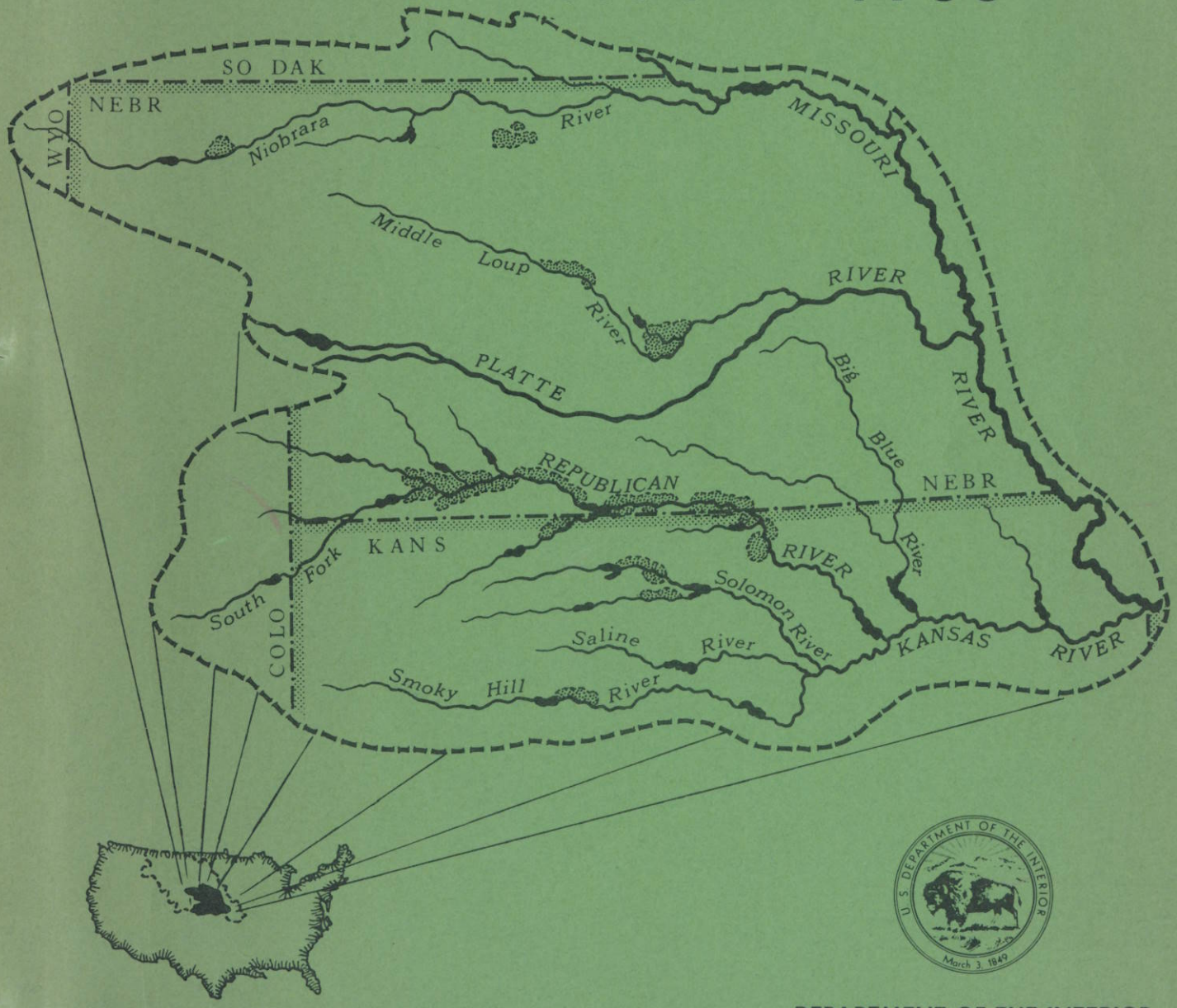
ANNUAL OPERATING PLAN

NIOBRARA, LOWER PLATTE, AND KANSAS RIVER BASINS

1979 – 1980



DEPARTMENT OF THE INTERIOR
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Water and Power Resources Service
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Department of the Interior

