FLOOD OF

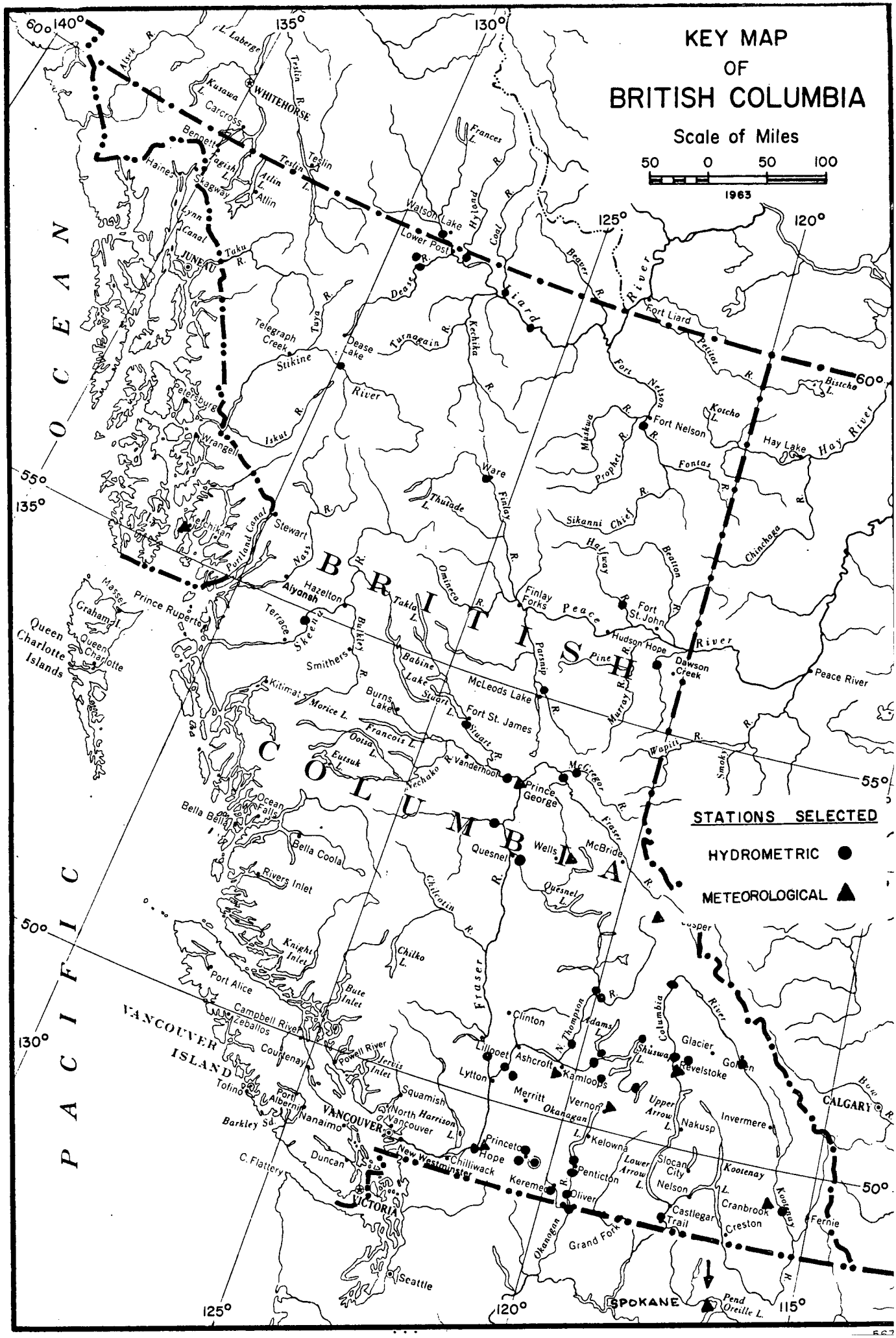
MAY - JUNE 1972

IN

BRITISH COLUMBIA

Water Survey of Canada, Vancouver, B.C.
Department of the Environment

January 1973


KEY MAP
OF
BRITISH COLUMBIA
Scale of Miles
50 0 50 100
1963
STATIONS SELECTED
HYDROMETRIC
METEOROLOGICAL
PACIFIC OCEAN
BRITISH COLUMBIA
VANCOUVER ISLAND
60°
55°
50°
140°
135°
130°
125°
120°
115°
WHITEHORSE
Carcross
Bennett
Skagway
Haines
Atlin
Teslin
Watson Lake
Lower Post
Fort Liard
Fort Nelson
Hay Lake
Hay River
Bistcho L.
Kotcho L.
Telegraph Creek
Stikine River
Dease Lake
Wrangell
Petersburg
Ketchikan
Prince Rupert
Queen Charlotte Islands
Graham I.
Hazelton
Aiyansh
Terrace
Smithers
Kitimat
Burns Lake
Morice L.
Babine Lake
Stuart L.
Fort St. James
McLeods Lake
Finlay Forks
Hudson Hope
Fort St. John
Dawson Creek
Peace River
Chetwynd
Prince George
Vanderhoof
Ocean Falls
Bella Bella
Bella Coola
Rivers Inlet
Quesnel
Wells
McBride
Jasper
Knight Inlet
Port Alice
Bute Inlet
Campbell River
Zeballos
Courtenay
Powell River
Jervis Inlet
Tofino
Port Alberni
Nanaimo
Barkley Sd.
C. Flattery
Duncan
VICTORIA
Seattle
VANCOUVER
North Vancouver
Harrison L.
Squamish
New Westminster
Chilliwack
Hope
Princeton
Clinton
Lillooet
Ashcroft
Lytton
Kamloops
Merritt
Vernon
Okanagan L.
Kelowna
Penticton
Keremeos
Oliver
Grand Forks
Castlegar
Trail
Creston
Fernie
Cranbrook
Kootenay L.
Nelson
Slocan City
Lower Arrow L.
Upper Arrow L.
Nakusp
Revelstoke
Glacier
Golden
Invermere
Shuswap L.
Adams L.
Columbia River
CALGARY
SPOKANE
Pend Oreille L.
Liard River
Fraser River
Peace River
Parsnip R.
Finlay R.
Ware
Thutade L.
Sikanni Chief R.
Halfway R.
Beatton R.
Chinchaga R.
Prophet R.
Muskwa R.
Fontas R.
Petitot R.
Beaver R.
Coal R.
Hyland R.
Dease R.
Turnagain R.
Kechika R.
Tuya R.
Iskut R.
Nass R.
Portland Canal
Skeena R.
Bulkley R.
Omineca R.
Takla L.
Francois L.
Ootsa L.
Eutsuk L.
Nechako R.
Chilcotin R.
Quesnel L.
Chilko L.
Murray R.
Wapiti R.
Smoky R.

ACKNOWLEDGEMENTS

The Water Survey of Canada acknowledges the contributions from public and private agencies to the content of this report. Among them are the Water Investigation Branch, Water Resources Service, Department of Lands, Forests, and Water Resources (B.C.) for snow survey data; Atmospheric Environment Service for meteorological data; the Engineering Division, Water Planning and Management Branch, Department of the Environment for technical data; the *"Province"* and *"Sun"* newspapers for reporting and photographic services; Neil McDonald for photographic service and the many gauge readers for maintaining services during the flood.

CONTENTS

FLOOD OF MAY - JUNE 1972 IN BRITISH COLUMBIA

INTRODUCTION

The purpose of this report is to describe the extent and magnitude of the flooding conditions that occurred in British Columbia during the 1972 Spring freshet of May and June. The freshet was due to a base flow of snowmelt runoff augmented in the latter stages by rainfall runoff. It was the greatest flood in magnitude and extent since the historic flood of 1948.

The emphasis of this report is on the Fraser and Columbia River basins, where public attention was focussed during the freshet. Statistical and interpretive material is limited essentially to these two basins. Adjacent areas, such as the Peace River and tributary basins in Northern British Columbia, are covered lightly to indicate the extent and nature of flooding conditions. Those areas where unusual flooding did not occur are identified.

SCOPE OF REPORT

A. The General Description of the Flood

A brief story of the general flooding conditions that occurred in the Fraser and Columbia River basins is included. This story was obtained from the Vancouver *"Sun"* and *"Province"*, daily newspapers, and from local newspapers of interior cities and towns. The unfolding of this story in this report is appropriate because it illustrates in some perspective the complex nature of a freshet of flooding proportions progressing from possibility to reality, the interplay of climatic conditions on snowmelt and the human effort and emotional involvement.

Following this narrative, conditions in selected basins are described less or more fully, depending upon the degree of flooding and treatment of data elsewhere. The effect of the regulation of storage facilities is also noted.

Photographs depicting flooding conditions in the Province follow.

B. Snowpack

The snowpack conditions reported in February were the alert signal that a flood potential existed. Included in this report are copies of Page 3 of the *"British Columbia Snow Survey Bulletin"* for February 1, March 1, April 1, May 1, May 15, June 1 and June 15, 1972. (Refer to pages 19 to 25). These excerpts describe the general snowpack conditions that existed on or about the date of the *"Bulletin"* and an outlook of the runoff conditions that could be expected.

Following this text material are graphs showing average water equivalent data at intervals for selected snow courses in the main river basins of the Province. (Refer to pages 26 to 27).

C. Meteorology

The climatic conditions that produced the runoff pattern and in some cases the record or near-record peak flows are illustrated by hydrographs of daily mean freezing levels for four reporting stations and hydrographs of daily mean temperatures together with bar graphs of daily precipitation totals for eight meteorological reporting stations. (Pages 29 to 33).

D. Hydrometric Data

Daily mean discharges for the freshet period for selected hydrometric stations in the main basins of the interior of the Province are represented by hydrographs. (Pages 35 to 68) The data for 1972 are shown by a solid line. These data are to be considered preliminary although it is expected that there will not be any significant revisions. For comparison there are shown by broken lines the hydrograph of discharges or water levels for other selected years to indicate dissimilar runoff patterns.

It should be pointed out that there were no hydrometric stations on the Fraser River upstream from Prince George prior to 1950 and data was sparse in 1948 in other areas of northern British Columbia.

(The reader is referred to the *"Surface Water Data British Columbia 1972"*, due for publication in late 1973, for all streamflow and water level data collected in 1972 by the Water Survey of Canada and co-operating agencies. Advance data may be obtained from the District Engineer of the Water Survey of Canada at Vancouver).

E. Interpretation of Hydrometric Data

Historical annual maximum daily flows for each year of record for selected stations are listed chronologically and arrayed. (Pages 70 to 125). The flood frequencies were determined by the method of

maximum likelihood and the results plotted. (Pages 70 to 125). Listed by station are the drainage areas, maximum daily flow of record, date of occurrence and runoff per square mile (Page 126). Also listed are the period of record of annual maximum daily flows for the same selected hydrometric stations. (Page 127).

The envelope curve of extreme floods in British Columbia will give the reader an approximation of the flood discharge that can be expected, knowing the drainage area of a basin and its geographic location. (Page 128).

The graph of the mean annual floods for the main stem of the Fraser and Columbia Rivers shows the magnitude of floods in relation to drainage areas for stations in these basins. (Page 129).

THE GENERAL DESCRIPTION OF THE FLOOD

The Unfolding of the Story

The first indication of the potential for spring flooding conditions on rivers in central British Columbia was observed by the snow surveyors and reported in the Provincial *"Snow Survey Bulletin"* of February 1972. Subsequent monthly *"Bulletins"* told of continuing heavy mountain snowpacks. In mid-March 1972 Provincial Government authorities alerted their departments and civil defence units to the possibility of flooding in the Fraser River basin. In mid-April meetings were held in communities throughout the basin to co-ordinate and plan the activities of agencies who would be involved in the defence against flooding and the minimizing of damages.

The May 1, 1972 *"Snow Bulletin"* included the following guarded warning:

> *" Because of the heavy May 1st snow cover, the lateness of spring and the increasing probability of a prolonged warm spell, a flood potential exists on those interior rivers which lack adequate storage. In particular, this potential applies to the Okanagan, Similkameen, Kettle, Thompson, Fraser, Upper Kootenay and Upper Columbia Rivers."*

Towards the end of May flooding and property damage had occurred along the Nicola River. About May 27 interior valley temperatures were in the 70 and 80 degree range, the highest of the season, and freezing levels were over 12,000 ft. With these conditions and the heavy snowpack, many of the interior rivers peaked at record levels at the end of May and in the first week of June. After months of guarded warnings countered by statements of cautious optimism, and weeks of excitement and apprehension, the flooding arrived. Property damage was heavy in the Similkameen and Nicola River tributary basins.

On May 30 the weather throughout the Province cooled and freezing levels dropped below 12,000 ft. The worst seemed to be over and the flood threat eased. Even so, many farmlands were flooded in the river valleys and dyke patrols were busy. Sandbagging was a familiar activity throughout the Province in desperate attempts to protect homes and property in low-lying lands, especially in the Kamloops, Prince George and Okanagan areas. Thousands of threatened people were watchful of the changing water levels.

On June 2 a dyke broke at Brocklehurst, a subdivision near Kamloops, causing some flooding. Another subdivision, Westsyde, was reported to be six feet below water level but still safe. In the Okanagan tributary basin flooding was occurring along the shores of Osoyoos Lake with water to the main-floor level of waterfront houses. In the Okanagan basin in Washington the flooding was reported as the worst in history. At 4:15 p.m. a dyke broke at Oak Hills; an odd name for a subdivision north of Kamloops, in places seven feet below the level on that day of the North Thompson River. About 150 homes in the 30,000 dollar class and 52 mobile homes were flooded in this worst single calamity of the freshet season. No lives were lost in this incident nor on any other occasion of flooding in the Province in 1972.

Following the cooling trend at the end of May, temperatures and freezing levels were again peaking, in some areas on the 5th and in others between the 5th and the 9th of the month. Heavy widespread rains accompanied this warming trend with the greatest daily totals occurring around the 10th. (It was heavy rains that also peaked out the 1948 flood in the Province). These factors caused rivers throughout the central interior of the Province and the Grand Prairie region of Alberta to rise again. River levels peaked between June 11 to 14 on the main stem of the upper Fraser and Columbia Rivers, the Skeena River and tributaries of the Peace River. The Liard River at Upper Crossing peaked on June 2 and the Fraser River at Hope on the 16th.

The main effect of this second and final major peak of the season was to increase the extent of the flooding in already flooded areas. The centres experiencing the most difficulties were Prince George in the upper Fraser River and in the lower Fraser River valley downstream from Hope; on the North Thompson River at Birch Island, Clearwater and Kamloops; on the Shuswap Lakes, notably Sicamous, and on the Okanagan Lake system.

When the heavy rains ended the rivers soon returned to safer levels and the battle against the flood waters was over. Those who lost the battle submitted damage claims which by January 1973 amounted to approximately 9.96 million dollars. Of this total 7.08 million was claimed by the private sector and the remainder of 2.87 million was for Departmental expenses, including the Departments of Highways, Health, Civil Defence, etc.

The Description of Conditions in Selected Basins

The Okanagan River Tributary Basin

The inflow to and regulation of the Okanagan Lake in Canada, the inflow to Osoyoos Lake and the backwater effects of the Similkameen River at Oroville on the levels of Osoyoos Lake and many other factors are challenging studies in themselves and beyond the scope of this report. At the time of writing this report separate studies are being carried out by the Province of British Columbia and United States federal agencies on certain aspects of the flooding and reservoir operations in the Okanagan River tributary basin.

For the purpose of this report it is noted that the maximum daily regulated flow of the Okanagan River at Penticton was 2100 cfs on June 26, 1972. This was the second highest daily discharge on record, exceeded only on June 2, 1928 by a discharge of 2540 cfs. At Okanagan Falls the maximum daily discharge of the Okanagan River was 2680 cfs on May 11, 1972 - the same as the previously recorded maximum discharge which occurred on June 10, 1928.

The maximum daily mean gauge height on Okanagan Lake at Penticton was 8.64 feet (elevation 1124.64 feet, G.S.C. datum) on June 30, 1972, compared with the previous maximum gauge height of 10.23 feet (elevation 1126.23 feet) which occurred on June 25, 1948. On Osoyoos Lake near Oroville, Washington, the maximum daily elevation was 917.06 feet on June 3, 1972, compared with the previous maxima of 916.74 feet on May 31, 1948 and 918.8 feet in 1894.

On the Similkameen River near Nighthawk the maximum daily discharge in 1972 was 45,800 cfs (provisional) on June 1. This was the highest value in 62 years of record and more than double the peaks of 54 of these years. The previous record was 38,100 cfs on May 30, 1948.

Peace River Tributary Basin

Heavy rains over the Peace River tributary basin southwest of Grand Prairie, June 9 - 14, 1972, caused record floods in nearly all streams in that area. Storm activity produced rainfall totals of from six to eight inches in a 36-hour period on tributary basins in the related Rocky Mountain foothills. A preliminary report, *"Peace River Basin Flood, June 1972"*, has been produced by the Calgary District Office of the Water Survey of Canada.

Northern British Columbia

Record and near-record annual maximum daily discharges occurred on some streams in northern British Columbia and the southern Yukon Territory. The only reported event associated with this flooding was the closure of the Alaska Highway at Upper Crossing for a day or so when the approach to the bridge was flooded. On page 10 is a listing of the maximum daily discharge for 1972 for selected streams and, for comparison, the maximum daily discharge previously recorded.

Station	Drainage Area Sq.Mi.	Annual Maximum Daily Discharge (cfs)				Years of Record
		1972	Date	For Period	Year	
7EA-1 Finlay River at Ware	4,280	55,200	Jun 15	60,900	1964	12
7EE-7 Parsnip River above Misinchinka River	1,890	48,300	Jun 13	32,000	1970	5
7FA-1 Halfway River near Farrell Creek	3,630	22,900	Jul 25	70,000	1965	11
7FD-1 Kiskatinaw River near Farmington	1,270	10,600	Jun 14	14,600	1968	16
10AA-1 Liard River at Upper Crossing	12,500	108,000	Jun 2	107,000	1961	13
10AC-2 Dease River at McDame	2,700	31,900	Jun 1	30,000	1964	14
10AC-4 Blue River, near Mouth	668	5,480	May 31	5,550	1970	10
10AD-1 Hyland River near Lower Post	2,600	42,400	Jun 2	59,800	1961	20
10BC-1 Coal River at Mouth	3,650	36,900	May 30	36,300	1964	11
10CB-1 Sikanni Chief River near Fort Nelson	800	7,900	Jun 16	16,900	1965	28
8CB-1 Stikine River above Grand Canyon	7,300	81,400	Jun 15	84,400*	1964	13

* The 1972 flood is thought to have exceeded the 1964 flood on the Stikine River

The 1964 data will probably be revised following a review

Coastal and Vancouver Island Area

Flood discharge on coastal streams and streams on Vancouver Island are generally due to rainfall. The above-average snowpacks in these areas did not produce significant floods and the areas were not covered in the Report.

Upper Kootenay River Tributary Basin

In the Upper Kootenay River tributary basin flood discharges were not considered extreme and this basin is not covered in this Report. Indicative of the runoff in this area was the peak discharge in 1972 for the Kootenay River at Wardner of 56,200 cfs, which was the seventh highest in 59 years of record. The greatest daily mean discharge recorded was 67,500 cfs in 1916.

Effect of Storage Facilities on Flooding

In the Columbia River basin no significant flooding occurred in Canada downstream from the major storage facilities operated in Canada and the United States, namely Duncan, Arrow and Libby reservoirs. Indicative of the beneficial effect the operation of these reservoirs had in preventing flooding are the observed and computed peak water elevations for the Columbia River at Trail.

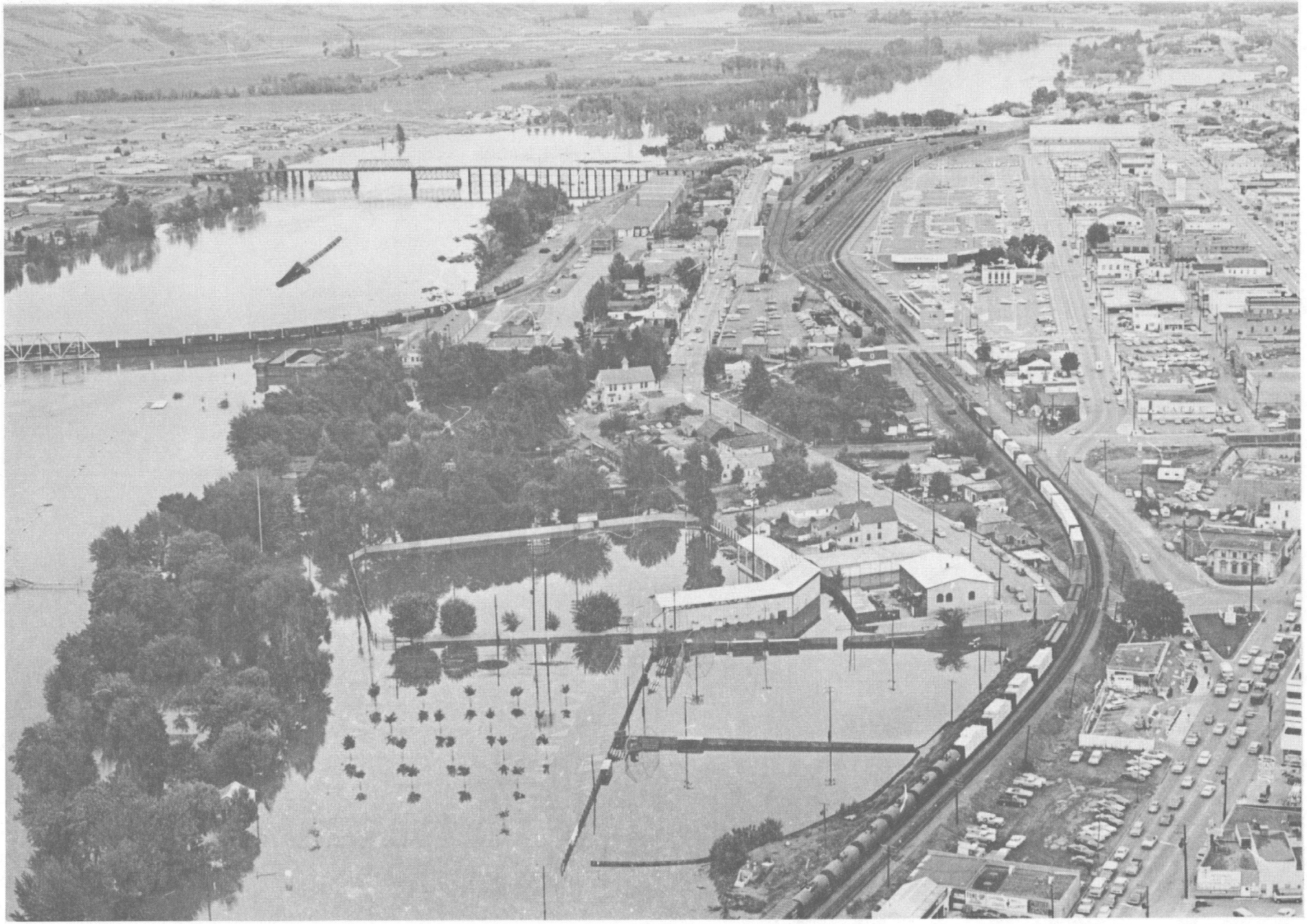
Observed maximum daily elevation (1972)	1349.7 feet (approximately)
Computed pre-project elevation (1972)	1361.4 feet (approximately)
Maximum elevation recorded (1948)	1359.80 feet

In the Fraser River basin the Aluminum Company of Canada and the British Columbia Hydro and Power Authority co-operated in the management of their storage capacities to reduce the flow in the Nechako and Fraser Rivers. The inflow that was regulated in the Nechako system amounted to about 30,000 cfs, while in the Bridge River system the inflow totalled about 10,000 cfs. The control of this total inflow of about 40,000 cfs had the effect of reducing the level of the Fraser River at Mission by about 0.8 foot at the maximum stage. The control of inflow to the Stave River system had an additional but smaller effect in reducing the level of the Fraser River at Mission at the maximum stage.

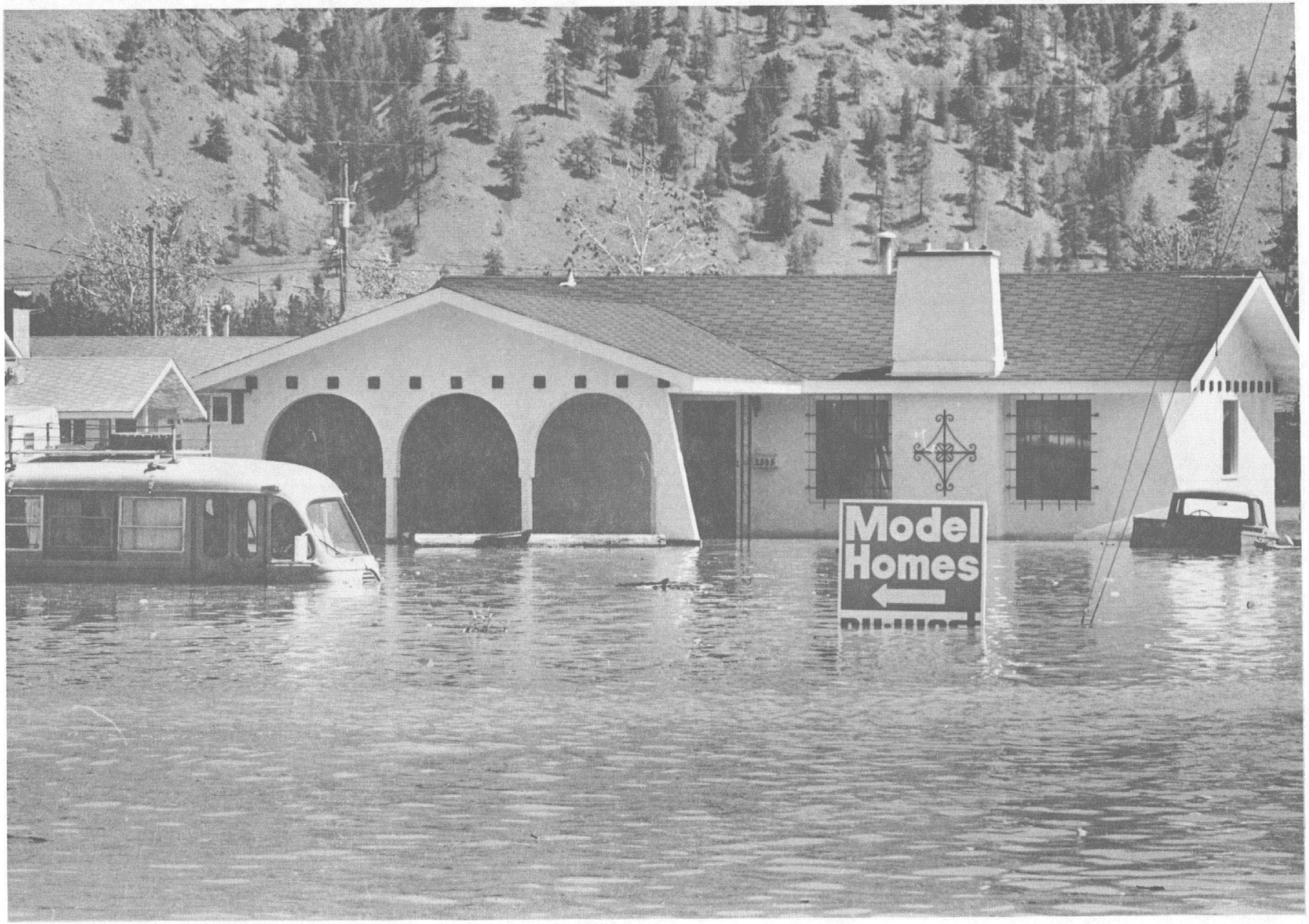
Storage on the Peace River (Williston Lake) was appreciable. It is estimated that the Peace River at Peace River would have been seven feet higher than what actually occurred if this storage had not been provided.

Fraser River at South Fort George

Prince George with Nechako River and Island Cache in foreground



South Thompson River at Kamloops



Oak Hills Subdivision north of Kamloops

Fraser River - Whonnock Mill at Upper Centre

SNOWPACK CONDITIONS IN BRITISH COLUMBIA

SNOWPACK CONDITIONS
IN
BRITISH COLUMBIA

Feb. 1, 1972

An above to well above average February 1st snowpack lies on most British Columbia watersheds with this heavier than usual accumulation of snow applicable to all elevation ranges. The only exception to this trend was the average February 1st snowpack recorded at snow courses on the Nechako Reservoir Basin. Elsewhere on Columbia, Fraser, Lower Coastal and Vancouver Island rainages, February 1st snowpacks are either above or well above average.

Approximately two-thirds of the winter's maximum snowpack is usually on the ground by February 1st. Assuming a normal precipitation and temperature pattern up to and during the runoff period, it is anticipated that British Columbia's snow-fed rivers will record above average volume streamflow this coming spring and summer.

GENERAL

During the snow accumulation period, November through January, valley precipitation was as follows: November - above normal along the Coast and generally below normal at interior stations; December - above to well above normal in southern interior regions, close to normal along the Coast and below normal at stations in the northern half of the Province; January - above to well above normal in most regions in the southern half of British Columbia and below normal in the nothern half. Exceptions to this January pattern were the below normal precipitation measured at Vancouver Island stations and the close to normal precipitation at Skeena River valley stations.

Accumulated totals for selected stations for the November - January period show that most regions received above normal valley precipitation. Exceptions were the close to normal catch recorded at Lower Coastal and Vancouver Island stations and the slightly below normal catch at Northern British Columbia stations.

Interior valley mean monthly temperatures were 2 to 4 degrees above normal for November but well below normal for both December and January with several stations recording deficits of 10 or more degrees. The persistence of this cold air is reflected in a two month period of continuous freezing conditions at valley floor measuring stations. These sub-freezing temperatures combined with the above normal December and January precipitation have resulted in higher than usual snow accumulation at valley locations.

For the period October through January, mean monthly flows have been consistently below average at Columbia, Kootenay, Fraser and Peace River stream and reservoir gauging stations.

SNOWPACK CONDITIONS IN BRITISH COLUMBIA

Mar. 1, 1972

The British Columbia March 1st snow survey shows that in all regions, and all elevation ranges, mountain snowpacks are above to well above average. The well above average snowpacks are especially applicable to the Lower Coast and southern interior regions where many snow courses have recorded the highest March 1st measurements in their back period of measurements.

Volume streamflow during the coming spring and summer runoff period is expected to be above to well above average for virtually all snow-fed rivers in the Province. Although the larger than usual mountain snowpacks give cause for concern as to the expected maximum freshet stages of interior rivers, it should be noted that in addition to mountain snow, the maximum stages also depend on the melt and precipitation patterns of the next few months. For this reason it is too early to anticipate maximum river stages and flood potential.

GENERAL

Preliminary data supplied by the Atmospheric Environment Service show that above to well above normal valley precipitation fell during February in most regions of the Province. Exceptions were the South Thompson, Okanagan and lower Columbia regions where valley stations have reported normal to below normal February precipitation. In the southern half of the Province most of the precipitation can be attributed to a series of heavy water-producing storms which passed eastward through British Columbia near the end of the month.

February's mean monthly temperatures vary from normal at southern coastal and southern interior stations close to the international border to 3 to 5 degrees below normal in the central interior to as much as 10 degrees below normal in the extreme northern regions of the Province.

The February mean flow as observed at river gauging stations has been below normal on the Fraser, Thompson, Columbia, Kootenay and Peace Rivers.

WATER SUPPLY OUTLOOK
AND
SNOWPACK CONDITIONS
IN
BRITISH COLUMBIA

APRIL 1, 1972

The April 1, 1972 snow survey confirms the existence of a heavy snowpack at higher elevations on watersheds in the southern half of the Province. In particular this applies to the Kootenay, Columbia, Okanagan, Similkameen, Thompson, Fraser and Lower Coastal regions. Maximum or near maximum April 1 water equivalents have been recorded at many snow courses. At lower elevations warm weather and resultant melt during March has decreased the previously reported high lower level runoff potential.

Spring and summer volume runoff is expected to reflect the heavy accumulation of snow with volumes forecasted comparable to the previous maximums recorded in the period 1953 to date.

Higher than usual freshet peak stages should be expected on British Columbia's snowmelt rivers. However, the determining factor as to the ultimate stage will be the weather, in particular the melt pattern during April, May and June.

GENERAL

Double the normal quota of March precipitation fell at most valley locations in British Columbia with a significant proportion of this valley precipitation falling as rain. At higher elevations this above normal March precipitation increased the water equivalent of the already above to well above average snowpack of a month ago.

Valley temperatures were below normal in the first and final weeks of March. However, warm air blanketed the Province for most of the second and third weeks resulting in freezing levels close to or above the 5,000 foot level. During this warm spell considerable low elevation melt occurred resulting in depletion of the lower level snowpack and a subsequent increase in streamflow.

Preliminary streamflow data supplied by the Water Survey of Canada shows that March flow was excessive. As a percentage of the 1953-67 average, March streamflow was as follows: Fraser at Hope - 160%, Thompson at Spences Bridge - 131%, Inflow to Arrow Lakes - 154%, Inflow to Kootenay Lake - 266%, and Inflow to Upper Campbell Lake - 250%. Further north on the Peace River drainage the March inflow to Williston Reservoir was 102% of its 1953-67 average. Based on limited weather data, this region appears to have experienced below normal temperatures during March.

WATER SUPPLY OUTLOOK
AND
SNOWPACK CONDITIONS
IN
BRITISH COLUMBIA

MAY 1, 1972

The May 1st snow survey shows that near maximum or maximum of record snowpacks lie on the Fraser, Thompson, Nechako, Columbia, Kootenay, Okanagan, Similkameen, Kettle, Lower Coastal and Vancouver Island watersheds. As a result of this heavy accumulation of snow, volume streamflow is expected to be near record or record high for the May through July or May through September forecast periods.

The timing and magnitude of peak stages on the above rivers and their tributaries will depend on the melt pattern of May and June. A normal weather pattern with short periods of alternate cooling and warming would result in high but not excessive peaks while a period of sustained warm weather would force rivers to flood stages.

Because of the heavy May 1st snow cover, the lateness of spring and the increasing probability of a prolonged warm spell, a flood potential exists on those interior rivers which lack adequate storage. In particular, this potential applies to the Okanagan, Similkameen, Kettle, Thompson, Fraser, Upper Kootenay and Upper Columbia rivers.

GENERAL

Preliminary data supplied by the Federal Atmospheric Environment Service show that below to well below normal April temperatures occurred at British Columbia valley meteorological stations. Coastal stations reported mean monthly temperature deficiencies of 3 to 4 degress, and interior stations anomalies of 3 to 6 degrees. During April daily freezing levels were consistently below the 5,000 foot level.

April precipitation was above to well above normal at Vancouver Island, North Coastal, and southern interior valley stations, and generally below to slightly below normal at central and northern interior stations. At snow course elevations, most of this precipitation fell in the form of snow.

As a percentage of their 1953-67 averages, selected monthly mean streamflow for April was as follows: Fraser at Hope - 119%, Thompson at Spences Bridge - 128%, Inflow to Arrow Lake - 95%, Inflow to Kootenay Lake - 145%, and Inflow to Williston Lake - 95%.

SNOWPACK
AND
RUNOFF CONDITIONS
IN
BRITISH COLUMBIA

MAY 15, 1972

The May 15th British Columbia snow survey shows that since May 1st, snowpack depletion was generally heavy at the lower elevations and average at middle and high watershed elevations. The snowpack is maximum or near maximum for May 15th indicating that a large volume of water still lies in the form of snow on British Columbia watersheds. Just when and how this snow becomes streamflow will depend on future weather.

The weather of the next few weeks will determine this year's peak stages on interior rivers. A sustained spell of warm weather or above normal rainfall during this period would push the already high stages to flood levels. On the other hand, cool weather or short periods of alternate cooling and warming would result in high, but not excessive peaks.

A flood potential continues for most interior rivers with this especially applicable to the Okanagan, Similkameen, Kettle, Thompson, Fraser and tributaries of the Kootenay and Columbia rivers.

GENERAL

The weather of the past two weeks has been slightly cooler and definitely drier than normal. The coolest temperatures were recorded in the first week and the warmest in the latter part of the second week. This warm spell caused a rapid rise in river stages resulting in higher than usual stages, but below the average of previous annual peaks.

SNOWPACK
AND
RUNOFF CONDITIONS
IN
BRITISH COLUMBIA

June 1, 1972

The warm air that blanketed the province in the last week of May caused a rapid melt of the extremely heavy snowccver on interior watersheds and resulted in a marked increase of tributary and major river streamflow. During this warm spell, southern interior rivers such as the Similkameen, Okanagan and Kettle rose to flows either just below or just above those recorded in the 1948 flood year with flooding conditions reported in the Similkameen and southern Okanagan regions. At most main stem Fraser, Thompson, Columbia, Kootenay and Skeena stream gauging stations, June 1st river flows are just below their previous maximum peaks. At the Hope gauging station, however, the June 1st flow is above average but still well below its 1948 maximum.

Although river stages are still rising, the expectation is that the cool Pacific air which entered the province on June 1st will provide a braking action and downward trend to these stages. Information received from the Federal Atmospheric Environment Service indicates freezing levels in this cool air are, on June 1st, at 3000 to 4000 feet in the Prince Rupert-Terrace region, 5000 feet at Prince George and 6000 to 7000 feet in the southern interior region. Persistence of this cooler weather would progressively decrease the high-water potential of the province's snow-fed rivers.

The June 1st snow survey shows that heavy snowpacks still remain on river basins in the southern half of British Columbia. Just when and how this snow becomes streamflow will depend on future weather. As stated previously, a prolonged period of cool weather or short periods of alternate cooling and warming would prevent further flooding while a sustained period of warming would push most rivers to high and in some cases flood levels.

Because of heavy inflow and a limited outflow capacity, Okanagan Lake is expected to exceed its upper operating level. For a more detailed assessment of each river basin, the reader should refer to the body of this bulletin.

A further bulletin will be issued June 15th.

GENERAL

Meteorological station temperatures were below normal in the first half of May and above normal in the second half resulting in mean monthly temperatures not too far removed from normal.

In most regions of British Columbia, May precipitation was either below or well below normal. One exception was the Okanagan-Similkamenn regions where all valley meteorological stations have recorded above normal May precipitation. Most of the precipitation fell in the first half of the month.

SNOWPACK
AND
RUNOFF CONDITIONS
IN
BRITISH COLUMBIA

June 15, 1972

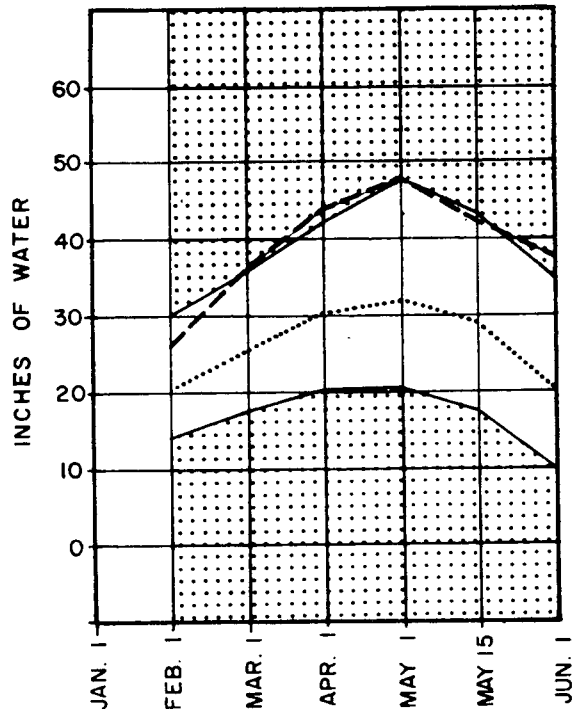
Because of the heavy mountain snowpacks measured June 1st and the possibility of rapid melt and high flows on interior rivers, a special June 15th snow survey was completed at higher elevation sampling sites. In the past, only the heavy snowpack years of 1964 and 1967 have a back record of June 15th snow course measurements. Comparison with the current year shows that in most cases this year's June 15th measurements are either similar or lighter than those recorded in 1964 and 1967. This year's special June 15th snow survey shows that interior mountain snowpacks have experienced rapid melt since the June 1st snow survey.

Heavy and widely distributed rainfall during the period June 10 to 12 combined with the already high snowmelt flows pushed river levels to flood stages. New maximum or near maximum peak flows were recorded at Columbia, Thompson and upper and middle Fraser stream gauging stations with these peaks either surpassing or just below those of the 1948 flood year. However, at the Hope stream gauging station on the Fraser River, this year's peak was well below that recorded in 1948. Fraser River peaks would have been much higher but for the storage of water in the Nechako Reservoir prior to and during the crucial high water period. It should also be pointed out that the operation of Columbia River Treaty Dams alleviated flooding on the lower Kootenay and lower Columbia regions. Flows are now receding and with normal weather conditions this recession is expected to continue on most rivers. However, on the Columbia, a high-elevation watershed, a sustained hot spell could cause rapid melt of the heavy snowpack still lying on this basin and could once again push feeder stream and main stem flows to high stages but not as high as those recorded earlier.

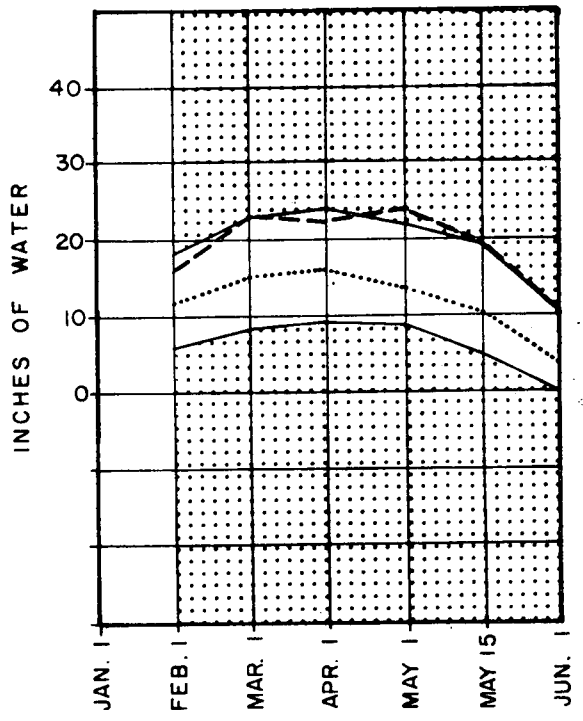
Okanagan Lake is currently six-tenths of a foot above its upper operating limit and is expected to continue its rise at a gradually decreasing rate for the next week until inflow balances outflow. The present rate of rise approximates three to four hundredths of a foot per day which suggests a peak level close to one foot above the upper operating limit. This prediction is made assuming normal weather conditions without excessive rainfall. With the exception of light snow cover in its highest elevation range, the Okanagan River basin is free of snow.

