90
Max.					21.45	25.26	24.54	21.54	20.92	20.66	20.34	20.05
Min.					20.39	21.05	21.25	20.41	20.65	20.34	20.06	19.72

WATER YEAR 1969 : Max. 25.26 m. Min. 19.72 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1					0.45	0.56	90	1.38	0.31	0.060		
2					0.33	0.47	77	0.18	0.30	0.040		
3					0.23	0.45	68	0.20	0.28	0.020		
4					0.18	0.45	57	0.29	0.27	0.00		
5					0.12	0.49	47	0.36	0.27	0.00		
6					0.060	0.66	32	0.31	0.29	0.00		
7					0.010	1.24	16	0.24	0.32	0.00		
8					0.00	2.20	8.96	0.11	0.32	0.00		
9					0.00	15	6.09	0.00	0.30	0.00		
10					0.00	34	3.64	0.00	0.29	0.00		
11					0.00	39	2.36	0.84	0.28	0.00		
12					0.00	43	1.52	0.47	0.27	0.00		
13					0.00	26	1.68	0.68	0.26	0.00		
14					0.00	14	1.36	1.00	0.25	0.00		
15					0.040	8.84	0.84	0.00	0.23	0.00		
16					0.080	8.96	0.96	0.00	0.22	0.00		
17					0.070	9.34	0.80	0.00	0.22	0.00		
18					0.050	12	1.10	0.00	0.20	0.00		
19					0.010	43	1.62	0.88	0.18	0.00		
20					0.00	58	1.82	0.90	0.17	0.00		
21					0.00	77	1.84	0.92	0.17	0.00		
22					0.00	1,000	1.82	0.82	0.15	0.00		
23					0.00	257	1.70	0.70	0.14	0.00		
24					0.66	130	4.00	0.54	0.13	0.00		
25					0.66	84	2.84	0.45	0.12	0.00		
26					1.10	43	3.16	0.42	0.12	0.00		
27					1.20	22	1.80	0.39	0.09	0.00		
28					1.20	11	2.20	0.37	0.09	0.00		
29					1.16	23	2.11	0.35	0.08	0.00		
30					0.88	46	1.88	0.33	0.07	0.00		
31					0.74	–	1.46	–	0.05	0.00		
Total					9.230	2,010.66	444.56	13.13	6.44	0.120	0.00	0.00
Mean					0.29	67.0	14.3	0.44	0.21	0.004	0.00	0.00
Max.					1.20	1,000	90	1.38	0.32	0.060	0.00	0.00
Min.					0.00	0.45	0.80	0.00	0.050	0.00	0.00	0.00
Runoff – mcm.					0.797	173.721	38.410	1.134	0.556	0.010	0.00	0.00

WATER YEAR 1969 : Max. 1,000 Min. 0.00 Mean 6.80 Annual Runoff 214.630 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 22, 69	06.00	25.37	1,500				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
CHAO PHYA RIVER BASIN

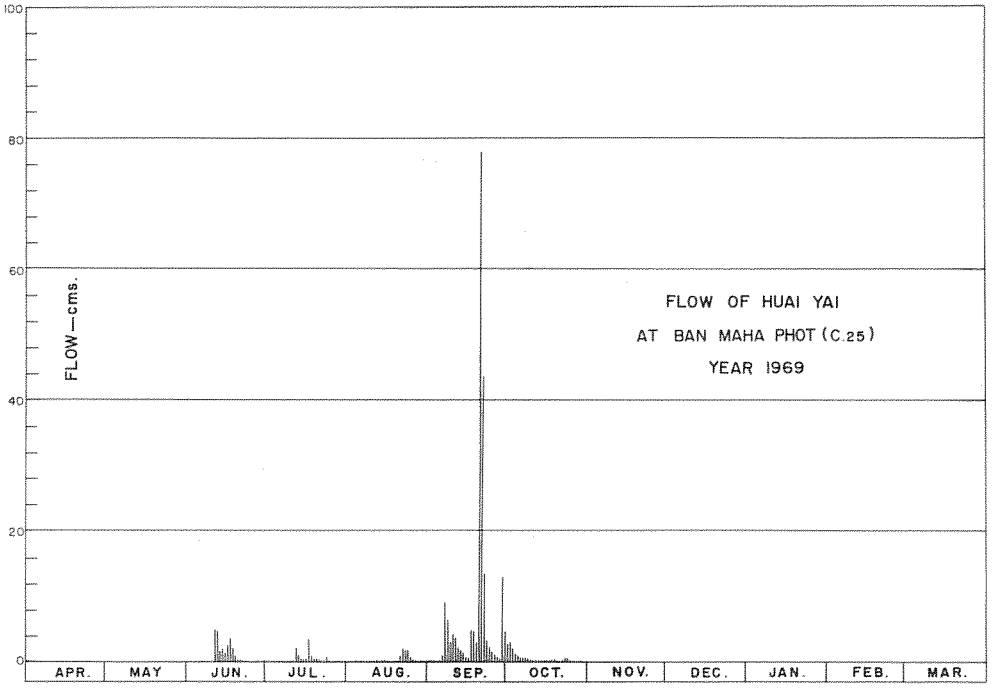
Huai Yai at Ban Maha Phot, Lop Buri (C_{25})

Location:	Lat. 15°-15'-12" N., Long. 100°-51'-45" E., on left bank about 2.5 kilometers North-East of Amphoe Khok Samrong at Ban Maha Phot, Amphoe Khok Samrong, Lop Buri.
Drainage Area:	68 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	B.M. - H.S.
Location:	Near the C.25 Station Office
Elevation:	+ 5.20 m. (A.D.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1966-1972
Rating Operation:	
Period of Rating:	1966-1972
Rated by Float:	-
Rated by Current Meter:	1966-1972
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.
Remarks:	Records for period of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			0.35	0.46	0.45	0.50	1.07					
2			.34	.46	.48	.48	.10					
3			.32	.45	.52	.47	0.98					
4			.27	.53	.48	.49	.92					
5			.26	.45	.47	.52	.88					
6			0.27	0.47	0.45	0.55	0.84					
7			.25	.45	.45	1.30	.83					
8			.25	.44	.45	.12	.81					
9			.32	.46	.44	0.84	.80					
10			.45	.57	.43	.96	.78					
11			1.02	0.53	0.43	0.91	0.75					
12			.90	.78	.52	.75	.75					
13			0.68	.66	.49	.75	.75					
14			.77	.62	.49	.67	.75					
15			.69	.57	.49	.61	.74					
16			0.84	0.63	0.53	0.61	0.74					
17			.90	.88	.49	1.01	.74					
18			.71	.60	.50	0.99	.74					
19			.62	.60	.49	.83	.73					
20			.58	.60	.48	.85	.71					
21			0.55	0.55	0.65	3.97	0.71					
22			.53	.53	.77	1.52	.75					
23			.51	.53	.75	.06	.84					
24			.51	.63	.76	.02	.75					
25			.49	.53	.59	0.94	.72					
26			0.49	0.51	0.54	0.90	0.72					
27			.48	.50	.53	.86	.70					
28			.49	.50	.51	.84	.69					
29			.49	.49	.56	1.56	.68					
30			.47	.48	.51	.10	.68					
31			-	.46	.50	-	.68					
Mean	0	0	0.53	0.54	0.52	0.97	0.78	0	0	0	0	0
Max.	0	0	1.02	0.88	0.77	3.97	1.10	0	0	0	0	0
Min.	0	0	0.25	0.44	0.43	0.47	0.68	0	0	0	0	0

WATER YEAR 1969 : Max. m. Min. m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			0.00	0.05	0.04	0.08	2.79					
2			0.00	0.05	0.06	0.06	3.16					
3			0.00	0.05	0.15	0.06	1.74					
4			0.00	0.19	0.06	0.07	1.18					
5			0.00	0.04	0.06	0.15	0.88					
6			0.00	0.06	0.04	0.26	0.64					
7			0.00	0.04	0.04	9.12	0.58					
8			0.00	0.03	0.04	6.41	0.46					
9			0.00	0.05	0.03	2.78	0.40					
10			0.04	0.33	0.02	4.25	0.32					
11			5.03	0.19	0.02	3.61	0.20					
12			4.76	2.11	0.15	1.80	0.20					
13			1.11	0.94	0.07	1.80	0.20					
14			2.01	0.61	0.07	1.03	0.20					
15			1.20	0.33	0.07	0.52	0.16					
16			2.78	0.69	0.19	0.52	0.16					
17			3.48	3.25	0.07	4.90	0.16					
18			1.38	0.44	0.08	4.63	0.16					
19			0.61	0.44	0.07	2.67	0.12					
20			0.37	0.44	0.06	2.90	0.04					
21			0.26	0.26	0.86	78	0.04					
22			0.19	0.19	2.01	12	0.20					
23			0.12	0.19	1.80	2.66	0.64					
24			0.12	0.69	1.90	2.17	0.20					
25			0.07	0.19	0.40	1.37	0.08					
26			0.07	0.12	0.22	1.00	0.08					
27			0.06	0.08	0.19	0.76	0.00					
28			0.07	0.08	0.12	0.64	0.00					
29			0.07	0.07	0.30	13	0.00					
30			0.06	0.06	0.12	3.16	0.00					
31			–	0.05	0.08	–	0.00					
Total	0	0	23.86	12.31	9.69	162.38	14.99	0	0	0	0	0
Mean			0.796	0.397	0.312	5.41	0.483					
Max.			5.03	3.25	2.01	78	3.16					
Min.			0.00	0.03	0.02	0.06	0.00					
Runoff – mcm.	0	0	2.061	1.063	0.837	14.030	1.295	0	0	0	0	0

WATER YEAR 1969 : Max. 78 Min. 0.00 Mean 0.61 Annual Runoff 19.287 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 21, 69	10.00	5.00	115				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
CHAO PHYA RIVER BASIN

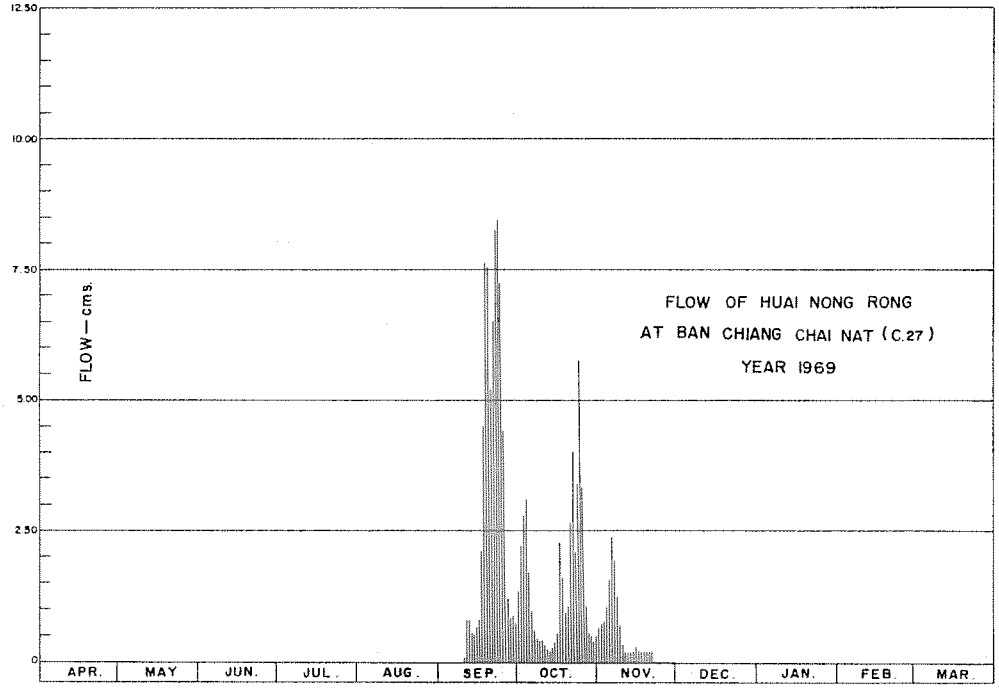
Huai Nong Rong at Ban Chiang, Chai Nat (C_{27})

Location:	Lat. 15°-00'-15" N., Long. 99°-47'-39" E., on right bank at Ban Chiang, Amphoe Hankha, Chai Nat.
Drainage Area:	282 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	-
Location:	-
Elevation:	-
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1969-70
Rating Operation:	
Period of Rating:	1969
Rated by Float:	-
Rated by Current Meter:	1969
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.
Remarks:	Records for period of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1							1.56	1.40				
2							.72	.41				
3							.80	.43				
4							.83	.50				
5							.54	.59				
6							1.44	1.72				
7							.38	.65				
8							.34	.50				
9							.33	.40				
10						0.38	.34	.31				
11						1.43	1.32	1.26				
12						.43	.29	.26				
13						.38	.27	.27				
14						.36	.30	.27				
15						.40	.34	.31				
16						1.44	1.34	1.28				
17						.83	.71	.28				
18						2.33	.56	.28				
19						.31	.45	.28				
20						.04	.49	.27				
21						2.20	1.87	1.27				
22						.39	.95	.14				
23						.41	.65	.13				
24						.17	2.15	.12				
25						1.80	1.89	.08				
26						1.60	1.62	1.07				
27						.46	.51	.06				
28						.44	.37	.04				
29						.45	.36	.02				
30						.41	.32	.02				
31						-	.36	-				
Mean						1.19	1.53	1.29				
Max.						2.41	2.15	1.72				
Min.						0.38	1.27	1.02				

WATER YEAR 1969 : Max. 2.41 m. Min. 0.38 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1							1.47	0.65				
2							2.38	0.70				
3							2.90	0.80				
4							3.12	1.15				
5							1.36	1.63				
6							0.85	2.39				
7							0.58	1.96				
8							0.43	1.15				
9							0.39	0.65				
10						0.00	0.43	0.32				
11						0.80	0.35	0.17				
12						0.80	0.25	0.17				
13						0.58	0.20	0.20				
14						0.52	0.28	0.20				
15						0.69	0.43	0.32				
16						0.85	0.43	0.22				
17						3.37	2.31	0.22				
18						7.62	1.47	0.22				
19						7.53	0.90	0.22				
20						4.75	1.10	0.20				
21						6.32	3.42	0.20				
22						8.28	4.02	0.00				
23						8.42	1.96	0.00				
24						5.96	5.76	0.00				
25						2.92	3.57	0.00				
26						1.67	1.79	0.00				
27						0.96	1.20	0.00				
28						0.83	0.54	0.00				
29						0.90	0.50	0.00				
30						0.71	0.35	0.00				
31						–	0.50	–				
Total						64.48	4.524	13.74				
Mean						2.15	1.46	0.46				
Max.						8.42	5.76	2.39				
Min.						0.00	0.20	0.00				
Runoff – mcm.						5.571	3.909	1.187				

WATER YEAR 1969 : Max. 8.42 Min.0.00 Mean 0.34 Annual Runoff 10.669 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept.23,69	06.00	2.44	8.80				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
SA KAE KRANG RIVER BASIN

Huai Thap Salao at Ban Prada Hak, Uthai Thani (Ct.3)

Location: Lat. 15°-24'-19" N., Long. 99°-42'-40" E., on right bank about 4 kilometers downstream from local weir at Ban Prada Hak, Amphoe Nong Chang, Uthai Thani.

Drainage Area: 791 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Near the gage site

Elevation: + 4.671 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1967-1973

Rating Operation:

Period of Rating: 1967-1970

Rated by Float:

Rated by Current Meter: 1967-1970

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation

Overbank Flow Conditions: No overbank flow

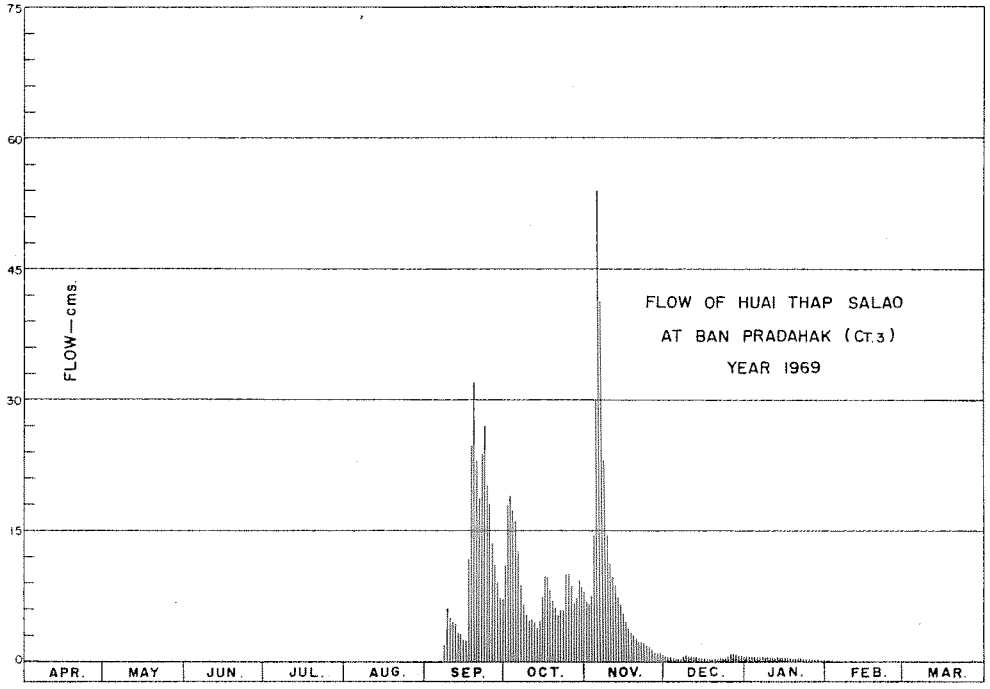
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Records for period of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.01	0.00	0.00	0.12	0.00	0.01	1.22	1.01	0.37	0.39	0.22	0.06
2	.01	.00		.07		.00	.51	.00	.35	.38	.21	.06
3	.01	.01		.07		.01	.55	.08	.33	.37	.21	.06
4	.02	.02		.07		.02	.47	.49	.31	.36	.20	.06
5	.04	.02		.07		.11	.43	2.40	.30	.36	.19	.05
6	0.02	0.02		0.08		0.14	1.28	2.01	0.29	0.36	0.18	0.05
7	.00	.03		.09		.20	.06	1.66	.29	.35	.15	.04
8	.00	.03		.08		.69	0.99	.46	.37	.34	.15	.04
9	.00	.04		.12		.98	.91	.35	.37	.33	.14	.04
10	.01	.03		.12		.90	.88	.25	.36	.34	.13	.03
11	0.00	0.03		0.08		0.87	0.89	1.17	0.35	0.34	0.11	0.03
12	.00	.03		.11		.85	.86	.10	.35	.33	.10	.04
13	.01	.02		.10		.76	.79	.03	.37	.33	.09	.03
14	.01	.03		.06		.75	.87	0.97	.33	.33	.08	.03
15	.00	.04		.08		.69	.02	.91	.32	.33	.08	.02
16	0.01	0.03		0.07		0.63	1.17	0.86	0.31	0.33	0.11	0.01
17	.01	.02		.07		1.29	.17	.80	.30	.33	.12	.02
18	.01	.02		.08		.72	.06	.77	.28	.30	.11	.02
19	.02	.02		.09		.93	.01	.73	.30	.29	.10	.02
20	.00	.02		.09		.63	0.97	.69	.30	.27	.09	.02
21	0.00	0.01		0.10	0.00	1.53	0.92	0.66	0.33	0.25	0.09	0.02
22	.00	.01		.10		.68	.96	.66	.33	.26	.08	.03
23	.02	.00		.10		.78	.95	.63	.33	.27	.08	.03
24	.02	.00		.08		.59	1.19	.58	.33	.26	.10	.07
25	.03	.00		.07	0.00	.51	.21	.57	.39	.25	.08	.10
26	0.03	0.00		0.07	0.05	1.31	1.10	0.52	0.43	0.25	0.07	0.13
27	.04	.01		.06	.03	.22	1.00	.48	.43	.25	.07	.14
28	.01	.02		.06	.03	.13	.04	.44	.43	.24	.06	.14
29	.01	.02		.05	.04	1.06	.15	.46	.42	.23	-	.13
30	.01	.01	0.00	.03	.04	0.99	.10	.40	.40	.23	-	.12
31	-	.01	-	.00	.05	-	.07	-	.39	-	-	.11
Mean	0.01	0.02		0.08	0.01	0.94	1.09	0.97	0.35	0.31	0.12	0.06
Max.	0.04	0.04		0.12	0.05	1.93	1.55	2.40	0.43	0.39	0.22	0.14
Min.	0.00	0.00		0.00	0.00	0.00	0.79	0.40	0.28	0.23	0.06	0.01

WATER YEAR 1969 : Max. 2.40 m. Min. 0.00 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1,1969 TO MARCH 31,1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.010	0.000	0.00	0.130	0.00	0.010	11	6.77	0.701	0.767	0.294	0.060
2	0.010	0.000		0.070		0.000	18	6.60	0.635	0.734	0.272	0.060
3	0.010	0.010		0.070		0.010	19	8.00	0.569	0.701	0.272	0.060
4	0.020	0.020		0.070		0.020	17	17	0.503	0.668	0.250	0.060
5	0.040	0.020		0.070		0.115	16	54	0.470	0.668	0.235	0.050
6	0.020	0.020		0.080		0.160	12	35	0.448	0.668	0.220	0.050
7	0.000	0.030		0.090		0.250	7.65	23	0.448	0.635	0.175	0.040
8	0.000	0.030		0.080		2.62	6.44	16	0.701	0.602	0.175	0.040
9	0.000	0.040		0.130		6.28	5.16	14	0.701	0.569	0.160	0.040
10	0.010	0.030		0.130		5.00	4.75	11	0.668	0.602	0.145	0.030
11	0.000	0.030		0.080		4.62	4.87	9.71	0.635	0.602	0.115	0.030
12	0.000	0.030		0.115		4.37	4.50	8.35	0.635	0.569	0.100	0.040
13	0.010	0.020		0.100		3.33	3.64	7.12	0.701	0.569	0.090	0.030
14	0.010	0.030		0.060		3.22	4.62	6.12	0.569	0.569	0.080	0.030
15	0.000	0.040		0.080		2.62	6.95	5.16	0.536	0.569	0.080	0.020
16	0.010	0.030		0.070		2.17	9.71	4.50	0.503	0.569	0.115	0.010
17	0.010	0.020		0.070		12	9.71	3.75	0.470	0.569	0.130	0.020
18	0.010	0.020		0.080		25	7.65	3.43	0.426	0.470	0.115	0.020
19	0.020	0.020		0.090		32	6.77	3.01	0.470	0.448	0.100	0.020
20	0.020	0.020		0.090		22	6.12	2.62	0.470	0.404	0.090	0.020
21	0.000	0.010		0.100		18	5.32	2.40	0.569	0.360	0.090	0.020
22	0.000	0.010		0.100		23	5.96	2.40	0.569	0.382	0.080	0.030
23	0.020	0.000		0.100		27	5.80	2.17	0.569	0.404	0.080	0.030
24	0.020	0.000		0.080		20	10	1.82	0.569	0.382	0.100	0.070
25	0.030	0.000		0.070	0.00	18	10	1.75	0.767	0.360	0.080	0.100
26	0.030	0.000		0.070	0.050	13	8.35	1.43	0.950	0.360	0.070	0.145
27	0.040	0.010		0.060	0.030	11	6.60	1.20	0.950	0.360	0.070	0.160
28	0.010	0.020		0.060	0.030	8.93	7.30	1.00	0.950	0.338	0.060	0.160
29	0.001	0.020		0.050	0.040	7.65	9.32	1.10	0.900	0.316	–	0.145
30	0.000	0.010	0.00	0.030	0.040	6.44	8.35	0.80	0.800	0.316	–	0.130
31	–	0.010		0.000	0.050	–	7.82	–	0.767	–	–	0.115
Total	0.360	0.550	0.00	2.475	0.240	278.815	266.360	261.210	19.619	15.530	3.843	1.835
Mean	0.012	0.018	0.00	0.080	0.008	9.29	8.59	8.71	0.633	0.518	0.137	0.059
Max.	0.040	0.040	0.00	0.130	0.050	32	19	54	0.950	0.767	0.294	0.060
Min.	0.000	0.000	0.00	0.000	0.000	0.00	3.64	0.80	0.426	0.316	0.060	0.010
Runoff – mcm.	0.031	0.047	0.00	0.214	0.021	24.090	23.013	22.568	1.695	1.342	0.332	0.158

WATER YEAR 1969 : Max. 54 Min. 0.00 Mean 2.33 Annual Runoff 73.512 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 5, 69	18.00	2.56	63.0				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
SAKAE KRANG RIVER BASIN

Mae Wang at Ban Pang Makha, Kamphaeng Phet (Ct.5A)

Location: Lat. 15°-54'-10" N., Long. 99°-28'-45" E., on left bank behind of Wat Pang Makha, Amphoe Khanuworalaksa Buri, Kamphaeng Phet.

Drainage Area: 833 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - R.I.D.

Location: Near automatic gage building

Elevation: + 4.189 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1969 to date

Rating Operation:

Period of Rating: 1969 to date

Rated by Float: -

Rated by Current Meter: 1969 to date

Stability of Channel Regimes: Stable, no shifting adjustment but periodic curves are used for flow

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversion for irrigation except those built by the local residents. No adjustment made for virgin flow.

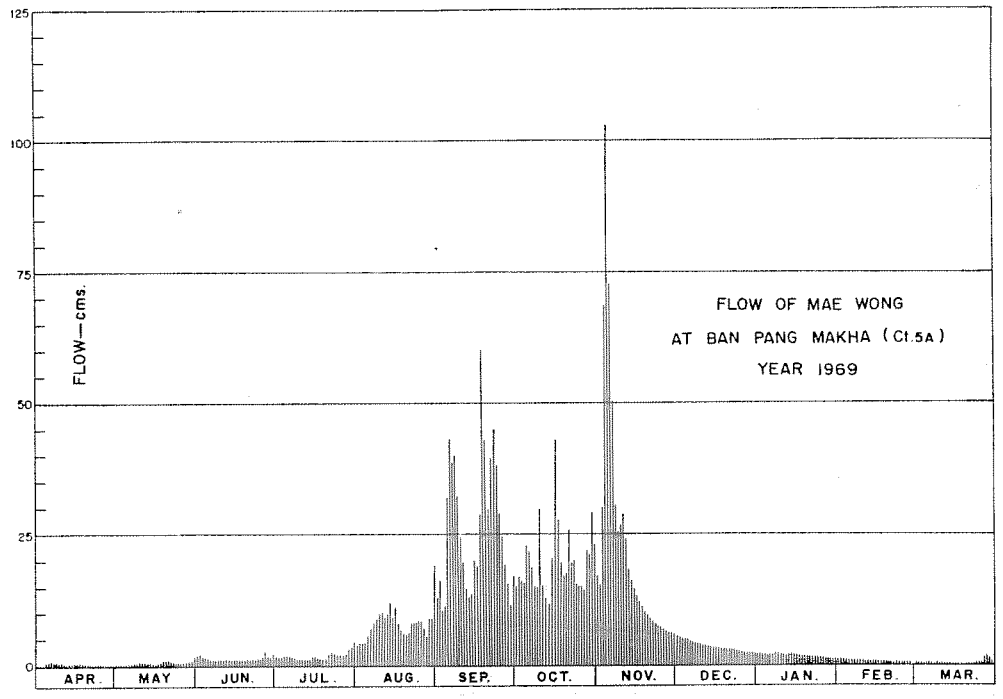
Remarks: Stream gaging station began on May 11, 1969

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			0.42	0.39	0.60	1.09	1.19	1.25	0.64	0.35	0.24	0.13
2			.43	.35	.64	.22	.29	.19	.63	.34	.23	.13
3			.35	.38	.65	1.00	.22	.80	.61	.33	.23	.13
4			.34	.42	.65	.10	.22	2.35	.60	.32	.23	.13
5			.34	.40	.76	.86	.50	3.04	.58	.32	.22	.12
6			0.31	0.39	0.75	2.02	1.43	2.38	0.57	0.32	0.22	0.12
7			.30	.37	.90	1.91	.28	1.99	.55	.33	.23	.12
8			.29	.34	.93	.96	.17	.72	.54	.36	.23	.12
9			.31	.32	1.00	.61	.18	.56	.53	.34	.21	.13
10			.31	.31	.03	.48	.37	.63	.52	.32	.20	.12
11		0.20	0.31	0.33	1.04	1.27	1.20	1.67	0.50	0.32	0.20	0.11
12		.20	.33	.31	0.96	.21	.09	.45	.50	.31	.21	.11
13		.19	.33	.31	1.04	.12	.01	.28	.49	.35	.20	.11
14		.19	.29	.31	.11	.17	.02	.23	.48	.35	.20	.10
15		.18	.31	.40	0.97	.37	.61	.15	.47	.33	.20	.10
16		0.16	0.29	0.39	1.06	1.32	2.02	1.08	0.46	0.32	0.20	0.09
17		.18	.31	.33	0.89	.46	1.53	.02	.46	.31	.20	.08
18		.21	.30	.31	.80	2.37	.34	0.98	.45	.30	.20	.08
19		.28	.29	.30	.78	1.92	.28	.93	.44	.30	.19	.08
20		.28	.31	.30	.78	.69	.30	.89	.44	.30	.19	.08
21		0.28	0.33	0.43	0.82	1.74	1.58	0.85	0.43	0.29	0.18	0.08
22		.25	.33	.50	.93	2.04	.33	.82	.43	.29	.17	.08
23		.23	.31	.45	.93	.07	.39	.79	.42	.28	.16	.09
24		.21	.31	.42	.92	1.75	.20	.76	.40	.28	.16	.13
25		.21	.34	.38	.96	.59	.19	.74	.39	.27	.16	.13
26		0.20	0.39	0.37	0.94	1.41	1.18	0.72	0.39	0.27	0.15	0.15
27		.19	.47	.39	.81	.26	.13	.71	.37	.26	.15	.29
28		.20	.38	.44	.71	.15	.46	.68	.36	.25	.14	.30
29		.21	.36	.55	.98	.05	.42	.67	.36	.24		.21
30		.28	.43	.60	.93	.27	.68	.66	.36	.24		.17
31		.34		.66	1.34		.39		.35	.24		.14
Mean			0.34	0.39	0.89	1.52	1.33	1.28	0.47	0.30	0.20	0.13
Max.			0.47	0.66	1.34	2.37	2.02	3.04	0.64	0.36	0.24	0.30
Min.			0.29	0.30	0.60	1.00	1.01	0.66	0.35	0.24	0.14	0.08

WATER YEAR 1969 : Max. 3.04 m. Min. 0.08 m.

BN. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	*0.30	*0.44	2.17	1.92	3.85	12	15	17	5.86	2.40	1.36	0.51
2	*0.30	*0.44	2.25	1.60	4.29	16	17	15	5.72	2.30	1.27	0.51
3	*0.36	*0.44	1.60	1.84	4.40	9.50	16	34	5.44	2.20	1.27	0.51
4	*0.66	*0.48	1.52	2.08	4.40	12	16	90	5.30	2.10	1.27	0.51
5	*0.84	*0.52	1.52	2.00	5.70	36	23	103	5.04	2.10	1.18	0.44
6	*1.01	*0.52	1.28	1.92	5.57	43	21	61	4.91	2.10	1.27	0.44
7	*0.90	*0.56	1.20	1.76	7.70	38	17	41	4.65	2.20	1.27	0.44
8	*0.84	*0.56	1.14	1.52	8.24	40	15	31	4.52	2.50	1.27	0.44
9	*0.78	*0.58	1.28	1.32	9.50	27	15	25	4.39	2.30	1.09	0.51
10	*0.66	*0.60	1.28	1.28	10	23	30	27	4.26	2.10	1.00	0.44
11	*0.54	0.60	1.20	1.44	10	17	15	29	4.00	2.10	1.00	0.37
12	*0.48	0.60	1.44	1.28	8.78	15	13	22	4.00	2.00	1.09	0.37
13	*0.60	0.56	1.44	1.28	10	13	12	17	3.89	2.40	1.00	0.37
14	*0.66	0.56	1.14	1.28	12	14	12	16	3.78	2.40	1.00	0.30
15	*0.60	0.52	1.28	2.00	8.96	20	27	14	3.67	2.20	1.00	0.30
16	*0.60	0.44	1.14	1.92	11	18	43	13	3.56	2.10	1.00	0.24
17	*0.54	0.52	1.28	1.44	7.55	22	24	12	3.56	2.00	1.00	0.18
18	*0.54	0.66	1.20	1.28	6.20	60	19	11	3.45	1.90	1.00	0.18
19	*0.48	1.08	1.14	1.20	5.95	38	17	10	3.34	1.90	0.93	0.18
20	*0.48	1.08	1.28	1.20	5.95	29	18	9.54	3.34	1.90	0.93	0.18
21	*0.42	1.08	1.44	2.25	6.50	31	26	8.90	3.23	1.81	0.86	0.18
22	*0.42	0.90	1.44	2.85	8.24	44	19	8.42	3.23	1.81	0.79	0.18
23	*0.36	0.78	1.28	2.42	8.24	45	20	7.96	3.12	1.72	0.72	0.24
24	*0.36	0.66	1.28	2.17	8.06	32	15	7.54	2.90	1.72	0.72	0.51
25	*0.30	0.66	1.52	1.84	8.78	26	15	7.26	2.80	1.63	0.72	0.51
26	*0.30	0.60	1.92	1.76	8.42	21	15	6.98	2.80	1.63	0.65	0.65
27	*0.30	0.56	2.59	1.92	6.35	17	14	6.84	2.60	1.54	0.65	1.81
28	*0.36	0.60	1.84	2.34	5.07	14	22	6.42	2.50	1.45	0.58	1.90
29	*0.42	0.66	1.68	3.35	9.14	11	21	6.28	2.50	1.36		1.09
30	*0.42	1.08	2.25	3.85	8.24	17	29	6.14	2.50	1.36		0.79
31		1.52		4.51	19		20		2.40	1.36		0.58
Total	15.83	20.86	45.02	60.82	246.08	760.50	591	670.28	117.26	60.59	27.89	15.86
Mean	0.528	0.67	1.50	1.96	7.94	25.3	19.1	22.3	3.78	1.95	1.00	0.52
Max.	1.01	1.52	2.59	4.51	19	60	43	103	5.86	2.50	1.36	1.90
Min.	0.30	0.44	1.14	1.20	3.85	9.50	12	6.14	2.40	1.36	0.58	0.18
Runoff — mcm.	1.368	1.802	3.890	5.255	21.261	65.707	51.062	57.912	10.131	5.235	2.410	1.370

WATER YEAR 1969 : Max. 103 Min. 0.18 Mean 7.21 Annual Runoff 227.404 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 5	06.00	3.24	117				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
SAKAE KRANG RIVER BASIN

Huai Thap Salao at Ban Tha Manao, Uthai Thani (Ct_6)

Location: Lat. 15°-31'-18" N., Long. 99°-28'-23" E., on left bank about 3 kilometers upstream from Ban Pak Muang weir at Ban Tha Manao, Amphoe BanRai, Uthai Thani.

Drainage Area: 519 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.) which equal to + 113.006 m. (M.S.L.)

Bench Mark: B.M. – H.S./R.I.D.

- Location: Near the Meteorological Station
- Elevation: + 117.639 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1969 to date

Rating Operation:

- Period of Rating: 1970 to date
- Rated by Float: –
- Rated by Current Meter: 1970 to date

Stability of Channel Regimes: Unstable, no shifting adjustment but periodic curves are used for flow computation.

Overbank Flow Conditions: No overbank flow

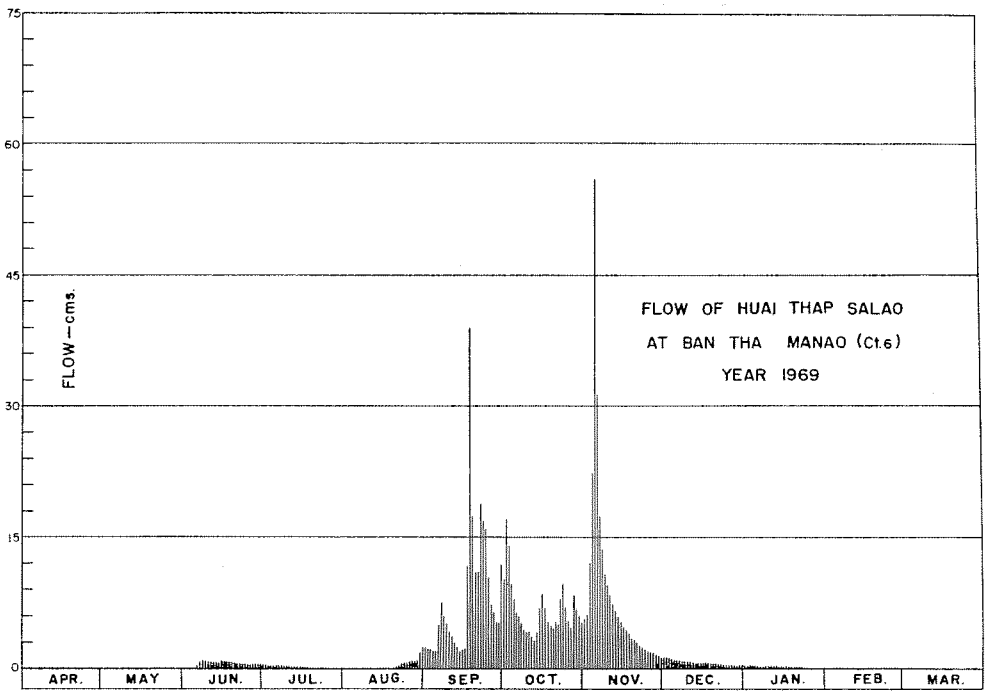
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Records for period of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.03		–	0.40	0.20	0.69	1.08	0.85	0.48	0.27	0.20	0.15
2	.08		–	.39	.20	.65	.37	.87	.47	.27	.19	0.15
3	.11		–	.39	.19	.66	.26	1.22	.46	.28	.19	0.14
4	.10		–	.40	.19	.63	.07	.68	.45	.28	.19	0.14
5	.10		0.03	.39	.18	.62	0.96	2.28	.43	.28	.18	0.13
6	0.09		0.44	0.38	0.18	0.87	0.88	1.56	0.43	0.27	0.18	0.13
7	.09		.47	.37	.18	.96	.85	.35	.42	.27	.18	.13
8	.08		.48	.35	.18	.95	.80	.21	.41	.28	.18	.13
9	.08		.47	.34	.18	.87	.75	.11	.41	.28	.18	.12
10	.08		.47	.33	.18	.82	.75	.05	.39	.27	.17	.12
11	0.08		0.45	0.33	0.17	0.78	0.75	1.00	0.39	0.25	0.17	0.12
12	.07		.45	.33	.17	.73	.69	0.94	.39	.25	.17	.11
13	.05		.43	.33	.17	.68	.66	.88	.37	.25	.17	.11
14	.05		.46	.31	.20	.64	.36	.85	.37	.25	.17	.11
15	.05		.49	.31	.20	.66	.99	.82	.36	.24	.17	.11
16	0.03		0.47	0.31	0.20	0.79	1.01	0.78	0.35	0.24	0.17	0.11
17	.01		.47	.30	.21	1.05	0.90	.75	.35	.24	.18	.11
18	.01		.47	.29	.21	.94	.81	.72	.35	.24	.18	.11
19			.44	.28	.27	.37	.80	.70	.34	.23	.18	.10
20			.43	.28	.30	.13	.77	.68	.33	.23	.18	.10
21			0.42	0.28	0.32	1.14	0.83	0.65	0.33	0.23	0.16	0.10
22			.40	.28	.35	.44	.79	.62	.33	.23	.16	.11
23			.39	.27	.44	.36	1.03	.60	.32	.23	.16	.17
24			.39	.27	.47	.33	.07	.57	.31	.23	.15	.16
25			.37	.26	.45	.10	0.90	.56	.31	.22	.15	.17
26			0.36	0.25	0.48	0.95	0.82	0.55	0.30	0.22	0.15	0.14
27			.38	.25	.48	.88	.76	.53	.29	.22	.15	.13
28			.38	.24	.49	.83	1.01	.52	.29	.21	.15	.12
29			.39	.24	.48	.78	0.89	.51	.28	.21	–	.12
30			.40	.23	.62	1.18	.86	.49	.27	.21	–	.11
31			–	.20	.68	–	.80	–	.27	.20	–	.10
Mean				0.31	0.30	0.95	0.89	0.90	0.36	0.24	0.17	0.12
Max.				0.40	0.68	1.94	1.37	2.28	0.48	0.28	0.20	0.17
Min.				0.20	0.18	0.62	0.66	0.49	0.27	0.20	0.15	0.10

WATER YEAR 1969 : Max. 2.28 m. Min. 0.10 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00		0.00	0.57	0.10	2.52	10	5.84	1.42	0.41	0.20	0.11
2	0.01		0.00	0.54	0.10	2.14	17	6.18	1.36	0.41	0.18	0.11
3	0.03		0.00	0.54	0.09	2.24	14	13	1.30	0.44	0.18	0.10
4	0.02		0.00	0.54	0.09	1.95	9.80	28	1.23	0.44	0.18	0.10
5	0.02		0.00	0.54	0.08	1.85	7.71	56	1.11	0.44	0.17	0.08
6	0.02		0.74	0.51	0.08	5.30	6.34	23	1.11	0.41	0.17	0.08
7	0.02		0.87	0.48	0.08	7.64	5.84	17	1.05	0.41	0.17	0.08
8	0.01		0.91	0.42	0.08	7.14	5.00	13	0.99	0.47	0.17	0.08
9	0.01		0.87	0.40	0.08	5.30	4.29	11	0.99	0.47	0.17	0.06
10	0.01		0.87	0.37	0.08	4.34	4.29	9.40	0.89	0.41	0.15	0.06
11	0.01		0.78	0.37	0.08	3.69	4.29	8.40	0.89	0.35	0.15	0.06
12	0.01		0.78	0.37	0.08	3.02	3.47	7.37	0.89	0.35	0.15	0.05
13	0.00		0.70	0.37	0.08	2.43	3.12	6.34	0.80	0.35	0.15	0.05
14	0.00		0.83	0.31	0.10	2.04	6.01	5.84	0.80	0.35	0.15	0.05
15	0.00		0.96	0.31	0.10	2.24	8.23	5.34	0.76	0.32	0.15	0.05
16	0.00		0.87	0.31	0.10	3.83	8.60	4.72	0.71	0.32	0.15	0.05
17	0.00		0.87	0.28	0.12	9.40	6.68	4.29	0.71	0.32	0.17	0.05
18	0.00		0.87	0.26	0.14	39	5.17	3.86	0.71	0.32	0.17	0.05
19			0.74	0.24	0.23	17	5.00	3.58	0.67	0.29	0.17	0.03
20			0.70	0.24	0.28	11	4.57	3.35	0.63	0.29	0.17	0.03
21			0.66	0.24	0.34	11	5.50	3.01	0.63	0.29	0.13	0.03
22			0.57	0.24	0.42	19	4.86	2.67	0.63	0.29	0.13	0.05
23			0.54	0.23	0.74	17	9.00	2.44	0.59	0.29	0.13	0.15
24			0.54	0.23	0.87	16	9.80	2.17	0.54	0.29	0.11	0.13
25			0.48	0.21	0.78	10	6.68	2.08	0.54	0.26	0.11	0.15
26			0.45	0.19	0.91	7.54	5.34	1.99	0.50	0.26	0.11	0.10
27			0.51	0.19	0.96	6.34	4.43	1.81	0.47	0.26	0.11	0.08
28			0.51	0.17	0.96	5.50	8.60	1.72	0.47	0.23	0.11	0.06
29			0.54	0.17	0.91	4.72	6.51	1.63	0.44	0.23	–	0.06
30			0.57	0.15	1.85	12	6.01	1.48	0.41	0.23	–	0.05
31			–	0.10	2.43	–	5.00	–	0.41	0.20	–	0.03
Total	0.17	0	17.73	10.12	13.34	243.17	213.14	256.51	24.69	10.40	4.26	2.22
Mean	0.006		0.591	0.337	0.430	8.10	6.87	8.55	0.796	0.335	0.152	0.072
Max.	0.03		0.91	0.57	2.43	39	17	56	1.42	0.47	0.20	0.15
Min.	0.00		0.00	0.10	0.08	1.85	3.12	1.48	0.41	0.20	0.11	0.03
Runoff – mcm.	0.015	0	1.532	0.874	1.152	21.010	18.415	22.162	2.133	0.898	0.368	0.192

WATER YEAR 1969 : Max. 56 Min. 0.00 Mean 2.18 Annual Runoff 68.753 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 5, 69	06.00	2.40	62.60				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
PA SAK RIVER BASIN

Pa Sak River at Kaeng Khoi, Saraburi (S_2)

Location: Lat. 14°-35'-32" N., Long. 100°-00'-23" E., on left bank about 100 meters downstream from Kaeng Khoi Water Supply, Amphoe Kaeng Khoi, Saraburi.

Drainage Area: 14,522 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 6.110 m. (M.S.L.)

Bench Mark: B.M. - S. 2

Location: Near the bridge of automatic gage building

Elevation: + 20.130 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1914 to date

Rating Operation:

Period of Rating: 1959-1962, 1965, 1967 to date

Rated by Float:

Rated by Current Meter: 1959-1962, 1965, 1967 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

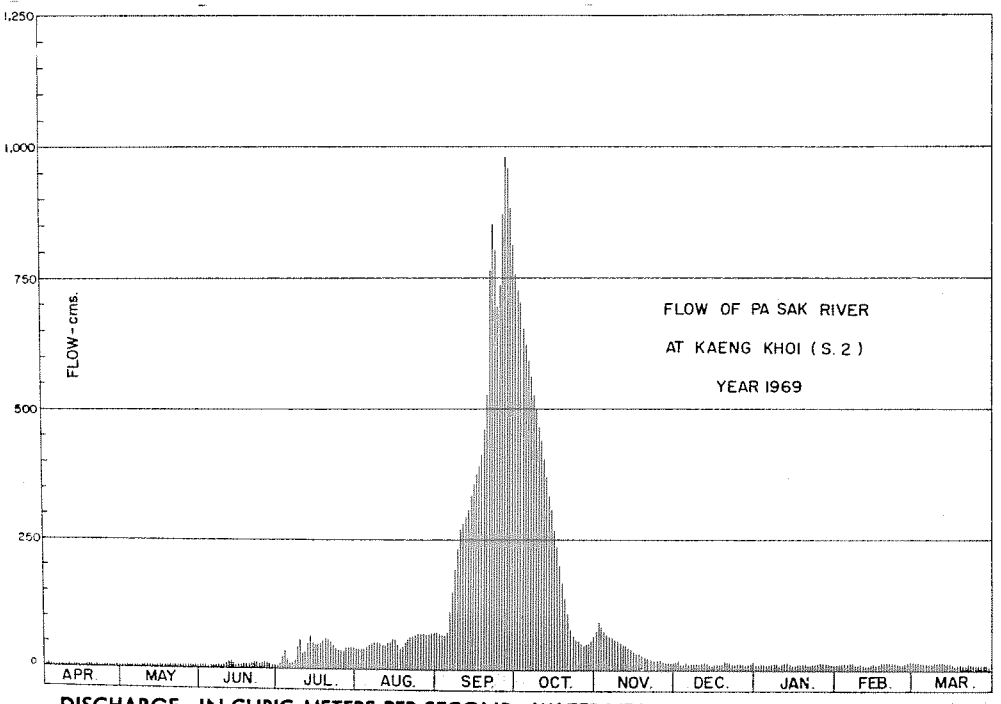
Overbank Flow Conditions: No overbank flow

General Description: Records fair except those for period of low flow is effected by back water from Rama VI Barrage which are poor. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow is diverted for irrigation of about 3,000 hectares above gage site at Lom Sak weir. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	7.25	7.23	7.11	7.44	8.09	8.50	14.98	8.51	7.67	7.57	7.63	7.66
2	.40	.26	.22	.44	.07	.49	.83	.74	.70	.51	.62	.65
3	.32	.30	.11	.74	.02	.46	.61	.62	.58	.63	.58	.62
4	.27	.29	.21	8.04	.07	.43	.32	.53	.58	.57	.57	.61
5	.29	.22	.14	7.69	.10	.45	.01	.47	.69	.57	.62	.64
6	7.33	7.21	7.20	7.53	8.19	9.18	13.75	8.42	7.59	7.60	7.63	7.62
7	.33	.26	.34	.61	.23	.58	.52	.38	.58	.57	.66	.63
8	.34	.23	.14	.73	.25	.84	.27	.35	.63	.61	.59	.60
9	.28	.23	.10	8.10	.27	10.42	12.99	.32	.60	.65	.52	.63
10	.40	.18	.42	.32	.21	.74	.68	.29	.59	.49	.61	.61
11	7.30	7.11	7.58	7.95	8.18	10.91	12.36	8.23	7.57	7.59	7.50	7.59
12	.38	.05	.65	.99	.15	11.02	.02	.18	.66	.66	.46	.64
13	.34	.03	.73	8.29	.29	.10	11.69	.14	.67	.65	.45	.56
14	.31	.07	.51	.44	.22	.30	.38	.08	.55	.57	.56	.60
15	.33	.07	.39	.24	.38	.54	.07	.02	.56	.55	.62	.60
16	7.35	7.00	7.46	8.20	8.35	11.78	10.74	8.00	7.62	7.61	7.50	7.49
17	.37	6.96	.47	.22	.13	.94	.35	7.97	.62	.62	.63	.46
18	.44	.94	.50	.24	.08	12.14	9.97	.90	.55	.56	.64	.55
19	.38	.90	.61	.35	.16	.53	.61	.86	.63	.55	.66	.54
20	.35	7.06	.47	.39	.25	13.01	.23	.84	.70	.63	.62	.51
21	7.39	7.11	7.63	8.36	8.37	14.89	8.83	7.76	7.66	7.45	7.67	7.53
22	.30	.06	.73	.25	.40	15.71	.60	.75	.65	.54	.62	.58
23	.29	.11	.60	.20	.42	.01	.44	.75	.56	.60	.66	.56
24	.32	.12	.46	.12	.43	14.45	.33	.74	.57	.55	.61	.54
25	.37	.03	.61	.06	.48	.88	.32	.75	.56	.59	.58	.54
26	7.28	6.91	7.63	8.02	8.49	15.95	8.22	7.67	7.64	7.60	7.62	7.49
27	.26	.85	.60	.04	.48	16.49	.20	.66	.52	.66	.65	.53
28	.23	.83	.57	.10	.46	.37	.25	.67	.53	.62	.66	.52
29	.19	.82	.49	.12	.45	15.96	.24	.67	.57	.57		.48
30	.21	.83	.55	.12	.49	.43	.39	.62	.64	.60		.39
31		.95		.11	.50		.47		.64	.60		.38
Mean	7.32	7.07	7.44	8.05	8.28	12.15	10.96	8.06	7.60	7.57	7.60	7.56
Max.	7.44	7.30	7.73	8.44	8.50	16.49	14.98	8.74	7.70	7.66	7.66	7.66
Min.	7.19	6.82	7.10	7.44	8.02	8.43	8.20	7.62	7.52	7.45	7.45	7.38

WATER YEAR 1969 : Max. 16.49 m. Min. 6.82 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	2.50	2.30	1.10	6.20	40	71	747	71	14	11	13	15
2	5.00	2.60	2.20	6.20	39	70	728	93	17	8.40	13	14
3	3.40	3.00	1.10	19	36	68	699	82	11	13	11	13
4	2.70	2.90	2.10	37	39	65	662	74	11	11	11	12
5	2.90	2.20	1.40	16	41	67	623	69	16	11	13	14
6	3.60	2.10	2.00	9.20	47	125	592	65	12	12	13	13
7	3.60	2.60	3.80	12	50	158	564	61	11	11	15	13
8	3.80	2.30	1.40	18	51	182	535	59	13	12	12	12
9	2.80	2.30	1.00	41	53	234	504	57	12	14	8.80	13
10	5.00	1.80	5.60	57	49	266	470	54	12	7.70	12	12
11	3.00	1.10	11	31	47	283	435	50	11	12	8.00	12
12	4.60	0.70	14	34	44	294	397	47	15	15	6.80	14
13	3.80	0.58	18	54	54	302	361	44	15	14	6.50	10
14	3.20	0.82	8.40	66	49	322	330	40	10	11	10	12
15	3.60	0.82	4.80	51	61	346	299	36	10	10	13	12
16	4.00	0.40	6.80	48	59	371	266	34	13	12	8.00	7.70
17	4.40	0.28	7.10	49	43	388	227	32	13	13	13	6.80
18	6.20	0.22	8.00	51	40	410	193	28	10	10	14	10
19	4.60	0.10	12	59	44	453	161	26	13	10	15	9.60
20	4.00	0.76	7.10	62	51	506	129	24	17	13	13	8.40
21	4.80	1.10	13	60	61	736	103	20	15	6.50	15	9.20
22	3.00	0.76	18	51	63	850	80	19	14	9.60	13	11
23	2.90	1.10	12	48	65	751	66	19	10	12	15	10
24	3.40	1.20	6.80	42	65	678	57	19	11	10	12	9.60
25	4.40	0.58	12	38	69	734	57	19	10	12	11	9.60
26	2.80	0.13	13	36	70	888	49	15	14	12	13	7.70
27	2.60	0.05	12	37	79	974	48	15	8.80	15	14	9.20
28	2.30	0.03	11	41	68	955	51	15	9.20	13	15	8.80
29	1.90	0.02	7.70	42	67	890	51	15	11	11		7.40
30	2.10	0.03	10	42	70	808	62	13	14	12		4.80
31		0.25		42	71		69		14	12		4.60
Total	106.90	35.13	234.40	1,205.60	1,675	13,245	9,615	1,215	387	356.20	337.10	325.40
Mean	3.56	1.13	7.81	38.9	54.0	441	310	40.5	12.5	11.5	12.0	10.5
Max.	6.20	3.00	18	66	71	974	747	93	17	15	15	15
Min.	1.90	0.02	1.00	6.20	36	65	48	13	8.80	6.50	6.50	4.60
Runoff - mcm.	9.236	0.035	20.252	104.164	144.720	1,144.368	830.736	104.976	33.437	30.776	29.125	28.114

WATER YEAR 1969 : Max. 974 Min. 0.02 Mean 78.7 Annual Runoff 2,482.940 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 27	18.00	16.55	984				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

150

WATER YEAR 1969
PA SAK RIVER BASIN

Lam Muak Lek at highway bridge, Saraburi (S7)

Location: Lat. 14°-38'-04" N., Long. 101°-12'-37" E., on left bank about 30 meters upstream from the highway bridge on Bangkok – Nakhon Ratchasima, Tambon Muak Lek, Amphoe Kaeng Khoi, Saraburi.

Drainage Area: 177 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S.

Location: Near automatic gage building

Elevation: + 6.919 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1965 to date

Rating Operation:

Period of Rating: 1965 to date

Rated by Float: –

Rated by Current Meter: 1965 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

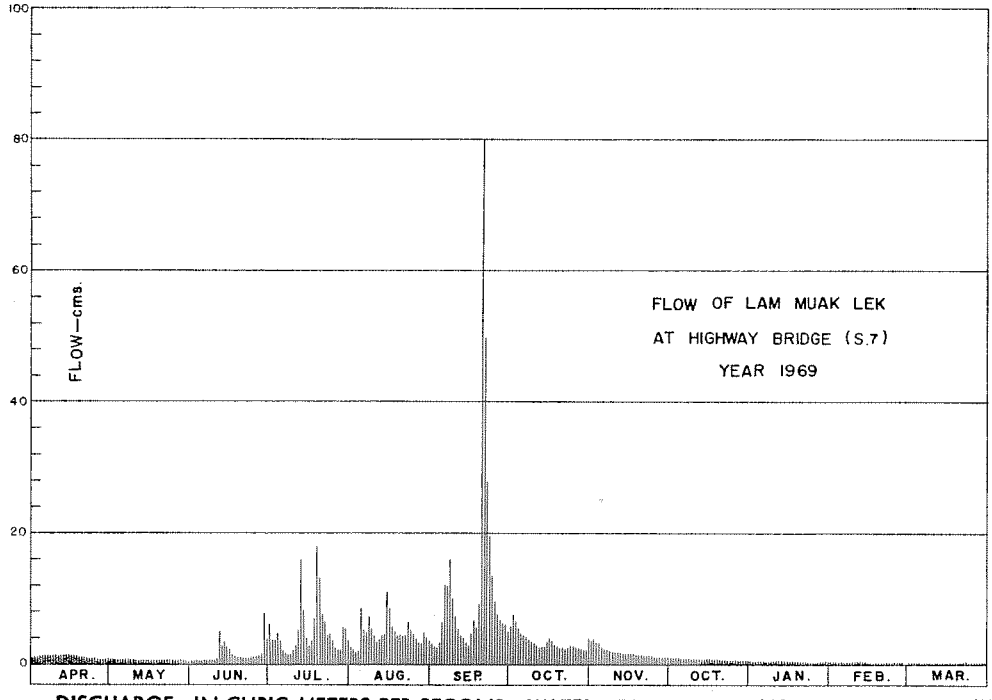
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: * Mean hourly gage height and discharge September 18-28.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.56	0.54	0.51	0.94	0.72	0.75	0.91	0.78	0.58	0.52	0.51	0.51
2	.57	.54	.51	.78	.66	.72	1.03	.80	.57	.52	.51	.51
3	.56	.54	.51	.79	.64	.71	0.97	.76	.57	.52	.51	.50
4	.58	.54	.51	.86	.69	.80	.91	.75	.57	.52	.51	.50
5	.59	.54	.52	.76	1.08	1.02	.85	.72	.56	.52	.51	.50
6	0.59	0.54	0.51	0.67	0.88	1.26	0.83	0.69	0.56	0.52	0.51	0.50
7	.59	.54	.51	.63	.86	.26	.81	.68	.56	.52	.51	.50
8	.59	.54	.52	.61	1.00	.42	.79	.66	.56	.52	.51	.51
9	.59	.54	.53	.61	0.90	.17	.77	.66	.56	.52	.51	.50
10	.59	.54	.51	.66	.81	0.99	.76	.65	.56	.52	.52	.50
11	0.59	0.53	0.56	0.73	0.76	0.89	0.72	0.65	0.55	0.52	0.52	0.50
12	.59	.52	.87	.95	.80	.83	.71	.63	.56	.52	.52	.50
13	.60	.52	.72	1.45	.84	.81	.72	.63	.55	.52	.52	.50
14	.60	.52	.77	0.95	.85	.77	.72	.63	.55	.52	.51	.50
15	.60	.52	.69	.80	1.22	.73	.78	.63	.55	.52	.50	.50
16	0.60	0.51	0.63	0.70	1.04	0.87	0.81	0.63	0.55	0.52	0.50	0.50
17	.61	.52	.59	.76	0.89	.98	.77	.62	.55	.52	.50	.50
18	.59	.52	.57	.94	.87	* .88	.74	.61	.55	.52	.50	.49
19	.57	.52	.56	1.50	.82	*1.10	.73	.61	.54	.51	.50	.50
20	.57	.51	.55	.27	.84	* .80	.71	.61	.54	.51	.50	.51
21	0.57	0.51	0.55	0.97	0.82	*3.69	0.71	0.60	0.54	0.51	0.50	0.51
22	.56	.51	.54	.96	.85	*2.07	.69	.60	.54	.51	.50	.51
23	.56	.52	.54	.83	.97	*1.48	.71	.59	.54	.51	.50	.51
24	.55	.52	.56	.85	.88	* .24	.73	.59	.54	.51	.50	.50
25	.55	.51	.56	.77	.85	* .11	.73	.59	.54	.51	.50	.50
26	0.54	0.51	0.57	0.71	0.80	*1.02	0.71	0.59	0.53	0.51	0.50	0.50
27	.54	.51	.58	.69	.76	*0.97	.71	.59	.53	.51	.50	.50
28	.54	.51	.63	.68	.76	* .94	.69	.59	.53	.51	.50	.50
29	.54	.51	1.03	.91	.86	.94	.68	.59	.53	.51		.50
30	.54	.51	0.75	.90	.81	.88	.68	.59	.53	.51		.49
31		.51		.80	.78		.81		.53	.51		.49
Mean	0.57	0.52	0.60	0.85	0.85	1.14	0.77	0.64	0.53	0.52	0.51	0.50
Max.	0.61	0.54	1.03	1.50	1.22	3.69	1.03	0.80	0.58	0.52	0.52	0.51
Min.	0.54	0.51	0.51	0.61	0.64	0.71	0.68	0.59	0.53	0.51	0.50	0.49

WATER YEAR 1969 : Max. 3.69 m. Min. 0.49 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.00	0.80	0.50	6.18	2.78	3.20	5.67	3.62	1.20	0.60	0.50	0.50
2	1.10	0.80	0.50	3.62	2.06	2.78	7.74	3.90	1.10	0.60	0.50	0.50
3	1.00	0.80	0.50	3.76	1.84	2.64	6.69	3.34	1.10	0.60	0.50	0.40
4	1.20	0.80	0.50	4.86	2.39	3.90	5.67	3.20	1.10	0.60	0.50	0.40
5	1.30	0.80	0.60	3.34	8.64	7.56	4.70	2.78	1.00	0.60	0.50	0.40
6	1.30	0.80	0.50	2.17	5.18	12	4.38	2.39	1.00	0.60	0.50	0.40
7	1.30	0.80	0.50	1.73	4.86	12	4.06	2.28	1.00	0.60	0.50	0.40
8	1.30	0.80	0.60	1.51	7.20	16	3.76	2.06	1.00	0.60	0.50	0.50
9	1.30	0.80	0.70	1.51	5.50	10	3.48	2.06	1.00	0.60	0.50	0.40
10	1.30	0.80	0.50	2.06	4.06	7.03	3.34	1.95	1.00	0.60	0.60	0.40
11	1.30	0.70	1.00	2.92	3.34	5.34	2.78	1.95	0.90	0.60	0.60	0.40
12	1.30	0.60	5.02	6.35	3.90	4.38	2.64	1.73	1.00	0.60	0.60	0.40
13	1.40	0.60	2.78	16	4.54	4.06	2.78	1.73	0.90	0.60	0.60	0.40
14	1.40	0.60	3.48	6.35	4.70	3.48	2.78	1.73	0.90	0.60	0.50	0.40
15	1.40	0.60	2.39	3.90	11	2.92	3.62	1.73	0.90	0.60	0.40	0.40
16	1.40	0.50	1.73	2.50	7.92	5.02	4.06	1.73	0.90	0.60	0.40	0.40
17	1.51	0.60	1.30	3.34	5.34	6.86	3.48	1.62	0.90	0.60	0.40	0.40
18	1.30	0.60	1.10	6.18	5.02	*5.26	3.06	1.51	0.90	0.60	0.40	0.32
19	1.10	0.60	1.00	18	4.22	*9.13	2.92	1.51	0.80	0.50	0.40	0.40
20	1.10	0.50	0.90	12	4.54	*26	2.64	1.51	0.80	0.50	0.40	0.50
21	1.10	0.50	0.90	6.69	4.22	*80	2.64	1.40	0.80	0.50	0.40	0.50
22	1.00	0.50	0.80	6.52	4.70	*32	2.39	1.40	0.80	0.50	0.40	0.50
23	1.00	0.60	0.80	4.38	6.69	*17	2.64	1.30	0.80	0.50	0.40	0.50
24	0.90	0.60	1.00	4.70	5.18	*12	2.92	1.30	0.80	0.50	0.40	0.40
25	0.90	0.50	1.00	3.48	4.70	*9.18	2.92	1.30	0.80	0.50	0.40	0.40
26	0.80	0.50	1.10	2.64	3.90	*7.56	2.64	1.30	0.70	0.50	0.40	0.40
27	0.80	0.50	1.20	2.39	3.34	*6.75	2.64	1.30	0.70	0.50	0.40	0.40
28	0.80	0.50	1.73	2.28	3.34	*6.18	2.39	1.30	0.70	0.50	0.40	0.40
29	0.80	0.50	7.74	5.67	4.86	6.18	2.28	1.30	0.70	0.50		0.40
30	0.80	0.50	3.20	5.50	4.06	5.18	2.28	1.30	0.70	0.50		0.32
31		0.50		3.90	3.62		4.06		0.70	0.50		0.32
Total	34.21	19.60	45.57	156.43	147.64	331.59	110.05	57.53	27.60	17.30	13.00	12.86
Mean	1.14	0.63	1.52	5.05	4.76	11.0	3.55	1.92	0.89	0.56	0.46	0.41
Max.	1.51	0.80	7.74	18	11	80	7.74	3.90	1.20	0.60	0.60	0.50
Min.	0.80	0.50	0.50	1.51	1.84	2.64	2.28	1.30	0.70	0.50	0.40	0.32
Runoff - mcm.	2.956	1.693	3.937	13.515	12.756	28.649	9.508	4.970	2.385	1.495	1.123	1.111

WATER YEAR 1969 : Max. 80 Min. 0.30 Mean 2.67 Annual Runoff 84.100 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 21	13.00	4.46	105				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
PA SAK RIVER BASIN

Nam Phung at Nam Phung bridge, Phetchabun (S_{10})

Location: Lat. 16°-56'-20" N., Long. 101°-13'-10" E., on right bank at Nam Phung bridge, Tambon Hin Hao, Amphoe Lom Kao, Petchabun.

Drainage Area: 268 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S.

Location: Near the gage site

Elevation: + 8.850 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean at 5 readings.

Period of Available Gage Records: 1965 to date

Rating Operation:

Period of Rating: 1967

Rated by Float: –

Rated by Current Meter: 1967

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

General Description: Records poor. Stage-discharge relationship used is defined by discharge measurements made during 1967. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

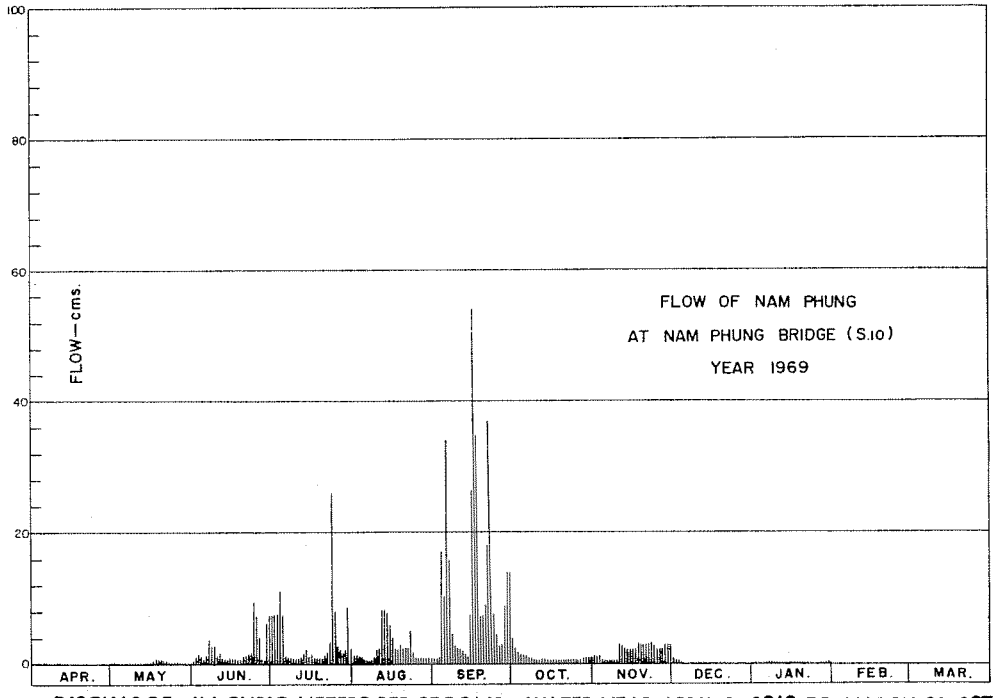
Remark: * Mean hourly gage height September 15-19, no gage-height record February – March.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	-0.02	-0.02	0.13	1.06	0.30	0.21	0.53	0.31	0.24	-0.06		
2	.02	.01	.33	.06	.34	.21	.52	.28	.16	.06		
3	.02	.01	.35	.07	.29	.21	.43	.31	.20	.06		
4	.02	.02	.24	.34	.28	1.75	.36	.11	-0.02	.06		
5	.02	.02	.11	0.71	.17	.03	.32	.12	.03	.06		
6	-0.05	-0.02	0.43	0.23	0.13	2.53	0.32	0.12	-0.04	-0.05		
7	.04	.02	.70	.25	.14	0.95	.25	.12	.03	.05		
8	.04	.02	.55	.23	.14	.74	.21	.12	.03	.05		
9	.05	.02	.56	.21	.29	.53	.16	.13	.03	.05		
10	.05	.01	.29	.21	.50	.52	.13	.54	.04	.05		
11	-0.05	-0.01	0.38	0.22	0.51	0.48	0.10	0.60	-0.04	-0.06		
12	.05	.01	.22	.27	1.11	.42	.20	.58	.03	.06		
13	.05	.01	.20	.34	.13	.32	.15	.51	.04	.06		
14	.05	.01	.13	.48	.10	.26	.12	.51	.05	.07		
15	.04	.01	.24	.26	0.88	*1.04	.10	.51	.05	.07		
16	-0.05	-0.11	0.20	0.37	0.61	*3.24	0.11	0.50	-0.05	-0.07		
17	.05	.12	.11	.24	.47	*2.35	.13	.51	.04	.07		
18	.05	.14	.10	.22	.50	*1.19	.11	.63	.05	.07		
19	.05	.11	.14	.22	.60	* .02	.11	.61	.05	.07		
20	.06	.12	.30	.22	.50	.07	.12	.61	.04	.08		
21	-0.05	0.11	0.29	0.34	0.53	1.27	0.11	0.62	-0.05	-0.08		
22	.05	-0.01	.33	.40	.52	2.67	.10	.63	.05	.08		
23	.04	.01	.37	.63	.83	1.39	.13	.63	.05	.08		
24	.04	.02	1.23	2.20	.24	0.90	.12	.54	.05	.08		
25	.04	.01	.01	0.96	.23	.75	.11	.50	.05	.09		
26	-0.05	-0.01	0.66	0.50	0.21	0.53	0.14	0.50	-0.05	-0.09		
27	.04	.01	.11	.48	.21	.58	.17	.50	.05	.09		
28	.08	.01	.11	.38	.21	1.09	.22	.61	.06	.01		
29	.01	.01	.96	.50	.22	.57	.25	.61	.05	.01		
30	.01	.01	1.06	1.14	.21	.54	.26	.61	.06	.01		
31		.01		0.35	.21		.24		.06	.01		
Mean	-0.04	0.01	0.39	0.55	0.44	1.08	0.20	0.45	-0.02	-0.06		
Max.	-0.01	0.14	1.23	2.20	1.13	3.24	0.53	0.63	0.24	-0.01		
Min.	-0.05	-0.02	0.10	0.21	0.13	0.21	0.10	0.11	-0.06	-0.09		

WATER YEAR 1969 : Max. 3.24 m. Min. m.

BM. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.21	0.21	0.56	7.52	1.20	0.82	2.51	1.25	0.95	0.15		
2	0.21	0.22	1.35	7.52	1.40	0.82	2.44	1.12	0.66	0.15		
3	0.21	0.22	1.45	7.64	1.16	0.82	1.88	1.25	0.78	0.15		
4	0.21	0.21	0.95	11	1.12	17	1.50	0.50	0.21	0.15		
5	0.21	0.21	0.50	3.89	0.69	7.16	1.30	0.53	0.19	0.15		
6	0.16	0.21	1.88	0.91	0.56	34	1.30	0.53	0.18	0.16		
7	0.18	0.21	3.80	0.99	0.59	6.25	0.99	0.53	0.19	0.16		
8	0.18	0.21	2.65	0.91	0.59	4.16	0.82	0.53	0.19	0.16		
9	0.16	0.21	2.72	0.82	1.16	2.51	0.66	0.56	0.19	0.16		
10	0.16	0.22	1.16	0.82	2.30	2.44	0.56	2.58	0.18	0.16		
11	0.16	0.22	1.60	0.86	2.37	2.18	0.47	3.00	0.18	0.15		
12	0.16	0.22	0.86	1.07	8.12	1.82	0.78	2.86	0.19	0.15		
13	0.16	0.22	0.78	1.40	8.36	1.30	0.62	2.37	0.18	0.15		
14	0.16	0.22	0.56	2.18	8.00	1.03	0.53	2.37	0.16	0.13		
15	0.18	0.22	0.95	1.03	5.50	*11	0.47	2.37	0.16	0.13		
16	0.16	0.50	0.78	1.55	3.08	*54	0.50	2.30	0.16	0.13		
17	0.16	0.53	0.50	0.95	2.16	*30	0.56	2.37	0.18	0.13		
18	0.16	0.59	0.47	0.86	2.30	*9.23	0.50	3.24	0.16	0.43		
19	0.16	0.50	0.59	0.86	3.00	*7.05	0.50	3.08	0.16	0.13		
20	0.15	0.53	1.20	0.86	2.30	7.64	0.53	3.08	0.18	0.12		
21	0.16	0.50	1.16	1.40	2.51	10	0.50	3.16	0.16	0.12		
22	0.16	0.22	1.35	1.70	2.44	37	0.47	3.24	0.16	0.12		
23	0.18	0.22	1.55	3.24	5.00	12	0.56	3.24	0.16	0.12		
24	0.18	0.21	9.59	26	0.95	5.70	0.53	2.58	0.16	0.12		
25	0.18	0.22	6.92	6.36	0.91	4.25	0.50	2.30	0.16	0.10		
26	0.16	0.22	3.48	2.30	0.82	2.51	0.59	2.30	0.16	0.10		
27	0.18	0.22	0.50	2.18	0.82	2.86	0.69	2.30	0.16	0.10		
28	0.12	0.22	0.50	1.60	0.82	7.88	0.86	3.08	0.15	0.22		
29	0.22	0.22	6.36	2.30	0.86	14	0.99	3.08	0.16	0.22		
30	0.22	0.22	7.52	8.48	0.82	14	1.03	3.08	0.15	0.22		
31		0.22		1.45	0.82		0.95		0.15	0.22		
Total	5.26	8.57	64.24	110.65	72.73	311.43	27.09	64.78	7.16	4.56		
Mean	0.17	0.28	2.14	3.57	2.35	10.4	0.87	2.16	0.23	0.15		
Max.	0.22	0.59	9.59	26	8.36	54	2.51	3.24	0.95	0.22		
Min.	0.16	0.21	0.47	0.82	0.56	0.82	0.47	0.50	0.15	0.10		
Runoff - MCM.	0.454	0.740	5.550	9.560	6.284	26.907	2.340	5.597	0.619	0.394		

WATER YEAR 1969 : Max. 54 Min. 0.10 Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 16	09.00	3.80	72				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
SALAWIN RIVER BASIN

Huai Mae Lamao at Ban Ko Ko, Tak (Sw.$_1$)

Location: Lat. 16°-54'-56" N., Long. 98°-37'-57" E., on right bank at Ban Ko Ko, 14 kilometers south-east of Amphoe Mae Ramat between Doi Kala and Doi Mae Phasa, Amphoe Mae Sot, Tak.

Drainage Area: 1,426 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Along the measuring line

Elevation: + 5.597 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1966 to date

Rating Operation

Period of Rating: 1966-1969

Rated by Float: -

Rated by Current Meter: 1966-1969

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

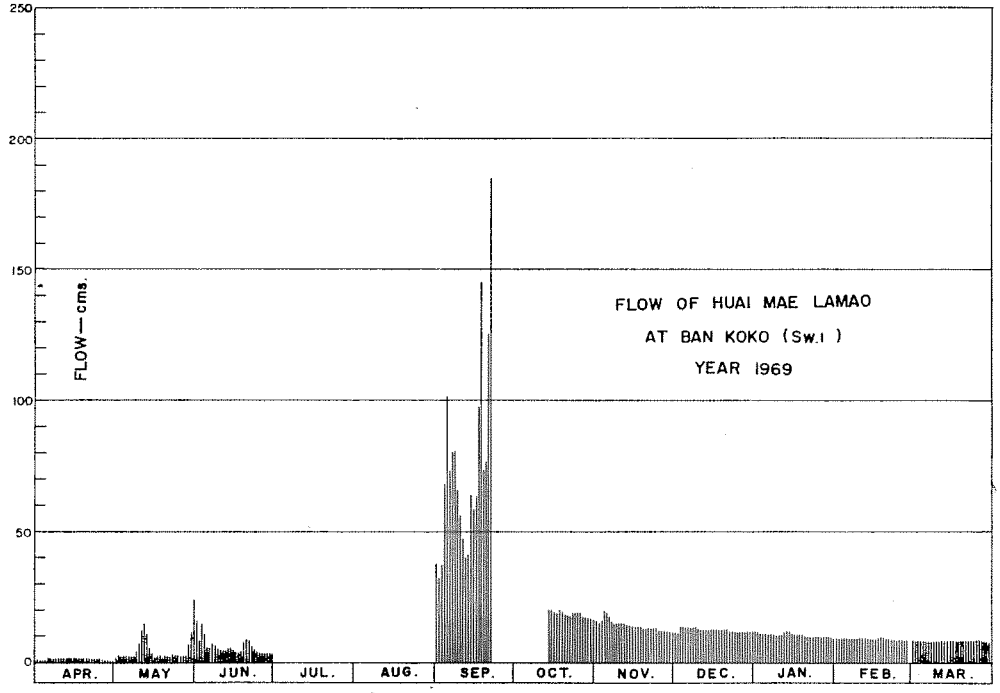
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1968. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: No gage-height record July - August, September 23-30, October 1-13

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.09	0.14	0.80			1.41		0.78	0.63	0.63	0.56	0.52
2	.09	.20	.46			.25		.77	.62	.63	.56	.51
3	.10	.19	.74			.41		.78	.70	.62	.55	.51
4	.10	.20	.59			3.38		.92	.71	.62	.55	.51
5	.15	.20	.36			2.81		.88	.70	.61	.55	.51
6	0.14	0.20	0.39			2.16		0.84	0.70	0.61	0.55	0.50
7	.14	.18	.45			.35		.80	.70	.61	.55	.50
8	.14	.18	.41			.32		.77	.70	.61	.55	.50
9	.14	.27	.37			.00		.76	.70	.61	.55	.50
10	.14	.44	.34			1.83		.75	.69	.61	.55	.50
11	0.14	0.64	0.32			1.60		0.74	0.69	0.61	0.55	0.50
12	.16	.77	.31			.47		.74	.69	.63	.55	.51
13	.15	.61	.37			.45		.73	.67	.66	.55	.51
14	.14	.37	.38			2.01	0.94	.72	.67	.63	.55	.51
15	.13	.22	.33			1.88	.94	.72	.68	.62	.55	.51
16	0.13	0.14	0.30			1.96	0.91	0.71	0.68	0.61	0.55	0.51
17	.12	.21	.29			2.65	.91	.71	.68	.60	.58	.51
18	.12	.20	.33			3.53	.92	.71	.68	.60	.57	.51
19	.12	.16	.48			2.21	.91	.69	.67	.60	.56	.51
20	.12	.21	.54			.30	.87	.69	.67	.59	.55	.51
21	0.12	0.19	0.53			3.12	0.85	0.68	0.67	0.59	0.55	0.51
22	.12	.16	.43			4.20	.84	.68	.66	.59	.53	.51
23	.12	.24	.36				.90	.67	.66	.59	.52	.52
24	.11	.21	.31				.89	.67	.66	.58	.52	.52
25	.11	.19	.28				.91	.66	.65	.58	.54	.54
26	0.10	0.18	0.27				0.88	0.65	0.65	0.58	0.53	0.53
27	.10	.20	.27				.84	.64	.64	.58	.52	.51
28	.09	.20	.26				.83	.64	.64	.58	.52	.51
29	.10	.41	.26				.81	.64	.64	.57		.49
30	.10	.59	.25				.81	.63	.64	.56		.48
31		1.05					.80		.64	.56		.47
Mean	0.12	0.30	0.39					0.72	0.67	0.60	0.55	0.51
Max.	0.16	1.05	0.80			4.20		0.92	0.71	0.66	0.58	0.54
Min.	0.09	0.14	0.25					0.63	0.64	0.56	0.52	0.47

WATER YEAR 1969 : Max. m. Min. m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.81	1.50	16			38		16	12	12	9.76	8.72
2	0.81	2.40	7.32			31		15	11	12	9.76	8.46
3	0.90	2.25	15			38		16	14	11	9.76	8.46
4	0.90	2.40	10			136		20	14	11	9.50	8.46
5	1.65	2.40	5.20			102		19	14	11	9.50	8.46
6	1.50	2.40	5.80			71		17	14	11	9.50	8.20
7	1.50	2.10	7.10			80		16	14	11	9.50	8.20
8	1.50	2.10	6.22			81		15	14	11	9.50	8.20
9	1.50	3.52	5.40			63		15	14	11	9.50	8.20
10	1.50	6.88	4.80			55		15	13	11	9.50	8.20
11	1.50	12	4.40			46		15	13	11	9.50	8.20
12	1.80	15	4.20			40		15	13	12	9.50	8.46
13	1.65	11	5.40			40		14	13	12	9.50	8.46
14	1.50	5.40	5.60			64	20	14	13	12	9.50	8.46
15	1.35	2.72	4.60			58	20	14	13	11	9.50	8.46
16	1.35	1.50	4.00			61	19	14	13	11	9.50	8.46
17	1.20	2.56	3.84			94	19	14	13	11	10	8.46
18	1.20	2.40	4.60			145	20	14	13	11	10	8.46
19	1.20	1.80	7.76			73	19	13	13	11	9.76	8.46
20	1.20	2.56	9.24			77	18	13	13	10	9.50	8.46
21	1.20	2.25	8.98			120	18	13	13	10	9.50	8.46
22	1.20	1.80	6.66			185	17	13	12	10	8.98	8.46
23	1.20	3.04	5.20				19	13	12	10	8.72	8.72
24	1.05	2.56	4.20				19	13	12	10	8.72	8.72
25	1.05	2.25	3.68				19	12	12	10	9.24	9.24
26	0.90	2.10	3.52				19	12	12	10	8.98	8.98
27	0.90	2.40	3.52				17	12	12	10	8.72	8.46
28	0.81	2.40	3.36				17	12	12	10	8.72	8.46
29	0.90	6.22	3.36				17	12	12	10		7.98
30	9.90	10	3.20				17	12	12	9.76		7.76
31		24					16		12	9.76		7.32
Total	36.63	143.91	182.16					428	397	333.52	263.62	260.46
Mean	1.22	4.64	6.07					14.3	12.8	10.7	9.41	8.40
Max.	1.80	24	16					20	14	12	10	9.24
Min.	0.81	1.50	3.20					12	12	9.76	8.72	7.32
Runoff - mcm.	3.165	12.434	15.739					36.979	34.301	28.816	22.777	22.504

WATER YEAR 1969 : Max. Min. Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
SALAWIN RIVER BASIN

Yuam River at Ban Tha Kham, Mae Hong Son (Sw.2)

Location: Lat. 18°-11'-26" N., Long. 97°-56'-06" E., on left bank about 500 meters upstream from Mae Yuam Weir at Ban Tha Kham, Amphoe Mae Sariang, Mae Hong Son.

Drainage Area: 2,617 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Along the gage site

Elevation: + 8.377 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1966 to date

Rating Opeation

Period of Rating: 1966-1970

Rated by Float: -

Rated by Current Meter: 1966-1970

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

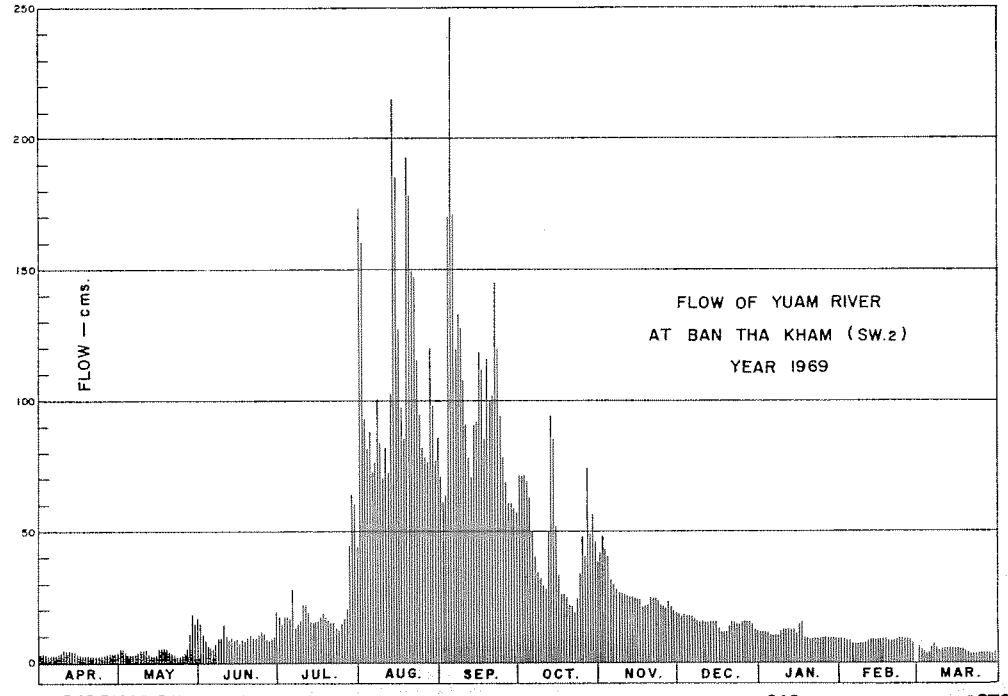
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.41	1.50	1.56	1.60	2.38	1.66	1.57	1.66	1.49	1.41	1.46	1.41
2	.41	.49	.47	.54	.30	.60	.56	.70	.48	.41	.45	.38
3	.40	.45	.42	.61	1.91	.64	.57	.67	.49	.41	.44	.33
4	.40	.40	.35	.61	.86	2.41	.54	.65	.48	.41	.44	.31
5	.40	.34	.33	.59	.92	.56	.50	.60	.48	.40	.43	.35
6	1.40	1.40	1.33	1.72	1.81	2.11	1.51	1.58	1.48	1.39	1.43	1.41
7	.41	.43	.41	.53	.85	1.86	.44	.57	.47	.39	.43	.42
8	.42	.48	.45	.56	2.00	.96	.39	.56	.46	.39	.43	.36
9	.47	.47	.41	.57	1.88	.92	.36	.56	.46	.42	.44	.34
10	.47	.57	.45	.65	.78	.75	.34	.55	.46	.42	.43	.36
11	1.47	1.49	1.47	1.65	1.88	1.66	1.32	1.55	1.45	1.42	1.44	1.37
12	.46	.41	.41	.62	.81	.60	.51	.54	.45	.42	.45	.37
13	.46	.39	.45	.58	2.03	.54	.72	.54	.45	.42	.45	.39
14	.45	.35	.41	.56	.58	.70	.69	.54	.45	.42	.45	.37
15	.42	.36	.44	.57	.39	.71	.52	.53	.45	.39	.45	.37
16	1.39	1.33	1.38	1.57	2.06	1.87	1.59	1.53	1.43	1.44	1.45	1.36
17	.39	.42	.44	.60	1.91	.82	.55	.51	.41	.46	.45	.36
18	.39	.33	.41	.62	.83	.65	.55	.52	.41	.46	.45	.35
19	.38	.34	.44	.59	2.33	.86	.54	.52	.41	.46	.44	.33
20	.38	.30	.48	.57	.29	.75	.52	.54	.43	.45	.44	.31
21	1.37	1.26	1.44	1.56	2.12	1.77	1.50	1.54	1.45	1.45	1.45	1.30
22	.37	.24	.44	.55	.11	2.03	.49	.54	.45	.45	.46	.30
23	.37	.21	.46	.53	1.99	1.86	.54	.53	.44	.46	.46	.29
24	.38	.22	.48	.50	.82	.69	.62	.52	.44	.46	.46	.30
25	.38	.22	.51	.55	.75	.58	.70	.52	.45	.47	.45	.31
26	1.41	1.24	1.44	1.58	1.73	1.53	1.64	1.51	1.45	1.47	1.45	1.31
27	.42	.32	.42	.64	.70	.48	.82	.53	.45	.47	.45	.30
28	.43	.47	.42	.81	.97	.48	.70	.51	.45	.46	.43	.30
29	.43	.62	.46	.97	.83	.46	.74	.50	.44	.46		.30
30	.43	.54	.63	.95	.71	.45	.68	.49	.42	.46		.33
31		.59	-	.83	.78		.64		.42	.46		.34
Mean	1.41	1.39	1.44	1.62	1.98	1.76	1.56	1.55	1.45	1.43	1.44	1.34
Max.	1.47	1.62	1.63	1.97	2.58	2.56	1.82	1.70	1.49	1.47	1.46	1.42
Min.	1.37	1.21	1.33	1.50	1.70	1.45	1.32	1.49	1.41	1.39	1.43	1.29

WATER YEAR 1969 : Max. 2.56 m. Min. 1.21 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	3.06	5.40	15	18	173	68	72	42	19	12	9.74	6.54
2	3.06	5.14	10	14	157	59	71	48	18	12	9.10	5.46
3	2.80	4.10	8.40	18	87	65	72	43	19	12	8.46	4.36
4	2.80	2.80	6.05	18	79	211	69	40	18	12	8.46	3.92
5	2.80	2.56	5.43	17	88	246	63	32	18	11	7.82	4.80
6	2.80	2.80	5.43	28	72	160	48	30	18	11	7.82	6.54
7	3.06	3.58	8.00	13	78	116	40	28	17	11	7.82	7.18
8	3.32	4.88	9.60	15	101	133	34	27	16	11	7.82	5.02
9	4.62	4.62	9.20	16	82	126	32	27	16	13	8.46	4.58
10	4.62	8.62	15	22	69	99	30	26	16	13	7.82	5.02
11	4.62	5.14	10	22	82	85	28	26	16	13	8.46	5.24
12	4.36	3.06	8.00	19	72	76	48	25	16	13	9.10	5.24
13	4.36	2.76	9.60	16	106	69	94	25	16	13	9.10	5.68
14	4.10	2.60	8.00	15	215	91	85	25	16	13	9.10	5.24
15	3.32	2.64	9.20	16	175	92	50	24	16	11	9.10	5.24
16	2.76	5.43	6.98	16	112	118	31	24	14	15	9.10	5.02
17	2.76	8.40	9.20	18	87	110	26	21	12	16	9.10	5.02
18	2.76	5.43	8.00	19	75	84	26	22	12	9.74	9.10	4.80
19	2.72	5.74	9.20	17	193	116	25	22	12	9.74	8.46	4.36
20	2.72	4.50	11	16	184	99	22	25	14	9.10	8.46	3.92
21	2.68	3.62	9.20	15	149	102	22	25	16	9.10	9.10	3.70
22	2.68	3.18	9.20	15	147	145	19	25	16	9.10	9.74	3.70
23	2.63	2.52	10	13	124	116	25	24	15	9.74	9.74	3.68
24	2.72	2.74	11	12	93	89	35	22	15	9.74	9.74	3.70
25	2.72	2.74	12	15	82	74	48	22	16	10	9.10	3.92
26	3.06	3.18	9.20	16	78	67	38	21	16	10	9.10	3.92
27	3.32	5.12	8.40	21	74	61	74	24	16	10	9.10	3.70
28	3.58	10	8.40	39	120	61	48	21	16	9.74	7.82	3.70
29	3.58	19	10	64	95	59	57	20	15	9.74		3.70
30	3.58	14	20	60	75	57	45	19	13	9.74		4.36
31		17		41	86		38		13	9.74		4.58
Total	98.02	173.30	288.69	664	3,410	3,054	1,413	805	486	347.22	245.84	145.84
Mean	3.27	5.59	9.62	21.4	110	102	45.6	26.8	15.7	11.2	8.78	4.70
Max.	4.62	19	20	64	215	246	94	48	19	16	9.74	7.18
Min.	2.68	2.52	5.43	12	69	57	19	19	12	9.10	7.82	3.68
Runoff — MCM.	8.469	14.973	24.943	57.370	294.624	263.866	122.083	69.552	41.990	30.000	21.240	12.600

WATER YEAR 1969 : Max. 246 Min. 2.52 Mean 30.5 Annual Runoff 961.711 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 5	12.00	2.60	256				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
MAE KOK RIVER BASIN

Mae Kok River at Mae Kok bridge, Chiang Rai (G.2A)

Location: Lat. 19°-55'-16" N., Long. 99°-50'-57" E., on right bank about 80 meters downstream from the bridge of Chiang Rai – Mae Chan highway, Amphoe Muang, Chiang Rai.

Drainage Area: 6,063 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 389.00 m. (M.S.L.)

Bench Mark: B.M. – H.S.

Location: Near automatic gage building

Elevation: + 392.602 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1958 to date

Rating Operation

Period of Rating: 1958-1960, 1967-1971

Rated by Float: –

Rated by Current Meter: 1958-1960, 1967-1971

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

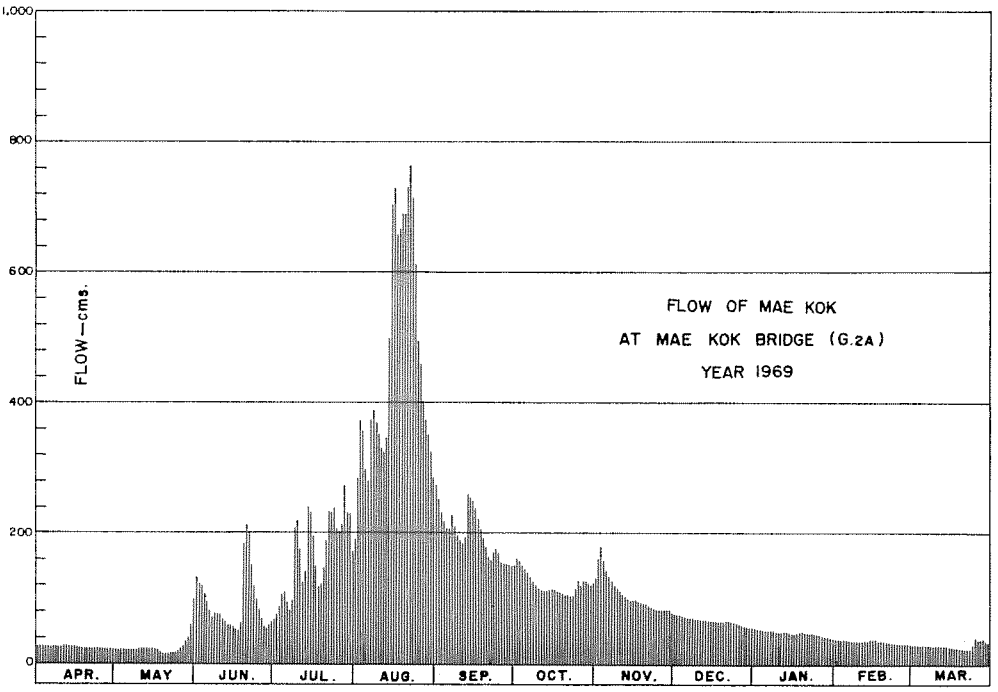
Overbank Flow Conditions: No overbank flow

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1968. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	390.76	390.72	391.33	391.05	391.49	391.76	391.38	391.30	391.04	390.89	390.77	390.69
2	.76	.72	.29	.08	.76	.68	.41	.42	.04	.88	.77	.69
3	.76	.72	.28	.13	392.01	.64	.39	.47	.03	.88	.76	.69
4	.76	.72	.23	.22	391.96	.61	.37	.37	.02	.87	.76	.69
5	.76	.72	.17	.24	.79	.58	.34	.33	.01	.87	.76	.69
6	390.76	390.72	391.10	391.18	391.77	391.59	391.32	391.30	391.00	390.87	390.75	390.69
7	.76	.71	.05	.09	392.01	.64	.29	.27	.00	.87	.75	.68
8	.76	.72	.09	.21	.04	.59	.27	.25	.00	.87	.75	.68
9	.76	.72	.09	.59	.00	.56	.24	.22	390.99	.86	.75	.68
10	.76	.73	.08	.62	391.96	.53	.23	.20	.99	.86	.75	.68
11	390.77	390.74	391.04	391.42	391.90	391.51	391.21	391.18	390.98	390.86	390.75	390.68
12	.77	.74	.02	.27	.89	.55	.21	.16	.98	.86	.75	.68
13	.77	.73	.00	.37	.99	.73	.21	.15	.98	.85	.75	.68
14	.76	.73	390.99	.68	392.30	.71	.22	.15	.97	.85	.76	.67
15	.76	.72	.99	.65	.62	.70	.22	.15	.97	.84	.76	.65
16	390.76	390.72	390.95	391.50	392.66	391.66	391.22	391.15	390.97	390.84	390.76	390.64
17	.74	.72	.95	.35	.55	.59	.21	.14	.96	.85	.75	.64
18	.74	.67	391.02	.26	.56	.54	.20	.12	.96	.85	.75	.64
19	.74	.64	.48	.28	.60	.50	.19	.12	.96	.85	.74	.63
20	.74	.64	.60	.41	.60	.46	.18	.12	.97	.84	.74	.62
21	390.74	390.65	391.60	391.57	392.66	391.41	391.18	391.10	390.97	390.84	390.73	390.62
22	.74	.65	.40	.66	.71	.40	.17	.08	.97	.84	.73	.62
23	.74	.66	.26	.65	.61	.45	.18	.07	.96	.84	.72	.62
24	.73	.68	.18	.68	.42	.46	.24	.08	.95	.83	.71	.63
25	.73	.70	.12	.58	.26	.42	.28	.07	.94	.83	.71	.78
26	390.72	390.74	391.05	391.57	392.14	391.38	391.24	391.07	390.93	390.82	390.71	390.75
27	.72	.79	390.99	.61	.04	.38	.28	.07	.92	.81	.70	.76
28	.72	.84	.97	.76	391.99	.38	.27	.07	.91	.80	.70	.76
29	.72	.89	391.00	.65	.95	.38	.26	.07	.91	.79		.73
30	.72	391.01	.03	.65	.85	.36	.25	.06	.90	.78		.70
31		.18		.45	.80		.27		.90	.77		.69
Mean	390.75	390.74	391.14	391.43	392.16	391.54	391.25	391.18	390.97	390.84	390.74	390.68
Max.	390.77	391.18	391.60	391.76	392.71	391.76	391.41	391.47	391.04	390.89	390.77	390.78
Min.	390.72	390.64	390.95	391.05	391.49	391.36	391.17	391.06	390.90	390.77	390.70	390.62

WATER YEAR 1969 : Max. 392.71 m. Min. 390.64 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31,1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	27	22	134	69	179	272	154	103	78	55	39	30
2	27	22	123	75	272	242	162	165	78	53	39	30
3	27	22	121	86	374	228	156	179	76	53	38	30
4	27	22	108	106	353	217	151	151	75	52	38	30
5	27	22	94	111	284	207	143	141	73	52	38	30
6	27	22	79	97	276	210	138	133	71	52	36	30
7	27	21	69	77	374	228	131	126	71	52	36	29
8	27	22	77	103	388	210	126	121	71	52	36	29
9	27	22	77	210	370	201	119	115	69	50	36	29
10	27	23	75	221	353	191	112	110	69	50	36	29
11	28	24	68	159	328	185	112	106	68	50	36	29
12	28	24	64	118	324	198	112	102	68	50	36	29
13	28	23	60	145	366	260	112	99	68	49	36	29
14	27	23	58	242	515	253	115	99	66	49	38	28
15	27	22	58	231	703	249	115	99	66	48	38	26
16	27	22	52	182	730	239	115	99	66	48	38	25
17	24	22	52	139	658	225	112	97	65	49	36	25
18	24	18	64	116	665	210	110	93	65	49	36	25
19	24	15	176	121	690	188	108	93	65	49	35	24
20	24	15	213	156	690	176	106	93	66	48	35	23
21	24	16	213	204	730	162	106	89	66	48	34	23
22	24	16	153	235	763	159	104	85	66	48	34	23
23	24	17	116	231	697	173	106	84	65	48	33	23
24	23	18	97	242	581	176	119	85	63	46	32	24
25	23	20	83	207	495	165	128	84	62	46	32	40
26	22	24	69	204	434	154	119	84	60	45	32	36
27	22	30	58	217	388	154	128	84	59	43	31	38
28	22	36	55	272	366	154	126	84	57	42	31	38
29	22	43	60	231	349	154	124	84	57	41		34
30	22	62	66	231	308	149	121	82	56	40		31
31		97		167	287		126		56	39		30
Total	759	807	2,792	5,285	14,290	5,987	3,821	3,199	2,061	1,496	995	899
Mean	25.3	26.0	93.1	168	461	199	123	107	66.5	48.2	35.5	29.0
Max.	28	97	210	272	763	272	162	179	78	55	39	40
Min.	22	15	52	60	179	149	104	82	56	39	31	23
Runoff - mcm.	65.578	69.725	241.229	449.712	1,234.656	517.277	330.134	276.394	178.070	129.254	85.968	77.674

WATER YEAR 1969 : Max. 763 Min. 15 Mean 116 Annual Runoff 3,655.670 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 22	12.00	392.73	777				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
MAE KHONG RIVER BASIN

Huai Mong at Ban Na Ang, Udon Thani (Kh. 18)

Location: Lat. 17°-34'-39" N., Long. 102°-20'-19" E., on right bank about 300 meters downstream from confluence of Huai Nam Ban and Huai Pak Kong, Amphoe Ban Phu, Udon Thani.

Drainage Area: 1,307 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Near the Kh.18 station office

Elevation: + 7.590 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1957 to date

Rating Operation

Period of Rating: 1957-59, 1965-66, 1974 to date

Rated by Float:

Rated by Current Meter: 1957-59, 1965-66, 1974 to date

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

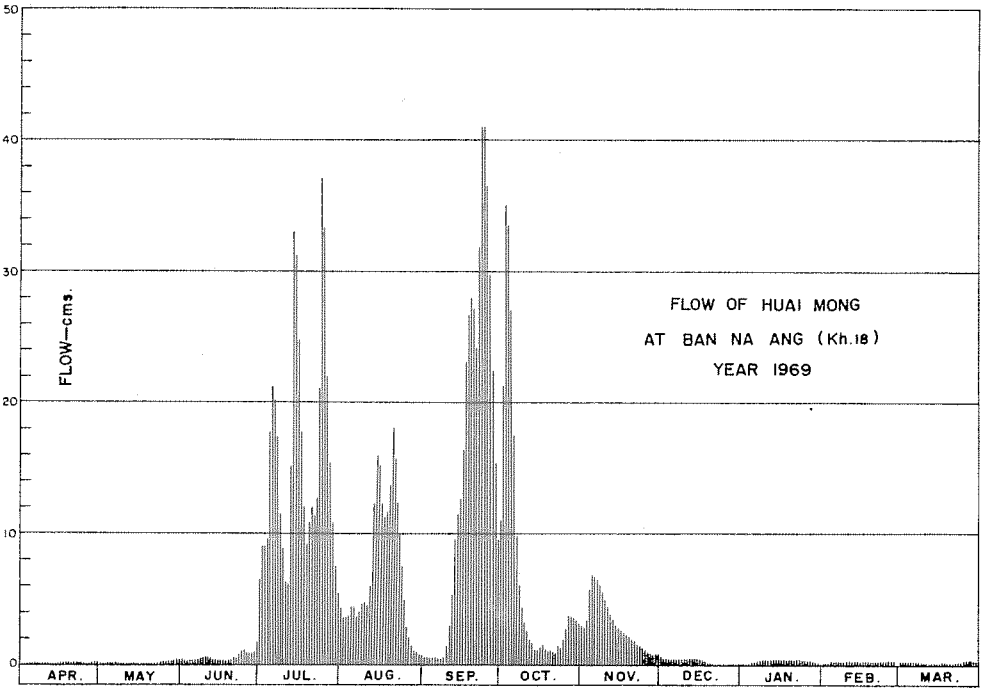
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1966. No upstream state diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.70	0.79	0.99	2.88	2.20	1.18	3.21	1.88	1.14	0.87	0.89	0.93
2	.71	.77	.96	3.10	.00	.14	4.53	.85	.07	.86	.89	.93
3	.72	.76	.94	.10	.05	.12	5.60	2.28	.07	.87	.94	.93
4	.73	.74	.96	.32	.06	.12	.47	.58	.04	.88	.96	.93
5	.80	.73	.95	4.48	.25	.13	4.84	.73	.07	.90	.95	.93
6	0.81	0.74	0.97	4.60	2.24	1.10	4.00	2.70	1.08	0.93	0.94	0.93
7	.78	.74	.98	.33	.00	.08	3.15	.64	.07	.98	.94	.93
8	.77	.74	1.04	3.71	.18	.02	2.63	.57	.09	1.00	.93	.92
9	.74	.74	.11	.25	.30	.05	.20	.47	.08	.01	.92	.90
10	.72	.75	.07	2.91	.31	.39	1.94	.37	.11	.02	.92	.87
11	0.71	0.74	1.06	2.53	2.17	1.59	1.76	2.26	1.13	1.02	0.92	0.86
12	.71	.75	.02	.61	.52	2.08	.58	.12	.11	.02	.93	.86
13	.73	.75	0.98	4.30	3.26	.80	.52	.01	.12	.02	.95	.86
14	.76	.76	.97	5.52	.71	3.36	.33	1.92	.12	.02	.96	.86
15	.83	.75	.96	.39	4.05	.61	.35	.88	.07	.02	.95	.85
16	0.86	0.74	0.96	4.72	3.90	3.69	1.40	1.80	1.04	1.01	0.94	0.85
17	.87	.74	.95	3.96	.56	4.26	.50	.75	.01	.02	.94	.86
18	.88	.74	.94	.35	.48	.93	.34	.74	0.96	.00	.94	.86
19	.89	.73	.98	.11	.58	5.05	.30	.70	.89	.04	.93	.85
20	.89	.73	1.06	.42	.80	.13	.31	.60	.90	.04	.93	.85
21	0.88	0.76	1.06	3.58	4.27	5.09	1.28	1.59	0.89	1.04	0.93	0.86
22	.83	.84	.05	.45	3.86	.28	.25	.49	.88	.03	.94	.87
23	.78	.87	.24	.68	.37	.51	.48	.45	.87	.00	.94	.89
24	.76	.91	.31	4.90	2.81	.93	.37	.41	.85	.00	.94	.91
25	.73	.94	.31	5.74	.27	.90	.54	.34	.82	.00	.94	.94
26	0.73	0.93	1.28	5.20	1.83	5.48	1.92	1.30	0.80	0.98	0.94	0.95
27	.78	.90	.25	4.36	.56	.01	2.08	.26	.83	.95	.93	.97
28	.88	.90	.24	3.65	.43	4.59	.07	.22	.84	.93	.93	.97
29	.90	.91	.26	.23	.29	3.90	.05	.24	.86	.92		.95
30	.83	.96	.60	2.78	.28	.14	1.99	.25	.87	.90		.93
31		1.00		.43	.23		.93		.88	.89		.93
Mean	0.79	0.80	1.08	3.79	2.61	3.25	2.29	1.88	0.98	0.97	0.93	0.90
Max.	0.90	1.00	1.60	5.74	4.27	5.93	5.60	2.73	1.14	1.04	0.96	0.97
Min.	0.70	0.73	0.94	2.43	1.23	1.02	1.25	1.22	0.80	0.86	0.89	0.85

WATER YEAR 1969 : Max. 5.93 m. Min. 0.70 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.000	0.090	0.38	7.70	4.20	0.66	10	2.84	0.58	0.17	0.19	0.26
2	0.010	0.070	0.32	9.00	3.40	0.58	21	2.75	0.47	0.16	0.19	0.26
3	0.020	0.060	0.28	9.00	3.60	0.54	35	4.60	0.47	0.17	0.28	0.26
4	0.030	0.040	0.32	10	3.64	0.54	33	6.08	0.44	0.18	0.32	0.26
5	0.10	0.030	0.30	20	4.45	0.56	24	6.88	0.47	0.20	0.30	0.26
6	0.11	0.040	0.34	21	4.40	0.50	16	6.70	0.48	0.26	0.28	0.26
7	0.080	0.040	0.36	19	3.40	0.48	9.30	6.40	0.47	0.36	0.28	0.26
8	0.070	0.040	0.44	13	4.12	0.42	6.35	6.02	0.49	0.40	0.26	0.24
9	0.040	0.040	0.52	10	4.70	0.45	4.20	5.45	0.48	0.41	0.24	0.20
10	0.020	0.050	0.47	7.86	4.74	1.27	3.10	4.98	0.52	0.42	0.24	0.17
11	0.010	0.040	0.46	5.78	4.08	1.87	2.44	4.50	0.56	0.42	0.24	0.16
12	0.010	0.050	0.42	6.25	5.72	3.72	1.84	3.88	0.52	0.42	0.26	0.16
13	0.030	0.050	0.36	18	10	7.30	1.66	3.44	0.54	0.42	0.30	0.16
14	0.060	0.060	0.34	33	13	11	1.09	3.00	0.54	0.42	0.32	0.16
15	0.13	0.050	0.32	31	16	12	1.15	2.84	0.47	0.42	0.30	0.15
16	0.16	0.040	0.32	23	15	13	1.30	2.60	0.44	0.41	0.28	0.15
17	0.17	0.040	0.30	15	12	18	1.60	2.40	0.41	0.42	0.28	0.16
18	0.18	0.040	0.28	11	11	25	1.12	2.36	0.32	0.40	0.28	0.16
19	0.19	0.030	0.36	9.06	12	27	1.00	2.20	0.19	0.44	0.26	0.15
20	0.19	0.030	0.46	11	14	28	1.03	1.90	0.20	0.44	0.26	0.15
21	0.18	0.060	0.46	12	18	27	0.94	1.87	0.19	0.44	0.26	0.16
22	0.13	0.14	0.45	11	14	30	0.85	1.57	0.18	0.43	0.28	0.17
23	0.080	0.17	0.82	13	11	33	1.54	1.45	0.17	0.40	0.28	0.19
24	0.060	0.22	1.03	25	7.35	41	1.21	1.33	0.15	0.40	0.28	0.22
25	0.030	0.28	1.03	37	4.55	41	1.72	1.12	0.12	0.40	0.28	0.28
26	0.030	0.26	0.94	29	2.69	33	3.00	1.00	0.10	0.36	0.28	0.30
27	0.080	0.20	0.85	19	1.78	26	3.72	0.88	0.13	0.30	0.26	0.34
28	0.18	0.20	0.82	13	1.39	21	3.68	0.76	0.14	0.26	0.26	0.34
29	0.20	0.22	0.88	10	0.97	15	3.60	0.82	0.16	0.24		0.30
30	0.13	0.32	1.90	7.18	0.94	9.24	3.35	0.85	0.17	0.20		0.26
31		0.40		5.25	0.79	–	3.05		0.18	0.19		0.26
Total	2.71	3.40	16.53	471.08	216.91	429.13	202.84	93.47	10.75	10.56	7.54	6.81
Mean	0.09	0.11	0.55	15.2	6.99	14.3	6.54	3.11	0.35	0.34	0.27	0.22
Max.	0.20	0.40	1.90	37	18	41	35	6.88	0.58	0.44	0.32	0.34
Min.	0.00	0.030	0.28	5.25	0.79	0.42	0.85	0.76	0.10	0.16	0.19	0.15
Runoff - mcm.	0.234	0.294	1.428	40.701	18.741	37.077	17.525	8.076	0.929	0.912	0.651	0.588

WATER YEAR 1969 : Max. 41 Min. 0.000 Mean 4.03 Annual Runoff 127.157 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 24	19.00	6.01	43				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
MAE KHONG RIVER BASIN

Nam Un River at Ban Khok Sa-At, Sakhon Nakhon (Kh. 20B)

Location: Lat. 17°-18'-08" N., Long. 103°-45'-27" E., on left bank, at Ban Khok Sa-at and about 500 meters upstream from Nam Un Damsite (Formerly written as Nam Oon Damsite), Amphoe Phannanikhom, Sakon Nakhon.

Drainage Area: 1,117 sq.km. referred to AMS. Map 1:50,000

Type of Gage: Staff gage

Zero Gage at Bottom at: + 160.00 m. (M.S.L.)

Bench Mark:

Location: B.M. - R.I.D. 4

Elevation:

Gage Reading Frequency: 13 times daily readings at 6.00, 7.00, - 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 13 hourly readings.

Period of Available Gage Records: 1962 to 1971

Rating Operation:

Period of Rating: 1962 to 1971

Rated by Float: -

Rated by Current Meter: 1962 to 1971

Stability of Channel Regimes: Stable, shifting adjustment is negligible in flow computation.

Overbank Flow Conditions: No overbank flow.

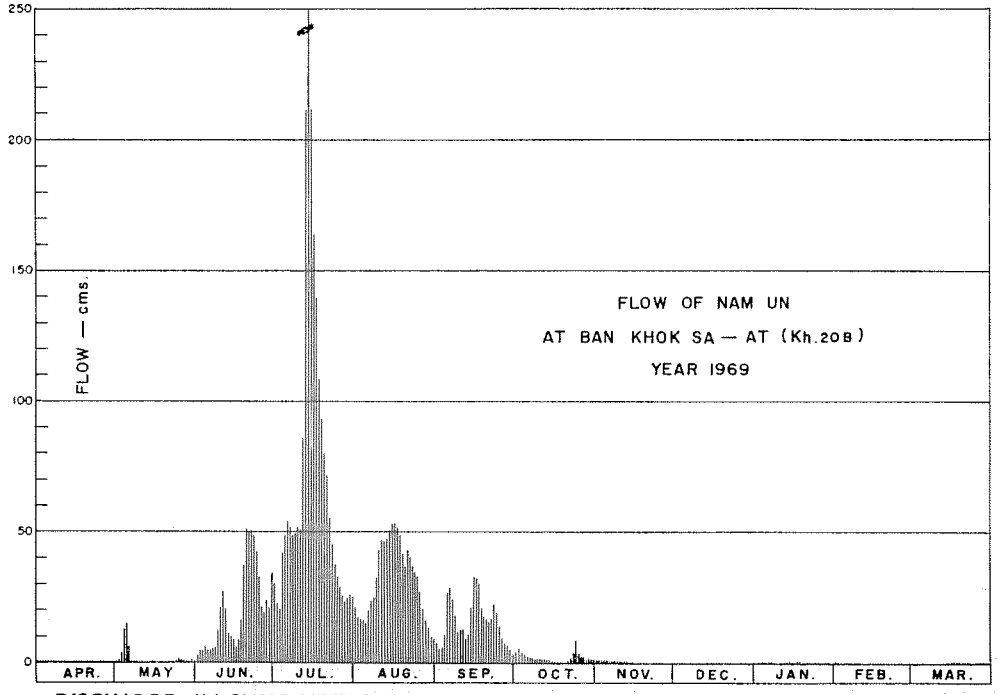
General Description: Records are classified as good. No diversion is made above the gage site. No gage records during April 1 to May 1 and December 7 to March 31, but mean daily discharges for these periods can be taken from station Kh. 20C which is about 1 kilometer downstream without significant error.

Remarks: Construction of coffer dam started in December, 1969.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			162.98	164.67	164.26	163.40	163.10	162.60	162.23			
2		162.59	163.19	.39	.03	.27	.27	.59	.21			
3		163.16	.16	.18	.01	.28	.17	.55	.20			
4		.86	.34	165.66	.00	.66	162.96	.63	.17			
5		.94	.18	.98	163.91	164.69	.87	.64	.16			
6		162.49	163.16	166.13	164.37	164.85	162.80	162.59	162.15			
7		.41	.20	165.97	.49	.48	.76	.58				
8		.39	.24	.86	.61	.02	.70	.58				
9		.39	.99	.99	165.11	163.66	.62	.54				
10		.35	164.42	166.04	.62	.81	.64	.47				
11		162.35	164.72	*165.95	165.78	163.78	162.61	162.46				
12		.51	.20	167.87	.77	.54	.56	.42				
13		.38	163.71	170.00	.84	.65	.54	.43				
14		.34	.57	.53	166.05	164.36	.47	.42				
15		.32	.55	169.89	.10	165.05	.44	.41				
16		162.27	163.23	169.45	166.09	165.07	162.42	162.37				
17		.24	.60	168.52	.04	164.93	.38	.35				
18		.21	164.28	167.93	165.85	.35	.34	.34				
19		.20	165.53	.51	.51	.08	.41	.33				
20		.14	.99	.08	.20	.01	.44	.31				
21		162.20	165.94	166.59	165.60	163.91	162.59	162.31				
22		.31	.99	.16	.43	164.08	.92	.31				
23		.26	.87	165.71	.29	.36	163.09	.26				
24		.45	.48	.26	.19	.15	.58	.24				
25		.62	164.93	164.98	.00	163.81	.06	.23				
26		162.52	164.23	*164.81	164.41	163.53	162.92	162.24				
27		.51	.21	.56	.22	.42	.95	.19				
28		.49	.49	.47	163.92	.29	.54	.21				
29		.53	.26	.56	.73	.14	.83	.18				
30		.63	165.11	.64	.58	.09	.71	.22				
31		.56		.56	.48		.66					
Mean			164.23	166.32	164.92	163.96	162.75	162.40				
Max.		163.94	165.99	170.53	166.09	165.07	163.58	162.60				
Min.		162.14	162.98	164.18	163.48	163.09	162.34	162.18				

WATER YEAR 1969 : Max. m. Min. m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.028	3.16	26	20	740	4.10	1.10	0.23	0.10	0.069	0.073
2	0.00	1.06	5.09	22	17	597	5.97	1.06	0.21	0.12	0.068	0.063
3	0.014	4.76	4.76	19	17	6.08	4.87	0.90	0.20	0.13	0.061	0.058
4	0.028	14	6.74	44	16	11	3.02	1.22	0.17	0.15	0.054	0.074
5	0.028	15	4.98	51	15	27	2.42	1.26	0.16	0.15	0.050	0.058
6	0.014	0.68	4.76	54	22	29	2.00	1.06	0.15	0.16	0.047	0.059
7	0.014	0.52	5.20	51	24	23	1.80	1.02	0.35	0.14	0.044	0.055
8	0.014	0.48	5.64	48	25	17	1.50	1.02	0.084	0.13	0.040	0.053
9	0.014	0.48	15	51	34	11	1.18	0.86	0.084	0.13	0.037	0.051
10	0.070	0.40	23	52	44	13	1.26	0.64	0.084	0.14	0.033	0.045
11	0.084	0.40	27	*50	47	13	1.14	0.62	0.084	0.14	0.036	0.040
12	0.056	0.74	19	102	46	9.06	0.94	0.54	0.084	0.18	0.039	0.038
13	0.028	0.46	12	214	48	11	0.86	0.56	0.084	0.16	0.042	0.037
14	0.042	0.38	9.48	252	52	22	0.64	0.54	0.084	0.16	0.045	0.033
15	0.084	0.34	9.20	205	53	33	0.58	0.52	0.084	0.13	0.14	0.032
16	0.070	0.27	5.53	160	53	33	0.54	0.44	0.084	0.13	0.11	0.031
17	0.056	0.24	9.90	123	52	31	0.46	0.40	0.084	0.12	0.12	0.035
18	0.042	0.21	20	102	48	21	0.38	0.38	0.16	0.12	0.095	0.021
19	0.042	0.20	42	89	41	17	0.52	0.36	0.29	0.12	0.082	0.017
20	0.028	0.14	51	77	36	17	0.58	0.32	0.31	0.10	0.088	0.017
21	0.028	0.20	50	64	43	15	1.06	0.32	0.31	0.097	0.095	0.017
22	0.028	0.32	51	55	40	17	2.74	0.32	0.37	0.093	0.080	0.016
23	0.028	0.26	48	45	37	22	3.93	0.26	0.40	0.089	0.069	0.015
24	0.028	0.60	41	37	35	18	9.62	0.24	0.40	0.086	0.073	0.013
25	0.028	1.18	31	32	32	15	3.72	0.23	0.40	0.090	0.063	0.012
26	0.056	0.78	21	*29	22	8.92	2.74	0.24	0.40	0.094	0.097	0.010
27	0.042	0.74	19	25	20	7.62	2.95	0.19	0.40	0.092	0.083	0.012
28	0.028	0.68	24	23	15	6.19	0.86	0.21	0.40	0.089	0.079	0.007
29	0.028	0.82	20	25	12	4.54	2.18	0.18	0.40	0.080		0.005
30	0.028	1.22	34	26	9.62	3.93	1.55	0.22	0.37	0.071		0.005
31		0.94		25	8.28		1.34		0.37	0.070		0.020
Total	1.050	48.528	622.44	2,178	983.90	473.71	67.45	17.23	7.310	3.661	1.939	1.022
Mean	0.035	1.56	20.7	70.2	31.7	15.8	2.17	0.574	0.235	0.118	0.069	0.033
Max.	0.070	15	51	252	53	33	9.62	1.10	0.40	0.18	0.14	0.074
Min.	0.00	0.14	3.16	19	8.28	3.93	0.38	0.18	0.084	0.070	0.033	0.005
Runoff - mcm.	0.091	4.190	53.779	188.179	85.009	40.928	5.828	1.489	0.631	0.316	0.167	0.088

WATER YEAR 1969 : Max. 252 Min. 0.00 Mean 12.0 Annual Runoff 380.698 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
July 14	06.00	170.68	263				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
MAE KHONG RIVER BASIN

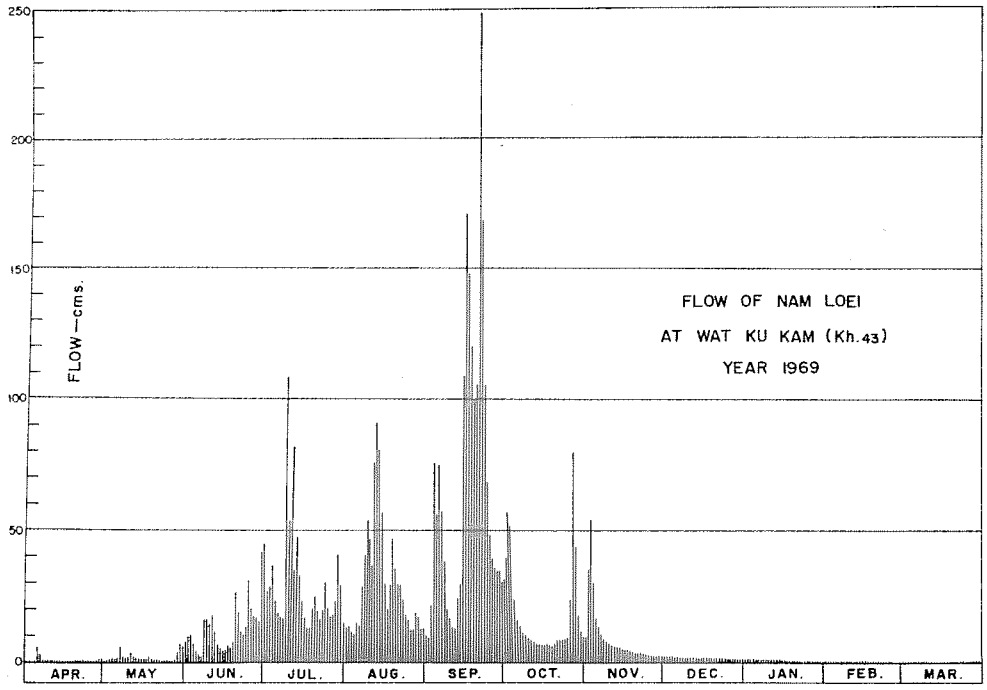
Nam Loei at Wat Ku Kam, Loei (Kh.$_{43}$)

Location:	Lat. 17°-14'-15" N., Long. 101°-41'-31" E., on left bank downstream of Wat Ku Kam at Ban Sai Khao, Amphoe Wang Saphung, Loei.
Drainage Area:	991 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	B.M. - H.S.
Location:	At tamarind tree along the measuring line.
Elevation:	+ 10.689 m. (A.D.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings.
Period of Available Gage Records:	1966 to date
Rating Operation:	
Period of Rating:	1966-1973
Rated by Float:	-
Rated by Current Meter:	1966-1973
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow.
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurement made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.70	0.74	1.21	2.03	1.38	1.26	1.82	1.26	0.91	0.83	0.77	0.73
2	.69	.76	.28	1.71	.39	.24	2.24	.83	.91	.82	.77	.73
3	.69	.78	.26	.74	.33	.65	.12	2.18	.91	.82	.77	.73
4	.69	.86	1.09	.90	.28	2.54	1.69	1.73	.90	.82	.76	.72
5	1.08	.80	0.97	.62	.43	.18	.53	.46	.90	.81	.76	.72
6	0.87	0.81	0.93	1.54	1.38	2.51	1.43	1.36	0.90	0.82	0.76	0.73
7	.77	1.07	.90	.44	.57	.19	.36	.28	.89	.83	.76	.77
8	.75	0.89	1.46	.36	.90	1.79	.31	.22	.89	.83	.76	.73
9	.74	.84	.46	.97	2.04	.54	.27	.18	.89	.83	.76	.72
10	.72	.91	.39	2.97	.18	.44	.24	.15	.88	.82	.76	.72
11	0.71	0.99	1.51	2.10	1.79	1.37	1.21	1.12	0.88	0.81	0.75	0.71
12	.71	.89	.29	1.77	2.56	.37	.19	.10	.87	.81	.77	.71
13	.70	.85	.15	2.62	.75	.69	.16	.08	.87	.81	.78	.71
14	.69	.83	.07	.09	.55	.77	.15	.07	.87	.81	.78	.71
15	.68	.81	.01	1.71	1.96	2.19	.15	.05	.87	.80	.77	.71
16	0.68	0.80	1.02	1.51	1.66	3.75	1.13	1.04	0.86	0.80	0.77	0.70
17	.76	.80	.11	.37	.52	.65	.17	.02	.86	.80	.77	.70
18	.70	.90	.06	.34	.78	.23	.14	.01	.86	.80	.76	.70
19	.74	.82	.10	.57	2.07	2.99	.12	0.99	.86	.79	.76	.70
20	.73	.78	.71	.66	1.82	2.43	.13	.98	.86	.79	.76	.70
21	0.71	0.76	1.55	1.57	1.74	3.36	1.23	0.97	0.85	0.79	0.76	0.70
22	.69	.76	.30	.46	.74	4.00	.23	.96	.85	.79	.75	.70
23	.68	.76	.24	.50	.61	3.25	.23	.96	.85	.79	.75	.71
24	.68	.75	.36	.77	.56	2.31	.23	.95	.85	.78	.75	.72
25	.68	.75	.78	.60	.45	.10	.27	.94	.84	.78	.74	.73
26	0.69	0.77	1.58	1.48	1.35	1.91	1.20	0.93	0.84	0.78	0.74	0.71
27	.70	.78	.47	.51	.34	.89	2.59	.93	.84	.78	.73	.70
28	.79	.81	.53	.59	.52	.87	1.96	.93	.84	.78	.73	.72
29	.84	1.01	.40	.97	.48	.86	.47	.92	.83	.78		.72
30	.77	.15	2.00	.66	.34	.77	.33	.92	.83	.77		.71
31		.07		.46	.38		.26		.83	.77		.71
Mean	0.73	0.85	1.31	1.73	1.70	2.24	1.40	1.15	0.87	0.80	0.76	0.71
Max.	1.08	1.15	2.00	2.97	2.75	4.00	2.59	2.18	0.91	0.83	0.78	0.77
Min.	0.68	0.74	0.90	1.34	1.28	1.24	1.12	0.92	0.83	0.77	0.73	0.70

WATER YEAR 1969 : Max. 4.00 m. Min. 0.68 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.20	0.52	8.30	45	13	9.80	33	9.80	2.20	1.30	0.76	0.44
2	0.18	0.68	10	27	14	9.20	57	33	2.20	1.20	0.76	0.44
3	0.18	0.84	9.80	29	12	24	50	54	2.20	1.20	0.76	0.44
4	0.18	1.60	5.80	37	10	76	26	28	2.00	1.20	0.68	0.36
5	5.60	1.00	3.40	23	15	54	17	16	2.00	1.10	0.68	0.36
6	1.70	1.10	2.60	18	13	75	15	13	2.00	1.20	0.68	0.44
7	0.76	5.40	2.00	17	19	54	13	10	1.90	1.30	0.68	0.76
8	0.60	1.90	16	13	37	31	11	8.60	1.90	1.30	0.68	0.44
9	0.52	1.40	16	41	45	18	10	7.60	1.90	1.30	0.68	0.36
10	0.36	2.20	14	109	54	16	9.20	7.00	1.80	1.20	0.68	0.36
11	0.28	3.80	18	49	31	13	8.30	6.40	1.80	1.10	0.60	0.28
12	0.28	1.90	11	30	78	13	7.80	6.00	1.70	1.10	0.76	0.28
13	0.20	1.50	7.00	82	91	26	7.20	5.60	1.70	1.10	0.84	0.28
14	0.18	1.30	5.40	48	77	30	7.00	5.40	1.70	1.10	0.84	0.28
15	0.16	1.10	4.20	27	41	54	7.00	5.00	1.70	1.00	0.76	0.28
16	0.16	1.00	4.40	18	25	171	6.60	4.80	1.60	1.00	0.76	0.20
17	0.68	1.00	6.20	13	19	163	7.40	4.40	1.60	1.00	0.76	0.20
18	0.20	2.00	5.20	12	31	129	6.80	4.20	1.60	1.00	0.68	0.20
19	0.52	1.20	6.00	19	47	110	6.40	3.80	1.60	0.92	0.68	0.20
20	0.44	0.84	27	25	33	69	6.60	3.60	1.60	0.92	0.68	0.20
21	0.28	0.68	18	19	29	140	8.90	3.40	1.50	0.92	0.68	0.20
22	0.18	0.68	11	16	29	249	8.90	3.20	1.50	0.92	0.60	0.20
23	0.16	0.68	9.20	18	22	131	8.90	3.20	1.50	0.92	0.60	0.28
24	0.16	0.60	13	30	18	62	8.90	3.00	1.50	0.84	0.60	0.36
25	0.16	0.60	31	22	16	49	10	2.80	1.40	0.84	0.52	0.44
26	0.16	0.76	19	17	12	38	8.00	2.60	1.40	0.84	0.52	0.28
27	0.20	0.84	17	18	12	36	80	2.60	1.40	0.84	0.44	0.20
28	0.92	1.10	17	20	19	35	41	2.60	1.40	0.84	0.44	0.36
29	1.40	4.20	14	41	17	35	17	2.40	1.30	0.84		0.36
30	0.76	7.00	43	25	12	30	12	2.40	1.30	0.76		0.28
31		5.40		16	13		9.80		1.30	0.76		0.28
Total	17.76	54.82	374.50	924	904	1,950	525.70	264.40	52.20	31.86	18.80	10.04
Mean	0.59	1.77	12.5	29.8	29.2	65.0	16.9	8.81	1.68	1.03	0.67	0.32
Max.	5.60	7.00	43	109	91	249	80	54	2.20	1.30	0.84	0.76
Min.	0.16	0.52	2.00	12	10	9.20	6.40	2.40	1.30	0.76	0.44	0.20
Runoff — mcm.	1.534	4.736	32.357	79.834	78.106	168.480	45.420	22.844	4.510	2.753	1.624	0.867

WATER YEAR 1969 : Max. 249 Min. 0.16 Mean 14.0 Annual Runoff 443.066 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 22	04.00	5.46	330				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
MAE KHONG RIVER BASIN

Nam Yap at Ban Mae Rai, Chiang Rai (Kh_{49})

Location: Lat. 20°-18'-25" N., Long. 100°-15'-56" E., on right bank at Ban Mae Rai, Amphoe Chiang Saen, Chiang Rai.

Drainage Area: 16 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: -

Location: -

Elevation: -

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1968-1970

Rating Operation:

Period of Rating: 1968-1970

Rated by Float: -

Rated by Current Meter: 1968-1970

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

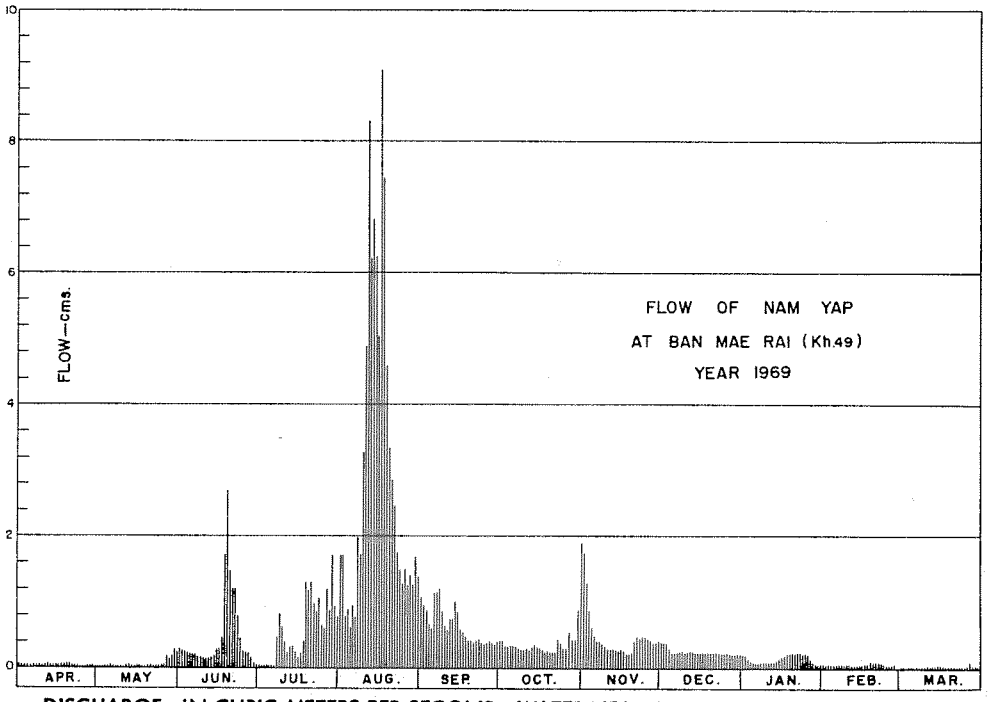
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State Diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.25	1.21	1.41	1.25	1.58	1.58	1.45	1.67	1.45	1.37	1.26	1.23
2	.24	.21	.40	.24	.58	.56	.45	.65	.44	.35	.26	.22
3	.24	.20	.39	.25	.53	.55	.42	.57	.44	.33	.25	.21
4	.24	.21	.38	.25	.55	.51	.42	.52	.40	.29	.26	.23
5	.24	.21	.37	.23	.49	.50	.43	.49	.38	.28	.26	.21
6	1.23	1.22	1.36	1.23	1.56	1.59	1.42	1.47	1.38	1.28	1.26	1.22
7	.24	.21	.35	.23	.52	.59	.42	.45	.39	.28	.26	.24
8	.24	.20	.34	.48	.68	.60	.41	.44	.39	.29	.26	.21
9	.23	.21	.34	.54	.62	.54	.40	.43	.40	.30	.26	.23
10	.23	.22	.33	.49	.79	.51	.40	.42	.39	.29	.25	.25
11	1.26	1.22	1.32	1.41	1.86	1.49	1.41	1.41	1.39	1.29	1.26	1.25
12	.26	.24	.34	.37	2.05	.53	.40	.41	.40	.29	.25	.24
13	.24	.23	.34	.42	1.95	.53	.42	.41	.40	.28	.25	.24
14	.24	.22	.36	.42	.99	.57	.43	.40	.39	.31	.25	.25
15	.24	.22	.41	.37	.96	.54	.42	.40	.39	.33	.26	.26
16	1.24	1.23	1.42	1.34	1.87	1.50	1.41	1.41	1.39	1.35	1.26	1.26
17	.26	.24	.48	.38	2.08	.49	.40	.38	.39	.37	.27	.24
18	.26	.22	.63	.40	.00	.47	.38	.37	.38	.37	.29	.24
19	.25	.22	.74	.61	1.84	.45	.40	.37	.38	.38	.30	.23
20	.25	.23	.61	.59	.78	.45	.39	.38	.38	.38	.29	.24
21	1.24	1.24	1.60	1.61	1.75	1.44	1.38	1.46	1.38	1.38	1.29	1.23
22	.23	.22	.60	.55	.71	.45	.39	.47	.38	.39	.29	.22
23	.22	.22	.51	.54	.66	.46	.46	.46	.38	.39	.29	.21
24	.22	.23	.43	.58	.63	.44	.43	.47	.38	.38	.24	.23
25	.22	.23	.39	.51	.60	.43	.41	.47	.38	.38	.23	.22
26	1.22	1.24	1.39	1.50	1.63	1.44	1.41	1.46	1.38	1.37	1.23	1.27
27	.22	.35	.37	.60	.60	.45	.50	.45	.37	.32	.25	.30
28	.22	.31	.31	.52	.62	.44	.45	.44	.37	.29	.25	.24
29	.22	.35	.25	.65	.60	.43	.42	.44	.37	.26		.24
30	.19	.41	.25	.56	.65	.45	.54	.45	.37	.26		.23
31		.39		.51	.63		.59		.37	.26		.22
Mean	1.24	1.24	1.41	1.44	1.72	1.50	1.43	1.45	1.39	1.32	1.26	1.23
Max.	1.26	1.41	1.74	1.65	2.08	1.60	1.59	1.67	1.45	1.39	1.30	1.30
Min.	1.19	1.20	1.25	1.23	1.49	1.43	1.38	1.37	1.37	1.26	1.23	1.21

WATER YEAR 1969 : Max. 2.08 m. Min. 1.19 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.057	0.023	0.29	0.057	1.07	1.07	0.41	1.89	0.41	0.21	0.066	0.040
2	0.049	0.023	0.26	0.049	1.07	0.94	0.41	1.69	0.38	0.18	0.066	0.032
3	0.049	0.015	0.24	0.057	0.75	0.88	0.32	1.01	0.38	0.15	0.057	0.023
4	0.049	0.023	0.23	0.057	0.88	0.62	0.32	0.69	0.26	0.091	0.066	0.040
5	0.049	0.023	0.21	0.040	0.53	0.56	0.35	0.53	0.23	0.083	0.066	0.023
6	0.040	0.032	0.20	0.040	0.94	1.14	0.32	0.47	0.23	0.083	0.066	0.032
7	0.049	0.023	0.18	0.040	0.69	1.14	0.32	0.41	0.24	0.083	0.066	0.049
8	0.049	0.015	0.16	0.50	1.98	1.20	0.29	0.38	0.24	0.091	0.066	0.023
9	0.040	0.023	0.16	0.82	1.40	0.82	0.26	0.35	0.26	0.10	0.066	0.040
10	0.040	0.032	0.15	0.53	3.32	0.62	0.26	0.32	0.24	0.091	0.057	0.057
11	0.066	0.032	0.13	0.29	4.40	0.53	0.29	0.29	0.24	0.091	0.066	0.057
12	0.066	0.049	0.16	0.21	8.30	0.75	0.26	0.29	0.26	0.091	0.057	0.049
13	0.049	0.040	0.16	0.32	6.02	0.75	0.32	0.29	0.26	0.083	0.057	0.049
14	0.049	0.032	0.20	0.32	6.80	1.01	0.35	0.26	0.24	0.12	0.057	0.057
15	0.049	0.032	0.29	0.21	6.22	0.82	0.32	0.26	0.24	0.15	0.066	0.066
16	0.049	0.040	0.32	0.16	4.56	0.56	0.29	0.29	0.24	0.18	0.066	0.066
17	0.066	0.049	0.50	0.23	9.08	0.53	0.26	0.23	0.24	0.21	0.074	0.049
18	0.066	0.032	1.49	0.26	7.00	0.47	0.23	0.21	0.23	0.21	0.091	0.049
19	0.057	0.032	2.69	1.30	4.09	0.41	0.26	0.21	0.23	0.23	0.10	0.040
20	0.057	0.040	1.30	1.14	3.20	0.41	0.24	0.23	0.23	0.23	0.091	0.049
21	0.049	0.049	1.20	1.30	2.81	0.38	0.23	0.44	0.23	0.23	0.091	0.040
22	0.040	0.032	1.20	0.88	2.31	0.41	0.24	0.47	0.23	0.24	0.091	0.032
23	0.032	0.032	0.62	0.82	1.79	0.44	0.44	0.44	0.23	0.24	0.091	0.023
24	0.032	0.040	0.35	1.07	1.49	0.38	0.35	0.47	0.23	0.23	0.049	0.040
25	0.032	0.040	0.24	0.62	1.20	0.35	0.29	0.47	0.23	0.23	0.040	0.032
26	0.032	0.049	0.24	0.56	1.49	0.38	0.29	0.44	0.23	0.21	0.040	0.074
27	0.032	0.18	0.21	1.20	1.20	0.41	0.56	0.41	0.21	0.13	0.057	0.10
28	0.032	0.12	0.12	0.69	1.40	0.38	0.41	0.38	0.21	0.091	0.057	0.049
29	0.032	0.18	0.057	1.69	1.20	0.35	0.32	0.38	0.21	0.066	–	0.049
30	0.012	0.29	0.057	0.94	1.69	0.41	0.82	0.41	0.21	0.066	–	0.040
31		0.24		0.62	1.49		1.14		0.21	0.066	–	0.032
Total	1.370	1.862	13.614	17.020	90.37	19.12	11.17	14.61	7.71	4.556	1.883	1.401
Mean	0.046	0.060	0.454	0.549	2.91	0.64	0.36	0.49	0.25	0.15	0.067	0.045
Max.	0.066	0.29	2.69	1.69	9.08	1.20	1.14	1.89	0.41	0.24	0.10	0.10
Min.	0.012	0.015	0.057	0.040	0.53	0.35	0.23	0.21	0.21	0.066	0.040	0.023
Runoff - mcm.	0.118	0.161	1.176	1.470	7.808	1.652	0.965	1.262	0.666	0.394	0.163	0.121

WATER YEAR 1969 : Max. 9.08 Min. 0.012 Mean 0.50 Annual Runoff 15.957 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 17	21.00	3.05	66				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
CHI RIVER BASIN

Chi River at Wat Tai Kosum, Maha Sarakham (E_1)

Location: Lat. 16°-15'-02" N., Long. 103°-04'-25" E., on right bank about 800 meters north-east of the district office of Amphoe Kosum Phisai, Maha Sarakham.