Water and Power Resources Service

Lower Missouri Region • Denver, Colorado

ANNUAL OPERATING PLAN

NIOBRARA, LOWER PLATTE, AND KANSAS RIVER BASINS

1979 OPERATIONS
1980 OUTLOOK

CONTENTS

All following page 24

LIST OF TABLES

All following Table 7

LIST OF EXHIBITS

Name of Reservoir	Historical Operation	1979 Actual Operation	1980 Operation Plan
Box Butte Reservoir	1A	1B	1C
Merritt Reservoir	2A	2B	2C
Sherman Reservoir	3A	3B	3C
Bonny Reservoir	4A	4B	4C
Swanson Lake	5A	5B	5C
Enders Reservoir	6A	6B	6C
Hugh Butler Lake	7A	7B	7C
Harry Strunk Lake	8A	8B	8C
Norton Reservoir	9A	9B	9C
Harlan County Lake	10A	10B	10C
Lovewell Reservoir	11A	11B	11C
Kirwin Reservoir	12A	12B	12C
Webster Reservoir	13A	13B	13C
Waconda Lake	14A	14B	14C
Cedar Bluff Reservoir	15A	15B	15C

Canal Diversions and Acres Irrigated:

16 - Mirage Flats Irrigation District
17 - Ainsworth Irrigation District
18 - Sargent Irrigation District
19 - Farwell Irrigation District
20 - Frenchman Valley Irrigation District
21 - H & RW Irrigation District
22 - Frenchman-Cambridge Irrigation District
23 - Almena Irrigation District
24 - Bostwick Irrigation District in Nebraska
25 - Kansas-Bostwick Irrigation District
26 - Kirwin Irrigation District
27 - Webster Irrigation District
28 - Cedar Bluff Irrigation District

Map - Irrigation and Flood Control Facilities

SYNOPSIS

GENERAL

This is the twenty-seventh consecutive year that an Annual Operating Plan has been prepared for the federally owned dams and reservoirs serving an irrigation function in the Niobrara, Lower Platte, and Kansas River Basins. There are 15 of these dams and reservoirs in Colorado, Nebraska and Kansas. These reservoirs, together with 10 diversion dams, 10 pumping plants, and 22 canal systems, serve approximately 271,000 acres of project lands in Nebraska and Kansas. In addition to irrigation, municipal and industrial water, these features serve flood control, recreation, and fish and wildlife purposes. A map in the back of this report shows the location of these features. The reservoirs in the Niobrara and Lower Platte River Basins are operated by either irrigation or reclamation districts, and the reservoirs in the Kansas River Basin are operated by either the Water and Power Resources Service 1/ or the Corps of Engineers. The diversion dams, pumping plants, and canal systems are operated by either irrigation or reclamation districts.

A Programmable Master-Station Supervisory Control System is being used to assist in operational management of all eleven dams under Water and Power's jurisdiction that are located in the Kansas River Basin.

The "Headlines 79" following this Synopsis is indicative of the awareness of local people of natural resource development and conservation in the Niobrara, Lower Platte, and Kansas River Basins.

1979 SUMMARY

Climatic Conditions. The total precipitation over the operating area during 1979 ranged from 95 to 150 percent of normal. Box Butte was the only reservoir which received below normal rainfall. The temperatures were generally below normal during the growing season.

Storage Reservoirs.

A. Conservation Operations - The 1979 inflows were below the dry-year forecast at Merritt, Bonny, Enders, Norton and Cedar Bluff Reservoirs and Swanson Lake. Box Butte, Kirwin and Webster Reservoirs and Harry Strunk and Harlan County Lakes had inflows between the dry- and normal-year forecasts. Hugh Butler and Waconda Lakes and Sherman Reservoir had inflows between normal- and wet-year forecasts. Lovewell Reservoir had inflows above the wet-year forecast. The following table shows a comparison of 1978 and 1979 carryover storage for all reservoirs in the Niobrara, Lower Platte and Kansas River Basin.

1/ On November 6, 1979, the Secretary of Interior approved changing the name of the former Bureau of Reclamation to the Water and Power Resources Service.