SELECTED SNOW COURSES
WATER EQUIVALENTS

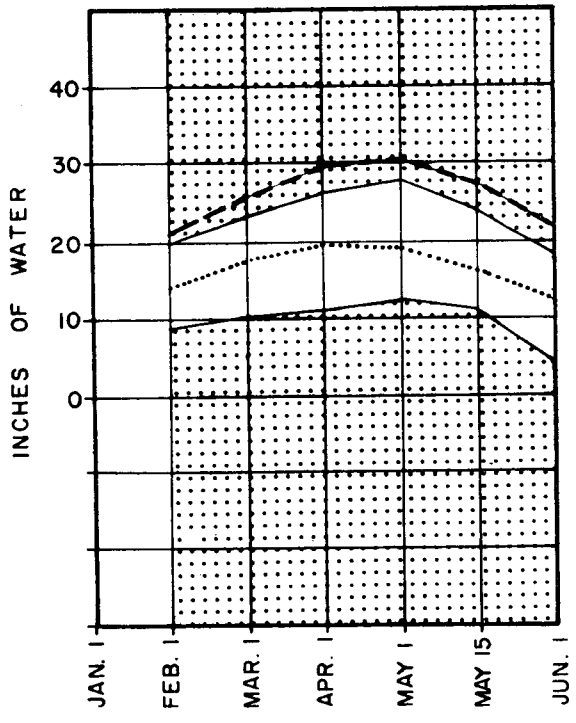
COLUMBIA



KOOTENAY



OKANAGAN

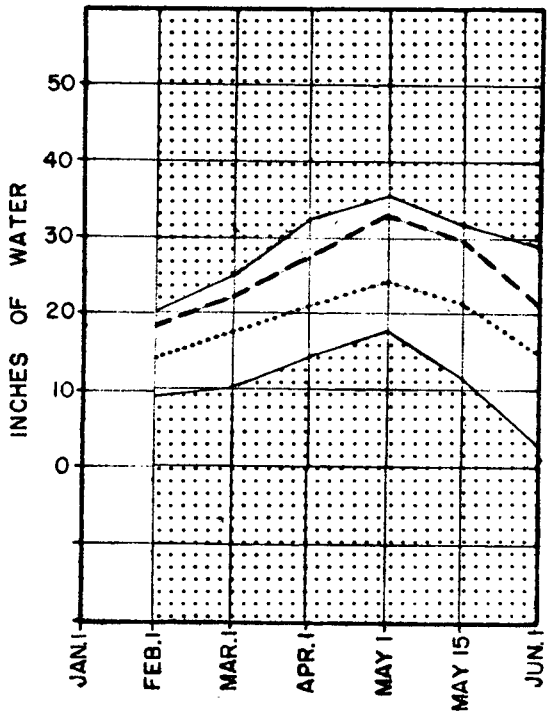


MINIMUM ——— MAXIMUM ::::::: AVERAGE ····· 1972 — — — —

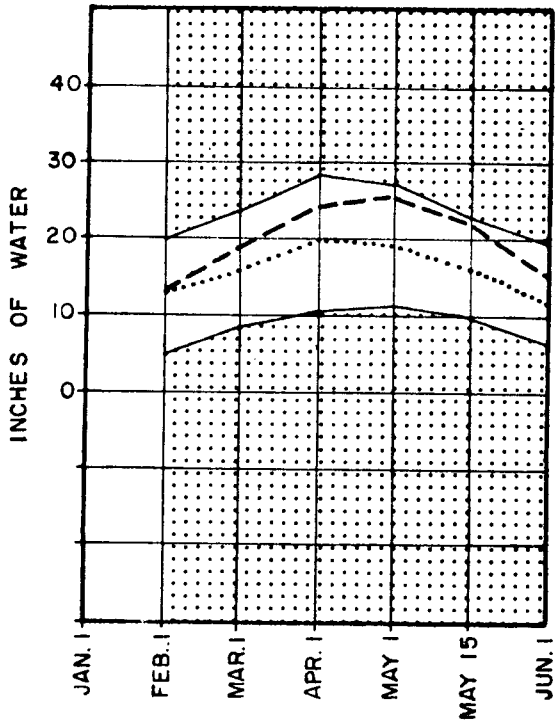
PLATE 1

SELECTED SNOW COURSES
WATER EQUIVALENTS

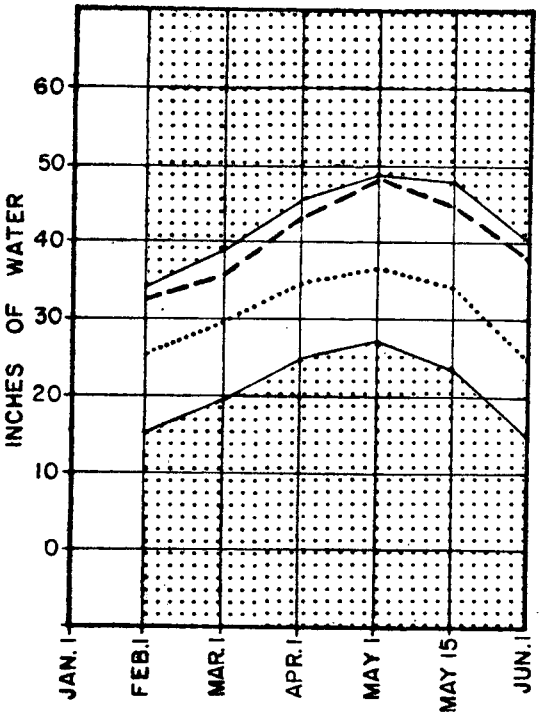
UPPER FRASER



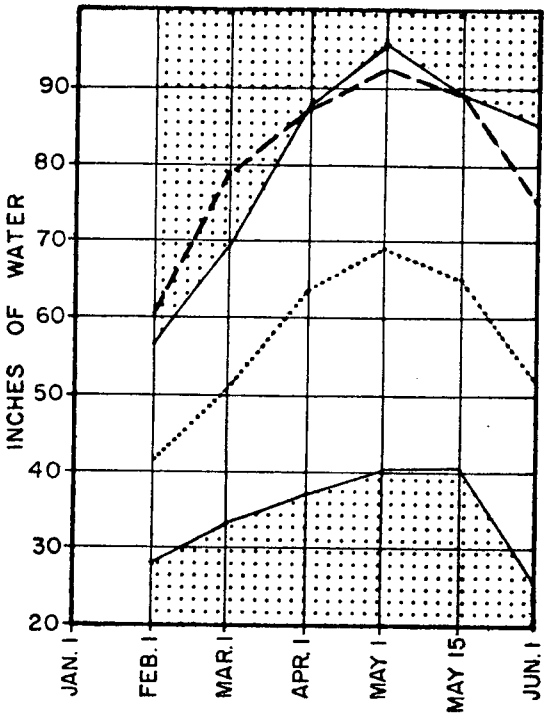
LOWER AND MIDDLE FRASER



NORTH AND SOUTH THOMPSON



COASTAL



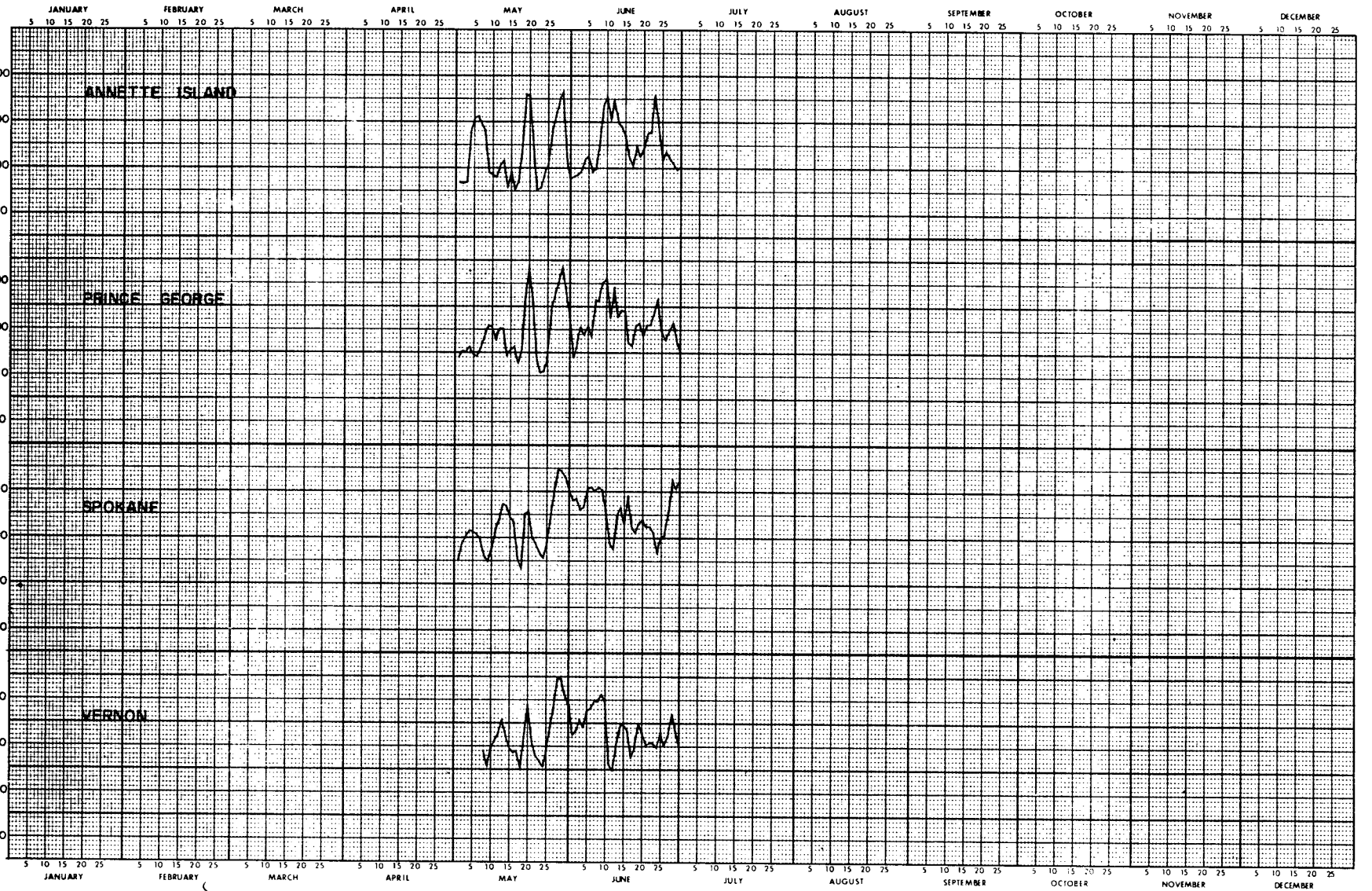
MAXIMUM ⋯⋯ MINIMUM ⋯⋯ AVERAGE ····· 1972 – – – –

PLATE 2

METEOROLOGICAL DATA

HYDROGRAPH FOR **DAILY MEAN FREEZING LEVELS**

for year ending December 31, 19 72



ELEVATION IN FEET

Plotted by R.K. Moore Checked by A.L. Approved by Date OCT 25, 1972

PLATE 3

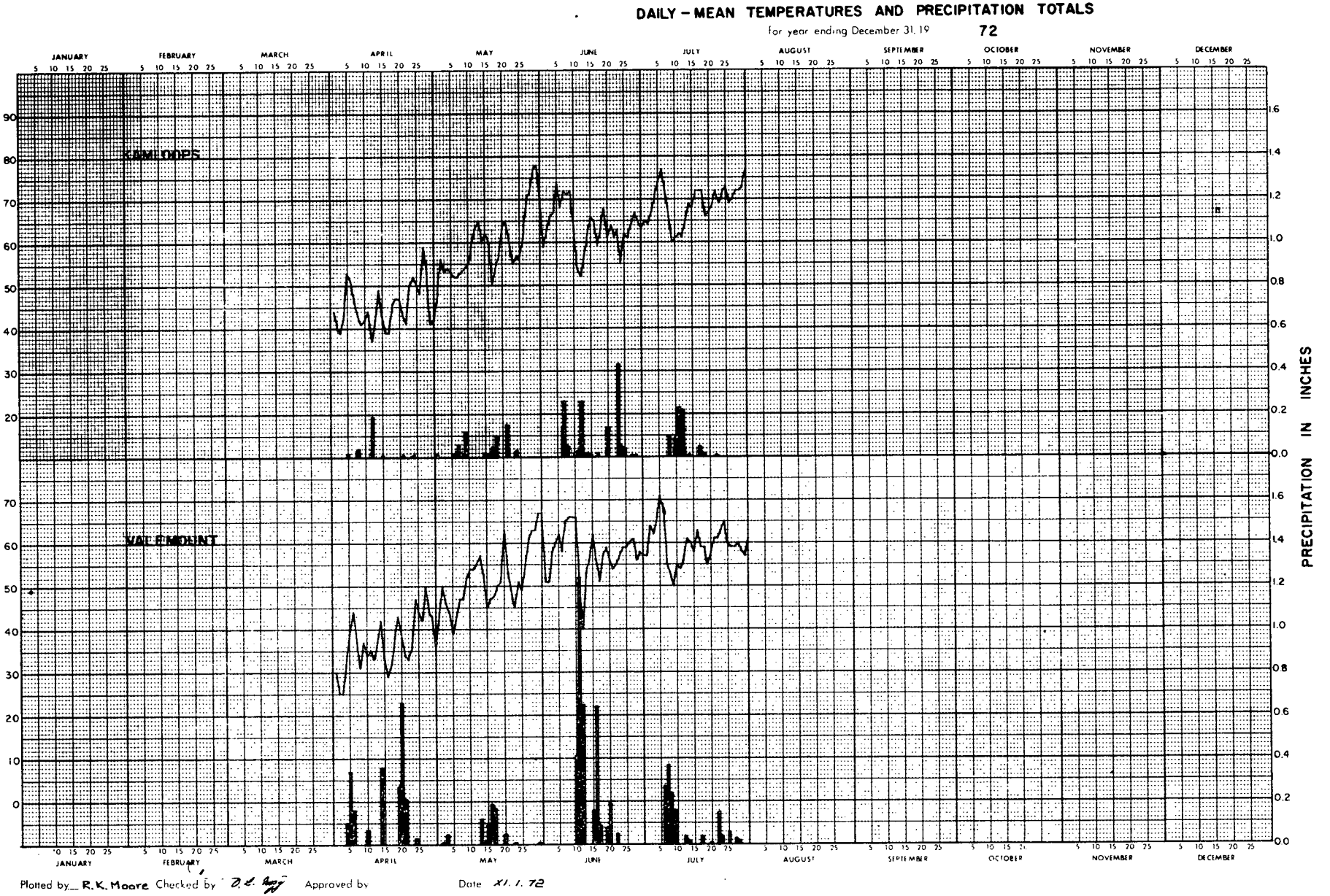

DAILY – MEAN TEMPERATURES AND PRECIPITATION TOTALS
for year ending December 31, 19 72
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
KAMLOOPS
VALEMOUNT
TEMPERATURE IN DEGREES FAHRENHEIT
PRECIPITATION IN INCHES
Plotted by R.K. Moore Checked by D.E. Hay Approved by Date XI. 1. 72

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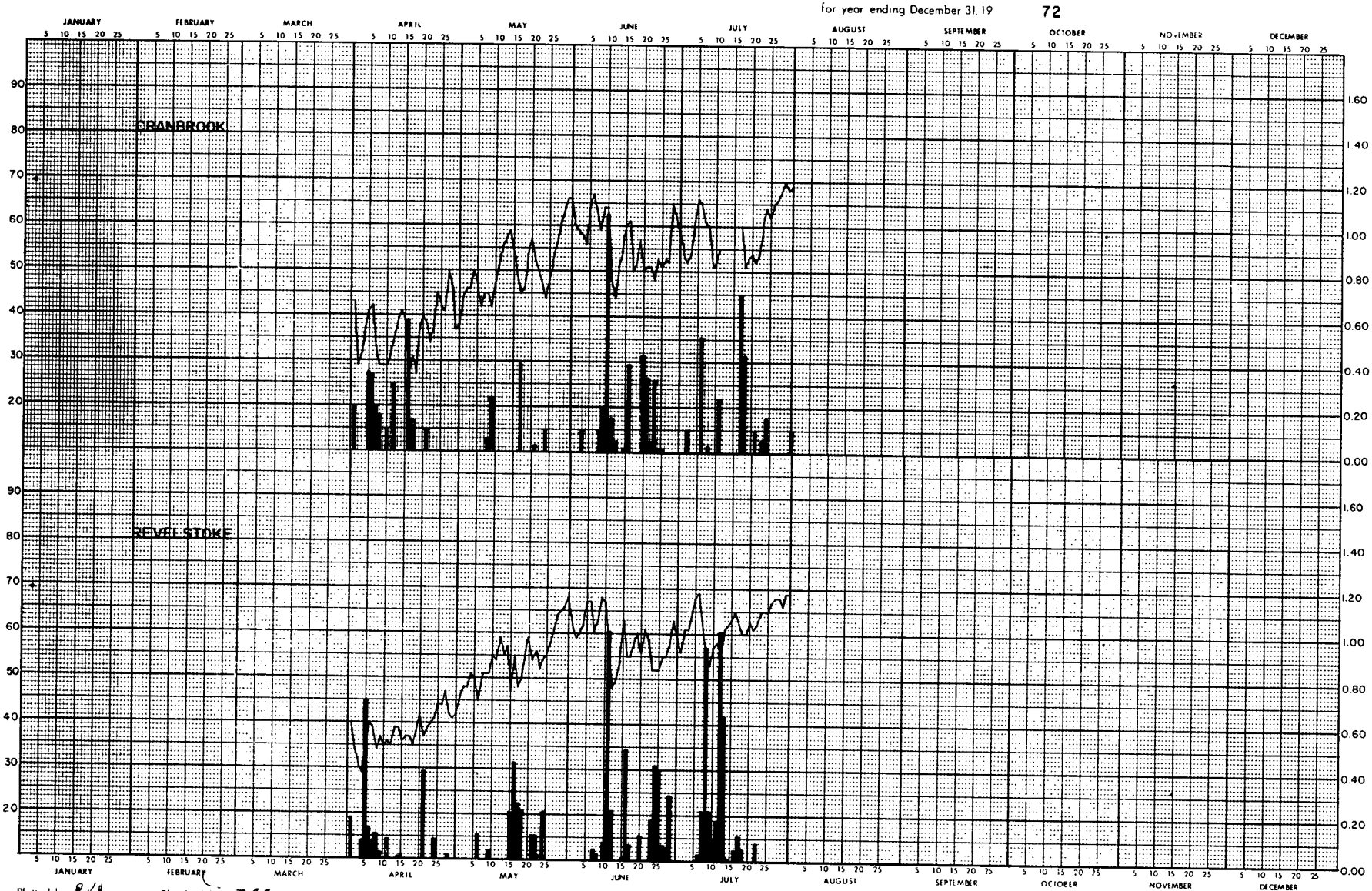
PLATE 4

DAILY - MEAN TEMPERATURES AND PRECIPITATION TOTALS

for year ending December 31, 19 72



Plotted by R. L. Hoar Checked by E. L. Ivey Approved by Date OCT 25, 1972

PLATE 5

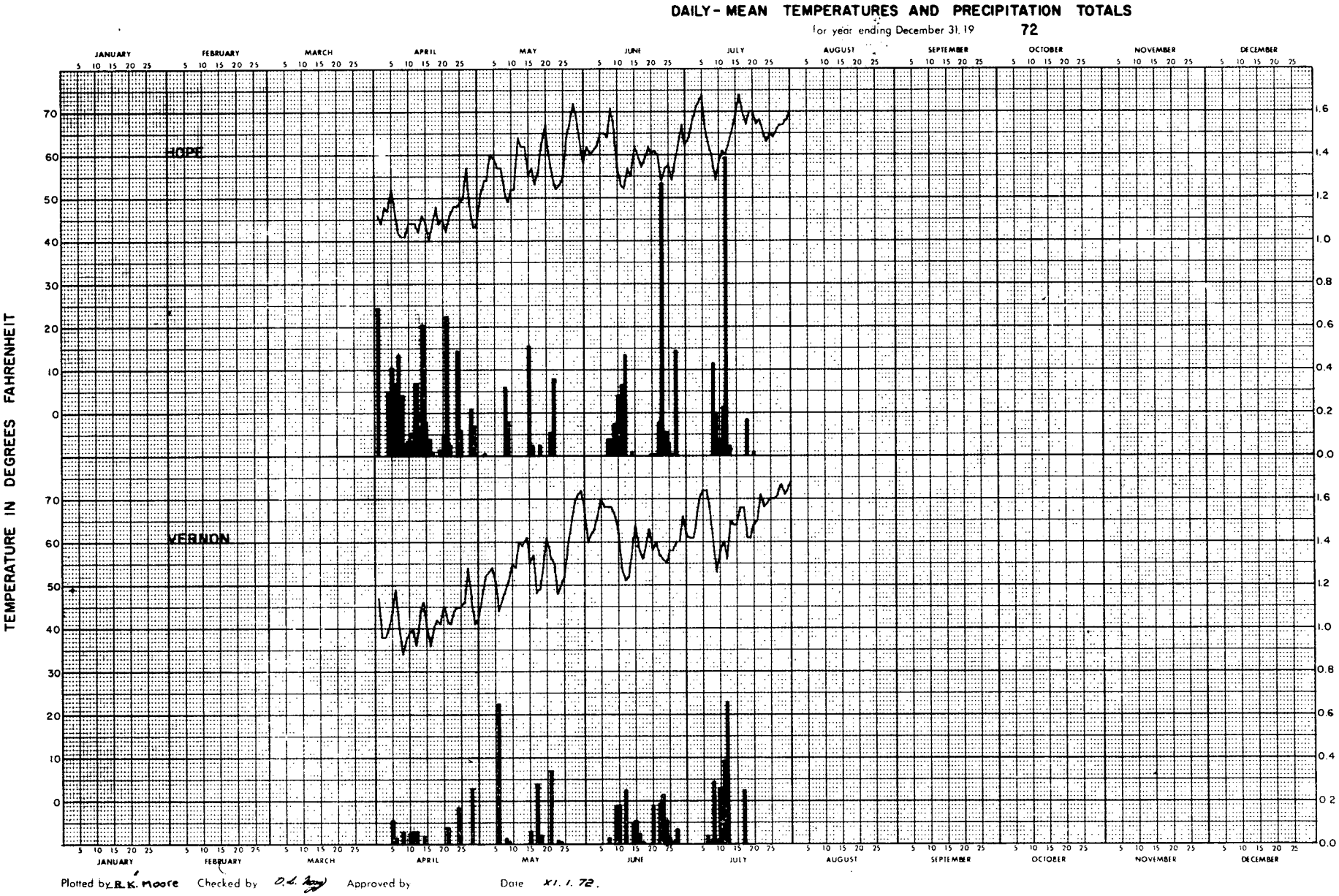
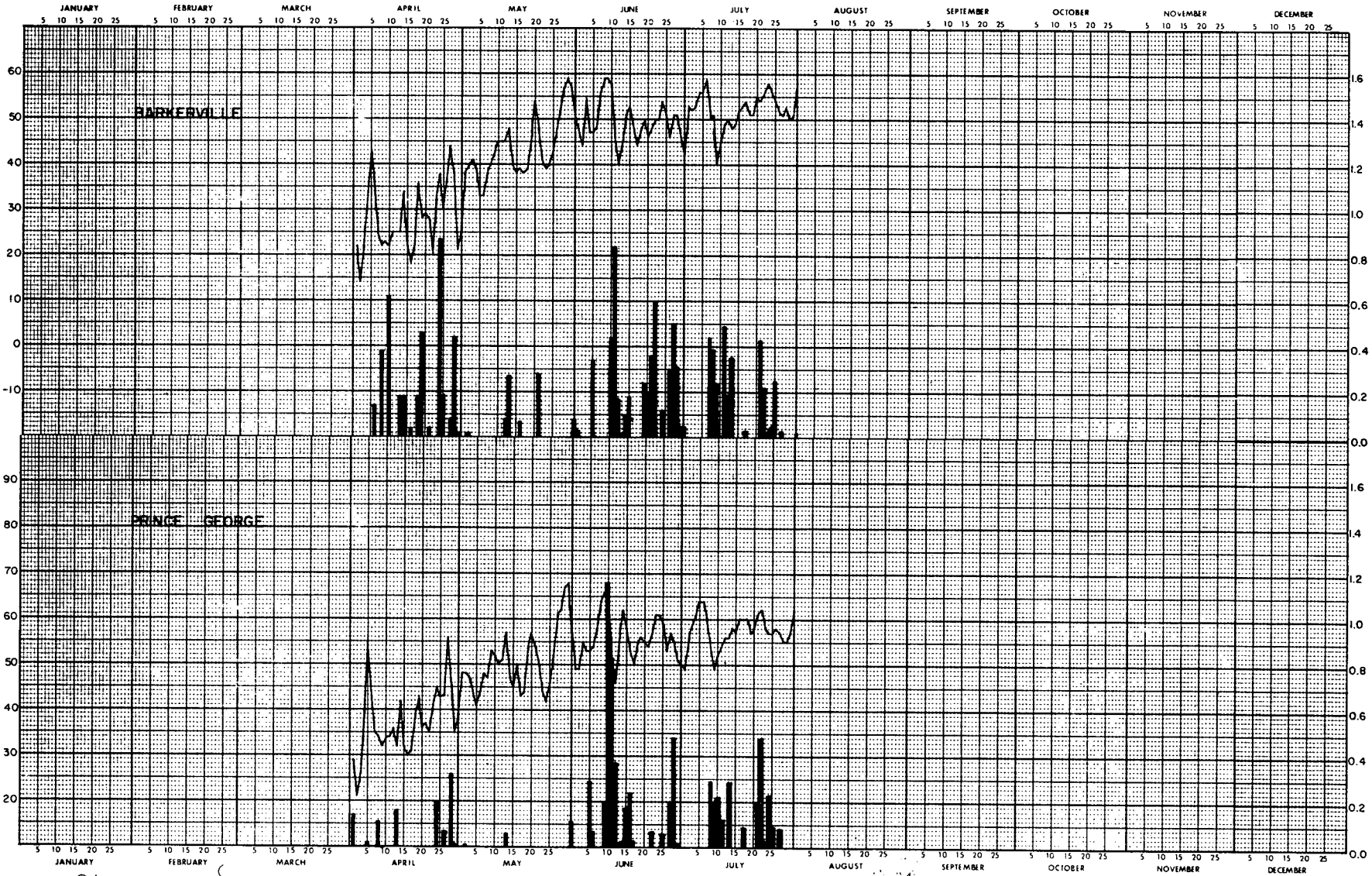

DAILY - MEAN TEMPERATURES AND PRECIPITATION TOTALS
for year ending December 31, 19 72
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
HOPE
VERNON
TEMPERATURE IN DEGREES FAHRENHEIT
PRECIPITATION IN INCHES
Plotted by R.K. Moore
Checked by O.L. Avery
Approved by
Date XI. 1. 72.

PLATE 6

DAILY - MEAN TEMPERATURES AND PRECIPITATION TOTALS

for year ending December 31, 19 72



TEMPERATURE IN DEGREES FAHRENHEIT

PRECIPITATION IN INCHES

Plotted by R.L. Rowe. Checked by D.L. Hagg Approved by

Date OCT 25, 1972

PLATE 7

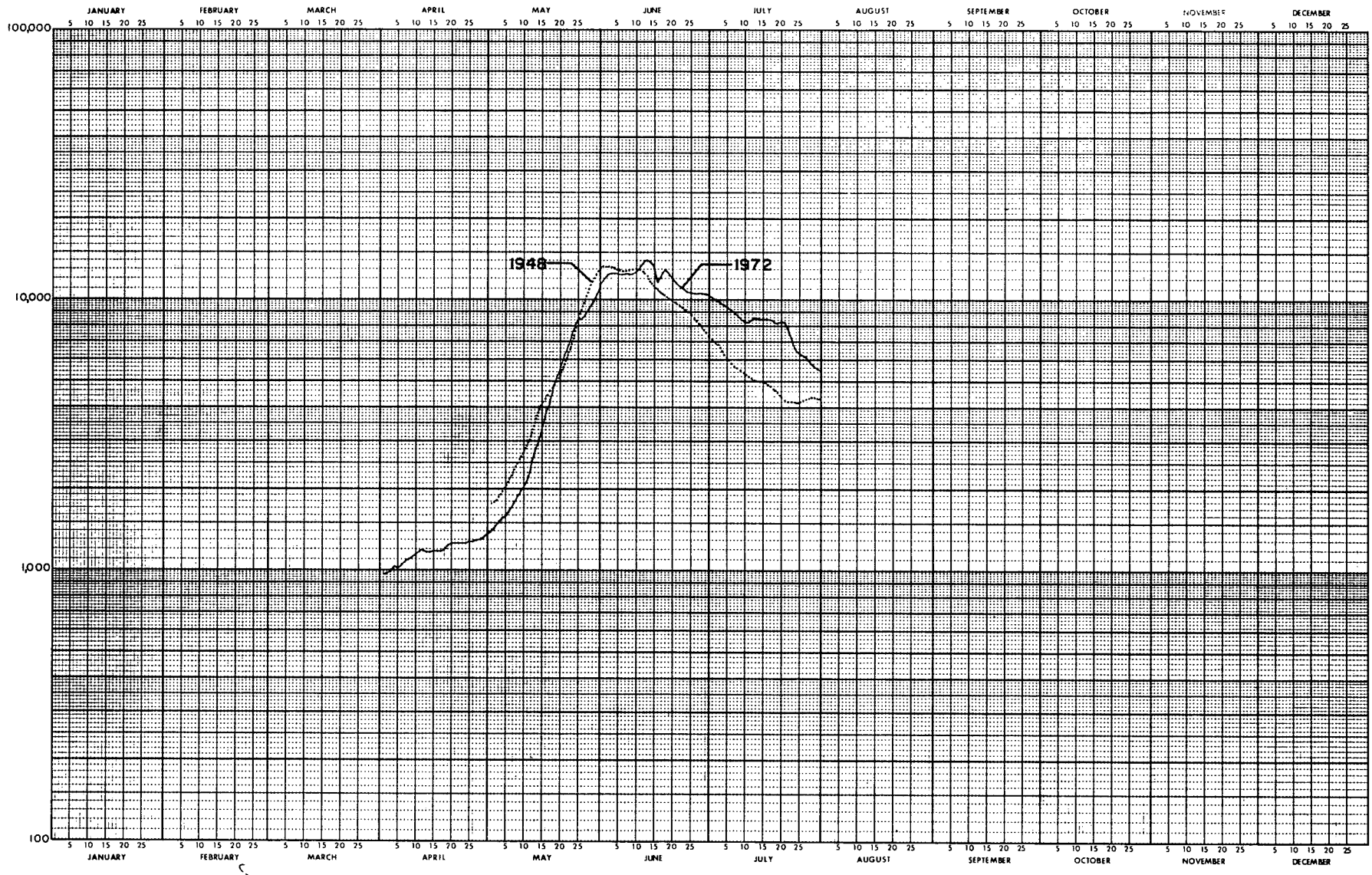
HYDROMETRIC DATA

Plate

Hydrograph of Observed Daily Mean Discharge or Water Levels

HYDROGRAPH FOR **ADAMS RIVER NEAR SQUILAX** Station No **08LD001**

R187 A
9 671

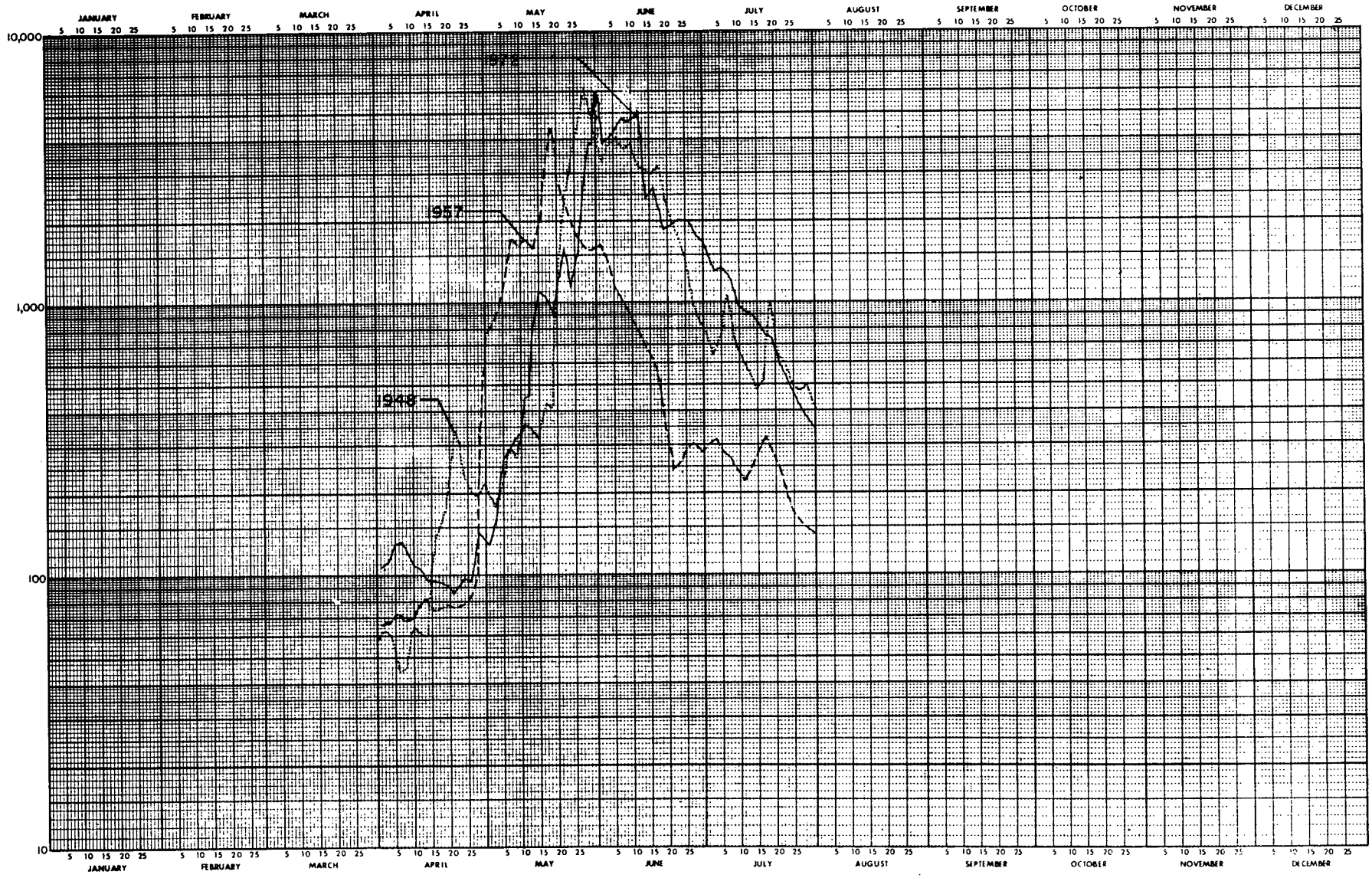


Plotted by R. K. MOORE Checked by C. L. Hogg Approved by Date Oct 26, 1972

PLATE 8

35

HYDROGRAPH FOR ASHNOLA RIVER NEAR KEREMEOS Station No. 08NL004 N187A (2-67)



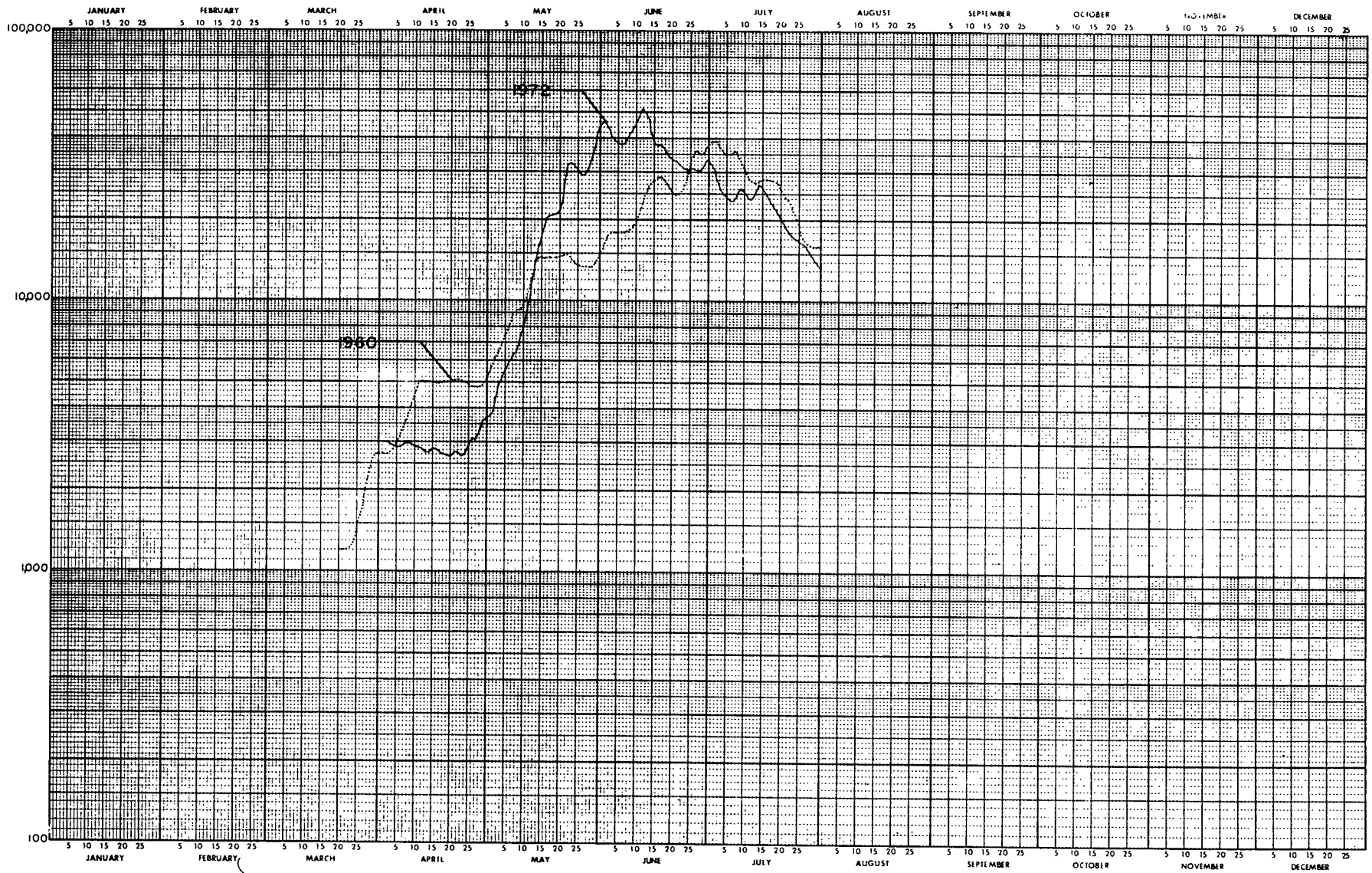
DISCHARGE IN CUBIC FEET PER SECOND

Plotted by R.K. Moore Checked by [illegible] Approved by [illegible] Date. Oct 26, 1972

PLATE 9

HYDROGRAPH FOR CLEARWATER RIVER NR. CLEARWATER STA. Station No 08LA 001

R18/A (2-67)

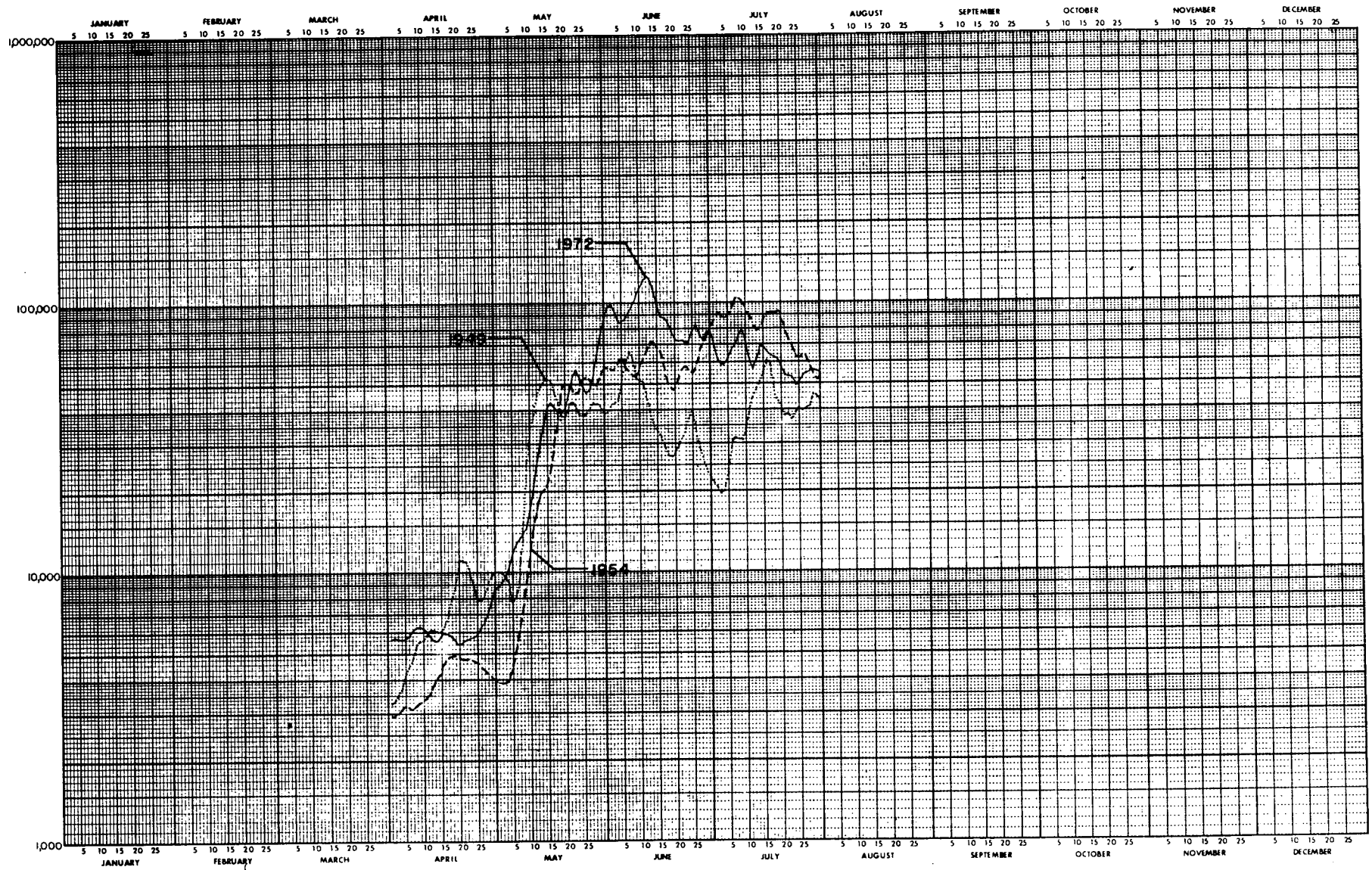


Plotted by R.K. Moore Checked by D.F. Approved by _____ Date Oct 26 1972

PLATE 10

HYDROGRAPH FOR COLUMBIA RIVER ABOVE NAGLE CREEK Station No. 08ND007

H187A (2-67)

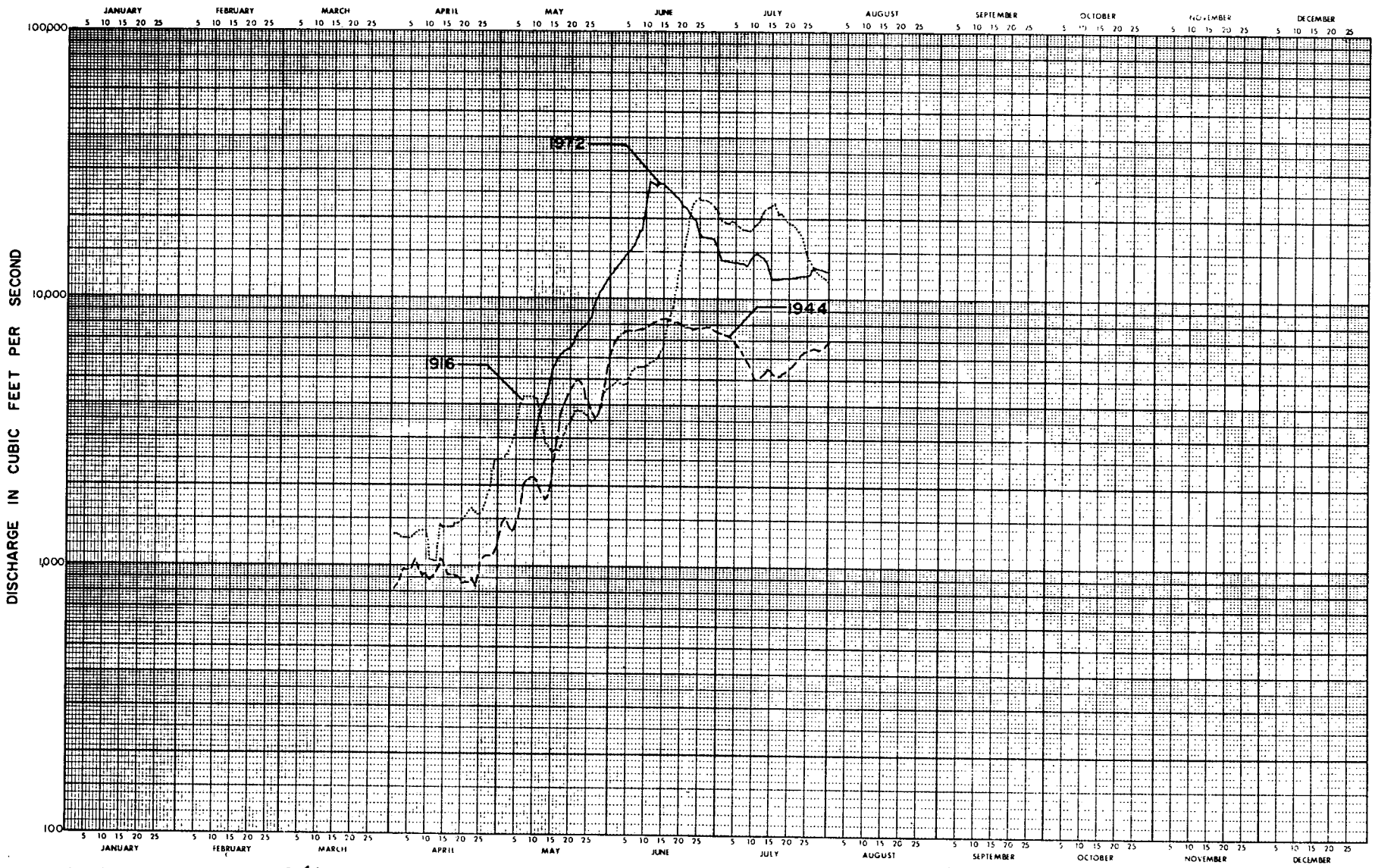


Plotted by R.K. Moore Checked by [illegible] Approved by Date Oct 26, 1972

PLATE 11

38

HYDROGRAPH FOR COLUMBIA RIVER AT NICHOLSON Station No 08NA002 R187A (2-67)



Plotted by R.K. Moore Checked by C.C. Approved by Date X. 31. 72

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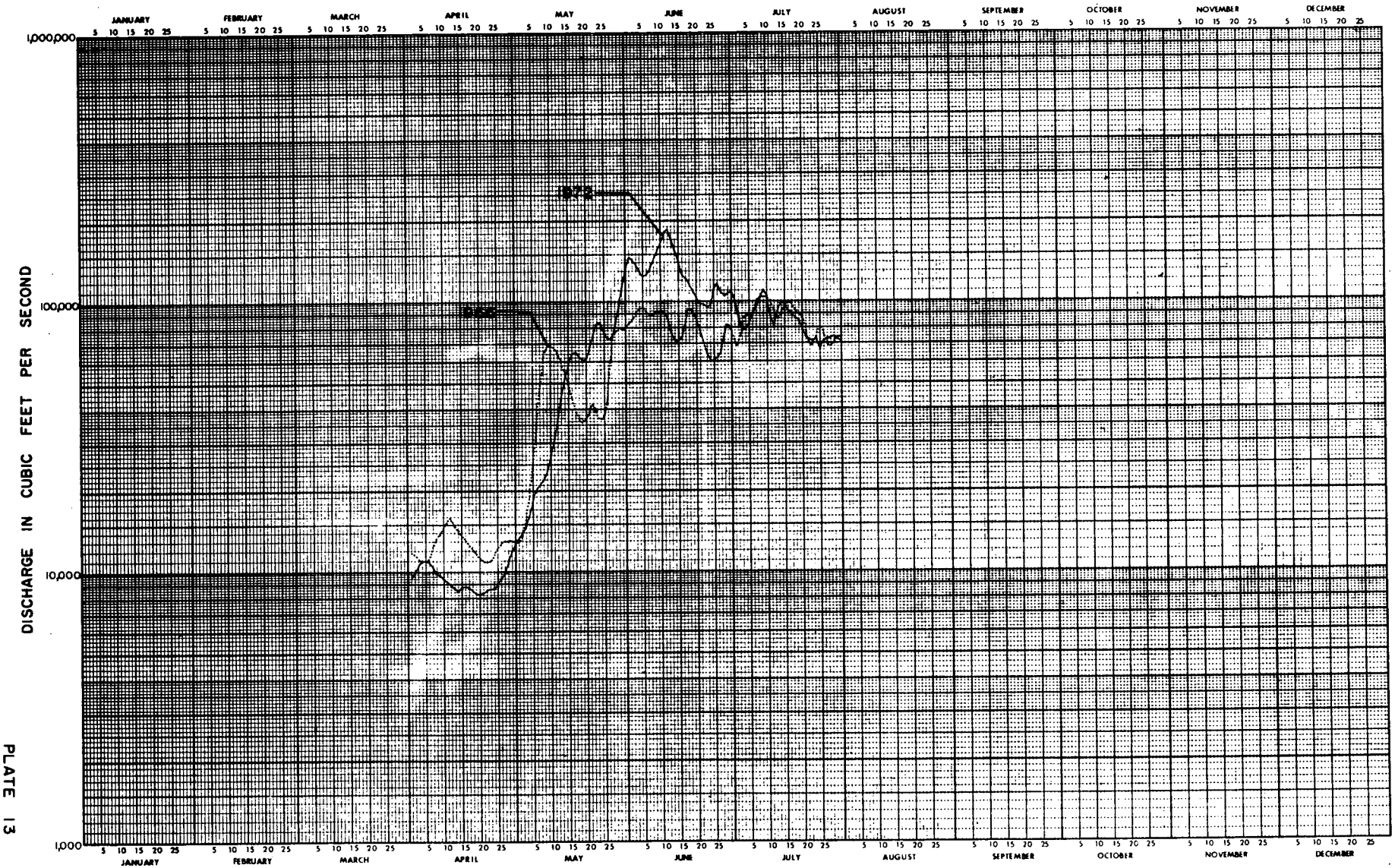
PLATE 12

HYDROGRAPH FOR COLUMBIA RIVER ABOVE STEAMBOAT RAPIDS Station No. 08ND011

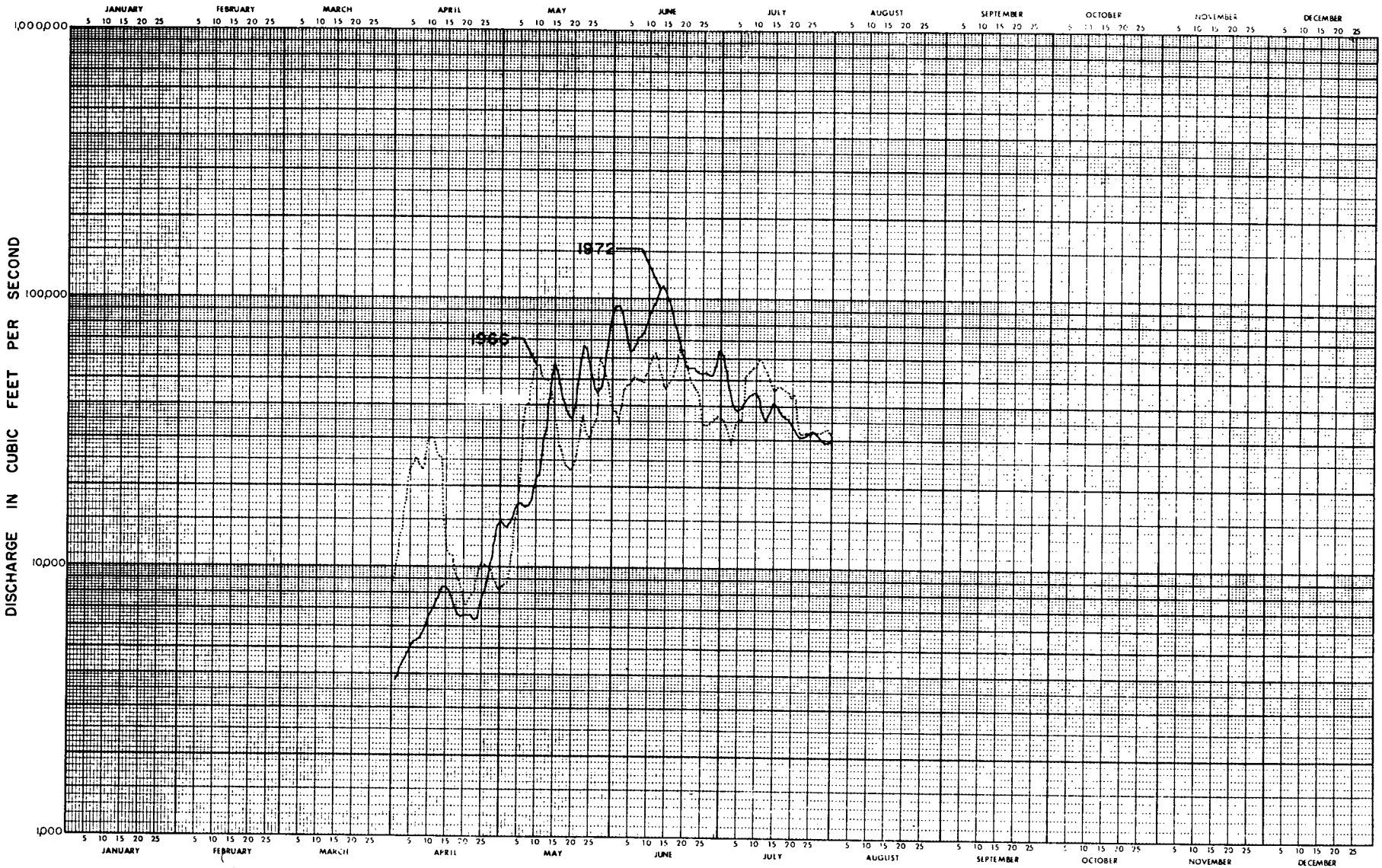
R18/A (2-67)



Plotted by R K Moore Checked by [illegible] Approved by _____ Date Oct 26, 1972

PLATE 13

HYDROGRAPH FOR FRASER RIVER AT HANSARD Station No. 08KA004 HYD 7 A (2-67)