Drainage Area: 29,788 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 136.64 m. (M.S.L.)

Bench Mark: B.M. E. 1

Location: About 5 meters from gage site

Elevation: + 149.116 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1936-1943, 1951 to date

Rating Operation:

Period of Rating: 1965-1973

Rated by Float: -

Rated by Current Meter: 1965-1973

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

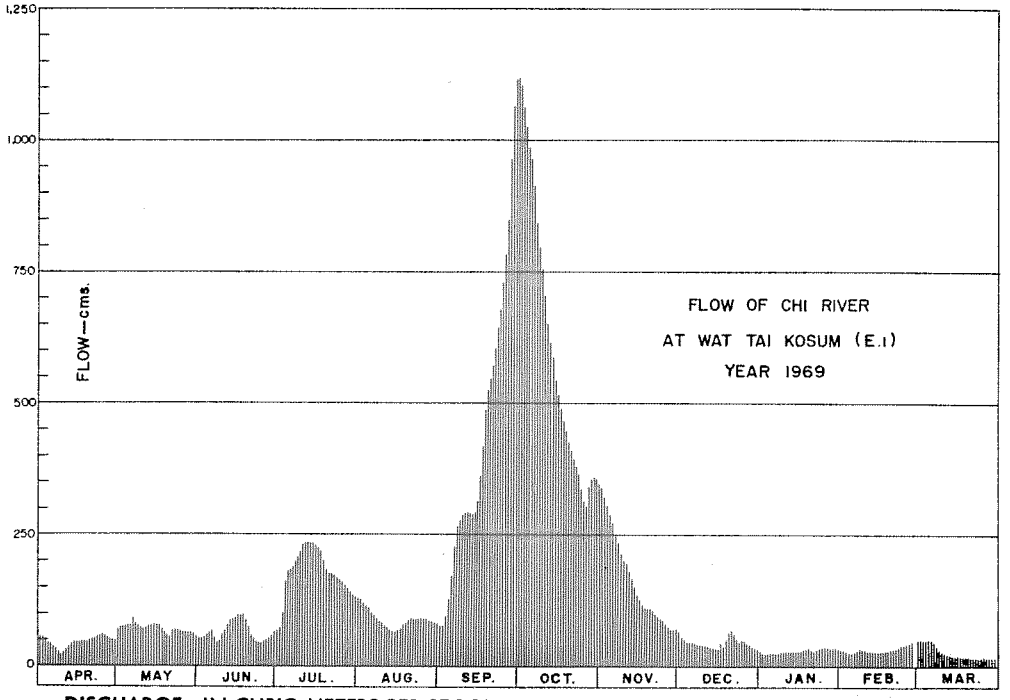
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by Nam Phong Dam at above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	138.13	138.41	138.06	138.33	139.44	138.54	146.92	142.79	138.51	137.60	137.79	138.17
2	.13	.49	.06	.42	.41	.49	.88	.60	.32	.53	.73	.19
3	.05	.49	.11	.53	.32	.80	.81	.39	.19	.52	.63	.17
4	137.92	.49	.20	139.92	.21	139.30	.75	.13	.12	.52	.56	.19
5	.90	.54	.30	140.23	.16	.99	.69	141.94	.08	.56	.55	.22
6	137.80	138.58	138.37	140.26	139.02	140.56	146.65	141.74	138.08	137.57	137.61	138.22
7	.68	.64	.08	.32	138.94	141.22	.52	.45	.08	.57	.70	.08
8	.47	.59	137.89	.51	.81	.54	.40	.24	.03	.58	.82	137.89
9	.35	.55	138.01	.64	.74	.68	.29	140.97	.00	.61	.79	.71
10	.45	.43	.19	.85	.67	.76	.16	.81	137.98	.64	.70	.57
11	137.68	138.42	138.41	140.98	138.58	141.77	146.04	140.71	137.97	137.65	137.66	137.49
12	.86	.47	.60	.99	.50	.78	145.89	.51	.93	.62	.68	.46
13	.93	.54	.77	.99	.42	.77	.72	.29	.88	.60	.66	.42
14	.96	.57	.78	.98	.36	.74	.62	139.99	.84	.59	.62	.39
15	.95	.60	.82	.98	.32	.86	.38	.73	.82	.61	.59	.36
16	137.94	138.59	138.88	140.94	138.36	142.38	145.16	139.61	137.80	137.65	137.62	137.35
17	.96	.60	.89	.87	.44	143.22	144.96	.47	.79	.71	.65	.33
18	.98	.43	.91	.75	.57	.84	.71	.37	.81	.72	.67	.31
19	.97	.29	.74	.47	.66	144.18	.46	.32	138.14	.80	.71	.30
20	138.04	.21	.49	.21	.76	.38	.19	.35	.53	.82	.75	.30
21	138.08	138.17	138.19	140.19	138.82	144.60	143.98	139.27	138.56	137.73	137.76	137.28
22	.13	.41	.04	.17	.81	.85	.71	.13	.40	.71	.81	.27
23	.15	.43	137.95	.11	.79	145.12	.44	.07	.19	.74	.89	.24
24	.21	.40	.89	.02	.79	.39	.16	.01	.11	.83	.94	.24
25	.23	.34	.89	139.99	.81	.69	142.60	138.95	.25	.88	.96	.28
26	138.21	138.29	137.98	139.93	138.81	145.94	142.34	138.77	138.17	137.85	138.00	137.27
27	.13	.28	.97	.83	.76	146.26	.24	.70	.03	.82	.05	.22
28	.04	.31	138.03	.75	.72	.60	.78	.63	137.95	.80	.11	.22
29	.01	.31	.22	.62	.72	.84	143.09	.61	.89	.80		.23
30	137.96	.24	.31	.54	.68	.91	.13	.62	.83	.83		.24
31		.09		.49	.62		142.99		.78	.81		.27
Mean	137.94	138.42	138.30	140.15	138.77	142.90	144.89	140.17	138.08	137.68	138.00	137.54
Max.	138.23	138.64	138.91	140.99	139.44	146.91	146.92	142.79	138.56	137.88	138.11	138.22
Min.	137.35	138.09	137.89	138.33	138.32	138.49	142.24	138.61	137.78	137.52	137.55	137.24

WATER YEAR 1969 : Max. 146.92 m. Min. 137.24 m.

BH. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	55	69	51	65	128	76	1,120	342	66	28	35	50
2	55	73	51	69	127	73	1,096	329	56	26	32	51
3	51	73	54	75	121	90	1,049	314	51	26	29	50
4	45	73	58	159	115	120	1,012	296	48	26	27	51
5	44	76	63	180	112	164	977	283	46	27	26	52
6	39	78	67	182	103	203	957	269	46	27	28	52
7	34	91	52	186	98	249	892	248	46	27	31	46
8	26	78	43	200	91	273	835	234	44	27	36	39
9	22	76	49	209	86	284	791	215	43	28	35	31
10	26	70	58	223	82	291	740	204	42	29	31	27
11	34	69	69	233	78	292	700	197	42	29	30	25
12	42	72	79	233	74	292	643	183	40	29	30	24
13	43	76	88	233	69	292	609	169	38	28	30	23
14	47	77	89	233	66	289	586	150	37	28	27	22
15	46	79	91	233	64	299	534	135	36	28	28	21
16	45	78	95	230	66	341	512	128	35	29	29	20
17	47	79	95	225	70	419	487	119	45	31	29	20
18	48	70	97	216	77	483	461	113	35	32	30	19
19	47	63	86	197	82	522	439	110	49	35	31	19
20	50	59	73	179	88	545	419	112	66	36	33	19
21	52	57	58	177	91	572	407	107	68	32	33	18
22	55	69	50	176	90	604	391	99	60	31	35	18
23	56	70	46	172	89	642	375	95	51	33	39	17
24	59	68	43	165	89	682	361	92	47	36	41	17
25	60	65	43	164	91	737	329	88	53	38	41	18
26	59	63	48	160	91	785	311	78	50	37	43	18
27	55	62	47	153	88	862	304	75	44	36	45	17
28	50	64	50	147	85	969	342	71	41	35	47	17
29	49	64	59	139	85	1,064	357	70	39	36		17
30	47	60	64	134	83	1,115	359	71	36	36		17
31		53		131	80		352		34	35		18
Total	1,388	2,174	1,916	5,478	2,759	13,629	18,747	4,996	1,434	961	931	853
Mean	46.3	70.1	63.9	177	89.0	454	605	166	46.2	31.0	33.2	27.5
Max.	60	91	97	233	128	1,115	1,120	342	68	38	47	52
Min.	22	53	43	65	64	73	304	70.	34	26	26	17
Runoff - mcm.	119.923	187.834	165.542	473.299	238.378	1,177.545	1,619.741	431.654	123.898	83.030	80.438	73.699

WATER YEAR 1969 : Max. 1,120 Min. 17 Mean 151 Annual Runoff 4,774.982 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 1	03.00	146.92	1,120				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
CHI RIVER BASIN

Chi River at Wat Si Thammaram, Yasothon (E_2)

Location: Lat. 15°-47'-06" N., Long. 104°-08'-36" E., on left bank about 1.5 kilometers south of office of Amphoe Muang, and 500 meters downstream from Wat Si Thammaram, Amphoe Muang, Yasothon.

Drainage Area: 47,391 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 117.00 m. (M.S.L.)

Bench Mark: B.M. of Survey Department No. 97

Location: 15 meters east of the post office.

Elevation: + 126.972 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1951 to date

Rating Operation:

Period of Rating: 1951

Rated by Float: -

Rated by Current Meter: 1951

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

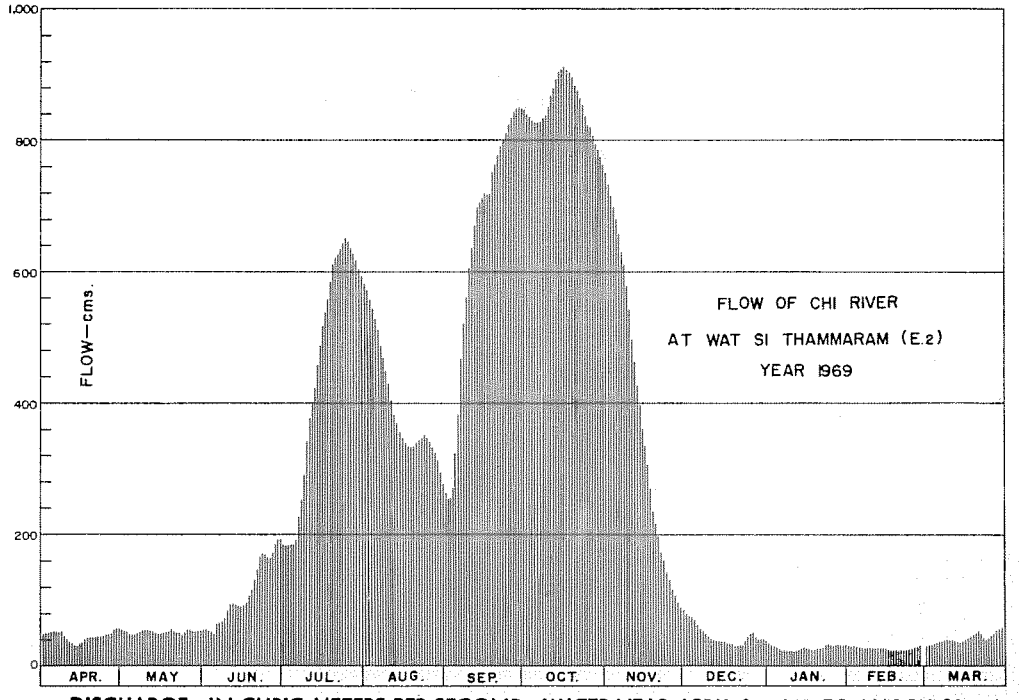
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1951. Flow regulated by Nam Phong and Lam Pao Dam at above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	119.48	119.59	119.61	121.23	124.52	122.06	125.71	125.37	119.97	119.25	119.12	119.13
2	.52	.56	.58	.22	.46	121.93	.69	.30	.93	.21	.12	.16
3	.53	.56	.57	.22	.39	.98	.68	.23	.88	.17	.12	.19
4	.54	.49	.53	.24	.39	122.17	.66	.15	.83	.13	.12	.21
5	.54	.49	.54	.26	.19	.63	.65	.06	.75	.07	.10	.24
6	119.54	119.49	119.71	121.39	124.09	123.27	125.65	124.95	119.66	119.02	119.09	119.28
7	.53	.51	.74	.67	123.96	.75	.65	.78	.59	118.99	.07	.30
8	.56	.53	.76	.94	.81	124.12	.66	.67	.52	.97	.05	.31
9	.41	.57	.87	122.27	.64	.42	.68	.47	.46	.97	.04	.32
10	.35	.60	120.04	.69	.49	.67	.72	.23	.41	.96	.04	.33
11	119.29	119.60	120.17	123.02	123.30	124.86	125.77	123.91	119.38	118.95	119.04	119.31
12	.19	.58	.19	.19	.14	125.02	.81	.67	.34	.96	.06	.26
13	.13	.54	.15	.37	.03	.15	.84	.38	.33	.99	.08	.23
14	.12	.50	.11	.61	122.92	.18	.87	.11	.32	119.04	.06	.24
15	.19	.49	.11	.85	.84	.22	.88	122.86	.31	.06	.04	.28
16	119.27	119.50	120.14	124.07	122.78	125.25	125.89	122.59	119.28	119.04	119.00	119.32
17	.34	.52	.19	.23	.73	.25	.88	.31	.26	.03	118.98	.36
18	.38	.55	.31	.36	.69	.22	.87	.03	.23	.03	.98	.42
19	.40	.57	.43	.49	.68	.38	.85	121.67	.20	.02	.98	.47
20	.40	.58	.60	.69	.71	.42	.82	.52	.18	.03	.98	.54
21	119.42	119.56	120.74	124.74	122.76	125.47	125.80	121.27	119.17	119.05	118.98	119.57
22	.43	.54	121.00	.79	.79	.52	.77	.08	.18	.09	.99	.47
23	.44	.52	.10	.82	.82	.55	.74	120.94	.29	.17	119.00	.31
24	.46	.47	.07	.89	.83	.59	.69	.78	.44	.18	.01	.29
25	.48	.55	.02	.92	.81	.63	.64	.60	.52	.17	.03	.36
26	119.49	119.60	120.99	124.89	122.75	125.67	125.63	120.43	119.52	119.17	119.08	119.45
27	.54	.59	121.08	.84	.69	.70	.58	.33	.44	.17	.10	.52
28	.61	.56	.25	.78	.60	.72	.54	.23	.39	.17	.11	.58
29	.63	.55	.33	.73	.52	.72	.50	.14	.38	.16		.62
30	.61	.53	.32	.66	.37	.72	.46	.04	.35	.13		.64
31		.57		.58	.20		.41		.31	.13		.64
Mean	119.43	119.54	120.34	123.47	123.19	124.64	125.71	122.74	119.44	119.08	119.05	119.37
Max.	119.63	119.60	121.33	124.92	124.52	125.72	125.89	125.37	119.97	119.25	119.12	119.64
Min.	119.12	119.47	119.53	121.22	122.20	121.93	125.41	120.04	119.17	118.95	118.98	119.13

WATER YEAR 1969 : Max. 125.89 m. Min. 118.95 m.

BM. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	48	54	56	184	581	265	845	748	80	36	30	30
2	50	53	54	183	572	252	839	730	77	34	30	32
3	51	53	53	183	561	257	836	715	74	32	30	33
4	51	48	51	185	546	277	830	697	70	30	30	34
5	51	48	51	186	531	327	827	678	65	28	29	35
6	51	48	62	198	516	404	827	657	59	26	28	37
7	51	50	64	226	496	467	827	626	54	25	28	38
8	53	51	66	253	475	520	830	607	50	24	27	39
9	43	53	73	288	452	565	836	573	47	24	27	39
10	41	55	85	334	433	607	849	537	43	24	27	40
11	38	55	94	373	408	640	866	489	42	23	27	39
12	33	54	95	394	388	670	880	456	40	24	28	37
13	30	51	93	417	375	697	892	418	40	25	28	35
14	30	49	90	448	361	704	904	384	39	27	28	35
15	33	48	90	481	352	712	908	354	39	28	27	37
16	37	49	92	513	345	719	912	323	37	27	25	39
17	40	50	95	537	339	719	908	292	36	26	24	41
18	42	52	105	556	334	712	904	262	35	26	24	44
19	43	53	114	576	333	751	896	226	33	26	24	47
20	43	54	128	610	336	762	884	211	33	26	24	51
21	44	53	140	619	342	776	876	187	32	27	24	53
22	45	51	163	627	346	790	866	170	33	29	25	47
23	45	50	172	633	349	798	856	158	38	32	25	39
24	47	47	169	645	351	809	839	143	45	33	26	38
25	48	52	165	651	348	821	824	128	50	32	26	41
26	48	55	162	645	341	833	821	114	50	32	28	46
27	51	54	170	636	334	842	806	106	45	32	29	50
28	56	53	186	626	324	849	795	98	42	32	30	54
29	57	52	193	617	315	849	784	92	42	32		56
30	56	51	192	605	299	849	773	85	42	30		57
31		53		592	280		759		39	30		57
Total	1,356	1,599	3,323	14,021	12,363	19,243	26,299	11,264	1,450	882	758	1,300
Mean	45.2	51.6	111	452	399	641	848	375	46.8	28.4	27.1	41.9
Max.	57	55	193	651	581	849	912	748	80	36	30	57
Min.	30	47	51	183	280	252	759	85	32	23	24	30
Runoff - MCM.	117.158	138.154	287.107	1,211.44	1,068.163	1,662.595	2,272.234	973.210	125.280	76.205	65.491	112.320

WATER YEAR 1969 : Max. 912 Min. 23 Mean 257 Annual Runoff 8,109.331 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 16	06.00	125.89	912				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
CHI RIVER BASIN

Chi River near Ban Non Puai, Chaiyaphum (E5)

Location: Lat. 15°-46'-07" N., Long. 101°-49'-03" E., on left bank near Ban Non Puai, formerly referred as "at Ban Na Di" about 12 kilometers upstream from Amphoe Ban Khwao, Chaiyaphum.

Drainage Area: 4,254 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 186.144 m. (M.S.L.)

Bench Mark: B.M. E. 5 No. 1107

Location: Along measuring line

Elevation: + 197.543 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1958-1969

Rating Operation:

Period of Rating: 1967-1970

Rated by Float: -

Rated by Current Meter: 1967-1970

Stability of Channel Regimes: Stable, no shifting adjusiment for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

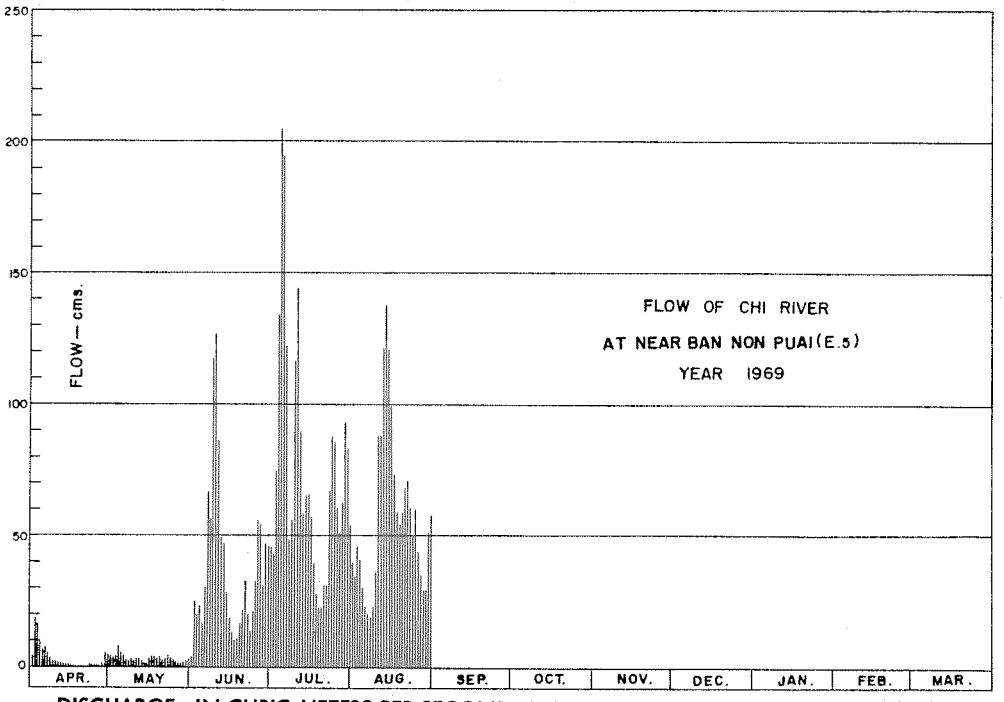
Remarks: Ending gage record on August 31, 1969.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	186.78	187.05	187.08	189.26	189.01							
2	188.49	186.93	188.30	.03	188.73							
3	187.85	187.04	187.99	190.40	189.26							
4	.26	.33	188.25	192.73	.01							
5	.18	.16	187.84	194.12	188.52							
6	187.28	187.02	188.37	193.82	188.22							
7	.03	186.88	190.03	191.27	.05							
8	186.90	.86	189.47	189.34	187.98		Ending	Gage Record	August 31,	1969		
9	.84	.91	192.07	.64	188.25							
10	.81	.87	.42	191.81	.86							
11	186.78	186.97	190.71	192.60	190.83							
12	.74	.93	189.34	190.82	.69							
13	.72	.82	.27	189.56	191.89							
14	.71	.76	188.53	.99	192.44							
15	.70	.74	187.96	190.04	191.85							
16	186.69	186.97	187.65	189.74	191.00							
17	.68	187.05	.42	.05	190.32							
18	.67	.02	.53	188.48	189.85							
19	.66	186.92	.85	.15	.55							
20	.64	187.00	188.10	.22	.66							
21	186.63	186.84	188.68	188.59	190.14							
22	.67	.93	187.99	.62	.24							
23	.76	187.04	.55	189.59	189.79							
24	.67	186.95	188.11	190.85	.24							
25	.71	.83	.74	.77	.81							
26	186.68	186.77	189.65	189.97	189.25							
27	.64	.74	.55	.46	188.79							
28	.80	.73	188.40	.47	.52							
29	187.14	.79	189.28	190.99	.52							
30	.08	.81	.26	.65	189.45							
31		.95		189.58	.71							
Mean	186.91	186.92	188.78	190.21	189.59							
Max.	188.49	187.33	192.42	194.12	192.44							
Min.	186.63	186.73	187.08	188.15	187.98							

WATER YEAR 1969 : Max. m. Min. m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.80	4.50	4.80	46	40							
2	29	3.30	25	41	34							
3	16	4.40	19	75	46							
4	7.40	8.45	24	149	40							
5	6.20	5.90	16	205	29							
6	7.70	4.20	26	193	23							
7	4.30	2.80	66	101	20							
8	3.00	2.60	52	45	19							
9	2.40	3.10	125	56	24	Ending Gage Record August 31, 1969						
10	2.10	2.70	137	117	36							
11	1.80	3.70	84	144	88							
12	1.40	3.30	48	88	84							
13	1.20	2.20	47	54	120							
14	1.10	1.60	30	65	138							
15	1.00	1.40	18	66	118							
16	0.90	3.70	12	58	93							
17	0.80	4.50	9.80	41	73							
18	0.70	4.20	11	29	61							
19	0.60	3.20	16	22	54							
20	0.40	4.00	21	23	56							
21	0.30	2.40	33	31	68							
22	0.70	3.30	19	31	71							
23	1.60	4.40	12	55	60							
24	0.70	3.50	21	88	46							
25	1.10	2.30	34	86	60							
26	0.80	1.70	56	64	46							
27	0.40	1.40	54	51	35							
28	2.00	1.30	27	52	29							
29	5.60	1.90	47	93	29							
30	4.80	2.10	46	82	51							
31		3.50		54	58							
Total	107.80	101.55	1,140.60	2,305	1,749							
Mean	3.59	3.27	38.0	74.3	56.4							
Max.	29	8.45	137	205	138							
Min.	0.30	1.30	4.80	22	19							
Runoff - MCM.	9.314	8.774	98.548	199.152	151.114							

WATER YEAR 1969 : Max. Min. Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

WATER YEAR 1969
CHI RIVER BASIN

Chi River near Ban Non Puai, Chaiyaphum (E_5)

Location: Lat. 15°-46'-03" N., Long. 101°-49'-03" E., on left bank on left bank near Ban Non Puai about 30 meters downstream from former gage, Amphoe Ban Khwao, Chiayaphum. The station name formerly referred as "at Kang Tha Dua".

Drainage Area: 4,254 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 186.070 m. (M.S.L.)

Bench Mark: B.E. - E. 5

- Location: Along the measuring line
- Elevation: + 197.543 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1969 to date

Rating Operation:

- Period of Rating: 1969-1973
- Rated by Float: -
- Rated by Current Meter: 1969-1973

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

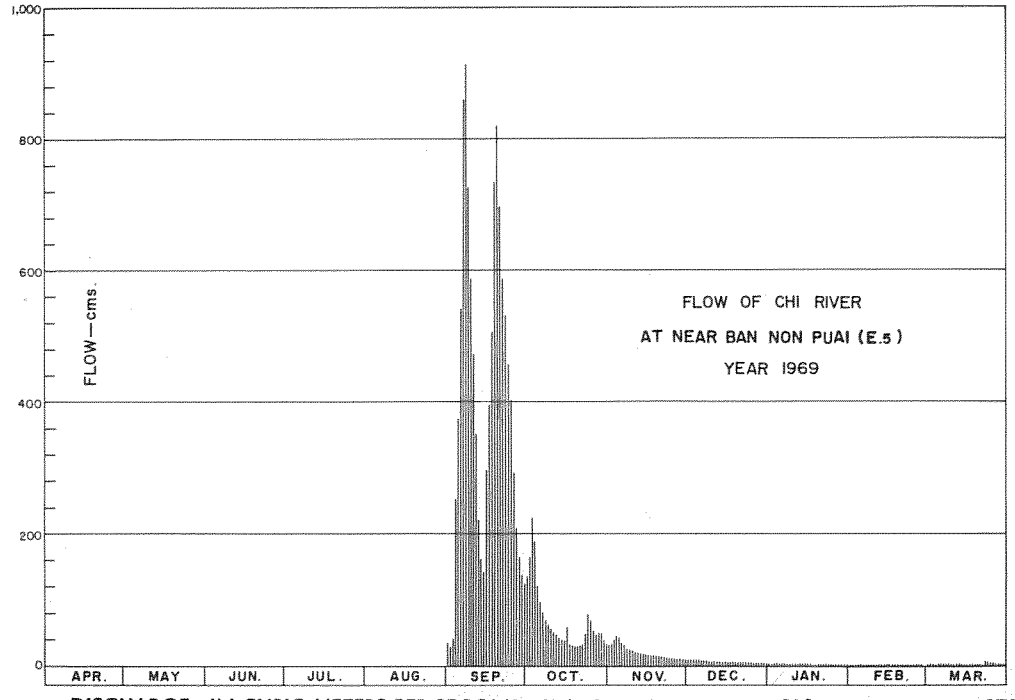
Remarks: Stream gaging station began on September 1, 1969.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1						189.04	192.23	188.73	187.48	187.12	186.95	186.88
2						188.50	193.10	.85	.46	.11	.95	.87
3						189.30	194.34	189.11	.44	.11	.95	.87
4						194.32	193.81	.46	.42	.10	.95	.87
5						196.31	191.81	.28	.41	.10	.94	.87
6						196.93	191.03	188.90	187.39	187.09	186.94	186.87
7						197.56	190.62	.57	.37	.08	.94	.87
8						.61	.30	.51	.36	.08	.94	.85
9						.47	.05	.40	.25	.07	.93	.84
10						.27	189.84	.31	.33	.07	.92	.85
11						196.91	189.64	188.23	187.31	187.07	186.91	186.85
12						195.65	.45	.18	.30	.06	.91	.85
13						193.43	.30	.12	.29	.05	.92	.86
14						192.21	.17	.07	.29	.04	.92	.86
15						.57	.06	.03	.28	.03	.92	.84
16						195.68	189.94	187.98	187.26	187.03	186.92	186.84
17						196.60	188.84	.94	.25	.03	.92	.83
18						.96	.78	.89	.25	.03	.93	.82
19						197.48	.74	.85	.23	.02	.93	.81
20						.54	.65	.81	.22	.01	.97	.81
21						197.43	188.68	187.76	187.21	187.00	186.95	186.81
22						.28	.83	.73	.19	.00	.97	.82
23						.09	189.43	.70	.18	.00	.95	187.35
24						196.85	190.68	.67	.17	.00	.93	.20
25						.52	.40	.63	.17	.00	.91	.14
26						195.40	189.82	187.60	187.16	186.99	186.90	187.11
27						193.74	.41	.57	.16	.99	.89	.08
28						192.95	.61	.54	.16	.99	.88	.00
29						.25	.55	.52	.16	.98		186.95
30						191.92	.14	.50	.14	.98		.93
31							188.92		.13	.96		.90
Mean						195.02	190.09	188.15	187.27	186.23	186.93	186.91
Max.						197.61	194.34	189.46	187.48	187.12	186.97	187.35
Min.						188.50	188.65	187.50	187.13	186.96	186.88	186.81

WATER YEAR 1969 : Max. m. Min. m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1						36	133	30	9.20	3.80	1.50	0.80
2						25	168	32	8.90	3.65	1.50	0.70
3						42	223	37	8.60	3.65	1.50	0.70
4						222	183	46	8.30	3.50	1.50	0.70
5						373	117	41	8.15	3.50	1.40	0.70
6	Stream Gaging Began on Sept. 1, 1969					471	91	33	7.85	3.35	1.40	0.70
7						846	77	28	7.55	3.20	1.40	0.70
8						913	67	25	7.40	3.20	1.40	0.50
9						724	61	23	5.75	3.05	1.30	0.40
10						568	55	22	6.95	3.05	1.20	0.50
11						467	50	20	6.65	3.05	1.10	0.50
12						304	46	20	6.50	2.90	1.10	0.50
13						181	42	19	6.35	2.75	1.20	0.60
14						132	39	18	6.35	2.60	1.20	0.60
15						147	36	17	6.20	2.45	1.20	0.40
16						307	58	17	5.90	2.45	1.20	0.40
17						410	32	16	5.75	2.45	1.20	0.30
18						478	31	15	5.75	2.45	1.30	0.20
19						738	30	15	5.45	2.30	1.30	0.10
20						819	28	14	5.30	2.15	1.70	0.10
21						670	29	13	5.15	2.00	1.50	0.10
22						573	32	13	4.85	2.00	1.70	0.20
23						509	45	12	4.70	2.00	1.50	7.25
24						454	79	12	4.55	2.00	1.30	5.00
25						400	70	11	4.55	2.00	1.10	4.10
26						286	55	11	4.40	1.90	1.00	3.65
27						194	45	10	4.40	1.90	0.90	3.20
28						162	50	10	4.40	1.90	0.80	2.00
29						134	48	9.80	4.40	1.80		1.50
30						121	38	9.50	4.10	1.80		1.30
31							33		3.95	1.60		1.00
Total						11,706	2,091	599.30	188.30	80.40	36.40	39.40
Mean						390	67.4	19.9	6.07	2.59	1.30	1.27
Max.						913	223	46	9.20	3.80	1.70	7.25
Min.						25	28	9.50	3.95	1.60	0.80	0.10
Runoff - mcm.						1,011.398	180.612	51.779	16.269	6.946	3.145	3.404

WATER YEAR 1969 : Max. Min. Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 8	01.00	197.64	954				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
CHI RIVER BASIN

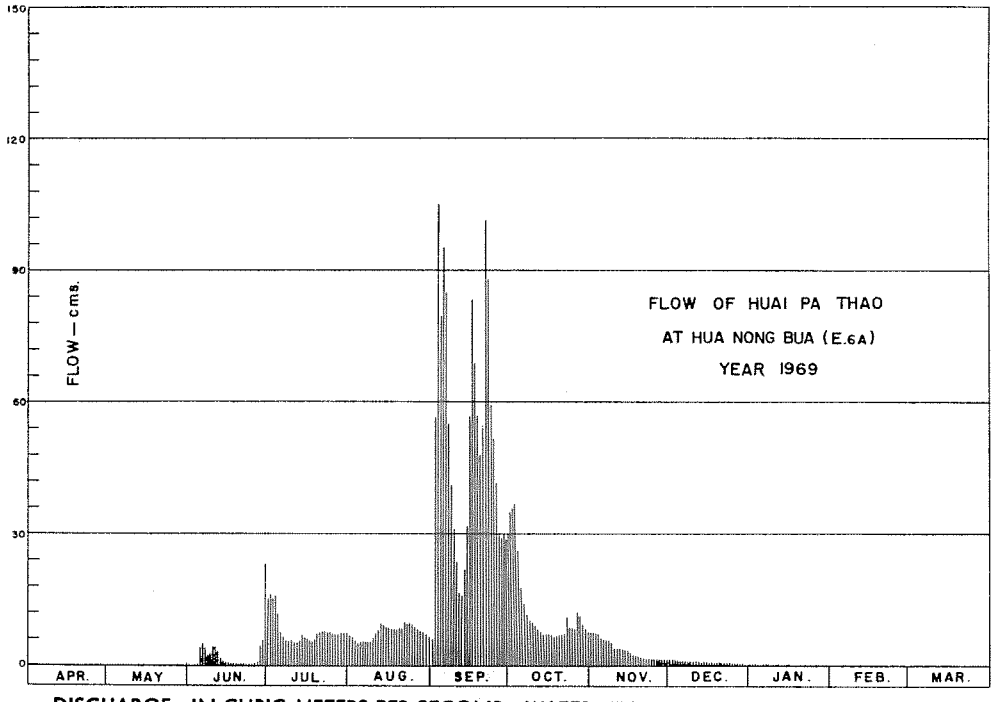
Huai Pa Thao at Hua Nong Bua, Chaiyaphum (E_{6A})

Location:	Lat. 15°-55'-28" N., Long. 102°-02'-18" E., on right bank about 2.5 kilometers east side from Chaiyaphum – Chum Phae road at Kilometer marker 12+300, and about 1 kilometer upstream from E6 station.
Drainage Area:	498 sq.km.
Type of Gage:	Water-stage recorder
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	B.M. – H.S. EGA
Location:	Under the bridge of automatic gage building about 6 meters apart.
Elevation:	+ 6.303 m. (M.S.L.)
Gage Reading Frequency:	Recording
Basis of Mean Daily Gage Height:	Arithmetic mean of 24 hourly readings.
Period of Available Gage Records:	1967 to date
Rating Operation:	
Period of Rating:	1967-1971
Rated by Float:	
Rated by Current Meter:	1967-1971
Stability of Channel Regimes:	Unstable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by Ban Na Fai weir about 500 meters upstream. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.91	1.93	2.63	4.82	4.25	4.18	5.43	4.31	3.25	2.75	2.42	2.21
2	.90	.97	.54	.88	.21	.14	.46	.30	.25	.74	.40	.21
3	.88	2.01	.44	.83	.12	5.64	.48	.29	.22	.72	.36	.21
4	.88	.04	.42	.84	.04	6.27	.26	.29	.19	.70	.35	.23
5	.89	.03	3.91	.47	.05	.08	4.97	.22	.15	.68	.34	.25
6	1.89	2.02	4.07	4.28	4.06	6.21	4.81	4.13	3.10	2.67	2.34	2.25
7	.90	.00	3.85	.20	.07	.10	.71	.04	.09	.66	.33	.23
8	.89	.03	.57	.13	.09	5.81	.61	.01	.09	.68	.33	.23
9	.89	.10	.70	.11	.10	.50	.55	3.93	.07	.68	.32	.22
10	.88	.11	.97	.13	.19	.34	.49	.87	.04	.68	.34	.19
11	1.88	2.11	3.87	4.08	4.32	5.10	4.42	3.88	3.03	2.66	2.32	2.17
12	.87	.11	.58	.07	.39	4.88	.37	.85	.03	.65	.32	.17
13	.86	.10	.28	.16	.49	.85	.33	.83	.01	.63	.31	.16
14	.84	.11	.04	.27	.46	5.17	.28	.83	.00	.62	.31	.15
15	.84	.12	2.93	.22	.44	.42	.26	.78	2.98	.60	.31	.18
16	1.84	2.11	2.85	4.18	4.42	5.89	4.27	3.66	2.96	2.62	2.31	2.17
17	.83	.10	.77	.12	.40	6.13	.23	.59	.95	.61	.31	.17
18	.81	.09	.72	.11	.37	5.91	.19	.55	.93	.51	.32	.17
19	.83	.07	.67	.21	.38	.82	.23	.51	.91	.49	.32	.12
20	.85	.06	.60	.32	.42	.69	.23	.47	.88	.48	.34	.14
21	1.86	2.08	2.57	4.33	4.39	5.83	4.26	3.43	2.87	2.48	2.31	2.14
22	.88	.10	.56	.33	.50	6.25	.29	.35	.86	.47	.29	.17
23	.88	.11	.57	.33	.46	.07	.56	.34	.84	.47	.28	.27
24	.88	.15	.60	.33	.49	5.86	.39	.32	.83	.47	.26	.28
25	.89	.17	.73	.31	.43	.76	.41	.28	.82	.46	.25	.27
26	1.91	2.23	2.80	4.27	4.40	5.52	4.40	3.27	2.82	2.45	2.22	2.22
27	.92	.22	3.01	.27	.38	.32	.65	.25	.82	.44	.23	.21
28	.92	.22	4.14	.26	.34	.28	.60	.24	.81	.42	.21	.20
29	.92	.24	.19	.32	.32	.31	.45	.24	.79	.41	–	.22
30	.92	.29	5.12	.31	.27	.27	.38	.22	.77	.44	–	.24
31	–	.61	–	.30	.22	–	.32	–	.76	.43	–	.21
Mean	1.88	2.12	3.19	4.31	4.30	5.56	4.57	4.57	2.97	2.57	2.31	2.20
Max.	1.92	2.61	5.12	4.88	4.50	6.28	5.48	4.31	3.25	2.75	2.42	2.28
Min.	1.81	1.93	2.42	4.07	4.04	4.14	4.19	3.22	2.76	2.41	2.21	2.12

WATER YEAR 1969 : Max. 6.28 m. Min. 1.81 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.001	0.003	0.40	15	6.85	6.12	35	7.41	1.30	0.50	0.19	0.082
2	0.00	0.007	0.30	16	6.41	5.76	36	7.30	1.30	0.49	0.18	0.082
3		0.011	0.21	15	5.58	69	37	7.29	1.24	0.47	0.15	0.082
4		0.014	0.19	16	4.92	105	28	7.29	1.18	0.45	0.14	0.086
5		0.013	4.06	9.38	5.00	77	19	6.52	1.10	0.44	0.13	0.090
6		0.012	5.16	7.18	5.08	95	15	5.67	1.00	0.43	0.13	0.090
7		0.010	3.70	6.30	5.16	80	13	4.92	0.98	0.42	0.12	0.086
8		0.013	2.28	5.67	5.32	54	11	4.68	0.98	0.44	0.12	0.086
9		0.020	2.90	5.49	5.40	37	10	4.18	0.94	0.44	0.12	0.084
10		0.026	4.42	5.67	6.21	31	9.66	3.82	0.88	0.44	0.14	0.074
11		0.026	3.94	5.24	7.52	22	8.68	3.88	0.86	0.42	0.12	0.062
12		0.026	2.32	5.16	8.29	16	8.07	3.70	0.86	0.41	0.12	0.062
13		0.020	1.36	5.94	9.66	16	7.63	3.58	0.82	0.40	0.11	0.056
14		0.026	0.88	7.07	9.24	25	7.18	3.58	0.80	0.39	0.11	0.050
15		0.032	0.72	6.52	8.96	34	6.96	3.30	0.78	0.38	0.11	0.068
16		0.026	0.61	6.12	8.68	59	7.07	2.70	0.75	0.39	0.11	0.062
17		0.020	0.52	5.58	8.40	83	6.63	2.36	0.75	0.39	0.11	0.062
18		0.019	0.47	5.49	8.07	61	6.21	2.80	0.72	0.26	0.12	0.062
19		0.017	0.43	6.41	8.18	55	6.63	2.04	0.69	0.24	0.12	0.052
20		0.016	0.38	7.52	8.68	47	6.63	1.91	0.65	0.24	0.13	0.044
21		0.018	0.34	7.63	8.29	55	6.96	1.79	0.64	0.24	0.11	0.044
22		0.020	0.33	7.63	9.80	101	7.29	1.55	0.63	0.23	0.10	0.062
23		0.026	0.34	7.63	9.24	75	11	1.52	0.60	0.23	0.10	0.094
24		0.050	0.38	7.63	9.66	57	8.29	1.46	0.59	0.23	0.092	0.096
25		0.062	0.48	7.41	8.82	51	8.54	1.36	0.58	0.22	0.090	0.094
26	0.001	0.086	0.55	7.07	8.40	38	8.40	1.34	0.58	0.21	0.084	0.084
27	0.002	0.084	0.82	7.07	8.18	30	12	1.30	0.58	0.21	0.086	0.082
28	0.002	0.084	5.76	6.96	7.74	29	11	1.28	0.56	0.19	0.082	0.080
29	0.002	0.088	6.21	7.52	7.52	30	9.10	1.28	0.54	0.19	–	0.084
30	0.002	0.098	23	7.41	7.07	28	8.18	1.24	0.52	0.21	–	0.088
31	–	0.39	–	7.30	6.52	–	7.52	–	0.51	0.20	–	0.082
Total	0.010	1.363	73.46	244.00	323.85	1,471.88	383.63	102.45	24.91	10.40	3.324	2.292
Mean	0.00	0.044	2.45	7.87	7.51	49.1	12.4	3.41	0.803	0.335	0.118	0.073
Max.	0.002	0.39	23	16	9.80	105	37	7.41	1.30	0.50	0.19	0.096
Min.	0.00	0.003	0.19	5.16	4.92	5.76	6.21	1.24	0.51	0.19	0.082	0.052
Runoff – mcm.	0.00	1.178	6.347	21.082	27.981	127.170	33.146	8.852	2.152	0.898	0.287	0.198

WATER YEAR 1969 : Max. 105 Min. 0.00 Mean 6.98 Annual Runoff 202.825 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 4	24.00	6.43	129				

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT

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WATER YEAR 1969
CHI RIVER BASIN

Chi River at Ban Tha Khon Yang, Maha Sarakham (E_{8A})

Location: Lat. 16°-13'-51" N., Long. 103°-16'-29" E., on right bank at the bridge of Maha Sarakham – Kalasin highway, Tambon Tha Khon Yang, Amphoe Muang, Maha Sarakham.

Drainage Area: 29,802 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 133.21 m. (M.S.L.)

Bench Mark: B.M. – H.S. No. 6

Location: At abutment of the bridge

Elevation: + 147.910 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1955 to date

Rating Operation:

Period of Rating: 1955-56, 1965 to date

Rated by Float:

Rated by Current Meter: 1955-56, 1965 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

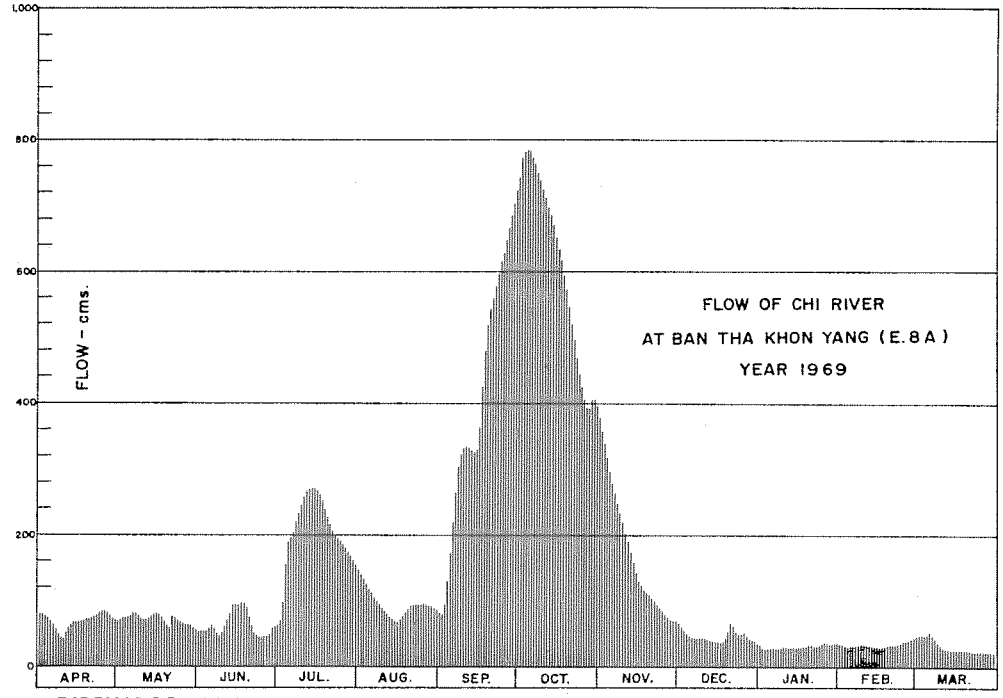
Overbank Flow Conditions: No overbank flow.

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by Ubonrat Dam at above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	135.43	135.24	134.89	135.15	136.75	135.53	143.65	140.54	135.55	134.62	134.63	134.94
2	.44	.31	.89	.29	.62	.44	.85	.31	.31	.44	.60	.98
3	.40	.37	.97	.68	.54	.90	.96	.04	.14	.41	.55	.99
4	.29	.34	.96	136.83	.41	136.41	144.01	139.78	.02	.43	.51	.97
5	.20	.37	135.06	137.43	.29	137.04	.01	.53	134.98	.44	.52	135.00
6	135.13	135.44	135.15	137.58	136.16	137.71	143.97	139.27	134.92	134.44	134.53	135.09
7	.02	.50	.04	.67	.04	138.63	.89	.08	.88	.44	.54	.00
8	134.84	.49	134.79	.91	135.91	139.09	.83	138.86	.86	.44	.59	134.83
9	.66	.42	.74	138.05	.82	.28	.73	.59	.85	.45	.64	.68
10	.61	.31	.93	.22	.70	.39	.63	.35	.88	.48	.59	.54
11	134.85	135.28	135.14	138.42	135.58	139.41	143.54	138.18	134.86	134.49	134.55	134.41
12	135.06	.29	.37	.54	.49	.39	.45	137.99	.85	.48	.54	.37
13	.15	.37	.59	.62	.40	.38	.34	.75	.81	.47	.53	.35
14	.20	.43	.74	.61	.34	.31	.23	.46	.78	.46	.51	.33
15	.22	.47	.77	.61	.28	.39	.10	.14	.75	.45	.49	.32
16	135.23	135.51	135.77	138.59	135.25	139.83	142.95	136.90	134.74	134.46	134.49	134.30
17	.25	.47	.80	.53	.33	140.47	.82	.73	.73	.49	.51	.30
18	.27	.37	.82	.41	.46	141.06	.65	.57	.72	.53	.53	.29
19	.28	.21	.81	.25	.56	.45	.47	.48	.86	.54	.55	.28
20	.32	.10	.57	.07	.67	.65	.26	.45	135.20	.59	.57	.27
21	135.35	135.06	135.23	137.87	135.75	141.84	142.08	136.36	135.41	134.56	134.58	134.26
22	.36	.39	134.91	.71	.78	142.03	141.88	.21	.35	.52	.60	.25
23	.46	.34	.81	.61	.77	.21	.63	.08	.16	.55	.65	.24
24	.50	.29	.73	.52	.76	.37	.38	.01	.01	.60	.69	.24
25	.53	.23	.69	.43	.77	.53	.11	135.93	.04	.66	.72	.25
26	135.55	135.17	134.77	137.37	135.81	142.68	140.85	135.80	135.09	134.68	134.76	134.26
27	.48	.12	.78	.28	.77	.85	.68	.66	134.97	.64	.80	.24
28	.40	.15	.86	.17	.73	143.02	.65	.59	.86	.63	.87	.22
29	.32	.15	135.04	.08	.72	.20	.75	.56	.80	.63	–	.22
30	.26	.08	.10	136.96	.71	.35	.80	.58	.76	.64	–	.23
31	–	134.97	–	.84	.63	–	.71	–	.71	.64	–	.24
Mean	135.23	135.30	135.16	137.59	135.80	140.06	142.61	137.49	134.96	134.52	134.59	134.48
Max.	135.55	135.51	135.82	138.62	136.75	143.35	144.01	140.54	135.55	134.68	134.87	135.09
Min.	134.61	134.97	134.69	135.15	135.25	135.44	140.65	135.56	134.71	134.41	134.49	134.22

WATER YEAR 1969 : Max. 144.01 m. Min. 134.22 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1,1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	77	68	52	63	149	82	745	383	71	35	35	47
2	78	71	52	70	141	78	767	363	61	29	34	48
3	76	74	55	90	136	101	780	341	55	28	32	49
4	70	73	55	154	129	129	785	320	50	29	31	48
5	66	74	59	190	122	166	785	301	48	29	32	49
6	62	78	63	199	115	208	779	281	46	29	32	53
7	57	81	58	205	109	272	767	268	44	29	32	49
8	50	80	48	222	101	307	759	252	43	29	34	42
9	42	77	46	231	97	322	745	233	43	29	35	37
10	40	71	53	243	91	331	731	216	44	30	34	32
11	50	70	63	257	85	333	719	205	43	31	32	28
12	59	70	74	266	80	331	707	193	43	30	32	27
13	63	74	85	271	76	330	692	179	41	30	32	26
14	66	77	93	271	73	325	677	162	40	30	31	26
15	67	79	94	271	70	331	660	145	39	29	31	26
16	67	81	94	269	68	366	640	132	39	30	31	25
17	68	79	96	265	72	423	624	124	38	31	31	25
18	69	74	97	257	79	478	604	116	38	32	32	25
19	70	66	96	245	84	516	582	112	43	32	32	24
20	72	61	84	233	89	536	557	110	57	34	33	24
21	73	59	67	219	93	555	536	106	65	33	33	24
22	74	75	52	208	95	574	514	99	63	32	34	23
23	76	73	48	201	94	592	486	94	55	32	36	23
24	81	70	45	195	94	609	461	90	49	34	37	23
25	82	67	44	190	94	626	434	87	51	36	38	23
26	83	64	47	186	96	642	410	81	53	37	40	24
27	80	62	47	181	94	660	395	75	48	35	41	23
28	76	63	50	174	92	678	392	73	43	35	44	23
29	72	63	58	169	92	696	402	71	41	35	–	23
30	69	60	61	162	91	712	406	72	40	35	–	23
31	–	55	–	154	87	–	398	–	38	35	–	23
Total	2,035	2,189	1,936	6,311	2,988	12,309	18,938	5,284	1,472	984	951	965
Mean	67.8	70.6	64.5	203	96.4	410	611	176	47.5	31.7	34.0	31.1
Max.	83	81	97	271	149	712	785	383	71	37	44	53
Min.	40	55	44	63	68	78	392	71	38	28	31	23
Runoff – mcm.	175.824	189.130	167.270	545.270	258.163	1,063.498	1,636.243	456.538	127.181	85.018	82.166	83.376

WATER YEAR 1969 : Max. 785 Min. 23 Mean 154 Annual Runoff 4,869.677 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct.4,69	06.00	144.01	785				

WATER YEAR 1969
CHI RIVER BASIN

Chi River at Ban Tha Nang Luan, Khon Kaen (E_9)

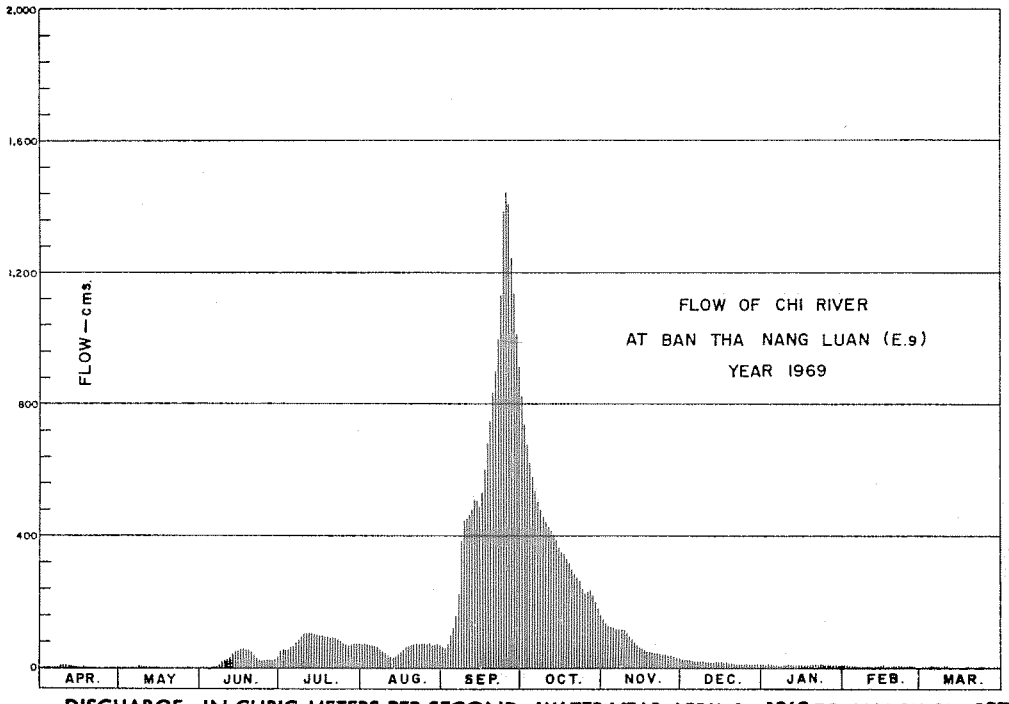
Location:	Lat. 16°-05'-49" N., Long. 102°-34'-23" E., on left bank at the bridge of Mancha Khiri – Chonnabot highway, about 6 kilometers from Amphoe Mancha Khiri at Ban Nang Luan, Amphoe Ban Phai, Khon Kaen.
Drainage Area:	11,020 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	
Location:	–
Elevation:	–
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings.
Period of Available Gage Records:	1958 to date
Rating Operation:	
Period of Rating:	1967-1973
Rated by Float:	–
Rated by Current Meter:	1967-1973
Stability of Channel Regimes:	Unstable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow.
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.43	1.19	1.46	4.06	5.33	4.77	10.34	7.93	3.32	2.32	2.06	1.89
2	.38	.16	.40	.30	.33	.60	.15	.65	.23	.30	.05	.89
3	.33	.15	.34	.56	.32	5.52	.07	.38	.16	.28	.04	.90
4	.29	.14	.30	.78	.27	6.79	9.95	.29	.10	.26	.04	.89
5	.28	.17	.32	5.02	.15	7.60	.86	.20	.05	.26	.04	.88
6	1.26	1.30	1.35	5.23	4.99	8.26	9.77	7.12	3.01	2.26	2.03	1.87
7	.58	.52	.87	.55	.77	.89	.70	.05	2.98	.25	.02	.86
8	2.18	.55	2.61	.95	.60	9.40	.63	.03	.93	.24	.01	.85
9	.08	.60	.84	6.33	.32	.54	.58	.03	.89	.22	.01	.83
10	1.99	.74	.94	.59	.01	.57	.54	6.68	.85	.21	.01	.83
11	1.88	1.77	3.27	6.71	3.72	9.61	9.50	6.18	2.80	2.20	1.97	1.81
12	.82	.68	.69	.72	.47	.65	.46	5.81	.77	.20	.95	.80
13	.73	.55	4.19	.63	.43	.72	.43	.47	.75	.20	.94	.80
14	.59	.51	.49	.51	.65	.70	.38	.26	.73	.20	.95	.80
15	.48	.46	.67	.38	4.09	.65	.31	4.94	.69	.20	.95	.79
16	1.42	1.42	4.75	6.31	4.43	9.81	9.27	4.73	2.67	2.18	1.95	1.79
17	.28	.39	.73	.26	.69	.99	.25	.57	.63	.17	.95	.79
18	.24	.41	.58	.22	.92	10.12	.20	.41	.58	.17	.94	.79
19	.21	.43	.37	.20	5.10	.27	.15	.30	.54	.16	.93	.78
20	.20	.41	.14	.16	.22	.42	.11	.19	.49	.16	.92	.78
21	1.20	1.38	3.77	6.09	5.29	10.52	9.05	4.13	2.46	2.15	1.91	1.80
22	.20	.36	.22	5.95	.32	.69	8.99	.06	.43	.14	.91	.80
23	.20	.37	2.99	.79	.32	.94	.93	3.99	.41	.12	.90	.80
24	.20	.46	.98	.55	.31	11.24	.82	.92	.42	.11	.90	.81
25	.20	.50	3.04	.35	.31	.31	.76	.84	.41	.11	.90	.82
26	1.20	1.49	3.07	5.18	5.30	11.23	8.79	3.76	2.41	2.11	1.89	1.82
27	.19	.44	.05	.14	.29	.02	.80	.68	.40	.11	.89	.83
28	.23	.41	2.99	.20	.24	10.87	.71	.61	.37	.10	.89	.84
29	.27	.45	3.26	.29	.19	.68	.59	.54	.36	.09	–	.85
30	.22	.50	.68	.34	.13	.51	.45	.39	.33	.09	–	.92
31	–	.49	–	.35	.01	–	.18	–	.32	.09	–	2.07
Mean	1.42	1.43	3.11	5.70	4.82	9.43	9.28	5.34	2.69	2.18	1.96	1.84
Max.	2.18	1.77	4.75	6.72	5.33	11.31	10.34	7.93	3.32	2.32	2.06	2.07
Min.	1.19	1.14	1.30	4.06	3.43	4.60	8.18	3.39	2.32	2.09	1.89	1.78

WATER YEAR 1969 : Max. 11.31 m. Min. 1.14 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	2.04	0.45	2.28	43	73	59	807	148	28	12	8.40	5.90
2	1.64	0.30	1.80	48	73	54	710	137	27	12	8.25	5.90
3	1.24	0.25	1.32	53	72	27	670	127	25	12	8.10	6.00
4	0.95	0.20	1.00	59	71	110	612	125	24	11	8.10	5.90
5	0.90	0.35	1.16	65	68	135	572	122	23	11	8.10	5.80
6	0.80	1.00	1.40	70	64	166	532	120	23	11	7.95	5.70
7	3.24	2.76	5.70	78	59	252	503	117	22	11	7.80	5.60
8	10	3.00	17	88	54	392	476	117	21	11	7.65	5.50
9	8.70	3.40	20	98	48	442	457	117	21	11	7.65	5.30
10	7.35	4.52	22	104	42	454	442	106	20	11	7.65	5.30
11	5.80	4.76	27	107	36	469	427	94	19	10	7.05	5.10
12	5.20	4.04	36	108	31	484	413	85	19	10	6.75	5.00
13	4.44	3.00	46	105	31	5.11	402	76	19	10	6.60	5.00
14	3.32	2.68	52	102	35	503	386	71	18	10	6.75	5.00
15	2.44	2.28	56	99	44	484	363	63	18	10	6.75	4.92
16	1.96	1.96	58	97	51	549	351	58	17	10	6.75	4.92
17	0.90	1.72	58	96	57	630	345	54	17	10	6.75	4.92
18	0.70	1.88	54	95	62	6.95	330	50	16	10	6.60	4.92
19	0.55	2.04	49	94	67	770	315	48	16	9.90	6.45	4.84
20	0.50	1.88	45	93	70	851	303	46	15	9.90	6.30	4.84
21	0.50	1.64	37	92	72	906	288	45	14	9.75	6.15	5.00
22	0.50	1.48	26	88	72	1,004	275	43	14	9.60	6.15	5.00
23	0.50	1.56	22	84	72	1,168	261	42	14	9.30	6.00	5.00
24	0.50	2.28	22	78	72	1,387	237	40	14	9.15	6.00	5.10
25	0.50	2.60	23	73	72	1,443	226	39	14	9.15	6.00	5.20
26	0.50	2.52	23	69	72	1,379	231	37	14	9.15	5.90	5.20
27	0.45	2.12	23	68	72	1,224	233	36	13	9.15	5.90	5.30
28	0.65	1.88	22	69	70	1,120	217	34	13	9.00	5.90	5.40
29	0.85	2.20	27	72	69	998	199	33	13	8.85	–	5.50
30	0.60	2.60	36	73	68	900	183	30	12	8.85	–	6.30
31	–	2.52	–	73	65	–	161	–	12	8.85	–	8.55
Total	68.22	65.87	815.66	2,541	1,884	19,616	11,927	2,260	555	313.60	194.40	167.91
Mean	2.27	2.12	27.2	82.0	60.8	654	385	75.3	17.9	10.1	6.94	5.42
Max.	10	4.76	58	108	73	1,443	807	148	28	12	8.40	8.55
Min.	0.45	0.20	1.00	43	31	54	161	30	12	8.85	5.90	4.84
Runoff - mcm.	5.894	5.691	70.473	219.542	162.778	1,694.822	1,030.493	195.264	47.952	27.095	16.796	14.507

WATER YEAR 1969 : Max. 1,443 Min. 0.20 Mean 111 Annual Runoff 3,491.308 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 25	18.00	11.32	1,452				

WATER YEAR 1969
CHI RIVER BASIN

Chi River at Ban Tha Phra, Khon Kaen (E_{16A})

Location: Lat. 16°-21'-14" N., Long. 102°-48'-09" E., on left bank about 400 meters upstream from the bridge on Khon Kaen Maha Sarakham highway, Tambon Don Han, Amphoe Muang, Khon Kaen.

Drainage Area: 13,171 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 142.94 m. (M.S.L.)

Bench Mark: B.M. - H.S.

- **Location:** Near abutment of the bridge.
- **Elevation:** + 154.989 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1954 to date

Rating Operation:

- **Period of Rating:** 1963, 1965 to date
- **Rated by Float:**
- **Rated by Current Meter:** 1963, 1965 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

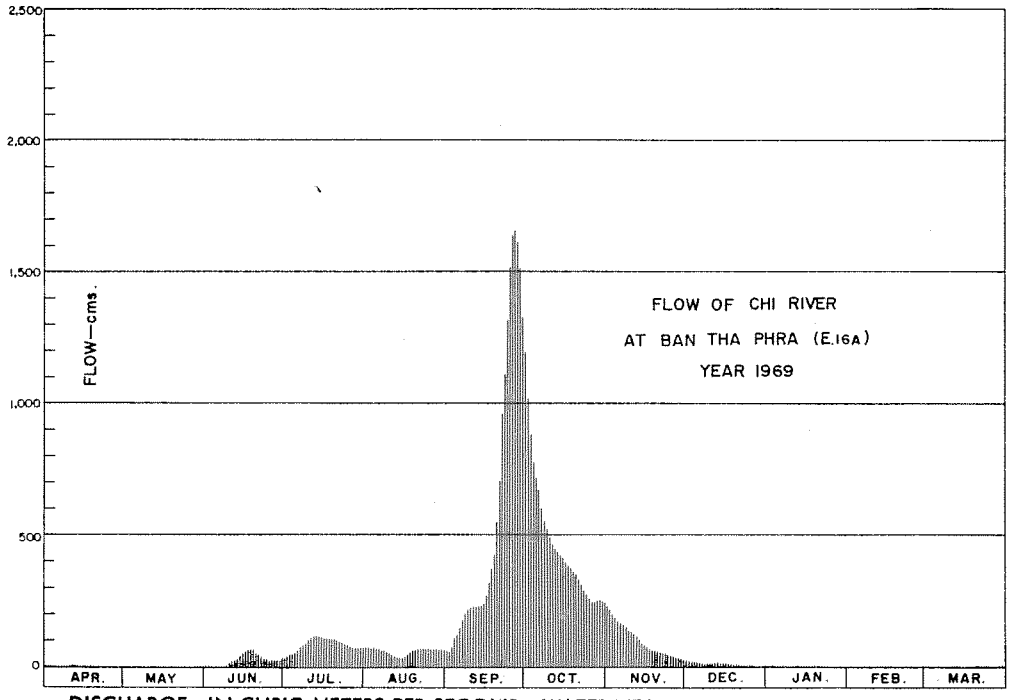
General Description: Records fair. Stage-discharge relationship use is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Discharge records for period of no flow are omitted.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	143.21	142.76	143.20	144.53	145.59	145.34	153.25	148.76	144.39	143.59	143.41	143.24
2	.22	.75	.22	.78	.58	.25	.05	.46	.32	.59	.39	.23
3	.17	.72	.20	.98	.57	.71	152.86	.20	.27	.61	.37	.23
4	.22	.72	.16	.99	.56	146.51	.69	147.97	.20	.61	.34	.23
5	.11	.70	.21	145.18	.53	.76	.54	.77	.15	.60	.33	.23
6	143.06	142.68	143.20	145.44	145.47	147.23	152.39	147.60	144.11	143.59	143.32	143.23
7	.01	.68	.14	.71	.37	.82	.25	.46	.07	.59	.32	.24
8	142.97	.69	.19	.81	.29	148.28	.12	.20	.06	.56	.32	.23
9	143.16	.80	.74	146.06	.18	.56	.01	.02	.05	.56	.32	.23
10	.69	143.09	144.08	.32	.04	.69	151.90	146.93	.04	.56	.32	.21
11	143.70	143.21	144.18	146.50	144.87	148.73	151.80	146.77	143.98	143.55	143.32	143.20
12	.60	.35	.33	.57	.71	.75	.70	.56	.95	.55	.31	.19
13	.49	.42	.62	.59	.57	.76	.62	.31	.93	.54	.31	.18
14	.44	.39	.90	.58	.50	.78	.54	145.98	.90	.54	.31	.17
15	.33	.34	145.10	.52	.54	.91	.45	.80	.88	.51	.31	.15
16	143.25	143.26	145.25	146.44	144.74	149.49	151.35	145.65	143.87	143.51	143.31	143.15
17	.16	.17	.32	.36	.96	150.38	.24	.52	.85	.51	.31	.13
18	.09	.11	.35	.29	145.14	151.16	.10	.39	.84	.52	.30	.11
19	.03	.06	.33	.24	.27	.50	150.94	.29	.80	.54	.29	.11
20	142.98	.05	.09	.20	.37	.96	.73	.20	.77	.53	.28	.11
21	142.94	143.08	144.92	146.15	145.44	152.49	150.48	145.12	143.75	143.51	143.27	143.10
22	.89	.14	.74	.10	.47	.82	.18	.07	.72	.50	.26	.09
23	.85	.14	.54	.03	.49	153.13	149.84	.05	.69	.49	.26	.08
24	.80	.11	.39	145.94	.50	.39	.52	144.98	.66	.47	.25	.07
25	.82	.06	.30	.84	.50	.62	.24	.85	.64	.47	.24	.06
26	142.81	143.10	144.34	145.72	145.51	153.77	148.05	144.76	143.64	143.46	143.24	143.06
27	.80	.18	.36	.62	.51	.79	.11	.69	.64	.44	.24	.06
28	.81	.19	.43	.57	.50	.72	.19	.62	.63	.45	.24	.08
29	.83	.19	.30	.57	.47	.52	.24	.55	.63	.44	–	.10
30	.78	.21	.32	.57	.45	.42	.18	.49	.62	.43	–	.11
31	–	.17	–	.58	.41	–	.01	–	.59	.41	–	.10
Mean	143.11	143.05	144.25	145.86	145.26	150.10	151.05	146.13	143.89	143.52	143.30	143.15
Max.	143.70	143.42	145.35	146.59	145.59	153.79	153.25	148.76	144.39	143.61	143.41	143.24
Min.	142.78	142.68	143.14	144.53	144.50	145.25	148.01	144.49	143.59	143.41	143.24	143.06

WATER YEAR 1969 : Max. 153.79 m. Min. 142.68 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	2.10	0.00	2.00	32	73	63	1,184	230	28	7.30	4.15	2.40
2	2.20		2.20	40	72	59	1,031	214	26	7.30	3.90	2.30
3	1.70		2.00	48	72	78	892	200	24	7.70	3.70	2.30
4	2.20		1.60	49	71	114	785	188	22	7.70	3.40	2.30
5	1.10		2.10	56	70	127	713	177	20	7.50	3.30	2.30
6	0.80		2.00	67	68	150	651	169	19	7.30	3.20	2.30
7	0.55		1.40	78	64	180	596	162	18	7.30	3.20	2.40
8	0.41		1.90	82	61	204	551	149	18	6.70	3.20	2.30
9	1.60	0.00	10	94	56	219	520	140	18	6.70	3.20	2.30
10	9.30	0.95	18	105	51	226	492	135	17	6.70	3.20	2.10
11	9.50	2.10	21	114	44	228	470	127	16	6.50	3.20	2.00
12	7.50	3.50	26	117	37	229	450	117	15	6.50	3.10	1.90
13	5.35	4.30	35	118	33	230	436	105	15	6.30	3.10	1.80
14	4.60	3.90	45	118	31	231	424	90	14	6.30	3.10	1.70
15	3.30	3.40	53	115	32	238	411	82	13	5.70	3.10	1.50
16	2.50	2.60	59	111	39	271	399	75	13	5.70	3.10	1.50
17	1.60	1.70	62	107	47	325	389	70	13	5.70	3.10	1.30
18	0.95	1.10	63	104	55	381	376	65	12	5.90	3.00	1.10
19	0.65	0.80	62	102	60	418	363	61	11	6.30	2.90	1.10
20	0.44	0.75	53	100	64	507	349	57	11	6.10	2.80	1.10
21	0.32	0.90	46	98	67	691	332	54	10	5.70	2.70	1.00
22	0.18	1.40	39	95	68	864	313	52	9.90	5.50	2.60	0.95
23	0.10	1.40	32	92	69	1,091	292	51	9.30	5.35	2.60	0.90
24	0.00	1.10	28	88	69	1,298	273	48	8.70	5.05	2.50	0.85
25	0.04	0.80	25	84	69	1,502	256	43	8.30	5.05	2.40	0.80
26	0.02	1.00	26	78	69	1,637	246	39	8.30	4.90	2.40	0.80
27	0.00	1.80	27	74	69	1,655	249	37	8.30	4.60	2.40	0.80
28	0.02	1.90	29	72	69	1,592	253	35	8.10	4.75	2.40	0.90
29	0.06	1.90	25	72	68	1,466	256	32	8.10	4.60	–	1.00
30	0.00	2.10	26	72	67	1,324	253	31	7.90	4.45	–	1.10
31	–	1.70	–	72	65	–	243	–	7.30	4.15	–	1.00
Total	59.09	41.10	825.20	2,654	1,849	17,598	14,448	3,035	432.20	187.30	84.95	48.10
Mean	1.97	1.32	27.5	85.6	59.6	587	466	101	14.1	6.04	3.03	1.55
Max.	9.50	4.30	63	118	73	1,655	1,184	230	28	7.70	4.15	2.40
Min.	0.00	0.00	1.40	32	31	59	243	31	7.30	4.15	2.40	0.80
Runoff – mcm.	5.105	3.551	71.297	229.306	159.754	1,520.467	1,248.307	262.224	37.774	16.183	7.340	4.156

WATER YEAR 1969 : Max. 1,655 Min. 0.00 Mean 113 Annual Runoff 3,565.464 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 27, 69	01.00	153.80	1,664				

WATER YEAR 1969
CHI RIVER BASIN

Nam Phong at Ban Tha Hin, Khon Kaen (E_{17})

Location: Lat. 16°-26'-20" N., Long. 102°-56'-52" E., on left bank about 20 meters downstream from the bridge on Khon Kaen – Yang Talat road, opposite Wat Tha Hin, Amphoe Muang, Khon Kaen.

Drainage Area: 14,426 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S. No. 2

- Location: Near the gage site.
- Elevation: + 10.990 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1954 to date

Rating Operation:

- Period of Rating: 1965-1973
- Rated by Float: –
- Rated by Current Meter: 1965-1973

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

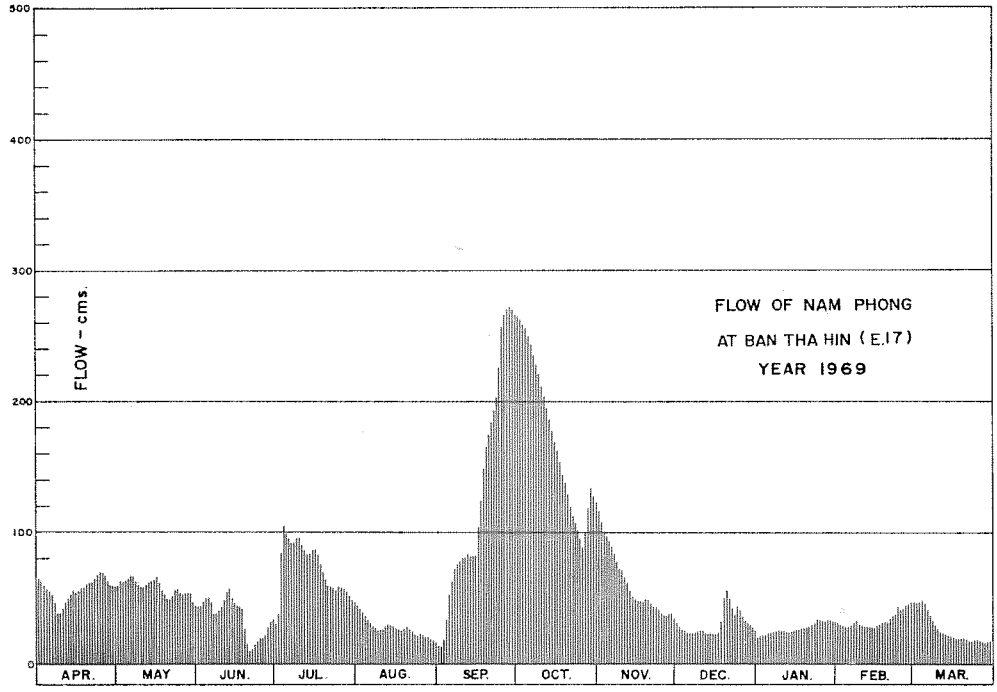
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by Ubonrat Dam at above gage site. No. adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	3.70	3.60	2.91	2.32	2.94	1.58	9.48	5.52	2.41	1.89	2.38	3.06
2	.66	.68	.97	.81	.83	.55	.41	.24	.25	.91	.30	.05
3	.45	.65	3.09	4.38	.70	.83	.33	.03	.15	.96	.27	.03
4	.31	.72	.20	5.13	.55	2.41	.23	4.91	.13	2.00	.26	.09
5	.34	.79	.22	4.88	.43	3.20	.10	.80	.10	.02	.27	.10
6	3.17	3.85	3.05	4.82	2.35	3.65	8.96	4.64	2.07	2.03	2.28	2.91
7	2.86	.80	2.61	.70	.29	.96	.79	.43	.06	.06	.33	.69
8	.64	.65	.75	.68	.22	4.14	.60	.24	.08	.10	.48	.47
9	.65	.52	.81	.84	.17	.29	.40	.03	.09	.15	.34	.29
10	.86	.48	.92	.87	.17	.33	.20	.05	.12	.18	.30	.12
11	3.05	3.52	3.11	4.67	2.18	4.34	7.98	3.91	2.16	2.15	2.29	2.06
12	.21	.61	.40	.47	.24	.41	.77	.69	.06	.13	.27	.01
13	.33	.66	.45	.40	.29	.37	.51	.48	.07	.11	.25	1.95
14	.36	.69	.21	.42	.29	.36	.29	.26	.07	.13	.23	.91
15	.34	.71	.02	.51	.24	.34	.05	.17	.04	.16	.22	.88
16	3.39	3.74	2.89	4.51	2.21	4.97	6.81	3.10	2.03	2.18	2.28	1.87
17	.47	.57	.86	.40	.18	5.78	.60	.09	.05	.18	.33	.84
18	.49	.34	.84	.19	.15	6.48	.34	.04	.42	.21	.38	.83
19	.57	.21	.26	3.93	.20	.97	.09	.16	3.13	.24	.43	.82
20	.64	.11	1.67	.74	.29	7.16	5.95	.12	.40	.26	.44	.80
21	3.65	3.08	1.27	3.56	2.22	7.39	5.72	2.97	3.16	2.28	2.53	1.79
22	.75	.32	.40	.50	.12	.72	.42	.90	2.86	.33	.63	.76
23	.83	.47	.59	.44	.03	8.15	.18	.93	.63	.45	.69	.73
24	.94	.39	.72	.42	1.99	.71	4.94	.84	.90	.54	.92	.79
25	.90	.30	.85	.52	2.04	9.23	.74	.68	.88	.51	.78	.79
26	3.81	3.29	1.88	3.48	1.97	9.51	4.60	2.60	2.62	2.46	2.88	1.71
27	.63	.32	.95	.43	.87	.61	.97	.62	.48	.45	.95	.68
28	.57	.34	2.32	.38	.87	.64	5.64	.70	.40	.45	3.02	.68
29	.50	.24	.44	.26	.82	.61	.97	.76	.33	.48		.71
30	.50	.01	.49	.13	.75	.55	.89	.58	.27	.47		.76
31		2.93		.03	.67		.73		.19	.44		.80
Mean	3.42	3.47	2.57	3.99	2.20	5.77	7.02	3.58	2.37	2.22	2.45	2.12
Max.	3.94	3.85	3.45	5.13	2.94	9.64	9.48	5.52	3.40	2.54	3.02	3.06
Min.	2.64	2.93	1.27	2.32	1.67	1.55	4.60	2.58	2.03	1.89	2.22	1.68

WATER YEAR 1969 : Max. 9.64 m. Min. 1.55 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	64	61	44	30	44	14	265	118	32	20	31	47
2	63	63	45	41	42	14	262	109	28	21	29	47
3	57	62	48	83	39	19	259	102	26	22	28	47
4	54	64	51	105	35	32	255	99	25	23	28	48
5	54	66	51	98	32	51	250	95	25	23	28	48
6	50	68	47	96	30	62	244	91	24	23	29	44
7	43	66	37	92	29	71	238	84	24	24	30	38
8	37	62	40	92	27	76	230	79	24	25	33	33
9	38	59	41	97	26	80	222	73	24	26	30	29
10	43	58	44	97	26	81	214	73	25	26	29	25
11	47	59	49	91	26	82	205	69	26	26	29	24
12	51	61	56	85	28	84	197	63	24	25	28	23
13	54	63	57	83	29	82	188	58	24	25	28	22
14	55	63	51	84	29	82	180	52	24	25	28	21
15	54	64	46	87	28	82	171	50	23	26	27	20
16	56	65	43	87	27	100	163	48	23	26	29	20
17	58	60	43	83	26	126	155	48	24	26	30	19
18	58	54	42	77	26	151	146	47	32	27	31	19
19	60	51	28	70	27	168	137	50	49	28	32	19
20	62	49	16	65	29	175	132	49	56	28	32	19
21	62	48	9.32	60	27	184	124	45	50	29	35	18
22	65	54	11	59	25	195	115	44	43	30	37	18
23	67	58	15	57	23	212	107	44	37	33	38	17
24	70	56	17	56	22	234	100	42	44	35	44	18
25	69	53	20	59	23	255	94	38	43	34	41	18
26	67	53	20	58	22	266	89	36	37	33	43	17
27	62	54	22	57	20	271	100	37	33	33	45	16
28	60	54	30	55	20	272	122	39	32	33	46	16
29	59	52	32	52	19	271	133	40	30	33		17
30	59	46	34	49	18	268	130	36	28	33		18
31		44		47	16		125		27	32		19
Total	1,698	1,790	1,089.32	2,252	840	4,060	5,352	1,858	966	853	918	804
Mean	56.6	57.7	36.3	72.6	27.1	135	173	61.9	31.2	27.5	32.8	25.9
Max.	70	68	57	105	44	272	265	118	56	35	46	48
Min.	37	44	9.32	30	16	14	89	36	23	20	28	16
Runoff - mcm.	146.707	154.656	94.117	194.573	72.576	350.784	462.413	160.531	83.462	73.699	79.315	69.466

WATER YEAR 1969 : Max. 272 Min. 14 Mean 61.6 Annual Runoff 1,942.300 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 28	06.00	9.65	272				

WATER YEAR 1969
CHI RIVER BASIN

Chi River at Maha Chana Chai, Yasothon (E_{20})

Location: Lat. 15°-31'-49" N., Long. 104°-15'-07" E., on right bank infront of Amphoe Maha Chana Chai office, Amphoe Maha Chana Chai, Ubon Ratchathani.

Drainage Area: 47,818 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 112.00 m. (M.S.L.)

Bench Mark: B.M. of Thai Army Survey Department

Location: Infront of Amphoe Maha Chana Chai office

Elevation: + 131.297 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1955-61, 1968 to date

Rating Operation:

Period of Rating: 1972 to date

Rated by Float:

Rated by Current Meter: 1972 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow.

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1972-1973. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

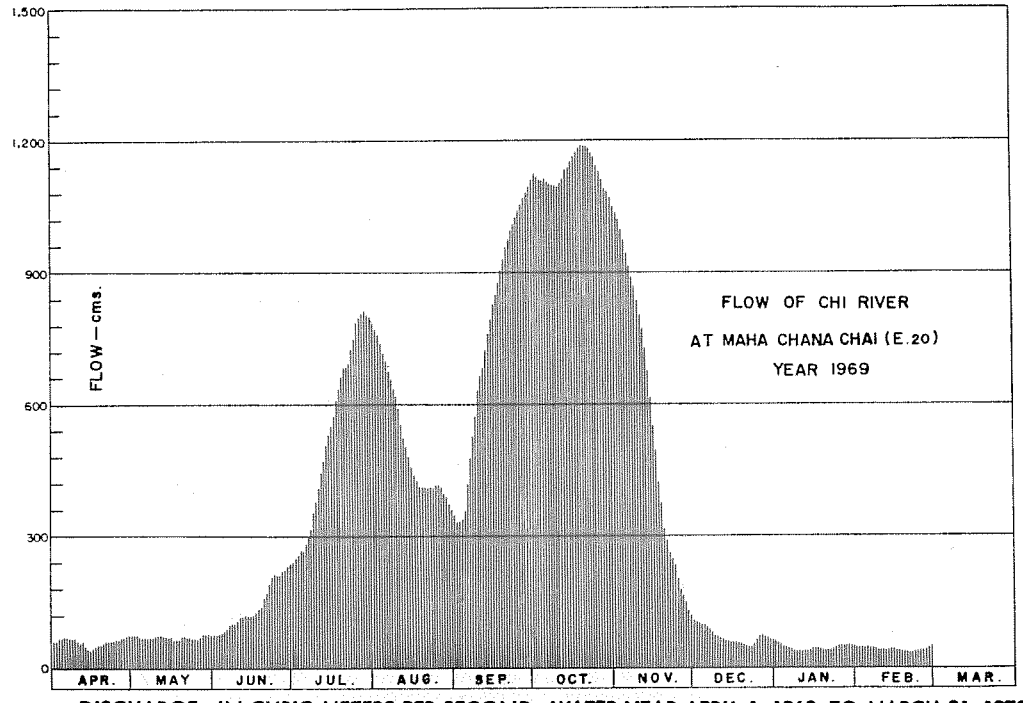
Remarks: No gage-height record March 1-31.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	115.41	115.63	115.60	117.42	120.78	118.32	121.72	121.56	116.04	115.37	115.20	
2	.46	.62	.61	.52	.74	.20	.73	.52	115.99	.32	.19	
3	.51	.59	.63	.65	.68	.22	.72	.48	.95	.28	.18	
4	.54	.55	.68	.70	.62	.27	.70	.43	.91	.24	.19	
5	.54	.50	.77	.66	.54	.47	.70	.36	.88	.18	.18	
6	115.54	115.47	115.87	117.80	120.47	118.87	121.70	121.28	115.84	115.12	115.17	
7	.55	.48	.96	.97	.37	119.27	.69	.20	.75	.08	.14	
8	.52	.51	.98	118.10	.27	.60	.68	.13	.65	.06	.13	
9	.47	.55	.98	.34	.17	.87	.67	.07	.56	.05	.10	
10	.42	.57	116.07	.59	.06	120.17	.67	120.98	.52	.04	.09	
11	115.37	115.60	116.15	118.84	119.91	120.32	121.67	120.88	115.48	115.04	115.09	
12	.42	.60	.19	119.06	.67	.40	.69	.78	.44	.03	.09	
13	.24	.58	.20	.26	.52	.60	.72	.57	.40	.05	.09	
14	.16	.55	.18	.45	.43	.72	.76	.33	.36	.07	.12	
15	.10	.51	.17	.60	.25	.83	.78	.05	.38	.11	.10	
16	115.16	115.57	116.21	119.72	119.07	120.94	121.81	119.66	115.37	115.13	115.08	
17	.25	.43	.27	.87	118.97	121.02	.84	.26	.36	.13	.05	
18	.31	.48	.33	120.06	.87	.10	.86	118.85	.34	.10	.03	
19	.33	.45	.40	.21	.80	.18	.88	.41	.29	.09	.00	
20	.39	.59	.61	.32	.80	.24	.88	.05	.24	.08	.00	
21	115.40	115.59	116.75	120.40	118.80	121.31	121.88	117.85	115.20	115.09	115.00	
22	.40	.55	.95	.40	.80	.38	.88	.64	.19	.12	.00	
23	.41	.53	117.13	.47	.80	.42	.86	.50	.20	.16	.01	
24	.42	.51	.17	.65	.81	.46	.84	.37	.34	.20	.02	
25	.45	.49	.19	.76	.85	.50	.81	.07	.49	.23	.03	
26	115.47	115.49	117.13	120.81	118.83	121.54	121.77	116.85	115.56	115.24	115.06	
27	.51	.58	.21	.85	.79	.58	.73	.69	.58	.24	.09	
28	.54	.67	.27	.88	.72	.61	.69	.53	.53	.24	.13	
29	.61	.67	.34	.89	.62	.65	.65	.35	.48	.24	–	
30	.63	.62	.40	.86	.52	.69	.64	.19	.44	.23	–	
31	–	.62	–	.85	.45	–	.60	–	.43	.20	–	
Mean	115.41	115.55	116.42	119.45	119.45	120.42	121.74	119.32	115.52	115.15	115.09	
Max.	115.63	115.67	117.40	120.89	120.78	121.69	121.88	121.56	116.04	115.37	115.20	
Min.	115.10	115.43	115.60	117.42	118.45	118.20	121.60	116.19	115.19	115.03	115.00	

WATER YEAR 1969 : Max. 121.88 m. Min. 115.00 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	61	76	74	239	778	345	1,116	1,050	107	58	47	
2	64	75	75	250	767	330	1,121	1,034	103	54	46	
3	68	73	76	264	751	332	1,116	1,018	100	52	46	
4	70	70	80	270	735	338	1,108	998	97	49	46	
5	70	67	86	266	716	364	1,108	971	94	46	46	
6	70	65	94	282	699	420	1,108	941	91	42	45	
7	70	66	101	302	677	476	1,104	912	84	40	43	
8	68	68	102	318	655	530	1,100	888	77	39	43	
9	65	70	102	347	634	576	1,095	868	71	38	41	
10	61	72	110	381	612	634	1,095	840	68	37	40	
11	58	74	116	416	583	666	1,095	808	66	37	40	
12	61	74	119	446	542	684	1,104	778	63	37	40	
13	49	73	120	474	516	730	1,116	723	60	38	40	
14	45	70	118	504	501	762	1,133	669	59	39	42	
15	41	68	118	530	473	793	1,142	610	59	42	41	
16	45	72	122	550	448	827	1,155	540	58	43	40	
17	50	62	126	576	434	852	1,168	474	57	43	38	
18	54	66	132	612	420	878	1,178	417	56	41	37	
19	55	63	138	642	410	905	1,187	356	52	40	35	
20	59	73	157	669	410	926	1,187	312	49	40	35	
21	60	73	171	684	410	952	1,187	288	47	40	35	
22	60	70	191	684	410	978	1,187	263	46	42	35	
23	61	69	209	699	410	994	1,178	248	47	45	36	
24	61	68	213	743	411	1,010	1,168	234	56	47	36	
25	63	66	215	773	417	1,026	1,155	203	66	49	37	
26	65	66	209	787	414	1,042	1,137	181	71	49	39	
27	68	73	217	799	409	1,058	1,121	165	73	49	40	
28	70	79	223	808	399	1,070	1,104	150	69	49	43	
29	75	79	230	811	385	1,087	1,087	133	66	49	–	
30	76	75	237	802	371	1,104	1,083	119	63	49	–	
31	–	75	–	799	361	–	1,066	–	62	47	–	
Total	1,843	2,180	4,281	16,727	16,158	22,689	35,009	17,191	2,137	1,370	1,132	
Mean	61.43	70.32	142.70	539.58	521.22	756.30	1,129.32	573.03	68.93	44.19	40.42	
Max.	76	79	237	811	778	1,104	1,187	1,050	107	58	47	
Min.	41	62	74	239	361	330	1,066	119	46	37	35	
Runoff – MCM.	159.235	188.352	369.878	1,445.213	1,396.051	1,960.330	3,024.778	1,485.302	184.637	118.368	97.805	

WATER YEAR 1969 : Max. Min. Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge

WATER YEAR 1969
CHI RIVER BASIN

Chi River at Ban Kaeng Ko, Chaiyaphum (E_{21})

Location: Lat. 15°-45'-07" N., Long. 102°-15'-24" E., on left bank about 75 meters upstream from bridge at Ban Kaeng Ko, Amphoe Muang, Chaiyaphum.

Drainage Area: 8,912 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S. E. 21

Location: Infront of the bridge of automatic gage building.

Elevation: + 9.433 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1955-1957, 1967 to date.

Rating Operation:

Period of Rating: 1968 to date

Rated by Float: -

Rated by Current Meter: 1968 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation and including overbank flow.

Overbank Flow Conditions: Overbank flow at about elevation + 8.05 m. (A.D.)

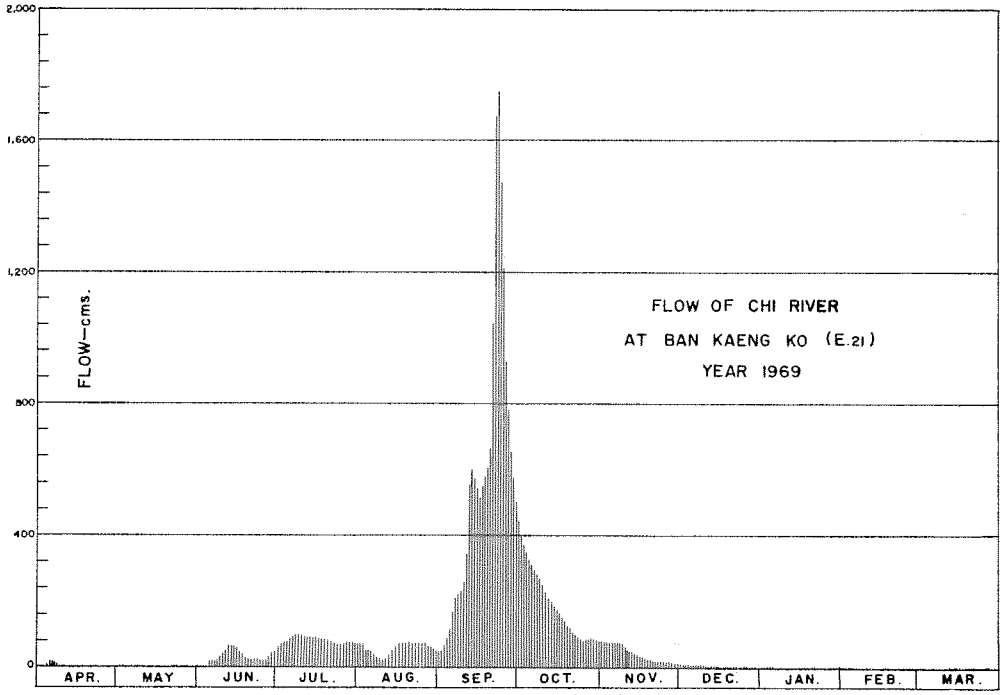
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.26	1.24	1.29	2.71	3.28	2.60	8.81	3.82	1.68	1.50	1.37	1.32
2	.24	.29	.28	3.01	.24	.69	.72	.71	.68	.50	.36	.31
3	.24	.43	.29	.26	.09	3.58	.65	.62	.66	.49	.35	.30
4	.33	.44	.49	.40	2.88	4.79	.57	.53	.66	.48	.36	.29
5	.80	.42	.83	.63	.75	5.92	.48	.51	.65	.47	.34	.28
6	1.78	1.41	1.90	4.09	2.62	7.24	8.40	3.55	1.65	1.46	1.33	1.28
7	.62	.49	.90	.70	.40	.75	.35	.56	.63	.46	.32	.28
8	.53	.51	.92	.98	.19	.89	.29	.39	.61	.46	.32	.29
9	.51	.49	2.15	.99	.06	.94	.20	.16	.61	.45	.32	.28
10	.48	.43	.41	.88	1.99	8.16	.08	2.91	.60	.45	.32	.27
11	1.42	1.38	2.67	4.62	1.99	8.70	7.93	2.73	1.59	1.44	1.32	1.27
12	.37	.35	.92	.43	2.14	9.05	.76	.62	.58	.43	.31	.27
13	.33	.35	3.01	.33	.46	.12	.62	.51	.57	.43	.31	.26
14	.31	.35	2.98	.28	.70	.09	.43	.41	.57	.42	.31	.26
15	.29	.37	.88	.26	.91	.04	.24	.31	.55	.41	.30	.25
16	1.26	1.38	2.70	4.23	3.07	8.99	7.07	2.24	1.53	1.41	1.29	1.25
17	.25	.35	.49	.22	.21	9.05	6.85	.20	.53	.41	.29	.25
18	.24	.32	.28	.17	.30	.10	.58	.15	.53	.41	.31	.25
19	.24	.29	.06	.04	.35	.14	.24	.09	.53	.40	.31	.25
20	.24	.36	1.92	3.91	.34	.21	5.86	.03	.53	.40	.31	.25
21	1.23	1.42	1.89	3.68	3.30	9.46	5.42	2.01	1.53	1.39	1.31	1.25
22	.23	.41	.93	.42	.27	.65	4.91	1.98	.54	.39	.31	.25
23	.24	.39	2.03	.21	.27	.67	.49	.97	.54	.38	.32	.26
24	.24	.38	.02	.02	.27	.60	.12	.95	.53	.38	.32	.26
25	.23	.35	1.90	.02	.25	.50	3.95	.91	.53	.38	.34	.26
26	1.22	1.37	1.84	3.16	3.20	9.40	4.08	1.87	1.52	1.38	1.33	1.30
27	.21	.40	.98	.28	.14	.30	.19	.82	.52	.38	.33	.42
28	.20	.39	2.29	.32	.03	.20	.17	.76	.51	.38	.32	.45
29	.23	.36	.53	.29	2.87	.08	.04	.74	.51	.37		.43
30	.24	.33	.53	.26	.69	8.94	3.97	.72	.51	.37		.42
31		.30		.26	.58		.94		.51	.37		.42
Mean	1.33	1.38	2.14	3.81	2.86	8.09	6.53	2.56	1.57	1.42	1.32	0.29
Max.	1.80	1.51	3.01	4.99	3.35	9.67	8.81	3.82	1.68	1.50	1.37	1.45
Min.	1.20	1.24	1.28	2.71	1.99	2.60	3.94	1.72	1.51	1.37	1.29	1.25

WATER YEAR 1969 : Max. 9.67 m. Min. 1.20 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.98	0.72	137	56	77	51	*428	84	13	6.50	3.25	2.00
2	0.72	1.37	1.24	69	76	55	*395	82	13	6.50	3.00	1.75
3	0.72	4.75	1.37	76	73	81	*373	81	12	6.25	2.75	1.50
4	2.25	5.00	6.25	78	61	99	*349	80	12	6.00	3.00	1.37
5	17	4.50	18	81	58	123	*326	80	12	5.75	2.50	1.24
6	16	4.25	21	88	52	179	*307	80	12	5.50	2.25	1.24
7	11	6.25	21	97	42	214	*296	80	11	5.50	2.00	1.24
8	7.55	6.85	22	102	32	226	*285	78	10	5.50	2.00	1.37
9	6.85	6.25	31	102	27	230	*268	75	10	5.25	2.00	1.24
10	6.00	4.75	42	100	25	*261	*249	65	10	5.25	2.00	1.11
11	4.50	3.50	54	93	25	*388	229	57	9.65	5.00	2.00	1.11
12	3.25	2.75	65	93	31	*553	215	52	9.30	4.75	1.75	1.11
13	2.25	2.75	69	91	45	*601	204	47	8.65	4.75	1.75	0.98
14	1.75	2.75	68	91	55	*578	191	42	8.65	4.50	1.75	0.98
15	1.37	3.25	64	90	65	*546	179	38	8.25	4.25	1.50	0.85
16	0.98	3.50	55	90	72	*515	169	35	7.55	4.25	1.37	0.85
17	0.85	2.75	46	89	75	*553	157	33	7.55	4.25	1.37	0.85
18	0.72	2.00	37	89	77	*585	145	31	7.55	4.25	1.75	0.85
19	0.72	1.37	27	87	77	*618	133	27	7.55	4.00	1.75	0.85
20	0.72	3.00	21	85	77	*678	122	26	7.55	4.00	1.75	0.85
21	0.56	4.50	21	82	77	*1,060	111	25	7.55	3.75	1.75	0.85
22	0.56	4.25	22	78	76	*1,675	101	24	7.90	3.75	1.75	0.85
23	0.72	3.75	26	75	76	*1,751	94	24	7.90	3.50	2.00	0.98
24	0.72	3.50	26	70	76	*1,486	88	23	7.55	3.50	2.00	0.98
25	0.56	2.75	21	70	76	*1,148	85	21	7.55	3.50	2.50	0.98
26	0.46	3.25	19	73	75	*928	88	20	7.20	3.50	2.25	1.50
27	0.33	4.00	24	77	73	*780	89	18	7.20	3.50	2.25	4.50
28	0.20	3.75	37	77	70	*667	89	16	6.85	3.50	2.00	5.25
29	0.56	3.00	48	77	63	*572	87	15	6.85	3.25		4.75
30	0.72	2.25	48	76	55	*489	86	14	6.85	3.25		4.50
31		1.50		76	50		85		6.85	3.25		4.50
Total	91.57	108.81	963.23	2,578	1,889	17,690	6,023	1,373	277.50	140.25	57.99	52.98
Mean	3.05	3.51	32.1	83.2	60.9	590	194	45.8	8.95	4.52	2.07	1.71
Max.	17	6.85	69	102	77	1,751	428	84	13	6.50	3.25	5.25
Min.	0.20	0.72	1.24	56	25	51	85	14	6.85	3.25	1.37	0.84
Runoff - MCM.	7.912	9.401	83.223	222.739	163.210	1,528.416	520.387	118.627	23.976	12.118	5.010	4.577

WATER YEAR 1969 : Max. 1,751 Min. 0.20 Mean 85.6 Annual Runoff 2,699.596 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23	01.00	9.68	1,789				

WATER YEAR 1969
CHI RIVER BASIN

Nam Phong at Nam Phong Weir, Khon Kaen (E_{22A})

Location: Lat. 16°-43'-29" N., Long. 102°-48'-21" E., on left bank about 500 meters downstream from Khon Kaen – Udon highway bridge, Amphoe Nam Phong, Khon Kaen.

Drainage Area: 13,183 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 150.92 m. (M.S.L.)

Bench Mark: B.M. of NEA

- Location: At kilometer marker III on Udon–Khon Kaen highway.
- Elevation: + 165.507 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1965 to date

Rating Operation:

- Period of Rating: 1966 to date
- Rated by Float: –
- Rated by Current Meter: 1966 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

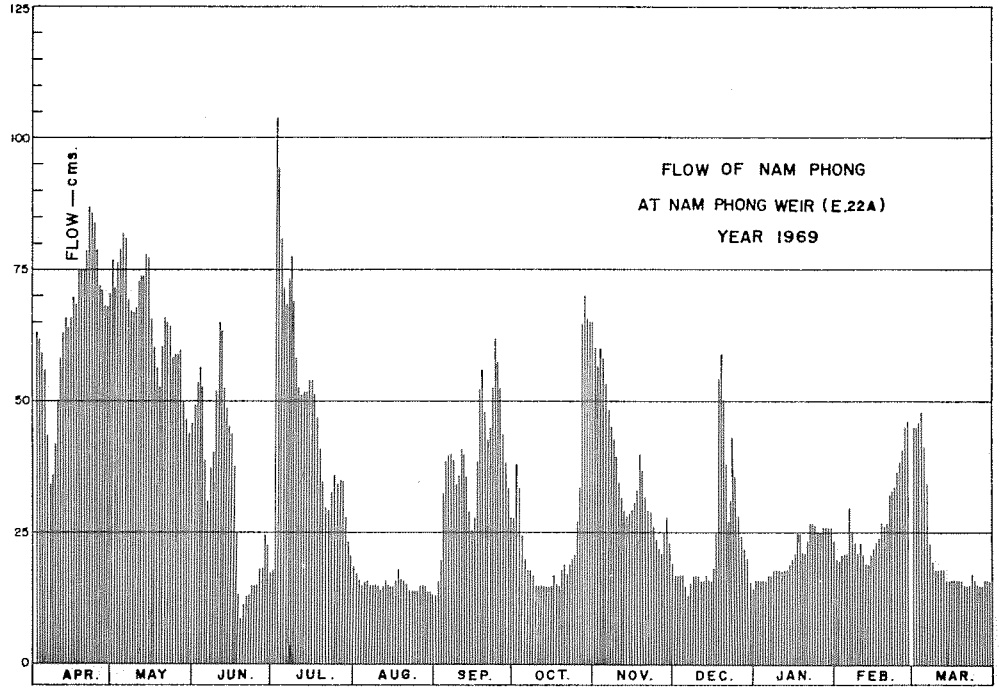
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage–discharge relationship used is devined by discharge measurements made during 1969. Flow regulated by Ubonrat Dam above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	156.73	156.35	155.29	153.95	513.95	153.65	154.48	155.80	153.92	153.82	154.07	155.19
2	155.84	.13	.44	156.87	.87	.77	.93	.60	.90	.80	.05	.19
3	.77	.36	.65	157.23	.80	154.14	.75	.75	.87	.83	.13	.24
4	.71	.41	.62	156.63	.77	.69	.32	.69	.86	.83	.14	.30
5	.48	.51	.18	.35	.82	.94	.07	.51	.74	.85	.13	.13
6	155.03	156.50	154.48	156.03	153.80	154.98	153.97	155.33	153.66	153.87	154.57	154.66
7	154.74	.10	.87	.07	.76	.99	.93	.17	.77	.90	.31	.26
8	.88	155.99	.98	.40	.78	.89	.86	.09	.86	.97	.21	.07
9	155.24	.98	155.17	.28	.77	.76	.79	154.96	.92	.96	.12	153.94
10	.53	156.03	.66	155.68	.74	.83	.75	.76	.90	.95	.22	.93
11	155.76	156.20	155.92	155.44	153.73	155.04	153.75	154.60	153.85	153.95	154.14	155.88
12	.90	.24	.85	.40	.79	154.95	.75	.52	.85	.93	.03	.88
13	.95	.26	.38	.45	.81	.75	.75	.47	.86	.97	.03	.83
14	.89	.40	.29	.47	.78	.52	.75	.52	.84	154.00	.11	.85
15	156.01	.34	.10	.54	.79	.33	.74	.58	.84	.08	.18	.82
16	156.09	155.92	155.15	155.52	153.79	154.45	153.89	154.64	153.98	154.09	154.24	153.80
17	.04	.72	154.93	.41	.82	.98	.79	.73	154.43	.32	.29	.82
18	.28	.59	153.77	.23	.93	155.51	.79	.99	155.51	.30	.40	.81
19	.27	.47	.28	.01	.81	.61	.93	.79	.71	.13	.39	.81
20	.28	.81	.49	154.78	.83	.31	.98	.61	.15	.14	.42	.79
21	156.47	155.95	153.63	154.58	153.78	155.06	153.90	154.52	154.76	154.20	154.65	153.77
22	.68	.93	.64	.54	.73	.18	154.03	.51	.42	.43	.71	.78
23	.66	.88	.78	.67	.73	.53	.06	.44	155.10	.42	.75	.86
24	.58	.69	.78	.81	.72	.81	.12	.25	154.81	.37	.86	.80
25	.42	.71	.75	.73	.69	.68	.48	.16	.48	.34	.96	.76
26	156.13	155.72	153.94	154.79	153.76	155.39	154.83	154.11	154.30	153.33	155.05	153.76
27	.15	.74	.95	.78	.79	.13	155.89	.31	.26	.37	.19	.76
28	.03	.41	154.34	.54	.74	154.90	156.10	.45	.13	.36	.22	.80
29	.03	.22	.22	.34	.71	.70	155.95	.25	.07	.37		.82
30	.18	.16	153.92	.22	.68	.49	.92	.04	153.81	.36		.84
31		.18		.08	.64		.93		.70	.27		.96
Mean	155.96	155.93	154.65	155.32	153.78	154.90	154.36	154.77	154.20	154.11	154.41	154.10
Max.	156.73	156.51	155.92	157.23	153.95	155.81	156.10	155.80	155.71	154.43	155.22	155.30
Min.	154.74	155.16	153.28	153.95	153.64	153.65	153.74	154.04	153.66	153.27	154.03	153.76

WATER YEAR 1968 : Max. 157.28 m. Min. 153.28 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	89	77	48	18	18	13	28	62	17	16	20	45
2	63	71	52	93	17	15	38	56	17	16	20	45
3	61	77	57	104	16	21	34	60	17	16	21	46
4	59	79	56	85	15	33	25	58	17	16	21	48
5	55	82	45	77	16	39	20	53	15	16	21	43
6	41	81	28	68	16	40	18	49	13	17	30	32
7	34	70	37	69	15	40	18	45	15	17	25	24
8	37	67	40	78	15	37	17	42	17	18	23	20
9	46	67	45	75	15	34	15	39	17	18	21	18
10	54	68	58	58	15	36	15	34	17	18	23	18
11	60	73	65	52	14	41	15	31	16	18	21	18
12	64	74	63	51	15	39	15	29	16	18	19	18
13	66	74	50	52	16	34	15	28	17	18	19	16
14	64	78	48	52	15	29	15	29	16	19	21	16
15	67	77	43	54	15	25	15	30	16	20	22	16
16	70	65	44	54	15	28	17	32	19	21	23	16
17	68	59	38	51	16	40	15	34	27	25	24	16
18	75	56	15	46	18	53	15	40	53	25	27	16
19	75	52	7.92	40	16	56	18	35	59	21	26	16
20	75	62	11	35	16	48	19	31	44	21	27	15
21	80	66	13	30	15	42	17	29	34	23	32	15
22	87	65	13	29	14	45	19	29	27	27	33	15
23	86	64	15	32	14	54	20	27	43	27	34	17
24	84	58	15	36	14	62	21	24	36	26	37	16
25	79	59	15	34	14	58	28	22	28	25	39	15
26	71	59	18	35	15	50	36	21	25	25	41	15
27	71	60	18	35	15	43	64	25	24	26	45	15
28	68	51	25	29	15	38	70	28	21	26	46	16
29	68	46	23	25	14	33	66	24	20	26		16
30	72	44	17	23	14	28	65	20	16	26		16
31		45		20	13		65		14	24		18
Total	1,987	2,026	1,023	1,540	471	1,154	858	1,066	733	655	761	676
Mean	66.2	65.3	34.1	49.7	15.2	38.5	27.7	35.5	23.6	21.1	27.2	21.8
Max.	89	82	65	104	18	62	70	62	59	27	46	48
Min.	34	44	7.92	18	13	13	15	20	13	16	19	15
Runoff - mcm.	171.677	175.046	88.380	133.056	40.694	99.706	74.131	92.102	63.331	56.592	65.750	58.406

WATER YEAR 1969 : Max. 104 Min. 7.92 Mean 35.5 Annual Runoff 1,118.873 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
July 3	01.00	57.96	121				

WATER YEAR 1969
CHI RIVER BASIN

Chi River at Ban Mun Khai, Chaiyaphum (E_{23})

Location: Lat. 15°-40'-49" N., Long. 102°-00'-47" E., on left bank at the highway bridge of Ban Mun Khai, Amphoe Muang, Chaiyaphum.

Drainage Area: 6,835 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 174.10 m. (M.S.L.)

Bench Mark: B.M. E 23

Location: Near automatic gage building.

Elevation: + 181.926 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1954-1956, 1967 to date

Rating Operation:

Period of Rating: 1968 to date

Rated by Float: -

Rated by Current Meter: 1968 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation, and included overbank flow.

Overbank Flow Conditions: Overbank flow at about elevation + 180.60 m. (M.S.L.)

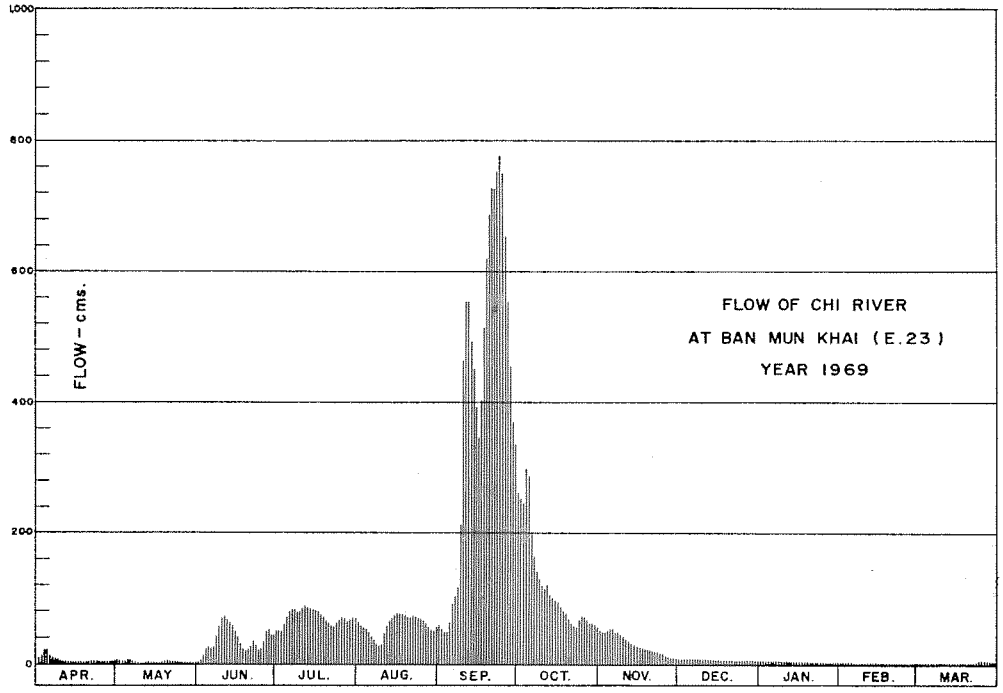
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	174.93	175.76	175.21	179.09	179.95	179.60	182.09	179.08	176.10	175.56	175.25	175.02
2	175.03	.64	.52	.02	.58	.27	.07	178.93	.06	.54	.23	.03
3	176.93	.48	176.83	178.96	.37	178.88	.06	.89	.02	.54	.22	.05
4	177.13	.53	177.24	179.73	.39	.97	.12	179.07	175.99	.50	.21	.05
5	176.32	.87	.39	180.40	.10	180.23	.11	.20	.97	.48	.19	.08
6	175.89	175.82	177.24	*180.74	178.61	*181.11	182.02	179.24	175.94	175.47	175.19	175.06
7	.96	.68	.48	.85	.21	.39	181.92	178.90	.93	.46	.18	.00
8	.70	.44	178.88	.81	177.88	.63	.82	.62	.91	.46	.17	.00
9	.39	.30	179.36	.67	.66	182.01	.74	.39	.89	.46	.17	174.98
10	.20	.29	180.10	.70	.80	.23	.66	.19	.87	.44	.18	.98
11	175.10	175.29	180.24	180.87	178.62	182.30	181.59	178.08	175.85	175.44	175.15	174.96
12	.07	.30	.06	.98	179.62	.30	.53	177.91	.82	.43	.14	.95
13	174.99	.43	179.81	.93	.86	.28	.43	.70	.80	.42	.11	.95
14	.94	.32	.65	.85	180.15	.26	.32	.57	.79	.43	.11	.95
15	.93	.15	.13	.82	.42	.21	.25	.49	.76	.42	.12	.95
16	174.91	175.12	178.48	180.75	180.52	182.16	181.15	177.44	175.75	175.41	175.11	174.97
17	.90	.13	177.77	* .63	.55	.20	180.95	.30	.75	.36	.09	.96
18	.90	.58	.17	.44	.50	.28	* .69	.17	.75	.36	.10	.96
19	.89	.58	176.98	.17	.41	.33	.45	.11	.72	.36	.11	.93
20	.89	.44	177.13	179.80	.32	.35	.04	.04	.69	.35	.12	.93
21	174.87	175.35	177.49	179.63	180.29	182.37	179.69	176.89	175.67	175.35	175.12	174.94
22	.86	.44	.89	.50	.36	.37	.49	.81	.66	.35	.18	.91
23	.81	.48	.61	.40	.33	.38	.47	.74	.65	.35	.17	.97
24	.80	.47	.01	.86	.22	.39	.91	.67	.63	.35	.19	175.01
25	.93	.45	.23	180.11	.12	.38	180.34	.56	.62	.35	.18	.84
26	174.91	175.33	178.05	180.17	180.00	182.35	180.28	176.44	175.59	175.34	175.12	175.70
27	.90	.22	179.00	.10	179.79	.31	.01	.29	.57	.33	.07	.66
28	.95	.12	.23	179.94	.47	.24	179.74	.21	.57	.32	.05	.57
29	.95	174.99	178.56	.98	.22	.19	.78	.16	.59	.31		.46
30	.93	.99	.78	180.18	.08	.16	.63	.12	.59	.29		.35
31		175.10		.17	.46		.39		.58	.26		.16
Mean	175.23	175.39	178.08	180.20	179.58	181.70	180.89	177.61	175.78	175.40	175.15	175.11
Max.	177.13	175.87	180.24	180.98	180.55	182.39	182.12	179.24	176.10	175.56	175.25	175.84
Min.	174.80	174.99	175.21	178.96	177.66	178.88	179.39	176.12	175.57	175.26	175.05	174.91

WATER YEAR 1969 : Max. 182.39 m. Min. 174.80 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.62	6.00	1.86	52	67	60	*269	52	9.50	4.28	2.10	0.98
2	1.02	4.92	3.96	51	60	55	*254	49	9.06	4.12	1.98	1.02
3	20	3.64	18	50	56	48	*247	48	8.62	4.12	1.92	1.10
4	22	4.04	24	63	57	50	*299	51	8.30	3.80	1.86	1.10
5	12	7.10	26	75	52	72	*287	54	8.10	3.64	1.75	1.22
6	7.30	6.60	24	*82	44	*93	*218	54	7.80	3.56	1.75	1.14
7	8.00	5.24	27	*85	38	*104	*168	49	7.70	3.48	1.70	0.90
8	5.40	3.32	48	*84	33	*118	*140	44	7.50	3.48	1.65	0.90
9	2.94	2.40	56	*80	29	*211	*128	40	7.30	3.48	1.65	0.82
10	1.80	2.34	69	*81	31	*439	*120	37	7.10	3.32	1.70	0.82
11	1.30	2.34	72	*86	44	*554	*116	36	6.90	3.32	1.55	0.74
12	1.18	2.40	69	*89	61	*554	*122	33	6.60	3.24	1.50	0.70
13	0.86	3.24	64	*87	65	*521	*106	30	6.40	3.16	1.35	0.70
14	0.66	2.52	61	*85	70	*488	*101	28	6.30	3.24	1.35	0.70
15	0.62	1.55	52	*84	75	*406	* 98	27	6.00	3.16	1.40	0.70
16	0.54	1.40	42	*82	77	*344	* 95	26	5.90	3.08	1.35	0.78
17	0.50	1.45	31	*79	78	*390	* 88	24	5.90	2.76	1.26	0.74
18	0.50	4.44	23	76	77	*521	* 81	23	5.90	2.76	1.30	0.74
19	0.47	4.44	20	71	75	*628	76	22	5.60	2.76	1.35	0.62
20	0.47	3.32	22	64	73	*677	68	21	5.32	2.70	1.40	0.62
21	0.41	2.70	27	61	73	*726	62	19	5.16	2.70	1.40	0.66
22	0.38	3.32	33	59	74	*726	59	18	5.08	2.70	1.70	0.54
23	0.23	3.64	29	57	73	*751	58	17	5.00	2.70	1.65	0.78
24	0.20	3.56	21	65	71	*775	66	16	4.84	2.70	1.75	0.94
25	0.62	3.40	23	69	70	*751	74	15	4.76	2.70	1.70	6.80
26	0.54	2.58	35	71	68	*677	73	13	4.52	2.64	1.40	5.40
27	0.50	1.92	50	69	64	*579	68	11	4.36	2.58	1.18	5.08
28	0.70	1.40	54	66	58	*456	63	11	4.36	2.52	1.10	4.36
29	0.70	0.86	43	67	54	*378	64	10	4.52	2.46		3.48
30	0.62	0.86	46	71	52	*345	61	9.72	4.52	2.34		2.70
31		1.30		71	58		57		4.44	2.16		1.60
Total	93.08	98.24	1,114.82	2,232	1,877	12,497	3,786	887.72	193.36	95.66	43.75	49.36
Mean	3.10	3.17	37.2	72.0	60.5	416	122	29.6	6.23	3.08	1.56	1.59
Max.	22	7.10	72	89	78	775	299	54	9.50	4.28	2.10	6.80
Min.	0.20	0.86	1.86	50	29	48	57	9.72	4.36	2.16	1.10	0.54
Runoff - MCM.	8.042	8.488	96.320	192.845	162.173	1,079.741	327.110	76.699	16.706	8.265	3.780	4.265

WATER YEAR 1969 : Max. 775 Min. 0.20 Mean 62.9 Annual Runoff 1,984.434 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 24	03.00	182.39	775				

WATER YEAR 1969
CHI RIVER BASIN

Chi River at Ban Nong O, Chaiyaphum (E_{32A})

Location: Lat. 15°-54'-40" N., Long. 101°-42'-40" E., on left bank about 500 meters north of Ban Nong O, and about 600 meters upstream from gaging station E32, Amphoe Kaset Sombun, Chaiyaphum.

Drainage Area: 2,905 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 198.00 m. (M.S.L.)

Bench Mark: B.M. - H.S.

- Location: Along automatic gage line
- Elevation: + 213.903 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1966 to date

Rating Operation:

- Period of Rating: 1967 to date
- Rated by Float: -
- Rated by Current Meter: 1967 to date

Stability of Channel Regimes: Rather stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

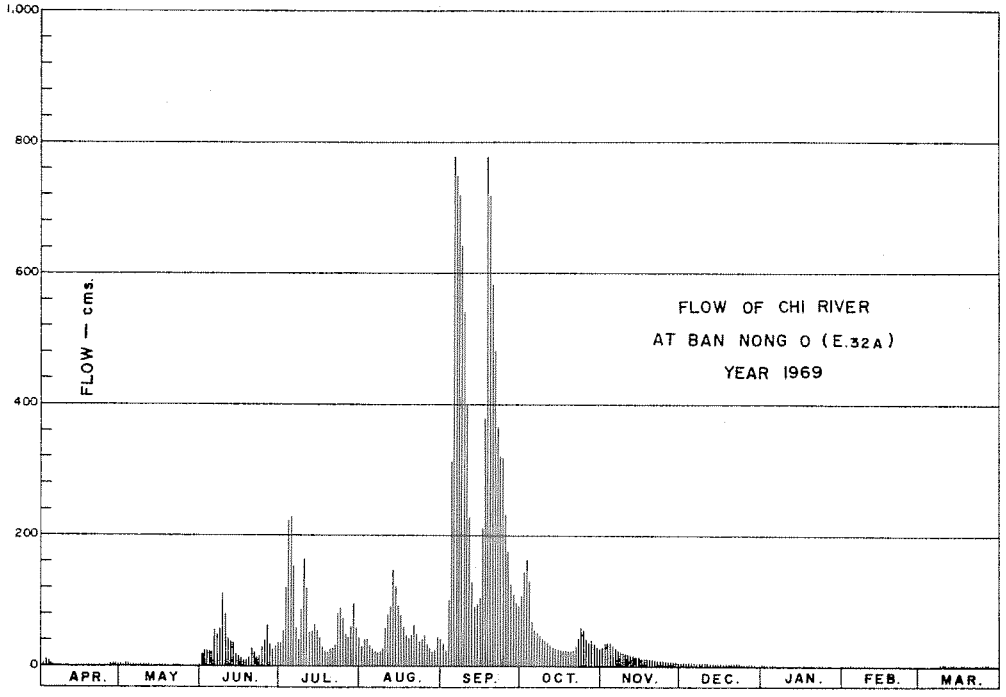
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	198.59	198.77	199.68	200.20	200.24	199.87	203.35	200.29	199.24	198.99	198.86	198.77
2	199.14	.73	.85	201.01	.64	.73	204.63	.54	.24	.99	.85	.77
3	.01	199.00	.84	204.15	.57	203.23	.93	.55	.22	.99	.85	.77
4	198.80	198.89	.70	206.49	.11	208.19	202.76	.53	.21	.98	.85	.77
5	.76	.83	.70	.64	199.86	210.41	201.85	.56	.20	.97	.80	.76
6	198.68	198.62	201.22	203.40	199.69	210.79	201.44	200.16	199.18	198.97	198.78	198.75
7	.61	.63	200.87	200.77	.62	.70	.17	.05	.18	.96	.78	.75
8	.58	.70	201.75	.50	.68	.36	200.94	199.98	.18	.96	.77	.75
9	.57	.60	203.33	202.44	200.10	209.56	.76	.93	.16	.96	.77	.74
10	.57	.78	201.53	205.04	202.03	207.85	.62	.88	.14	.95	.79	.74
11	198.55	198.76	200.63	202.81	202.38	205.22	200.51	199.80	199.13	198.95	198.80	198.74
12	.54	.62	.52	200.98	.90	203.42	.40	.75	.12	.95	.81	.75
13	.54	.57	.34	201.14	204.56	202.59	.32	.70	.11	.94	.81	.75
14	.53	.56	199.56	.51	203.59	.83	.26	.66	.10	.93	.80	.73
15	.53	.53	.43	.28	202.33	203.20	.19	.63	.10	.91	.80	.73
16	198.54	198.59	199.14	200.62	201.71	206.81	200.14	199.59	199.09	198.91	198.80	198.73
17	.53	.80	.12	.01	.16	209.65	.13	.56	.08	.90	.80	.72
18	.52	.68	.15	199.23	200.75	210.80	.13	.53	.07	.90	.81	.71
19	.51	.63	.37	.63	.71	.57	.10	.50	.07	.91	.85	.71
20	.50	.61	200.14	200.01	201.03	209.91	.04	.47	.07	.91	.84	.71
21	198.50	198.61	199.78	200.11	201.49	208.95	200.13	199.44	199.06	198.90	198.85	198.71
22	.50	.94	.31	.45	200.76	.29	.42	.43	.04	.90	.84	.72
23	.52	.77	.42	202.36	.38	.32	201.41	.39	.03	.90	.81	.77
24	.51	.63	200.27	.64	.78	207.72	.44	.37	.03	.90	.79	.99
25	.49	.58	.63	201.66	.91	205.87	.25	.34	.03	.89	.79	199.00
26	198.48	198.56	201.35	200.95	200.15	203.94	200.69	199.33	199.03	198.90	198.78	198.99
27	.71	.55	199.90	.77	199.87	.73	.62	.32	.02	.89	.78	.92
28	.88	.59	.92	202.10	.74	.05	.78	.29	.02	.88	.77	.87
29	.84	.59	200.31	.77	200.31	202.73	.45	.26	.01	.88	-	.85
30	.82	.58	.49	201.28	.80	.61	.30	.25	.01	.87	-	.81
31	-	.65	-	200.54	.62	-	.17	-	.00	.86	-	.78
Mean	198.63	198.68	200.21	201.74	200.95	206.38	201.04	199.73	199.73	199.10	198.81	198.78
Max.	199.14	199.00	203.33	206.64	204.56	210.80	204.93	200.55	199.24	198.99	198.86	199.00
Min.	198.48	198.53	199.12	199.63	199.62	199.73	200.17	199.25	199.00	198.86	198.77	198.71

WATER YEAR 1969 : Max. 210.80 m. Min. 1,948.48 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.08	3.92	21	33	33	25	111	29	6.70	3.20	1.94	1.13
2	10	3.28	25	52	43	22	151	35	6.70	3.20	1.85	1.13
3	7.80	7.60	24	135	41	119	161	35	6.40	3.20	1.85	1.13
4	4.40	5.84	22	221	30	315	94	35	6.25	3.10	1.85	1.13
5	3.76	4.88	22	227	25	664	69	31	6.10	3.00	1.40	1.04
6	2.48	1.52	57	112	21	769	58	26	5.82	3.00	1.22	0.95
7	1.36	1.68	48	46	20	717	51	23	5.82	2.90	1.22	0.95
8	0.96	2.80	69	39	21	588	45	22	5.82	2.90	1.13	0.95
9	0.84	1.20	110	86	30	442	40	20	5.54	2.90	1.13	0.86
10	0.84	4.08	64	164	76	294	37	19	5.26	2.80	1.31	0.86
11	0.60	3.76	42	96	85	173	34	17	5.12	2.80	1.40	0.86
12	0.48	1.52	40	51	98	113	32	16	4.98	2.80	1.49	0.95
13	0.48	0.84	36	55	148	90	30	15	4.84	2.70	1.49	0.95
14	0.36	0.72	19	64	118	96	28	14	4.70	2.60	1.40	0.77
15	0.36	0.36	16	58	83	108	26	14	4.70	2.40	1.40	0.77
16	0.48	1.08	10	42	68	240	25	13	4.56	2.40	1.40	0.77
17	0.36	4.40	10	28	55	486	25	12	4.42	2.30	1.40	0.68
18	0.24	2.48	11	22	45	775	25	12	4.28	2.30	1.49	0.59
19	0.12	1.68	15	20	44	659	24	11	4.28	2.40	1.85	0.59
20	0.00	1.36	31	28	52	491	23	10	4.28	2.40	1.76	0.59
21	0.00	1.36	23	30	63	372	25	10	4.14	2.30	1.85	0.59
22	0.00	6.64	14	38	46	319	32	10	3.86	2.30	1.76	0.68
23	0.24	3.92	16	84	36	321	57	9.13	3.72	2.30	1.49	1.13
24	0.12	1.68	34	91	46	283	58	8.79	3.72	2.30	1.31	3.20
25	0.00	0.96	42	67	49	196	53	8.28	3.72	2.21	1.31	3.30
26	0.00	0.72	60	50	31	129	39	8.11	3.72	2.30	1.22	3.20
27	2.96	0.60	26	46	25	122	37	7.94	3.58	2.21	1.22	2.50
28	5.68	1.08	26	78	22	102	41	7.45	3.58	2.12	1.13	2.03
29	5.04	1.08	35	95	35	94	33	7.00	3.44	2.12	–	1.85
30	4.72	0.96	39	58	47	91	29	6.85	3.44	2.03	–	1.49
31	–	2.00	–	40	42	–	26	–	3.30	1.94	–	1.22
Total	55.76	76.00	1,007	2,256	1,578	9,215	1,519	492.55	146.79	79.43	41.27	38.84
Mean	1.85	2.45	33.6	72.8	50.9	307	49.0	16.42	4.73	2.56	1.47	1.25
Max.	10	7.60	110	227	148	775	161	35	6.70	3.20	1.94	3.30
Min.	0.00	0.36	10	20	20	22	23	6.85	3.30	1.94	1.13	0.59
Runoff – mcm.	4.818	6.566	87.005	194.918	136.339	796.176	131.242	42.556	12.683	6.863	3.566	3.356

WATER YEAR 1969 : Max. 775 Min. 0.00 Mean 45.2 Annual Runoff 1,426.088 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 28	15.00	210.84	798				

WATER YEAR 1969
CHI RIVER BASIN

Nam Yang at Ban Nong Saeng Thung, Roi Et (E_{33A})

Location: Lat. 16°-20'-01" N., Long. 104°-01'-18" E., on left bank about 1 kilometer south-east of Ban Nong Saeng Thung and 150 meters downstream from confluence with Nong Saeng, Amphoe Phon Thong, Roi Et.

Drainage Area: 2,599 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 133.97 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: Infront of E33A Station office

Elevation: + 143.700 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1961 to date

Rating Operation:

Period of Rating: 1961-1968

Rated by Float: -

Rated by Current Meter: 1961-1968

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

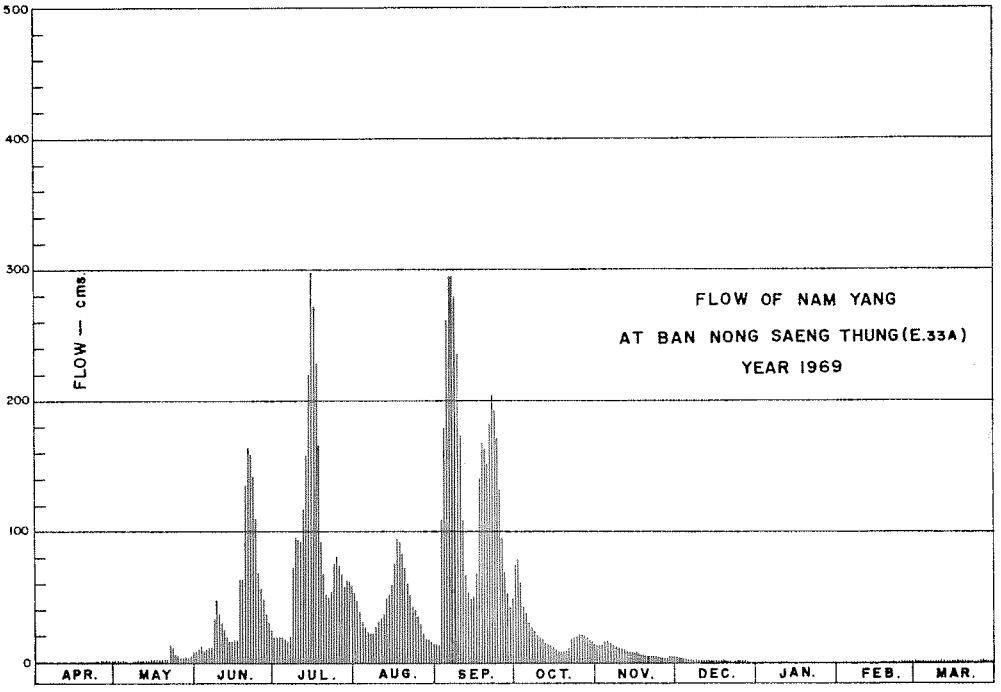
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1961-68. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	134.66	134.77	135.38	135.93	137.18	135.71	137.92	135.70	135.08	134.79	134.76	134.70
2	.63	.73	.53	.98	136.96	.77	.96	.72	.06	.80	.75	.70
3	.62	.71	.62	.99	.70	138.55	.38	.78	.05	.78	.74	.69
4	.62	.69	.37	.98	.48	141.12	136.95	.86	.03	.79	.74	.68
5	.62	.66	.49	.91	.32	.98	.69	.83	.03	.80	.73	.68
6	134.63	134.70	135.48	135.79	136.16	142.41	136.49	135.78	134.99	134.81	134.75	134.69
7	.65	.86	.54	136.02	.06	.41	.32	.72	.93	.78	.76	.70
8	.65	.93	136.55	137.70	.10	.14	.18	.62	.94	.77	.73	.69
9	.64	.83	137.04	138.46	.40	141.34	.04	.57	.93	.81	.73	.69
10	.64	.76	136.66	.40	.54	140.02	135.92	.51	.92	.83	.74	.67
11	134.64	134.73	136.39	138.36	136.60	138.13	135.85	135.45	134.91	134.78	134.74	134.66
12	.71	.83	.16	139.15	.70	137.36	.76	.39	.90	.78	.73	.65
13	.71	.81	135.92	140.18	137.17	.22	.68	.37	.89	.77	.73	.66
14	.70	.78	.79	141.70	.24	.06	.62	.37	.90	.77	.73	.68
15	.69	.74	.79	142.44	.42	.21	.58	.33	.89	.78	.73	.68
16	134.66	134.70	135.90	142.04	137.95	137.76	135.49	135.28	134.89	134.79	134.72	134.68
17	.66	.68	.89	141.32	138.44	139.69	.42	.23	.89	.76	.71	.68
18	.65	.67	137.57	139.91	.32	140.35	.40	.21	.89	.77	.71	.68
19	.65	.68	.57	138.25	.02	.25	.36	.18	.88	.78	.71	.68
20	.66	.67	140.05	137.62	137.70	139.89	.39	.18	.86	.78	.72	.67
21	134.73	134.65	140.24	137.18	137.45	140.84	135.51	135.16	134.87	134.74	134.71	134.65
22	.74	135.71	.11	.09	.17	141.07	.88	.14	.85	.77	.69	.65
23	.79	.54	139.53	.27	136.81	140.72	.92	.13	.85	.76	.70	.65
24	.78	.18	138.50	.93	.73	139.91	136.04	.12	.85	.78	.72	.64
25	.77	.15	137.61	138.09	.59	138.86	.09	.11	.92	.77	.73	.65
26	134.75	134.14	137.33	137.86	136.33	137.97	136.06	135.09	134.85	134.78	134.71	134.66
27	.70	.04	136.99	.63	.05	.64	.03	.08	.86	.76	.70	.80
28	.82	.12	.66	.35	135.90	137.13	135.92	.09	.84	.81	.70	.67
29	.82	.13	.42	.56	.92	136.79	.85	.12	.81	.84	-	.65
30	.81	.17	.20	.49	.83	137.07	.79	.12	.82	.79	-	.69
31	-	.43	-	.35	.74	-	.74	-	.81	-	-	.67
Mean	134.69	134.91	136.92	138.06	136.80	139.15	136.07	135.37	134.91	134.78	134.72	134.68
Max.	134.82	135.71	140.24	142.44	138.44	142.41	137.96	135.86	135.08	134.84	134.76	134.80
Min.	134.62	134.04	135.37	135.79	135.74	135.71	135.36	135.08	134.81	134.76	134.69	134.64

WATER YEAR 1969 : Max. 142.44 m. Min. 134.62 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.11	0.39	8.88	19	52	14	76	14	4.56	174	156	1.20
2	0.054	0.27	11	20	46	15	78	14	4.32	180	150	1.20
3	0.036	0.21	13	20	38	99	58	16	4.20	168	144	1.14
4	0.036	0.16	8.72	20	32	207	45	17	3.96	174	144	1.08
5	0.036	0.11	11	19	28	261	38	17	3.96	180	138	1.08
6	0.054	0.18	10	16	24	293	31	16	3.48	186	150	1.14
7	0.090	0.72	11	21	22	293	28	14	2.76	168	156	1.20
8	0.090	1.05	34	68	23	272	24	13	2.88	162	138	1.14
9	0.072	0.60	48	96	30	168	21	12	2.76	186	138	1.14
10	0.072	0.36	37	94	33	155	19	11	2.64	198	144	1.02
11	0.072	0.27	29	92	35	84	19	10	2.52	168	144	0.96
12	0.21	0.60	24	121	38	58	15	9.04	2.40	168	138	0.90
13	0.21	0.52	19	161	52	54	14	8.72	2.34	162	138	0.96
14	0.18	0.42	16	241	54	49	13	8.72	2.40	162	138	1.08
15	0.16	0.30	16	295	60	53	12	8.08	2.34	168	138	1.08
16	0.11	0.18	18	265	77	70	11	7.28	2.34	174	132	1.08
17	0.11	0.14	18	219	95	142	9.52	6.48	2.34	156	126	1.08
18	0.090	0.13	64	150	91	168	9.20	6.16	2.34	162	126	1.08
19	0.090	0.14	64	88	80	164	8.56	5.76	2.28	168	126	1.08
20	0.11	0.13	156	66	68	150	9.04	5.76	2.16	168	132	1.02
21	0.27	0.090	164	52	60	192	11	5.52	2.22	144	126	0.90
22	0.30	14	158	50	52	205	18	5.28	2.10	162	114	0.90
23	0.45	11	135	55	41	185	19	5.16	2.10	156	120	0.90
24	0.42	5.76	97	77	40	150	21	5.04	2.10	168	132	0.84
25	0.39	5.40	65	82	35	110	22	4.92	2.64	162	138	0.90
26	0.33	5.28	57	74	28	78	22	4.68	2.10	168	126	0.96
27	0.18	4.08	47	65	22	66	21	4.56	2.16	156	120	1.80
28	0.56	5.04	37	57	18	51	19	4.68	2.04	186	120	1.02
29	0.56	5.16	30	64	19	41	17	5.04	1.86	204	–	0.90
30	0.52	5.64	25	62	17	49	16	5.04	1.92	174	–	1.14
31	–	9.68	–	57	15	–	15	–	1.86	–	–	1.02
Total	5.972	78.01	1,431.60	2,786	1,325	3,896	739.32	269.92	82.08	51.12	37.72	32.94
Mean	0.20	2.52	47.7	89.9	42.7	130	23.9	8.99	2.65	1.70	1.35	1.06
Max.	0.56	9.68	164	295	95	293	78	17	4.56	2.04	1.56	1.80
Min.	0.036	0.090	8.72	16	15	14	11	4.56	1.86	1.56	1.14	0.84
Runoff – mcm.	0.516	6.740	123.690	240.710	114.480	336.614	63.877	23.321	7.091	4.416	3.276	2.846

WATER YEAR 1969 : Max. 295 Min. 0.03 Mean 29.4 Annual Runoff 927.580 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
July 15	09.00	142.51	301				

WATER YEAR 1969
CHI RIVER BASIN

Huai Prong Khun Phet at Ban Nong Bua Noi, Chaiyaphum (E_{35})

Location: Lat. 15°-45'-00" N., Long. 101°-40'-30" E., on left bank about 2 kilometers upstream from confluence with Lam Krachuan, Ban Nong Bua Noi, Amphoe Chatturat, Chaiyaphum.