Reservoir	RESERVOIR DATA SEPTEMBER 30 1978 Elevation (feet)	1978 Storage (A.F.)	1979 Elevation (feet)	1979 Storage (A.F.)	Top of Conserv. Capacity Elevation (feet)	Storage (A.F.)
Box Butte	3978.51	3,037	3981.90	4,694	4007.00	31,060
Merritt	2937.90	53,454	2939.20	56,487	2946.00	74,486
Sherman	2153.60	46,920	2140.40	23,150	2162.30	69,076
Bonny	3667.99	33,653	3668.00	33,670	3672.00	41,340
Swanson	2726.70	28,240	2730.09	36,280	2752.00	120,160
Enders	3084.02	11,065	3087.57	13,764	3112.30	44,480
Hugh Butler	2565.45	17,067	2570.80	22,704	2581.80	37,776
Harry Strunk	2341.39	8,475	2365.06	35,253	2366.10	37,141
Norton	2278.67	4,343	2281.68	6,078	2304.30	35,935
Harlan County	1934.30	186,227	1938.49	228,011	1946.00	319,787
Lovewell	1580.72	36,340	1578.36	30,340	1582.60	41,690
Kirwin	1701.31	14,933	1701.77	15,558	1729.25	99,435
Webster	1872.71	22,929	1872.13	21,847	1892.45	77,370
Waconda	1454.79	231,272	1453.43	215,109	1455.60	241,460
Cedar Bluff	2107.67	35,047	2106.52	32,700	2144.00	185,090

Cedar Bluff Reservoir reached a historically low level of 2105.62 feet (30,928 acre-feet of storage) on December 18, 1979.

B. Flood Control Operations - Flood control benefits accrued by operation of Kansas River Projects dams during 1979 totaled $1,025,000 (Lovewell - $13,000; Kirwin - $35,000; Webster - $16,000; Glen Elder - $959,000; and Cedar Bluff - $2,000). The accumulative total of flood control benefits for the years 1951 through 1979 by the facilities included in this report total $43,710,000. (See table 5.)

Water Service. There were 406,996 acre-feet of water diverted to irrigate 246,742 acres of project lands in 13 irrigation districts. (See tables 3 and 7.) The project water supply was inadequate for 45,315 acres of lands in Mirage Flats, Frenchman Valley, H & RW, Almena and Cedar Bluff Irrigation Districts. No project water was delivered to Cedar Bluff and Almena Irrigation Districts. The project water supplies for the other units mentioned in this report were adequate in 1979.

The water requirements of three municipalities, one rural water district, two industrial companies, and a federal fish hatchery were furnished from storage releases or natural flows.

Under a long-term contract with the Water and Power Resources Service for use of the Arcadia Diversion Dam, the Middle Loup Public Power and Irrigation District diverted 28,155 acre-feet to irrigate 14,356 acres of non-project lands. These diversions were made under natural flow water rights granted by the State of Nebraska.

Irrigation Production. The 1979 crop yields from lands receiving project water were slightly higher on the average than in 1978. Corn, the principal crop, increased from an average of 113 bushels per acre to 118 bushels per acre. In 1979, the unit prices for all commodities were higher than those in 1978. The

gross crop value of $62,756,477 was 113 percent of the 1978 gross crop value, and the average crop value per acre increased from $237.13 to $270.87 in 1979. Figure 1 is a graph which compares corn prices with the gross crop value per acre.