Plotted by R.K. Moore Checked by D.L. Hay Approved by _____ Date XI. 1. 72

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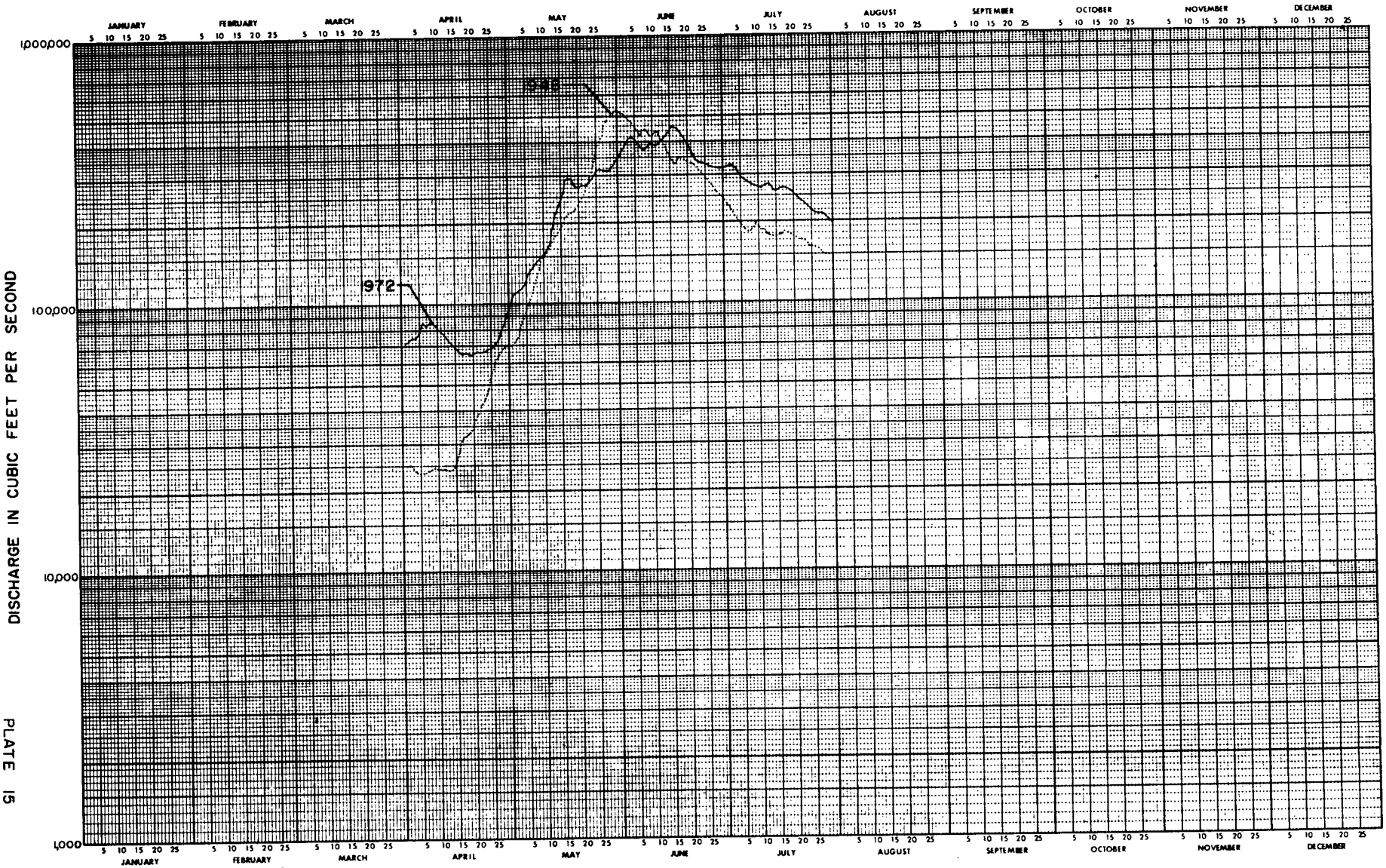
PLATE 14

HYDROGRAPH FOR FRASER RIVER AT HOPE Station No. 08MF005 R187A (2-67)

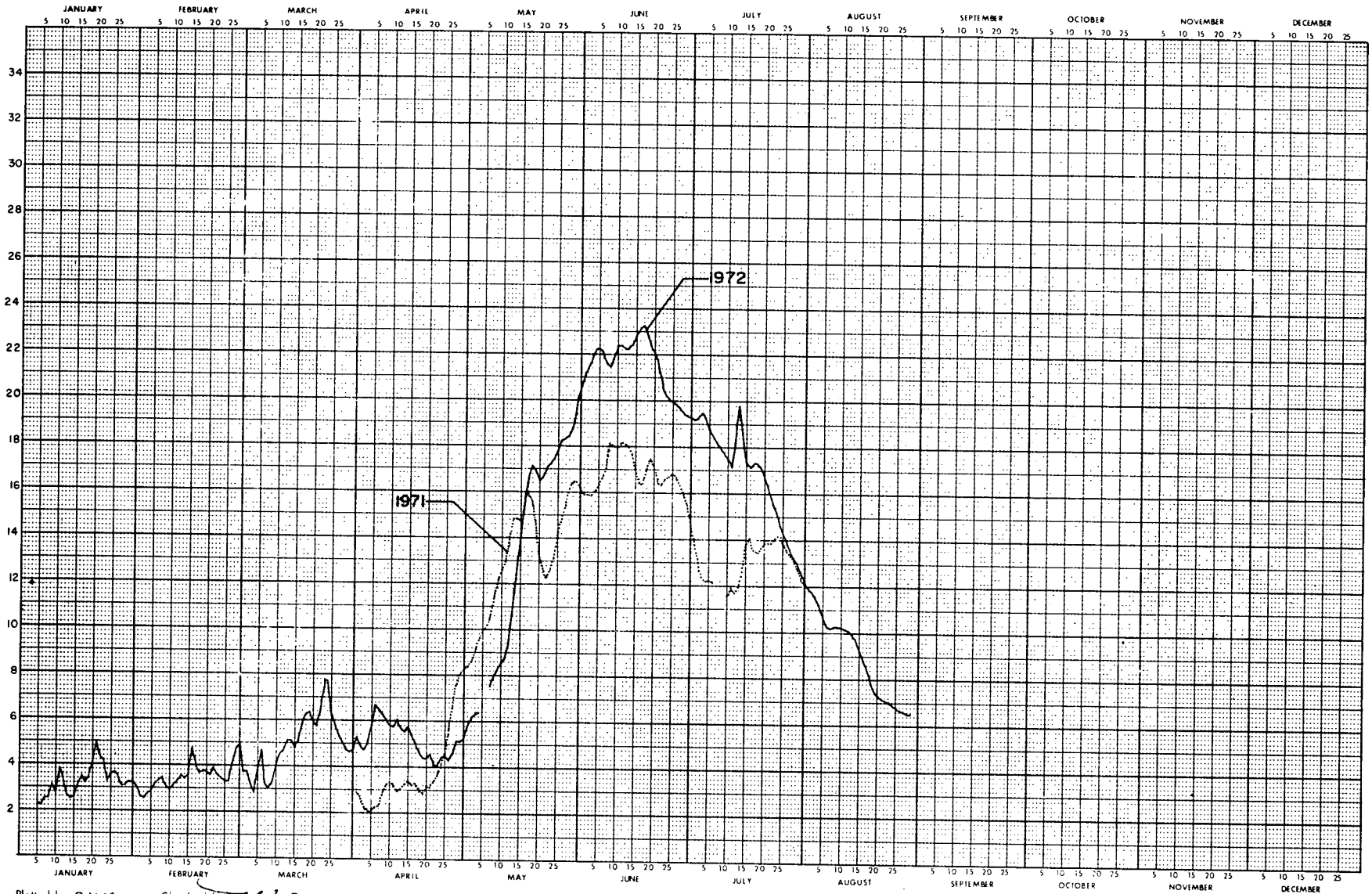


Plotted by R.K. Moore Checked by [illegible] Approved by _____ Date Oct. 26, 1972

PLATE 15

HYDROGRAPH FOR **FRASER RIVER AT MISSION** **08MH024**

39 A
(9-67)



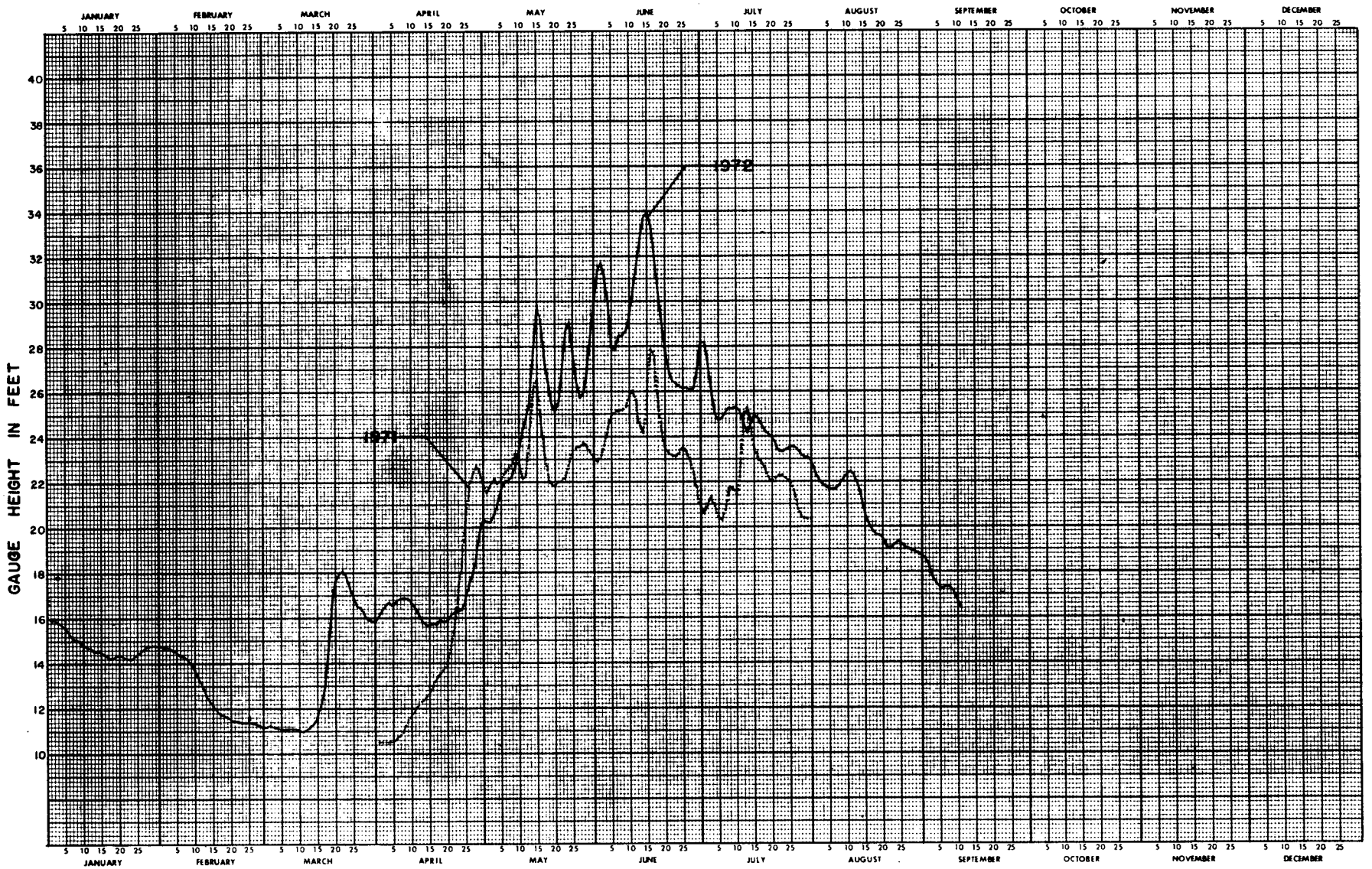
GAUGE HEIGHT IN FEET

Plotted by R. K. Moore Checked by A. L. Higg Approved by Date OCT 26, 1972

PLATE 16

HYDROGRAPH FOR **FRASER RIVER AT SOUTH FORT GEORGE** Station No. 08KE018

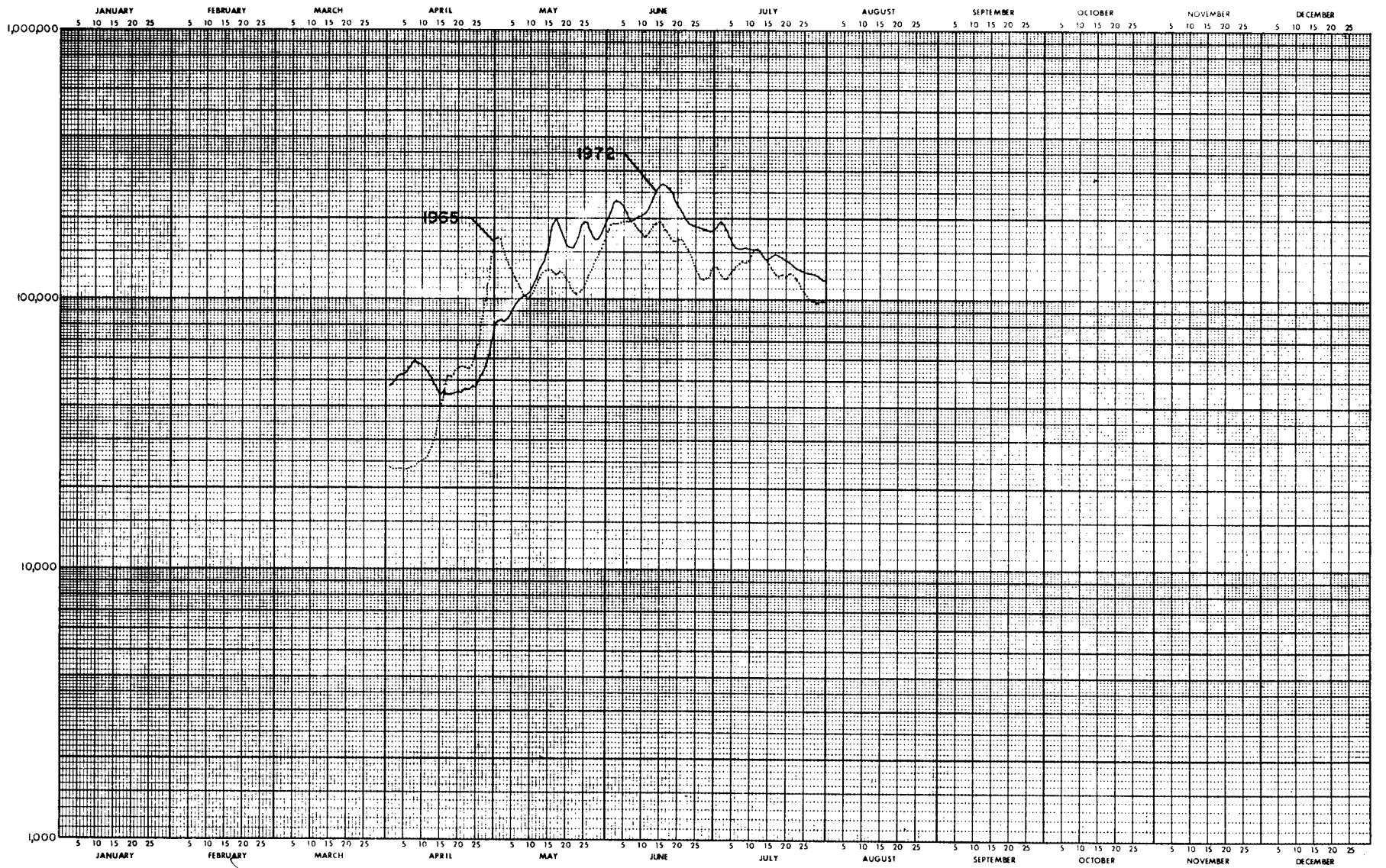
R 139 A
(9-67)



Plotted by R.K. Moore Checked by D.L. Approved by Date OCT 26, 1972

PLATE 17

HYDROGRAPH FOR FRASER RIVER ABOVE TEXAS CREEK Station No. 08MF040 R1B7A (2-67)



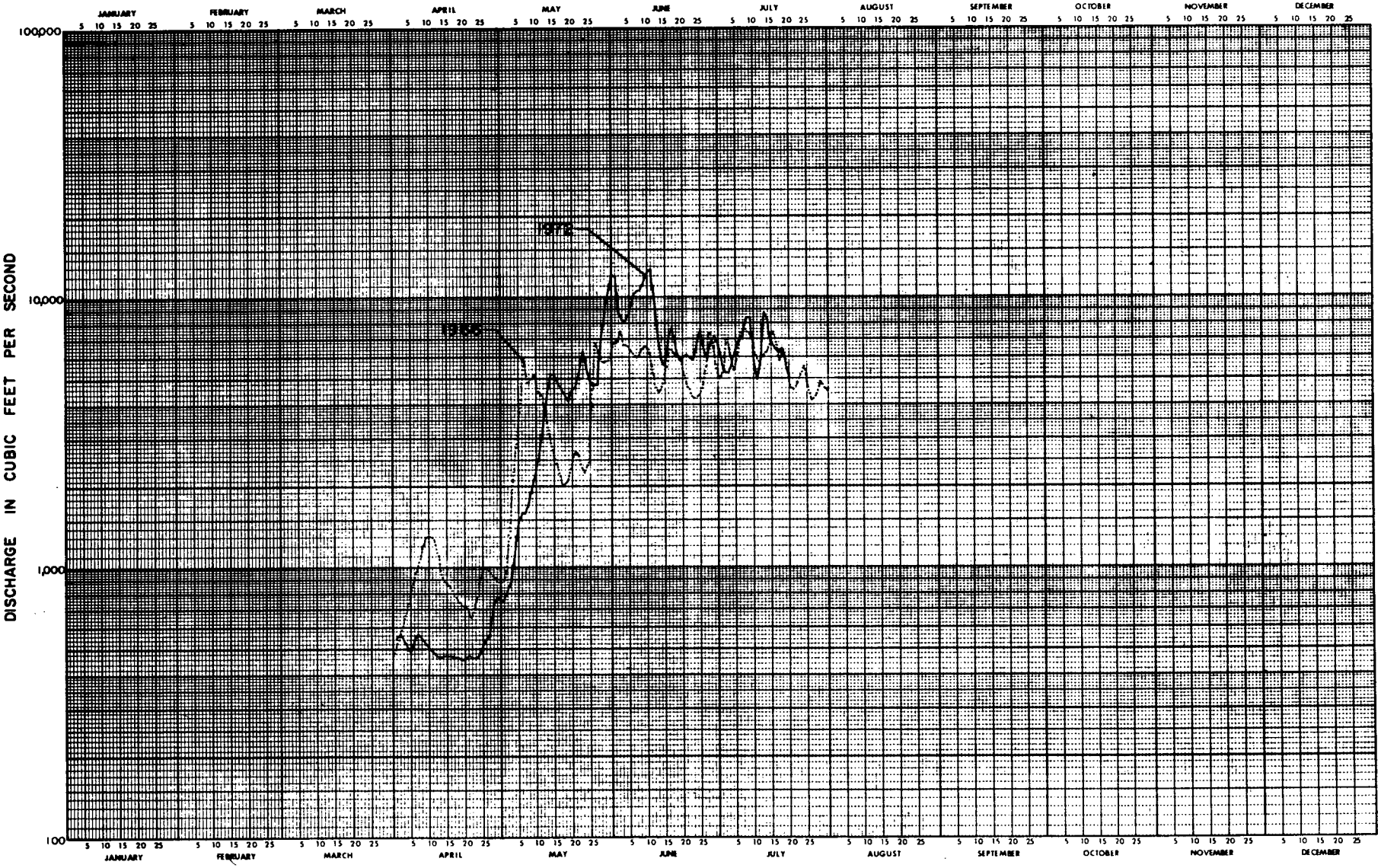
DISCHARGE IN CUBIC FEET PER SECOND

Plotted by R.K. MOORE Checked by D.L. Hoff Approved by _____ Date OCT 26, 1972

PLATE 18

HYDROGRAPH FOR ILLECILLEWAET RIVER AT GREELEY Station No. 08ND013

R187A (2-67)

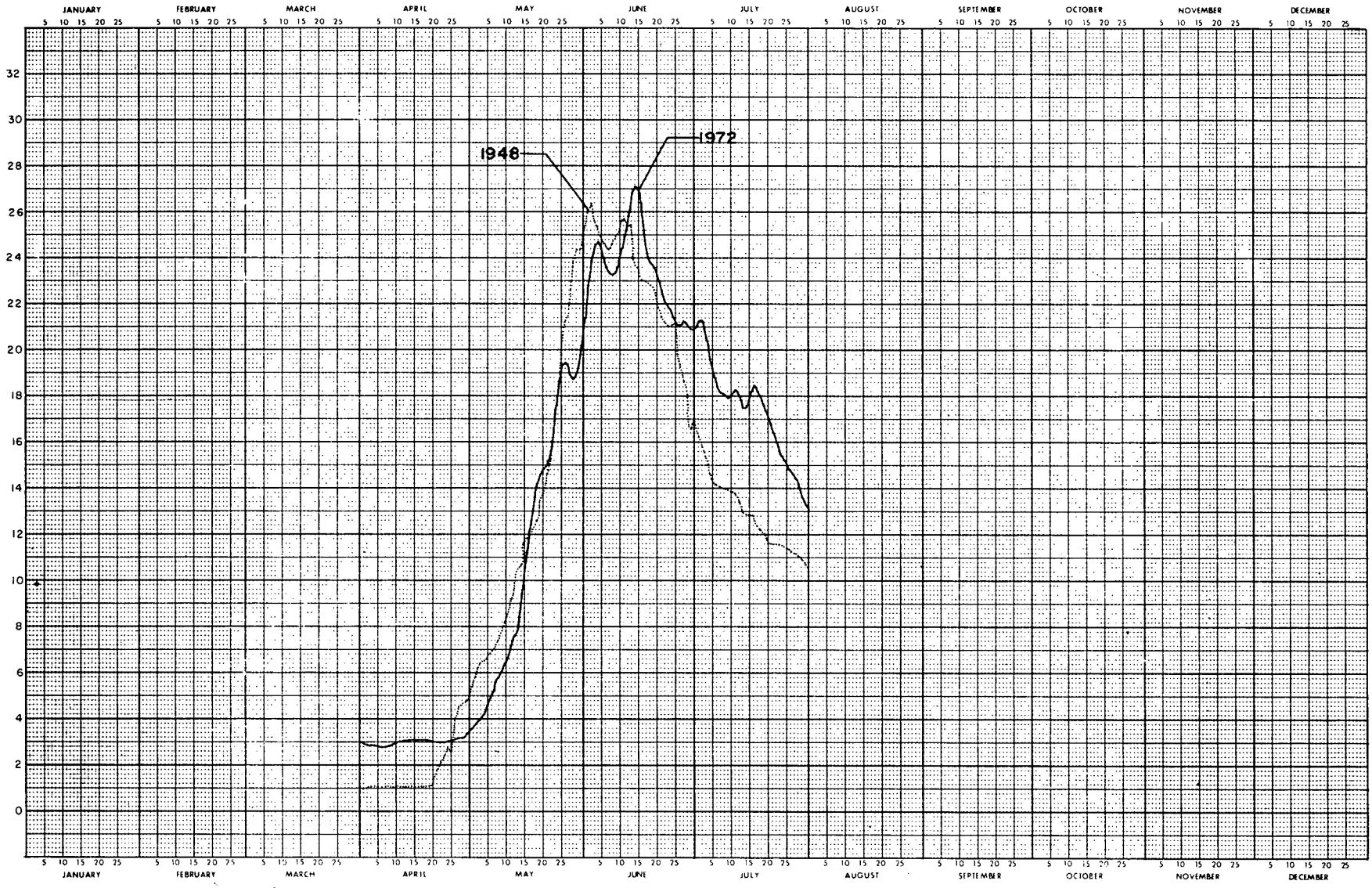


Plotted by R.K Moore Checked by [illegible] Approved by _____ Date X. 31. 72.

PLATE 19

HYDROGRAPH FOR KAMLOOPS LAKE AT SAVONA 08LF046.

R 139 A (9-67)



GAUGE HEIGHT IN FEET

Plotted by R. K. Moore Checked by D. L. Hay Approved by Date OCT 26, 1972

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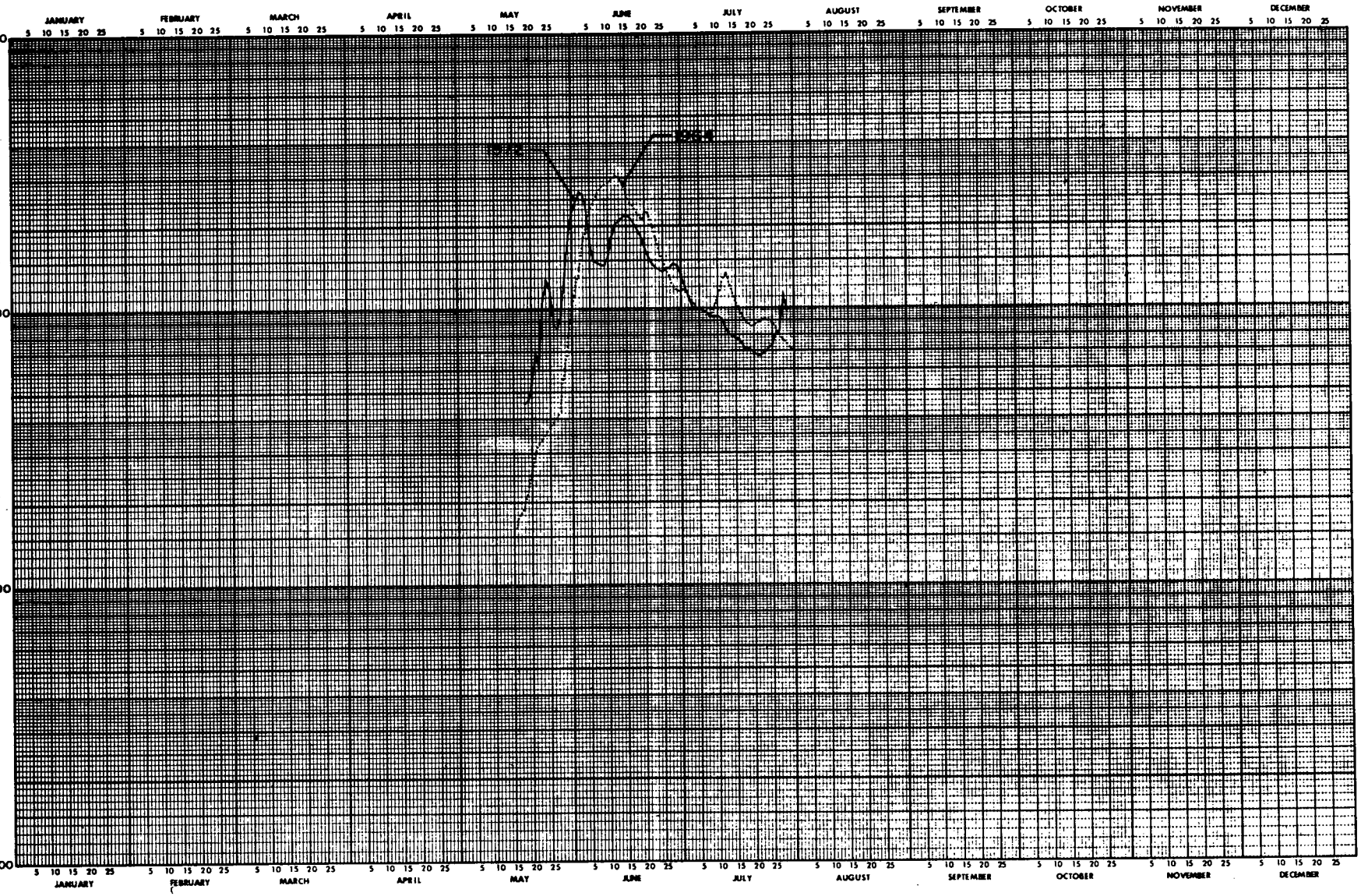
PLATE 20

HYDROGRAPH FOR LIARD RIVER AT LOWER CROSSING Station No. 10 BE 001

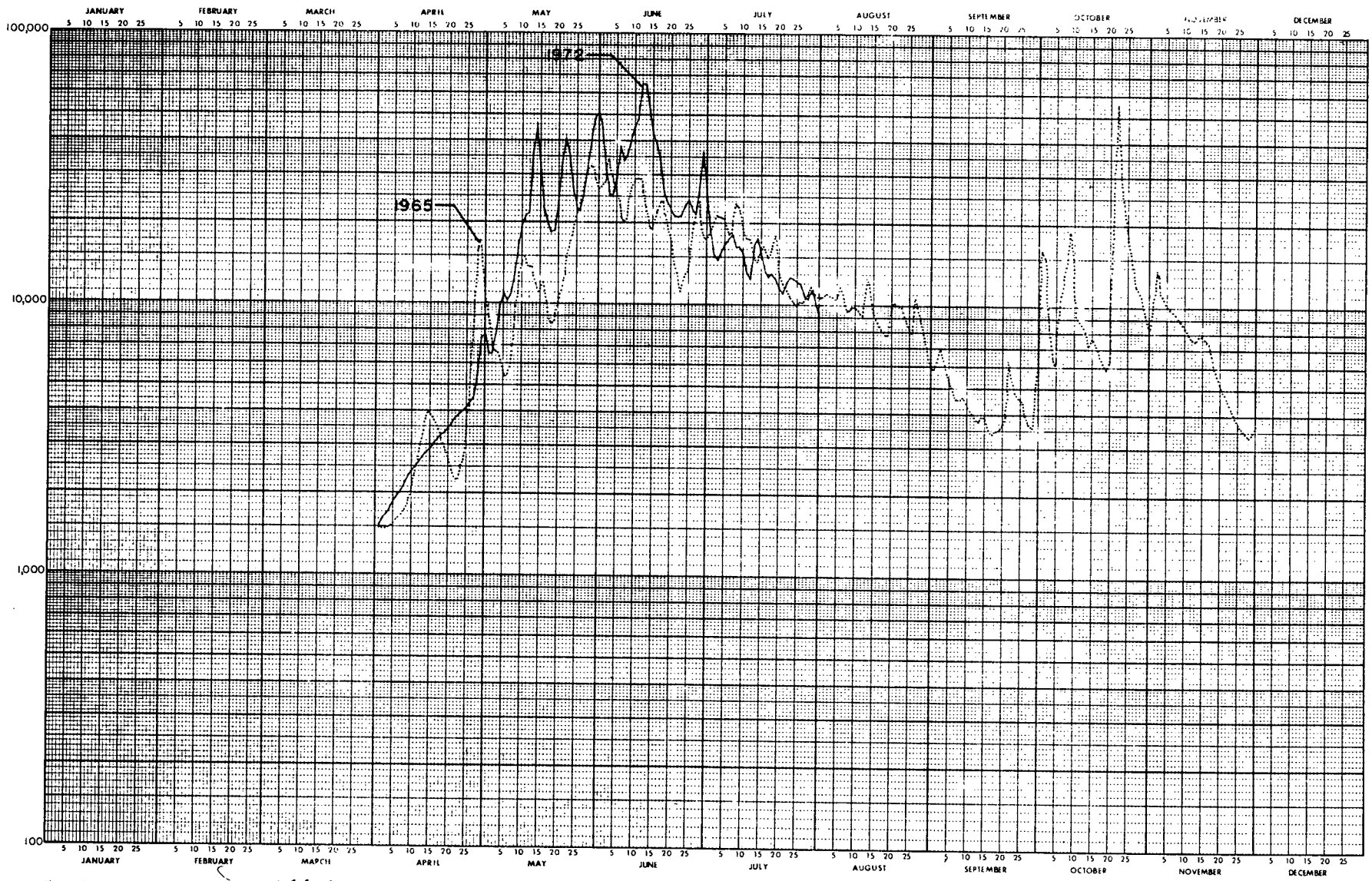
R187 A (2-67)



Plotted by R.K. Moore Checked by O.E. Hay Approved by _____ Date Oct 26, 1972

PLATE 21

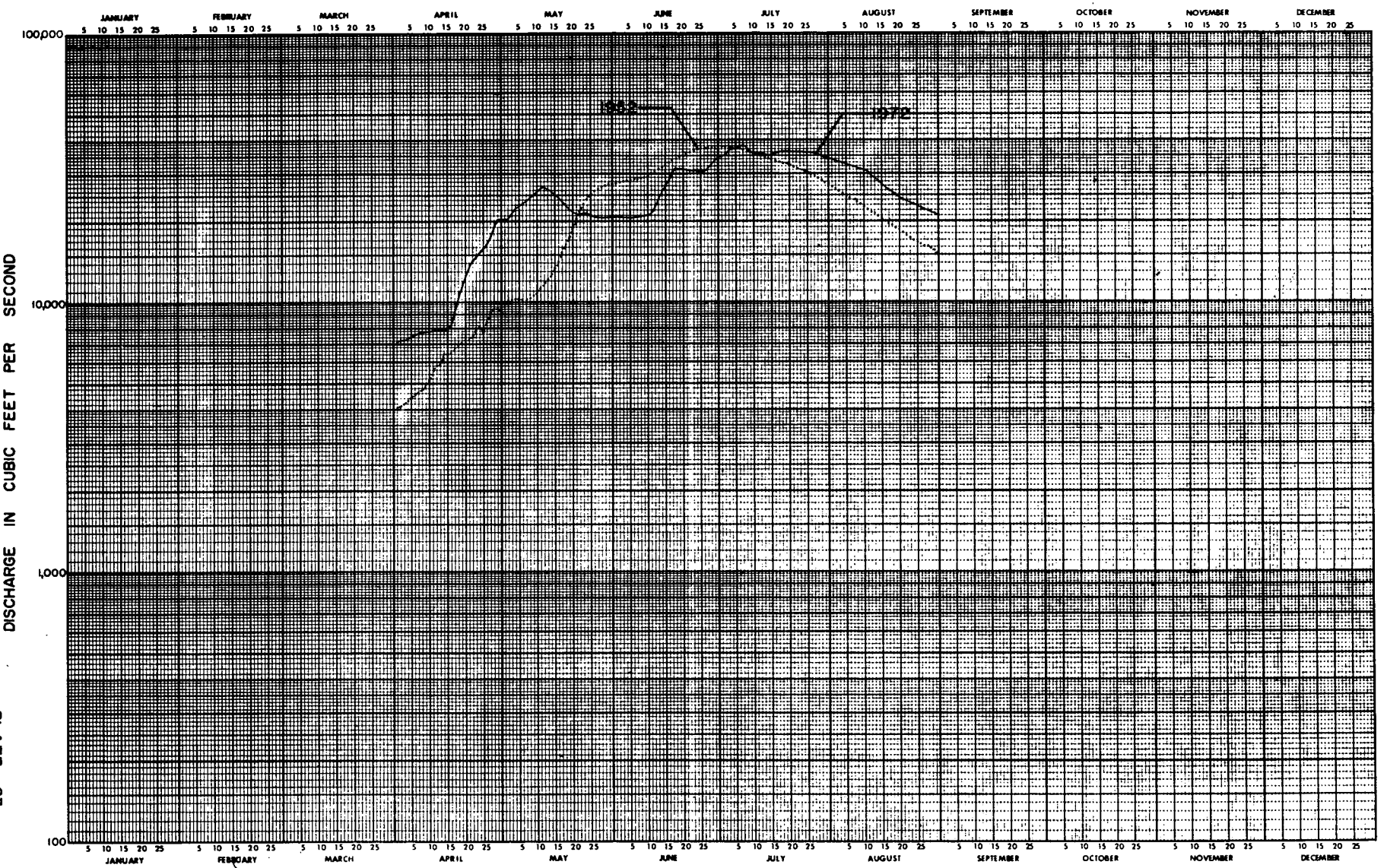
HYDROGRAPH FOR Mc GREGOR RIVER AT LOWER CANYON Station No. 08KB003 H18Z A (2-67)



Plotted by R.E. Moore Checked by O.E. Kay Approved by Date OCT 26, 1972

PLATE 22

HYDROGRAPH FOR NECHAKO RIVER AT ISLE PIERRE Station No. 08JC002 R187A (2-67)



Plotted by R.K. Moore Checked by D.L. Jay Approved by _____ Date Oct 26, 1972

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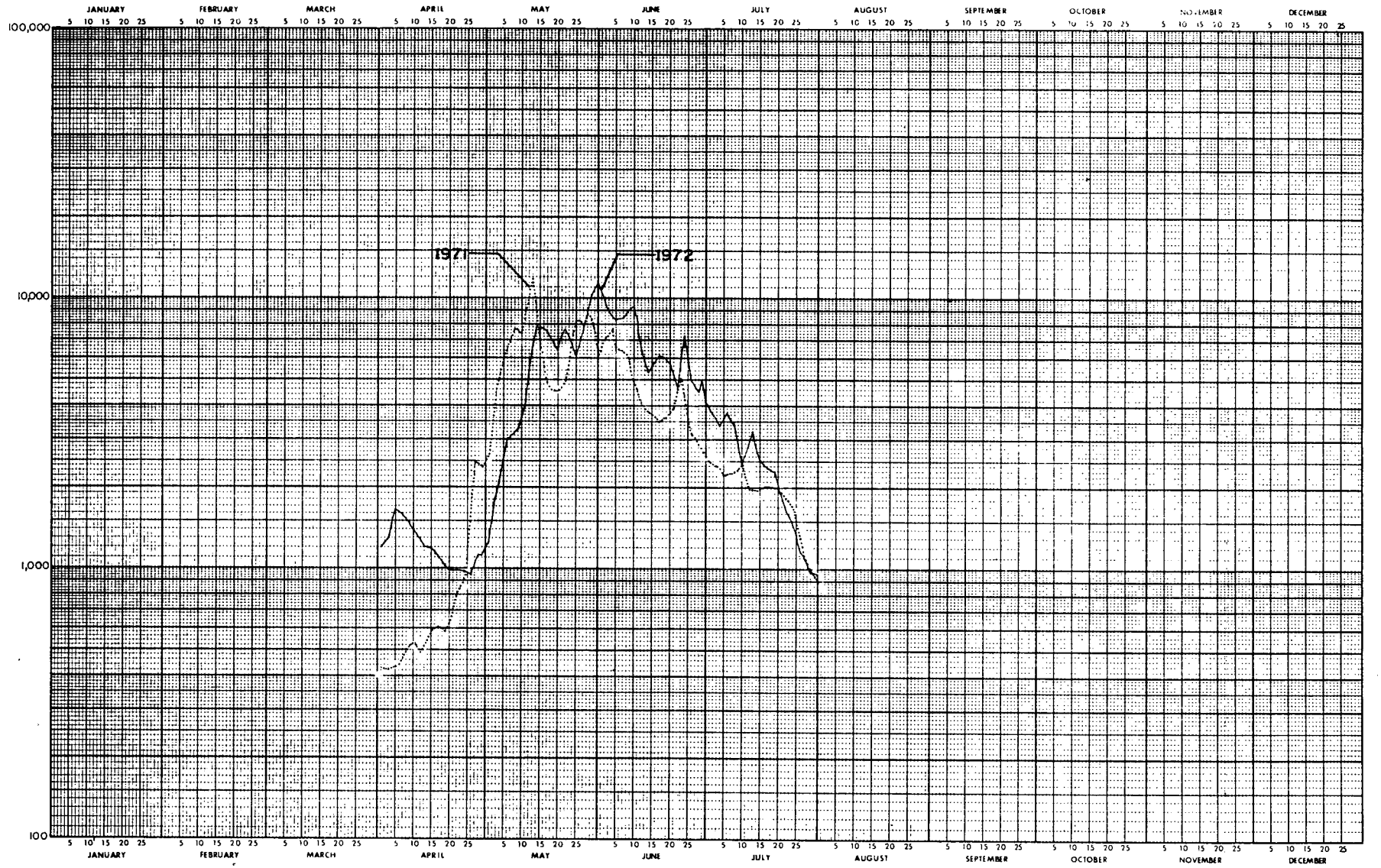
PLATE 23

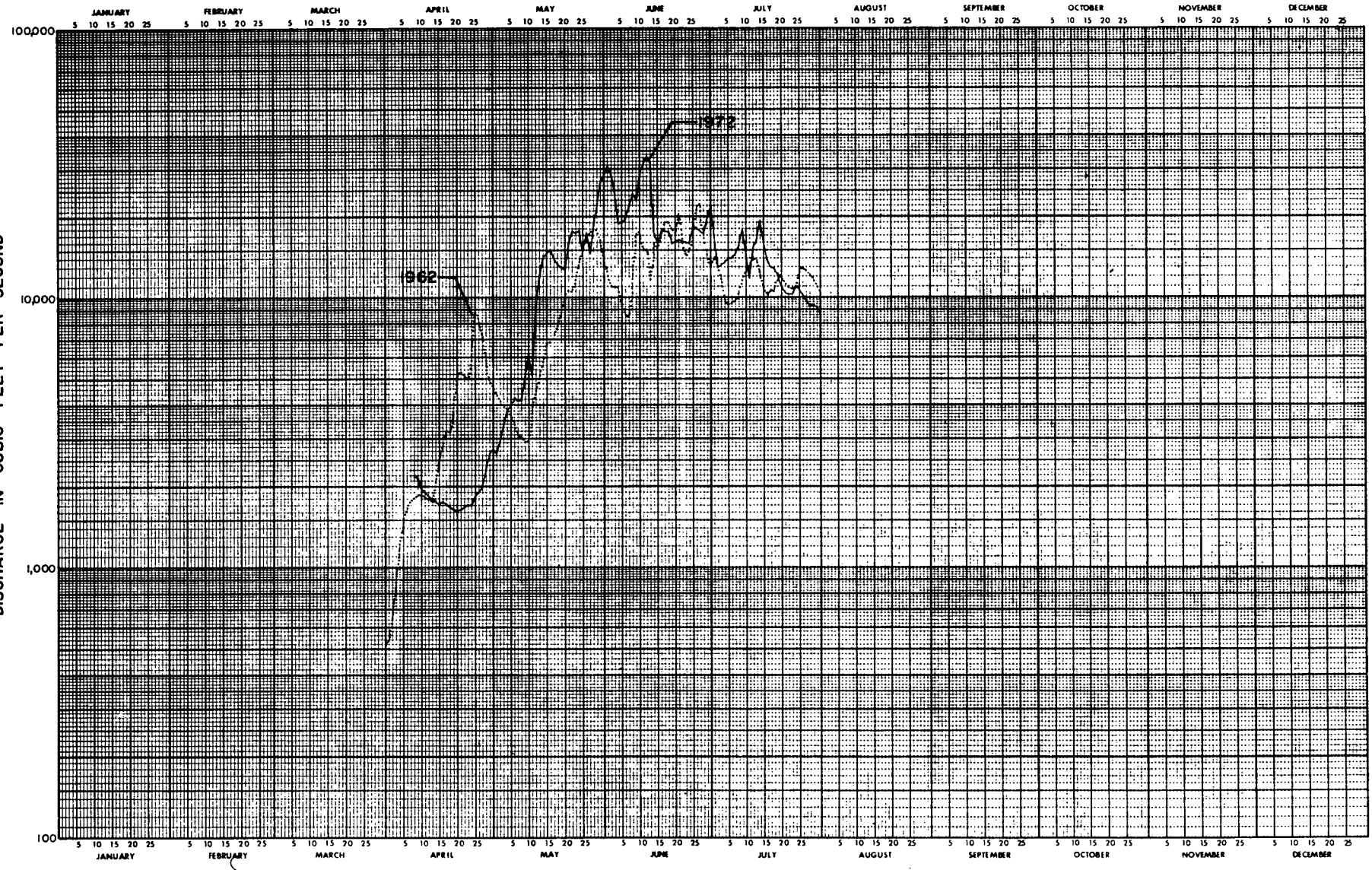
HYDROGRAPH FOR NICOLA RIVER NEAR SPENCES BRIDGE Station No. 08LG006 WSB/A (2-67)



Plotted by R.K. Moore Checked by [signature] Approved by _____ Date Oct. 26, 1972

PLATE 24

HYDROGRAPH FOR NORTH THOMPSON RIVER AT BIRCH ISLAND Station No. 08LB047 R187A (2-67)



Plotted by R.K. Moore Checked by D.E. Hay Approved by _____ Date Oct 26, 1972

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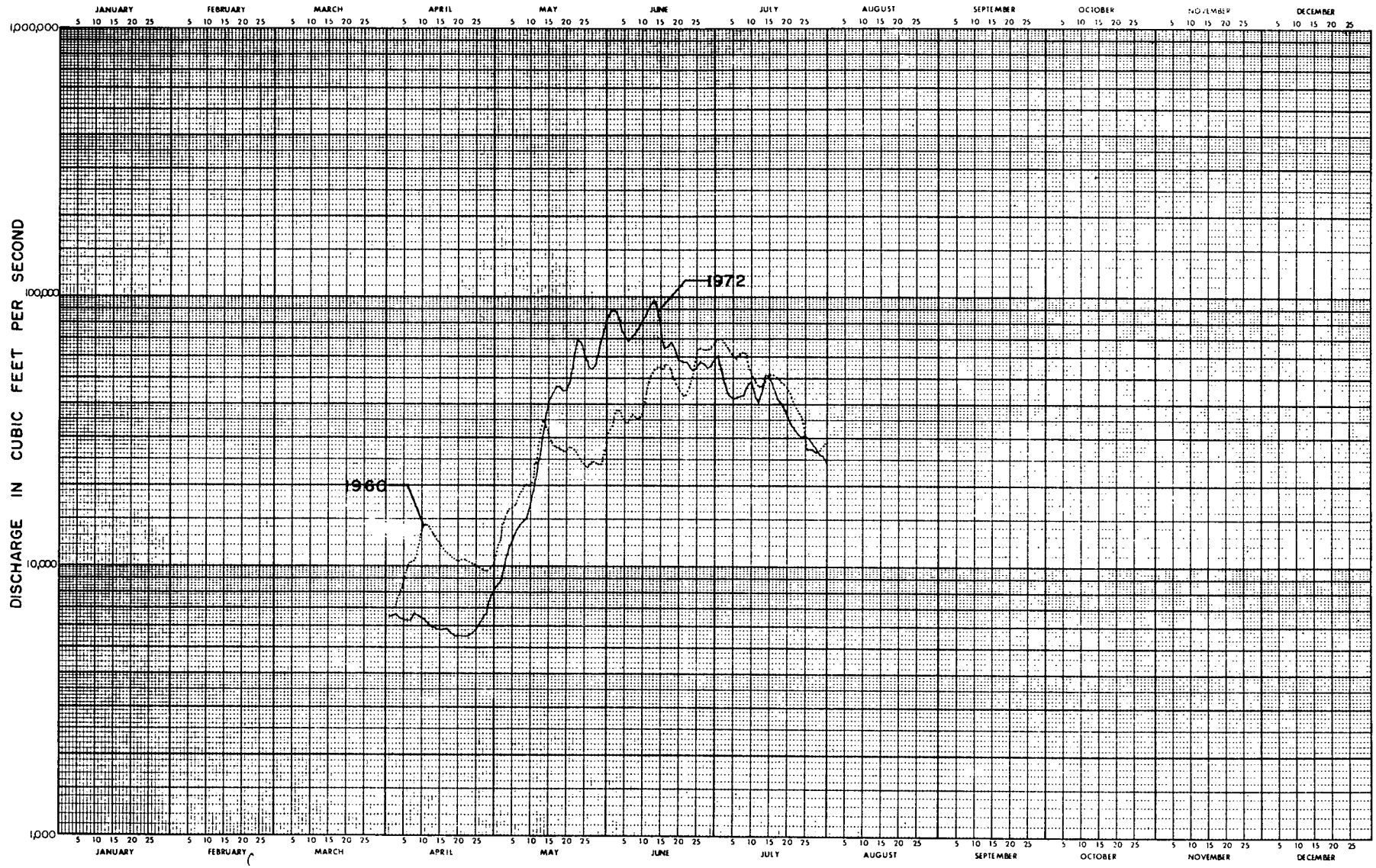
PLATE 25

HYDROGRAPH FOR NORTH THOMPSON RIVER AT MCLURE Station No. 08LB064 R187A (2-67)



Plotted by R.K. Moore Checked by D.L. Approved by Date Oct. 26, 1972

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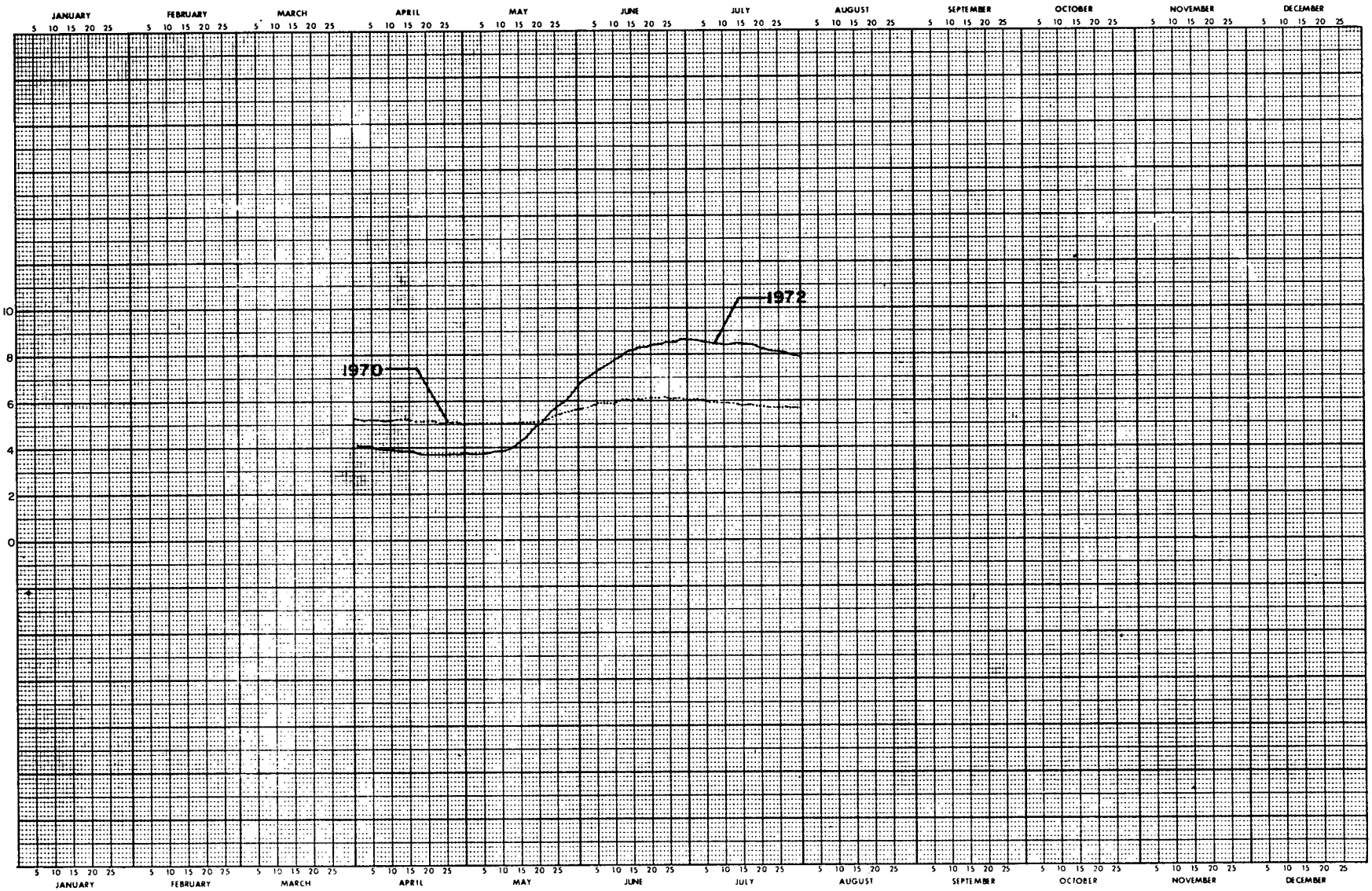
PLATE 26