Drainage Area: 457 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Near automatic gage building

Elevation: + 5.637 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1968-1972

Rating Operation:

Period of Rating: 1968-1971

Rated by Float: -

Rated by Current Meter: 1968-1971

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

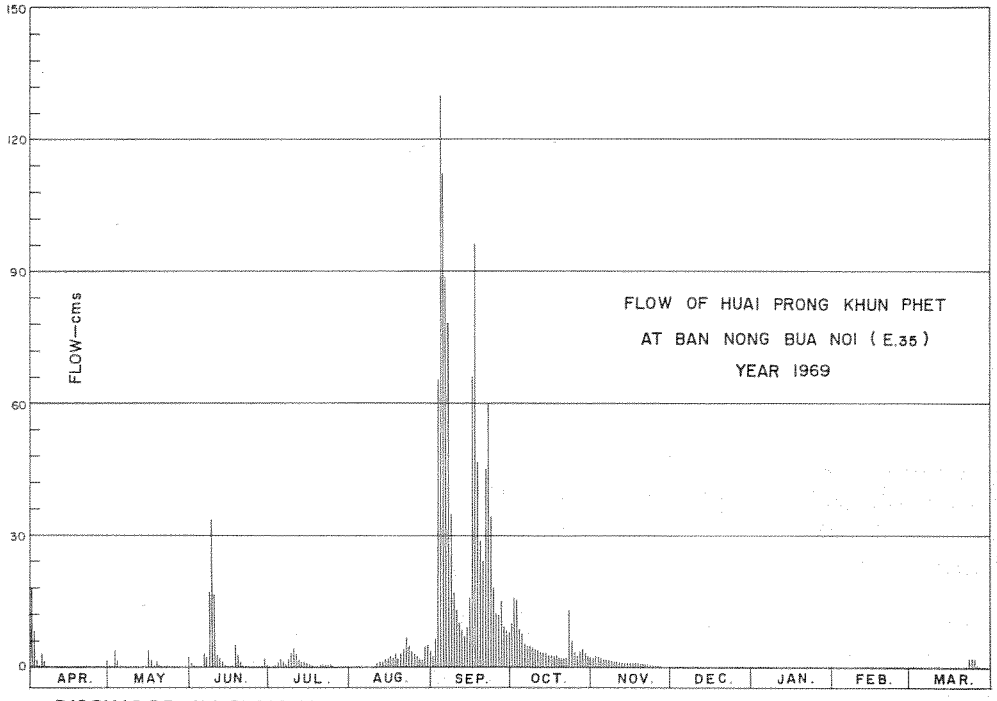
Remarks: * Mean hourly discharge September 2-10.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.33	0.76	0.85	0.69	0.74	1.00	1.22	0.98	0.77	0.58	0.52	0.50
2	.12	.67	.79	.70	.73	*0.97	.31	1.00	.75	.57	.52	.49
3	0.86	1.04	.67	.67	.72	*2.27	.28	0.98	.75	.57	.52	.49
4	.78	0.85	.61	.92	.71	*4.85	.16	.96	.75	.57	.52	.48
5	1.01	.79	.69	.94	.71	* .20	.14	.95	.73	.57	.52	.48
6	0.83	0.78	1.02	0.90	0.71	*3.19	1.10	0.94	0.73	0.56	0.52	0.48
7	.69	.70	0.93	.85	.71	*2.03	.08	.94	.72	.56	.51	.48
8	.62	.63	1.35	.94	.70	*1.46	.08	.93	.72	.56	.51	.48
9	.58	.57	.56	1.03	.70	* .28	.07	.92	.70	.56	.51	.47
10	.56	.55	.16	.06	.72	* .25	.05	.92	.69	.56	.51	.47
11	0.55	0.54	0.96	0.98	0.90	1.19	1.04	0.91	0.68	0.56	0.51	0.46
12	.57	.53	.89	.91	.92	.17	.02	.90	.68	.56	.51	.45
13	.62	.53	.87	.89	.91	.13	.02	.90	.67	.56	.51	.44
14	.57	.52	.81	.90	.96	.17	.01	.90	.67	.56	.51	.44
15	.55	.71	.78	.88	1.09	.25	1.00	.89	.66	.55	.51	.44
16	0.54	1.04	0.74	0.86	1.00	2.89	1.00	0.89	0.65	0.55	0.51	0.43
17	.53	0.89	.74	.83	0.96	3.89	0.99	.89	.65	.55	.51	.43
18	.52	.79	1.08	.81	1.02	1.63	.98	.89	.65	.55	.51	.42
19	.53	.91	0.96	.82	.93	.48	.97	.88	.64	.55	.51	.41
20	.61	.79	.85	.86	1.04	.40	.96	.88	.64	.54	.51	.40
21	0.55	0.67	0.78	0.87	1.06	1.77	0.96	0.86	0.63	0.54	0.51	0.42
22	.54	.69	.71	.85	.13	2.24	.97	.85	.62	.54	.51	.53
23	.53	.66	.67	.84	.06	1.47	1.26	.85	.62	.54	.51	.94
24	.61	.59	.66	.84	.04	.32	.09	.84	.61	.53	.51	.89
25	.56	.57	.66	.81	.02	.24	.02	.83	.61	.53	.50	.72
26	0.54	0.56	0.70	0.78	0.98	1.24	1.00	0.81	0.61	0.53	0.50	0.63
27	.53	.55	.65	.78	.95	.28	.04	.80	.61	.53	.50	.59
28	.52	.54	.68	.77	.94	.18	.05	.80	.59	.53	.50	.57
29	.65	.52	.95	.75	1.08	.16	.01	.79	.59	.53		.55
30	.88	.61	.79	.74	.08	.15	0.99	.79	.59	.52		.55
31		.96		.75	.05		.98		.58	.52		.55
Mean	0.66	0.69	0.85	0.84	0.91	1.79	1.06	0.89	0.66	0.55	0.51	0.52
Max.	1.33	1.04	1.93	1.06	1.93	4.85	1.31	1.00	0.77	0.58	0.52	0.94
Min.	0.52	0.52	0.61	0.67	0.70	0.97	0.96	0.79	0.58	0.52	0.50	0.40

WATER YEAR 1969 : Max. 4.85 m. Min. 0.40 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	18	0.32	0.85	0.18	0.28	2.80	11	2.50	0.34	0.040	0.010	0.00
2	6.52	0.15	0.38	0.20	0.26	*2.42	16	2.80	0.30	0.035	0.010	
3	0.94	3.92	0.15	0.15	0.24	*56	15	2.50	0.30	0.035	0.010	
4	0.36	0.85	0.065	1.60	0.22	*130	8.36	2.20	0.30	0.035	0.010	
5	3.08	0.38	0.185	1.90	0.22	*105	7.44	2.05	0.26	0.035	0.010	
6	0.67	0.36	3.36	1.30	0.22	*80	5.60	1.90	0.26	0.030	0.010	
7	0.18	0.20	1.75	0.85	0.22	*54	5.04	1.90	0.24	0.030	0.005	
8	0.080	0.095	19	1.90	0.20	*27	5.04	1.75	0.24	0.030	0.005	
9	0.040	0.035	34	3.64	0.20	*15	4.76	1.60	0.20	0.030	0.005	
10	0.030	0.025	8.36	4.48	0.24	*13	4.20	1.60	0.18	0.030	0.005	
11	0.025	0.020	2.20	2.50	1.30	9.74	3.92	1.45	0.17	0.030	0.005	
12	0.035	0.015	1.21	1.45	1.60	8.82	3.36	1.30	0.17	0.030	0.005	
13	0.080	0.015	1.03	1.21	1.45	6.98	3.36	1.30	0.15	0.030	0.005	
14	0.035	0.010	0.49	1.30	2.20	8.82	3.08	1.30	0.15	0.030	0.005	
15	0.025	0.22	0.36	1.12	5.32	13	2.80	1.21	0.14	0.025	0.005	
16	0.020	3.92	0.28	0.94	2.80	73	2.80	1.21	0.12	0.025	0.005	
17	0.015	1.21	0.28	0.67	2.20	96	2.65	1.21	0.12	0.025	0.005	
18	0.010	0.38	5.04	0.49	3.36	39	2.50	1.21	0.12	0.025	0.005	
19	0.015	1.45	2.20	0.58	1.75	28	2.35	1.12	0.11	0.025	0.005	
20	0.065	0.38	0.85	0.94	3.92	22	2.20	1.12	0.11	0.020	0.005	
21	0.025	0.15	0.36	1.03	4.48	53	2.20	0.94	0.095	0.020	0.005	0.00
22	0.020	0.18	0.22	0.85	6.98	60	2.35	0.85	0.080	0.020	0.005	0.015
23	0.015	0.14	0.15	0.76	4.48	27	13	0.85	0.080	0.020	0.005	1.90
24	0.065	0.04	0.14	0.76	3.92	17	5.32	0.76	0.065	0.015	0.005	1.21
25	0.030	0.03	0.14	0.49	3.36	12	3.36	0.67	0.065	0.015	0.00	0.24
26	0.020	0.03	0.20	0.36	2.50	12	2.80	0.49	0.065	0.015	0.00	0.095
27	0.015	0.025	0.12	0.36	2.05	15	3.92	0.40	0.065	0.015	0.00	0.045
28	0.010	0.020	0.17	0.34	1.90	9.28	4.20	0.40	0.045	0.015	0.00	0.035
29	0.12	0.010	2.05	0.30	5.04	8.36	3.08	0.38	0.045	0.015		0.025
30	1.12	0.065	0.38	0.28	5.04	7.90	2.65	0.38	0.045	0.010		0.025
31		2.20		0.30	4.20		2.50		0.040	0.010		0.025
Total	31.665	16.845	85.970	33.23	72.150	1,012.12	156.84	39.35	4.67	0.765	0.150	3.615
Mean	1.05	0.54	2.86	1.07	2.33	33.7	5.06	1.31	0.15	0.025	0.005	0.117
Max.	18	3.92	34	4.48	6.98	130	16	2.80	0.34	0.040	0.010	1.90
Min.	0.010	0.010	0.065	0.15	0.20	2.42	2.20	0.38	0.040	0.010	0.00	0.00
Runoff - mcm.	2.736	1.455	7.428	2.871	6.234	87.447	13.551	3.400	0.403	0.066	0.013	0.312

WATER YEAR 1969 : Max. 130 Min. 0.00 Mean 3.99 Annual Runoff 125.916 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 4	13.00	5.18	142				

WATER YEAR 1969
CHI RIVER BASIN

Lam Krachuan at Ban Nong Bua Raheo, Chaiyaphum (E_{36})

Location: Lat. 15°-44'-10" N., Long. 101°-41'-01" E., on left bank about 2 kilometers upstream from confluence with Huai Prong Khun Phet, at Ban Nong Bua Raheo, Amphoe Chatturat, Chaiyaphum.

Drainage Area: 296 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. E 36

- **Location:** Infront of E36 Station office
- **Elevation:** + 6.864 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1968-1972

Rating Operation:

- **Period of Rating:** 1968-1970
- **Rated by Float:** -
- **Rated by Current Meter:** 1968-1970

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

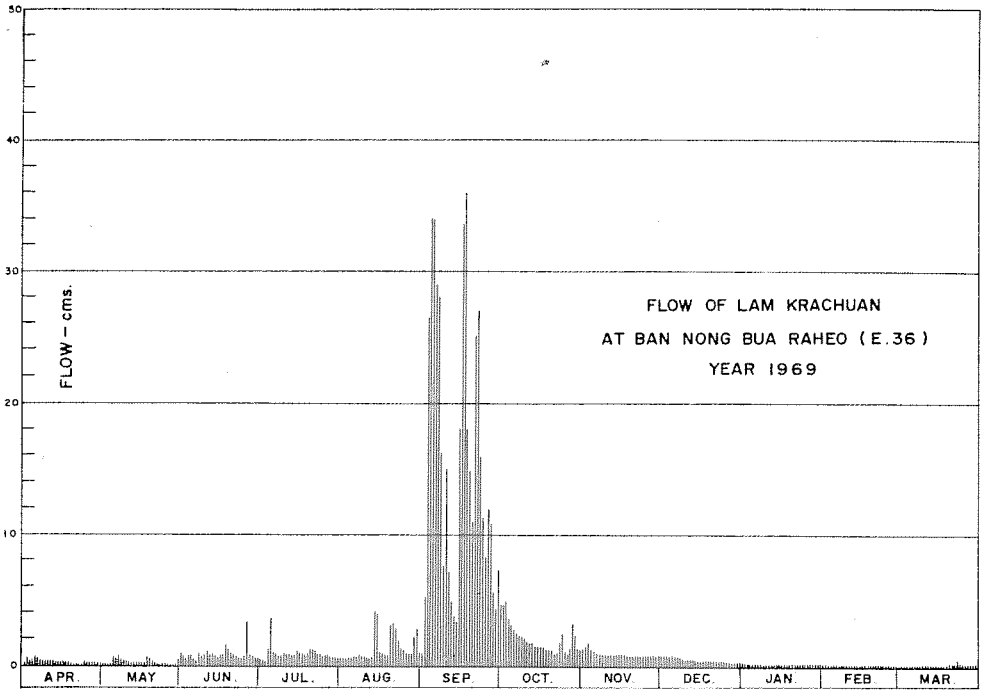
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by man-made channel obstructions. No adjustment made for virgin flow.

Remarks: * Mean hourly discharge September 2-9, 14-25. Discharge record for periods of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1		0.27	0.39	0.34	0.35	0.40	0.54	0.41	0.38	0.31	0.27	0.11
2	0.35	.26	.36	.33	.35	* .39	.54	.42	.37	.30	.27	.10
3	.32	.26	.33	.32	.35	*1.98	.55	.43	.37	.30	.27	.07
4	.33	.28	.38	.41	.35	*4.22	.50	.41	.37	.30	.23	.07
5	.36	.36	.36	.50	.36	* .26	.48	.41	.37	.30	.19	.05
6	0.34	0.35	0.33	0.40	0.37	*3.60	0.47	0.40	0.36	0.30	0.18	0.04
7	.33	.37	.33	.39	.36	* .37	.46	.40	.36	.30	.18	
8	.31	.34	.39	.38	.37	*1.09	.45	.39	.36	.30	.16	
9	.31	.32	.63	.38	.36	*0.64	.45	.39	.35	.29	.15	
10	.31	.32	.64	.40	.36	.88	.44	.39	.34	.29	.14	
11	0.31	0.31	0.41	0.39	0.35	0.64	0.43	0.39	0.34	0.29	0.14	
12	.31	.30	.38	.38	.35	.56	.43	.39	.34	.29	.13	
13	.30	.30	.37	.38	.37	.51	.43	.39	.34	.29	.12	
14	.30	.30	.36	.37	.52	* .49	.42	.39	.34	.29	.12	
15	.30	.30	.35	.41	.51	* .56	.42	.39	.33	.29	.13	
16	0.30	0.30	0.37	0.40	0.40	*3.85	0.42	0.39	0.33	0.28	0.24	
17	.29	.29	.36	.39	.39	*4.50	.42	.39	.33	.28	.27	
18	.29	.36	.42	.38	.39	*1.76	.41	.38	.33	.29	.27	
19	.23	.34	.41	.39	.38	*0.94	.41	.38	.32	.29	.23	
20	.17	.32	.39	.41	.48	* .71	.41	.38	.32	.29	.20	
21	0.10	0.31	0.37	0.41	0.49	*2.61	0.40	0.38	0.32	0.29	0.16	0.28
22	.08	.30	.36	.41	.47	*3.24	.40	.38	.32	.28	.14	.28
23	.17	.30	.35	.39	.44	*1.26	.43	.38	.32	.28	.13	.34
24	.31	.29	.34	.39	.41	*0.79	.46	.38	.32	.28	.11	.29
25	.30	.29	.36	.38	.41	* .66	.41	.37	.32	.28	.11	.28
26	0.29	0.29	0.49	0.38	0.40	0.77	0.40	0.38	0.31	0.28	0.11	0.28
27	.29	.29	.39	.37	.40	.74	.42	.39	.31	.28	.11	.28
28	.28	.26	.37	.36	.39	.54	.49	.38	.31	.28	.11	.28
29	.28	.30	.35	.36	.45	.53	.45	.37	.31	.28		.28
30	.28	.31	.34	.36	.47	.63	.41	.37	.31	.28		.28
31		.34		.35	.40		.41		.31	.28		.28
Mean	0.28	0.30	0.38	0.38	0.40	1.57	0.44	0.39	0.38	0.28	0.17	0.11
Max.	0.36	0.37	0.64	0.50	0.52	4.50	0.54	0.43	0.38	0.31	0.27	0.34
Min.	0.08	0.26	0.33	0.32	0.35	0.39	0.40	0.37	0.31	0.28	0.11	0.04

WATER YEAR 1969 : Max. 4.50 m. Min. 0.04 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.14	0.92	0.52	0.60	1.00	4.72	1.26	0.84	0.28	0.14	0.00
2	0.60	0.12	0.68	0.44	0.60	*0.95	4.72	1.52	0.76	0.20	0.14	
3	0.36	0.12	0.44	0.36	0.60	*18	5.00	1.78	0.76	0.20	0.14	
4	0.44	0.16	0.84	1.26	0.60	*34	3.60	1.26	0.76	0.20	0.06	
5	0.68	0.68	0.68	3.60	0.68	*34	3.08	1.26	0.76	0.20	0.00	
6	0.52	0.60	0.44	1.00	0.76	*29	2.82	1.00	0.68	0.20		
7	0.44	0.76	0.44	0.92	0.68	*28	2.56	1.00	0.68	0.20		
8	0.28	0.52	0.92	0.84	0.76	*14	2.30	0.92	0.68	0.20		
9	0.28	0.36	7.40	0.84	0.68	*7.73	2.30	0.92	0.60	0.18		
10	0.28	0.36	7.70	1.00	0.68	15	2.04	0.92	0.52	0.18		
11	0.28	0.28	1.26	0.92	0.60	7.70	1.78	0.92	0.52	0.18		
12	0.28	0.24	0.84	0.84	0.60	5.28	1.78	0.92	0.52	0.18		
13	0.20	0.20	0.76	0.84	0.76	3.88	1.78	0.92	0.52	0.18		
14	0.20	0.20	0.68	0.76	4.16	*3.48	1.52	0.92	0.52	0.18		
15	0.20	0.20	0.60	1.26	3.88	*4.81	1.52	0.92	0.44	0.18	0.00	
16	0.20	0.20	0.76	1.00	1.00	*32	1.52	0.92	0.44	0.16	0.08	
17	0.18	0.18	0.68	0.92	0.92	*36	1.52	0.92	0.44	0.16	0.14	
18	0.18	0.68	1.52	0.84	0.92	*18	1.26	0.84	0.44	0.18	0.14	
19	0.06	0.52	1.26	0.92	0.84	*14	1.26	0.84	0.36	0.18	0.06	
20	0.00	0.36	0.92	1.26	3.08	*11	1.26	0.84	0.36	0.18	0.00	0.00
21	0.00	0.28	0.76	1.26	3.34	*24	1.00	0.84	0.36	0.18		0.16
22	0.00	0.20	0.68	1.26	2.82	*27	1.00	0.84	0.36	0.16		0.16
23	0.00	0.20	0.60	0.92	2.04	*16	1.78	0.84	0.36	0.16		0.52
24	0.28	0.18	0.52	0.92	1.26	*12	2.56	0.84	0.36	0.16		0.18
25	0.20	0.18	0.68	0.84	1.26	*8.42	1.26	0.76	0.36	0.16		0.16
26	0.18	0.18	3.34	0.84	1.00	12	1.00	0.84	0.28	0.16		0.16
27	0.18	0.18	0.92	0.76	1.00	11	1.52	0.92	0.28	0.16		0.16
28	0.16	0.12	0.76	0.68	0.92	4.72	3.34	0.84	0.28	0.16	0.00	0.16
29	0.16	0.20	0.60	0.68	2.30	4.44	2.30	0.76	0.28	0.16	–	0.16
30	0.16	0.28	0.52	0.68	2.82	7.40	1.26	0.76	0.28	0.16	–	0.16
31		0.52		0.60	1.00		1.26		0.28	0.16	–	0.16
Total	6.98	9.36	39.12	29.78	43.16	444.81	66.62	29.04	15.08	5.58	0.90	2.14
Mean	0.23	0.301	1.30	0.96	1.39	14.8	2.14	0.97	0.49	0.18	0.03	0.07
Max.	0.68	0.76	7.70	3.60	4.16	36	5.00	1.78	0.84	0.28	0.14	0.52
Min.	0.00	0.12	0.44	0.36	0.60	0.95	1.00	0.76	0.28	0.16	0.00	0.00
Runoff - mcm.	0.603	0.809	3.380	2.573	3.729	38.431	5.756	2.509	1.303	0.482	0.078	0.185

WATER YEAR 1969 : Max. 36 Min. 0.00 Mean 1.90 Annual Runoff 59.838 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 17	06.00	5.64	45				

WATER YEAR 1969
CHI RIVER BASIN

Nam Yang at Ban Chom Thong, Kalasin (E_{46})

Location: Lat. 16°-36'-06" N., Long. 103°-58'-01" E., on right bank at the bridge on Somdet - Kuchinarai road, Tambon Ban Chom Thong, Amphoe Kuchinarai, Kalasin.

Drainage Area: 502 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: -

Location: -

Elevation: -

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1968-1971

Rating Operation:

Period of Rating: 1969-1971

Rated by Float: -

Rated by Current Meter: 1969-1971

Stability of Channel Regimes: Stable, no shifting adjustment but overbank flow is included for flow computation.

Overbank Flow Conditions: Overbank flow at elevation about + 2.60 m. (A.D.)

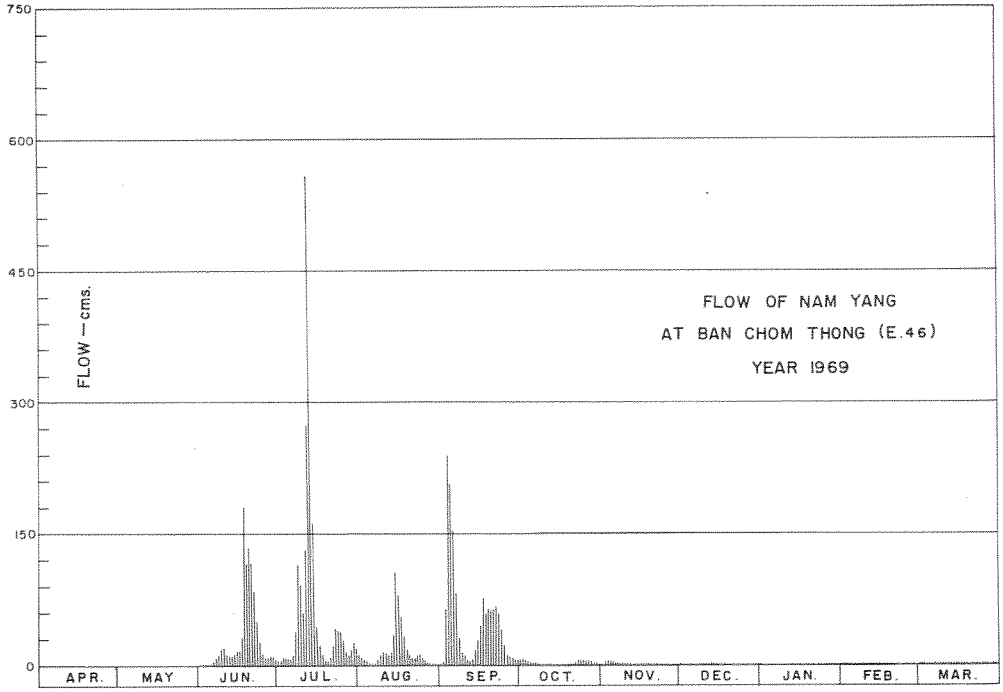
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversions above gage site for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Stream gaging station began on June 1, 1969.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			-0.58	0.85	2.16	-0.12	1.48	0.03	-0.67	-0.67	-0.62	-0.58
2			-0.40	.91	1.25	-0.25	.37	.42	-0.67	-0.68	-0.57	-0.60
3	Stream gaging		-0.35	1.64	0.89	3.03	0.89	1.07	-0.67	-0.67	-0.55	-0.60
4	began on June 1, 69		-0.46	.62	.77	4.07	0.50	0.83	-0.67	-0.58	-0.52	-0.60
5			-0.61	.66	.47	3.98	.36	.58	-0.67	-0.58	-0.61	-0.53
6			0.56	1.59	0.21	3.79	0.04	0.39	-0.66	-0.58	-0.67	-0.50
7			1.48	2.39	.08	.47	-0.10	.27	-0.68	-0.58	-0.67	-0.54
8			2.03	3.32	1.08	.12	-0.20	.13	-0.63	-0.57	-0.67	-0.50
9			.75	.74	2.24	2.56	-0.20	0.00	-0.63	-0.49	-0.59	-0.48
10			.75	.61	.62	1.69	-0.20	-0.14	-0.56	-0.47	-0.65	-0.47
11			2.34	3.36	2.48	1.08	-0.26	-0.27	-0.58	-0.46	-0.62	-0.32
12			1.82	4.32	.17	0.77	-0.32	-0.36	-0.55	-0.51	-0.66	-0.25
13			.81	.31	.44	1.87	-0.38	-0.40	-0.59	-0.52	-0.65	-0.26
14			2.26	3.81	3.14	2.89	-0.43	-0.44	-0.57	-0.55	-0.60	-0.29
15			.59	.50	.71	3.07	-0.48	-0.49	-0.53	-0.55	-0.60	-0.32
16			2.67	3.19	3.58	3.39	-0.49	-0.51	-0.53	-0.54	-0.66	-0.33
17			3.14	2.73	.37	.58	-0.49	-0.52	-0.58	-0.59	-0.59	-0.35
18			.94	1.83	.12	.42	-0.51	-0.53	-0.59	-0.56	-0.57	-0.35
19			.73	.12	2.69	.51	-0.38	-0.53	-0.61	-0.61	-0.59	-0.32
20			.81	.01	1.89	.47	-0.27	-0.55	-0.65	-0.57	-0.62	-0.32
21			3.74	1.87	1.41	3.50	0.08	-0.57	-0.67	-0.60	-0.50	-0.32
22			.56	2.94	.64	.52	0.51	-0.59	-0.64	-0.60	-0.59	-0.32
23			.34	3.26	2.41	.40	0.78	-0.57	-0.64	-0.62	-0.51	-0.33
24			.05	.23	.31	.17	0.56	-0.65	-0.66	-0.58	-0.47	-0.34
25			2.45	.19	1.67	2.78	0.55	-0.66	-0.67	-0.56	-0.49	-0.35
26			1.47	3.02	0.80	2.20	0.65	-0.63	-0.67	-0.56	-0.48	-0.36
27			.58	2.49	.31	1.88	.59	-0.60	-0.69	-0.59	-0.48	-0.37
28			2.27	.10	.12	.55	.46	-0.53	-0.67	-0.59	-0.52	-0.37
29			1.84	.77	.07	.22	.33	-0.60	-0.68	-0.61		-0.38
30			.25	.99	.13	.07	.23	-0.61	-0.68	-0.62		-0.38
31				.82	.05		.11		-0.67	-0.61		-0.19
Mean			1.99	2.62	1.65	2.56	0.15	-0.23	-0.63	-0.57	-0.58	-0.39
Max.			3.94	4.32	3.71	4.07	1.48	1.07	-0.53	-0.46	-0.47	-0.19
Min.			-0.61	0.85	0.05	-0.25	-0.51	-0.66	-0.69	-0.68	-0.67	-0.60

WATER YEAR 1969 : Max. 4.32 m. Min. m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			0.12	*4.53	11	0.96	7.50	1.29	0.03	0.03	0.08	0.12
2			0.40	*4.84	6.35	*0.70	6.95	2.78	0.03	0.02	0.13	0.10
3	Stream gaging began		0.50	*8.34	4.66	*69	4.66	5.45	0.03	0.03	0.15	0.10
4	on June 1, 1969.		0.28	*8.21	4.18	*239	3.10	4.42	0.03	0.12	0.18	0.10
5			0.09	*8.41	2.98	*197	2.54	3.42	0.03	0.12	0.09	0.17
6			3.34	*8.07	1.94	*129	1.32	2.66	0.04	0.15	0.03	0.20
7			7.50	*14	1.44	*63	1.00	2.18	0.02	0.12	0.03	0.16
8			11	*53	5.50	*33	0.80	1.62	0.07	0.13	0.03	0.20
9			18	*114	12	*16	0.80	1.20	0.07	0.22	0.11	0.24
10			18	*85	15	*9.21	0.80	0.92	0.14	0.26	0.05	0.26
11			13	*51	14	*5.53	0.68	0.66	0.12	0.28	0.08	0.56
12			9.22	*558	11	*4.20	0.56	0.48	0.15	0.19	0.04	0.70
13			9.16	*405	13	9.52	0.44	0.40	0.11	0.18	0.05	0.68
14			12	*135	34	22	0.34	0.32	0.13	0.15	0.10	0.62
15			14	*67	105	30	0.24	0.22	0.17	0.15	0.10	0.56
16			16	*37	77	52	0.22	0.19	0.17	0.16	0.04	0.54
17			34	*19	51	77	0.22	0.18	0.12	0.11	0.11	0.50
18			180	*9.43	33	56	0.19	0.17	0.11	0.14	0.13	0.50
19			111	*5.73	16	65	0.44	0.17	0.09	0.09	0.11	0.56
20			133	*5.14	9.64	61	0.66	0.15	0.05	0.13	0.08	0.56
21			113	9.52	7.15	64	1.44	0.13	0.03	0.10	0.20	0.56
22			74	24	8.30	68	3.14	0.11	0.06	0.10	0.22	0.56
23			48	42	13	53	4.22	0.13	0.06	0.08	0.19	0.54
24			29	39	12	35	3.34	0.05	0.04	0.12	0.26	0.52
25			13	37	8.45	19	3.30	0.04	0.03	0.14	0.22	0.50
26			7.45	28	4.30	12	3.70	0.07	0.03	0.14	0.24	0.48
27			8.00	14	2.34	9.58	3.46	0.10	0.01	0.11	0.24	0.46
28			12	11	1.58	7.85	2.94	0.17	0.03	0.11	0.18	0.46
29			9.34	18	1.41	6.20	2.42	0.10	0.02	0.09		0.44
30			6.35	26	1.62	5.45	2.02	0.09	0.02	0.08		0.44
31				19	1.35		1.54		0.03	0.09		0.82
Total			910.75	1,868.22	486.24	1,419.20	64.98	29.87	2.07	3.94	3.47	13.21
Mean			30.3	60.3	15.7	47.3	2.10	0.996	0.067	0.13	0.124	0.43
Max.			180	558	105	239	7.50	5.45	0.17	0.28	0.26	0.82
Min.			0.09	4.53	1.35	0.70	0.19	0.04	0.01	0.02	0.03	0.10
Runoff - mcm.			78.689	161.414	42.011	122.619	5.614	2.581	0.179	0.340	0.300	1.141

WATER YEAR 1969 : Max. 558 Min. Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
July 12	17.00	5.00	1,094				

WATER YEAR 1969
CHI RIVER BASIN

Lam Chi Long at Ban Kut Yang, Chaiyaphum (E_{49})

Location: Lat. 15°-49'-31" N., Long. 101°-51'-01" E., on left bank at Ban Kut Yang, Amphoe Ban Khwao, Chaiyaphum.

Drainage Area: 265 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 196.394 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: About 20 meter south-east of E. 49 Station office.

Elevation: + 205.115 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1967-1970

Rated by Float: -

Rated by Current Meter: 1967-1970

Stability of Channel Regimes: Rather stable, no shifting adjustment but overbank flow is included for flow computation.

Overbank Flow Conditions: Overbank flow at elevation about + 202.75 m. (M.S.L.)

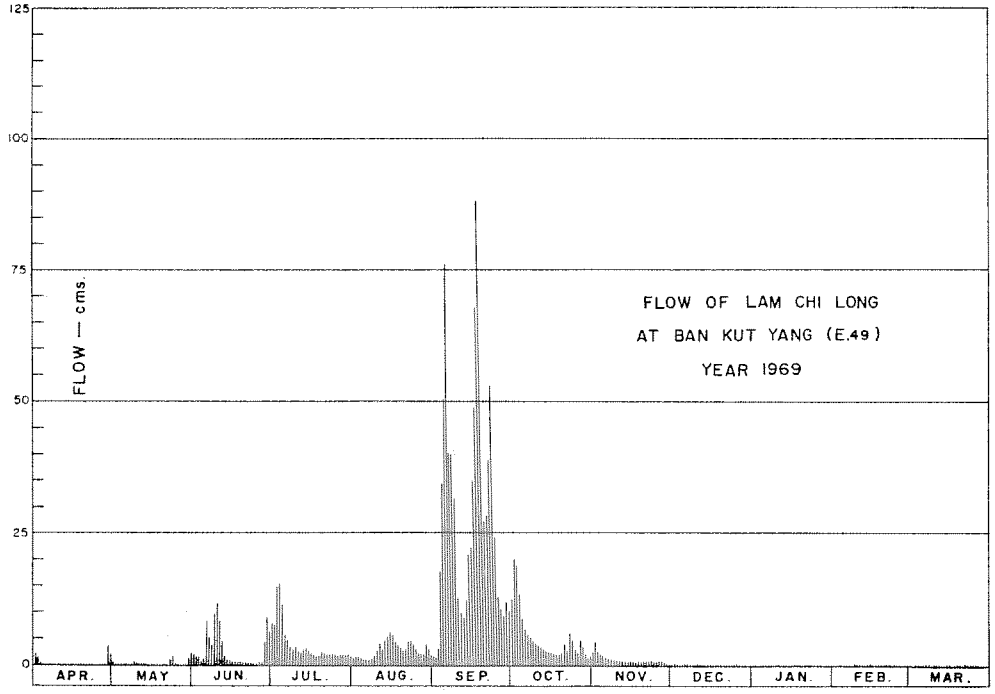
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. River stage is effected by man-made channel obstructions. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	200.22	199.08	199.98	202.01	199.84	199.98	202.52	200.68	199.26	198.92	198.97	198.93
2	.13	198.93	.96	201.89	.89	.88	.89	201.22	.23	.97	.96	.93
3	199.24	.89	200.04	202.73	200.06	201.32	.85	200.35	.22	.91	.92	.93
4	.11	.87	199.44	.73	199.86	203.23	.33	.09	.22	.93	.87	.93
5	.00	.87	.95	.14	.74	.43	.00	199.93	.16	.93	.96	.93
6	198.95	198.84	202.04	201.53	199.69	203.18	201.73	199.80	199.16	198.89	198.88	198.93
7	.90	.81	201.19	.01	.65	.19	.50	.74	.16	.96	.86	.93
8	.89	.80	200.80	200.73	.70	.12	.33	.69	.17	.95	.89	.93
9	.88	199.59	202.33	.53	.97	202.75	.16	.65	.19	.93	.86	.93
10	.88	.29	.45	.77	200.53	.45	.00	.59	.16	.93	.86	.92
11	198.87	199.04	201.94	200.48	200.99	202.27	200.85	199.56	199.18	198.88	198.86	198.92
12	.86	198.93	200.65	.33	.55	.13	.73	.55	.16	.87	.85	.92
13	.84	.87	199.89	.64	201.32	.07	.60	.51	.15	.93	.83	.92
14	.78	.85	.58	.72	.43	.91	.51	.51	.14	.94	.84	.92
15	.75	.81	.43	.43	.66	.89	.42	.50	.14	.99	.84	.91
16	198.75	198.79	199.37	200.21	201.55	203.21	200.34	199.49	199.14	199.13	198.84	198.91
17	.79	.77	.37	.10	200.96	.49	.28	.46	.12	.18	.85	.91
18	.79	.77	.41	.00	.85	.29	.21	.43	.10	.17	.85	.90
19	.79	.81	.32	.15	.73	.05	.15	.41	.10	.13	.90	.90
20	.78	.81	.26	.45	.52	.03	.49	.40	.09	.03	.94	.89
21	198.77	198.85	199.22	200.16	200.54	203.06	200.99	199.41	199.08	199.04	198.94	198.89
22	.77	.77	.15	.06	201.21	.30	.44	.41	.05	.05	.95	.89
23	.77	199.80	.12	.17	.23	.20	201.64	.39	.08	198.98	.99	.93
24	.77	.96	.09	.16	200.92	202.91	.11	.36	.03	.99	199.00	.93
25	.79	.21	.11	.07	.50	.56	200.40	.33	.02	.96	.01	.92
26	198.79	199.04	199.34	199.97	200.29	202.37	200.16	199.34	199.00	199.01	199.00	198.90
27	.80	198.96	.17	.98	.30	.19	201.18	.33	198.95	198.95	198.97	.89
28	.82	.92	201.11	200.00	.23	.15	200.50	.32	199.04	.94	.92	.89
29	200.80	199.18	202.14	.07	.87	.39	.17	.29	198.95	.94		.89
30	199.52	.98	201.57	.06	.52	.26	199.99	.26	.93	199.07		.89
31		200.33		199.93	.14		200.04		.93	198.96		.88
Mean	199.03	199.08	200.18	200.65	200.52	202.57	200.98	199.63	199.11	198.98	198.91	198.91
Max.	200.80	200.33	202.45	202.73	201.66	203.49	202.89	201.22	199.26	199.18	199.01	198.93
Min.	198.75	198.77	199.09	199.93	199.65	199.88	199.99	199.26	198.93	198.87	198.83	198.88

WATER YEAR 1969 : Max. 203.49 m. Min. 198.75 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	2.14	0.28	1.66	*8.18	1.38	1.66	13	3.24	0.46	0.12	0.17	0.13
2	1.96	0.13	1.62	*7.50	1.48	1.46	20	4.86	0.43	0.17	0.16	0.13
3	0.44	0.09	1.78	*15	1.82	5.16	18	2.40	0.42	0.11	0.12	0.13
4	0.31	0.08	0.64	*15	1.42	*45	10	1.88	0.42	0.13	0.08	0.13
5	0.20	0.08	1.60	*9.22	1.18	*76	8.10	1.56	0.36	0.13	0.16	0.13
6	0.15	0.07	*8.42	5.82	1.08	*40	6.66	1.30	0.36	0.09	0.09	0.13
7	0.10	0.05	4.77	4.23	1.00	*40	5.70	1.18	0.36	0.16	0.08	0.13
8	0.09	0.05	3.60	3.39	1.10	*34	5.19	1.08	0.37	0.15	0.09	0.13
9	0.09	0.88	*10	2.79	1.64	*17	4.68	1.00	0.39	0.13	0.08	0.13
10	0.09	0.49	*12	3.51	2.79	*12	4.20	0.88	0.36	0.13	0.08	0.12
11	0.08	0.24	*7.77	2.66	4.17	*10	3.75	0.82	0.38	0.09	0.08	0.12
12	0.08	0.13	3.15	2.36	2.85	*9.14	3.39	0.80	0.36	0.08	0.07	0.12
13	0.07	0.08	1.48	3.12	5.16	*8.66	3.00	0.72	0.35	0.13	0.06	0.12
14	0.04	0.07	0.86	3.36	5.49	*21	2.73	0.72	0.34	0.14	0.07	0.12
15	0.02	0.05	0.63	2.56	6.34	*21	2.54	0.70	0.34	0.19	0.07	0.11
16	0.02	0.04	0.57	2.12	5.90	*43	2.38	0.69	0.34	0.33	0.07	0.11
17	0.04	0.03	0.57	1.90	4.08	*88	2.26	0.66	0.32	0.38	0.07	0.11
18	0.04	0.03	0.61	1.70	3.75	*52	2.12	0.63	0.30	0.37	0.07	0.10
19	0.04	0.05	0.52	2.00	3.39	*29	2.00	0.61	0.30	0.33	0.10	0.10
20	0.04	0.05	0.46	2.60	2.76	*27	2.68	0.60	0.29	0.23	0.14	0.09
21	0.03	0.07	0.42	2.02	2.82	*29	4.17	0.61	0.28	0.24	0.14	0.09
22	0.03	0.03	0.35	1.82	4.83	*53	2.58	0.61	0.25	0.25	0.15	0.09
23	0.03	1.30	0.32	2.04	4.89	*41	6.26	0.59	0.28	0.18	0.19	0.13
24	0.04	1.62	0.29	2.02	3.96	*21	4.53	0.56	0.23	0.19	0.20	0.13
25	0.04	0.41	0.31	1.84	2.70	*14	2.50	0.53	0.22	0.16	0.21	0.12
26	0.04	0.24	0.54	1.64	2.28	*12	2.02	0.54	0.20	0.21	0.20	0.10
27	0.05	0.16	0.37	1.66	2.30	*9.62	4.74	0.53	0.15	0.15	0.17	0.09
28	0.06	0.12	4.53	1.70	2.16	*9.30	2.70	0.52	0.23	0.14	0.12	0.09
29	3.60	0.38	9.22	1.84	3.81	*12	2.04	0.49	0.15	0.24		0.09
30	0.74	1.66	5.98	1.82	2.76	*10	1.68	0.46	0.13	0.27		0.09
31		2.36		1.56	1.98		1.78		0.13	0.16		0.09
Total	10.70	11.32	85.04	118.98	93.27	792.00	157.38	31.77	9.50	5.68	3.29	3.50
Mean	0.36	0.36	2.83	3.84	3.01	26.4	5.08	1.06	0.31	0.18	0.12	0.11
Max.	2.14	2.36	12	15	6.34	88	20	4.86	0.46	0.38	0.21	0.13
Min.	0.02	0.03	0.29	1.56	1.00	1.46	1.68	0.46	0.13	0.08	0.06	0.09
Runoff – MCM.	0.924	0.978	7.347	10.280	8.058	68.429	13.598	2.745	0.821	0.491	0.284	0.320

WATER YEAR 1969 : Max. 88 Min. 0.02 Mean 3.62 Annual Runoff 114.258 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 17	16.00	203.53	97				

WATER YEAR 1969
CHI RIVER BASIN

Huai Yang at Ban Yang Khai, Chaiyaphum (E_{50})

Location: Lat. 15°-49'-32" N., Long. 101°-51'-58" E., on left bank at Ban Yang Khai, Tambon Ban Raeng, Amphoe Dan Khwao, Chaiyaphum.

Drainage Area: 41 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 198.61 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: Near the measuring line

Elevation: B.M. 1 + 206.196 m. (M.S.L.) B.M. 2 " 207.103 m. (M.S.L.)

Gage Reading Frequency: 3-time daily readings at 06.00, 12.00, and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 3 hourly readings.

Period of Available Gage Records: 1967-1971

Rating Operation:

Period of Rating: 1968-1970

Rated by Float: -

Rated by Current Meter: 1968-1970

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationsh used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

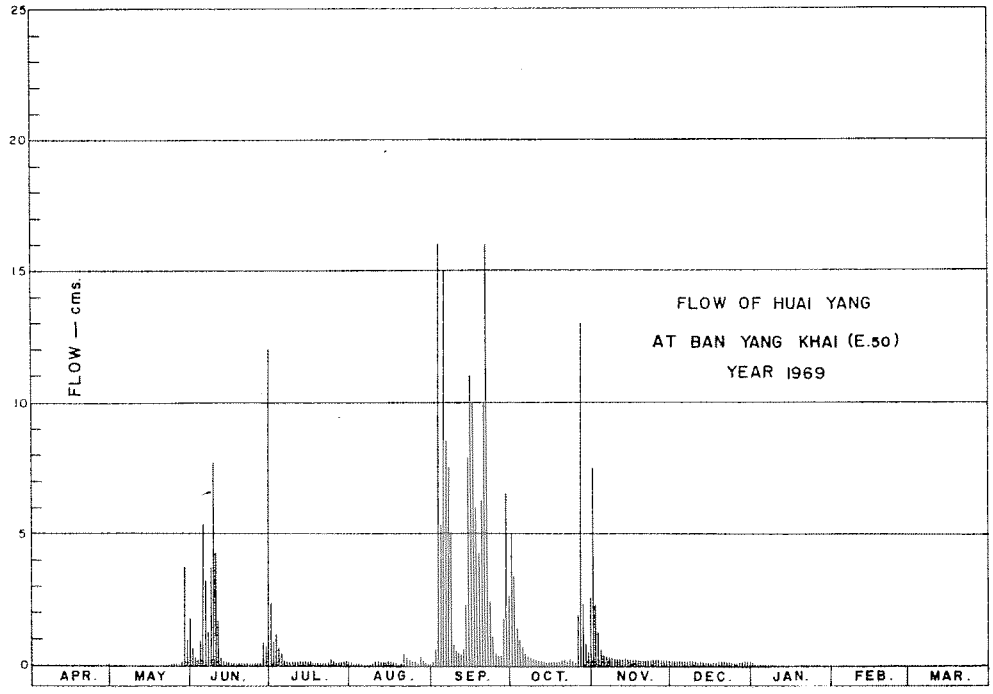
Remarks: Records for period of no flow are omitted.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1		199.88	200.50	201.07	200.13	200.11	201.76	202.11	200.18	200.01	199.80	
2		.88	.30	200.61	.10	.38	.33	201.24	.19	.01	.80	
3		.87	.21	.76	.09	203.27	200.84	200.74	.17	.01	.78	
4		.79	.51	.53	.09	201.76	.68	.49	.17	.00	.78	
5		.78	201.82	.43	.09	203.15	.57	.39	.17	.00	.76	
6		199.78	200.99	200.22	200.07	201.63	200.40	200.34	200.17	199.99	199.76	
7		.78	.60	.18	.07	202.17	.35	.29	.18	.98	.75	
8		.77	.98	.18	.08	201.18	.31	.29	.19	.97	.74	
9		.76	202.26	.18	.14	200.58	.28	.29	.20	.97	.73	
10		.75	201.24	.18	.24	.47	.25	.27	.16	.97	.72	
11		199.74	200.51	200.18	200.19	200.41	200.21	200.27	200.14	199.96	199.71	
12		.98	.27	.19	.17	.36	.19	.27	.17	.95	.71	
13		200.01	.22	.19	.15	.53	.18	.28	.15	.94	.70	
14		.01	.18	.19	.15	202.47	.18	.27	.14	.93	.70	
15		199.99	.15	.18	.21	.65	.17	.25	.13	.91	.69	
16		199.95	200.14	200.18	200.17	202.69	200.17	200.21	200.11	199.91	199.69	
17		.93	.14	.18	.15	201.94	.17	.21	.14	.89	.68	
18		.93	.12	.17	.14	.62	.16	.21	.09	.89	.68	
19		.89	.11	.16	.13	.77	.16	.19	.17	.89	.67	
20		.80	.09	.16	.15	202.64	.16	.17	.18	.89	.66	
21		199.77	200.09	200.16	200.45	203.45	200.24	200.17	200.15	199.88	199.65	
22		.82	.09	.15	.31	201.74	.19	.20	.13	.88	.65	
23		.87	.09	.14	.25	200.93	.30	.21	.12	.87	.63	
24		.94	.09	.33	.18	.60	.19	.21	.09	.86	.62	
25		200.05	.10	.23	.14	.43	.09	.21	.09	.86		
26		200.08	200.15	200.18	200.11	200.38	200.89	200.19	200.09	199.86		
27		.05	.15	.18	.37	.36	202.70	.19	.15	.85		
28		.16	.64	.18	.19	201.11	201.04	.19	.19	.84		
29		201.51	.51	.21	.16	202.07	200.63	.17	.20	.83		
30		200.62	202.97	.21	.14	201.17	.39	.17	.21	.82		
31		.96	-	.21	.13	-	.60	-	-	.81		
Mean		200.00	200.54	200.27	200.16	201.47	200.51	200.36	200.15	199.92		
Max.		201.51	201.82	201.07	200.45	203.45	202.70	202.11	200.21	200.01		
Min.		199.74	200.09	200.14	200.07	200.11	200.09	200.17	200.09	199.81		

WATER YEAR 1969 : Max. 203.45 m. Min. 199.74 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			0.55	2.06	0.08	0.06	5.03	7.54	0.13	0.005		
2			0.25	0.77	0.05	0.80	2.92	2.57	0.14	0.005		
3			0.16	1.15	0.04	16	1.34	1.07	0.12	0.005		
4			1.09	0.61	0.04	5.18	0.95	0.54	0.12			
5			5.38	0.44	0.04	15	0.67	0.37	0.12			
6			1.78	0.17	0.03	4.19	0.39	0.31	0.12			
7			0.74	0.13	0.03	7.45	0.32	0.24	0.13			
8			2.68	0.13	0.04	2.40	0.26	0.24	0.14			
9			7.68	0.13	0.09	0.69	0.23	0.24	0.15			
10			2.62	0.13	0.19	0.50	0.20	0.22	0.11			
11			0.57	0.13	0.14	0.41	0.16	0.22	0.09			
12		0.00	0.21	0.14	0.12	0.34	0.14	0.22	0.12			
13		0.005	0.17	0.14	0.10	0.98	0.13	0.23	0.10			
14		0.005	0.13	0.14	0.10	9.03	0.13	0.22	0.09			
15		0.000	0.10	0.13	0.16	11	0.12	0.20	0.08			
16			0.09	0.13	0.12	9.95	0.12	0.16	0.06			
17			0.09	0.13	0.10	5.81	0.12	0.16	0.09			
18			0.07	0.12	0.09	4.00	0.11	0.16	0.04			
19			0.06	0.11	0.08	5.18	0.11	0.14	0.12			
20			0.04	0.11	0.10	10	0.11	0.12	0.13			
21			0.04	0.11	0.47	16	0.19	0.12	0.10			
22			0.04	0.10	0.26	4.67	0.14	0.15	0.08			
23			0.04	0.09	0.20	1.60	0.25	0.16	0.07			
24		0.000	0.04	0.29	0.13	0.74	0.13	0.16	0.04			
25		0.025	0.05	0.18	0.09	0.44	0.05	0.16	0.04			
26		0.040	0.10	0.13	0.06	0.37	3.02	0.14	0.04			
27		0.025	0.10	0.13	0.35	0.34	13	0.14	0.10			
28		0.11	0.85	0.13	0.14	2.95	1.93	0.14	0.14			
29		3.74	0.57	0.16	0.11	6.54	0.81	0.12	0.14			
30		0.80	12	0.16	0.09	2.41	0.38	0.12	0.15			
31		1.73	–	0.16	0.08	–	0.81	–	0.16			
Total		6.48	38.29	8.64	3.72	145.03	34.27	16.58	3.26	0.015		
Mean		0.21	1.28	0.28	0.12	4.83	1.10	0.55	0.10	0.00		
Max.		3.74	12	2.06	0.47	16	13	7.54	0.16	0.005		
Min.		0.000	0.04	0.09	0.03	0.06	0.05	0.12	0.04	0.00		
Runoff – mcm.		0.560	3.308	0.746	0.321	12.530	2.961	1.432	0.282	0.001		

WATER YEAR 1969 : Max. 16 Min. 0.0 Mean 0.70 Annual Runoff 22.143 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 27	09.00	204.03	34				

WATER YEAR 1968
CHI RIVER BASIN

Huai Lua at Ban Kaeng Kra-am, Kalasin (E_{52})

Location: Lat. 16°-46'-17" N., Long. 103°-49'-53" E., on right bank about 10 meters upstream from the bridge on Kalasin – Skon Nakhon road, and about 1 kilometer from Ban Kaeng Kra-Am, Amphoe Ban Somdet, Kalasin.

Drainage Area: 20 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S.

Location: About + 6.00 meters north of automatic gage building.

Elevation: + 7.654 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1969-1971

Rating Operation:

Period of Rating: 1969-1971

Rated by Float: –

Rated by Current Meter: 1969-1971

Stability of Channel Regimes: Rather stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

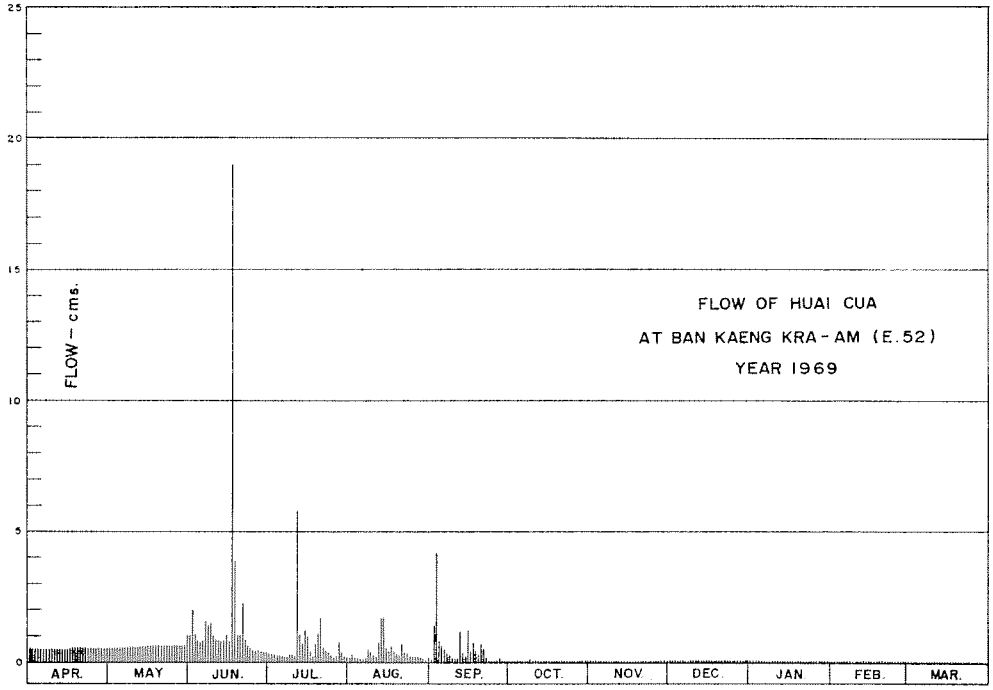
Remarks: * Mean hourly discharge June 16-20, July 9-14. Records for period of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.29	0.29	0.44	0.24	0.17	0.12	0.09	0.03	-0.15	-0.14	-0.13	-0.13
2	.29	.30	.63	.23	.22	.14	.07	.03	.15	.13	.13	.13
3	.29	.30	.43	.22	.18	.95	.07	-0.03	.15	.13	.13	.13
4	.29	.30	.39	.22	.16	.41	.06	.03	.15	.13	.13	.13
5	.29	.31	.36	.22	.14	.33	.05	.06	.15	.13	.13	.13
6	0.29	0.32	0.39	0.20	0.13	0.27	0.05	-0.08	-0.15	-0.13	-0.13	-0.13
7	.29	.32	.54	.19	.14	.26	.05	.09	.15	.13	.13	.13
8	.29	.32	.50	.19	.39	.22	.05	.09	.15	.13	.13	.13
9	.29	.32	.52	* .23	.28	.17	.12	.10	.15	.13	.13	.13
10	.29	.32	.42	* .23	.22	.16	.04	.11	.14	.13	.13	.13
11	0.29	0.32	0.40	*0.51	0.19	0.15	0.04	-0.12	-0.14	-0.13	-0.13	-0.13
12	.29	.32	.39	*1.03	.25	.47	.04	.13	.14	.13	.13	.13
13	.29	.32	.38	*0.47	.56	.24	.04	.14	.14	.13	.13	.13
14	.29	.33	.39	* .36	.57	.20	.04	.14	.14	.13	.13	.13
15	.29	.33	.44	.47	.31	.48	.04	.14	.14	.14	.13	.13
16	0.29	0.33	*0.38	0.44	0.27	0.28	0.04	-0.14	-0.14	-0.13	-0.13	-0.13
17	.30	.34	*3.12	.27	.34	.38	.04	.14	.14	.13	.13	.13
18	.30	.34	*1.02	.17	.25	.29	.04	.14	.14	.13	.13	.13
19	.30	.34	*0.56	.36	.22	.22	.04	.14	.14	.13	.13	.13
20	.30	.34	* .58	.44	.20	.36	.09	.14	.14	.13	.13	.13
21	0.30	0.34	0.66	0.56	0.37	0.32	0.10	-0.15	-0.14	-0.13	-0.13	-0.13
22	.30	.34	.40	.32	.25	.20	.03	.15	.14	.13	.13	.13
23	.30	.34	.33	.28	.26	.13	.04	.15	.14	.13	.13	.13
24	.30	.33	.30	.26	.20	.07	.11	.15	.14	.13	.13	.13
25	.29	.33	.28	.23	.18	.07	.08	.15	.14	.13	.13	.13
26	0.29	0.33	0.28	0.20	0.18	0.08	0.05	-0.15	-0.14	-0.13	-0.13	-0.13
27	.29	.33	.29	.19	.19	.16	.05	.15	.14	.13	.13	.13
28	.29	.34	.27	.38	.17	.06	.07	.15	.14	.13	.13	.13
29	.30	.34	.27	.27	.15	.05	.07	.15	.14	.13		.13
30	.30	.35	.26	.21	.13	.31	.08	.14	.14	.13		.13
31		.44		.18	.13		.08		.14	.13		.13
Mean	0.29	0.33	0.52	0.31	0.24	0.25	0.06	-0.12	-0.14	-0.13	-0.13	-0.13
Max.	0.30	0.35	3.12	1.03	0.57	0.95	0.12	0.03	-0.14	-0.13	-0.13	-0.13
Min.	0.29	0.29	0.26	0.17	0.13	0.05	0.03	-0.15	-0.15	-0.14	-0.13	-0.13

WATER YEAR 1969 : Max. 3.12 m. Min. -0.13 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.52	0.52	1.10	0.38	0.21	0.13	0.09	0.03				
2	0.52	0.55	2.08	0.35	0.32	0.16	0.07	0.03				
3	0.52	0.55	1.05	0.32	0.23	4.22	0.07	0.00				
4	0.52	0.55	0.88	0.32	0.20	0.92	0.06					
5	0.52	0.58	0.75	0.32	0.16	0.65	0.05					
6	0.52	0.68	0.88	0.26	0.15	0.46	0.05					
7	0.52	0.62	1.60	0.24	0.16	0.43	0.05					
8	0.52	0.62	1.40	0.24	0.52	0.32	0.05					
9	0.52	0.62	1.50	*0.35	0.49	0.21	0.13					
10	0.52	0.62	1.00	*0.34	0.32	0.20	0.04					
11	0.52	0.62	0.90	*0.28	0.24	0.18	0.04					
12	0.52	0.62	0.88	*5.84	0.40	1.25	0.04					
13	0.52	0.62	0.82	*1.26	1.70	0.38	0.04					
14	0.52	0.65	0.88	*0.75	1.75	0.26	0.04					
15	0.52	0.65	1.10	1.25	0.58	1.30	0.04					
16	0.52	0.65	*0.83	1.10	0.46	0.49	0.04					
17	0.55	0.68	*19	0.46	0.68	0.82	0.04					
18	0.55	0.68	*4.99	0.21	0.40	0.52	0.04					
19	0.55	0.68	*1.44	0.75	0.32	0.32	0.04					
20	0.55	0.68	1.80	1.10	0.26	0.75	0.09					
21	0.55	0.68	2.26	1.70	0.78	0.62	0.10					
22	0.55	0.68	0.90	0.62	0.40	0.26	0.03					
23	0.55	0.68	0.65	0.49	0.43	0.15	0.04					
24	0.55	0.65	0.55	0.43	0.26	0.07	0.11					
25	0.52	0.65	0.49	0.35	0.23	0.07	0.08					
26	0.52	0.65	0.49	0.26	0.23	0.08	0.05					
27	0.52	0.65	0.52	0.24	0.24	0.20	0.05					
28	0.52	0.68	0.46	0.82	0.21	0.06	0.07					
29	0.55	0.68	0.46	0.46	0.18	0.05	0.07					
30	0.55	0.71	0.43	0.29	0.15	0.58	0.08					
31		1.10		0.23	0.15		0.08					
Total	16.45	20.19	52.09	22.01	12.81	16.14	1.87					
Mean	0.53	0.65	1.74	0.71	0.41	0.54	0.06					
Max.	0.55	0.71	19	5.84	1.75	4.22	0.13					
Min.	0.52	0.52	0.43	0.21	0.15	0.05	0.03					
Runoff - mcm.	1.421	1.744	4.500	1.902	1.107	1.394	0.161					

WATER YEAR 1969 : Max. 19 Min. 0.00 Mean 0.387 Annual Runoff 12.231 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
June 17	06.00	3.87	39				

WATER YEAR 1969
CHI RIVER BASIN

Nam Yang at Ban Tha Kaeng Yao, Kalasin (E_{54})

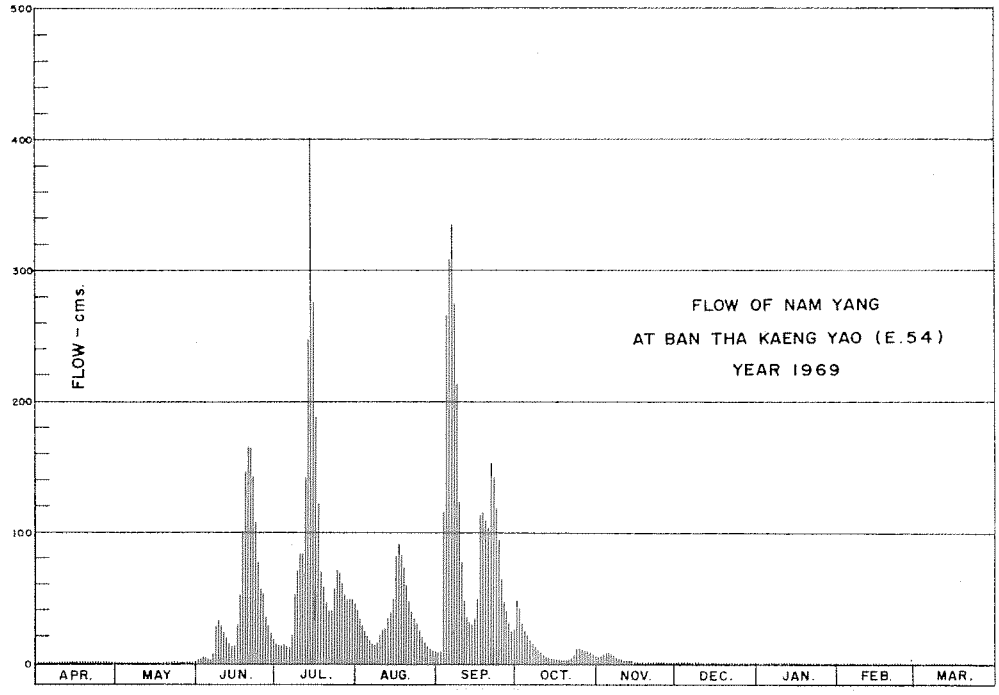
Location:	Lat. 15°-26'-29" N., Long. 104°-02'-07" E., on left bank at Ban Kaeng Yaa about 2 kilometers downstream proposed of USBR Damsite, Amphoe Kuchinarai, Kalasin.
Drainage Area:	847 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	BM. E54
Location:	About 40 meters from the left bank along the gage line.
Elevation:	+ 9.425 m. (A.D.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1969 to date
Rating Operation:	
Period of Rating:	1969 to date
Rated by Float:	-
Rated by Current Meter:	1969 to date
Stability of Channel Regimes:	Stable, no shifting adjustment but overbank flow is included for flow computation.
Overbank Flow Conditions:	Overbank flow at elevation about 7.72 m. (A.D.)
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversions above gage site for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.43	0.44	1.11	2.01	3.51	1.66	3.72	1.38	0.75	0.57	0.55	0.50
2	.43	.41	.11	1.99	.19	.59	.49	.43	.74	.56	.53	.48
3	.42	.41	.33	.96	2.82	5.78	.04	.53	.72	.57	.53	.47
4	.42	.41	.24	2.06	.64	8.29	2.75	.68	.71	.56	.55	.51
5	.43	.42	.19	1.97	.43	.56	.53	.59	.69	.57	.54	.50
6	0.42	0.41	1.16	1.88	2.21	8.67	2.29	1.50	0.68	0.54	0.51	0.49
7	.41	.56	.34	2.13	.05	.37	.19	.43	.69	.55	.54	.48
8	.41	.50	2.67	3.68	1.95	7.70	1.98	.33	.70	.60	.50	.47
9	.41	.55	3.05	4.37	2.22	6.26	.73	.28	.68	.57	.52	.47
10	.43	.53	2.84	.96	.53	4.55	.62	.22	.67	.55	.53	.48
11	0.51	0.66	2.61	4.99	2.67	3.72	1.52	1.14	0.67	0.54	0.54	0.48
12	.43	.66	.31	5.78	.74	.17	.39	.08	.67	.54	.53	.49
13	.41	.63	.03	8.24	3.14	2.91	.27	.12	.67	.56	.52	.51
14	.42	.58	1.89	.91	.28	.91	.26	.07	.64	.56	.51	.49
15	.44	.55	2.00	.38	.84	3.17	.19	.03	.66	.53	.50	.51
16	0.44	0.54	2.27	7.68	4.87	3.82	1.18	0.97	0.65	0.54	0.49	0.50
17	.45	.53	3.46	6.83	5.24	5.85	.11	.93	.65	.56	.50	.50
18	.44	.51	4.41	4.57	.02	.96	.06	.90	.66	.55	.51	.47
19	.46	.51	6.42	.22	4.61	.80	.03	.88	.65	.52	.50	.47
20	.52	.50	7.16	3.75	.10	.60	.03	.87	.66	.57	.48	.49
21	0.49	0.56	7.14	3.38	3.73	6.91	1.10	0.85	0.63	0.52	0.48	0.48
22	.64	.60	6.76	.35	.35	.84	.35	.85	.61	.56	.50	.48
23	.52	.87	5.81	.75	.08	.19	.58	.83	.62	.55	.53	.48
24	.46	.75	4.84	4.49	2.99	5.40	.87	.81	.61	.55	.51	.46
25	.45	.72	4.06	.59	.81	4.62	.87	.79	.61	.56	.49	.46
26	0.45	0.71	3.85	4.32	2.44	3.76	1.80	0.78	0.63	0.53	0.50	0.48
27	.50	.72	.26	.00	.09	.46	.74	.77	.60	.60	.51	.49
28	.47	.91	2.90	3.70	1.93	2.98	.67	.83	.58	.63	.50	.48
29	.45	.84	.61	.76	.81	.63	.60	.83	.58	.66	-	.47
30	.45	.79	.36	.70	.74	.76	.51	.79	.56	.60	-	.49
31	-	.97	-	.67	.67	-	.43	-	.55	.57	-	.49
Mean	0.45	0.60	3.17	4.27	2.99	5.00	1.77	1.08	0.65	0.56	0.51	0.48
Max.	0.64	0.97	7.16	8.91	5.24	8.67	3.72	1.68	0.75	0.66	0.55	0.51
Min.	0.41	0.41	1.11	1.88	1.67	1.59	1.03	0.77	0.55	0.52	0.48	0.46

WATER YEAR 1969 : Max. 8.91 m. Min. 0.41 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.045	0.060	2.88	14	44	9.04	49	5.56	0.62	0.255	0.225	0.150
2	0.045	0.015	2.88	14	36	8.24	44	6.16	0.59	0.240	0.195	0.120
3	0.030	0.015	4.96	14	29	151	33	7.36	0.52	0.255	0.195	0.105
4	0.030	0.015	4.00	15	25	260	27	9.32	0.48	0.240	0.225	0.165
5	0.045	0.030	3.52	14	21	311	23	8.08	0.43	0.255	0.210	0.150
6	0.030	0.015	3.28	12	18	334	19	7.00	0.42	0.210	0.165	0.135
7	0.015	0.240	5.08	17	15	275	17	6.16	0.43	0.225	0.165	0.120
8	0.015	0.150	26	51	14	196	14	4.96	0.45	0.300	0.150	0.105
9	0.015	0.225	33	67	18	128	10	4.00	0.42	0.255	0.180	0.105
10	0.045	0.195	29	85	23	72	8.48	3.80	0.40	0.225	0.195	0.120
11	0.165	0.390	24	84	26	49	7.24	3.12	0.40	0.210	0.210	0.120
12	0.045	0.390	19	113	27	36	5.68	2.64	0.40	0.210	0.195	0.135
13	0.015	0.345	15	247	35	30	4.30	2.96	0.40	0.240	0.180	0.165
14	0.030	0.270	13	400	39	30	4.20	2.56	0.36	0.240	0.165	0.135
15	0.060	0.225	14	277	52	36	3.52	2.24	0.39	0.195	0.150	0.165
16	0.060	0.210	19	193	81	52	3.44	1.82	0.37	0.210	0.135	0.150
17	0.075	0.195	43	132	92	113	2.88	1.58	0.37	0.240	0.150	0.150
18	0.060	0.165	68	81	85	117	2.48	1.40	0.39	0.225	0.165	0.105
19	0.090	0.165	135	63	74	111	2.24	1.28	0.37	0.180	0.150	0.105
20	0.180	0.150	165	49	59	104	2.24	1.22	0.39	0.255	0.120	0.135
21	0.135	0.240	164	41	49	154	2.80	1.10	0.34	0.180	0.120	0.120
22	0.360	0.300	147	40	40	151	5.20	1.10	0.31	0.240	0.150	0.120
23	0.180	1.220	112	50	34	125	7.96	0.98	0.33	0.225	0.195	0.120
24	0.090	0.625	80	70	32	97	12	0.86	0.31	0.225	0.165	0.090
25	0.075	0.520	58	73	28	74	12	0.76	0.31	0.240	0.135	0.090
26	0.075	0.485	51	65	21	50	11	0.73	0.34	0.195	0.150	0.120
27	0.150	0.520	38	57	16	43	10	0.69	0.30	0.300	0.165	0.135
28	0.105	1.46	30	49	13	32	9.18	0.98	0.27	0.345	0.150	0.120
29	0.075	1.04	26	50	11	25	8.20	0.98	0.27	0.390	–	0.105
30	0.075	0.765	20	49	10	27	7.12	0.76	0.24	0.300	–	0.135
31	–	1.82	–	48	9.18	–	6.16	–	0.22	0.255	–	0.135
Total	2.415	12.46	1,355.60	2,534	1,076.18	3,200.28	374.32	92.56	11.84	7.56	4.755	3.93
Mean	0.080	0.40	45.2	81.7	34.7	107	12.1	3.08	0.382	0.244	0.169	0.126
Max.	0.36	1.82	165	400	92	334	49	9.32	0.62	0.39	0.225	0.165
Min.	0.015	0.015	2.88	12	9.18	8.24	2.24	0.69	0.22	0.18	0.120	0.090
Runoff - MCM.	0.209	1.076	117.124	218.938	92.982	276.504	32.341	7.997	1.023	0.653	0.411	0.339

WATER YEAR 1969 : Max. 400 Min. 0.015 Mean 23.8 Annual Runoff 749.597 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
July 14	02.00	9.10	449				

WATER YEAR 1969
CHI RIVER BASIN

Huai Yang at Ban Na Khu, Kalasin (E_{55})

Location: Lat. 16°-45'-35" N., Long. 104°-01'-22" E., on right bank about 20 meters upstream from the local weir built by A.R.D. and 800 meters from Ban Na Khu, Amphoe Kuchinarai, Kalasin.

Drainage Area: 58 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: About 5 meters on the right bank along the automatic gage line

Elevation: + 3.488 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1969-1971

Rating Operation:

Period of Rating: 1969-1971

Rated by Float: -

Rated by Current Meter: 1969-1971

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

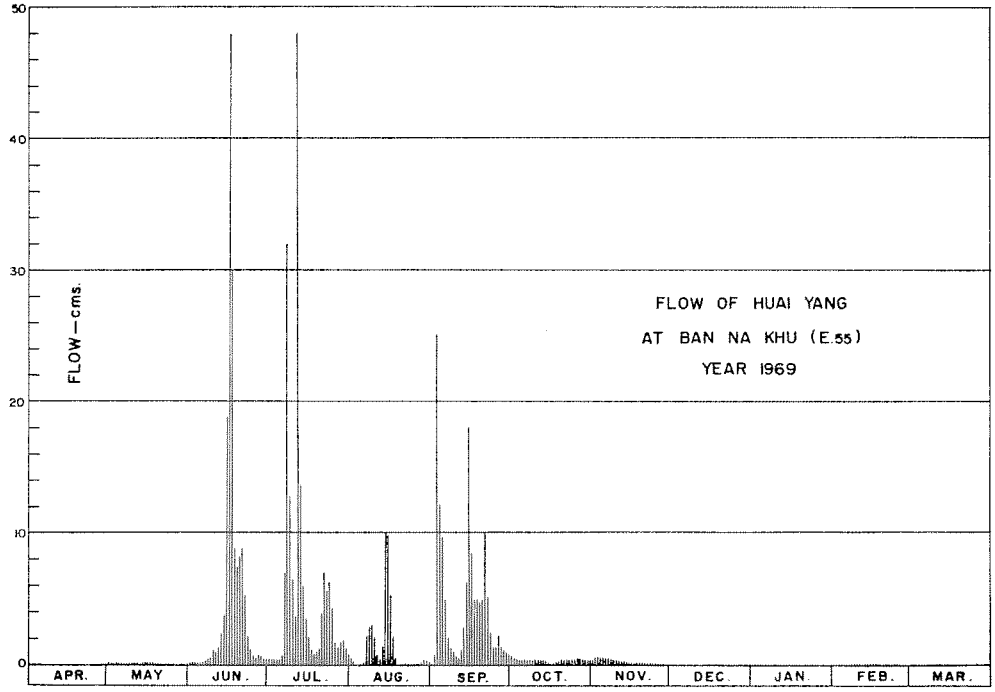
Remarks: Records for period of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.60	0.64	0.63	0.70	0.70	0.58	0.72	0.66	0.58	0.43	0.25	0.10
2	.60	.63	.63	.69	.65	.62	.70	.71	.58	.43	.25	.10
3	.60	.63	.63	.69	.60	1.58	.69	.71	.57	.43	.24	.10
4	.60	.63	.62	.69	.58	.19	.68	.71	.57	.43	.23	.10
5	.60	.62	.62	.70	.56	.15	.67	.70	.56	.43	.23	.10
6	0.60	0.61	0.64	0.74	0.66	0.97	0.67	0.70	0.56	0.43	0.22	0.10
7	.60	.60	.66	1.07	.84	.84	.67	.69	.56	.42	.22	.10
8	.60	.60	.69	.74	.89	.78	.67	.68	.56	.41	.21	.10
9	.60	.63	.71	.25	.90	.74	.67	.67	.55	.41	.21	.10
10	.60	.63	.76	0.93	.84	.71	.67	.67	.54	.41	.20	.10
11	0.60	0.63	0.74	0.88	0.73	0.70	0.67	0.66	0.54	0.39	0.20	0.10
12	.60	.62	.79	1.98	.69	.71	.68	.66	.53	.36	.19	.10
13	.60	.62	.88	.31	.67	.89	.67	.64	.53	.37	.18	.10
14	.60	.64	.95	.02	1.18	.84	.64	.64	.53	.37	.17	.10
15	.60	.64	.88	0.91	.16	1.41	.63	.63	.52	.36	.17	.10
16	0.60	0.63	0.89	0.83	0.98	1.07	0.63	0.63	0.51	0.35	0.16	0.10
17	.60	.62	2.00	.75	.81	0.97	.63	.63	.51	.35	.15	.10
18	.60	.60	1.14	.73	.64	.98	.64	.63	.50	.34	.15	.10
19	.60	.60	1.07	.75	.53	.97	.66	.63	.50	.33	.11	.10
20	.60	.60	1.11	.77	.50	.97	.67	.62	.49	.33	.11	.10
21	0.60	0.60	1.13	0.96	0.51	1.17	0.67	0.62	0.48	0.33	0.11	0.09
22	.60	.61	0.98	1.06	.62	0.97	.68	.62	.47	.32	.11	.09
23	.60	.61	.85	.00	.62	.86	.67	.62	.47	.31	.11	.09
24	.60	.60	.78	.03	.62	.79	.67	.62	.47	.31	.10	.09
25	.60	.60	.72	0.92	.55	.77	.68	.61	.46	.31	.10	.09
26	0.60	0.60	0.70	0.81	0.54	0.85	0.70	0.60	0.46	0.31	0.10	0.09
27	.60	.60	.73	.77	.59	.78	.69	.60	.46	.30	.10	.09
28	.61	.61	.72	.81	.64	.76	.68	.59	.45	.29	.10	.09
29	.61	.61	.70	.82	.67	.74	.68	.58	.44	.29		.09
30	.62	.61	.69	.78	.66	.73	.67	.58	.43	.28		.09
31		.62		.72	.60		.67		.43	.27		.36
Mean	0.60	0.61	0.83	0.93	0.70	0.90	0.67	0.64	0.51	0.36	0.17	0.10
Max.	0.62	0.64	2.00	1.98	1.18	1.58	0.72	0.71	0.58	0.43	0.25	0.36
Min.	0.60	0.60	0.62	0.69	0.50	0.58	0.63	0.58	0.43	0.27	0.10	0.09

WATER YEAR 1969 : Max. 2.00 m. Min. 0.09 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.20	0.15	0.50	0.50	0.00	0.70	0.30	0.00	0.00	0.00	0.00
2		0.15	0.15	0.45	0.25	0.10	0.50	0.60				
3		0.15	0.15	0.45	0.00	25	0.45	0.60				
4		0.15	0.10	0.45	0.00	11	0.40	0.60				
5		0.10	0.10	0.50	0.00	9.50	0.35	0.50				
6		0.05	0.20	0.90	0.30	4.70	0.35	0.50				
7		0.00	0.30	7.25	2.10	2.10	0.35	0.45				
8		0.00	0.45	32	2.85	1.30	0.35	0.40				
9		0.15	0.60	13	3.00	0.90	0.35	0.35				
10		0.15	1.10	3.75	2.10	0.60	0.35	0.35				
11		0.15	0.90	2.72	0.80	0.50	0.35	0.30				
12		0.10	1.40	48	0.45	0.60	0.40	0.30				
13		0.10	2.70	15	0.35	2.85	0.35	0.20				
14		0.20	4.25	6.16	10	2.10	0.20	0.20				
15		0.20	2.80	3.33	9.80	18	0.15	0.15				
16		0.15	3.15	1.95	5.00	7.25	0.15	0.15				
17		0.10	48	1.00	1.65	4.75	0.15	0.15				
18		0.00	9.30	0.80	0.20	5.00	0.20	0.15				
19		0.00	7.29	1.00	0.00	4.75	0.30	0.15				
20		0.00	8.30	1.20	0.00	4.75	0.35	0.10				
21		0.00	8.90	4.50	0.00	10	0.35	0.10				
22		0.05	5.00	7.00	0.10	4.75	0.40	0.10				
23		0.05	2.25	5.50	0.10	2.40	0.35	0.10				
24		0.00	1.30	6.25	0.10	1.40	0.35	0.10				
25		0.00	0.70	3.50	0.00	1.20	0.40	0.05				
26		0.00	0.50	1.65	0.00	2.25	0.50	0.00				
27	0.00	0.00	0.80	1.20	0.00	1.30	0.45	0.00				
28	0.05	0.05	0.70	1.65	0.20	1.10	0.40	0.00			0.00	
29	0.05	0.05	0.50	1.80	0.35	0.90	0.40	0.00				
30	0.10	0.05	0.45	1.30	0.30	0.80	0.35	0.00	0.00	0.00		
31		0.10		0.70	0.60		0.35					
Total	0.20	2.45	112.49	175.46	40.30	131.90	11.06	6.95	0.00	0.00	0.00	0.00
Mean	0.001	0.08	3.75	5.66	1.30	4.40	0.36	0.23				
Max.	0.10	0.20	48	48	10	25	0.70	0.60				
Min.	0.00	0.00	0.10	0.45	0.00	0.00	0.15	0.00				
Runoff - MCM.	0.017	0.212	9.719	15.160	3.482	11.396	0.955	0.600	0.000	0.000	0.000	0.000

WATER YEAR 1969 : Max. 48 Min. 0.00 Mean 1.32 Annual Runoff 41.542 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
July 12	10.00	3.01	109				

WATER YEAR 1969
CHI RIVER BASIN

Huai Kham at Ban Na Chan, Kalasin (E_{56})

Location: Lat. 16°-44'-01" N., Long. 104°-00'-40" E., on left bank about 20 meters upstream from the bridge on Ban Na Khu – Ban Huai Phung road, Amphoe Kuchinarai, Kalasin.

Drainage Area: 60 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S.

Location: Along the measuring line

Elevation: + 4.355 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1969-1971

Rating Operation:

Period of Rating: 1969-1971

Rated by Float: –

Rated by Current Meter: 1969-1971

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

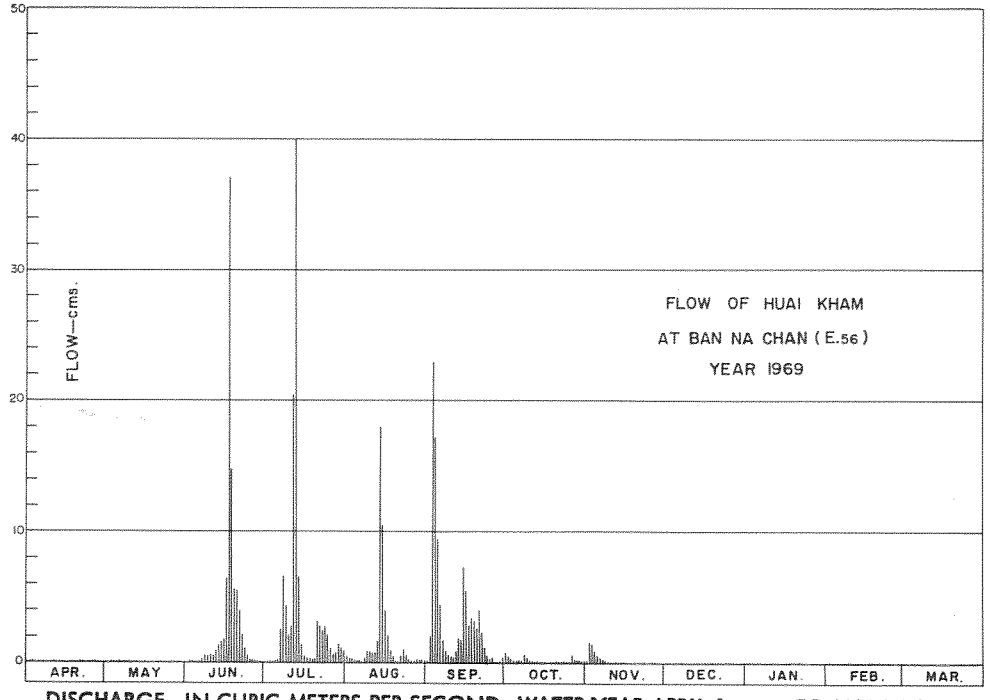
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Records for period of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.30	0.27	0.53	0.54	0.70	0.61	0.76	0.56	0.50	0.46	0.23	0.23
2	.29	.32	.58	.53	.66	.66	.71	.90	.50	.46	.32	.23
3	.29	.36	.53	.53	.67	2.51	.65	.87	.50	.46	.36	.23
4	.29	.45	.50	.54	.62	1.88	.62	.77	.50	.46	.31	.23
5	.29	.43	.47	.56	.60	.44	.63	.69	.50	.46	.27	.23
6	0.30	0.43	0.52	0.57	0.58	1.14	0.61	0.65	0.52	0.46	0.26	0.23
7	.30	.42	.68	1.05	.56	0.87	.62	.63	.53	.45	.25	.23
8	.30	.42	.72	.38	.66	.78	.72	.58	.52	.44	.25	.23
9	.30	.55	.69	.15	.80	.72	.64	.59	.51	.43	.25	.23
10	.30	.55	.72	0.95	.80	.70	.60	.54	.51	.41	.25	.23
11	0.30	0.49	0.68	0.95	0.77	0.67	0.58	0.47	0.50	0.41	0.25	0.23
12	.29	.46	.77	3.41	.79	.78	.56	.45	.50	.41	.25	.23
13	.28	.43	.84	1.78	.96	.94	.54	.44	.50	.41	.25	.23
14	.27	.43	.88	1.15	2.23	.88	.53	.43	.50	.40	.25	.23
15	.27	.40	.92	0.78	1.31	1.44	.52	.43	.49	.40	.25	.23
16	0.27	0.35	1.15	0.65	1.08	1.24	0.50	0.42	0.49	0.39	0.25	0.23
17	.27	.30	3.19	.64	0.87	.03	.49	.41	.49	.39	.23	.23
18	.27	.29	1.29	.64	.76	.11	.47	.41	.49	.37	.23	.23
19	.27	.28	.29	.66	.66	.08	.45	.40	.49	.34	.23	.23
20	.28	.27	.30	.66	.62	.00	.56	.39	.48	.33	.23	.23
21	0.28	0.40	1.13	1.10	0.57	1.17	0.58	0.39	0.48	0.33	0.23	0.23
22	.28	.47	0.93	.04	.71	0.90	.60	.38	.48	.33	.23	.23
23	.28	.47	.78	.01	.82	.75	.56	.43	.48	.31	.23	.23
24	.28	.45	.67	.05	.70	.66	.57	.46	.48	.31	.23	.23
25	.29	.45	.61	0.93	.64	.64	.56	.50	.48	.31	.23	.23
26	0.30	0.42	0.60	0.81	0.59	0.68	0.73	0.49	0.48	0.30	0.23	0.23
27	.30	.45	.61	.73	.55	.56	.64	.49	.47	.29	.23	.23
28	.30	.48	.60	.74	.57	.57	.61	.49	.47	.28	.23	.23
29	.28	.48	.57	.87	.63	.62	.60	.49	.47	.27	–	.23
30	.28	.49	.56	.84	.63	.67	.58	.49	.47	.27	–	.23
31	–	.50	–	.77	.61	–	.56	–	.47	.27	–	.50
Mean	0.29	0.42	0.84	0.94	0.76	0.96	0.59	0.52	0.49	0.37	0.25	0.24
Max.	0.30	0.55	3.19	3.41	2.23	2.51	0.76	0.90	0.53	0.46	0.36	0.50
Min.	0.27	0.27	0.47	0.53	0.55	0.56	0.45	0.38	0.47	0.27	0.23	0.23

WATER YEAR 1969 : Max. 3.41 m. Min. 0.27 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			0.10	0.12	0.50	0.25	0.80	0.15	0.05	0.01		
2			0.19	0.10	0.39	0.39	0.55	1.70	0.05	0.01		
3			0.10	0.10	0.42	23	0.36	1.49	0.05	0.01		
4			0.05	0.12	0.28	13	0.28	0.85	0.05	0.01		
5			0.02	0.15	0.22	7.22	0.30	0.47	0.05	0.01		
6			0.08	0.16	0.19	3.74	0.25	0.36	0.08	0.01		
7			0.44	3.12	0.15	1.49	0.28	0.30	0.10	0.00		
8			0.60	6.63	0.39	0.90	0.60	0.19	0.08			
9		0.13	0.47	3.91	1.00	0.60	0.33	0.20	0.07			
10		0.13	0.60	2.05	1.00	0.50	0.22	0.12	0.07			
11		0.04	0.44	2.51	0.85	0.42	0.19	0.02	0.05			
12		0.01	0.85	40	0.95	0.90	0.15	0.00	0.05			
13		0.00	1.28	12	2.12	1.98	0.12		0.05			
14			1.56	4.01	18	1.56	0.10		0.05			
15			1.83	0.95	5.62	7.22	0.08		0.04			
16			4.70	0.41	3.12	4.84	0.05		0.04			
17			37	0.33	1.49	2.67	0.04		0.04			
18			6.12	0.33	0.80	3.41	0.02		0.04			
19			5.43	0.39	0.39	3.12	0.00		0.04			
20			5.50	0.39	0.28	2.40	0.15		0.03			
21		0.00	3.63	3.30	0.17	4.07	0.19		0.03			
22		0.02	1.91	2.76	0.55	1.70	0.22		0.03			
23		0.02	0.90	2.49	1.14	0.75	0.15	0.00	0.03			
24		0.00	0.42	2.85	0.50	0.39	0.17	0.01	0.03			
25		0.00	0.25	1.91	0.33	0.33	0.15	0.05	0.03			
26		0.00	0.22	1.07	0.20	0.44	0.65	0.04	0.03			
27		0.00	0.25	0.65	0.13	0.15	0.33	0.04	0.02			
28		0.03	0.22	0.70	0.17	0.17	0.25	0.04	0.02			
29		0.03	0.17	1.49	0.30	0.28	0.22	0.04	0.02			
30		0.04	0.15	1.28	0.30	0.42	0.19	0.04	0.02			
31		0.05	–	0.85	0.25	–	0.15	–	0.02	0.00		
Total		0.50	75.48	97.13	42.20	88.31	7.54	6.11	1.36	0.06		
Mean		0.016	2.52	3.13	1.36	2.94	0.24	0.34	0.044	0.002		
Max.		0.13	37	40	18	23	0.80	1.70	0.10	0.01		
Min.		0.000	0.02	0.10	0.13	0.15	0.000	0.000	0.02	0.000		
Runoff – mcm.		0.043	6.521	8.392	3.646	7.630	0.651	0.528	0.117	0.005		

WATER YEAR 1969 : Max. 40 Min. 0.000 Mean 0.87 Annual Runoff 27.535 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
July 12	07.00	4.12	54				

WATER YEAR 1969
CHI RIVER BASIN

Nam Yang at Ban Kut Chim Khum Mai, Kalasin (E_{57})

Location: Lat. 16°-41'-05" N., Long. 104°-05'-10" E., at the bridge on Ban Kut Chim Mai – Ban Kut Chim Kao road, King Amphoe Khoo Wong, Kalasin.

Drainage Area: 98 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S.

Location: On right bank about + 85 meters from the bridge.

Elevation: + 5.726 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1969-1971

Rating Operation:

Period of Rating: 1969-1971

Rated by Float: –

Rated by Current Meter: 1969-1971

Stability of Channel Regimes: Rather stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

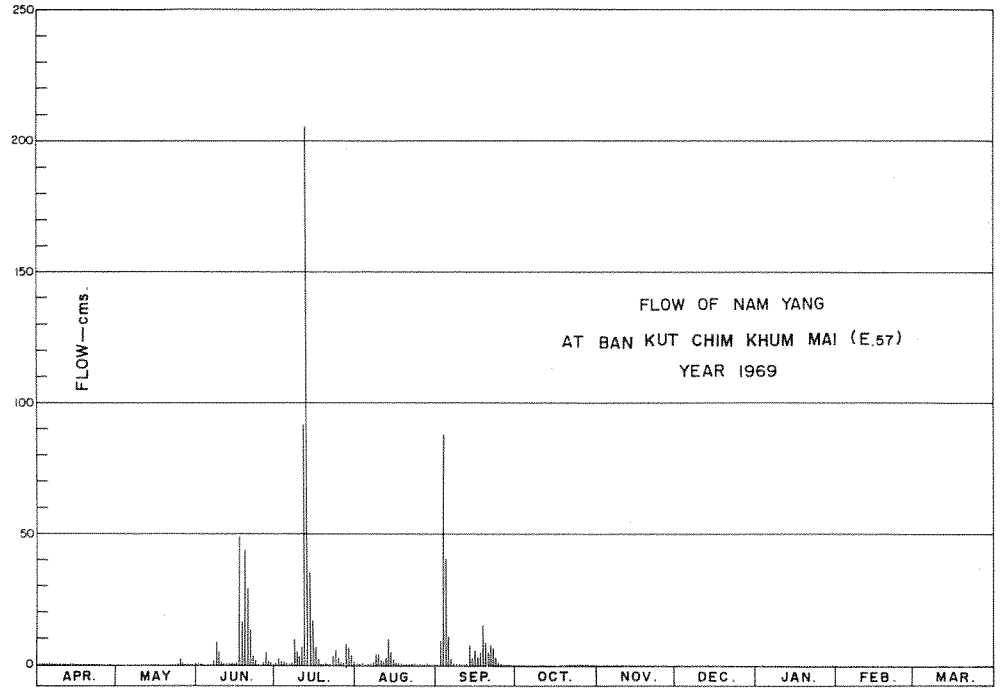
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Records for period of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.31	0.16	0.41	0.39	0.39	0.28	0.35	0.24	0.24	0.27	0.23	0.17
2	.31	.15	.47	.64	.39	.32	.30	.23	.24	.27	.23	.14
3	.28	.14	.37	.52	.37	2.42	.27	.21	.24	.27	.23	.11
4	.25	.14	.33	.51	.35	1.80	.26	.20	.24	.27	.23	.11
5	.36	.13	.33	.49	.33	.23	.24	.19	.24	.27	.23	.11
6	0.39	0.13	0.45	0.46	0.32	0.75	0.23	0.19	0.23	0.27	0.22	0.11
7	.38	.14	.63	.55	.33	.52	.23	.18	.23	.27	.22	.11
8	.37	.21	.95	.99	.71	.41	.24	.17	.23	.27	.21	.11
9	.38	.20	.74	.84	.70	.33	.24	.17	.23	.27	.21	.11
10	.33	.17	.55	.65	.59	.30	.22	.16	.24	.27	.21	.09
11	0.22	0.16	0.45	0.98	0.50	0.31	0.23	0.15	0.24	0.27	0.21	0.08
12	.18	.20	.39	3.70	.65	.41	.22	.15	.24	.27	.21	.08
13	.15	.15	.41	2.12	.98	.92	.22	.15	.25	.27	.21	.08
14	.13	.13	.48	1.47	.79	.60	.22	.15	.25	.27	.21	.06
15	.13	.13	.44	1.08	.57	.84	.22	.15	.25	.28	.21	.05
16	0.13	0.11	0.50	0.91	0.47	0.65	0.22	0.15	0.25	0.28	0.21	0.05
17	.14	.01	1.90	.75	.46	.83	.21	.15	.25	.27	.20	.04
18	.14	.00	0.96	.54	.40	1.21	.21	.15	.25	.27	.20	.03
19	.15	.00	1.81	.42	.37	0.84	.23	.15	.25	.27	.20	.07
20	.15	.00	1.40	.37	.45	.76	.24	.15	.25	.27	.20	.07
21	0.15	0.00	0.94	0.42	0.42	0.93	0.39	0.15	0.25	0.27	0.19	0.07
22	.19	.17	.68	.48	.47	.85	.45	.15	.26	.27	.19	.07
23	.45	.32	.58	.77	.39	.62	.39	.15	.27	.27	.19	.07
24	.17	.28	.45	.84	.35	.48	.36	.20	.27	.27	.18	.07
25	.17	.61	.38	.62	.32	.39	.42	.25	.28	.27	.18	.07
26	0.16	0.33	0.43	0.50	0.30	0.36	0.33	0.25	0.28	0.27	0.17	0.07
27	.14	.35	.79	.44	.27	.38	.33	.25	.28	.27	.17	.07
28	.14	.30	.61	.92	.27	.35	.30	.24	.28	.26	.17	.07
29	.14	.27	.53	.88	.33	.30	.28	.25	.28	.26		.07
30	.15	.27	.45	.65	.33	.30	.26	.24	.28	.25		.07
31		.30		.50	.28		.25		.27	.25		.10
Mean	0.22	0.18	0.66	0.82	0.44	0.69	0.28	0.18	0.25	0.27	0.20	0.08
Max.	0.45	0.61	1.90	3.70	0.98	2.42	0.45	0.25	0.28	0.28	0.23	0.17
Min.	0.13	0.00	0.33	0.37	0.27	0.28	0.21	0.15	0.23	0.25	0.17	0.03

WATER YEAR 1969 : Max. m. Min. m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1,1969 TO MARCH 31,1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.23	0.06	0.57	0.47	0.47	0.18	0.35	0.14	0.14	0.17	0.13	0.07
2	0.23	0.05	0.99	3.04	0.47	0.26	0.20	0.13	0.14	0.17	0.13	0.04
3	0.18	0.04	0.41	1.44	0.41	88	0.17	0.11	0.14	0.17	0.13	0.01
4	0.15	0.04	0.29	1.32	0.35	43	0.16	0.10	0.14	0.17	0.13	0.01
5	0.38	0.03	0.29	1.13	0.29	17	0.14	0.09	0.14	0.17	0.13	0.01
6	0.47	0.03	0.85	0.92	0.26	0.90	0.13	0.09	0.13	0.17	0.12	0.01
7	0.44	0.04	2.88	0.80	0.29	1.44	0.13	0.08	0.13	0.17	0.12	0.01
8	0.41	0.11	9.25	10	4.18	0.57	0.14	0.07	0.13	0.17	0.11	0.01
9	0.44	0.10	4.72	6.68	4.00	0.29	0.14	0.06	0.13	0.17	0.11	0.01
10	0.29	0.07	1.80	3.20	2.28	0.20	0.12	0.05	0.14	0.17	0.11	0.00
11	0.12	0.06	0.85	10	1.20	0.23	0.13	0.05	0.14	0.17	0.11	
12	0.08	0.10	0.47	205	3.20	0.57	0.12	0.06	0.14	0.17	0.11	
13	0.05	0.05	0.57	64	10	8.50	0.12	0.06	0.15	0.17	0.11	
14	0.03	0.03	1.06	27	5.62	2.40	0.12	0.06	0.15	0.17	0.11	
15	0.03	0.03	0.78	13	2.04	6.68	0.12	0.06	0.15	0.18	0.11	
16	0.03	0.01	1.20	8.25	0.99	3.20	0.12	0.06	0.15	0.18	0.11	
17	0.04	0.00	49	4.90	0.92	6.46	0.11	0.06	0.15	0.17	0.10	
18	0.04	0.00	9.50	1.68	0.50	16	0.11	0.06	0.15	0.17	0.10	
19	0.05	0.00	44	0.64	0.41	6.68	0.13	0.06	0.15	0.17	0.10	
20	0.05	0.00	24	0.41	0.85	5.08	0.14	0.06	0.15	0.17	0.10	
21	0.05	0.00	9.00	0.64	0.64	8.75	0.47	0.06	0.15	0.17	0.09	
22	0.09	0.07	3.68	1.06	0.99	6.90	0.85	0.06	0.16	0.17	0.09	
23	0.85	0.26	2.16	5.26	0.47	2.72	0.47	0.06	0.17	0.17	0.09	
24	0.07	0.18	0.85	6.68	0.35	1.06	0.38	0.10	0.17	0.17	0.08	
25	0.07	2.56	0.44	2.72	0.26	0.47	0.64	0.15	0.18	0.17	0.08	
26	0.06	0.29	0.71	1.20	0.20	0.38	0.29	0.15	0.18	0.17	0.07	
27	0.04	0.35	5.62	0.78	0.17	0.44	0.29	0.15	0.18	0.17	0.07	
28	0.04	0.20	2.56	8.50	0.17	0.35	0.20	0.14	0.18	0.16	0.07	
29	0.04	0.17	1.56	7.56	0.29	0.20	0.18	0.15	0.18	0.16		
30	0.05	0.17	0.85	3.20	0.29	0.20	0.16	0.14	0.18	0.15		
31		0.20		1.20	0.18		0.15		0.17	0.15		0.00
Total	5.10	5.30	113.59	402.68	42.74	229.11	6.98	2.69	4.74	5.08	2.92	
Mean	0.17	0.17	3.78	12.9	1.38	7.64	0.22	0.09	0.15	0.17	0.10	
Max.	0.85	2.56	49	205	10	88	0.85	0.15	0.18	0.18	0.13	0.07
Min.	0.03	0.00	0.29	0.41	0.17	0.18	0.12	0.05	0.13	0.15	0.07	0.00
Runoff - mcm.	0.361	0.458	9.814	34.791	3.692	19.795	0.603	0.232	0.409	0.439	0.252	

WATER YEAR 1969 : Max. 205 Min. 0.00 Mean 2.43 Annual Runoff 76.757 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
July 12	02.00	3.73	207				

WATER YEAR 1969
MUN RIVER BASIN

Mun River at railway bridge, Nakhon Ratchasima (M_2)

Location: Lat. 15°-00'-03" N., Long. 105°-15'-57" E., on the right bank about 100 meters west site of Ban Tha Chang School, and 30 meters south of railway pumping station, Amphoe Chakkarat, Nakhon Ratchasima.

Drainage Area: 4,800 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 157.850 m. (M.S.L.)

Bench Mark: B.M. - H.S./R.I.D. No. 1004

Location: At the foot of the ladder of automatic gage building.

Elevation: + 165.802 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1950 to date

Rating Operation:

Period of Rating: 1960, 1969-70

Rated by Float: -

Rated by Current Meter: 1960, 1969-70

Stability of Channel Regimes: Rather stable, no shifting adjustment for flow computation..

Overbank Flow Conditions: No overbank flow

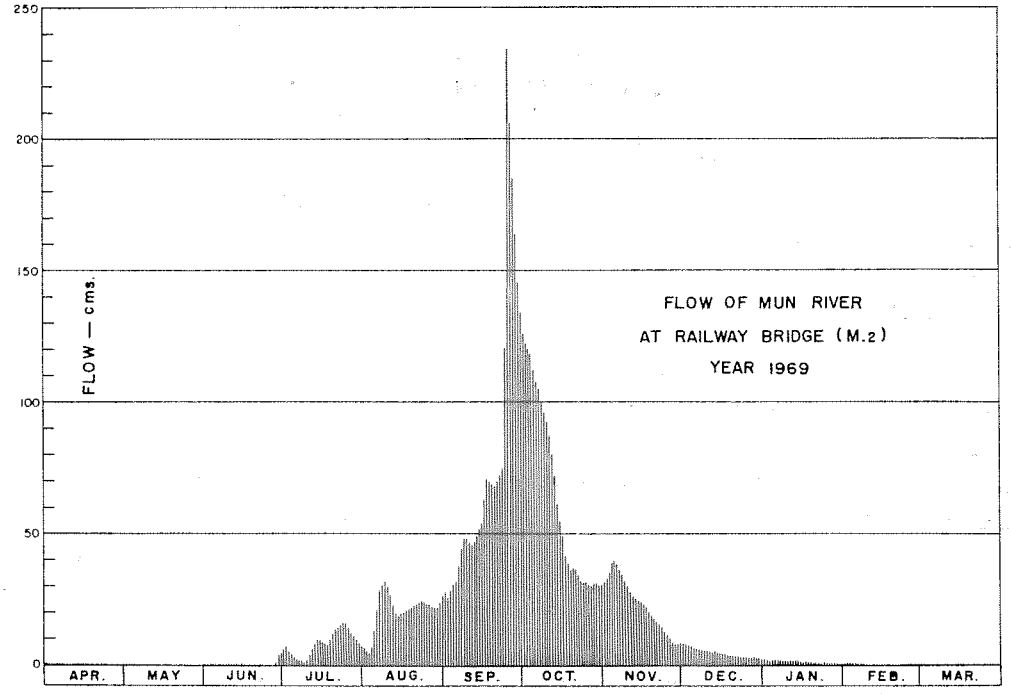
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Record for period of no flow are omitted.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	158.94	158.80	158.79	160.31	160.26	161.67	165.20	161.89	160.39	159.74	159.29	159.09
2	.95	.80	.79	.33	.14	.68	.20	.93	.36	.69	.27	.08
3	.98	.79	.78	.22	.08	.74	.16	162.13	.33	.68	.27	.07
4	.99	.77	.77	.06	.33	.87	.11	.29	.30	.68	.26	.07
5	159.01	.76	.75	159.89	.99	.93	.02	.32	.26	.68	.24	.05
6	159.00	158.75	158.73	159.74	161.41	162.35	164.95	162.26	160.23	159.66	159.23	159.10
7	158.98	.75	.73	.66	.71	.60	.87	.15	.20	.65	.21	.05
8	.97	.74	.72	.63	.87	.77	.76	.03	.18	.63	.20	.02
9	.97	.73	.71	.64	.88	.76	.67	161.86	.16	.62	.19	.02
10	.97	.73	.71	.68	.80	.66	.56	.74	.14	.60	.14	.03
11	158.97	158.71	158.70	160.02	161.63	162.65	164.40	161.66	160.12	159.61	159.11	159.03
12	.96	.71	.70	.32	.40	.72	.14	.58	.10	.60	.14	.03
13	.95	.70	.73	.44	.23	.83	163.76	.50	.13	.56	.15	.08
14	.94	.69	.81	.52	.16	163.01	.36	.43	.06	.55	.17	.10
15	.93	.69	.81	.51	.19	.19	.00	.39	.06	.56	.16	.08
16	158.93	158.69	158.81	160.47	161.22	163.65	162.68	161.36	160.05	159.55	159.14	159.07
17	.93	.71	.82	.41	.27	.84	.43	.29	.03	.52	.12	.05
18	.93	.74	.82	.39	.34	.80	.23	.23	.01	.51	.12	.08
19	.92	.75	.82	.62	.34	.70	.13	.13	159.98	.51	.12	.07
20	.86	.77	.81	.70	.36	.72	.21	.04	.98	.51	.11	.01
21	158.84	158.79	158.81	160.84	161.38	163.85	162.16	160.95	159.95	159.49	159.10	158.96
22	.82	.79	.81	.86	.40	.95	.01	.88	.93	.44	.09	.99
23	.81	.79	.81	.90	.45	164.07	161.93	.80	.90	.43	.14	159.03
24	.81	.79	.80	.95	.46	165.26	.87	.71	.88	.41	.13	158.99
25	.80	.78	.79	.94	.43	166.12	.89	.61	.88	.41	.10	.19
26	158.80	158.77	158.78	160.86	161.36	165.93	161.82	160.55	159.89	159.39	159.07	158.98
27	.79	.76	.79	.72	.30	.76	.82	.46	.87	.37	.03	.98
28	.87	.75	159.08	.59	.30	.60	.86	.38	.87	.38	.05	.98
29	.83	.76	160.03	.50	.34	.47	.85	.37	.85	.39	-	.97
30	.81	.77	.03	.42	.42	.33	.82	.39	.82	.39	-	.99
31	-	.78	-	.33	.64	-	.86	-	.78	.35	-	.99
Mean	158.90	158.75	158.86	160.37	161.26	163.54	163.24	161.34	160.05	159.53	159.15	159.03
Max.	159.01	158.80	160.03	160.95	161.88	166.12	165.20	162.32	160.39	159.74	159.29	159.10
Min.	158.79	158.69	158.70	159.63	160.08	161.68	161.82	160.37	159.78	159.35	159.03	158.96

WATER YEAR 1969 : Max. 166.12 m. Min. 158.70 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.04			7.12	6.52	28	123	32	8.08	2.04	0.48	0.19
2	0.05			7.36	5.20	28	123	32	7.72	1.75	0.44	0.18
3	0.08			6.04	4.62	29	120	36	7.36	1.70	0.44	0.17
4	0.09			4.44	7.36	31	117	39	7.00	1.70	0.42	0.17
5	0.11			2.94	17	32	111	39	6.52	1.70	0.38	0.15
6	0.10			2.04	23	40	107	38	6.16	1.60	0.36	0.20
7	0.08			1.60	29	45	104	36	5.80	1.55	0.32	0.15
8	0.07			1.45	31	48	99	34	5.60	1.45	0.30	0.12
9	0.07			1.50	32	48	96	31	5.40	1.40	0.29	0.12
10	0.07			1.70	30	46	91	29	5.20	1.30	0.24	0.13
11	0.07			4.08	27	46	86	28	5.00	1.35	0.21	0.13
12	0.06			7.24	23	47	78	26	4.80	1.30	0.24	0.13
13	0.05			8.68	20	49	69	25	5.10	1.18	0.25	0.18
14	0.04			9.68	19	53	60	24	4.44	1.15	0.27	0.20
15	0.03			9.54	20	56	52	23	4.44	1.18	0.26	0.18
16	0.03			9.04	20	66	46	23	4.35	1.15	0.24	0.17
17	0.03			8.32	21	71	41	21	4.17	1.06	0.22	0.15
18	0.03			8.08	22	70	38	20	3.99	1.03	0.22	0.18
19	0.02			11	22	68	36	19	3.72	1.03	0.22	0.17
20	0.00			12	23	68	37	17	3.72	1.03	0.21	0.11
21	0.00			14	23	71	36	16	3.45	0.97	0.20	0.06
22	0.00			14	23	73	34	15	3.27	0.82	0.19	0.09
23	0.00			15	24	77	32	14	3.00	0.79	0.24	0.13
24	0.00			16	24	127	31	12	2.88	0.73	0.23	0.09
25	0.00			16	24	234	32	11	2.88	0.73	0.20	0.09
26	0.00			14	23	199	30	10	2.94	0.68	0.17	0.08
27	0.00		0.00	12	22	175	30	8.92	2.82	0.64	0.13	0.08
28	0.00		0.18	11	22	157	31	7.96	2.82	0.66	0.15	0.08
29	0.00		4.17	9.40	22	144	31	7.84	2.70	0.68	–	0.07
30	0.00		4.17	8.44	24	132	30	8.08	2.52	0.68	–	0.09
31	–		–	7.36	27	–	31	–	2.28	0.60	–	0.09
Total	1.12	0.00	8.52	261.05	660.70	2,355	1,982	682.80	140.13	35.63	7.52	4.13
Mean	0.037	0.00	0.284	8.42	21.3	78.5	63.9	22.8	4.52	1.15	0.268	0.133
Max.	0.11	0.00	4.17	16	32	234	123	39	8.08	2.04	0.48	0.20
Min.	0.00	0.00	0.00	1.45	4.62	28	30	7.84	2.28	0.60	0.13	0.06
Runoff – MCM.	0.096	0.000	0.736	22.555	57.084	203.472	171.245	58.994	12.107	3.078	0.649	0.357

WATER YEAR 1969 : Max. 234 Min. 0.00 Mean 16.8 Annual Runoff 530.375 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 25, 69	20.00	166.21	254				

WATER YEAR 1969
MUN RIVER BASIN

Mun River at Rasi Salai, Si Sa Ket (M_5)

Location: Lat. 15°-20'-16" N., Long. 103°-09'-29" E., on right bank infront of Amphoe Rasi Salai office, Si Sa Ket.

Drainage Area: 44,275 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 110.00 m. (M.S.L.)

Bench Mark: B.M. of Army Survey Department No. 801

Location: On east side of staff gage behind the police station office.

Elevation: + 119.194 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1955 to date

Rating Operation:

Period of Rating: 1972 to date

Rated by Float: -

Rated by Current Meter: 1972 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

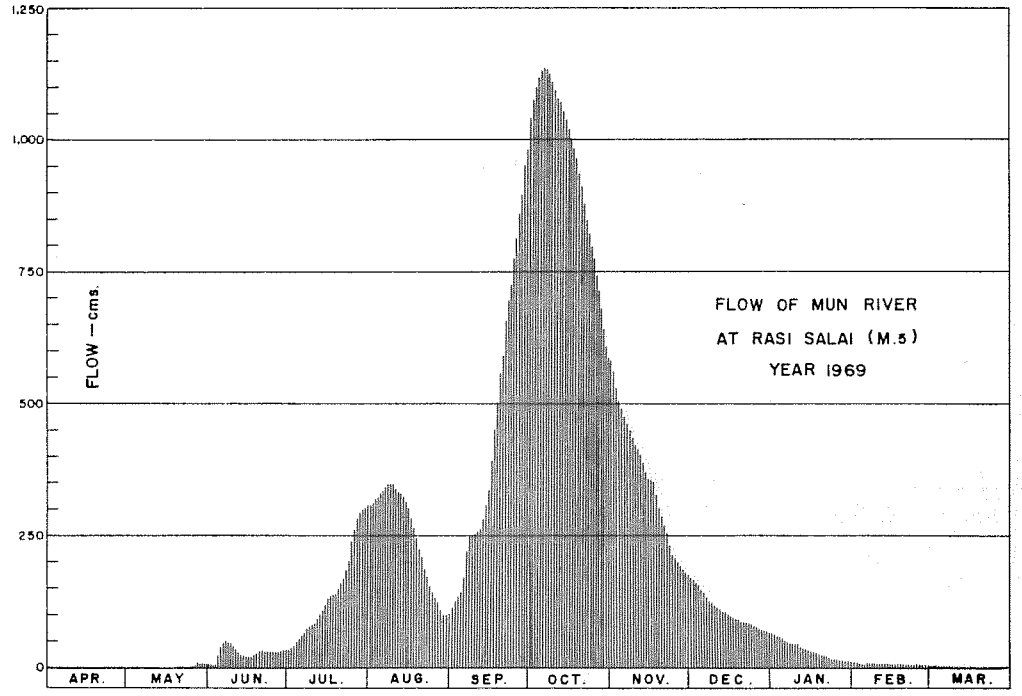
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1972-73. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	110.09	110.04	110.25	100.80	113.38	111.74	117.69	115.17	112.32	111.21	110.38	110.22
2	.09	.04	.24	.84	.41	.85	.86	.01	.27	.19	.37	.21
3	.09	.05	.23	.91	.45	.96	.99	114.84	.21	.16	.35	.21
4	.08	.05	.58	.99	.48	112.04	118.11	.72	.15	.12	.34	.20
5	.08	.06	.88	111.06	.55	.14	.18	.61	.10	.10	.33	.18
6	110.08	110.07	110.98	111.15	113.59	112.36	118.23	114.52	112.04	111.08	110.32	110.18
7	.08	.07	111.06	.24	.65	.74	.25	.43	111.98	.04	.32	.17
8	.07	.08	.01	.32	.68	.93	.24	.37	.92	.02	.32	.17
9	.07	.08	110.98	.38	.68	.96	.20	.25	.87	110.99	.32	.17
10	.07	.10	.88	.41	.66	.98	.13	.17	.83	.97	.30	.16
11	110.07	110.12	110.77	111.47	113.61	113.01	118.04	114.10	111.79	110.93	110.30	110.16
12	.06	.15	.68	.54	.56	.06	117.98	.03	.75	.90	.29	.16
13	.06	.11	.64	.63	.54	.19	.94	113.92	.73	.87	.29	.15
14	.06	.09	.62	.73	.47	.36	.86	.82	.70	.82	.28	.15
15	.06	.08	.59	.83	.40	.48	.79	.75	.67	.77	.28	.15
16	110.06	110.06	110.57	111.93	113.28	113.73	117.70	113.70	111.63	110.75	110.28	110.15
17	.05	.06	.60	112.01	.15	114.18	.61	.65	.61	.72	.27	.14
18	.05	.07	.63	.03	112.98	.51	.50	.51	.59	.69	.27	.14
19	.05	.08	.70	.05	.84	.79	.41	.36	.56	.67	.26	.14
20	.05	.08	.75	.14	.69	115.09	.28	.23	.53	.63	.26	.14
21	110.05	110.08	110.76	112.25	112.53	115.33	117.12	113.10	111.50	110.59	110.26	110.13
22	.04	.09	.74	.32	.41	.69	116.92	112.97	.49	.58	.25	.13
23	.04	.10	.73	.47	.26	.94	.75	.85	.46	.54	.25	.13
24	.04	.10	.71	.61	.15	116.15	.59	.71	.45	.53	.25	.13
25	.04	.10	.71	.87	.03	.39	.44	.61	.41	.51	.25	.12
26	110.04	110.19	110.71	113.06	111.93	116.61	116.28	112.54	111.39	110.49	110.24	110.12
27	.04	.35	.70	.20	.83	.88	.08	.49	.36	.47	.24	.12
28	.14	.30	.76	.28	.75	117.06	115.88	.45	.34	.45	.24	.12
29	.11	.30	.80	.33	.69	.29	.51	.41	.31	.42	-	.12
30	.07	.30	.79	.36	.63	.45	.29	.36	.27	.41	-	.12
31	-	.23	-	.39	.66	-	.22	-	.24	.40	-	.12
Mean	0.69	2.08	28.90	144	248	403	950	351	106	33.6	7.58	2.57
Max.	110.14	110.35	111.06	113.39	113.68	117.45	118.25	115.17	112.32	111.21	110.38	110.22
Min.	110.04	110.04	110.23	110.80	111.63	111.74	115.22	112.36	111.24	110.40	110.24	110.12

WATER YEAR 1969 : Max. 118.25 m. Min. 110.04 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.90	0.40	6.00	34	307	109	1,019	577	170	64	11	4.80
2	0.90	0.40	5.60	36	311	120	1,053	552	165	62	11	4.40
3	0.90	0.50	5.20	41	317	131	1,079	524	158	60	10	4.40
4	0.80	0.50	21	40	321	139	1,104	505	151	57	9.60	4.00
5	0.80	0.60	39	52	331	150	1,120	488	146	55	9.20	3.40
6	0.80	0.70	46	59	337	175	1,131	474	139	53	8.80	3.40
7	0.80	0.70	52	66	345	222	1,135	460	133	50	8.80	3.10
8	0.70	0.80	48	73	349	247	1,133	451	127	49	8.80	3.10
9	0.70	0.80	46	77	349	251	1,124	433	122	46	8.80	3.10
10	0.70	1.00	39	80	346	253	1,109	421	118	45	8.00	2.80
11	0.70	1.60	32	85	339	257	1,089	411	114	42	8.00	2.80
12	0.60	2.50	27	90	332	264	1,077	400	110	40	7.60	2.80
13	0.60	1.30	24	98	330	281	1,069	384	108	38	7.60	2.50
14	0.60	0.90	23	108	320	304	1,053	369	105	35	7.20	2.50
15	0.60	0.80	21	118	310	321	1,035	359	102	32	7.26	2.50
16	0.60	0.60	20	128	293	356	1,021	352	98	31	7.20	2.50
17	0.50	0.60	22	136	275	423	1,003	345	96	29	6.80	2.20
18	0.50	0.70	24	138	253	472	982	325	94	27	6.80	2.20
19	0.50	0.80	28	140	235	516	965	304	92	26	6.40	2.20
20	0.50	0.80	31	150	216	564	940	286	89	24	6.40	2.20
21	0.50	0.80	32	162	196	603	910	269	87	21	6.40	1.90
22	0.40	0.90	30	170	181	660	873	252	86	21	6.00	1.90
23	0.40	1.00	30	188	164	793	842	236	84	18	6.00	1.90
24	0.40	1.00	29	205	151	738	813	218	83	18	6.00	1.90
25	0.40	1.00	29	239	138	779	788	205	80	17	6.00	1.60
26	0.40	3.70	29	264	128	817	761	197	78	16	5.60	1.60
27	0.40	10	28	282	118	865	727	191	76	15	5.60	1.60
28	2.20	8.00	32	293	110	898	693	186	74	14	5.60	1.60
29	1.30	8.00	34	300	104	942	632	181	72	13	–	1.60
30	0.70	8.00	33	304	98	972	596	175	69	12	–	1.60
31	–	5.20	–	309	101	–	585	–	66	12	–	1.60
Total	20.80	64.60	865.80	4,471	7,705	12,105	29,465	10,530	3,292	1,042	212.40	79.70
Mean	0.69	2.08	28.9	144	248	403	950	351	106	33.6	7.58	2.57
Max.	2.20	10	52	309	349	972	1,135	577	170	64	11	4.80
Min.	0.40	0.40	5.20	34	98	109	585	175	66	12	5.60	1.60
Runoff - mcm.	1.797	5.581	74.805	386.294	665.712	1,045.872	2,545.776	909.792	284.429	90.029	18.351	6.886

WATER YEAR 1969 : Max. 1,135 Min. 0.40 Mean 191 Annual Runoff 6,035.325 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 7, 69	06.00	118.25	1,135				

WATER YEAR 1969
MUN RIVER BASIN

Mun River at Seri Prachathipatai Bridge, Ubon Ratchathani (M_7)

Location: Lat. 15°-13'-17" N., Long. 104°-51'-39" E., on left bank at abutment of Seri Prachathipatai bridge, Amphoe Muang, Ubon Ratchathani.

Drainage Area: 106,673 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 105.00 m. (M.S.L.)

Bench Mark: B.M. - H.S. M. 7

Location: Near abutment of the bridge

Elevation: + 113.317 m. (M.S.L.)

Gage Reading Frequency: 2-time daily readings at 09.00 and 15.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1944 to date

Rating Operation:

Period of Rating: 1956, 1958, 1964 to date

Rated by Float: -

Rated by Current Meter: 1956, 1958, 1964 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

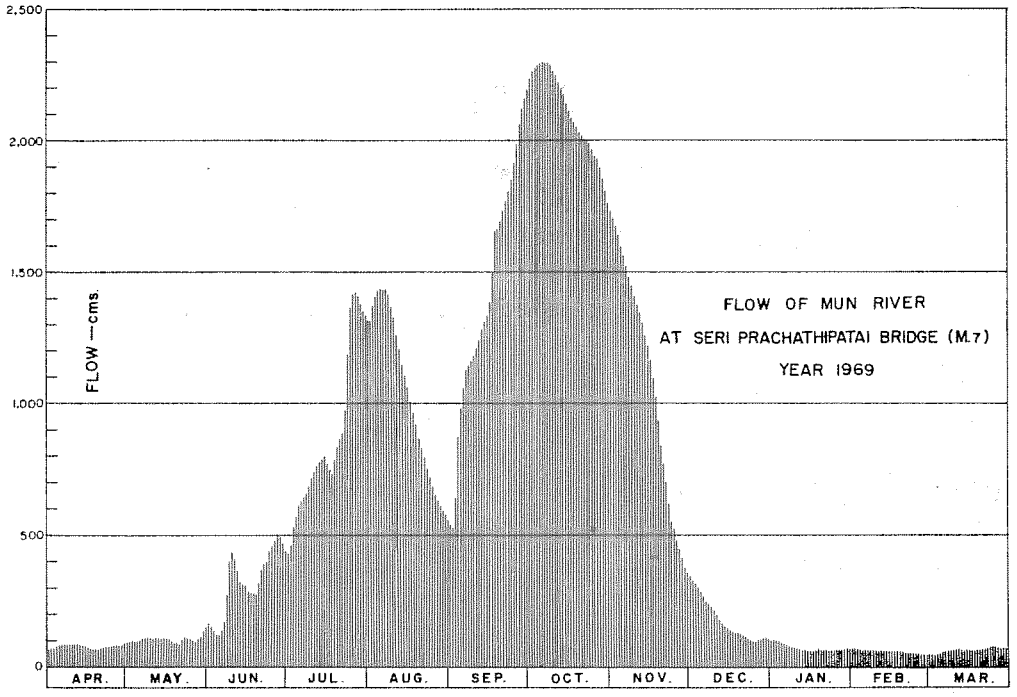
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversions for irrigation above gage site except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	106.67	106.78	107.06	107.86	109.94	108.16	111.63	110.76	107.62	106.82	106.69	106.59
2	.68	.79	.01	.98	110.04	.12	.67	.72	.58	.81	.68	.58
3	.69	.80	106.95	108.17	.15	.71	.69	.67	.54	.80	.67	.58
4	.71	.80	.90	.28	.20	109.12	.71	.61	.49	.78	.67	.59
5	.75	.81	.90	.37	.22	.26	.72	.54	.44	.77	.67	.62
6	106.75	106.82	106.96	108.41	110.23	109.44	111.73	110.46	107.38	106.76	106.67	106.62
7	.75	.85	107.11	.45	.23	.57	.73	.39	.33	.75	.66	.64
8	.76	.85	.49	.49	.19	.60	.72	.31	.31	.73	.66	.65
9	.77	.85	.82	.57	.11	.64	.71	.24	.26	.72	.66	.66
10	.77	.84	.89	.64	.01	.69	.68	.15	.23	.71	.66	.67
11	106.76	106.84	107.82	108.70	109.87	109.74	111.65	110.07	107.18	106.70	106.66	106.67
12	.76	.83	.67	.76	.74	.82	.61	.00	.12	.69	.65	.68
13	.75	.84	.56	.78	.64	.90	.57	109.92	.07	.68	.65	.68
14	.74	.84	.53	.80	.55	.94	.53	.83	.03	.67	.65	.67
15	.73	.85	.52	.82	.45	.98	.48	.73	.00	.67	.65	.67
16	106.71	106.85	107.46	108.77	109.33	110.12	111.43	109.63	106.97	106.67	106.64	106.66
17	.69	.83	.45	.71	.23	.37	.39	.49	.95	.67	.64	.66
18	.68	.80	.44	.67	.15	.55	.37	.34	.94	.68	.64	.67
19	.68	.79	.45	.81	.07	.66	.34	.16	.93	.68	.64	.67
20	.69	.78	.59	.94	108.96	.73	.31	108.96	.92	.67	.64	.67
21	106.70	106.77	107.73	109.00	108.88	110.80	111.29	108.76	106.90	106.66	106.63	106.68
22	.71	.84	.78	.04	.80	.85	.27	.58	.87	.66	.62	.69
23	.71	.86	.80	.24	.72	.94	.28	.40	.85	.66	.61	.70
24	.72	.85	.90	.72	.63	111.02	.24	.24	.83	.65	.60	.71
25	.73	.84	.97	110.07	.56	.12	.21	.13	.81	.66	.60	.72
26	106.74	106.82	108.01	110.17	108.48	111.23	111.16	108.02	106.81	106.67	106.59	106.72
27	.74	.81	.08	.18	.40	.35	.13	107.94	.82	.67	.59	.71
28	.75	.84	.06	.14	.36	.45	.06	.82	.84	.67	.59	.71
29	.76	.88	.00	.07	.31	.52	110.99	.75	.85	.68	-	.71
30	.77	.96	107.91	.02	.27	.58	.91	.67	.84	.69	-	.71
31	-	107.03	-	109.96	.22	-	.83	-	.83	.69	-	.73
Mean	106.71	106.84	107.56	108.99	109.32	110.17	111.42	109.41	107.08	106.70	106.64	106.67
Max.	106.77	107.03	108.08	110.18	110.23	111.58	111.73	110.76	107.62	106.82	106.69	106.73
Min.	106.67	106.77	106.90	107.86	108.22	108.12	110.83	107.67	106.81	106.65	106.59	106.58

WATER YEAR 1969 : Max. 111.73 m. Min. 106.58 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	66	91	167	426	1,312	536	2,235	1,722	343	101	70	49
2	68	94	153	469	1,358	521	2,261	1,701	329	99	68	47
3	70	96	136	539	1,409	750	2,274	1,674	316	96	66	47
4	74	96	122	580	1,428	935	2,286	1,641	299	91	66	49
5	84	99	122	615	1,439	1,000	2,293	1,604	282	89	66	55
6	84	101	139	630	1,434	1,082	2,299	1,560	263	86	66	55
7	84	109	181	645	1,434	1,132	2,299	1,523	247	84	64	59
8	86	109	299	660	1,427	1,156	2,293	1,479	241	79	64	61
9	89	109	411	692	1,391	1,174	2,286	1,440	226	77	64	64
10	89	106	436	721	1,345	1,197	2,267	1,409	216	74	64	66
11	86	106	411	746	1,280	1,220	2,248	1,372	201	72	64	66
12	86	104	360	771	1,220	1,257	2,222	1,340	184	70	61	68
13	84	106	322	780	1,174	1,294	2,197	1,303	170	68	61	68
14	82	106	312	788	1,123	1,312	2,171	1,262	158	66	61	66
15	79	109	309	797	1,087	1,331	2,139	1,216	150	66	61	66
16	74	109	289	775	1,032	1,395	2,107	1,170	142	66	59	64
17	70	104	285	750	986	1,512	2,082	1,105	136	66	59	64
18	68	96	282	733	949	1,658	2,069	1,036	133	68	59	66
19	68	94	282	793	912	1,668	2,050	954	130	68	59	66
20	70	91	333	852	862	1,706	2,030	862	128	66	59	66
21	72	89	380	880	825	1,744	2,018	771	122	64	57	68
22	74	106	397	898	788	1,771	2,004	696	114	64	55	70
23	74	112	404	990	754	1,820	2,001	626	109	64	53	72
24	77	109	440	1,211	717	1,862	1,986	565	104	61	51	74
25	79	106	465	1,372	688	1,917	1,966	523	99	64	51	77
26	82	101	480	1,418	656	1,979	1,938	483	99	66	49	77
27	82	99	505	1,423	626	2,056	1,922	454	101	66	49	74
28	84	106	498	1,404	611	2,120	1,884	411	106	66	49	74
29	86	117	476	1,372	592	2,165	1,847	387	109	68	–	74
30	89	139	444	1,349	577	2,203	1,803	360	106	70	–	74
31	–	158	–	1,322	558	–	1,760	–	104	70	–	79
Total	2,360	3,277	9,843	27,401	31,994	43,473	65,247	32,649	5,467	2,275	1,675	2,025
Mean	78.7	106	328	884	1,032	1,449	2,105	1,088	176	73.4	59.8	65.3
Max.	89	158	505	1,423	1,439	2,203	2,299	1,722	343	101	70	79
Min.	66	89	122	426	558	521	1,760	360	99	61	49	47
Runoff – mcm.	203.904	283.133	850.435	2,367.446	2,764.282	3,756.067	5,637.341	2,820.874	472.349	196.560	144.720	174.960

WATER YEAR 1969 : Max. 2,299 Min.47 Mean 65.3 Annual Runoff 174.960 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct.6,69	24.00	111.73	2,299				

WATER YEAR 1969
MUN RIVER BASIN

Lam Plai Mat at railway bridge, Buri Ram (M_8)

Location: Lat. 15°-01'-05" N., Long. 102°-48'-55" E., on left bank about 60 meters upstream from railway bridge, Amphoe Lam Plai Mat, Buri Rum

Drainage Area: 5,025 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 149.50 m. (M.S.L.)

Bench Mark: B.M. M. 8

- Location: At the foot of the ladder of automatic gage building.
- Elevation: + 155.859 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1951 to date

Rating Operation:

- Period of Rating: 1967
- Rated by Float: -
- Rated by Current Meter: 1967

Stability of Channel Regimes: Rather stable, no shifting adjustment for flow computation for year without actual ratings.

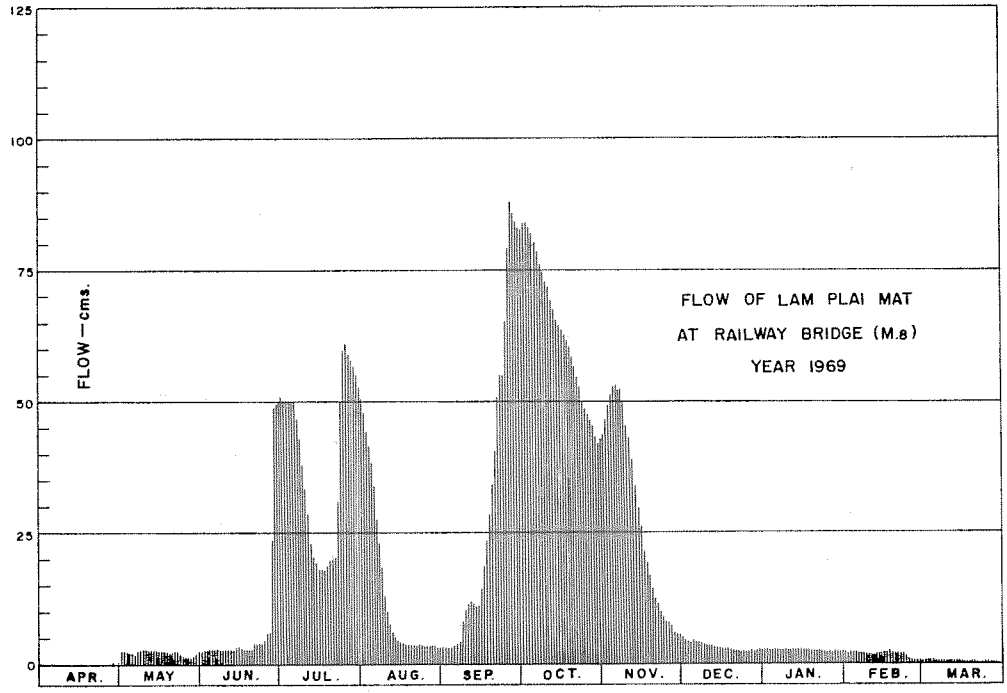
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1967. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	149.82	150.64	150.66	155.12	155.10	150.76	156.46	154.71	151.03	150.70	150.59	150.27
2	.81	.66	.67	.07	154.92	.76	.51	.90	150.97	.70	.57	.26
3	.81	.65	.66	.07	.70	.77	.49	155.10	.93	.69	.63	.26
4	.80	.62	.68	.08	.48	.76	.47	.20	.92	.67	.63	.26
5	.80	.59	.68	.09	.17	.79	.43	.24	.95	.66	.61	.25
6	149.79	150.55	150.69	155.06	153.78	150.85	156.39	155.24	150.91	150.66	150.58	150.25
7	.77	.58	.67	154.93	.33	.89	.33	.18	.90	.64	.55	.25
8	.73	.70	.67	.70	152.87	151.16	.27	.09	.89	.68	.53	.24
9	.72	.71	.69	.43	.36	.56	.21	154.96	.85	.68	.53	.24
10	.70	.72	.67	.07	151.85	.77	.14	.80	.83	.68	.51	.23
11	149.69	150.71	150.67	153.64	151.49	151.80	156.07	154.60	150.81	150.69	150.49	150.23
12	.68	.71	.65	.22	.27	.79	.00	.37	.79	.69	.51	.24
13	.67	.71	.69	152.90	.10	.71	155.93	.09	.77	.71	.59	.23
14	.66	.70	.73	.69	.00	.74	.87	153.76	.75	.70	.60	.23
15	.65	.70	.76	.57	150.95	.87	.81	.41	.75	.70	.63	.22
16	149.64	150.68	150.73	152.45	150.89	152.24	155.78	153.08	150.74	150.69	150.61	150.22
17	.66	.66	.70	.43	.88	.72	.74	152.77	.74	.69	.64	.22
18	.67	.64	.70	.50	.85	153.19	.69	.51	.73	.69	.63	.21
19	.68	.62	.71	.60	.84	.69	.63	.27	.71	.66	.60	.20
20	.66	.63	.70	.64	.83	154.11	.55	.06	.69	.65	.59	.20
21	149.66	150.65	150.70	152.61	150.82	154.63	155.44	151.88	150.68	150.64	150.57	150.20
22	.65	.66	.83	.69	.82	155.11	.37	.72	.67	.64	.58	.19
23	.65	.62	.87	153.62	.83	.37	.26	.61	.67	.65	.59	.19
24	.65	.55	.83	155.22	.82	.35	.16	.48	.66	.62	.40	.19
25	.64	.42	151.00	.62	.82	.88	.06	.38	.63	.62	.35	.20
26	149.64	150.43	151.14	155.64	150.82	156.43	154.97	151.38	150.66	150.62	150.30	150.19
27	.67	.43	.12	.58	.82	.63	.91	.28	.68	.60	.26	.18
28	.89	.42	153.82	.51	.81	.57	.83	.16	.66	.64	.28	.17
29	.94	.49	155.01	.44	.80	.50	.71	.11	.68	.65	-	.15
30	150.11	.57	.09	.35	.77	.45	.59	.10	.70	.65	-	.15
31	-	.64	-	.23	.76	-	.64	-	.70	.65	-	.15
Mean	149.73	150.61	151.14	154.15	151.82	153.13	155.70	153.25	150.77	150.66	150.53	150.21
Max.	150.11	150.72	155.09	155.64	155.10	156.63	156.51	155.24	151.03	150.70	150.64	150.27
Min.	149.64	150.42	150.65	152.43	150.76	150.76	154.59	151.10	150.63	150.60	150.26	150.15

WATER YEAR 1969 : Max. 156.63 m. Min. 149.64 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	2.54	2.66	51	50	3.32	83	44	5.24	2.90	2.25	0.68
2	0.00	2.66	2.72	50	47	3.32	84	47	4.79	2.90	2.15	0.64
3	0.00	2.60	2.66	50	44	3.39	84	50	4.51	2.84	2.48	0.64
4	0.00	2.42	2.78	50	41	3.32	83	52	4.44	2.72	2.48	0.64
5	0.00	2.25	2.78	50	37	3.53	82	53	4.65	2.66	2.36	0.60
6	0.00	2.05	2.84	50	32	3.95	81	53	4.37	2.66	2.20	0.60
7	0.00	2.20	2.72	48	27	4.23	79	52	4.30	2.54	2.05	0.60
8	0.00	2.90	2.72	44	22	6.28	77	50	4.23	2.78	1.95	0.56
9	0.00	2.97	2.84	40	17	9.64	75	48	3.95	2.78	1.95	0.56
10	0.00	3.04	2.72	36	12	11	73	45	3.81	2.78	1.85	0.52
11	0.00	2.97	2.72	30	9.01	12	72	43	3.67	2.84	1.75	0.52
12	0.00	2.97	2.60	26	7.16	12	70	39	3.53	2.84	1.85	0.56
13	0.00	2.97	2.84	22	5.80	11	68	36	3.39	2.97	2.25	0.52
14	0.00	2.90	3.11	20	5.00	11	66	32	3.25	2.90	2.30	0.52
15	0.00	2.90	3.32	19	4.65	12	65	28	3.25	2.90	2.48	0.48
16	0.00	2.78	3.11	18	4.23	16	64	24	3.18	2.84	2.36	0.48
17	0.00	2.66	2.90	18	4.16	21	63	21	3.18	2.84	2.54	0.48
18	0.00	2.54	2.90	18	3.95	25	62	19	3.11	2.84	2.48	0.44
19	0.00	2.42	2.97	19	3.88	31	61	16	2.97	2.66	2.30	0.40
20	0.00	2.48	2.90	20	3.81	36	59	14	2.84	2.60	2.25	0.40
21	0.00	2.60	2.90	20	3.74	43	57	12	2.78	2.54	2.15	0.40
22	0.00	2.66	3.81	20	3.74	51	55	11	2.72	2.54	2.20	0.36
23	0.00	2.42	4.09	30	3.81	55	53	10	2.72	2.60	2.25	0.36
24	0.00	2.05	3.81	52	3.74	55	51	8.92	2.66	2.42	1.30	0.36
25	0.00	1.40	5.00	60	3.74	67	49	8.04	2.48	2.42	1.05	0.40
26	0.00	1.45	6.12	61	3.74	82	48	8.12	2.66	2.42	0.80	0.36
27	0.00	1.45	5.96	59	3.74	88	47	7.24	2.78	2.30	0.64	0.32
28	0.00	1.40	33	58	3.67	86	46	6.28	2.66	2.54	0.72	0.28
29	0.00	1.75	49	57	3.60	84	44	5.88	2.78	2.60	–	0.20
30	0.04	2.15	50	55	3.39	83	42	5.80	2.90	2.60	–	0.20
31	–	2.54	–	53	3.32	–	43	–	2.90	2.60	–	0.20
Total	0.04	75.09	220.50	1,204	420.88	932.98	1,986	849.28	106.70	83.37	55.39	14.28
Mean	0.00	2.42	7.35	38.8	13.6	31.1	64.1	28.3	3.44	2.69	1.98	0.46
Max.	0.04	3.04	50	61	50	88	84	53	5.24	2.90	2.54	0.68
Min.	0.00	1.40	2.60	18	3.32	3.32	42	5.80	2.48	2.30	0.64	0.20
Runoff - mcm.	0.003	6.488	19.051	104.026	36.364	80.609	171.590	73.378	9.219	7.203	4.785	1.234

WATER YEAR 1969 : Max. 88 Min. 0.00 Mean 16.3 Annual Runoff 513.951 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept.27,70	6.00	156.64	88				

WATER YEAR 1969
MUN RIVER BASIN

Huai Samran at highway bridge, Si Sa Ket (M9)

Location: Lat. 15°-07'-00" N., Long. 104°-19'-20" E., on left bank downstream side of the bridge, and about 200 meters north of city jail, Amphoe Muang, Si Sa Ket.