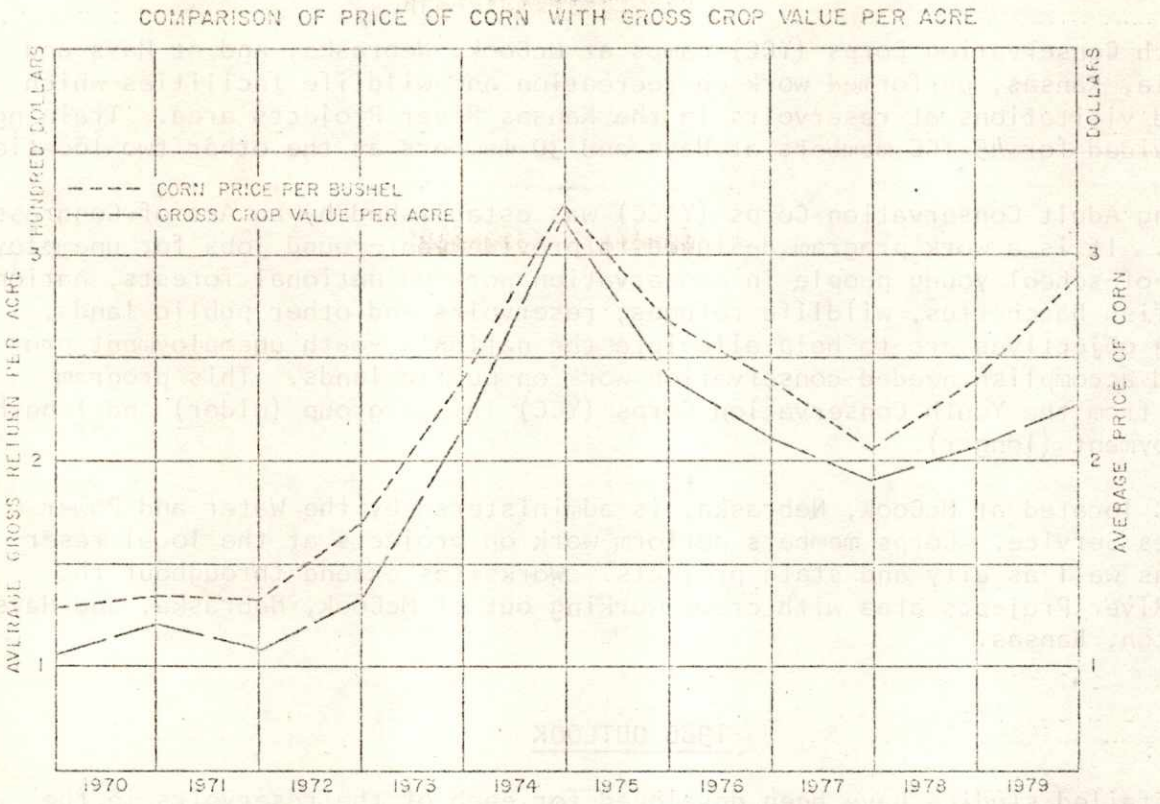


Figure 1

The following table shows a comparison of corn yields for each irrigation district.

Irrigation District	Corn Yield (bu./ac.) 1978	1979
Ainsworth	106	108
Mirage Flats	114	109
Sargent	119	121
Farwell	126	123
Frenchman Valley	123	117
H & RW	100	111
Frenchman-Cambridge	116	128
Bostwick in Nebraska	113	121
Kansas-Bostwick	121	123
Kirwin	106	119
Webster	98*	124
Cedar Bluff	106	42*
Almena	112	153* 1/
Average	113	118

* No project water supplied; not included in averages.
1/ Project lands irrigated from private wells.

Fish and Wildlife and Recreation Benefits. During the early part of the 1979 season, reservoir operations were favorable for recreation and fish and wildlife uses. (See table 6.) Late in the season, irrigation operations lowered reservoir levels at some reservoirs, thereby limiting the recreation benefits.

The Youth Conservation Corps (YCC) camps at McCook, Nebraska, and at Hays and Concordia, Kansas, performed work on recreation and wildlife facilities which enhanced visitations at reservoirs in the Kansas River Projects area. Training was provided for 45 YCC members at Hays and 30 members at the other two locations.

The Young Adult Conservation Corps (YACC) was established by an Act of Congress in 1977. It is a work program designed to provide year-round jobs for unemployed and out-of-school young people in conservation work on national forests, national parks, fish hatcheries, wildlife refuges, reservoirs and other public lands. Its main objectives are to help alleviate the nation's youth unemployment problem and accomplish needed conservation work on public lands. This program differs from the Youth Conservation Corps (YCC) in age group (older) and length of employment (longer).

The YACC located at McCook, Nebraska, is administered by the Water and Power Resources Service. Corps members perform work on projects at the local reservoirs, as well as city and state projects. Worksites extend throughout the Kansas River Projects area with crews working out of McCook, Nebraska, and Hays and Norton, Kansas.

1980 OUTLOOK

Three detailed studies have been developed for each of the reservoirs in the Niobrara, Lower Platte, and Kansas River Basins conforming with established operating criteria under conditions that would be experienced if reservoir inflow during 1980 is assumed to be reasonable minimum, most probable, or reasonable maximum. These operation studies are included as table 4. Under reasonable minimum inflow forecast conditions, irrigation districts receiving storage water from the following reservoirs are expected to receive less than a full supply: Box Butte, Sherman, Norton, Kirwin, Webster, Cedar Bluff and Enders. The irrigation districts affected are: Mirage Flats, Farwell, Frenchman Valley, H & RW, Almena, Kirwin, Webster and Cedar Bluff. This means that if 1980 is a dry year, 101,563 of the total 248,263 acres estimated to be irrigated (or about 41 percent) will have an inadequate water supply.