HYDROGRAPH FOR **OKANAGAN LAKE AT PENTICTON** Station No. **08NM071** R 139 A (9-67)



Plotted by R.V. Moore. Checked by D.L. Approved by Date Oct 26, 1972

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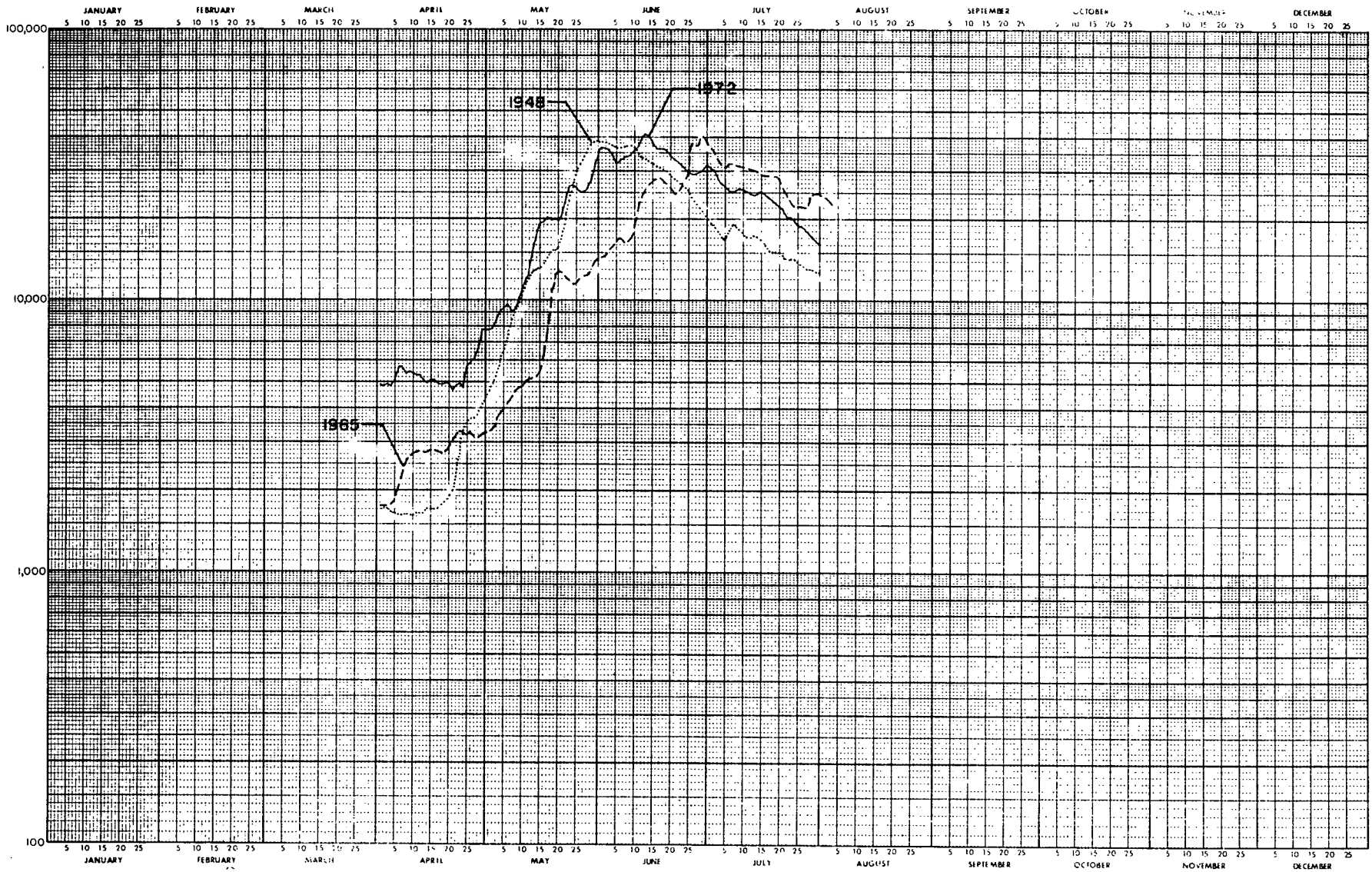
PLATE 27

HYDROGRAPH FOR QUESNEL RIVER NEAR QUESNEL Station No 08KH006 R187A (2-67)



Plotted by R.K. Moore Checked by D.L. Approved by Date Oct 26, 1972

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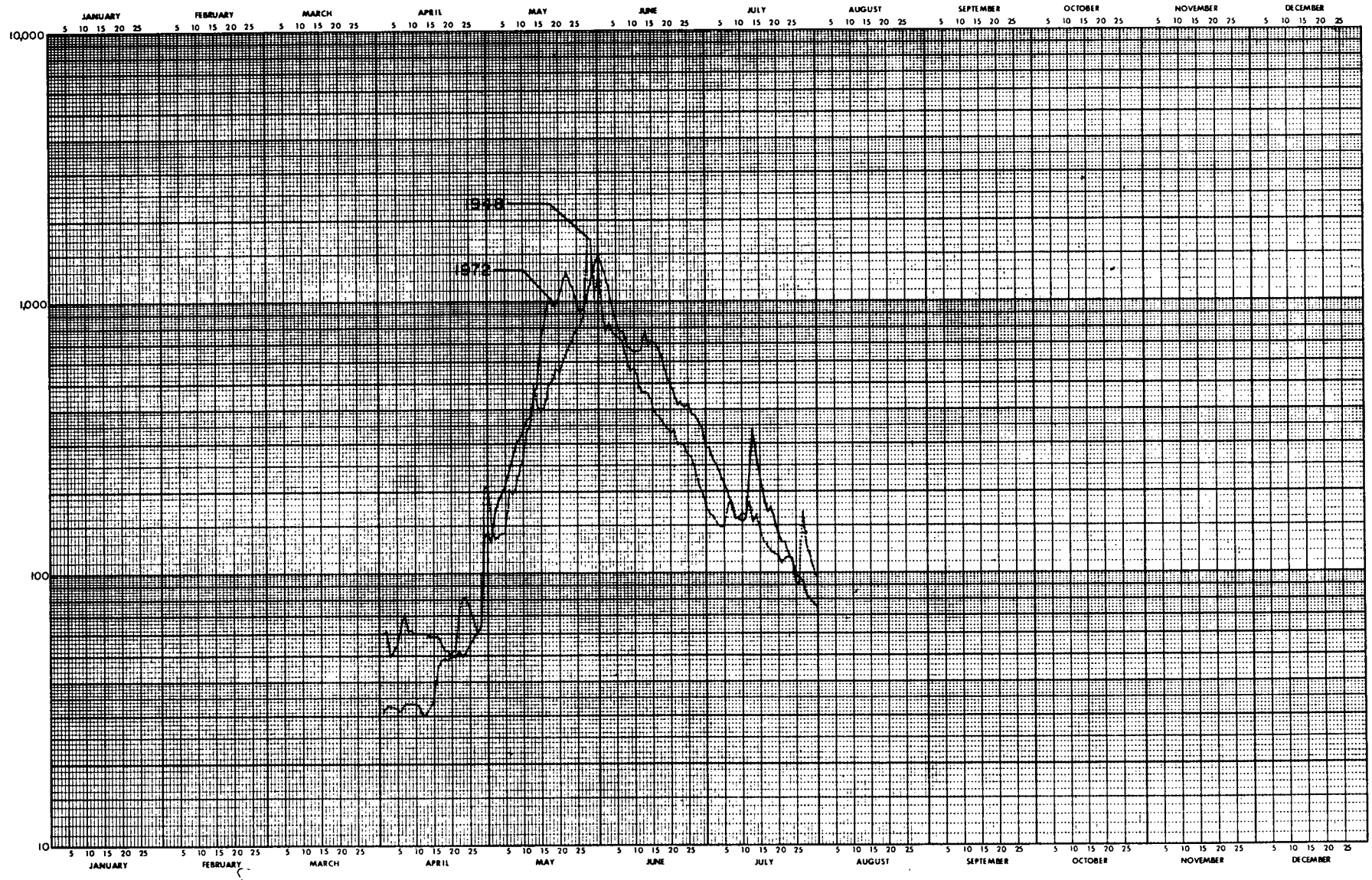
PLATE 28

HYDROGRAPH FOR SALMON RIVER AT FALKLAND Station No. 08LE020 R187A (2-67)

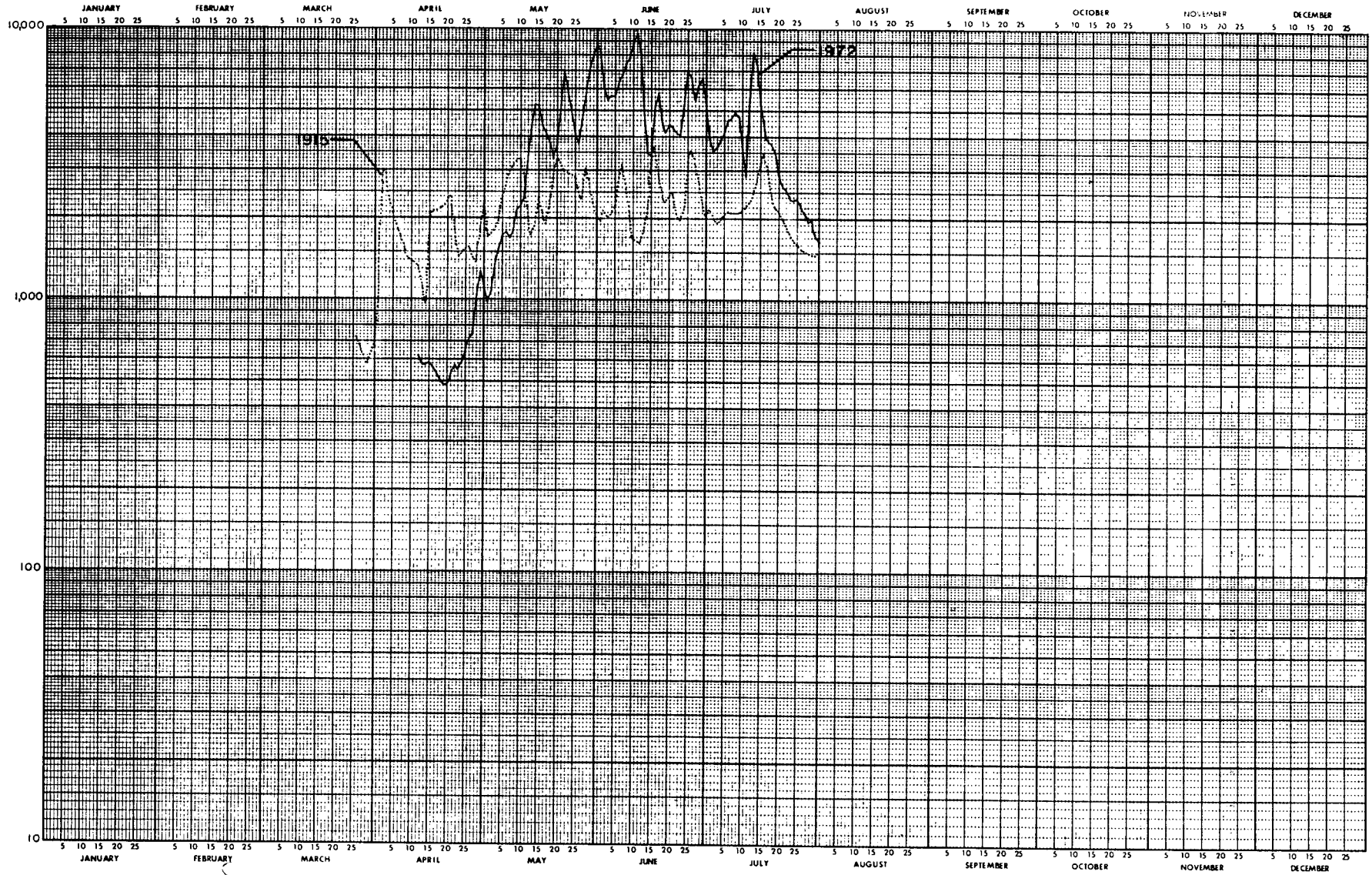


Plotted by R.K Moore Checked by D.E. Approved by _____ Date OCT 26, 1972

PLATE 29

HYDROGRAPH FOR SEYMOUR RIVER NEAR SEYMOUR ARM Station No 08LE027

R187A (2-67)

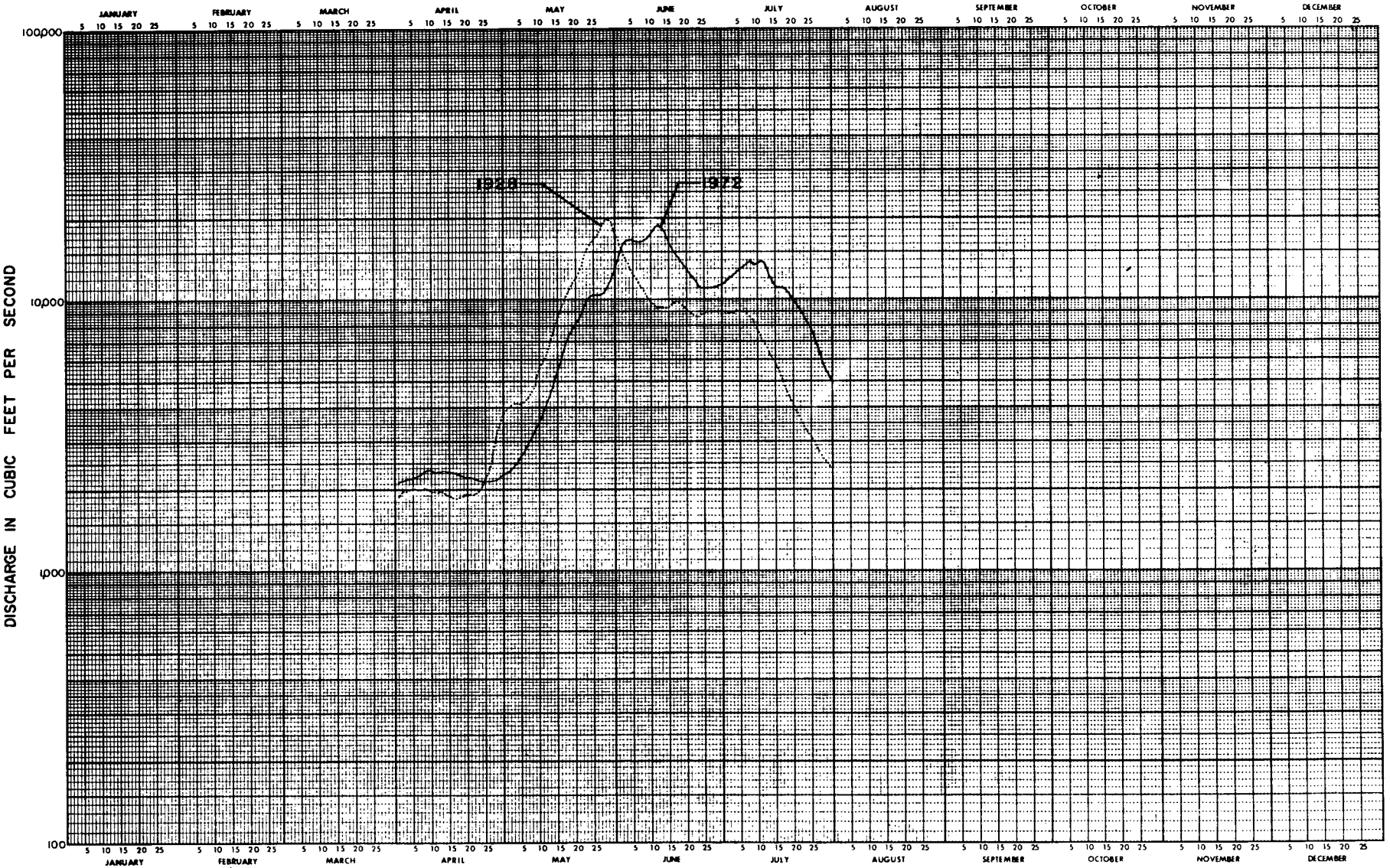


Plotted by R.K Moore Checked by D.E. Approved by _____ Date OCT 26, 1972

PLATE 30

HYDROGRAPH FOR SHUSWAP RIVER AT OUTLET OF MABEL LAKE Station No. 08LC019

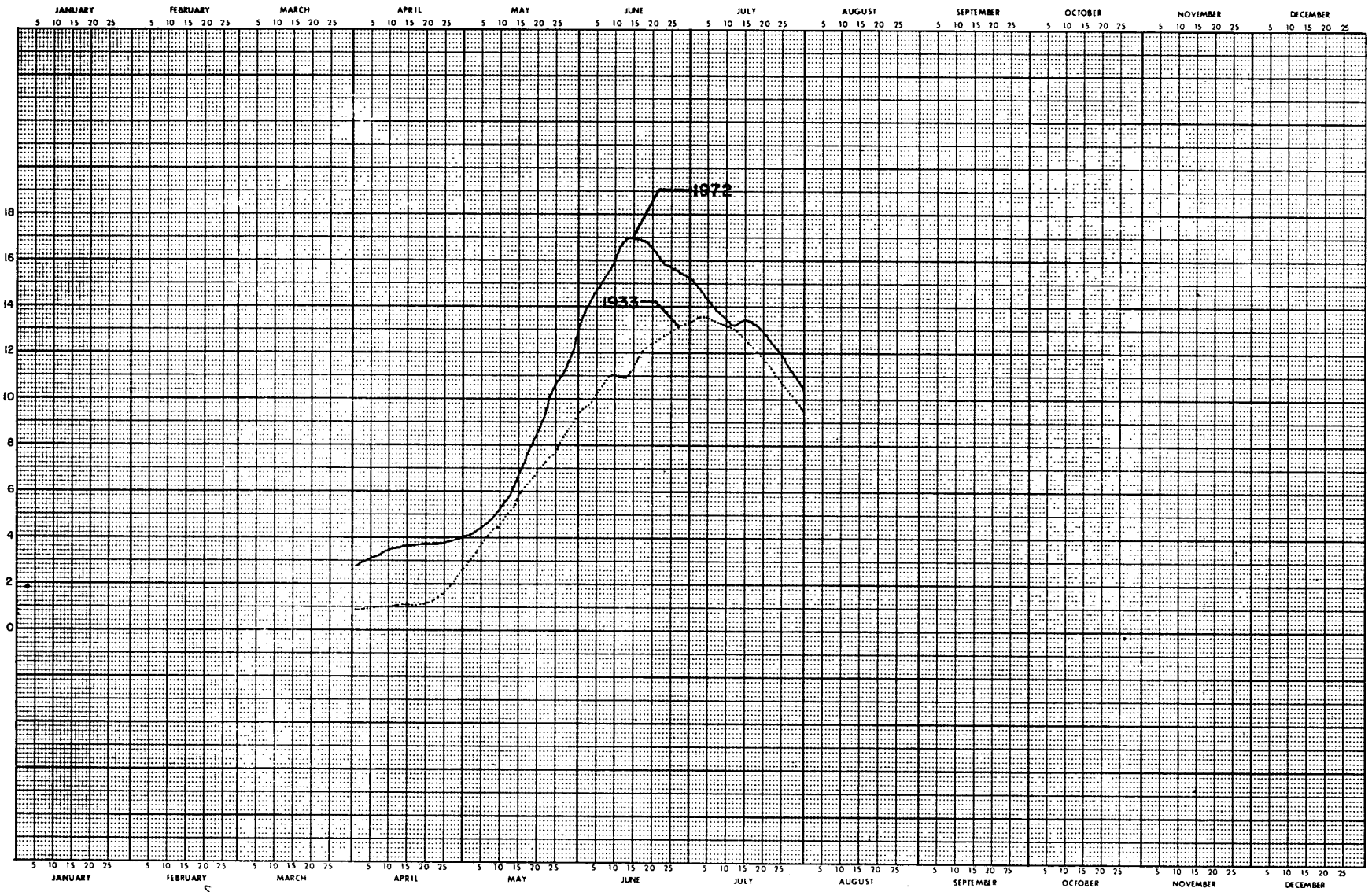
R187A (2-67)



Plotted by R.K. Moore Checked by [illegible] Approved by _____ Date OCT 30, 1972

PLATE 31

HYDROGRAPH FOR **SHUSWAP LAKE NEAR SORRENTO** 08LE047



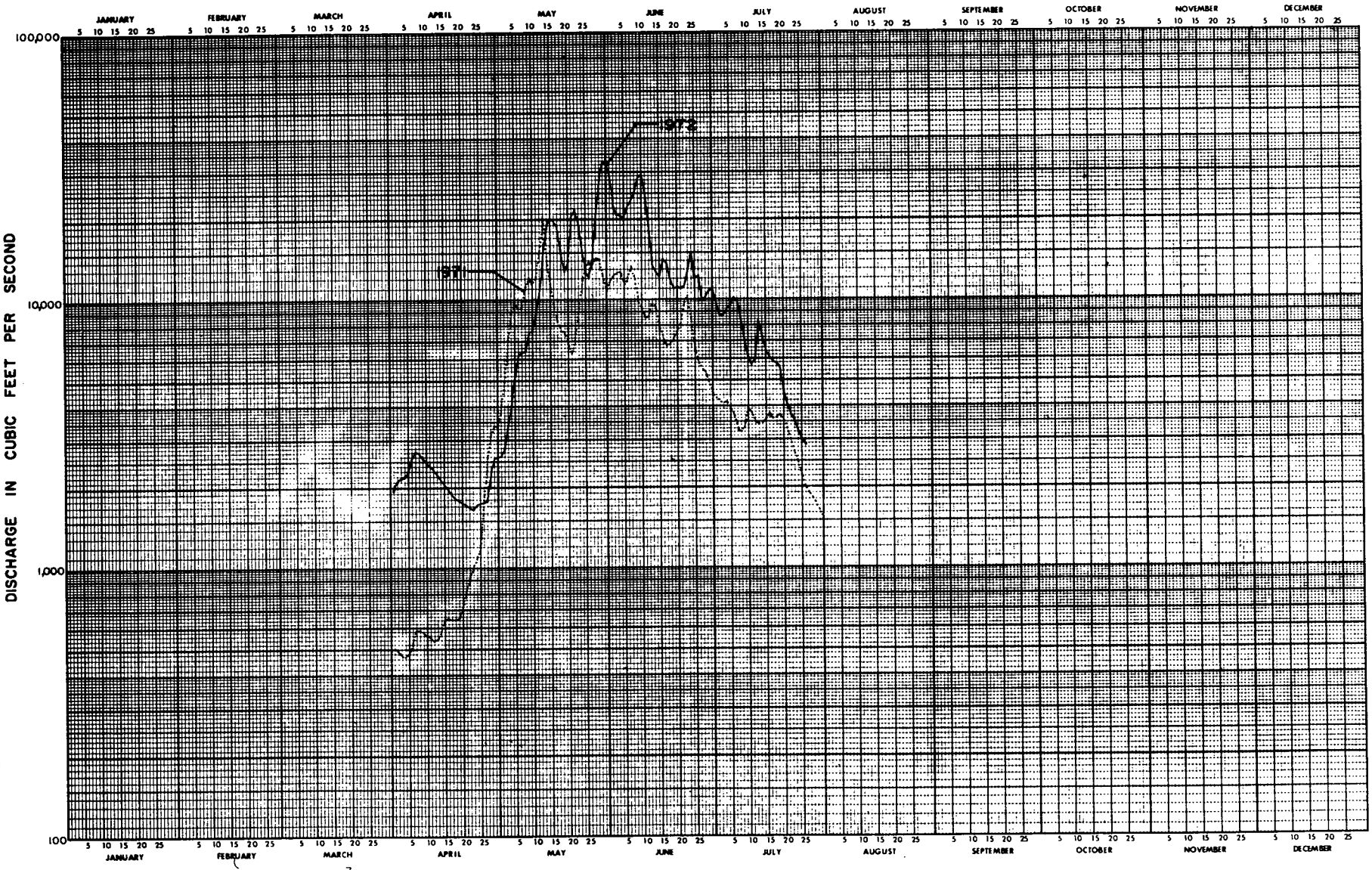
GAUGE HEIGHT IN FEET

Plotted by R.K. Moore Checked by O.L. Approved by Date OCT 26, 1972

PLATE 32

HYDROGRAPH FOR SIMILKAMEEN RIVER NEAR HEDLEY Station No. 08NL038

N187 A (2-67)



Plotted by R.K Moore Checked by J.A. Hay Approved by _____ Date XII. 1. 72

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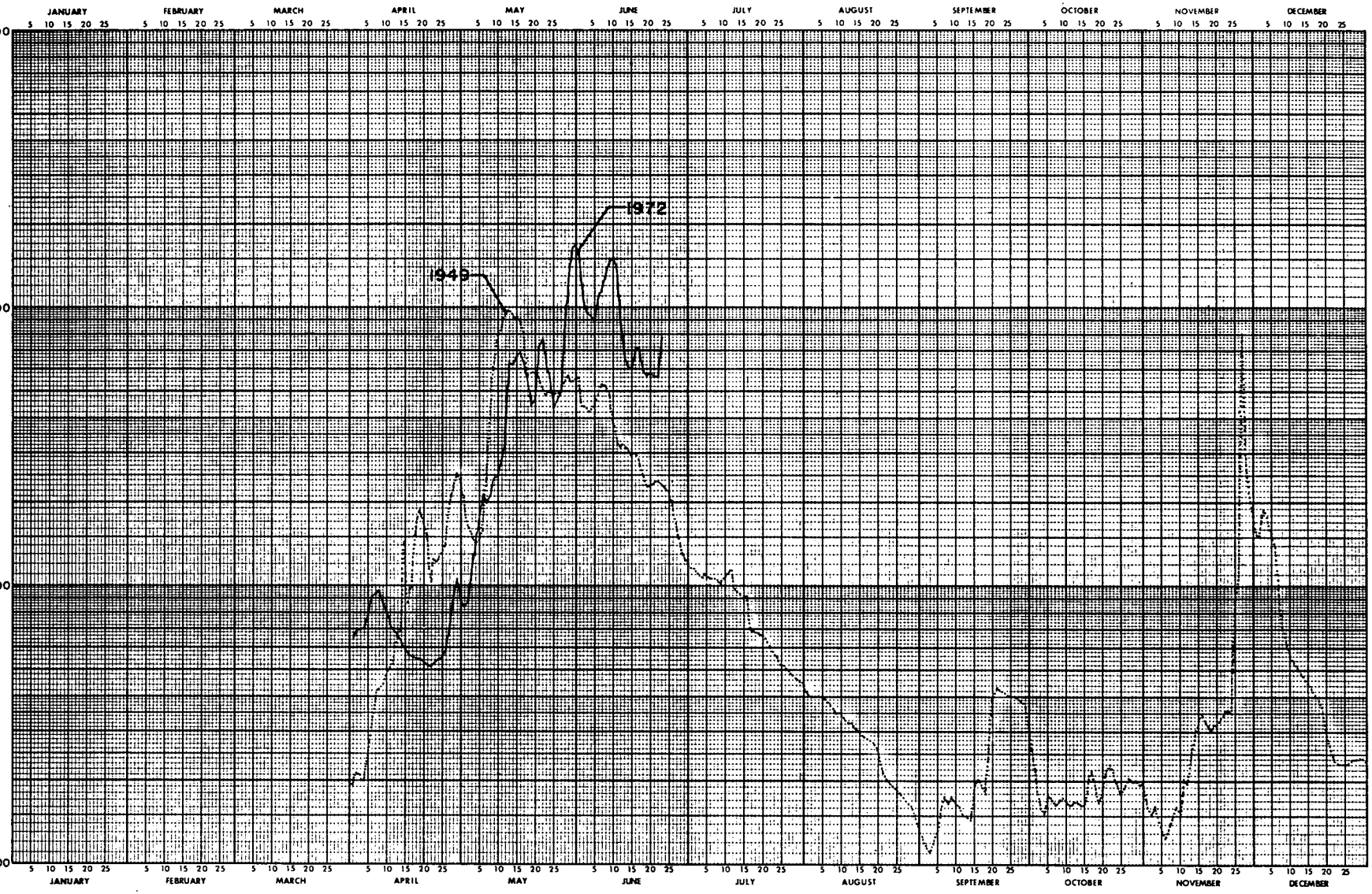
PLATE 33

HYDROGRAPH FOR **SIMILKAMEEN RIVER AT PRINCETON** Station No **08NL007**

R187A
9-67)



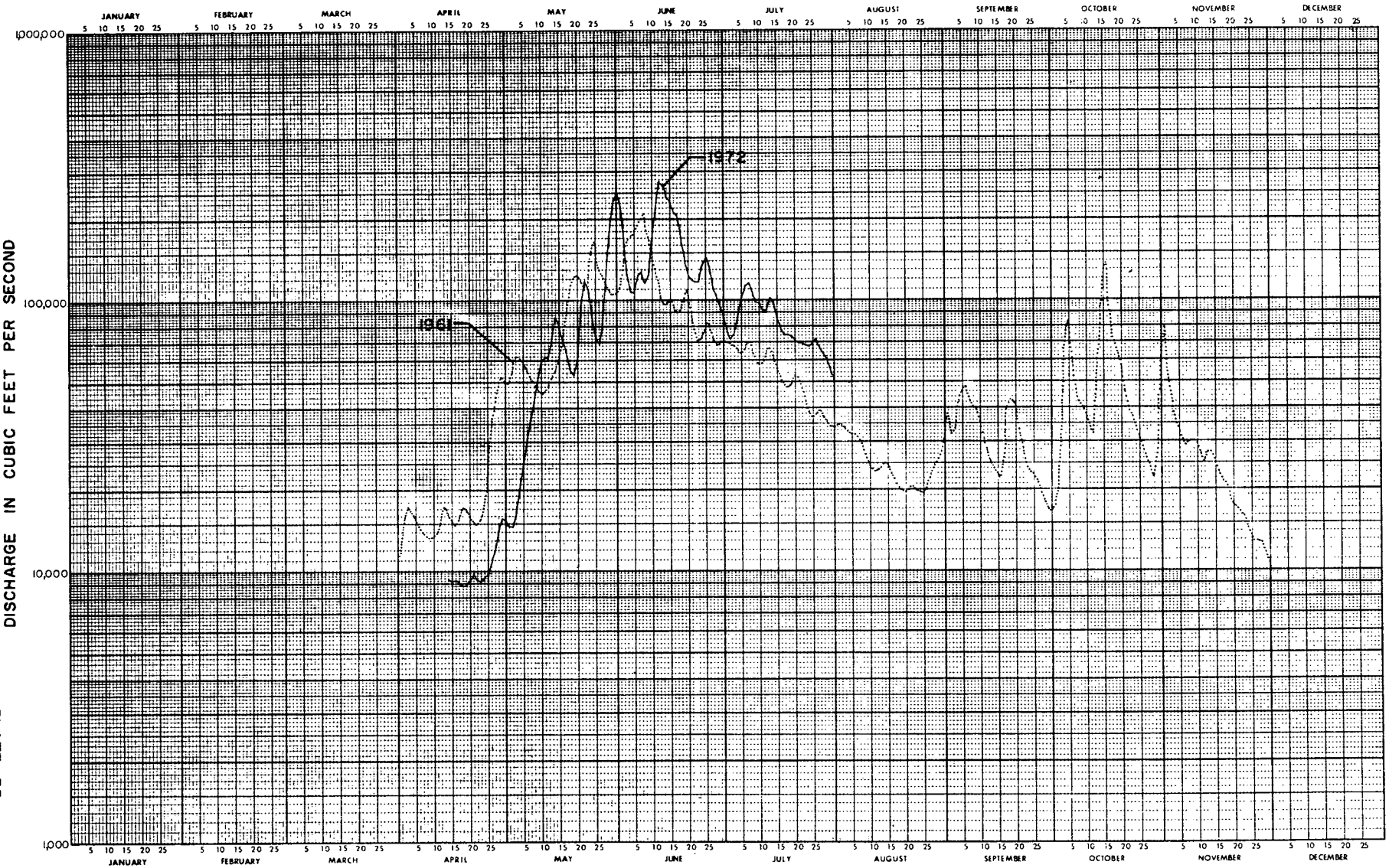
DISCHARGE IN CUBIC FEET PER SECOND

Plotted by R.K. Moore Checked By D.L. [illegible] Approved by ___ Date Oct. 26, 1972

PLATE 34

HYDROGRAPH FOR SKEENA RIVER AT USK Station No. 08EF001

R187A (2-67)



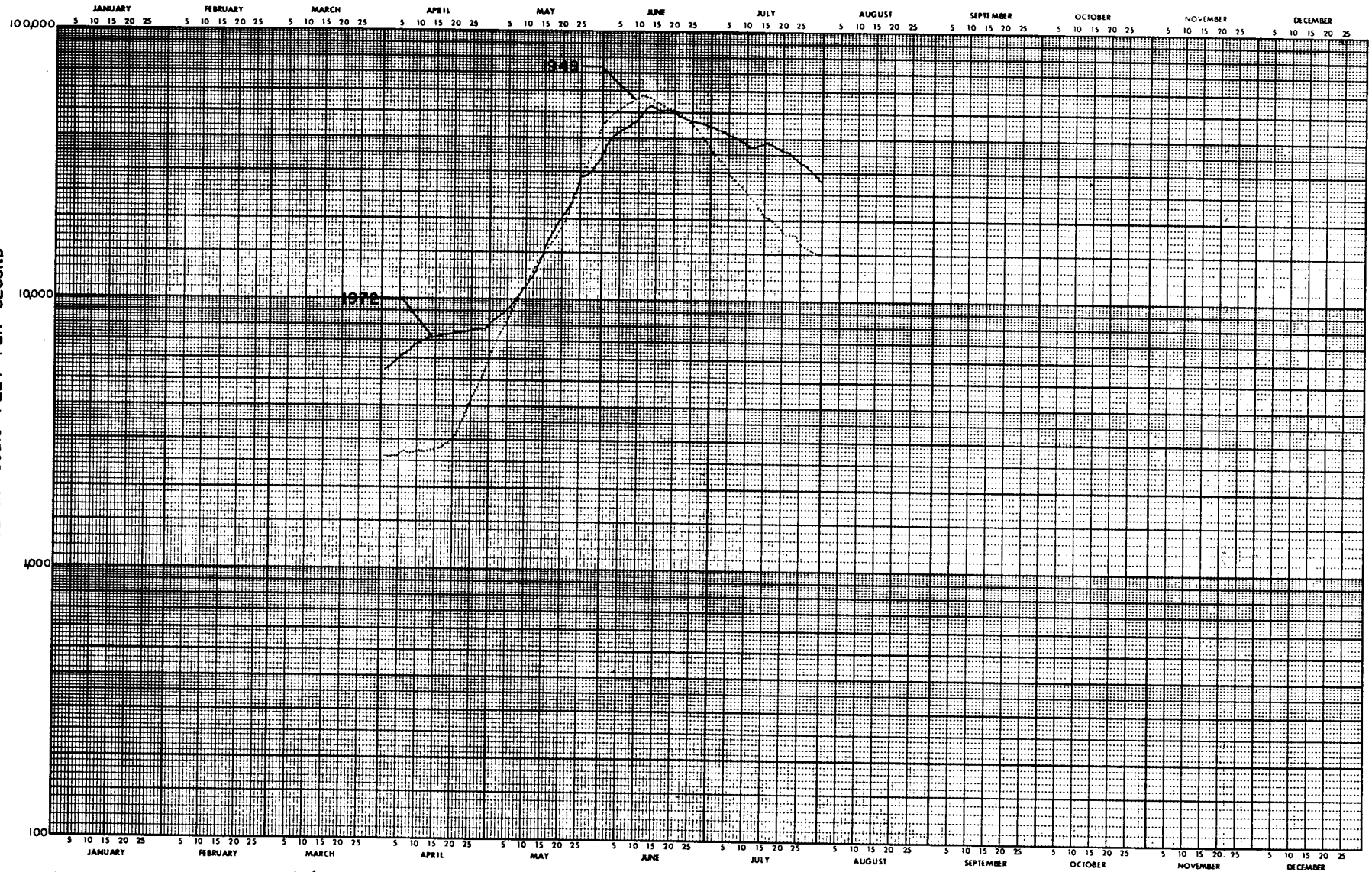
DISCHARGE IN CUBIC FEET PER SECOND

Plotted by R.K. Moore Checked by O.C. Jay Approved by _____ Date OCT 26, 1972

PLATE 35

HYDROGRAPH FOR SOUTH THOMPSON RIVER AT CHASE Station No 08LE31

R187A (2-67)



Plotted by R.K. Moore Checked by O.C. Approved by _____ Date OCT 26, 1972

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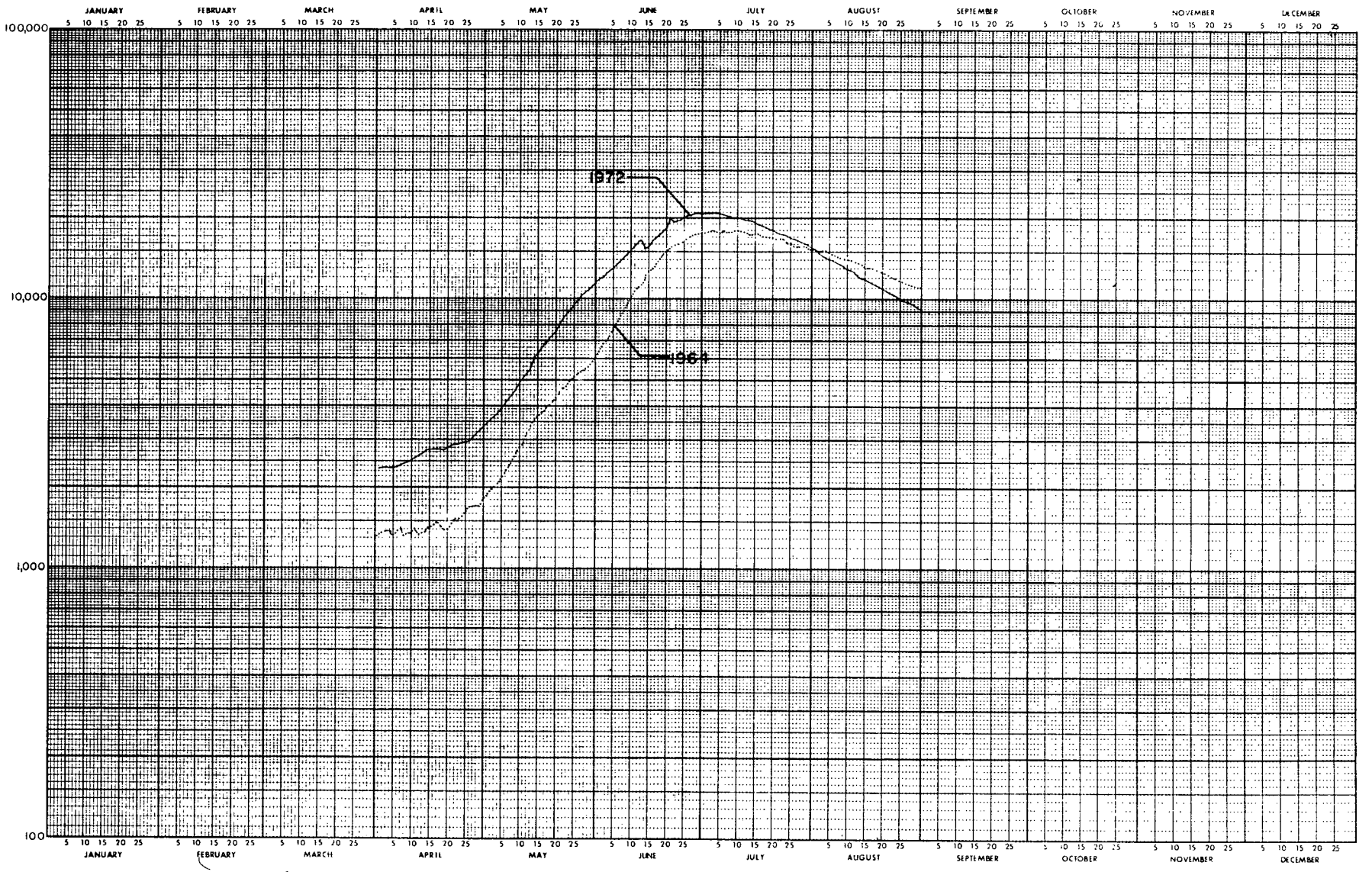
PLATE 36

HYDROGRAPH FOR STUART RIVER NEAR FORT ST. JAMES Station No. 08JE001



Plotted by R. K. Moore Checked by O.C. Approved by Date OCT 26, 1972

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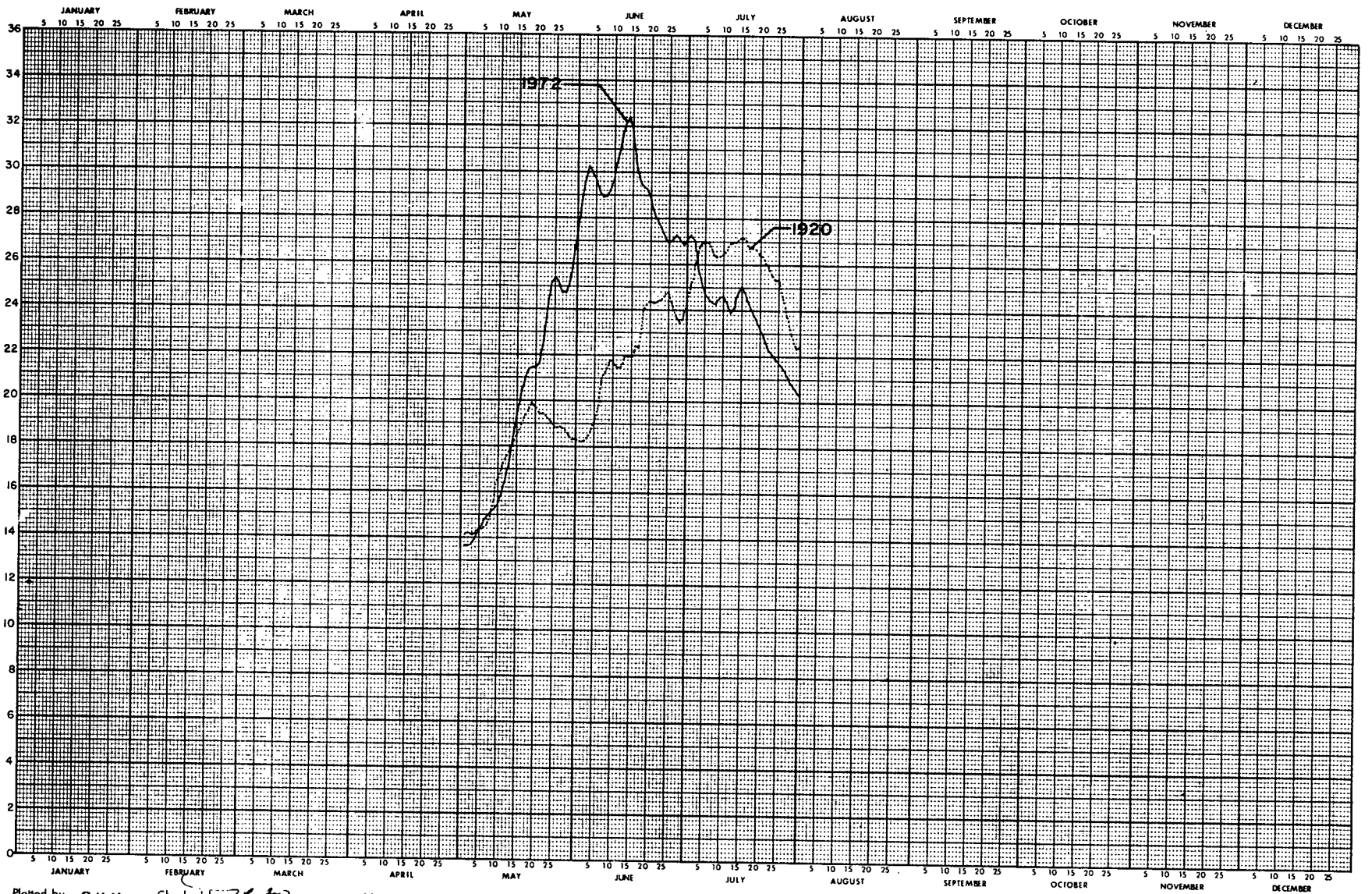
PLATE 37

HYDROGRAPH FOR THOMPSON RIVER AT KAMLOOPS Station No. 08LF023 R 139 A (9-67)

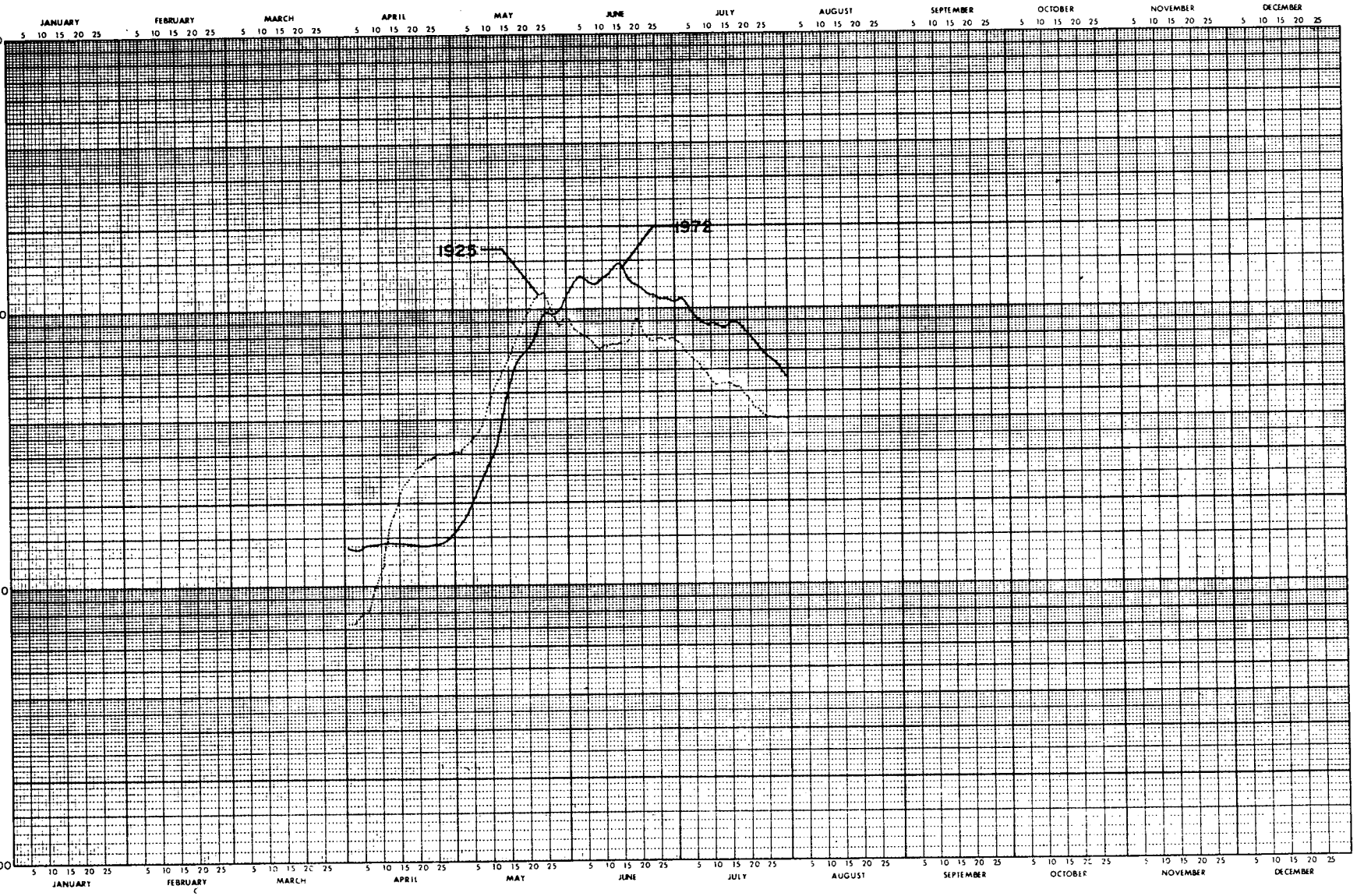


Plotted by R.K. Moore Checked by D.L. Approved by ... Date OCT 26, 1972

PLATE 38

HYDROGRAPH FOR THOMPSON RIVER NEAR SPENCES BRIDGE Station No. 08LF051

R187A (2-67)