Drainage Area: 3,026 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 109.00 m. (M.S.L.)

Bench Mark: B.M. No. 0339

Location: On right bank at abutment of highway bridge.

Elevation: + 123.034 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1954 to date

Rating Operation:

Period of Rating: 1951, 1972 to date

Rated by Float:

Rated by Current Meter: 1951, 1972 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1951. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

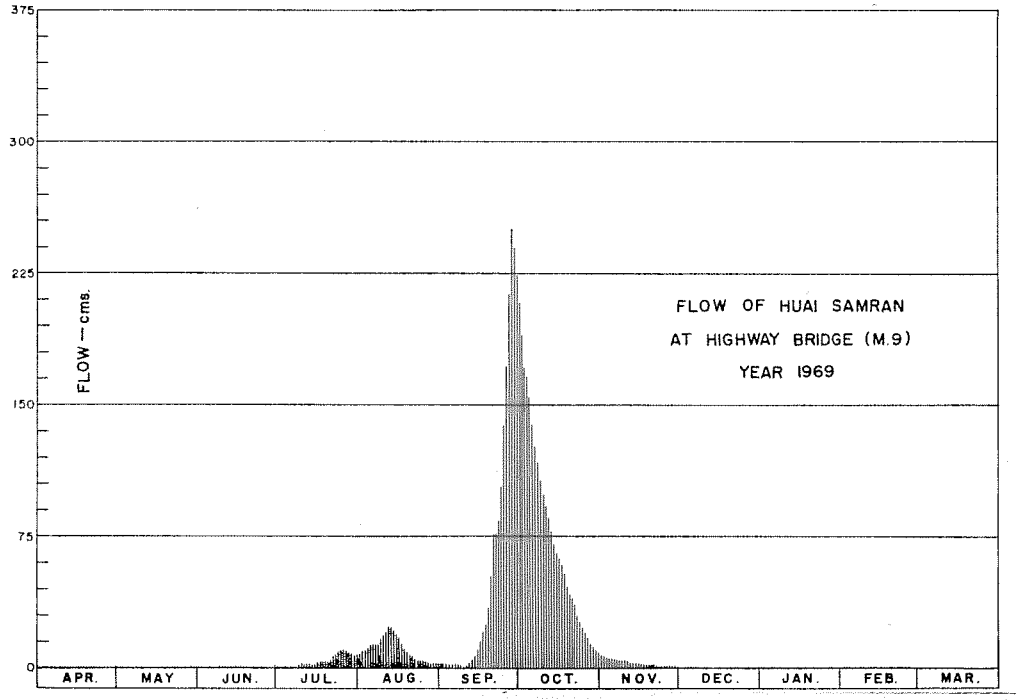
Remarks: Record for period of no flow are omitted.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	109.22	109.30	109.72	109.67	112.02	110.90	117.48	111.89	110.28	109.66	109.27	109.21
2	.23	.32	.66	.76	.12	.84	.29	.76	.16	.65	.26	.17
3	.23	.33	.70	.90	.25	.80	.08	.70	.10	.66	.25	.17
4	.22	.38	.85	110.09	.37	.79	116.87	.54	.10	.69	.25	.22
5	.22	.41	110.12	.12	.47	.83	.70	.50	.09	.68	.37	.26
6	109.24	109.43	110.28	110.16	112.43	110.83	116.53	111.48	110.06	109.65	109.35	109.20
7	.23	.40	.12	.24	.42	.80	.35	.45	.06	.62	.30	.18
8	.23	.38	.25	.57	.50	.70	.16	.40	.03	.60	.32	.18
9	.21	.37	.35	.97	.71	.54	115.97	.36	.01	.59	.30	.26
10	.22	.36	.30	111.03	.86	.42	.77	.30	.01	.58	.30	.20
11	109.28	109.37	110.22	110.98	113.03	110.89	115.62	111.21	109.98	109.56	109.31	109.18
12	.27	.35	.16	.94	.14	111.21	.44	.13	.93	.52	.30	.17
13	.27	.35	.11	.88	.10	.61	.24	.06	.87	.49	.30	.18
14	.36	.39	.05	.75	112.99	112.03	.03	.01	.82	.48	.30	.19
15	.43	.42	109.99	.83	.75	.36	114.86	.00	.80	.49	.31	.20
16	109.44	109.46	109.95	111.06	112.60	112.78	114.80	110.97	109.78	109.57	109.29	109.19
17	.40	.53	.87	.23	.43	113.12	.65	.93	.76	.55	.27	.21
18	.36	.54	.80	.25	.17	.31	.46	.87	.74	.53	.26	.24
19	.34	.52	.79	.23	.04	114.16	.18	.80	.70	.51	.26	.18
20	.32	.50	.87	.20	111.91	.62	.01	.84	.67	.50	.25	.18
21	109.31	109.59	109.90	111.66	111.80	115.26	113.90	110.78	109.65	109.50	109.24	109.18
22	.30	.64	.84	.83	.64	.28	.71	.70	.63	.48	.23	.17
23	.30	.63	.80	.97	.47	.63	.40	.65	.60	.44	.24	.16
24	.29	.63	.81	112.09	.38	116.09	.19	.60	.61	.42	.26	.18
25	.32	.50	.80	.15	.30	.83	.03	.59	.62	.38	.27	.16
26	109.33	109.40	109.75	112.13	111.17	117.25	112.83	100.53	109.60	109.33	109.25	109.14
27	.32	.38	.70	.09	.10	.79	.59	.51	.59	.30	.25	.20
28	.32	.42	.69	111.98	.03	.93	.37	.47	.79	.31	.24	.20
29	.31	.77	.70	.95	110.97	.78	.23	.45	.78	.33	–	.17
30	.31	.82	.67	.91	.90	.65	.13	.41	.73	.29	–	.14
31	–	.80	–	112.00	.91	–	.00	–	.69	.28	–	.14
Mean	109.29	109.47	109.92	111.12	112.06	113.36	114.70	111.03	109.85	109.50	109.28	109.19
Max.	109.44	109.82	110.35	112.15	113.14	117.93	117.48	111.89	110.28	109.69	109.37	109.26
Min.	109.21	109.30	109.66	109.67	110.90	110.42	112.00	110.41	109.60	109.28	109.24	109.14

WATER YEAR 1969 : Max. 117.93 m. Min. 109.14 m.

8M. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.000	0.106	0.091	8.52	200	205	7.31	0.49	0.088	0.000	0.00
2	0.00	0.004	0.088	0.118	9.62	1.79	187	6.23	0.35	0.085	0.000	0.00
3	0.00	0.006	0.100	0.160	10	1.65	170	5.82	0.28	0.088	0.000	0.00
4	0.00	0.016	0.145	0.272	12	1.62	155	4.83	0.28	0.097	0.000	0.00
5	0.00	0.022	0.302	0.302	14	1.75	144	4.62	0.27	0.094	0.014	0.00
6	0.00	0.026	0.494	0.346	13	1.75	133	4.52	0.25	0.085	0.010	0.00
7	0.00	0.020	0.302	0.442	13	1.65	123	4.36	0.25	0.076	0.000	0.00
8	0.00	0.016	0.455	1.034	14	1.35	114	4.10	0.22	0.070	0.004	0.00
9	0.00	0.014	0.605	2.24	17	0.968	105	3.90	0.21	0.067	0.000	0.00
10	0.00	0.012	0.520	2.45	19	0.728	96	3.60	0.21	0.064	0.000	0.00
11	0.00	0.014	0.416	2.28	22	1.96	90	3.19	0.18	0.058	0.002	0.00
12	0.00	0.010	0.346	2.14	24	3.19	83	2.83	0.17	0.046	0.000	0.00
13	0.00	0.010	0.291	1.93	23	5.22	76	2.56	0.15	0.038	0.000	0.00
14	0.012	0.018	0.240	1.50	21	8.63	68	2.38	0.14	0.036	0.000	0.00
15	0.026	0.024	0.187	1.75	18	12	63	2.35	0.13	0.038	0.002	0.00
16	0.028	0.032	0.175	2.56	15	18	61	2.24	0.12	0.061	0.00	0.00
17	0.020	0.049	0.151	3.28	13	24	57	2.10	0.12	0.055	0.00	0.00
18	0.012	0.052	0.130	3.37	10	27	52	1.89	0.11	0.049	0.00	0.00
19	0.008	0.046	0.127	3.28	8.74	45	45	1.65	0.10	0.043	0.00	0.00
20	0.004	0.040	0.151	3.15	7.49	56	41	1.79	0.091	0.040	0.00	0.00
21	0.002	0.067	0.160	5.55	6.50	77	39	1.59	0.085	0.040	0.00	0.00
22	0.000	0.082	0.142	6.77	5.42	77	35	1.35	0.079	0.036	0.00	0.00
23	0.000	0.079	0.130	8.03	4.47	90	28	1.22	0.070	0.028	0.00	0.00
24	0.000	0.079	0.133	9.29	4.00	111	25	1.10	0.073	0.024	0.00	0.00
25	0.004	0.040	0.130	9.95	3.60	152	22	1.08	0.076	0.016	0.00	0.00
26	0.006	0.020	0.115	9.73	3.01	184	19	0.95	0.070	0.006	0.00	0.00
27	0.004	0.016	0.100	9.29	2.70	235	15	0.90	0.067	0.000	0.00	0.00
28	0.004	0.024	0.097	8.12	2.45	250	12	0.82	0.127	0.002	0.00	0.00
29	0.002	0.121	0.100	7.85	2.24	234	11	0.78	0.124	0.006	–	0.00
30	0.002	0.136	0.091	7.49	2.00	221	10	0.71	0.109	0.000	–	0.00
31	–	0.130	–	8.30	2.03	–	8.30	–	0.097	0.000	–	0.00
Total	0.134	1.225	6.529	123.065	330.99	1,847.256	2,292.30	82.77	5.098	1.436	0.032	0.000
Mean	0.004	0.039	0.217	3.97	10.7	61.5	73.9	2.76	0.164	0.046	0.001	0.000
Max.	0.028	0.136	0.605	9.95	24	250	205	7.31	0.49	0.097	0.014	0.000
Min.	0.000	0.000	0.088	0.091	2.00	0.728	8.30	0.71	0.070	0.00	0.000	0.000
Runoff – MCM.	0.012	0.106	0.564	10.633	28.597	159.603	198.055	7.151	0.440	0.124	0.003	0.000

WATER YEAR 1969 : Max. 250 Min. 0.00 Mean 12.8 Annual Runoff 405.288 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 28	12.00	117.95	252				

WATER YEAR 1969
MUN RIVER BASIN

Lam Chi at railway bridge, Surin (M_{26})

Location: Lat. 14°-54'-03" N., Long. 103°-24'-21" E., on left bank about 60 meters downstream from railway bridge, Amphoe Muang, Surin.

Drainage Area: 2,927 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 127.00 m. (M.S.L.)

Bench Mark: B.M. - M26

Location: At the foot of the ladder of automatic gage building.

Elevation: + 135.010 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1954 to date

Rating Operation:

Period of Rating: 1967-1968

Rated by Float: -

Rated by Current Meter: 1967-1968

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

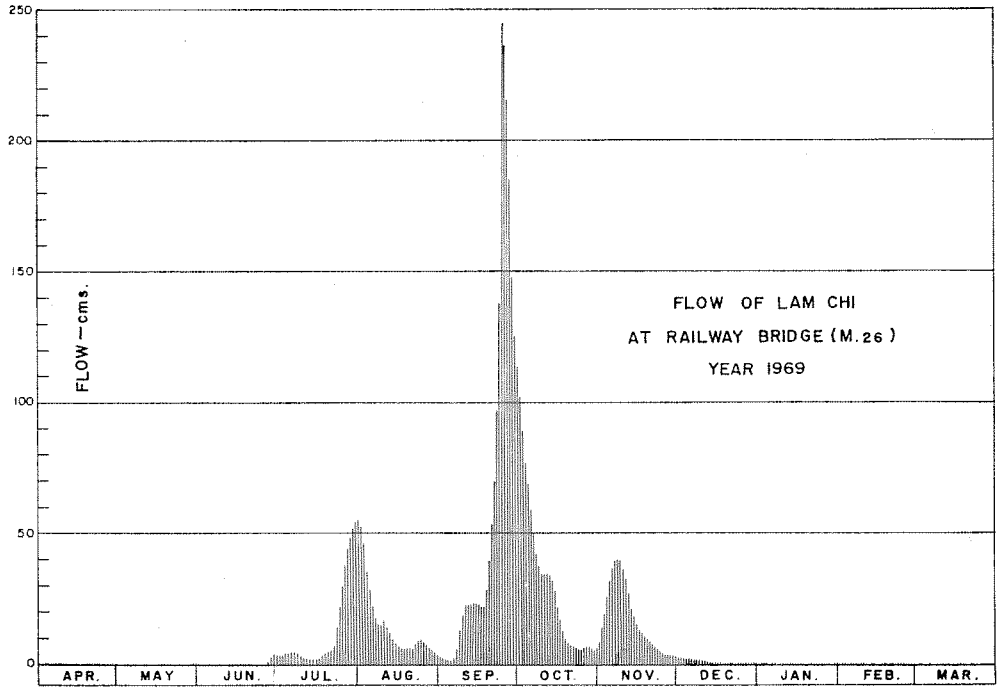
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1967-1968. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	127.47	127.46	127.48	128.60	132.92	128.51	135.37	129.68	128.43	127.61	127.60	127.48
2	.45	.47	.50	.58	.69	.41	.08	130.17	.42	.61	.59	.46
3	.43	.45	.56	.62	.31	.34	134.69	.72	.40	.55	.55	.47
4	.44	.49	.50	.67	131.71	.23	.25	131.24	.37	.60	.54	.48
5	.44	.52	.58	.75	.27	.21	133.77	.68	.33	.60	.53	.48
6	127.46	127.49	127.55	128.90	130.77	128.36	133.21	131.88	128.26	127.59	127.57	127.51
7	.47	.52	.53	.90	.34	.63	132.57	132.00	.18	.56	.55	.57
8	.45	.50	.50	.77	.19	129.39	.03	.04	.23	.54	.50	.51
9	.43	.48	.46	.61	.08	130.20	131.74	131.96	.22	.58	.51	.48
10	.42	.44	.55	.46	.23	.61	.63	.75	.08	.50	.50	.49
11	127.42	127.50	127.51	128.34	130.18	130.76	131.67	131.38	127.99	127.54	127.48	127.52
12	.42	.50	.54	.27	.02	.81	.71	130.99	.91	.55	.53	.52
13	.40	.44	.53	.27	19.77	.82	.64	.64	.86	.51	.55	.52
14	.41	.45	.56	.29	.48	.84	.40	.34	.84	.47	.56	.53
15	.44	.41	.53	.29	.32	.82	130.99	.11	.86	.59	.52	.56
16	127.44	127.42	127.55	128.29	129.16	130.77	130.49	129.91	127.91	127.54	127.51	127.54
17	.46	.41	.56	.43	.11	.72	.05	.73	.92	.52	.50	.50
18	.44	.42	.70	.61	.02	.78	129.72	.60	.89	.52	.49	.48
19	.44	.43	.68	.76	.03	131.53	.49	.47	.82	.51	.50	.48
20	.46	.43	.65	.80	.09	132.36	.34	.34	.79	.48	.53	.48
21	127.42	127.44	127.63	128.84	139.01	133.33	129.23	129.20	127.78	127.51	127.58	127.48
22	.39	.42	.61	129.09	.08	134.19	.19	.07	.75	.53	.55	.48
23	.38	.41	.64	.73	.32	135.07	.11	128.92	.72	.50	.58	.48
24	.37	.41	.65	130.46	.45	.67	.04	.99	.69	.47	.57	.48
25	.36	.41	.68	131.21	.45	136.14	.04	.97	.68	.51	.54	.48
26	127.42	127.40	127.73	131.78	129.36	136.27	129.10	128.61	127.68	127.55	127.51	127.47
27	.47	.40	128.15	132.16	.21	.14	.13	.60	.62	.50	.46	.45
28	.47	.41	.41	.49	.06	135.94	.09	.54	.69	.49	.51	.45
29	.45	.51	.66	.77	128.94	.76	.05	.47	.67	.49	-	.43
30	.45	.60	.65	.94	.81	.58	128.98	.45	.64	.49	-	.43
31	-	.56	-	.99	.64	-	129.21	-	.62	.53	-	.45
Mean	127.43	127.46	127.69	129.54	129.90	131.77	131.00	130.06	127.85	127.53	127.53	127.49
Max.	127.47	127.60	128.66	132.99	132.92	136.27	135.37	132.04	128.43	127.61	127.60	127.57
Min.	127.36	127.40	127.46	128.27	128.64	128.21	128.98	128.45	127.62	127.47	127.46	127.43

WATER YEAR 1969 : Max. 136.27 m. Min. 127.36 m.

BM. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.041	0.038	0.044	3.70	54	3.25	113	12	2.85	0.22	0.20	0.044
2	0.035	0.041	0.050	3.60	50	2.75	101	16	2.80	0.22	0.18	0.038
3	0.029	0.035	0.140	3.80	44	2.40	88	22	2.70	0.12	0.12	0.041
4	0.032	0.047	0.050	4.05	35	1.85	78	29	2.55	0.20	0.11	0.044
5	0.032	0.080	0.170	4.45	29	1.75	69	35	2.35	0.20	0.095	0.044
6	0.038	0.047	0.125	5.30	23	2.50	58	38	2.00	0.18	0.15	0.065
7	0.041	0.080	0.095	5.30	18	3.85	48	40	1.64	0.14	0.12	0.15
8	0.035	0.050	0.050	4.55	16	8.82	40	40	1.85	0.11	0.050	0.065
9	0.029	0.044	0.038	3.75	15	16	36	39	1.80	0.17	0.065	0.044
10	0.029	0.032	0.125	3.00	17	21	34	36	1.34	0.05	0.050	0.047
11	0.029	0.050	0.065	2.40	16	23	35	31	1.07	0.11	0.044	0.080
12	0.029	0.050	0.110	2.05	14	23	35	26	0.83	0.12	0.095	0.080
13	0.020	0.032	0.095	2.05	12	24	34	21	0.72	0.065	0.12	0.080
14	0.023	0.035	0.140	2.15	9.54	24	31	18	0.68	0.041	0.14	0.095
15	0.032	0.023	0.095	2.15	8.26	24	26	15	0.72	0.18	0.080	0.140
16	0.032	0.026	0.125	2.15	7.12	23	20	13	0.83	0.11	0.065	0.110
17	0.038	0.023	0.140	2.85	6.77	22	15	12	0.86	0.080	0.050	0.050
18	0.032	0.026	0.400	3.75	6.14	23	11	10	0.78	0.080	0.047	0.044
19	0.032	0.029	0.360	4.50	6.21	33	9.62	9.46	0.64	0.065	0.050	0.044
20	0.038	0.029	0.300	4.70	6.63	45	8.42	8.42	0.58	0.044	0.095	0.044
21	0.029	0.032	0.26	4.94	6.07	61	7.61	7.40	0.56	0.065	0.170	0.44
22	0.018	0.026	0.22	6.63	6.56	77	7.33	6.49	0.50	0.095	0.12	0.044
23	0.016	0.023	0.28	12	8.26	100	6.77	5.44	0.44	0.050	0.17	0.044
24	0.014	0.023	0.30	19	9.30	134	6.28	4.65	0.38	0.041	0.15	0.044
25	0.012	0.023	0.36	29	9.30	218	6.28	4.05	0.36	0.065	0.11	0.044
26	0.026	0.023	0.46	36	8.58	244	6.70	3.75	0.36	0.125	0.065	0.041
27	0.041	0.023	1.55	42	7.47	218	6.91	3.70	0.24	0.050	0.038	0.035
28	0.041	0.023	2.75	47	6.42	178	6.63	3.40	0.38	0.047	0.065	0.035
29	0.035	0.065	4.00	51	5.58	145	6.35	3.05	0.34	0.047	–	0.029
30	0.035	0.200	3.95	54	4.76	127	5.86	2.95	0.28	0.047	–	0.029
31	–	0.140	–	55	3.90	–	7.47	–	0.24	0.095	–	0.035
Total	0.913	1.418	16.847	426.82	469.87	1,830.17	964.23	515.76	33.67	3.232	2.814	1.773
Mean	0.030	0.046	0.51	13.8	15.1	61.0	31.1	17.2	1.09	0.104	0.100	0.057
Max.	0.041	0.200	4.00	55	54	244	113	40	2.85	0.22	0.20	0.155
Min.	0.012	0.023	0.038	2.05	3.90	1.75	5.86	2.95	0.24	0.041	0.038	0.029
Runoff – MCM.	0.079	0.122	1.455	36.877	40.597	158.127	83.309	44.562	2.909	0.279	0.243	0.153

WATER YEAR 1969 : Max. 244 Min. 0.012 Mean 117 Annual Runoff 368.713 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 26,	06.00	136.28	246				

WATER YEAR 1969
MUN RIVER BASIN

Lam Se Bai at Phawaplutanon bridge, Yasothon (M_{32})

Location: Lat. 15°-50'-20" N., Long. 104°-27'-35" E., on right bank about 25 meters upstream from Phawaphutanon bridge at Tambon Pho Sai, Amphoe Kham Khuan Kaeo, Yasothon.

Drainage Area: 1,654 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 119.90 m. (M.S.L.)

Bench Mark: B.M. - H.S./R.I.D.

Location: Near the gage site

Elevation: + 128.102 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1954 to date

Rating Operation:

Period of Rating: 1965-1973

Rated by Float: -

Rated by Current Meter: 1965-1973

Stability of Channel Regimes: Rather stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

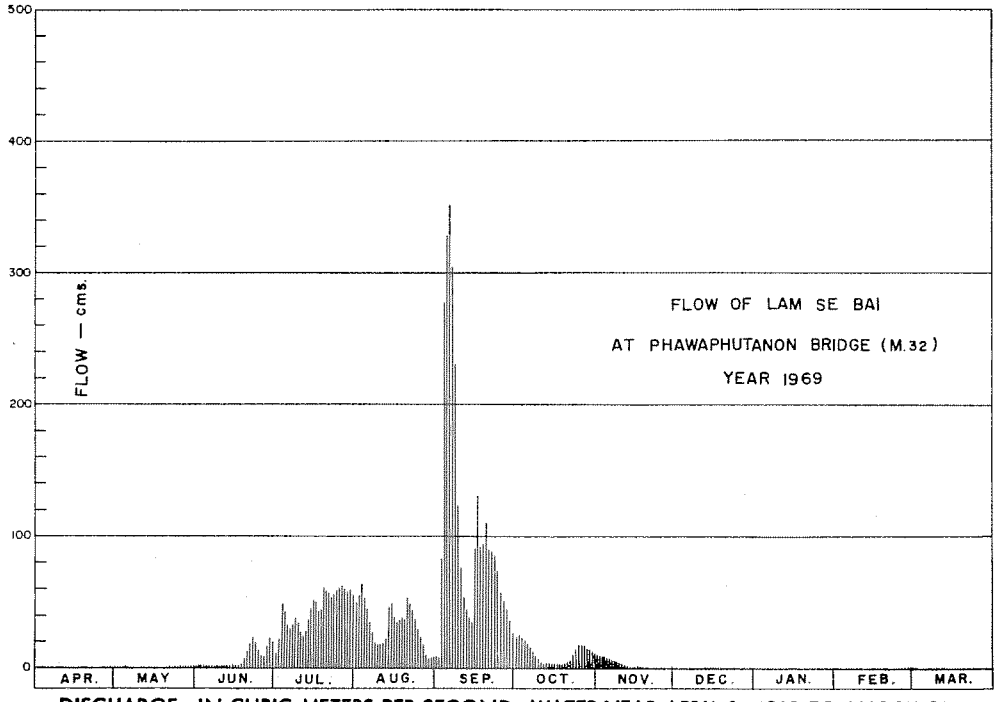
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1965-1967. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Record for period of no flow are omitted.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	120.58	120.54	121.24	122.16	123.88	121.93	122.92	122.20	120.72	120.54	120.51	120.46
2	.58	.54	.30	.40	.97	122.05	123.03	.06	.71	.54	.50	.46
3	.57	.54	.15	123.32	124.17	124.47	.01	.03	.69	.54	.50	.45
4	.57	.54	.00	.84	123.95	126.15	122.91	.09	.68	.54	.50	.45
5	.56	.54	120.91	.62	.69	.37	.81	.03	.68	.54	.50	.45
6	120.55	120.53	120.91	123.38	123.43	126.48	122.66	121.94	120.68	120.54	120.50	120.45
7	.54	.53	121.01	.27	.14	.23	.47	.83	.67	.54	.50	.45
8	.54	.54	.11	.39	122.87	125.77	.24	.72	.66	.54	.50	.45
9	.53	.54	.16	.50	.65	124.98	.02	.62	.64	.54	.50	.45
10	.53	.55	.18	.44	.58	.38	121.81	.52	.64	.54	.50	.45
11	120.52	120.55	121.11	123.12	122.70	124.07	121.66	121.42	120.62	120.54	120.50	120.45
12	.52	.55	.00	122.96	.76	123.83	.53	.32	.62	.54	.50	.45
13	.52	.55	120.91	123.31	123.21	.63	.43	.24	.62	.54	.50	.45
14	.52	.53	.84	.59	.79	.42	.35	.18	.61	.54	.50	.45
15	.51	.53	.80	.78	.79	.29	.29	.15	.61	.53	.50	.45
16	120.51	120.53	120.78	123.90	123.55	124.93	121.23	121.13	120.60	120.53	120.49	120.45
17	.51	.52	.80	.87	.42	.99	.18	.10	.59	.53	.49	.44
18	.51	.52	121.07	.69	.55	.58	.16	.09	.59	.53	.49	.44
19	.51	.52	.58	.73	.54	.61	.18	.06	.58	.52	.49	.44
20	.51	.51	122.02	124.12	.55	.78	.23	.02	.58	.52	.49	.44
21	120.51	120.57	122.41	124.01	123.95	124.54	121.25	120.98	120.57	120.52	120.49	120.44
22	.50	.61	.97	123.94	.97	.53	.40	.94	.57	.52	.49	.43
23	.49	.61	.93	.91	.61	.49	.80	.91	.57	.52	.48	.43
24	.49	.62	.62	124.04	.50	.26	122.26	.87	.57	.52	.48	.42
25	.48	.62	.32	.11	.20	.06	.52	.85	.57	.52	.48	.41
26	120.48	120.61	122.05	124.10	122.75	123.92	122.65	120.82	120.57	120.52	120.48	120.41
27	.50	.61	.00	.14	.33	.79	.70	.79	.57	.52	.47	.41
28	.53	.61	.70	.06	121.96	.58	.65	.78	.55	.52	.47	.40
29	.54	.64	123.01	.03	.95	.33	.60	.75	.54	.51	-	.40
30	.54	.66	122.64	.07	122.03	.05	.51	.73	.54	.51	-	.40
31	-	.79	-	123.99	.01	-	.37	-	.54	.51	-	.40
Mean	120.52	120.56	121.58	123.63	123.21	124.35	122.05	121.30	120.62	120.53	120.49	120.43
Max.	120.58	120.79	123.01	124.14	124.17	126.48	123.03	122.20	120.72	120.54	120.51	120.46
Min.	120.48	120.51	120.78	122.16	122.01	121.93	121.16	120.73	120.54	120.51	120.47	120.40

WATER YEAR 1969 : Max. 126.48 m. Min. 120.46 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.00	1.70	10	51	7.30	22	11	0.12	0.00	0.00	0.00
2	0.00	0.00	2.00	13	55	8.65	25	8.78	0.11	0.00	0.00	0.00
3	0.00	0.00	1.25	32	65	84	24	8.39	0.09	0.00	0.00	0.00
4	0.00	0.00	0.60	49	54	291	22	9.17	0.08	0.00	0.00	0.00
5	0.00	0.00	0.42	41	43	331	20	8.37	0.08	0.00	0.00	0.00
6	0.00	0.00	0.42	33	35	351	18	7.40	0.08	0.00	0.00	0.00
7	0.00	0.00	0.64	30	27	305	14	6.30	0.07	0.00	0.00	0.00
8	0.00	0.00	1.05	34	21	230	11	5.20	0.06	0.00	0.00	0.00
9	0.00	0.00	1.30	37	17	130	8.26	4.20	0.04	0.00	0.00	0.00
10	0.00	0.00	1.40	35	16	78	6.10	3.36	0.04	0.00	0.00	0.00
11	0.00	0.00	1.05	27	18	60	4.60	2.64	0.02	0.00	0.00	0.00
12	0.00	0.00	0.60	23	19	49	3.44	2.10	0.02	0.00	0.00	0.00
13	0.00	0.00	0.42	31	29	41	2.71	1.70	0.02	0.00	0.00	0.00
14	0.00	0.00	0.28	40	47	35	2.25	1.40	0.01	0.00	0.00	0.00
15	0.00	0.00	0.20	47	47	31	1.95	1.25	0.01	0.00	0.00	0.00
16	0.00	0.00	0.18	52	38	125	1.65	1.15	0.00	0.00	0.00	0.00
17	0.00	0.00	0.20	51	35	131	1.40	1.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.88	43	38	92	1.30	0.96	0.00	0.00	0.00	0.00
19	0.00	0.00	3.92	45	38	95	1.40	0.84	0.00	0.00	0.00	0.00
20	0.00	0.00	8.26	62	38	110	1.65	0.68	0.00	0.00	0.00	0.00
21	0.00	0.00	14	57	54	89	1.75	0.56	0.00	0.00	0.00	0.00
22	0.00	0.00	23	54	46	88	2.50	0.48	0.00	0.00	0.00	0.00
23	0.00	0.00	23	52	40	85	6.00	0.42	0.00	0.00	0.00	0.00
24	0.00	0.02	17	58	37	70	11	0.34	0.00	0.00	0.00	0.00
25	0.00	0.02	12	62	28	59	15	0.30	0.00	0.00	0.00	0.00
26	0.00	0.01	8.65	61	19	53	17	0.24	0.00	0.00	0.00	0.00
27	0.00	0.01	8.00	63	12	47	18	0.19	0.00	0.00	0.00	0.00
28	0.00	0.01	18	59	7.60	39	17	0.18	0.00	0.00	0.00	0.00
29	0.00	0.04	24	58	7.50	32	16	0.15	0.00	0.00	–	0.00
30	0.00	0.06	18	60	8.39	25	15	0.13	0.00	0.00	–	0.00
31	–	0.19	–	56	8.13	–	13	–	0.00	0.00	–	0.00
Total	0.00	0.36	192.42	1,375	998.62	3,171.95	324.96	88.88	0.85	0.00	0.00	0.00
Mean	0.00	0.011	6.41	44.3	32.2	106	10.48	2.95	0.027	0.00	0.00	0.00
Max.	0.00	0.19	24	63	65	351	25	11	0.12	0.00	0.00	0.00
Min.	0.00	0.00	0.18	10	8.13	7.30	1.30	0.13	0.00	0.00	0.00	0.00
Runoff – mcm.	0.000	0.031	16.625	118.800	86.280	274.056	28.076	7.679	0.073	0.000	0.000	0.000

WATER YEAR 1969 : Max. 351 Min. 0.00 Mean 16.8 Annual Runoff 531.622 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept.6,	04.00	126.51	357				

WATER YEAR 1969
MUN RIVER BASIN

Lam Se Bai at Ban Kaeng, Yasothon (M32A)

Location: Lat. 15°-54'-05" N., Long. 104°-28'-20" E., on right bank at Ban Kaeng about 7 kilometers upstream from M32 station, Amphoe Kham Khuan Kaeo, Yasothon.

Drainage Area: 1,535 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: -

Location: -

Elevation: -

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1968-1974

Rating Operation:

Period of Rating: 1961-1969, 1973

Rated by Float:

Rated by Current Meter: 1961-1969, 1973

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

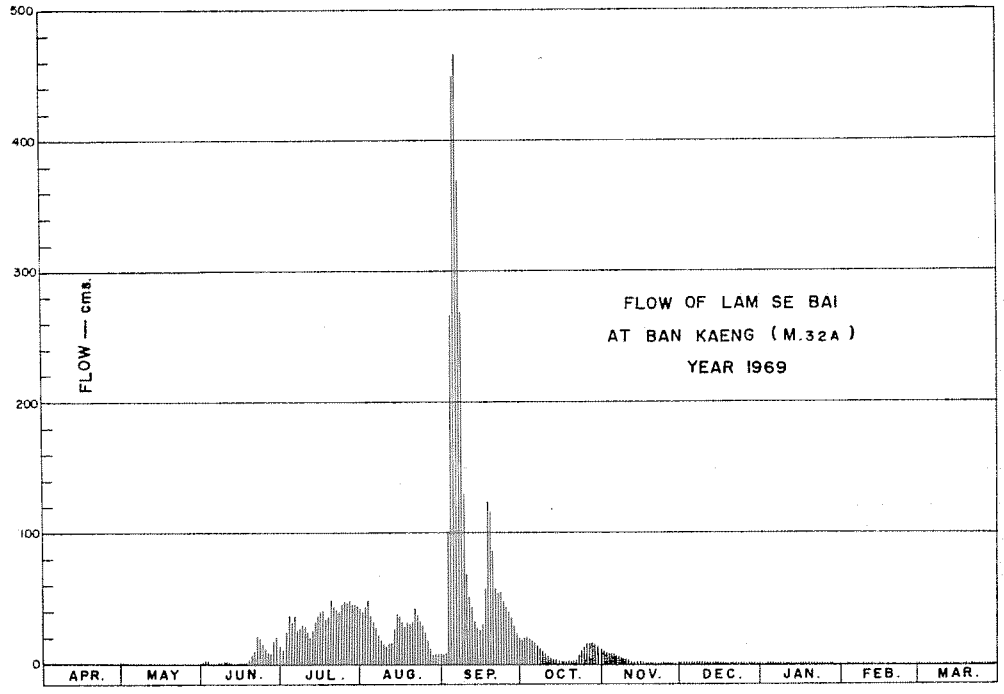
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.75	0.71	1.60	2.38	4.18	2.16	3.15	2.41	0.95	0.73	0.68	0.65
2	.74	.71	.69	.66	.37	.40	.26	.27	.93	.73	.68	.65
3	.74	.72	.35	3.69	.54	5.86	.22	.27	.92	.73	.67	.65
4	.73	.71	.20	4.16	.23	7.71	.13	.31	.91	.73	.67	.65
5	.72	.71	.12	3.82	3.93	8.52	.03	.25	.90	.72	.67	.65
6	0.71	0.70	1.18	3.60	3.64	8.64	2.88	2.15	0.89	0.72	0.67	0.65
7	.70	.71	.34	.54	.35	7.96	.68	.05	.88	.72	.67	.65
8	.70	.71	.38	.68	.06	6.89	.45	1.95	.87	.72	.66	.65
9	.70	.72	.42	.80	2.86	5.52	.23	.84	.86	.72	.66	.66
10	.70	.73	.43	.68	.80	4.82	.03	.74	.85	.72	.66	.66
11	0.69	0.73	1.33	3.34	2.95	4.61	1.85	1.63	0.84	0.71	0.66	0.66
12	.69	.72	.21	.25	3.03	.24	.72	.55	.83	.71	.65	.66
13	.69	.71	.12	.69	.57	3.85	.62	.47	.82	.71	.65	.66
14	.69	.70	.04	.97	4.19	.62	.55	.42	.81	.71	.65	.65
15	.68	.70	0.97	4.18	.10	.51	.49	.38	.80	.70	.65	.65
16	0.68	0.70	0.95	4.31	3.81	3.93	1.44	1.36	0.80	0.70	0.65	0.65
17	.68	.69	1.03	.21	.66	4.97	.40	.33	.80	.69	.65	.64
18	.69	.69	.48	3.71	.86	5.99	.38	.30	.79	.69	.65	.64
19	.69	.68	2.01	4.10	.82	.83	.41	.28	.78	.69	.65	.64
20	.69	.68	.36	.53	.91	4.97	.48	.25	.78	.69	.65	.63
21	0.68	0.72	2.78	4.34	4.34	4.76	1.48	1.21	0.77	0.68	0.65	0.63
22	.67	.78	3.33	.25	.05	.69	.71	.18	.77	.68	.65	.63
23	.67	.78	.16	.20	3.89	.71	2.12	.15	.77	.70	.65	.62
24	.66	.79	2.81	.41	.76	.46	.60	.11	.77	.71	.65	.61
25	.67	.79	.52	.49	.44	.28	.81	.07	.76	.72	.65	.61
26	0.78	0.78	2.27	4.46	3.00	4.14	2.93	1.04	0.76	0.71	0.65	0.60
27	.82	.78	.30	.53	2.55	.03	.97	.03	.76	.70	.65	.60
28	.78	.80	3.13	.39	.17	3.78	.90	.01	.75	.70	.65	.59
29	.74	.85	.25	.39	.22	.51	.83	0.98	.74	.70	-	.59
30	.72	.87	2.83	.44	.28	.23	.74	.96	.74	.70	-	.59
31	-	1.21	-	.32	.24	-	.58	-	.74	.69	-	.59
Mean												
Max.	0.82	1.21	3.33	4.53	4.54	8.64	3.26	2.41	0.95	0.73	0.68	0.66
Min.	0.66	0.68	0.95	2.38	2.17	2.16	1.38	0.96	0.74	0.68	0.65	0.59

WATER YEAR 1969 : Max. 8.64 m. Min. 0.59 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.075	0.055	3.20	9.80	39	7.64	19	10	0.30	0.065	0.040	0.025
2	0.070	0.055	3.74	13	44	10	21	8.70	0.26	0.065	0.040	0.025
3	0.070	0.060	1.70	28	49	132	20	8.70	0.24	0.065	0.035	0.025
4	0.065	0.055	1.00	38	40	314	19	9.10	0.22	0.065	0.035	0.025
5	0.060	0.055	0.68	31	33	448	17	8.50	0.20	0.060	0.035	0.025
6	0.055	0.050	0.92	37	27	465	15	7.55	0.19	0.060	0.035	0.025
7	0.050	0.055	1.64	26	22	347	13	6.65	0.18	0.060	0.035	0.025
8	0.050	0.055	1.88	28	18	204	10	5.80	0.17	0.060	0.030	0.025
9	0.050	0.060	2.12	31	15	93	8.30	4.92	0.16	0.060	0.030	0.030
10	0.050	0.065	2.18	28	14	59	6.47	4.12	0.15	0.060	0.030	0.030
11	0.045	0.065	1.58	22	16	51	5.00	3.38	0.14	0.055	0.030	0.030
12	0.045	0.060	1.04	21	17	40	3.96	2.90	0.13	0.055	0.025	0.030
13	0.045	0.055	0.68	28	26	31	3.32	2.42	0.12	0.055	0.025	0.030
14	0.045	0.050	0.48	34	39	27	2.90	2.12	0.11	0.055	0.025	0.025
15	0.040	0.050	0.34	39	37	25	2.54	1.88	0.10	0.050	0.025	0.025
16	0.040	0.050	0.30	42	31	33	2.24	1.76	0.10	0.050	0.025	0.025
17	0.040	0.045	0.46	40	28	65	2.00	1.58	0.10	0.045	0.025	0.020
18	0.045	0.045	2.48	34	32	124	1.88	1.40	0.095	0.045	0.025	0.020
19	0.045	0.040	6.29	37	31	113	2.06	1.32	0.090	0.045	0.025	0.020
20	0.045	0.040	9.60	49	33	65	2.48	1.20	0.090	0.045	0.025	0.015
21	0.040	0.060	14	43	43	57	2.48	1.04	0.085	0.040	0.025	0.015
22	0.035	0.090	22	41	36	54	3.88	0.92	0.085	0.040	0.025	0.015
23	0.035	0.090	19	40	32	55	7.28	0.80	0.085	0.050	0.025	0.010
24	0.030	0.095	14	45	30	47	12	0.64	0.085	0.055	0.025	0.005
25	0.035	0.095	11	48	24	42	14	0.54	0.080	0.060	0.025	0.005
26	0.090	0.090	8.70	47	17	38	16	0.48	0.080	0.055	0.025	0.000
27	0.12	0.095	9.00	49	11	35	16	0.46	0.080	0.050	0.025	
28	0.090	0.10	19	45	7.73	30	16	0.42	0.075	0.050	0.025	
29	0.070	0.15	21	45	8.20	25	15	0.36	0.070	0.050	–	
30	0.060	0.17	15	46	8.80	20	14	0.32	0.070	0.050	–	
31	–	1.04	–	43	8.40	–	12	–	0.070	0.045	–	0.000
Total	1.635	3.135	195.01	1,107.80	817.13	3,056.64	305.79	91.28	4.010	1.665	0.860	0.550
Mean	0.054	0.101	6.50	35.7	26.3	102	9.86	3.04	0.13	0.054	0.028	0.018
Max.	0.12	1.04	22	49	49	465	21	10	0.30	0.065	0.040	0.030
Min.	0.030	0.040	0.30	9.80	7.73	7.64	1.88	0.32	0.070	0.040	0.025	0.000
Runoff – MCM.	0.141	0.271	16.849	95.714	70.600	264.094	26.420	7.886	0.346	0.144	0.069	0.047

WATER YEAR 1969 : Max. 465 Min. 0.000 Mean 15.3 Annual Runoff 482.582 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 5	23.00	8.82	500				

WATER YEAR 1969
MUN RIVER BASIN

Lam Takhong at Ban Khlong Phai, Nakhon Ratchasima (M38C)

Location: Lat. 14°-52'-06" N., Long. 101°-33'-53" E., on left bank about 500 meters downstream from Lam Takhong Damsite, Tambon Khlong Phai, Amphoe Sikhiu, Nakhon Ratchasima.

Drainage Area: 1,292.59 Sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 242.00 m. (M.S.L.)

Bench Mark: B.M. - H.S.

- Location: On left bank along the measuring line
- Elevation: + 251.841 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1962 to date

Rating Operation:

- Period of Rating: 1962-1965, 1967 to date
- Rated by Float:
- Rated by Current Meter: 1962-1965, 1967 to date

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

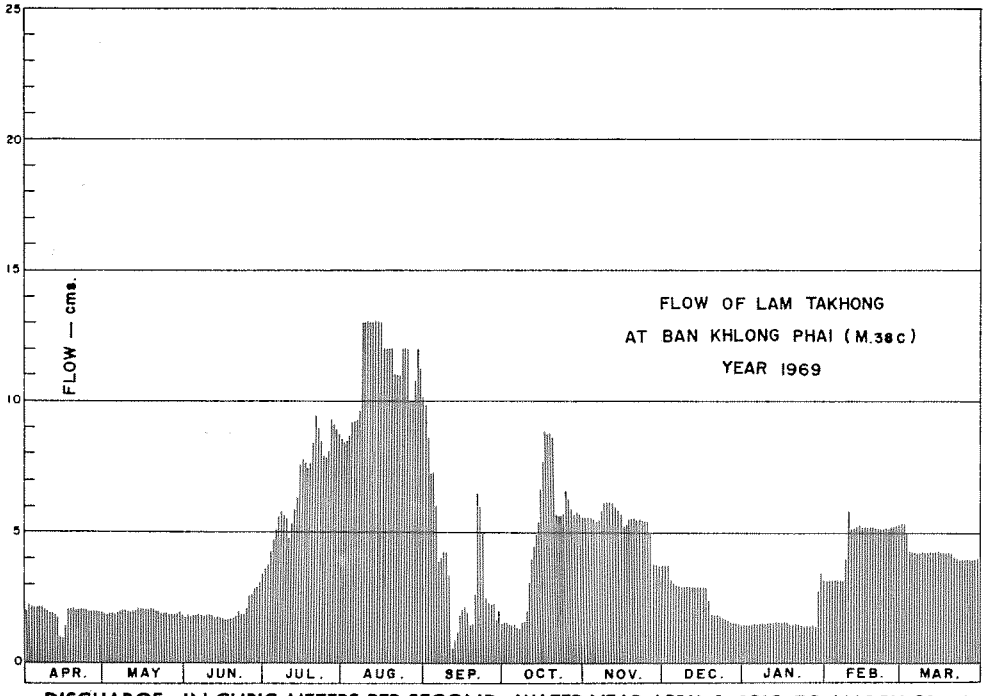
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by Lam Takhong Dam diverted for irrigation of about 62,080 hectares. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	244.37	244.32	244.31	244.86	246.04	245.92	244.48	245.28	244.89	244.26	244.53	244.85
2	.37	.32	.32	.85	.06	.76	.49	.27	.90	.26	.53	.85
3	.37	.33	.31	.95	.09	.54	.47	.27	.81	.26	.53	.79
4	.36	.33	.32	245.17	.13	.55	.46	.26	.61	.26	.53	.69
5	.36	.32	.32	.28	.13	.39	.46	.26	.59	.26	.53	.69
6	244.37	244.33	244.33	245.46	246.14	244.98	244.42	245.25	244.56	244.26	244.53	244.68
7	.36	.34	.32	.54	.19	245.01	.42	.30	.55	.26	.53	.68
8	.35	.35	.31	.55	.37	.06	.48	.37	.55	.26	.52	.68
9	.34	.35	.33	.49	.37	.05	.49	.37	.55	.26	.70	.68
10	.33	.34	.32	.47	.37	244.83	.64	.37	.55	.27	.92	.68
11	244.33	244.33	244.32	245.19	246.37	244.18	244.99	245.37	244.55	244.27	244.82	244.68
12	.32	.35	.30	.49	.37	.29	245.07	.35	.53	.27	.83	.68
13	.30	.35	.31	.60	.37	.36	.15	.33	.53	.27	.84	.68
14	.18	.36	.31	.74	.35	.57	.25	.32	.52	.27	.84	.68
15	.17	.36	.30	.95	.32	.61	.55	244.92	.52	.27	.83	.68
16	244.26	244.35	244.29	245.96	246.25	244.62	245.78	245.21	244.53	244.27	244.83	244.68
17	.35	.35	.29	.93	.22	.57	.76	.26	.53	.27	.83	.68
18	.36	.36	.31	.90	.20	.46	.78	.27	.42	.27	.83	.68
19	.36	.36	.30	.96	.17	.45	.76	.27	.32	.26	.83	.68
20	.34	.35	.31	246.05	.15	.82	.60	.26	.32	.26	.83	.68
21	244.35	244.34	244.34	246.15	246.05	245.42	245.29	245.26	444.31	244.26	244.82	244.65
22	.35	.34	.33	.09	.04	.33	.29	.26	.31	.26	.82	.65
23	.35	.33	.31	.04	.18	.13	.30	.25	.30	.25	.82	.64
24	.35	.34	.35	245.97	.21	244.70	.31	.25	.30	.25	.83	.64
25	.34	.32	.44	.96	.18	.65	.44	.25	.29	.25	.82	.64
26	244.34	244.32	244.43	246.01	245.99	244.65	245.34	245.10	244.29	244.25	244.83	244.64
27	.34	.32	.47	.14	.95	.65	.31	244.89	.27	.25	.84	.64
28	.34	.32	.56	.12	246.06	.49	.29	.89	.27	.25	.84	.64
29	.33	.33	.61	.10	.19	.59	.32	.88	.27	.47	—	.65
30	.33	.34	.74	.08	.13	.46	.29	.88	.26	.57	—	.65
31	—	.31	—	.06	245.99	—	.27	—	.26	.53	—	.64
Mean	244.33	244.34	244.36	245.71	246.18	244.87	245.09	245.21	244.47	244.29	294.74	244.68
Max.	244.37	244.36	244.74	246.15	246.37	245.92	245.78	245.37	244.90	244.57	244.92	244.85
Min.	244.17	244.31	244.29	244.85	245.95	244.18	244.42	244.88	244.26	244.25	244.52	244.64

WATER YEAR 1969 : Max. 246.37 m. Min. 244.17 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	2.17	1.85	1.78	3.67	8.40	9.83	1.56	5.58	3.74	1.47	3.19	5.34
2	2.17	1.85	1.85	3.64	8.56	8.70	1.60	5.52	3.77	1.47	3.19	5.34
3	2.17	1.91	1.78	3.91	8.82	7.22	1.53	5.52	3.54	1.47	3.19	4.93
4	2.10	1.91	1.85	4.55	9.23	7.29	1.49	5.46	3.08	1.47	3.19	4.25
5	2.10	1.85	1.85	4.88	9.23	6.26	1.49	5.46	3.04	1.47	3.19	4.25
6	2.17	1.91	1.91	5.46	9.34	3.86	1.34	5.40	2.98	1.47	3.19	4.18
7	2.10	1.98	1.85	5.75	9.89	4.02	1.34	5.70	2.96	1.47	3.19	4.18
8	2.04	2.04	1.78	5.78	13	4.30	1.56	6.13	2.96	1.47	3.13	4.18
9	1.98	2.04	1.91	5.57	13	4.24	1.60	6.13	2.96	1.47	4.32	4.18
10	1.91	1.98	1.85	5.50	13	3.10	2.23	6.13	2.96	1.53	5.82	4.18
11	1.91	1.91	1.85	4.61	13	0.51	3.91	6.13	2.96	1.53	5.14	4.18
12	1.85	2.04	1.72	5.57	13	0.87	4.35	6.01	2.92	1.53	5.20	4.18
13	1.72	2.04	1.78	5.97	13	1.12	4.81	5.89	2.92	1.53	5.27	4.18
14	0.99	2.10	1.78	6.59	13	1.93	5.40	5.82	2.90	1.53	5.27	4.18
15	0.93	2.10	1.72	7.73	13	2.10	7.29	3.54	2.90	1.53	5.20	4.18
16	1.47	2.04	1.66	7.80	12	2.15	8.84	5.16	2.92	1.53	5.20	4.18
17	2.04	2.04	1.66	7.60	12	1.93	8.70	5.46	2.92	1.53	5.20	4.18
18	2.10	2.10	1.78	7.40	12	1.49	8.84	5.52	2.48	1.53	5.20	4.18
19	2.10	2.10	1.72	7.80	12	1.45	8.70	5.52	1.85	1.47	5.20	4.18
20	1.98	2.04	1.78	8.48	11	3.05	7.62	5.46	1.85	1.47	5.20	4.18
21	2.04	1.98	1.98	9.45	11	6.45	5.64	5.46	1.85	1.47	5.14	3.98
22	2.04	1.98	1.91	8.82	11	5.89	5.64	5.46	1.85	1.47	5.14	3.98
23	2.04	1.91	1.78	8.40	12	4.69	5.70	5.40	1.72	1.41	5.14	3.91
24	2.04	1.98	2.04	7.86	12	2.49	5.76	5.40	1.72	1.41	5.20	3.91
25	1.98	1.85	2.62	7.80	12	2.27	6.58	5.40	1.66	1.41	5.14	3.91
26	1.98	1.85	2.55	8.14	10	2.27	5.95	4.52	1.66	1.41	5.20	3.91
27	1.98	1.85	2.81	9.34	10	2.27	5.76	3.74	1.53	1.41	5.27	3.91
28	1.98	1.85	2.98	9.12	11	1.60	5.64	3.74	1.53	1.41	5.27	3.91
29	1.91	1.91	3.08	8.90	12	2.02	5.82	3.72	1.53	2.81	–	3.98
30	1.91	1.98	3.38	8.73	11	1.49	5.64	3.72	1.47	3.45	–	3.98
31	–	1.78	–	8.56	10	–	5.52	–	1.47	3.19	–	3.91
Total	57.90	60.95	60.99	213.38	348.47	106.86	147.85	158.10	76.60	50.79	129.18	130.10
Mean	1.93	1.97	2.03	6.88	11.2	3.56	4.77	5.27	2.47	1.64	4.62	4.20
Max.	2.17	2.10	3.38	9.45	13	9.83	8.84	6.13	3.77	3.45	5.82	5.34
Min.	0.93	1.78	1.66	3.64	10	0.51	1.34	3.72	1.47	1.41	3.13	3.91
Runoff - mcm.	5.002	5.266	5.269	18.436	30.108	9.233	12.774	13.660	6.618	4.388	11.161	11.241

WATER YEAR 1969 : Max. 13 Min. 0.51 Mean 4.22 Annual Runoff 133.157 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 13,69	19.00	246.39	14				

WATER YEAR 1969
MUN RIVER BASIN

Lam Takhong at Khao Yai (Ban Mu Si), Nakhon Ratchasima (M_{43})

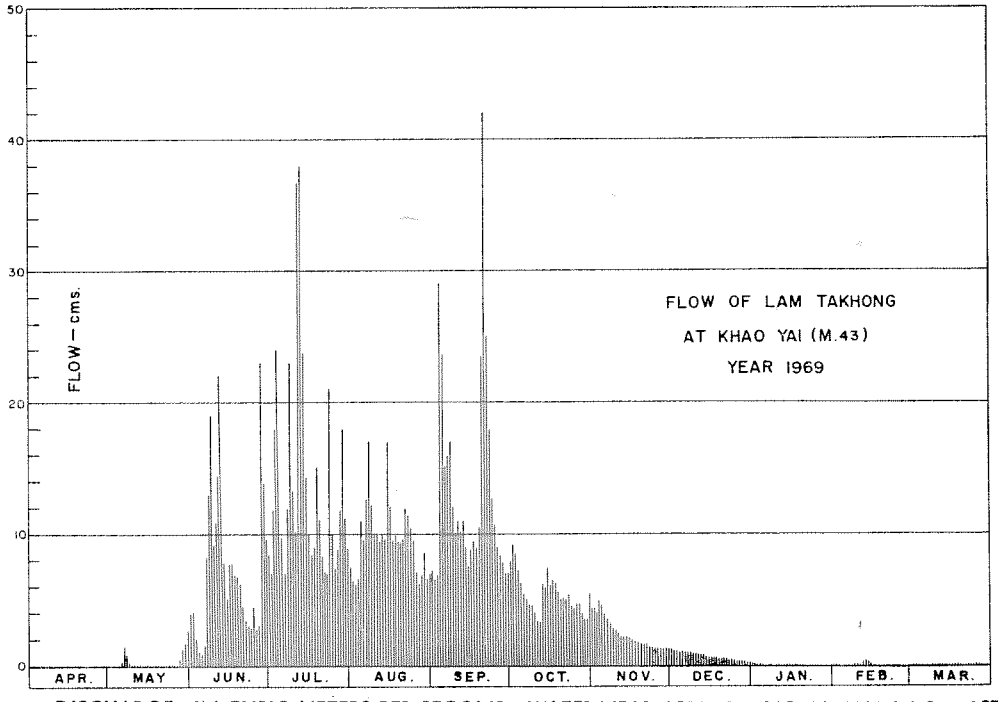
Location:	Lat. 14°-31'-40" N., Long. 101°-24'-09" E., on left bank infront of highway maintenance office, at Khao Yai (Ban Mu Si) Amphoe Pak Chong, Nakhon Ratchasima.
Drainage Area:	235 sq.km.
Type of Gage:	Water-stage recorder
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	B.M. - H.S.
Location:	Near the gage site
Elevation:	+ 5.592 m. (A.D.)
Gage Reading Frequency:	Recording
Basis of Mean Daily Gage Height:	Arithmetic mean of 24 hourly readings
Period of Available Gage Records:	1965 to date
Rating Operation:	
Period of Rating:	1965, 1967-1973
Rated by Float:	
Rated by Current Meter:	1965, 1967-1973
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.
Remarks:	Record for period of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.31	0.14	0.90	1.20	1.13	1.13	1.24	0.92	0.63	0.52	0.45	0.44
2	.30	.14	.91	.10	.08	.07	.25	.93	.62	.51	.45	.44
3	.29	.14	.68	.75	.05	.11	.17	.89	.61	.51	.45	.41
4	.28	.32	.60	.94	.10	2.13	.09	.96	.61	.51	.44	.37
5	.40	.39	.58	.36	.33	1.90	.04	.92	.61	.51	.44	.37
6	0.49	0.54	0.55	1.18	1.25	1.55	1.00	0.87	0.61	0.51	0.44	0.36
7	.45	.66	1.21	.07	.46	.58	0.97	.84	.61	.51	.45	.37
8	.37	.53	.53	.39	.63	.65	.94	.82	.60	.50	.45	.39
9	.35	.47	.74	.90	.38	.40	.94	.80	.59	.50	.45	.43
10	.34	.45	.24	.42	.32	.32	.89	.78	.59	.50	.47	.39
11	0.32	0.44	1.46	1.24	1.31	1.34	0.85	0.76	0.59	0.49	0.48	0.36
12	.31	.44	.83	2.41	.25	.29	.84	.75	.58	.49	.53	.34
13	.31	.45	.19	.45	.30	.34	1.06	.75	.58	.49	.55	.33
14	.30	.41	.13	1.82	.23	.22	.03	.74	.57	.49	.53	.33
15	.30	.39	0.95	.43	.63	.14	.14	.73	.57	.51	.51	.33
16	0.30	0.36	1.16	1.27	1.35	1.24	1.04	0.72	0.56	0.50	0.50	0.33
17	.29	.41	.16	.19	.26	.25	.07	.71	.56	.50	.49	.32
18	.28	.39	.11	.18	.28	.22	.05	.70	.56	.49	.46	.31
19	.28	.37	.09	.53	.21	.36	.01	.69	.56	.48	.47	.31
20	.27	.36	.04	.36	.21	2.01	0.97	.68	.56	.47	.46	.31
21	0.25	0.35	0.92	1.19	1.31	2.61	0.98	0.68	0.56	0.46	0.46	0.31
22	.23	.36	.55	.12	.39	.04	.97	.67	.56	.46	.45	.31
23	.22	.41	.81	.10	.35	1.64	.99	.66	.55	.46	.45	.31
24	.20	.40	.81	.79	.32	.41	.93	.65	.54	.47	.45	.32
25	.18	.40	.93	.22	.25	.29	.92	.64	.54	.47	.44	.32
26	0.18	0.45	0.79	1.12	1.12	1.21	0.95	0.64	0.54	0.46	0.44	0.31
27	.16	.47	.75	.25	.05	.19	.95	.64	.54	.46	.44	.30
28	.16	.56	1.88	.43	.11	.16	.89	.64	.53	.46	.43	.30
29	.15	.65	.39	.62	.21	.11	.86	.64	.53	.46	-	.30
30	.14	.69	1.21	.31	.07	.12	.87	.63	.52	.46	-	.30
31	-	.79	-	.22	.12	-	1.00	-	.52	.45	-	.30
Mean	0.27	0.43	1.08	1.44	1.26	1.43	1.00	0.75	0.57	0.48	0.47	0.34
Max.	0.49	0.79	1.88	2.45	1.63	2.61	1.25	0.96	0.63	0.52	0.55	0.44
Min.	0.14	0.14	0.55	1.07	1.05	1.07	0.84	0.63	0.52	0.45	0.43	0.30

WATER YEAR 1969 : Max. 2.61 m. Min. 0.44 m.

BM. 55



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.001	0.000	4.00	8.40	7.28	7.28	9.12	4.30	1.24	0.22	0.020	0.018
2	0.000	0.000	4.15	6.80	6.54	6.41	9.30	4.45	1.16	0.13	0.020	0.018
3	0.000	0.000	1.64	20	6.15	6.96	7.92	3.88	1.08	0.13	0.020	0.012
4	0.000	0.002	1.00	24	6.80	29	6.67	4.90	1.08	0.13	0.018	0.007
5	0.010	0.009	0.81	11	11	23	6.02	4.30	1.08	0.13	0.018	0.007
6	0.028	0.418	0.51	8.08	9.30	15	5.50	3.64	1.08	0.13	0.018	0.006
7	0.020	1.48	8.58	6.41	13	16	5.05	3.28	1.08	0.13	0.020	0.007
8	0.007	0.32	15	12	17	17	4.60	3.04	1.00	0.030	0.020	0.009
9	0.005	0.024	19	23	12	12	4.60	2.80	0.90	0.030	0.020	0.016
10	0.004	0.020	9.12	12	10	10	3.88	2.60	0.90	0.030	0.024	0.009
11	0.002	0.018	13	9.12	10	11	3.40	2.40	0.90	0.028	0.026	0.006
12	0.001	0.018	22	37	9.30	10	3.28	2.30	0.81	0.028	0.32	0.004
13	0.001	0.020	8.24	38	10	11	6.28	2.30	0.81	0.028	0.51	0.003
14	0.001	0.012	7.28	21	8.94	8.76	5.89	2.20	0.71	0.028	0.32	0.003
15		0.009	4.75	13	17	7.44	7.44	2.10	0.71	0.13	0.13	0.003
16		0.006	7.76	9.66	11	9.12	6.02	2.00	0.61	0.030	0.030	0.003
17		0.012	7.76	8.24	9.48	9.30	6.41	1.90	0.61	0.030	0.028	0.002
18		0.009	6.96	8.08	9.84	8.76	6.15	1.80	0.61	0.028	0.026	0.001
19		0.007	6.67	15	8.58	11	5.63	1.72	0.61	0.026	0.024	0.001
20		0.006	6.02	11	8.58	26	5.05	1.64	0.61	0.024	0.022	0.001
21		0.005	4.30	8.24	10	42	5.20	1.64	0.61	0.022	0.022	0.001
22		0.006	3.40	7.12	12	27	5.05	1.56	0.61	0.022	0.020	0.001
23		0.012	2.92	6.80	11	17	5.35	1.48	0.51	0.022	0.020	0.001
24		0.010	2.92	21	10	12	4.45	1.40	0.42	0.024	0.020	0.002
25		0.010	4.45	8.76	9.30	10	4.30	1.32	0.42	0.024	0.018	0.002
26		0.020	2.70	7.12	7.12	8.58	4.75	1.32	0.42	0.022	0.018	0.001
27		0.024	2.30	9.30	6.15	8.24	4.75	1.32	0.42	0.022	0.018	0.000
28		0.612	23	13	6.96	7.76	3.88	1.32	0.32	0.022	0.016	0.000
29		1.40	12	18	8.58	6.96	3.52	1.32	0.32	0.022	–	0.000
30	0.000	1.72	8.58	10	6.41	7.12	3.64	1.24	0.22	0.022	–	0.000
31		2.70	–	8.76	7.12	–	5.50	–	0.22	0.020	–	0.000
Total	0.079	8.909	220.82	419.89	296.43	401.69	168.60	71.47	22.08	1.714	1.786	0.144
Mean	0.003	0.29	7.43	13.5	9.56	13.4	5.47	2.38	0.71	0.055	0.064	0.005
Max.	0.028	2.70	23	38	17	42	9.30	4.90	1.24	0.22	0.51	0.018
Min.	0.000	0.000	0.51	6.41	6.15	6.41	3.28	1.24	0.22	0.020	0.016	0.000
Runoff – mcm.	0.007	0.770	19.079	36.278	25.611	34.706	14.567	6.175	1.908	0.149	0.154	0.012

WATER YEAR 1969 : Max. 42 Min. 0.000 Mean 4.42 Annual Runoff 139.416 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 21	01.00	49.76	287				

WATER YEAR 1969
MUN RIVER BASIN

Mun River at Ban Chorakhe Hin, Nakhon Ratchasima (M_{49})

Location: Lat. 14°-30'-32" N., Long. 102°-09'-50" E., on right bank about 3 kilometers downstream from propose damsite, Amphoe Khon Buri, Nakhon Ratchasima.

Drainage Area: 451 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 197.16 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: Near automatic gage building

Elevation: + 202.348 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1965-1974

Rating Operation:

Period of Rating: 1965-1973

Rated by Float: -

Rated by Current Meter: 1965-1973

Stability of Channel Regimes: Unstable, shifting adjustment is included for flow computation.

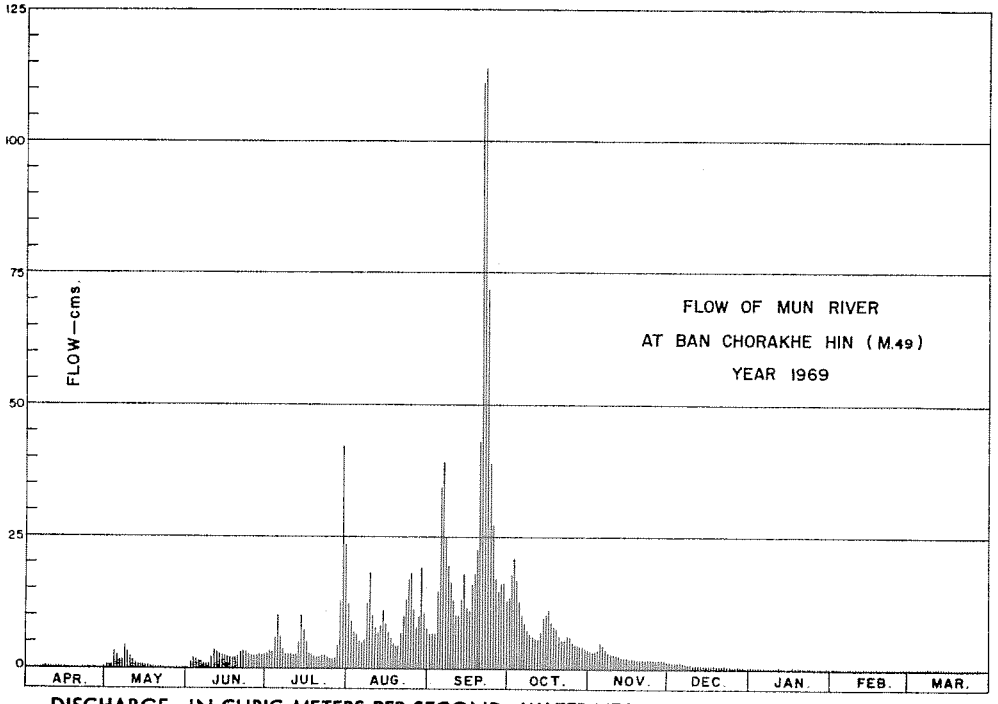
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Water Stage is effected by channel obstructions which are made by local residents. No state diversions above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	198.32	198.76	198.07	200.29	201.06	200.70	200.87	200.22	199.16	198.34	198.12	198.22
2	.30	.67	199.50	.47	200.92	.71	201.10	.19	.14	.28	197.99	.16
3	.29	.74	.80	.41	.80	.57	.20	.19	.10	.24	198.01	.08
4	.35	199.98	.63	.62	.76	.84	.08	.21	.08	.21	.30	.02
5	.57	.77	.39	.97	.70	201.62	200.94	.53	.05	.23	.15	197.97
6	198.54	199.53	199.21	200.75	200.65	201.76	200.81	200.41	198.99	198.24	198.05	197.93
7	.46	.53	.07	.59	.62	.38	.73	.25	.90	.24	.02	.93
8	.46	200.22	.04	.49	201.02	.28	.66	.12	.85	.25	.17	.92
9	.48	199.91	.05	.44	.32	.17	.59	.01	.83	.31	.08	.89
10	.44	.53	.96	.44	200.96	200.95	.57	199.96	.81	.27	.11	.88
11	198.39	199.20	200.37	200.44	199.83	200.84	200.54	199.92	198.78	198.27	198.07	197.86
12	.35	198.99	.22	.40	.76	.81	.48	.86	.74	.26	197.98	.86
13	.32	.86	.12	.54	.87	201.02	.51	.78	.71	.33	198.04	.90
14	.29	.75	.00	201.01	201.06	.21	.81	.73	.70	.23	197.95	.91
15	.27	.67	199.93	200.79	200.91	200.90	.84	.69	.70	.22	.91	.88
16	198.18	198.52	199.89	200.64	200.78	200.90	200.87	199.66	198.71	198.21	197.91	197.97
17	197.92	.37	.85	.55	.74	201.12	.74	.63	.73	.51	198.16	.91
18	.84	.33	.84	.47	.64	.17	.69	.60	.65	.33	.10	.89
19	.83	.33	.81	.41	.56	.33	.66	.57	.57	.28	197.92	.89
20	.83	.31	.83	.34	.54	.70	.60	.54	.54	.37	.92	.87
21	197.82	198.25	200.23	200.40	200.66	202.52	200.50	199.50	198.51	198.35	198.27	197.85
22	.81	.23	.27	.50	.86	.58	.50	.46	.50	.29	.15	.87
23	.81	.19	.18	.41	201.04	.11	.61	.45	.50	.27	.08	.89
24	.81	.13	.11	.35	.21	201.71	.58	.40	.48	.49	197.92	.86
25	.84	.10	.10	.32	.25	.86	.49	.38	.47	.15	.89	.84
26	197.87	198.06	100.12	200.28	200.95	201.63	200.43	199.35	198.45	197.93	197.87	197.88
27	.86	.03	.14	.26	.78	.50	.36	.30	.46	.86	.93	.86
28	.85	.02	.17	.46	.89	.08	.39	.29	.42	.85	198.00	.84
29	.83	197.99	.15	201.03	201.31	.08	.35	.26	.34	198.14	-	.85
30	198.23	.99	.11	.90	200.96	200.94	.28	.18	.33	.13	-	.86
31	-	.98	-	.41	.77	-	.23	-	.33	.16	-	.84
Mean	198.14	198.71	199.80	200.59	200.88	201.29	200.64	199.75	198.69	198.23	198.04	197.91
Max.	198.57	200.22	200.37	201.90	201.32	202.58	201.20	200.53	199.16	198.51	198.30	198.22
Min.	197.81	197.98	198.07	200.26	200.54	200.57	200.23	199.18	198.33	197.85	197.87	197.84

WATER YEAR 1969 : Max. 202.58 m. Min. 197.81 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.096	0.84	0.064	2.89	12	6.50	12	3.34	1.30	0.38	0.16	0.15
2	0.088	0.73	1.45	3.49	8.89	6.61	18	3.24	1.27	0.33	0.10	0.12
3	0.084	0.83	1.96	3.27	6.83	6.06	21	3.24	1.21	0.30	0.11	0.092
4	0.16	3.17	1.65	5.59	6.17	9.91	17	3.31	1.18	0.28	0.28	0.068
5	0.31	2.04	1.28	10	5.41	33	12	4.92	1.14	0.29	0.15	0.054
6	0.29	1.60	1.03	6.94	4.85	39	9.74	4.20	1.06	0.30	0.10	0.046
7	0.30	1.60	0.85	3.07	4.53	24	8.40	3.45	0.96	0.30	0.092	0.046
8	0.30	4.20	0.82	2.77	11	20	7.35	3.01	0.89	0.31	0.16	0.044
9	0.32	2.95	0.83	2.64	18	17	6.50	2.69	0.87	0.36	0.12	0.038
10	0.21	2.02	2.30	2.64	9.74	12	6.28	2.64	0.84	0.33	0.13	0.036
11	0.18	1.45	3.49	2.64	7.65	9.91	5.95	2.53	0.80	0.33	0.064	0.032
12	0.16	1.14	2.98	2.53	6.72	9.40	5.41	2.39	0.76	0.32	0.044	0.032
13	0.14	0.97	2.69	4.53	8.25	13	5.68	2.21	0.72	0.37	0.056	0.024
14	0.13	0.83	2.39	10	11	18	9.74	2.10	0.71	0.29	0.038	0.026
15	0.12	0.73	2.23	6.72	8.89	11	10	2.02	0.71	0.29	0.030	0.020
16	0.12	0.58	2.15	5.23	6.94	11	11	1.96	0.72	0.28	0.030	0.038
17	0.036	0.44	2.06	2.64	5.77	16	8.55	1.90	0.74	0.53	0.10	0.026
18	0.020	0.41	2.04	2.69	4.92	17	7.80	1.84	0.76	0.37	0.076	0.022
19	0.018	0.41	1.98	2.30	4.40	22	7.35	1.79	0.67	0.33	0.032	0.022
20	0.018	0.39	2.02	2.15	4.30	36	6.17	1.74	0.64	0.41	0.032	0.018
21	0.016	0.32	3.01	2.28	6.50	111	5.23	1.67	0.61	0.39	0.25	0.014
22	0.014	0.28	3.13	2.51	9.40	114	5.23	1.60	0.60	0.34	0.17	0.018
23	0.014	0.22	2.86	2.30	13	60	6.28	1.79	0.60	0.33	0.13	0.022
24	0.014	0.16	2.66	2.17	17	36	5.95	1.70	0.58	0.43	0.068	0.016
25	0.020	0.13	2.39	1.86	18	24	5.14	1.67	0.57	0.18	0.038	0.012
26	0.026	0.10	2.44	1.79	11	17	4.72	1.62	0.55	0.076	0.034	0.020
27	0.024	0.076	2.48	1.75	7.50	14	4.30	1.54	0.56	0.054	0.046	0.016
28	0.022	0.060	2.56	4.85	9.25	16	4.46	1.62	0.52	0.052	0.060	0.012
29	0.018	0.048	2.51	13	19	16	4.25	1.57	0.45	0.17	–	0.014
30	0.33	0.046	2.41	42	10	13	3.90	1.33	0.44	0.16	–	0.016
31	–	0.044	–	22	7.35	–	3.67	–	0.44	0.18	–	0.012
Total	3.598	28.804	62.714	181.24	284.26	758.39	249.05	70.63	23.87	9.062	2.700	1.126
Mean	0.12	0.93	2.09	5.85	9.17	25.2	8.03	2.35	0.77	0.29	0.096	0.036
Max.	0.33	4.20	3.49	42	19	114	21	4.92	1.30	0.53	0.28	0.15
Min.	0.014	0.044	0.064	1.75	4.30	6.06	3.67	1.33	0.44	0.052	0.030	0.012
Runoff – mcm.	0.311	2.489	5.418	15.659	24.560	65.525	21.518	6.102	2.062	0.783	0.233	0.097

WATER YEAR 1969 : Max. 114 Min. 0.014 Mean 4.59 Annual Runoff 144.758 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept.21,69	18.00	202.99	173				

WATER YEAR 1969
MUN RIVER BASIN

Lam Sae at Khon Buri, Nakhon Ratchasima (M_{50})

Location: Lat. 14°-31'-08" N., Long. 102°-14'-39" E., on right bank about 500 meters south of Amphoe Khon Buri office, and 30 meters south-east of Khon Buri Sanitarium, Nakhon Ratchasima.

Drainage Area: 875 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

- Location: At the foot of the big tree near automatic gage building
- Elevation: + 10.00 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1965 to date

Rating Operation:

- Period of Rating: 1965-1967
- Rated by Float:
- Rated by Current Meter: 1965-1967

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

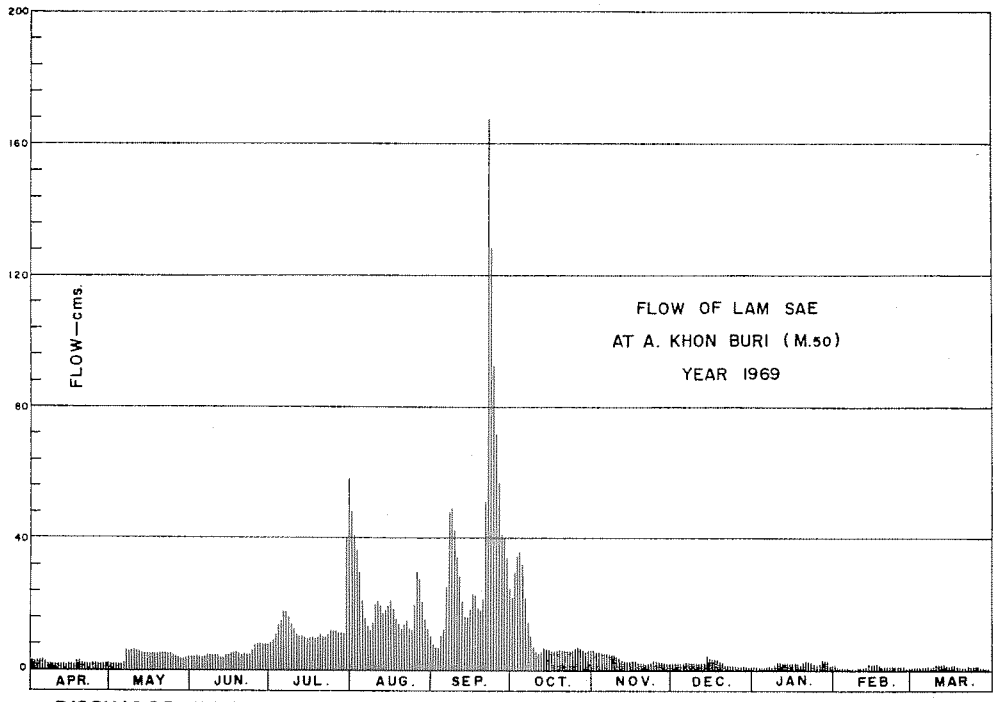
Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1967. Flow is effected by the temporary weir which built by the local residents. No State diversions above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.36	1.24	1.48	1.79	2.40	1.76	2.09	1.62	1.28	1.08	1.19	1.10
2	.38	.24	.46	.80	.34	.68	.22	.59	.28	.08	0.92	.10
3	.39	.23	.46	.87	.28	.68	.29	.56	.28	.06	.87	.11
4	.36	.21	.42	.94	.19	.83	.30	.57	.28	.04	.87	.15
5	.37	.21	.41	.97	.08	.91	.23	.56	.28	.04	.87	.06
6	1.36	1.26	1.48	2.02	1.97	2.18	2.12	1.54	1.29	1.04	0.84	1.04
7	.35	.66	.53	.03	.91	.43	.00	.53	.28	.05	.86	.07
8	.34	.71	.51	1.99	.89	.44	1.83	.51	.26	.07	.96	0.99
9	.33	.71	.52	.93	1.95	.37	.70	.51	.24	.24	.95	1.09
10	.32	.70	.50	.88	2.08	.28	.62	.45	.24	.31	.95	.20
11	1.31	1.67	1.47	1.86	2.08	2.18	1.57	1.38	1.24	1.30	1.03	1.23
12	.30	.65	.45	.84	.03	.07	.58	.32	.23	.25	.08	.24
13	.28	.63	.44	.84	.01	1.99	.68	.31	.27	.28	.14	.19
14	.27	.63	.50	.84	.03	.99	.66	.31	.51	.28	.25	.19
15	.25	.60	.52	.81	.07	2.05	.64	.32	.45	.28	.21	.14
16	1.24	1.59	1.55	1.82	2.08	2.12	1.62	1.32	1.38	1.28	1.27	1.18
17	.23	.61	.59	.83	.01	.11	.62	.30	.40	.30	.27	.21
18	.40	.62	.60	.81	1.95	.05	.64	.31	.38	.19	.18	.09
19	.39	.60	.57	.83	.93	.03	.65	.29	.33	.22	.04	.04
20	.35	.59	.53	.86	.90	.10	.66	.26	.27	.32	.10	.06
21	1.33	1.58	1.55	1.84	1.93	2.48	1.61	1.25	1.21	1.33	1.09	1.09
22	.31	.56	.52	.82	.96	3.18	.61	.28	.19	.35	.05	.14
23	.29	.56	.55	.85	.90	2.90	.64	.31	.19	.30	.05	.14
24	.29	.58	.66	.89	.89	.73	.64	.32	.17	.24	.12	.10
25	.28	.50	.74	.89	2.06	.60	.69	.31	.16	.21	.16	.10
26	1.27	1.48	1.78	1.88	2.22	2.47	1.71	1.31	1.14	1.26	1.11	1.09
27	.27	.43	.79	.86	.17	.36	.67	.30	.13	.38	.11	0.93
28	.25	.41	.77	.85	.06	.35	.63	.28	.11	.32	.04	.90
29	.26	.42	.74	.85	1.96	.28	.61	.27	.10	.32	–	.89
30	.26	.45	.73	1.31	.91	.15	.65	.27	.10	.11	–	.93
31	–	.46	–	.53	.84	–	.64	–	.10	.24	–	1.01
Mean	1.31	1.51	1.56	1.91	2.03	2.22	1.77	1.38	1.25	1.22	1.05	1.07
Max.	1.40	1.71	1.79	2.53	2.40	3.18	2.30	1.62	1.51	1.38	1.27	1.24
Min.	1.23	1.21	1.41	1.79	1.84	1.68	1.57	1.26	1.10	1.04	0.84	0.89

WATER YEAR 1969 : Max. 3.18 m. Min. 0.84 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	3.04	2.08	4.20	8.06	45	7.64	21	5.76	2.36	1.12	1.74	1.20
2	3.22	2.08	4.00	9.10	40	6.54	30	5.39	2.36	1.12	0.72	1.20
3	3.31	2.01	4.00	11	34	6.54	35	5.06	2.36	1.04	0.67	1.26
4	3.04	1.87	3.60	14	28	10	36	5.17	2.36	0.96	0.67	1.50
5	3.13	1.87	3.50	15	21	13	31	5.06	2.36	0.96	0.67	1.04
6	3.04	2.22	4.20	18	15	27	23	4.84	2.43	0.96	0.64	0.96
7	2.95	6.28	4.73	18	13	48	17	4.73	2.36	1.00	0.66	1.08
8	2.86	6.94	4.51	16	12	49	10	4.51	2.22	1.08	0.76	0.79
9	2.77	6.94	4.62	14	15	42	6.80	4.51	2.08	2.08	0.75	1.16
10	2.68	6.80	4.40	12	21	35	5.76	3.90	2.08	2.99	0.75	1.80
11	2.59	6.41	4.10	11	21	27	5.17	3.22	2.08	2.50	0.92	2.01
12	2.50	6.15	3.90	10	18	20	5.28	2.68	2.01	2.15	1.12	2.08
13	2.36	5.89	3.80	10	17	16	6.54	2.59	2.29	2.36	1.44	1.74
14	2.29	5.89	4.40	10	18	16	6.28	2.59	4.51	2.36	2.15	1.74
15	2.15	5.50	4.62	9.44	20	19	6.02	2.68	3.90	2.36	1.87	1.44
16	2.08	5.39	4.95	9.78	21	23	5.76	2.68	3.22	2.43	2.29	1.68
17	2.01	5.63	5.39	10	17	23	5.76	2.50	3.40	2.50	2.29	1.87
18	3.40	5.76	5.50	9.42	15	19	6.02	2.59	3.22	1.74	1.68	1.16
19	3.31	5.50	5.17	10	14	18	6.15	2.43	2.77	1.94	0.96	0.96
20	2.95	5.39	4.73	11	12	22	6.28	2.22	2.29	2.68	1.20	1.04
21	2.77	5.28	4.95	10	14	58	5.63	2.15	1.87	2.77	1.16	1.16
22	2.59	5.06	4.62	9.78	15	167	5.63	2.36	1.74	2.95	1.00	1.44
23	2.43	5.06	4.95	11	12	112	6.02	2.59	1.74	2.50	1.00	1.44
24	2.43	5.28	6.28	12	12	85	6.15	2.68	1.62	2.08	1.32	1.20
25	2.36	4.40	7.36	12	20	66	6.67	2.59	1.56	1.87	1.56	1.20
26	2.29	4.20	7.92	12	30	52	6.94	2.59	1.44	2.22	1.26	1.16
27	2.29	3.70	8.06	11	27	41	6.41	2.50	1.38	3.22	1.26	0.73
28	2.15	3.50	7.78	11	20	40	5.89	2.36	1.26	2.68	0.96	0.70
29	2.22	3.60	7.36	11	15	34	5.63	2.29	1.20	2.68	–	0.69
30	2.22	3.90	7.22	44	13	25	6.15	2.29	1.20	1.26	–	0.73
31	–	4.00	–	58	10	–	6.02	–	1.20	2.08	–	0.84
Total	79.43	144.58	154.82	437.58	605	1,127.72	341.96	99.51	68.87	62.24	33.47	44.64
Mean	2.65	4.66	5.16	14.1	19.5	37.6	11.0	3.32	2.22	2.01	1.19	1.44
Max.	3.40	6.94	8.06	58	45	167	36	5.76	4.51	3.22	2.29	2.08
Min.	2.01	1.87	3.50	8.06	10	6.54	5.17	2.22	1.20	0.96	0.64	0.69
Runoff – MCM.	6.863	12.492	13.376	37.807	52.272	97.435	29.545	8.598	5.950	5.377	2.892	3.856

WATER YEAR 1969 : Max. 167 Min. 0.69 Mean 8.77 Annual Runoff 276.464 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept.22	04.00	3.28	205				

WATER YEAR 1969
MUN RIVER BASIN

Huai Khayung at Ban Nam Om, Si Sa Ket (M_{66})

Location: Lat. 14°-35'-23" N., Long. 104°-39'-45" E., on right bank about 50 meters upstream from the bridge on Kantharalak - Det Udom road, Ban Nam Om, Amphoe Kantharalak, Si Sa Ket.

Drainage Area: 586 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S. No. 1

Location: Near the gage site

Elevation: + 6.581 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1965 to date

Rating Operation:

Period of Rating: 1965-68, 1972 to date

Rated by Float: -

Rated by Current Meter: 1965-68, 1972 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

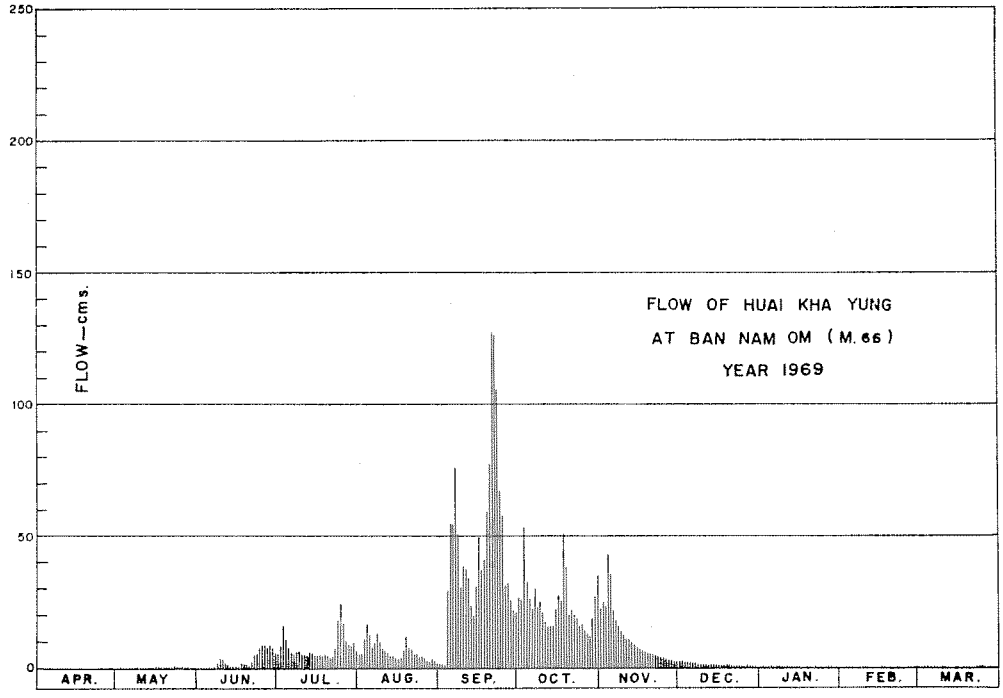
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1965-68. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Record for period of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.02	0.10	0.02	0.81	0.83	0.41	2.23	1.97	0.59	0.28	0.16	0.10
2	.01	.08	.01	1.12	.90	.38	.15	.13	.58	.29	.17	.12
3	.01	.08	.01	.58	1.36	.42	3.54	2.04	.56	.28	.17	.12
4	.01	.07	.01	.21	.66	2.51	2.60	3.08	.54	.27	.15	.10
5	.00	.07	.05	.02	.28	3.63	.15	2.66	.53	.27	.15	.11
6	0.01	0.06	0.10	0.86	1.01	3.63	1.94	1.98	0.52	0.27	0.17	0.10
7	.01	.05	.20	.84	.24	4.50	2.40	.74	.51	.26	.17	.10
8	.01	.05	.51	.97	.44	3.17	.02	.59	.50	.25	.16	.10
9	.01	.10	.69	.93	.10	2.43	.12	.46	.48	.25	.16	.10
10	.01	.09	.53	.87	0.99	.82	1.88	.37	.46	.25	.14	.10
11	0.01	0.07	0.41	0.90	0.98	2.76	1.67	1.29	0.45	0.24	0.14	0.10
12	.01	.07	.32	.83	.83	.58	.55	.26	.44	.24	.14	.09
13	.01	.07	.26	.94	.78	.09	.60	.16	.43	.23	.14	.07
14	.01	.07	.24	.87	.78	1.81	.59	.11	.42	.22	.14	.07
15	.00	.17	.24	.80	.70	2.61	2.02	.06	.41	.21	.14	.07
16	0.00	0.18	0.38	0.80	0.68	3.39	2.30	1.01	0.41	0.21	0.13	0.07
17	.01	.17	.44	.80	.75	2.75	.10	0.95	.40	.22	.13	.07
18	.01	.16	.42	.74	.95	3.04	3.44	.92	.39	.22	.13	.07
19	.01	.13	.36	.86	1.33	.93	2.34	.89	.39	.22	.13	.07
20	.01	.13	.33	.75	.00	4.63	1.88	.86	.38	.23	.13	.07
21	0.01	0.12	0.54	0.71	1.00	6.35	1.95	0.83	0.38	0.23	0.13	0.07
22	.01	.18	.76	.80	0.89	.29	1.83	.80	.38	.22	.12	.08
23	.01	.17	.80	1.09	.86	5.16	.80	.77	.37	.22	.12	.07
24	.01	.15	1.04	.79	.74	3.75	.62	.75	.35	.22	.13	.07
25	.01	.13	.13	2.08	.78	2.85	.66	.72	.34	.21	.13	.09
26	0.02	0.11	1.08	1.45	0.71	2.45	1.49	0.69	0.33	0.20	0.11	0.08
27	.04	.06	.00	.22	.62	.50	.40	.65	.33	.18	.11	.07
28	.05	.03	.11	.09	.56	.13	.33	.63	.32	.18	.11	.07
29	.07	.02	.03	.07	.67	1.97	.77	.61	.32	.17	-	.07
30	.12	.02	0.90	.21	.52	.91	.29	.60	.30	.17	-	.06
31	-	.01	-	0.96	.45	-	2.65	-	.29	.17	-	.07
Mean	0.02	0.09	0.50	1.03	0.91	2.96	2.04	1.25	0.42	0.23	0.14	0.08
Max.	0.12	0.18	1.13	2.08	1.66	6.35	3.54	3.08	0.59	0.29	0.17	0.12
Min.	0.00	0.01	0.01	0.71	0.45	0.38	1.33	0.60	0.29	0.17	0.11	0.06

WATER YEAR 1969 : Max. 6.35 m. Min. 0.00 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.10	0.00	4.82	5.06	1.18	27	22	2.62	0.54	0.22	0.10
2		0.06	0.00	8.68	5.90	1.00	25	25	2.54	0.57	0.24	0.14
3		0.06	0.00	16	12	1.26	53	23	2.38	0.54	0.24	0.14
4		0.04	0.00	9.95	17	32	34	43	2.22	0.51	0.20	0.10
5		0.04	0.00	7.36	11	55	25	35	2.14	0.51	0.20	0.12
6		0.02	0.10	5.42	7.23	55	22	22	2.06	0.51	0.24	0.10
7		0.00	0.30	5.18	10	76	30	18	1.98	0.48	0.24	0.10
8		0.00	0.98	6.74	13	45	23	16	1.90	0.45	0.22	0.10
9		0.10	3.51	6.26	8.40	30	25	14	1.74	0.45	0.22	0.10
10		0.08	2.14	5.54	6.98	38	21	12	1.58	0.45	0.18	0.10
11		0.04	1.18	5.90	6.86	37	17	11	1.50	0.42	0.18	0.10
12		0.04	0.70	5.66	5.06	33	15	11	1.42	0.42	0.18	0.08
13		0.04	0.48	6.38	4.48	24	16	9.24	1.34	0.39	0.18	0.04
14		0.04	0.42	5.54	4.48	19	16	8.54	1.26	0.36	0.18	0.04
15		0.24	0.42	4.70	3.60	34	23	7.88	1.18	0.33	0.18	0.04
16		0.26	1.00	4.70	3.42	50	28	7.23	1.18	0.33	0.16	0.04
17		0.24	1.42	4.70	4.15	37	25	6.50	1.10	0.36	0.16	0.04
18		0.22	1.26	4.04	6.50	43	51	6.14	1.05	0.36	0.16	0.04
19		0.16	0.90	5.42	12	62	29	5.78	1.00	0.36	0.16	0.04
20		0.16	0.75	4.15	7.10	80	21	5.42	1.00	0.39	0.16	0.04
21		0.14	2.22	3.71	7.10	127	22	5.06	1.00	0.39	0.16	0.04
22		0.26	4.26	4.70	5.78	125	20	4.70	1.00	0.36	0.14	0.06
23		0.24	4.70	8.27	5.42	94	19	4.37	0.95	0.36	0.14	0.04
24		0.20	7.62	19	4.04	58	16	4.15	0.85	0.36	0.16	0.04
25		0.16	8.82	24	4.48	39	17	3.82	0.80	0.33	0.16	0.08
26		0.12	8.27	14	3.71	31	14	3.51	0.75	0.30	0.12	0.06
27		0.02	7.10	10	2.88	32	13	3.15	0.75	0.26	0.12	0.04
28	0.00	0.00	8.54	8.27	2.38	25	12	2.97	0.70	0.26	0.12	0.04
29	0.04	0.00	7.49	8.01	3.33	22	19	2.79	0.70	0.24	–	0.04
30	0.14	0.00	5.90	9.95	2.06	21	28	2.70	0.60	0.24	–	0.02
31	–	0.00	–	6.62	1.50	–	35	–	0.57	0.24	–	0.04
Total	0.18	3.08	81.48	243.67	196.90	1,327.44	741.00	345.95	41.86	12.07	5.02	2.10
Mean	0.01	0.10	2.72	7.86	6.35	44.2	23.9	11.53	1.35	0.39	0.18	0.068
Max.	0.14	0.26	8.82	24	17	127	53	43	2.62	0.57	0.24	0.14
Min.	0.00	0.00	0.00	3.71	1.50	1.00	12	2.70	0.57	0.24	0.12	0.02
Runoff - mcm.	0.015	0.266	7.040	21.053	17.012	114.691	64.022	29.890	3.617	1.043	0.434	0.181

WATER YEAR 1969 : Max. 127 Min. 0.00 Mean 8.22 Annual Runoff 259.264 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept.21,69	19.00	6.52	132				

WATER YEAR 1969
MUN RIVER BASIN

Huai Kwang at Ban Kaeng Yang, Ubon Ratchathani (M_{75})

Location: Lat. 15°-09'-53" N., Long. 105°-17'-01" E., on left bank at the bridge on Phibun Mangsahan – Chong Mek highway, near Wat Phathephurom, Amphoe Phibun Mangsahan, Ubon Ratchathani.

Drainage Area: 388 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S.

Location: About 9 meters from left bank at Wat Phathepburom

Elevation: + 6.775 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings

Period of Available Gage Records: 1965 to date

Rating Operation:

Period of Rating: 1965 to date

Rated by Float:

Rated by Current Meter: 1965 to date

Stability of Channel Regimes: Stable, no shifting adjustment but mean hourly discharge are used for flow computation for period of high flood.

Overbank Flow Conditions: Overbank flow is included for flow computation.

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

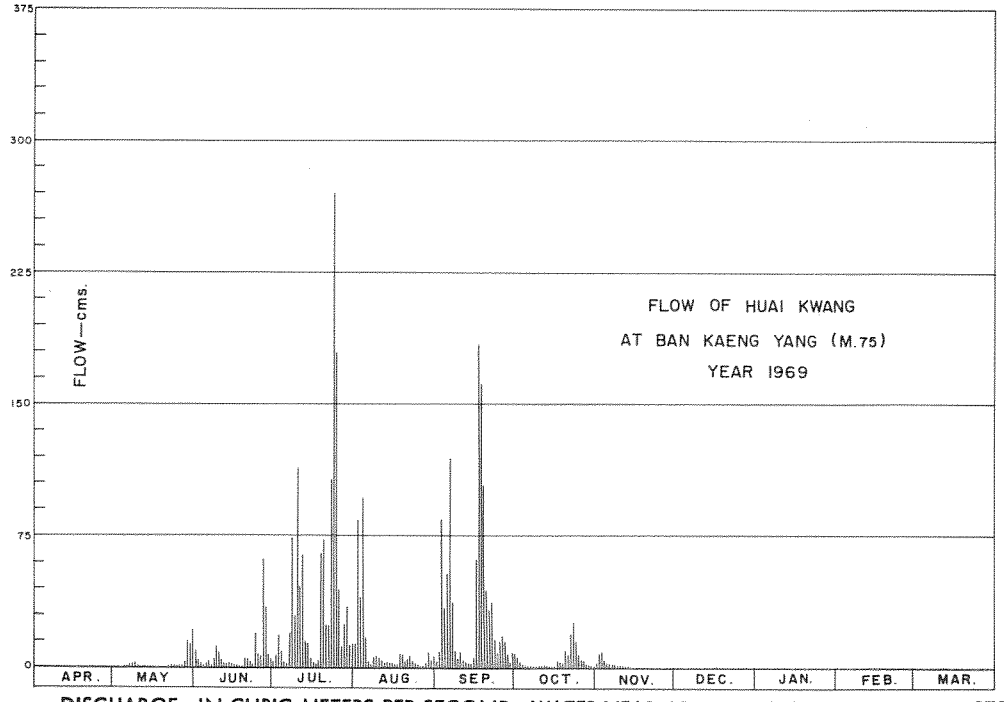
Remarks: Discharge record for periods of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1,1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.68	0.66	1.24	1.07	1.61	1.01	1.35	0.93	0.69	0.74	0.69	0.60
2	.67	.66	.00	.33	3.48	.07	.12	1.31	.69	.73	.70	.60
3	.67	.66	0.88	.74	2.14	3.47	0.99	.44	.69	.72	.68	.60
4	.68	.66	.80	.20	3.73	2.13	.91	.10	.70	.71	.66	.60
5	.69	.66	.99	0.98	1.95	.84	.86	0.99	.71	.70	.70	.60
6	0.69	0.77	1.05	0.94	2.26	4.17	0.85	0.95	0.70	0.70	0.70	0.60
7	.67	.86	0.85	1.89	1.52	1.79	.84	.92	.70	.70	.69	.60
8	.67	.97	1.03	3.26	.27	.29	.83	.89	.70	.69	.68	.60
9	.69	.98	.52	1.79	.27	.15	.81	.88	.70	.68	.68	.60
10	.70	.80	.29	4.07	.18	.37	.79	.86	.71	.68	.67	.61
11	0.70	0.76	1.00	2.52	1.04	1.09	0.78	0.85	0.71	0.68	0.67	0.64
12	.71	.76	0.89	3.04	0.95	0.96	.77	.81	.69	.68	.67	.67
13	.68	.76	.92	1.59	1.03	.92	.77	.74	.68	.67	.67	.68
14	.66	.75	.99	.61	0.99	.89	.76	.74	.69	.67	.67	.68
15	.69	.74	.94	.21	.90	1.01	.79	.73	.69	.67	.67	.68
16	0.70	0.72	0.84	1.00	0.89	2.49	0.81	0.73	0.69	0.67	0.67	0.68
17	.67	.70	.82	0.92	.87	5.31	1.28	.73	.69	.67	.67	.68
18	.66	.70	.82	.94	1.36	4.78	.00	.73	.70	.67	.66	.68
19	.65	.69	.83	2.86	.31	2.81	0.97	.72	.72	.67	.64	.68
20	.65	.69	1.18	3.16	.05	.35	1.41	.71	.73	.67	.63	.68
21	0.65	0.68	1.12	1.89	1.16	2.18	1.25	0.69	0.75	0.67	0.63	0.68
22	.65	.83	0.95	.91	.26	.34	.80	.69	.75	.67	.63	.67
23	.64	.86	.91	4.02	.02	1.60	2.01	.69	.74	.67	.63	.67
24	.64	.75	1.79	6.19	0.93	.25	1.53	.69	.74	.68	.62	.67
25	.64	.77	.27	3.56	.86	2.18	.24	.69	.72	.69	.61	.67
26	0.66	0.81	1.03	1.52	0.84	1.78	1.11	0.69	0.70	0.69	0.61	0.67
27	.66	.79	3.06	.51	.84	.64	.08	.70	.71	.69	.61	.67
28	.65	1.00	1.87	2.05	.89	.29	0.98	.69	.72	.69	.61	.68
29	.66	.61	.26	.27	1.38	.02	.91	.69	.72	.69	–	.68
30	.66	.51	.07	1.53	.04	.41	.86	.69	.71	.68	–	.68
31	–	.83	–	.16	.28	–	.84	– .	.74	.67	–	.68
Mean	0.67	0.85	1.14	2.09	1.36	1.99	1.04	0.82	0.71	0.68	0.66	0.65
Max.	0.71	1.83	3.06	6.19	3.73	5.31	2.01	1.44	0.75	0.74	0.70	0.68
Min.	0.64	0.66	0.80	0.92	0.84	0.89	0.76	0.69	0.68	0.67	0.61	0.60

WATER YEAR 1969 : Max. 6.19 m. Min. 0.60 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.00	6.44	3.84	14	3.12	8.40	2.16	0.00	0.32	0.00	0.00
2			3.00	8.00	84	3.84	4.52	7.60	0.00	0.24		
3			1.60	18	30	84	2.88	10	0.00	0.16		
4			0.80	5.80	96	30	1.92	4.20	0.00	0.08		
5		0.00	2.88	2.76	24	57	1.40	2.88	0.08	0.00		
6		0.56	3.60	2.26	34	119	1.30	2.40	0.00			
7		1.40	1.30	22	12	20	1.20	2.04	0.00			
8		2.64	3.36	74	6.92	7.24	1.10	1.70	0.00			
9		2.76	12	19	6.92	5.00	0.90	1.60	0.00			
10	0.00	0.80	7.24	113	5.48	8.80	0.72	1.40	0.08			
11	0.00	0.48	3.00	44	3.48	4.08	0.64	1.30	0.08			
12	0.08	0.48	1.70	65	2.40	2.52	0.56	0.90	0.00			
13	0.00	0.48	2.04	14	3.36	2.04	0.56	0.32				
14		0.40	2.88	14	2.88	1.77	0.48	0.32				
15		0.32	2.28	5.96	1.80	3.30	0.72	0.24				
16		0.16	1.20	3.00	1.70	50	0.92	0.24				
17		0.00	1.00	2.04	1.50	184	7.08	0.24				
18			1.00	2.35	8.60	156	3.00	0.24	0.00			
19			1.10	65	7.60	56	2.64	0.16	0.16			
20			5.48	72	3.60	38	10	0.08	0.24			
21		0.00	4.52	23	5.16	32	6.60	0.00	0.40			
22		1.10	2.40	24	6.76	37	20		0.40			
23		1.40	1.92	112	3.24	14	26		0.32			
24		0.40	19	270	2.16	6.60	12		0.32			
25		0.56	6.92	102	1.40	14	6.44		0.16			
26		0.90	3.36	12	1.20	19	4.36		0.00			
27		0.72	66	12	1.20	15	3.96		0.08			
28		3.00	22	27	1.70	7.24	2.76		0.16		0.00	
29		14	6.76	35	9.00	3.24	1.92		0.16			
30	0.00	12	3.84	12	3.48	10	1.40	0.00	0.08		–	
31	–	21	–	14	7.08	–	1.20	–	0.32	0.00	–	0.00
Total	0.080	65.56	200.62	1,199.03	392.62	993.79	137.58	40.02	3.04	0.80	0.00	0.00
Mean	0.000	2.11	6.68	38.7	12.6	33.1	4.44	1.33	0.098	0.025	0.00	0.00
Max.	0.08	21	66	270	96	184	26	10	0.40	0.32	0.00	0.00
Min.	0.00	0.00	0.80	2.04	1.20	1.77	0.48	0.00	0.00	0.00	0.00	0.00
Runoff – mcm.	0.006	5.664	17.333	103.596	33.922	85.863	11.887	3.458	0.263	0.069	0.00	0.00

WATER YEAR 1969 : Max. 270 Min. 0.00 Mean 8.28 Annual Runoff 261.199 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
July 24,	17.00	6.72	332				

WATER YEAR 1969
MUN RIVER BASIN

Lam Dom Noi at Ban Fang Lum, Ubon Ratchathani (M79)

Location: Lat. 15°-07'-19" N., Long. 105°-23'-42" E., on right bank about 20 meters upstream from concrete bridge crossing Lam Dom Noi on Phibun Mangsahan - Chong Mek highway, and about 300 meters south-east of Ban Fang Lum, Amphoe Phibun Mangsahan, Ubon Ratchathani.

Drainage Area: 1,973 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S. M.79

Location: about 10 meters from the top gage

Elevation: + 12.246 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1965-1969

Rating Operation:

Period of Rating: 1965-1969

Rated by Float: -

Rated by Current Meter: 1965-1969

Stability of Channel Regimes: Rather stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

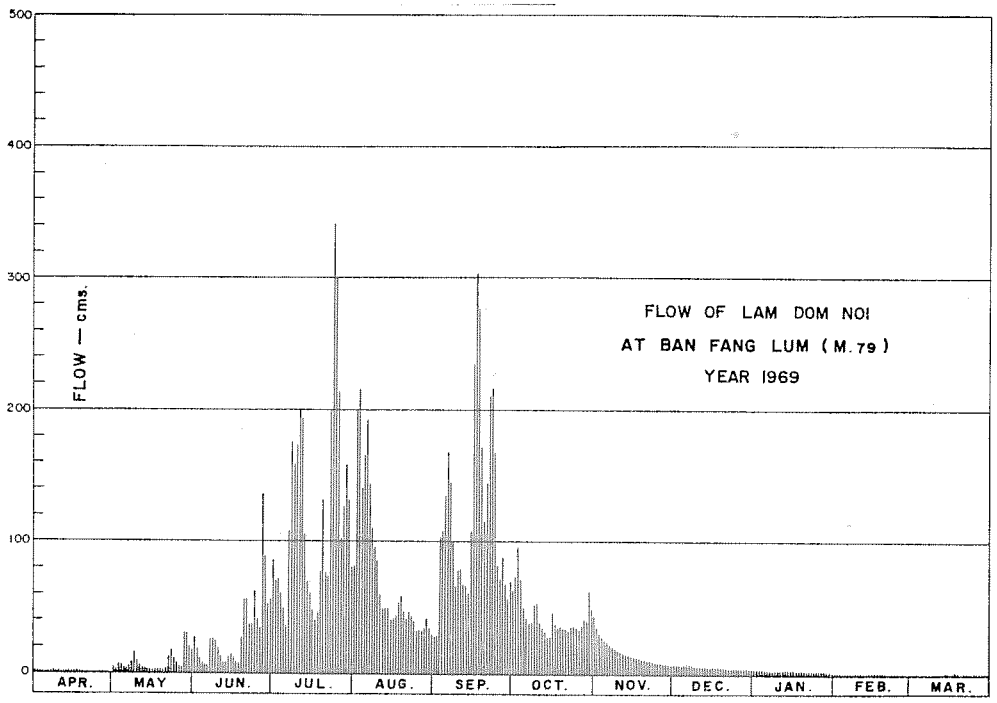
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Hourly gage-height on July 22-27, September 14-20

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1,1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.36	0.68	1.42	2.60	2.52	1.44	2.18	1.68	0.80	0.65	0.50	0.44
2	.34	.58	.26	.28	4.26	.52	.46	.62	.79	.64	.50	.44
3	.33	.83	0.96	.35	.42	2.86	.75	.52	.78	.63	.50	.44
4	.33	.68	.80	.18	3.38	.96	.26	.43	.77	.63	.49	.44
5	.33	.59	.74	1.90	.88	3.44	1.94	.38	.77	.62	.48	.44
6	0.35	0.58	0.72	1.62	4.13	3.80	1.78	1.32	0.77	0.61	0.48	0.44
7	.42	.76	1.40	3.07	2.92	.33	.69	.27	.77	.61	.48	.44
8	.44	.90	.39	.92	.98	2.58	.69	.24	.77	.60	.48	.44
9	.40	1.12	.36	.67	.63	.27	2.00	.21	.75	.60	.48	.44
10	.39	0.86	.20	.86	.59	.48	.03	.18	.73	.60	.48	.43
11	0.39	0.70	0.96	4.22	2.09	2.47	1.71	1.13	0.71	0.60	0.47	0.43
12	.39	.65	.79	.10	1.92	.25	.59	.09	.71	.60	.47	.43
13	.39	.60	.77	2.95	.92	.27	.51	.06	.71	.60	.47	.43
14	.38	.54	1.01	.32	.95	.12	.45	.04	.71	.60	.47	.43
15	.37	.52	.05	.13	.73	.79	.46	.03	.71	.60	.47	.44
16	0.37	0.53	0.92	1.89	1.79	5.16	1.88	1.02	0.71	0.60	0.45	0.44
17	.37	.51	.81	.70	.84	.43	.64	.00	.70	.60	.45	.45
18	.37	.54	.78	.94	2.04	4.63	.62	0.98	.68	.60	.45	.50
19	.38	.58	1.68	2.83	.12	3.51	.65	.96	.68	.60	.45	.47
20	.37	.59	2.09	3.29	1.86	2.99	.61	.94	.68	.59	.48	.44
21	0.35	0.56	2.08	2.45	1.71	3.65	1.62	0.93	0.68	0.58	0.47	0.44
22	.35	1.06	1.65	.34	.88	4.36	.54	.91	.68	.57	.46	.44
23	.35	.23	.69	4.30	.80	.43	.64	.90	.67	.56	.46	.45
24	.35	0.99	2.20	5.94	.72	3.48	.65	.89	.66	.55	.45	.44
25	.35	.80	1.77	.47	.56	2.50	.60	.86	.65	.55	.44	.44
26	0.35	0.66	1.57	3.86	1.58	2.32	1.58	0.85	0.65	0.54	0.44	0.44
27	.35	.60	3.35	2.83	.54	.62	.66	.83	.65	.53	.44	.43
28	.35	1.53	2.50	3.22	.63	.18	.79	.82	.65	.52	.44	.42
29	.37	.46	1.96	.63	.75	.02	.74	.82	.65	.52	-	.41
30	.37	.23	2.16	.31	.54	.32	2.19	.80	.65	.51	-	.40
31	-	1.15	-	2.49	.44	-	1.82	-	.65	.50	-	.39
Mean	0.36	0.79	1.43	3.05	2.29	3.00	1.80	1.09	0.71	0.58	0.47	0.44
Max.	0.44	1.53	3.35	5.94	4.42	5.43	2.75	1.68	0.80	0.65	0.50	0.50
Min.	0.33	0.51	0.72	1.62	1.44	1.44	1.45	0.80	0.65	0.50	0.44	0.39

WATER YEAR 1969 : Max. 5.94 m. Min. 0.33 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.60	4.70	27	86	82	28	62	38	7.00	4.25	2.00	1.40
2	0.40	3.20	21	68	203	31	78	35	6.80	4.10	2.00	1.40
3	0.30	7.75	11	72	216	103	96	31	6.60	3.95	2.00	1.40
4	0.30	4.70	7.00	62	138	110	67	27	6.40	3.95	1.90	1.40
5	0.30	3.35	5.80	48	173	142	50	25	6.40	3.80	1.80	1.40
6	0.50	3.20	5.40	35	192	167	42	23	6.40	3.65	1.80	1.40
7	1.20	6.20	26	117	107	135	38	21	6.40	3.65	1.80	1.40
8	1.40	9.50	26	176	111	85	38	20	6.40	3.50	1.80	1.40
9	1.00	16	24	158	88	67	53	19	6.00	3.50	1.80	1.40
10	0.90	8.50	18	172	86	79	54	18	5.60	3.50	1.80	1.30
11	0.90	5.00	11	200	51	79	39	16	5.20	3.50	1.70	1.30
12	0.90	4.25	6.80	190	49	66	34	15	5.20	3.50	1.70	1.30
13	0.90	3.50	6.40	109	49	67	30	14	5.20	3.50	1.70	1.30
14	0.80	2.60	13	70	50	59	28	14	5.20	3.50	1.70	1.30
15	0.70	2.30	14	60	40	100	28	13	5.20	3.50	1.70	1.40
16	0.70	2.45	10	46	42	281	47	13	5.20	3.50	1.50	1.40
17	0.70	2.15	7.25	38	45	303	36	12	5.00	3.50	1.50	1.50
18	0.70	2.60	6.60	50	55	233	35	12	4.70	3.50	1.50	2.00
19	0.80	3.20	38	101	59	147	36	11	4.70	3.50	1.50	1.70
20	0.70	3.35	57	132	46	111	34	11	4.70	3.35	1.80	1.40
21	0.50	2.90	57	77	39	157	35	10	4.70	3.20	1.70	1.40
22	0.50	14	36	71	47	211	32	9.80	4.70	3.50	1.60	1.40
23	0.50	19	38	208	43	216	36	9.50	4.55	2.90	1.60	1.50
24	0.50	12	63	340	39	145	36	9.25	4.40	2.75	1.50	1.40
25	0.50	7.00	42	298	32	80	34	8.50	4.25	2.75	1.40	1.40
26	0.50	4.40	33	173	33	70	33	8.25	4.25	2.60	1.40	1.40
27	0.50	3.50	136	101	32	88	37	7.75	4.25	2.45	1.40	1.30
28	0.50	31	80	130	35	62	42	7.50	4.25	2.30	1.40	1.20
29	0.70	28	51	156	41	54	40	7.50	4.25	2.30	–	1.10
30	0.70	19	61	133	32	70	63	7.00	4.25	2.15	–	1.00
31	–	17	–	80	28	–	44	–	4.25	2.00	–	0.90
Total	20.10	256.30	936.25	3,757	2,283	3,547	1,357	473.05	162.40	101.15	47.00	42.50
Mean	0.670	8.27	31.3	121	73.6	118	43.8	15.8	5.24	3.26	1.68	1.37
Max.	1.40	31	136	340	216	303	96	38	7.00	4.25	2.00	2.00
Min.	0.30	2.15	5.40	35	28	28	28	7.00	4.25	2.00	1.40	0.90
Runoff - mcm.	1.737	22.144	81.065	324.605	197.251	306.461	117.245	40.871	14.031	8.739	4.061	3.672

WATER YEAR 1969 : Max. 340 Min. 0.30 Mean 35.6 Annual Runoff 1,121.882 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
July 24,69	15.00	6.13	366				

WATER YEAR 1969
MUN RIVER BASIN

Lam Dom Yai at Highway Bridge, Ubon Ratchathani (M80)

Location: Lat. 14°-53'-53" N., Long. 105°-05'-08" E., on left bank about 20 meters downstream site of the bridge on Buntharik road, Amphoe Det Udom, Ubon Ratchathani.

Drainage Area: 3,363 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S. M. 80

Location: Near the gage site

Elevation: + 11.819 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1965 to date

Rating Operation:

Period of Ratihg: 1965 to date

Rated by Float: -

Rated by Current Meter: 1965 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

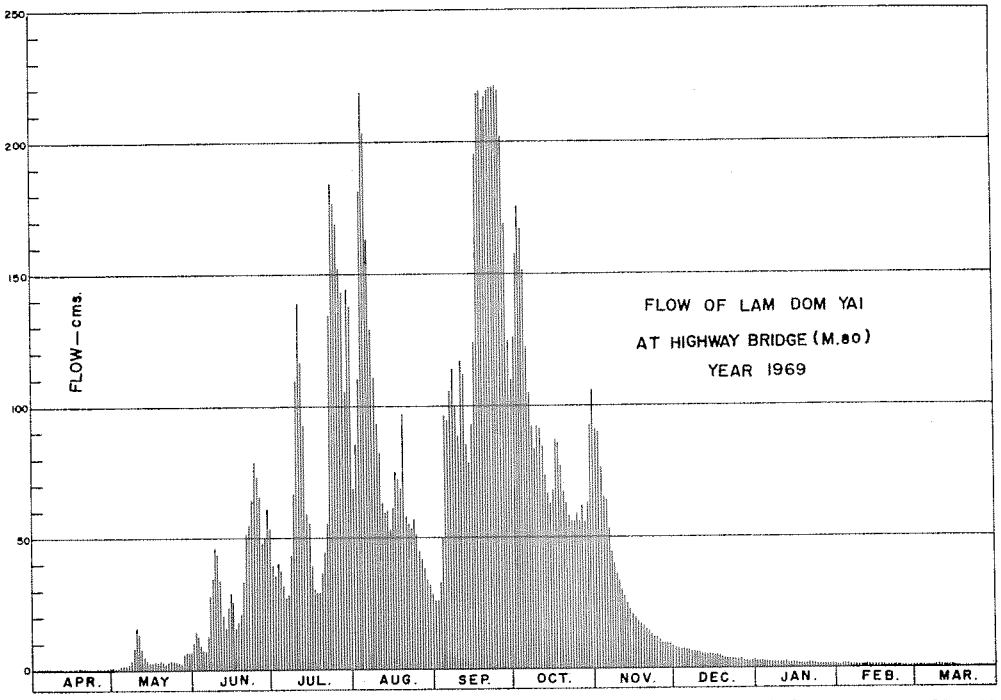
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.59	0.66	1.39	2.33	3.15	1.92	4.42	3.75	1.21	0.87	0.72	0.62
2	.58	.63	.48	.24	.69	.92	5.19	.71	.20	.86	.71	.62
3	.58	.67	.30	.37	5.33	2.18	.70	.40	.18	.87	.72	.61
4	.57	.71	.17	.29	6.38	.70	.45	.08	.16	.85	.72	.63
5	.60	.75	.05	.13	.63	3.37	4.93	.06	.15	.84	.72	.63
6	0.58	0.72	1.25	1.96	6.03	3.81	4.48	2.80	1.13	0.84	0.71	0.62
7	.57	.78	.96	2.02	4.92	4.23	.01	.49	.12	.84	.71	.61
8	.55	.89	2.24	.55	.45	.30	3.75	.36	.11	.84	.69	.61
9	.55	1.18	.55	3.07	.26	3.75	.52	.27	.09	.83	.70	.61
10	.55	.56	.46	4.24	3.73	.64	.77	.17	.07	.82	.68	.61
11	0.55	1.42	2.05	4.87	3.24	4.37	3.73	2.07	1.06	0.82	0.69	0.60
12	.55	.11	1.65	.31	2.97	.24	.47	1.98	.05	.81	.68	.60
13	.55	0.97	.49	3.48	.93	3.51	.26	.89	.04	.81	.68	.60
14	.55	.89	.87	2.93	.96	.41	.11	.83	.02	.80	.68	.60
15	.56	.83	2.04	.82	.71	.67	.01	.74	.02	.79	.67	.60
16	0.58	0.82	1.89	2.42	3.00	4.65	3.22	1.68	1.02	0.79	0.68	0.60
17	.59	.83	.53	.08	.33	6.20	.63	.63	.00	.78	.68	.59
18	.59	.85	.27	.05	.26	.61	.59	.58	.00	.78	.68	.59
19	.57	.88	.79	.05	.13	.63	.28	.54	0.99	.77	.66	.59
20	.56	.81	2.29	.31	.39	.48	.08	.50	.98	.78	.66	.59
21	0.55	0.77	2.72	2.60	2.85	6.60	3.00	1.47	0.96	0.78	0.65	0.59
22	.55	.86	.79	.94	.84	.64	2.88	.43	.96	.78	.65	.59
23	.54	.93	3.08	5.11	.74	.66	.82	.40	.95	.77	.65	.59
24	.54	.92	.43	.86	.87	.67	.83	.40	.95	.76	.63	.58
25	.54	.85	.29	.67	.62	.67	.91	.36	.94	.76	.63	.58
26	0.53	0.82	3.06	5.51	2.53	6.62	2.81	1.32	0.93	0.76	0.62	0.58
27	.54	.81	2.57	.09	.43	.14	.87	.30	.92	.75	.62	.58
28	.58	1.01	.69	3.94	.34	5.46	.79	.28	.91	.74	.62	.57
29	.62	.10	.98	.53	.33	4.58	3.01	.26	.91	.73	-	.57
30	.60	.09	.70	.99	.14	.13	.85	.24	.90	.73	-	.58
31	-	.15	-	.82	.00	-	4.09	-	.88	.72	-	.58
Mean	0.56	0.91	2.13	3.31	3.46	4.72	3.63	2.00	1.03	0.79	0.67	0.27
Max.	0.62	1.56	3.43	5.86	6.63	6.67	5.70	3.75	1.21	0.87	0.72	0.63
Min.	0.53	0.63	1.05	1.96	2.00	1.92	2.79	1.24	0.88	0.72	0.62	0.57

WATER YEAR 1969 : Max. 6.67 m. Min. 0.53 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.45	0.92	12	38	67	26	119	91	8.38	3.04	1.40	0.64
2	0.40	0.71	14	35	87	26	153	90	8.20	2.92	1.30	0.64
3	0.40	0.99	10	40	160	33	176	75	7.88	3.04	1.40	0.57
4	0.35	1.30	7.72	37	207	51	165	65	7.56	2.80	1.40	0.71
5	0.50	1.70	5.80	32	219	96	142	64	7.40	2.68	1.40	0.71
6	0.40	1.40	9.10	27	191	94	122	55	7.08	2.68	1.30	0.64
7	0.35	2.00	27	29	141	111	102	44	6.92	2.68	1.30	0.57
8	0.25	3.28	35	46	120	114	91	40	6.76	2.68	1.13	0.57
9	0.25	7.88	46	64	112	91	82	36	6.44	2.56	1.20	0.57
10	0.25	16	43	112	91	87	92	33	6.12	2.44	1.06	0.57
11	0.25	13	29	139	71	117	91	30	5.96	2.44	1.13	0.50
12	0.25	6.76	18	114	61	112	80	27	5.80	2.32	1.06	0.50
13	0.25	4.12	14	81	59	82	72	25	5.64	2.32	1.06	0.50
14	0.25	3.28	24	59	61	78	66	23	5.32	2.20	1.06	0.50
15	0.30	2.56	29	56	52	88	62	21	5.32	2.10	0.99	0.50
16	0.40	2.44	25	42	62	129	70	19	5.32	2.10	1.06	0.50
17	0.45	2.56	15	30	75	199	87	18	5.00	2.00	1.06	0.45
18	0.45	2.80	9.46	29	72	218	85	17	5.00	2.00	1.06	0.45
19	0.35	3.16	22	29	67	219	73	16	4.44	1.90	0.92	0.45
20	0.36	2.32	37	38	97	212	65	15	4.28	2.00	0.92	0.45
21	0.25	1.90	52	48	57	218	62	14	3.96	2.00	0.85	0.45
22	0.25	2.92	55	60	56	220	58	13	3.96	2.00	0.85	0.45
23	0.20	3.48	65	150	53	221	56	12	3.80	1.90	0.85	0.45
24	0.20	3.32	79	184	57	221	56	12	3.80	1.80	0.71	0.40
25	0.20	2.80	73	175	49	221	59	11	3.64	1.80	0.71	0.40
26	0.15	2.44	64	168	45	219	55	10	3.48	1.80	0.64	0.40
27	0.20	2.32	47	149	42	196	57	10	3.32	1.70	0.64	0.40
28	0.40	5.16	51	142	39	166	55	9.64	3.16	1.60	0.64	0.35
29	0.64	6.60	61	124	33	126	62	9.28	3.16	1.50	–	0.35
30	0.50	6.44	51	144	32	107	95	8.92	3.40	1.50	–	0.40
31	–	7.40	–	137	28	–	106	–	3.16	1.40	–	0.40
Total	9.90	123.96	1,030.08	2,558	2,565	4,098	2,716	913.84	163.66	67.90	29.10	15.44
Mean	0.33	3.99	34.3	82.5	82.7	137	87.6	30.5	5.28	2.19	1.04	0.50
Max.	0.64	16	79	184	219	221	176	91	8.38	3.04	1.40	0.71
Min.	0.15	0.71	5.80	27	28	26	55	8.92	3.16	1.40	0.64	0.35
Runoff – mcm.	0.855	10.710	88.999	221.011	221.616	354.067	234.662	78.956	14.140	5.867	2.514	1.334

WATER YEAR 1969 : Max. 221 Min. 0.15 Mean 39.1 Annual Runoff 1,234.732 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 24,	01.00	6.68	222				

WATER YEAR 1968
MUN RIVER BASIN

Lam Sae at Ban Mak Krat, Nakhon Ratchasima (M_{81})

Location: Lat. 14°-23'-51" N., Long. 102°-15'-20" E., on right bank infront of Wat Map Krat, Tambon Khok Kra Chai, Amphoe Khon Buri, Nakhon Ratchasima.

Drainage Area: 482 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 209.90 m. (M.S.L.)

Bench Mark: B.M. - R.I.D.

Location: No. 326 at Sandal tree, No. 350 at Peedal tree.

Elevation: + 215.006 m. (M.S.L.) and + 215.923 m. (M.S.L.) respectively.

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1967-1972

Rated by Float: -

Rated by Current Meter: 1967-1972

Stability of Channel Regimes: Rather stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

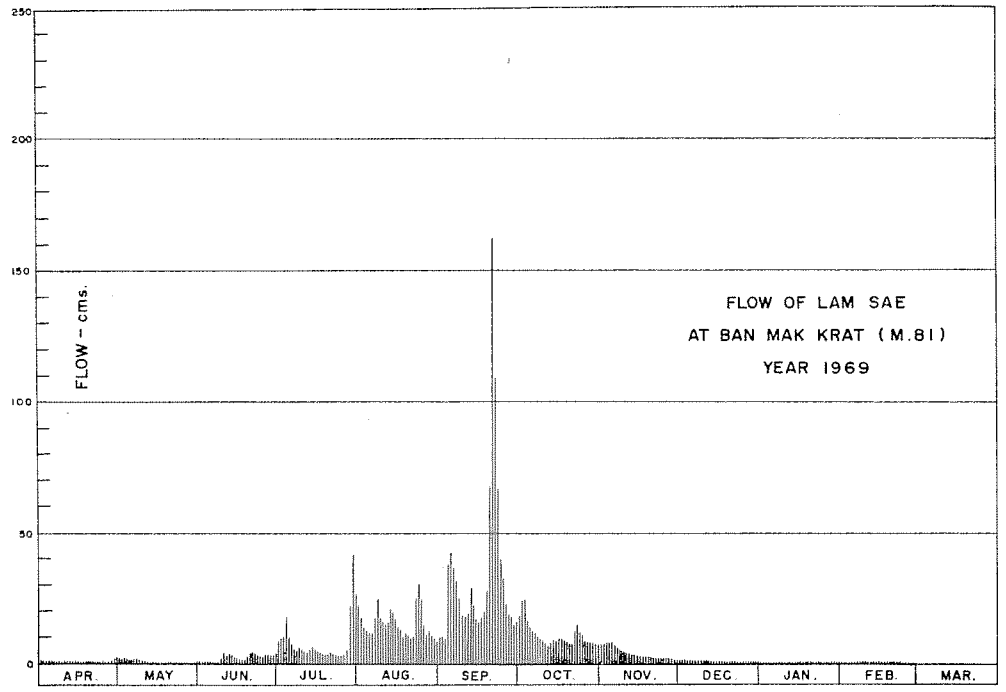
Remarks: No records March 1970.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	208.81	210.38	210.39	212.04	212.57	211.89	212.24	211.43	210.42	209.87	209.60	
2	.81	.36	.68	.06	.31	.97	.45	.44	.38	.87	.59	
3	.81	.43	.67	.08	.19	.85	.49	.43	.34	.88	.58	
4	.81	.43	.61	.32	.12	212.83	.22	.52	.27	.87	.57	
5	.85	.39	.54	.13	.07	.98	.07	.56	.24	.87	.57	
6	208.87	210.40	210.49	211.91	212.07	212.89	211.94	211.40	210.23	209.88	209.57	
7	.86	.85	.44	.79	.28	.76	.93	.30	.21	.87	.56	
8	.88	.72	.37	.75	.64	.55	.79	.24	.21	.90	.56	
9	.93	.47	211.10	.99	.33	.32	.70	.19	.20	.92	.54	
10	.95	.34	.74	.83	.29	.24	.66	.15	.18	.88	.52	
11	208.98	210.28	211.46	211.73	212.22	212.18	211.58	211.08	210.16	209.85	209.51	
12	209.00	.22	.57	.61	.27	.25	.49	.04	.13	.82	.51	
13	.01	.15	.43	.89	.46	.54	.59	.00	.09	.81	.52	
14	.02	.08	.22	212.02	.43	.28	.70	210.97	.07	.85	.52	
15	.03	.09	.11	211.88	.20	.20	.68	.92	.06	.85	.52	
16	209.03	210.13	211.06	211.78	212.17	212.26	211.79	210.88	210.04	209.84	209.52	
17	.03	.10	.00	.66	.12	.28	.74	.84	.03	.82	.52	
18	.01	.04	210.89	.54	211.87	.41	.69	.82	.02	.80	.52	
19	.01	209.99	211.03	.42	212.07	.65	.64	.74	.01	.78	.53	
20	.01	.95	.69	.52	211.94	213.09	.59	.72	.00	.76	.52	
21	209.00	209.89	211.65	211.75	211.90	213.94	211.66	210.71	209.98	209.74	209.52	
22	208.99	.86	.50	.62	.97	.71	.77	.68	.97	.73	.52	
23	.99	.83	.39	.51	212.61	.16	.86	.62	.96	.71	.51	
24	.99	.81	.29	.49	.72	212.89	.72	.58	.94	.70	.50	
25	.99	.79	.28	.49	.36	.69	.62	.55	.92	.68	.50	
26	209.06	209.77	211.48	211.50	212.06	212.47	211.54	210.52	209.91	209.66	209.48	
27	.16	.84	.52	.61	211.91	.35	.52	.49	.90	.65	.47	
28	.35	.89	.46	212.12	212.07	.30	.50	.46	.90	.64	.46	
29	210.17	.92	.42	213.59	211.97	.18	.48	.44	.89	.62	-	
30	.49	.93	.68	.09	.82	.22	.45	.43	.89	.61	-	
31	-	.95	-	212.70	.69	-	.42	-	.88	.60	-	
Mean	209.06	210.13	211.13	211.91	212.18	212.52	211.75	210.93	210.07	209.78	209.52	
Max.	210.49	210.85	211.74	213.59	212.72	213.94	212.49	211.56	210.42	209.92	209.60	
Min.	208.81	209.77	210.39	211.42	211.69	211.85	211.42	210.43	209.88	209.60	209.46	

WATER YEAR 1969 : Max. m. Min. m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.01	2.04	0.52	9.00	22	11	18	7.30	1.83	0.64	0.23	
2	0.01	1.99	1.24	10	15	11	24	7.40	1.83	0.58	0.27	
3	0.01	2.18	1.22	11	13	10	25	7.30	1.86	0.56	0.22	
4	0.01	2.18	1.10	18	13	36	17	8.20	1.80	0.50	0.21	
5	0.01	1.57	0.96	11	12	43	14	8.60	1.80	0.47	0.20	
6	0.01	1.24	0.87	7.70	12	38	12	7.00	1.62	0.44	0.19	
7	0.01	2.21	0.79	5.71	16	33	12	6.32	1.45	0.40	0.17	
8	0.01	1.85	0.69	5.06	25	25	10	5.71	1.40	0.42	0.16	
9	0.02	1.20	2.29	6.66	18	19	9.20	5.19	1.37	0.44	0.14	
10	0.02	0.91	4.94	5.58	17	18	9.00	4.84	1.32	0.40	0.12	
11	0.02	0.77	3.49	4.95	15	18	8.00	4.34	1.27	0.36	0.12	
12	0.03	0.66	3.99	4.34	16	20	7.10	4.05	1.19	0.34	0.12	
13	0.03	0.54	3.37	5.98	21	29	8.10	3.76	1.10	0.33	0.12	
14	0.03	0.43	2.65	6.86	20	20	9.20	3.76	1.05	0.36	0.12	
15	0.03	0.42	2.32	5.91	15	16	9.00	3.52	1.12	0.36	0.12	
16	0.03	0.44	2.18	5.26	14	17	10	3.40	1.07	0.31	0.12	
17	0.02	0.39	2.02	4.58	13	18	9.60	3.08	1.05	0.25	0.12	
18	0.02	0.32	1.73	4.00	10	21	9.10	2.97	1.02	0.21	0.12	
19	0.01	0.26	2.10	3.44	12	31	8.60	2.68	1.00	0.23	0.13	
20	0.01	0.23	4.62	3.90	11	51	7.30	2.61	0.90	0.23	0.12	
21	0.01	0.20	4.40	5.06	10	162	7.80	2.57	0.86	0.24	0.12	
22	0.01	0.18	3.67	4.38	11	120	12	2.47	0.84	0.26	0.12	
23	0.02	0.15	3.20	3.86	26	56	15	2.28	0.82	0.28	0.11	
24	0.03	0.14	2.87	3.76	31	40	12	2.16	0.78	0.30	0.11	
25	0.04	0.12	2.84	3.76	19	31	11	2.19	0.75	0.33	0.11	
26	0.07	0.10	3.76	3.81	13	23	8.80	2.25	0.74	0.33	0.10	
27	0.12	0.12	3.95	4.34	11	19	8.60	2.16	0.72	0.30	0.10	
28	0.24	0.13	3.67	10	13	18	8.40	2.04	0.69	0.30	0.10	
29	1.49	0.13	3.50	79	11	16	8.20	1.95	0.67	0.26	–	
30	2.34	0.13	4.82	42	9.90	17	7.90	1.86	0.67	0.24	–	
31	–	0.13	–	26	8.60	–	7.60	–	0.66	0.23	–	
Total	4.72	23.36	79.77	324.90	473.50	987	343.50	123.96	35.25	10.90	3.99	
Mean	0.157	0.753	2.65	10.5	15.3	32.9	11.1	4.13	1.13	0.351	0.142	
Max.	2.34	2.21	4.94	79	31	162	25	8.60	1.83	0.64	0.27	
Min.	0.01	0.10	0.52	3.44	8.60	10	7.10	1.86	0.66	0.21	0.10	
Runoff – mcm.	0.408	2.018	6.892	28.071	40.910	85.277	29.678	10.705	3.046	0.942	0.345	

WATER YEAR 1969 : Max. 162 Min. Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 21,	18.00	214.45	269				

WATER YEAR 1969
MUN RIVER BASIN

Lam Plai Mat at Ban Nong Bot Bridge, Buri Ram (M82)

Location: Lat. 14°-37'-59" N., Long. 102°-43'-13" E., on left bank upstream the bridge on Chok Chai – Det Udom road, Ban Nong Bot, Tambon Chum Saeng, Amphoe Nang Rong, Buri Ram.