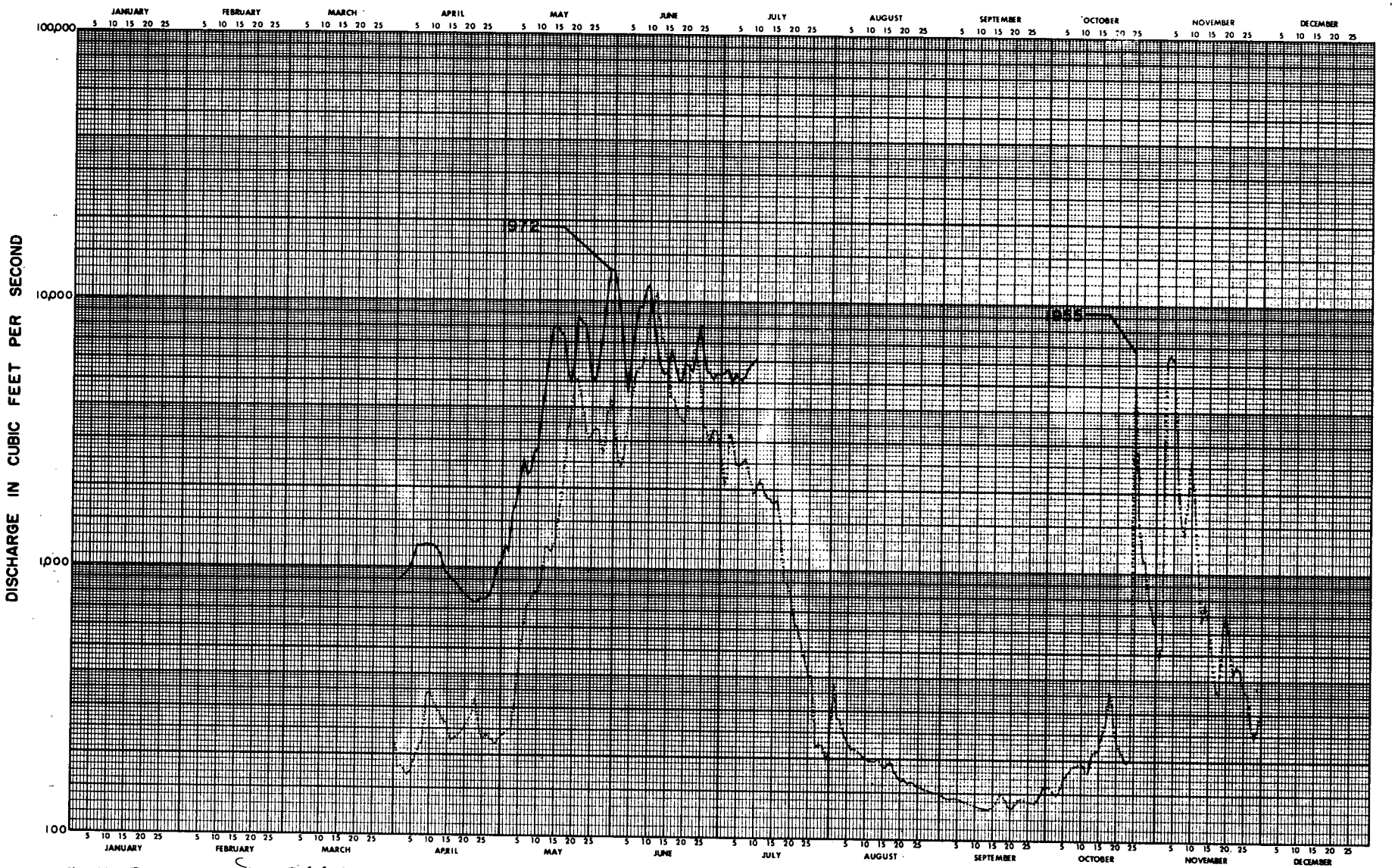
DISCHARGE IN CUBIC FEET PER SECOND

Plotted by R.K. Moore Checked by [illegible] Approved by _____ Date OCT 26, 1972

PLATE 39

HYDROGRAPH FOR TULAMEEN RIVER AT PRINCETON Station No. 08NL024

R187A
(9-67)

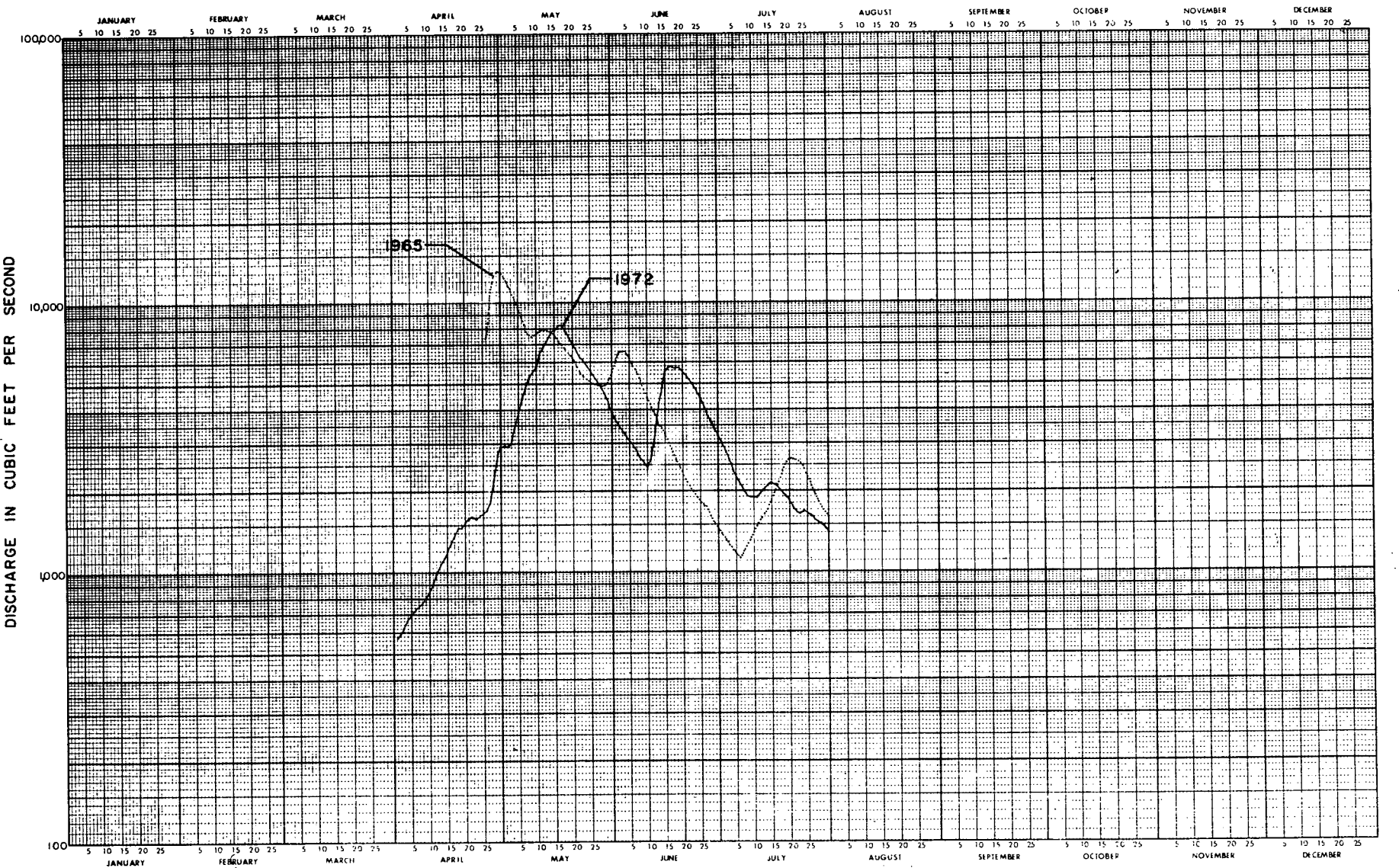


Plotted by R.K.M. Checked by D.L. Approved by _____ Date Oct 26, 1972

67

PLATE 40

HYDROGRAPH FOR WEST ROAD RIVER NEAR CINEMA Station No. 08KG001 NIB/A (2-67)



Plotted by R.K.Moore Checked by D.L. Hoy Approved by Date OCT 26, 1972

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PLATE 41

ANNUAL MAXIMUM DAILY MEAN FLOWS

AND FLOOD FREQUENCY GRAPHS

I N D E X

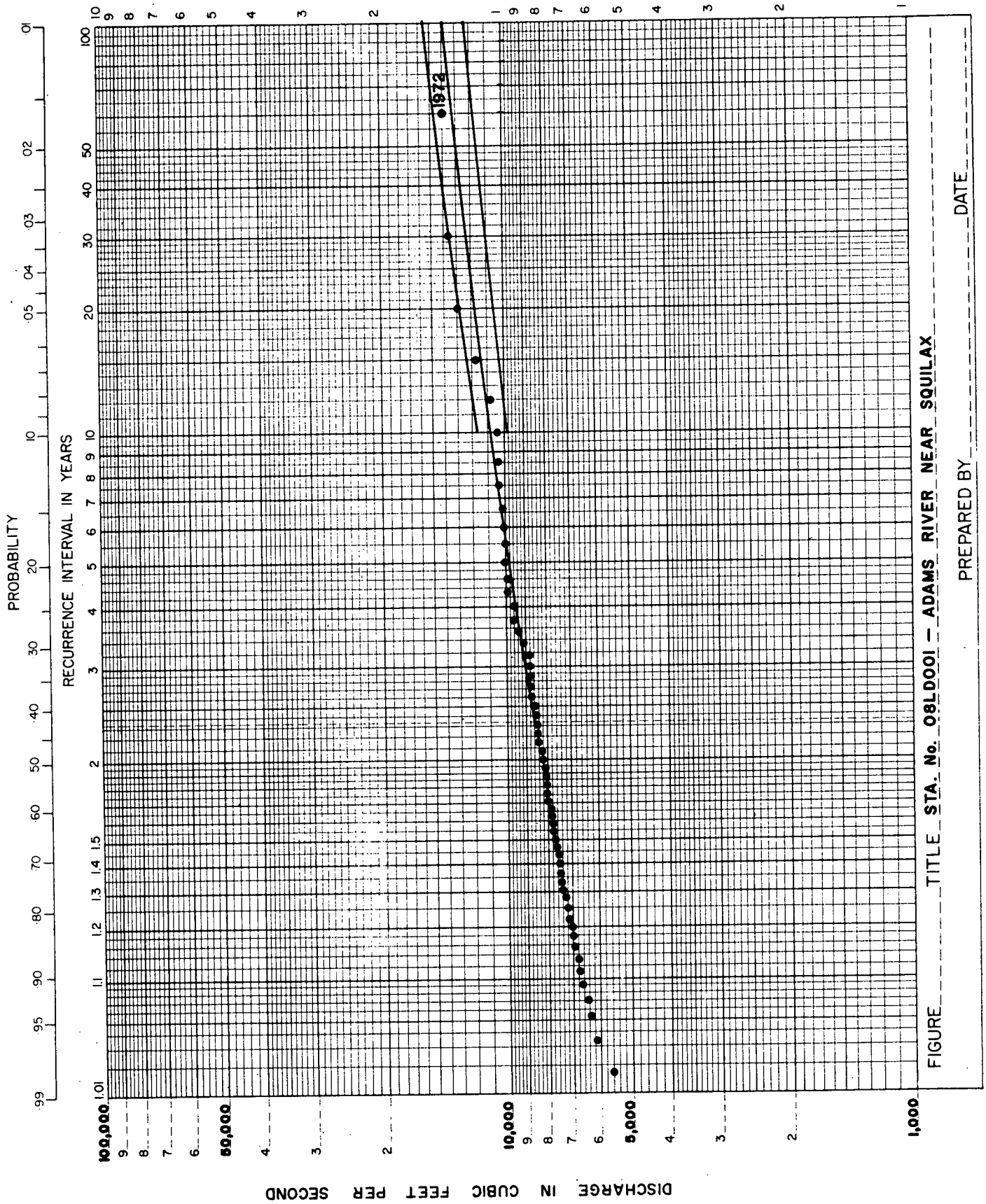

PROBABILITY
RECURRENCE INTERVAL IN YEARS
DISCHARGE IN CUBIC FEET PER SECOND
1972
FIGURE_____TITLE STA. No. 08LD001 — ADAMS RIVER NEAR SQUILAX
PREPARED BY_____DATE_____

PLATE 42

MAXIMUM DAILY MEAN FLOWS

Station No. 08LD001
Adams River near Squilax

Date	Maximum daily flow in cfs
May 19, 1912	10500
Jun 20, 1913	13800
Jun 23, 1914	6330
Jul 20, 1915	7270
Jun 29, 1916	8660
Jun 10, 1917	8050
Jun 16, 1918	7150
May 30, 1919	7600
Jul 14, 1920	7980
Jun 10, 1921	8150
Jun 7, 1922	8760
Jun 20, 1923	9920
May 23, 1924	7810
Jun 26, 1925	10400
May 2, 1926	6760
Jun 16, 1927	8530
May 28, 1928	10800
Jun 17, 1929	7870
Jun 14, 1930	7160
Jun 23, 1931	8800
Jul 1, 1932	8010
Jul 4, 1933	9430
May 1, 1934	8270
Jun 1, 1935	7730
Jun 4, 1936	11700
Jun 26, 1937	7370
May 31, 1939	6770
May 28, 1940	7590
Jun 21, 1941	5580
Jun 10, 1942	6960
Jul 14, 1943	6640
Jun 7, 1944	6450
Jun 12, 1945	6890
Jun 12, 1947	9150
Jun 1, 1948	13100
May 29, 1949	7950
Jun 24, 1950	10200
May 27, 1951	7800
Jul 3, 1952	8450
Jun 16, 1953	8270
Jun 17, 1954	8570
Jun 27, 1955	10100
Jun 6, 1956	8530
May 24, 1957	9930
Jun 3, 1958	10100
Jun 25, 1959	7820
Jul 3, 1960	8770
Jun 10, 1961	9640
Jun 29, 1962	7440
Jun 18, 1963	6160
Jun 18, 1964	10100
Jun 14, 1965	7500
Jun 22, 1966	7530
Jun 22, 1967	9660
Jun 13, 1968	8530
Jun 9, 1969	8810
Jun 10, 1970	7040
Jun 9, 1971	10500
Jun 13, 1972	14000

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	60.0	14000	1972
2	30.0	13800	1913
3	20.0	13100	1948
4	15.0	11700	1936
5	12.0	10800	1928
6	10.0	10500	1912
7	8.6	10500	1971
8	7.5	10400	1925
9	6.7	10200	1950
10	6.0	10100	1955
11	5.5	10100	1958
12	5.0	10100	1964
13	4.62	9930	1957
14	4.29	9920	1923
15	4.00	9660	1967
16	3.75	9640	1961
17	3.53	9430	1933
18	3.33	9150	1947
19	3.16	8810	1969
20	3.00	8800	1931
21	2.86	8770	1960
22	2.73	8760	1922
23	2.61	8660	1916
24	2.50	8570	1954
25	2.40	8530	1927
26	2.31	8530	1956
27	2.22	8530	1968
28	2.14	8450	1952
29	2.07	8270	1934
30	2.00	8270	1953
31	1.94	8150	1921
32	1.87	8050	1917
33	1.82	8010	1932
34	1.76	7980	1920
35	1.71	7950	1949
36	1.67	7870	1929
37	1.62	7820	1959
38	1.58	7810	1924
39	1.54	7800	1951
40	1.50	7730	1935
41	1.46	7600	1919
42	1.43	7590	1940
43	1.40	7530	1966
44	1.36	7500	1965
45	1.33	7440	1962
46	1.30	7370	1937
47	1.28	7270	1915
48	1.25	7160	1930
49	1.22	7150	1918
50	1.20	7040	1970
51	1.176	6960	1942
52	1.154	6890	1945
53	1.132	6770	1939
54	1.111	6760	1926
55	1.091	6640	1943
56	1.071	6450	1944
57	1.053	6330	1914
58	1.034	6160	1963
59	1.017	5580	1941

Mean annual flood: 8600 cfs

Standard deviation: 1760 cfs

Drainage area: 1200 sq mi

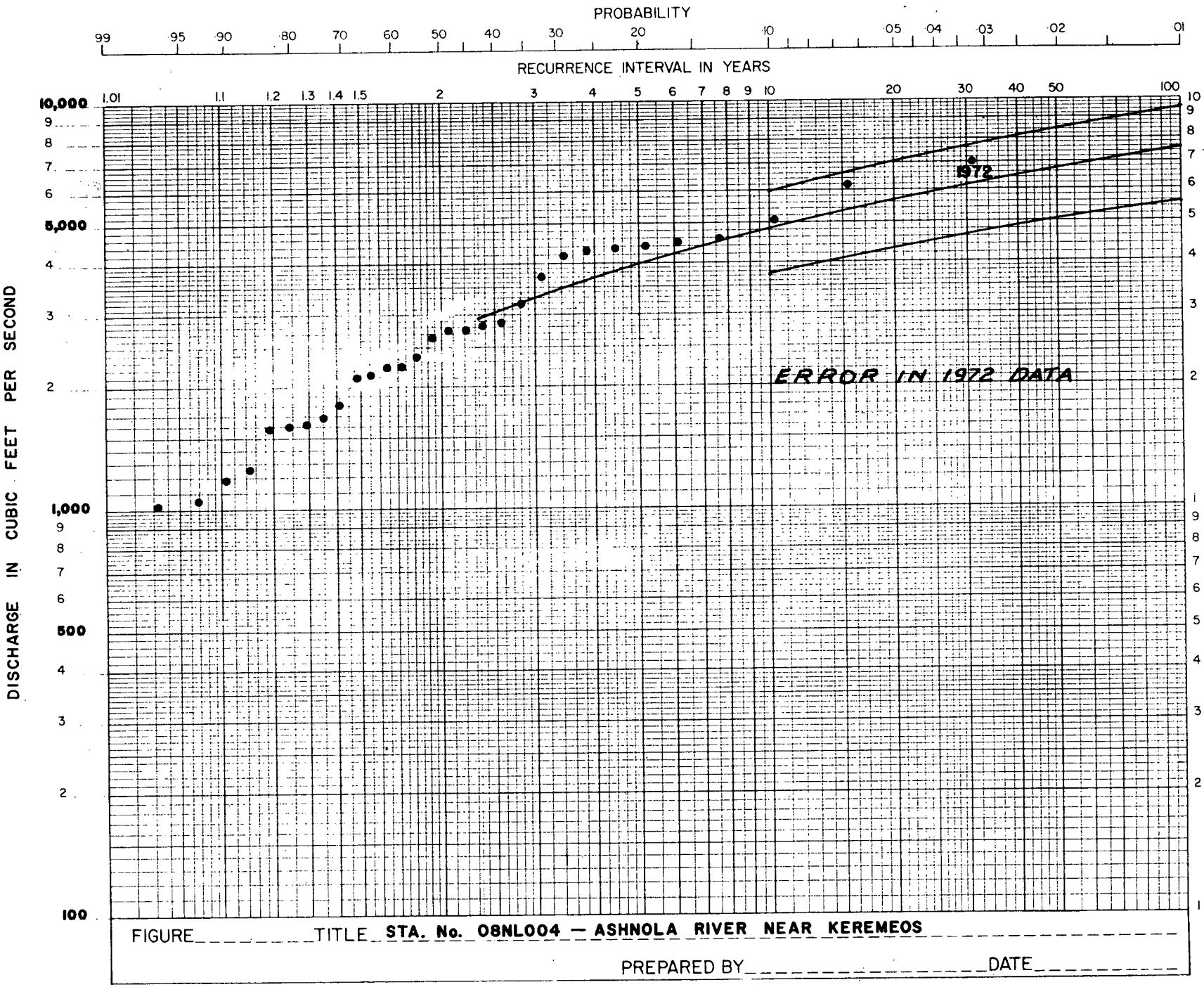

PROBABILITY
99 95 90 80 70 60 50 40 30 20 10 05 04 03 02 01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
10,000
9
8
7
6
5,000
4
3
2
1,000
9
8
7
6
500
4
3
2
100
1972
ERROR IN 1972 DATA
FIGURE_____TITLE STA. No. 08NL004 — ASHNOLA RIVER NEAR KEREMEOS
PREPARED BY_____DATE_____

PLATE 43

MAXIMUM DAILY MEAN FLOWS

Station No. 08NL004
Ashnola River near Keremeous

Date	Maximum daily flow in cfs
May 27, 1915	1060
Jun 17, 1916	1690
Jun 16, 1917	1600
Jun 13, 1918	1620
May 8, 1947	1190
May 28, 1948	6160
May 14, 1949	2740
Jun 15, 1950	4320
May 23, 1951	3190
May 19, 1952	1580
Jun 13, 1953	5050
Jul 1, 1954	2830
Jun 14, 1955	2750
May 24, 1956	4400
May 19, 1957	4480
May 22, 1958	2240
Jun 21, 1959	2860
Jun 4, 1960	1800
Jun 2, 1961	3720
May 26, 1962	1270
May 29, 1963	2100
Jun 8, 1964	4160
Jun 11, 1965	4350
Jun 9, 1966	1030
Jun 22, 1967	4580
Jun 2, 1968	2240
May 25, 1969	2140
Jun 3, 1970	2360
Jun 7, 1971	2640
May 31, 1972	~~7000~~ 6000 (Revised)

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
		~~7000~~ 6000 (Revised)	1972
1	31.0	6160	1948
2	15.5	5050	1953
3	10.3	4580	1967
4	7.7	4480	1957
5	6.2	4400	1956
6	5.2	4350	1965
7	4.43	4320	1950
8	3.87	4160	1964
9	3.44	3720	1961
10	3.10	3190	1951
11	2.82	2860	1959
12	2.58	2830	1954
13	2.38	2750	1955
14	2.21	2740	1949
15	2.07	2640	1971
16	1.94	2360	1970
17	1.82	2240	1958
18	1.72	2240	1968
19	1.63	2140	1969
20	1.55	2100	1963
21	1.48	1800	1960
22	1.41	1690	1916
23	1.35	1620	1918
24	1.29	1600	1917
25	1.24	1580	1952
26	1.192	1270	1962
27	1.148	1190	1947
28	1.107	1060	1915
29	1.069	1030	1966
30	1.033		

Note Error

Mean annual flood: 2970 cfs

Standard deviation: 1540 cfs

Drainage area: 400 sq mi

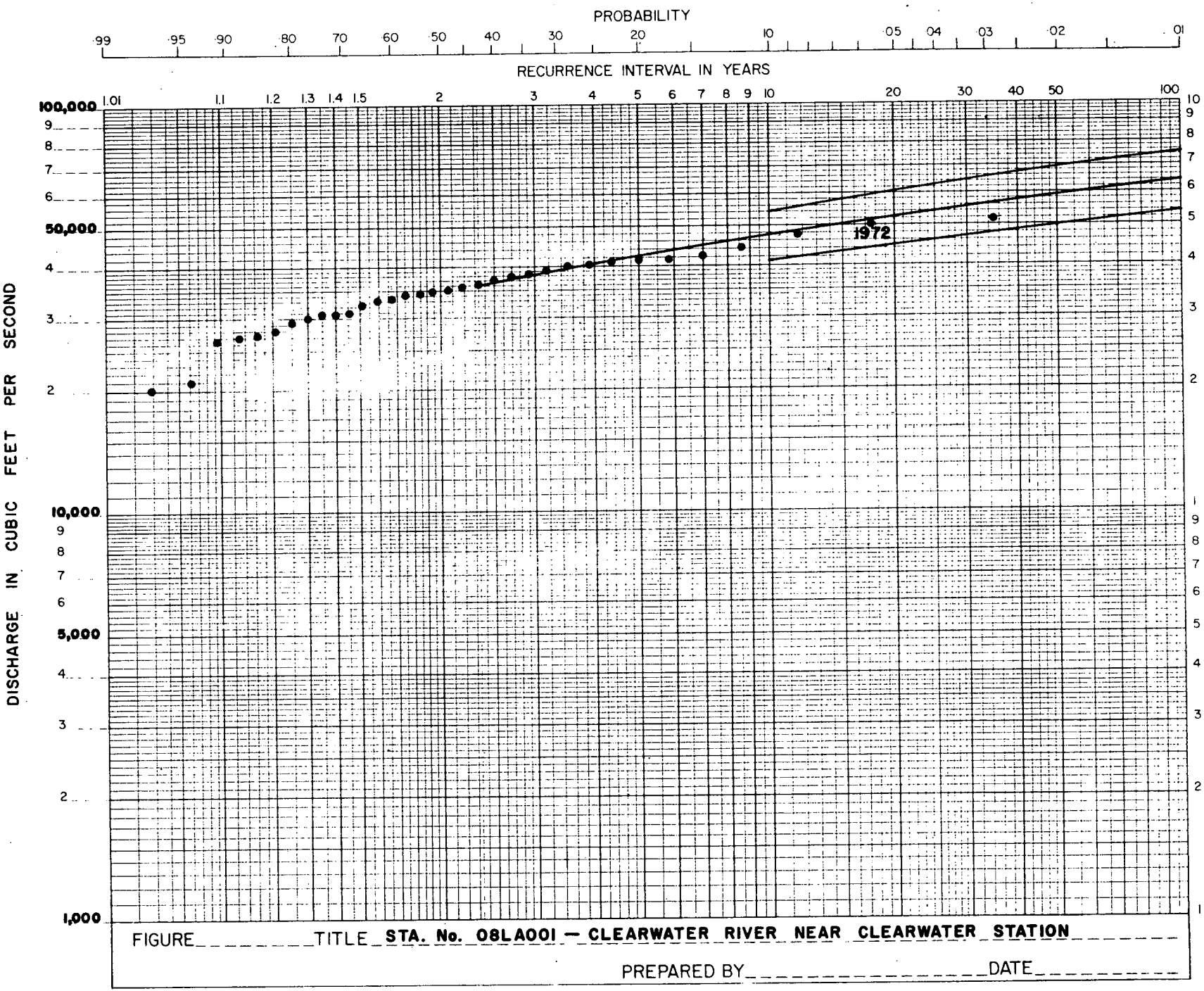

PROBABILITY
99 95 90 80 70 60 50 40 30 20 10 05 04 03 02 01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE_____TITLE_STA. No. 08LA001 — CLEARWATER RIVER NEAR CLEARWATER STATION_____
PREPARED BY_____DATE_____

PLATE 44

MAXIMUM DAILY MEAN FLOWS

Station No. 08LA001
Clearwater River near Clearwater Station

Date	Maximum daily flow in cfs
Jun 18, 1914	28000
May 23, 1915	20100
Jun 23, 1916	33200
Jun 9, 1917	34200
Jun 14, 1918	31000
Jun 4, 1922	35600
Jun 30, 1923	50000
May 19, 1924	40200
May 22, 1925	44200
May 1, 1926	20900
Jun 14, 1927	37300
Jun 19, 1950	47500
May 25, 1951	30800
May 22, 1952	36300
Jun 13, 1953	26600
Jul 3, 1954	34400
Jun 26, 1955	42300
Jun 5, 1956	33700
May 22, 1957	41600
May 30, 1958	38100
Jun 23, 1959	30000
Jul 2, 1960	39200
Jun 7, 1961	40400
Jun 27, 1962	32400
Jun 19, 1963	27300
Jun 16, 1964	41300
Jun 12, 1965	30800
Jun 10, 1966	27000
Jun 20, 1967	41400
Jun 12, 1968	35200
Jun 7, 1969	29400
Jun 5, 1970	34900
Jun 8, 1971	37900
Jun 12, 1972	51600

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	35.0	51600	1972
2	17.5	50000	1923
3	11.7	47500	1950
4	8.7	44200	1925
5	7.0	42300	1955
6	5.8	41600	1957
7	5.0	41400	1967
8	4.37	41300	1964
9	3.89	40400	1961
10	3.50	40200	1924
11	3.18	39200	1960
12	2.92	38100	1958
13	2.69	37900	1971
14	2.50	37300	1927
15	2.33	36300	1952
16	2.19	35600	1922
17	2.06	35200	1968
18	1.94	34900	1970
19	1.84	34400	1954
20	1.75	34200	1917
21	1.67	33700	1956
22	1.59	33200	1916
23	1.52	32400	1962
24	1.46	31000	1918
25	1.40	30800	1951
26	1.35	30800	1965
27	1.30	30000	1959
28	1.25	29400	1969
29	1.21	28000	1914
30	1.167	27300	1963
31	1.129	27000	1966
32	1.094	26600	1953
33	1.061	20900	1926
34	1.029	20100	1915

Mean annual flood: 35400 cfs

Standard deviation: 7380 cfs

Drainage area: 3950 sq mi

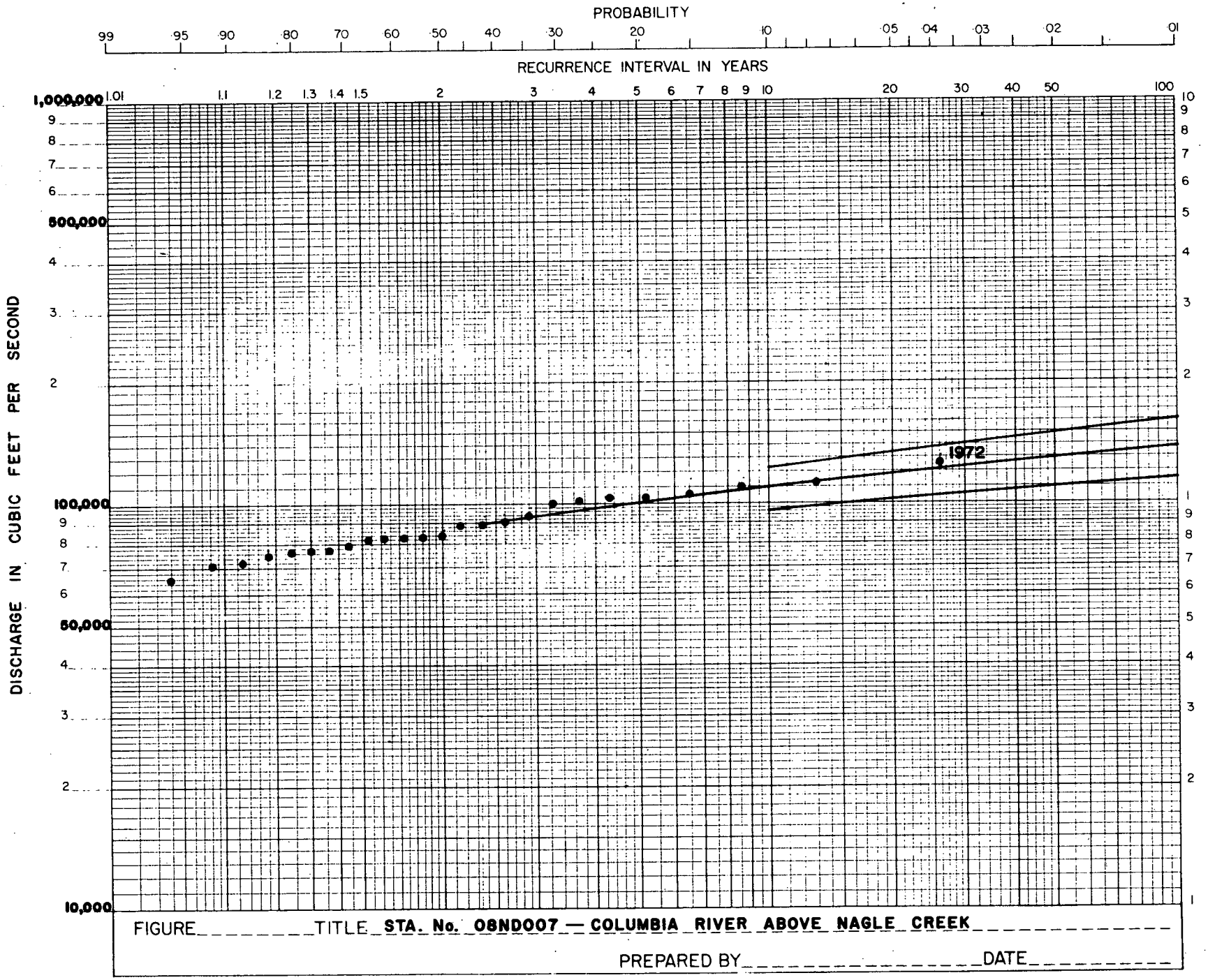

PROBABILITY
99 95 90 80 70 60 50 40 30 20 10 05 04 03 02 01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
1,000,000
500,000
100,000
50,000
10,000
1972
FIGURE TITLE STA. No. 08ND007 — COLUMBIA RIVER ABOVE NAGLE CREEK
PREPARED BY DATE

PLATE 45

MAXIMUM DAILY MEAN FLOWS

Station No. 08ND007
Columbia River above Nagel Creek

Date	Maximum daily flow in cfs
Jun 11, 1947	74600
Jun 9, 1948	112000
Jun 7, 1949	65600
Jun 21, 1950	106000
Jul 15, 1951	79000
Jun 30, 1952	70700
Jul 15, 1953	83400
Jul 8, 1954	104000
Jun 25, 1955	102000
Jun 5, 1956	90200
Jun 8, 1957	76200
Jun 10, 1958	83200
Jul 25, 1959	88800
Jun 7, 1961	110000
Jun 26, 1962	88400
Jun 19, 1963	84100
Jul 10, 1964	93800
Jul 8, 1965	82000
Jul 9, 1966	76900
Jun 29, 1967	104000
Jul 13, 1968	99600
Jun 20, 1969	82600
Jun 5, 1970	72000
Jun 8, 1971	76900
Jun 12, 1972	126000

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	26.0	126000	1972
2	13.0	112000	1948
3	8.7	110000	1961
4	6.5	106000	1950
5	5.2	104000	1954
6	4.33	104000	1967
7	3.71	102000	1955
8	3.25	99600	1968
9	2.89	93800	1964
10	2.60	90200	1956
11	2.36	88800	1959
12	2.17	88400	1962
13	2.00	84100	1963
14	1.86	83400	1953
15	1.73	83200	1958
16	1.62	82600	1969
17	1.53	82000	1965
18	1.44	79000	1951
19	1.37	76900	1966
20	1.30	76900	1971
21	1.24	76200	1957
22	1.182	74600	1947
23	1.130	72000	1970
24	1.083	70700	1952
25	1.040	65600	1949

Mean annual flood: 89300 cfs

Drainage area: 8220 sq mi

Standard deviation: 15100 cfs

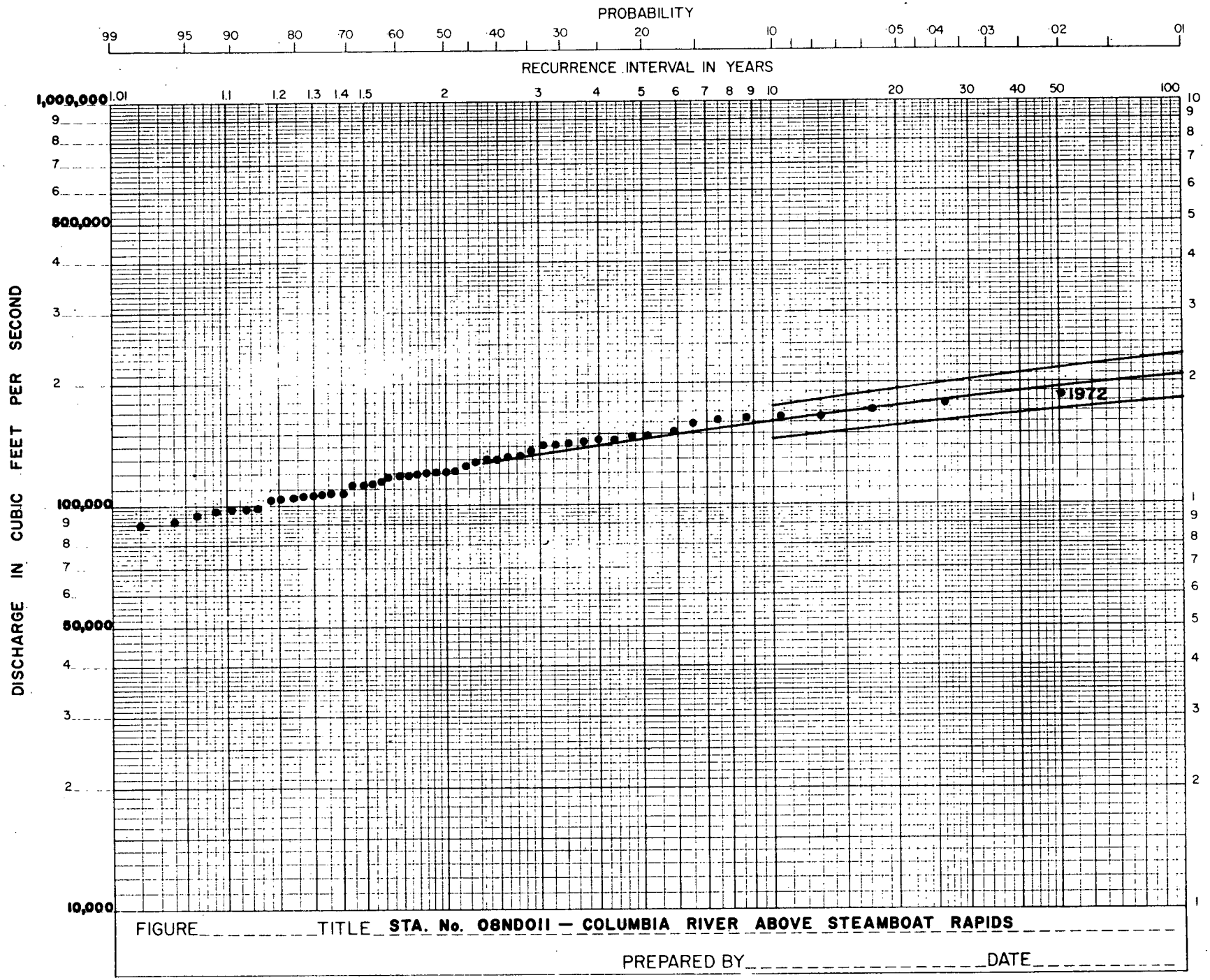

PROBABILITY
99 95 90 80 70 60 50 40 30 20 10 05 04 03 02 01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
1,000,000
500,000
100,000
50,000
10,000
1972
FIGURE TITLE STA. No. 08ND011 — COLUMBIA RIVER ABOVE STEAMBOAT RAPIDS
PREPARED BY DATE

PLATE 46

MAXIMUM DAILY MEAN FLOWS

Station No. 08ND011
Columbia River above Steamboat Rapids

Date	Maximum daily flow in cfs
Jun 26, 1912	142000
Jun 11, 1913	148000
Jul 14, 1914	146000
Aug 4, 1915	99000
Jun 20, 1916	165000
Jul 5, 1917	122000
Jun 24, 1918	166000
Jun 23, 1919	148000
Jul 18, 1920	171000
Jun 25, 1921	143000
Jun 5, 1922	137000
Jun 9, 1929	117000
Jul 15, 1930	126000
Jun 10, 1931	121000
Jun 16, 1932	130000
Jun 17, 1933	130000
May 30, 1934	142000
Jul 17, 1935	123000
Jun 2, 1936	152000
Jul 1, 1937	95200
Jun 25, 1938	121000
May 29, 1939	108000
May 25, 1940	114000
Jun 14, 1941	98400
Jul 6, 1942	105000
Jul 10, 1943	104000
Jun 12, 1944	90000
Jun 1, 1945	91600
May 29, 1946	133000
Jun 11, 1947	108000
Jun 9, 1948	178000
Jun 7, 1949	98100
Jun 22, 1950	163000
Jun 25, 1955	165000
Jun 5, 1956	128000
May 20, 1957	113000
Jun 10, 1958	107000
Jul 25, 1959	114000
Jul 8, 1960	119000
Jun 7, 1961	159000
Jun 26, 1962	120000
Jun 19, 1963	115000
Jul 9, 1964	133000
Jun 12, 1965	107000
Jul 9, 1966	104000
Jun 22, 1967	146000
Jun 28, 1968	145000
Jun 6, 1969	118000
Jun 5, 1970	97300
Jun 8, 1971	108000
Jun 12, 1972	186000

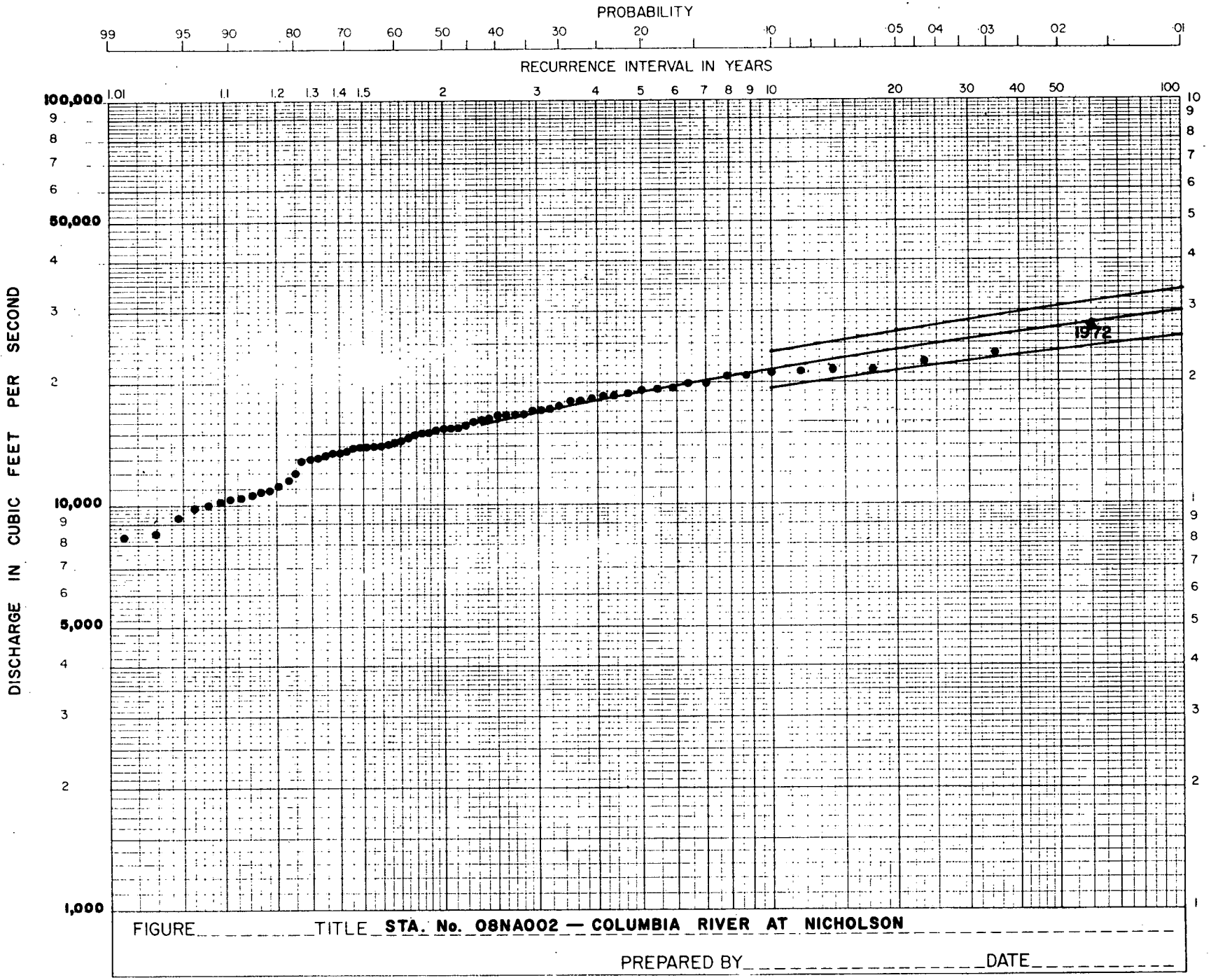
Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	52.0	186000	1972
2	26.0	178000	1948
3	17.3	171000	1920
4	13.0	166000	1918
5	10.4	165000	1916
6	8.7	165000	1955
7	7.4	163000	1950
8	6.5	159000	1961
9	5.8	152000	1936
10	5.2	148000	1913
11	4.73	148000	1919
12	4.33	146000	1914
13	4.00	146000	1967
14	3.71	145000	1968
15	3.47	143000	1921
16	3.25	142000	1912
17	3.06	142000	1934
18	2.89	137000	1922
19	2.74	133000	1946
20	2.60	133000	1964
21	2.48	130000	1932
22	2.36	130000	1933
23	2.26	128000	1956
24	2.17	126000	1930
25	2.08	123000	1935
26	2.00	122000	1917
27	1.93	121000	1931
28	1.86	121000	1938
29	1.79	120000	1962
30	1.73	119000	1960
31	1.68	118000	1969
32	1.62	117000	1929
33	1.58	115000	1963
34	1.53	114000	1940
35	1.49	114000	1959
36	1.44	113000	1957
37	1.41	108000	1939
38	1.37	108000	1947
39	1.33	108000	1971
40	1.30	107000	1958
41	1.27	107000	1965
42	1.24	105000	1942
43	1.21	104000	1943
44	1.182	104000	1966
45	1.156	99000	1915
46	1.130	98400	1941
47	1.106	98100	1949
48	1.083	97300	1970
49	1.061	95200	1937
50	1.040	91600	1945
51	1.020	90000	1944

Mean annual flood: 128000 cfs

Drainage area: 10300 sq mi

Standard deviation: 24300 cfs

Remarks: Records before 1955 obtained from:
08ND002 - Columbia River at Revelstoke


PROBABILITY
99 95 90 80 70 60 50 40 30 20 10 05 04 03 02 01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE TITLE STA. No. 08NA002 — COLUMBIA RIVER AT NICHOLSON
PREPARED BY DATE

08

PLATE 47

MAXIMUM DAILY MEAN FLOWS

Station No. 08NA002
Columbia River at Nicholson

Date	Maximum daily flow in cfs
Jun 19, 1903	20800
Jul 11, 1904	18100
Jun 12, 1905	10800
Jul 14, 1906	13900
Jul 4, 1907	15100
Jul 17, 1908	18500
Jul 10, 1909	16800
Jul 21, 1910	14000
Jun 26, 1911	18100
Jun 30, 1912	11600
Jun 14, 1913	18600
Jul 11, 1914	20000
Aug 7, 1915	10600
Jun 25, 1916	23700
Jul 22, 1917	14900
Jun 20, 1918	21300
Jun 28, 1919	15800
Jul 20, 1920	21500
Jul 3, 1921	15300
Jul 7, 1922	13100
Jun 19, 1923	14000
Jul 9, 1924	10200
Jun 30, 1925	18300
Jul 14, 1926	10400
Jul 1, 1927	16600
May 31, 1928	15600
Jun 15, 1929	13400
Jul 18, 1930	13500
Jun 22, 1931	10400
Jun 25, 1932	15500
Jun 21, 1933	16300
Jun 2, 1934	17200
Jul 21, 1935	13000
Jun 5, 1936	13300
Jul 7, 1937	10000
Jun 27, 1938	17200
Jul 16, 1939	11200
Jun 26, 1940	10900
Jun 19, 1941	8510
Jul 10, 1942	14700
Jul 13, 1943	13900
Jun 16, 1944	8400
Jun 30, 1945	9300
Jun 27, 1946	14500
Jun 13, 1947	12800
Jun 11, 1948	19400
Jun 13, 1949	9860
Jul 8, 1950	19200
Jul 20, 1951	16900
Jun 13, 1952	12000
Jul 18, 1953	16200
Jul 10, 1954	20800
Jun 28, 1955	20000
Jun 6, 1956	21600
Jun 11, 1957	17600
Jun 4, 1958	15500
Jun 27, 1959	19100
Jul 9, 1960	14300
Jun 9, 1961	22500
Jun 26, 1962	16100
Jun 20, 1963	15100
Jul 15, 1964	16700
Jul 10, 1965	13600
Jul 12, 1966	14100
Jun 25, 1967	21100
Jul 13, 1968	18800
Jun 26, 1969	17300
Jun 8, 1971	13800
Jun 11, 1972	27200

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	70.0	27200	1972
2	35.0	23700	1916
3	23.3	22500	1961
4	17.5	21600	1956
5	14.0	21500	1920
6	11.7	21300	1918
7	10.0	21100	1967
8	8.7	20800	1903
9	7.8	20800	1954
10	7.0	20000	1914
11	6.4	20000	1955
12	5.8	19400	1948
13	5.4	19200	1950
14	5.0	19100	1959
15	4.67	18800	1968
16	4.37	18600	1913
17	4.12	18500	1908
18	3.89	18300	1925
19	3.68	18100	1904
20	3.50	18100	1911
21	3.33	17600	1957
22	3.18	17300	1969
23	3.04	17200	1934
24	2.92	17200	1938
25	2.80	16900	1951
26	2.69	16800	1909
27	2.59	16700	1964
28	2.50	16600	1927
29	2.41	16300	1933
30	2.33	16200	1953
31	2.26	16100	1962
32	2.19	15800	1919
33	2.12	15600	1928
34	2.06	15500	1932
35	2.00	15500	1958
36	1.94	15300	1921
37	1.89	15100	1907
38	1.84	15100	1963
39	1.79	14900	1917
40	1.75	14700	1942
41	1.71	14500	1946
42	1.67	14300	1960
43	1.63	14100	1966
44	1.59	14000	1910
45	1.56	14000	1923
46	1.52	13900	1906
47	1.49	13900	1943
48	1.46	13800	1971
49	1.43	13600	1965
50	1.40	13500	1930
51	1.37	13400	1929
52	1.35	13300	1936
53	1.32	13100	1922
54	1.30	13000	1935
55	1.27	12800	1947
56	1.25	12000	1952
57	1.23	11600	1912
58	1.21	11200	1939
59	1.186	10900	1940
60	1.167	10800	1905
61	1.148	10600	1915
62	1.129	10400	1926
63	1.111	10400	1931
64	1.094	10200	1924
65	1.077	10000	1937
66	1.061	9860	1949
67	1.045	9300	1945
68	1.029	8510	1941
69	1.014	8400	1944

Mean annual flood: 15700 cfs

Standard deviation: 3930 cfs

Drainage area: 2570 sq mi

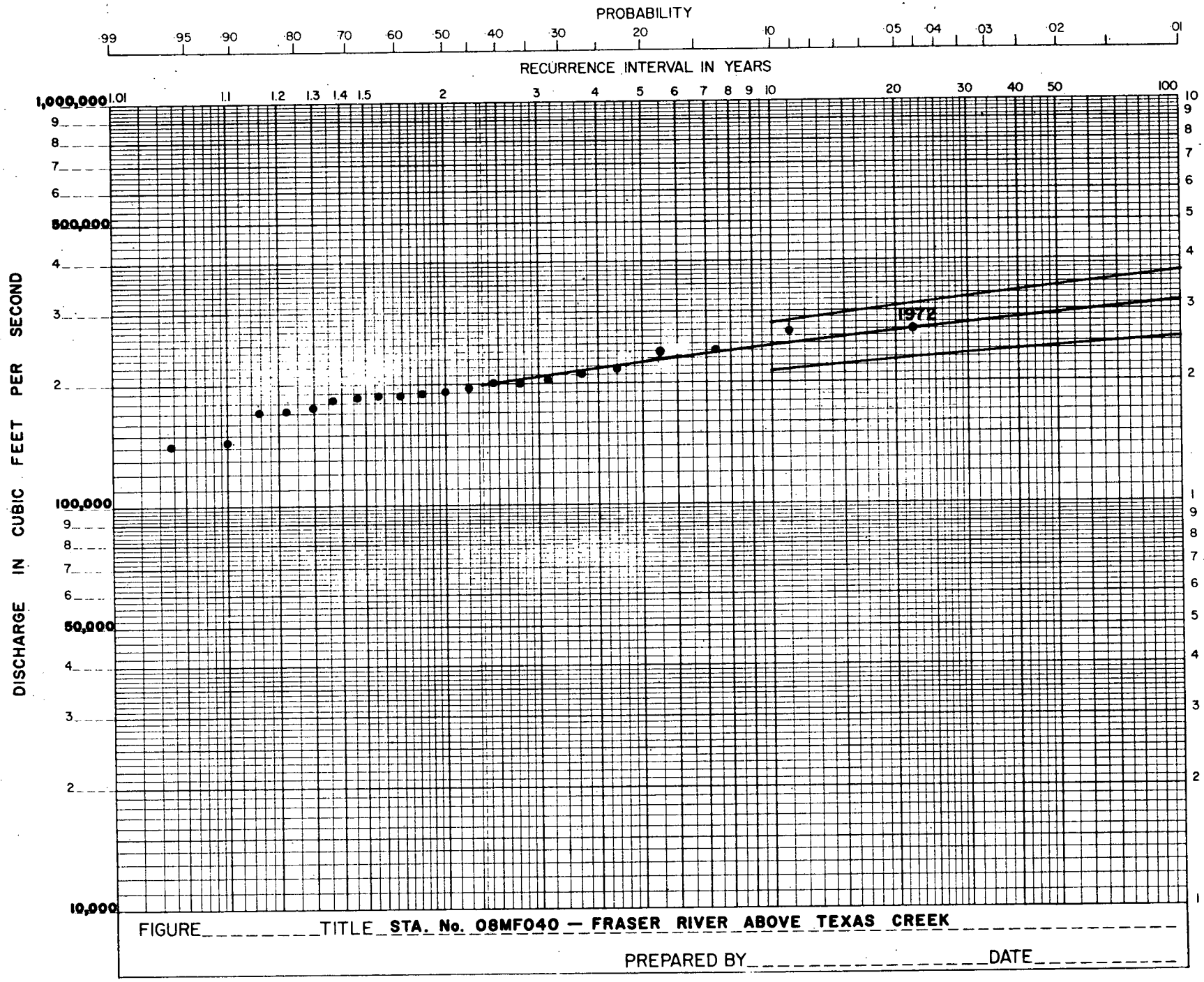

PROBABILITY
99 95 90 80 70 60 50 40 30 20 10 05 04 03 02 01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
1,000,000
500,000
100,000
50,000
10,000
1972
FIGURE TITLE STA. No. 08MF040 — FRASER RIVER ABOVE TEXAS CREEK
PREPARED BY DATE

PLATE 48

MAXIMUM DAILY MEAN FLOWS

Station No. 08MP040
Fraser River above Texas Creek

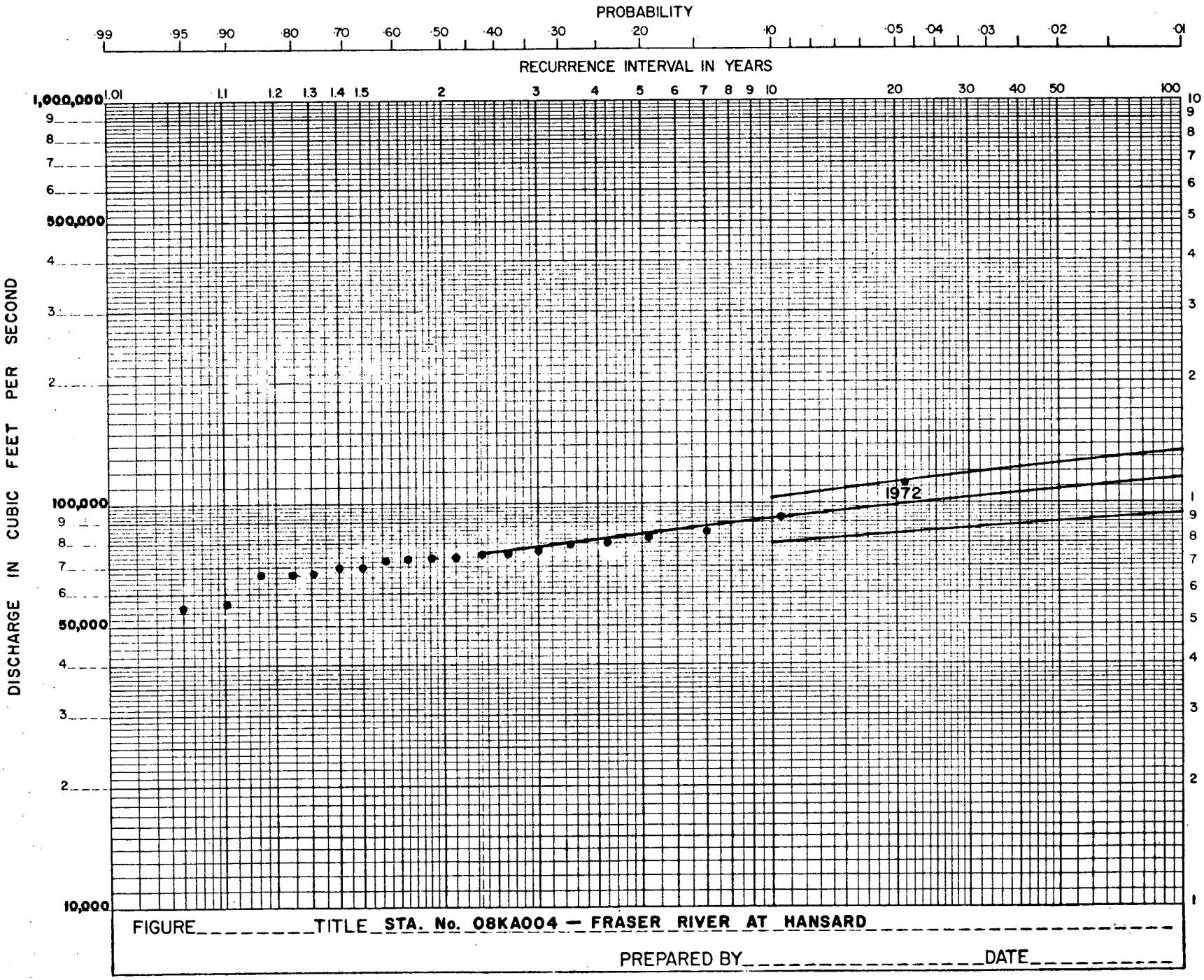
Date	Maximum daily flow in cfs
May 22, 1952	189000
May 22, 1953	142000
Jul 6, 1954	187000
Jun 29, 1955	241000
Jun 8, 1956	200000
May 23, 1957	216000
Jun 1, 1958	203000
Jun 7, 1959	175000
Jul 2, 1960	210000
Jun 9, 1961	187000
Jun 30, 1962	186000
Jun 15, 1963	173000
Jun 20, 1964	266000
Jun 6, 1965	191000
May 13, 1966	183000
Jun 6, 1967	238000
May 25, 1968	200000
Jun 8, 1969	144000
Jun 8, 1970	195000
Jun 18, 1971	172000
Jun 16, 1972	269000

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	22.0	269000	1972
2	11.0	266000	1964
3	7.3	241000	1955
4	5.5	238000	1967
5	4.40	216000	1957
6	3.67	210000	1960
7	3.14	203000	1958
8	2.75	200000	1956
9	2.44	200000	1968
10	2.20	195000	1970
11	2.00	191000	1965
12	1.83	189000	1952
13	1.69	187000	1954
14	1.57	187000	1961
15	1.47	186000	1962
16	1.37	183000	1966
17	1.29	175000	1959
18	1.22	173000	1963
19	1.158	172000	1971
20	1.100	144000	1969
21	1.048	142000	1953

Mean annual flood: 198000 cfs Drainage area: 53600 sq mi

Standard deviation: 33300 cfs

Remarks: Storage and diversion since 1952 (Kenny Dam)



FIGURE_____TITLE STA. No. 08KA004 — FRASER RIVER AT HANSARD_____

PREPARED BY_____DATE_____

PLATE 49

MAXIMUM DAILY MEAN FLOWS

Station No. 08KA004
Fraser River at Hansard

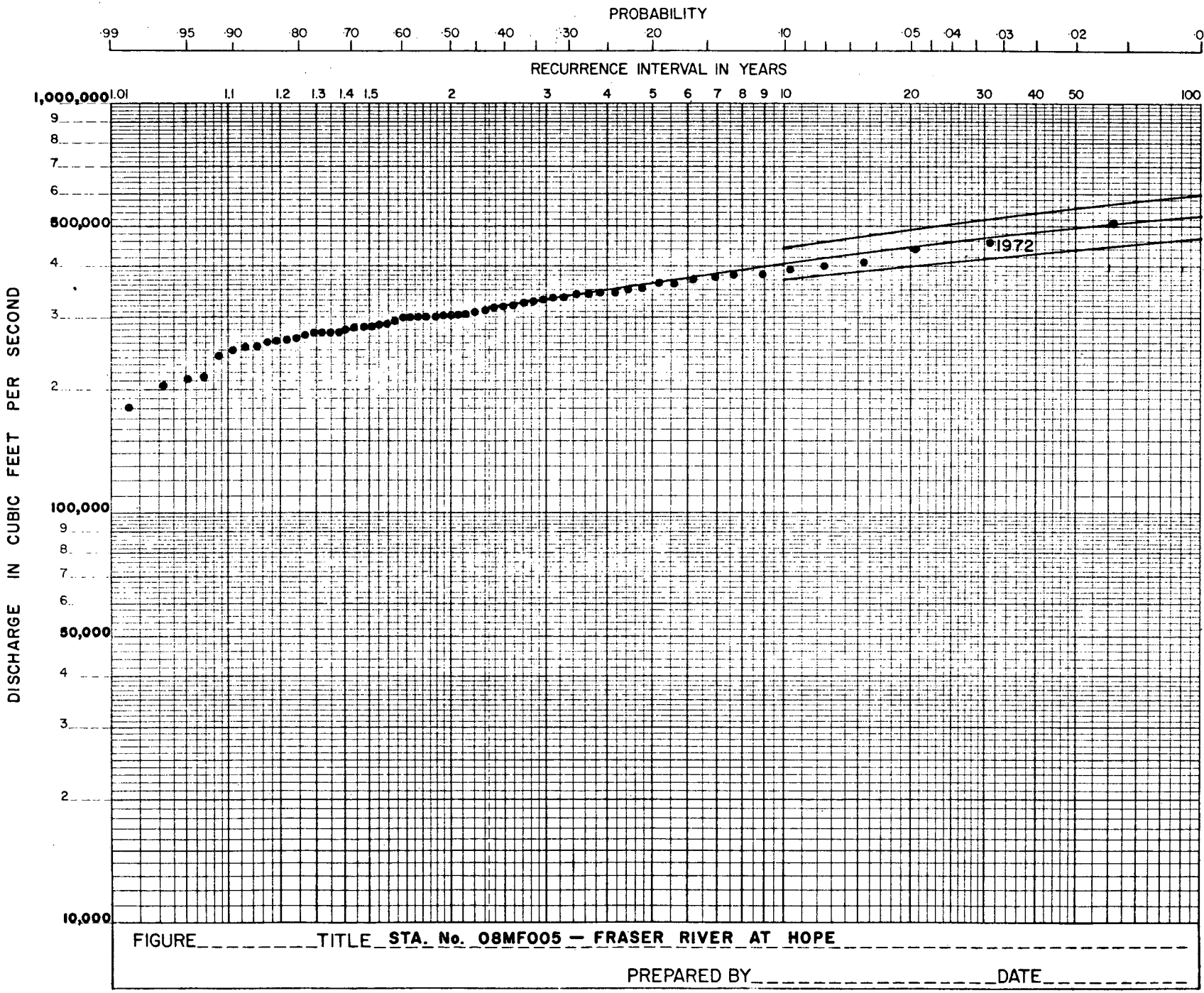
Date	Maximum daily flow in cfs
May 21, 1953	56600
Jul 3, 1954	79300
Jun 28, 1955	92400
Jun 6, 1956	73600
May 21, 1957	74900
May 31, 1958	73900
Jun 23, 1959	69500
Jun 30, 1960	72400
Jun 7, 1961	76600
Jun 30, 1962	73400
Jun 21, 1963	66800
Jun 15, 1964	80300
Jun 13, 1965	69500
Jun 19, 1966	66900
Jun 23, 1967	82500
Jun 28, 1968	75100
Jun 6, 1969	55600
Jun 6, 1970	85200
Jun 16, 1971	67800
Jun 14, 1972	112000

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	21.0	112000	1972
2	10.5	92400	1955
3	7.0	85200	1970
4	5.2	82500	1967
5	4.20	80300	1964
6	3.50	79300	1954
7	3.00	76600	1961
8	2.62	75100	1968
9	2.33	74900	1957
10	2.10	73900	1958
11	1.91	73600	1956
12	1.75	73400	1962
13	1.62	72400	1960
14	1.50	69500	1959
15	1.40	69500	1965
16	1.31	67800	1971
17	1.24	66900	1966
18	1.167	66800	1963
19	1.105	56600	1953
20	1.050	55600	1969

Mean annual flood: 75200 cfs

Standard deviation: 12300 cfs

Drainage area: 7060 sq mi


PROBABILITY
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RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
1,000,000
500,000
100,000
50,000
10,000
1972
FIGURE_____TITLE STA. No. 08MF005 — FRASER RIVER AT HOPE
PREPARED BY_____DATE_____

PLATE 50

MAXIMUM DAILY MEAN FLOWS

Station No. 08MF005
Fraser River at Hope

Date	Maximum daily flow in cfs
Jun 24, 1912	262000
Jun 14, 1913	362000
Jun 20, 1914	302000
Jul 14, 1915	205000
Jun 26, 1916	308000
Jun 11, 1917	317000
Jun 19, 1918	345000
Jun 26, 1919	301000
Jul 16, 1920	380000
Jun 11, 1921	392000
Jun 7, 1922	350000
Jun 13, 1923	327000
May 19, 1924	342000
May 23, 1925	352000
May 7, 1926	212000
Jun 14, 1927	306000
May 30, 1928	363000
Jun 13, 1929	284000
Jun 14, 1930	277000
Jun 15, 1931	269000
Jun 18, 1932	300000
Jul 6, 1933	328000
May 1, 1934	300000
Jul 6, 1935	284000
Jun 5, 1936	375000
Jun 22, 1937	264000
May 29, 1938	241000
May 21, 1939	276000
May 29, 1940	250000
Jun 18, 1941	181000
May 31, 1942	255000
Jun 28, 1943	267000
Jun 7, 1944	214000
Jun 4, 1945	276000
May 31, 1946	337000
Jun 14, 1947	288000
May 31, 1948	536000
May 16, 1949	318000
Jun 20, 1950	440000
May 20, 1951	284000
May 24, 1952	294000
Jun 13, 1953	255000
Jul 6, 1954	320000
Jun 29, 1955	400000
Jun 9, 1956	342000
May 24, 1957	369000
May 28, 1958	345000
Jun 25, 1959	299000
Jul 3, 1960	330000
Jun 7, 1961	336000
Jun 30, 1962	290000
Jun 16, 1963	272000
Jun 21, 1964	408000
Jun 6, 1965	303000
Jun 14, 1966	279000
Jun 22, 1967	382000
Jul 1, 1968	312000
Jun 9, 1969	276000
Jun 8, 1970	306000
Jun 11, 1971	300000
Jun 16, 1972	457000

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	62.0	536000	1948
2	31.0	457000	1972
3	20.7	440000	1950
4	15.5	408000	1964
5	12.4	400000	1955
6	10.3	392000	1921
7	8.9	382000	1967
8	7.7	380000	1920
9	6.9	375000	1936
10	6.2	369000	1957
11	5.6	363000	1928
12	5.2	362000	1913
13	4.77	352000	1925
14	4.43	350000	1922
15	4.13	345000	1918
16	3.87	345000	1958
17	3.65	342000	1924
18	3.44	342000	1956
19	3.26	337000	1946
20	3.10	336000	1961
21	2.95	330000	1960
22	2.82	328000	1933
23	2.70	327000	1923
24	2.58	320000	1954
25	2.48	318000	1949
26	2.38	317000	1917
27	2.30	312000	1968
28	2.21	308000	1916
29	2.14	306000	1927
30	2.07	306000	1970
31	2.00	303000	1965
32	1.94	302000	1914
33	1.88	301000	1919
34	1.82	300000	1932
35	1.77	300000	1934
36	1.72	300000	1971
37	1.68	299000	1959
38	1.63	294000	1952
39	1.59	290000	1962
40	1.55	288000	1947
41	1.51	284000	1929
42	1.48	284000	1935
43	1.44	284000	1951
44	1.41	279000	1966
45	1.38	277000	1930
46	1.35	276000	1939
47	1.32	276000	1945
48	1.29	276000	1969
49	1.27	272000	1963
50	1.24	269000	1931
51	1.22	267000	1943
52	1.192	264000	1937
53	1.170	262000	1912
54	1.148	255000	1942
55	1.127	255000	1953
56	1.107	250000	1940
57	1.088	241000	1938
58	1.069	214000	1944
59	1.051	212000	1926
60	1.033	205000	1915
61	1.016	181000	1941

Mean annual flood: 314000 cfs

Drainage area: 78300 sq mi

Standard deviation: 61400 cfs

Remarks: Storage and diversion since 1952 (Kenny Dam)

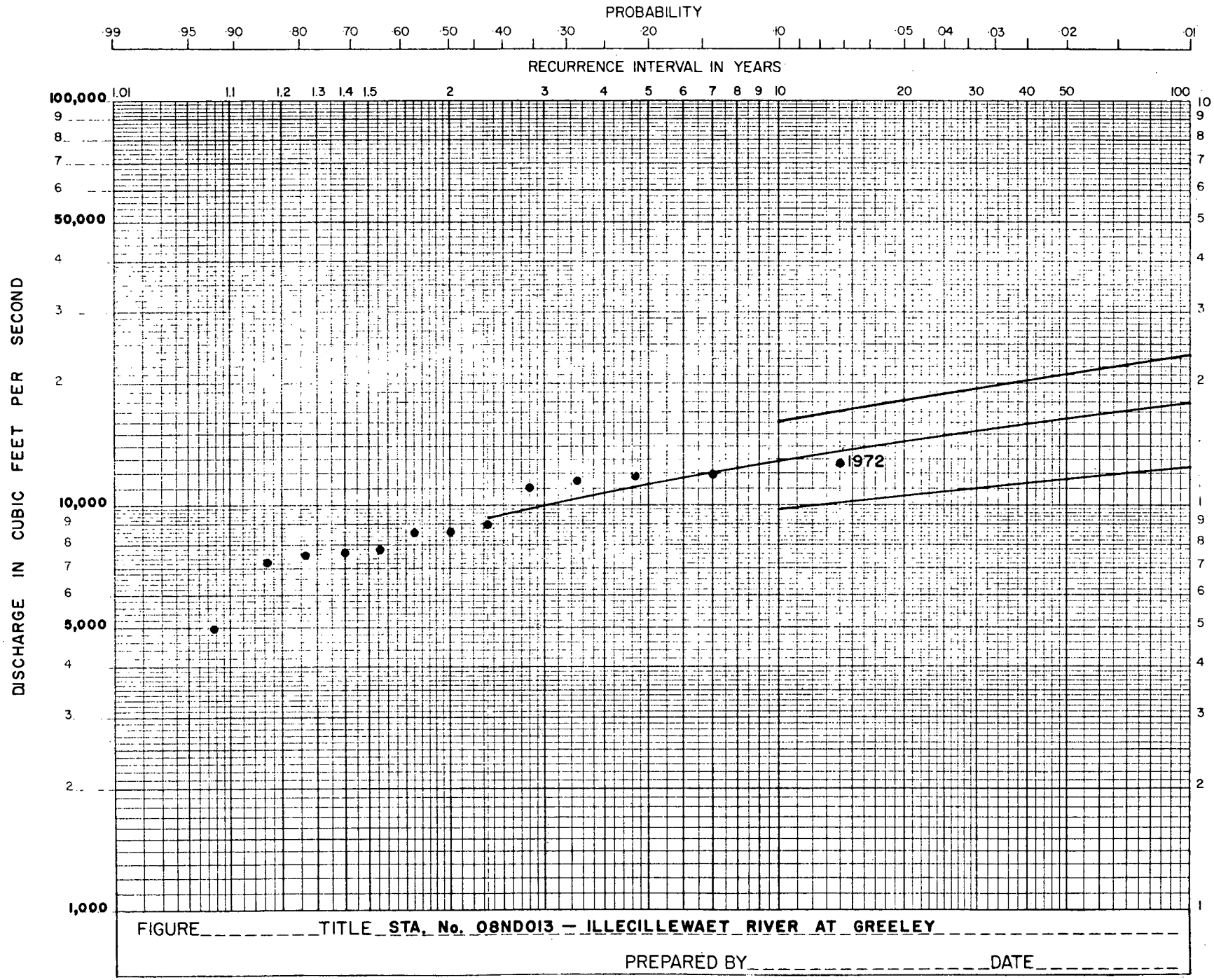

PROBABILITY
.99 .95 .90 .80 .70 .60 .50 .40 .30 .20 .10 .05 .04 .03 .02 .01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE_____TITLE STA. No. 08ND013 — ILLECILLEWAET RIVER AT GREELEY
PREPARED BY_____DATE_____

PLATE 51

MAXIMUM DAILY MEAN FLOWS

Station No. 08ND013
Illecillewaet River at Greeley

Date	Maximum daily flow in cfs
Jun 10, 1913	11900
Jul 5, 1914	7260
Aug 3, 1915	4960
Jun 18, 1916	7660
Jul 9, 1964	11100
Jun 12, 1965	7750
Jul 8, 1966	7560
Jun 3, 1967	11800
Jun 2, 1968	11500
Jun 5, 1969	8640
Jun 4, 1970	8560
Jun 23, 1971	8960
Jun 11, 1972	12700

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	14.0	12700	1972
2	7.0	11900	1913
3	4.67	11800	1967
4	3.50	11500	1968
5	2.80	11100	1964
6	2.33	8960	1971
7	2.00	8640	1969
8	1.75	8560	1970
9	1.56	7750	1965
10	1.40	7660	1916
11	1.27	7560	1966
12	1.167	7260	1914
13	1.077	4960	1915

Mean annual flood: 9260 cfs

Drainage area: 443 sq mi

Standard deviation: 2320 cfs

Remarks: Records before 1964 obtained from:
08ND003 - Illecillewaet River near Revelstoke

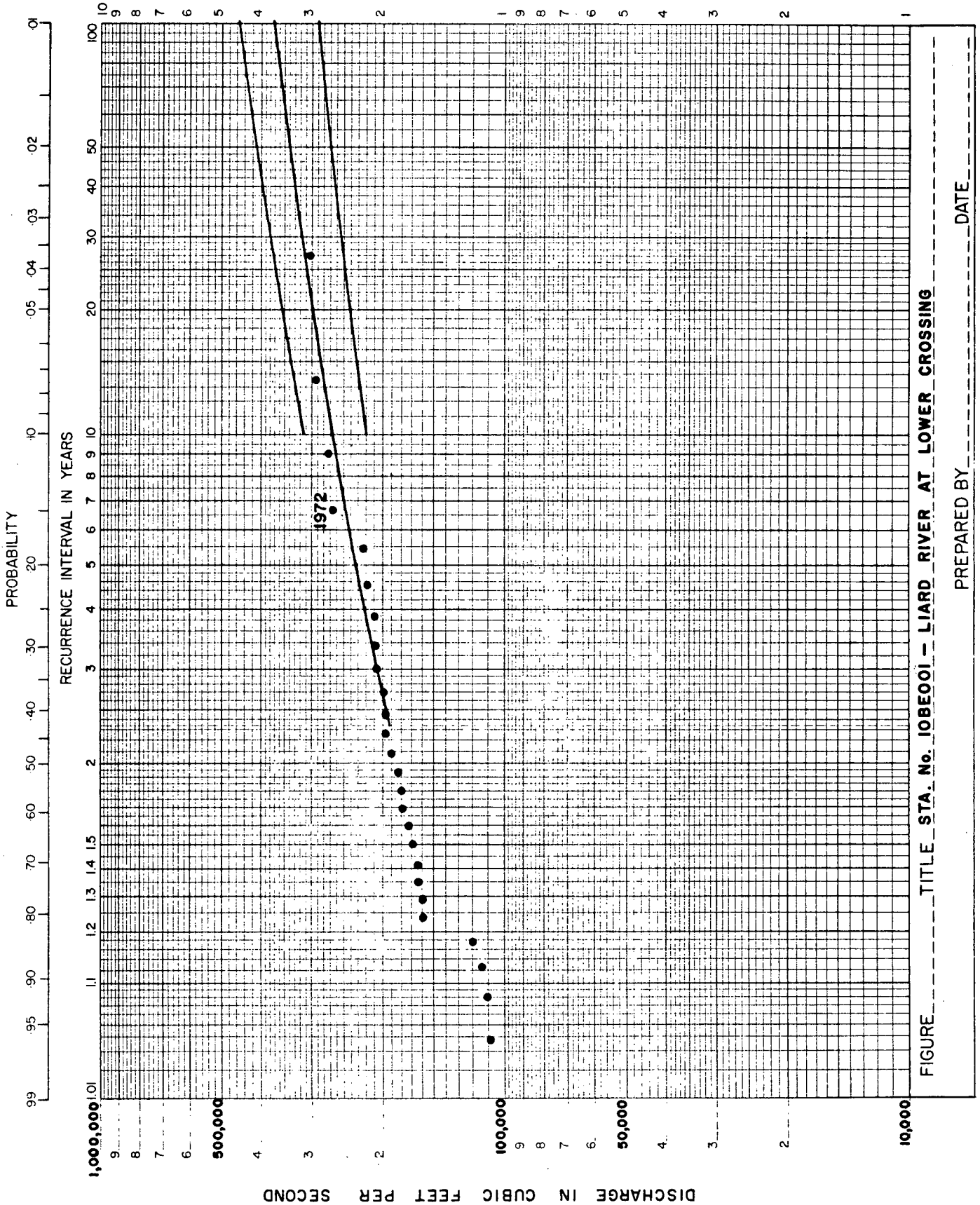

PROBABILITY
RECURRENCE INTERVAL IN YEARS
DISCHARGE IN CUBIC FEET PER SECOND
1972
FIGURE
TITLE STA. No. 10BE001 — LIARD RIVER AT LOWER CROSSING
PREPARED BY
DATE

PLATE 52

MAXIMUM DAILY MEAN FLOWS

Station No. 10BE001
Liard River at Lower Crossing

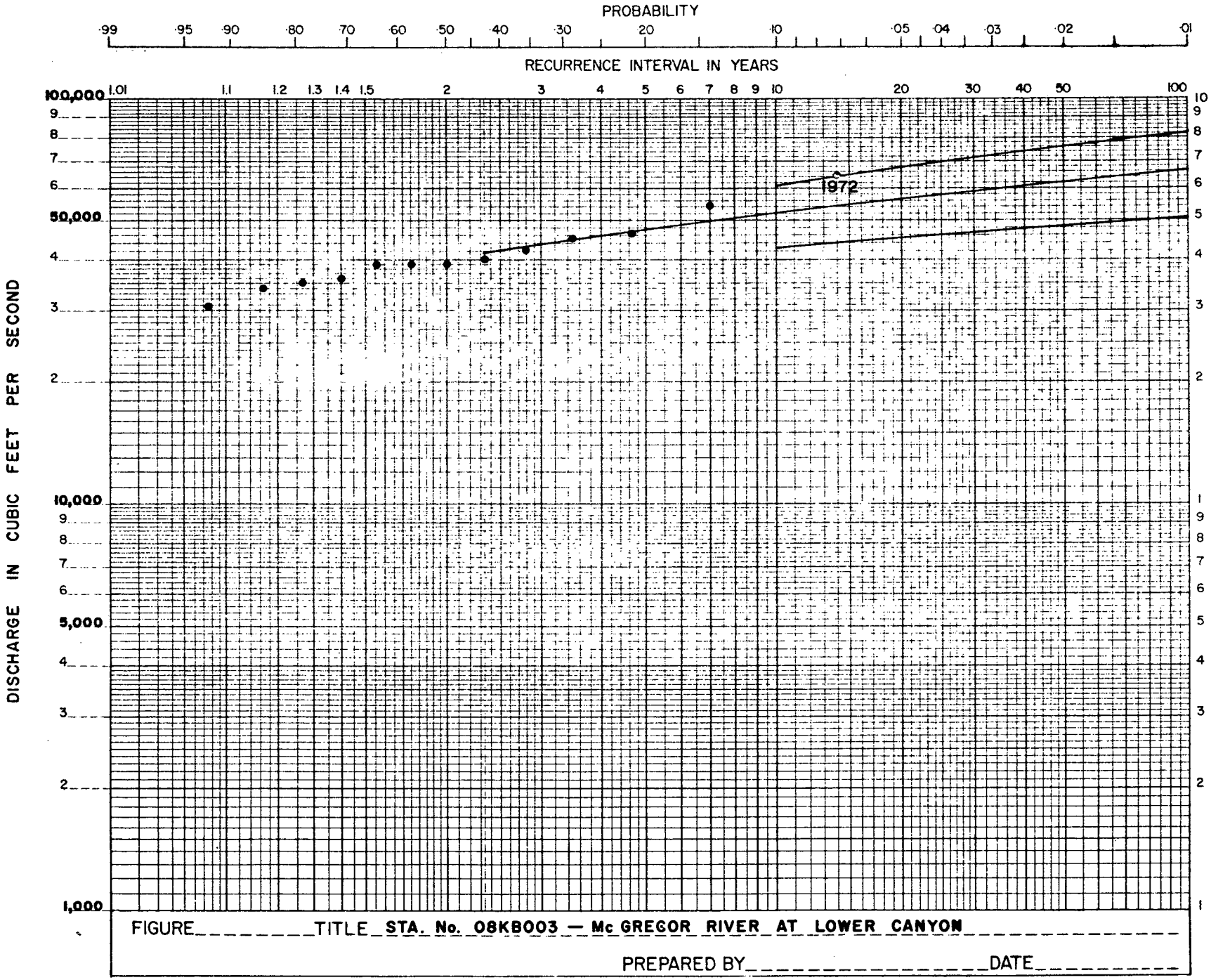
Date	Maximum daily flow in cfs
Jun 1, 1947	223000
May 28, 1948	179000
Jun 25, 1949	184000
Jun 14, 1950	111000
Jul 4, 1951	114000
Jul 2, 1952	197000
May 21, 1953	109000
Jun 2, 1954	169000
Jun 28, 1955	199000
Jun 8, 1956	172000
May 25, 1957	208000
Jun 9, 1958	120000
Jun 15, 1959	180000
Jun 29, 1960	219000
Jun 12, 1961	293000
Jun 24, 1962	272000
Jul 12, 1963	198000
Jun 13, 1964	301000
Jun 2, 1965	164000
Jun 19, 1966	159000
Jun 8, 1967	206000
Jul 15, 1968	165000
Jun 13, 1969	159000
Jun 6, 1970	190000
Jun 13, 1971	210000
Jun 2, 1972	266000

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	27.0	301000	1964
2	13.5	293000	1961
3	9.0	272000	1962
4	6.7	266000	1972
5	5.4	223000	1947
6	4.50	219000	1960
7	3.86	210000	1971
8	3.37	208000	1957
9	3.00	206000	1967
10	2.70	199000	1955
11	2.45	198000	1963
12	2.25	197000	1952
13	2.08	190000	1970
14	1.93	184000	1949
15	1.80	180000	1959
16	1.69	179000	1948
17	1.59	172000	1956
18	1.50	169000	1954
19	1.42	165000	1968
20	1.35	164000	1965
21	1.29	159000	1966
22	1.23	159000	1969
23	1.174	120000	1958
24	1.125	114000	1951
25	1.080	111000	1950
26	1.038	109000	1953

Mean annual flood: 191000 cfs

Standard deviation: 51500 cfs

Drainage area: 40300 sq mi


PROBABILITY
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RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE_____TITLE STA. No. 08KB003 — Mc GREGOR RIVER AT LOWER CANYON
PREPARED BY_____DATE_____

PLATE 53

MAXIMUM DAILY MEAN FLOWS

Station No. 08KB003
McGregor River at Lower Canyon

Date	Maximum daily flow in cfs
Oct 16, 1960	39100
May 24, 1961	39000
Jul 19, 1962	35100
Jun 12, 1963	40000
Aug 2, 1964	45400
Oct 22, 1965	54700
May 10, 1966	39000
Jun 3, 1967	42100
Jun 27, 1968	36100
Jun 4, 1969	30800
Jun 4, 1970	46400
May 13, 1971	34000
Jun 12, 1972	64800

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	14.0	64800	1972
2	7.0	54700	1965
3	4.67	46400	1970
4	3.50	45400	1964
5	2.80	42100	1967
6	2.33	40000	1963
7	2.00	39100	1960
8	1.75	39000	1961
9	1.56	39000	1966
10	1.40	36100	1968
11	1.27	35100	1962
12	1.167	34000	1971
13	1.077	30800	1969

Mean annual flood: 42000 cfs

Standard deviation: 9190 cfs

Drainage area: 1840 sq mi

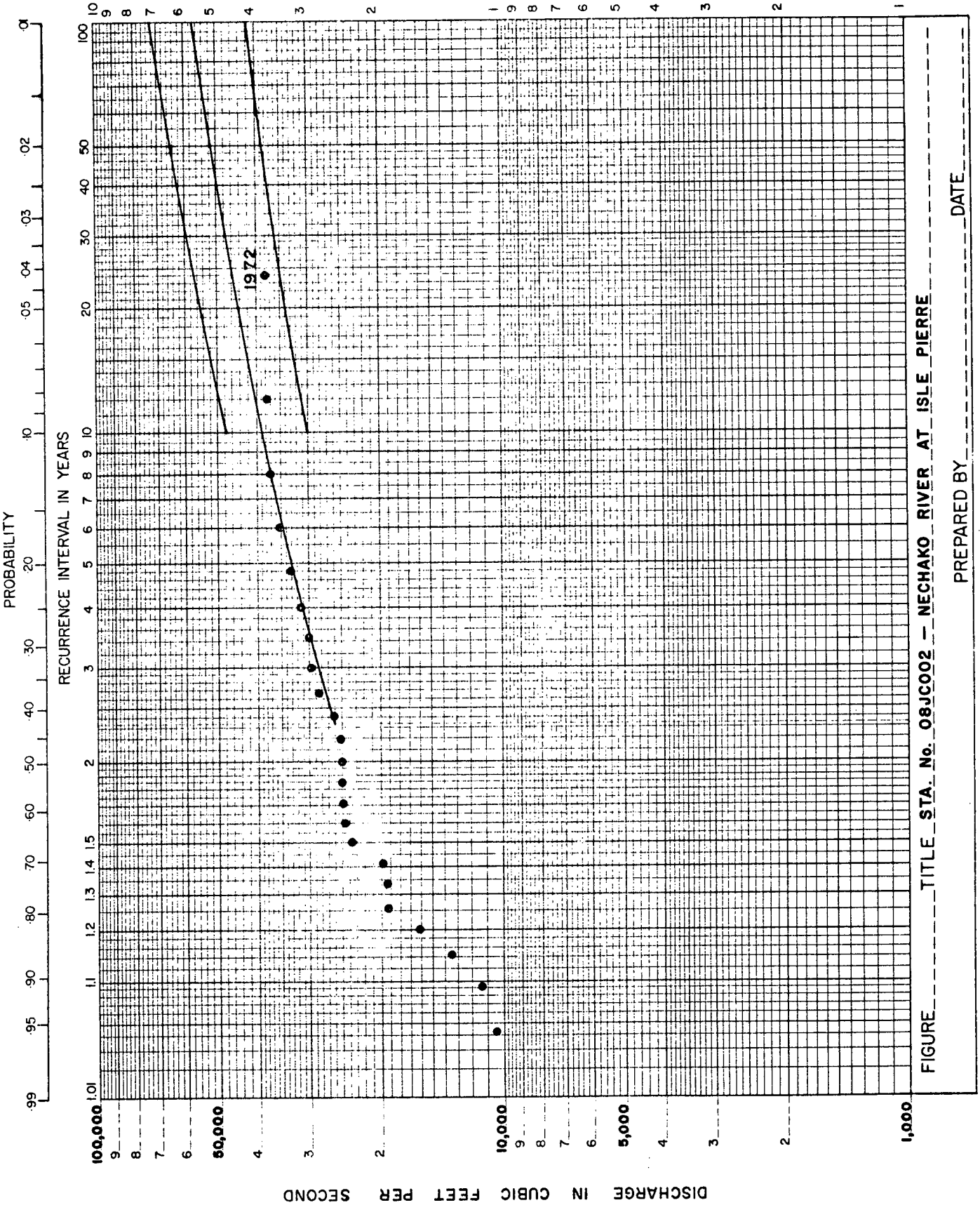

PROBABILITY
RECURRENCE INTERVAL IN YEARS
DISCHARGE IN CUBIC FEET PER SECOND
1972
FIGURE_____TITLE STA. No. 08JC002 — NECHAKO RIVER AT ISLE PIERRE_____
PREPARED BY_____DATE_____

PLATE 54

MAXIMUM DAILY MEAN FLOWS

Station No. 08JC002
Nechako River at Isle Pierre

Date	Maximum daily flow in cfs
Jun 30, 1950	35100
Jun 22, 1951	32800
Jul 1, 1952	37800
Jul 2, 1953	16300
Jul 7, 1954	19200
Jun 4, 1955	11400
Jul 8, 1956	10500
Jun 27, 1957	25000
May 10, 1958	28500
Jul 21, 1959	26200
Jun 10, 1960	33300
Jul 8, 1961	24900
Aug 4, 1962	25200
Jun 11, 1963	24700
Jul 1, 1964	37300
Jun 18, 1965	23700
Jun 29, 1966	25000
Jun 4, 1967	29900
Jul 21, 1968	29700
Jun 28, 1969	19400
Jun 22, 1970	13600
Jul 14, 1971	19800
Jul 7, 1972	38100

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	24.0	38100	1972
2	12.0	37800	1952
3	8.0	37300	1964
4	6.0	35100	1950
5	4.80	33300	1960
6	4.00	32800	1951
7	3.43	29900	1967
8	3.00	29700	1968
9	2.67	28500	1958
10	2.40	26200	1959
11	2.18	25200	1962
12	2.00	25000	1957
13	1.85	25000	1966
14	1.71	24900	1961
15	1.60	24700	1963
16	1.50	23700	1965
17	1.41	19800	1971
18	1.33	19400	1969
19	1.26	19200	1954
20	1.20	16300	1953
21	1.143	13600	1970
22	1.091	11400	1955
23	1.043	10500	1956

Mean annual flood: 25500 cfs

Standard deviation: 8160 cfs

Drainage area: --- sq mi

Remarks: Storage and diversion since 1952 (Kenny Dam)

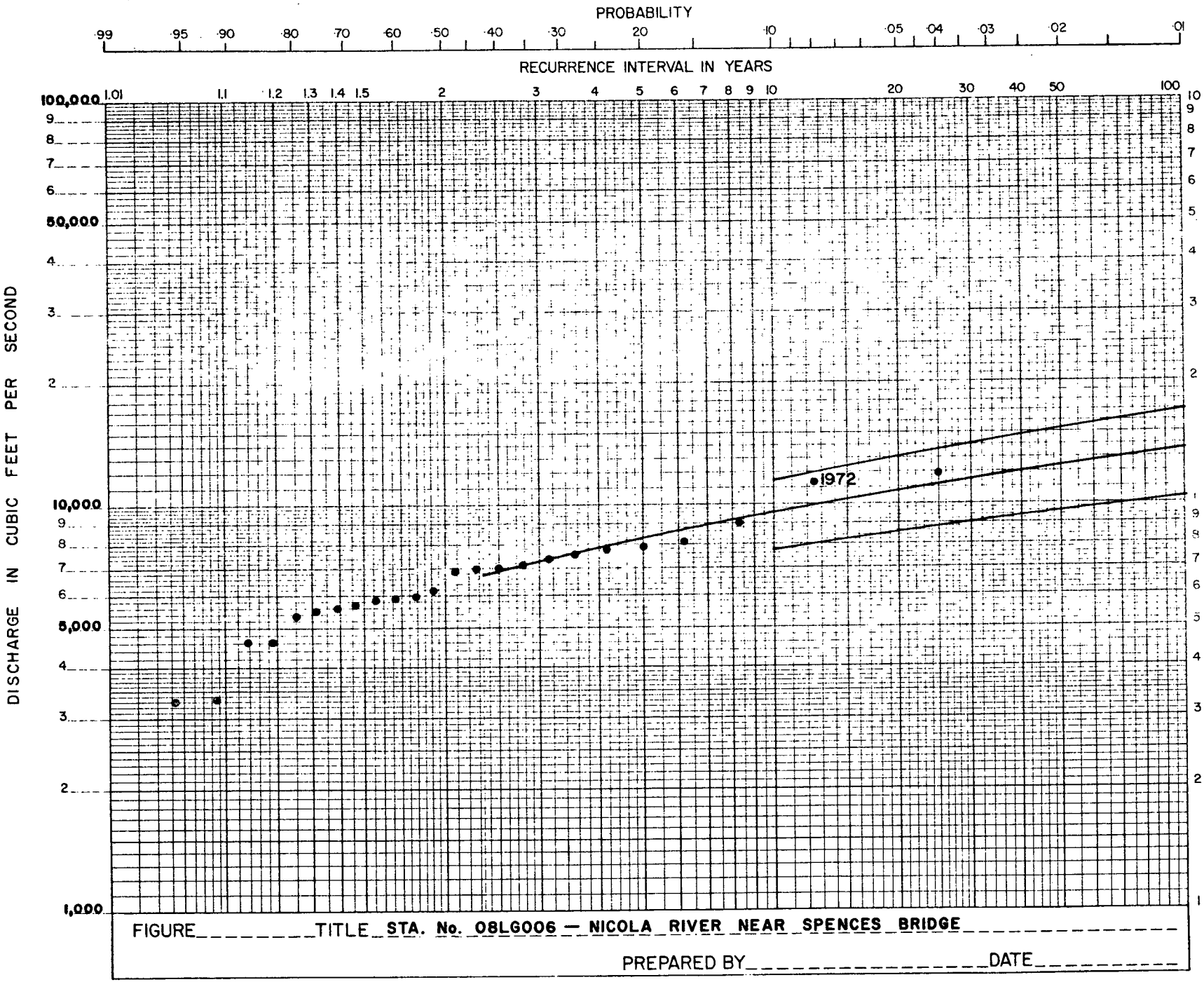

PROBABILITY
99 95 90 80 70 60 50 40 30 20 10 05 04 03 02 01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE_____TITLE STA. No. 08LG006 — NICOLA RIVER NEAR SPENCES BRIDGE
PREPARED BY_____DATE_____

PLATE 55

MAXIMUM DAILY MEAN FLOWS

Station No. 08LG006
Nicola River near Spences Bridge

Date	Maximum daily flow in cfs
May 22, 1912	4630
Jun 1, 1913	5380
May 14, 1914	7740
Apr 20, 1915	3300
Jun 13, 1916	8060
Jun 9, 1917	7400
Jun 10, 1918	5600
May 26, 1919	9000
Jun 16, 1920	3340
May 9, 1958	6190
Jun 3, 1959	7880
Jun 3, 1960	5830
Jun 4, 1961	7100
May 26, 1962	5480
Nov 27, 1963	5730
Jun 9, 1964	6880
May 28, 1965	5880
May 9, 1966	4640
Jun 3, 1967	7030
Jun 1, 1968	6970
May 14, 1969	7540
May 26, 1970	5940
May 13, 1971	11900
May 31, 1972	11400

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	25.0	11900	1971
2	12.5	11400	1972
3	8.3	9000	1919
4	6.2	8060	1916
5	5.0	7880	1959
6	4.17	7740	1914
7	3.57	7540	1969
8	3.12	7400	1917
9	2.78	7100	1961
10	2.50	7030	1967
11	2.27	6970	1968
12	2.08	6880	1964
13	1.92	6190	1958
14	1.79	5940	1970
15	1.67	5880	1965
16	1.56	5830	1960
17	1.47	5730	1963
18	1.39	5600	1918
19	1.32	5480	1962
20	1.25	5380	1913
21	1.190	4640	1966
22	1.136	4630	1912
23	1.087	3340	1920
24	1.042	3300	1915