Drainage Area: 1,581 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. M. 82

- **Location:** About 30 meters along the gage site
- **Elevation:** + 5.282 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00, and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1969-1971

Rating Operation:

- **Period of Rating:** 1969-1971
- **Rated by Float:** –
- **Rated by Current Meter:** 1969-1971

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

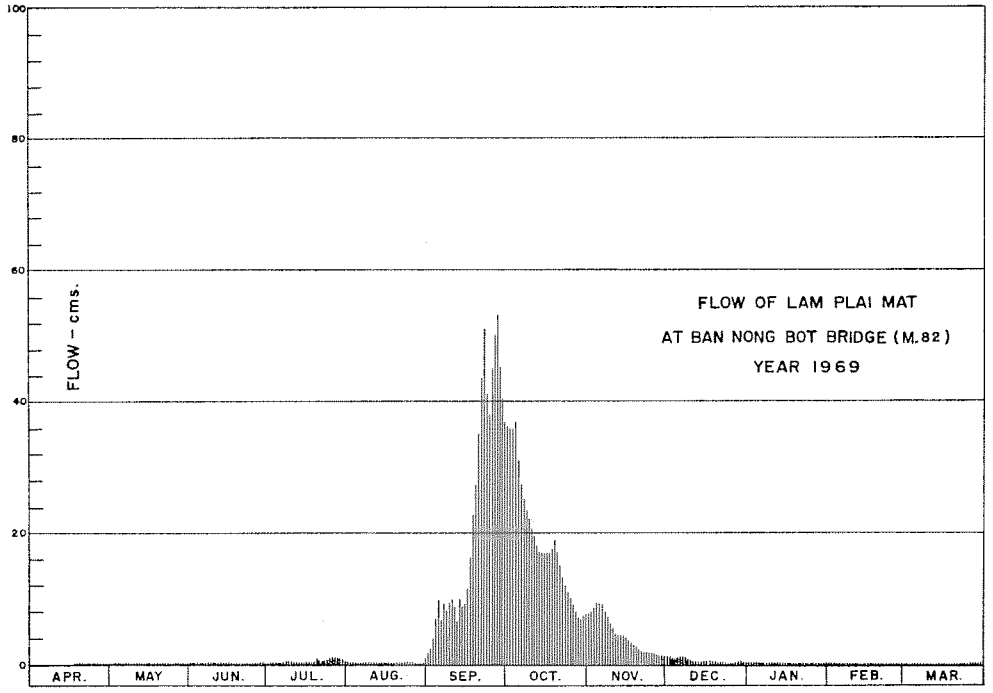
Remarks: Stream gaging station began on April 17, 1969. Discharge record for periods of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1		1.79	1.69	2.04	2.56	2.97	5.35	3.94	2.92	2.50	2.29	2.07
2		.78	.70	.10	.52	3.26	.35	.96	.93	.45	.23	.08
3		.79	.70	.22	.50	.58	.35	4.02	.82	.44	.20	.08
4		.78	.70	.45	.48	.86	.38	.08	.76	.40	.20	.07
5		.77	.70	.45	.47	4.12	.28	.08	.82	.38	.20	.08
6		1.78	1.70	2.42	2.43	3.86	5.16	4.06	2.89	2.38	2.19	2.08
7		.78	.70	.42	.39	4.08	.09	.00	.88	.36	.20	.06
8		.78	.70	.52	.35	3.99	.01	3.90	.85	.39	.15	.04
9		.77	.70	.54	.32	4.07	4.93	.78	.81	.37	.12	.03
10		.77	.70	.58	.28	.14	.84	.67	.76	.34	.10	.02
11		1.78	1.70	2.50	2.26	4.07	4.74	3.61	2.68	2.35	2.12	2.01
12		.77	.70	.46	.26	3.80	.68	.59	.64	.40	.14	1.98
13		.76	.73	.50	.25	4.15	.64	.57	.62	.38	.15	.98
14		.70	.75	.44	.25	.04	.63	.57	.62	.34	.14	.97
15		.70	.77	.42	.25	.05	.60	.53	.63	.30	.05	.95
16		1.70	1.78	2.50	2.26	4.20	4.60	3.45	2.63	2.35	2.02	1.94
17	1.79	.72	.78	.52	.28	.44	.64	.39	.62	.42	.01	.93
18	.79	.73	.78	.51	.29	.74	.70	.36	.61	.46	.03	.93
19	.80	.69	.79	.55	.28	5.10	.72	.31	.57	.44	.16	.92
20	.79	.68	.79	.80	.26	.25	.63	.21	.53	.36	.09	.91
21	1.78	1.68	1.79	2.62	2.28	5.42	4.51	3.13	2.55	2.31	2.07	1.90
22	.78	.67	.79	.60	.29	.57	.36	.12	.56	.26	.08	.90
23	.77	.69	.79	.67	.31	.48	.26	.12	.54	.22	.10	.91
24	.78	.67	.82	.68	.32	.40	.19	.12	.51	.22	.10	.91
25	.77	.66	.85	.80	.33	.44	.15	.09	.46	.20	.09	.90
26	1.77	1.67	1.88	2.89	2.32	5.55	4.07	3.09	2.44	2.21	2.09	1.90
27	.78	.68	.90	.84	.29	.62	3.96	.03	.52	.24	.07	.89
28	.79	.67	.92	.87	.28	.54	.89	2.98	.59	.26	.07	.89
29	.78	.69	.95	.86	.27	.48	.86	.93	.57	.24	–	.88
30	.78	.68	.97	.73	.38	.37	.89	.93	.55	.26	–	.87
31	–	.68	–	.63	.67	–	.92	–	.53	.34	–	.87
Mean		1.72	1.77	2.55	2.34	4.55	4.62	3.49	2.66	2.34	2.12	1.97
Max.		1.79	1.97	2.89	2.56	5.62	5.38	4.08	2.93	2.50	2.29	2.08
Min.		1.66	1.69	2.04	2.25	2.97	3.86	2.93	2.44	2.20	2.01	1.87

WATER YEAR 1969 : Max. 5.62 m. Min. 1.66 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1		0.00	0.00	0.042	0.40	1.41	36	7.90	1.26	0.33	0.16	0.051
2				0.060	0.35	2.60	36	8.10	1.29	0.29	0.12	0.054
3				0.11	0.33	4.56	36	8.74	0.96	0.28	0.10	0.054
4				0.29	0.31	7.10	37	9.46	0.78	0.25	0.10	0.054
5				0.29	0.31	9.96	32	9.46	0.96	0.23	0.10	0.054
6				0.27	0.27	7.10	28	9.22	1.17	0.23	0.096	0.054
7				0.27	0.24	9.46	26	8.50	1.14	0.23	0.10	0.048
8				0.35	0.21	8.40	24	7.50	1.05	0.24	0.080	0.042
9				0.38	0.19	9.34	23	6.32	0.93	0.23	0.068	0.039
10				0.43	0.16	10	21	5.33	0.78	0.20	0.060	0.036
11				0.33	0.14	9.34	19	4.79	0.57	0.21	0.068	0.033
12				0.31	0.14	6.50	18	4.63	0.51	0.25	0.076	0.024
13				0.33	0.13	10	17	4.49	0.48	0.23	0.080	0.024
14				0.28	0.13	8.98	17	4.49	0.48	0.20	0.076	0.021
15				0.27	0.13	9.10	17	4.21	0.49	0.17	0.045	0.015
16				0.33	0.14	11	17	3.70	0.49	0.21	0.036	0.012
17	0.00			0.35	0.16	14	17	3.34	0.48	0.27	0.033	0.009
18				0.34	0.16	19	18	3.16	0.46	0.30	0.039	0.009
19				0.39	0.16	27	19	2.86	0.41	0.28	0.084	0.006
20				0.90	0.14	31	17	2.35	0.37	0.22	0.057	0.003
21				0.48	0.16	39	15	2.02	0.39	0.18	0.051	0.000
22				0.45	0.16	49	13	1.98	0.40	0.14	0.054	0.000
23				0.55	0.18	43	12	1.98	0.38	0.11	0.060	0.003
24				0.57	0.19	38	11	1.98	0.34	0.11	0.060	0.003
25				0.90	0.19	41	10	1.86	0.30	0.10	0.057	0.00
26				1.17	0.19	48	9.34	1.86	0.28	0.11	0.057	
27			0.00	1.02	0.16	53	8.10	1.62	0.35	0.13	0.051	
28			0.006	1.11	0.16	47	7.40	1.44	0.44	0.14	0.051	
29			0.015	1.08	0.15	43	7.10	1.29	0.41	0.13	–	
30	0.00		0.021	0.69	0.23	37	7.40	1.29	0.39	0.14	–	
31	–	0.00	–	0.49	0.55	–	7.70	–	0.37	0.20	–	0.00
Total			0.042	14.832	6.52	653.85	583.04	135.87	19.11	6.34	2.019	0.645
Mean			0.001	0.48	0.21	21.8	18.8	4.53	0.62	0.20	0.072	0.021
Max.			0.021	1.17	0.55	53	37	9.46	1.29	0.33	0.16	0.054
Min.			0.000	0.042	0.13	1.41	7.10	1.29	0.28	0.10	0.033	0.000
Runoff - mcm.			0.004	1.281	0.563	56.493	50.375	11.739	1.651	0.548	0.174	0.056

WATER YEAR 1969 : Max. 53 Min. 0.000 Mean 3.90 Annual Runoff 122.884 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 27,	09.00	5.63	54				

WATER YEAR 1969
NAKHON NAYOK RIVER BASIN

Nakhon Nayok River at Khao Kariang, Nakhon Nayok (Ny.1)

Location: Lat. 14°-14'-22" N., Long. 101°-16'-45" E., on left bank about 10 kilometers from Suwanson road, and 12 kilometers upstream from Muang Nakhon Nayok.

Drainage Area: 520 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 2.970 m. (M.S.L.)

Bench Mark: B.M. - R.I.D.

- Location: Near the top gage
- Elevation: + 9.791 m. (M.S.L.)

Gage Reading Frequency: 8-time daily readings at 03.00, 06.00, 09.00, 12.00, 15.00, 18.00, 21.00 and 24.00 hours on April - May 1969. 24-time daily readings on June - November 1969. 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours on December 1969 - March 1970.

Basis of Mean Daily Gage Height: Arithmetic mean of 8, 24, 5 hourly readings.

Period of Available Gage Records: 1952-1970

Rating Operation:

- Period of Rating: 1953, 1955-57, 1967-72
- Rated by Float: -
- Rated by Current Meter: 1953, 1955-57, 1967-72

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

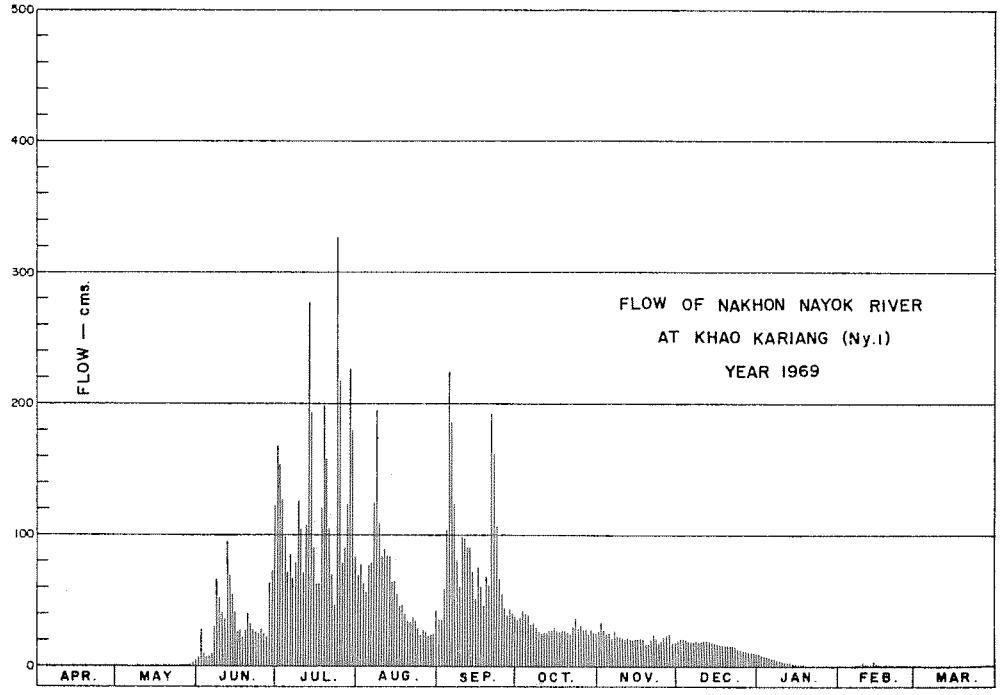
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	3.40	3.35	3.94	7.34	5.61	4.87	5.09	4.62	4.33	3.99	3.46	3.45
2	.40	.35	4.67	6.87	.81	.84	.16	.80	.40	.97	.45	.45
3	.40	.35	.01	.54	.47	5.38	.25	.60	.37	.97	.45	.45
4	.40	.35	3.85	7.27	.32	6.42	4.97	.50	.38	.88	.45	.45
5	.40	.35	.89	5.64	.81	8.17	.92	.59	.36	.82	.45	.45
6	3.40	3.35	3.99	5.95	5.82	7.13	4.75	4.40	4.36	3.80	3.45	3.45
7	.40	.36	4.68	.58	6.63	6.15	.78	.60	.36	.76	.45	.45
8	.40	.38	5.56	.89	7.75	5.79	.70	.46	.36	.71	.45	.44
9	.40	.44	.34	6.66	6.03	.39	.61	.40	.36	.70	.45	.44
10	.40	.42	4.96	.24	5.89	6.19	.54	.40	.35	.68	.63	.44
11	3.40	3.41	4.80	5.67	6.01	6.15	4.58	4.38	3.34	3.64	3.47	3.44
12	.40	.40	6.12	6.20	5.91	.02	.56	.40	.34	.61	.51	.44
13	.40	.40	5.51	8.91	.91	.02	.60	.42	.34	.59	.56	.43
14	.40	.39	.32	7.13	.51	5.61	.61	.39	.33	.57	.52	.43
15	.40	.38	4.91	5.93	.55	.21	.66	.40	.32	.55	.49	.42
16	3.40	3.37	4.59	5.47	5.31	5.76	4.62	4.40	4.28	3.51	3.47	3.42
17	.40	.37	.63	.47	.12	.44	.58	.41	.26	.50	.47	.41
18	.40	.36	.46	6.67	.17	.06	.61	.43	.26	.50	.47	.40
19	.39	.36	.69	7.81	4.93	.61	.61	.20	.26	.50	.50	.40
20	.38	.36	.95	6.85	.80	.41	.58	.25	.25	.50	.47	.40
21	3.37	3.36	4.68	5.92	4.77	7.70	4.53	4.42	4.25	3.49	3.47	3.40
22	.37	.36	.61	.38	.92	.02	.72	.54	.23	.48	.47	.40
23	.37	.36	.59	.04	.84	5.93	.85	.43	.17	.48	.47	.44
24	.37	.37	.56	9.58	.64	.45	.67	.29	.13	.48	.47	.43
25	.36	.37	.67	7.21	.53	.35	.73	.39	.11	.48	.47	.43
26	3.36	3.42	4.56	5.79	4.65	5.10	4.65	4.46	4.10	3.48	3.47	3.43
27	.35	.40	.45	6.18	.60	4.91	.65	.49	.07	.47	.47	.43
28	.35	.40	5.53	.83	.49	5.03	.52	.50	.05	.47	.47	.43
29	.35	.46	.79	8.20	.56	4.96	.63	.31	.03	.47		.43
30	.35	.56	6.85	6.41	.54	.94	.57	.28	.01	.47		.43
31		.74		5.84	5.04		.56		3.99	.47		.43
Mean	3.38	3.40	4.83	6.53	5.35	5.77	4.70	4.44	4.25	3.61	3.48	3.43
Max.	3.40	3.74	6.85	9.58	7.75	8.17	5.25	4.80	4.40	3.99	3.63	3.45
Min.	3.35	3.35	3.85	5.04	4.49	4.84	4.52	4.20	3.99	3.47	3.45	3.40

WATER YEAR 1969 : Max. 9.58 m. Min. 3.35 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1,1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.30	0.15	8.68	168	68	36	45	27	19	9.78	0.84	0.75
2	0.30	0.15	29	139	78	35	48	34	21	9.34	0.75	0.75
3	0.30	0.15	10	119	62	58	52	27	20	9.34	0.75	0.75
4	0.30	0.15	6.80	163	55	112	40	24	20	7.40	0.75	0.75
5	0.30	0.15	7.60	70	78	224	38	26	19	6.20	0.75	0.75
6	0.30	0.15	9.78	86	79	155	32	21	19	5.80	0.75	0.75
7	0.30	0.18	30	67	124	97	33	27	19	5.08	0.75	0.75
8	0.30	0.24	66	83	195	77	30	22	19	4.18	0.75	0.66
9	0.30	0.66	51	126	90	58	27	21	19	4.00	0.75	0.66
10	0.30	0.48	40	102	83	99	25	21	19	3.70	2.95	0.66
11	0.30	0.39	34	71	89	97	26	20	19	3.10	0.93	0.66
12	0.30	0.30	95	99	84	90	25	21	19	2.65	1.33	0.66
13	0.30	0.30	63	277	84	90	27	21	19	2.37	1.98	0.57
14	0.30	0.27	55	155	63	68	27	20	18	2.11	1.46	0.57
15	0.30	0.24	38	85	65	50	29	21	18	1.85	1.11	0.48
16	0.30	0.21	26	62	54	76	27	21	17	1.33	0.93	0.48
17	0.30	0.21	28	62	46	60	26	21	16	1.20	0.93	0.39
18	0.30	0.18	22	127	48	44	27	21	16	1.20	0.93	0.30
19	0.27	0.18	30	199	39	68	27	15	16	1.20	1.20	0.30
20	0.24	0.18	40	137	34	59	26	16	16	1.20	0.93	0.30
21	0.21	0.18	30	84	33	192	24	21	16	1.11	0.93	0.30
22	0.21	0.18	27	58	38	148	31	25	16	1.02	0.93	0.30
23	0.21	0.18	26	43	35	85	36	21	14	1.02	0.93	0.66
24	0.21	0.21	25	327	28	61	29	17	13	1.02	0.93	0.57
25	0.18	0.21	29	160	24	56	31	20	12	1.02	0.93	0.57
26	0.18	0.48	25	77	28	45	28	22	12	1.02	0.93	0.57
27	0.15	0.30	22	98	27	38	28	23	11	0.93	0.93	0.57
28	0.15	0.30	64	136	23	43	24	24	11	0.93	0.93	0.57
29	0.15	0.84	77	226	25	40	28	18	11	0.93		0.57
30	0.15	1.98	137	110	25	39	26	17	10	0.93		0.57
31		4.72		80	43		25		9.78	0.93		0.57
Total	7.71	14.50	1,151.86	3,796	1,847	2,400	947	655	503.78	93.89	28.96	17.76
Mean	0.26	0.47	38.4	122	59.6	80.0	30.5	21.8	16.2	3.03	1.03	0.57
Max.	0.30	4.72	137	327	195	224	52	34	21	9.78	2.95	0.75
Min.	0.15	0.15	6.80	43	23	35	24	15	9.78	0.93	0.75	0.30
Runoff - mcm.	0.666	1.253	99.521	327.974	159.581	207.360	81.821	56.592	43.526	8.112	2.502	1.534

WATER YEAR 1969 : Max. 327 Min. 0.15 Mean 31.4 Annual Runoff 990.442 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
July 24	05.00	10.32	385				

WATER YEAR 1969
PRACHIN RIVER BASIN

Prachin River at Amphoe Muang, Prachin Buri (Kgt.1)

Location: Lat. 14°-03'-01" N., Long. 101°-22'-03" E., on left bank behind the Meteorological station at Muang, Prachin Buri.

Drainage Area: 9,209 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: - 1.305 m. (M.S.L.)

Bench Mark: B.M. - R.I.D.

Location: In fence of Meteorological station

Elevation: + 4.115 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1926 to date

Rating Operation:

Period of Rating: 1967

Rated by Float: -

Rated by Current Meter: 1967

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

General Description: Records fair except those for periods effected by tidal which are poor. Stage-discharge relationship used is defined by discharge measurements made during 1967. No adjustment made for virgin flow.

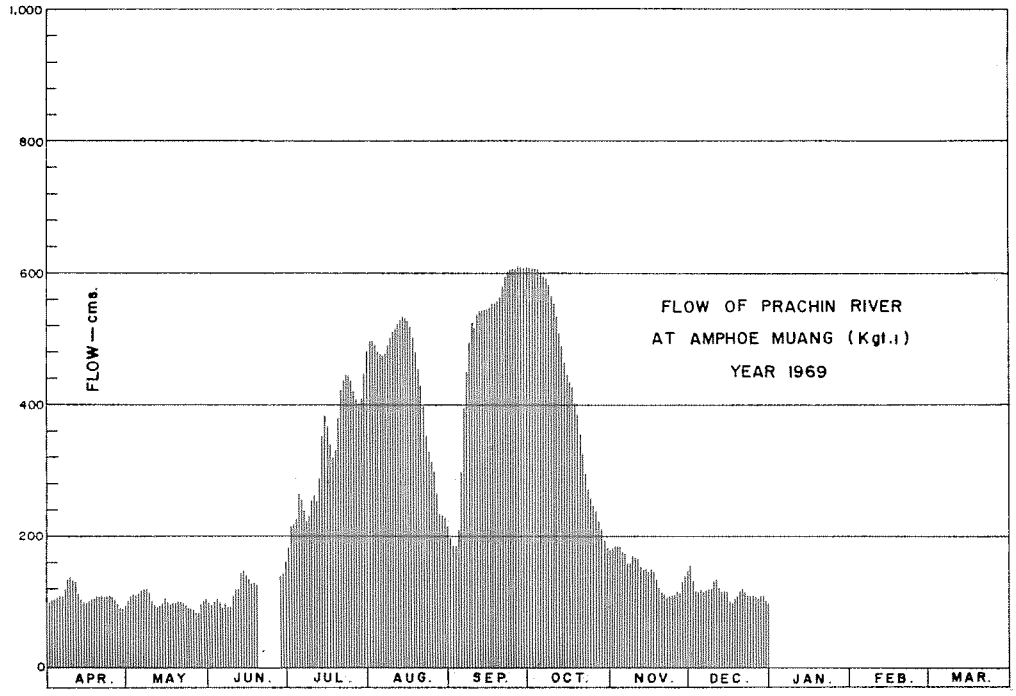
Remarks: No stage-discharge record June 20-27, January - March.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	-0.00	0.05	-0.05	0.92	3.09	0.96	3.76	0.84	0.63			
2	0.05	.13	-0.04	1.14	.09	.86	.76	.86	.42			
3	.06	.17	0.04	.14	.05	.86	.76	.88	.22			
4	.11	.13	.06	.25	2.99	1.13	.75	.07	.17			
5	.12	.17	-0.04	.50	.96	.88	.73	.81	.25			
6	0.10	0.23	-0.11	1.43	2.95	2.48	3.69	0.79	0.20			
7	.25	.26	-0.04	.27	.97	.82	.67	.62	.23			
8	.42	.24	-0.11	.17	3.03	3.09	.63	.65	.25			
9	.42	.18	-0.09	.26	.12	.26	.53	.74	.27			
10	.38	.04	0.16	.46	.18	.20	.47	.73	.38			
11	0.33	-0.05	0.25	1.50	3.21	3.35	3.35	0.69	0.40			
12	.16	-0.10	.27	.41	.26	.37	.20	.60	.25			
13	.05	-0.06	.52	.78	.30	.38	.04	.55	.20			
14	-0.01	-0.01	.51	2.25	.31	.38	2.88	.57	.21			
15	-0.01	0.07	.44	.35	.30	.39	.76	.51	.21			
16	0.02	0.00	0.38	2.22	3.26	3.41	2.67	0.57	0.03			
17	.05	-0.04	.31	.02	.19	.44	.61	.52	-0.01			
18	.08	-0.02	.36	1.91	.07	.45	.43	.42	0.07			
19	.14	0.02	.30	2.05	2.91	.47	.32	.29	.12			
20	.09	.02		.38	.73	.52	.14	.18	.23			
21	0.12	0.00		2.61	2.51	3.63	1.94	0.15	0.27			
22	.10	-0.02		.71	.30	.70	.73	.10	.16			
23	.13	-0.08		.76	.08	.74	.57	.12	.13			
24	.13	-0.13		.75	1.96	.75	.47	.12	.13			
25	.10	-0.11		.69	.85	.75	.37	.14	.11			
26	0.02	-0.16		2.59	1.71	3.76	1.29	0.22	0.11			
27	-0.08	-0.23		.49	.48	.77	.20	.18	.08			
28	-0.13	-0.21	0.43	.46	.26	.76	.07	.39	.13			
29	-0.13	0.01	.50	.56	.25	.75	0.96	.47	.13			
30	0.00	.02	.68	.82	.20	.76	.86	.54	.04			
31		.05		3.00	.08		.82		-0.05			
Mean	0.10	0.02		1.99	2.60	3.07	2.53	0.50	0.19			
Max.	0.42	0.26		3.00	3.31	3.77	3.76	0.88	0.63			
Min.	-0.13	-0.23		0.92	1.08	0.86	0.82	0.10	-0.05			

WATER YEAR 1969 : Max. m. Min. m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	100	104	96	191	496	196	607	182	158			
2	104	110	97	218	496	184	607	184	137			
3	105	114	103	218	490	184	607	187	118			
4	109	110	105	231	480	217	605	185	114			
5	110	114	97	264	476	315	602	178	120			
6	108	119	91	255	474	404	595	176	116			
7	120	121	97	234	477	455	592	157	119			
8	137	120	91	221	487	496	585	160	120			
9	137	114	93	233	501	524	568	170	122			
10	133	103	113	259	511	514	558	169	133			
11	128	96	120	264	516	538	538	165	135			
12	113	92	122	252	524	541	514	155	120			
13	104	95	147	301	530	543	488	150	116			
14	99	99	146	369	532	543	464	152	117			
15	99	106	139	384	530	544	446	146	117			
16	102	100	133	365	524	548	432	152	102			
17	104	97	126	335	512	553	423	147	99			
18	106	98	131	319	493	554	396	137	106			
19	111	102	125	339	468	558	380	124	110			
20	107	102		389	441	566	353	114	119			
21	110	100		423	408	585	324	112	122			
22	108	98		438	377	597	294	108	113			
23	110	94		446	344	604	273	110	110			
24	110	90		444	326	605	260	110	110			
25	108	91		435	311	605	247	111	109			
26	102	88		420	291	607	237	118	109			
27	94	83		405	261	609	225	114	106			
28	90	84	138	401	233	607	209	134	110			
29	90	101	145	416	231	605	196	142	110			
30	100	102	164	455	225	607	184	149	103			
31		104		482	211		179		96			
Total	3,258	3,151		10,406	13,176	15,008	12,988	4,398	3,596			
Mean	109	102		336	425	500	419	147	116			
Max.	137	121		482	532	609	607	187	158			
Min.	90	83		191	211	184	179	108	96			
Runoff - mcm.	281.491	272.246		899.078	1,138.406	1,296.691	1,122.163	379.987	310.694			

WATER YEAR 1969 : Max. 609 Min. 83 Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 27	06.00	3.78	611				

WATER YEAR 1969
PRACHIN RIVER BASIN

Prachin River at Amphoe Kabin Buri, Prachin Buri (Kgt.3)

Location: Lat. 13°-59'-05" N., Long. 101°-42'-32" E., on left bank infront of Amphoe Kabin Buri office, and about 500 meters downstream from confluence of Lam Phra Prong and Lam Hanuman, Amphoe Kabin Buri, Prachin Buri.

Drainage Area: 7,502 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: - 0.49 m. (M.S.L.)

Bench Mark: B.M. - H.S./R.I.D.

Location: At the fence of Amphoe Kabin Buri office.

Elevation: + 10.179 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1941 to date

Rating Operation:

Period of Rating: 1941, 1943, 1945, 1964 to date

Rated by Float:

Rated by Current Meter: 1941, 1943, 1945, 1964 to date

Stability of Channel Regimes: Stable, no shifting adjustment but overbank flow is included for flow computation.

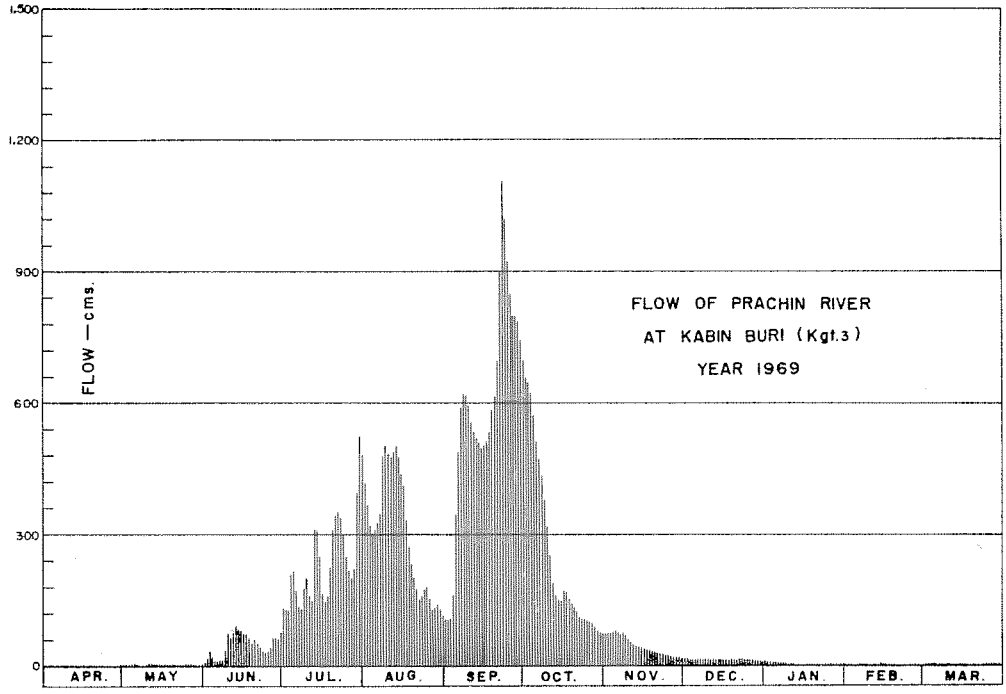
Overbank Flow Conditions: Overbank flow at elevation about 7.00 m. (M.S.L.)

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.21	0.46	0.74	3.78	7.59	3.24	9.29	2.66	1.29	1.00	0.57	0.47
2	.22	.53	1.38	.73	6.85	.27	.06	.64	.26	0.96	.57	.46
3	.22	.64	.75	.63	.32	.28	.04	.70	.24	.94	.57	.45
4	.21	.71	.22	4.91	.05	4.48	8.77	.68	.23	.92	.56	.44
5	.20	.64	0.96	.98	.27	6.79	.35	.83	.21	.91	.55	.44
6	0.20	0.63	0.96	4.36	6.38	8.07	8.02	2.69	1.20	0.89	0.54	0.44
7	.21	.44	1.05	3.76	.65	.67	7.74	.61	.20	.86	.53	.43
8	.20	.39	.07	.65	7.83	.89	.42	.70	.19	.82	.54	.43
9	.21	.45	2.10	4.46	8.07	.86	6.92	.52	.17	.79	.53	.42
10	.21	.52	.75	.81	7.90	.65	.16	.33	.17	.77	.53	.41
11	0.23	0.83	2.46	4.19	7.81	8.45	5.34	2.21	1.22	0.76	0.53	0.41
12	.22	.68	.72	3.87	.89	.26	4.65	.11	.15	.75	.54	.42
13	.21	.57	3.00	6.20	8.03	.14	.21	.03	.16	.73	.54	.42
14	.20	.52	2.76	.16	7.83	.06	.05	1.98	.16	.72	.54	.39
15	.21	.53	.80	5.10	.53	7.95	.00	.90	.15	.71	.54	.39
16	0.23	0.47	2.67	4.29	7.27	8.04	4.41	1.87	1.17	0.70	0.54	0.38
17	.36	.41	.65	3.92	6.52	.10	.34	.80	.15	.71	.57	.38
18	.31	.38	.37	4.26	5.76	.34	.08	.76	.17	.69	.56	.37
19	.28	.36	.17	5.36	.20	.68	3.94	.72	.15	.68	.57	.37
20	.26	.34	.38	6.22	4.76	.97	.76	.67	.15	.67	.55	.36
21	0.24	0.32	2.19	6.56	4.33	9.33	3.52	1.62	1.14	0.66	0.53	0.36
22	.22	.43	1.98	.62	.02	10.15	.30	.58	.16	.66	.52	.36
23	.20	.51	.84	.50	.21	.65	.29	.59	.17	.65	.51	.38
24	.19	.53	.68	.10	.46	.44	.28	.54	.15	.65	.50	.38
25	.18	.48	.66	5.52	.52	.13	.22	.45	.17	.64	.49	.37
26	0.17	0.52	1.78	5.04	4.08	9.88	3.19	1.40	1.18	0.63	0.48	0.38
27	.16	.49	2.43	4.78	3.64	.76	.14	.38	.12	.62	.48	.37
28	.18	.43	.44	5.09	.74	.77	2.97	.35	.08	.62	.48	.36
29	.19	.45	.40	6.09	.89	.68	.78	.32	.06	.61		.34
30	.40	.47	.81	8.20	.69	.47	.69	.31	.05	.60		.37
31		.48		.10	.44		.65		.03	.58		.37
Mean	0.22	0.50	2.04	5.20	5.89	8.21	5.08	2.00	0.16	0.74	0.53	0.40
Max.	0.40	0.83	3.00	8.20	8.07	10.65	9.29	2.83	1.29	1.00	0.57	0.47
Min.	0.16	0.32	0.74	3.63	3.44	3.24	2.65	1.31	1.03	0.58	0.48	0.34

WATER YEAR 1969 : Max. 10.65 m. Min. 0.40 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.23	1.80	5.72	135	*447	104	*692	74	19	11	3.11	1.90
2	0.26	2.59	21	132	371	105	*648	73	18	10	3.11	1.80
3	0.26	4.10	34	126	322	105	*645	76	17	9.68	3.11	1.70
4	0.23	5.18	17	209	298	179	*606	75	17	9.24	2.98	1.60
5	0.20	4.10	10	214	318	355	*544	82	16	9.02	2.85	1.60
6	0.20	3.95	10	171	327	*506	*501	75	16	8.60	2.72	1.60
7	0.23	1.60	12	133	352	*596	*466	71	16	8.00	2.59	1.50
8	0.20	1.13	13	127	*478	*621	*428	76	16	7.20	2.72	1.50
9	0.23	1.70	48	178	*506	*616	377	67	15	6.62	2.59	1.40
10	0.23	2.46	78	202	*486	*590	308	58	15	6.26	2.59	1.30
11	0.29	7.40	64	160	*475	*559	241	52	17	6.08	2.59	1.30
12	0.26	4.70	77	140	*485	*532	191	48	15	5.90	2.72	1.40
13	0.23	3.11	91	312	*502	*517	161	45	15	5.54	2.72	1.40
14	0.20	2.46	79	308	*478	*505	151	43	15	5.36	2.72	1.13
15	0.23	2.59	81	233	*441	*493	148	40	15	5.18	2.71	1.13
16	0.29	1.90	74	166	*413	*503	174	39	15	5.00	2.72	1.06
17	0.92	1.30	73	143	341	*511	170	36	15	5.18	3.11	1.06
18	0.57	1.06	60	164	274	*543	153	35	15	4.85	2.98	0.99
19	0.44	0.92	51	242	231	*598	144	33	15	4.70	3.11	0.99
20	0.38	0.78	60	314	198	*631	134	31	15	4.55	2.85	0.92
21	0.32	0.64	52	344	169	*700	120	30	14	4.40	2.59	0.92
22	0.26	1.50	45	349	149	*904	107	28	15	4.40	2.46	0.92
23	0.20	2.33	38	338	161	*1,106	107	29	15	4.25	2.33	1.06
24	0.18	2.59	32	302	178	*1,012	106	27	15	4.25	2.20	1.06
25	0.16	2.00	31	255	182	*898	103	24	15	4.10	2.10	0.99
26	0.14	2.46	35	219	153	*827	101	22	15	3.95	2.00	1.06
27	0.12	2.10	62	200	126	*796	99	21	14	3.80	2.00	0.99
28	0.16	1.50	63	222	132	*798	89	20	13	3.80	2.00	0.92
29	0.18	1.70	61	380	141	*777	80	20	12	3.65		0.78
30	1.20	1.90	81	*524	129	*728	75	19	12	3.50		0.99
31	–	2.00		*511	115		73	–	12	3.24		0.99
Total	9.00	75.55	1,456.72	7,455	9,378	17,724	7,942	1,369	469	181.30	74.29	37.96
Mean	0.30	2.44	48.5	240	302	591	256	45.6	15.1	5.85	2.65	1.22
Max.	1.20	7.40	91	524	506	1,106	692	82	19	11	3.11	1.90
Min.	0.12	0.64	5.72	126	115	104	73	19	12	3.24	2.00	0.78
Runoff – mcm.	0.778	6.527	125.861	643.939	810.259	1,531.354	686.189	118.282	40.522	15.664	6.419	3.280

WATER YEAR 1969 : Max. 1,106 Min. 0.12 Mean 126 Annual Runoff 3,989.072 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23	12.00	10.66	1,111				

WATER YEAR 1969
PRACHIN RIVER BASIN

Khlong Phra Sathung at Ban Khao Chakan, Prachin Buri (Kgt.9)

Location: Lat. 13°-40'-10" N., Long. 102°-04'-35" N., Long. 102°-04'-35" E., on right bank infront of Wat Khao Chukan, Ban Khao Chokan, Amphoe Sa Kaco, Prachin Buri.

Drainage Area: 2,279 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: At the side of Wat Khao Chakan School

Elevation: + 10.239 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1967-1970, 1972 to date

Rating Operation:

Period of Rating: 1969-70

Rated by Float:

Rated by Current Meter: 1969-70

Stability of Channel Regimes: Stable, shifting adjustment is included for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No state diversions for irrigation above gage site except those built by the local residents. No adjustment made for virgin flow.

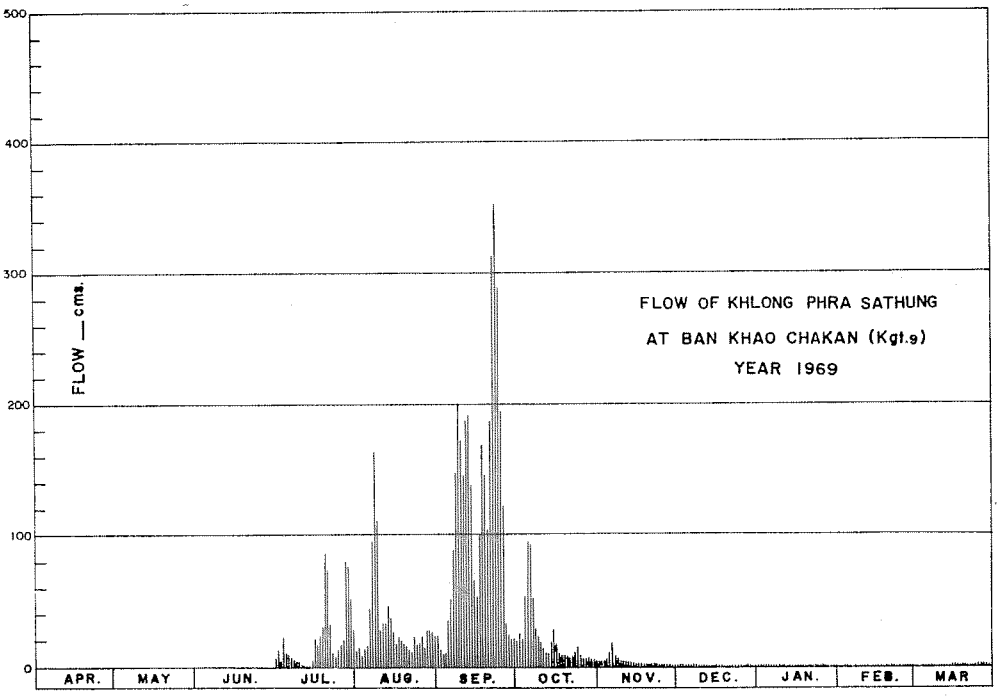
Remarks: Stream gaging station began on July 1, 1969.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1				1.04	1.46	1.75	1.70	0.69	0.38	0.24	0.15	0.10
2				.50	.56	.22	2.02	.66	.37	.23	.14	.10
3				0.77	.18	.01	1.97	.67	.36	.23	.14	.09
4				2.04	.52	.11	3.56	.79	.35	.22	.13	.08
5				1.36	.73	2.57	4.71	1.07	.34	.22	.13	.07
6				1.23	2.97	3.23	4.65	1.62	0.33	0.22	0.13	0.07
7				.19	5.22	4.73	3.57	.11	.33	.21	.13	.07
8				0.97	6.56	6.63	2.05	0.88	.33	.21	.12	.06
9				.94	4.97	7.26	1.96	.76	.33	.21	.12	.06
10				.87	2.24	6.39	.67	.70	.32	.20	.16	.06
11				0.79	2.57	6.36	1.42	0.66	0.32	0.20	0.20	0.05
12				.57	.53	7.47	.24	.63	.31	.20	.18	.05
13				.45	3.07	.57	.16	.61	.30	.20	.21	.05
14				.63	2.64	6.14	.71	.57	.30	.20	.24	.05
15				.93	.09	3.67	2.17	.55	.29	.19	.19	.06
16				1.94	1.32	2.91	1.44	0.53	0.29	0.19	0.15	0.05
17				.66	.65	4.79	.17	.52	.29	.20	.14	.04
18				2.17	.60	6.37	.07	.51	.28	.20	.14	.04
19				.35	.59	5.64	.09	.50	.28	.21	.14	.03
20				4.43	.46	4.62	.01	.49	.28	.20	.13	.03
21				3.99	1.39	7.03	0.92	0.47	0.27	0.19	0.12	0.02
22				1.83	.29	9.02	.82	.46	.26	.19	.12	.02
23				.21	.93	10.17	1.18	.45	.26	.18	.13	.03
24				.04	.57	9.62	.48	.43	.25	.18	.12	.02
25				.47	.53	8.26	.05	.42	.25	.17	.11	.02
26				1.49	1.82	3.71	0.87	0.42	0.25	0.17	0.10	0.04
27				.77	.32	1.93	.81	.41	.25	.16	.10	.13
28				4.29	2.10	.79	.95	.40	.25	.16	.10	.22
29				.08	.05	.61	.80	.39	.24	.16		.18
30				3.05	1.89	.67	.74	.38	.24	.15		.17
31				1.82	.72		.71		.24	.15		.18
Mean				1.73	2.21	4.87	1.87	0.62	0.29	0.19	0.14	0.07
Max.				4.43	6.56	10.17	4.71	1.62	0.38	0.24	0.24	0.22
Min.				0.45	1.18	1.01	0.71	0.38	0.24	0.15	0.10	0.02

WATER YEAR 1969 : Max. m. Min. m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1				7.46	13	25	20	4.90	1.85	0.88	0.42	0.21
2				14	15	14	27	4.60	1.77	0.82	0.38	0.21
3				4.20	9.56	9.98	23	4.70	1.70	0.82	0.38	0.19
4				24	15	11	61	6.08	1.62	0.76	0.34	0.17
5				12	18	40	96	9.98	1.55	0.76	0.34	0.15
6				10	45	58	94	19	1.47	0.76	0.34	0.15
7				9.56	113	103	62	10	1.47	0.70	0.34	0.15
8				6.48	164	175	27	7.32	1.47	0.70	0.30	0.13
9				6.08	104	201	26	5.72	1.47	0.70	0.30	0.13
10				5.24	28	165	20	5.00	1.40	0.64	0.47	0.13
11				4.50	35	164	15	4.60	1.40	0.64	0.64	0.10
12				2.20	34	210	12	4.30	1.32	0.64	0.55	0.10
13				1.00	48	215	11	4.10	1.25	0.64	0.70	0.10
14				2.80	37	155	21	3.65	1.25	0.64	0.88	0.10
15				5.96	25	70	30	3.42	1.19	0.60	0.59	0.13
16				22	18	52	16	3.19	1.19	0.60	0.42	0.10
17				17	24	110	11	3.07	1.19	0.64	0.38	0.08
18				27	21	169	9.98	2.96	1.13	0.64	0.38	0.08
19				32	19	150	10	2.84	1.13	0.70	0.38	0.06
20				88	16	103	9.14	2.76	1.13	0.64	0.34	0.06
21				73	14	196	7.88	2.59	1.07	0.60	0.30	0.04
22				21	12	289	7.04	2.50	1.01	0.60	0.30	0.04
23				11	24	352	11	2.42	1.01	0.55	0.34	0.06
24				8.44	17	319	16	2.25	0.94	0.55	0.30	0.04
25				15	17	253	9.70	2.17	0.94	0.51	0.25	0.04
26				17	24	74	7.18	2.17	0.94	0.51	0.21	0.08
27				22	14	28	6.34	2.08	0.94	0.47	0.21	0.34
28				82	29	26	8.30	2.00	0.94	0.47	0.21	0.76
29				76	28	22	6.20	1.92	0.88	0.47		0.55
30				47	27	23	5.48	1.85	0.88	0.42		0.51
31				20	24		5.12		0.88	0.41		0.55
Total				693.92	1,031.56	3,781.98	691.36	134.14	38.38	19.49	11.29	5.54
Mean				22.4	33.3	126	22.3	4.47	1.24	0.628	0.40	0.18
Max.				88	164	352	96	19	1.85	0.88	0.88	0.76
Min.				1.00	9.56	9.98	5.12	1.85	0.88	0.42	0.21	0.04
Runoff - mcm.				59.954	89.126	326.763	59.733	11.590	3.316	1.684	0.975	0.055

WATER YEAR 1969 : Max. Min. Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23	12.00	10.22	354				

WATER YEAR 1969
PRACHIN RIVER BASIN

Khlong Phra Sathung at Ban Wang Khian, Prachin Buri (Kgt.10)

Location: Lat. 13°-48'-29" N., Long. 102°-03'-35" E., on left bank near the Saha Charoen Saw-Mill, Ban Wang Khian, Amphoe Sa Kaco, Prachin Buri.

Drainage Area: 2,523 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 23.741 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: At the cocoanut tree near the station office

Elevation: + 34.652 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1966 to date

Rating Operation:

Period of Rating: 1966 to date

Rated by Float: -

Rated by Current Meter: 1966 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

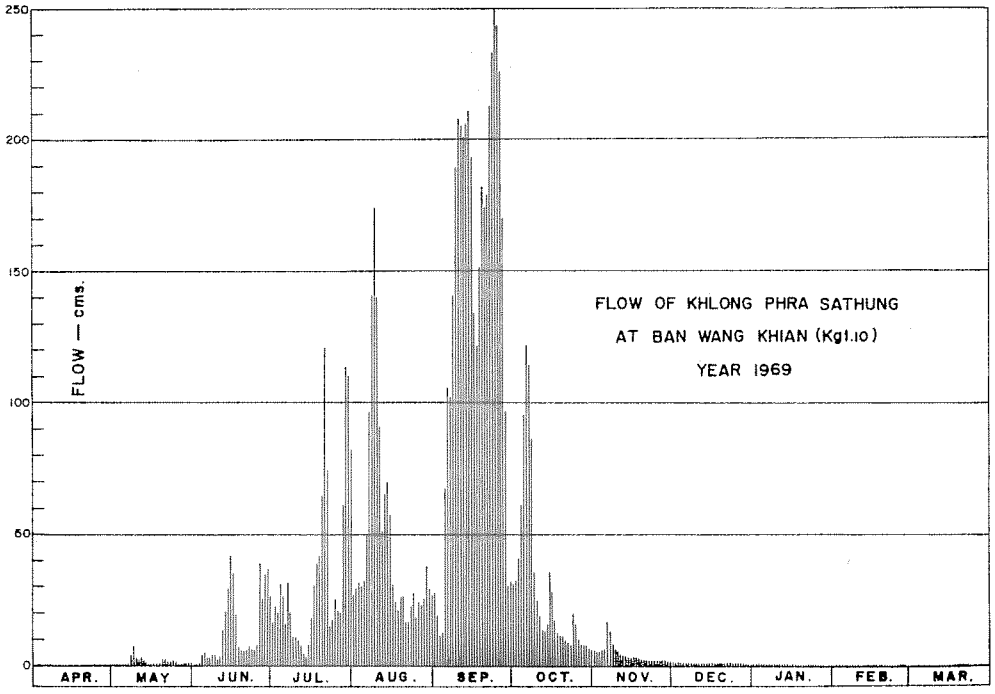
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Discharge record for period of no flow are omitted.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	24.72	24.69	24.88	26.75	27.50	27.55	27.71	25.86	25.34	25.06	24.93	24.79
2	.72	.77	.97	27.24	.64	26.87	.84	.84	.34	.04	.93	.81
3	.72	.73	25.15	26.94	.77	.33	28.14	.83	.34	.04	.93	.80
4	.70	.88	.79	27.71	.69	.47	29.46	.92	.34	.04	.91	.81
5	.75	25.05	.82	.38	.91	29.75	31.23	26.01	.31	.02	.92	.81
6	24.78	25.17	25.54	26.58	28.67	31.22	31.81	26.83	25.30	25.01	24.91	24.80
7	.75	.04	.62	27.75	30.84	30.99	.40	.57	.29	.00	.92	.79
8	.73	.81	.74	26.82	32.64	32.64	28.97	.13	.27	24.99	.90	.78
9	.70	26.09	.77	.34	33.45	34.05	27.65	25.94	.30	.99	.87	.77
10	.75	25.54	.45	.32	32.08	.33	.35	.85	.30	.98	.88	.76
11	24.77	25.38	25.59	26.29	29.31	34.27	26.88	25.78	25.28	24.97	24.91	24.76
12	.73	.57	26.68	.03	28.82	.17	.60	.73	.26	.97	.89	.75
13	.69	.36	27.07	25.73	29.64	.31	.49	.69	.28	.97	.96	.74
14	.68	.08	.74	.59	.78	.44	.73	.63	.28	.96	.97	.73
15	.66	24.93	28.31	26.31	.04	33.92	28.03	.59	.25	.96	25.03	.72
16	24.63	24.86	27.78	27.04	27.57	32.03	27.43	25.58	25.24	24.96	25.05	24.74
17	.63	.85	26.53	.70	.32	31.72	26.65	.58	.19	.97	24.96	.76
18	.66	.83	25.97	28.22	.12	33.02	.43	.55	.17	.98	.91	.75
19	.66	25.05	.85	.32	.49	.66	.35	.54	.18	.97	.89	.74
20	.64	.52	.85	30.62	.48	.46	.32	.52	.16	.98	.88	.74
21	24.63	25.48	25.90	31.78	26.75	33.69	26.19	25.50	25.16	24.96	24.87	24.74
22	.63	.32	26.07	30.20	.72	34.50	.11	.49	.18	.97	.85	.73
23	.62	.35	.01	26.65	27.21	35.00	.08	.48	.17	.95	.85	.73
24	.62	.38	25.90	.89	.57	.29	27.05	.47	.15	.95	.87	.75
25	.66	.16	27.20	27.41	26.87	.15	26.51	.44	.12	.95	.86	.75
26	24.73	24.99	28.18	27.14	27.38	34.79	26.19	25.41	25.14	24.94	24.83	24.73
27	.72	.90	27.33	.11	.25	32.20	.07	.40	.12	.94	.82	.74
28	.74	.85	.94	29.81	.41	28.45	.13	.88	.09	.94	.82	.70
29	.72	25.22	28.04	31.51	28.12	27.69	.08	.37	.07	.94		.96
30	.67	.11	27.02	.32	27.61	.79	25.97	.34	.07	.94		.97
31		24.98		29.19	.51		.90		.07	.94		.94
Mean	24.69	25.16	26.39	27.76	28.39	31.99	27.35	25.71	25.22	24.98	24.90	24.77
Max.	24.77	26.09	28.04	31.78	33.45	35.29	31.81	26.83	25.34	25.06	25.05	24.97
Min.	24.62	24.69	24.88	25.59	26.75	26.33	25.90	25.34	25.07	24.94	24.82	24.70

WATER YEAR 1969 : Max. 35.29 m. Min. 24.62 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.04	0.00	0.30	16	27	28	31	5.60	1.88	0.70	0.37	0.18
2	0.04	0.14	0.43	23	30	18	33	5.40	1.88	0.63	0.37	0.21
3	0.04	0.06	1.05	19	32	11	39	5.30	1.88	0.63	0.37	0.22
4	0.00	0.30	4.91	31	30	12	65	6.01	1.88	0.63	0.34	0.24
5	0.10	0.66	5.20	25	34	71	106	6.05	1.83	0.55	0.35	0.25
6	0.16	1.13	2.93	14	48	106	122	17	1.70	0.52	0.34	0.22
7	0.10	0.63	3.50	32	97	100	111	14	1.65	0.48	0.35	0.18
8	0.06	5.10	4.47	17	146	146	54	8.59	1.56	0.46	0.32	0.16
9	0.00	7.98	4.74	11	174	196	30	6.02	1.70	0.46	0.28	0.14
10	0.10	2.93	2.40	11	130	208	25	5.50	1.70	0.45	0.30	0.12
11	0.14	2.06	3.28	10	62	205	18	4.82	1.61	0.43	0.34	0.12
12	0.06	3.14	15	6.69	51	201	14	4.38	1.52	0.43	0.31	0.10
13	0.00	1.97	20	4.38	69	208	13	4.04	1.61	0.43	0.42	0.08
14		0.78	31	3.28	70	211	16	3.58	1.61	0.42	0.43	0.06
15		0.37	42	11	56	192	36	3.28	1.47	0.42	0.59	0.04
16		0.27	32	20	28	128	26	3.21	1.43	0.42	0.66	0.08
17		0.26	13	31	24	120	15	3.21	1.21	0.43	0.42	0.12
18		0.24	6.03	41	21	159	12	3.00	1.13	0.45	0.34	0.10
19		0.66	5.50	42	27	182	11	2.93	1.17	0.43	0.31	0.08
20		2.79	5.50	91	27	174	11	2.79	1.09	0.45	0.30	0.08
21		2.55	6.00	121	16	183	9.37	2.65	1.09	0.42	0.28	0.08
22		1.79	7.55	59	16	215	8.33	2.60	1.17	0.43	0.26	0.06
23		1.92	6.26	15	23	236	7.77	2.55	1.13	0.40	0.26	0.06
24		2.06	6.00	18	28	249	20	2.50	1.05	0.40	0.28	0.10
25	0.00	1.09	9.60	26	18	243	13	2.35	0.93	0.40	0.27	0.10
26	0.06	0.46	39	21	25	224	9.37	2.20	1.01	0.38	0.24	0.06
27	0.04	0.32	24	21	23	133	7.55	2.15	0.93	0.38	0.22	0.08
28	0.08	0.26	35	73	26	44	8.59	2.06	0.81	0.38	0.22	0.00
29	0.04	1.34	37	114	38	30	7.77	2.01	0.74	0.38		0.42
30	0.00	0.89	20	109	29	32	6.03	1.88	0.74	0.38		0.43
31		0.45		59	27		6.00		0.74	0.38		0.38
Total	1.06	44.60	393.65	1,095.35	1,452	4,265	891.78	137.66	41.85	14.15	9.54	4.55
Mean	0.03	1.44	13.1	35.3	46.8	142	28.8	4.58	1.32	0.46	0.34	0.15
Max.	0.14	7.98	42	121	174	249	122	17	1.88	0.70	0.66	0.43
Min.	0.00	0.00	0.30	3.28	16	11	6.00	1.88	0.74	0.38	0.22	0.00
Runoff - mcm.	0.091	3.853	34.011	94.638	125.452	368.496	77.049	11.894	3.529	1.222	0.824	0.393

WATER YEAR 1969 : Max. 249 Min. 0.00 Mean 22.9 Annual Runoff 721.542 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 24	08.00	35.31	250				

WATER YEAR 1969
PRACHIN RIVER BASIN

Khlong Phra Prong at Ban Kaeng, Prachin Buri (Kgt.12)

Location: Lat. 13°-56'-02" N., Long. 101°-58'-41" E., on left bank near Ban Kaeng railway station, about 200 meters upstream from Thot Saphon Sawmill, Amphoe Sa Kaeo, Prachin Buri.

Drainage Area: 1,540 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Near the gage site

Elevation: + 9.687 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1966 to date

Rating Operation:

Period of Rating: 1966 to date

Rated by Float: -

Rated by Current Meter: 1966 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

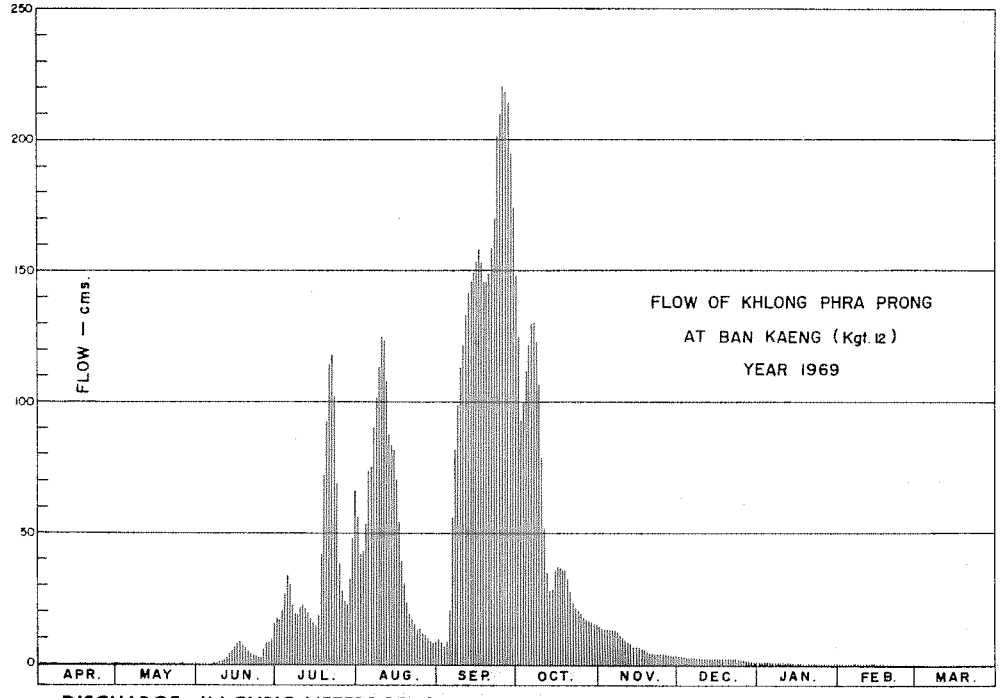
Overbank Flow Conditions: No overbank flow.

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.41	0.30	0.47	2.33	4.09	1.70	6.35	2.05	1.13	0.82	0.58	0.50
2	.40	.32	.44	.26	3.60	.62	5.57	.05	.10	.80	.58	.48
3	.37	.37	.42	.59	.66	.50	.79	.06	.09	.79	.58	.47
4	.35	.37	.50	3.01	4.39	.73	6.30	.03	.08	.78	.58	.47
5	.37	.37	.58	.21	.88	2.48	.60	.02	.05	.77	.56	.46
6	0.35	0.35	0.59	3.04	4.97	4.01	6.76	2.02	1.06	0.75	0.56	0.46
7	.33	.33	.59	2.62	5.40	5.29	.76	.02	.05	.73	.56	.46
8	.34	.40	.70	.40	.92	.91	.53	1.96	.02	.71	.55	.46
9	.34	.59	.79	.38	6.32	6.26	5.83	.87	.04	.71	.55	.45
10	.34	.53	.85	.67	.61	.56	4.75	.79	.05	.69	.55	.44
11	0.35	0.48	0.97	2.64	6.56	6.90	3.71	1.71	1.06	0.68	0.57	0.44
12	.36	.43	1.07	.57	5.99	7.15	.25	.64	.05	.67	.56	.44
13	.36	.40	.30	.48	.31	.28	2.92	.59	.02	.67	.55	.45
14	.34	.40	.48	.35	.20	.40	.93	.53	.04	.67	.55	.45
15	.33	.40	.52	.20	.15	.51	3.34	.51	.05	.67	.53	.45
16	0.32	0.43	1.64	2.12	4.59	7.63	3.36	1.46	0.96	0.67	0.53	0.45
17	.32	.51	.58	.47	3.83	.41	.37	.43	.96	.66	.53	.45
18	.31	.53	.44	3.80	.19	.24	.35	.40	.95	.66	.52	.45
19	.30	.49	.33	5.19	2.75	.28	.35	.36	.94	.65	.52	.45
20	.30	.46	.24	.97	.54	.41	.15	.30	.94	.63	.53	.44
21	0.30	0.41	1.21	6.36	2.36	7.74	2.86	1.32	0.93	0.62	0.54	0.44
22	.30	.40	.15	.40	.17	8.34	.64	.29	.95	.62	.53	.44
23	.29	.40	.10	5.52	.06	.83	.52	.26	.94	.62	.51	.43
24	.29	.39	.05	3.94	1.99	9.22	.46	.25	.95	.62	.51	.43
25	.29	.38	.03	.18	2.05	.35	.39	.22	.93	.62	.51	.43
26	0.27	0.39	1.34	2.94	1.93	2.29	2.32	1.20	0.91	0.60	0.51	0.41
27	.27	.38	.52	.74	.80	.12	.28	.19	.87	.60	.50	.41
28	.28	.37	.57	.65	.70	8.79	.27	.18	.86	.60	.50	.43
29	.29	.39	.85	3.37	.63	.26	.22	.16	.88	.59		.41
30	.30	.41	2.19	4.25	.62	7.53	.21	.14	.87	.58		.40
31		.47		.57	.63		.12		.86	.58		.39
Mean	0.32	0.41	1.12	3.36	3.74	6.56	3.88	1.57	0.99	0.67	0.54	0.44
Max.	0.41	0.59	2.19	6.40	6.61	9.35	6.76	2.05	1.13	0.82	0.58	0.50
Min.	0.27	0.30	0.42	2.12	1.62	1.50	2.12	1.14	0.86	0.58	0.50	0.39

WATER YEAR 1969 : Max. 9.35 m. Min. 0.27 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.20	0.06	0.31	18	54	9.16	117	14	3.33	1.50	0.58	0.36
2	0.18	0.08	0.25	17	42	8.17	93	14	3.10	1.40	0.58	0.32
3	0.14	0.14	0.22	22	44	6.78	100	14	3.04	1.36	0.58	0.31
4	0.12	0.14	0.36	30	61	9.56	115	14	2.98	1.32	0.58	0.31
5	0.14	0.14	0.58	34	74	20	125	14	2.79	1.27	0.53	0.29
6	0.12	0.12	0.61	30	76	52	130	14	2.85	1.19	0.53	0.29
7	0.10	0.10	0.61	23	88	85	130	14	2.79	1.11	0.53	0.29
8	0.11	0.18	0.98	19	104	103	122	13	2.60	1.02	0.50	0.29
9	0.11	0.61	1.36	19	116	114	101	11	2.73	1.02	0.50	0.27
10	0.11	0.44	1.66	23	125	123	71	10	2.79	0.95	0.50	0.25
11	0.12	0.32	2.31	23	123	134	45	9.29	2.85	0.91	0.56	0.25
12	0.12	0.23	2.91	22	106	142	35	8.42	2.73	0.88	0.53	0.25
13	0.13	0.18	4.76	20	85	146	28	7.81	2.60	0.88	0.50	0.27
14	0.11	0.18	6.56	18	83	150	28	7.12	2.37	0.88	0.50	0.27
15	0.10	0.18	7.01	16	81	154	36	6.89	2.26	0.88	0.44	0.27
16	0.08	0.23	8.42	15	66	158	37	6.34	2.26	0.88	0.44	0.27
17	0.08	0.39	7.69	20	48	151	37	6.01	2.26	0.84	0.44	0.27
18	0.07	0.44	6.12	47	33	145	36	5.68	2.20	0.84	0.42	0.27
19	0.06	0.34	5.04	82	25	146	36	5.31	2.14	0.81	0.42	0.27
20	0.06	0.29	4.23	105	21	151	33	4.76	2.14	0.74	0.44	0.25
21	0.06	0.20	3.97	117	18	162	27	4.94	2.09	0.71	0.47	0.25
22	0.06	0.18	3.49	118	16	183	23	4.67	2.20	0.71	0.44	0.25
23	0.05	0.18	3.10	92	14	201	21	4.41	2.14	0.71	0.39	0.23
24	0.05	0.17	2.79	50	13	215	20	4.32	2.20	0.71	0.39	0.23
25	0.05	0.16	2.67	33	14	220	19	4.06	2.01	0.71	0.39	0.23
26	0.04	0.17	5.13	28	12	218	18	3.88	1.98	0.64	0.39	0.20
27	0.04	0.16	7.01	24	10	212	17	3.80	1.76	0.64	0.36	0.20
28	0.05	0.14	7.58	23	9.16	199	17	3.72	1.71	0.64	0.36	0.23
29	0.05	0.17	10	37	8.29	180	16	3.57	1.82	0.61		0.20
30	0.06	0.20	16	58	8.04	155	16	3.41	1.76	0.58		0.18
31		0.31		66	8.29		15		1.71	0.58		0.17
Total	2.77	6.83	123.73	1,249	1,585.78	3,952.67	1,664	240.41	74.19	27.92	13.29	7.99
Mean	0.09	0.22	4.12	40.3	51.1	132	53.7	8.10	2.39	0.90	0.47	0.25
Max.	0.20	0.61	16	118	125	220	130	14	3.33	1.50	0.58	0.36
Min.	0.04	0.06	0.22	15	8.04	6.78	15	3.41	1.71	0.58	0.36	0.17
Runoff — mcm.	0.239	0.590	10.690	107.914	137.011	341.511	143.770	20.771	6.410	2.412	1.148	0.690

WATER YEAR 1969 : Max. 220 Min. 0.04 Mean 24.5 Annual Runoff 773.157 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 25	12.00	9.36	221				

WATER YEAR 1969
PRACHIN RIVER BASIN

Huai Yang at Ban Thung Faek, Prachin Buri (Kgt.14)

Location: Lat. 14°-09'-30" N., Long. 101°-52'-52" E., on left bank at BanThung Faek, 2 kilometers on left side of Kabin Buri – Nakhon Ratchasima highway,Amphoe Kabin Buri, Prachin Buri.

Drainage Area: 366 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 34.61 m. (M.S.L.)

Bench Mark: B.M. – H.S.

- Location: Near the gage site
- Elevation: + 44.428 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1966 to date

Rating Operation:

- Period of Rating: 1966 to date
- Rated by Float: –
- Rated by Current Meter: 1966 to date

Stability of Channel Regimes: Rather stable, shifting adjustment is included for flow computation.

Overbank Flow Conditions: No overbank flow

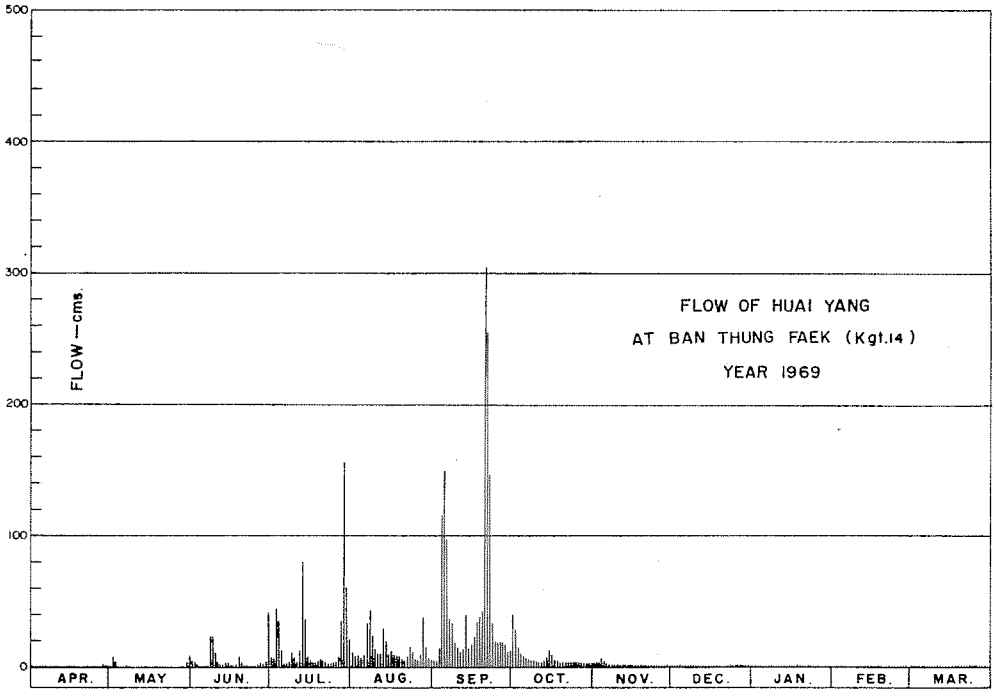
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Discharge record for periods of no flow are omitted.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	34.46	34.78	35.55	35.70	35.69	35.31	36.65	35.26	34.97	34.87	34.80	34.76
2	.46	35.54	.24	.45	.56	.27	.19	.34	.97	.87	.80	.76
3	.46	.03	.07	37.00	.58	.84	35.79	.27	.96	.86	.80	.76
4	.45	34.88	34.97	36.62	.48	38.41	.64	.49	.95	.85	.80	.76
5	.45	.81	.91	35.62	.62	.65	.52	.33	.95	.85	.80	.76
6	34.45	34.80	34.86	35.37	35.57	36.98	35.45	35.18	34.95	34.85	34.79	34.74
7	.44	35.07	35.00	.33	36.50	.47	.40	.17	.95	.85	.79	.74
8	.44	34.86	36.11	.37	.72	.39	.36	.15	.95	.86	.71	.74
9	.43	.79	.18	.68	35.90	35.92	.32	.14	.94	.86	.80	.74
10	.44	.77	35.37	.47	.71	.74	.30	.12	.93	.86	.81	.73
11	34.45	34.75	35.18	35.29	35.62	35.64	35.27	35.10	34.93	34.84	34.81	34.73
12	.45	.77	.11	.75	.70	.77	.25	.09	.92	.84	.82	.73
13	.44	.77	.18	37.55	36.36	36.59	.34	.08	.92	.84	.85	.72
14	.48	.76	.26	35.95	35.82	35.66	.49	.08	.92	.84	.89	.71
15	.87	.73	.24	.55	.61	.91	.76	.07	.92	.84	.89	.71
16	34.81	34.71	35.15	35.38	35.68	*35.83	35.51	35.06	34.92	34.82	34.87	34.71
17	.74	.70	.01	.28	.54	36.41	.39	.05	.92	.82	.85	.70
18	.69	.70	.31	.27	.55	.49	.35	.05	.92	.84	.84	.69
19	.65	.68	.67	.38	.50	.53	.30	.04	.91	.83	.83	.69
20	.63	.67	.32	.50	.33	.97	.24	.03	.90	.82	.80	.69
21	34.61	34.67	35.24	35.34	35.28	40.42	35.22	35.02	34.90	34.82	34.80	34.69
22	.59	.70	.16	.27	.60	37.77	.27	.02	.90	.82	.80	.72
23	.58	.71	.09	.23	.83	36.23	.30	.01	.91	.82	.79	.73
24	.57	.71	.10	.26	.57	35.89	.24	.00	.90	.82	.79	.73
25	.55	.70	.11	.28	.35	.84	.21	.00	.89	.81	.77	.72
26	34.54	34.69	35.11	35.36	35.41	35.84	35.26	34.99	34.89	34.81	34.76	34.72
27	.53	.68	.34	.69	.62	.90	.33	.99	.89	.81	.77	.71
28	35.15	.68	.27	36.56	36.58	.82	.21	.98	.89	.81	.77	.71
29	.07	.90	.37	38.75	35.68	.57	.18	.97	.88	.81		.70
30	34.84	35.29	36.89	36.26	.42	.64	.26	.97	.88	.81		.70
31		.59		.04	.32		.27		.88	.80		.70
Mean	34.59	34.84	35.32	35.79	35.57	36.39	35.42	35.10	34.91			
Max.	35.15	35.59	36.89	38.75	36.72	40.42	36.65	35.49	34.97	34.87	34.89	34.76
Min.	34.43	34.67	34.86	35.23	35.28	35.27	35.18	34.97	34.88	34.80	34.71	34.69

WATER YEAR 1969 : Max. 40.42 m. Min. 34.43 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.00	0.16	5.35	6.64	11	4.75	40	3.12	1.04	0.41	0.20	0.12
2		8.24	2.10	3.01	8.03	4.15	25	4.00	1.04	0.41	0.20	0.12
3		1.34	1.04	45	9.08	16	14	3.23	1.04	0.38	0.20	0.12
4		0.44	0.68	32	7.02	133	10	6.45	0.98	0.35	0.20	0.12
5		0.23	0.50	6.45	9.92	149	7.61	3.89	1.04	0.35	0.20	0.12
6		0.20	0.44	3.34	8.87	56	6.26	2.30	1.04	0.35	0.18	0.08
7		1.66	1.18	3.34	35	35	5.35	2.00	1.04	0.35	0.18	0.08
8		0.38	23	4.30	43	33	4.75	1.82	1.10	0.38	0.02	0.08
9		0.18	24	11	17	18	4.15	1.74	1.10	0.38	0.20	0.08
10		0.14	4.75	6.26	12	14	3.89	1.58	1.04	0.38	0.23	0.06
11		0.10	2.30	3.56	9.92	11	3.56	1.42	1.04	0.32	0.23	0.06
12		0.14	1.66	12	12	14	3.34	1.34	0.98	0.32	0.26	0.06
13		0.14	2.10	80	30	40	4.45	1.26	0.98	0.32	0.35	0.06
14	0.00	0.12	2.80	17	15	12	7.02	1.10	0.98	0.32	0.47	0.04
15	0.41	0.06	2.50	7.82	9.71	18	13	1.04	0.98	0.32	0.47	0.02
16	0.23	0.02	1.50	4.75	12	16	7.40	1.04	0.98	0.26	0.41	0.02
17	0.08	0.00	0.56	3.45	9.08	33	5.20	1.04	0.98	0.26	0.35	0.02
18	0.00		2.80	3.34	9.21	38	4.60	1.04	0.98	0.32	0.32	0.00
19			8.24	4.75	8.24	40	3.89	1.04	0.92	0.29	0.29	0.00
20			2.70	6.83	5.05	*60	3.28	1.04	0.86	0.26	0.20	0.00
21			1.90	4.15	4.30	*304	3.01	0.98	0.98	0.26	0.20	0.00
22		0.00	1.26	3.34	10	*108	3.23	1.04	0.98	0.26	0.20	0.04
23		0.02	0.80	2.90	16	29	3.56	1.04	1.04	0.26	0.18	0.06
24		0.02	0.86	3.23	9.71	19	2.90	0.98	0.98	0.26	0.18	0.06
25		0.00	0.92	3.45	5.35	18	2.60	1.04	0.92	0.23	0.14	0.04
26		0.00	1.10	4.45	6.45	18	3.12	0.98	0.92	0.23	0.12	0.04
27	0.00	0.00	2.90	11	11	19	3.89	1.04	0.92	0.23	0.14	0.02
28	2.40	0.00	2.20	*45	39	17	2.60	0.98	0.92	0.23	0.14	0.02
29	1.66	0.50	2.80	*156	12	11	2.30	0.92	0.86	0.23		0.00
30	0.32	3.89	41	26	6.64	13	3.12	0.98	0.86	0.23		
31		9.29		20	4.90		3.23		0.86	0.20		
Total	5.10	27.27	145.94	544.36	406.48	1,300.90	210.26	51.47	30.38	9.35	6.46	1.54
Mean	0.17	0.88	4.86	17.6	13.1	43.4	6.78	1.72	0.98	0.30	0.23	0.05
Max.	2.40	9.29	41	156	43	304	40	6.45	1.10	0.41	0.47	0.12
Min.	0.00	0.00	0.44	2.90	4.30	4.15	2.30	0.92	0.86	0.20	0.02	0.00
Runoff — mcm.	0.441	2.356	12.609	47.033	35.120	112.398	18.166	4.447	2.625	0.807	0.558	0.133

WATER YEAR 1969 : Max. 304 Min. 0.00 Mean 7.50 Annual Runoff 236.694 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 21	15.00	41.00	359				

WATER YEAR 1969
PRACHIN RIVER BASIN

Huai Samong at highway bridge, Prachin Buri (Kgt.15)

Location: Lat. 14°-02'-37" N., Long. 101°-47'-30" E., on left bank about 5 kilometers upstream from confluence with Lam Hanuman, on Kabin Buri – Nakhon Ratchasima highway about 8 kilometers from Crossing with Suwanson road, Amphoe Kabin Buri, Prachin Buri.

Drainage Area: 789 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S.

- **Location:** Near the gage site
- **Elevation:** + 6.248 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1966-1974

Rating Operation:

- **Period of Rating:** 1966-1970
- **Rated by Float:** –
- **Rated by Current Meter:** 1966-1970

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1967. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

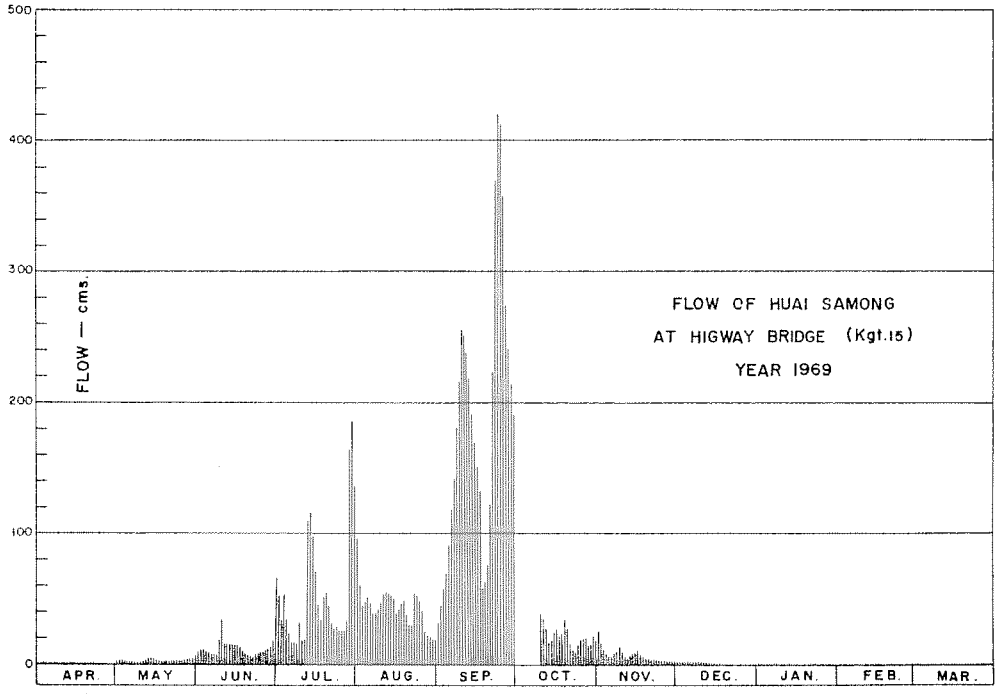
Remarks: No stage-discharge record October 1-9, and discharge record for period of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.35	0.64	0.83	2.43	2.80	1.83		1.55	0.54	0.47	0.37	0.36
2	.35	.65	.82	.18	.36	2.12		.23	.54	.47	.37	.35
3	.34	.62	.80	1.69	.00	.36		.06	.53	.46	.37	.34
4	.34	.60	.78	2.22	.13	.60		0.96	.53	.46	.37	.33
5	.34	.56	.76	1.78	.15	.94		.93	.52	.46	.37	.33
6	0.34	0.48	0.73	1.30	2.03	3.38		0.80	0.55	0.45	0.36	0.32
7	.34	.48	.69	.24	1.85	.76		.95	.56	.45	.36	.32
8	.33	.50	.71	.25	.89	4.38		1.02	.57	.44	.36	.31
9	.33	.52	1.35	.68	.97	.81		.12	.57	.44	.36	.31
10	.33	.54	.76	.31	2.12	5.07	1.87	0.99	.56	.43	.37	.30
11	0.33	0.55	1.23	1.31	2.26	4.98	1.70	0.85	0.55	0.43	0.37	0.30
12	.33	.57	.23	.45	.26	.78	.52	.76	.54	.42	.37	.30
13	.32	.60	.25	3.20	.24	.40	.22	.73	.53	.42	.37	.29
14	.32	.59	.25	.27	.21	.20	.32	.70	.52	.41	.36	.29
15	.32	.58	.16	2.87	1.90	3.96	.58	.76	.51	.41	.36	.29
16	0.32	0.56	1.18	2.18	1.87	3.77	1.56	0.82	0.50	0.40	0.36	0.28
17	.32	.56	.08	1.66	2.05	.47	.36	.92	.50	.40	.36	.28
18	.32	.55	.00	.79	.13	2.28	.55	.88	.50	.39	.36	.30
19	.32	.55	0.94	2.14	.00	.48	.77	.78	.50	.39	.36	.30
20	.32	.55	.88	.19	1.83	.87	.54	.77	.49	.38	.36	.34
21	0.32	0.56	0.84	1.97	1.63	4.09	1.17	0.76	0.49	0.38	0.36	0.34
22	.31	.56	.84	.75	.71	5.76	.06	.75	.49	.38	.36	.36
23	.31	.57	.95	.56	2.24	6.76	.00	.73	.49	.38	.36	.36
24	.31	.57	.96	.63	.19	.76	.20	.70	.48	.38	.36	.37
25	.31	.57	.99	.58	.05	.66	.36	.68	.48	.38	.36	.37
26	0.31	0.58	1.02	1.53	1.79	5.47	1.36	0.66	0.48	0.37	0.36	0.35
27	.31	.59	.07	.55	.49	.08	.41	.64	.48	.37	.36	.31
28	.31	.60	.13	.80	.40	4.81	.17	.62	.47	.37	.36	.31
29	.31	.63	.19	4.07	.41	.54	.23	.60	.47	.37		.30
30	.31	.65	.56	.24	.36	.30	.50	.58	.47	.37		.30
31		.70		3.40	.32		.30		.47	.37		.29
Mean	0.32	0.57	0.99	2.07	1.95	4.15		0.84	0.51	0.41	0.36	0.30
Max.	0.35	0.70	1.76	4.24	2.80	6.76		1.55	0.57	0.47	0.37	0.36
Min.	0.31	0.48	0.69	1.24	1.32	1.83		0.58	0.47	0.37	0.36	0.29

WATER YEAR 1969 : Max. m. Min. m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.15	2.76	5.80	65	85	37		26	1.48	0.79	0.21	0.18
2	0.15	2.90	5.60	52	61	50		16	1.48	0.79	0.21	0.15
3	0.12	2.48	5.20	31	44	61		11	1.36	0.72	0.21	0.12
4	0.12	2.20	4.88	54	50	74		8.64	1.36	0.72	0.21	0.09
5	0.12	1.72	4.56	35	51	94		7.92	1.24	0.72	0.21	0.09
6	0.12	0.86	4.08	18	45	122		5.20	1.60	0.65	0.18	0.06
7	0.12	0.86	3.46	16	38	149		8.40	1.72	0.65	0.18	0.06
8	0.09	1.00	3.76	16	40	196		10	1.84	0.58	0.18	0.03
9	0.09	1.24	19	31	43	232		13	1.84	0.58	0.18	0.03
10	0.09	1.48	34	18	50	255	39	9.36	1.72	0.51	0.21	0.00
11	0.09	1.60	16	18	56	247	32	6.20	1.60	0.51	0.21	
12	0.09	1.84	16	23	56	230	25	4.56	1.48	0.44	0.21	
13	0.06	2.20	16	110	55	198	15	4.08	1.36	0.44	0.21	
14	0.06	2.08	16	115	54	182	18	3.60	1.24	0.37	0.18	
15	0.06	1.96	14	90	40	164	27	4.56	1.12	0.37	0.18	
16	0.06	1.72	14	52	39	150	27	5.60	1.00	0.30	0.18	
17	0.06	1.72	12	30	46	129	20	7.68	1.00	0.30	0.18	
18	0.06	1.60	9.60	35	50	57	26	6.80	1.00	0.27	0.18	
19	0.06	1.60	8.16	50	44	67	35	4.80	1.00	0.27	0.18	0.00
20	0.06	1.60	6.80	53	37	90	26	4.72	0.93	0.24	0.18	0.12
21	0.06	1.72	6.00	43	29	173	14	4.56	0.93	0.24	0.18	0.12
22	0.03	1.72	6.00	34	32	320	11	4.40	0.93	0.24	0.18	0.18
23	0.03	1.84	8.40	27	55	419	9.60	4.08	0.93	0.24	0.18	0.48
24	0.03	1.84	8.64	29	53	419	15	3.60	0.86	0.24	0.18	0.21
25	0.03	1.84	9.36	27	46	409	20	3.32	0.86	0.24	0.18	0.21
26	0.03	1.96	10	25	35	292	20	3.04	0.86	0.21	0.15	0.15
27	0.03	2.08	11	26	24	256	21	2.76	0.86	0.21	0.18	0.03
28	0.03	2.20	13	36	21	232	14	2.48	0.79	0.21	0.18	0.03
29	0.03	2.62	14	172	21	209	16	2.20	0.79	0.21		0.00
30	0.03	2.90	27	185	20	190	24	1.96	0.79	0.21		0.00
31		3.60		124	18		18		0.79	0.21		0.00
Total	2.16	59.74	332.40	1,630	1,328	5,703		200.70	36.76	12.68	5.31	2.04
Mean	0.07	1.93	11.1	52.6	42.8	190		6.69	1.18	0.41	0.19	0.06
Max.	0.15	3.60	34	185	85	419		26	1.84	0.79	0.21	0.21
Min.	0.03	0.86	3.46	16	18	37		1.96	0.79	0.21	0.18	0.00
Runoff - mcm.	0.186	5.161	28.719	140.832	114.739	492.739		17.340	3.176	1.095	0.458	0.176

WATER YEAR 1969 : Max. Min. Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23	24.00	6.76	419				

WATER YEAR 1969
PRACHIN RIVER BASIN

Huai Samong at Ban Kaeng Din So, Prachin Buri (Kgt.15A)

Location: Lat. 14°-03'-46" N., Long. 101°-55'-39" E., on right bank at Ban Kaeng Din So, upstream from the Kgt. 15 station about 15 kilometers, Amphoe KabinBuri, Prachin Buri.

Drainage Area: 530 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Infront of Kgt. 15A station office near the rain gage.

Elevation: + 9.615 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1968 to date

Rating Operation:

Period of Rating: 1968 to date

Rated by Float: -

Rated by Current Meter: 1968 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

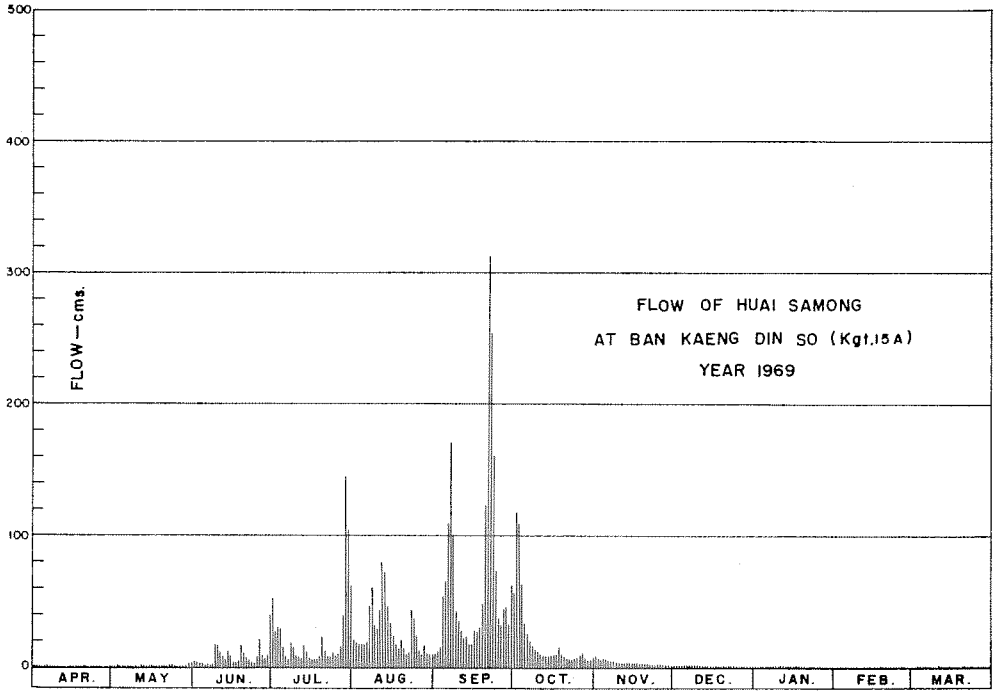
Overbank Flow Conditions: No overbank flow.

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.58	0.69	1.19	2.91	1.92	1.53	2.84	1.49	0.94	0.81	0.63	0.52
2	.58	.69	.08	.14	.89	.62	4.40	.36	.94	.81	.63	.52
3	.58	.93	.08	.29	.79	.80	.09	.31	.94	.81	.60	.52
4	.59	.79	.05	.22	.84	2.97	2.77	.41	.93	.80	.59	.52
5	.59	.71	0.96	1.65	.80	3.31	.29	.34	.92	.78	.58	.52
6	0.59	0.69	0.90	1.42	1.92	4.58	2.06	1.26	0.92	0.78	0.58	0.52
7	.59	.70	.87	.31	2.70	5.47	1.90	.22	.92	.78	.58	.52
8	.59	.72	1.23	.88	3.10	3.74	.76	.19	.92	.77	.57	.52
9	.59	.77	.80	.74	2.31	2.62	.66	.17	.90	.77	.57	.52
10	.59	.75	.77	.44	.27	2.46	.58	.13	.90	.77	.58	.52
11	0.60	0.74	1.54	1.32	2.18	2.11	1.51	1.13	0.90	0.77	0.58	0.52
12	.59	.88	.42	.35	3.58	1.95	.46	.13	.89	.76	.59	.52
13	.59	.83	.20	.79	.35	2.04	.44	.12	.89	.76	.60	.52
14	.59	.74	.65	.58	2.73	1.78	.47	.11	.88	.76	.61	.52
15	.59	.71	.36	.38	.38	.83	.50	.10	.86	.76	.59	.52
16	0.59	0.70	1.17	1.29	2.04	2.19	1.47	1.07	0.86	0.76	0.58	0.52
17	.59	.68	.13	.29	1.79	* .16	.53	.13	.85	.76	.58	.52
18	.59	.68	.25	.34	.68	* .31	.78	.12	.85	.75	.58	.52
19	.59	.67	.80	.54	.93	* .82	.48	.07	.84	.74	.58	.52
20	.58	.69	.58	2.04	.67	*3.25	.41	.05	.84	.71	.58	.52
21	0.58	0.70	1.36	1.64	1.51	*6.19	1.34	1.02	0.87	0.66	0.57	0.52
22	.57	.69	.33	.45	.62	*7.66	.31	.01	.94	.64	.57	.52
23	.57	.88	.17	.41	2.65	*5.84	.30	.00	.86	.63	.57	.52
24	.57	.86	.12	.57	.44	*3.08	.36	0.99	.84	.63	.57	.52
25	.58	.79	.44	.48	1.91	*2.46	.38	.98	.83	.63	.57	.52
26	0.58	0.75	1.97	1.58	1.59	*2.22	1.52	0.98	0.83	0.63	0.57	0.52
27	.59	.77	.49	.74	.48	.65	.58	.97	.82	.63	.56	.52
28	.61	.77	.34	2.18	.78	.72	.36	.98	.81	.63	.55	.52
29	.60	.80	.51	4.99	.54	.18	.29	.96	.81	.63		.51
30	.67	.99	2.58	.07	.52	3.15	.29	.94	.81	.63		.51
31		1.17		2.96	.46		.40		.80	.63		.51
Mean	0.59	0.77	1.38	1.90	2.07	3.02	1.79	1.12	0.87	0.72	0.58	0.52
Max.	0.67	1.17	2.58	4.99	3.58	7.66	4.40	1.49	0.94	0.81	0.63	0.52
Min.	0.57	0.67	0.87	1.29	1.46	1.53	1.29	0.94	0.80	0.63	0.55	0.51

WATER YEAR 1969 : Max. 7.66 m. Min. 0.51 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1,1969 TO MARCH 31,1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.08	0.28	4.08	52	20	9.92	50	9.00	1.62	0.76	0.16	0.02
2	0.08	0.28	2.82	26	19	12	117	6.52	1.62	0.76	0.16	0.02
3	0.08	1.54	2.82	31	17	17	103	5.67	1.62	0.76	0.10	0.02
4	0.09	0.66	2.55	29	18	55	47	7.40	1.54	0.70	0.09	0.02
5	0.09	0.34	1.78	13	17	68	31	6.18	1.62	0.62	0.08	0.02
6	0.09	0.28	1.30	7.60	20	125	24	4.98	1.62	0.62	0.08	0.02
7	0.09	0.30	1.12	5.67	45	170	19	4.46	1.62	0.62	0.08	0.02
8	0.09	0.38	4.59	19	60	87	16	4.08	1.62	0.58	0.07	0.02
9	0.09	0.58	17	15	32	42	13	3.84	1.30	0.58	0.07	0.02
10	0.09	0.50	16	8.00	30	36	11	3.36	1.30	0.58	0.08	0.02
11	0.10	0.46	10	5.84	27	25	9.44	3.36	1.30	0.58	0.08	0.02
12	0.09	1.18	7.60	6.35	80	21	8.40	3.36	1.24	0.54	0.09	0.02
13	0.09	0.88	4.20	17	70	23	8.00	3.24	1.24	0.54	0.10	0.02
14	0.09	0.46	13	11	46	16	8.60	3.12	1.18	0.54	0.12	0.02
15	0.09	0.34	6.52	6.86	34	18	9.20	3.00	1.06	0.54	0.09	0.02
16	0.09	0.30	3.84	5.37	23	28	8.60	2.91	1.06	0.54	0.08	0.02
17	0.09	0.26	3.36	5.37	17	27	9.92	3.36	1.00	0.54	0.08	0.02
18	0.09	0.26	4.85	6.18	14	31	16	3.24	1.00	0.50	0.08	0.02
19	0.09	0.24	17	10	20	50	8.80	2.73	0.94	0.46	0.08	0.02
20	0.08	0.28	11	23	14	66	7.40	2.55	0.94	0.34	0.08	0.02
21	0.08	0.30	6.52	13	9.44	218	6.18	2.28	1.12	0.22	0.07	0.02
22	0.07	0.28	5.01	8.20	12	312	5.67	2.19	1.62	0.18	0.07	0.02
23	0.07	1.18	3.84	7.40	43	194	5.50	2.10	1.06	0.16	0.07	0.02
24	0.07	1.06	3.24	11	36	59	6.52	2.02	0.94	0.16	0.07	0.02
25	0.08	0.66	8.00	8.80	20	36	6.86	1.94	0.88	0.16	0.07	0.02
26	0.08	0.50	21	11	11	29	9.68	1.94	0.88	0.16	0.07	0.02
27	0.09	0.58	9.00	15	8.80	43	11	1.86	0.82	0.16	0.06	0.02
28	0.12	0.58	6.18	27	16	45	6.52	1.94	0.76	0.16	0.05	0.02
29	0.10	0.70	9.44	145	10	27	5.37	1.78	0.76	0.16		0.01
30	0.24	2.02	40	102	9.68	62	5.37	1.62	0.76	0.16		0.01
31		3.84		54	8.40		7.20		0.70	0.16		0.01
Total	2.77	21.50	247.66	705.64	807.32	1,951.92	601.23	106.03	36.74	13.54	2.38	0.59
Mean	0.92	0.69	8.25	22.8	26.0	65.1	19.4	3.53	1.18	0.44	0.13	0.02
Max.	0.24	3.84	40	145	80	312	117	9.00	1.62	0.76	0.16	0.02
Min.	0.07	0.24	1.12	5.37	8.40	9.92	5.37	1.62	0.70	0.16	0.05	0.01
Runoff - mcm.	0.239	1.857	21.397	60.967	69.752	168.645	51.946	9.160	3.174	1.169	0.205	0.050

WATER YEAR 1969 : Max. 312 Min. 0.01 Mean 12.3 Annual Runoff 388.568 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 22	05.00	7.96	334				

WATER YEAR 1969
PRACHIN RIVER BASIN

Khlong Si Yat at Ban Tha Kloi, Chachoengsao (Kgt.18)

Location: Lat. 13°-26'-30" N., Long. 101°-39'-06" E., on right bank at Ban Tha Glay, King Amphoe Sanam Chai, Chachoengsao.

Drainage Area: 951 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: At the cocoanut tree infront of Kgt. 18 station office.

Elevation: + 6.887 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1969 to date

Rated by Float: -

Rated by Current Meter: 1969 to date

Stability of Channel Regimes: Stable, no shifting adjustment but periodic curves are used for flow computation, and including overbank flow.

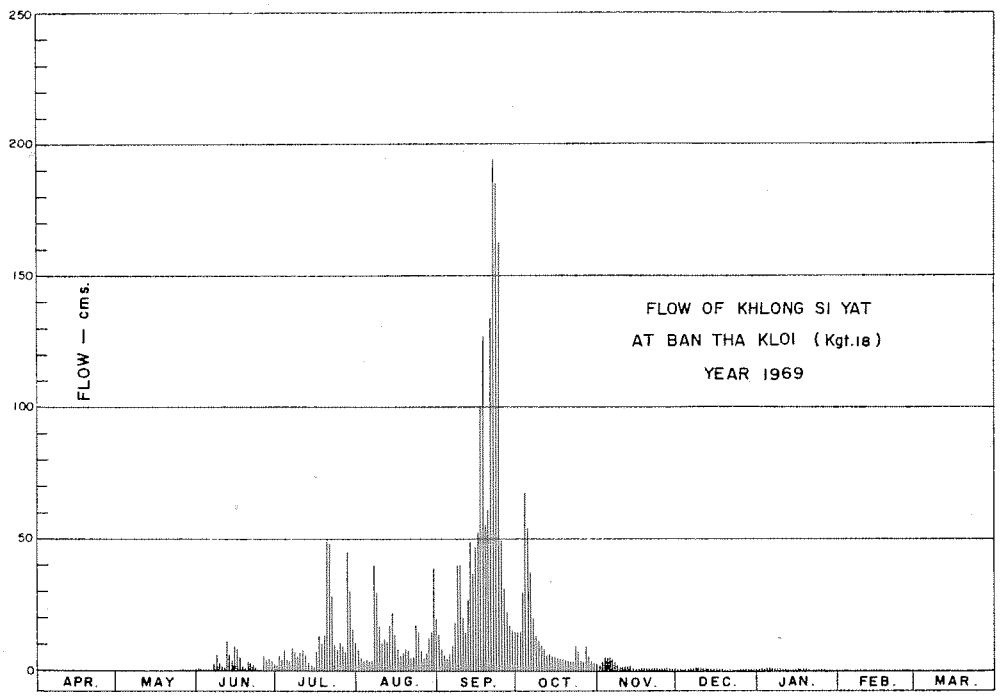
Overbank Flow Conditions: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Stream gaging station began on May 23, 1969, and discharge record for periods of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			0.86	1.16	1.71	2.21	2.40	1.14	0.75	0.68	0.66	0.65
2			.89	.67	.55	1.86	.44	.35	.75	.68	.66	.65
3			.87	.38	.43	.65	3.65	.67	.75	.68	.66	.65
4			.81	.89	.51	.54	4.65	.51	.75	.68	.66	.65
5			.76	.40	.36	.75	3.90	.68	.74	.68	.66	.64
6			0.75	1.40	1.56	2.14	3.00	1.48	0.74	0.68	0.66	0.64
7			1.28	.98	3.71	.73	2.54	.32	.74	.68	.66	.63
8	Stream Gaging		.70	.74	.05	3.68	.30	.21	.73	.68	.66	.62
9	began on		.20	.48	2.33	.67	.16	.15	.73	.68	.66	.62
10	May 23, 1969		0.99	.83	.03	2.62	1.96	.09	.73	.68	.66	.61
11			0.98	1.86	2.25	2.41	1.81	1.05	0.72	0.68	0.66	0.61
12			2.17	.63	.21	3.36	.69	.01	.72	.68	.66	.61
13			1.56	.35	.64	4.05	.70	0.98	.72	.68	.66	.60
14			1.40	.17	.86	3.53	.65	.95	.71	.68	.66	.60
15			2.05	.13	.26	4.04	.56	.94	.71	.68	.66	.60
16			1.86	1.92	1.87	4.20	1.49	0.92	0.71	0.71	0.66	0.59
17			.42	2.30	.68	6.00	.47	.90	.71	.71	.66	.59
18			.16	.12	.71	.23	.48	.89	.71	.70	.66	.58
19			.05	.45	.93	4.25	.55	.87	.70	.69	.66	.57
20			.39	4.06	.83	.59	.44	.86	.70	.69	.66	.57
21			1.25	4.01	1.52	7.16	1.36	0.84	0.70	0.69	0.66	0.57
22			.12	2.44	.65	.41	.36	.83	.70	.69	.66	.57
23		0.69	0.99	.01	2.59	.15	2.06	.82	.70	.69	.66	.58
24		.68	.94	1.84	.47	4.71	1.72	.82	.70	.68	.66	.58
25		.68	.90	2.21	1.82	3.61	.46	.80	.70	.68	.66	.59
26		0.68	1.66	2.03	1.57	3.09	1.43	0.79	0.69	0.68	0.66	0.59
27		.69	.46	1.72	.86	2.76	2.06	.78	.69	.68	.66	.60
28		.67	.58	3.89	2.41	.50	1.57	.78	.69	.68	.66	.60
29		.69	.40	.00	.46	.46	.38	.77	.69	.67		.62
30		.68	.30	2.55	3.64	.48	.27	.77	.69	.67		.63
31		.93		.08	2.64		.20		.68	.67		.64
Mean			1.26	2.05	2.13	3.66	1.99	1.03	0.71	0.68	0.66	
Max.		0.93	2.17	4.06	3.71	7.41	4.65	1.68	0.75	0.71	0.66	0.65
Min.		0.67	0.75	1.13	1.36	1.54	1.20	0.77	0.68	0.67	0.66	0.57

WATER YEAR 1969 : Max. m. Min. m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			0.60	1.97	6.10	11	14	1.86	0.27	0.072	0.024	0.00
2			0.69	5.73	4.70	7.60	15	3.15	0.27	0.072	0.024	
3			0.63	3.36	3.74	5.55	39	5.73	0.27	0.072	0.024	
4			0.45	7.90	4.38	4.62	67	4.38	0.27	0.072	0.024	
5			0.30	3.50	3.22	6.50	45	5.82	0.24	0.072	0.024	
6			0.27	3.50	4.78	11	25	4.14	0.24	0.072	0.024	
7			2.68	8.80	40	20	16	2.04	0.24	0.072	0.024	
8			6.00	6.40	26	40	13	2.26	0.21	0.072	0.024	
9			2.20	4.14	13	40	11	1.92	0.21	0.072	0.024	
10			1.12	7.30	9.30	18	8.60	1.59	0.21	0.072	0.024	
11	Stream Gaging		1.08	7.60	12	14	7.10	1.40	0.18	0.072	0.024	
12	began on		11	5.37	11	32	5.91	1.21	0.18	0.072	0.024	
13	May 23, 1969		4.78	3.15	18	49	6.00	1.08	0.18	0.072	0.024	
14			3.50	2.03	22	36	5.55	0.94	0.15	0.072	0.024	
15			9.50	1.80	12	49	5.64	0.90	0.15	0.072	0.024	
16			7.60	8.20	7.70	54	4.22	0.81	0.15	0.15	0.024	
17			3.66	13	5.82	122	4.06	0.72	0.15	0.15	0.024	
18			1.97	10	6.10	135	4.14	0.69	0.15	0.12	0.024	
19			1.40	15	8.30	55	4.70	0.63	0.12	0.096	0.024	
20			3.43	49	7.30	65	3.82	0.60	0.12	0.096	0.024	
21			2.50	48	4.46	163	3.22	0.54	0.12	0.096	0.024	
22			1.75	15	5.55	263	3.22	0.51	0.12	0.096	0.024	
23		0.096	1.12	9.10	17	122	9.60	0.48	0.12	0.096	0.024	
24		0.072	0.90	7.40	15	69	6.20	0.48	0.12	0.072	0.024	
25		0.072	0.72	11	7.20	38	3.98	0.42	0.12	0.072	0.024	
26		0.072	5.64	9.30	4.86	26	3.74	0.39	0.096	0.072	0.024	
27		0.096	3.98	6.20	7.60	20	9.60	0.36	0.096	0.072	0.024	
28		0.048	4.94	45	14	16	4.86	0.36	0.096	0.072	0.024	
29		0.092	3.50	25	15	15	3.36	0.33	0.096	0.048	–	
30		0.072	2.80	17	39	15	2.62	0.33	0.096	0.048	–	
31		0.850		10	18		2.20		0.072	0.048	–	0.00
Total			90.71	370.75	373.11	1,522.27	357.34	46.97	5.112	2.484	0.672	0.00
Mean			3.02	12.0	12.0	50.7	11.5	1.56	0.16	0.080	0.024	
Max.		0.850	11	49	40	263	67	5.82	0.27	0.15	0.024	
Min.		0.048	0.27	1.80	3.22	4.62	2.20	0.33	0.072	0.048	0.024	
Runoff – mcm.			7.837	32.033	32.236	131.524	30.874	4.058	0.442	0.215	0.058	0.00

WATER YEAR 1969 : Max. Min. Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 22	18.00	7.49	268				

WATER YEAR 1969
PRACHIN RIVER BASIN

Khlong Luang at Ban Mai, Chon Buri (Kgt.19)

Location: Lat. 13°-23'-17" N., Long. 101°-20'-40" E., on left bank about 4 kilometers east of Khok Pho market and 16 kilometers from Amphoe Phanat Nikhom, Chon Buri.

Drainage Area: 535 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 20.12 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: Infront of Kgt. 19 station office

Elevation: + 25.780 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1965 to date

Rating Operation:

Period of Rating: 1965 to date

Rated by Float: -

Rated by Current Meter: 1965 to date

Stability of Channel Regimes: Stable, shifting adjustment is included for flow computation, and including overbank flow.

Overbank Flow Conditions: Overbank flow at elevation about 24.25 m. (M.S.L.)

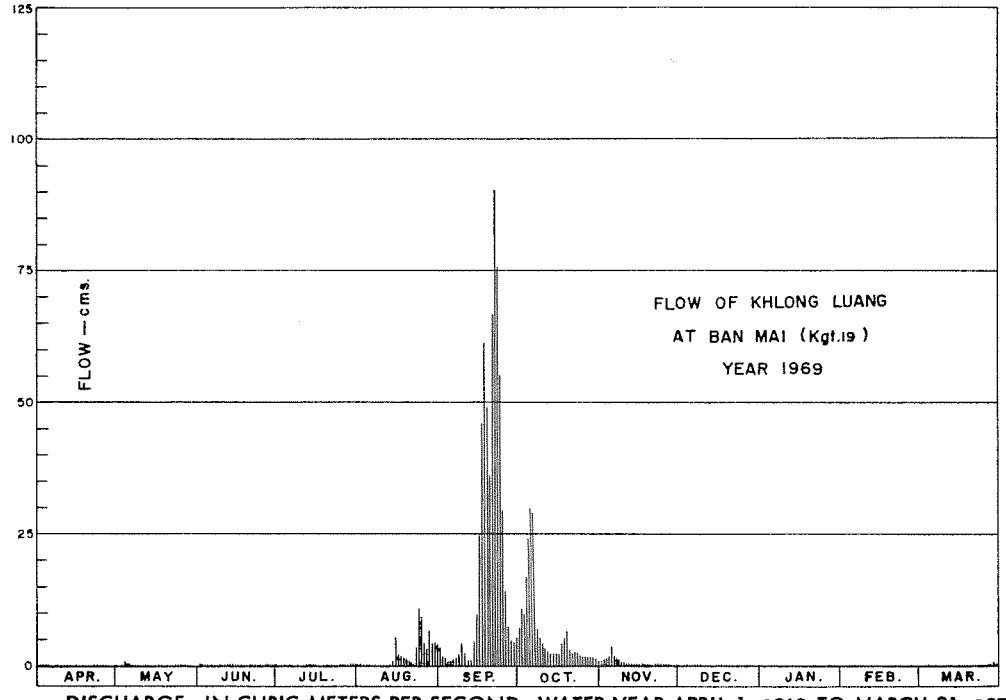
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

Remarks: Discharge record for period of no flow are omitted.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	20.58	20.62	20.86	20.69	20.86	21.99	22.67	21.22	20.69	20.61	20.54	20.60
2	.57	.63	.80	.69	.80	.58	23.35	.29	.69	.61	.53	.60
3	.57	.87	.76	.69	.76	.39	.17	.36	.70	.60	.53	.59
4	.56	21.26	.80	.68	.72	.23	24.61	.54	.70	.60	.52	.58
5	.60	.02	.80	.65	.68	.22	25.05	22.00	.68	.59	.51	.58
6	20.63	20.86	20.80	20.66	20.68	21.34	25.01	21.55	20.63	20.58	20.51	20.58
7	.69	.79	.76	.63	.66	.61	23.74	.35	.62	.57	.51	.57
8	.66	.77	.78	.64	.66	.78	22.51	.24	.76	.56	.50	.57
9	.62	.73	.80	.65	.65	22.21	.32	.17	.63	.56	.50	.57
10	.72	.68	.81	.70	.64	21.80	.04	.12	.61	.57	.49	.56
11	20.78	20.67	20.87	20.73	20.61	21.45	21.85	21.07	20.61	20.56	20.49	20.55
12	.70	.64	.97	.92	.72	.28	.71	.04	.61	.55	.49	.55
13	.69	.62	.86	.87	.80	.39	.61	.01	.61	.55	.49	.54
14	.84	.62	.91	.79	21.23	22.45	.62	20.98	.60	.55	.49	.54
15	.76	.62	.88	.75	22.54	23.46	.65	.97	.60	.56	.49	.54
16	20.70	20.62	20.81	20.72	21.66	24.92	21.63	20.96	20.60	20.59	20.48	20.53
17	.66	.61	.75	.70	.68	25.31	22.07	.93	.61	.57	.48	.53
18	.64	.61	.71	.80	.37	.56	.27	.92	.60	.57	.48	.52
19	.63	.73	.68	.76	.29	.42	.67	.87	.61	.56	.51	.51
20	.62	.78	.66	.77	.21	.17	21.81	.85	.61	.56	.63	.51
21	20.61	20.68	20.64	20.75	21.10	25.69	21.64	20.85	20.61	20.57	20.67	20.50
22	.60	.64	.63	.73	.04	.83	.74	.82	.62	.55	.64	.53
23	.59	.66	.62	.72	22.18	.68	.67	.81	.61	.56	.61	.61
24	.58	.74	.60	.74	23.50	.44	.52	.81	.61	.57	.60	.79
25	.58	.78	.65	.76	.05	24.76	.42	.82	.60	.57	.59	.69
26	20.58	20.79	20.71	20.73	22.01	23.32	21.49	20.78	20.60	20.57	20.60	20.63
27	.57	.65	.86	.77	21.96	22.59	.45	.77	.60	.57	.61	.68
28	.61	.64	.83	.85	22.67	.29	.49	.72	.61	.56	.60	.93
29	.66	.69	.78	.91	.15	.25	.44	.73	.58	.56		21.11
30	.63	.74	.76	.94	.31	.47	.32	.77	.61	.55		.02
31		.84		.95	.24		.22		.61	.54		20.90
Mean	20.64	20.73	20.77	20.75	21.43	23.10	22.25	21.04	20.63	20.57	20.51	20.62
Max.	20.84	21.26	20.97	20.95	23.50	25.83	25.05	22.00	20.76	20.61	20.67	21.11
Min.	20.56	20.61	20.60	20.63	20.61	21.22	21.22	20.72	20.58	20.54	20.48	20.50

WATER YEAR 1969 : Max. 25.83 m. Min. 20.48 m.



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.040	0.060	0.21	0.095	0.20	3.48	6.85	0.98	0.070	0.055	0.020	0.05
2	0.035	0.065	0.15	0.095	0.14	1.88	11	1.19	0.070	0.055	0.015	0.05
3	0.035	0.22	0.13	0.095	0.12	1.30	9.56	1.40	0.075	0.050	0.015	0.045
4	0.030	0.98	0.15	0.090	0.095	0.83	*20	1.94	0.075	0.050	0.015	0.040
5	0.050	0.44	0.15	0.075	0.075	0.80	*30	3.76	0.065	0.045	0.005	0.040
6	0.065	0.21	0.15	0.080	0.065	1.16	*29	1.97	0.065	0.040	0.005	0.040
7	0.095	0.14	0.13	0.065	0.055	1.97	13	1.36	0.060	0.040		0.035
8	0.080	0.13	0.14	0.070	0.050	2.64	6.05	1.04	0.13	0.035		0.035
9	0.060	0.11	0.15	0.075	0.040	4.30	5.10	0.68	0.065	0.030		0.035
10	0.11	0.090	0.16	0.10	0.035	2.72	3.92	0.58	0.055	0.035		0.035
11	0.14	0.085	0.22	0.11	0.015	1.49	3.16	0.48	0.055	0.030		0.025
12	0.10	0.070	0.35	0.28	0.065	0.98	2.60	0.42	0.055	0.025		0.025
13	0.095	0.060	0.21	0.22	0.10	1.30	2.20	0.37	0.055	0.025		0.020
14	0.19	0.060	0.26	0.14	0.66	5.66	2.24	0.32	0.050	0.025		0.020
15	0.13	0.060	0.23	0.12	5.42	11	2.36	0.31	0.050	0.030		0.020
16	0.10	0.060	0.16	0.11	1.91	*27	2.28	0.29	0.050	0.045		0.015
17	0.080	0.055	0.12	0.10	2.00	*45	4.04	0.29	0.055	0.035		0.015
18	0.070	0.055	0.10	0.15	1.16	*61	4.85	0.28	0.055	0.035		0.010
19	0.065	0.11	0.090	0.13	0.98	*47	6.85	0.22	0.055	0.030	0.005	0.005
20	0.060	0.14	0.080	0.13	0.78	*34	3.00	0.20	0.055	0.030	0.065	0.005
21	0.055	0.090	0.070	0.12	0.56	*74	2.32	0.20	0.055	0.035	0.085	0.000
22	0.050	0.070	0.065	0.11	0.44	*90	2.72	0.17	0.060	0.025	0.070	0.015
23	0.045	0.080	0.060	0.11	4.24	*72	2.44	0.16	0.055	0.030	0.055	0.055
24	0.040	0.12	0.050	0.12	11	*49	1.88	0.14	0.055	0.035	0.05	0.145
25	0.040	0.14	0.075	0.13	8.48	*22	1.58	0.14	0.050	0.035	0.045	0.15
26	0.040	0.14	0.10	0.11	3.56	10	1.79	0.12	0.050	0.035	0.05	0.065
27	0.035	0.075	0.21	0.13	3.36	6.10	1.67	0.12	0.050	0.035	0.055	0.090
28	0.055	0.070	0.18	0.20	6.55	4.64	1.79	0.095	0.055	0.030	0.05	0.295
29	0.080	0.095	0.14	0.26	4.12	4.48	1.64	0.090	0.040	0.030		0.62
30	0.065	0.12	0.13	0.31	4.76	5.46	1.27	0.11	0.055	0.025		0.44
31		0.19		0.32	4.48		0.98		0.055	0.020		0.25
Total	2.135	4.390	4.420	4.250	65.510	593.19	188.14	19.425	1.840	1.070	0.605	2.685
Mean	0.071	0.141	0.147	0.137	2.11	19.8	6.07	0.65	0.059	0.034	0.021	0.086
Max.	0.19	0.98	0.35	0.32	11	90	30	3.76	0.13	0.055	0.085	0.62
Min.	0.030	0.055	0.050	0.065	0.015	0.80	0.98	0.090	0.040	0.020	0.00	0.00
Runoff – mcm.	0.184	0.379	0.382	0.367	5.660	51.252	16.255	1.678	0.159	0.092	0.052	0.231

WATER YEAR 1969 : Max. 90 Min. 0.00 Mean 2.43 Annual Runoff 76.693 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 22	06.00	25.89	96				

WATER YEAR 1969
RAYONG RIVER BASIN

Khlong Mae Nam Khu at Ban Mae Nam Khu, Rayong (Z_3)

Location: Lat. 12°-53'-35" N., Long. 101°-15'-29" E., on left bank at Ban Mae Nam Khu, Tambon Tasit, Amphoe Ban Khai, Rayong.

Drainage Area: 291 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 25.594 m. (M.S.L.)

Bench Mark: B.M. No. 1577 of Army Survey Department.

Location: At the rain tree near staff gage.

Elevation: -

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1967-1972

Rating Operation:

Period of Rating: 1967-1972

Rated by Float: -

Rated by Current Meter: 1967-1972

Stability of Channel Regimes: Rather stable, shifting adjustment is included for flow computation.

Overbank Flow Conditions: No overbank flow.

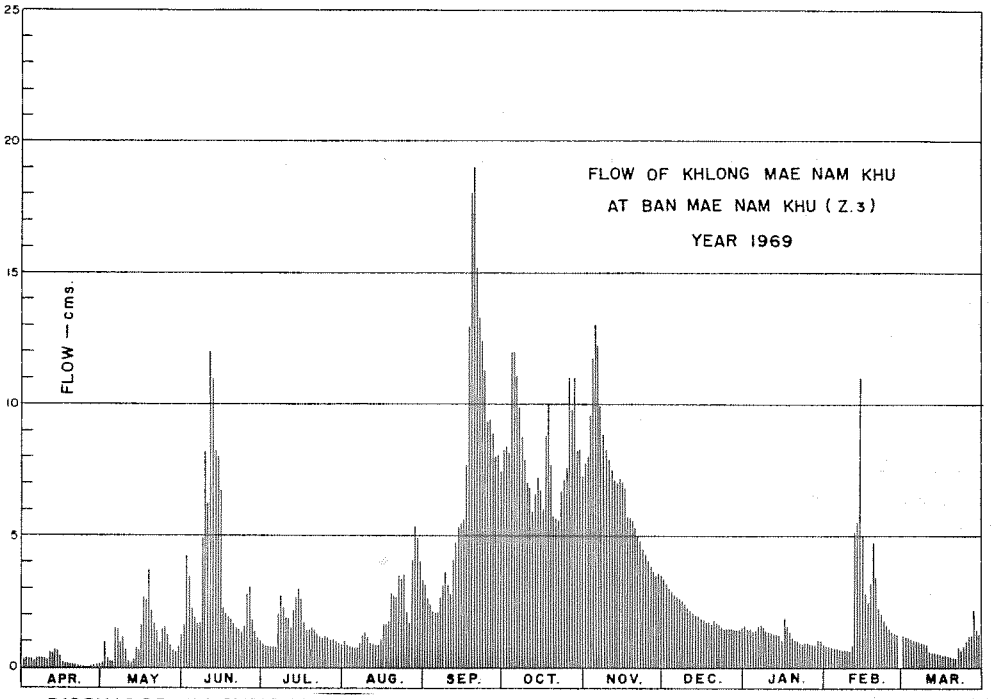
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	25.80	25.75	26.34	26.08	26.02	26.57	27.55	27.47	26.64	26.09	25.95	26.06
2	.81	26.05	.73	.06	25.99	.46	.56	.49	.60	.07	.94	.05
3	.80	25.83	.57	.04	.98	.39	.52	.66	.57	.06	.92	.04
4	.78	.78	.31	.04	.96	.34	.80	.77	.54	.04	.91	.02
5	.78	.76	.22	.03	.94	.32	.79	.90	.51	.04	.90	.00
6	25.82	26.18	26.15	26.02	25.94	26.34	27.72	27.84	26.49	26.09	25.89	26.00
7	.82	.17	.15	.28	26.00	.50	.64	.70	.47	.10	.90	25.99
8	.81	.00	.94	.48	.09	.59	.54	.63	.45	.08	.88	.98
9	.81	.07	27.42	.35	.13	.67	.43	.58	.43	.04	.87	.97
10	.79	25.90	26.99	.25	.05	.54	.36	.53	.39	.03	.87	.94
11	25.89	25.86	26.71	26.24	26.00	26.45	27.32	27.48	26.36	26.03	26.02	25.94
12	.86	.82	.54	.15	25.98	.80	.28	.44	.34	.01	27.00	.94
13	.94	.93	.44	.37	.97	.73	.30	.40	.33	.01	.19	.92
14	.92	26.08	.39	.48	.97	.84	.39	.36	.32	25.99	.68	.92
15	.85	25.93	.32	.52	26.03	.87	.30	.33	.29	.99	26.82	.91
16	25.80	26.35	26.26	26.38	26.20	26.96	27.28	27.29	26.28	26.24	26.48	25.90
17	.78	.60	.21	.24	.20	27.27	.58	.26	.26	.17	.38	.89
18	.76	.54	.18	.19	.23	.58	.68	.21	.26	.12	.59	.88
19	.76	.82	.16	.23	.50	.96	.45	.17	.24	.04	.89	.86
20	.75	.44	.13	.24	.41	.98	.29	.12	.22	.01	.47	.86
21	25.74	26.35	26.10	26.21	26.40	27.83	27.20	27.06	26.21	26.00	26.32	25.86
22	.73	.27	.09	.15	.58	.79	.15	.01	.19	25.98	.26	.95
23	.72	.12	.06	.13	.56	.77	.31	26.95	.17	.97	.21	.91
24	.70	.29	.06	.12	.59	.68	.40	.89	.15	.98	.17	.97
25	.70	.33	.54	.14	.44	.58	.47	.84	.15	.98	.14	26.03
26	25.70	26.20	26.64	26.11	26.33	27.49	27.72	26.81	26.14	25.97	26.11	26.08
27	.69	.08	.36	.09	.61	.43	.65	.76	.14	.95	.09	.08
28	.70	.03	.23	.10	.93	.36	.75	.73	.13	.96	.08	.32
29	.73	.01	.15	.09	.88	.37	.52	.70	.13	26.02		.13
30	.73	.11	.11	.07	.80	.59	.53	.67	.13	.00		.09
31		.23		.04	.61		.38		.10	25.97		.04
Mean	25.78	26.09	26.38	26.19	26.27	27.06	27.48	27.27	26.31	26.03	26.28	26.07
Max.	25.94	26.82	27.42	26.52	26.93	27.98	27.80	27.90	26.64	26.24	27.68	26.32
Min.	25.69	26.01	26.11	26.02	25.94	26.32	27.15	26.67	26.10	25.95	25.87	25.86

WATER YEAR 1969 : Max. 27.98 m. Min. 25.69 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.36	0.20	1.63	0.94	1.01	3.10	8.30	7.79	3.30	1.58	0.33	1.21
2	0.38	0.97	4.21	0.87	0.90	2.66	8.40	7.93	3.10	1.49	0.80	1.18
3	0.36	0.38	3.45	0.86	0.87	2.38	8.00	9.84	2.98	1.45	0.76	1.15
4	0.30	0.26	2.34	0.80	0.80	2.18	12	12	2.86	1.39	0.73	1.08
5	0.30	0.22	1.98	0.78	0.76	2.10	12	13	2.74	1.39	0.71	1.01
6	0.41	1.54	1.67	0.76	0.76	2.18	11	12	2.66	1.58	0.69	1.01
7	0.41	1.49	1.67	1.98	0.94	2.82	9.84	9.56	2.58	1.63	0.71	0.97
8	0.38	0.94	5.20	2.78	1.24	3.20	8.60	8.70	2.50	1.54	0.67	0.94
9	0.38	1.18	8.20	2.26	1.36	3.60	7.65	8.20	2.42	1.39	0.65	0.90
10	0.33	0.67	5.59	1.85	1.11	2.98	7.06	7.79	2.26	1.36	0.65	0.80
11	0.60	0.22	12	1.81	0.94	2.62	6.82	7.44	2.14	1.36	1.08	0.58
12	0.52	0.14	11	1.42	0.90	4.21	6.68	7.18	2.06	1.30	5.30	0.58
13	0.71	0.38	8.20	2.34	0.83	4.86	6.70	6.94	2.02	1.30	5.65	0.52
14	0.67	0.76	8.10	2.78	0.83	5.40	7.24	7.19	1.98	1.24	11	0.52
15	0.33	0.65	7.58	2.04	1.04	5.51	6.70	7.00	1.85	0.97	4.43	0.50
16	0.22	1.67	2.22	2.38	1.63	5.68	5.68	6.76	1.81	1.90	2.86	0.47
17	0.18	2.70	2.02	1.54	1.63	8.10	8.80	5.68	1.72	1.58	2.46	0.44
18	0.14	2.46	1.90	1.36	1.76	13	10	5.63	1.72	1.39	3.35	0.41
19	0.14	3.70	1.81	1.49	2.86	18	7.65	5.59	1.63	1.15	4.76	0.36
20	0.12	1.90	1.67	1.54	2.74	19	5.69	5.30	1.81	1.04	2.82	0.36
21	0.10	1.67	1.54	1.42	2.70	14	5.80	5.00	1.76	1.01	2.22	0.36
22	0.08	1.36	1.49	1.24	3.50	13	5.55	4.76	1.67	0.94	1.98	0.78
23	0.06	0.87	1.39	1.18	3.40	12	6.76	4.48	1.58	0.90	1.76	0.69
24	0.02	1.42	1.39	1.15	3.55	11	7.30	4.21	1.49	0.94	1.58	0.83
25	0.02	1.58	2.70	1.21	2.14	9.28	7.79	3.98	1.49	0.94	1.49	1.04
26	0.02	1.15	3.10	1.11	1.67	9.42	11	3.84	1.45	0.90	1.36	1.21
27	0.08	0.76	1.98	1.04	3.84	8.70	9.70	3.60	1.45	0.83	1.30	1.21
28	0.10	0.65	1.42	1.08	5.35	8.00	11	3.45	1.42	0.87	1.27	2.14
29	0.16	0.60	1.18	1.04	5.10	8.10	8.20	3.60	1.42	1.08		1.36
30	0.16	0.83	1.04	0.97	4.21	7.37	8.30	3.45	1.42	1.01		1.24
31		1.24		0.87	3.30		7.18		1.63	0.90		1.08
Total	8.04	34.56	109.67	45.73	63.67	214.45	252.19	201.88	62.92	38.35	63.87	26.93
Mean	0.268	1.11	3.65	1.47	2.05	7.15	8.13	6.73	2.03	1.24	2.28	0.87
Max.	0.71	3.70	12	2.94	5.35	19	12	13	3.30	1.90	11	2.14
Min.	0.02	0.20	1.04	0.76	0.76	2.10	5.55	3.45	1.42	0.83	0.65	0.36
Runoff - MCM.	0.695	2.986	9.475	3.951	5.501	18.528	21.789	17.442	5.436	3.313	5.518	2.326

WATER YEAR 1969 : Max. 0.02 Min. 2.07 Mean 3.07 Annual Runoff 96.963 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 20	06.00	28.11	24				

WATER YEAR 1969
RAYONG RIVER BASIN

Khlong Nong Pla Lai at Ban Nong Mapring, Rayong (Z_4)

Location: Lat. 12°-54'-40" N., Long. 101°-17'-37" E., on left bank at Ban Nong Mapring, Amphoe Ban Khai, Rayong.

Drainage Area: 429 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.B.)

Bench Mark: B.M. - H.S.

Location: Near the gage site

Elevation: + 5.270 m. (A.B.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1967 to date

Rated by Float: -

Rated by Current Meter: 1967 to date

Stability of Channel Regimes: Unstable, shifting adjustment is included for flow computation.

Overbank Flow Conditions: No overbank flow.

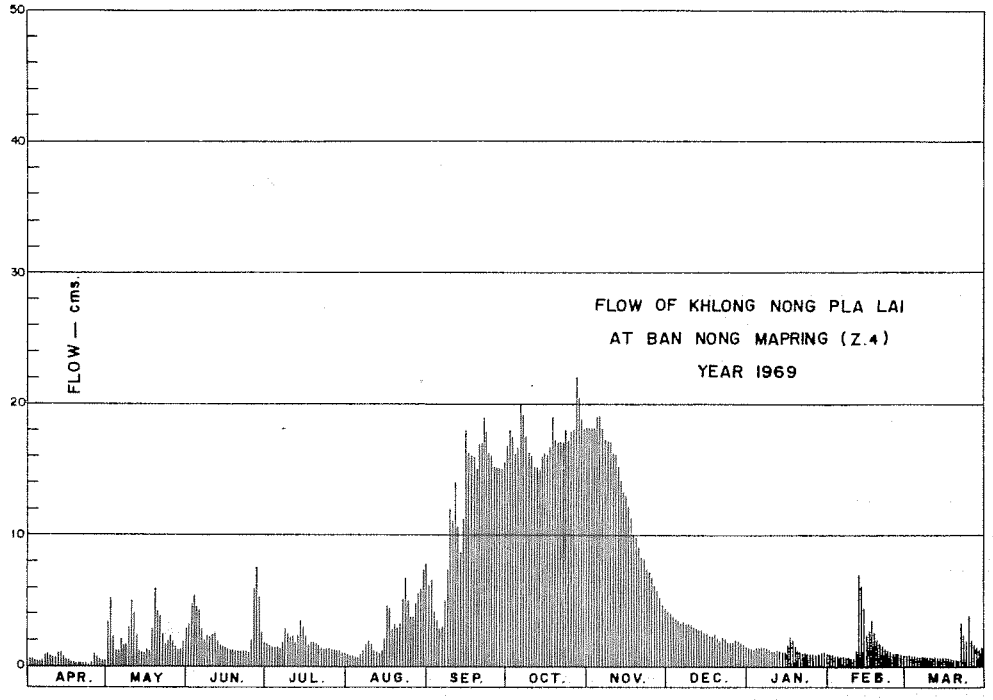
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.25	1.34	0.98	0.60	0.39	1.39	2.82	2.87	1.33	0.51	0.44	0.39
2	.22	.43	1.29	.54	.38	.50	.85	.86	.31	.61	.41	.38
3	.19	0.75	.41	.50	.36	.09	.80	.87	.24	.59	.39	.35
4	.17	.48	.25	.47	.35	0.95	.84	.91	.22	.66	.38	.34
5	.15	.44	.23	.53	.34	.91	.94	.91	.17	.61	.37	.33
6	0.23	0.73	0.78	0.46	0.38	0.90	3.17	2.84	1.15	0.63	0.36	0.32
7	.44	.56	.68	.66	.54	1.21	.09	.79	.14	.65	.36	.31
8	.36	.64	.81	.88	.67	.71	2.89	.76	.10	.60	.34	.31
9	.34	1.22	.75	.78	.72	2.31	.82	.72	.08	.59	.34	.31
10	.30	.45	.79	.67	.60	.17	.78	.69	.04	.57	.34	.30
11	0.31	1.21	0.85	0.72	0.51	2.44	2.75	6.67	1.03	0.55	0.52	0.30
12	.39	0.71	.64	.58	.45	.29	.71	.59	0.98	.55	1.64	.29
13	.42	.51	.60	.76	.44	.02	.68	.48	.96	.55	.52	.28
14	.27	.43	.58	.98	.45	.44	.72	.40	.96	.54	.16	.26
15	.23	.43	.52	.80	.73	3.05	.79	.35	.91	.53	0.78	.25
16	0.19	0.49	0.46	0.65	1.25	2.91	2.75	2.32	0.89	0.73	0.92	0.23
17	.16	.45	.46	.58	.20	.85	.84	.25	.86	.87	1.08	.22
18	.14	.88	.45	.56	0.85	.85	3.02	.21	.85	.81	0.83	.21
19	.12	1.51	.44	.64	.96	.82	2.88	.14	.89	.61	.68	.21
20	.10	.18	.43	.64	.88	.96	.85	.03	.79	.56	.61	.21
21	0.10	1.12	0.47	0.58	0.95	3.01	2.80	1.93	0.76	0.55	0.56	0.22
22	.11	0.70	.42	.53	1.34	.11	.80	.87	.84	.52	.51	.90
23	.09	.57	.36	.50	.59	.01	.91	.76	.78	.52	.48	.53
24	.08	.73	.36	.51	.28	2.91	.82	.70	.73	.49	.49	.60
25	.12	.79	.76	.53	.05	.85	.87	.64	.72	.49	.44	.94
26	0.57	0.63	1.56	0.48	1.05	2.81	2.87	1.58	0.72	0.48	0.41	0.62
27	.29	.52	.75	.46	.28	.77	3.19	.51	.78	.46	.40	.61
28	.20	.45	.17	.47	.39	.74	.04	.43	.76	.46	.39	.52
29	.19	.50	0.71	.50	.43	.74	2.87	.42	.71	.47		.44
30	.17	.72	.61	.47	.71	.75	.87	.37	.68	.47		.46
31		.93		.42	.72		.92		.66	.45		.41
Mean	0.20	0.79	0.78	0.59	0.87	2.31	2.86	2.26	0.93	0.57	0.61	0.38
Max.	0.57	1.51	1.75	0.98	1.72	3.11	3.19	2.91	1.33	0.87	1.64	0.90
Min.	0.08	0.43	0.36	0.42	0.34	0.91	2.68	1.37	0.66	0.45	0.34	0.21

WATER YEAR 1969 : Max. 3.19 m. Min. 0.08 m.

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DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.62	4.74	3.21	1.73	0.93	6.01	17	18	4.25	1.44	1.02	0.96
2	0.55	5.24	4.74	1.60	0.90	6.68	18	18	4.15	1.44	0.93	0.99
3	0.48	2.05	5.41	1.50	0.84	4.30	17	18	3.80	1.38	0.87	0.84
4	0.44	1.14	4.52	1.41	0.81	3.61	16	18	3.70	1.53	0.90	0.81
5	0.40	1.02	4.41	1.59	0.78	2.89	17	19	3.48	1.44	0.87	0.78
6	0.57	2.13	2.37	1.38	0.90	3.16	20	18	3.39	1.50	0.84	0.75
7	1.17	1.50	1.97	2.09	1.38	4.74	19	17	3.57	1.56	0.84	0.72
8	0.93	1.77	2.49	2.98	1.81	7.76	17	17	3.39	1.41	0.78	0.72
9	0.87	3.95	2.25	2.57	2.01	12	16	17	3.30	1.38	0.78	0.72
10	0.75	5.18	2.41	2.13	1.97	11	16	16	3.12	1.29	0.78	0.70
11	0.78	3.90	2.65	2.45	1.29	14	15	16	3.07	1.26	1.32	0.70
12	1.02	1.97	1.81	1.89	1.11	11	15	15	2.85	1.26	7.00	0.67
13	1.11	1.14	1.65	2.61	1.08	8.74	15	14	2.89	1.20	6.25	0.65
14	0.67	1.14	1.59	3.57	1.11	12	16	13	2.89	1.17	4.20	0.60
15	0.57	1.14	1.41	2.77	2.05	18	16	13	2.69	1.14	2.49	0.57
16	0.48	1.32	1.23	2.17	4.74	16	16	12	2.61	1.77	3.07	0.52
17	0.42	1.20	1.23	1.56	4.47	16	17	11	2.49	2.33	3.66	0.50
18	0.38	2.77	1.20	1.85	2.81	16	19	10	2.45	2.09	2.57	0.48
19	0.34	6.01	1.17	1.85	3.30	15	17	9.90	2.61	1.44	1.97	0.48
20	0.30	4.15	1.14	1.85	3.03	17	17	9.09	2.21	1.23	1.69	0.48
21	0.20	3.85	1.26	1.62	3.34	17	17	8.39	2.09	1.26	1.53	0.50
22	0.22	2.09	1.11	1.47	5.35	19	17	8.32	2.41	1.17	1.38	3.48
23	0.18	1.56	1.17	1.38	6.87	17	18	7.55	2.17	1.17	1.29	1.93
24	0.16	2.17	1.17	1.41	5.02	16	17	7.13	1.97	1.08	1.26	1.97
25	0.34	2.41	2.61	1.47	3.80	16	18	6.74	1.93	1.08	1.17	3.39
26	1.56	1.77	6.81	1.29	3.80	15	18	6.19	2.01	1.05	1.02	1.97
27	0.72	1.41	7.69	1.29	5.13	15	22	5.77	2.17	0.99	0.99	1.62
28	0.50	1.20	4.20	1.26	5.77	15	20	5.29	2.09	1.08	0.96	1.35
29	0.48	1.35	2.17	1.26	6.01	15	18	4.74	1.89	1.11		1.11
30	0.44	2.13	1.77	1.17	7.76	16	18	4.47	1.77	1.11		1.17
31		2.98		1.02	7.90		18		1.69	1.05		1.02
Total	17.65	76.38	78.82	56.19	98.07	366.89	537	364.58	85.10	41.41	52.43	33.15
Mean	0.59	2.46	2.62	1.81	3.16	12.2	17.3	12.1	2.74	1.33	1.87	1.07
Max.	1.56	6.01	7.69	3.57	7.90	19	22	19	4.25	2.33	7.00	3.48
Min.	0.16	1.02	1.11	1.02	0.78	2.89	15	4.47	1.69	0.99	0.78	0.48
Runoff - mcm.	1.524	6.599	6.810	4.854	8.473	31.699	46.396	31.499	7.352	3.577	4.529	2.864

WATER YEAR 1969 : Max. 22 Min. 0.16 Mean 4.95 Annual Runoff 156.182 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 27	18.00	3.31	23				

WATER YEAR 1969
RAYONG RIVER BASIN

Khlong Prasae at Ban Yang Ngam, Rayong (Z_5)

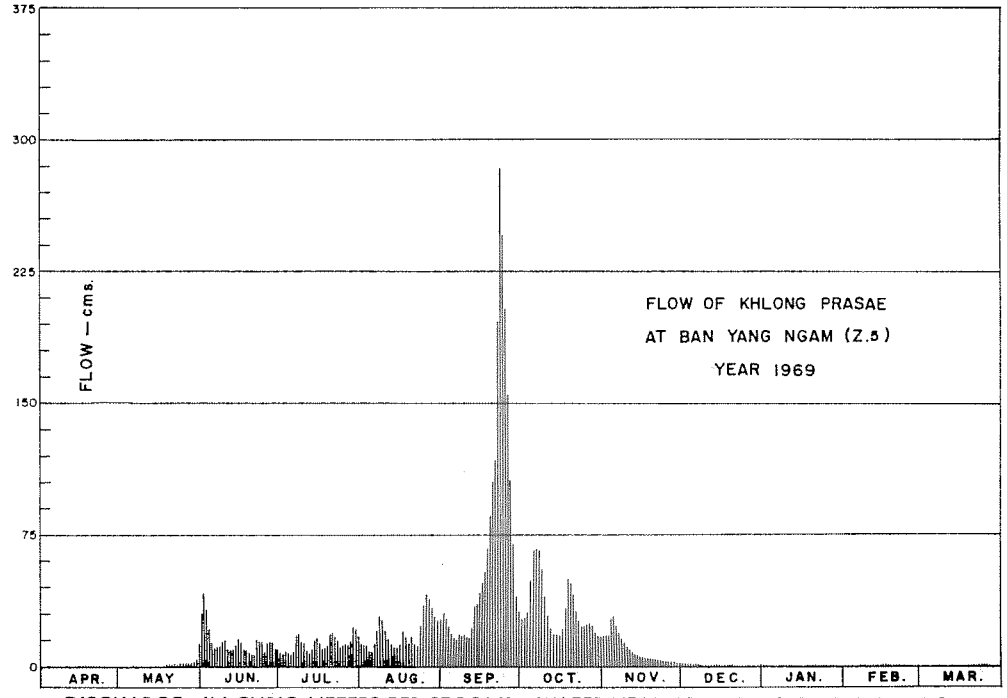
Location:	Lat. 12°-53'-03" N., Long. 101°-35'-58" E., on left bank at Ban Yang Ngam, Amphoe Klaeng, Rayong.
Drainage Area:	1,164 sq.km.
Type of Gage:	Water-stage recorder
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	B.M. - H.S.
Location:	Infront of Z5 station office
Elevation:	+ 7.595 m. (A.D.)
Gage Reading Frequency:	Recording
Basis of Mean Daily Gage Height:	Arithmetic mean of 24 hourly readings.
Period of Available Gage Records:	1967 to date
Rating Operation:	
Period of Rating:	1967 to date
Rated by Float:	-
Rated by Current Meter:	1967 to date
Stability of Channel Regimes:	Stable, shifting adjustment is included for flow computation.
Overbank Flow Conditions:	No overbank flow.
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.62	0.61	4.64	1.99	2.57	4.06	3.90	3.09	1.33	0.81	0.72	0.72
2	.61	.60	.75	.92	.62	3.86	4.02	.01	.30	.81	.72	.71
3	.61	.60	3.94	2.11	.47	.51	.20	.13	.27	.81	.72	.71
4	.61	.61	.19	.00	.23	.02	.87	.65	.25	.82	.71	.70
5	.60	.60	2.68	1.85	.34	2.92	5.83	.73	.23	.82	.70	.70
6	0.60	0.60	2.34	2.13	2.90	3.06	5.94	3.41	1.20	0.81	0.70	0.69
7	.60	.61	.63	.89	3.64	.34	.94	.06	.19	.82	.70	.68
8	.59	.68	.66	3.25	.96	.34	.79	2.84	.17	.82	.69	.68
9	.60	.69	.95	2.81	.62	.46	.25	.63	.16	.81	.69	.68
10	.59	.66	.88	.88	.26	.30	4.53	.47	.13	.80	.69	.67
11	0.61	0.65	2.48	2.44	2.98	3.34	3.89	2.35	1.13	0.80	0.68	0.66
12	.60	.71	.42	.19	.77	.97	.40	.25	.10	0.80	.69	.66
13	.60	.75	.53	.65	.61	4.54	.13	.16	.10	.80	.70	.66
14	.60	.76	.73	3.15	.56	.65	.00	.09	.08	.80	.77	.65
15	.59	.77	.81	2.93	.42	5.06	2.95	.03	.06	.79	.98	.65
16	0.58	0.77	2.56	2.59	3.10	5.34	3.02	1.97	1.04	0.82	1.08	0.64
17	.58	.72	.23	.36	.18	.63	.61	.92	.03	.81	.04	.64
18	.58	1.15	.23	.50	2.86	6.12	4.46	.86	.01	.80	0.97	.64
19	.58	.05	.11	.71	.66	.65	.91	.82	.00	.79	.89	.63
20	.58	0.97	1.95	3.25	3.22	.67	.76	.78	0.99	.80	.84	.63
21	0.57	0.94	1.93	3.18	2.78	6.85	4.25	1.73	0.96	0.80	0.82	0.62
22	.56	.95	.83	2.81	.54	7.59	3.73	.67	.95	.80	.81	.62
23	.56	1.11	.68	.57	3.13	.76	.40	.62	.94	.80	.79	.65
24	.56	.36	.73	.39	4.22	.59	.27	.59	.93	.79	.78	.65
25	.56	.23	2.01	.57	.57	.25	.41	.54	.92	.78	.76	.70
26	0.56	1.21	2.60	2.61	4.65	6.77	3.48	1.50	0.91	0.76	0.74	0.77
27	.56	.27	.77	.46	.43	.17	.48	.46	.91	.76	.74	.76
28	.56	.42	.82	3.28	3.95	5.41	.43	.42	.90	.75	.72	.77
29	.57	.46	.48	.47	.75	4.67	.14	.39	.88	.74		.78
30	.57	.65	.20	.16	.62	.19	.06	.38	.88	.73		.80
31		2.63		2.90	4.30		2.94		.87	.71		.78
Mean	0.58	0.96	2.62	2.64	3.22	5.00	4.03	2.22	1.06	0.79	0.78	0.69
Max.	0.62	2.63	4.75	3.47	4.65	7.76	5.94	3.73	1.33	0.82	1.08	0.80
Min.	0.56	0.60	1.68	1.85	2.23	2.92	2.94	1.38	0.87	0.71	0.68	0.62

WATER YEAR 1969 : Max. 7.76 m. Min. 0.56 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.12	0.10	41	7.60	12	31	26	19	2.16	0.52	0.34	0.50
2	0.10	0.08	43	7.04	12	28	28	18	2.04	0.52	0.34	0.48
3	0.10	0.08	29	8.70	11	24	31	19	1.92	0.52	0.34	0.48
4	0.10	0.10	18	7.68	8.30	18	43	28	1.84	0.54	0.32	0.46
5	0.08	0.08	12	6.48	9.40	16	64	29	1.77	0.54	0.30	0.46
6	0.08	0.08	8.60	8.90	16	15	67	24	1.62	0.52	0.30	0.44
7	0.08	0.10	12	18	25	19	67	19	1.59	0.54	0.46	0.42
8	0.06	0.24	12	19	29	17	63	16	1.53	0.54	0.44	0.42
9	0.08	0.26	15	14	24	18	51	14	1.50	0.52	0.44	0.42
10	0.06	0.20	15	13	19	16	36	12	1.41	0.50	0.44	0.40
11	0.10	0.18	10	8.40	15	17	27	10	1.41	0.46	0.42	0.38
12	0.08	0.28	9.40	6.32	13	25	21	8.90	1.14	0.46	0.44	0.38
13	0.08	0.38	10	10	11	34	18	7.84	1.14	0.46	0.46	0.38
14	0.08	0.40	13	16	11	36	18	7.20	1.08	0.46	0.60	0.36
15	0.06	0.42	16	16	11	44	18	6.56	1.02	0.44	1.02	0.36
16	0.04	0.42	13	12	19	49	18	5.92	0.96	0.50	1.32	0.34
17	0.04	0.32	9.10	9.60	20	56	26	5.48	0.93	0.48	1.20	0.34
18	0.04	1.47	9.10	11	16	68	41	5.12	0.87	0.46	0.99	0.34
19	0.04	1.17	7.92	13	13	89	50	4.88	0.84	0.48	0.75	0.32
20	0.04	0.93	6.64	20	20	108	47	4.64	0.81	0.50	0.60	0.32
21	0.02	0.84	6.48	19	13	122	37	4.34	0.72	0.50	0.56	0.30
22	0.00	0.87	16	15	10	214	28	4.10	0.69	0.50	0.54	0.30
23	0.00	1.35	14	12	17	283	24	3.80	0.66	0.50	0.50	0.36
24	0.00	2.20	15	11	33	239	22	3.62	0.63	0.48	0.48	0.36
25	0.00	1.71	7.12	13	39	180	24	3.32	0.60	0.46	0.44	0.46
26	0.00	1.65	13	13	41	126	25	3.08	0.58	0.42	0.40	0.60
27	0.00	1.84	14	12	36	75	25	2.84	0.58	0.42	0.40	0.58
28	0.00	2.44	14	22	31	54	23	2.60	0.66	0.40	0.36	0.60
29	0.02	2.60	10	23	28	39	19	2.48	0.60	0.38		0.63
30	0.02	3.74	9.60	19	26	31	18	2.36	0.60	0.36		0.69
31		12		16	37		17		0.58	0.32		0.63
Total	1.52	38.53	428.96	407.72	625.70	2,091	1,022	297.08	34.48	14.70	15.20	13.51
Mean	0.051	1.24	14.3	13.1	20.2	69.7	33.0	9.90	1.11	0.474	0.543	0.44
Max.	0.12	12	43	23	41	283	67	29	2.16	0.54	1.32	0.69
Min.	0.00	0.08	6.48	6.32	8.30	15	17	2.36	0.58	0.32	0.30	0.30
Runoff - mcm.	0.131	3.329	37.062	35.227	54.060	180.662	88.301	25.668	2.979	1.270	1.313	1.351

WATER YEAR 1969 : Max. 283 Min. 0.00 Mean 13.7 Annual Runoff 431.170 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 23	01.00	7.80	295				

WATER YEAR 1969
CHANTHABURI RIVER BASIN

Chanthaburi River at Ban Puk, Chanthaburi (Z_{13})

Location: Lat. 12°-45'-40" N., Long. 102°-18'-35" E., on left bank infront of Wat Puk, Ban Puk, Amphoe Makham, Chanthaburi.

Drainage Area: 671 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Near automatic gage building

Elevation: + 8.109 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1968 to date

Rating Operation:

Period of Rating: 1973 to date

Rated by Float: -

Rated by Current Meter: 1973 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

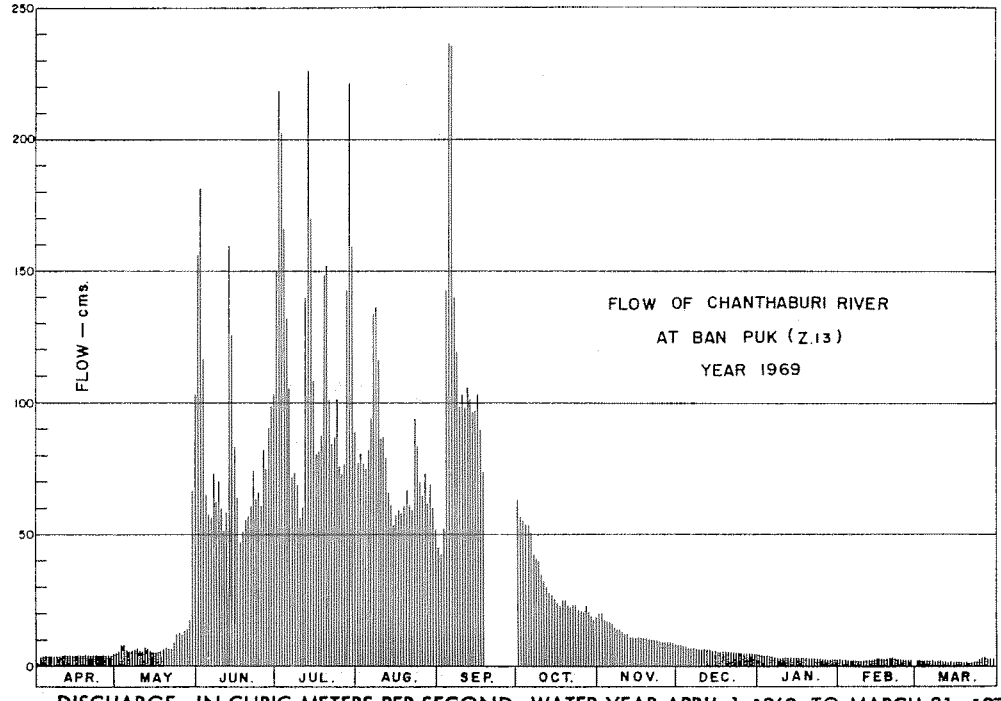
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1973. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.33	0.59	4.56	4.66	2.78	1.97	2.44	-	0.75	0.56	0.46	0.40
2	.54	.62	.95	5.63	.90	.90	.29	1.23	.74	.56	.46	.40
3	.54	.76	2.84	.17	.83	2.26	.24	.15	.74	.56	.46	.40
4	.54	.71	.44	4.09	.70	3.95	.22	.15	.74	.56	.46	.40
5	.54	.64	.29	3.86	.98	5.96	.22	.14	.73	.54	.46	.40
6	0.54	0.62	2.26	3.10	3.27	5.94	2.14	1.09	0.72	0.53	0.46	0.40
7	.54	.64	.69	2.65	.98	4.15	1.95	.05	.70	.52	.45	.38
8	.54	.66	.41	.70	4.04	3.62	.90	.04	.69	.52	.44	.38
9	.54	.67	.62	.57	3.41	.26	.85	.02	.68	.52	.44	.39
10	.55	.63	.27	.24	.02	.38	.69	.01	.67	.52	.45	.37
11	0.55	0.64	2.12	2.42	3.04	3.25	1.63	0.96	0.66	0.52	0.47	0.36
12	.55	.72	.41	4.24	2.73	.44	.56	.93	.66	.52	.46	.36
13	.55	.66	4.51	5.77	.49	.32	.51	.92	.66	.51	.46	.36
14	.55	.62	3.70	4.48	.38	.24	.48	.92	.66	.51	.49	.36
15	.55	.61	2.83	3.29	.17	.28	.43	.91	.65	.51	.50	.36
16	0.55	0.59	2.34	2.87	2.34	3.39	1.37	0.88	0.64	0.52	0.48	0.35
17	.55	.62	.03	.92	.35	.07	.35	.89	.63	.52	.48	.33
18	.55	.64	.15	3.02	.32	2.69	.40	.88	.62	.52	.50	.32
19	.55	.69	.28	4.29			.40	.88	.62	.52	.50	.32
20	.55	.71	.31	.37	2.56		.33	.86	.62	.52	.50	.31
21	0.55	0.67	2.42	3.43	2.37		1.31	0.84	0.62	0.52	0.50	0.31
22	.55	.67	.73	2.98	.36		.34	.83	.62	.52	.49	.33
23	.55	.80	.42	3.07	.20		.34	.84	.61	.50	.49	.34
24	.55	.94	.53		.89		.27	.83	.60	.50	.48	.39
25	.55	1.00	.35		.54		.26	.82	.60	.49	.47	.46
26	0.55	0.93	2.93	2.69	2.48		1.25	0.81	0.60	0.47	0.44	0.50
27	.55	1.04	.65	.85	.69		.32	.80	.59	.47	.41	.48
28	.59	0.99	3.20	4.42	.40		.23	.79	.58	.46	.40	.48
29	.56	1.21	.32	5.69	.60		.19	.77	.58	.46		.47
30	.59	2.74	.43	4.02	.30		.15	.76	.58	.48		.48
31		3.25		3.06	.13		.20		.58	.47		.48
Mean	0.54	0.88	2.80	3.67	2.71	3.45	1.59	0.90	0.65	0.51	0.47	0.38
Max.	0.59	3.25	4.95	5.77	4.04	5.96	2.44	1.23	0.75	0.56	0.50	0.50
Min.	0.33	0.59	2.03	2.24	2.13	1.90	1.15	0.76	0.58	0.46	0.40	0.31

WATER YEAR 1969 : Max. 5.96 m. Min. 0.31 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.30	4.80	162	167	76	44	63	20	8.00	4.20	2.60	2.00
2	3.80	5.40	181	218	81	41	57	20	7.80	4.20	2.60	2.00
3	3.80	8.20	79	193	78	55	55	17	7.80	4.20	2.60	2.00
4	3.80	7.20	63	138	73	131	54	17	7.80	4.20	2.60	2.00
5	3.80	5.80	57	127	84	236	54	17	7.60	3.80	2.60	2.00
6	3.80	5.40	55	89	97	235	51	16	7.40	3.60	2.60	2.00
7	3.80	5.80	73	71	133	141	43	14	7.00	3.40	2.50	1.80
8	3.80	6.20	61	73	136	115	41	14	6.80	3.40	2.40	1.80
9	3.80	6.40	70	68	104	97	40	14	6.60	3.40	2.40	1.90
10	4.00	5.60	56	55	86	103	34	13	6.40	3.40	2.50	1.70
11	4.00	5.80	50	62	87	96	32	12	6.20	3.40	2.70	1.60
12	4.00	7.40	61	146	74	106	30	12	6.20	3.40	2.60	1.60
13	4.00	6.20	159	226	65	100	28	11	6.20	3.20	2.60	1.60
14	4.00	5.40	119	158	60	96	27	11	6.20	3.20	2.90	1.60
15	4.00	5.20	78	98	52	98	26	11	6.00	3.20	3.00	1.60
16	4.00	4.80	59	80	59	103	24	11	5.80	3.20	2.80	1.50
17	4.00	5.40	46	82	59	88	23	11	5.60	3.20	2.80	1.30
18	4.00	5.80	51	86	58	73	25	11	5.40	3.20	3.00	1.20
19	4.00	6.80	56	148	62		25	11	5.40	3.20	3.00	1.20
20	4.00	7.20	57	152	67		23	10	5.40	3.20	3.00	1.10
21	4.00	6.40	62	105	60		22	9.80	5.40	3.20	3.00	1.10
22	4.00	6.40	74	84	59		23	9.60	5.40	3.20	2.90	1.30
23	4.00	9.00	62	88	94		23	9.80	5.20	3.00	2.90	1.40
24	4.00	12	66	101	81		21	9.60	5.00	3.00	2.80	1.90
25	4.00	13	59	74	67		21	9.40	5.00	2.90	2.70	2.60
26	4.00	12	82	73	64		20	9.20	5.00	2.70	2.40	3.00
27	4.00	14	71	79	73		23	9.00	4.80	2.70	2.10	2.80
28	4.80	14	94	155	61		20	8.80	4.60	2.60	2.00	2.80
29	4.20	19	100	221	69		19	8.40	4.60	2.60		2.70
30	4.80	75	105	135	57		17	8.20	4.60	2.80		2.80
31		96		88	50		19		4.60	2.70		2.80
Total	117.30	397.60	378.00	640.00	326.00	1,958	983	364.80	185.80	101.60	74.60	58.70
Mean	3.91	12.8	12.6	19.5	8.80	196	31.7	11.9	5.99	3.28	2.66	1.89
Max.	4.80	96	181	226	136	236	63	20	8.00	4.20	3.00	3.00
Min.	1.30	4.80	46	55	50	41	17	8.20	4.60	2.60	2.00	1.10
Runoff - MCM.	10.135	34.353	32.659	48.816	22.810	169.171	84.931	29.791	16.053	8.778	6.445	5.072

WATER YEAR 1969 : Max. 236 Min. 1.10 Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 5	18.00	6.21	250				

WATER YEAR 1969
MAE KLONG RIVER BASIN

Mae Klong River at Tha Muang, Kanchanaburi (K_4)

Location: Lat. 13°-57'-38" N., Long. 99°-38'-11" E., on left bank at Wat Si Lo Ratchaburmrung, Amphoe Tha Muang, Kanchanaburi.

Drainage Area: 26,441 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 12.00 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: At the foot of tamarind tree infront of Amphoe Tha Muang office.

Elevation: + 23.781 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1939-1969

Rating Operation:

Period of Rating: 1943-1947, 1962-1965

Rated byfloat:

Rated by Current Meter: 1943-1947, 1962-1965

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1962-1965. Upstream State diversions for irrigation of about 2,960 hectares. No adjustment made for virgin flow.

Remarks: Stream gaging station ending on July 31, 1969.

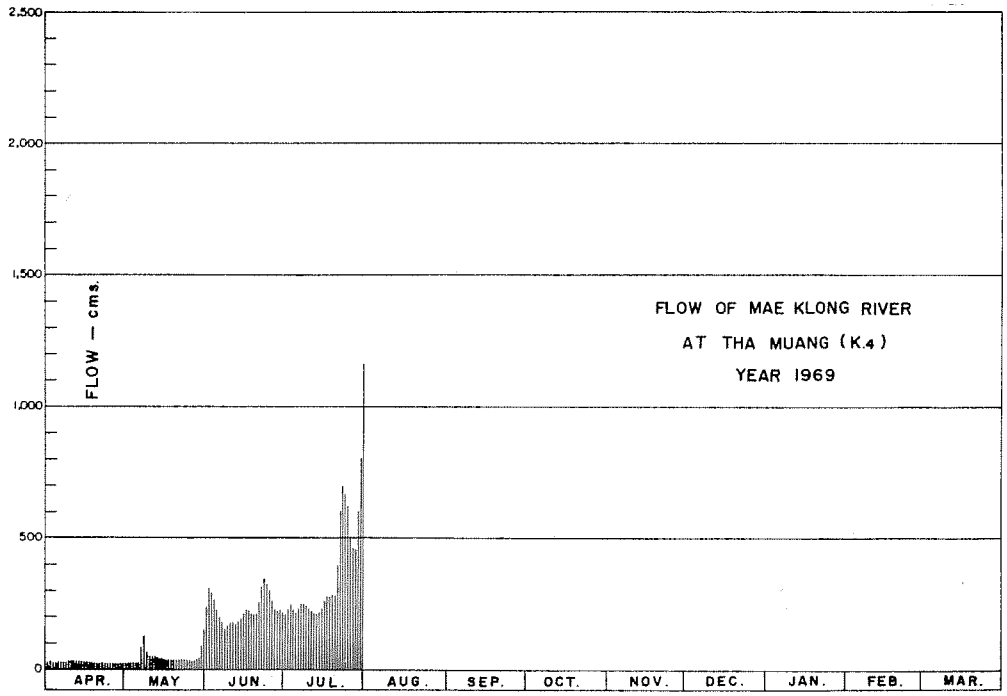
GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	12.36	12.28	14.26	13.92								
2	.36	.32	.50	14.06								
3	.35	.33	.39	.17								
4	.35	.31	.23	.06								
5	.41	.35	.04	13.96								
6	12.38	12.35	13.77	14.09								
7	.38	.99	.61	.22								
8	.35	13.38	.54	.21								
9	.44	12.86	.62	.13								
10	.44	.68	.74	.04								
11	12.41	12.64	13.74	14.00								
12	.42	.68	.68	13.99								
13	.41	.61	.73	.95								
14	.41	.53	.85	14.00								
15	.40	.52	.92	.02								
16	12.39	12.47	14.05	14.27								
17	.38	.41	.02	.36								
18	.36	.52	13.97	.32								
19	.34	.49	.90	.35								
20	.33	.49	.98	.37								
21	12.33	12.50	14.25	14.82								
22	.31	.51	.58	15.88								
23	.32	.51	.70	16.18								
24	.31	.49	.58	.03								
25	.28	.44	.42	15.86								
26	12.29	12.45	14.18	15.34								
27	.29	.44	.03	.21								
28	.33	.51	.00	.20								
29	.31	.59	.05	.99								
30	.29	13.03	13.95	16.91								
31		.66		17.65								
Mean	12.36	12.59	14.04	14.76								
Max.	12.44	13.66	14.70	17.65								
Min.	12.28	12.28	13.54	13.92								

WATER YEAR 1969 : Max. m. Min. m.

H.62

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	28	23	267	210								
2	28	25	313	232								
3	27	26	291	251								
4	27	25	261	233								
5	32	27	229	217								
6	30	27	187	237								
7	30	85	163	260								
8	27	130	153	258								
9	34	72	165	244								
10	34	54	183	229								
11	32	51	183	223								
12	33	54	174	221								
13	32	48	181	215								
14	32	41	199	223								
15	31	41	210	226								
16	30	37	231	269								
17	30	32	226	285								
18	28	41	218	278								
19	27	38	207	283								
20	26	38	220	287								
21	26	39	265	377								
22	25	40	329	620								
23	25	40	353	700								
24	25	38	329	659								
25	23	34	297	615								
26	23	35	253	490								
27	23	34	228	459								
28	26	40	223	457								
29	25	46	231	648								
30	23	89	215	916								
31		171		1,167								
Total	842	1,521	6,984	11,987								
Mean	28.1	49.1	233	387								
Max.	34	171	353	1,167								
Min.	23	23	153	210								
Runoff – mcm.	72.749	131.414	603.418	1,035.850								

WATER YEAR 1969 : Max. Min. Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge

WATER YEAR 1969
MAE KLONG RIVER BASIN

Khwae Yai at Kaeng Riang, Kanchanaburi (K_6)

Location: Lat. 14°-25'-43" N., Long. 99°-07'-04" E., on left bank about 200 meters downstream from Lan Thom cave, and about 9 kilometers upstream from Erawan Fall, Tambon Tha Kradan, Amphoe Si Sawat, Kanchanaburi.

Drainage Area: 11,010 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 54.00 m. (M.S.L.)

Bench Mark: B.M. - R.I.D. No. 2

- Location: Near the rain gage infront of K6 station office.
- Elevation: + 72.812 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1952-1972

Rating Operation:

- Period of Rating: 1952-1972
- Rated by Float: -
- Rated by Current Meter: 1952-1972

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

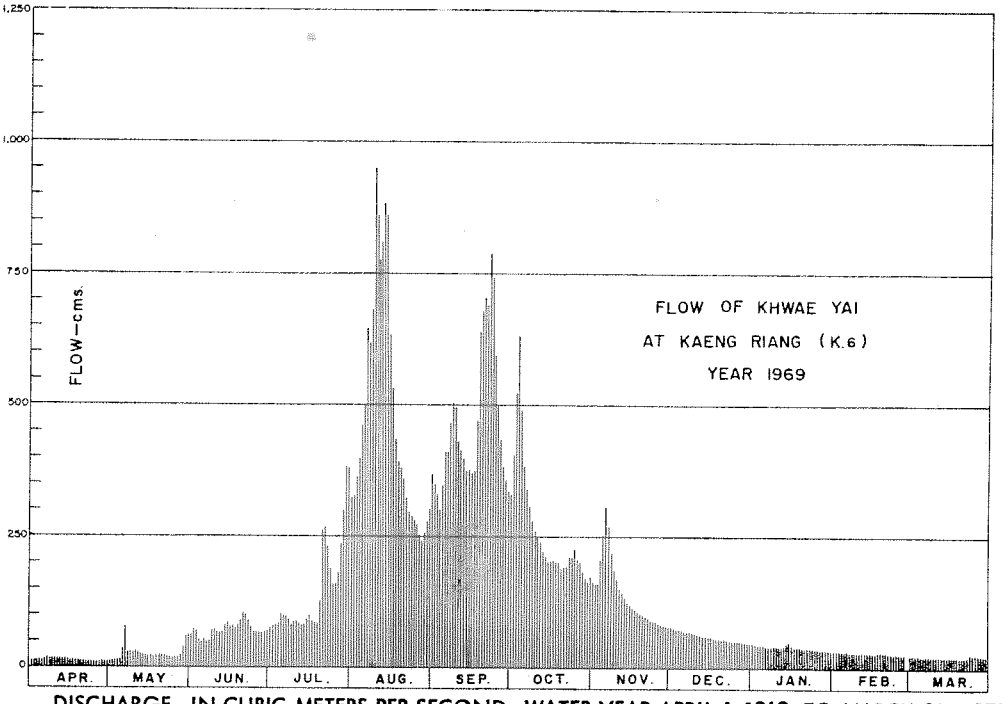
General Description: Records good. Stage-discharge relation used is defined by discharge measurements made during 1969. No State diversions above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	55.72	55.69	56.50	56.66	59.00	59.37	59.09	57.59	56.67	56.29	56.09	55.95
2	.70	.71	.62	.70	.08	.18	.73	.55	.65	.28	.09	.94
3	.72	.73	.57	.71	.41	.03	60.43	.59	.63	.27	.08	.93
4	.70	.75	.37	.73	.72	58.81	.95	58.06	.61	.26	.08	.93
5	.74	.78	.29	.96	60.08	59.25	59.93	.28	.59	.25	.08	.92
6	55.81	56.07	56.39	56.94	60.25	59.68	59.49	58.91	56.57	56.25	56.07	55.92
7	.82	.68	.31	.90	61.02	.62	.12	.71	.57	.25	.06	.91
8	.81	55.94	.33	.85	60.86	60.05	58.86	.11	.56	.24	.05	.91
9	.78	56.04	.59	.70	61.20	.27	.66	57.80	.54	.24	.05	.91
10	.76	55.99	.59	.80	62.21	.20	.50	.61	.53	.24	.05	.90
11	55.77	56.04	56.53	56.82	61.79	59.77	58.41	57.48	56.51	56.23	56.07	55.90
12	.77	.00	.52	.76	.51	.68	.28	.40	.49	.22	.08	.90
13	.75	55.95	.55	.72	62.00	.56	.14	.31	.48	.27	.07	.89
14	.75	.89	.75	.76	61.92	.35	.06	.23	.47	.34	.05	.88
15	.74	.86	.80	.88	.30	.42	57.97	.17	.46	.32	.05	.87
16	55.73	55.86	56.69	56.95	60.71	59.39	57.99	57.12	56.45	56.25	56.04	55.86
17	.71	.91	.70	.82	.73	.43	58.00	.07	.44	.23	.04	.86
18	.69	.84	.62	.78	59.73	60.05	57.97	.03	.43	.22	.05	.85
19	.68	.89	.71	.77	.55	.98	.95	56.98	.43	.21	.05	.85
20	.67	.93	.86	57.27	.45	61.19	.84	.95	.42	.20	.07	.85
21	55.66	55.90	56.99	58.51	59.17	61.30	57.88	56.91	56.41	56.19	56.04	55.84
22	.66	.86	.94	.58	58.97	.16	.89	.88	.39	.18	.01	.84
23	.65	.85	.78	.20	.82	.66	58.08	.85	.38	.17	.00	.88
24	.64	.83	.67	57.87	.73	.45	.03	.82	.36	.16	55.99	.99
25	.64	.81	.56	.55	.69	60.77	.20	.79	.35	.15	.98	.94
26	55.64	55.82	56.56	57.54	58.61	60.22	57.97	56.76	36.34	56.15	55.97	55.96
27	.64	.84	.55	.77	.42	59.80	.96	.74	.34	.14	.97	.93
28	.67	.88	.52	58.40	.34	.48	.81	.72	.33	.13	.96	.93
29	.63	56.11	.48	59.01	.54	.25	.67	.71	.32	.12		.91
30	.67	.44	.57	.50	.80	.09	.60	.69	.31	.11		.89
31		.50		.44	.97		.70		.30	.10		.87
Mean	55.71	55.95	56.60	57.38	59.70	59.94	58.45	57.34	56.46	56.21	56.04	55.90
Max.	55.82	56.68	56.99	59.50	62.21	61.66	60.95	58.91	56.67	56.29	56.09	55.99
Min.	55.63	55.69	56.29	56.66	58.34	58.81	57.60	56.69	36.30	56.10	55.96	55.84

WATER YEAR 1969 : Max. 62.21 m. Min. 55.63 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	14	13	64	77	319	367	331	163	78	47	33	25
2	13	13	74	80	329	342	417	159	76	47	33	25
3	14	14	70	81	372	323	531	163	74	46	33	24
4	13	15	54	82	416	295	630	212	73	45	33	24
5	15	17	47	102	473	351	449	236	71	44	33	24
6	18	32	55	101	500	410	383	307	70	44	32	24
7	19	78	49	97	644	410	335	283	70	44	32	24
8	18	25	50	92	612	468	301	217	69	44	31	23
9	17	30	71	80	680	504	278	184	67	44	31	23
10	16	27	71	88	950	492	260	165	66	44	31	23
11	16	30	66	90	820	423	250	152	65	43	32	23
12	16	28	66	85	751	410	236	144	63	42	33	23
13	15	25	68	82	883	392	220	135	62	46	32	22
14	15	22	84	85	859	364	212	127	62	51	31	22
15	15	21	88	95	702	374	202	121	61	50	31	21
16	14	21	79	101	583	370	204	117	60	44	30	21
17	13	23	80	90	497	375	205	112	59	43	30	21
18	13	20	74	86	417	468	202	109	58	42	31	20
19	12	22	81	86	391	636	199	104	58	42	31	20
20	12	24	93	131	377	678	188	101	58	41	32	20
21	11	23	105	261	341	702	192	98	57	40	30	20
22	11	21	101	269	315	672	193	95	55	40	29	20
23	11	20	86	227	296	787	214	92	54	39	28	22
24	11	19	78	191	286	737	208	90	53	38	27	27
25	11	18	69	159	281	594	227	87	52	37	27	25
26	11	19	69	158	272	495	202	85	51	37	26	26
27	11	20	68	181	251	428	201	83	51	37	26	24
28	12	22	66	249	242	381	185	82	50	36	26	24
29	10	35	62	320	264	351	171	81	50	35		23
30	12	59	70	384	294	331	164	79	49	35		22
31		64		376	315		174		48	34		21
Total	409	820	2,158	4,586	14,732	13,921	8,164	4,183	1,890	1,301	854	706
Mean	13.6	26.4	71.9	148	475	464	263	139	60.9	41.9	30.5	22.8
Max.	19	78	105	384	950	787	630	307	78	47	33	27
Min.	10	13	47	77	242	295	164	79	48	34	26	20
Runoff – MCM.	35.338	70.848	186.451	396.230	1,272.845	1,202.774	705.369	361.411	163.296	112.406	73.785	60.998

WATER YEAR 1969 : Max. 950 Min. 10 Mean 147 Annual Runoff 4,641.753 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 10	22.00	22.00	1,079				

WATER YEAR 1969
MAE KLONG RIVER BASIN

Khwae Noi at Wang Pho, Kanchanaburi (K9)

Location: Lat. 14°-06'-56" N., Long. 99°-08'-20" E., on right bank opposite the Wang Pho railway station, Amphoe Sai Yok, Kanchanaburi.

Drainage Area: 6,902 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 33.00 m. (M.S.L.)

Bench Mark: B.M. – H.S. K9

Location: on left bank north of the staff gage line about 30 meters.

Elevation: + 54.582 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1962-1974

Rating Operation:

Period of Rating: 1962-1964

Rated by Float: –

Rated by Current Meter: 1962-1964

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow.

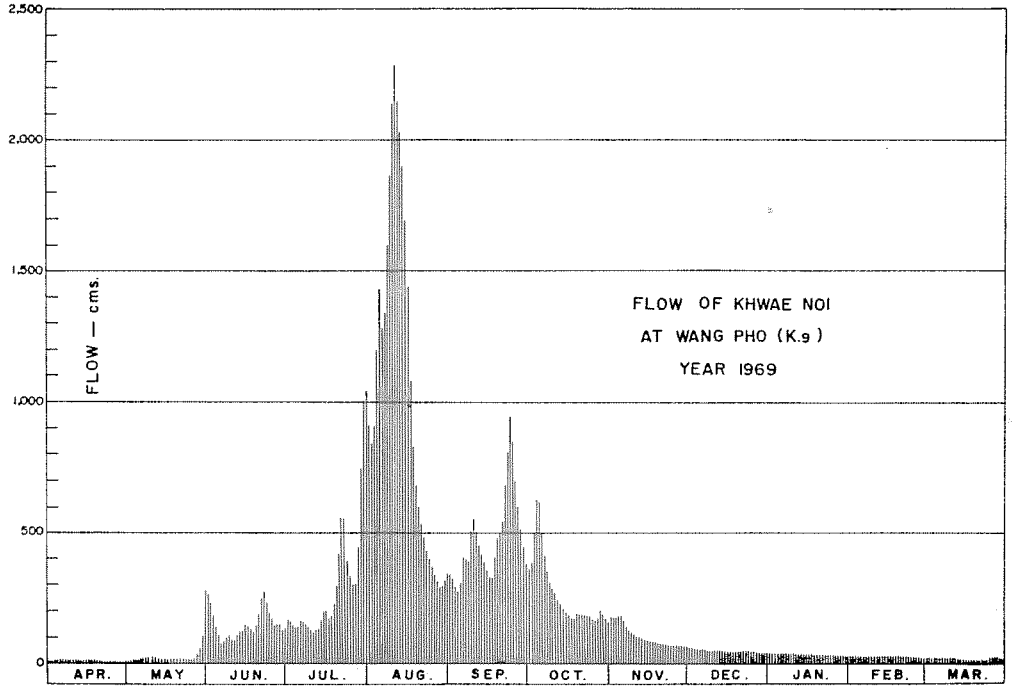
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1962-64. No State diversions above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	33.76	33.75	37.80	36.69	42.60	38.40	38.60	36.80	35.03	34.58	34.20	33.99
2	.89	.77	.01	.55	.17	.26	.80	.76	.01	.57	.19	.98
3	.87	.79	36.75	.28	.88	37.98	39.22	.80	34.99	.56	.18	.98
4	.83	.81	.23	.18	44.65	.80	40.78	.82	.98	.55	.19	.97
5	.82	.85	35.64	.34	45.48	38.31	.70	.78	.97	.54	.19	.96
6	33.85	33.92	35.30	36.64	44.72	39.03	39.66	36.53	34.94	34.53	34.18	33.95
7	.88	.92	.46	.52	45.18	38.92	38.90	.26	.92	.52	.18	.95
8	.87	34.15	.74	.33	46.44	.90	.44	.10	.91	.51	.17	.94
9	.86	.13	.75	.19	47.38	40.05	.14	35.97	.89	.51	.17	.94
10	.86	.21	.58	.05	48.44	.25	37.88	.88	.89	.49	.17	.94
11	33.87	34.16	35.47	35.97	49.02	39.70	37.63	35.79	34.89	34.48	34.19	33.94
12	.88	.06	.97	36.13	48.80	.28	.39	.72	.87	.48	.18	.93
13	.90	33.96	36.03	.15	47.88	.01	.21	.65	.85	.48	.20	.92
14	.85	.92	.06	.43	.26	38.78	.09	.59	.84	.52	.20	.91
15	.82	.90	.39	37.06	46.32	.62	36.92	.53	.82	.53	.17	.90
16	33.81	33.90	36.33	36.94	45.50	38.37	36.80	35.48	34.81	34.49	34.14	33.89
17	.78	.90	.09	.67	42.90	.34	.65	.44	.78	.46	.13	.88
18	.77	.87	35.95	.85	41.60	39.34	.68	.40	.77	.45	.15	.88
19	.83	.91	36.33	37.47	40.88	.70	.95	.38	.77	.44	.14	.88
20	.76	.94	37.08	38.36	.32	.81	.91	.34	.76	.42	.13	.88
21	33.76	34.06	37.70	40.29	39.96	40.44	36.86	35.29	34.75	34.41	34.11	33.87
22	.73	.02	.83	.22	.48	41.66	.79	.27	.73	.40	.10	.88
23	.72	33.94	.41	39.33	.10	42.38	.82	.24	.70	.39	.09	.88
24	.72	.96	36.91	38.69	38.90	.83	.79	.21	.67	.38	.07	.90
25	.73	.94	.57	.35	.72	41.92	.66	.17	.67	.38	.05	.99
26	33.70	33.94	36.32	38.05	38.45	40.90	35.59	35.13	34.66	34.36	34.03	34.15
27	.69	34.14	.40	.20	.24	.18	.83	.11	.65	.36	.02	.17
28	.70	.65	.41	39.82	.02	39.76	37.08	.10	.64	.34	.00	.00
29	.73	35.26	.09	41.71	.04	.16	36.85	.07	.63	.32		33.97
30	.73	36.45	.16	43.22	.24	38.77	.57	.06	.62	.31		.94
31		37.92		.41	.48		.54		.60	.31		.92
Mean	33.79	34.23	36.35	37.84	42.80	39.55	37.60	35.72	34.80	34.45	34.14	33.94
Max.	33.89	37.92	37.83	43.41	49.02	42.83	40.78	36.82	35.03	34.58	34.20	34.17
Min.	33.69	33.75	35.30	35.97	38.02	37.80	36.54	35.06	34.60	34.31	34.00	33.87

WATER YEAR 1969 : Max. 49.02 m. Min. 33.69 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	11	10	271	173	904	332	356	182	60	38	24	18
2	15	11	200	162	835	316	380	179	59	38	24	17
3	14	12	178	141	951	288	430	182	57	37	23	17
4	13	12	137	134	1,266	271	627	184	57	37	24	17
5	13	13	96	145	1,429	321	616	180	56	37	24	17
6	13	16	76	169	1,280	408	483	160	55	36	23	16
7	14	17	86	160	1,369	394	392	139	54	36	23	16
8	14	22	103	144	1,632	392	337	128	53	35	23	16
9	14	22	103	134	1,850	530	304	119	52	35	23	16
10	14	24	93	124	2,115	554	278	113	52	35	23	16
11	14	23	86	119	2,286	488	256	106	52	34	24	16
12	14	20	119	130	2,220	438	234	101	51	34	23	16
13	15	17	123	131	1,974	405	218	97	50	34	24	16
14	13	16	125	152	1,821	378	207	93	50	36	24	15
15	13	15	149	204	1,605	358	192	90	49	36	23	15
16	12	15	144	194	1,433	328	182	87	48	35	22	15
17	11	15	127	172	954	325	170	84	47	33	22	14
18	11	14	117	186	746	433	172	82	46	33	22	14
19	13	15	144	241	641	488	194	81	46	33	22	14
20	11	16	206	327	563	501	191	78	46	32	22	14
21	11	20	262	559	519	508	187	75	45	31	21	14
22	9.90	19	274	550	462	755	181	74	44	31	21	14
23	9.60	16	236	444	416	869	184	72	43	31	21	14
24	9.60	17	191	367	392	942	181	71	42	30	20	15
25	9.90	16	164	326	370	795	171	68	42	30	19	18
26	9.00	16	144	295	338	644	165	66	41	29	19	22
27	8.70	22	150	310	314	546	184	65	41	29	19	23
28	9.00	41	151	502	292	495	206	64	41	29	18	18
29	9.90	74	127	762	294	423	186	62	40	28		17
30	9.90	154	132	1,008	314	376	164	62	40	27		16
31		282		1,041	342		161		39	27		16
Total	358.50	1,002	4,514	8,506	31,927	14,373	8,189	3,206	1,498	1,026	620	502
Mean	11.9	32.3	150	307	1,030	479	264	107	48.3	33.1	22.1	16.2
Max.	15	282	274	1,041	2,286	942	627	184	60	38	24	23
Min.	8.70	10	76	119	292	271	161	62	39	27	18	14
Runoff - mcm.	30.974	86.573	390.010	821.318	2,758.493	1,241.837	707.530	276.998	129.427	88.646	53.568	43.373

WATER YEAR 1969 : Max. 2,286 Min. 8.70 Mean 210 Annual Runoff 6,628.738 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 11	18.00	49.12	2,318				

WATER YEAR 1969
MAE KLONG RIVER BASIN

Khwae Noi at Ban Lum Sum, Kanchanaburi (K_{10})

Location: Lat. 14°-05'-40" N., Long. 99°-10'-28" E., on left bank about 100 meters upstream from Ban Lum Sum railway station, Amphoe Sai Yok, Kanchanaburi.

Drainage Area: 7,008 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 30.40 m. (M.S.L.)

Bench Mark: B.M.- H.S.

Location: Near the gage site

Elevation: + 52.057 m. (M.S.L.)

Gage Reading Frequency: 16-time daily reading at 03.00, 06.00-18.00, 21.00 and 24.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 16 readings.

Period of Available Gage Records: 1965 to date

Rating Operation:

Period of Rating: 1965 to date

Rated by Float: -

Rated by Current Meter: 1965 to date

Stability of Channel Regimes: Stable, shifting adjustment is included for flow computation.

Overbank Flow Conditions: No overbank flow

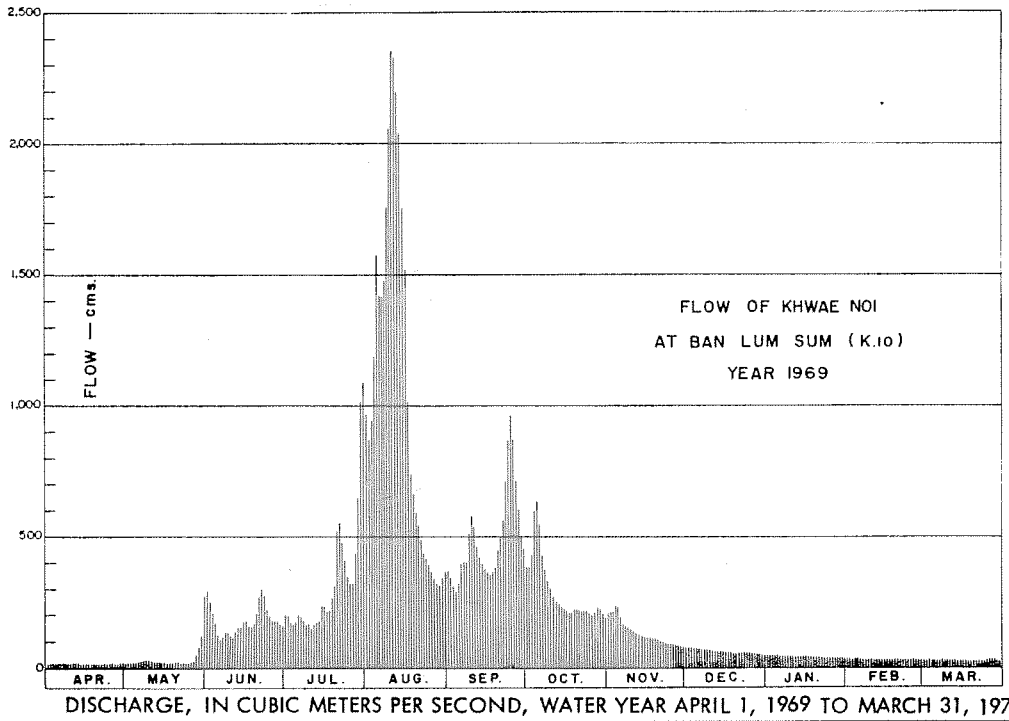
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversion above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	30.95	30.94	35.17	33.79	40.33	35.81	36.01	33.97	32.11	31.61	31.35	31.23
2	31.01	.90	34.34	.74	39.72	.64	.09	.95	.08	.60	.34	.22
3	.03	.97	33.97	.43	40.41	.37	.54	34.03	.06	.59	.34	.21
4	.00	.99	33.51	.32	42.09	.13	38.11	.32	.04	.58	.33	.20
5	30.99	31.00	32.82	.44	43.12	.54	.24	.21	.01	.57	.33	.20
6	31.03	31.18	32.43	33.76	42.43	36.30	37.15	34.01	31.99	31.56	31.32	31.19
7	.04	.20	.53	.71	.54	.30	36.36	33.59	.97	.55	.32	.19
8	.04	.24	.82	.50	43.01	.26	35.84	.29	.96	.54	.31	.18
9	.02	.24	.85	.33	44.91	37.32	.51	.14	.95	.53	.30	.18
10	.02	.33	.70	.39	45.92	.70	.25	.03	.93	.52	.29	.18
11	31.00	31.30	32.57	33.08	46.58	37.17	34.99	32.93	31.91	31.52	31.31	31.17
12	.03	.19	.99	.23	.42	36.70	.73	.85	.89	.51	.30	.17
13	.05	.12	33.16	.30	45.56	.47	.52	.78	.87	.51	.29	.16
14	.03	.08	.16	.50	.02	.15	.37	.72	.85	.54	.31	.15
15	.00	.04	.53	34.24	44.02	35.99	.21	.67	.84	.55	.32	.16
16	.00	.04	.53	34.24	44.02	35.99	.21	.67	.84	.55	.32	.16
17	30.98	31.02	33.52	34.22	42.46	35.74	34.08	32.62	31.82	31.53	31.30	31.14
18	.97	.03	.06	34.02	39.23	36.31	.87	.54	.79	.49	.29	.13
19	.99	.06	.39	.61	38.42	37.04	34.15	.51	.78	.47	.28	.13
20	.97	.11	34.17	35.57	37.84	.19	.16	.46	.77	.46	.28	.13
21	30.95	31.20	34.89	37.55	37.44	37.78	34.09	32.42	31.76	31.45	31.26	31.12
22	.93	.16	35.11	.72	36.99	39.06	.00	.37	.74	.44	.28	.13
23	.92	.10	34.72	36.86	.59	.77	.01	.34	.72	.43	.28	.13
24	.92	.12	.11	.18	.36	40.33	.02	.31	.70	.43	.27	.14
25	.92	.11	33.77	35.70	.19	39.61	33.87	.28	.69	.42	.26	.20
26	30.90	31.10	33.48	35.40	35.96	38.50	33.80	32.24	31.68	31.41	31.25	31.34
27	.90	.25	.53	.44	.68	37.67	.96	.21	.67	.40	.24	.31
28	.91	.74	.54	36.93	.43	.06	34.28	.18	.66	.39	.23	.24
29	.93	32.26	.24	39.04	.33	36.59	.17	.15	.65	.37		.21
30	.98	33.29	.23	40.70	.57	.22	33.85	.13	.64	.37		.19
31		34.95		41.06	.88		.70		.63	.36		.17
Mean	30.98	31.37	33.51	35.09	40.26	37.94	34.90	32.89	31.85	31.49	31.29	31.18
Max.	31.05	34.95	35.17	41.06	46.58	40.33	38.24	34.32	32.11	31.61	31.35	31.34
Min.	30.90	30.94	32.43	33.08	35.33	35.13	33.70	32.13	31.63	31.36	31.23	31.12

WATER YEAR 1969 : Max. 46.58 m. Min. 30.90 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	12	13	297	206	962	367	381	214	80	47	33	26
2	14	14	242	202	858	336	388	212	78	47	32	25
3	15	14	212	174	977	312	431	218	77	46	32	25
4	14	15	175	166	1,350	290	617	242	75	45	32	24
5	14	16	128	175	1,577	336	635	233	74	45	32	24
6	15	23	104	201	1,420	405	500	201	74	44	31	24
7	16	24	114	197	1,422	405	415	167	72	44	31	24
8	16	26	134	180	1,514	408	368	168	72	43	30	23
9	15	26	136	166	1,941	534	323	157	71	42	29	23
10	15	31	125	171	2,188	581	299	149	70	42	29	23
11	14	29	116	149	2,354	505	276	141	65	42	30	23
12	15	23	146	165	2,313	453	258	133	64	41	30	23
13	16	20	135	170	2,098	428	246	127	66	41	29	22
14	15	18	153	186	1,967	397	237	122	65	43	30	22
15	14	16	182	242	1,728	383	228	118	64	44	31	22
16	13	16	181	240	1,376	364	218	115	63	44	30	21
17	13	18	159	215	1,018	355	208	115	60	42	30	21
18	13	16	152	220	824	415	201	112	59	42	29	21
19	14	17	177	264	702	495	223	110	59	41	29	21
20	13	19	239	345	595	512	224	107	58	40	29	21
21	13	24	285	545	545	600	218	104	57	39	27	20
22	13	22	305	560	493	789	211	96	56	39	29	21
23	12	19	270	456	438	828	214	94	55	38	29	21
24	12	20	227	387	414	964	216	92	54	38	28	21
25	12	19	200	343	398	825	206	90	53	38	27	22
26	11	19	177	316	367	659	198	88	53	36	27	30
27	11	26	181	320	342	568	208	86	52	36	26	28
28	11	56	182	466	319	496	230	84	51	35	26	25
29	12	87	162	750	315	444	222	80	50	34		24
30	15	146	161	1,029	345	406	204	79	49	34		23
31		277		1,094	373		192		48	33		22
Total	408	1,109	5,477	10,300	33,533	14,920	8,995	4,054	1,944	1,265	827	715
Mean	13.6	35.8	182	332	1,082	497	290	135	62.7	40.8	29.5	23.1
Max.	16	277	305	1,094	2,354	964	635	242	80	47	33	30
Min.	11	13	104	149	315	290	192	79	48	33	26	20
Runoff - mcm.	35.251	95.818	473.213	889.920	2,897.251	1,289.088	777.168	350.266	167.961	108.518	71.462	61.776

WATER YEAR 1969 : Max. 2,354 Min. 11 Mean 229 Annual Runoff 7,218.460 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 11	24.00	46.66	2,375				

WATER YEAR 1969
MAE KLONG RIVER BASIN

Mae Klong River at Ban Wang Khanai, Kanchanaburi (K_{11})

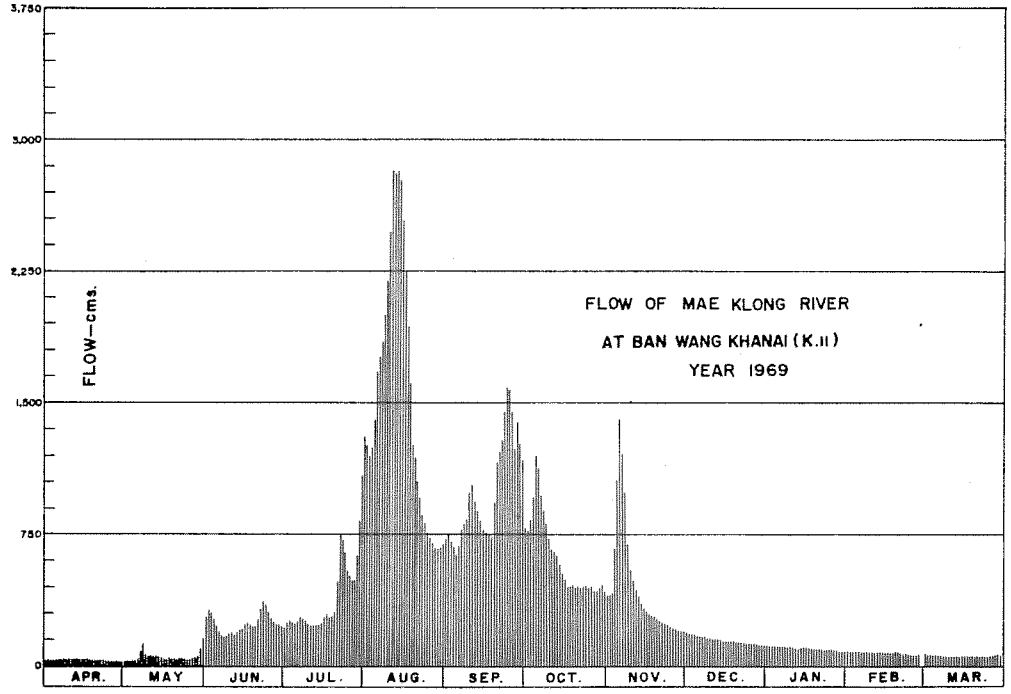
Location:	Lat. 13°-56'-55" N., Long. 99°-38'-42" E., on left bank about 3 kilometers downstream from district office of Amphoe Tha Muang, Kanchanaburi.
Drainage Area:	26,449 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 11.93 m. (M.S.L.)
Bench Mark:	B.M. - H.S.
Location:	Along the gage site
Elevation:	B.M. 1 + 22.097 m. (M.S.L.) and B.M. 2 + 22.224 m. (M.S.L.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings.
Period of Available Gage Records:	1965 to date
Rating Operation:	
Period of Rating:	1965-70, 1972 to date
Rated by Float:	
Rated by Current Meter:	1965-70, 1972 to date
Stability of Channel Regimes:	Stable, shifting adjustment is included for flow computation.
Overbank Flow Conditions:	No overbank flow.
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. Upstream State diversions for irrigation of about 2,960 hectares at Tha Lo Project about 12 kilometers above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	12.32	12.28	14.14	13.81	17.61	15.93	16.08	14.71	13.65	13.13	12.88	12.67
2	.33	.29	.36	.96	.39	16.02	.10	.72	.62	.12	.88	.66
3	.33	.29	.26	14.05	.28	15.88	.33	.82	.59	.10	.85	.65
4	.34	.31	.10	13.98	.59	.74	.82	15.91	.57	.10	.83	.64
5	.38	.32	13.84	.93	18.21	.60	17.33	17.15	.54	.08	.83	.63
6	12.39	12.39	13.67	14.01	18.69	15.86	17.04	17.87	13.51	13.07	12.82	12.63
7	.38	.90	.51	.11	.75	16.16	16.62	.55	.49	.06	.81	.62
8	.41	13.25	.48	.11	19.03	.23	.32	16.48	.47	.04	.80	.61
9	.41	12.70	.50	.03	.40	.42	.08	15.67	.46	.04	.79	.60
10	.40	.59	.63	13.93	.82	.78	15.86	.21	.44	.04	.79	.61
11	12.39	12.59	13.63	13.88	20.42	16.88	15.67	15.04	13.41	13.03	12.80	12.61
12	.39	.63	.56	.89	.62	.54	.65	14.85	.39	.01	.81	.60
13	.39	.59	.61	.88	.58	.43	.57	.66	.37	.00	.80	.61
14	.39	.55	.73	.89	.62	.23	.35	.52	.36	.03	.79	.60
15	.37	.50	.81	.94	.41	.09	.16	.41	.34	.07	.78	.57
16	12.36	12.43	13.93	14.16	19.99	16.06	15.07	14.32	13.32	13.07	12.79	12.57
17	.35	.45	.93	.25	.37	15.98	.01	.25	.31	.03	.78	.56
18	.34	.49	.91	.15	18.48	.98	14.93	.20	.30	.01	.78	.55
19	.33	.45	.80	.17	17.54	16.53	.93	.17	.28	12.99	.78	.54
20	.31	.46	.88	.30	.28	17.17	.96	.10	.27	.98	.77	.53
21	12.30	12.46	14.13	14.67	16.82	17.36	14.93	14.05	13.26	12.97	12.76	12.52
22	.30	.48	.44	15.72	.58	.58	.92	13.99	.26	.96	.75	.52
23	.32	.48	.56	16.03	.29	.87	.93	.95	.24	.95	.74	.53
24	.29	.45	.46	15.72	.16	18.30	.96	.90	.23	.94	.72	.54
25	.28	.42	.30	.33	.01	.27	.91	.86	.20	.93	.71	.58
26	12.27	12.42	14.09	15.16	15.91	17.84	14.95	13.80	13.18	12.92	12.69	12.59
27	.29	.43	13.98	.07	.83	.33	.80	.76	.16	.91	.69	.63
28	.29	.49	.90	.11	.73	.83	.82	.73	.17	.90	.67	.65
29	.26	.57	.92	.82	.73	.47	.90	.70	.12	.89		.63
30	.27	.96	.83	16.70	.76	.27	.98	.67	.15	.88		.61
31		13.51		17.39	.84		.98		.14	.88		.58
Mean	12.34	12.55	13.93	14.62	17.93	16.72	15.51	14.77	13.35	13.00	12.78	12.56
Max.	12.41	13.51	14.56	17.39	20.62	18.30	17.33	17.87	13.65	13.13	12.88	12.67
Min.	12.26	12.28	13.48	13.81	15.73	15.60	14.80	13.67	13.12	12.88	12.67	12.52

WATER YEAR 1969 : Max. 20.62 m. Min. 12.26 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	30	29	277	218	1,302	724	771	399	192	118	87	64
2	31	29	320	244	1,216	752	777	402	187	117	87	63
3	31	29	300	260	1,177	709	849	425	182	114	83	62
4	33	31	269	247	1,294	668	1,012	718	179	114	81	61
5	36	32	223	238	1,544	628	1,195	1,130	174	111	81	60
6	37	37	195	253	1,765	703	1,090	1,406	170	110	80	60
7	36	89	170	271	1,795	796	944	1,278	167	109	79	59
8	39	133	165	271	1,935	817	845	897	164	106	78	58
9	39	67	168	256	2,122	878	771	648	162	106	77	57
10	38	56	189	238	2,352	998	703	523	160	106	77	58
11	37	56	189	230	2,694	1,033	648	479	155	105	78	58
12	37	60	178	231	2,822	917	642	432	153	102	79	57
13	37	56	186	230	2,797	881	620	388	150	101	78	58
14	37	52	205	231	2,822	817	559	356	148	105	77	57
15	36	47	218	240	2,694	774	510	330	146	110	76	54
16	35	41	238	280	2,450	765	486	312	143	110	77	54
17	34	42	246	298	2,106	740	449	298	141	105	76	53
18	33	46	235	278	1,667	740	451	288	140	102	76	52
19	32	42	216	282	1,274	914	458	282	137	100	76	51
20	31	43	230	308	1,177	1,141	446	269	136	99	75	50
21	30	43	275	390	1,012	1,206	451	260	135	97	74	49
22	30	45	337	662	930	1,290	449	249	135	96	72	49
23	32	45	365	755	836	1,406	451	242	132	95	71	50
24	29	42	342	662	796	1,584	458	233	131	94	69	51
25	29	40	308	554	749	1,571	446	226	127	93	68	55
26	28	40	267	510	718	1,394	456	216	124	91	66	56
27	29	41	247	486	694	1,195	420	210	122	90	66	60
28	29	46	233	497	665	1,390	425	205	123	89	64	62
29	27	54	237	691	665	1,247	444	200	117	88		60
30	28	96	221	971	673	1,173	463	195	120	87		58
31		170		1,216	697		415		119	87		55
Total	990	1,679	7,249	12,498	47,440	29,851	19,131	13,496	4,571	3,157	2,128	1,751
Mean	33.0	54.2	242	403	1,530	995	617	450	147	102	76.0	56.5
Max.	39	170	365	1,216	2,822	1,584	1,195	1,406	192	118	87	64
Min.	27	29	165	218	665	628	415	195	117	87	64	49
Runoff - MCM.	85.536	145.066	626.314	1,079.827	4,098.816	2,579.126	1,652.918	1,166.054	394.934	272.765	183.859	151.286

WATER YEAR 1969 : Max. 2,822 Min. 27 Mean 394 Annual Runoff 12,436.502 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 14	09.00	20.65	2,841				

WATER YEAR 1969
MAE KLONG RIVER BASIN

Lam Taphoen at Ban Thung Na Nang Rok, Kanchanaburi (K_{12})

Location: Lat. 14°-09'-15" N., Long. 99°-25'-06" E., on left bank about 50 meters downstream from Wat Thung Na Nang Rok, Tambon Lat Ya, Amphoe Muang, Kanchanaburi.

Drainage Area: 2,340 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: At the corner of Sala Wat Thung Na Nang Rok.

Elevation: + 9.260 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1965 to date

Rating Operation:

Period of Rating: 1965-1968

Rated by Float: -

Rated by Current Meter: 1965-1968

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow.

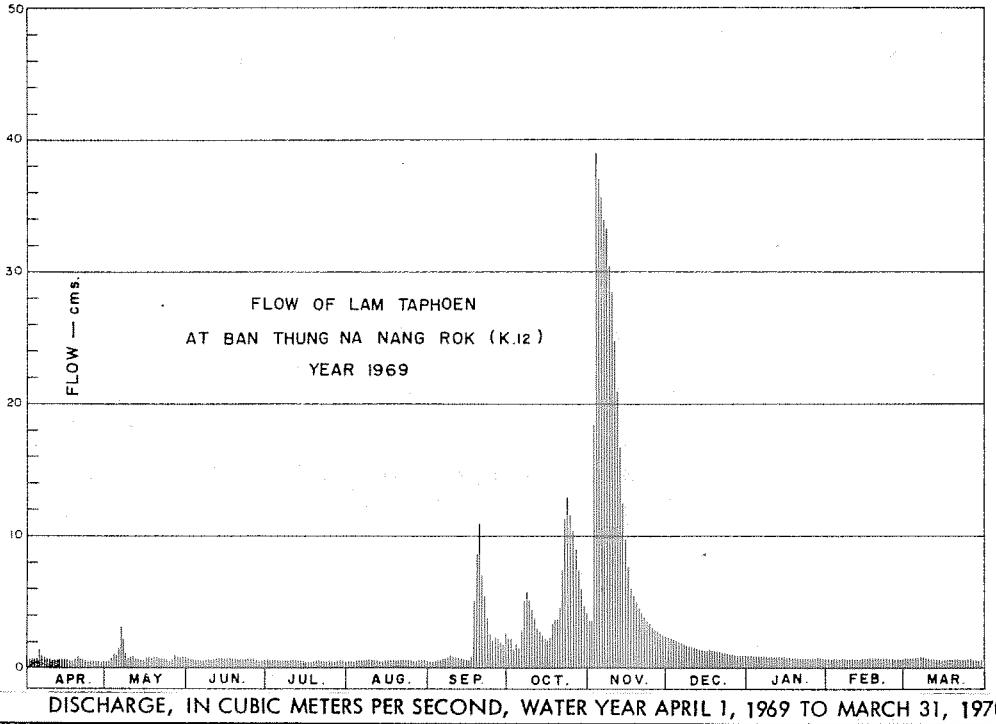
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1967. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.59	0.52	0.60	0.55	0.55	0.54	1.05	1.38	1.11	0.70	0.62	0.62
2	.60	.55	.58	.54	.54	.54	.09	.35	.09	.70	.62	.62
3	.59	.68	.57	.54	.54	.55	0.80	4.14	.09	.70	.62	.63
4	.58	.76	.56	.56	.55	.56	.98	5.48	.07	.70	.62	.63
5	.88	.67	.55	.55	.55	.58	.87	.31	.02	.70	.62	.63
6	0.68	0.94	0.54	0.55	0.55	0.62	1.37	5.08	1.00	0.69	0.62	0.64
7	.62	1.27	.53	.55	.55	.60	.69	.05	0.98	.69	.61	.66
8	.60	0.72	.56	.55	.56	.64	.81	4.90	.96	.69	.61	.62
9	.59	.63	.56	.55	.57	.72	.71	.68	.93	.69	.61	.60
10	.58	.66	.55	.55	.56	.61	.54	.42	.92	.68	.61	.59
11	0.56	0.68	0.58	0.54	0.55	0.59	1.39	4.02	0.90	0.67	0.62	0.59
12	.57	.62	.59	.54	.54	.58	.27	3.59	.88	.66	.62	.58
13	.55	.59	.59	.55	.54	.58	.19	.06	.85	.66	.62	.58
14	.57	.57	.58	.55	.53	.58	.13	2.53	.84	.66	.62	.60
15	.56	.54	.60	.54	.55	.57	.06	.23	.83	.66	.62	.60
16	0.56	0.68	0.60	0.54	0.55	0.57	1.01	2.03	0.82	0.66	0.63	0.60
17	.54	.69	.60	.53	.55	.90	.08	1.89	.81	.66	.63	.59
18	.52	.61	.59	.53	.55	1.40	.40	.77	.80	.64	.64	.59
19	.63	.65	.59	.54	.56	2.28	.43	.67	.79	.63	.64	.59
20	.69	.65	.57	.54	.57	.57	.42	.58	.78	.63	.63	.59
21	0.58	0.62	0.58	0.54	0.56	2.03	1.59	1.50	0.78	0.63	0.61	0.59
22	.55	.60	.55	.54	.56	1.62	2.49	.44	.76	.63	.61	.59
23	.52	.58	.56	.55	.56	.35	.86	.38	.76	.63	.61	.59
24	.51	.56	.59	.54	.56	.11	.72	.33	.75	.62	.61	.60
25	.56	.54	.62	.54	.54	.01	.58	.29	.75	.62	.61	.60
26	0.53	0.55	0.56	0.54	0.54	1.10	2.37	1.25	0.74	0.62	0.62	0.60
27	.50	.70	.53	.54	.55	.07	.15	.21	.73	.62	.62	.59
28	.53	.64	.52	.55	.56	.01	.02	.18	.73	.62	.63	.59
29	.51	.62	.51	.55	.56	0.94	1.85	.14	.71	.62		.59
30	.50	.64	.55	.55	.56	1.18	.64	.13	.71	.62		.59
31		.61		.54	.55		.47		.71	.62		.59
Mean	0.58	0.65	0.57	0.54	0.55	0.97	1.58	2.63	0.86	0.65	0.62	0.60
Max.	0.88	1.27	0.60	0.56	0.57	2.57	2.86	5.48	1.11	0.70	0.64	0.66
Min.	0.50	0.52	0.51	0.53	0.53	0.54	0.80	1.13	0.71	0.62	0.61	0.58

WATER YEAR 1969 : Max. 5.48 m. Min. 0.50 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.68	0.54	0.70	0.60	0.60	0.58	2.20	3.60	2.44	1.00	0.76	0.76
2	0.70	0.60	0.66	0.58	0.58	0.58	2.36	3.45	2.36	1.00	0.76	0.76
3	0.68	0.94	0.64	0.58	0.58	0.60	1.30	25	2.36	1.00	0.76	0.79
4	0.66	1.18	0.62	0.62	0.60	0.62	1.92	39	2.28	1.00	0.76	0.79
5	1.54	0.91	0.60	0.60	0.60	0.66	1.51	37	2.08	1.00	0.76	0.79
6	0.94	1.76	0.58	0.60	0.60	0.76	3.55	35	2.00	0.97	0.76	0.82
7	0.76	3.08	0.56	0.60	0.60	0.70	5.19	34	1.92	0.97	0.73	0.88
8	0.70	1.03	0.62	0.60	0.62	0.82	5.86	33	1.84	0.97	0.73	0.76
9	0.68	0.79	0.62	0.60	0.64	1.06	5.30	30	1.72	0.97	0.73	0.70
10	0.66	0.88	0.60	0.60	0.62	0.73	4.40	28	1.68	0.94	0.73	0.68
11	0.62	0.94	0.66	0.58	0.60	0.68	3.65	24	1.60	0.91	0.76	0.68
12	0.64	0.76	0.68	0.58	0.58	0.66	3.08	20	1.54	0.88	0.76	0.66
13	0.60	0.68	0.68	0.60	0.58	0.66	2.76	15	1.45	0.88	0.76	0.66
14	0.64	0.64	0.66	0.60	0.56	0.66	2.52	11	1.42	0.88	0.76	0.70
15	0.62	0.58	0.70	0.58	0.60	0.64	2.24	8.61	1.39	0.88	0.76	0.70
16	0.62	0.94	0.70	0.58	0.60	0.64	2.04	7.24	1.36	0.88	0.79	0.70
17	0.58	0.97	0.70	0.56	0.60	1.60	2.32	6.34	1.33	0.88	0.79	0.68
18	0.54	0.73	0.68	0.56	0.60	3.70	3.70	5.63	1.30	0.82	0.82	0.68
19	0.79	0.85	0.68	0.58	0.62	8.96	3.85	5.08	1.27	0.79	0.82	0.68
20	0.97	0.85	0.64	0.58	0.64	11	3.80	4.60	1.24	0.79	0.79	0.68
21	0.66	0.76	0.66	0.58	0.62	7.24	4.65	4.20	1.24	0.79	0.73	0.68
22	0.60	0.70	0.60	0.58	0.62	4.81	10	3.90	1.18	0.79	0.73	0.68
23	0.54	0.66	0.62	0.60	0.62	3.45	13	3.60	1.18	0.79	0.73	0.68
24	0.52	0.62	0.68	0.58	0.62	2.44	12	3.35	1.15	0.76	0.73	0.70
25	0.62	0.58	0.76	0.58	0.58	2.04	11	3.16	1.15	0.76	0.73	0.70
26	0.56	0.60	0.62	0.58	0.58	2.40	9.59	3.00	1.12	0.76	0.76	0.70
27	0.50	1.00	0.56	0.58	0.60	2.28	8.05	2.84	1.09	0.76	0.76	0.68
28	0.56	0.82	0.54	0.60	0.62	2.04	7.18	2.72	1.09	0.76	0.79	0.68
29	0.52	0.76	0.52	0.60	0.62	1.76	6.10	2.56	1.03	0.76		0.68
30	0.50	0.82	0.60	0.60	0.62	2.72	4.92	2.52	1.03	0.76		0.68
31		0.73		0.58	0.60		4.05		1.03	0.76		0.68
Total	20.20	27.70	19.14	18.24	18.72	67.49	154.09	407.40	46.87	26.86	21.25	22.09
Mean	0.67	0.89	0.64	0.59	0.60	2.25	4.97	13.6	1.51	0.87	0.76	0.71
Max.	1.54	3.08	0.76	0.62	0.64	11	13	39	2.44	1.00	0.82	0.88
Min.	0.50	0.54	0.52	0.56	0.56	0.58	1.30	2.52	1.03	0.76	0.73	0.66
Runoff - mcm.	1.745	2.393	1.654	1.576	1.617	5.831	13.313	35.199	4.049	2.321	1.836	1.908

WATER YEAR 1969 : Max. 39 Min. 0.50 Mean 2.33 Annual Runoff 73.444 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge

WATER YEAR 1969
MAE KLONG RIVER BASIN

Khwae Noi at Ban Tha Khanun, Kanchanaburi (K_{13})

Location: Lat. 14°-43'-50" N., Long. 98°-38'-32" E., on right bank at Pompe village, 200 meters downstream from Wat Tha Khanun, Amphoe Thong Pha Phum, Kanchanaburi.

Drainage Area: 4,047 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 73.70 m. (M.S.L.)

Bench Mark: B.M. – H.S.

- Location: on right bank near the K.13 station office
- Elevation: + 97.200 m. (M.S.L.)

Gage Reading Frequency: 16-time daily readings at 03.00, 06.00-18.00, 21.00 and 24.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 16 readings.

Period of Available Gage Records: 1965 to date

Rating Operation:

- Period of Rating: 1965-1971
- Rated by Float: –
- Rated by Current Meter: 1965-1971

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversions above gage site. No adjustment made for virgin flow.

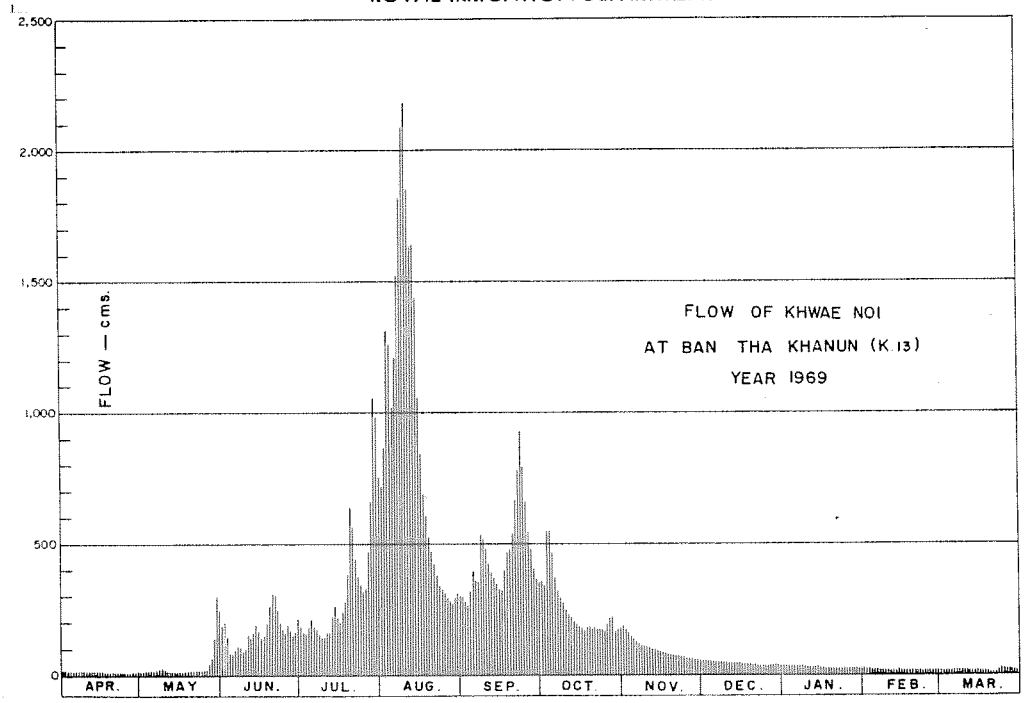
GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	75.75	75.72	77.80	77.74	81.68	78.78	79.26	77.84	76.42	76.08	75.88	75.75
2	.74	.75	.92	.55	82.68	.55	.06	.71	.41	.07	.87	.74
3	.76	.77	.16	.53	85.93	.46	80.57	.48	.39	.07	.87	.74
4	.77	.80	76.72	.82	.60	.99	.60	.37	.38	.06	.87	.73
5	.79	.79	.72	78.01	83.38	79.51	79.63	.29	.36	.05	.87	.72
6	75.78	75.81	76.91	77.74	84.92	79.25	79.16	77.20	76.34	76.04	75.86	75.72
7	.78	.89	77.03	.62	86.47	.21	78.89	.13	.34	.04	.85	.72
8	.76	.92	76.98	.53	87.44	80.52	.70	.08	.33	.03	.85	.71
9	.76	.95	.81	.36	88.59	.38	.54	.03	.32	.03	.84	.71
10	.72	.85	.96	.41	89.06	79.88	.35	76.98	.30	.02	.84	.70
11	75.82	75.76	77.52	77.60	87.39	79.58	78.18	76.94	76.28	76.02	75.84	75.70
12	.79	.72	.37	.55	86.52	.41	.08	.91	.26	.02	.84	.69
13	.76	.69	.58	78.02	.59	.28	77.97	.88	.26	.05	.86	.69
14	.75	.69	.86	.46	84.97	.12	.86	.85	.25	.04	.86	.69
15	.73	.65	.62	.10	83.39	78.96	.77	.82	.24	.01	.85	.68
16	75.73	75.64	77.35	77.86	82.13	78.95	77.71	76.79	76.23	75.99	75.85	75.68
17	.71	.64	.41	78.31	81.28	79.66	.64	.76	.22	.99	.84	.67
18	.69	.72	.85	.67	80.79	80.05	.74	.73	.21	.98	.83	.67
19	.69	.80	78.41	79.60	.34	.07	.74	.70	.20	.97	.82	.66
20	.69	.72	.87	81.20	79.98	.70	.71	.67	.19	.96	.82	.66
21	75.69	75.68	78.81	80.56	79.63	81.74	77.74	76.64	76.18	75.96	75.80	75.65
22	.68	.74	.31	79.70	.37	82.26	.68	.62	.17	.95	.79	.66
23	.67	.73	77.94	.31	.17	.90	.69	.59	.16	.94	.78	.85
24	.66	.73	.72	.09	78.98	81.66	.69	.57	.15	.94	.78	.92
25	.65	.76	.55	78.91	.87	80.87	.60	.54	.14	.93	.77	.87
26	75.65	75.84	77.85	79.06	78.74	80.30	77.99	76.52	76.13	75.92	75.77	75.78
27	.65	76.26	.58	80.35	.59	79.88	78.10	.50	.12	.92	.76	.76
28	.76	.61	.38	81.73	.51	.53	77.86	.48	.11	.91	.76	.73
29	.70	77.46	.62	83.61	.74	.27	.58	.46	.10	.90		.70
30	.73	78.78	78.06	.15	.86	.18	.70	.44	.10	.90		.68
31		.22		81.90	.80		.74		.09	.89		.66
Mean	75.73	76.03	77.59	79.00	82.50	79.90	78.27	76.88	76.23	76.05	75.83	75.72
Max.	75.82	78.78	78.87	83.61	89.06	82.90	80.60	77.84	76.42	76.08	75.88	75.92
Min.	75.65	75.64	76.72	77.36	78.51	78.46	77.58	76.44	76.09	75.89	75.76	75.65

WATER YEAR 1969 : Max. 89.06 m. Min. 75.64 m.

H.62

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	14	13	188	181	719	304	364	192	56	33	21	14
2	14	14	201	160	890	276	338	178	56	32	20	14
3	15	15	121	158	1,313	265	546	153	54	32	20	14
4	15	17	80	190	1,247	329	551	142	54	32	20	13
5	16	16	80	211	1,016	396	412	134	52	31	20	13
6	16	17	97	181	1,311	362	351	125	51	30	20	13
7	16	21	108	168	1,621	357	317	118	51	30	19	13
8	16	23	103	158	1,824	539	294	113	50	30	19	12
9	15	25	88	141	2,070	518	275	108	49	30	19	12
10	18	19	101	146	2,177	447	252	103	48	29	19	12
11	18	15	157	166	1,814	405	232	100	47	29	19	12
12	16	13	142	160	1,631	383	220	97	45	29	19	11
13	15	11	164	212	1,646	366	207	94	45	31	20	11
14	14	11	195	265	1,321	346	195	91	44	30	20	11
15	13	9.50	168	222	1,018	325	185	89	44	29	19	11
16	13	9.00	140	195	794	324	178	86	43	27	19	11
17	12	9.00	146	247	655	416	170	83	42	27	19	10
18	11	13	193	290	579	471	181	81	42	27	18	10
19	11	17	259	408	512	474	181	78	41	26	18	10
20	11	13	314	642	461	566	178	76	40	26	18	10
21	11	11	307	545	412	728	181	73	40	26	17	9.00
22	11	14	247	422	378	816	175	72	39	25	16	10
23	10	13	203	370	352	930	176	69	38	24	16	19
24	10	13	179	342	328	716	176	68	37	24	16	23
25	9.50	15	160	319	314	591	166	65	37	24	15	20
26	9.50	19	193	338	299	506	209	64	36	23	15	16
27	9.50	45	164	513	281	447	222	62	35	23	15	15
28	15	71	143	727	271	399	195	61	35	23	15	13
29	12	151	168	1,058	299	365	164	59	34	22		12
30	13	304	217	975	313	353	177	58	34	22		11
31		236		755	306		181		33	21		10
Total	399.50	1,192.50	5,026	10,865	28,172	13,720	7,649	2,892	1,352	847	511	395
Mean	13.3	38.5	167	350	909	457	247	96.4	43.6	27.3	18.2	12.7
Max.	18	304	314	1,058	2,177	930	551	192	56	33	21	23
Min.	9.50	9.00	80	141	271	265	164	58	33	21	15	9.00
Runoff - mcm.	34.517	103.032	434.246	938.736	2,434.061	1,185.408	660.874	249.869	116.812	73.180	44.150	34.128

WATER YEAR 1969 : Max. 2,177 Min. 9.00 Mean 200 Annual Runoff 6,309.014 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 10	07.00	89.21	2,211				

WATER YEAR 1969
MAE KLONG RIVER BASIN

Lam Phachi at Frontier Police Station, Ratchaburi (K_{17})

Location: Lat. 13°-32'-41" N., Long. 99°-21'-22" E., on left bank opposite to the "Sai Ngam" frontier police station, Tambon Suan Phung, Amphoe Chom Bung, Ratchaburi.

Drainage Area: 1,355 sq.km.

Type of Gage: Water-stage recorder.

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

- **Location:** Along the measuring line
- **Elevation:** + 10.540 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1966 to date

Rating Operation:

- **Period of Rating:** 1966 to date
- **Rated by Float:** -
- **Rated by Current Meter:** 1966 to date

Stability of Channel Regimes: Unstable, no shifting adjustment but periodic curves are used for flow computation.

Overbank Flow Conditions: No overbank flow.

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversions above gage site. No adjustment made for virgin flow.

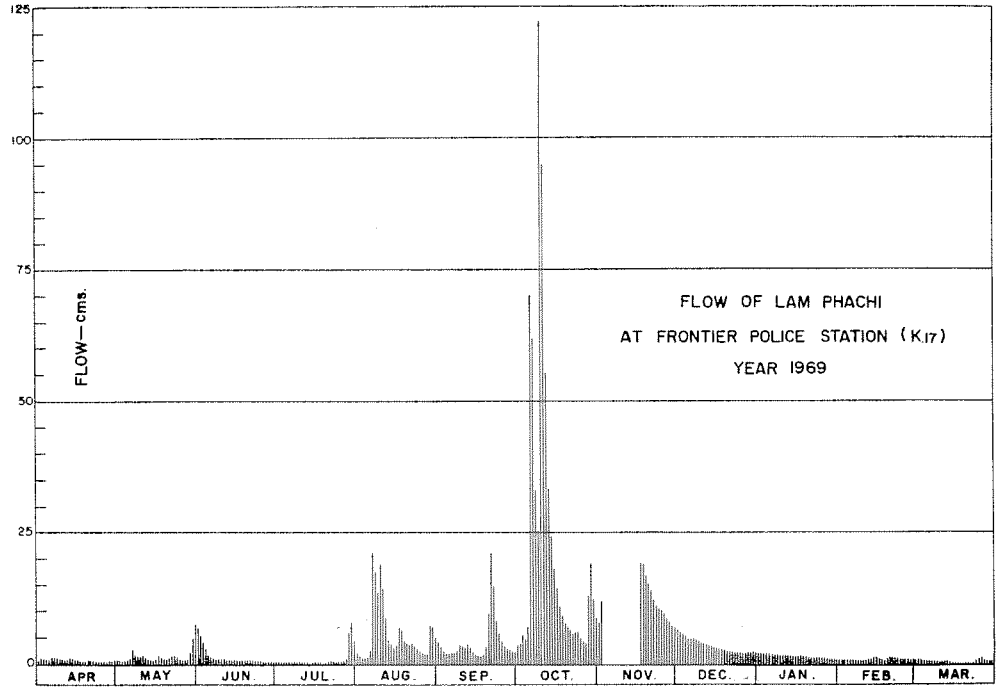
Remarks: No record November 3-16, 1969

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.37	0.35	0.94	0.29	0.63	0.79	0.75	1.04	0.51	0.21	0.07	0.01
2	.41	.34	.87	.28	.54	.70	.75	.26	.48	.19	.07	.01
3	.39	.31	.76	.28	.47	.63	.91		.46	.18	.06	- .01
4	.36	.30	.65	.27	.47	.59	.84		.44	.18	.06	0.00
5	.37	.30	.57	.27	.51	.60	1.11		.42	.18	.06	.00
6	0.48	0.40	0.52	0.27	0.69	0.61	2.68		0.40	0.18	0.06	- .01
7	.49	.67	.48	.27	1.59	.63	.48		.42	.17	.06	- .01
8	.42	.54	.45	.27	.44	.65	1.78		.40	.17	.05	- .01
9	.38	.53	.45	.26	.32	.76	.71		.39	.16	.06	- .01
10	.35	.51	.45	.26	.53	.73	3.41		.36	.16	.06	0.00
11	0.34	0.56	0.43	0.25	1.33	0.70	2.96		0.35	0.16	0.08	- .01
12	.35	.51	.43	.26	.02	.78	.19*		.34	.16	.07	- .01
13	.45	.42	.43	.26	0.85	.69	1.81		.34	.15	.10	- .01
14	.43	.38	.42	.27	.75	.61	.62		.32	.15	.12	- .03
15	.38	.37	.40	.26	.69	.57	.44		.30	.15	.10	- .05
16	0.35	0.43	0.38	0.26	0.75	0.55	1.34		0.29	0.15	0.09	- .06
17	.32	.57	.39	.26	1.00	.54	.23	1.08	.28	.15	.09	- .06
18	.31	.50	.37	.25	0.96	.57	.14	.07	.27	.15	.11	- .06
19	.32	.48	.35	.27	.80	.77	.04	0.97	.25	.14	.11	- .06
20	.35	.42	.35	.29	.80	1.12	.00	.92	.25	.13	.10	- .07
21	0.33	0.42	0.35	0.35	0.77	1.61	0.95	0.86	0.24	0.13	0.08	- .05
22	.33	.56	.36	.36	.78	.36	.91	.79	.24	.12	.08	- .06
23	.31	.56	.37	.34	.71	.07	.95	.76	.23	.12	.07	- .01
24	.29	.46	.34	.31	.66	0.92	.94	.71	.22	.12	.05	0.02
25	.29	.41	.33	.32	.64	.81	.86	.67	.22	.11	.04	.05
26	0.28	0.38	0.32	0.33	0.60	0.73	0.82	0.64	0.22	0.11	0.03	0.17
27	.27	.37	.31	.36	.59	.68	.80	.61	.22	.10	.02	.07
28	.27	.40	.31	.52	.59	.68	1.34	.57	.23	.10	.02	.05
29	.30	.50	.29	.92	1.03	.62	.54	.54	.23	.09		.05
30	.35	.84	.29	1.08	.01	.60	.23	.53	.22	.08		.02
31		1.05		0.82	0.86		.11		.21	.08		.00
Mean	0.35	0.52	0.51	0.44	0.92	0.80	1.61		0.33	0.14	0.07	0.01
Max.	0.49	1.05	0.94	1.08	1.59	1.61	3.41		0.51	0.21	0.12	0.17
Min.	0.27	0.30	0.29	0.25	0.47	0.54	0.75	0.53	0.21	0.08	0.02	- 0.07

WATER YEAR 1969 : Max. 3.41 m. Min. - 0.07 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.68	0.60	6.10	0.37	2.30	3.90	3.50	7.56	6.58	2.10	0.76	0.28
2	0.84	0.56	5.05	0.35	1.52	3.00	3.50	12	6.04	1.90	0.76	0.28
3	0.76	0.44	3.60	0.35	1.08	2.30	3.65		5.68	1.80	0.68	0.016
4	0.64	0.40	2.50	0.32	1.08	1.92	4.60		5.32	1.80	0.68	0.02
5	0.68	0.40	1.76	0.32	1.28	2.00	8.62		4.96	1.80	0.68	0.02
6	1.12	1.04	1.36	0.32	2.90	2.10	70		4.60	1.80	0.68	0.016
7	1.16	2.70	1.12	0.32	21	2.30	58		4.96	1.70	0.68	0.016
8	0.88	1.52	1.00	0.32	17	2.50	27		4.60	1.60	0.68	0.016
9	0.72	1.44	1.00	0.30	13	3.60	24		4.44	1.60	0.68	0.016
10	0.60	1.28	1.00	0.30	19	3.30	122		3.96	1.60	0.68	0.02
11	0.56	1.68	0.92	0.27	14	3.00	88		3.80	1.60	0.84	0.016
12	0.60	1.28	0.92	0.30	7.28	3.80	43		3.64	1.60	0.76	0.016
13	1.00	0.88	0.92	0.30	4.75	2.90	28		3.64	1.50	1.00	0.016
14	0.92	0.72	0.88	0.32	3.50	2.10	22		3.32	1.50	1.20	0.008
15	0.72	0.68	0.80	0.30	2.90	1.76	17		3.00	1.50	1.00	0.00
16	0.60	0.98	0.72	0.30	3.50	1.60	14		2.90	1.50	0.92	0.00
17	0.48	1.76	0.76	0.30	7.00	1.52	11	19	2.80	1.50	0.92	0.00
18	0.44	1.20	0.68	0.27	6.40	1.76	9.28	19	2.70	1.50	1.10	0.00
19	0.48	1.12	0.60	0.32	4.00	3.70	7.56	16	2.50	1.40	1.10	0.00
20	0.60	0.88	0.60	0.37	4.00	8.84	7.00	15	2.50	1.30	1.00	0.00
21	0.52	0.88	0.60	0.60	3.70	21	6.25	14	2.40	1.30	0.84	0.00
22	0.52	1.68	0.64	0.64	3.80	14	5.65	12	2.40	1.20	0.84	0.00
23	0.44	1.68	0.68	0.56	3.10	7.98	6.25	11	2.30	1.20	0.76	0.016
24	0.37	1.04	0.56	0.44	2.60	5.80	6.10	10	2.20	1.20	0.60	0.36
25	0.37	0.84	0.52	0.48	2.40	4.15	4.90	10	2.20	1.10	0.52	0.60
26	0.35	0.72	0.48	0.52	2.00	3.30	4.30	9.00	2.20	1.10	0.44	1.70
27	0.32	0.68	0.44	0.64	1.92	2.80	4.00	8.40	2.20	1.00	0.44	0.76
28	0.32	0.80	0.44	1.36	1.92	2.80	14	7.66	2.30	1.00	0.36	0.60
29	0.40	1.20	0.37	5.80	7.42	2.20	19	7.12	2.30	0.92		0.60
30	0.60	4.60	0.37	8.12	7.14	2.00	11	6.94	2.20	0.84		0.36
31		7.70		4.30	4.90		8.62		2.10	0.84		0.02
Total	18.69	43.32	37.39	29.82	178.39	121.93	663.78		106.74	44.40	21.60	5.77
Mean	0.62	1.40	1.25	0.96	5.75	4.06	21.41		3.44	1.43	0.77	0.19
Max.	1.16	7.70	6.10	8.12	21	21	122		6.58	2.10	1.20	1.70
Min.	0.32	0.40	0.37	0.27	1.08	1.52	3.50	6.94	2.10	0.84	0.36	0.00
Runoff - mcm.	1.615	3.743	3.230	2.576	15.413	10.535	57.350		9.222	3.836	1.866	0.498

WATER YEAR 1969 : Max. 122 Min. 0.00 Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 10	15.00	3.94	165				

WATER YEAR 1969
MAE KLONG RIVER BASIN

Khwae Yai at Ban Ong Kha, Kanchanaburi (K_{19})

Location: Lat. 14°-52'-17" N., Long. 99°-03'-50" E., on left bank about 4.5 kilometers downstream from confluence with Huai Kha Khaeng, and about 2 kilometers upstream from Confluence with Huai Ong Kha, Tambon Na Suan, Amphoe Si Sawat, Kanchanaburi.

Drainage Area: 8,437 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S.

Location: Along the gage line.

Elevation: + 14.385 m. (A.D.)

Gage Reading Frequency: 16-time daily readings at 03.00, 06.00-18.00, 21.00 and 24.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 16 readings.

Period of Available Gage Records: 1966-1972

Rating Operation:

Period of Rating: 1966-1971

Rated by Float: –

Rated by Current Meter: 1966-1971

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

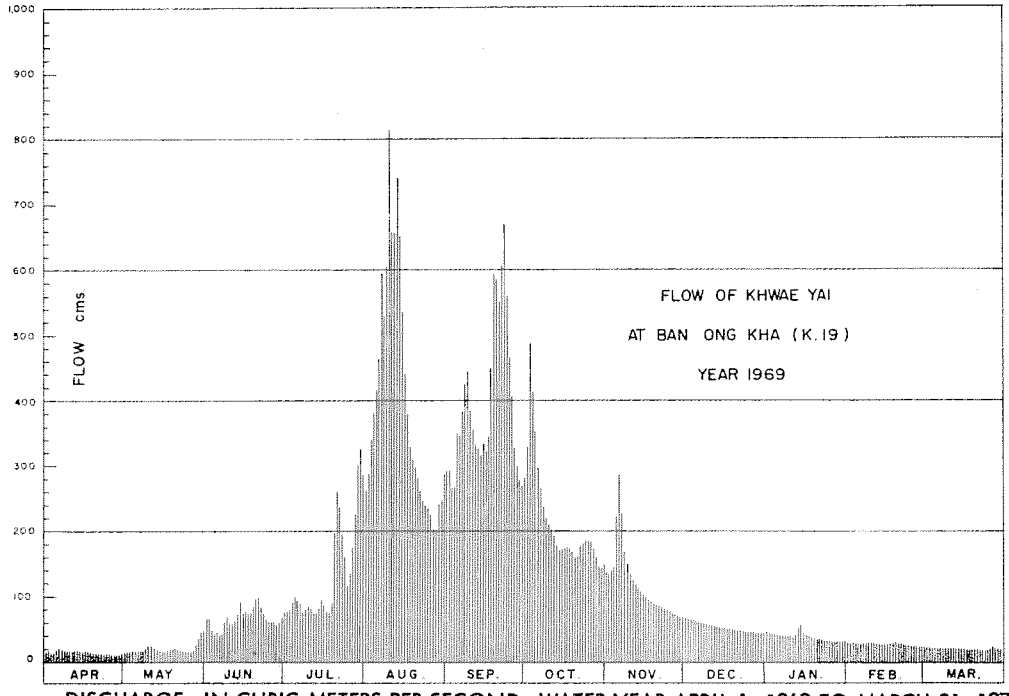
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversions above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.22	1.25	2.10	2.21	4.09	4.35	4.38	2.90	2.11	1.76	1.56	1.44
2	.24	.26	.11	.24	.37	.35	.79	.88	.11	.75	.55	.43
3	.19	.29	1.88	.26	.68	.14	5.60	.94	.09	.74	.55	.42
4	.24	.27	.77	.45	5.01	.15	.11	3.22	.07	.73	.55	.41
5	.35	.29	.84	.54	.19	.76	4.61	.89	.06	.73	.55	.41
6	1.35	1.29	1.76	2.44	5.58	4.71	4.26	4.30	2.05	1.72	1.54	1.40
7	.33	.32	.77	.39	.91	.95	.04	3.58	.04	.72	.54	.39
8	.30	.31	2.05	.23	.79	5.26	3.86	.25	.02	.72	.53	.39
9	.28	.43	.14	.27	6.56	.35	.71	.05	.01	.72	.53	.40
10	.28	.49	.01	.34	7.26	4.94	.64	2.89	.00	.71	.53	.40
11	1.30	1.46	2.00	2.30	6.48	4.76	3.58	2.81	1.98	1.70	1.54	1.39
12	.28	.41	.06	.20	.50	.64	.45	.73	.96	.74	.53	.38
13	.28	.36	.15	.19	.92	.55	.34	.67	.96	.84	.52	.37
14	.27	.33	.41	.33	.40	.50	.25	.61	.95	.86	.52	.37
15	.26	.30	.20	.48	5.70	.65	.27	.56	.93	.75	.53	.36
16	1.25	1.28	2.24	2.34	5.30	4.52	3.31	2.52	1.92	1.73	1.52	1.36
17	.22	.30	.13	.23	4.80	.76	.30	.48	.91	.71	.54	.35
18	.20	.35	.20	.20	.54	5.81	.26	.44	.91	.70	.54	.35
19	.21	.42	.32	.42	.60	6.16	.20	.40	.90	.69	.58	.34
20	.21	.37	.49	3.58	.36	.12	.15	.38	.89	.68	.54	.34
21	1.20	1.34	2.50	4.11	4.17	5.90	3.17	2.35	1.88	1.67	1.51	1.33
22	.19	.32	.34	3.73	.03	6.24	.34	.32	.87	.66	.49	.33
23	.18	.31	.22	.43	3.96	.57	.37	.29	.87	.65	.48	.33
24	.18	.29	.08	.07	.90	.02	.41	.27	.86	.64	.47	.36
25	.17	.30	.04	2.91	.88	5.38	.39	.25	.85	.63	.47	.39
26	1.16	1.30	2.09	3.06	3.74	4.94	3.38	2.23	1.84	1.62	1.46	1.41
27	.15	.33	.05	.41	.55	.60	.27	.21	.83	.61	.45	.43
28	.16	.51	1.99	.91	.59	.39	.12	.18	.82	.60	.45	.40
29	.20	.68	2.00	4.44	.94	.21	.00	.15	.81	.59		.38
30	.22	.84	.14	.59	.99	.14	2.99	.12	.80	.58		.36
31		.83		.21	4.31		3.04		.78	.58		.35
Mean	1.24	1.38	2.10	2.86	4.94	4.99	3.63	2.69	1.94	1.69	1.52	1.38
Max.	1.35	1.84	2.50	4.59	7.26	6.57	5.60	4.30	2.11	1.86	1.56	1.44
Min.	1.15	1.25	1.76	2.19	3.55	4.14	2.99	2.12	1.78	1.58	1.45	1.33

WATER YEAR 1969 : Max. 7.26 m. Min. 1.15 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	15	16	68	77	261	293	297	136	69	44	32	24
2	16	16	69	79	292	293	355	134	69	43	31	24
3	14	18	51	81	341	267	488	140	67	42	31	23
4	16	17	44	92	390	268	406	168	66	42	31	23
5	20	18	48	103	418	351	329	237	65	42	31	23
6	20	18	44	95	484	343	282	287	64	41	30	22
7	19	19	44	91	594	380	255	202	63	41	30	22
8	18	18	64	78	522	430	234	171	62	41	30	22
9	17	24	71	82	667	444	217	151	61	41	30	22
10	17	27	61	87	814	378	210	135	60	41	30	22
11	18	26	60	84	652	351	204	127	58	40	30	22
12	17	23	65	76	656	334	191	120	57	42	30	21
13	17	20	72	75	741	321	180	114	57	48	29	21
14	17	19	93	86	637	314	171	109	56	50	29	21
15	16	18	76	98	506	335	173	105	54	43	29	20
16	16	17	79	87	436	317	177	102	54	42	29	20
17	15	18	70	78	357	351	176	98	53	41	30	20
18	14	20	76	76	320	526	172	95	53	40	30	20
19	14	23	86	94	328	591	166	92	52	39	33	20
20	14	21	99	204	295	584	161	90	51	39	30	20
21	14	20	100	263	270	542	163	88	51	38	29	19
22	14	19	87	219	254	607	180	86	50	38	27	19
23	13	18	78	189	245	669	183	83	50	37	27	19
24	13	18	66	153	238	565	187	82	50	36	26	20
25	13	18	63	137	236	450	185	80	49	36	26	22
26	12	18	67	152	220	378	184	78	48	35	26	23
27	12	19	64	187	201	328	173	77	48	35	25	24
28	12	29	59	239	205	299	158	74	47	34	25	22
29	14	39	60	306	243	275	146	72	47	33		21
30	15	48	71	327	249	267	145	70	46	33		20
31		48		275	288		150		45	33		20
Total	462	690	2,055	4,270	12,360	11,851	6,698	3,603	1,722	1,230	816	661
Mean	15.4	22.3	68.5	138	399	395	216	120	55.5	39.7	29.1	21.3
Max.	20	48	100	327	814	669	488	287	69	50	33	24
Min.	12	16	44	75	201	267	145	70	45	33	25	19
Runoff - mcm.	39.417	59.616	177.552	368.928	1,067.904	1,023.926	578.707	311.299	148.781	106.272	70.502	57.110

WATER YEAR 1969 : Max. 814 Min. 12 Mean 127 Annual Runoff 4,010.515 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 10	06.00	7.51	869				

WATER YEAR 1969
MAE KLONG RIVER BASIN

Khwae Yai at Khao Wang Masang, Kanchanaburi (K_{20})

Location: Lat. 14°-20'-52" N., Long. 99°-10'-45" E., on right bank about 500 meters upstream from Ban Kaeng Khab, Tambon Tha Kradan, Amphoe Si Sawat, Kanchanaburi.

Drainage Area: 11,184 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 44.50 m. (M.S.L.)

Bench Mark: B.M. – H.S. K20

- **Location:** Along the gage line.
- **Elevation:** + 60.932 m. (M.S.L.)

Gage Reading Frequency: 16-time daily readings at 03.00, 06.00-18.00, 21.00 and 24.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 16 readings.

Period of Available Gage Records: 1966 to date

Rating Operation:

- **Period of Rating:** 1966 to date
- **Rated by Float:** –
- **Rated by Current Meter:** 1966 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversions above gage site. No adjustment made for virgin flow.

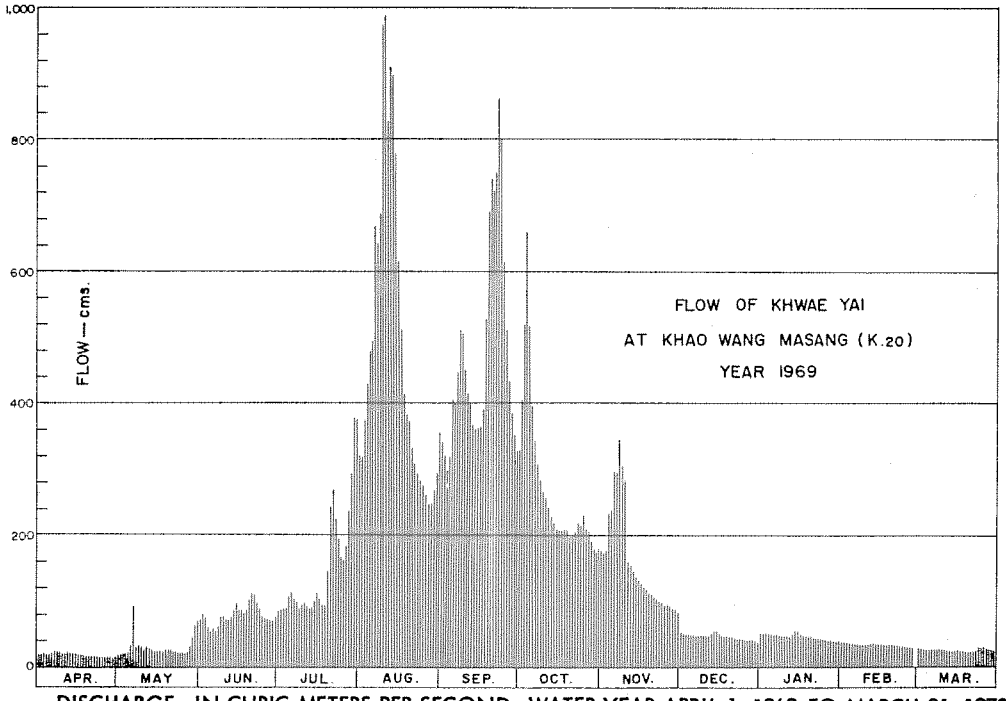
GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	45.32	45.28	46.03	46.21	48.52	48.78	48.54	47.22	46.23	45.83	45.64	45.50
2	.34	.30	.17	.24	.51	.65	49.12	.16	.22	.83	.63	.49
3	.33	.31	.12	.27	.82	.50	.76	.19	.19	.82	.63	.48
4	.28	.33	45.92	.26	49.16	.29	50.42	.75	.17	.81	.62	.47
5	.32	.35	.82	.48	.53	.60	49.46	.80	.15	.80	.61	.47
6	45.39	45.48	45.91	46.53	49.65	49.11	49.00	48.35	46.13	45.80	45.60	45.46
7	.40	46.30	.84	.43	50.46	.06	48.63	.29	.11	.79	.60	.46
8	.38	45.47	.87	.39	.31	.44	.38	.70	.11	.79	.59	.47
9	.35	.55	46.10	.26	.51	.71	.17	.40	.10	.79	.59	.47
10	.34	.51	.14	.34	51.63	.67	.01	.21	.09	.79	.59	.45
11	45.34	45.56	46.07	46.39	51.68	49.24	47.92	47.07	46.07	45.78	45.60	45.45
12	.36	.52	.05	.31	.08	.12	.80	46.98	.05	.77	.62	.44
13	.33	.48	.10	.26	.41	.00	.68	.89	.03	.80	.61	.43
14	.33	.42	.25	.30	.36	48.81	.59	.82	.02	.87	.60	.42
15	.31	.40	.38	.42	50.73	.83	.51	.76	.01	.87	.60	.41
16	45.31	45.39	46.24	46.53	50.11	48.84	47.51	46.70	46.00	45.80	45.59	45.40
17	.30	.45	.25	.37	49.65	.85	.52	.65	45.99	.77	.59	.40
18	.28	.38	.16	.32	.17	49.40	.51	.61	.98	.77	.59	.39
19	.27	.43	.24	.32	48.97	50.41	.51	.56	.97	.76	.59	.39
20	.26	.46	.39	.75	.90	.67	.40	.52	.96	.75	.58	.38
21	45.26	45.43	46.53	47.86	48.63	50.76	47.44	46.48	45.95	45.74	45.57	45.38
22	.26	.39	.50	48.07	.42	.62	.47	.45	.94	.73	.56	.38
23	.26	.38	.35	47.72	.29	51.23	.63	.42	.92	.72	.55	.50
24	.25	.36	.23	.42	.20	.03	.56	.39	.90	.71	.54	.54
25	.24	.35	.12	.10	.16	50.28	.72	.35	.89	.70	.53	.49
26	45.24	45.35	46.10	47.05	48.08	49.69	47.53	46.34	45.89	45.69	45.53	45.53
27	.24	.37	.08	.26	47.90	.28	.50	.32	.88	.68	.52	.47
28	.26	.40	.06	.82	.84	48.97	.37	.29	.87	.67	.51	.46
29	.23	.61	.02	48.41	.96	.72	.24	.27	.86	.67		.45
30	.26	.93	.11	.93	48.25	.57	.17	.25	.85	.66		.44
31		46.06		.93	.37		.24		.84	.65		.43
Mean	45.30	45.48	46.14	46.90	49.36	49.40	47.98	47.02	44.52	45.76	45.58	45.45
Max.	45.40	46.30	46.53	48.93	51.68	51.23	50.42	48.70	46.23	45.87	45.64	45.54
Min.	45.23	45.28	45.82	46.21	47.84	48.29	47.17	46.25	45.84	45.65	45.51	45.38

WATER YEAR 1969 : Max. 51.68 m. Min. 45.23 m.

H.62

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	19	17	69	84	320	355	322	178	86	53	40	30
2	20	18	81	87	319	337	406	172	85	53	39	29
3	20	19	77	89	361	317	520	175	82	53	39	29
4	17	20	61	88	413	292	659	233	81	52	38	28
5	19	21	53	108	477	330	465	239	79	51	37	28
6	23	29	60	113	499	405	387	299	77	51	37	28
7	24	92	54	104	668	397	334	293	76	50	37	28
8	23	28	57	100	634	461	303	344	76	50	36	28
9	21	33	75	88	679	511	280	305	75	50	36	28
10	20	31	78	96	974	503	262	284	74	50	36	27
11	20	24	73	100	989	427	252	163	73	50	37	27
12	22	31	71	93	822	406	239	154	71	49	38	26
13	20	29	75	88	911	387	226	145	69	51	38	26
14	20	25	87	92	897	359	216	139	67	57	37	25
15	19	24	99	105	731	362	207	133	68	57	37	25
16	19	23	87	113	591	364	207	128	67	51	36	24
17	18	27	87	98	499	365	208	123	66	49	36	24
18	17	23	80	94	415	454	207	120	65	49	36	23
19	16	26	87	94	382	656	207	115	65	48	36	23
20	16	28	100	132	372	717	196	112	64	47	36	23
21	16	26	113	246	334	739	200	108	63	47	35	23
22	16	23	110	269	307	705	203	105	62	46	34	23
23	16	23	96	230	293	861	220	103	61	45	33	25
24	15	22	86	198	283	809	213	100	59	45	33	31
25	15	21	77	166	279	628	230	96	58	44	33	29
26	15	21	75	161	270	504	209	96	58	43	32	31
27	15	22	73	182	250	434	206	94	57	43	31	28
28	16	24	72	241	243	382	193	91	57	42	31	28
29	14	38	69	306	257	347	180	89	56	42		27
30	16	61	76	376	288	326	173	87	55	41		26
31		72		376	302		180		54	40		25
Total	547	931	2,358	4,715	15,058	14,140	8,310	4,823	2,106	1,499	1,003	825
Mean	18.2	30.0	78.6	152	486	471	268	161	67.9	48.3	35.8	26.6
Max.	24	92	113	376	989	861	659	344	86	57	40	31
Min.	14	17	53	84	243	292	173	87	54	40	31	25
Runoff — mcm.	47.261	80.438	203.731	407.376	1,301.011	1.221.696	717.984	416.707	181.958	129.513	86.659	71.820

WATER YEAR 1969 : Max. 989 Min. 14 Mean 154 Annual Runoff 4,865.616 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 11	01.00	51.99	1,084				

WATER YEAR 1969
MAE KLONG RIVER BASIN

Huai Mae Nam Noi at Tambon Tha Thung Na, Kanchanaburi (K_{22A})

Location: Lat. 14°-26'-44" N., Long. 98°-48'-08" E., on left bank about 3 kilometers downstream from K22 station at Tambon Thu Thung No, Amphoe Sai Yok, Kanchanaburi.

Drainage Area: 321 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 66.690 m. (M.S.L.)

Bench Mark: B.M _ H.S

- **Location:** Near the Meteorological station
- **Elevation:** + 76.874 m. (M.S.L.)

Gage Reading Frequency: 16-time readings at 03.00, 06.00-18.00, 21.00 and 24.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 16 readings.

Period of Available Gage Records: 1969 to date

Rating Operation:

- **Period of Rating:** 1969 to date
- **Rated by Float:** -
- **Rated by Current Meter:** 1969 to date

Stability of Channel Regimes: Unstable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

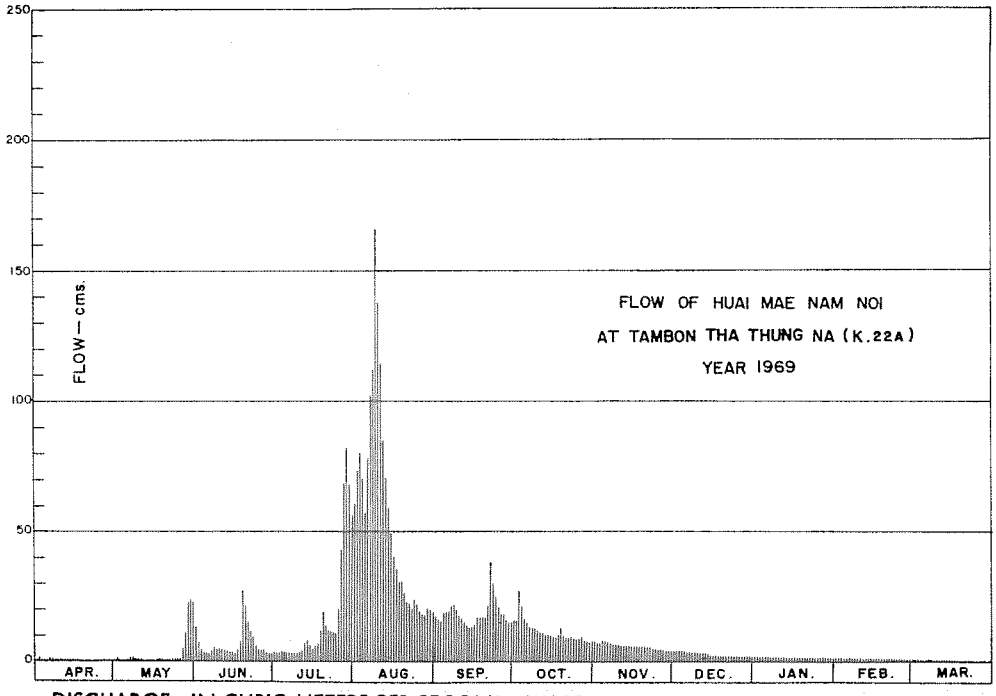
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversions at above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	66.99	66.95	67.96	67.27	69.40	67.94	67.90	67.49	67.35	67.29	67.24	67.20
2	67.06	67.00	.41	.26	.80	.90	.91	.49	.35	.29	.24	.20
3	66.99	66.98	.27	.24	.95	.87	68.32	.48	.35	.28	.24	.20
4	.98	.97	.26	.29	.57	68.02	.02	.51	.35	.28	.24	.20
5	.98	.97	.21	.27	.22	.01	67.90	.51	.34	.28	.24	.19
6	67.03	67.03	67.19	67.24	70.13	68.00	67.84	67.48	67.34	67.28	67.24	67.19
7	.02	.05	.30	.25	.55	.10	.79	.46	.34	.28	.23	.19
8	66.98	.07	.37	.23	.77	.12	.76	.45	.34	.28	.23	.19
9	.97	.02	.33	.22	72.00	.01	.74	.44	.33	.28	.23	.19
10	.99	.02	.35	.23	71.31	67.93	.70	.43	.33	.27	.23	.18
11	66.98	67.00	67.33	67.25	70.39	67.90	67.67	67.43	67.33	67.27	67.23	67.18
12	.97	66.98	.28	.29	69.84	.83	.64	.42	.33	.27	.24	.18
13	.96	.99	.29	.48	.68	.79	.62	.41	.33	.29	.24	.18
14	.95	.99	.25	.51	.23	.78	.61	.41	.32	.28	.24	.18
15	.95	.98	.25	.40	.00	.77	.59	.41	.32	.28	.24	.18
16	66.94	66.98	67.22	67.37	69.77	67.82	67.58	67.40	67.32	67.27	67.23	67.18
17	.94	67.02	.28	.41	.64	.95	.56	.40	.32	.27	.23	.18
18	.94	.04	.38	.45	.43	.92	.58	.40	.32	.27	.23	.17
19	.94	.00	68.33	.72	.47	.95	.76	.39	.31	.27	.23	.17
20	.93	66.98	.08	68.03	.28	.95	.58	.39	.31	.26	.22	.17
21	66.93	66.97	67.85	67.81	68.18	67.99	67.56	67.38	67.31	67.26	67.22	67.17
22	.93	.99	.64	.73	.11	68.68	.56	.38	.31	.26	.22	.17
23	.92	67.04	.51	.71	.03	.45	.60	.37	.30	.26	.22	.18
24	.92	.00	.40	.65	.21	.22	.53	.37	.30	.26	.21	.21
25	.92	.01	.34	.66	.11	.08	.53	.37	.30	.26	.21	.20
26	66.91	67.07	67.32	68.01	68.00	67.98	67.54	67.36	67.30	67.26	67.21	67.19
27	.91	.47	.28	.78	67.98	.98	.59	.36	.30	.25	.21	.21
28	.92	.70	.25	69.69	.96	.91	.51	.36	.29	.25	.21	.19
29	.91	68.17	.24	70.01	68.08	.86	.50	.36	.29	.25		.18
30	.94	.22	.24	.50	.06	.84	.48	.35	.29	.25		.18
31		.16		.27	.01		.51		.29	.25		.18
Mean	66.96	67.16	67.41	67.78	69.10	67.98	67.68	67.41	67.32	67.27	67.23	67.18
Max.	67.06	68.22	68.33	70.01	72.00	68.68	68.32	67.51	67.35	67.29	67.24	67.21
Min.	66.91	66.95	67.19	67.22	67.96	67.77	67.48	67.35	67.29	67.25	67.21	67.17

WATER YEAR 1969 : Max. 72.00 m. Min. 66.91 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.93	0.65	12	4.11	61	17	16	7.62	4.15	2.16	1.46	0.90
2	1.60	1.00	6.18	3.98	74	16	16	7.62	4.15	2.16	1.46	0.90
3	0.93	0.68	4.11	3.72	80	15	27	7.44	4.15	2.02	1.46	0.90
4	0.86	0.79	3.98	4.37	66	19	19	8.00	4.15	2.02	1.46	0.90
5	0.86	0.79	3.33	4.11	55	19	16	8.00	3.78	2.02	1.46	0.81
6	1.30	1.30	3.08	3.72	86	19	15	7.44	3.78	2.02	1.46	0.81
7	1.20	1.50	4.50	3.85	103	21	14	7.08	3.78	2.02	1.32	0.81
8	0.86	1.70	5.55	3.59	111	22	13	6.90	3.78	2.02	1.32	0.81
9	0.79	1.20	4.95	3.46	166	19	13	6.72	3.41	2.02	1.32	0.81
10	0.93	1.20	5.25	3.59	134	17	12	6.54	3.41	1.88	1.32	0.72
11	0.86	1.00	4.95	3.85	96	16	11	6.54	3.41	1.88	1.32	0.72
12	0.79	0.86	4.24	4.37	76	15	11	6.36	3.41	1.88	1.46	0.72
13	0.72	0.93	4.37	7.44	70	14	10	6.18	3.41	2.16	1.46	0.72
14	0.65	0.93	3.85	8.00	55	13	10	6.18	3.04	2.02	1.46	0.72
15	0.65	0.86	3.85	6.00	47	13	9.60	6.18	3.04	2.02	1.46	0.72
16	0.58	0.86	3.46	5.55	40	14	9.40	*6.00	3.04	1.88	1.32	0.72
17	0.58	1.20	4.24	6.18	36	17	9.00	6.00	3.04	1.88	1.32	0.72
18	0.58	1.40	5.70	6.90	30	17	9.40	6.00	3.04	1.88	1.32	0.63
19	0.58	1.00	28	12	31	17	13	5.63	2.67	1.88	1.32	0.63
20	0.51	0.86	21	19	26	17	9.40	5.63	2.67	1.74	1.18	0.63
21	0.51	0.79	15	14	23	18	9.00	5.26	2.67	1.74	1.18	0.63
22	0.51	0.93	11	12	22	38	9.00	5.26	2.67	1.74	1.18	0.63
23	0.44	1.40	8.00	12	19	31	9.80	4.89	2.30	1.74	1.18	0.72
24	0.44	1.00	6.00	11	24	24	9.40	4.89	2.30	1.74	1.04	1.04
25	0.44	1.10	5.10	11	22	21	8.40	4.89	2.30	1.74	1.04	0.90
26	0.37	1.70	4.80	19	19	18	8.60	4.52	2.30	1.74	1.04	0.81
27	0.37	7.26	4.24	41	18	18	9.60	4.52	2.30	1.60	1.04	1.04
28	0.44	12	3.85	71	18	16	8.00	4.52	2.16	1.60	1.04	0.81
29	0.37	23	3.72	82	21	15	7.80	4.52	2.16	1.60		0.72
30	0.58	24	3.72	64	20	15	7.44	4.15	2.16	1.60		0.72
31		23		56	19		8.00		2.16	1.60		0.72
Total	21.23	116.89	202.02	510.79	1,668	551	356.84	181.48	94.79	58.00	36.40	24.04
Mean	0.71	3.77	6.73	10.5	53.8	18.4	11.5	6.04	3.06	1.87	1.30	0.77
Max.	1.60	24	28	82	166	38	27	8.00	4.15	2.16	1.46	1.04
Min.	0.37	0.65	3.08	3.46	18	13	7.44	4.15	2.16	1.60	1.04	0.63
Runoff - MCM.	1.834	10.099	17.455	44.132	144.115	47.606	30.831	15.680	8.190	5.011	3.145	0.077

WATER YEAR 1969 : Max. 166 Min. 0.37 Mean 10.5 Annual Runoff 330.176 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Aug. 9	24.00	72.79	207				

WATER YEAR 1969
MAE KLONG RIVER BASIN

Lam Taphoen at Ban Wang Yai, Kanchanaburi (K_{27})

Location: Lat. 14°-20'-14" N., Long. 99°-29'-22" E., on left bank about 3 kilometers upstream from Ban Lat Ya, Amphoe Bo Phloi, Kanchanaburi.

Drainage Area: 1,921 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: In the fence of Meteorological station

Elevation: + 6.250 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1968 to date

Rating Operation:

Period of Rating: 1968 to date

Rated by Float: -

Rated by Current Meter: 1968 to date

Stability of Channel Regimes: Stable, shifting adjustment is included for flow computation.

Overbank Flow Conditions: No overbank flow.

General Description: Records fair except those for drought periods which are poor. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

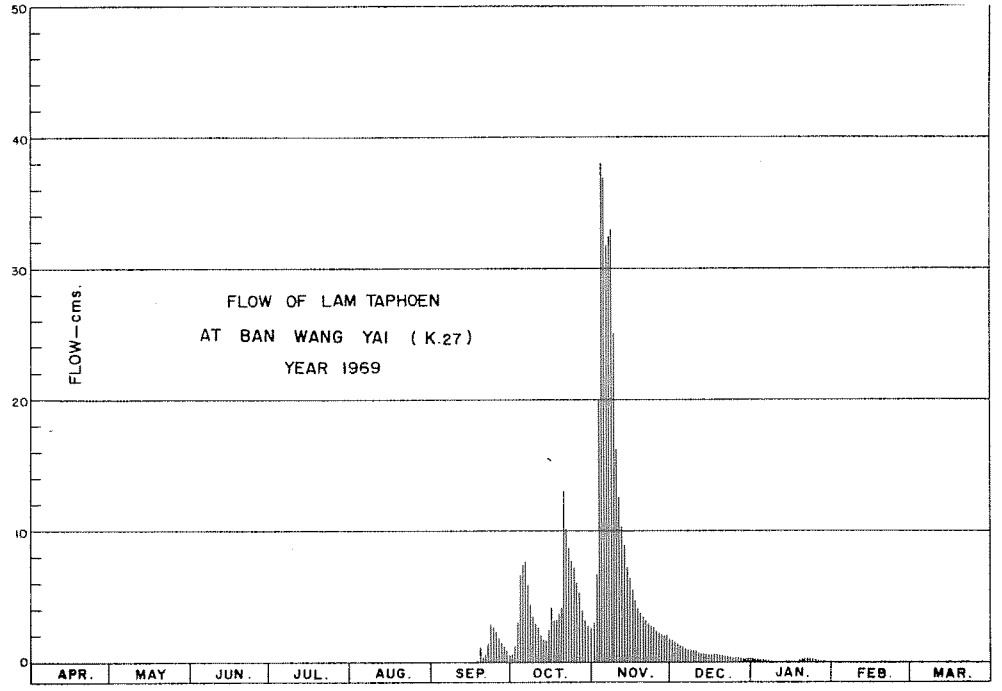
Remarks: Record for periods of no flow are omitted.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.37						0.97	1.35	1.36	0.90	0.80	0.63
2	.34						1.05	.59	.33	.90	.79	.59
3	.31						.34	2.58	.29	.89	.79	.56
4	.28						2.03	4.82	.24	.87	.77	.54
5	.34						.18	.77	.20	.87	.77	.52
6	0.30						2.24	4.37	1.17	0.87	0.76	0.50
7	.27						1.99	.39	.16	.87	.75	.47
8	.24						.73	.39	.14	.86	.74	.46
9	.22						.54	3.84	.11	.86	.73	.44
10	.20						.42	2.99	.09	.86	.72	.42
11	0.19						1.33	2.55	1.06	0.84	0.73	0.40
12	.17		0.37				.27	.30	.05	.85	.72	.38
13	.15		.21				.20	.10	.03	.86	.71	.36
14	.13		.13				.16	1.91	.03	.86	.71	.33
15	.11		.09				.24	.78	.01	.87	.84	.31
16	0.10		0.04				1.74	1.68	1.00	0.87	0.82	0.30
17	.08		.01				.56	.65	0.99	.88	.76	.28
18	.06					0.81	.57	.59	.99	.86	.73	.26
19	.05					1.19	.65	.54	.98	.88	.72	.25
20	.03					0.98	.73	.49	.97	.91	.77	.24
21	0.02					1.04	3.03	1.44	0.95	0.90	0.78	0.22
22						.25	2.58	.40	.95	.90	.77	.21
23						.56	.41	.37	.94	.90	.77	.21
24						.53	.13	.36	.93	.87	.77	.22
25						1.45	.04	.29	.93	.86	.75	.20
26						1.34	1.85	1.27	0.92	0.86	0.73	0.20
27						.23	.78	.25	.92	.85	.71	.78
28						.13	.52	.27	.91	.84	.69	.75
29						.06	.42	.34	.91	.83		.67
30						.00	.35	.34	.91	.82		.63
31							.33		.91	.81		.57
Mean							1.69	2.23	1.01	0.85	0.75	0.42
Max.						1.56	3.03	4.82	1.36	0.91	0.84	0.78
Min.						0.81	0.97	1.25	0.91	0.81	0.69	0.20

WATER YEAR 1969 : Max. 4.82 m. Min. 0.20 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1							0.47	2.66	1.70	0.30	0.00	0.00
2							0.77	3.88	1.55	0.30		
3							2.10	10	1.38	0.27		
4							6.20	38	1.33	0.21		
5							7.22	37	1.16	0.21		
6							7.64	31	1.03	0.12		
7							5.94	32	0.99	0.12		
8							4.30	33	0.96	0.009		
9							3.52	26	0.95	0.009		
10							2.83	16	0.86	0.009		
11							2.35	12	0.73	0.003		
12							2.05	10	0.69	0.006		
13							1.70	8.49	0.61	0.009		
14							1.51	7.15	0.61	0.009		
15							1.90	6.27	0.54	0.12		
16							4.18	5.62	0.65	0.12		
17							3.10	4.42	0.61	0.15		
18						0.00	3.16	4.06	0.61	0.009		
19						1.03	3.64	3.76	0.58	0.24		
20						0.24	4.12	3.46	0.54	0.33		
21						0.44	13	3.16	0.47	0.30		
22						1.29	9.39	2.94	0.47	0.30		
23						2.83	8.13	2.77	0.44	0.30		
24						2.66	7.57	2.72	0.40	0.21		
25						2.25	6.94	2.35	0.40	0.18		
26						1.70	5.69	2.25	0.37	0.18		
27						1.55	5.24	2.15	0.37	0.15		
28						1.12	3.64	1.95	0.33	0.12	0.00	
29						0.82	3.05	2.05	0.33	0.009		
30						0.58	2.66	1.75	0.33	0.006		
31							2.55		0.33	0.003		0.00
Total						18.51	136.56	318.86	22.32	4.311	0.00	0.00
Mean						0.62	4.40	10.6	0.72	0.139		
Max.						2.83	13	38	1.70	0.33		
Min.						0.00	0.47	1.75	0.33	0.003		
Runoff - mcm.						1.599	11.797	27.549	1.928	0.372	0.000	0.000

WATER YEAR 1969 : Max. 38 Min. 0.00 Mean 1.37 Annual Runoff 43.248 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 4	21.00	5.07	42				

WATER YEAR 1969
PHET RIVER BASIN

Phet River at Ban Rai Phaniat, Phetchaburi (B_{1A})

Location: Lat. 13°-04'-22" N., Long. 99°-56'-37" E., next to Muang Thamon Regulator, Ban Rai Phaniat, Tambon Ban Mo, Amphoe Muang, Phetchaburi.

Drainage Area: 4,188 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (M.S.L.)

Bench Mark: B.M. ; R.I.D. 075

Location: At the cross road infront of Wang Ban Pun.

Elevation: + 4.179 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1961 to date

Rating Operation:

Period of Rating: 1965, 1967-1971

Rated by Float:

Rated by Current Meter: 1965, 1967-1971

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow.

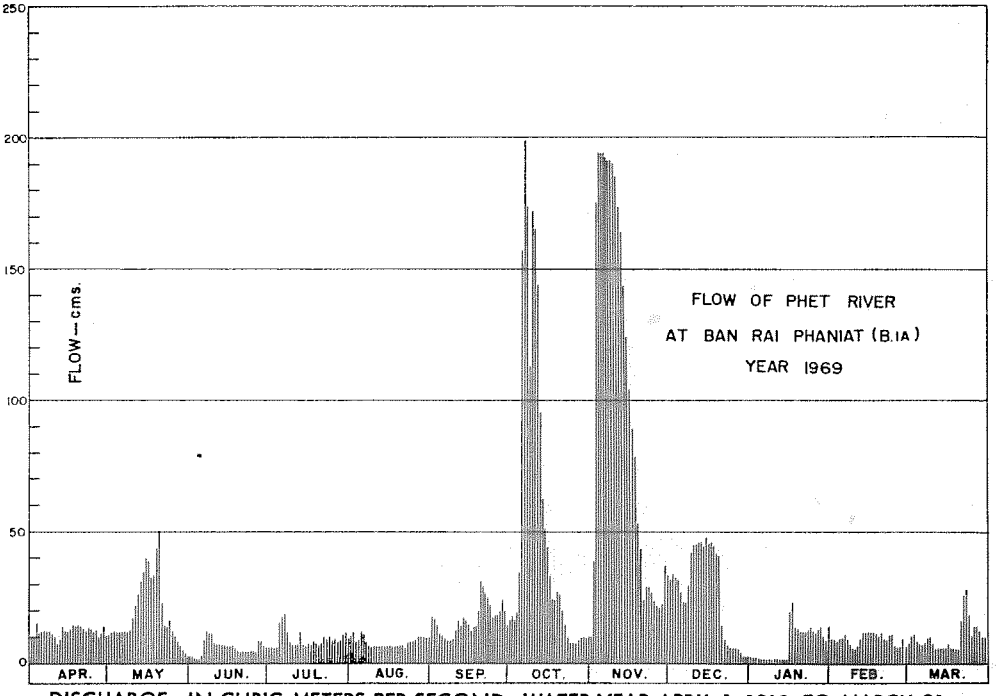
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1970. Flow regulated by Kaeng Krachan reservoir and Phet Diversion Dam at above gage site, for irrigation of about 27,800 hectares. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.30	1.40	0.94	1.16	1.32	1.71	1.62	1.35	2.21	0.95	1.52	1.22
2	.35	.42	.90	.12	.43	.65	.72	.65	.29	.95	.51	.37
3	.57	.42	.88	.12	.27	.55	.60	4.94	.26	.94	.50	.40
4	.38	.44	.88	.16	.27	.39	.84	5.26	.23	.92	.33	.25
5	.43	.45	.91	.56	.45	.35	2.54	.26	.02	.91	.36	.21
6	1.46	1.45	1.28	1.69	1.38	1.30	5.10	5.25	1.91	0.89	1.40	1.20
7	.45	.45	.43	.74	.24	.27	.32	.22	.89	.87	.27	.21
8	.43	.44	.41	.45	.16	.27	4.83	.21	2.09	.87	.16	.32
9	.39	.48	.38	.23	.14	.27	3.85	.22	.56	.88	.14	.35
10	.34	.72	.22	.20	.16	.41	4.96	.17	.65	.87	.14	.21
11	1.19	1.83	1.21	1.21	1.16	1.63	4.83	5.01	2.63	0.87	1.23	1.13
12	.31	2.06	.21	.19	.16	.47	.29	4.94	.66	.87	.31	.12
13	.55	.24	.20	.43	.15	.67	3.36	.69	.67	.87	.45	.12
14	.45	.35	.19	.21	.17	.60	2.90	.37	.60	.87	.43	.12
15	.42	.48	.19	.16	.16	.58	.58	.10	.72	.88	.42	.11
16	1.49	2.45	1.18	1.21	1.16	1.43	2.35	3.83	2.63	1.73	1.42	1.21
17	.59	.23	.18	.23	.16	.52	1.94	.61	.67	.89	.42	.14
18	.53	.22	.10	.26	.16	.52	.96	.43	.59	.50	.38	.12
19	.57	.54	.06	.24	.18	.83	2.05	2.83	.52	.50	.36	.11
20	.53	.80	.06	.17	.18	2.21	.03	.58	.51	.42	.44	.11
21	1.50	1.87	1.05	1.24	1.17	2.08	1.79	1.86	1.41	1.46	1.32	1.72
22	.46	.52	.05	.35	.18	.03	.53	2.12	.29	.46	.29	2.00
23	.53	.51	.05	.26	.24	1.89	.35	.13	.17	.48	.40	.09
24	.47	.62	.05	.36	.26	.65	.23	.03	.14	.51	.38	1.75
25	.45	.42	.05	.28	.26	.71	.23	1.89	.13	.43	.17	.37
26	1.49	1.35	1.06	1.32	1.30	1.69	1.22	1.87	1.12	1.41	1.13	1.55
27	.30	.25	.27	.26	.35	.74	.28	.82	.10	.48	.17	.53
28	.44	.15	.27	.23	.35	.94	.34	.80	.03	.54	.33	.44
29	.51	.06	.13	.40	.33	.80	.34	2.39	0.98	.36	–	.37
30	.35	.00	.12	.46	.34	.55	.32	.31	.97	.26	–	.36
31	–	0.96	–	.32	.36	–	.36	–	.97	.53	–	.34
Mean	1.44	1.73	1.13	1.30	1.24	1.62	2.83	3.47	2.05	1.20	1.33	1.34
Max.	1.59	2.80	1.43	1.74	1.45	2.21	5.32	5.26	2.72	1.89	1.52	2.09
Min.	1.19	0.96	0.88	1.12	1.14	1.27	1.22	1.35	0.97	0.87	1.13	1.11

WATER YEAR 1969 : Max. 5.32 m. Min. 0.87 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	9.00	11	2.32	6.28	9.44	18	16	10	31	2.40	14	7.40
2	10	12	1.60	5.56	12	17	18	17	34	2.40	14	10
3	15	12	1.28	5.56	8.40	14	16	171	33	2.32	13	11
4	11	12	1.28	6.28	8.40	11	21	194	32	1.96	9.66	8.00
5	12	12	1.78	15	12	10	42	194	26	1.78	10	7.20
6	12	12	8.60	18	11	9.00	182	194	23	1.44	11	7.00
7	12	12	12	19	7.80	8.40	199	191	23	1.12	8.40	7.20
8	12	12	11	12	6.28	8.40	163	191	28	1.12	6.28	9.44
9	11	13	11	7.60	5.92	8.40	99	191	42	1.28	5.92	10
10	9.80	18	7.40	7.00	6.28	11	172	188	45	1.12	5.92	7.20
11	6.82	21	7.20	7.20	6.28	16	163	176	45	1.12	7.60	5.74
12	9.22	27	7.20	6.80	6.28	13	126	171	46	1.12	9.22	5.56
13	14	32	7.00	12	6.10	17	74	153	46	1.12	12	5.56
14	12	36	6.82	7.20	6.46	16	54	131	44	1.12	12	5.56
15	12	40	6.82	6.28	6.28	15	43	114	48	1.28	12	5.38
16	13	39	6.64	7.20	6.28	12	36	98	45	19	12	7.20
17	15	32	6.64	7.60	6.28	14	24	86	46	23	12	5.92
18	14	32	5.20	8.20	6.28	14	24	77	43	13	11	5.56
19	15	42	4.48	7.80	6.64	21	27	51	41	13	10	5.38
20	14	50	4.48	6.46	6.64	31	26	43	41	12	12	5.38
21	13	22	4.30	7.80	6.46	28	20	22	11	12	9.44	18
22	12	14	4.30	10	6.64	26	14	29	8.80	12	8.80	26
23	14	14	4.30	8.20	7.80	23	10	29	6.46	13	11	28
24	13	16	4.30	10	8.20	17	7.60	26	5.92	14	11	19
25	12	12	4.30	8.60	8.20	18	7.60	23	5.74	12	6.46	10
26	13	10	4.48	9.44	9.00	18	7.40	22	5.56	11	5.74	14
27	9.00	8.00	8.40	8.20	10	19	8.60	21	5.20	13	6.46	14
28	12	6.10	8.40	7.60	10	24	9.88	20	3.94	14	9.66	12
29	14	4.48	5.74	11	9.66	20	9.88	37	2.94	10	–	10
30	10	3.40	5.56	12	9.88	14	9.44	34	2.76	8.20	–	10
31	–	2.58	–	9.44	10	–	10	–	2.76	14	–	9.88
Total	350.92	589.56	174.82	281.32	246.88	491.20	1,539.40	2,904	823.08	235.90	276.56	312.56
Mean	12.0	19.0	5.82	9.07	7.96	16.3	52.8	96.8	26.5	7.60	9.87	10.1
Max.	15	50	12	19	12	28	199	194	48	23	14	28
Min.	6.82	2.58	1.28	5.56	5.92	8.40	7.40	10	2.71	1.12	5.74	5.38
Runoff – mcm.	31.183	50.937	15.104	24.306	21.330	42.439	141.644	250.905	71.114	20.381	23.894	27.005

WATER YEAR 1969 : Max. 199 Min. 1.12 Mean 22.8 Annual Runoff 720.247 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Oct. 7	16.00	5.35	202				

WATER YEAR 1969
PHET RIVER BASIN

Phet River at Phet Barrage, Phetchaburi (B_{2A})

Location: Lat. 12°-54'-44" N., Long. 99°-51'-31" E., on left bank about 500 meters downstream of Phet Barrage, Amphoe Tha Yang, Phetchaburi.

Drainage Area: 4,060 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 12.00 m. (M.S.L.)

Bench Mark: B.M. ; H.S.

- Location: On abutment of Phet Barrage
- Elevation: + 23.00 m. (M.S.L.)

Gage Reading Frequency: 24-time daily readings at 01.00-24.00 hours

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1965 to date

Rating Operation:

- Period of Rating: 1960-61, 1965 to date
- Rated by Float:
- Rated by Current Meter: 1960-61, 1965 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

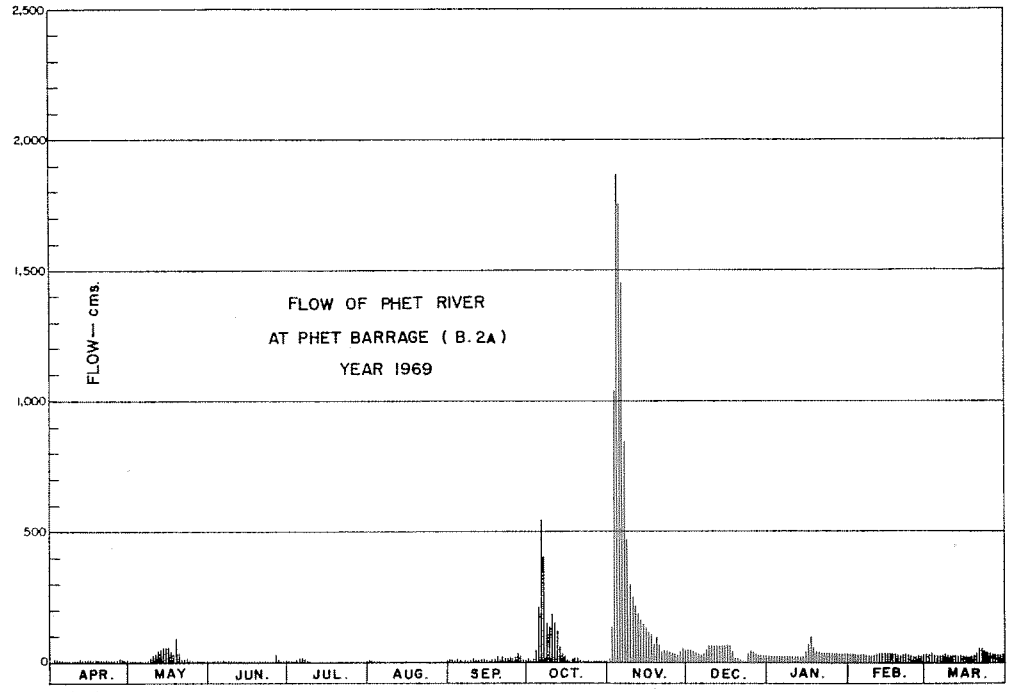
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by Kaeng Krachan reservoir and Phet barrage at above gage site for irrigation of about 27,800 hectares. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	12.19	12.25	12.06	12.18	12.35	12.36	12.55	12.16	13.09	12.70	12.90	12.81
2	.35	.25	.05	.18	.19	.36	.26	13.68	.10	.70	.90	.86
3	.30	.26	.05	.18	.19	.24	.43	19.51	.09	.70	.79	.76
4	.20	.27	.05	.30	.24	.19	.72	20.09	12.96	.70	.74	.70
5	.23	.26	.14	.40	.24	.16	15.05	19.80	.90	.70	.84	.70
6	12.23	12.25	12.25	12.59	12.17	12.16	17.15	18.45	12.66	12.70	12.84	12.70
7	.22	.25	.25	.34	.15	.16	15.90	17.33	.96	.70	.76	.75
8	.20	.18	.24	.18	.15	.16	14.41	16.23	13.24	.70	.70	.80
9	.20	.55	.17	.18	.15	.20	.46	15.82	.40	.70	.65	.72
10	.14	.64	.15	.18	.15	.45	15.00	.54	.45	.70	.70	.65
11	12.21	12.92	12.15	12.18	12.15	12.25	14.55	15.21	13.42	12.68	12.79	12.65
12	.31	13.01	.15	.18	.15	.37	.26	.01	.45	.66	.86	.63
13	.27	.08	.15	.18	.15	.36	13.22	14.69	.44	.64	.87	.63
14	.21	.30	.15	.18	.15	.35	12.81	.61	.48	.61	.84	.63
15	.21	.29	.15	.18	.15	.26	.62	.36	.50	13.16	.84	.63
16	12.40	13.26	12.15	12.18	12.15	12.24	12.28	14.25	13.50	13.36	12.84	12.63
17	.25	12.99	.14	.18	.15	.25	.20	.10	.50	.97	.84	.63
18	.30	.72	.13	.18	.15	.47	.48	13.48	12.76	.03	.78	.63
19	.27	13.81	.13	.18	.15	.71	.53	.95	.28	.00	.85	.63
20	.26	12.83	.13	.16	.15	.25	.39	.40	.33	.00	.75	.95
21	12.22	12.35	12.13	12.17	12.15	12.72	12.21	12.95	12.21	12.90	12.71	13.17
22	.30	.33	.13	.22	.16	.53	.14	13.11	.16	.91	.85	.25
23	.25	.52	.13	.20	.18	.40	.14	12.98	.13	.93	.79	.16
24	.24	.24	.13	.18	.17	.54	.14	.94	13.05	.90	.67	12.71
25	.28	.21	.13	.20	.16	.41	.14	.84	.03	.88	.65	.82
26	12.21	12.19	12.78	12.19	12.19	12.49	12.15	12.81	12.92	12.91	12.65	12.85
27	.22	.16	.23	.18	.19	.88	.17	.70	.76	.93	.69	.84
28	.39	.12	.14	.23	.17	.69	.17	13.05	.70	.83	.75	.75
29	.24	.10	.20	.29	.16	.22	.16	.28	.70	.66	–	.75
30	.25	.08	.19	.19	.16	.31	.18	.07	.70	.93	–	.75
31	–	.07	–	.20	.36	–	.17	–	.70	.90	–	.79
Mean	12.25	12.93	12.17	12.22	12.18	12.37	13.06	14.71	12.95	12.86	12.78	12.71
Max.	12.40	13.81	12.78	12.59	12.36	12.88	17.15	20.09	13.50	13.97	12.90	13.25
Min.	12.14	12.07	12.05	12.16	12.15	12.16	12.14	12.16	12.13	12.61	12.65	12.63

WATER YEAR 1969 : Max. 20.09 m. Min. 12.05 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1,1969TO MARCH 31,1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	6.35	8.60	1.92	6.00	12	13	20	5.30	46	27	36	32
2	12	8.60	1.60	6.00	6.35	13	8.98	81	47	27	36	34
3	10	8.98	1.60	6.00	6.35	8.22	15	1,350	46	27	31	30
4	6.70	9.36	1.60	10	8.22	6.35	28	1,867	39	27	29	27
5	7.84	8.98	4.60	14	8.22	5.30	186	1,700	36	27	34	27
6	7.84	8.60	8.60	22	5.65	5.30	540	1,020	25	27	34	27
7	7.46	8.60	8.60	12	4.95	5.30	282	593	39	27	30	29
8	6.70	6.00	8.22	6.00	4.95	5.30	132	334	55	27	27	32
9	6.70	20	5.65	6.00	4.95	6.70	136	272	64	27	25	28
10	4.60	24	4.95	6.00	4.95	16	181	237	67	27	27	25
11	7.08	37	4.95	6.00	4.95	8.60	143	201	65	26	31	25
12	11	42	4.95	6.00	4.95	13	120	182	67	25	34	24
13	9.36	46	4.95	6.00	4.95	13	54	155	66	24	35	24
14	7.08	58	4.95	6.00	4.95	12	32	148	69	23	34	24
15	7.08	58	4.95	6.00	4.95	8.98	23	128	70	50	34	24
16	14	56	4.95	6.00	4.95	8.22	9.74	120	70	62	34	24
17	8.60	41	4.60	6.00	4.95	8.60	6.70	109	70	100	34	24
18	10	28	4.25	6.00	4.95	17	17	69	30	43	31	24
19	9.36	90	4.25	6.00	4.95	27	19	99	9.74	41	34	24
20	8.98	33	4.25	5.30	4.95	8.60	14	64	12	41	29	39
21	7.46	12	4.25	5.65	4.95	28	7.08	39	7.08	36	27	51
22	10	12	4.25	7.46	5.30	19	4.60	47	5.30	37	34	55
23	8.60	19	4.25	6.70	6.00	14	4.60	40	4.25	38	31	50
24	8.22	8.22	4.25	6.00	5.65	20	4.60	38	44	36	26	27
25	9.74	7.08	4.25	6.70	5.30	15	4.60	33	43	35	25	33
26	7.08	6.35	31	6.35	6.35	18	4.95	32	37	37	25	34
27	7.46	5.30	7.84	6.00	6.35	35	5.65	27	30	38	26	34
28	14	3.90	4.60	7.84	5.65	26	5.65	44	27	33	29	29
29	8.22	3.20	6.70	10	5.30	7.46	5.30	57	27	25	–	29
30	8.60	2.56	6.35	6.35	5.30	11	6.00	45	27	38	–	29
31	–	2.24	–	6.70	13	–	5.65	–	27	36	–	31
Total	258.11	682.57	172.13	229.05	185.24	402.93	2,026.10	9,136.30	1,271.37	1,094	862	949
Mean	8.60	22.0	5.74	8.03	5.97	13.4	65.3	304	41.0	35.3	30.8	30.6
Max.	14	90	31	22	13	35	540	1,867	70	100	36	55
Min.	4.60	2.24	1.60	5.30	4.95	5.30	4.60	5.30	4.25	23	25	24
Runoff – MCM.	22.301	58.974	14.872	19.790	16.005	34.813	175.055	789.376	109.846	94.522	74.476	81.993

WATER YEAR 1969 : Max. 1,867 Min. 1.60 Mean 47.3 Annual Runoff 1,492.024 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 4	14.00	20.15	1,905				

WATER YEAR 1969
PHET RIVER BASIN

Phet River at Ban Song Phi Nong, Phetchaburi (B_3)

Location: Lat. 12°-52'-04" N., Long. 99°-40'-40" E., on left bank at Ban Song Phi Nong, Amphoe Tha Yang, Phetchaburi.