Mean annual flood: 6700 cfs

Standard deviation: 2080 cfs

Drainage area: 2960 sq mi

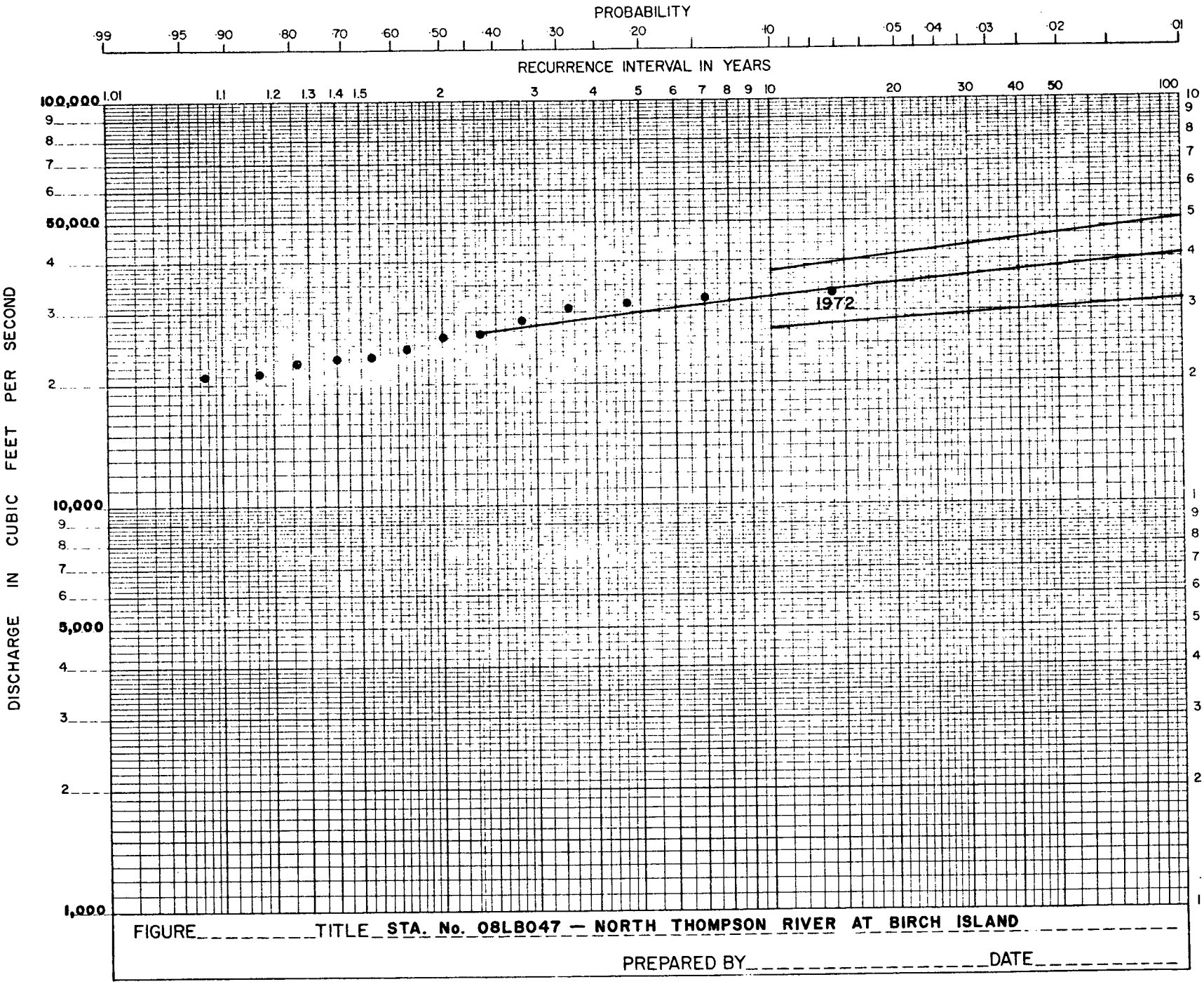

PROBABILITY
.99 .95 .90 .80 .70 .60 .50 .40 .30 .20 .10 .05 .04 .03 .02 .01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE_____TITLE STA. No. 08LB047 — NORTH THOMPSON RIVER AT BIRCH ISLAND
PREPARED BY_____DATE_____

PLATE 56

MAXIMUM DAILY MEAN FLOWS

Station No. 08LB047
North Thompson River at Birch Island

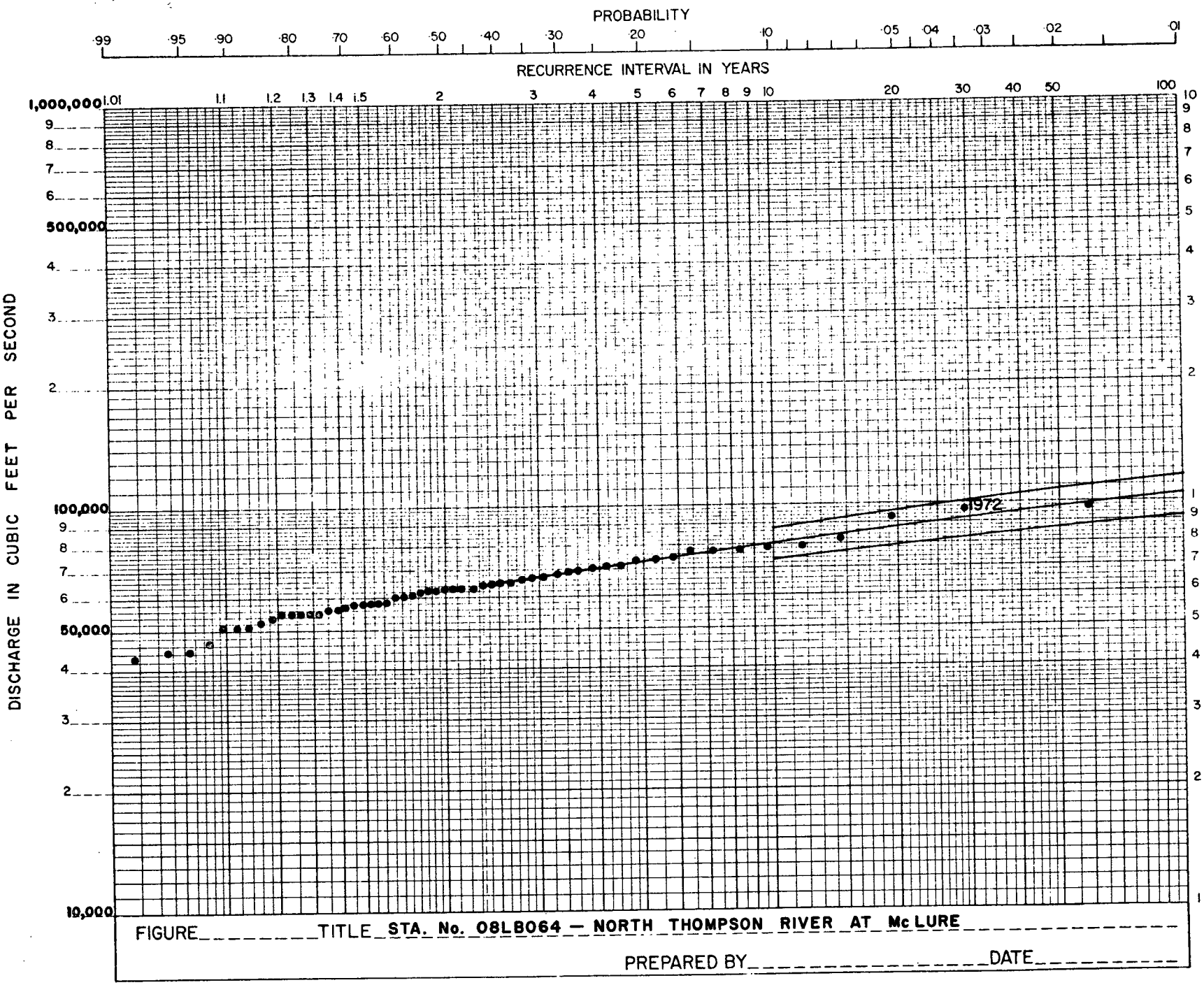
Date	Maximum daily flow in cfs
Jul 2, 1960	26500
Jun 7, 1961	32600
Jun 27, 1962	22500
Jun 12, 1963	20900
Jun 14, 1964	31600
Jun 12, 1965	23500
May 28, 1966	21200
Jun 18, 1967	28800
Jun 28, 1968	30800
Jun 6, 1969	23200
Jun 5, 1970	26100
Jun 4, 1971	24500
Jun 12, 1972	33300

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	14.0	33300	1972
2	7.0	32600	1961
3	4.67	31600	1964
4	3.50	30800	1968
5	2.80	28800	1967
6	2.33	26500	1960
7	2.00	26100	1970
8	1.75	24500	1971
9	1.56	23500	1965
10	1.40	23200	1969
11	1.27	22500	1962
12	1.167	21200	1966
13	1.077	20900	1963

Mean annual flood: 26600 cfs

Standard deviation: 4400 cfs

Drainage area: 1750 sq mi


PROBABILITY
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RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
1,000,000
500,000
100,000
50,000
10,000
1972
FIGURE_____TITLE_STA. No. 08LB064 — NORTH THOMPSON RIVER AT McLURE_____
PREPARED BY_____DATE_____

100

PLATE 57

MAXIMUM DAILY MEAN FLOWS

Station No. 08LB064
North Thompson River at McLure

Date	Maximum daily flow in cfs
Jun 22, 1916	63200
Jun 9, 1917	62500
Jun 15, 1918	64000
May 27, 1919	52000
Jul 3, 1920	67000
Jun 9, 1921	78100
Jun 5, 1922	65300
Jun 12, 1923	62900
May 20, 1924	58300
May 23, 1925	68800
May 1, 1926	46600
Jun 15, 1927	56100
May 29, 1928	77300
Jun 11, 1929	54800
Jun 12, 1930	55100
Jun 20, 1931	57600
Jun 17, 1932	60800
Jun 18, 1933	64400
Jun 1, 1934	64800
Jul 3, 1935	55200
Jun 3, 1936	82500
Jun 24, 1937	50600
May 28, 1938	56200
May 17, 1939	54200
May 26, 1940	62200
Jun 14, 1941	44300
May 28, 1942	62900
Jul 4, 1943	43200
Jun 3, 1944	44300
Jun 1, 1945	51100
May 29, 1946	69900
Jun 2, 1947	57300
May 30, 1948	93200
May 17, 1949	58400
Jun 22, 1950	74900
May 18, 1951	54200
May 21, 1952	70900
Jun 14, 1953	60200
Jul 3, 1954	60400
Jun 27, 1955	79000
May 22, 1956	68400
May 23, 1957	96800
May 28, 1958	74000
Jun 23, 1959	58000
Jul 2, 1960	71400
Jun 8, 1961	77600
Jun 27, 1962	61900
Jun 13, 1963	51300
Jun 15, 1964	77000
Jun 13, 1965	62400
Jun 19, 1966	53600
Jun 23, 1967	74000
Jun 4, 1968	67300
Jun 7, 1969	58000
Jun 6, 1970	66600
Jun 9, 1971	71300
Jun 13, 1972	96600

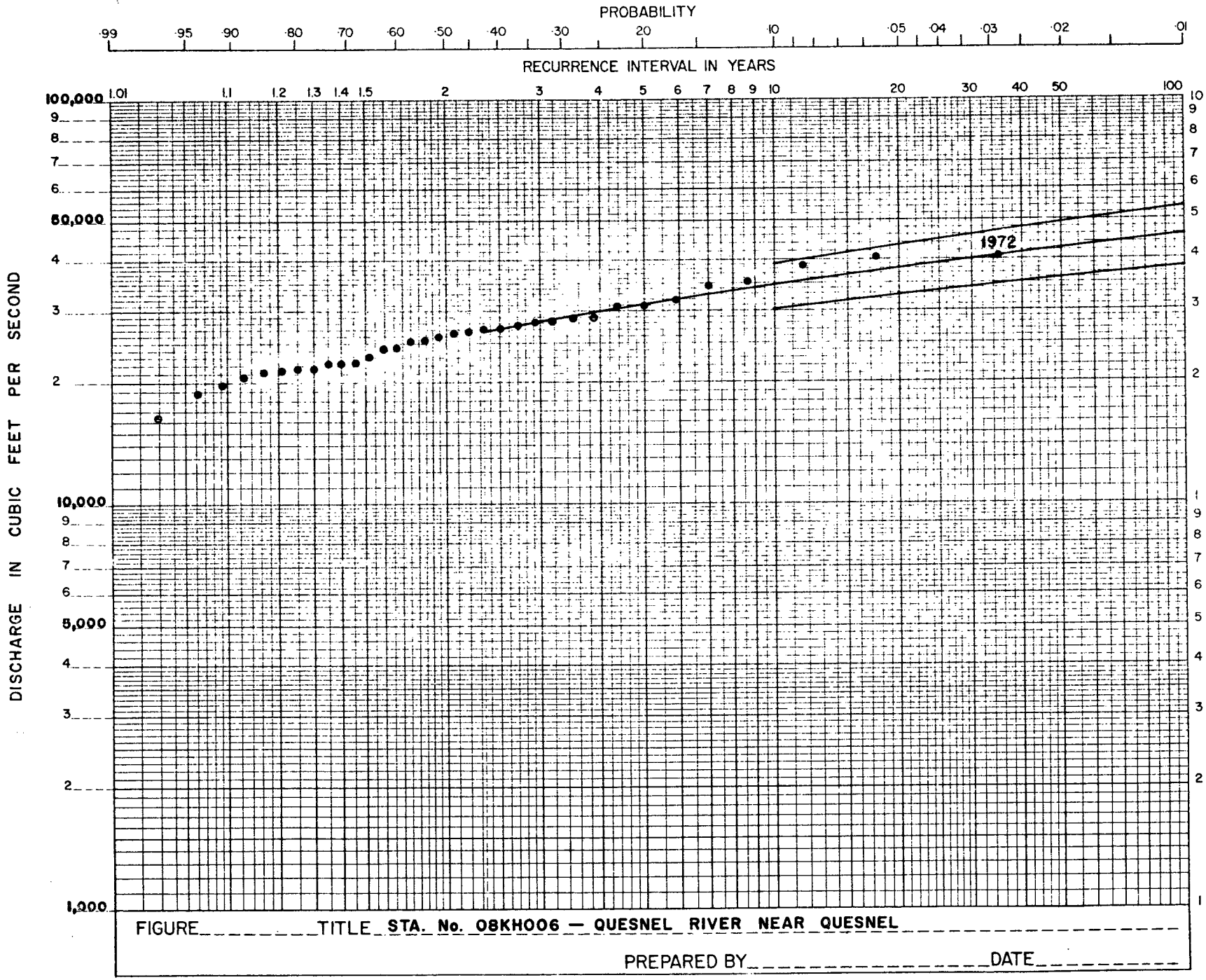
Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	58.0	96800	1957
2	29.0	96600	1972
3	19.3	93200	1948
4	14.5	82500	1936
5	11.6	79000	1955
6	9.7	78100	1921
7	8.3	77600	1961
8	7.2	77300	1928
9	6.4	77000	1964
10	5.8	74900	1950
11	5.3	74000	1958
12	4.83	74000	1967
13	4.46	71400	1960
14	4.14	71300	1971
15	3.87	70900	1952
16	3.62	69900	1946
17	3.41	68800	1925
18	3.22	68400	1956
19	3.05	67300	1968
20	2.90	67000	1920
21	2.76	66600	1970
22	2.64	65300	1922
23	2.52	64800	1934
24	2.42	64400	1933
25	2.32	64000	1918
26	2.23	63200	1916
27	2.15	62900	1923
28	2.07	62900	1942
29	2.00	62500	1917
30	1.93	62400	1965
31	1.87	62200	1940
32	1.81	61900	1962
33	1.76	60800	1932
34	1.71	60400	1954
35	1.66	60200	1953
36	1.61	58400	1949
37	1.57	58300	1924
38	1.53	58000	1959
39	1.49	58000	1969
40	1.45	57600	1931
41	1.41	57300	1947
42	1.38	56200	1938
43	1.35	56100	1927
44	1.32	55200	1935
45	1.29	55100	1930
46	1.26	54800	1929
47	1.23	54200	1939
48	1.21	54200	1951
49	1.184	53600	1966
50	1.160	52000	1919
51	1.137	51300	1963
52	1.115	51100	1945
53	1.094	50600	1937
54	1.074	46600	1926
55	1.055	44300	1941
56	1.036	44300	1944
57	1.018	43200	1943

Mean annual flood: 64100 cfs

Drainage area: 7870 sq mi

Standard deviation: 11900 cfs

Remarks: Records before 1959 obtained from:
08LB022 - North Thompson River at Barriere


PROBABILITY
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RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE_____TITLE STA. No. 08KH006 — QUESNEL RIVER NEAR QUESNEL
PREPARED BY_____DATE_____

PLATE 58

MAXIMUM DAILY MEAN FLOWS

Station No. 08KH006
Quesnel River near Quesnel

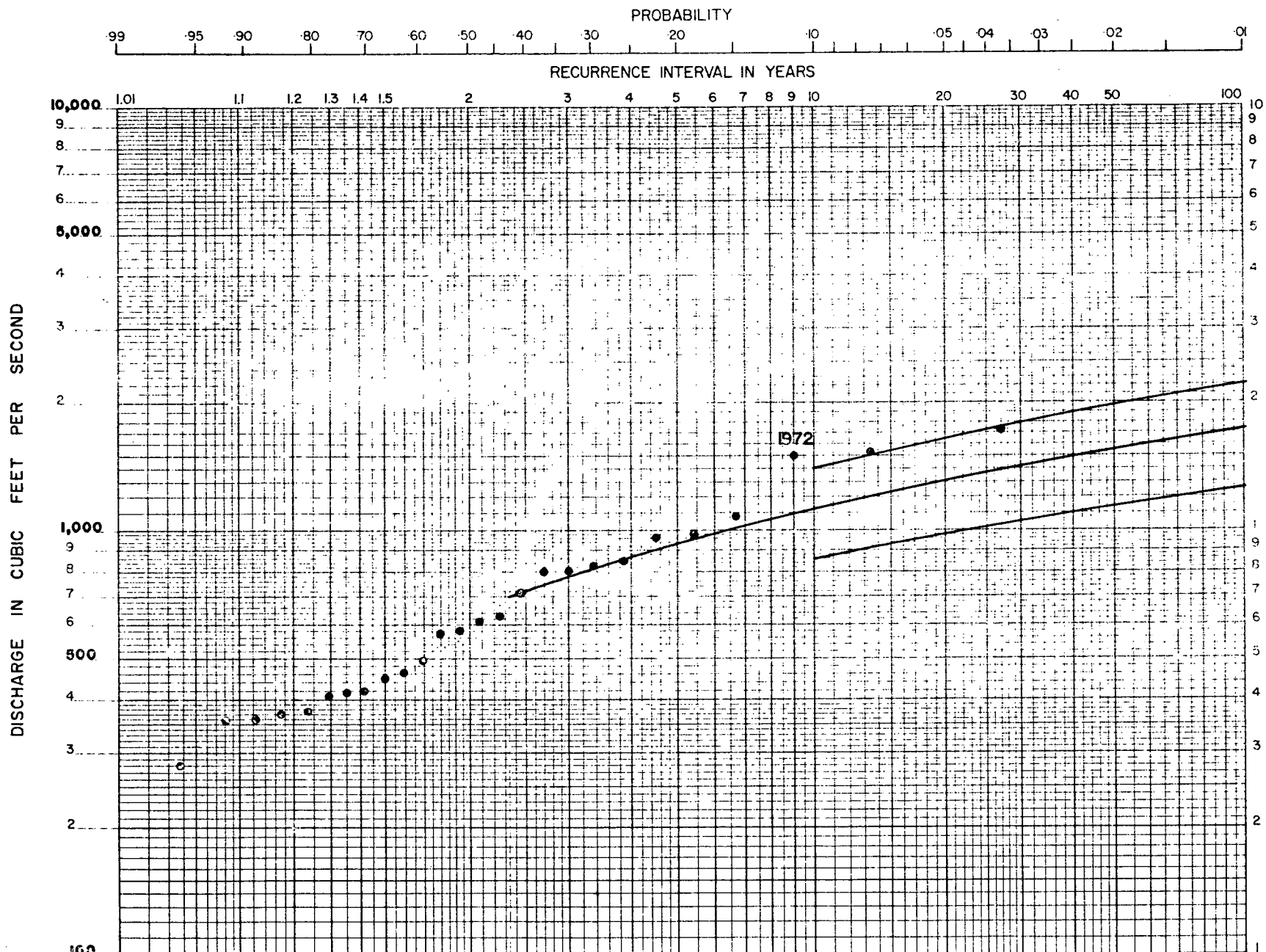
Date	Maximum daily flow in cfs
May 19, 1939	22400
Jun 16, 1940	18900
Jul 3, 1941	16500
Jun 9, 1942	21400
Jun 23, 1943	26400
Jun 3, 1944	21200
Jun 10, 1945	20600
May 29, 1946	26000
Jun 11, 1947	24400
May 31, 1948	38500
Jun 8, 1949	22300
Jun 22, 1950	31900
May 25, 1951	21600
May 29, 1952	24400
Jun 10, 1953	21700
Jun 15, 1954	25600
Jun 29, 1955	40400
Jun 12, 1956	28300
May 22, 1957	30900
May 31, 1958	26700
Jun 23, 1959	22300
Jul 2, 1960	30900
Jun 8, 1961	28900
Jun 28, 1962	27100
Jun 20, 1963	23200
Jun 19, 1964	34500
Jun 12, 1965	28800
Jun 20, 1966	25400
Jun 23, 1967	35300
Jun 13, 1968	28000
Jun 13, 1969	19800
Jun 7, 1970	27200
Jun 10, 1971	27800
Jun 13, 1972	40800

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	35.0	40800	1972
2	17.5	40400	1955
3	11.7	38500	1948
4	8.7	35300	1967
5	7.0	34500	1964
6	5.8	31900	1950
7	5.0	30900	1957
8	4.37	30900	1960
9	3.89	28900	1961
10	3.50	28800	1965
11	3.18	28300	1956
12	2.92	28000	1968
13	2.69	27800	1971
14	2.50	27200	1970
15	2.33	27100	1962
16	2.19	26700	1958
17	2.06	26400	1943
18	1.94	26000	1946
19	1.84	25600	1954
20	1.75	25400	1966
21	1.67	24400	1947
22	1.59	24400	1952
23	1.52	23200	1963
24	1.46	22400	1939
25	1.40	22300	1949
26	1.35	22300	1959
27	1.30	21700	1953
28	1.25	21600	1951
29	1.21	21400	1942
30	1.167	21200	1944
31	1.129	20600	1945
32	1.094	19800	1969
33	1.061	18900	1940
34	1.029	16500	1941

Mean annual flood: 26800 cfs

Standard deviation: 5980 cfs

Drainage area: 4690 sq mi



FIGURE_____TITLE STA. No. 08LE020 — SALMON RIVER AT FALKLAND

PREPARED BY_____DATE_____

PLATE 59

MAXIMUM DAILY MEAN FLOWS

Station No. 08LE020
Salmon River at Falkland

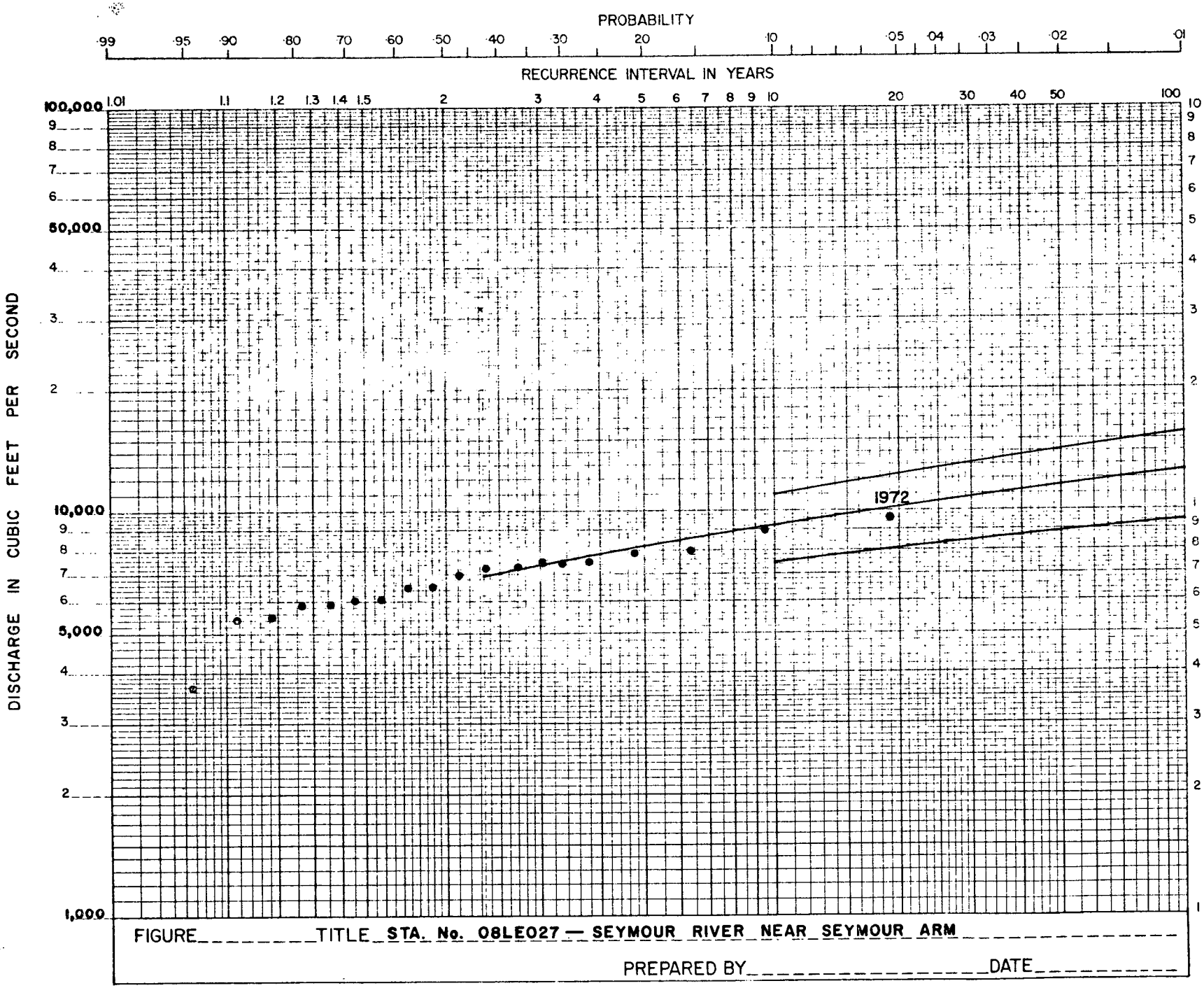
Date	Maximum daily flow in cfs
May 16, 1912	1080
Jun 27, 1915	415
May 6, 1916	420
May 30, 1917	830
May 5, 1918	370
May 28, 1948	1730
May 15, 1949	963
Jun 5, 1950	358
May 14, 1951	847
May 21, 1952	617
Jun 18, 1953	461
May 19, 1954	630
Jun 13, 1955	802
May 22, 1956	982
May 16, 1957	719
May 22, 1958	449
May 25, 1959	805
May 12, 1960	572
May 30, 1961	358
May 9, 1966	280
Jun 3, 1967	410
May 27, 1968	496
May 14, 1969	581
May 23, 1970	375
May 13, 1971	1540
May 31, 1972	1500

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	27.0	1730	1948
2	13.5	1540	1971
3	9.0	1500	1972
4	6.7	1080	1912
5	5.4	982	1956
6	4.50	963	1949
7	3.86	847	1951
8	3.37	830	1917
9	3.00	805	1959
10	2.70	802	1955
11	2.45	719	1957
12	2.25	630	1954
13	2.08	617	1952
14	1.93	581	1969
15	1.80	572	1960
16	1.69	496	1968
17	1.59	461	1953
18	1.50	449	1958
19	1.42	420	1916
20	1.35	415	1915
21	1.29	410	1967
22	1.23	375	1970
23	1.174	370	1918
24	1.125	358	1950
25	1.080	358	1961
26	1.038	280	1966

Mean annual flood: 715 cfs

Standard deviation: 391 cfs

Drainage area: 340 sq mi


PROBABILITY
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RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE_____TITLE STA. No. 08LE027 — SEYMOUR RIVER NEAR SEYMOUR ARM
PREPARED BY_____DATE_____

PLATE 60

MAXIMUM DAILY MEAN FLOWS

Station No. 08LE027
Seymour River near Seymour Arm

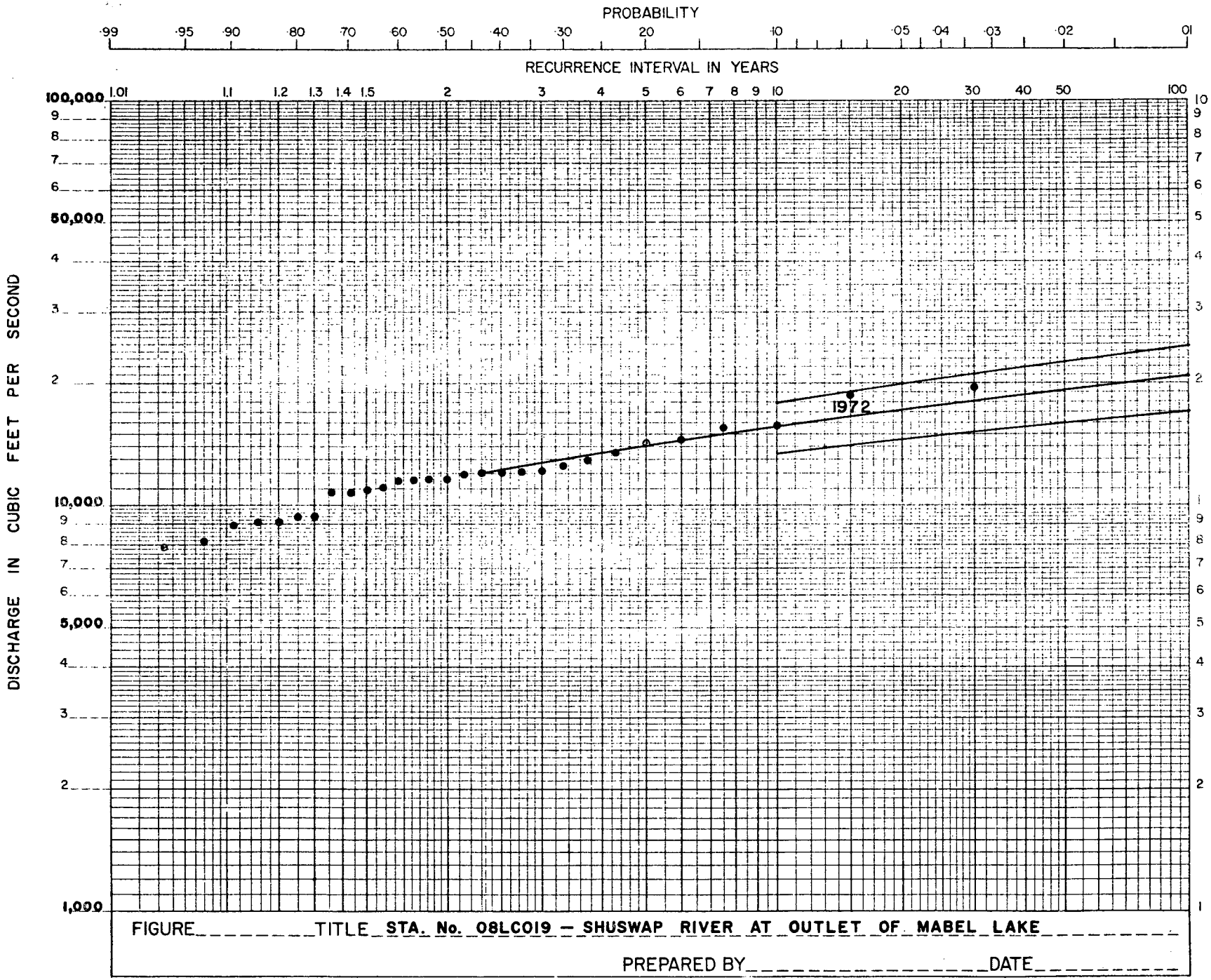
Date	Maximum daily flow in cfs
Jun 16, 1915	3690
Jun 19, 1916	7270
Jun 9, 1917	7300
Jun 14, 1918	8000
May 26, 1919	5440
Jul 3, 1920	6030
May 23, 1921	6950
May 29, 1922	6060
Jun 13, 1923	5500
May 19, 1924	7880
May 21, 1925	6520
Apr 22, 1926	5940
Jun 15, 1927	6480
Jun 24, 1955	8940
Jun 11, 1956	5880
Jun 4, 1970	7540
May 13, 1971	7470
Jun 11, 1972	9650

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	19.0	9650	1972
2	9.5	8940	1955
3	6.3	8000	1918
4	4.75	7880	1924
5	3.80	7540	1970
6	3.17	7470	1971
7	2.71	7300	1917
8	2.37	7270	1916
9	2.11	6950	1921
10	1.90	6520	1925
11	1.73	6480	1927
12	1.58	6060	1922
13	1.46	6030	1920
14	1.36	5940	1926
15	1.27	5880	1956
16	1.187	5500	1923
17	1.118	5440	1919
18	1.056	3690	1915

Mean annual flood: 6810 cfs

Standard deviation: 1390 cfs

Drainage area: 308 sq mi


PROBABILITY
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RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE TITLE STA. No. 08LC019 — SHUSWAP RIVER AT OUTLET OF MABEL LAKE
PREPARED BY DATE

PLATE 61

MAXIMUM DAILY MEAN FLOWS

Station No. 08LC019
Shuswap River at outlet of Mable Lake

Date	Maximum daily flow in cfs
May 29, 1928	19500
Jun 11, 1929	9420
Jun 12, 1930	7880
Jun 22, 1931	9080
Jun 17, 1932	12000
Jun 19, 1933	14300
May 1, 1934	10800
Jun 17, 1935	11600
May 30, 1952	11100
Jun 17, 1953	11500
Jul 6, 1954	11700
Jun 27, 1955	15800
Jun 5, 1956	11700
May 23, 1957	12900
Jun 4, 1958	11900
Jun 26, 1959	13600
Jun 17, 1960	9420
Jun 9, 1961	12500
Jun 24, 1962	8900
Jun 2, 1963	8180
Jun 17, 1964	15600
Jun 14, 1965	10900
Jun 11, 1966	10800
Jun 24, 1967	14600
Jun 12, 1968	12000
Jun 9, 1969	12100
Jun 10, 1970	9120
Jun 10, 1971	12200
Jun 12, 1972	18800

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	30.0	19500	1928
2	15.0	18800	1972
3	10.0	15800	1955
4	7.5	15600	1964
5	6.0	14600	1967
6	5.0	14300	1933
7	4.29	13600	1959
8	3.75	12900	1957
9	3.33	12500	1961
10	3.00	12200	1971
11	2.73	12100	1969
12	2.50	12000	1932
13	2.31	12000	1968
14	2.14	11900	1958
15	2.00	11700	1954
16	1.87	11700	1956
17	1.76	11600	1935
18	1.67	11500	1953
19	1.58	11100	1952
20	1.50	10900	1965
21	1.43	10800	1934
22	1.36	10800	1966
23	1.30	9420	1929
24	1.25	9420	1960
25	1.20	9120	1970
26	1.154	9080	1931
27	1.111	8900	1962
28	1.071	8180	1963
29	1.034	7880	1930

Mean annual flood: 12100 cfs

Drainage area: 1560 sq mi

Standard deviation: 2820 cfs

Remarks: Pondage since 1929 (Shuswap Falls Power Plant)
Storage since 1940 (Sugar Lake Dam)

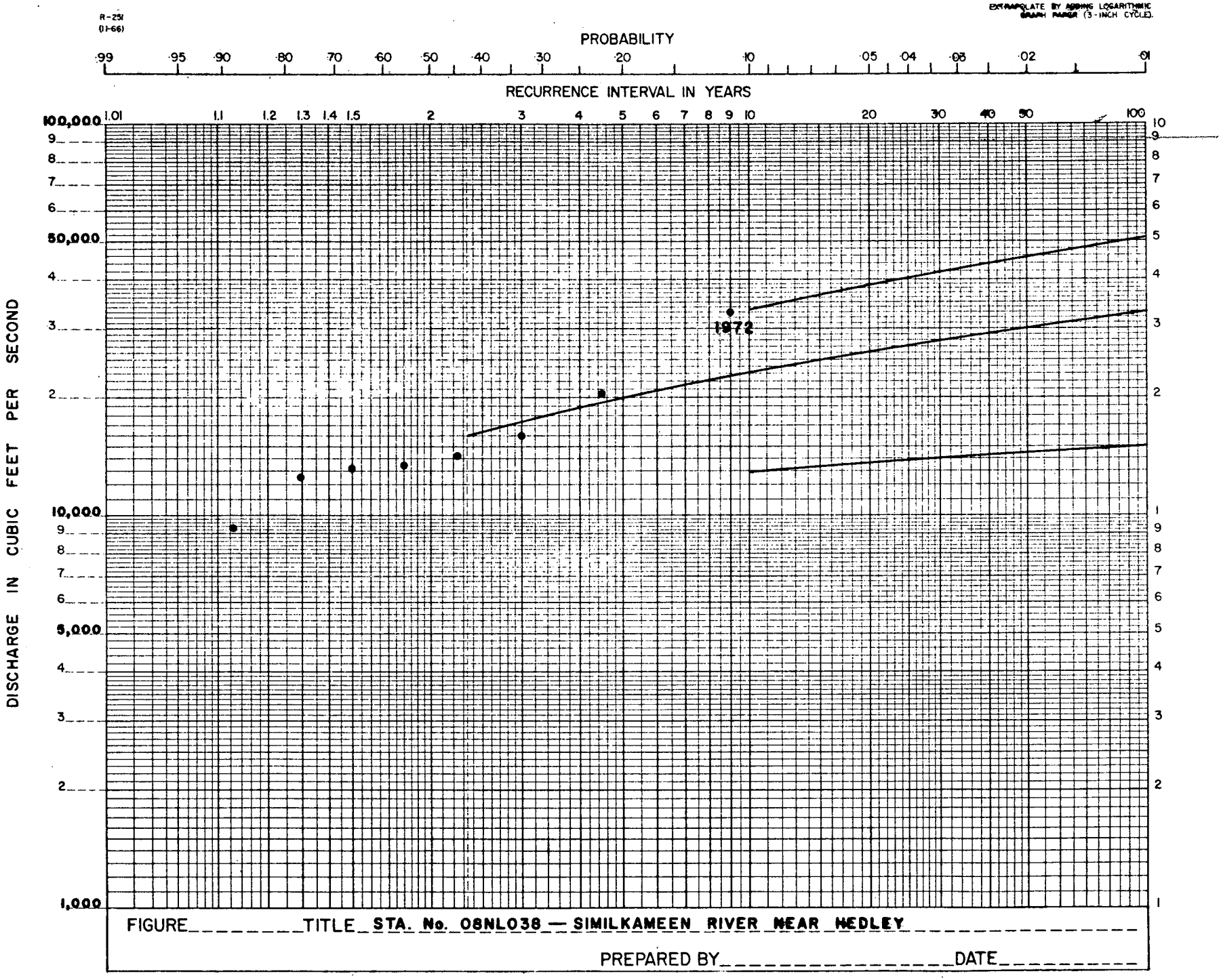

R-25
(11-66)
EXTRAPOLATE BY ADDING LOGARITHMIC
GRAPH PAPER (3-INCH CYCLE).
PROBABILITY
.99 .95 .90 .80 .70 .60 .50 .40 .30 .20 .10 .05 .04 .03 .02 .01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE_____TITLE STA. No. 08NL038 — SIMILKAMEEN RIVER NEAR HEDLEY
PREPARED BY_____DATE_____

PLATE 62

MAXIMUM DAILY MEAN FLOWS

Station No. 08NL038
Similkameen River at Hedley

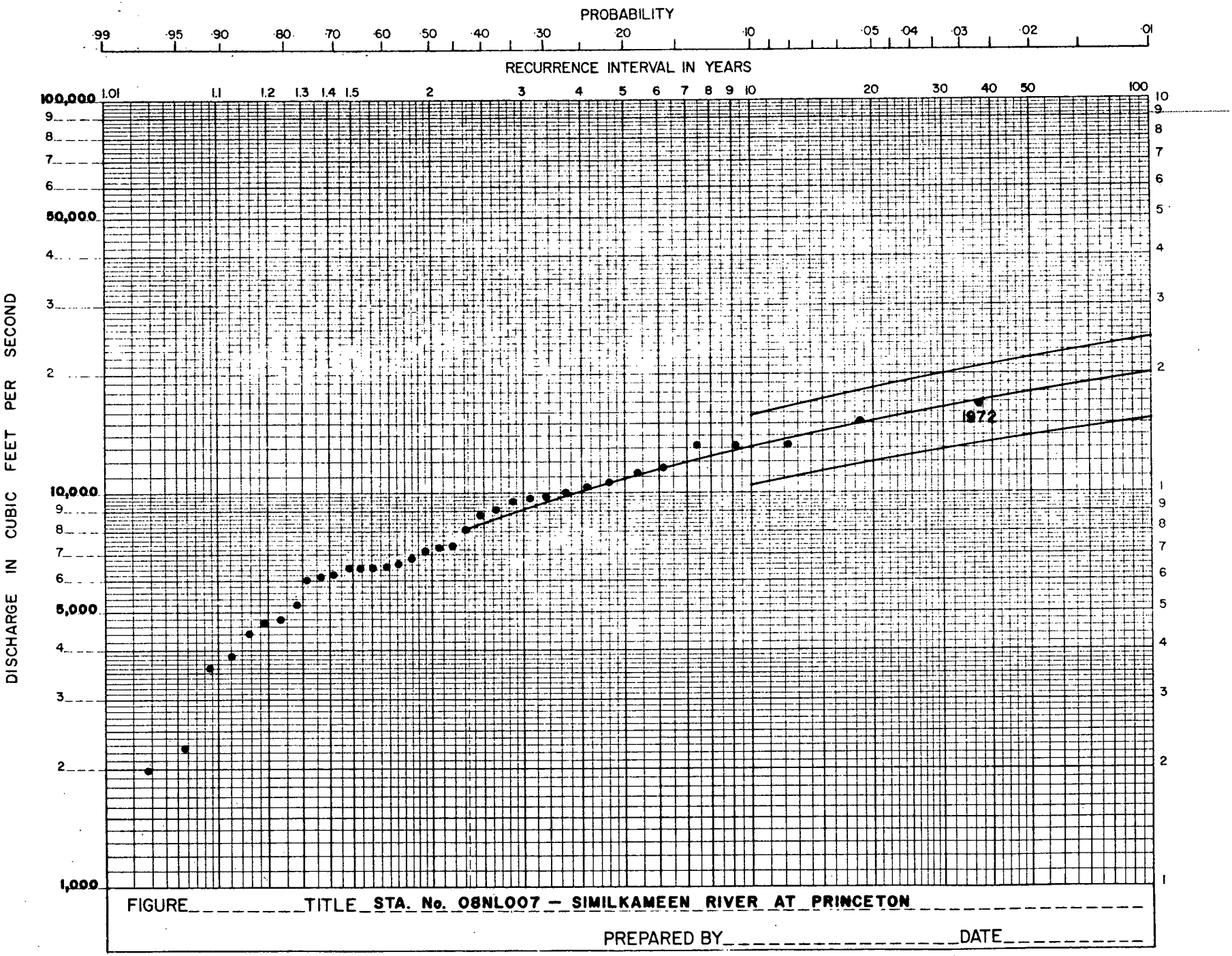
Date	Maximum daily flow in cfs
May 29, 1965	13200
May 10, 1966	9340
Jun 22, 1967	15900
May 21, 1968	14200
May 24, 1969	12700
Jun 4, 1970	13400
May 13, 1971	20500
May 30, 1972	32800

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	9.0	32800	1972
2	4.50	20500	1971
3	3.00	15900	1967
4	2.25	14200	1968
5	1.80	13400	1970
6	1.50	13200	1965
7	1.29	12700	1969
8	1.125	9340	1966

Mean annual flood: 16500 cfs

Standard deviation: 7310 cfs

Drainage area: 2160 sq mi


PROBABILITY
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RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE_____TITLE_STA. No. 08NL007 — SIMILKAMEEN RIVER AT PRINCETON
PREPARED BY_____DATE_____

PLATE 63

MAXIMUM DAILY MEAN FLOWS

Station No. 08NL007
Similkameen River at Princeton

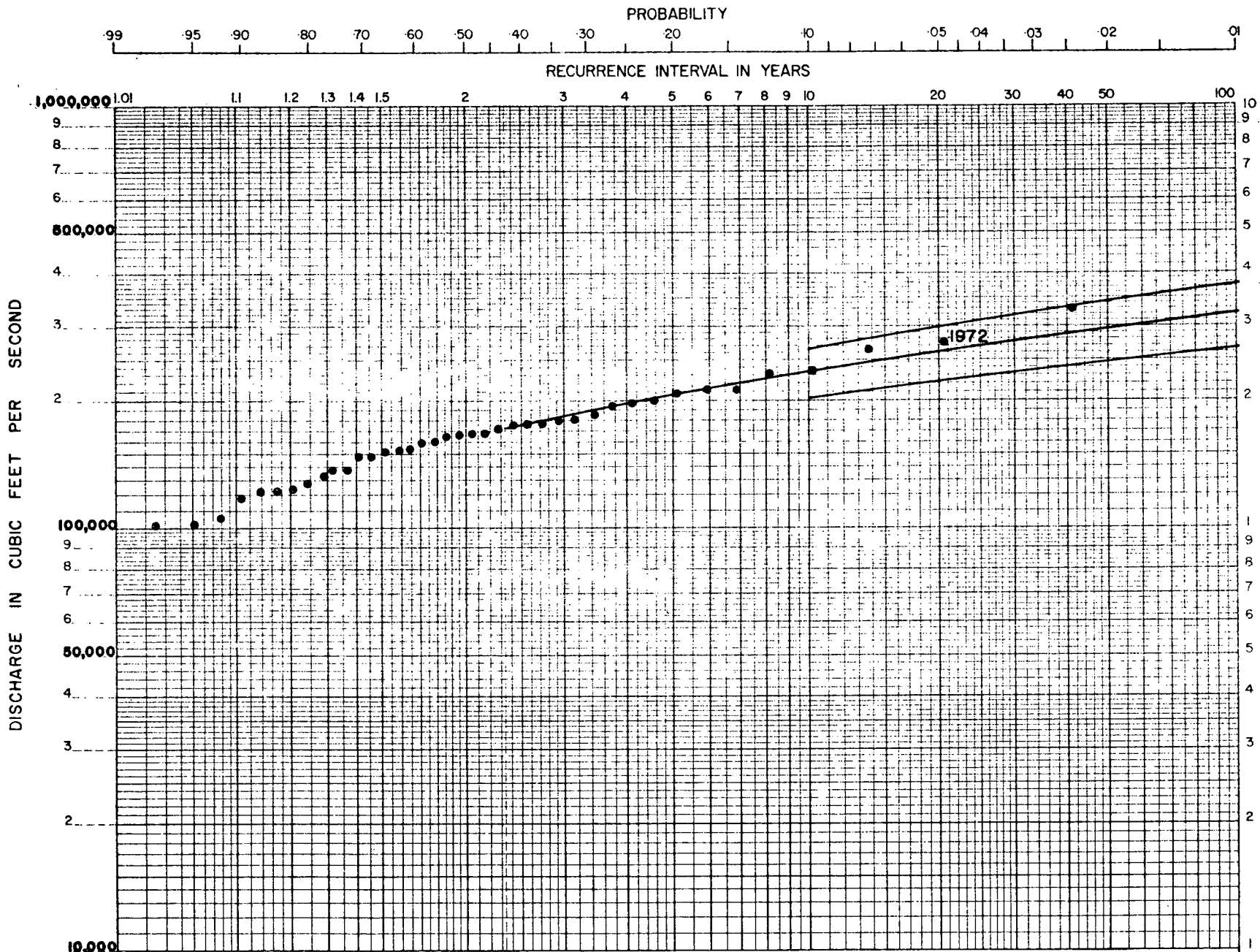
Date	Maximum daily flow in cfs
Jun 2, 1914	6040
May 19, 1915	2270
Jun 18, 1916	11300
Jun 16, 1917	6850
May 16, 1939	3630
May 24, 1940	3870
May 1, 1941	1990
May 25, 1942	6230
May 31, 1945	4800
May 27, 1946	5220
May 28, 1947	8040
May 28, 1948	13200
May 13, 1949	9690
Jun 20, 1950	10400
May 23, 1951	11600
May 18, 1952	6650
Jun 8, 1953	7160
May 20, 1954	13300
Jun 12, 1955	15200
May 24, 1956	13200
May 19, 1957	6490
May 24, 1958	10100
Jun 21, 1959	9100
Jun 4, 1960	6140
Jun 4, 1961	10700
May 27, 1962	4700
May 24, 1963	6580
Jun 2, 1964	8790
May 29, 1965	6520
May 10, 1966	4410
Jun 22, 1967	9820
May 21, 1968	7300
May 24, 1969	6470
Jun 4, 1970	7360
May 13, 1971	9570
May 31, 1972	16800

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	37.0	16800	1972
2	18.5	15200	1955
3	12.3	13300	1954
4	9.2	13200	1948
5	7.4	13200	1956
6	6.2	11600	1951
7	5.3	11300	1916
8	4.62	10700	1961
9	4.11	10400	1950
10	3.70	10100	1958
11	3.36	9820	1967
12	3.08	9690	1949
13	2.85	9570	1971
14	2.64	9100	1959
15	2.47	8790	1964
16	2.31	8040	1947
17	2.18	7360	1970
18	2.06	7300	1968
19	1.95	7160	1953
20	1.85	6850	1917
21	1.76	6650	1952
22	1.68	6580	1963
23	1.61	6520	1965
24	1.54	6490	1957
25	1.48	6470	1969
26	1.42	6230	1942
27	1.37	6140	1960
28	1.32	6040	1914
29	1.28	5220	1946
30	1.23	4800	1945
31	1.194	4700	1962
32	1.156	4410	1966
33	1.121	3870	1940
34	1.088	3630	1939
35	1.057	2270	1915
36	1.028	1990	1941

Mean annual flood: 8100 cfs

Standard deviation: 3520 cfs

Drainage area: 730 sq mi



FIGURE_____TITLE STA. No. 08EF001 — SKEENA RIVER AT USK

PREPARED BY_____DATE_____

PLATE 64

MAXIMUM DAILY MEAN FLOWS

Station No. 08EF001
Skeena River at Usk

Date	Maximum daily flow in cfs
Jun 13, 1928	138000
Jun 8, 1929	128000
Jun 11, 1930	177000
Jun 19, 1931	167000
Jun 10, 1937	153000
May 25, 1938	122000
Jun 17, 1939	118000
Jun 13, 1940	125000
Jun 4, 1941	107000
May 26, 1942	138000
Jun 24, 1943	103000
May 29, 1944	102000
May 30, 1945	175000
May 28, 1946	185000
May 30, 1947	212000
May 26, 1948	330000
May 23, 1949	134000
Jun 14, 1950	231000
Jun 15, 1951	154000
Jun 25, 1952	148000
May 20, 1953	177000
Jun 10, 1954	209000
Jun 25, 1955	180000
May 19, 1956	123000
May 20, 1957	235000
May 29, 1958	200000
Jun 13, 1959	151000
Jun 29, 1960	161000
Jun 8, 1961	211000
Jun 28, 1962	165000
May 23, 1963	148000
Jun 11, 1964	264000
Jun 3, 1965	168000
Jun 18, 1966	168000
Jun 7, 1967	197000
May 22, 1968	195000
May 25, 1969	159000
Jun 4, 1970	181000
Jun 24, 1971	173000
Jun 12, 1972	275000