Drainage Area: 2,244 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 41.00 m. (M.S.L.)

Bench Mark: B.M. – H.S.

Location: Near the top gage

Elevation: + 49.760 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1930 to date

Rating Operation:

Period of Rating: 1954-59, 1965 to date

Rated by Float: –

Rated by Current Meter: 1954-59, 1968 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

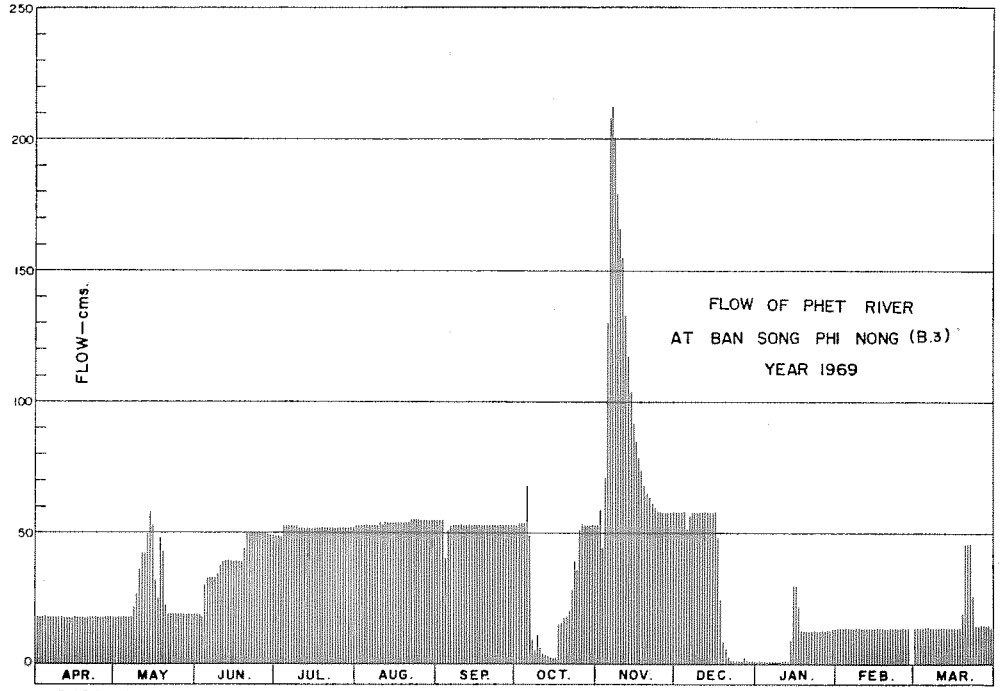
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by Kaeng Krachan reservoir. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	42.24	42.24	42.27	42.80	42.85	42.88	42.86	42.85	42.92	41.56	42.14	42.15
2	.24	.24	.27	.80	.85	.88	.87	.94	.92	.59	.14	.15
3	.24	.24	.22	.79	.85	.88	.87	.68	.92	.59	.14	.15
4	.24	.24	.51	.85	.85	.61	.87	43.19	.92	.59	.14	.15
5	.24	.24	.55	.85	.85	.83	43.05	.81	.82	.59	.14	.15
6	42.24	42.24	42.55	42.85	42.85	42.85	42.89	44.31	42.90	41.59	42.14	42.15
7	.24	.24	.55	.85	.85	.85	41.92	.33	.93	.59	.14	.15
8	.24	.33	.55	.85	.85	.85	.79	.19	.93	.59	.14	.15
9	.24	.48	.58	.85	.85	.85	42.06	.03	.93	.59	.14	.15
10	.24	.61	.65	.84	.87	.86	41.82	43.98	.93	.61	.14	.15
11	42.24	42.70	42.65	42.84	42.86	42.86	41.78	43.79	42.93	41.61	42.14	42.15
12	.24	.70	.65	.84	.87	.86	.75	.64	.92	.61	.16	.15
13	.24	.82	.65	.84	.87	.85	.74	.51	.92	.61	.15	.15
14	.24	.92	.65	.84	.87	.85	.69	.38	.92	.97	.15	.15
15	.24	.84	.65	.84	.87	.85	.69	.29	.92	42.50	.15	.15
16	42.24	42.51	42.65	42.84	42.87	42.85	41.71	43.21	42.92	42.49	42.15	42.15
17	.24	.31	.65	.84	.87	.85	42.18	.14	.69	.14	.14	.15
18	.24	.79	.65	.74	.87	.85	.20	.09	41.99	.13	.14	.15
19	.24	.69	.72	.84	.87	.85	.24	.04	.97	.13	.14	.31
20	.24	.27	.81	.84	.87	.86	.25	.01	.86	.13	.14	.75
21	42.24	42.27	42.81	42.84	42.87	42.86	42.25	42.97	41.66	42.13	42.15	42.75
22	.24	.27	.81	.84	.88	.86	.46	.95	.63	.13	.15	.75
23	.24	.27	.81	.84	.88	.86	.64	.93	.61	.13	.15	.16
24	.24	.27	.81	.84	.88	.86	.54	.92	.61	.13	.15	.16
25	.24	.27	.81	.84	.88	.86	.82	.92	.61	.13	.15	.16
26	42.24	42.27	42.81	42.84	42.88	42.86	42.85	42.92	41.60	42.13	42.15	42.16
27	.24	.27	.81	.84	.88	.86	.85	.92	.69	.13	.15	.16
28	.24	.27	.81	.84	.89	.86	.85	.92	.59	.13	.15	.16
29	.24	.27	.80	.84	.88	.86	.85	.92	.59	.13	–	.16
30	.24	.27	.80	.84	.88	.86	.85	.92	.59	.14	–	.15
31	–	.27	–	–	.88	.86	.85	–	.59	.14	–	.15
Mean	42.24	42.42	42.65	42.83	42.88	42.85	42.39	43.29	42.35	41.92	42.14	42.21
Max.	42.24	42.92	42.81	42.85	42.89	42.88	43.05	44.33	42.93	42.50	42.16	42.75
Min.	42.24	42.24	42.22	42.74	42.85	42.61	41.69	42.68	41.59	41.56	42.15	42.15

WATER YEAR 1969 : Max. 44.33 m. Min. 41.56 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	18	18	19	49	53	55	53	53	58	0.80	14	14
2	18	18	19	49	53	55	54	59	58	1.10	14	14
3	18	18	17	48	53	55	54	41	58	1.10	14	14
4	18	18	31	53	53	37	54	94	58	1.10	14	14
5	18	18	33	53	53	51	68	141	50	1.10	14	14
6	18	18	33	53	53	53	55	208	56	1.10	14	14
7	18	18	33	53	53	53	7.06	212	58	1.10	14	14
8	18	22	33	53	53	53	4.02	192	58	1.10	14	14
9	18	29	35	53	53	53	11	170	58	1.10	14	14
10	18	37	39	52	54	53	4.66	164	58	1.32	14	14
11	18	42	39	52	53	53	3.84	142	58	1.32	14	14
12	18	42	39	52	54	53	3.30	124	58	1.32	15	14
13	18	50	39	52	54	53	3.12	111	58	1.32	14	14
14	18	58	39	52	54	53	2.28	98	58	8.46	14	14
15	18	52	39	52	54	53	2.28	90	58	30	14	14
16	18	31	39	52	54	53	2.58	82	58	30	14	14
17	18	21	39	52	54	53	15	76	42	14	14	14
18	18	48	39	45	54	53	16	72	9.02	13	14	14
19	18	42	44	52	54	53	18	66	8.46	13	14	21
20	18	19	50	52	54	53	18	65	5.58	13	14	46
21	18	19	50	52	54	53	18	63	1.92	13	14	46
22	18	19	50	52	55	53	28	61	1.56	13	14	46
23	18	19	50	52	55	53	39	59	1.32	13	14	15
24	18	19	50	52	55	53	33	58	1.32	13	14	15
25	18	19	50	52	55	53	51	58	1.32	13	14	15
26	18	19	50	52	55	53	53	58	1.20	13	14	15
27	18	19	50	52	55	53	53	58	2.28	13	14	15
28	18	19	50	52	55	53	53	58	1.10	13	14	15
29	18	19	49	52	55	53	53	58	1.10	13	–	15
30	18	19	49	52	55	53	53	58	1.10	14	–	14
31	–	19	–	–	55	53	53	–	1.10	14	–	14
Total	540	828	1,196	1,549	1,674	1,631	936.14	2,849	998.38	281.34	393	544
Mean	18.0	26.7	39.9	51.6	54.0	52.6	30.2	95.0	32.2	9.07	14.0	17.5
Max.	18	58	50	53	55	55	68	212	58	30	15	46
Min.	18	18	17	45	53	37	2.28	41	1.10	0.80	14	14
Runoff – MCM.	46.656	71.539	103.334	133.834	144.634	140.918	80.882	246.154	86.260	24.308	33.955	47.001

WATER YEAR 1969 : Max. 212 Min. 0.80 Mean 36.8 Annual Runoff 1,159.476 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 7	1.00	44.36	215				

WATER YEAR 1969
PHET RIVER BASIN

Phet River at Takhian-Ha-Bat, Phetchaburi (B_5)

Location: Lat. 12°-54'-40" N., Long. 99°-38'-38" E., on right bank about 1 kilometer downstream from Kaeng Krachan reservoir, Amphoe Tha Yang, Phetchaburi.

Drainage Area: 2,207 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 48.48 m. (M.S.L.)

Bench Mark: B.M. - H.S. No. 11

Location: Infront of B. 5 station office

Elevation: + 66.904 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1962 to date

Rating Operation:

Period of Rating: 1962-66, 1968 to date

Rated by Float:

Rated by Current Meter: 1962-66, 1968 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. Flow regulated by Kaeng Krachan reservoir. No adjustment made for virgin flow.

Remarks: Flow is included service spillway November 4-28.

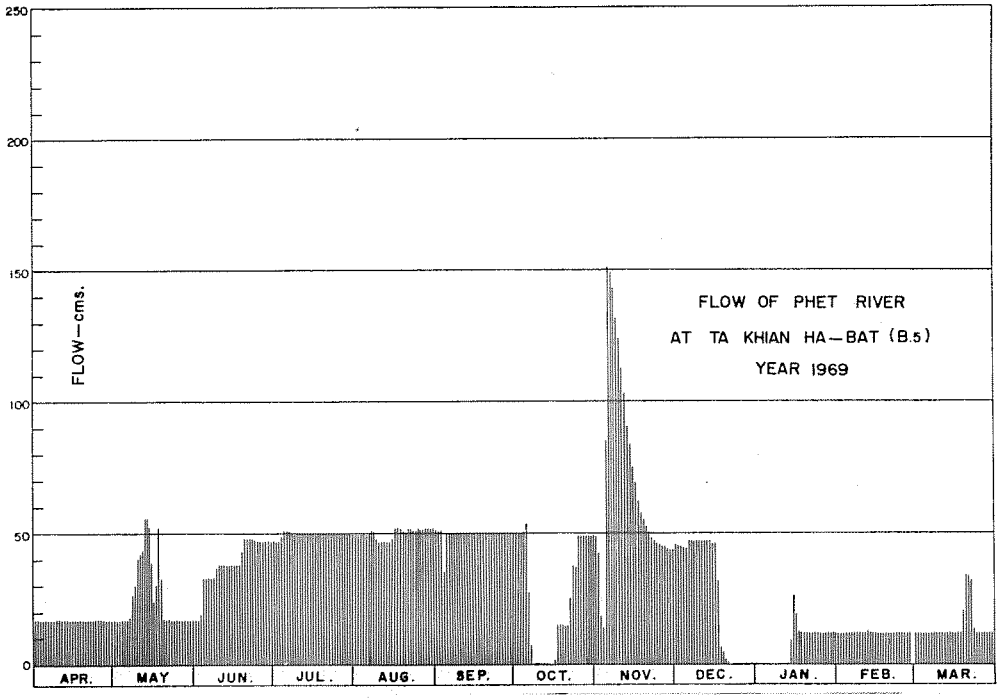
GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	49.25	49.25	49.26	50.02	50.08	50.10	50.07	50.05	49.99	47.96	48.93	48.93
2	.25	.25	.26	.02	.08	.09	.08	49.78	.98	.94	.93	.93
3	.25	.24	.30	.02	.08	.09	.08	48.65	.98	.94	.93	.93
4	.25	.24	.71	.06	.08	49.71	.08	49.29	.98	.94	.93	.92
5	.25	.25	.71	.09	.08	50.07	.15	51.10	.96	.94	.93	.91
6	49.25	49.25	49.71	50.09	50.08	50.07	49.64	51.67	50.01	47.95	48.93	48.91
7	.25	.25	.71	.09	.09	.07	48.26	.65	.01	.96	.93	.91
8	.25	.54	.71	.08	.10	.07	.12	.50	.01	.97	.93	.91
9	.25	.65	.79	.07	.01	.07	.29	.37	.01	.97	.93	.91
10	.25	.86	.83	.07	.01	.08	.22	.28	.01	.96	.93	.91
11	49.25	49.92	49.83	50.07	50.01	50.07	48.08	51.09	50.01	47.96	48.94	48.91
12	.25	.95	.83	.07	.01	.07	.05	50.92	.01	.97	.96	.91
13	.25	50.19	.83	.07	.01	.07	.00	.76	.01	.97	.93	.91
14	.25	.18	.83	.07	.01	.07	47.98	.64	.01	48.91	.93	.91
15	.25	.03	.83	.07	.01	.07	.96	.50	.00	49.50	.93	.91
16	49.25	49.48	49.83	50.07	50.11	50.06	48.34	50.39	50.00	49.15	48.93	48.91
17	.26	.47	.83	.07	.11	.07	49.18	.31	49.64	48.93	.94	.91
18	.26	50.11	.83	49.85	.11	.07	.18	.23	48.73	.93	.94	.91
19	.26	49.73	.96	50.07	.10	.07	.19	.17	.61	.93	.93	49.32
20	.25	.26	50.03	.07	.10	.07	.18	.12	.31	.93	.93	.74
21	49.25	49.26	50.03	50.07	50.11	50.07	49.17	50.07	47.98	48.93	48.93	49.74
22	.25	.26	.03	.07	.11	.07	.57	.03	.96	.93	.93	.64
23	.25	.26	.03	.07	.10	.07	.82	.01	.95	.93	.93	48.94
24	.25	.26	.02	.07	.10	.07	.79	49.99	.95	.93	.93	.91
25	.25	.26	.02	.07	.11	.07	50.06	.99	.98	.93	.93	.91
26	49.25	49.26	50.02	50.07	50.10	50.07	50.06	49.98	48.00	48.93	48.93	48.91
27	.25	.26	.02	.07	.11	.07	.06	.97	47.99	.93	.93	.91
28	.25	.26	.02	.07	.11	.07	.06	.96	.98	.93	.93	.91
29	.25	.26	.02	.07	.11	.07	.06	.96	.98	.93	–	.91
30	.25	.26	.02	.07	.12	.07	.06	.96	.97	.93	–	.90
31	–	.26	–	.07	.11	–	–	–	.97	.93	–	.90
Mean	49.25	49.48	49.82	50.06	50.08	50.06	49.25	50.38	49.13	48.55	48.93	49.00
Max.	49.26	50.19	50.03	50.09	50.12	50.10	50.15	51.67	50.01	49.50	48.96	49.74
Min.	49.25	49.24	49.26	50.02	50.01	49.71	47.96	48.65	47.95	47.94	48.93	48.90

WATER YEAR 1969 : Max. 51.67 m. Min. 47.04 m.

H.62

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	17	17	17	47	50	51	50	49	46	0.00	12	12
2	17	17	17	47	50	51	50	36	45	0.00	12	12
3	17	17	18	47	50	51	50	5.10	45	0.00	12	12
4	17	17	33	49	50	33	50	18	45	0.00	12	12
5	17	17	33	51	50	50	54	111	44	0.00	12	12
6	17	17	33	51	50	50	30	151	47	0.00	12	12
7	17	17	33	51	51	50	0.80	149	47	0.00	12	12
8	17	26	33	50	51	50	0.18	138	47	0.00	12	12
9	17	30	36	50	47	50	0.95	129	47	0.00	12	12
10	17	40	38	50	47	50	0.60	123	47	0.00	12	12
11	17	42	38	50	47	50	0.08	110	47	0.00	12	12
12	17	44	38	50	47	50	0.05	99	47	0.00	13	12
13	17	56	38	50	47	50	0.00	89	47	0.00	12	12
14	17	56	38	50	47	50	0.00	82	47	12	12	12
15	17	48	38	50	47	50	0.00	73	46	26	12	12
16	17	24	38	50	52	50	1.40	67	46	17	12	12
17	17	24	38	50	52	50	15	62	30	12	12	12
18	17	52	38	39	52	50	15	58	6.28	12	12	12
19	17	34	44	50	51	50	15	55	4.54	12	12	21
20	17	17	48	50	51	50	15	52	1.10	12	12	34
21	17	17	48	50	52	50	15	50	0.00	12	12	34
22	17	17	48	50	52	50	27	48	0.00	12	12	31
23	17	17	48	50	51	50	38	47	0.00	12	12	12
24	17	17	47	50	51	50	36	46	0.00	12	12	12
25	17	17	47	50	52	50	49	46	0.00	12	12	12
26	17	17	47	50	51	50	49	45	0.00	12	12	12
27	17	17	47	50	52	50	49	45	0.00	12	12	12
28	17	17	47	50	52	50	49	44	0.00	12	12	12
29	17	17	47	50	52	50	49	44	0.00	12	–	12
30	17	17	47	50	52	50	49	44	0.00	12	–	12
31	–	17	–	50	52	–	49	–	0.00	12	–	12
Total	510	799	1,160	1,532	1,558	1,486	807.06	2,115.10	781.92	235	337	444
Mean	17	25.8	38.7	49.4	50.2	49.5	26.0	70.5	39.1	7.58	12.0	14.3
Max.	17	56	48	51	52	51	54	151	47	26	13	34
Min.	17	17	17	39	47	33	0.00	5.10	0.00	0.00	12	12
Runoff - mcm.	44.064	69.034	100.224	132.365	134.611	128.390	69.730	182.745	67.558	20.304	29.117	38.362

WATER YEAR 1969 : Max. 151 Min. 0.00 Mean 32.2 Annual Runoff 1,016.503 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 7	24.00	51.69	152				

WATER YEAR 1969
PHET RIVER BASIN

Huai Mae Prachan at highway bridge, Phetchaburi (B_6)

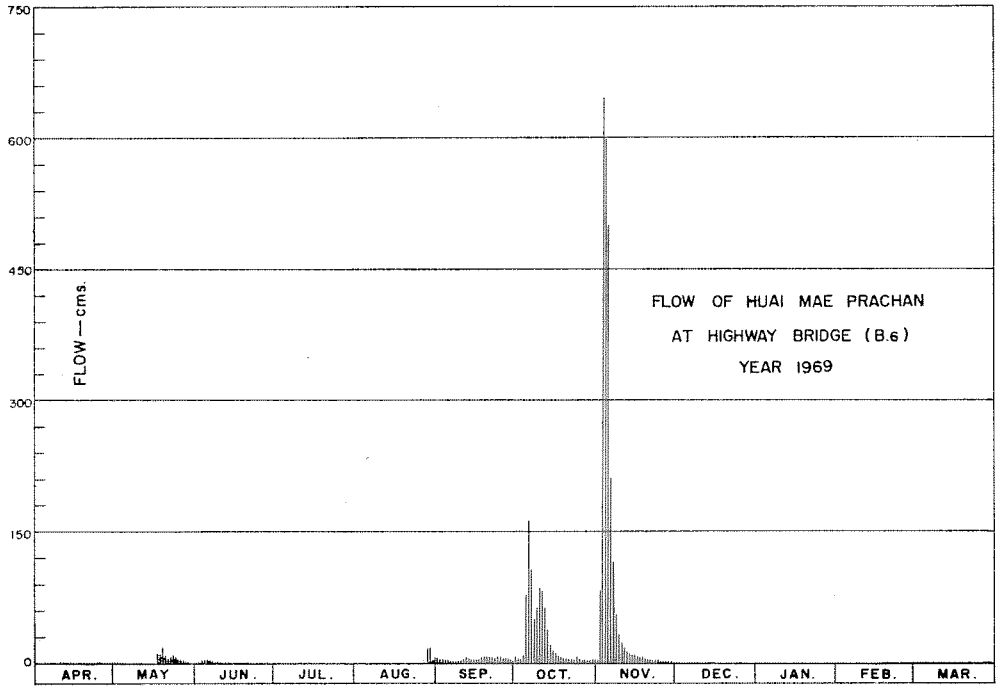
Location:	Lat. 12°-55'-56" N., Long. 99°-47'-05" E., on left bank about 250 meters upstream from the bridge on the road enter Kaeng Krachan reservoir. Amphoe Tha Yang, Phetchaburi.
Drainage Area:	1,015 sq.km.
Type of Gage:	Water-stage recorder.
Zero Gage at Bottom at:	+ 22.71 m. (M.S.L.)
Bench Mark:	B.M. - H.S./R.I.D.
Location:	On both bank along the gage line.
Elevation:	B.M.1 +29.580 m. (M.S.L.) on right bank and B.M.2 +30.223 m. (M.S.L.) on left bank.
Gage Reading Frequency:	Recording
Basis of Mean Daily Gage Height:	Arithmetic mean of 24 hourly readings.
Period of Available Gage Records:	1941-42, 1961 to date
Rating Operation:	
Period of Rating:	1961-62, 1964 to date
Rated by Float:	-
Rated by Current Meter:	1961-62, 1964 to date
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation. Including overbank flow.
Overbank Flow Conditions:	Overbank flow at elevation about +29.64 m. (M.S.L.)
General Description:	Records fair. Stage;discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	23.71	23.68	23.91	23.79	23.74	24.40	24.52	24.23	24.12	23.77	23.66	23.64
2	.71	.68	.91	.79	.74	.32	.40	25.81	.00	.77	.66	.61
3	.71	.71	24.19	.79	.73	.39	.31	30.74	23.99	.77	.66	.61
4	.71	.71	.24	.80	.73	.32	.69	31.29	.97	.76	.66	.62
5	.84	.70	.28	.90	.72	.20	26.45	30.75	.96	.75	.66	.62
6	23.91	23.69	24.25	23.89	23.72	24.11	27.55	28.32	23.95	23.75	23.65	23.62
7	.82	.80	.15	.98	.73	.08	26.54	26.57	.93	.74	.65	.61
8	.78	.76	.04	.92	.73	.11	25.63	25.78	.92	.74	.65	.60
9	.75	.90	.03	.86	.73	.25	25.88	25.38	.91	.74	.65	.60
10	.74	.98	.01	.84	.73	.23	26.51	25.14	.90	.73	.65	.60
11	23.73	23.93	23.99	23.82	23.73	24.29	26.43	24.97	23.89	23.72	23.65	23.60
12	.72	.90	.98	.81	.74	.45	25.86	.84	.88	.72	.70	.60
13	.71	.97	.96	.79	.74	.35	.23	.75	.87	.72	.75	.60
14	.71	.96	.94	.79	.74	.22	24.99	.69	.86	.72	.73	.60
15	.75	.94	.96	.79	.74	.19	.83	.60	.85	.72	.70	.59
16	23.77	23.91	23.91	23.79	23.72	24.23	24.70	24.53	23.84	23.72	23.68	23.58
17	.76	24.74	.90	.78	.71	.23	.56	.50	.84	.72	.67	.58
18	.74	.66	.89	.79	.71	.47	.45	.46	.83	.72	.66	.58
19	.73	25.01	.87	.78	.71	.67	.36	.41	.82	.71	.66	.57
20	.73	24.47	.86	.77	.73	.57	.29	.35	.81	.71	.66	.58
21	23.72	24.37	23.86	23.76	23.91	24.49	24.27	24.30	23.79	23.71	23.66	23.57
22	.71	.50	.85	.75	.88	.45	.28	.27	.79	.71	.65	.57
23	.71	.65	.84	.75	.84	.36	.25	.23	.79	.71	.64	.63
24	.70	.42	.84	.75	.81	.52	.52	.19	.79	.70	.64	.71
25	.68	.28	.85	.75	.82	.44	.36	.17	23.78	.70	.64	.66
26	23.68	24.19	23.84	23.75	24.08	24.34	24.26	24.14	23.78	23.70	23.64	23.63
27	.68	.13	.82	.75	.16	.34	.20	.11	.77	.70	.64	.63
28	.68	.08	.80	.74	.94	.30	.18	.08	.77	.70	.64	.63
29	.68	.05	.79	.74	.97	.18	.19	.07	.77	.69	-	.61
30	.68	.02	.79	.74	.12	.33	.36	.04	.77	.67	-	.61
31	-	.00	-	.74	.47	-	.24	-	.77	.67	-	.60
Mean	23.73	24.09	23.95	23.75	23.89	24.33	24.94	25.39	23.86	23.72	23.66	23.61
Max.	23.91	25.01	24.28	23.98	24.97	24.67	27.55	31.29	24.12	23.77	23.75	23.71
Min.	23.68	23.68	23.79	23.74	23.71	24.08	24.18	24.04	23.77	23.67	23.64	23.57

WATER YEAR 1969 : Max. 31.29 m. Min. 23.60 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.13	0.08	0.96	0.37	0.22	5.80	7.86	3.64	2.40	0.31	0.06	0.04
2	0.13	0.08	0.96	0.37	0.22	4.68	5.80	80	1.50	0.31	0.06	0.01
3	0.13	0.13	3.10	0.37	0.19	5.66	4.52	562	1.44	0.31	0.06	0.01
4	0.13	0.13	3.68	0.40	0.19	4.68	12	646	1.32	0.28	0.06	0.02
5	0.60	0.10	4.16	0.90	0.16	3.20	101	562	1.26	0.25	0.06	0.02
6	0.96	0.09	3.80	0.85	0.16	2.30	162	241	1.20	0.25	0.05	0.02
7	0.50	0.40	2.70	1.38	0.19	2.06	89	91	1.08	0.22	0.05	0.01
8	0.34	0.28	1.78	1.02	0.19	2.30	46	50	1.02	0.22	0.05	0.00
9	0.25	0.90	1.71	0.70	0.19	3.80	67	32	0.96	0.22	0.05	
10	0.22	1.38	1.57	0.60	0.19	3.56	87	23	0.90	0.19	0.05	
11	0.19	1.08	1.44	0.50	0.19	4.28	82	18	0.85	0.16	0.05	
12	0.16	0.90	1.38	0.45	0.22	6.60	53	14	0.80	0.16	0.10	
13	0.13	1.32	1.26	0.37	0.22	5.10	27	12	0.75	0.16	0.25	
14	0.13	1.26	1.14	0.37	0.22	3.44	19	11	0.70	0.16	0.19	
15	0.25	1.14	1.26	0.37	0.22	3.10	14	9.33	0.65	0.16	0.10	
16	0.31	0.96	0.96	0.37	0.16	4.82	11	8.25	0.60	0.16	0.08	
17	0.28	12	0.90	0.34	0.13	4.82	8.50	7.44	0.60	0.16	0.07	
18	0.22	10.40	0.85	0.37	0.13	6.92	6.69	6.83	0.55	0.16	0.06	
19	0.19	19	0.75	0.34	0.13	11	5.26	5.95	0.50	0.13	0.06	
20	0.19	6.92	0.70	0.31	0.19	8.76	4.28	5.15	0.45	0.13	0.06	
21	0.16	5.38	0.70	0.28	0.96	7.24	4.00	4.47	0.37	0.13	0.06	
22	0.13	7.40	0.65	0.25	0.80	6.60	4.14	4.04	0.37	0.13	0.05	
23	0.13	10.20	0.60	0.25	0.60	5.24	3.81	3.56	0.37	0.13	0.04	0.03
24	0.13	6.12	0.60	0.25	0.45	7.86	7.86	3.10	0.37	0.10	0.04	0.13
25	0.08	4.16	0.65	0.25	0.50	6.44	5.24	2.90	0.34	0.10	0.04	0.06
26	0.08	3.10	0.60	0.25	2.06	4.96	3.92	2.60	0.34	0.10	0.04	0.03
27	0.08	2.50	0.50	0.25	2.80	4.96	3.20	2.30	0.31	0.10	0.04	0.03
28	0.08	2.06	0.40	0.22	17	4.40	3.00	2.06	0.31	0.10	0.04	0.03
29	0.08	1.85	0.37	0.22	18	3.00	3.10	1.99	0.31	0.09	–	0.01
30	0.08	1.64	0.37	0.22	2.40	4.82	5.24	1.78	0.31	0.07	–	0.01
31	–	1.50	–	0.22	6.92	–	3.68	–	0.31	0.07	–	0.00
Total	6.47	104.46	40.50	13.41	56.20	152.40	860.10	2,417.39	23.24	5.22	1.92	0.46
Mean	0.21	3.37	1.35	0.43	1.81	5.08	27.7	80.6	0.75	0.17	0.068	0.015
Max.	0.96	19	4.16	1.38	18	11	162	646	2.40	0.31	0.25	0.04
Min.	0.08	0.08	0.37	0.22	0.13	2.06	3.00	1.78	0.31	0.07	0.04	0.00
Runoff – mcm.	0.559	9.025	3.499	1.158	4.855	13.167	74.312	208.862	2.007	0.451	0.165	0.039

WATER YEAR 1969 : Max. 646 Min. 0.00 Mean 10.1 Annual Runoff 318.104 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 3	22.00	31.57	695				

WATER YEAR 1969
PHET RIVER BASIN

Huai Mae Prachan at Ban Nong Bua, Phetchaburi (B_7)

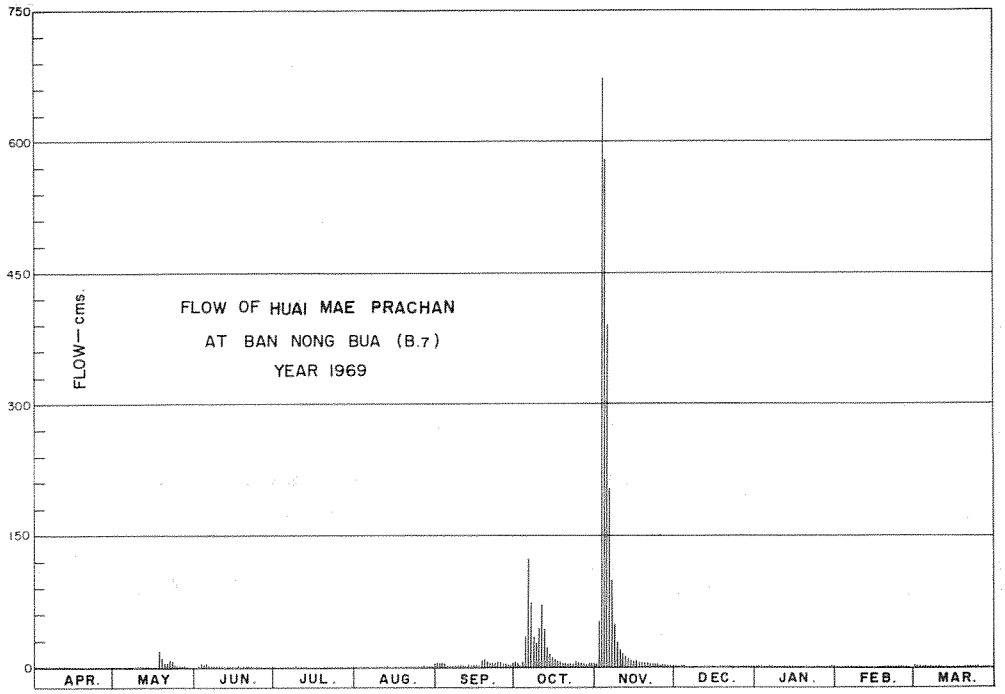
Location:	Lat. 13°-01'-45" N., Long. 99°-44'-00" E., on left bank at Ban Nong Bua, Amphoe Tha Yang, Phetchaburi.
Drainage Area:	846 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	B.M. – H.S.
Location:	Infront of B. 7 station office
Elevation:	+ 10.495 m. (A.D.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings.
Period of Available Gage Records:	1967 to date
Rating Operation:	
Period of Rating:	1967 to date
Rated by Float:	–
Rated by Current Meter:	1967 to date
Stability of Channel Regimes:	Rather stable, no shifting adjustment for flow computation. Including overbank flow.
Overbank Flow Conditions:	Overbank flow starts at elevation about + 6.60 m. (A.D.)
General Description:	Records fair. Stage;discharge relationship used is defined by discharge measurements made during 1973. No upstream State diversion for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.69	0.58	1.02	0.82	0.71	1.74	1.95	1.75	1.41	1.15	1.02	0.95
2	.68	.59	.36	.81	.69	.79	.61	3.73	.40	.16	.02	.95
3	.66	.59	.67	.84	.68	.86	.70	9.84	.38	.15	.02	.94
4	.65	.58	.59	.97	.67	.56	2.07	10.50	.36	.13	.01	.93
5	.77	.58	.65	.87	.66	.35	4.53	9.21	.34	.12	.01	.92
6	0.66	0.58	1.42	0.94	0.68	1.25	6.10	6.78	1.33	1.11	1.01	0.92
7	.65	.60	.29	.84	.69	.22	4.81	4.97	.31	.10	.01	.91
8	.64	1.17	.21	.86	.69	.32	3.55	3.99	.30	.10	.00	.91
9	.64	.09	.16	.85	.72	.53	.67	.42	.29	.09	.00	.91
10	.63	0.93	.11	.84	.72	.47	4.50	.04	.28	.09	0.99	.91
11	0.63	1.07	1.07	0.82	0.72	1.45	5.05	2.77	1.27	1.08	1.00	0.91
12	.63	.08	.04	.81	.72	.52	3.77	.58	.27	.08	.01	.91
13	.70	.05	.01	.80	.69	.57	2.97	.43	.26	.07	.01	.90
14	.71	0.99	0.97	.80	.71	.42	.70	.31	.25	.07	.00	.90
15	.66	.92	.94	.78	.70	.51	.43	.20	.23	.06	.00	.90
16	0.64	0.88	0.93	0.80	0.68	1.33	2.26	2.11	1.22	1.06	1.00	0.90
17	.63	1.37	.92	.78	.69	.50	.06	.04	.20	.07	0.99	.90
18	.63	3.13	.88	.76	.67	2.19	1.98	1.97	.20	.07	.98	.90
19	.62	2.37	.87	.78	.79	.32	.77	.91	.19	.06	.99	.91
20	.62	1.75	.87	.78	1.09	1.90	.67	.85	.19	.06	.99	.91
21	0.62	1.85	0.84	0.77	0.91	2.00	1.73	1.79	1.18	1.06	0.99	0.91
22	.61	2.39	.83	.77	.86	1.80	.70	.74	.18	.06	.98	.91
23	.61	.14	.82	.77	.85	.73	.81	.69	.18	.05	.97	.94
24	.60	1.26	.84	.76	.85	2.05	2.17	.64	.17	.05	.97	.96
25	.60	.45	.81	.75	.87	1.98	1.81	.61	.16	.05	.96	.94
26	0.59	1.28	0.79	0.74	1.07	1.58	1.67	1.58	1.16	1.04	0.96	0.94
27	.59	.19	.79	.74	0.93	.81	.59	.54	.15	.03	.95	.94
28	.59	.12	.78	.74	1.01	.46	.55	.51	.15	.04	.95	.95
29	.61	.07	.78	.74	.30	.39	.89	.47	.16	.04	–	.94
30	.58	.03	.81	.73	.55	.98	.84	.44	.16	.03	–	.92
31	–	.01	–	.72	.82	–	.69	–	.16	.03	–	.93
Mean	0.63	1.21	1.03	0.79	1.01	1.65	2.60	3.20	1.24	1.04	0.99	0.92
Max.	0.77	3.13	1.67	0.97	1.82	2.32	6.10	10.50	1.41	1.16	1.02	0.96
Min.	0.58	0.58	0.78	0.72	0.66	1.22	1.55	1.44	1.15	1.03	0.95	0.90

WATER YEAR 1968 : Max. 10.50 m. Min. 0.58 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.045	0.00	0.34	0.12	0.055	3.74	5.20	3.80	1.76	0.65	0.34	0.25
2	0.040		1.50	0.11	0.045	4.04	2.96	64	1.70	0.68	0.34	0.25
3	0.030		3.32	0.14	0.040	4.52	3.50	552	1.60	0.65	0.34	0.24
4	0.025		2.84	0.27	0.035	2.66	6.16	672	1.50	0.59	0.32	0.23
5	0.085		3.20	0.17	0.030	1.45	51	545	1.40	0.56	0.32	0.22
6	0.030		1.82	0.24	0.040	1.00	123	160	1.35	0.53	0.32	0.22
7	0.025	0.00	1.16	0.14	0.045	0.88	61	68	1.25	0.50	0.32	0.21
8	0.020	0.71	0.84	0.16	0.045	1.30	27	37	1.20	0.50	0.30	0.21
9	0.020	0.48	0.68	0.15	0.060	2.48	29	24	1.16	0.48	0.30	0.21
10	0.015	0.23	0.53	0.14	0.060	2.12	50	18	1.12	0.48	0.29	0.21
11	0.015	0.44	0.44	0.12	0.060	2.00	71	14	1.08	0.46	0.30	0.21
12	0.015	0.46	0.38	0.11	0.060	2.42	31	11	1.08	0.46	0.32	0.21
13	0.050	0.40	0.32	0.10	0.045	2.72	17	9.56	1.04	0.44	0.32	0.20
14	0.055	0.29	0.27	0.10	0.055	1.82	13	8.21	1.00	0.44	0.30	0.20
15	0.030	0.22	0.24	0.090	0.050	2.36	9.56	7.20	0.92	0.42	0.30	0.20
16	0.020	0.18	0.23	0.10	0.040	1.35	7.74	6.48	0.88	0.42	0.30	0.20
17	0.015	1.55	0.22	0.090	0.045	2.30	6.08	5.92	0.80	0.44	0.29	0.20
18	0.015	19	0.18	0.080	0.035	7.12	5.44	5.36	0.80	0.44	0.28	0.20
19	0.010	8.87	0.17	0.090	0.095	8.32	3.92	4.88	0.77	0.42	0.29	0.21
20	0.010	3.80	0.17	0.090	0.48	4.80	3.32	4.45	0.77	0.42	0.29	0.21
21	0.010	4.45	0.14	0.085	0.21	5.60	3.68	4.04	0.74	0.42	0.29	0.21
22	0.005	9.09	0.13	0.085	0.16	4.10	3.50	3.74	0.74	0.42	0.28	0.21
23	0.005	6.72	0.12	0.085	0.15	3.68	4.17	3.44	0.74	0.40	0.27	0.24
24	0.000	1.04	0.14	0.080	0.15	6.00	6.96	3.14	0.71	0.40	0.27	0.26
25	0.000	2.00	0.11	0.075	0.17	5.44	4.17	2.96	0.68	0.40	0.26	0.24
26	0.000	1.12	0.095	0.070	0.44	2.78	3.32	2.78	0.68	0.38	0.26	0.24
27	0.000	0.77	0.095	0.070	0.23	4.17	2.84	2.54	0.65	0.36	0.25	0.24
28	0.000	0.56	0.090	0.070	0.32	2.06	2.60	2.36	0.65	0.38	0.25	0.25
29	0.005	0.44	0.090	0.070	1.20	1.65	4.73	2.12	0.68	0.38	–	0.24
30	0.000	0.36	0.11	0.065	2.60	5.44	4.38	1.94	0.68	0.36	–	0.22
31	–	0.32	–	0.060	4.24	–	3.44	–	0.68	0.36	–	0.23
Total	0.595	63.50	19.97	3.425	11.29	100.24	570.67	2,249.92	30.81	14.24	8.31	6.87
Mean	0.019	2.05	0.66	0.11	0.36	3.34	18.4	75.0	0.99	0.46	0.30	0.22
Max.	0.085	19	3.32	0.27	4.24	8.32	123	672	1.76	0.68	0.34	0.26
Min.	0.000	0.00	0.090	0.060	0.030	0.88	2.60	1.94	0.65	0.36	0.25	0.20
Runoff – mcm.	0.051	5.486	1.725	0.296	0.975	8.661	49.306	194.393	2.662	1.230	0.718	0.593

WATER YEAR 1969 : Max. 672 Min. 0.00 Mean 8.44 Annual Runoff 266.098 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 3	22.00	10.92	775				

WATER YEAR 1969
PRAN RIVER BASIN

Pran River at Khao Noi, Prachuap Khiri Khan, (Pr.2)

Location: Lat. 12°-24'-41" N., Long. 99°-51'-01" E., on right bank about 10 kilometers from Phet Kasem Highway at Amphoe Pran Buri along the country road to Pran Buri Damsite, Amphue Pran Buri, Prachuap Khiri Khan.

Drainage Area: 2,370 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 2.56 m. (M.S.L.)

Bench Mark: B.M. – H.S./R.I.D.

Location: Infront of the Pr. 2 Station Office

Elevation: + 13.299 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1963-1970

Rating Operation:

Period of Rating: 1963-1970

Rated by Float: –

Rated by Current Meter: 1963-1970

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

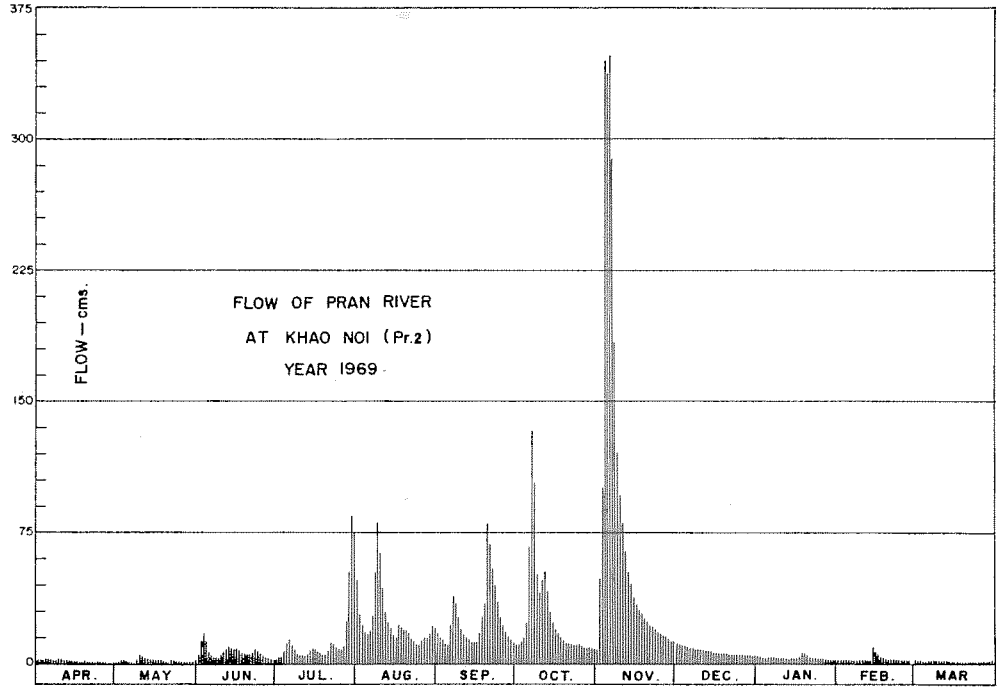
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	4.66	4.40	4.89	4.80	7.61	6.09	5.65	5.41	5.74	5.05	4.79	4.68
2	.71	.60	5.78	.99	6.78	5.96	.64	8.16	.69	.03	.78	.67
3	.72	.80	6.16	5.02	.32	.78	.79	10.23	.64	.01	.77	.66
4	.74	.66	5.62	.29	.13	.66	6.02	14.88	.61	.00	.77	.65
5	.73	.61	.23	.74	.02	.67	.74	.77	.58	4.99	.77	.64
6	4.71	4.61	5.04	5.90	6.17	6.56	8.85	14.92	5.54	4.98	4.77	4.68
7	.66	.59	4.91	.61	.70	7.25	10.93	12.76	.50	.98	.76	.71
8	.74	.58	.86	.33	8.20	6.94	.01	11.28	.48	.97	.75	.70
9	.89	.73	.85	.18	9.25	.50	7.93	10.20	.45	.97	.74	.69
10	.80	5.05	5.05	.07	8.35	.21	.24	9.45	.43	.96	.73	.69
11	4.73	4.99	5.21	5.04	7.35	6.06	7.77	8.84	5.41	4.94	4.72	4.68
12	.70	.94	.36	.03	6.79	5.94	8.03	8.26	.38	.92	.74	.67
13	.66	.85	.56	.04	.45	.84	7.30	7.84	.35	.91	.83	.66
14	.64	.79	.45	.31	.26	.81	6.76	.50	.33	.89	5.52	.65
15	.61	.74	.36	.45	.02	.78	.46	.20	.31	.87	.22	.65
16	4.59	4.72	5.36	5.45	5.91	5.77	6.22	7.00	5.29	4.92	5.08	4.64
17	.56	.71	.29	.29	6.41	6.08	.04	6.85	.27	5.01	4.99	.63
18	.54	.66	.19	.15	.28	.60	5.90	.72	.25	.21	.92	.62
19	.50	.63	.10	.07	.22	7.50	.80	.61	.24	.23	.84	.61
20	.48	.64	.10	.11	.22	9.18	.75	.50	.22	.07	.81	.60
21	4.45	4.66	5.14	5.39	6.10	8.68	5.68	6.40	5.19	4.98	4.79	4.58
22	.43	.73	.26	.70	5.90	7.94	.65	.31	.17	.93	.79	.57
23	.42	.66	.38	.60	.76	.41	.66	.23	.16	.91	.77	.58
24	.42	.60	.26	.43	.65	6.95	.66	.16	.14	.89	.75	.59
25	.42	.59	.11	.34	.62	.88	.62	.08	.13	.87	.74	.57
26	4.40	4.57	5.00	5.39	5.90	6.30	5.55	6.02	5.11	4.85	4.72	4.57
27	.40	.54	4.93	.68	.93	.08	.51	5.95	.10	.84	.70	.59
28	.36	.52	.87	6.58	.88	5.92	.48	.89	.09	.83	.69	.62
29	.36	.54	.83	8.35	6.05	.79	.49	.83	.08	.82	–	.71
30	.36	.62	.80	9.37	.41	.69	.45	.78	.07	.82	–	.71
31	–	.65	–	8.95	.25	–	.42	–	.06	.81	–	.70
Mean	4.57	4.67	5.19	5.69	6.48	6.49	6.51	8.20	5.32	4.95	4.83	4.64
Max.	4.89	5.05	6.16	9.37	9.25	9.18	10.93	14.92	5.74	5.23	5.52	4.71
Min.	4.36	4.40	4.80	4.80	5.62	5.66	5.42	5.41	5.06	4.81	4.69	4.57

WATER YEAR 1969 : Max. 14.92 m. Min. 4.36 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.56	0.40	3.32	2.60	45	17	11	8.41	12	4.65	2.52	1.68
2	1.88	1.20	13	4.12	29	15	11	56	12	4.47	2.44	1.62
3	1.96	2.60	18	4.38	21	13	13	109	11	4.29	2.36	1.56
4	2.12	1.56	11	7.09	18	11	16	344	11	4.20	2.36	1.50
5	2.04	1.26	6.43	12	16	11	28	336	10	4.12	2.36	1.44
6	1.88	1.26	4.56	14	19	25	72	347	9.88	4.04	2.36	1.68
7	1.56	1.16	3.48	11	27	38	133	217	9.40	4.04	2.28	1.88
8	2.12	1.12	3.08	7.53	57	32	102	146	9.18	3.96	2.20	1.80
9	3.32	2.04	3.00	5.90	81	24	51	108	8.85	3.96	2.12	1.74
10	2.60	4.65	4.65	4.83	60	19	38	87	8.63	3.88	2.04	1.74
11	2.04	4.12	6.21	4.56	40	17	48	72	8.41	3.72	1.96	1.68
12	1.80	3.72	7.86	4.47	28	15	53	58	8.08	3.56	2.12	1.62
13	1.56	3.00	10	4.56	23	14	39	50	7.75	3.48	2.84	1.56
14	1.44	2.52	8.85	7.31	20	13	28	43	7.53	3.32	9.64	1.50
15	1.26	2.12	7.86	8.85	16	13	23	37	7.31	3.16	6.32	1.50
16	1.16	1.96	7.86	8.85	15	13	19	33	7.09	3.56	4.92	1.44
17	1.04	1.88	7.09	7.09	22	17	17	30	6.87	4.29	4.12	1.38
18	0.96	1.56	6.00	5.60	20	26	14	28	6.65	6.21	3.56	1.32
19	0.80	1.38	5.10	4.83	19	43	13	26	6.54	6.43	2.92	1.26
20	0.72	1.44	5.10	5.20	19	80	12	24	6.32	4.83	2.68	1.20
21	0.60	1.56	5.50	8.19	17	68	12	22	6.00	4.04	2.52	1.12
22	0.52	2.04	6.76	12	14	52	11	21	5.80	3.64	2.52	1.08
23	0.48	1.56	8.08	11	13	41	11	19	5.70	3.48	2.36	1.12
24	0.48	1.20	6.76	8.63	11	32	11	18	5.50	3.32	2.20	1.16
25	0.48	1.16	5.20	7.64	11	25	11	17	5.40	3.16	2.12	1.08
26	0.40	1.08	4.20	8.19	14	20	10	16	5.20	3.00	1.96	1.08
27	0.40	0.96	3.64	11	15	17	9.52	15	5.10	2.92	1.80	1.16
28	0.32	0.88	3.16	25	14	15	9.18	14	5.01	2.84	1.74	1.32
29	0.32	0.96	2.84	60	17	13	9.29	13	4.92	2.76	–	1.88
30	0.32	1.32	2.60	85	22	12	8.85	13	4.83	2.76	–	1.88
31	–	1.50	–	75	20	–	8.52	–	4.74	2.68	–	1.80
Total	38.14	55.17	191.31	446.42	763	751	852.36	2,327.41	233.05	118.77	81.34	45.78
Mean	1.27	1.78	6.38	14.4	24.6	25.0	27.5	77.6	7.52	3.83	2.90	1.48
Max.	3.32	4.65	18	85	81	80	133	347	12	6.43	9.64	1.88
Min.	0.32	0.40	2.60	2.60	11	11	8.52	8.41	4.74	2.68	1.74	1.08
Runoff – MCM.	3.295	4.766	16.529	38.570	65.923	64.886	73.643	201.088	20.135	10.261	7.027	3.955

WATER YEAR 1969 : Max. 347 Min. 0.32 Mean 16.2 Annual Runoff 510.084 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
April 28	15.00	15.80	405				

WATER YEAR 1969
PRAN RIVER BASIN

Pran River at Pran Buri Damsite, Prachuap Khiri Khan (Pr.3A)

Location: Lat. 12°-23'-59" N., Long. 99°-48'-37" E., on right bank about 1.5 kilometers doenwstream from Pran Damsite, Amphoe Pran Buri, Prachuap Khiri Khan.

Drainage Area: 2,039 sq.km.

Type of Gage: Water-stage recorder.

Zero Gage at Bottom at: + 13.800 m. (M.S.L.)

Bench Mark: B.M. - H.S. Pr.3A

Location: Near Automatic gage building

Elevation: + 26.267 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1968 to date

Rating Operation:

Period of Rating: 1968 to date

Rated by Float: -

Rated by Current Meter: 1968 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

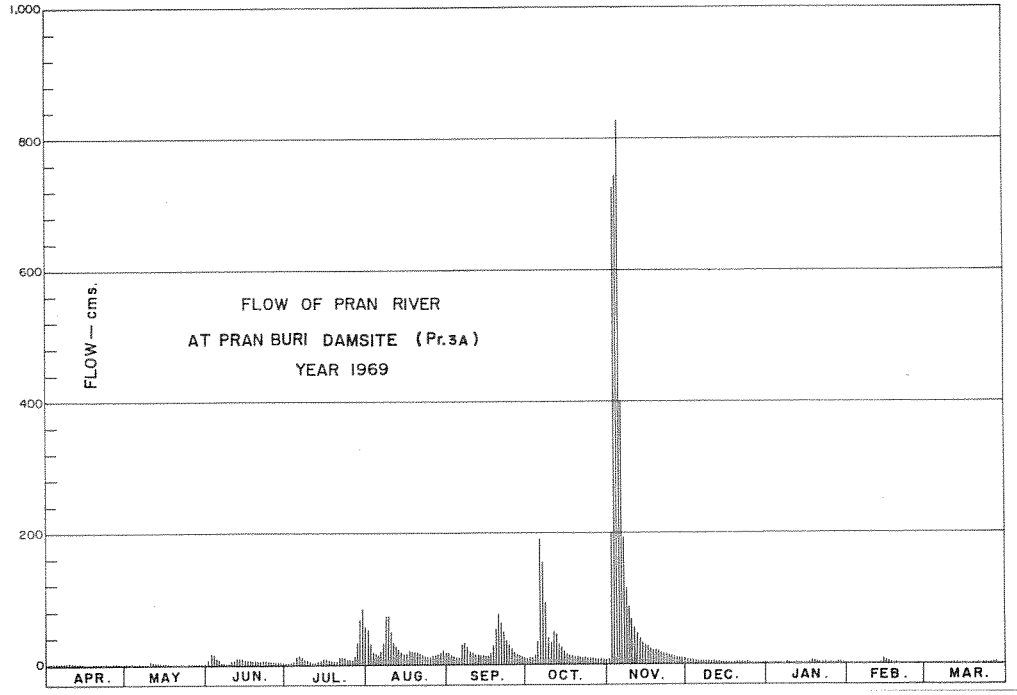
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	15.46	15.33	15.90	15.61	17.26	16.49	16.16	16.02	16.11	15.69	15.53	15.43
2	.51	.57	16.56	.72	16.86	.37	.23	19.87	.08	.67	.51	.43
3	.50	.52	.46	.80	.59	.24	.24	26.14	.06	.66	.51	.42
4	.52	.45	.07	.99	.54	.17	.48	25.97	.03	.64	.51	.40
5	.49	.44	15.83	16.37	.45	.24	17.52	26.19	.01	.63	.51	.39
6	15.48	15.46	15.71	16.34	16.70	17.16	19.15	23.04	15.99	15.63	15.51	15.38
7	.44	.43	.63	.09	17.29	.31	20.25	20.73	.97	.62	.50	.38
8	.60	.42	.61	15.91	18.65	16.99	18.34	19.64	.96	.62	.49	.37
9	.61	.70	.67	.82	.68	.72	17.41	18.94	.94	.62	.47	.36
10	.54	.78	.89	.74	17.79	.56	.21	.45	.92	.61	.47	.36
11	15.50	15.72	15.90	15.74	17.23	16.47	17.92	18.03	15.91	15.60	15.48	15.35
12	.47	.67	16.10	.73	16.91	.39	.69	17.75	.89	.59	.53	.35
13	.44	.60	.14	.79	.75	.33	.18	.51	.86	.58	.93	.34
14	.41	.55	.04	.99	.58	.31	16.87	.31	.85	.57	16.15	.35
15	.38	.53	.01	16.10	.44	.28	.68	.16	.83	.56	15.90	.35
16	15.37	15.52	16.00	16.03	16.45	16.33	16.53	17.03	15.82	15.68	15.77	15.34
17	.34	.49	15.93	15.90	.80	.59	.42	16.92	.81	.81	.67	.33
18	.32	.46	.83	.80	.64	17.11	.33	.84	.80	.98	.61	.32
19	.30	.46	.79	.76	.60	18.09	.27	.76	.79	.80	.58	.32
20	.28	.45	.80	.79	.60	.77	.24	.68	.78	.69	.54	.32
21	15.27	15.51	15.86	16.18	16.48	18.10	16.21	16.61	15.78	15.64	15.52	15.31
22	.26	.49	.97	.24	.35	17.62	.17	.54	.77	.61	.52	.31
23	.25	.43	.99	.14	.26	.30	.22	.47	.75	.59	.51	.31
24	.26	.40	.87	.02	.19	.00	.18	.41	.73	.58	.49	.31
25	.25	.39	.76	15.98	.25	16.78	.17	.35	.73	.57	.48	.31
26	15.23	15.37	15.69	16.05	16.39	16.61	16.11	16.30	15.71	15.57	15.46	15.32
27	.22	.35	.63	.39	.41	.47	.10	.26	.71	.56	.45	.34
28	.21	.34	.59	17.43	.39	.36	.08	.22	.72	.55	.44	.38
29	.20	.39	.56	18.62	.61	.27	.09	.18	.72	.54	-	.41
30	.21	.44	.54	19.02	.74	.20	.04	.14	.71	.53	-	.40
31	-	.49	-	18.10	.56	-	.02	-	.70	.53	-	.40
Mean	15.37	15.48	15.87	16.26	17.32	16.79	16.79	18.35	15.85	15.62	15.57	15.35
Max.	15.61	15.78	16.56	19.02	18.68	18.77	20.25	26.19	16.11	15.98	16.15	15.43
Min.	15.20	15.33	15.54	15.61	16.19	16.17	16.02	16.02	15.70	15.53	15.44	15.31

WATER YEAR 1969 : Max. 26.19 m. Min. 15.20 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.36	0.72	6.00	2.50	33	16	9.96	7.72	9.16	3.30	1.84	1.18
2	1.68	2.16	17	3.64	23	13	11	204	8.68	3.10	1.68	1.18
3	1.60	1.76	15	4.60	18	11	11	725	8.36	3.00	1.68	1.12
4	1.76	1.30	8.52	7.26	17	10	15	747	7.88	2.80	1.68	1.00
5	1.54	1.24	5.02	13	15	11	39	827	7.56	2.70	1.68	0.96
6	1.48	1.36	3.52	13	20	30	90	289	7.26	2.70	1.68	0.92
7	1.24	1.18	2.70	8.84	34	34	135	160	6.98	2.60	1.60	0.92
8	2.40	1.12	2.50	6.14	72	26	63	108	6.84	2.60	1.54	0.88
9	2.50	3.40	3.10	4.88	73	20	37	82	6.56	2.60	1.42	0.84
10	1.92	4.36	5.86	3.88	47	17	32	66	6.28	2.50	1.42	0.84
11	1.60	3.64	6.00	3.88	32	15	50	56	6.14	2.40	1.48	0.80
12	1.42	3.10	9.00	3.76	25	14	44	46	5.86	2.32	1.84	0.80
13	1.24	2.40	9.64	4.48	21	13	31	39	5.44	2.24	6.42	0.76
14	1.06	2.00	8.04	7.26	17	12	24	34	5.30	2.16	9.80	0.80
15	0.92	1.84	7.56	9.00	15	12	19	30	5.02	2.08	6.00	0.80
16	0.88	1.76	7.40	7.88	15	13	16	27	4.88	3.20	4.24	0.76
17	0.76	1.54	6.42	6.00	22	18	14	25	4.74	4.74	3.10	0.72
18	0.68	1.36	5.02	4.60	19	29	13	23	4.60	7.12	2.50	0.68
19	0.60	1.36	4.48	4.12	18	55	12	22	4.48	4.60	2.24	0.68
20	0.54	1.30	4.60	4.48	18	76	11	20	4.36	3.30	1.92	0.68
21	0.51	1.68	5.44	10.28	15	56	11	18	4.36	2.80	1.76	0.64
22	0.48	1.54	6.98	11	13	42	10	17	4.24	2.50	1.76	0.64
23	0.45	1.18	7.26	9.64	12	34	11	15	4.00	2.32	1.68	0.64
24	0.48	1.00	5.58	7.72	10	27	10	14	3.76	2.24	1.54	0.64
25	0.45	0.96	4.12	7.12	11	22	10	13	3.76	2.16	1.48	0.64
26	0.39	0.88	3.30	8.20	14	18	9.16	12	3.52	2.16	1.36	0.68
27	0.36	0.80	2.70	14	14	15	9.00	12	3.52	2.08	1.30	0.76
28	0.33	0.76	2.32	37	14	13	8.68	11	3.64	2.00	1.24	0.92
29	0.30	0.96	2.08	71	18	12	8.84	10	3.64	1.92	–	1.06
30	0.33	1.24	1.92	85	21	11	8.04	9.64	3.52	1.84	–	1.00
31	–	1.54	–	56	17	–	7.72	–	3.40	1.84	–	1.00
Total	31.26	51.44	179.08	440.16	713	695	734.40	3,669.36	167.74	85.92	67.88	25.94
Mean	1.04	1.66	5.96	14.2	23.0	23.1	23.7	89.0	5.41	2.77	2.42	0.83
Max.	2.50	4.36	17	85	73	76	135	827	9.16	7.12	9.80	1.18
Min.	0.30	0.72	1.92	2.50	10	10	7.72	7.72	3.40	1.84	1.24	0.64
Runoff – mcm.	2.701	4.444	15.472	38.030	61.603	60.048	63.452	317.033	14.493	7.423	5.865	2.241

WATER YEAR 1969 : Max. 827 Min. 0.30 Mean 18.80 Annual Runoff 592.806 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 5	04.00	27.81	1,314				

WATER YEAR 1969
KHLONG U-TA PHAO RIVER BASIN

Khlong Wat at Ton Nga Chang, Songkhla (X_{14})

Location: Lat. 6°-55'-00" N., Long. 100°-25'-00" E., on left bank about 5 kilometers from Phet Kasem Highway at Ban Tha Rae, Amphoe Hat Yai, Songkhla.

Drainage Area: 71 sq.km.

Type of Gage: Water-stage recorder.

Zero Gage at Bottom at: + 109.50 m. (A.D.)

Bench Mark:

Location: Near the Meteorological station

Elevation: + 114.598 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1954-1971

Rating Operation:

Period of Rating: 1954-1971

Rated by Float: -

Rated by Current Meter: 1954-1971

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

General Description: Records good. Stage;discharge relationship used is defined by discharge measurements made during 1969. No State diversion at above gage site. No adjustment made for virgin flow.

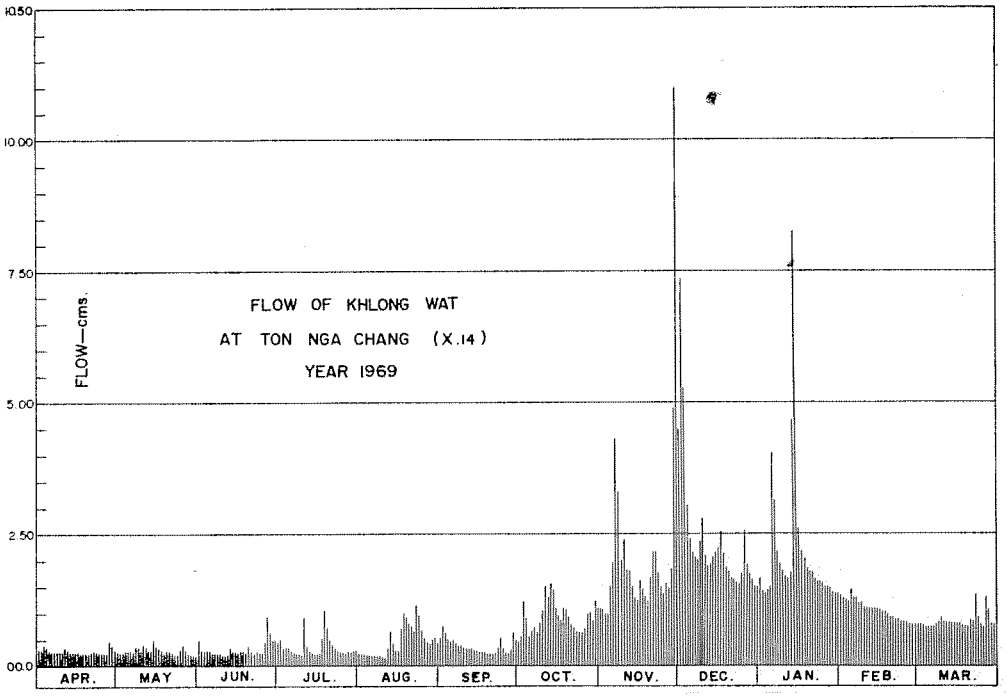
GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	109.66	109.64	109.71	109.70	109.63	109.73	109.71	109.87	110.26	109.98	109.92	109.80
2	.65	.63	.65	.72	.63	.79	.75	.86	.44	.94	.91	.80
3	.69	.63	.65	.66	.62	.74	.90	.84	.21	.93	.91	.79
4	.66	.65	.65	.67	.62	.72	.79	.84	.16	.94	.90	.79
5	.64	.64	.65	.67	.61	.71	.73	.96	.09	.95	.94	.79
6	109.64	109.65	109.63	109.64	109.61	109.72	109.77	110.03	110.06	110.23	109.91	109.79
7	.64	.63	.63	.64	.61	.69	.79	.25	.04	.09	.91	.79
8	.64	.68	.63	.63	.62	.68	.75	.10	.03	.03	.89	.80
9	.64	.67	.63	.63	.61	.68	.81	.01	.07	.01	.89	.82
10	.63	.64	.62	.62	.60	.67	.86	.08	.12	.00	.87	.83
11	109.67	109.69	109.62	109.83	109.60	109.66	109.95	110.00	110.04	109.98	109.87	109.81
12	.65	.67	.62	.68	.66	.66	.90	.00	.01	.98	.87	.81
13	.64	.64	.67	.65	.76	.66	.96	109.94	.02	110.00	.87	.81
14	.64	.65	.64	.64	.69	.65	.94	.91	.04	.49	.87	.80
15	.64	.71	.64	.63	.64	.65	.87	.89	.05	.16	.87	.80
16	109.64	109.67	109.63	109.62	109.64	109.64	109.83	109.97	110.06	110.09	109.86	109.80
17	.63	.67	.65	.63	.73	.64	.81	.93	.10	.05	.85	.80
18	.63	.64	.65	.72	.85	.64	.87	.91	.04	.03	.85	.79
19	.63	.63	.63	.86	.83	.63	.86	.89	.01	.01	.84	.79
20	.63	.65	.68	.77	.80	.63	.81	.99	.00	.00	.83	.79
21	109.64	109.64	109.65	109.71	109.79	109.63	109.79	110.05	109.98	110.00	109.83	109.82
22	.65	.63	.63	.69	.73	.63	.77	.05	.97	109.98	.82	.81
23	.64	.62	.64	.67	.88	.67	.76	109.97	.96	.97	.82	.92
24	.63	.63	.63	.65	.82	.73	.76	.94	.96	.97	.81	.82
25	.63	.66	.63	.64	.76	.65	.76	.92	.97	.96	.81	.80
26	109.63	109.69	109.65	109.64	109.72	109.64	109.78	109.96	110.10	109.95	109.81	109.79
27	.63	.65	.83	.63	.71	.63	.84	.93	.02	.95	.80	.91
28	.71	.63	.76	.65	.69	.66	.85	.99	109.99	.94	.80	.83
29	.67	.63	.71	.64	.72	.76	.80	110.22	.97	.93	–	.80
30	.65	.62	.72	.65	.73	.72	.90	.62	.95	.93	–	.80
31	–	.61	–	.65	.70	–	.86	–	.95	.93	–	.84
Mean	109.64	109.65	109.66	109.67	109.70	109.68	109.82	110.00	110.05	110.01	109.86	109.81
Max.	109.71	109.71	109.83	109.86	109.88	109.79	109.96	110.62	110.44	110.49	109.94	109.92
Min.	109.63	109.61	109.62	109.62	109.60	109.63	109.71	109.84	109.95	109.93	109.80	109.79

WATER YEAR 1969 : Max. 110.62 m. Min. 106.60 m.

H.62

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.32	0.27	0.47	0.43	0.24	0.54	0.47	1.11	4.44	1.69	1.35	0.80
2	0.29	0.24	0.29	0.50	0.24	0.76	0.61	1.06	7.35	1.46	1.30	0.80
3	0.40	0.24	0.29	0.32	0.21	0.58	1.24	0.98	3.77	1.41	1.30	0.76
4	0.32	0.29	0.29	0.35	0.21	0.50	0.76	0.98	3.21	1.46	1.24	0.76
5	0.27	0.27	0.29	0.35	0.19	0.47	0.54	1.58	2.48	1.52	1.46	0.76
6	0.27	0.29	0.24	0.27	0.19	0.50	0.69	2.03	2.26	4.04	1.30	0.76
7	0.27	0.24	0.24	0.27	0.19	0.40	0.76	4.31	2.10	2.48	1.30	0.76
8	0.27	0.38	0.24	0.24	0.21	0.38	0.61	2.56	2.03	2.03	1.20	0.80
9	0.27	0.35	0.24	0.24	0.19	0.38	0.84	1.88	2.33	1.88	1.20	0.89
10	0.27	0.27	0.21	0.21	0.16	0.35	1.06	2.41	2.78	1.80	1.11	0.93
11	0.35	0.40	0.21	0.93	0.16	0.32	1.52	1.80	2.10	1.69	1.11	0.84
12	0.29	0.35	0.21	0.38	0.32	0.32	1.24	1.80	1.88	1.69	1.11	0.84
13	0.27	0.27	0.35	0.29	0.65	0.32	1.58	1.46	1.95	1.80	1.11	0.84
14	0.27	0.29	0.27	0.27	0.40	0.29	1.46	1.30	2.10	8.26	1.11	0.80
15	0.27	0.47	0.27	0.24	0.27	0.29	1.11	1.20	2.18	3.21	1.11	0.80
16	0.27	0.35	0.24	0.21	0.27	0.27	0.93	1.63	2.26	2.48	1.06	0.80
17	0.24	0.35	0.29	0.24	0.54	0.27	0.84	1.41	2.56	2.18	1.02	0.80
18	0.24	0.27	0.29	0.50	1.02	0.27	1.11	1.30	2.10	2.03	1.02	0.76
19	0.24	0.24	0.24	1.06	0.93	0.24	1.06	1.20	1.88	1.88	0.98	0.76
20	0.24	0.29	0.38	0.69	0.80	0.24	0.84	1.74	1.80	1.80	0.93	0.76
21	0.27	0.27	0.29	0.47	0.76	0.24	0.76	2.18	1.69	1.80	0.93	0.89
22	0.29	0.24	0.24	0.40	0.54	0.24	0.69	2.18	1.63	1.69	0.89	0.84
23	0.27	0.21	0.27	0.35	1.15	0.35	0.65	1.63	1.58	1.63	0.89	1.35
24	0.24	0.24	0.24	0.29	0.89	0.54	0.65	1.46	1.58	1.63	0.84	0.89
25	0.24	0.32	0.24	0.27	0.65	0.29	0.65	1.35	1.63	1.58	0.84	0.80
26	0.24	0.40	0.29	0.27	0.50	0.27	0.73	1.58	2.56	1.52	0.84	0.76
27	0.24	0.29	0.93	0.24	0.47	0.24	0.98	1.41	1.95	1.52	0.80	1.30
28	0.47	0.24	0.65	0.29	0.40	0.32	1.02	1.74	1.74	1.46	0.80	0.93
29	0.35	0.24	0.47	0.27	0.50	0.65	0.80	3.91	1.63	1.41	–	0.80
30	0.29	0.21	0.50	0.29	0.54	0.50	1.24	11	1.52	1.41	–	0.80
31	–	0.19	–	0.29	0.43	–	1.06	–	1.52	1.41	–	0.98
Total	8.50	8.97	9.67	11.42	14.22	11.33	28.50	62.18	72.59	63.85	30.15	26.36
Mean	0.28	0.29	0.32	0.37	0.46	0.38	0.92	2.07	2.34	2.06	1.08	0.85
Max.	0.47	0.47	0.93	1.06	1.15	0.76	1.58	11	7.35	8.26	1.46	1.35
Min.	0.24	0.19	0.21	0.21	0.16	0.24	0.47	0.98	1.52	1.41	0.80	0.76
Runoff – mcm.	0.734	0.775	0.835	0.987	1.229	0.979	2.462	5.372	6.272	5.517	2.605	2.277

WATER YEAR 1969 : Max. 11 Min. 0.16 Mean 0.95 Annual Runoff 30.045 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov.30, 69	06.00	110.77	15				

WATER YEAR 1969
KHLONG U-TAPHAO RIVER BASIN

Khlong U-Taphao at Khok Samet Chum, Songkhla (X_{44})

Location: Lat. 7°-00'-02" N., Long. 100°-27'-32" E., on left bank upstream side of the bridge on Patthalung – Hat Yai Highway, Amphoe Hat Yai, Songkhla.

Drainage Area: 1,441 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S.

Location: Near the staff gage

Elevation: + 6.985 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1967-1971

Rated by Float: –

Rated by Current Meter: 1967-1971

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation. Including overbank flow.

Overbank Flow Conditions: Overbank flow Starts at elevation + 4.45 m. (A.D.)

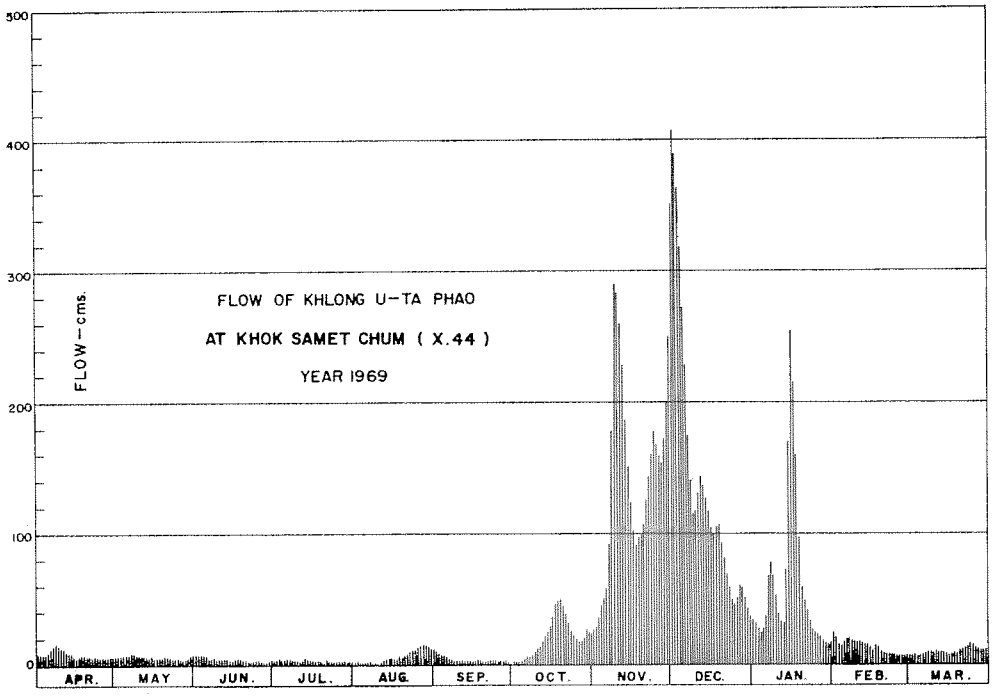
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1967, 1969. No State diversions at above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.97	0.94	1.00	0.77	0.71	1.11	0.75	1.59	7.03	1.83	1.54	0.95
2	.97	.96	0.98	.80	.73	.02	.74	.71	6.96	.75	.44	.94
3	.95	1.00	1.00	.87	.72	0.98	.73	.94	.85	.62	.23	.90
4	.99	0.98	0.93	.86	.69	1.00	.78	2.15	.53	.53	.25	.89
5	1.07	1.00	.87	.79	.69	0.96	.83	2.24	5.98	.60	.32	.97
6	1.16	0.99	0.84	0.83	0.69	0.89	0.93	2.44	5.26	1.90	1.41	1.00
7	1.28	1.02	.84	.84	.74	.84	.96	3.17	4.44	2.58	.42	.02
8	.29	.02	.90	.81	.67	.80	.99	5.15	3.81	.79	.37	.05
9	.22	0.99	.85	.80	.71	.78	1.08	6.09	.43	.52	.32	.08
10	.17	.97	.85	.78	.67	.80	.17	5.96	.52	.14	.31	.04
11	1.17	0.97	0.83	0.76	0.74	0.80	1.21	5.66	3.83	1.88	1.34	1.07
12	.05	.94	.85	.77	.87	.81	.33	5.25	.96	.76	.29	.04
13	.01	.89	.87	.89	.87	.78	.50	4.67	.80	.72	.26	.01
14	0.96	.89	.81	.87	.91	.79	.58	4.14	.60	2.74	.28	1.00
15	.95	.95	.74	.83	.92	.76	.69	3.70	.46	5.07	.17	0.99
16	0.88	0.87	0.84	0.81	0.88	0.79	1.89	3.25	3.28	5.65	1.09	0.93
17	.95	.89	.86	.75	.87	.87	2.12	3.06	.17	4.79	.22	.92
18	.97	.88	.87	.80	.98	.79	.20	3.08	.31	3.74	.19	1.03
19	.99	.92	.82	.73	.92	.76	.18	3.19	.34	2.77	.05	0.98
20	.95	.93	.79	.70	.99	.76	.04	3.36	.12	2.24	.01	1.14
21	0.97	0.88	0.76	0.83	1.03	0.76	1.86	3.69	2.82	2.17	1.00	1.14
22	.91	.88	.72	.76	.09	.80	.69	4.02	.55	2.01	0.99	.12
23	.94	.84	.74	.73	.13	.78	.55	4.29	.36	1.72	.98	.20
24	.94	.85	.79	.80	.13	.79	.45	4.53	.19	1.59	.98	.26
25	.92	.88	.79	.77	.20	.77	.40	4.37	.08	.54	.94	.22
26	0.91	0.86	0.74	0.78	1.23	0.79	1.33	4.20	2.23	1.49	0.96	1.17
27	.89	.79	.73	.73	.26	.74	.33	4.10	.43	.45	.96	.13
28	.91	.84	.72	.78	.27	.78	.43	4.39	.38	.37	.96	.11
29	.91	.92	.76	.73	.23	.75	.56	4.78	.21	.29	–	.11
30	.92	.94	.81	.76	.17	.67	.54	5.66	1.98	.26	–	.12
31	–	.98	–	.77	.17	–	.54	–	.86	.31	–	.05
Mean	1.00	0.92	0.83	0.79	0.93	0.82	1.40	3.86	3.67	2.25	1.19	1.05
Max.	1.29	1.02	1.00	0.89	1.27	1.11	2.20	6.09	7.03	5.65	1.54	1.26
Min.	0.88	0.79	0.72	0.70	0.67	0.67	0.73	1.59	1.86	1.26	0.94	0.89

WATER YEAR 1969 : Max. 7.03 m. Min. 0.67 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	13	12	14	9.00	7.80	16	8.60	27	406	35	25	7.25
2	13	13	13	9.60	8.20	14	8.40	31	384	32	21	7.00
3	13	14	14	11	8.00	13	8.20	40	362	28	15	6.00
4	13	13	12	11	7.42	14	9.20	48	326	24	15	5.80
5	15	14	11	9.40	7.42	13	10	52	280	27	18	7.75
6	18	13	10	10	7.42	11	12	62	226	38	20	8.50
7	21	14	10	10	8.40	10	13	99	173	68	21	9.00
8	21	14	12	9.80	7.06	9.60	13	219	135	78	19	9.75
9	19	13	11	9.60	7.80	9.20	16	289	112	65	18	10
10	18	13	11	9.20	7.06	9.60	18	278	117	48	17	9.50
11	18	13	10	8.80	8.04	9.60	19	254	136	37	18	10
12	15	12	11	9.00	11	9.80	22	225	144	33	17	9.50
13	14	11	11	11	11	9.20	27	187	134	31	16	8.75
14	13	11	9.80	11	12	9.44	29	154	122	79	16	8.50
15	13	13	8.40	10	12	9.80	32	128	114	214	13	8.25
16	11	11	10	9.80	11	9.40	38	103	104	254	11	6.75
17	13	11	11	8.60	11	11	47	92	98	195	15	6.50
18	13	11	11	9.60	13	9.40	50	98	105	131	14	9.25
19	13	12	10	8.20	12	8.80	50	99	107	77	9.75	8.00
20	13	12	9.40	7.60	13	8.80	44	108	95	52	8.75	12
21	13	11	8.80	10	14	8.80	36	127	80	49	8.50	12
22	12	11	8.00	8.80	16	9.60	30	147	66	42	8.25	12
23	12	10	8.40	8.20	17	9.20	25	163	58	32	8.00	14
24	12	11	9.40	9.60	17	9.40	22	178	50	27	8.00	16
25	12	11	9.40	9.00	19	9.40	20	168	45	25	7.00	15
26	12	11	8.40	9.20	19	9.40	18	158	52	23	7.50	13
27	11	9.40	8.20	8.20	20	8.40	18	152	61	22	7.50	12
28	12	10	8.00	9.20	21	9.20	21	170	59	19	7.50	11
29	12	12	8.80	8.20	19	8.60	27	195	51	17	–	11
30	12	12	9.80	8.80	18	7.06	25	260	41	16	–	12
31	–	13	–	9.00	18	–	24	–	36	17	–	9.75
Total	420	371.40	306.80	290.40	388.62	302.66	740.40	4,311	4,279	1,835	389.75	305.80
Mean	14.0	11.9	10.2	9.36	12.5	10.1	23.9	144	138	59.2	13.9	9.86
Max.	21	14	14	11	21	16	50	289	406	254	25	16
Min.	11	9.40	8.00	7.60	7.06	7.06	8.20	27	36	16	7.00	5.80
Runoff - mcm.	36.288	32.088	26.507	25.090	33.576	26.149	63.970	372.470	369.705	158.544	33.674	26.421

WATER YEAR 1969 : Max. 406 Min. 5.80 Mean 38.2 Annual Runoff 1,204.487 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Dec. 1, 69	12.00	7.15	408				

WATER YEAR 1969
KHLONG AI TO RIVER BASIN

Khlong Ai To at Wat Mahanpawat, Phatthalung (X_{21B})

Location: Lat. 7°-23'-09" N., Long. 100°-06'-27" E., on right bank about 800 meters upstream from the bridge on Phet Kasem highway (Phatthalung – Hat Yai), Amphoe Khao Chaison, Patthalung.

Drainage Area: 330 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 14.45 m. (M.S.L.)

Bench Mark: B.M. – H.S.

Location: About 50 meters from the right bank along the measuring line.

Elevation: + 21.081 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1964–1970

Rating Operation:

Period of Rating: 1964–1970

Rated by Float: –

Rated by Current Meter: 1964–1970

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

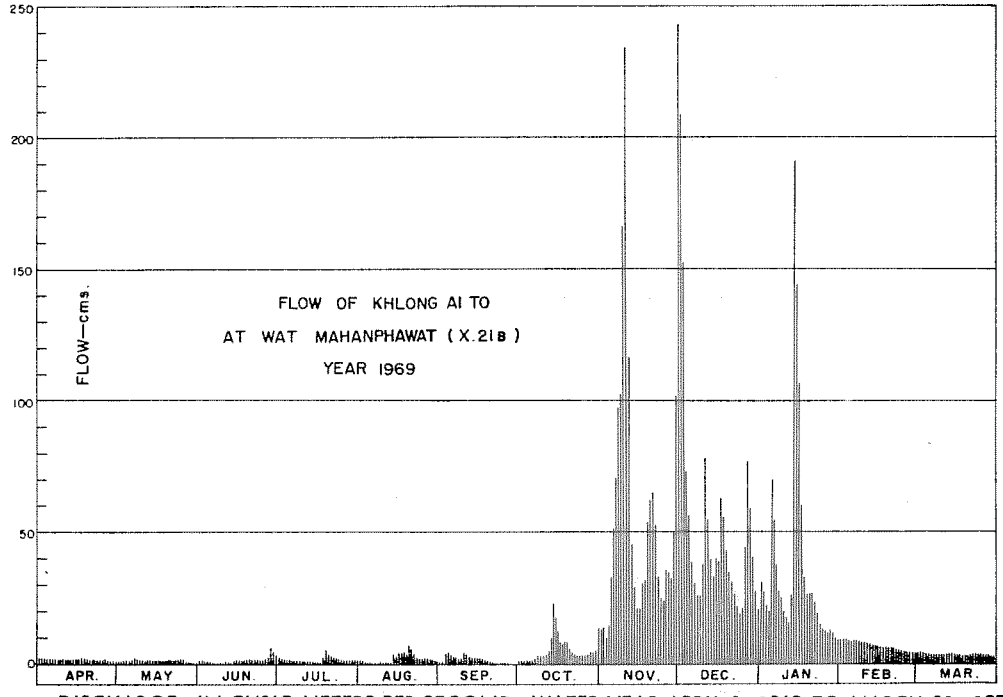
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	15.17	15.05	15.07	15.19	15.08	14.93	15.06	15.88	21.02	16.37	15.68	15.34
2	.16	.05	.05	.19	.05	15.00	.09	.92	20.42	.63	.69	.33
3	.15	.05	14.93	.17	14.93	.28	.08	.74	18.88	.32	.68	.32
4	.14	.08	.95	.13	.99	.36	.06	.71	17.78	.13	.66	.31
5	.13	.05	.92	.10	.95	.25	.04	16.69	.27	.37	.64	.30
6	15.12	15.08	14.90	15.09	14.95	15.20	15.06	17.37	16.79	17.88	15.67	15.30
7	.11	.19	.86	.08	.93	.15	.15	.93	.55	16.95	.66	.29
8	.10	.12	.88	.08	.92	.12	.30	18.58	.43	.51	.64	.28
9	.10	.07	.91	.07	15.03	.21	.24	.71	.44	.42	.63	.27
10	.10	.05	.93	.07	14.92	.32	.19	19.86	.94	.19	.61	.26
11	15.09	15.05	15.01	15.05	14.91	15.30	15.23	20.90	18.10	16.08	15.59	15.27
12	.09	.06	14.97	.05	.91	.18	.32	18.81	17.26	15.98	.57	.31
13	.09	.06	15.00	.04	.93	.18	.53	17.14	16.71	16.51	.55	.31
14	.09	.06	.03	.02	15.29	.17	16.32	16.49	.70	19.62	.53	.31
15	.10	.05	.04	14.99	.18	.16	.01	.23	.96	20.26	.51	.27
16	15.12	15.04	15.06	14.98	15.34	15.15	15.70	16.20	16.89	18.25	15.49	15.25
17	.15	.04	.06	15.01	.34	.11	.54	.65	17.69	17.14	.49	.25
18	.14	.07	.06	.20	.37	.05	.66	.68	.36	16.56	.50	.24
19	.12	.06	.08	.44	.21	.03	.61	17.40	16.92	.40	.49	.24
20	.10	.06	.09	.22	.55	14.92	.15	.66	.71	.47	.46	.24
21	15.09	15.05	15.10	15.25	15.44	14.90	15.36	17.73	16.61	16.48	15.44	15.26
22	.09	.05	.11	.21	.25	.88	.28	.34	.48	.34	.43	.29
23	.09	.07	.12	.18	.17	.88	.26	16.72	.29	.12	.42	.31
24	.08	.10	.09	.15	.15	.93	.26	.43	.17	15.93	.40	.29
25	.08	.13	.05	.10	.15	.93	.26	.28	.16	.88	.39	.27
26	15.08	15.12	15.13	15.07	15.19	14.90	15.26	16.80	17.05	15.83	15.38	15.25
27	.07	14.91	.10	.05	.15	.87	.28	.79	18.07	.82	.36	.23
28	.06	.91	.47	.05	.14	.86	.39	.62	17.42	.87	.34	.23
29	.05	.90	.35	.06	.11	.86	.34	17.01	16.80	.78	–	.22
30	.05	.87	.26	.07	.04	.79	.31	18.75	.51	.72	–	.22
31	–	.86	–	.08	14.94	–	.94	–	.22	.67	–	.51
Mean	15.10	15.04	15.05	15.11	15.11	15.06	15.37	17.23	17.21	16.60	15.53	15.27
Max.	15.17	15.19	15.47	15.44	15.55	15.36	16.32	20.90	21.02	20.26	15.69	15.51
Min.	15.05	14.86	14.86	14.98	14.91	14.79	15.04	15.71	16.16	15.67	15.34	15.22

WATER YEAR 1969 : Max. 21.02 m. Min. 14.79 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	2.40	1.30	1.46	2.60	1.54	0.55	1.38	13	243	24	9.28	4.32
2	2.30	1.30	1.30	2.60	1.30	0.90	1.62	14	202	31	9.44	4.19
3	2.20	1.30	0.55	2.40	0.55	3.58	1.54	10	111	23	9.28	4.06
4	2.10	1.54	0.65	2.00	0.85	4.58	1.38	9.79	66	18	8.96	3.93
5	2.00	1.30	0.50	1.70	0.65	3.25	1.22	33	50	24	8.64	3.80
6	1.90	1.54	0.40	1.62	0.65	2.70	1.38	53	35	70	9.12	3.80
7	1.80	2.60	0.24	1.54	0.55	2.20	2.20	72	29	40	8.96	3.69
8	1.70	1.90	0.32	1.54	0.50	1.90	3.80	98	26	28	8.64	3.58
9	1.70	1.46	0.45	1.46	1.14	2.81	3.14	103	26	25	8.48	3.47
10	1.70	1.30	0.55	1.46	0.50	4.06	2.60	166	40	20	8.16	3.36
11	1.62	1.30	0.98	1.30	0.45	3.80	3.03	234	78	17	7.85	3.47
12	1.62	1.38	0.75	1.30	0.45	2.50	4.06	108	49	15	7.55	3.93
13	1.62	1.38	0.90	1.22	0.55	2.50	6.95	46	33	28	7.25	3.93
14	1.62	1.38	1.14	1.06	3.69	2.40	23	27	33	151	6.95	3.80
15	1.70	1.30	1.22	0.85	2.50	2.30	16	21	40	191	6.65	3.47
16	1.90	1.22	1.38	0.80	4.32	2.20	9.60	20	38	84	6.36	3.25
17	2.20	1.22	1.38	0.98	4.32	1.80	7.10	31	63	46	6.36	3.25
18	2.10	1.46	1.38	2.70	4.71	1.30	8.96	32	52	29	6.50	3.14
19	1.90	1.38	1.54	5.66	2.81	1.14	8.16	54	39	25	6.36	3.14
20	1.70	1.38	1.62	3.58	7.25	0.50	5.80	62	33	27	5.94	3.14
21	1.62	1.30	1.70	3.25	5.66	0.40	4.58	65	30	27	5.66	3.36
22	1.62	1.30	1.80	2.81	3.25	0.32	3.58	52	27	23	5.52	3.69
23	1.62	1.46	1.90	2.50	2.40	0.32	3.36	33	22	18	5.38	3.93
24	1.54	1.70	1.62	2.20	2.20	0.55	3.36	26	19	14	5.10	3.69
25	1.54	2.00	1.30	1.70	2.20	0.55	3.36	22	19	13	4.97	3.47
26	1.54	1.90	2.00	1.46	2.60	0.40	3.36	36	43	12	4.84	3.25
27	1.46	0.45	1.70	1.30	2.20	0.28	3.58	35	77	12	4.58	3.03
28	1.38	0.45	6.08	1.30	2.10	0.24	4.97	31	54	13	4.32	3.03
29	1.30	0.40	4.45	1.38	1.80	0.00	4.32	42	36	11	–	2.92
30	1.30	0.28	3.36	1.46	1.22	0.00	3.93	105	28	9.98	–	2.92
31	–	0.24	–	1.54	0.60	–	14	–	20	9.12	–	6.65
Total	52.70	40.42	44.62	59.27	65.51	50.03	165.32	1,653.79	1,661	1,078.10	197.10	112.66
Mean	1.76	1.30	1.49	1.91	2.11	1.67	5.33	55.1	53.6	34.8	7.04	3.63
Max.	2.40	2.60	6.08	5.66	7.25	4.58	23	234	243	191	9.44	6.65
Min.	1.30	0.24	0.24	0.80	0.45	0.00	1.22	9.79	19	9.12	4.32	2.92
Runoff – mcm.	4.553	3.492	3.855	5.121	5.660	4.322	14.284	142.887	143.510	93.148	17.029	9.734

WATER YEAR 1969 : Max. 243 Min. 0.00 Mean 14.2 Annual Runoff 447.597 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Dec. 1, 69	09.00	21.14	251				

WATER YEAR 1969
PHUM DUANG RIVER BASIN

Phum Duang River at BanTha Tun, Surat Thani (X_{6B})

Location: Lat. 9°-03'-57" N., Long. 99°-02'-58" E., on right bank about 2 kilometers upstream from X6A station at Ban Tha Tun, Amphoe Khiri Ratthanikhom, Surat Thani.

Drainage Area: 4,415 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.030 m. (M.S.L.)

Bench Mark: B.M. – X6B

Location: Along the measuring line about 8 meters upstream from the top gage.

Elevation: + 3.720 m. (M.S.L.)

Gage Reading Frequency: 16-time daily readings at 03.00, 06.00-18.00, 21.00 and 24.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 16 readings.

Period of Available Gage Records: 1969 to date

Rating Operation:

Period of Rating: 1969 to date

Rated by Float: –

Rated by Current Meter: 1969 to date

Stability of Channel Regimes: Rather stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversions at above gage site. No adjustment made for virgin flow.

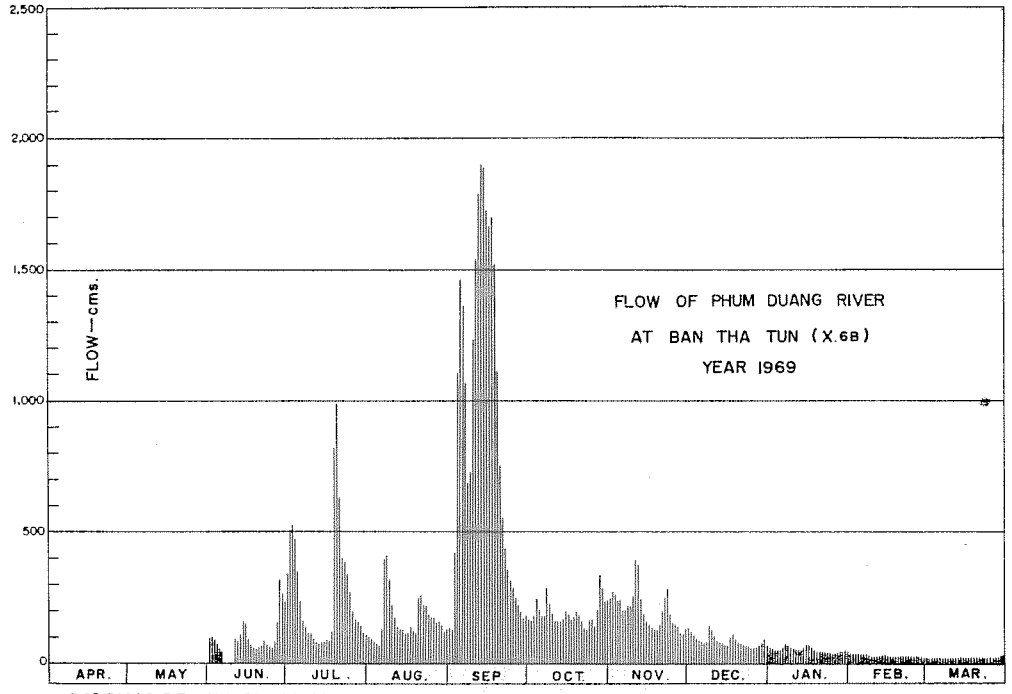
Remarks: Stream gaging station began on June 1, 1969. No record June 7-10.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			1.84	3.27	1.87	2.17	2.47	3.06	2.21	1.53	1.22	1.08
2			.91	4.27	.83	.03	.45	.20	.04	.47	.29	.08
3			.81	.34	.74	4.11	.56	.13	1.93	.44	.28	.08
4			.64	.02	.65	6.41	3.03	2.93	.86	.42	.26	.08
5			.49	3.23	.60	7.31	2.73	3.00	.80	.45	.25	.08
6			1.37	2.73	2.15	7.02	2.55	2.69	1.73	1.59	1.26	1.10
7				.32	3.72	6.13	.60	.73	.70	.65	.30	.08
8				.10	.78	4.94	3.28	.85	.73	.58	.21	.07
9				1.98	.24	5.21	2.83	.81	2.30	.53	.20	.06
10				.97	2.67	6.82	.59	3.16	.16	.51	.20	.07
11			1.82	1.80	2.35	7.55	2.43	3.95	1.91	1.45	1.19	1.07
12			.73	.70	.14	.93	.41	.81	.76	.43	.21	.06
13			.90	.65	.08	8.14	.41	2.89	.71	.44	.22	.07
14			2.33	.71	.11	.15	.49	.57	.68	.54	.23	.09
15			.18	.75	1.95	7.90	.72	.41	.64	.65	.18	.08
16			1.80	1.75	1.99	7.85	2.63	2.32	1.61	1.62	1.16	1.08
17			.64	.75	2.16	.91	.46	.24	.89	.54	.17	.08
18			.54	2.04	.02	.61	.55	.17	2.00	.43	.15	.06
19			.45	5.51	1.96	6.76	.72	.16	1.80	.38	.14	.04
20			.54	6.10	2.87	5.59	.60	.29	.70	.38	.14	.05
21			1.54	4.51	2.95	4.65	2.35	2.73	1.64	1.35	1.13	1.04
22			.73	3.64	.72	.07	.21	3.09	.60	.34	.12	.03
23			.60	.64	.70	3.68	.17	.25	.56	.32	.12	.04
24			.57	.31	.48	.43	.44	2.54	.54	.30	.11	.04
25			.46	2.89	.41	.19	.49	.34	.51	.29	.11	.04
26			1.70	2.56	2.42	2.99	2.22	2.26	1.50	1.28	1.10	1.05
27			2.22	.32	.27	.81	.70	.25	.55	.31	.10	.05
28			3.28	.30	.29	.63	3.61	.06	.61	.39	.10	.05
29			.01	.18	.18	.51	.28	.01	.70	.36		.15
30			2.69	.01	.01	.60	2.92	.18	.83	.41		.16
31				1.92	.14		3.01		.63	.32		.14
Mean				2.82	2.34	5.34	2.64	2.70	1.77	1.44	1.18	1.07
Max.			3.28	6.10	3.78	8.15	3.61	3.95	2.30	1.65	1.30	1.16
Min.			1.37	1.65	1.60	2.03	2.17	2.01	1.50	1.28	1.10	1.03

WATER YEAR 1969 : Max. 8.15 m. Min. m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1			99	320	103	143	169	255	135	60	31	19
2	Stream Gaging		108	516	98	124	167	276	115	54	37	19
3	began on June 1, 69		96	531	87	482	182	265	102	51	36	19
4			75	463	76	1,092	250	235	94	49	35	19
5			58	313	70	1,465	206	246	87	52	34	19
6			47	228	140	1,337	180	200	80	66	35	21
7				164	403	1,001	187	206	77	72	38	19
8				133	415	669	289	223	80	65	30	19
9				117	315	736	220	217	147	60	29	18
10				116	218	1,251	186	270	129	58	29	19
11			97	94	169	1,581	164	397	100	52	29	19
12			86	82	139	1,781	161	374	83	50	30	18
13			107	76	131	1,898	161	229	78	51	31	19
14			166	84	135	1,884	172	183	75	61	32	20
15			144	88	113	1,693	204	161	71	72	28	19
16			94	93	119	1,658	192	150	68	69	26	19
17			75	88	142	1,700	168	139	97	61	27	19
18			64	125	123	1,503	180	130	110	50	25	18
19			54	814	115	1,102	204	129	87	45	24	16
20			64	991	252	735	187	146	77	45	24	17
21			64	568	265	524	153	206	71	42	23	16
22			86	388	226	418	135	259	67	42	23	16
23			70	388	223	353	130	284	63	40	23	16
24			67	327	188	313	165	179	61	38	22	16
25			55	255	177	274	172	152	58	37	22	16
26			82	201	179	244	137	142	57	36	21	17
27			150	164	157	217	201	140	62	39	21	17
28			322	161	160	192	342	117	68	46	21	17
29			276	144	144	175	289	111	77	43		25
30			221	121	121	187	234	132	91	48		26
31				110	139		247		70	40		24
Total				8,263	5,342	26,732	6,034	6,153	2,637	1,594	786	581
Mean				266	172	891	195	205	85.1	51.4	28.1	18.7
Max.			322	991	415	1,898	342	397	147	72	38	26
Min.			47	76	70	124	130	111	57	36	21	16
Runoff — mcm.				713.923	461.549	2,309.645	521.338	531.619	227.837	137.722	67.910	50.198

WATER YEAR 1969 : Max. 1,898 Min. 16 Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 13	21.00	8.21	1,940				

WATER YEAR 1969
TAPI RIVER BASIN

Phum Duang River at Ban Yan Lon, Surat Thani (X_{38})

Location: Lat. 8°-53'-51" N., Long. 98°-52'-32" E., on right bank at Ban Yan Lon, about 2 kilometers downstream from confluence of Khlong Phra Saeng with Khlong Sok, Amphoe Khiri Ratchanikhom, Surat Thani.

Drainage Area: 2,690 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 3.70 m. (M.S.L.)

Bench Mark: B.M. – H.S.

Location: Near the X38 station office

Elevation: + 16.732 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1963 to date

Rating Operation:

Period of Rating: 1964-69, 1972 to date

Rated by Float:

Rated by Current Meter: 1964-69, 1972 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

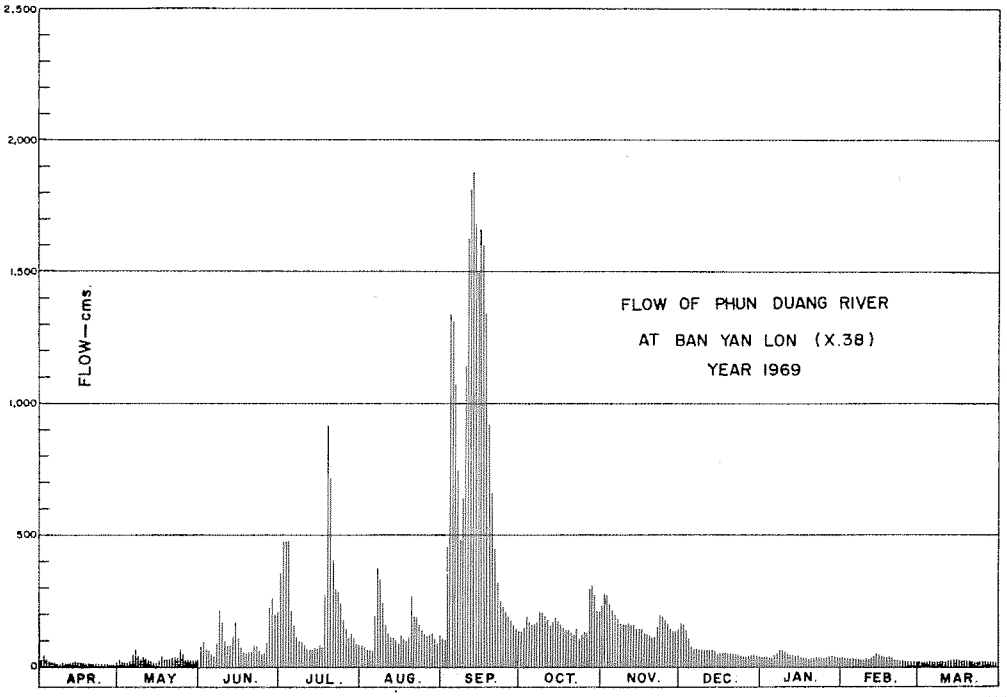
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1964-1968. No State diversions at above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	5.01	4.92	5.87	8.48	5.84	6.12	6.44	7.41	6.75	5.22	5.16	4.88
2	.26	.80	.98	9.25	.78	.12	.62	.73	.70	.21	.10	.87
3	.04	.74	.58	.24	.65	10.32	.94	.66	.39	.20	.09	.86
4	4.99	.81	.54	.26	.58	13.60	.69	.33	.02	.19	.09	.86
5	.80	.96	.26	7.14	.55	.46	.65	.14	5.73	.17	.08	.86
6	4.73	5.36	5.22	6.59	7.13	12.19	6.69	6.99	5.67	5.26	5.08	4.85
7	.70	.59	6.00	.17	8.51	10.22	.84	.93	.65	.47	.07	.85
8	.70	.14	7.17	.00	.08	8.99	7.14	.70	.63	.65	.07	.84
9	.72	.08	6.48	.01	7.12	10.35	.13	.68	.62	.57	.07	.84
10	.70	.23	.04	5.87	6.65	12.80	6.95	.65	.61	.45	.07	.83
11	4.70	5.09	5.76	5.67	6.31	14.62	6.82	6.68	5.60	5.37	5.07	4.85
12	.70	4.96	.83	.65	.09	15.27	.57	.64	.59	.31	.16	.92
13	.84	.84	6.18	.67	.16	.48	.80	.64	.58	.27	.38	.96
14	.86	.82	.76	.78	.05	14.69	.91	.52	.56	.24	.40	5.05
15	.81	.81	5.95	.69	5.81	.05	.79	.51	.53	.21	.31	.02
16	4.74	4.95	5.70	5.84	6.26	14.74	6.60	6.49	5.50	5.20	5.25	4.93
17	.70	5.31	.54	.68	.10	.45	.52	.32	.47	.18	.19	.91
18	.71	.04	.39	7.76	.01	12.84	.46	.32	.45	.17	.12	.89
19	.69	.05	.49	11.78	.22	10.64	.51	.25	.44	.15	.06	.88
20	.69	.07	.44	10.46	7.59	.40	.40	.15	.42	.15	4.99	.87
21	4.65	5.18	5.81	8.20	6.92	8.46	6.27	6.20	5.39	5.14	4.93	4.86
22	.68	.21	.78	7.81	.99	7.88	.58	.61	.35	.13	.90	.86
23	.68	.10	.46	.74	.65	.51	.08	7.04	.31	.12	.90	.85
24	.70	.67	.35	.23	.44	.32	.29	6.97	.30	.12	.90	.84
25	.70	.41	.49	6.75	.27	.11	.40	.83	.28	.11	.89	.84
26	4.69	5.04	5.99	6.42	6.18	7.00	6.36	6.67	5.27	5.12	4.89	4.84
27	.63	4.96	7.31	.07	.27	6.87	7.89	.47	.38	.26	.88	.83
28	.62	.92	.54	.33	.31	.64	.98	.41	.37	.28	.88	.83
29	.61	.94	.01	.12	.04	.50	.53	.43	.27	.23	–	.83
30	.80	.89	.00	5.84	5.93	.43	.14	.55	.24	.21	–	.84
31	–	5.14	–	.87	6.28	–	.17	–	.23	.19	–	5.13
Mean	4.76	5.06	5.00	7.04	6.41	10.45	6.78	6.73	5.59	5.24	5.07	4.88
Max.	5.26	5.67	7.54	11.78	8.51	15.48	7.98	7.73	6.75	5.65	5.40	5.13
Min.	4.61	4.74	5.22	5.65	5.55	6.12	6.08	6.15	5.23	5.11	4.88	4.83

WATER YEAR 1969 : Max. 15.48 m. Min. 4.61 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	26	22	85	370	82	107	138	241	169	38	35	20
2	41	16	94	477	77	107	156	280	164	38	31	19
3	28	13	62	476	67	649	188	271	133	37	30	19
4	20	16	59	478	62	1,339	163	232	98	36	30	19
5	16	24	41	210	59	1,303	159	210	73	35	30	19
6	12	47	38	153	209	998	163	194	69	41	30	18
7	11	62	96	111	374	625	178	187	67	54	29	18
8	11	33	214	96	322	441	210	164	65	67	29	18
9	12	30	142	97	208	647	209	162	65	61	29	18
10	11	39	100	85	159	1,134	189	159	64	52	29	17
11	11	30	76	69	125	1,622	176	162	63	47	29	18
12	11	24	81	67	104	1,811	151	158	62	44	35	22
13	18	18	112	69	110	1,874	174	158	62	41	48	24
14	19	17	170	77	101	1,642	185	146	60	39	49	28
15	16	16	95	70	80	1,460	173	145	58	38	44	27
16	13	23	71	82	120	1,657	154	143	56	37	40	22
17	11	44	59	69	105	1,572	146	126	54	36	36	21
18	11	28	48	283	97	1,144	140	126	52	35	32	20
19	11	28	55	912	116	748	145	119	52	34	29	20
20	11	29	52	666	263	656	134	109	50	35	25	19
21	9.00	36	80	336	186	368	121	114	48	33	22	19
22	10	38	77	289	194	298	147	155	46	33	21	19
23	10	31	53	281	159	253	103	199	44	32	21	18
24	11	69	46	220	138	230	123	192	43	32	21	18
25	11	50	55	169	121	207	134	177	42	32	20	18
26	11	28	95	136	112	195	130	161	41	32	20	18
27	8.20	24	229	102	121	181	299	141	48	41	20	17
28	7.80	22	257	127	125	158	310	135	47	42	20	17
29	7.40	23	196	107	100	144	256	137	41	39	–	17
30	16	20	195	82	90	137	210	149	39	38	–	18
31	–	33	–	85	122	–	214	–	39	36	–	33
Total	421.40	933	3,033	6,851	4,308	23,707	5,378	5,052	2,014	1,235	834	618
Mean	14.0	30.1	101	221	139	790	173	168	65.0	39.8	29.8	19.9
Max.	41	69	257	912	374	1,874	310	280	169	67	49	33
Min.	7.40	13	38	67	59	107	103	109	39	32	20	17
Runoff – mcm.	36.409	80.611	262.051	591.926	372.211	2,048.285	464.659	436.493	174.010	106.704	72.058	53.395

WATER YEAR 1969 : Max. 1,874 Min. 7.40 Mean 149 Annual Runoff 4,698.812 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 13, 69		15.51	1,883				

WATER YEAR 1969
PHUM DUANG RIVER BASIN

Khlong Saeng at Ban Khao Phang, Surat Thani (X_{39})

Location: Lat. 8°-57'-07" N., Long. 98°-48'-53" E., on left bank at Ban Khao Phang, Amphoe Khiri Ratthanikhom, Surat Thani.

Drainage Area: 1,437 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 8.550 m. (M.S.L.)

Bench Mark: B.M. – H.S.

- Location: about 10 meters above measuring line.
- Elevation: + 21.625 m. (M.S.L.)

Gage Reading Frequency: 16-time daily readings at 03.00, 06.00-18.00, 21.00 and 24.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 16 readings.

Period of Available Gage Records: 1964 to date

Rating Operation:

- Period of Rating: 1969 to date
- Rated by Float: –
- Rated by Current Meter: 1969 to date

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records good. Stage-discharge relation used is defined by discharge measurements made during 1969. No State diversions at above gage site. No adjustment made for virgin flow.

Remarks: Gage-height record April 1-9 are estimated from adjacent station.

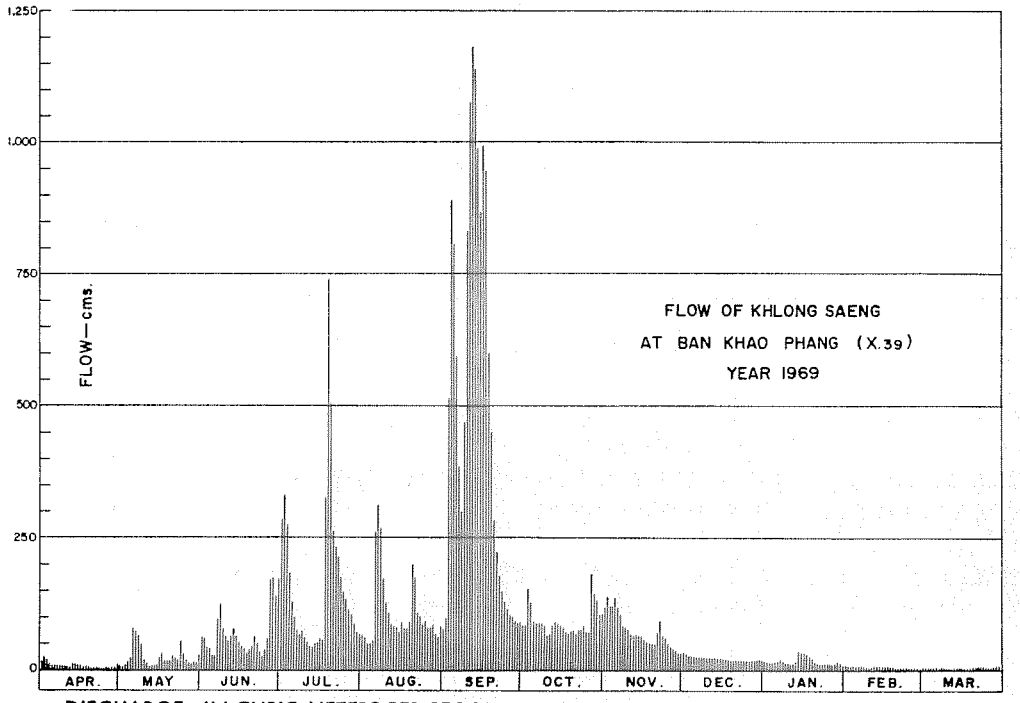
GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	9.33	9.14	10.18	12.41	10.22	10.25	10.46	10.88	9.71	9.36	9.16	9.04
2	.55	.08	.11	.88	.16	.66	.46	11.11	.67	.34	.16	.04
3	.36	.12	9.85	.64	.02	14.86	11.24	10.90	.63	.33	.17	.03
4	.23	.26	.81	11.70	9.95	16.60	10.95	.91	.61	.32	.16	.03
5	.16	.54	.54	.04	10.06	15.92	.58	11.08	.59	.34	.15	.02
6	9.10	10.39	9.58	10.68	12.32	14.38	10.52	10.92	9.57	9.43	9.14	9.02
7	.08	.28	10.63	.40	.71	13.00	.52	.73	.56	.41	.13	.02
8	.08	.18	.94	.22	.29	12.38	.55	.42	.55	.36	.12	.02
9	.10	9.93	.42	.32	11.41	14.16	.48	.42	.55	.31	.12	.02
10	.08	.49	.18	.15	10.94	16.30	.25	.35	.55	.29	.12	.02
11	9.08	9.21	9.98	9.98	10.70	17.65	10.23	10.25	9.54	9.28	9.12	9.01
12	.08	.13	10.21	.90	.50	.85	.42	.21	.53	.26	.15	.01
13	.19	.11	.38	.85	.48	.91	.58	.21	.52	.34	.14	.01
14	.21	.12	.18	.99	.38	16.76	.52	.18	.49	.75	.12	.01
15	.17	.15	9.98	10.02	.23	.37	.45	.18	.48	.70	.10	.01
16	9.11	9.52	9.89	10.14	10.53	17.18	10.43	10.08	9.47	9.65	9.09	9.01
17	.08	.66	.82	9.96	.40	16.82	.30	.03	.46	.61	.09	.01
18	.09	.29	.67	12.29	.40	15.06	.27	.00	.45	.56	.08	.01
19	.07	.32	.80	15.68	.46	13.45	.31	9.97	.44	.48	.08	.02
20	9.01	.38	.88	13.27	11.71	12.44	.33	.94	.43	.32	.07	.05
21	9.01	9.55	10.18	11.86	11.49	11.93	10.25	10.21	9.43	9.24	9.07	9.03
22	.02	.50	.02	.99	10.73	.57	.33	.59	.42	.22	.07	.03
23	.01	.41	9.75	.77	.66	.28	.36	.22	.41	.22	.07	.03
24	.00	10.05	.53	.42	.48	.07	.45	.13	.40	.22	.07	.03
25	.01	9.66	.83	.17	.57	10.82	.30	9.99	.39	.22	.06	.02
26	9.01	9.37	10.11	10.93	10.37	10.72	10.30	9.88	9.38	9.21	9.06	9.02
27	.00	.27	11.39	.78	.40	.67	11.55	.82	.44	.21	.06	.01
28	.00	.24	.44	.63	.48	.56	.14	.75	.40	.26	.05	.04
29	.02	.27	.07	.41	.24	.54	.00	.72	.40	.29	–	.01
30	.21	.22	.18	.30	.16	.55	10.72	.73	.45	.27	–	.13
31	–	.55	–	.25	.45	–	.73	–	.39	.20	–	.18
Mean	9.11	9.46	10.18	11.13	10.71	13.66	10.55	10.29	9.49	9.35	9.11	9.03
Max.	9.55	10.39	11.44	15.68	12.71	17.91	11.55	11.11	9.71	9.75	9.17	9.18
Min.	9.00	9.08	9.53	9.85	9.95	10.25	10.23	9.72	9.38	9.20	9.05	9.01

WATER YEAR 1969 : Max. 17.91 m. Min. 9.00 m.

H.62

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	16	8.60	65	278	67	69	85	120	35	17	9.40	5.20
2	26	6.40	60	335	63	101	85	141	32	17	9.40	5.20
3	17	7.80	43	306	53	610	153	122	30	16	9.80	4.90
4	12	13	41	199	49	892	126	123	29	16	9.40	4.90
5	9.40	26	26	135	56	776	94	138	28	17	9.00	4.60
6	7.00	79	28	102	267	538	90	124	27	20	8.60	4.60
7	6.40	72	98	80	314	349	90	107	27	19	8.20	4.60
8	6.40	65	126	67	264	275	92	82	26	17	7.80	4.60
9	7.00	48	82	74	170	505	86	82	26	15	7.80	4.60
10	6.40	23	65	62	126	841	69	76	26	15	7.80	4.60
11	6.40	11	51	51	104	1,080	68	69	26	14	7.80	4.30
12	6.40	8.20	67	46	88	1,118	82	67	25	13	9.00	4.30
13	11	7.40	79	43	86	1,130	94	67	25	17	8.60	4.30
14	11	7.80	65	51	79	919	90	65	23	37	7.80	4.30
15	9.80	9.00	51	53	68	853	84	65	23	34	7.00	4.30
16	7.40	25	45	62	90	994	82	58	22	31	6.70	4.30
17	6.40	32	41	50	80	930	73	54	22	29	6.70	4.30
18	6.70	15	32	264	80	640	71	52	21	27	6.40	4.30
19	6.10	16	40	738	85	407	74	50	21	23	6.40	4.60
20	4.30	18	45	384	200	282	75	48	20	16	6.10	5.50
21	4.30	26	65	217	178	224	69	67	20	13	6.10	4.90
22	4.60	24	53	231	107	186	75	95	20	12	6.10	4.90
23	4.30	19	37	207	101	157	77	67	19	12	6.10	4.90
24	4.00	55	25	171	86	137	84	61	19	12	6.10	4.90
25	4.30	32	42	146	94	115	73	51	19	12	5.80	4.60
26	4.30	18	60	125	78	106	73	45	18	11	5.80	4.60
27	4.00	14	168	111	80	102	184	41	21	11	5.80	4.30
28	4.00	13	173	98	86	93	144	37	19	13	5.50	5.20
29	4.60	14	137	81	69	91	131	35	21	15	–	7.40
30	11	12	147	73	63	92	106	36	21	14	–	8.20
31	–	26	–	69	84	–	107	–	19	11	–	10.00
Total	238.50	751.20	2,057	4,909	3,415	14,612	2,886	2,245	730	546	207	156.20
Mean	7.95	24.2	68.6	158	110	487	93.1	74.8	23.5	17.6	7.39	5.04
Max.	26	79	173	738	314	1,130	184	141	35	37	9.80	10.00
Min.	4.00	6.40	25	43	49	69	68	35	18	11	5.50	4.30
Runoff – mcm.	20.606	64.904	177.725	424.138	295.056	1,262.477	249.350	193.968	63.072	47.174	17.885	13.496

WATER YEAR 1969 : Max. 1,130 Min. 4.00 Mean 89.7 Annual Runoff 2,829.850 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 13, 69	02.00	18.11	1,168				

WATER YEAR 1969
PHUM DUANG RIVER BASIN

Khlong Yan at Ban Tha Kradan, Surat Thani (X_{74A})

Location: Lat. 9°-04'-03" N., Long. 98°-59'-08" E., on right bank about 4 kilometers upstream from X74 station, at Ban Tha Kradan, Amphoe Khiri Ratthanikhom, Surat Thani.

Drainage Area: 1,178 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 6.740 m. (M.S.L.)

Bench Mark: B.M. - H.S.

Location: Near the staff gage

Elevation: + 12.020 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1969-1970

Rating Operation:

Period of Rating: 1969-1970

Rated by Float: -

Rated by Current Meter: 1969-1970

Stability of Channel Regimes: Stable, shifting adjustment is included for flow computation.

Overbank Flow Conditions: No overbank flow.

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

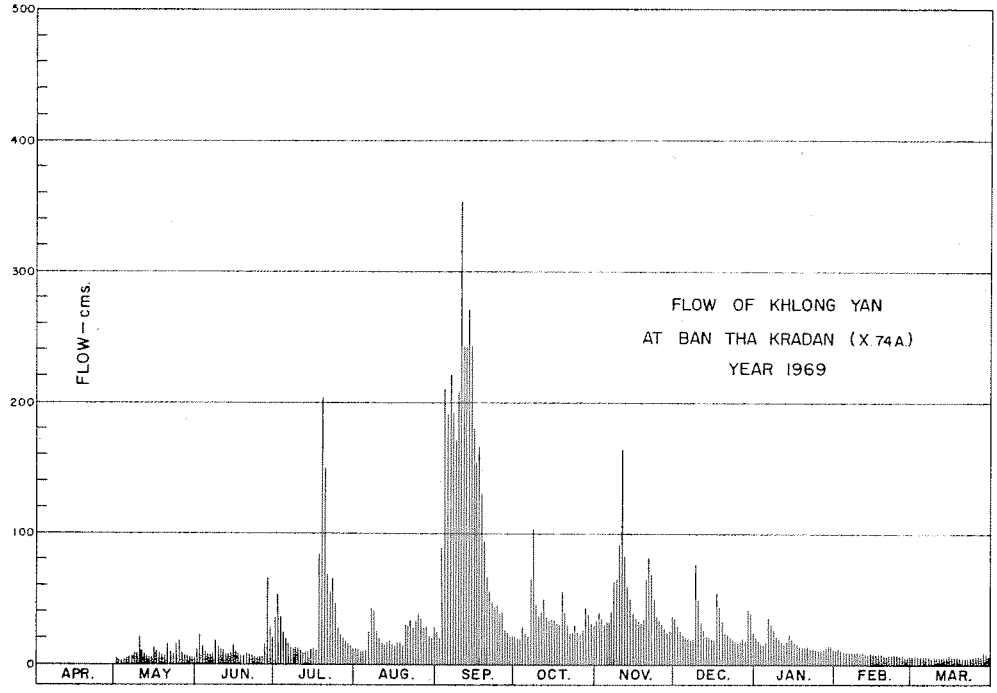
Remarks: Stream gaging station began on May 1, 1969.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1		7.50	7.75	8.23	7.71	7.95	7.93	8.12	8.14	7.87	7.66	7.56
2		.49	.91	.46	.69	.84	.88	.22	.01	.82	.68	.56
3		.49	.73	.20	.66	9.81	.89	.16	7.94	.78	.67	.56
4		.49	.65	.00	.65	10.40	8.07	.04	.90	.76	.65	.55
5		.54	.63	7.86	.65	.36	7.95	.11	.86	.82	.64	.55
6		7.55	7.61	7.80	7.94	9.58	7.92	8.09	7.84	8.16	7.63	7.55
7		.56	.62	.74	8.28	.01	8.53	.25	.82	.03	.63	.55
8		.63	.82	.69	.23	8.59	.97	.65	.89	7.98	.63	.54
9		.61	.72	.73	7.94	10.42	.34	.66	8.84	.88	.63	.54
10		.87	.68	.70	.84	12.22	.19	9.03	.35	.83	.62	.54
11		7.66	7.69	7.66	7.77	10.91	8.18	10.09	8.05	7.80	7.62	7.54
12		.61	.63	.65	.74	.90	.34	8.94	7.97	.77	.61	.54
13		.59	.63	.64	.81	11.36	.19	.54	.89	.83	.61	.54
14		.56	.62	.68	.81	.01	.14	.05	.86	.90	.61	.54
15		.58	.75	.68	.74	10.60	.16	.24	.84	.84	.60	.55
16		7.73	7.64	7.71	7.73	10.46	8.17	8.16	7.83	7.79	7.60	7.54
17		.65	.61	.66	.78	.62	.07	.14	8.49	.76	.60	.53
18		.62	.60	8.50	.76	9.91	.07	.08	.33	.74	.60	.53
19		.60	.59	10.00	.71	.09	.50	.17	.10	.72	.59	.53
20		.59	.62	9.51	8.05	8.72	.18	.67	7.97	.71	.59	.53
21		7.77	7.60	8.45	8.03	8.52	8.06	8.91	7.93	7.70	7.59	7.52
22		.64	.59	.47	.11	.37	7.95	.72	.89	.69	.58	.52
23		.60	.57	.61	.01	.24	.97	.39	.84	.68	.58	.53
24		.79	.56	.35	.08	.21	8.06	.20	.81	.68	.58	.54
25		.81	.56	.11	.19	.07	7.95	.10	.79	.67	.58	.53
26		7.64	7.58	7.97	8.12	8.10	7.92	8.07	7.78	7.67	7.58	7.52
27		.61	.85	.88	7.99	.03	8.00	.00	.84	.67	.57	.52
28		.58	8.67	.84	8.02	7.98	.25	7.94	.81	.70	.57	.62
29		.57	.07	.79	7.90	.92	.18	.99	8.27	.72	-	.60
30		.56	7.88	.75	.85	.92	.03	8.19	.23	.73	-	.57
31		.57	-	.72	8.03	-	.02	-	7.97	.67	-	.57
Mean		7.61	7.71	8.06	7.90	9.37	8.13	8.40	8.00	7.79	7.61	7.54
Max.		7.87	8.67	10.00	8.28	12.22	8.97	10.09	8.84	8.16	7.68	7.62
Min.		7.49	7.56	7.64	7.65	7.84	7.88	7.94	7.78	7.67	7.57	7.52

WATER YEAR 1969 : Max. 12.22 m. Min. 7.49 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1		4.00	15	40	13	25	22	34	35	21	11	6.40
2		3.60	23	54	12	19	20	39	28	19	12	6.40
3		3.60	14	38	10	165	20	36	25	17	11	6.40
4		3.60	10	28	11	211	29	30	23	16	10	6.00
5		5.60	9.50	21	11	191	23	33	21	19	10	6.00
6		6.00	8.50	18	26	121	22	32	20	36	9.50	6.00
7		6.40	9.00	15	44	92	63	41	19	29	9.50	6.00
8		9.50	19	12	41	71	104	65	22	27	9.50	5.60
9		8.50	14	14	26	204	47	66	76	22	9.50	5.60
10		21	12	13	21	352	38	90	47	19	9.00	5.60
11		11	12	11	17	243	40	164	32	18	9.00	5.60
12		8.50	9.50	10	16	242	50	84	26	16	8.50	5.60
13		7.60	9.50	10	19	271	36	58	22	19	8.50	5.60
14		6.40	9.00	12	19	243	34	47	21	23	8.50	5.60
15		7.20	15	12	16	180	35	40	20	20	8.00	6.00
16		14	10	13	15	155	35	36	19	17	8.00	5.60
17		10	8.50	11	18	166	30	35	55	16	8.00	5.20
18		9.00	8.00	70	17	117	30	32	45	15	8.00	5.20
19		8.00	7.60	204	14	89	55	36	33	14	7.60	5.20
20		7.60	9.00	153	31	66	36	66	26	13	7.60	5.20
21		16	8.00	69	30	56	30	82	24	13	7.60	4.80
22		10	7.60	57	34	50	24	69	22	12	7.20	4.80
23		8.00	6.80	65	29	44	25	49	20	12	7.20	5.20
24		17	6.40	48	33	45	30	38	18	12	7.20	5.60
25		18	6.40	33	39	39	24	33	17	11	7.20	5.20
26		10	7.20	26	35	40	23	31	17	11	7.20	5.20
27		8.50	20	21	28	27	27	28	20	11	6.80	5.20
28		7.20	66	19	30	25	43	25	18	13	6.80	9.00
29		6.80	31	17	22	22	39	27	42	14	–	8.00
30		6.40	22	15	20	22	31	37	40	14	–	6.80
31		6.80	–	13	29	–	30	–	26	11	–	6.60
Total		275.80	413.50	1,142	726	3,593	1,095	1,483	879	530	239.90	181.20
Mean		8.90	13.8	36.8	23.4	120	35.3	49.1	28.3	17.1	8.57	5.84
Max.		21	66	204	44	352	104	164	76	36	12	9.00
Min.		3.60	6.40	10	10	19	20	25	17	11	6.80	4.80
Runoff – mcm.		23.829	35.726	98.669	62.726	310.435	94.608	128.131	75.945	45.792	20.727	15.655

WATER YEAR 1969 : Max. 352 Min. 360 Mean Annual Runoff mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Sept. 10	12.00	12.47	359				

WATER YEAR 1969
PATTANI RIVER BASIN

Pattani River at Muang Yala (X_{40})

Location: Lat. 6°-35'-00" N., Long. 101°-20'-00" E., on right bank about 500 meters downstream from State railway bridge crossing Pattani river at Ban Streng Nok, Amphoe Muang. Yala.

Drainage Area: 3,295 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 9.60 m. (M.S.L.)

Bench Mark: B.M. – H.S.

Location: Near the gage site

Elevation: B.M. 1 + 14.009 m. (M.S.L.) and B.M. 2 + 14.240 m. (M.S.L.)

Gage Reading Frequency: 14-time daily readings at 06.00-18.00 and 21.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 14 readings.

Period of Available Gage Records: 1964 to date

Rating Operation:

Period of Rating: 1964 to date

Rated by Float: –

Rated by Current Meter: 1964 to date

Stability of Channel Regimes: Stable, no shifting adjustment but periods curves are used for flow computation.

Overbank Flow Conditions: No overbank flow

General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversions at above gage site. No adjustment made for virgin flow.

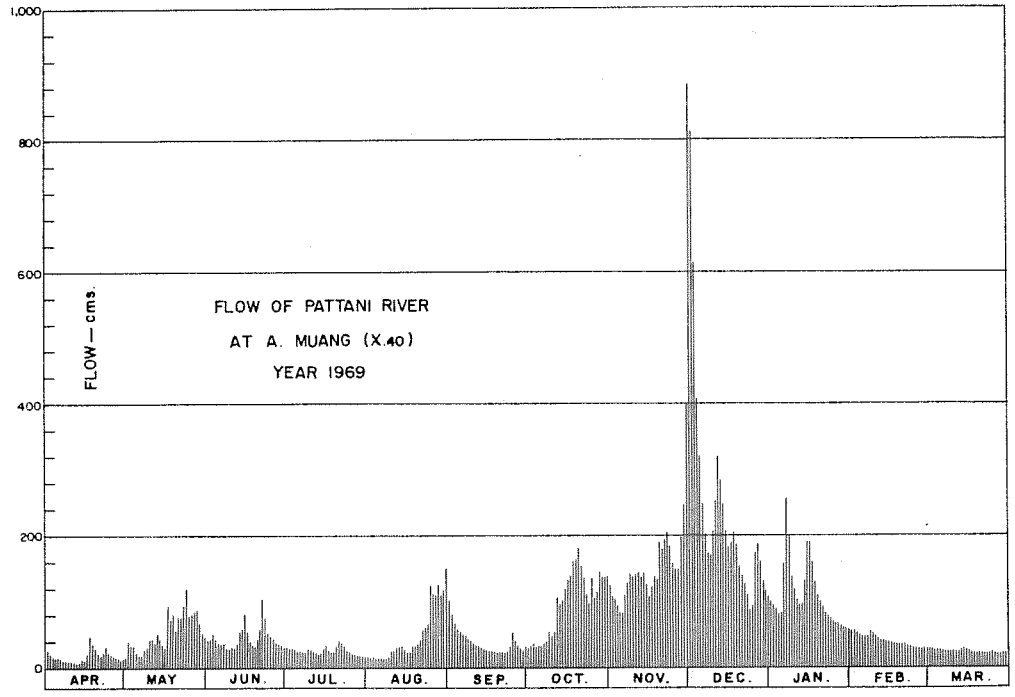
GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	10.65	10.41	10.88	10.72	10.39	11.73	10.69	11.98	16.02	11.94	11.31	10.83
2	.49	.92	.96	.69	.37	.48	.76	.85	15.89	.86	.33	.84
3	.36	.77	11.06	.69	.41	.30	.86	.79	.13	.77	.26	.80
4	.33	.72	10.90	.66	.38	.17	.71	.62	14.52	.70	.23	.78
5	.34	.54	.83	.60	.38	.11	.74	.50	.00	.74	.21	.77
6	10.29	10.44	10.80	10.62	10.35	11.05	10.74	11.49	13.50	12.65	11.20	10.76
7	.24	.45	.80	.57	.37	.02	.83	.92	.09	13.56	.22	.75
8	.20	.67	.73	.55	.36	10.95	.90	12.09	12.78	12.98	.33	.74
9	.17	.54	.65	.71	.37	.90	11.13	.25	.71	.27	.28	.73
10	.15	.97	.73	.66	.59	.84	.00	.16	13.07	.18	.18	.72
11	10.12	10.94	10.69	10.59	10.63	10.79	11.08	12.22	13.53	11.95	11.14	10.71
12	.10	.78	.75	.53	.73	.75	.82	.26	14.08	.87	.12	.75
13	.14	11.08	11.11	.51	.76	.71	.69	.15	13.77	.84	.09	.77
14	.31	10.89	.17	.55	.78	.67	.73	.26	.36	12.12	.07	.84
15	.24	.76	.47	.69	.67	.65	.98	11.99	.08	.95	.05	.80
16	10.42	10.73	11.09	10.80	10.57	10.62	12.16	11.80	12.85	12.94	11.03	10.74
17	11.03	11.66	10.88	.65	.56	.60	.19	12.08	.91	.54	.01	.70
18	10.85	.32	.79	.57	.78	.57	.44	.18	13.09	.27	10.99	.68
19	.71	.51	.75	.60	.79	.57	.47	.06	12.87	.06	.97	.67
20	.52	.08	.95	.74	.83	.54	.64	.72	.51	11.93	.96	.66
21	10.39	11.46	11.24	10.94	10.61	10.55	12.31	12.59	12.41	11.82	10.93	10.65
22	.49	.44	.79	.85	11.16	.56	.13	.81	.25	.73	.92	.64
23	.76	.68	.28	.72	.23	.61	11.77	.88	.13	.67	.90	.66
24	.57	.99	.06	.62	.28	.75	.62	.54	.04	.60	.89	.67
25	.44	.41	.01	.57	12.05	11.09	12.15	.39	.04	.54	.88	.71
26	10.40	11.50	10.91	10.52	11.89	10.89	11.75	12.26	12.76	11.51	10.87	10.67
27	.34	.53	.85	.49	.86	.77	.91	.32	.93	.52	.86	.65
28	.28	.60	.80	.46	12.07	.68	12.27	.79	.70	.46	.84	.65
29	.25	.29	.77	.43	11.85	.63	.18	.87	.37	.42	–	.69
30	.25	.10	.73	.42	.91	.74	.19	14.15	.17	.39	–	.71
31	–	10.99	–	.40	12.32	–	.19	–	.04	.34	–	.73
Mean	10.39	11.07	10.95	10.62	10.95	10.84	11.65	12.26	13.18	12.00	11.07	10.72
Max.	11.03	11.99	11.79	10.94	12.32	11.73	12.64	14.15	16.02	13.56	11.33	10.84
Min.	10.10	10.41	10.65	10.40	10.35	10.55	10.69	11.49	12.04	11.34	10.84	10.64

WATER YEAR 1969 : Max. 16.02 m. Min. 10.10 m.