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	41.0	330000	1948
2	20.5	275000	1972
3	13.7	264000	1964
4	10.2	235000	1957
5	8.2	231000	1950
6	6.8	212000	1947
7	5.9	211000	1961
8	5.1	209000	1954
9	4.56	200000	1958
10	4.10	197000	1967
11	3.73	195000	1968
12	3.42	185000	1946
13	3.15	181000	1970
14	2.93	180000	1955
15	2.73	177000	1930
16	2.56	177000	1953
17	2.41	175000	1945
18	2.28	173000	1971
19	2.16	168000	1965
20	2.05	168000	1966
21	1.95	167000	1931
22	1.86	165000	1962
23	1.78	161000	1960
24	1.71	159000	1969
25	1.64	154000	1951
26	1.58	153000	1937
27	1.52	151000	1959
28	1.46	148000	1952
29	1.41	148000	1963
30	1.37	138000	1928
31	1.32	138000	1942
32	1.28	134000	1949
33	1.24	128000	1929
34	1.21	125000	1940
35	1.171	123000	1956
36	1.139	122000	1938
37	1.108	118000	1939
38	1.079	107000	1941
39	1.051	103000	1943
40	1.025	102000	1944

Mean annual flood: 172000 cfs

Standard deviation: 48200 cfs

Drainage area: 16300 sq mi

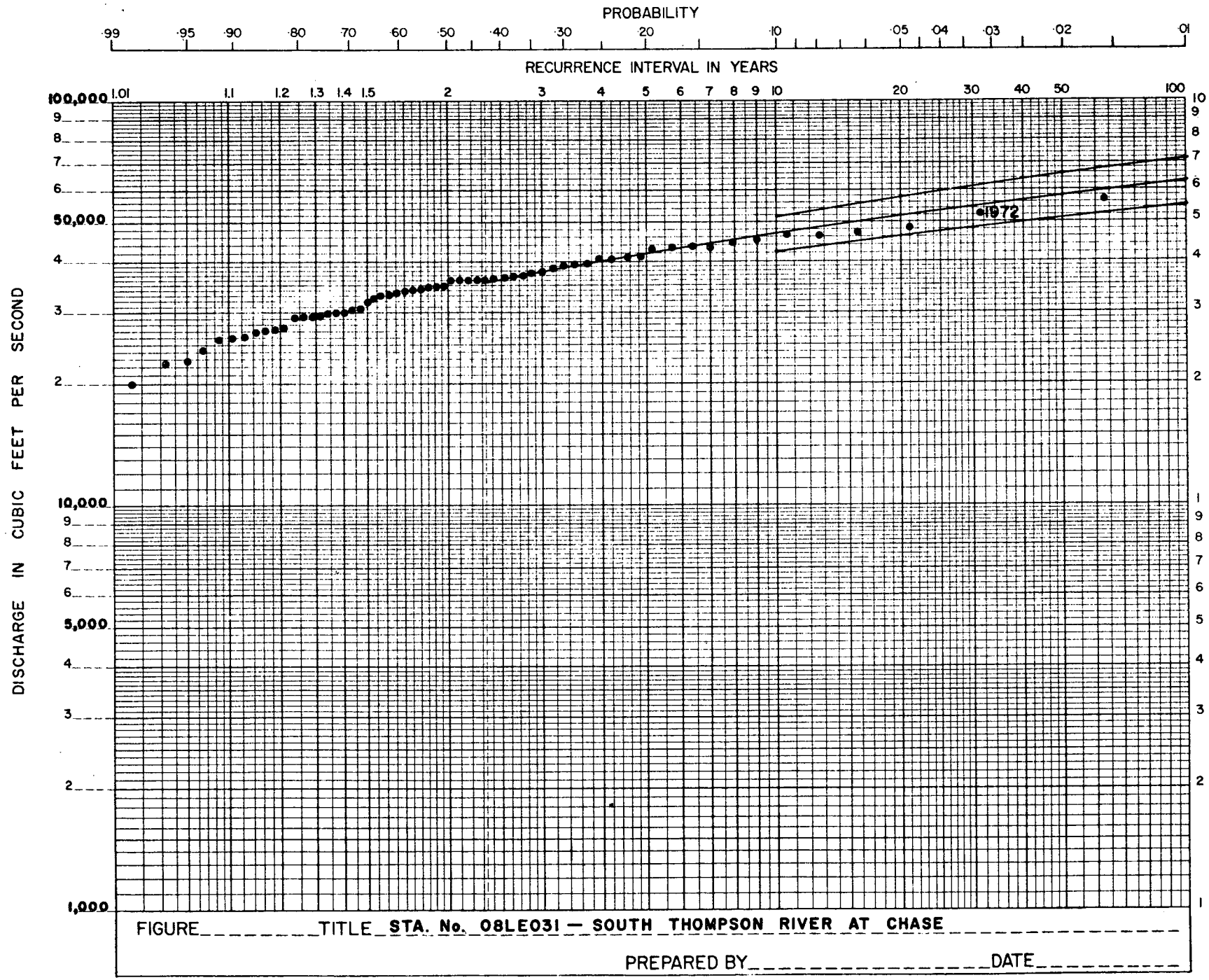

PROBABILITY
.99 .95 .90 .80 .70 .60 .50 .40 .30 .20 .10 .05 .04 .03 .02 .01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE_____TITLE STA. No. 08LE031 — SOUTH THOMPSON RIVER AT CHASE
PREPARED BY_____DATE_____

PLATE 65

MAXIMUM DAILY MEAN FLOWS

Station No. 08LE031
South Thompson River at Chase

Date	Maximum daily flow in cfs
Jun 27, 1911	36500
Jun 22, 1912	34800
Jun 15, 1913	48300
Jun 20, 1914	30500
May 30, 1915	26800
Jul 5, 1916	36100
Jun 23, 1917	36300
Jun 25, 1918	32600
Jun 30, 1919	27500
Jul 13, 1920	36200
Jun 14, 1921	45300
Jun 16, 1922	37000
Jun 17, 1923	43000
May 29, 1924	29300
May 30, 1925	36100
May 21, 1926	20000
Jun 26, 1927	37700
May 31, 1928	46400
Jun 19, 1929	27200
Jun 14, 1930	22900
Jun 23, 1931	30000
Jun 24, 1932	40800
Jul 4, 1933	47400
Jun 2, 1934	29800
Jul 5, 1935	41000
Jun 5, 1936	46500
Jun 26, 1937	31900
Jun 9, 1938	25800
Jun 1, 1939	30700
Jun 6, 1940	29300
Jun 19, 1941	22400
Jun 17, 1942	29300
Jul 12, 1943	27300
Jun 15, 1944	24300
Jun 12, 1945	33000
Jun 8, 1946	44700
Jun 15, 1947	34300
Jun 12, 1948	56700
Jun 8, 1949	34200
Jun 25, 1950	39600
May 28, 1951	30000
Jun 13, 1952	36000
Jun 19, 1953	33800
Jul 11, 1954	43600
Jun 30, 1955	43500
Jun 12, 1956	36600
Jun 14, 1957	38600
Jun 3, 1958	36900
Jun 28, 1959	37900
Jul 4, 1960	39200
Jun 9, 1961	43600
Jun 28, 1962	29400
Jun 21, 1963	26100
Jun 21, 1964	39200
Jun 14, 1965	33100
Jun 20, 1966	34600
Jun 26, 1967	40800
Jun 29, 1968	33500
Jun 12, 1969	34900
Jun 19, 1970	25800
Jun 16, 1971	41400
Jun 13, 1972	52200

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	63.0	56700	1948
2	31.5	52200	1972
3	21.0	48300	1913
4	15.7	47400	1933
5	12.6	46500	1936
6	10.5	46400	1928
7	9.0	45300	1921
8	7.9	44700	1946
9	7.0	43600	1954
10	6.3	43600	1961
11	5.7	43500	1955
12	5.2	43000	1923
13	4.85	41400	1971
14	4.50	41000	1935
15	4.20	40800	1932
16	3.94	40800	1967
17	3.71	39600	1950
18	3.50	39200	1960
19	3.32	39200	1964
20	3.15	38600	1957
21	3.00	37900	1959
22	2.86	37700	1927
23	2.74	37000	1922
24	2.62	36900	1958
25	2.52	36600	1956
26	2.42	36500	1911
27	2.33	36300	1917
28	2.25	36200	1920
29	2.17	36100	1916
30	2.10	36100	1925
31	2.03	36000	1952
32	1.97	34900	1969
33	1.91	34800	1912
34	1.85	34600	1966
35	1.80	34300	1947
36	1.75	34200	1949
37	1.70	33800	1953
38	1.66	33500	1968
39	1.62	33100	1965
40	1.57	33000	1945
41	1.54	32600	1918
42	1.50	31900	1937
43	1.47	30700	1939
44	1.43	30500	1914
45	1.40	30000	1931
46	1.37	30000	1951
47	1.34	29800	1934
48	1.31	29400	1962
49	1.29	29300	1924
50	1.26	29300	1940
51	1.24	29300	1942
52	1.21	27500	1919
53	1.189	27300	1943
54	1.167	27200	1929
55	1.145	26800	1915
56	1.125	26100	1963
57	1.105	25800	1938
58	1.086	25800	1970
59	1.068	24300	1944
60	1.050	22900	1930
61	1.033	22400	1941
62	1.016	20000	1926

Mean annual flood: 35500 cfs

Drainage area: 6060 sq mi

Standard deviation: 7560 cfs

Remarks: Records from 1959 to 1970 obtained from:
08LE069 - South Thompson River at Monte Creek

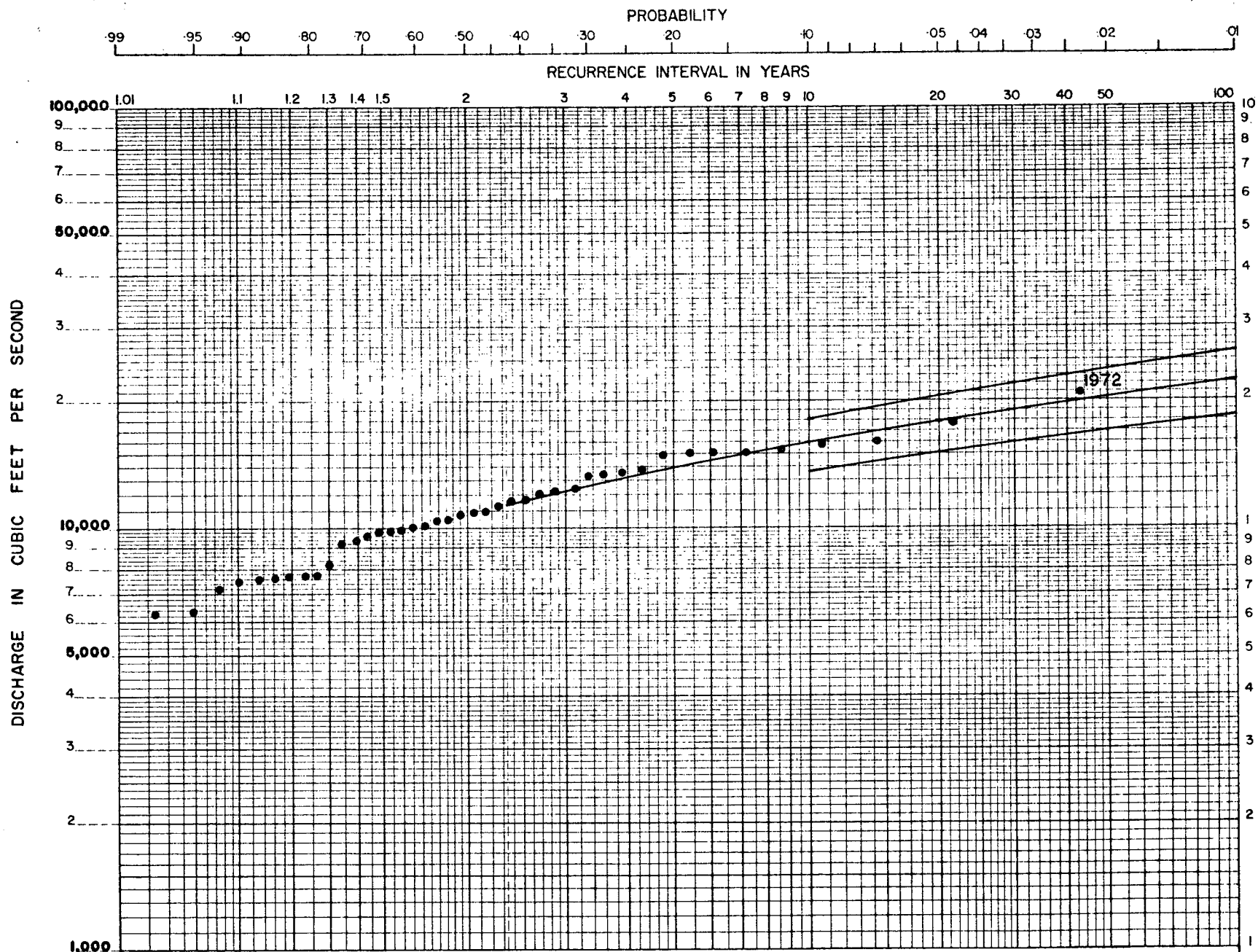


FIGURE _____ TITLE STA. No. 08JE001 – STUART RIVER NEAR FORT ST. JAMES

PREPARED BY _____ DATE _____

PLATE 66

MAXIMUM DAILY MEAN FLOWS

Station No. 08JE001
Stuart River near Fort St. James

Date	Maximum daily flow in cfs
Jul 16, 1930	6240
Jul 19, 1931	9600
Jul 12, 1933	13600
Jun 13, 1934	12100
Jul 12, 1935	9860
Jul 21, 1936	11300
Jul 12, 1937	7690
Jul 8, 1938	7700
Jun 30, 1939	13300
Jun 27, 1940	10800
Jun 27, 1941	7610
Jun 27, 1942	9230
Jul 9, 1943	7480
Jul 2, 1944	6370
Jul 2, 1945	7190
Jun 30, 1946	10900
Jul 4, 1947	9800
Jun 25, 1948	13800
Jul 1, 1949	10600
Jul 9, 1950	10900
Jun 25, 1951	11600
Jul 11, 1952	15100
Jul 2, 1953	11800
Jul 9, 1954	15100
Jul 18, 1955	7740
Jul 13, 1956	7590
Jun 26, 1957	10100
Jun 18, 1958	14900
Jul 13, 1959	16000
Jun 29, 1960	15300
Jun 26, 1961	10500
Jul 17, 1962	8200
Jun 23, 1963	9350
Jul 3, 1964	17700
Jun 27, 1965	12500
Jun 30, 1966	13500
Jun 27, 1967	15800
Jul 4, 1968	15100
Jul 3, 1969	9900
Jun 29, 1970	10200
Jul 17, 1971	12200
Jun 29, 1972	20900

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	43.0	20900	1972
2	21.5	17700	1964
3	14.3	16000	1959
4	10.7	15800	1967
5	8.6	15300	1960
6	7.2	15100	1952
7	6.1	15100	1954
8	5.4	15100	1968
9	4.78	14900	1958
10	4.30	13800	1948
11	3.91	13600	1933
12	3.58	13500	1966
13	3.31	13300	1939
14	3.07	12500	1965
15	2.87	12200	1971
16	2.69	12100	1934
17	2.53	11800	1953
18	2.39	11600	1951
19	2.26	11300	1936
20	2.15	10900	1946
21	2.05	10900	1950
22	1.95	10800	1940
23	1.87	10600	1949
24	1.79	10500	1961
25	1.72	10200	1970
26	1.65	10100	1957
27	1.59	9900	1969
28	1.54	9860	1935
29	1.48	9800	1947
30	1.43	9600	1931
31	1.39	9350	1963
32	1.34	9230	1942
33	1.30	8200	1962
34	1.26	7740	1955
35	1.23	7700	1938
36	1.194	7690	1937
37	1.162	7610	1941
38	1.132	7590	1956
39	1.103	7480	1943
40	1.075	7190	1945
41	1.049	6370	1944
42	1.024	6240	1930

Mean annual flood: 11400 cfs

Standard deviation: 3310 cfs

Drainage area: 5400 sq mi

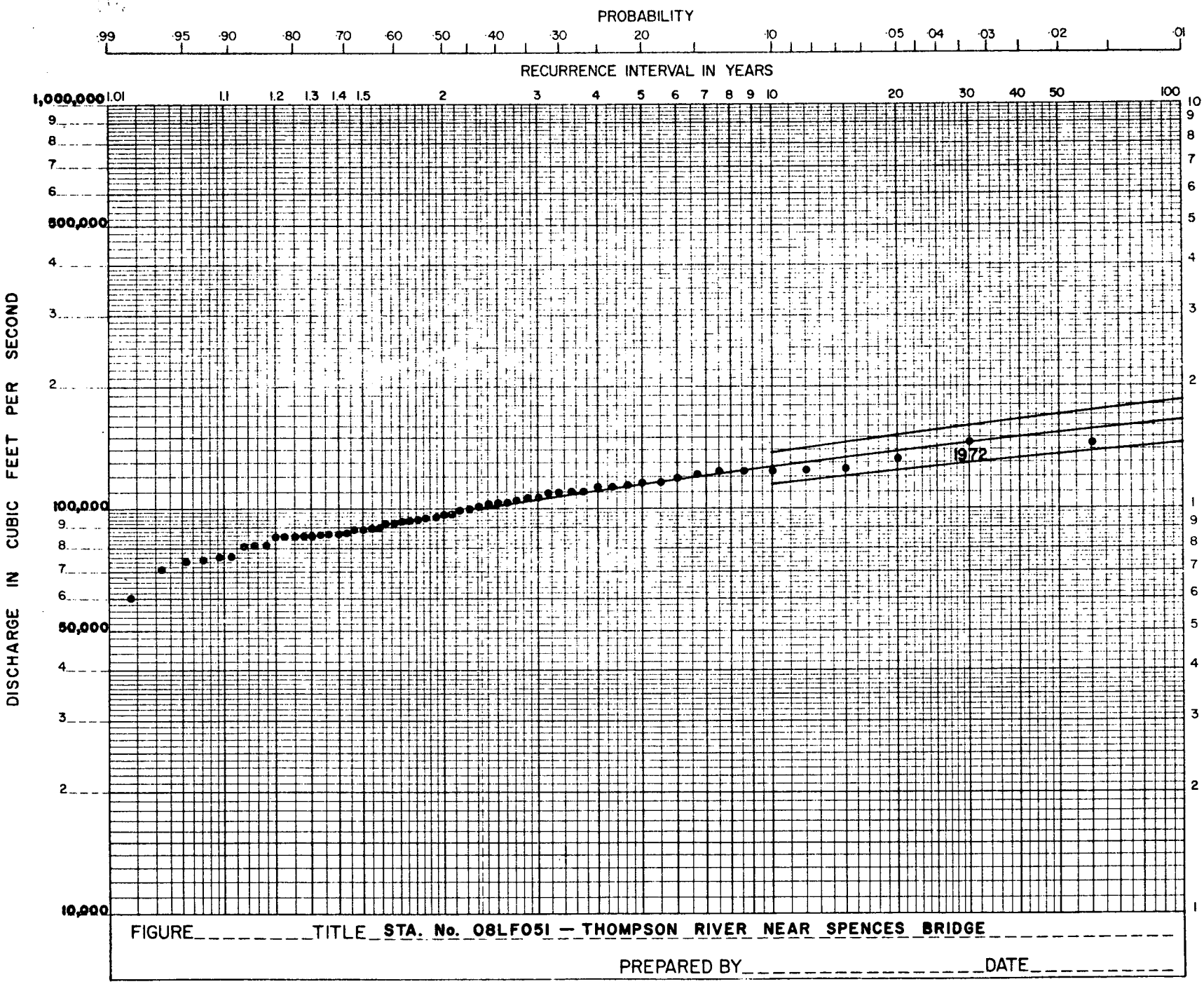

PROBABILITY
.99 .95 .90 .80 .70 .60 .50 .40 .30 .20 .10 .05 .04 .03 .02 .01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
1,000,000
500,000
100,000
50,000
10,000
1972
FIGURE_____TITLE STA. No. 08LF051 — THOMPSON RIVER NEAR SPENCES BRIDGE
PREPARED BY_____DATE_____

PLATE 67

MAXIMUM DAILY MEAN FLOWS

Station No. 08LF051
Thompson River near Spences Bridge

Date	Maximum daily flow in cfs
May 28, 1912	92100
Jun 12, 1913	110000
Jun 20, 1914	89000
May 25, 1915	74500
Jun 24, 1916	106000
Jun 11, 1917	110000
Jun 16, 1918	99000
Jun 25, 1919	94000
Jul 16, 1920	109000
Jun 11, 1921	124000
Jun 8, 1922	97000
Jun 13, 1923	104000
May 28, 1924	80600
May 25, 1925	114000
May 3, 1926	60300
Jun 16, 1927	103000
May 30, 1928	134000
Jun 13, 1929	86500
Jun 14, 1930	76200
Jun 21, 1931	85600
Jun 3, 1934	99500
Jul 5, 1935	102000
Jun 4, 1936	124000
Jun 25, 1937	85900
May 29, 1938	81900
May 31, 1939	85800
May 28, 1940	85000
Jun 17, 1941	70700
May 29, 1942	86400
Jul 4, 1943	81600
Jun 5, 1944	76300
Jun 4, 1945	93200
Jun 1, 1946	113000
Jun 12, 1947	92500
Jun 3, 1948	146000
May 17, 1949	89300
Jun 25, 1950	117000
May 26, 1951	85500
May 25, 1952	94600
Jun 16, 1953	89400
Jun 16, 1954	109000
Jun 29, 1955	125000
Jun 7, 1956	106000
May 24, 1957	126000
Jun 3, 1958	117000
Jun 25, 1959	94900
Jul 4, 1960	105000
Jun 9, 1961	116000
Jun 29, 1962	87600
Jun 22, 1963	75000
Jun 19, 1964	124000
Jun 15, 1965	95500
Jun 13, 1966	86900
Jun 24, 1967	122000
Jun 14, 1968	104000
Jun 9, 1969	97100
Jun 9, 1970	89600
Jun 10, 1971	119000
Jun 15, 1972	146000

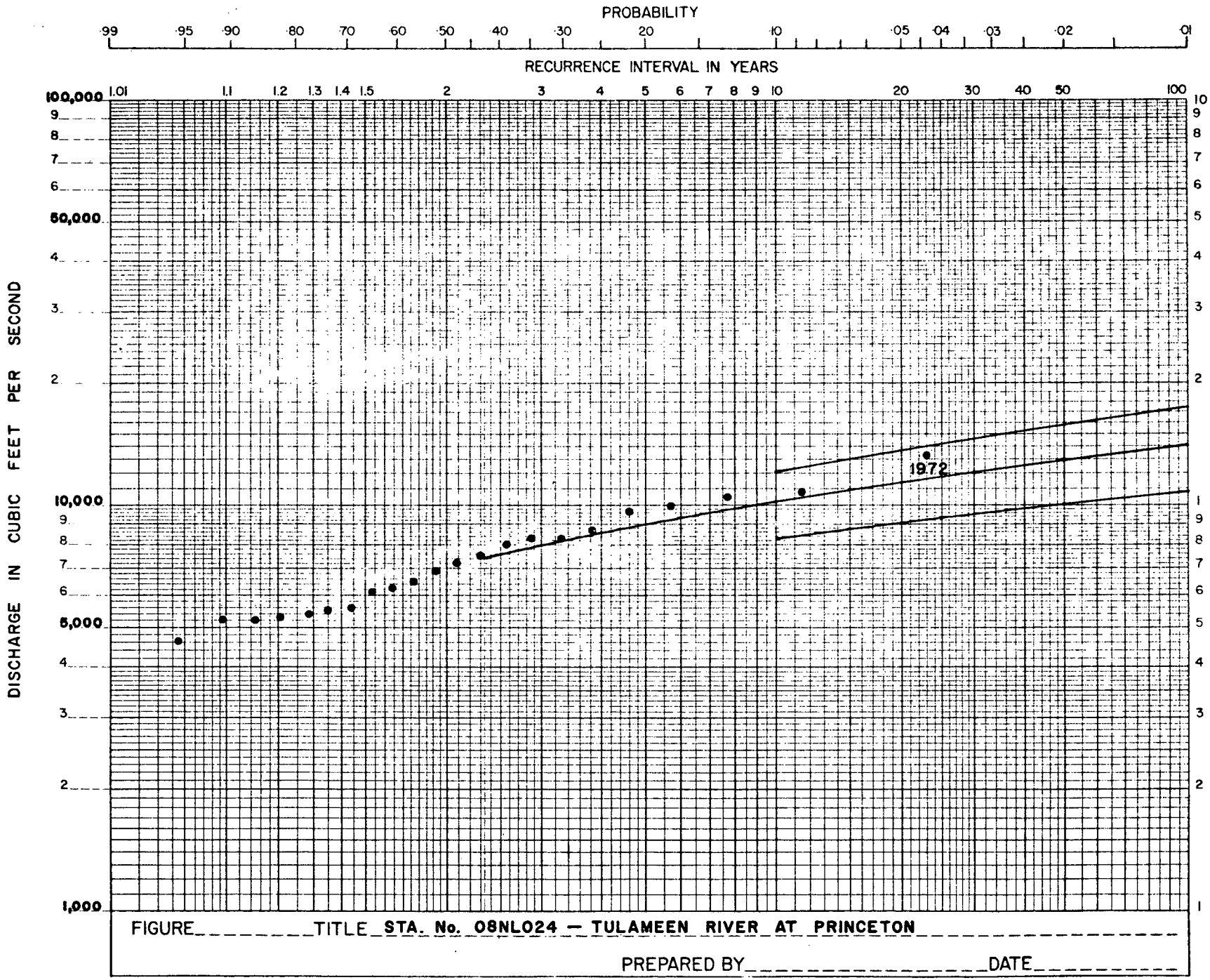
Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	60.0	146000	1948
2	30.0	146000	1972
3	20.0	134000	1928
4	15.0	126000	1957
5	12.0	125000	1955
6	10.0	124000	1921
7	8.6	124000	1936
8	7.5	124000	1964
9	6.7	122000	1967
10	6.0	119000	1971
11	5.5	117000	1950
12	5.0	117000	1958
13	4.62	116000	1961
14	4.29	114000	1925
15	4.00	113000	1946
16	3.75	110000	1913
17	3.53	110000	1917
18	3.33	109000	1920
19	3.16	109000	1954
20	3.00	106000	1916
21	2.86	106000	1956
22	2.73	105000	1960
23	2.61	104000	1923
24	2.50	104000	1968
25	2.40	103000	1927
26	2.31	102000	1935
27	2.22	99500	1934
28	2.14	99000	1918
29	2.07	97100	1969
30	2.00	97000	1922
31	1.94	95500	1965
32	1.87	94900	1959
33	1.82	94600	1952
34	1.76	94000	1919
35	1.71	93200	1945
36	1.67	92500	1947
37	1.62	92100	1912
38	1.58	89600	1970
39	1.54	89400	1953
40	1.50	89300	1949
41	1.46	89000	1914
42	1.43	87600	1962
43	1.40	86900	1966
44	1.36	86500	1929
45	1.33	86400	1942
46	1.30	85900	1937
47	1.28	85800	1939
48	1.25	85600	1931
49	1.22	85500	1951
50	1.20	85000	1940
51	1.176	81900	1938
52	1.154	81600	1943
53	1.132	80600	1924
54	1.111	76300	1944
55	1.091	76200	1930
56	1.071	75000	1963
57	1.053	74500	1915
58	1.034	70700	1941
59	1.017	60300	1926

Mean annual flood: 99900 cfs

Drainage area: 21600 sq mi

Standard deviation: 18300 cfs

Remarks: Records before 1952 obtained from:
08LF022 - Thompson River at Spences Bridge



FIGURE_____TITLE STA. No. 08NL024 — TULAMEEN RIVER AT PRINCETON

PREPARED BY_____DATE_____

PLATE 68

MAXIMUM DAILY MEAN FLOWS

Station No. 08NL024
Tulameen River at Princeton

Date	Maximum daily flow in cfs
May 11, 1951	8680
May 19, 1952	5520
Jun 13, 1953	6520
May 20, 1954	10500
Jun 12, 1955	10800
May 19, 1956	9960
May 7, 1957	7540
May 21, 1958	5220
Jun 3, 1959	6860
Jun 2, 1960	7230
Jun 3, 1961	8320
May 27, 1962	5400
May 24, 1963	4640
Jun 12, 1964	7970
May 30, 1965	6260
May 10, 1966	5220
Jun 22, 1967	9680
May 20, 1968	6120
May 13, 1969	5590
Jun 4, 1970	5330
May 13, 1971	8320
May 30, 1972	13200

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	23.0	13200	1972
2	11.5	10800	1955
3	7.7	10500	1954
4	5.7	9960	1956
5	4.60	9680	1967
6	3.83	8680	1951
7	3.29	8320	1961
8	2.87	8320	1971
9	2.56	7970	1964
10	2.30	7540	1957
11	2.09	7230	1960
12	1.92	6860	1959
13	1.77	6520	1953
14	1.64	6260	1965
15	1.53	6120	1968
16	1.44	5590	1969
17	1.35	5520	1952
18	1.28	5400	1962
19	1.21	5330	1970
20	1.150	5220	1958
21	1.095	5220	1966
22	1.045	4640	1963

Mean annual flood: 7490 cfs

Drainage area: 680 sq mi

Standard deviation: 2250 cfs

Remarks: Storage since 1951 (Otter Lake Irrigation Dam)

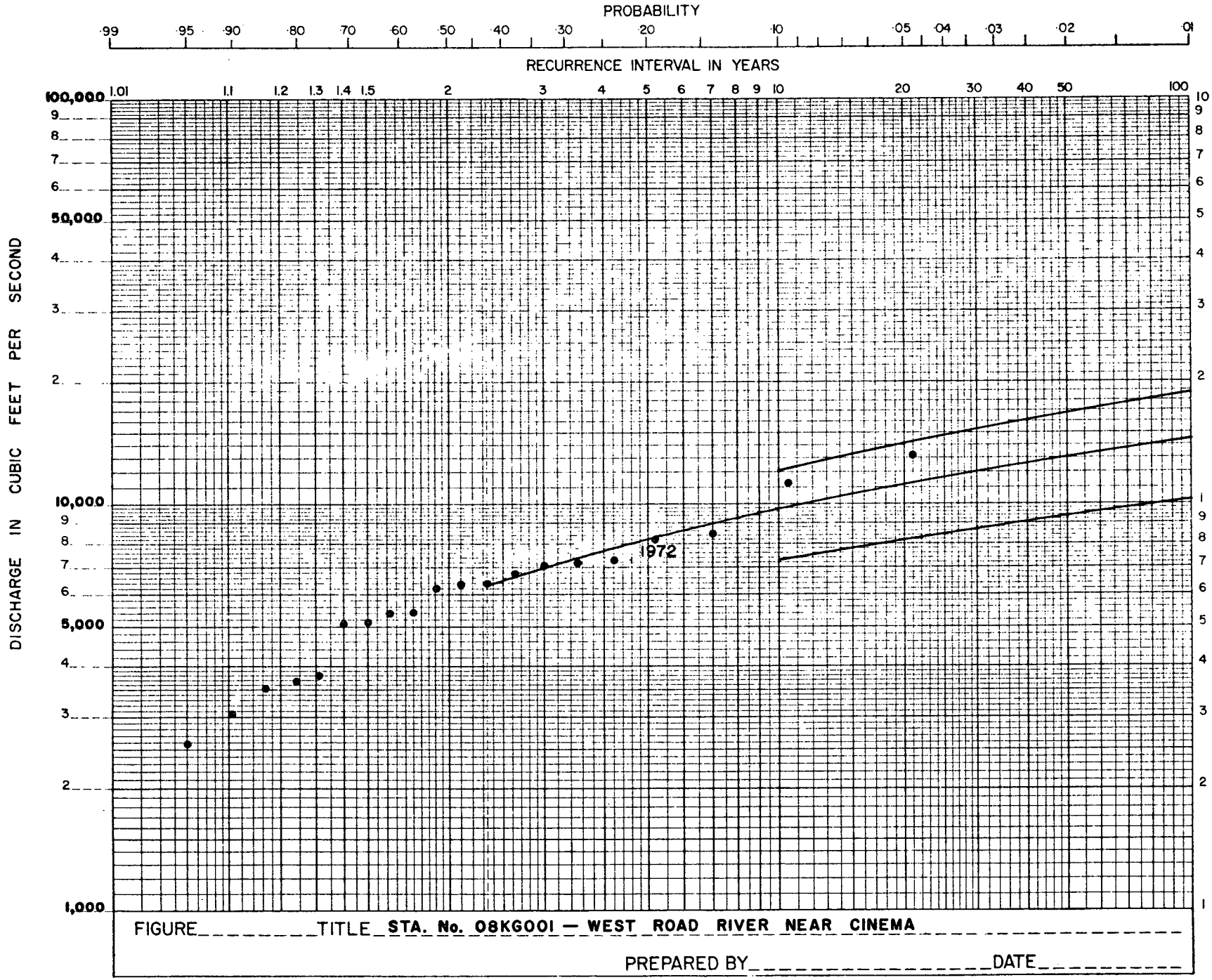

PROBABILITY
.99 .95 .90 .80 .70 .60 .50 .40 .30 .20 .10 .05 .04 .03 .02 .01
RECURRENCE INTERVAL IN YEARS
1.01 1.1 1.2 1.3 1.4 1.5 2 3 4 5 6 7 8 9 10 20 30 40 50 100
DISCHARGE IN CUBIC FEET PER SECOND
100,000
50,000
10,000
5,000
1,000
1972
FIGURE TITLE STA. No. 08KG001 — WEST ROAD RIVER NEAR CINEMA
PREPARED BY DATE

PLATE 69

MAXIMUM DAILY MEAN FLOWS

Station No. 08KG001
West Road River near Cinema

Date	Maximum daily flow in cfs
Jun 14, 1953	2580
Aug 15, 1954	7170
May 21, 1955	6450
May 13, 1956	6790
May 7, 1957	7320
May 9, 1958	11300
May 21, 1959	3520
Jun 10, 1960	6250
May 12, 1961	5450
May 31, 1962	5130
May 1, 1963	3800
Jul 2, 1964	5110
Apr 29, 1965	13200
May 11, 1966	5400
May 11, 1967	8530
May 24, 1968	6360
Apr 19, 1969	3690
May 19, 1970	3040
May 7, 1971	7080
May 16, 1972	8200

Rank	Recurrence interval in years	Maximum daily flow in cfs	Year
1	21.0	13200	1965
2	10.5	11300	1958
3	7.0	8530	1967
4	5.2	8200	1972
5	4.20	7320	1957
6	3.50	7170	1954
7	3.00	7080	1971
8	2.62	6790	1956
9	2.33	6450	1955
10	2.10	6360	1968
11	1.91	6250	1960
12	1.75	5450	1961
13	1.62	5400	1966
14	1.50	5130	1962
15	1.40	5110	1964
16	1.31	3800	1963
17	1.24	3690	1969
18	1.167	3520	1959
19	1.105	3040	1970
20	1.050	2580	1953

Mean annual flood: 6320 cfs

Standard deviation: 2650 cfs

Drainage area: 4630 sq mi

EXTREME MAXIMUM DAILY FLOWS

Station number	Station name	Drainage area in sq mi	Date	Maximum daily flow in cfs	Maximum runoff in cfs/sq mi
08NA002	Columbia River at Nicholson	2570	Jun 11, 1972	27200	10.6
08ND007	Columbia River above Nagel Creek	8220	Jun 12, 1972	126000	15.3
08ND011	Columbia River above Steamboat Rapids	10300	Jun 12, 1972	186000	18.1
08ND013	Illecillewaet River at Greeley	443	Jun 11, 1972	12700	28.7
08NL007	Similkameen River at Princeton	730	May 31, 1972	16800	23.0
08NL038	Similkameen River at Hedley	2160	May 30, 1972	32800	15.2
08NL024	Tulameen River at Princeton	680	May 30, 1972	13200	19.4
08NL004	Ashnola River near Keremeous	400	May ~~27~~ 19~~28~~72	~~7000~~6/60	~~17.5~~ 15.4
08KA004	Fraser River at Hansard	7060	Jun 14, 1972	112000	15.9
08MF040	Fraser River above Texas Creek	53600	Jun 16, 1972	269000	5.0
08MF005	Fraser River at Hope	78300	May 31, 1948	536000	6.8
08KB003	McGregor River at Lower Canyon	1840	Jun 12, 1972	64800	35.2
08JC002	Nechako River at Isle Pierre	---	Jul 7, 1972	38100	---
08JE001	Stuart River near Fort St. James	5400	Jun 29, 1972	20900	3.9
08KG001	West Road River near Cinema	4630	Apr 29, 1965	13200	2.9
08KH006	Quesnel River near Quesnel	4690	Jun 13, 1972	40800	8.7
08LF051	Thompson River near Spences Bridge	21600	Jun 3, 1948	146000	6.8
08LB047	North Thompson River at Birch Island	1750	Jun 12, 1972	33300	19.0
08LB064	North Thompson River at McLure	7870	May 23, 1957	96800	12.3
08LA001	Clearwater River near Clearwater Station	3950	Jun 12, 1972	51600	13.1
08LE031	South Thompson River at Chase	6060	Jun 12, 1948	56700	9.4
08LD001	Adams River near Squilax	1200	Jun 13, 1972	14000	11.7
08LE027	Seymour River near Seymour Arm	308	Jun 11, 1972	9650	31.3
08LC019	Shuswap River at outlet of Mable Lake	1560	May 29, 1928	19500	12.5
08LE020	Salmon River at Falkland	340	May 28, 1948	1730	5.1
08LG006	Nicola River near Spences Bridge	2960	May 13, 1971	11900	4.0
08EF001	Skeena River at Usk	16300	May 26, 1948	330000	20.2
10BE001	Liard River at Lower Crossing	40300	Jun 13, 1964	301000	7.5

PERIOD OF RECORD OF MAXIMUM DAILY FLOWS

Station number	No. of years of record	1900 01234	1900 56789	1901 01234	1901 56789	1902 01234	1902 56789	1903 01234	1903 56789	1904 01234	1904 56789	1905 01234	1905 56789	1906 01234	1906 56789	1907 01234	1907 56789
08NA002	69	---XX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	-XX--	-----
08ND007	25	-----	-----	-----	-----	-----	-----	-----	-----	-----	--XXX	XXXXX	XXXXX	-XXXX	XXXXX	XXX--	-----
08ND011	51	-----	-----	--XXX	XXXXX	XXX--	----X	XXXXX	XXXXX	XXXXX	XXXXX	X----	XXXXX	XXXXX	XXXXX	XXX--	-----
08ND013	13	-----	-----	---XX	XX---	-----	-----	-----	-----	-----	-----	-----	-----	----X	XXXXX	XXX--	-----
08NL007	36	-----	-----	----X	XXX--	-----	-----	-----	----X	XXX--	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08NL038	8	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	XXXXX	XXX--	-----
08NL024	22	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-XXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08NL004	30	-----	-----	-----	XXXX-	-----	-----	-----	-----	-----	--XXX	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08KA004	20	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---XX	XXXXX	XXXXX	XXXXX	XXX--	-----
08MF040	21	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	--XXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08MF005	61	-----	-----	--XXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08KB003	13	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	XXXXX	XXXXX	XXX--	-----
08JC002	23	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08JE001	42	-----	-----	-----	-----	-----	-----	XX-XX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08KG001	20	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---XX	XXXXX	XXXXX	XXXXX	XXX--	-----
08KH006	34	-----	-----	-----	-----	-----	-----	-----	----X	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08LF051	59	-----	-----	--XXX	XXXXX	XXXXX	XXXXX	XX--X	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08LB047	13	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	XXXXX	XXXXX	XXX--	-----
08LB064	57	-----	-----	-----	-XXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08LA001	34	-----	-----	----X	XXXX-	--XXX	XXX--	-----	-----	-----	-----	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08LE031	62	-----	-----	-XXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08LD001	59	-----	-----	--XXX	XXXXX	XXXXX	XXXXX	XXXXX	XXX-X	XXXXX	X-XXX	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08LE027	18	-----	-----	-----	XXXXX	XXXXX	XXX--	-----	-----	-----	-----	-----	XX---	-----	-----	XXX--	-----
08LC019	29	-----	-----	-----	-----	-----	---XX	XXXXX	X----	-----	-----	--XXX	XXXXX	XXXXX	XXXXX	XXX--	-----
08LE020	26	-----	-----	--X--	XXXX-	-----	-----	-----	-----	-----	---XX	XXXXX	XXXXX	XX---	-XXXX	XXX--	-----
08LG006	24	-----	-----	--XXX	XXXXX	X----	-----	-----	-----	-----	-----	-----	---XX	XXXXX	XXXXX	XXX--	-----
08EF001	40	-----	-----	-----	-----	-----	---XX	XX---	--XXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----
10BE001	26	-----	-----	-----	-----	-----	-----	-----	-----	-----	--XXX	XXXXX	XXXXX	XXXXX	XXXXX	XXX--	-----

ENVELOPE CURVE

OF

EXTREME FLOODS IN BRITISH COLUMBIA

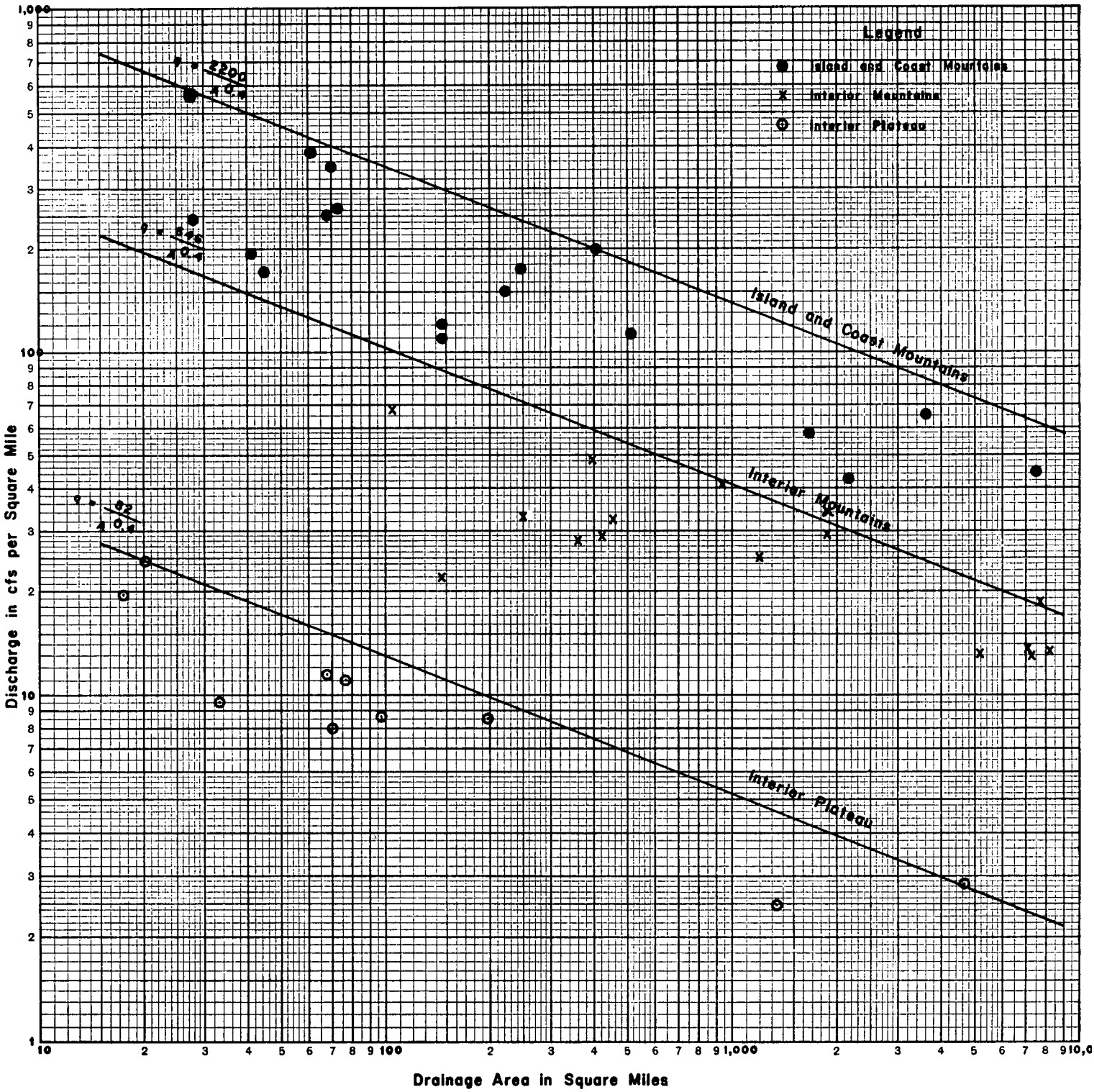


PLATE 70

MEAN ANNUAL FLOOD
MAIN STEM SITES ON THE
FRASER AND COLUMBIA RIVERS

(NOT CORRECTED FOR STORAGE OR DIVERSIONS)

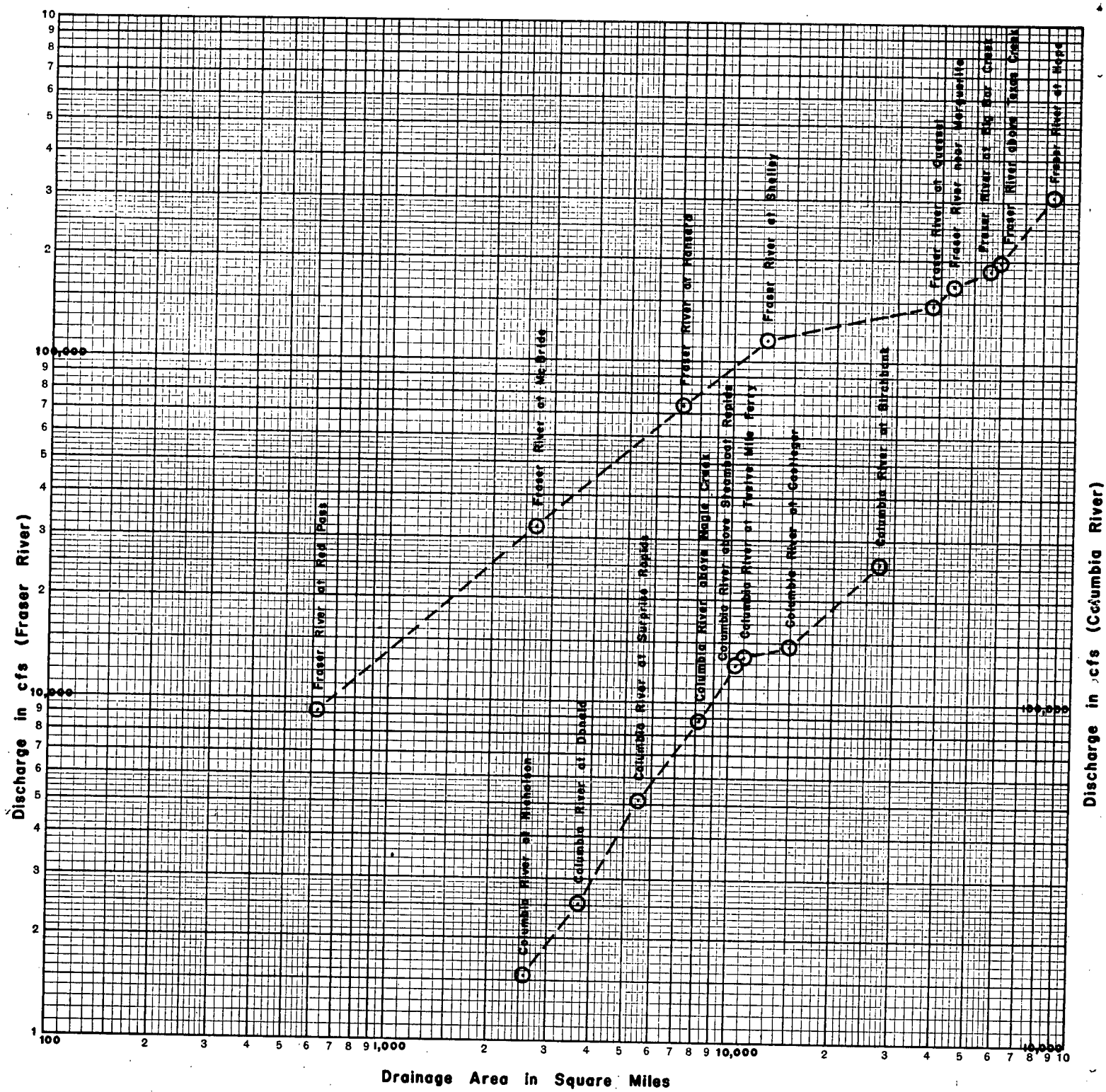


PLATE 24