H.62

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	27	17	39	31	17	98	29	119	884	100	54	27
2	21	41	44	29	16	80	33	108	784	94	55	28
3	16	33	50	29	17	67	38	103	509	87	51	26
4	15	31	40	28	16	58	30	90	387	81	49	25
5	15	23	36	25	16	54	32	81	309	84	48	25
6	14	19	35	26	15	49	32	80	248	162	47	24
7	12	19	35	24	16	47	36	114	205	255	48	24
8	11	28	31	23	16	43	40	129	174	194	55	24
9	10	23	27	30	16	40	55	143	168	128	52	23
10	9.50	44	31	28	25	37	46	135	203	120	46	23
11	8.60	42	29	25	26	34	52	141	251	101	43	22
12	8.00	34	32	22	31	32	106	144	320	95	42	23
13	9.20	52	54	21	33	30	95	134	278	92	40	25
14	14	39	58	23	34	28	98	144	233	115	39	28
15	12	33	79	29	28	27	119	120	204	191	38	26
16	18	31	52	35	24	26	135	104	181	190	37	24
17	48	93	39	27	23	25	138	122	187	153	36	22
18	37	68	34	24	34	24	161	137	205	128	35	21
19	30	82	32	25	34	24	164	126	183	110	34	21
20	22	52	43	32	36	23	181	189	150	99	34	21
21	17	78	63	42	41	23	149	176	141	91	35	20
22	21	77	103	37	57	23	133	198	126	83	32	20
23	33	94	66	31	62	25	102	205	116	79	31	21
24	24	120	50	26	66	32	90	171	108	74	30	21
25	19	75	47	24	125	52	134	156	108	70	30	22
26	17	81	41	22	111	39	100	144	172	68	29	21
27	15	83	37	21	108	33	113	150	189	68	29	20
28	13	88	35	19	127	29	145	196	167	64	28	20
29	12	66	33	18	108	26	137	204	137	61	–	22
30	12	53	31	18	113	32	138	360	119	59	–	22
31	–	45	–	17	150	–	138	–	108	56	–	23
Total	540.30	1,664	1,326	811	1,541	1,160	2,999	4,423	7,554	3,352	1,127	714
Mean	18.0	53.7	44.2	26.2	49.7	38.7	96.7	147	244	108	40.2	23.0
Max.	48	120	103	42	127	98	181	360	884	255	55	28
Min.	8.00	17	27	17	16	23	29	80	108	56	28	20
Runoff - mcm.	46.682	143.770	114.566	70.070	133.144	100.22	259.114	382.147	652.666	289.613	97.373	61.690

WATER YEAR 1969 : Max. 884 Min. 8.00 Mean 74.5 Annual Runoff 2,351.056 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Dec. 1, 69	18.00	16.11	925				

WATER YEAR 1969
KHLONG YAHA RIVER BASIN

Khlong Yaha at Ban La Ac, Yala (X_{72})

Location: Lat. 6°-78'-21" N., Long. 101°-10'-03" E., on right bank about 4 kilometers from Amphoe Yaha and about 3 kilometers downstream from confluence with Khlong Ba Tae at Ban La Ae, Amphoe Yaha, Yala.

Drainage Area: 358 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

Location: Along the measuring line

Elevation: + 7.109 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1967-1969

Rated by Float: -

Rated by Current Meter: 1967-1969

Stability of Channel Regimes: Rather stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

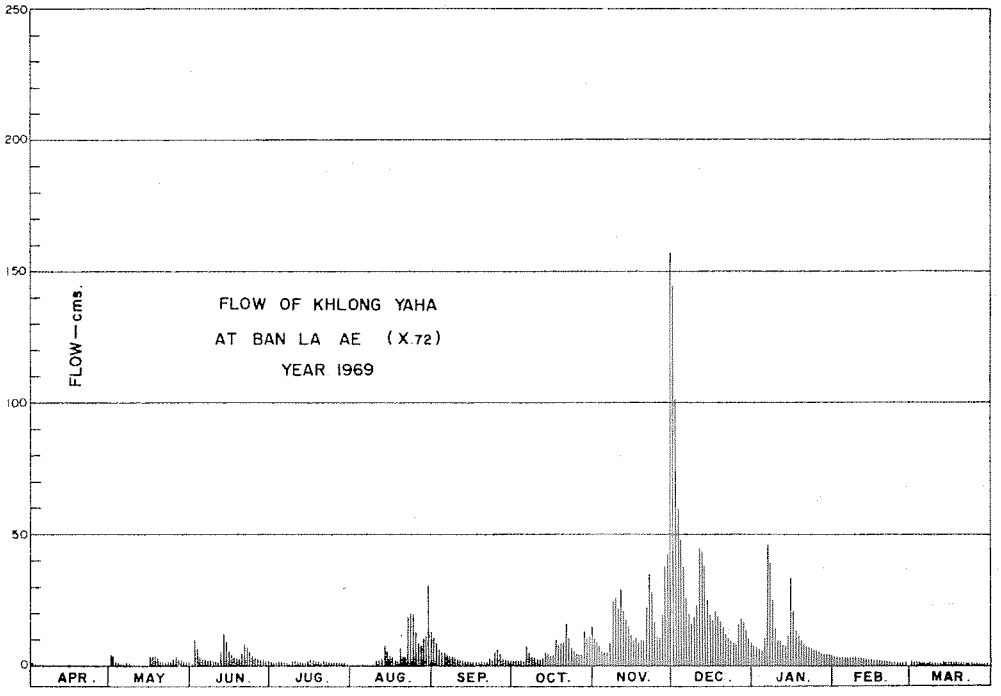
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1967-1968. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.36	1.91	1.43	1.50	1.34	2.57	1.57	2.50	7.38	2.26	1.81	1.47
2	.26	.49	2.49	.49	.33	.28	.65	.37	5.68	.18	.79	.49
3	.22	.46	1.85	.47	.34	.08	.60	.22	4.65	.11	.77	.48
4	.20	.34	.65	.44	.34	1.98	.56	.07	.54	.06	.76	.47
5	.19	.26	.58	.42	.34	.88	.53	1.99	3.93	.39	.75	.45
6	1.17	1.22	1.62	1.40	1.32	1.85	2.26	1.98	3.48	4.49	1.74	1.45
7	.16	.38	.55	.39	.31	.79	1.90	2.21	.14	.04	.76	.45
8	.15	.34	.50	.48	.32	.73	.83	3.42	2.92	3.08	.77	.45
9	.15	.32	.55	.60	.46	.68	.72	.54	3.14	2.73	.74	.43
10	.14	.32	.51	.58	.62	.63	.67	.14	.47	.52	.72	.42
11	1.13	1.25	1.47	1.50	1.66	1.59	1.64	3.67	4.44	2.39	1.70	1.42
12	.13	.46	2.24	.46	.79	.55	.73	.28	.35	.38	.68	.46
13	.13	.47	.66	.43	2.28	.53	2.04	.04	3.76	.27	.66	.50
14	.13	.43	.28	.44	1.96	.52	1.90	2.87	.38	.76	.64	.46
15	.13	.51	.03	.62	.76	.49	.77	.59	.14	3.87	.63	.43
16	1.14	1.82	1.85	1.66	1.65	1.47	1.88	2.40	2.98	2.95	1.61	1.42
17	.16	.80	.73	.57	.61	.47	2.51	.53	3.29	.67	.60	.42
18	.15	.74	.64	.52	.57	.48	.23	.38	.09	.51	.58	.42
19	.13	.60	.61	.49	2.16	.47	.35	.50	2.94	.40	.58	.42
20	.11	.52	2.07	.53	1.81	.48	.44	.43	.79	.29	.56	.40
21	1.10	1.47	2.32	1.55	1.79	1.48	2.91	3.65	2.61	2.22	1.54	1.39
22	.09	.42	.10	.53	3.13	.70	.42	4.00	.51	.16	.53	.39
23	.09	.40	1.90	.50	.21	.48	.15	3.48	.40	.10	.52	.39
24	.08	.39	.81	.47	.14	2.08	.06	2.89	.31	.06	.51	.46
25	.08	.63	.71	.43	2.60	.09	1.93	.59	.37	.02	.50	.44
26	1.08	1.75	1.64	1.41	2.35	1.81	1.90	2.55	2.97	1.98	1.50	1.42
27	.06	.66	.60	.39	.26	.68	2.23	3.34	3.09	.94	.49	.40
28	.05	.53	.59	.37	.60	.61	.70	4.20	2.87	.93	.48	.40
29	.05	.44	.56	.35	.62	.59	.48	.36	.61	.90	-	.39
30	.06	.39	.52	.34	3.80	.57	.56	7.68	.46	.86	-	.39
31	-	.36	-	.34	.26	-	.89	-	.34	.84	-	.39
Mean	1.14	1.49	1.80	1.47	2.02	1.72	2.06	3.06	3.39	2.46	1.64	1.43
Max.	1.36	1.91	2.66	1.66	3.80	2.57	2.91	7.68	7.38	4.49	1.81	1.50
Min.	1.05	1.22	1.43	1.34	1.31	1.47	1.53	1.98	2.31	1.84	1.48	1.39

WATER YEAR 1969 : Max. 7.68 m. Min. 1.05 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.04	4.48	1.35	1.70	0.96	11	2.12	10	139	7.70	3.77	1.55
2	0.68	1.65	10	1.65	0.92	7.90	2.65	8.87	79	6.90	3.63	1.65
3	0.56	1.50	4.05	1.55	0.96	5.92	2.30	7.30	50	6.20	3.49	1.60
4	0.50	0.96	2.65	1.40	0.96	5.04	2.06	5.83	47	5.70	3.42	1.55
5	0.48	0.68	2.18	1.30	0.96	4.26	1.88	5.12	34	9.09	3.35	1.45
6	0.44	0.56	2.44	1.20	0.88	4.05	7.70	5.04	25	46	3.28	1.45
7	0.42	1.12	2.00	1.16	0.84	3.63	4.40	7.20	19	36	3.42	1.45
8	0.40	0.96	1.70	1.60	0.88	3.21	3.91	24	16	18	3.49	1.45
9	0.40	0.88	2.00	2.30	1.50	2.86	3.14	26	19	13	3.28	1.35
10	0.36	0.88	1.76	2.18	2.44	2.51	2.79	19	25	10	3.14	1.30
11	0.36	0.65	1.55	1.70	2.72	2.24	2.58	29	45	9.09	3.00	1.30
12	0.36	1.50	7.50	1.50	3.63	2.00	3.21	21	43	7.90	2.86	1.50
13	0.36	1.55	12	1.35	7.90	1.88	5.56	17	30	7.80	2.72	1.70
14	0.36	1.35	7.90	1.40	4.88	1.82	4.40	15	23	13	2.58	1.50
15	0.36	1.76	5.47	2.44	3.42	1.65	3.49	11	19	33	2.51	1.35
16	0.38	3.84	4.05	2.72	2.65	1.55	4.26	9.20	17	16	2.37	1.30
17	0.42	3.70	3.21	2.12	2.37	1.55	10	11	21	12	2.30	1.30
18	0.40	3.28	2.58	1.82	2.12	1.60	7.40	8.98	18	10	2.18	1.30
19	0.36	2.30	2.37	1.65	6.70	1.55	8.65	10	16	9.20	2.18	1.30
20	0.32	1.82	5.43	1.88	3.77	1.60	9.64	9.53	14	8.00	2.06	1.20
21	0.30	1.55	8.32	2.00	3.63	1.60	16	28	12	7.30	1.94	1.16
22	0.28	1.30	6.10	1.88	19	3.00	9.42	35	10	6.70	1.88	1.16
23	0.28	1.20	4.40	1.70	20	1.60	6.60	25	9.20	6.10	1.82	1.16
24	0.26	1.16	3.77	1.55	19	5.92	5.74	15	8.21	5.74	1.76	1.50
25	0.26	2.51	3.07	1.35	11	6.01	4.64	11	8.87	5.38	1.70	1.40
26	0.26	3.35	2.58	1.25	8.65	3.77	4.40	11	16	5.04	1.70	1.30
27	0.22	2.72	2.30	1.16	7.70	2.86	7.40	23	18	4.72	1.65	1.20
28	0.20	1.88	2.24	1.08	11	2.37	13	40	15	4.64	1.60	1.20
29	0.20	1.40	2.06	1.00	12	2.24	10	43	12	4.40	–	1.16
30	0.22	1.16	1.82	0.96	31	2.12	11	157	9.86	4.12	–	1.16
31	–	1.04	–	0.96	21	–	15	–	8.54	3.98	–	1.16
Total	11.46	54.69	119.25	49.51	215.44	99.31	195.34	648.07	826.68	342.70	73.08	42.11
Mean	0.38	1.76	3.97	1.60	6.95	3.31	6.30	21.6	26.7	11.0	2.61	1.36
Max.	1.04	4.48	12	2.72	31	11	16	157	139	46	3.77	1.70
Min.	0.20	0.56	1.35	0.96	0.84	1.55	1.88	5.04	8.21	3.98	1.60	1.16
Runoff - mcm.	0.990	4.725	10.303	4.278	18.614	8.580	16.877	55.993	71.425	29.609	6.314	3.638

WATER YEAR 1969 : Max. 157 Min. 0.20 Mean 7.34 Annual Runoff 231.348 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Dec. 1	01.00	8.25	177				

WATER YEAR 1969
PATTANI RIVER BASIN

Pattani River at Bang Rang Damsite, Yala (X_{78})

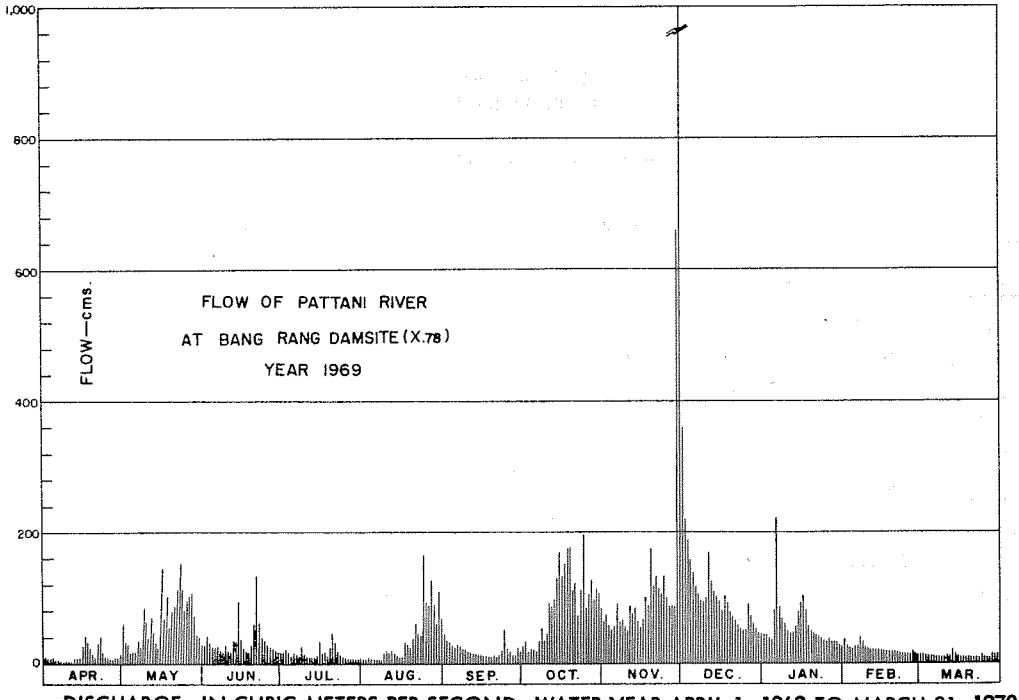
Location:	Lat. 6°-09'-16" N., Long. 101°-16'-34" E., on left bank about 30 meters downstream from Bang Rang Damsite, Ban Bang Rang, Amphoe Bannang Sata, Yala.
Drainage Area:	2,026 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 43.900 m. (M.S.L.)
Bench Mark:	B.M.-H.S./R.I.D.
Location:	In fence of Meteorologic station
Elevation:	+ 59.599 m. (M.S.L.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings.
Period of Available Gage Records:	1967-1973
Rating Operation:	
Period of Rating:	1967
Rated by Float:	-
Rated by Current Meter:	1967
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation for year without actual ratings.
Overbank Flow Conditions:	No overbank flow
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1967. No State diversions at above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	44.45	45.20	44.72	44.54	44.32	44.99	44.74	45.22	47.10	45.01	44.91	44.48
2	.33	44.78	.94	.67	.32	.84	.86	.36	46.63	44.95	.73	.47
3	.35	.75	.77	.54	.34	.77	.56	.13	.45	.91	.71	.46
4	.38	.49	.70	.47	.33	.75	.67	.07	.18	.89	.69	.45
5	.31	.50	.68	.56	.32	.69	.62	.08	.00	.92	.73	.44
6	44.26	44.58	44.75	44.48	44.38	44.77	44.59	45.54	45.75	46.64	44.75	44.44
7	.23	.87	.62	.43	.31	.70	.70	.20	.65	45.52	.95	.43
8	.21	.49	.54	.74	.31	.63	45.11	.30	.58	.29	.81	.42
9	.21	45.42	.79	.52	.58	.59	44.85	.15	.57	.21	.69	.41
10	.19	.09	.59	.44	.60	.54	.91	.05	.55	.08	.66	.40
11	44.17	44.75	44.57	44.42	44.53	44.53	45.54	45.52	46.25	45.03	44.65	44.46
12	.37	45.31	.89	.40	.65	.50	.47	.36	45.80	.00	.64	.44
13	.40	44.93	.83	.40	.50	.48	.60	.47	.71	.15	.63	.64
14	.27	.71	45.57	.47	.47	.46	.87	.24	.64	.38	.62	.53
15	.74	.63	44.78	.84	.40	.45	46.24	.11	.56	.56	.61	.44
16	44.76	46.07	44.67	44.48	44.43	44.43	45.93	45.28	45.41	45.66	44.59	44.41
17	.93	45.14	.60	.57	.83	.43	46.17	.63	.65	.45	.58	.40
18	.69	.64	.57	.43	.76	.42	.31	.25	.55	.14	.57	.39
19	.46	44.96	.82	.74	.69	.41	.32	46.31	.39	.08	.56	.38
20	.37	45.42	45.20	45.03	.98	.46	45.70	45.77	.31	.02	.55	.37
21	44.76	45.53	45.95	44.82	45.20	44.41	45.84	45.95	45.22	44.99	44.54	44.37
22	.96	.85	.15	.58	44.98	.47	.28	.77	.19	.95	.53	.40
23	.53	46.14	44.88	.49	.81	.57	.56	.68	.13	.92	.52	.39
24	.45	45.32	.88	.43	46.22	45.08	46.46	.95	.08	.88	.52	.46
25	.40	.55	.74	.41	45.53	44.63	45.39	.60	.10	.86	.51	.39
26	44.34	45.65	44.71	44.37	45.50	44.59	45.69	45.49	45.53	44.88	44.51	44.37
27	.31	.70	.64	.36	.88	.47	.89	.52	.27	.85	.60	.36
28	.38	.27	.65	.35	.49	.43	.51	.49	.19	.86	.48	.51
29	.35	44.99	.57	.34	.11	.70	.78	.47	.06	.84	-	.43
30	.51	.94	.57	.34	.72	.55	.69	49.72	.04	.77	-	.51
31	-	.76	-	.33	.09	-	.43	-	.00	.75	-	.57
Mean	44.43	45.14	44.81	44.51	44.82	44.59	45.46	45.58	45.59	45.11	44.63	44.43
Max.	44.96	46.14	45.95	45.03	46.22	45.08	46.46	49.72	47.10	46.64	44.91	44.64
Min.	44.17	44.49	44.54	44.33	44.31	44.41	44.56	45.05	45.00	44.75	44.48	44.36

WATER YEAR 1969 : Max. 49.72 m. Min. 44.17 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	13	62	27	18	7.80	45	28	64	294	47	40	15
2	8.20	31	42	24	7.80	35	36	76	220	42	28	14
3	9.00	29	30	18	8.60	30	19	56	195	40	27	14
4	10	15	26	14	8.20	29	24	52	162	38	25	13
5	7.40	16	25	19	7.80	25	22	52	140	40	28	13
6	5.80	20	29	15	7.80	30	20	93	114	222	29	13
7	4.90	37	22	12	7.40	26	26	62	104	91	42	12
8	4.30	15	18	28	7.40	22	55	71	97	70	33	12
9	4.30	82	31	17	20	20	35	58	96	63	25	11
10	3.70	53	20	13	21	18	40	50	94	52	24	11
11	3.10	29	19	12	17	17	93	91	170	48	23	14
12	9.80	72	38	11	23	16	86	76	119	46	23	13
13	11	41	34	11	16	15	99	86	110	58	22	23
14	6.10	27	96	14	14	14	127	66	103	78	22	17
15	28	22	31	35	11	13	169	55	95	95	21	13
16	30	148	24	15	12	12	132	69	81	105	20	11
17	41	57	21	19	34	12	160	102	104	84	20	11
18	25	103	19	12	30	12	177	66	94	57	19	11
19	14	43	33	28	25	11	179	177	79	52	19	10
20	9.80	82	62	48	45	14	109	116	72	48	18	9.80
21	30	92	134	33	62	11	123	134	64	45	18	9.80
22	43	124	58	20	45	14	69	116	61	42	17	11
23	17	154	38	15	33	19	95	107	56	40	17	11
24	13	73	38	12	166	52	197	134	52	38	17	14
25	11	94	28	11	92	22	79	99	54	36	16	11
26	8.60	104	27	9.80	89	20	108	88	92	38	16	9.80
27	7.40	109	23	9.40	127	14	128	91	68	35	21	9.40
28	10	68	23	9.00	88	12	90	88	61	36	15	16
29	9.00	45	19	8.60	55	26	117	86	51	35	–	12
30	16	42	19	8.60	111	18	108	1,070	49	30	–	16
31	–	30	–	8.20	53	–	83	–	46	29	–	19
Total	413.40	1,919	1,054	527.60	1,251.80	624	2,833	3,551	3,197	1,780	645	399.80
Mean	13.8	61.9	35.1	17.0	40.4	20.8	91.4	118	103	57.4	23.0	12.8
Max.	43	154	134	48	166	52	197	1,070	294	222	42	23
Min.	3.10	15	18	8.20	7.40	11	19	50	46	29	15	9.40
Runoff - mcm.	35.717	165.801	91.065	45.584	108.155	53.913	244.771	306.806	276.220	153.792	55.728	34.542

WATER YEAR 1969 : Max. 1,070 Min. 3.10 Mean 49.8 Annual Runoff 1,572.090 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 30	12.00	49.72	1,070				

WATER YEAR 1959
PATTANI RIVER BASIN

Pattani River at Bang Rang, Yala (X_{78A})

Location: Lat. 6°-09'-52" N., Long. 101°-16'-19" E., on left bank about 2 kilometers downstream from X78 station at Ban Bang Rang, Amphoe Bannang Sata, Yala.

Drainage Area: 2,044 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 42.403 m. (M.S.L.)

Bench Mark: B.M.-H.S./R.I.D. X78A

Location: About 4 meters south-east of the corner of Meteorological station.

Elevation: + 53.132 m. (M.S.L.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1967-1974

Rating Operation:

Period of Rating: 1967-1974

Rated by Float: -

Rated by Current Meter: 1967-1974

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow.

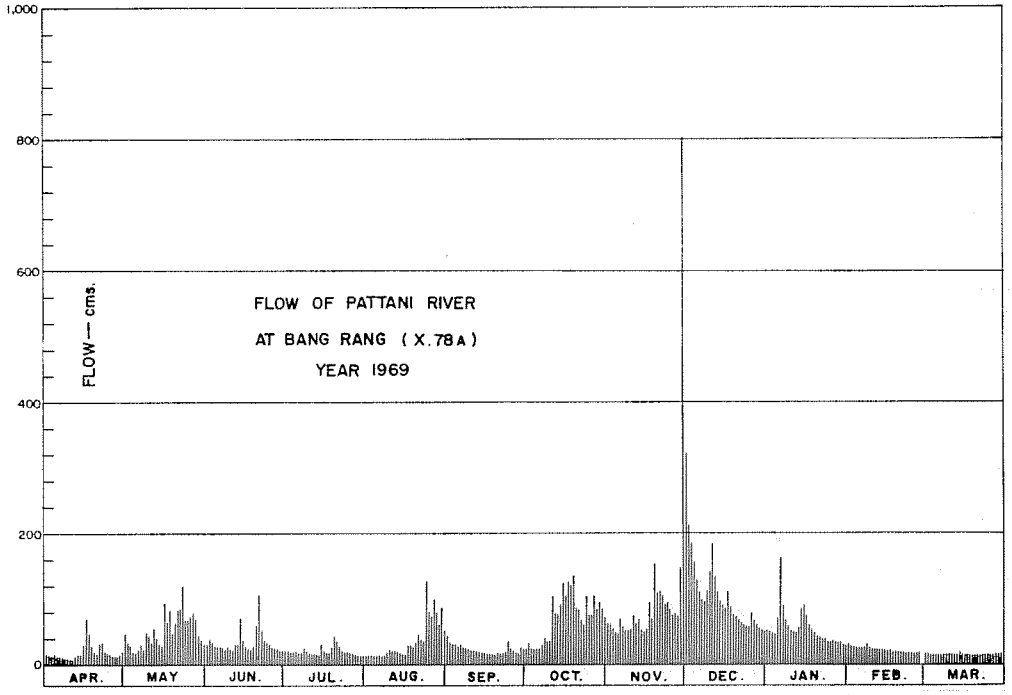
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No state diversions at above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (M.S.L.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	43.25	43.76	43.55	43.37	43.21	43.72	43.46	43.92	45.78	43.83	43.63	43.37
2	.20	.55	.68	.39	.20	.60	.56	.95	.16	.81	.58	.36
3	.20	.51	.53	.37	.20	.54	.39	.85	44.95	.79	.55	.35
4	.23	.33	.49	.32	.20	.53	.42	.78	.75	.76	.54	.35
5	.17	.31	.47	.37	.18	.48	.41	.77	.57	.79	.53	.34
6	43.13	43.37	43.51	43.32	43.21	43.52	43.43	44.05	44.43	44.83	43.55	43.34
7	.10	.55	.43	.30	.18	.46	.52	43.89	.32	.17	.56	.34
8	.09	.35	.37	.45	.18	.43	.68	.81	.27	.02	.64	.33
9	.07	.79	.49	.39	.35	.40	.59	.84	.51	43.93	.53	.32
10	.05	.71	.41	.29	.40	.37	.59	.82	.61	.84	.51	.31
11	43.04	43.54	43.38	43.27	43.39	43.35	44.36	44.09	44.96	43.81	43.50	43.33
12	.18	.88	.55	.26	.39	.33	.12	43.91	.59	.80	.50	.34
13	.26	.65	.55	.25	.31	.32	.10	44.03	.38	.90	.49	.35
14	.16	.52	44.05	.28	.32	.30	.30	43.86	.29	44.21	.48	.41
15	.49	.43	43.58	.53	.27	.28	.53	.83	.24	.25	.47	.34
16	44.03	44.29	43.46	43.34	43.27	43.27	44.32	43.82	44.20	44.05	43.46	43.31
17	43.65	43.92	.41	.31	.55	.26	.55	44.29	.43	43.94	.46	.31
18	.48	44.17	.38	.29	.49	.26	.50	43.95	.24	.87	.45	.30
19	.28	43.72	.53	.47	.47	.25	.59	44.74	.11	.83	.44	.29
20	.21	.96	.95	.72	.61	.28	.19	.38	.07	.80	.43	.28
21	43.55	44.18	44.39	43.57	43.76	43.26	44.18	44.44	44.00	43.77	43.43	43.28
22	.61	.20	43.82	.42	.65	.29	43.97	.40	43.97	.75	.41	.29
23	.35	.49	.62	.35	.58	.36	.86	.25	.93	.73	.41	.29
24	.27	.00	.60	.31	44.54	.63	44.37	.28	.90	.70	.40	.35
25	.24	.04	.52	.28	.12	.44	.07	.17	.91	.67	.40	.31
26	43.19	44.09	43.48	43.26	44.06	43.37	44.09	44.08	44.11	43.71	43.39	43.29
27	.17	.14	.44	.24	.32	.31	.37	.13	43.99	.68	.38	.29
28	.15	43.96	.43	.23	.10	.27	.15	.07	.91	.66	.38	.36
29	.19	.73	.39	.22	43.88	.45	.28	.64	.87	.66	-	.35
30	.33	.65	.38	.22	44.22	.40	.21	47.76	.86	.62	-	.37
31	-	.55	-	.22	43.82	-	.07	-	.83	.60	-	.41
Mean	43.27	43.78	43.69	43.34	43.56	43.39	44.00	44.19	44.32	43.86	43.48	43.33
Max.	44.03	44.49	44.39	43.72	44.54	43.72	44.59	47.76	45.78	44.83	43.64	43.41
Min.	43.04	43.31	43.37	43.22	43.18	43.25	43.39	43.77	43.83	43.60	43.38	43.28

WATER YEAR 1969 : Max. 47.76 m. Min. 43.04 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	15	46	31	21	14	43	25	59	317	51	32	17
2	13	31	40	22	13	34	32	61	214	50	29	17
3	13	28	30	21	13	30	22	53	182	48	27	16
4	15	19	27	18	13	30	23	47	153	46	26	16
5	12	18	26	21	13	26	23	47	130	48	26	16
6	11	21	28	18	14	29	24	70	113	164	27	16
7	10	31	24	17	13	25	29	56	99	82	27	16
8	9.70	20	21	25	13	24	40	50	93	67	32	16
9	9.10	48	27	22	20	22	34	52	122	59	26	15
10	8.50	42	23	17	22	21	34	51	135	52	24	15
11	8.20	30	21	16	22	20	103	74	183	50	24	16
12	13	55	31	16	22	19	77	58	133	49	24	16
13	16	38	31	15	18	18	75	68	106	57	23	16
14	12	29	70	17	18	17	96	54	95	86	23	19
15	27	24	33	30	16	17	125	51	89	90	22	16
16	68	95	25	19	16	16	98	51	85	70	22	15
17	38	59	23	18	31	16	127	95	112	58	22	15
18	26	82	21	17	27	16	121	61	89	51	21	14
19	17	43	30	26	26	15	133	152	76	47	21	14
20	14	62	61	43	35	17	84	106	72	44	20	14
21	31	83	107	32	46	16	83	113	65	42	20	14
22	35	85	51	23	38	17	63	108	63	40	19	14
23	20	120	36	20	33	20	54	90	59	39	19	14
24	16	65	34	18	126	36	104	94	57	36	19	16
25	15	69	29	17	77	24	72	82	58	34	19	15
26	13	74	26	16	71	21	74	73	76	37	18	14
27	12	79	24	15	98	18	104	78	64	35	18	14
28	12	62	24	15	75	16	80	72	58	34	18	17
29	13	44	22	14	55	25	94	155	55	34	–	16
30	19	38	21	14	87	22	86	801	54	31	–	17
31	–	31	–	14	51	–	72	–	51	30	–	19
Total	541.50	1,571	997	617	1,136	670	2,211	2,982	3,258	1,661	648	485
Mean	18.0	50.7	33.2	19.9	36.6	22.3	71.3	99.4	105	53.5	23.1	15.6
Max.	68	120	107	43	126	43	127	801	317	164	32	19
Min.	8.20	18	21	14	13	15	22	47	51	30	18	14
Runoff – MCM.	46.785	135.734	86.140	53.308	98.150	57.888	191.030	257.644	281.491	143.510	55.987	41.904

WATER YEAR 1969 : Max. 801 Min. 8.20 Mean 45.9 Annual Runoff 1,449.576 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 30	9.00	48.86	1,156				

WATER YEAR 1969
KHLONG SAO THONG RIVER BASIN

Khlong Sao Thong at Wat Sai Ngam, Nakhon Si Thammarat (X_{41})

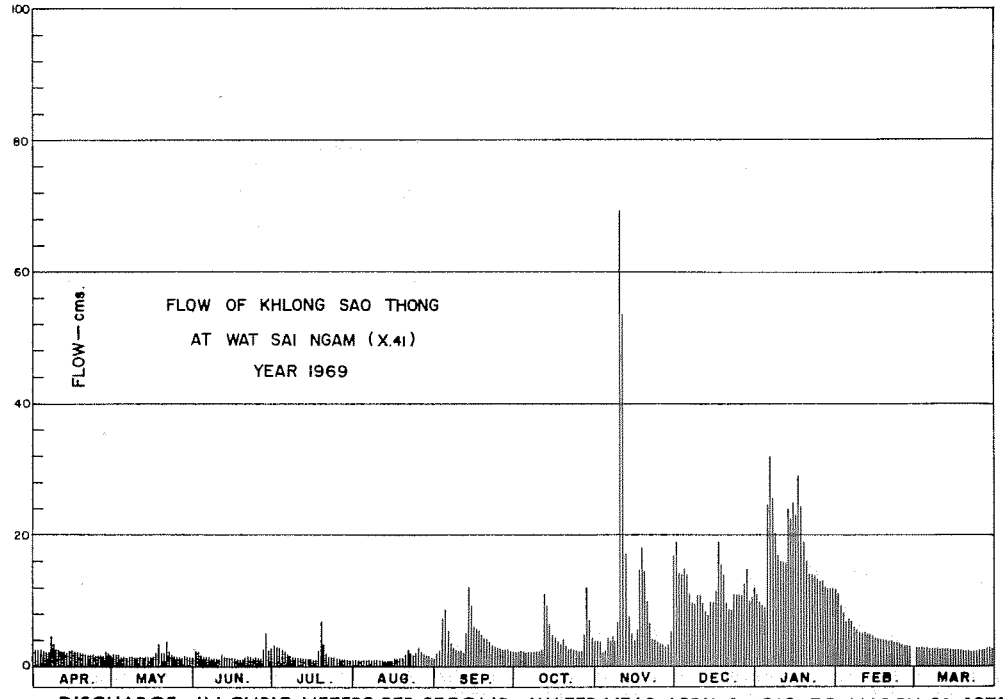
Location:	Lat. 8°-21'-00" N., Long. 99°-48'-23" E., on left bank about 800 meters downstream from confluence with Huai Lan Saka, and 1.5 kilometers south-east of Amphoe Lan Saka, Nakhon Si Thammarat.
Drainage Area:	149 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 26.19 m. (A.D.)
Bench Mark:	B.M.-H.S.
Location:	About 30 meters north of the top gage.
Elevation:	+ 34.921 m. (A.D.)
Gage Reading Frequency:	5-time daily reading at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings.
Period of Available Gage Records:	1965-69
Rating Operation:	
Period of Rating:	1966-69
Rated by Float:	-
Rated by Current Meter:	1966-69
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversions at above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	26.44	26.38	26.43	26.52	26.29	26.41	26.42	26.56	27.34	26.99	27.00	26.48
2	.43	.36	.42	.49	.29	.40	.42	.46	.13	.93	26.89	.48
3	.43	.34	.35	.47	.29	.80	.43	.40	.13	.90	.81	.48
4	.42	.34	.33	.44	.29	.86	.42	.45	.17	.88	.75	.48
5	.41	.33	.32	.42	.29	.67	.41	.60	.14	27.64	.79	.47
6	26.41	26.33	26.32	26.38	26.28	26.53	26.41	26.56	26.98	27.86	26.75	26.47
7	.60	.32	.31	.35	.28	.45	.40	.62	.93	.47	.70	.47
8	.48	.32	.31	.34	.28	.43	.41	.56	.92	.34	.66	.47
9	.44	.34	.30	.34	.28	.41	.41	.74	.97	.22	.65	.47
10	.43	.34	.30	.33	.27	.44	.41	28.99	.98	.24	.64	.46
11	26.42	26.34	26.37	26.32	26.27	26.39	26.47	28.15	26.90	27.23	26.65	26.46
12	.41	.34	.24	.31	.26	.67	27.01	27.03	.85	.15	.64	.46
13	.40	.34	.32	.30	.26	27.03	26.79	26.74	.82	.56	.63	.46
14	.43	.34	.31	.30	.26	26.84	.66	.60	.94	.49	.61	.45
15	.43	.34	.31	.30	.27	.70	.60	.54	.96	.59	.59	.45
16	26.42	26.34	26.30	26.29	26.30	26.68	26.58	26.61	27.01	27.48	26.59	26.45
17	.41	.38	.30	.29	.31	.65	.54	27.19	.36	.74	.58	.45
18	.39	.52	.29	.45	.32	.60	.51	.31	.16	.53	.57	.45
19	.38	.35	.29	.75	.33	.59	.57	.10	.13	.34	.57	.44
20	.38	.39	.32	.43	.40	.58	.49	26.93	26.94	.21	.56	.44
21	26.37	26.54	26.35	26.36	26.46	26.53	26.45	26.67	26.87	27.16	26.56	26.44
22	.37	.38	.33	.34	.38	.49	.46	.58	.88	.14	.55	.44
23	.37	.36	.31	.33	.36	.48	.44	.57	.99	.13	.55	.44
24	.36	.34	.33	.32	.42	.47	.44	.54	.98	.11	.53	.44
25	.36	.34	.31	.31	.46	.46	.42	.52	.97	.10	.51	.43
26	26.35	26.34	26.30	26.30	26.39	26.43	26.43	26.51	26.97	27.09	26.50	26.44
27	.35	.34	.47	.30	.38	.43	.71	.48	27.09	.06	.50	.45
28	.42	.36	.64	.30	.37	.43	27.02	.53	.29	.05	.49	.47
29	.38	.34	.41	.29	.34	.42	26.67	.62	26.96	.04	-	.47
30	.36	.34	.49	.29	.31	.42	.58	27.26	.98	.04	-	.46
31	-	.34	-	.29	.29	-	.56	-	27.03	.03	-	.46
Mean	26.41	26.36	26.35	26.36	26.32	26.56	26.53	26.81	27.02	27.25	26.64	26.46
Max.	26.60	26.54	26.64	26.75	26.46	27.03	27.02	28.99	27.36	27.86	27.00	26.48
Min.	26.35	26.32	26.29	26.29	26.26	26.39	26.40	26.40	26.82	26.88	26.49	26.43

WATER YEAR 1969 : Max. 28.99 m. Min. 26.26 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	2.54	1.92	2.43	3.46	1.13	2.21	2.32	3.98	19	11	11	2.98
2	2.43	1.74	2.32	3.09	1.13	2.10	2.32	2.76	14	9.87	9.13	2.98
3	2.43	1.56	1.65	2.87	1.13	7.60	2.43	2.10	14	9.30	7.77	2.98
4	2.32	1.56	1.47	2.54	1.13	8.62	2.32	2.65	15	8.96	6.80	2.98
5	2.21	1.47	1.38	2.32	1.13	5.55	2.21	4.50	14	26	7.44	2.87
6	2.21	1.47	1.38	1.92	1.06	3.59	2.21	3.98	11	32	6.80	2.87
7	4.50	1.38	1.29	1.65	1.06	2.65	2.10	4.80	9.87	22	6.00	2.87
8	2.98	1.38	1.29	1.56	1.06	2.43	2.21	3.98	9.68	19	5,49	2.87
9	2.54	1.56	1.20	1.56	1.06	2.21	2.21	6.64	11	16	5.25	2.87
10	2.43	1.56	1.20	1.47	0.99	2.54	2.21	69	11	16	5.10	2.76
11	2.32	1.56	1.83	1.38	0.99	2.01	2.87	41	9.30	16	5.25	2.76
12	2.21	1.56	1.56	1.29	0.92	5.55	11	12	8.45	14	5.10	2.76
13	2.10	1.56	1.38	1.20	0.92	12	7.44	6.64	7.94	24	4.95	2.76
14	2.43	1.56	1.29	1.20	0.92	8.28	5.40	4.50	10	22	4.65	2.65
15	2.43	1.56	1.29	1.20	0.99	6.00	4.50	3.72	10	25	4.37	2.65
16	2.32	1.56	1.20	1.13	1.20	5.70	4.24	4.65	11	22	4.37	2.65
17	2.21	1.92	1.20	1.13	1.29	5.25	3.72	15	19	29	4.24	2.65
18	2.01	3.46	1.13	2.65	1.38	4.50	3.33	18	14	23	4.11	2.65
19	1.92	1.65	1.13	6.80	1.47	4.37	4.11	13	14	19	4.11	2.54
20	1.92	2.01	1.38	2.43	2.10	4.24	3.09	9.87	10	16	3.98	2.54
21	1.83	3.72	1.65	1.74	2.76	3.59	2.65	5.55	8.79	14	3.98	2.54
22	1.83	1.92	1.47	1.56	1.92	3.09	2.76	4.24	8.96	14	3.85	2.54
23	1.83	1.74	1.29	1.47	1.74	2.98	2.54	4.11	11	14	3.85	2.54
24	1.74	1.56	1.47	1.38	2.32	2.87	2.54	3.72	11	13	3.59	2.54
25	1.74	1.56	1.29	1.29	2.76	2.76	2.32	3.46	11	13	3.33	2.43
26	1.65	1.56	1.20	1.20	2.01	2.43	2.43	3.33	11	13	3.20	2.54
27	1.65	1.56	2.87	1.20	1.92	2.43	6.16	2.98	13	12	3.20	2.65
28	2.32	1.74	5.10	1.20	1.83	2.43	12	3.59	17	12	3.09	2.87
29	1.92	1.56	2.21	1.13	1.56	2.32	5.55	4.80	10	12		2.87
30	1.74	1.56	3.09	1.13	1.29	2.32	4.24	17	11	12	–	2.76
31	–	1.56	–	1.13	1.13	–	3.98	–	12	12	–	2.76
Total	66.71	54.04	50.64	57.28	44.30	124.62	119.41	285.55	366.99	591.13	143.91	84.68
Mean	2.22	1.74	1.69	1.85	1.43	4.15	3.85	9.52	11.8	16.8	5.14	2.73
Max.	4.50	3.72	5.10	6.80	2.76	12	12	69	19	32	11	2.98
Min.	1.65	1.38	1.13	1.13	0.92	2.01	2.10	2.10	7.94	8.96	3.09	2.43
Runoff – mcm.	5.764	4.669	4.375	4.949	3.827	10.767	10.317	24.671	31.708	45.026	12.434	7.316

WATER YEAR 1969 : Max. 69 Min. 0.92 Mean 5.26 Annual Runoff 165.824 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 10	15.00	29.79	99				

WATER YEAR 1969
KHLONG THA DI RIVER BASIN

Khlong Tha Di at Ban Na Kam, Nakhon Si Tammarat (X_{55})

Location: Lat. 8°-23'-53" N., Long. 99°-50'-15" E., on left bank about 450 meters downstream from the bridge of Karom Road at Ban Na Kam, Amphoe Lan Saka, Nakhon Si Thammarat.

Drainage Area: 105 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M.-H.S.

- **Location:** B.M. 1 near the staff gage, B.M. 2 on right bank at abutment of the bridge.
- **Elevation:** B.M. 1 + 3.798 m. (A.D.) B.M. 2 + 6.706 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1967 to date

Rating Operation:

- **Period of Rating:** 1967-1971
- **Rated by Float:** -
- **Rated by Current Meter:** 1967-1971

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

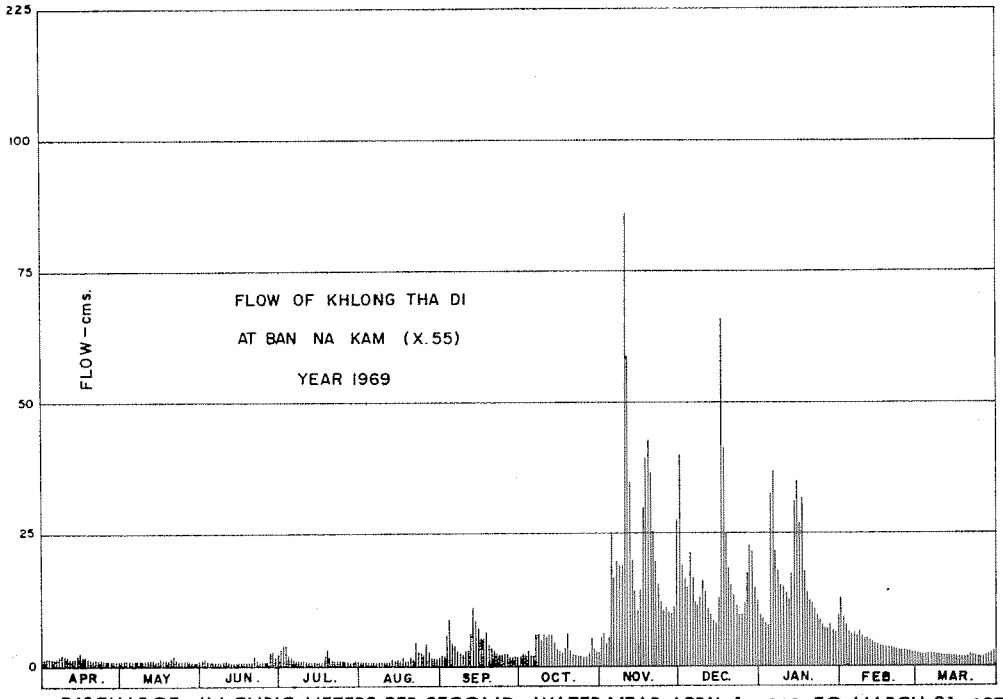
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.41	0.38	0.38	0.53	0.37	0.47	0.43	0.66	2.17	0.90	1.05	0.48
2	.42	.38	.42	.58	.36	.45	.47	.72	1.32	.85	0.89	.48
3	.42	.38	.38	.58	.36	.71	.46	.57	.17	.81	.79	.47
4	.40	.37	.38	.47	.36	.85	.53	.68	.15	.79	.73	.47
5	.40	.38	.36	.44	.36	.60	.46	1.60	.40	1.92	.70	.47
6	0.40	0.37	0.36	0.41	0.36	0.58	0.44	1.16	1.21	2.08	0.71	0.47
7	.44	.37	.36	.40	.36	.51	.69	.38	.02	1.46	.67	.47
8	.47	.38	.36	.39	.36	.48	.71	.34	0.97	.29	.73	.47
9	.44	.38	.36	.38	.35	.47	.62	.33	1.11	.16	.67	.47
10	.43	.37	.38	.38	.37	.52	.73	3.45	.21	.17	.64	.46
11	0.40	0.37	0.37	0.37	0.36	0.53	0.67	2.32	1.06	1.12	0.65	0.46
12	.40	.37	.36	.37	.35	.72	.70	1.62	0.94	.01	.63	.45
13	.40	.37	.36	.37	.41	.97	.70	.20	.87	.30	.61	.46
14	.44	.37	.36	.37	.38	.82	.61	.01	.83	.83	.59	.45
15	.49	.37	.35	.36	.40	.76	.55	0.89	.80	.99	.58	.45
16	0.43	0.42	0.35	0.36	0.37	0.66	0.52	1.21	1.00	1.60	0.57	0.44
17	.45	.39	.36	.36	.45	.66	.50	.90	2.96	.86	.56	.44
18	.42	.39	.36	.45	.38	.73	.55	2.25	.09	.27	.55	.43
19	.41	.39	.36	.54	.38	.59	.71	.27	1.52	.11	.55	.43
20	.39	.44	.37	.43	.44	.56	.52	.08	.25	.00	.54	.43
21	0.39	0.46	0.45	0.41	0.40	0.53	0.49	1.52	1.14	1.03	0.53	0.48
22	.39	.39	.39	.40	.62	.49	.47	.35	.04	0.97	.53	.46
23	.39	.38	.37	.39	.52	.47	.46	.16	0.94	.91	.52	.45
24	.39	.38	.36	.38	.51	.47	.47	.01	.88	.85	.52	.44
25	.38	.38	.36	.38	.46	.47	.45	0.93	.93	.80	.51	.43
26	0.38	0.38	0.37	0.37	0.60	0.46	0.45	0.98	1.02	0.76	0.51	0.43
27	.38	.38	.50	.36	.51	.44	.50	.92	.37	.76	.50	.44
28	.37	.37	.51	.36	.44	.43	.66	.90	.49	.83	.49	.48
29	.37	.37	.43	.36	.42	.45	.56	.97	.40	.75	-	.48
30	.38	.37	.48	.38	.42	.44	.52	1.95	.13	.71	-	.50
31	-	.38	-	.37	.42	-	.50	-	.00	.80	-	.50
Mean	0.41	0.38	0.38	0.41	0.41	0.58	0.55	1.38	1.24	1.15	0.62	0.46
Max.	0.49	0.46	0.51	0.58	0.62	0.97	0.73	3.45	2.96	2.08	1.05	0.50
Min.	0.37	0.37	0.35	0.36	0.35	0.43	0.44	0.57	0.80	0.71	0.49	0.43

WATER YEAR 1969 : Max. 3.45 m. Min. 0.35 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.37	1.05	1.05	3.08	0.96	2.15	1.63	5.35	40	9.82	13	2.28
2	1.50	1.05	1.50	3.98	0.86	1.89	2.15	6.38	19	8.83	9.62	2.28
3	1.50	1.05	1.05	3.98	0.86	6.20	2.02	3.80	15	8.04	7.66	2.15
4	1.24	0.96	1.05	2.15	0.86	8.83	3.08	5.68	15	7.66	6.57	2.15
5	1.24	1.05	0.86	1.76	0.86	4.34	2.02	25	21	33	6.02	2.15
6	1.24	0.96	0.86	1.37	0.86	3.98	1.76	15	16	37	6.20	2.15
7	1.76	0.96	0.86	1.24	0.86	2.72	5.85	20	12	22	5.52	2.15
8	2.15	1.05	0.86	1.15	0.86	2.28	6.20	19	11	18	6.57	2.15
9	1.76	1.05	0.86	1.05	0.77	2.15	4.68	19	14	15	5.52	2.15
10	1.63	0.96	1.05	1.05	0.96	2.90	6.57	86	16	15	5.01	2.02
11	1.24	0.96	0.96	0.96	0.86	3.08	5.52	44	13	14	5.18	2.02
12	1.24	0.96	0.86	0.96	0.77	6.38	6.02	26	11	12	4.84	1.89
13	1.24	0.96	0.86	0.96	1.37	11	6.02	16	9.23	18	4.51	2.02
14	1.76	0.96	0.86	0.96	1.05	8.24	4.51	12	8.43	31	4.16	1.89
15	2.41	0.96	0.77	0.86	1.24	7.11	3.44	9.62	7.84	35	3.98	1.89
16	1.63	1.50	0.77	0.86	0.96	5.35	2.90	16	12	25	3.80	1.76
17	1.89	1.15	0.86	0.86	1.89	5.35	2.54	33	66	32	3.62	1.76
18	1.50	1.15	0.86	1.89	1.05	6.57	3.44	42	38	18	3.44	1.63
19	1.37	1.15	0.86	3.26	1.05	4.16	6.20	43	23	14	3.44	1.63
20	1.15	1.76	0.96	1.63	1.76	3.62	2.90	37	17	12	3.26	1.63
21	1.15	2.02	1.89	1.37	1.24	3.08	2.41	23	15	12	3.08	2.28
22	1.15	1.15	1.15	1.24	4.68	2.41	2.15	19	13	11	3.08	2.02
23	1.15	1.05	0.96	1.15	2.90	2.15	2.02	15	11	12	2.90	1.89
24	1.15	1.05	0.86	1.05	2.72	2.15	2.15	12	9.42	8.83	2.90	1.76
25	1.05	1.05	0.86	1.05	2.02	2.15	1.89	10	10	7.84	2.72	1.63
26	1.05	1.05	0.96	0.96	4.34	2.02	1.89	11	12	7.11	2.72	1.63
27	1.05	1.05	2.54	0.86	2.72	1.76	2.54	10	20	7.11	2.54	1.76
28	0.96	0.96	2.72	0.86	1.76	1.63	5.35	9.82	23	8.43	2.41	2.28
29	0.96	0.96	1.63	0.86	1.50	1.89	3.62	11	21	6.93	–	2.28
30	1.05	0.96	2.28	1.05	1.50	1.76	2.90	34	14	6.20	–	2.54
31	–	1.05	–	0.96	1.50	–	2.54	–	12	7.84	–	2.54
Total	41.54	34.00	34.47	45.42	47.59	119.30	108.91	638.65	544.92	478.64	134.27	62.36
Mean	1.38	1.10	1.15	1.46	1.53	3.98	3.51	21.3	17.6	15.4	4.79	2.01
Max.	2.41	2.02	2.72	3.98	4.68	11	6.57	86	66	37	13	2.54
Min.	0.96	0.96	0.77	0.86	0.77	1.63	1.63	3.80	7.84	6.20	2.41	1.63
Runoff - mcm.	3.589	2.938	2.978	3.924	4.112	10.307	9.410	55.179	47.081	41.354	11.601	5.388

WATER YEAR 1969 : Max. 86 Min. 0.77 Mean 6.27 Annual Runoff 197.862 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 10	12.00	4.04	116				

WATER YEAR 1969
KHLONG RATTAPHUM RIVER BASIN

Khlong Rattaphum at Ban Kamphaeng Phet, Songkhla (X_{67})

Location: Lat. 7°-08'-35" N., Long. 100°-17'-20" E., on right bank upstream side of the bridge on Patthalung – Hat Yai highway, Amphoe Rattaphum, Songkhla.

Drainage Area: 272 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark:

- Location: On both bank near abutments of the bridge.
- Elevation: B.M. 1 on right bank + 3.415 m. (A.D.), B.M. 2 on left bank + 3.307 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1967 to date

Rating Operation:

- Period of Rating: 1967-1972
- Rated by Float: -
- Rated by Current Meter: 1967-1972

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow

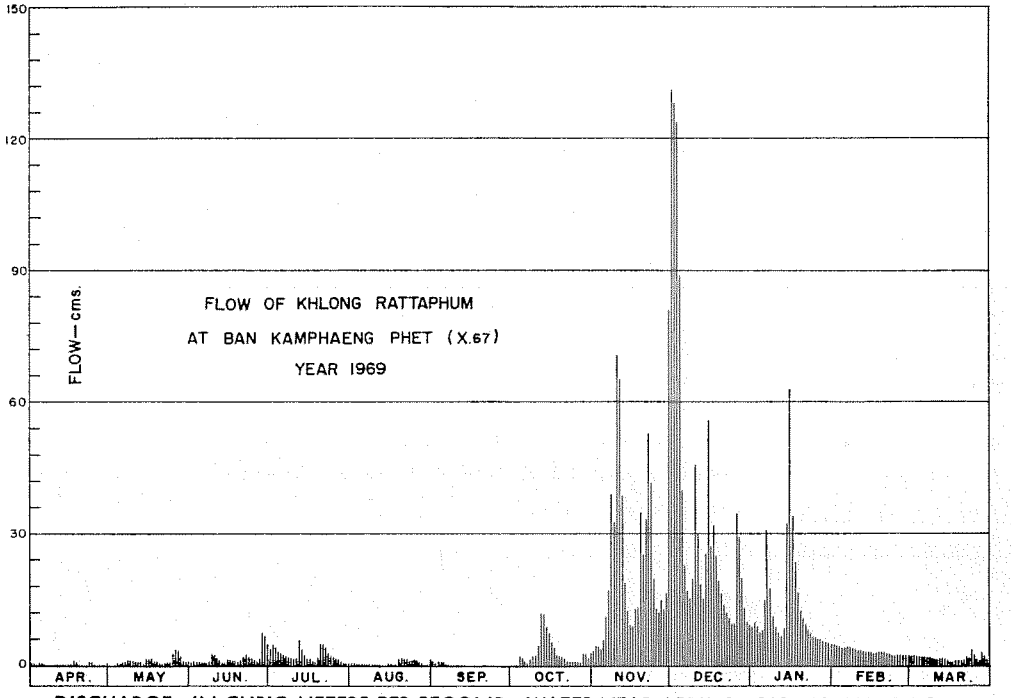
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1968. Flow regulated by Rattaphum weir for irrigation of about 10,688 hectares above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	-0.07	-0.18	-0.02	0.34	0.02	-0.01	-0.21	0.36	3.79	0.79	0.49	0.26
2	- .10	- .19	.03	.48	-0.01	- .03	- .21	.45	.72	.89	.46	.24
3	- .14	- .20	.06	.40	-0.03	+0.06	- .02	.44	.66	.76	.44	.23
4	- .10	- .02	.05	.30	- .04	.04	+0.17	.37	2.64	.70	.43	.23
5	- .01	- .06	.01	.25	- .08	-0.02	.09	.62	1.86	.76	.42	.22
6	-0.13	-0.01	0.00	0.21	-0.09	-0.10	-0.02	0.90	1.47	1.82	0.45	0.22
7	- .13	.02	- .02	.18	- .10	-0.18	- .08	1.26	.27	.50	.43	.22
8	- .18	.09	- .00	.14	- .10	-0.20	+ .10	2.04	.18	.07	.40	.21
9	- .18	.03	.25	.11	- .09	- .13	.29	1.81	.46	0.90	.37	.16
10	- .18	.02	.18	.11	- .09	- .13	.24	2.90	2.26	.79	.37	.13
11	-0.18	0.05	0.08	0.11	-0.11	-0.17	0.46	2.70	1.69	0.69	0.37	0.15
12	- .18	.01	.04	.52	- .13	- .22	.99	1.65	.29	.64	.35	.19
13	- .18	.06	.01	.35	- .16	- .19	.90	.25	.15	.66	.33	.17
14	- .17	- .17	.02	.21	- .12	- .21	.71	0.98	.49	1.69	.33	.14
15	- .18	.13	.10	.15	- .03	- .22	.68	.82	2.50	2.65	.30	.11
16	-0.19	0.11	0.08	0.11	-0.08	-0.23	0.47	0.77	1.67	1.89	0.30	0.05
17	+ .05	.15	.07	.05	- .10	-0.23	.40	1.03	.87	1.58	.32	.10
18	+ .04	.00	.06	.05	- .07	- .24	.29	0.94	.53	1.22	.32	.09
19	- .12	.01	- .00	.22	- .11	- .24	.22	1.96	.36	1.04	.33	.09
20	- .18	- .04	.09	.50	- .17	- .20	.20	1.58	.23	0.90	.32	.09
21	-0.19	-0.06	0.21	0.50	0.10	-0.19	0.11	1.88	1.08	0.81	0.31	0.12
22	- .14	- .04	.25	.35	.10	-0.22	.07	2.42	0.99	.76	.30	.23
23	+ .07	.03	.15	.29	.06	- .23	.03	2.09	.91	.72	.29	.18
24	.02	- .03	.10	.21	.10	- .23	.03	1.39	.83	.66	.27	.39
25	- .10	.28	.08	.15	.13	- .24	.01	1.06	.85	.62	.25	.26
26	-0.18	0.36	0.05	0.11	0.08	-0.25	-0.02	1.01	1.95	0.59	0.25	0.15
27	- .19	.33	.05	.06	.01	- .24	.01	1.16	.68	.60	.25	.12
28	- .19	.15	.71	-0.01	- .04	- .25	.26	.02	.25	.57	.24	.32
29	- .20	.06	.61	- .03	- .08	- .24	.25	.21	.01	.54	-	.24
30	- .04	.01	.43	- .01	- .06	- .07	.14	3.35	0.88	.52	-	.14
31	-	.03	-	- .02	.09	-	.31	-	.81	.50	-	.20
Mean	-0.12	0.03	0.12	0.21	0.02	0.17	0.22	1.38	1.65	0.96	0.35	0.18
Max.	0.07	0.36	0.71	0.52	0.17	0.06	0.99	3.35	3.79	2.65	0.49	0.39
Min.	-0.20	-0.20	-0.25	-0.03	-0.16	-0.25	-0.21	0.36	0.81	0.50	0.24	0.05

WATER YEAR 1969 : Max. 3.79 m. Min. -0.02 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.42	0.06	0.62	3.40	0.84	0.66	0.00	3.60	131	8.95	4.99	2.64
2	0.30	0.03	0.91	4.88	0.66	0.58	0.00	4.55	126	10	4.66	2.46
3	0.18	0.00	1.12	4.00	0.58	1.12	0.00	4.44	123	8.50	4.44	2.37
4	0.30	0.62	1.05	3.00	0.54	0.98	1.89	3.70	63	7.60	4.33	2.37
5	0.46	0.46	0.77	2.55	0.38	0.62	1.33	6.56	32	8.50	4.22	2.28
6	0.21	0.66	0.70	2.19	0.34	0.30	0.62	11	21	31	4.55	2.28
7	0.09	0.84	0.62	1.96	0.30	0.06	0.38	17	17	22	4.33	2.28
8	0.06	1.33	0.70	1.68	0.30	0.00	1.40	38	15	13	4.00	2.19
9	0.06	0.91	2.55	1.47	0.34	0.21	2.91	31	21	11	3.70	1.82
10	0.06	0.84	1.96	1.47	0.34	0.21	2.46	75	46	8.95	3.70	1.61
11	0.06	1.05	1.26	1.47	0.27	0.09	4.66	65	27	7.47	3.70	1.75
12	0.06	0.77	0.98	5.34	0.21	0.00	12	26	17	6.82	3.50	2.03
13	0.06	1.12	0.77	3.50	0.12	0.03	11	17	15	7.08	3.30	1.89
14	0.09	0.09	0.84	2.19	0.24	0.00	7.75	12	22	27	3.30	1.68
15	0.06	1.61	1.40	1.75	0.58		7.34	9.40	56	63	3.00	1.47
16	0.03	1.47	1.26	1.47	0.38		4.77	8.65	26	33	3.00	1.05
17	1.05	1.75	1.19	1.05	0.30		4.00	13	32	24	3.20	1.40
18	0.98	0.70	1.12	1.05	0.42		2.91	11	23	16	3.20	1.33
19	0.24	0.77	0.70	2.28	1.47		2.28	35	19	13	3.30	1.33
20	0.06	0.54	1.33	5.10	1.89		2.10	24	16	11	3.20	1.33
21	0.03	0.46	2.19	5.10	1.40		1.47	33	13	9.25	3.10	1.54
22	0.18	0.54	2.55	3.50	1.40		1.19	53	12	8.50	3.00	2.37
23	1.19	0.91	1.75	2.91	1.12		0.91	40	11	7.90	2.91	1.96
24	0.84	0.58	1.40	2.19	1.40		0.91	20	9.55	7.08	2.73	3.90
25	0.30	2.82	1.26	1.75	1.61		0.77	13	9.85	6.56	2.55	2.64
26	0.06	3.60	1.05	1.47	1.26		0.62	12	35	6.18	2.55	1.75
27	0.03	3.30	1.05	1.12	0.77		0.77	15	27	6.30	2.55	1.54
28	0.03	1.75	7.75	0.66	0.54		2.64	12	17	5.94	2.46	3.20
29	0.00	1.12	6.43	0.58	0.38		2.55	17	12	5.58	–	2.46
30	0.54	0.77	4.33	0.66	0.46	0.00	1.68	105	10	5.34	–	1.68
31	–	0.91	–	0.62	1.33	–	3.10	–	9.25	5.10	–	2.10
Total	8.03	32.38	51.61	72.36	22.17	4.86	86.41	735.90	1,013.65	411.60	97.47	62.70
Mean	0.27	1.04	1.72	2.33	0.715	0.162	2.79	24.5	32.7	13.3	3.48	2.02
Max.	1.19	3.60	7.75	5.34	1.89	1.12	12.00	105	131	63	4.99	3.90
Min.	0.00	0.00	0.62	0.58	0.12	0.00	0.00	3.60	9.25	5.10	2.46	1.05
Runoff – MCM.	0.694	2.798	4.459	6.252	1.915	0.420	7.466	63.582	87.579	35.562	8.421	5.417

WATER YEAR 1969 : Max. 131 Min. 0.00 Mean 7.12 Annual Runoff 224.566 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Dec. 1, 69	01.00	3.90	139				

WATER YEAR 1969
KHLONG THA KHAE RIVER BASIN

Khlong Tha Khae at Ban Tha Khae, Phatthalung (X_{68})

Location: Lat. 7°-34'-01" N., Long. 100°-03'-05" E., on left bank downstream side of the bridge on Phatthalung – Hat Yai highway, at Ban Tha Khae, Amphoe Muang, Phatthalung.

Drainage Area: 298 sq.km.

Type of Gage: Staff gage

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. – H.S.

Location: On right bank about 15 meters from the highway bridge

Elevation: + 4.659 m. (A.D.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings

Period of Available Gage Records: 1967 to date

Rating Operation:

Period of Rating: 1967-1972

Rated by Float: –

Rated by Current Meter: 1967-1972

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation.

Overbank Flow Conditions: No overbank flow

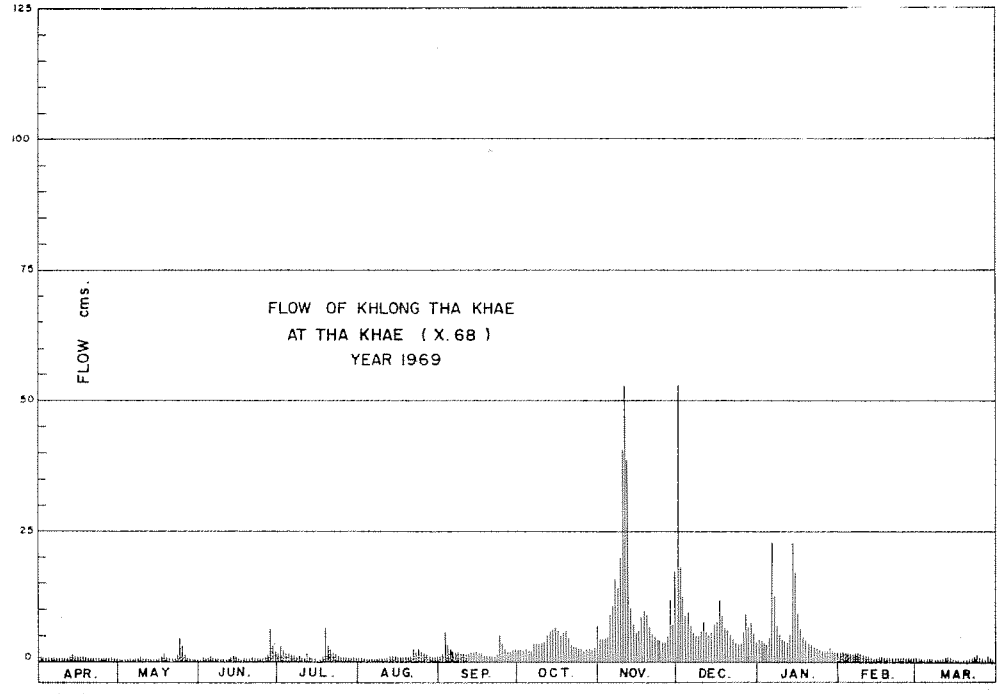
General Description: Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.55	0.50	0.50	0.75	0.62	0.66	0.79	1.05	3.44	1.07	0.77	0.52
2	.57	.53	.63	.93	.60	.71	.85	.07	2.00	.05	.76	.52
3	.59	.51	.54	.85	.59	1.22	.82	.08	1.56	0.98	.73	.49
4	.59	.51	.55	.74	.58	0.99	.87	.10	.40	.94	.71	.43
5	.55	.50	.66	.75	.58	.89	.81	.47	.53	1.36	.69	.46
6	0.53	0.50	0.55	0.69	0.57	0.82	0.78	1.58	1.31	2.27	0.70	0.48
7	.54	.50	.53	.69	.60	.76	.97	.91	.17	1.52	.69	.48
8	.55	.51	.58	.63	.58	.73	.98	.81	.12	.28	.69	.47
9	.53	.62	.56	.69	.62	.73	.97	2.18	.13	.15	.69	.46
10	.53	.54	.53	.63	.61	.73	1.00	3.45	.23	.05	.67	.46
11	0.48	0.51	0.52	0.54	0.58	0.71	1.05	3.30	1.36	1.02	0.62	0.49
12	.67	.50	.51	.74	.57	.74	.15	1.90	.19	0.95	.62	.60
13	.70	.49	.66	.64	.69	.74	.23	.53	.14	1.22	.50	.59
14	.65	.50	.69	.61	.69	.77	.28	.32	.26	2.27	.51	.50
15	.60	.49	.61	.60	.67	.82	.29	.22	.34	1.89	.62	.46
16	0.61	0.50	0.56	0.44	0.63	0.77	1.24	1.34	1.36	1.38	0.61	0.44
17	.60	.59	.48	.56	.62	.72	.13	.47	.69	.22	.61	.43
18	.57	.74	.62	.66	.63	.70	.26	.52	.42	.09	.60	.43
19	.56	.61	.57	1.29	.63	.68	.29	.47	.24	.02	.59	.43
20	.55	.56	.57	0.99	.62	.68	.10	.28	.25	0.98	.58	.43
21	0.55	0.56	0.61	0.87	0.61	0.68	0.99	1.18	1.14	0.94	0.58	0.46
22	.54	.53	.56	.80	.89	.66	.92	.12	.08	.90	.57	.52
23	.49	.53	.53	.72	.79	.72*	.91	.08	.01	.87	.56	.55
24	.52	1.09	.55	.68	.87	1.16	.87	.03	0.96	.84	.55	.67
25	.51	0.96	.56	.65	.75	.03	.84	0.98	.98	.82	.55	.53
26	0.51	0.66	0.61	0.63	0.74	0.88	0.82	1.01	1.19	0.81	0.54	0.46
27	.51	.56	.76	.62	.70	.81	.85	.15	.48	.81	.54	.45
28	.51	.54	1.28	.60	.65	.78	.89	.66	.29	.87	.53	.66
29	.50	.52	0.93	.60	.64	.80	.83	.29	.36	.78	–	.53
30	.50	.51	.78	.59	.63	.84	.88	2.10	.22	.75	–	.47
31	–	.50	–	.60	.64	–	1.33	–	.11	.74	–	.54
Mean	0.55	0.57	0.62	0.70	0.65	0.80	1.00	1.52	1.35	1.12	0.62	0.50
Max.	0.70	1.09	1.28	1.29	0.89	1.22	1.33	3.45	3.44	2.27	0.77	0.67
Min.	0.48	0.49	0.48	0.44	0.57	0.66	0.78	0.98	0.96	0.74	0.53	0.43

WATER YEAR 1969 : Max. 3.44 m. Min. 0.43 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.80	0.60	0.60	1.90	1.12	1.36	2.14	4.30	53	4.50	2.02	0.68
2	0.88	0.72	1.18	3.24	1.00	1.66	2.60	4.50	18	4.30	1.96	0.68
3	0.96	0.64	0.76	2.60	0.96	6.02	2.36	4.60	10	3.64	1.78	0.56
4	0.96	0.64	0.80	1.84	0.92	3.72	2.76	4.80	8.20	3.32	1.66	0.35
5	0.80	0.60	1.36	1.90	0.92	2.92	2.28	9.11	9.92	7.68	1.54	0.46
6	0.72	0.60	0.80	1.54	0.88	2.36	2.08	11	7.03	23	1.60	0.53
7	0.76	0.60	0.72	1.54	1.00	1.96	3.56	16	5.50	9.78	1.54	0.53
8	0.80	0.64	0.92	1.48	0.92	1.78	3.64	14	5.00	6.68	1.54	0.49
9	0.72	1.12	0.84	1.54	1.12	1.78	3.56	22	5.10	5.30	1.54	0.46
10	0.72	0.76	0.72	1.18	1.06	1.78	3.80	53	6.13	4.30	1.42	0.46
11	0.53	0.64	0.68	0.76	0.92	1.66	4.30	50	7.68	4.00	1.12	0.56
12	1.42	0.60	0.64	1.84	0.88	1.84	5.30	16	5.70	3.40	1.12	1.00
13	1.60	0.56	1.36	1.24	1.54	1.84	6.13	9.92	5.20	6.02	0.60	0.96
14	1.30	0.60	1.54	1.06	1.54	2.02	6.68	7.16	6.46	23	0.64	0.60
15	1.00	0.56	1.06	1.00	1.42	2.36	6.79	6.02	7.42	16	1.12	0.46
16	1.06	0.60	0.84	0.39	1.18	2.02	6.24	7.42	7.68	7.94	1.06	0.39
17	1.00	0.96	0.53	0.84	1.12	1.72	5.10	9.11	12	6.02	1.06	0.35
18	0.88	1.84	1.12	1.36	1.18	1.60	6.46	9.78	8.46	4.70	1.00	0.35
19	0.84	1.06	0.88	6.79	1.18	1.48	6.79	9.11	6.24	4.00	0.96	0.35
20	0.80	0.84	0.88	3.72	1.12	1.48	4.80	6.68	6.35	3.64	0.92	0.35
21	0.80	0.84	1.06	2.76	1.06	1.48	3.72	5.60	5.20	3.32	0.92	0.46
22	0.76	0.72	0.84	2.20	2.92	1.36	3.16	5.00	4.60	3.00	0.88	0.68
23	0.56	0.72	0.72	1.72	2.14	1.72	3.08	4.60	3.90	2.76	0.84	0.80
24	0.68	4.70	0.80	1.48	2.76	5.40	2.76	4.10	3.48	2.52	0.80	1.42
25	0.64	3.48	0.84	1.30	1.90	4.10	2.52	3.64	3.64	2.36	0.80	0.72
26	0.64	1.36	1.06	1.18	1.84	2.84	2.36	3.90	5.70	2.28	0.76	0.46
27	0.64	0.84	1.96	1.12	1.60	2.29	2.60	5.30	9.24	2.28	0.76	0.42
28	0.64	0.76	6.68	1.00	1.30	2.08	2.92	12	6.79	2.76	0.72	1.36
29	0.60	0.68	3.24	1.00	1.24	2.20	2.44	6.81	7.68	2.08	–	0.72
30	0.60	0.64	2.08	0.96	1.18	2.52	2.84	21	6.02	1.90	–	0.49
31	–	0.60	–	1.00	1.24	–	7.29	–	4.90	1.84	–	0.76
Total	25.11	30.52	37.51	53.18	41.16	69.35	123.06	346.46	262.22	178.32	32.68	18.86
Mean	0.84	0.98	1.25	1.71	1.33	2.31	3.97	11.5	8.46	5.75	1.17	0.61
Max.	1.60	4.70	6.68	6.79	2.92	6.02	7.29	53	53	23	202	1.42
Min.	0.53	0.56	0.53	0.39	0.88	1.36	2.08	3.64	3.48	1.84	0.60	0.35
Runoff - MCM.	2.169	2.637	3.241	4.595	3.556	5.992	10.632	29.934	22.656	15.407	2.823	1.629

WATER YEAR 1969 : Max. 53 Min. 0.35 Mean 3.34 Annual Runoff 105.272 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 11	06.00	4.08	73				

WATER YEAR 1969
KHLONG PHRU PHO RIVER BASIN

Khlong Phru Pho at Ban Phru Pho, Songkhla (X_{69})

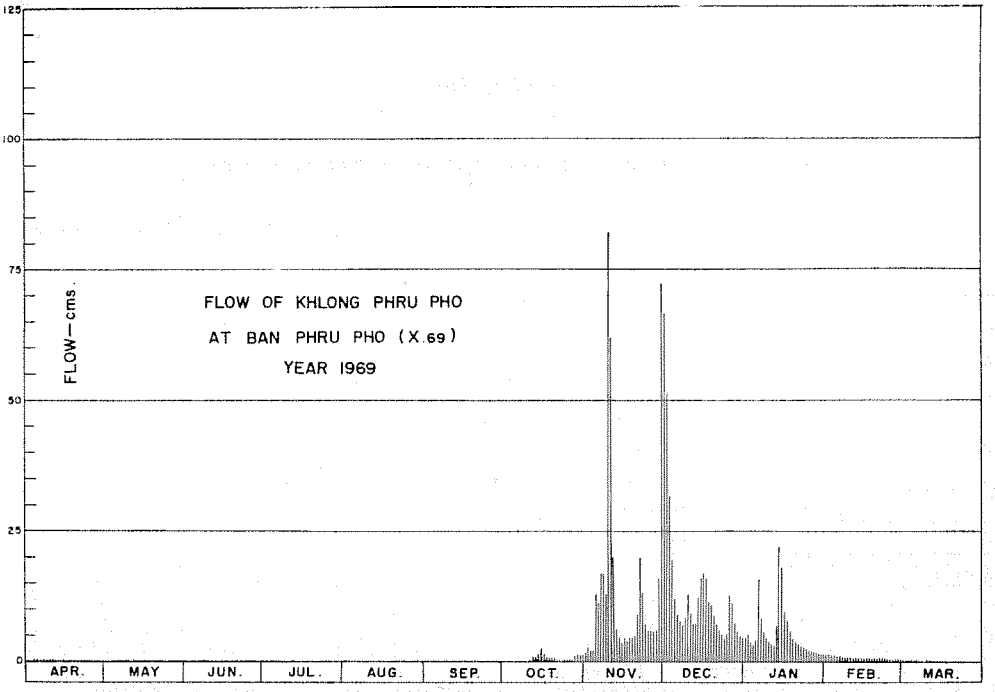
Location:	Lat. 7°-11'-25" N., Long. 100°-13'-26" E., on right bank upstream side of the bridge on Phatthalung – Hati Yai highway, at Ban Phru Pho, Amphoe Rattaphum, Songkhla.
Drainage Area:	88 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	B.M. – H.S.
Location:	On left bank about 300 meters from the bridge
Elevation:	+ 4.229 m. (A.D.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings
Period of Available Gage Records:	1967 to date
Rating Operation:	
Period of Rating:	1967-1972
Rated by Float:	–
Rated by Current Meter:	1967-1972
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No State diversions for irrigation at about gage side.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.55	0.52	0.52	0.64	0.53	0.56	0.55	1.02	3.39	1.33	0.95	0.74
2	.55	.54	.53	.61	.54	.57	.52	.17	.18	.42	.97	.73
3	.55	.53	.53	.61	.52	.59	.52	.04	2.73	.27	.94	.73
4	.57	.58	.53	.58	.50	.66	.56	.04	.30	.21	.92	.72
5	.55	.55	.53	.57	.51	.65	.56	.96	1.94	.28	.92	.72
6	0.54	0.54	0.53	0.56	0.51	0.61	0.51	1.75	1.73	2.19	0.97	0.71
7	.54	.52	.53	.55	.50	.56	.54	2.18	.61	1.64	.93	.70
8	.53	.56	.53	.52	.51	.55	.67	.24	.55	.48	.90	.69
9	.53	.53	.62	.51	.51	.54	.63	1.89	.67	.33	.89	.69
10	.53	.53	.60	.52	.54	.53	.60	3.62	.97	.25	.88	.69
11	0.53	0.53	0.56	0.53	0.52	0.51	0.62	2.77	1.75	1.20	0.89	0.69
12	.52	.52	.54	.74	.51	.51	.89	1.90	.57	.17	.88	.74
13	.58	.53	.53	.63	.50	.51	.83	.62	.58	.32	.86	.71
14	.60	.53	.52	.58	.53	.53	.96	.45	.87	2.48	.86	.68
15	.62	.53	.52	.56	.59	.51	1.12	.34	2.13	.27	.86	.67
16	0.57	0.55	0.52	0.55	0.55	0.49	0.88	1.27	2.20	1.80	0.84	0.66
17	.64	.57	.52	.53	.53	.42	.90	.32	.18	.60	.83	.65
18	.63	.58	.52	.55	.60	.52	.76	.33	1.86	.44	.82	.65
19	.58	.55	.52	.69	.61	.49	.80	.36	.83	.33	.81	.65
20	.55	.53	.53	.73	.69	.49	.83	.33	.70	.26	.80	.65
21	0.55	0.54	0.58	0.72	0.65	0.48	0.68	1.78	1.61	1.22	0.79	0.67
22	.54	.53	.61	.69	.61	.47	.66	2.37	.48	.18	.78	.73
23	.58	.53	.56	.67	.60	.47	.67	1.77	.39	.14	.77	.69
24	.60	.53	.54	.62	.56	.57	.68	.56	.33	.10	.76	.72
25	.56	.57	.73	.61	.53	.50	.60	.43	.38	.08	.76	.69
26	0.54	0.66	0.52	0.57	0.53	0.49	0.55	1.45	2.00	1.06	0.75	0.66
27	.54	.67	.53	.55	.53	.57	.69	.46	1.92	.04	.75	.65
28	.53	.57	.94	.55	.53	.47	.88	.45	.58	.02	.74	.65
29	.53	.54	.77	.55	.51	.47	.95	.66	.43	.00	–	.66
30	.52	.54	.69	.56	.51	.49	.90	3.26	.35	0.98	–	.65
31	–	.53	–	.54	.51	–	.93	–	.30	.96	–	.72
Mean	0.56	0.56	0.57	0.59	0.54	0.53	0.55	1.73	1.85	1.36	0.85	0.69
Max.	0.64	0.67	0.94	0.74	0.69	0.66	1.12	3.62	3.39	2.48	0.97	0.74
Min.	0.52	0.52	0.52	0.51	0.50	0.47	0.51	1.02	1.30	0.96	0.74	0.65

WATER YEAR 1969 : Max. 3.62 m. Min. 0.47 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.15	0.12	0.12	0.28	0.13	0.16	0.15	1.94	68	4.53	1.50	0.56
2	0.15	0.14	0.13	0.22	0.14	0.17	0.12	3.06	46	5.52	1.62	0.52
3	0.15	0.13	0.13	0.22	0.12	0.19	0.12	2.08	29	3.93	1.44	0.52
4	0.17	0.18	0.13	0.18	0.10	0.32	0.16	2.08	19	3.39	1.32	0.48
5	0.15	0.15	0.13	0.17	0.11	0.30	0.16	13	12	4.02	1.32	0.48
6	0.14	0.14	0.13	0.16	0.11	0.22	0.11	9.93	9.37	17	1.62	0.44
7	0.14	0.12	0.13	0.15	0.10	0.16	0.14	17	7.70	8.16	1.38	0.40
8	0.13	0.16	0.13	0.12	0.11	0.15	0.34	17	7.00	6.18	1.20	0.38
9	0.13	0.13	0.24	0.11	0.11	0.14	0.26	12	8.58	4.53	1.16	0.38
10	0.13	0.13	0.20	0.12	0.14	0.13	0.20	82	13	3.75	1.12	0.38
11	0.13	0.13	0.16	0.13	0.12	0.11	0.24	32	9.70	3.30	1.16	0.38
12	0.12	0.12	0.14	0.56	0.11	0.11	0.16	12	7.24	3.06	1.12	0.56
13	0.18	0.13	0.13	0.26	0.10	0.11	0.92	7.87	7.36	4.42	1.04	0.44
14	0.20	0.13	0.12	0.18	0.13	0.13	1.56	5.88	11	22	1.04	0.36
15	0.24	0.13	0.12	0.16	0.19	0.11	2.66	4.62	16	18	1.04	0.34
16	0.17	0.15	0.12	0.15	0.15	0.08	1.12	3.94	17	10	0.96	0.32
17	0.28	0.17	0.12	0.13	0.13	0.00	1.20	4.45	16	7.60	0.92	0.30
18	0.26	0.18	0.12	0.15	0.20	0.12	0.64	4.53	11	5.74	0.88	0.30
19	0.18	0.15	0.12	0.38	0.22	0.08	0.80	4.86	11	4.53	0.84	0.30
20	0.15	0.13	0.13	0.52	0.38	0.08	0.92	4.53	9.00	3.84	0.80	0.30
21	0.15	0.14	0.18	0.48	0.30	0.06	0.36	10	7.74	3.48	0.76	0.34
22	0.14	0.13	0.22	0.38	0.22	0.04	0.32	20	6.18	3.14	0.72	0.52
23	0.18	0.13	0.16	0.34	0.20	0.04	0.34	9.98	5.19	2.82	0.68	0.38
24	0.20	0.13	0.14	0.24	0.16	0.17	0.36	7.12	4.53	2.50	0.64	0.48
25	0.16	0.17	0.13	0.22	0.13	0.10	0.20	5.63	5.08	2.36	0.64	0.38
26	0.14	0.32	0.12	0.17	0.13	0.08	0.15	5.85	13	2.22	0.60	0.32
27	0.14	0.34	0.13	0.15	0.13	0.17	0.38	5.96	12	2.08	0.60	0.30
28	0.13	0.17	1.44	0.15	0.13	0.04	1.12	5.85	7.36	1.94	0.56	0.30
29	0.13	0.14	0.68	0.15	0.11	0.04	1.50	7.15	5.63	1.80	–	0.32
30	0.12	0.14	0.38	0.16	0.11	0.08	1.20	72	4.75	1.68	–	0.30
31	–	0.13	–	0.14	0.11	–	1.38	–	4.20	1.56	–	0.48
Total	4.84	4.76	8.33	6.93	4.63	3.69	20.29	394.31	410.61	169.08	28.68	12.26
Mean	0.16	0.15	0.28	0.22	0.15	0.12	0.65	13.1	13.24	5.45	1.02	0.39
Max.	0.28	0.34	1.44	0.56	0.38	0.32	2.66	82	68	22	1.62	0.56
Min.	0.12	0.12	0.12	0.11	0.10	0.00	0.11	1.94	4.20	1.56	0.56	0.30
Runoff - mcm.	0.418	0.411	0.720	0.599	0.400	0.319	1.753	34.068	35.477	14.608	2.478	1.059

WATER YEAR 1969 : Max. 82 Min. 0.04 Mean 2.93 Annual Runoff 92.311 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 10	06.00	3.62	82				

WATER YEAR 1969
KHLONG BAN TAN RIVER BASIN

Khlong Ban Tan at Ban Wang Kong, Nakhon Si Thammarat (X_{70})

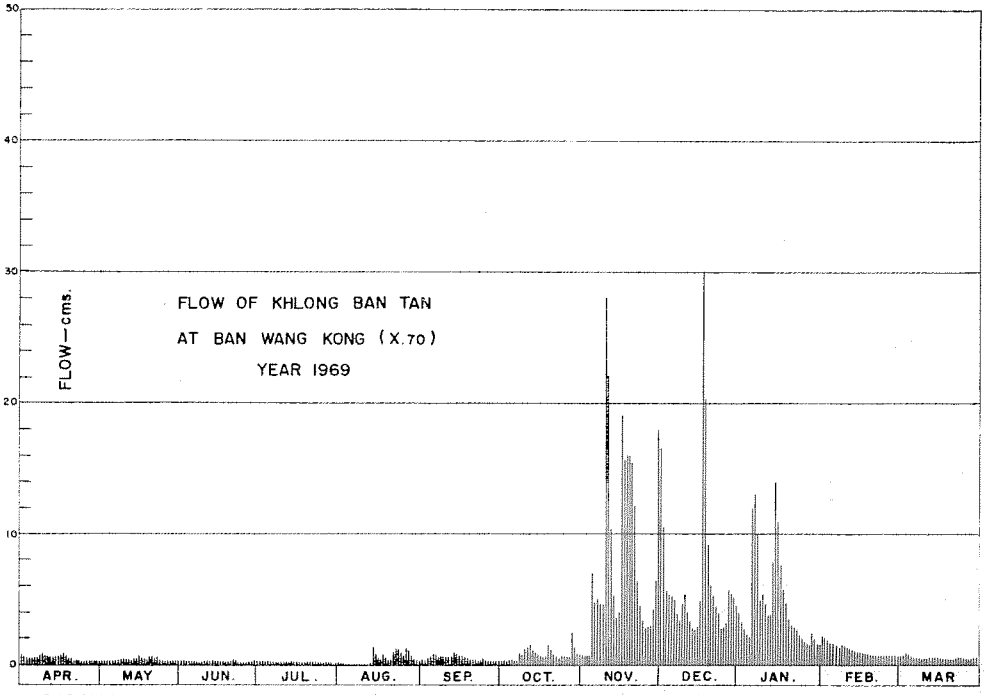
Location:	Lat. 8°-25'-35" N., Long. 99°-51'-53" E., on right bank downstream side of the bridge on Nakhon Si Thammarat – Amphoe Lan Saka road, Amphoe Muang, Nakhon Si Thammarat.
Drainage Area:	39 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	B.M. – H.S.
Location:	About 5 meters east of the top gage
Elevation:	+ 7.247 m. (A.D.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings.
Period of Available Gage Records:	1967 to date
Rating Operation:	
Period of Rating:	1967-1971
Rated by Float:	–
Rated by Current Meter:	1967-1971
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State-diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.28	0.16	0.16	0.18	0.11	0.22	0.18	0.33	2.05	0.74	0.61	0.34
2	.25	.16	.17	.17	.11	.18	.21	.34	1.26	.68	.59	.37
3	.24	.17	.16	.16	.10	.27	.18	.31	.08	.62	.54	.40
4	.24	.17	.15	.16	.10	.29	.21	.36	.06	.59	.52	.36
5	.24	.15	.14	.13	.10	.34	.17	1.23	.04	1.70	.52	.28
6	0.25	0.18	0.14	0.12	0.09	0.31	0.19	0.95	1.00	1.87	0.48	0.28
7	.26	.19	.14	.12	.09	.26	.20	1.02	0.84	.15	.48	.28
8	.35	.20	.13	.13	.09	.30	.37	0.94	.76	0.98	.51	.28
9	.30	.22	.16	.14	.10	.27	.33	.96	.93	1.06	.47	.28
10	.28	.21	.16	.14	.09	.28	.46	2.97	1.06	0.95	.46	.27
11	0.27	0.21	0.16	0.14	0.09	0.30	0.47	1.82	0.86	0.83	0.45	0.27
12	.27	.20	.16	.13	.09	.28	.52	.27	.77	.87	.43	.28
13	.27	.20	.16	.14	.45	.39	.40	0.99	.71	1.39	.41	.29
14	.28	.24	.16	.14	.31	.33	.37	.78	.69	.88	.40	.28
15	.30	.20	.15	.14	.23	.32	.33	.71	.74	.63	.38	.27
16	0.31	0.32	0.14	0.14	0.19	0.30	0.29	2.29	1.07	1.09	0.37	0.27
17	.35	.26	.13	.14	.34	.27	.27	1.97	3.06	.10	.36	.27
18	.28	.23	.13	.15	.21	.24	.29	2.09	1.80	0.92	.35	.26
19	.24	.19	.12	.17	.17	.24	.50	.12	.29	.80	.35	.26
20	.24	.30	.14	.17	.21	.21	.38	1.98	.10	.74	.35	.26
21	0.19	0.28	0.21	0.16	0.39	0.20	0.32	1.35	1.01	0.72	0.35	0.26
22	.20	.20	.15	.18	.45	.18	.28	.05	0.91	.68	.34	.29
23	.19	.31	.13	.17	.41	.18	.26	0.89	.85	.62	.34	.29
24	.18	.18	.12	.14	.33	.23	.31	.78	.71	.58	.33	.29
25	.16	.17	.12	.13	.28	.19	.30	.70	.73	.55	.33	.28
26	0.16	0.19	0.12	0.13	0.44	0.18	0.30	0.73	0.79	0.52	0.33	0.27
27	.17	.17	.16	.12	.34	.17	.29	.73	1.09	.53	.34	.26
28	.18	.17	.19	.12	.26	.17	.67	.89	.06	.67	.34	.30
29	.17	.16	.16	.11	.23	.18	.37	1.29	.01	.55	–	.27
30	.16	.16	.16	.12	.19	.18	.34	2.28	0.89	.52	–	.28
31	–	.16	–	.11	.20	–	.33	–	.85	.53	–	.29
Mean	0.24	0.20	0.15	0.14	0.22	0.25	0.32	1.20	1.07	0.90	0.42	0.29
Max.	0.35	0.32	0.21	0.18	0.45	0.39	0.67	2.97	3.06	1.88	0.61	0.40
Min.	0.16	0.15	0.12	0.11	0.09	0.17	0.17	0.31	0.69	0.52	0.33	0.26

WATER YEAR 1969 : Max. 3.06 m. Min. 0.09 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.64	0.30	0.30	0.35	0.17	0.46	0.35	0.82	16	3.08	2.21	0.86
2	0.55	0.30	0.32	0.32	0.17	0.35	0.43	0.86	7.29	2.67	2.09	0.98
3	0.52	0.32	0.30	0.30	0.15	0.61	0.35	0.74	5.68	2.28	1.82	1.10
4	0.52	0.32	0.27	0.30	0.15	0.67	0.43	0.94	5.51	2.09	1.71	0.94
5	0.52	0.27	0.25	0.22	0.15	0.86	0.32	7.02	5.34	12	1.71	0.64
6	0.55	0.35	0.25	0.20	0.13	0.74	0.37	4.62	5.00	13	1.50	0.64
7	0.58	0.37	0.25	0.20	0.13	0.58	0.40	5.17	3.80	6.30	1.50	0.64
8	0.90	0.40	0.22	0.22	0.13	0.70	0.98	4.55	3.22	4.85	1.65	0.64
9	0.70	0.46	0.30	0.25	0.15	0.61	0.82	4.70	4.47	5.51	1.45	0.64
10	0.64	0.43	0.30	0.25	0.13	0.64	1.40	28	5.51	4.62	1.40	0.61
11	0.61	0.43	0.30	0.25	0.13	0.70	1.45	13	3.95	3.72	1.35	0.61
12	0.61	0.40	0.30	0.22	0.13	0.64	1.71	7.38	3.29	4.02	1.25	0.64
13	0.61	0.40	0.30	0.25	1.35	1.06	1.10	4.92	2.87	8.46	1.15	0.67
14	0.64	0.52	0.30	0.25	0.74	0.82	0.98	3.36	2.73	14	1.10	0.64
15	0.70	0.40	0.27	0.25	0.49	0.78	0.82	2.87	3.08	11	1.02	0.61
16	0.74	0.78	0.25	0.25	0.37	0.70	0.67	19	5.59	5.76	0.98	0.61
17	0.90	0.58	0.22	0.25	0.86	0.61	0.61	15	30	5.85	0.94	0.61
18	0.64	0.49	0.22	0.27	0.43	0.52	0.67	16	13	4.40	0.90	0.58
19	0.52	0.37	0.20	0.32	0.32	0.52	1.60	16	7.56	3.50	0.90	0.58
20	0.52	0.70	0.25	0.32	0.43	0.43	1.02	15	5.85	3.08	0.90	0.58
21	0.37	0.64	0.43	0.30	1.06	0.40	0.78	8.10	5.08	2.94	0.90	0.58
22	0.40	0.40	0.27	0.35	1.35	0.35	0.64	5.42	4.32	2.67	0.86	0.67
23	0.37	0.74	0.22	0.32	1.15	0.35	0.58	4.17	3.87	2.28	0.86	0.67
24	0.35	0.35	0.20	0.25	0.82	0.49	0.74	3.36	2.87	2.04	0.82	0.67
25	0.30	0.32	0.20	0.22	0.64	0.37	0.70	2.80	3.01	1.87	0.82	0.64
26	0.30	0.37	0.20	0.22	1.30	0.35	0.70	3.01	3.43	1.71	0.82	0.61
27	0.32	0.32	0.30	0.20	0.86	0.32	0.67	3.01	5.76	1.76	0.86	0.58
28	0.35	0.32	0.37	0.20	0.58	0.32	2.60	4.17	5.51	2.60	0.86	0.70
29	0.32	0.30	0.30	0.17	0.49	0.35	0.98	7.56	5.08	1.87	–	0.61
30	0.30	0.30	0.30	0.20	0.37	0.35	0.86	18	4.17	1.71	–	0.64
31	–	0.30	–	0.17	0.40	–	0.82	–	3.87	1.76	–	0.67
Total	15.99	12.95	8.16	7.84	15.73	16.65	26.55	229.55	186.71	143.40	34.33	20.86
Mean	0.53	0.42	0.27	0.25	0.51	0.55	0.86	7.65	6.02	4.62	1.23	0.67
Max.	0.90	0.78	0.43	0.35	1.35	1.06	2.60	28	30	14	2.21	1.10
Min.	0.30	0.27	0.20	0.17	0.13	0.32	0.32	0.74	2.73	1.71	0.82	0.58
Runoff – mcm.	1.381	1.119	0.705	0.677	1.359	14.38	2.294	19.833	16.132	12.390	2.966	1.802

WATER YEAR 1969 : Max. 30 Min. 0.13 Mean 1.97 Annual Runoff 62.097 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Dec. 17	12.00	3.55	38				

WATER YEAR 1969
KHLONG TAM RIVER BASIN

Khlong Tam at Ban Khuan Lang, Songkhla (X_{71})

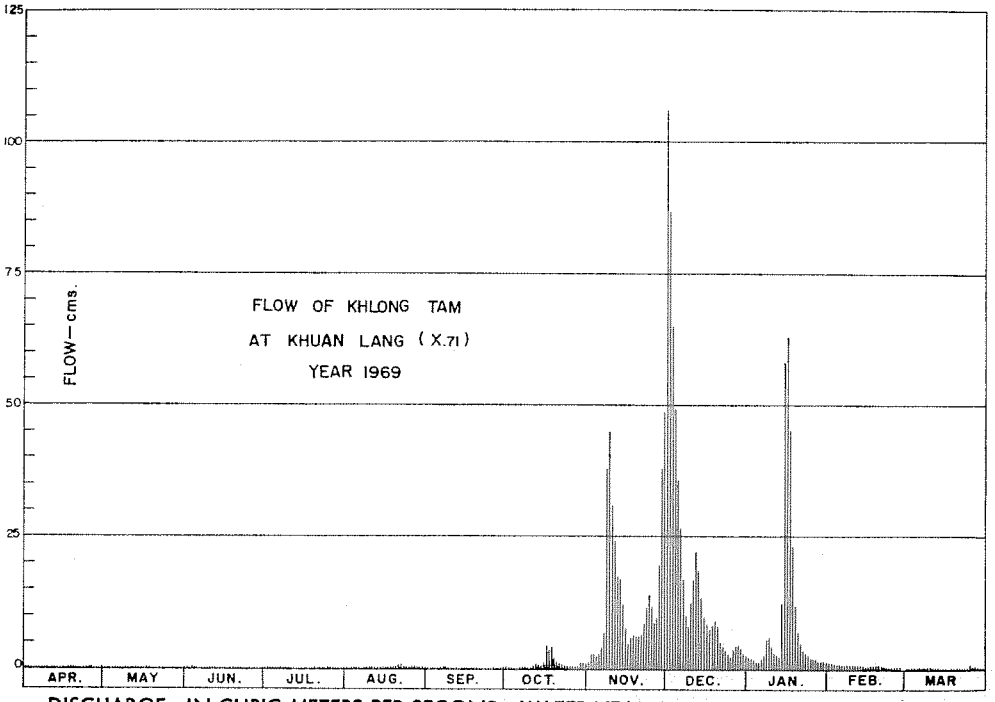
Location:	Lat. 6°-59'-33" N., Long. 100°-25'-57" E., on right bank at downstream side of the bridge on Phet Kasem highway at Ban Khuan Lang, Amphoe Hat-Yai, Songkhla.
Drainage Area:	127 sq.km.
Type of Gage:	Staff gage
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	B.M. - H.S.
Location:	On left bank about 12 meters from highway bridge.
Elevation:	+ 6.569 m. (A.D.)
Gage Reading Frequency:	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height:	Arithmetic mean of 5 readings.
Period of Available Gage Records:	1967 to date
Rating Operation:	
Period of Rating:	1967-1972
Rated by Float:	-
Rated by Current Meter:	1967-1972
Stability of Channel Regimes:	Stable, no shifting adjustment for flow computation.
Overbank Flow Conditions:	No overbank flow
General Description:	Records good. Stage-discharge relationship used is defined by discharge measurements made during 1969. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.32	1.28	1.36	1.50	1.36	1.43	1.35	1.98	6.64	2.25	1.96	1.52
2	.31	.30	.35	.50	.35	.40	.41	2.39	.36	.18	.94	.47
3	.31	.34	.40	.47	.34	.43	.36	.41	.30	.06	.90	.51
4	.31	.39	.40	.46	.34	.43	.33	.30	5.89	1.99	.86	.55
5	.30	.30	.37	.43	.32	.44	.34	.39	.51	.97	.85	.52
6	1.31	1.30	1.36	1.40	1.31	1.48	1.41	2.73	4.91	2.21	1.87	1.53
7	.32	.30	.36	.40	.30	.51	.48	3.32	.13	.47	.85	.49
8	.29	.30	.35	.40	.30	.47	.49	5.72	3.54	.98	.83	.50
9	.29	.32	.37	.40	.31	.44	.47	.93	.40	3.06	.79	.52
10	.28	.31	.37	.39	.29	.41	.57	.25	4.04	2.68	.77	.50
11	1.28	1.29	1.37	1.38	1.29	1.39	1.78	4.87	4.52	2.46	1.77	1.49
12	.28	.29	.39	.35	.30	.39	.89	.45	.81	.28	.74	.51
13	.28	.33	.43	.35	.29	.37	.72	.41	.29	.28	.70	.50
14	.28	.35	.51	.38	.30	.35	.72	3.79	3.88	4.22	.67	.51
15	.28	.35	.45	.38	.32	.35	2.01	.23	.60	6.21	.64	.44
16	1.29	1.40	1.39	1.40	1.31	1.35	2.75	2.79	3.41	6.30	1.65	1.41
17	.29	.53	.38	.41	.34	.35	.56	.99	.32	5.56	.69	.41
18	.28	.54	.39	.39	.53	.35	.73	3.16	.47	4.46	.71	.39
19	.28	.50	.43	.41	.49	.39	.03	.05	.57	3.56	.70	.40
20	.28	.49	.41	.46	.55	.35	1.97	.10	.23	.09	.69	.49
21	1.27	1.45	1.39	1.56	1.82	1.35	1.88	3.17	2.88	2.74	1.63	1.49
22	.30	.43	.37	.56	.73	.34	.72	.55	.70	.56	.55	.48
23	.33	.41	.36	.52	.66	.34	.62	.95	.54	.43	.50	.49
24	.32	.33	.37	.54	.66	.35	.59	4.14	.39	.30	.52	.55
25	.32	.33	.38	.53	.60	.35	.58	3.74	.29	.24	.51	.71
26	1.29	1.35	1.40	1.51	1.60	1.35	1.57	3.47	2.63	2.19	1.54	1.60
27	.28	.37	.40	.49	.59	.35	.64	.66	.80	.12	.55	.54
28	.27	.37	.41	.38	.55	.35	.83	4.96	.80	.06	.55	.49
29	.27	.36	.40	.37	.50	.34	.94	5.77	.61	.02	-	.43
30	.27	.34	.45	.35	.45	.35	.92	6.15	.40	.00	-	.41
31	-	.36	-	.34	.43	-	.85	-	.29	1.98	-	.49
Mean	1.29	1.36	1.39	1.43	1.44	1.38	1.76	3.74	3.78	2.87	1.71	1.49
Max.	1.33	1.54	1.51	1.56	1.82	1.51	2.75	6.15	6.64	6.30	1.96	1.71
Min.	1.27	1.28	1.35	1.34	1.29	1.34	1.33	1.98	2.29	1.97	1.50	1.39

WATER YEAR 1969 : Max. 6.64 m. Min. 1.27 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.052	0.032	0.076	0.20	0.076	0.13	0.070	1.15	106	2.02	1.10	0.23
2	0.046	0.040	0.070	0.20	0.070	0.10	0.11	2.56	68	1.78	1.05	0.17
3	0.046	0.064	0.10	0.17	0.064	0.13	0.076	2.64	63	1.38	0.95	0.21
4	0.046	0.094	0.10	0.16	0.064	0.13	0.058	2.20	43	1.17	0.87	0.27
5	0.040	0.040	0.082	0.13	0.052	0.14	0.064	2.56	33	1.12	0.85	0.23
6	0.046	0.040	0.076	0.10	0.046	0.18	0.11	4.00	23	1.88	0.89	0.24
7	0.052	0.040	0.076	0.10	0.040	0.21	0.18	7.39	14	2.88	0.85	0.19
8	0.036	0.040	0.070	0.10	0.040	0.17	0.19	38	8.95	5.34	0.81	0.20
9	0.036	0.052	0.082	0.10	0.046	0.14	0.17	45	7.95	5.81	0.73	0.23
10	0.032	0.046	0.082	0.094	0.036	0.11	0.30	28	13	3.76	0.69	0.20
11	0.032	0.036	0.082	0.088	0.036	0.094	0.71	23	18	2.84	0.69	0.19
12	0.032	0.036	0.094	0.070	0.040	0.094	0.93	17	22	2.13	0.63	0.21
13	0.032	0.058	0.13	0.070	0.036	0.082	0.59	17	16	2.13	0.55	0.20
14	0.032	0.070	0.21	0.088	0.040	0.070	0.59	11	12	15	0.49	0.21
15	0.032	0.070	0.15	0.088	0.052	0.070	1.23	6.83	9.40	58	0.43	0.14
16	0.036	0.10	0.094	0.10	0.046	0.070	4.10	4.30	8.02	63	0.45	0.11
17	0.036	0.24	0.088	0.11	0.064	0.070	3.24	5.39	7.39	34	0.53	0.11
18	0.032	0.26	0.094	0.094	0.24	0.070	4.00	6.41	8.44	17	0.57	0.094
19	0.032	0.20	0.13	0.11	0.19	0.094	1.29	5.75	9.17	9.10	0.55	0.10
20	0.032	0.19	0.11	0.16	0.27	0.070	1.12	6.05	6.83	5.99	0.53	0.19
21	0.028	0.15	0.094	0.29	0.79	0.070	0.91	6.47	4.79	4.05	0.41	0.19
22	0.040	0.13	0.082	0.29	0.61	0.064	0.59	9.02	3.85	3.24	0.27	0.18
23	0.058	0.11	0.076	0.23	0.47	0.064	0.39	12	3.16	2.72	0.20	0.19
24	0.052	0.058	0.084	0.26	0.47	0.070	0.33	14	2.56	2.20	0.23	0.27
25	0.052	0.058	0.088	0.24	0.35	0.070	0.32	10	2.16	1.99	0.21	0.57
26	0.036	0.070	0.10	0.21	0.35	0.070	0.30	8.44	3.53	1.81	0.26	0.35
27	0.032	0.082	0.10	0.19	0.33	0.070	0.43	9.88	4.35	1.57	0.27	0.26
28	0.028	0.082	0.11	0.088	0.27	0.070	0.81	24	4.35	1.38	0.27	0.19
29	0.028	0.076	0.10	0.082	0.20	0.064	1.05	39	3.44	1.26	–	0.13
30	0.028	0.064	0.15	0.070	0.15	0.070	1.00	54	2.60	1.20	–	0.11
31	–	0.076	–	0.064	0.13	–	0.85	–	2.16	1.15	–	0.19
Total	1,142	2,704	2.978	4.346	5.668	2.906	26.108	423.04	534.10	258.90	16.33	6.354
Mean	0.038	0.087	0.099	0.14	0.18	0.097	0.84	14.1	17.2	8.35	0.58	0.20
Max.	0.058	0.26	0.21	0.29	0.79	0.21	4.10	54	106	63	1.10	0.57
Min.	0.028	0.032	0.070	0.064	0.036	0.064	0.058	1.11	2.16	1.12	0.20	0.094
Runoff – mcm.	0.099	0.234	0.257	0.375	0.490	0.251	2.256	36.551	46.146	22.369	1.411	0.549

WATER YEAR 1969 : Max. 106 Min. 0.028 Mean 3.52 Annual Runoff 110.987 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Dec. 1	09.00	6.75	1.56				

WATER YEAR 1969
KHLONG DUSON RIVER BASIN

Khlong Duson at Thung Nui, Satun (X_{16A})

Location: Lat. 6°-48'-00" N., Long. 100°-07'-00" E., on right bank about 8 kilometers left side of Stun-Khuan Niang railway station road, at BanThung Nui, Amphoe Muang, Satun.

Drainage Area: 58 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: -

Location: -

Elevation -

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1959-1972

Rating Operation:

Period of Rating: 1960

Rated by Float: -

Rated by Current Meter: 1960

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings.

Overbank Flow Conditions: No overbank flow.

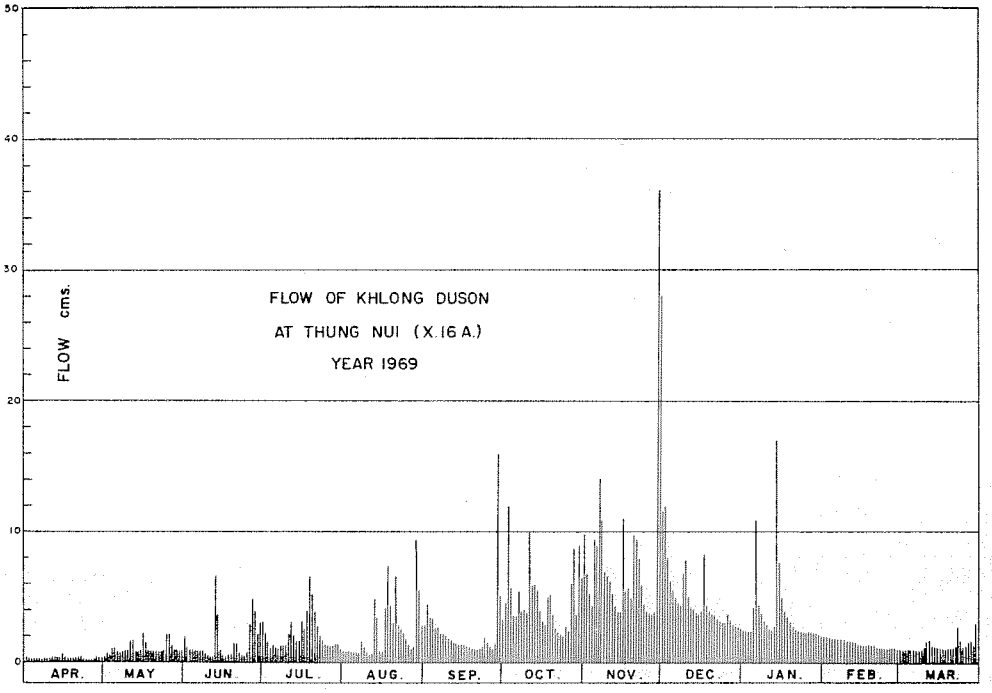
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1960. No upstream State diversion for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.90	0.91	1.06	1.15	0.96	1.12	1.15	1.54	1.60	1.10	1.06	0.97
2	.89	.95	0.99	.07	.96	.24	.25	.35	.63	.10	.05	.97
3	.89	.92	.96	.00	.97	.17	.63	.26	.41	.10	.05	.97
4	.89	.97	.97	0.98	.96	.16	.27	.20	.33	.09	.04	.97
5	.89	.98	.97	1.00	.95	.10	.17	.52	.30	.24	.04	.97
6	0.89	0.95	0.97	0.98	0.95	1.11	1.16	1.47	1.26	1.62	1.04	0.97
7	.89	.95	.97	.98	.95	.08	.30	.72	.24	.24	.04	.97
8	.89	.95	.97	1.00	1.03	.07	.20	.53	.22	.18	.04	.97
9	.89	.97	.95	.00	0.99	.06	.21	.35	.37	.15	.04	.97
10	.89	.96	.92	.00	.95	.04	.17	.37	.44	.13	.03	.97
11	0.92	1.03	0.92	1.68	0.94	1.03	1.55	1.34	1.26	1.11	1.02	1.02
12	.91	.03	.91	.14	.94	.03	.32	.28	.22	.10	.02	.03
13	.90	0.96	1.37	.04	1.26	.00	.33	.22	.21	.12	.02	.00
14	.90	.96	.07	.03	.15	.00	.30	.20	1.19	.88	.01	0.99
15	.94	.97	0.94	.03	0.95	.00	.19	.20	.18	.36	.00	.98
16	0.90	1.08	0.92	1.15	0.95	1.00	1.13	1.59	1.20	1.24	1.00	0.98
17	.90	.01	.92	.09	1.22	.00	.12	.29	.46	.20	.00	.98
18	.90	0.96	.94	.20	1.42	0.99	.27	.31	.23	.17	.00	.98
19	.90	.96	.94	.37	.23	.98	.28	.24	.20	.14	.00	.97
20	.90	.96	1.01	.27	.10	.98	.13	.54	.19	.12	.00	.97
21	0.92	0.96	1.01	1.20	1.37	0.98	1.10	1.52	1.18	1.11	0.99	0.98
22	.92	.96	0.94	.12	.13	.98	.08	.43	.16	.10	.98	.99
23	.88	.96	.93	.06	.11	.97	.07	.29	.15	.10	.98	1.11
24	.88	.96	.93	.03	.09	1.06	.06	.23	.14	.09	.98	.04
25	.88	1.08	.96	.01	.04	.01	.12	.19	.14	.08	.98	0.99
26	0.88	1.07	1.04	1.00	1.00	0.98	1.07	1.19	1.19	1.08	0.98	0.99
27	.88	.00	.26	.00	0.98	.97	1.35	.18	.15	.08	.98	1.02
28	.92	0.97	.18	.00	.98	1.01	.49	.20	.13	.08	.98	.03
29	.92	.97	.05	.01	1.52	.81	.18	.40	.12	.07	-	0.98
30	.91	.96	.14	.01	.27	.17	.50	2.57	.12	.06	-	1.13
31	-	.96	-	0.98	.11	-	.30	-	.11	-	-	1.10
Mean	0.90	0.98	1.00	1.08	1.08	1.07	1.24	1.39	1.25	1.17	1.01	1.00
Max.	0.92	1.08	1.37	1.68	1.52	1.81	1.63	2.57	1.63	1.62	1.06	1.13
Min.	0.88	0.91	0.91	0.98	0.94	0.97	1.06	1.18	1.11	1.06	0.98	0.97

WATER YEAR 1969 : Max. 2.57 m. Min. 0.88 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	0.40	0.47	2.04	3.24	0.92	2.82	3.24	9.80	11	2.54	2.04	1.03
2	0.33	0.81	1.25	2.16	0.92	4.55	4.71	6.32	12	2.54	1.92	1.03
3	0.33	0.47	0.92	1.36	1.03	3.52	12	4.87	7.36	2.54	1.92	1.03
4	0.33	1.03	1.03	1.14	0.92	3.38	5.03	3.95	5.99	2.40	1.80	1.03
5	0.33	1.14	1.03	1.36	0.81	2.54	3.52	9.42	5.51	4.55	1.80	1.03
6	0.33	0.81	1.03	1.14	0.81	2.68	3.38	8.47	4.87	11	1.80	1.03
7	0.33	0.81	1.03	1.14	0.81	2.28	5.51	14	4.55	4.55	1.80	1.03
8	0.33	0.81	1.03	1.36	1.69	2.16	3.95	9.61	4.25	3.66	1.80	1.03
9	0.33	1.03	0.81	1.36	1.25	2.04	4.10	6.32	6.66	3.24	1.80	1.03
10	0.33	0.92	0.54	1.36	0.81	1.80	3.52	6.66	7.90	2.96	1.69	1.03
11	0.54	1.69	0.54	13	0.70	1.69	10	6.15	4.87	2.68	1.58	1.58
12	0.47	1.69	0.47	3.10	0.70	1.69	5.83	5.19	4.25	2.54	1.58	1.69
13	0.40	0.92	6.66	1.80	4.87	1.36	5.99	4.25	4.10	2.82	1.58	1.36
14	0.40	0.92	2.16	1.69	3.24	1.36	5.51	3.95	3.80	17	1.47	1.25
15	0.70	1.03	0.70	1.69	0.81	1.36	3.80	3.95	3.66	6.49	1.36	1.14
16	0.40	2.28	0.54	3.24	0.81	1.36	2.96	11	3.95	4.55	1.36	1.14
17	0.40	1.47	0.54	2.40	4.25	1.36	2.82	5.35	8.28	3.95	1.36	1.14
18	0.40	0.92	0.70	3.95	7.54	1.25	5.03	5.67	4.40	3.52	1.36	1.14
19	0.40	0.92	0.70	6.66	4.40	1.14	5.19	4.55	3.95	3.10	1.36	1.03
20	0.40	0.92	1.47	5.03	2.54	1.14	2.96	9.80	3.80	2.82	1.36	1.03
21	0.54	0.92	1.47	3.95	6.66	1.14	2.54	9.42	3.66	2.68	1.25	1.14
22	0.54	0.92	0.70	2.82	2.96	1.14	2.28	7.73	3.38	2.54	1.14	1.25
23	0.26	0.92	0.62	2.04	2.68	1.03	2.16	5.35	3.24	2.54	1.14	2.68
24	0.26	0.92	0.62	1.69	2.40	2.04	2.04	4.40	3.10	2.40	1.14	1.80
25	0.26	2.28	0.92	1.47	1.80	1.47	2.82	3.80	3.10	2.28	1.14	1.25
26	0.26	2.16	1.80	1.36	1.36	1.14	2.16	3.80	3.80	2.28	1.14	1.25
27	0.26	1.36	4.87	1.36	1.14	1.03	6.32	3.66	3.24	2.28	1.14	1.58
28	0.54	1.03	3.66	1.36	1.14	1.47	8.85	3.95	2.96	2.28	1.14	1.69
29	0.54	1.03	1.92	1.47	9.42	16	3.66	7.18	2.82	2.16	–	1.14
30	0.47	0.92	3.10	1.47	5.03	3.52	9.04	36	2.82	2.04	–	2.96
31	–	0.92	–	1.14	2.68	–	5.51	–	2.68	–	–	2.54
Total	11.81	34.44	44.87	78.31	77.10	71.46	146.43	224.57	149.95	112.93	41.97	42.08
Mean	0.39	1.11	1.49	2.53	2.49	2.38	4.72	7.48	4.84	3.76	1.50	1.36
Max.	0.54	2.28	6.66	13	9.42	16	12	36	12	17	2.04	2.96
Min.	0.26	0.47	0.47	1.14	0.70	1.03	2.04	3.66	2.68	2.04	1.14	1.03
Runoff – mcm.	1.020	2.976	3.877	6.766	6.661	6.174	12.651	19.403	12.956	9.757	3.626	3.636

WATER YEAR 1969 : Max. 36 Min. 0.26 Mean 2.84 Annual Runoff 89.503 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 30, 69	04.00	3.45	63				

WATER YEAR 1969
KHLONG THEPHA RIVER BASIN

Khlong Thepha at Ban Huai Pring, Songkhla (X_{27})

Location: Lat. 6°-42'-50" N., Long. 100°-57'-48" E., on right bank at Ban Huai Pring, 8 kilometers upstream from state railway bridge, Amphoe Thepha, Songkhla.

Drainage Area: 1,557 sq.km.

Type of Gage: Water-stage recorder

Zero Gage at Bottom at: + 0.00 m. (A.D.)

Bench Mark: B.M. - H.S.

- Location: Near the X27 station office
- Elevation: B.M. 1 + 8.595 m. (A.D.) and B.M. 2 + 5.388 m. (A.D.)

Gage Reading Frequency: Recording

Basis of Mean Daily Gage Height: Arithmetic mean of 24 hourly readings.

Period of Available Gage Records: 1959 to date

Rating Operation:

- Period of Rating: 1960-61, 1963-68
- Rated by Float:
- Rated by Current Meter: 1960-61, 1963-68

Stability of Channel Regimes: Stable, no shifting adjustment for flow computation for year without actual ratings. Including overbank flow.

Overbank Flow Conditions: Overbank flow at elevation about + 5.96 m. (A.D.)

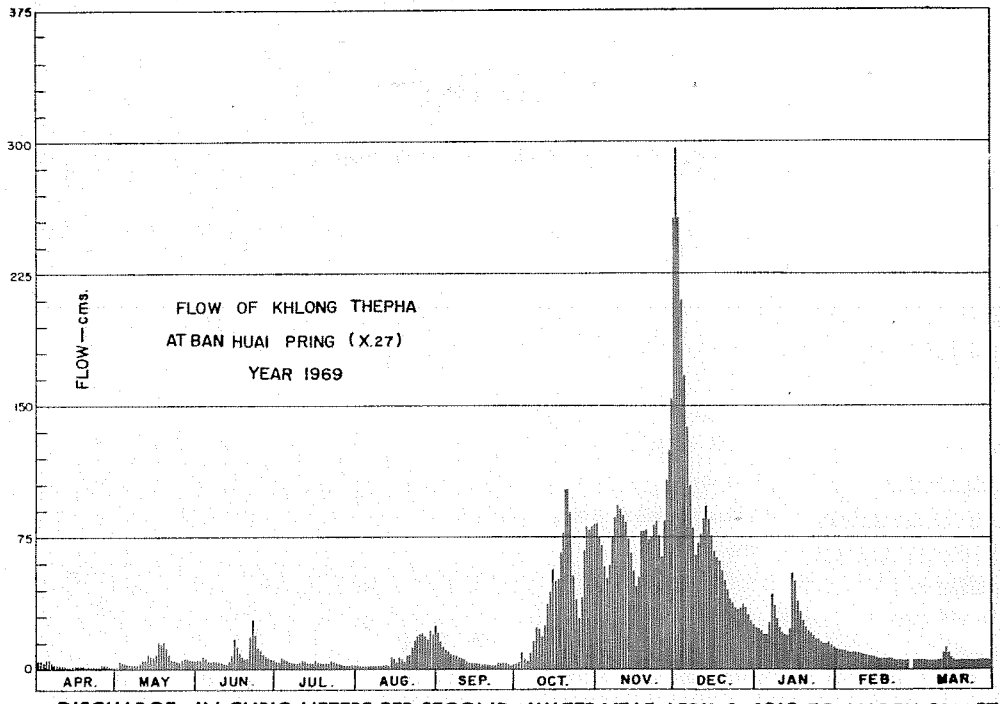
General Description: Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1966. No upstream State diversions for irrigation except those built by the local residents. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.32	0.83	1.26	1.22	0.95	2.27	1.10	5.00	7.83	2.50	1.82	1.36
2	.29	1.24	.25	.20	.93	.02	.22	4.70	8.06	.43	.79	.36
3	.14	.20	.41	.38	.92	1.89	.60	.50	7.57	.37	.75	.36
4	.36	.11	.28	.36	.92	.73	.41	.01	.06	.30	.71	.36
5	.26	.08	.21	.29	.92	.63	.27	3.69	6.66	.26	.68	.35
6	1.12	1.01	1.21	1.23	0.92	1.55	1.36	4.03	6.14	2.55	1.66	1.35
7	.04	0.98	.23	.20	.92	.56	.70	.77	5.45	3.39	.68	.35
8	.00	1.07	.22	.18	.93	.48	2.23	5.10	4.68	.08	.68	.35
9	0.95	.02	.18	.19	.92	.40	.48	.38	.29	2.71	.66	.36
10	.92	.17	.15	.23	.92	.37	.39	.31	.64	.50	.62	.36
11	0.90	1.27	1.09	1.32	1.06	1.31	2.14	5.16	4.85	2.36	1.59	1.36
12	.88	.28	.09	.24	.07	.24	.66	.04	5.21	.28	.56	.63
13	.87	.53	.23	.17	.09	.20	3.29	4.61	.36	.21	.54	.85
14	.92	.44	.53	.15	.45	.17	.45	.37	.03	.53	.51	.58
15	.92	.39	2.12	.18	.36	.12	4.00	3.89	4.67	3.88	.49	.42
16	0.91	1.38	1.82	1.31	1.19	1.11	3.65	3.53	4.34	3.73	1.46	1.35
17	.93	2.01	.54	.22	.40	.08	.74	.92	.25	.13	.45	.34
18	.90	1.91	.40	.15	.34	.06	4.34	.87	.21	2.96	.42	.34
19	.89	2.00	.31	.13	.24	.05	.82	.90	3.96	.66	.40	.33
20	.87	1.73	.34	.11	.57	.05	5.64	.86	.71	.47	.39	.33
21	0.84	1.44	2.11	1.16	1.51	1.05	5.62	4.66	3.50	2.37	1.38	1.33
22	.83	.32	.70	.25	.81	.04	4.63	.75	.25	.31	.37	.33
23	.82	.24	.20	.21	2.10	.03	3.64	.98	.17	.20	.36	.34
24	.98	.20	1.82	.15	.21	.19	.13	5.06	.04	.12	.36	.34
25	1.08	.20	.63	.10	.26	.14	2.79	4.71	2.97	.08	.36	.34
26	1.01	1.34	1.50	1.07	2.29	1.13	2.61	4.18	3.02	2.04	1.36	1.34
27	0.93	.38	.40	.04	.16	.15	4.32	.93	.12	.00	.36	.34
28	.88	.35	.34	.02	.08	.09	.93	5.72	.01	1.97	.36	.34
29	.86	.28	.29	.00	.38	.07	.88	6.04	2.83	2.03		.34
30	.84	.25	.27	0.97	.18	.05	.76	.68	.68	1.93		.34
31		.22		.96	.52		5.00		.59	.87		.34
Mean	0.98	1.32	1.47	1.17	1.47	1.31	3.26	4.78	4.55	2.49	1.53	1.38
Max.	1.36	2.01	2.70	1.38	2.52	2.27	5.64	6.68	8.06	3.88	1.82	1.85
Min.	0.82	0.83	1.09	0.96	0.92	1.03	1.10	3.53	2.59	1.87	1.36	1.33

WATER YEAR 1969 : Max. 8.06 m. Min. 0.82 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	5.46	1.15	4.72	4.24	1.75	20	3.00	83	268	24	12	5.98
2	5.08	4.48	4.60	4000	1.65	16	4.24	74	296	23	12	5.98
3	3.40	4.00	6.64	6.24	1.60	13	9.30	69	239	22	11	5.98
4	5.98	3.10	4.96	5.98	1.60	11	6.64	58	187	20	11	5.98
5	4.72	2.80	4.12	5.08	1.60	9.72	4.84	50	156	20	10	5.85
6	3.20	2.10	4.12	4.36	1.60	8.60	5.98	58	124	25	10	5.85
7	2.40	1.90	4.36	4.00	1.60	8.74	11	76	96	43	10	5.85
8	2.00	2.70	4.24	3.80	1.65	7.62	19	86	74	36	10	5.85
9	1.75	2.20	3.80	3.90	1.60	6.50	24	94	64	28	10	5.98
10	1.60	3.70	3.50	4.36	1.60	6.11	22	92	73	24	9.58	5.98
11	1.50	4.84	2.90	5.46	2.60	5.33	18	87	78	21	9.16	5.98
12	1.40	4.96	2.90	4.48	2.70	4.48	27	84	89	20	8.74	9.72
13	1.35	8.32	4.36	3.70	2.90	4.00	41	72	93	19	8.46	13
14	1.60	7.06	8.32	3.50	7.20	3.70	45	66	83	25	8.04	9.02
15	1.60	6.37	17	3.80	5.98	3.20	57	55	74	55	7.76	6.78
16	1.55	6.24	12	5.33	3.90	3.10	49	46	65	51	7.34	5.85
17	1.65	15	8.46	4.24	6.50	2.80	51	55	63	37	7.20	5.72
18	1.50	14	6.50	3.50	5.72	2.60	65	79	62	34	6.78	5.72
19	1.45	15	5.33	3.30	4.48	2.50	77	79	56	27	6.50	5.59
20	1.35	11	5.72	3.10	8.88	2.50	102	79	51	24	6.37	5.59
21	1.20	7.06	17	3.60	8.04	2.50	102	73	46	22	6.24	5.59
22	1.15	5.46	28	4.60	12	2.40	73	76	40	21	6.11	5.59
23	1.10	4.48	19	4.12	17	2.30	49	82	38	19	5.98	5.72
24	1.90	4.00	12	3.50	19	3.90	37	84	35	17	5.98	5.72
25	2.80	4.00	9.72	3.00	20	3.40	30	75	34	17	5.98	5.72
26	2.10	5.72	7.90	2.70	20	3.30	26	61	35	16	5.98	5.72
27	1.65	6.24	6.50	2.40	18	3.50	65	81	37	15	5.98	5.72
28	1.40	5.85	5.72	2.20	17	2.90	81	105	35	15	5.98	5.72
29	1.30	4.96	5.08	2.00	22	2.70	79	119	31	16		5.72
30	1.20	4.60	4.84	1.85	18	2.50	81	157	28	14		5.72
31		4.24		1.80	25		83		26	13		5.72
Total	66.34	177.53	234.31	118.14	263.15	170.90	1,348	2,355	2,676	763	230.16	194.91
Mean	2.21	5.73	7.81	3.81	8.49	5.70	43.8	78.5	86.3	24.3	8.22	6.29
Max.	5.98	15	28	6.24	25	20	102	157	296	55	12	13
Min.	1.10	1.15	2.90	1.80	1.60	2.30	3.00	46	26	13	5.98	5.59
Runoff - MCM.	5.732	15.339	20.244	10.207	22.736	14.766	116.467	203.472	231.206	65.923	19.886	16.840

WATER YEAR 1969 : Max. 296 Min. 1.10 Mean 23.5 Annual Runoff 742.819 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Dec. 1	24.00	8.20	314				

WATER YEAR 1969
TRANG RIVER BASIN

Trang River at Ban Pradu Tai, Trang (X_{56})

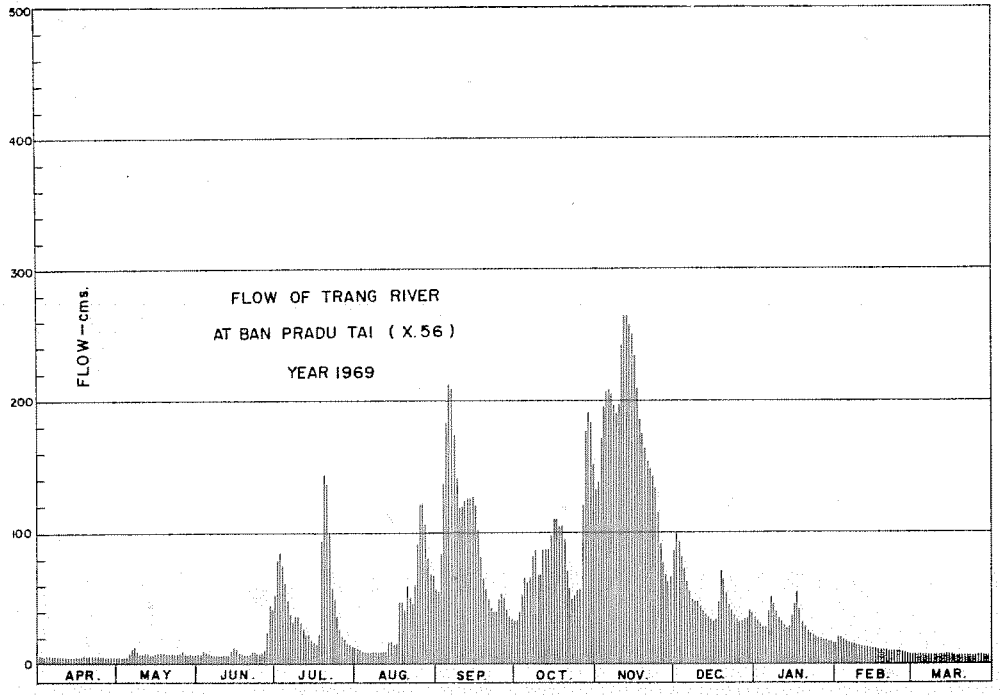
Location:	Lat. 7°-45'-45" N., Long. 99°-32'-25" E., on left bank at left side of Huai Yot – Krabi highway, 16 kilometers from Amphoe Huai Yot, Trang.
Drainage Area:	1,801 sq.km.
Type of Gage:	Water-stage recorder
Zero Gage at Bottom at:	+ 0.00 m. (A.D.)
Bench Mark:	B.M. – H.S.
Location:	Near the X56 station office
Elevation:	+ 8.855 m. (A.D.)
Gage Reading Frequency:	Recording
Basis of Mean Daily Gage Height:	Arithmetic mean of 24 hourly readings.
Period of Available Gage Records:	1966 to date
Rating Operation:	
Period of Rating:	1966-1968
Rated by Float:	–
Rated by Current Meter:	1966-1968
Stability of Channel Regimes:	Rather stable, no shifting adjustment for flow computation for year without actual ratings.
Overbank Flow Conditions:	No overbank flow
General Description:	Records fair. Stage-discharge relationship used is defined by discharge measurements made during 1966-1968. No State diversions at above gage site. No adjustment made for virgin flow.

GAGE HEIGHT IN METER (A.D.), WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	1.50	1.38	1.54	3.46	1.88	3.63	2.80	5.78	4.66	2.90	2.11	1.70
2	.48	.38	.57	4.35	.84	.54	.81	.97	.97	.81	.29	.68
3	.47	.37	.76	.54	.79	4.60	3.05	6.63	.76	.72	.32	.67
4	.47	.38	.72	.13	.74	6.33	.51	7.02	.34	.64	.22	.66
5	.48	.44	.66	3.68	.72	7.05	.95	.18	.01	.61	.16	.65
6	1.47	1.55	1.62	3.33	1.69	7.27	3.80	7.22	3.77	3.09	2.10	1.64
7	.46	.78	.57	.00	.69	.21	.85	.17	.57	.48	.07	.64
8	.45	.88	.54	2.72	.70	6.77	4.42	.04	.39	.33	.05	.64
9	.44	.63	.54	2.94	.72	.02	.60	6.91	.34	.10	.02	.63
10	.44	.59	.54	.91	.74	5.46	3.94	7.04	.37	2.92	.01	.63
11	1.44	1.56	1.54	2.70	1.72	5.49	4.01	7.56	3.25	2.79	1.98	1.63
12	.42	.67	.55	.52	.68	.62	.61	.79	.12	.68	.95	.61
13	.43	.65	.58	.36	.72	.64	.61	.79	.00	.59	.93	.63
14	.45	.53	.80	.40	2.09	.64	.62	.74	2.92	.61	.91	.66
15	.47	.51	.92	.15	.09	.68	.94	.66	.84	.91	.89	.63
16	1.47	1.55	1.86	2.00	1.97	5.50	5.27	7.48	2.79	3.27	1.87	1.63
17	.46	.66	.69	1.92	2.10	4.91	.27	.20	.83	.63	.86	.61
18	.46	.64	.62	2.35	3.33	.32	.11	6.89	3.21	2.92	.85	.60
19	.48	.62	.58	5.08	.33	3.92	.13	.64	4.15	.78	.84	.59
20	.48	.60	.56	6.11	2.99	.57	4.85	.43	3.88	.63	.83	.58
21	1.45	1.59	1.58	5.87	3.75	3.39	4.19	6.28	3.51	2.55	1.82	1.56
22	.42	.58	.77	4.93	.44	.21	3.65	.16	.26	.47	.81	.54
23	.42	.58	.75	3.64	.19	.08	.33	.05	.09	.40	.80	.54
24	.44	.58	.69	.47	.65	.01	.54	5.75	2.93	.33	.79	.55
25	.42	.59	.65	2.87	4.86	.39	.64	.18	.82	.27	.76	.56
26	1.41	1.69	1.68	2.49	5.55	3.56	3.62	4.62	2.73	2.24	1.73	1.54
27	.40	.63	.78	.27	.55	.41	5.63	.23	.79	.21	.71	.55
28	.39	.57	2.44	.13	.10	.10	6.66	3.97	.86	.18	.71	.57
29	.38	.55	3.24	.02	4.27	2.89	.96	.78	.91	.17	–	.51
30	.38	.55	.09	1.95	3.73	.82	.82	4.05	3.14	.15	–	.60
31	–	.54	–	.90	.66	–	.34	–	.08	.12	–	–
Mean	1.44	1.57	1.78	3.24	2.81	4.67	4.47	6.37	3.40	2.69	1.94	1.60
Max.	1.50	1.88	3.24	6.11	5.55	7.27	6.96	7.79	4.97	3.48	2.32	1.70
Min.	1.38	1.37	1.54	1.90	1.68	2.82	2.80	3.78	2.73	2.12	1.71	1.51

WATER YEAR 1969 : Max. 7.79 m. Min. 1.37 m.

HYDROLOGY SECTION, SURVEY DIVISION
ROYAL IRRIGATION DEPARTMENT



DISCHARGE, IN CUBIC METERS PER SECOND, WATER YEAR APRIL 1, 1969 TO MARCH 31, 1970

Day	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	5.00	3.30	5.60	50	12	55	32	130	89	35	16	8.00
2	4.70	3.30	6.05	78	11	53	33	138	99	33	20	7.70
3	4.55	3.20	9.20	84	9.80	86	39	170	92	30	20	7.55
4	4.55	3.30	8.40	71	8.80	155	52	194	77	28	18	7.40
5	4.70	4.10	7.40	57	8.40	196	65	205	67	28	17	7.25
6	4.55	5.75	6.80	46	7.85	212	60	208	60	40	16	7.10
7	4.40	9.60	6.05	37	7.85	207	62	204	54	51	15	7.10
8	4.25	12	5.60	30	8.00	178	80	195	48	46	15	7.10
9	4.10	6.95	5.60	36	8.40	140	86	187	47	40	14	6.95
10	4.10	6.35	5.60	35	8.80	117	65	195	48	35	14	6.95
11	4.10	5.90	5.60	30	8.40	119	67	238	44	32	14	6.95
12	3.80	7.55	5.75	25	7.70	124	87	264	40	29	13	6.65
13	3.95	7.25	6.20	21	8.40	125	87	264	37	27	13	6.95
14	4.25	5.45	10	22	16	125	87	258	35	28	12	7.40
15	4.55	5.15	12	17	16	126	98	249	33	35	12	6.95
16	4.55	5.75	11	16	13	119	110	230	32	45	11	6.95
17	4.40	7.40	7.85	12	16	97	110	206	33	55	11	6.65
18	4.40	7.10	6.80	21	46	77	104	185	43	35	11	6.50
19	4.70	6.80	6.20	103	46	64	105	171	71	32	11	6.35
20	4.85	6.50	5.90	144	37	54	95	160	63	28	11	6.20
21	4.25	6.35	6.20	134	59	48	72	153	52	26	10	5.90
22	3.80	6.20	9.40	98	50	43	56	147	44	24	10	5.60
23	3.80	6.20	9.00	56	42	39	46	142	40	22	10	5.60
24	4.10	6.20	7.85	51	56	38	53	129	36	21	9.80	5.75
25	3.80	6.35	7.25	34	96	48	56	107	33	19	9.20	5.90
26	3.65	7.85	7.70	25	121	53	55	87	31	19	8.60	5.60
27	3.50	6.95	9.60	19	121	49	124	73	32	18	8.20	5.75
28	3.40	6.05	23	17	104	40	172	66	34	18	8.20	6.05
29	3.30	5.75	44	14	75	35	190	60	35	17	–	5.15
30	3.30	5.75	40	13	58	33	181	68	41	17	–	6.50
31	–	5.60	–	12	56	–	156	–	39	16	–	–
Total	125.35	191.95	307.60	1,408	1,143.40	2,855	2,685	5,283	1,529	929	35.8	190.75
Mean	4.18	6.19	10.2	45.4	36.9	95.2	86.6	169	49.3	30.0	12.8	6.58
Max.	5.00	12	44	144	121	212	190	264	99	51	20	8.00
Min.	3.30	3.20	5.60	12	7.70	33	32	60	31	16	8.20	5.15
Runoff - MCM.	10.830	16.584	26.577	121.651	98.790	246.672	231.984	439.171	132.106	80.266	30.931	16.481

WATER YEAR 1969 : Max. 264 Min. 32 Mean 46.0 Annual Runoff 1,452.043 mcm.

Momentary Peak Discharge

Date	Time	Gage-Height	Discharge	Date	Time	Gage-Height	Discharge
Nov. 12	12.00	7.80	265				