Under most probable inflow conditions, it is also expected that Mirage Flats and Farwell Irrigation Districts would experience some shortages to irrigation demands from Box Butte and Sherman Reservoirs, respectively. Irrigators in several districts (Mirage Flats, Kirwin, Webster, Almena, Frenchman Valley and H & RW) plan to use water from private wells to supplement the project water supply. The industrial municipal, rural water district and fish hatchery water supply requirements will be met in full under all three inflow forecast conditions.

During 1980, under all inflow forecast conditions, storage water will be in excess of project needs at Bonny Reservoir and Waconda Lake.

Even under reasonable minimum inflow conditions, the conservation pools at Merritt, Sherman and Lovewell Reservoirs and Harry Strunk Lake will fill during 1980. With most probable inflow conditions, Bonny and Lovewell Reservoirs and Harlan County Lake will also fill.

Even with low reservoir levels and inadequate water supplies for some project lands, the recommendations of various State agencies will be considered. As in the past, irrigation and reclamation districts will advise State agencies regarding aquatic weed control and canal operations. The Water and Power Resources Service will continue to operate the reservoirs and other facilities under its jurisdiction in the best interests of all project functions and for the greatest public benefit.

HEADLINES 79

$6 Million More Earmarked For Nebraska Water Projects

70 mph Wind, 3-Inch Rain, Marble Hail Pelts McCook

Study Shows Significant Declines Ground Water Levels Drop with Irrigation

Irrigation Tour Starts in McCook

McCOOK DAILY GAZETTE

Hard-Hitting Hailstorm Slashes Wheat and Corn

Storm Hits First Day Of Summer

They're Coming from Wide Area

Irrigators To Tour This Area

Water Hearing Yields Variety of Solutions

Bureau Projects Aimed At Improving Drainage

Survey Indicates Majority Favors Water Regulation

Bureau's Name Change Reflects New Emphasis

January's Farm Price Rise Biggest Since August 1974

'Worst Possible Condition'

Sand Stopping Swanson Water

50 of 68 Wells Drop

Report: Water Levels Down in 1978

For 1980 Legislature

Water Law May Be Major Issue

Reorganization Won't Affect Bureau Office

Revisions in Water Law Proposed

New Law Would Change Ground Water Controls

Swanson Pipe Unplugged

Strunk Lake Near the Top

Friday, September 14, 1979, McCook Daily Gazette 3

Lake Levels Bolstered By August Precipitation

Low Lake Levels Force Irrigation Water Cutback

Carter Wants States to Pay For Projects

Well Drilling Moratorium Included

Upper NRD Proposes Control Rules

Rain Up To Five Inches Pours Into Thirsty Swanson Lake

Elevation of Lakes Low Inspite of Precipitation

More Precipitation Today

Subsoil Moisture Gets Boost from June Rains

Two Dams Register More Precipitation

Thursday, January 18, 1979, McCook, Neb., Daily Gazette

No Surprise-Water Levels Rise After Drought Years

Bureau Brings Zoologist To Study Local Habitat

Coloradan Wants to Restrict Flow of Water Into Nebraska

Bald Eagles Like Swanson Lake

CHAPTER I - INTRODUCTION

PURPOSE OF THIS REPORT

In addition to describing the operational responsibilities of the Water and Power Resources Service, Corps of Engineers, and irrigation or reclamation districts in the three river basins, this Annual Operating Plan advises water users, cooperating agencies, and other interested groups or persons of the actual operations during 1979 and serves as a guideline for the 1980 operations.

OPERATIONAL RESPONSIBILITIES

The Water and Power Resources Service is responsible for irrigation operations at all Federal reservoirs in the Kansas River Projects area. At those reservoirs which were constructed by the Water and Power Resources Service, the Service is also responsible for the operation and maintenance, safety of the structure, and reservoir operations not specifically associated with regulation of the flood control storage. In addition to irrigation and flood control, these reservoirs provide recreational, fish and wildlife, municipal, and industrial benefits.

By contractual arrangements with the Water and Power Resources Service, the irrigation or reclamation districts are responsible for the operation and maintenance of the canals and irrigation distribution facilities constructed or rehabilitated by the Service in the Niobrara, Lower Platte, and Kansas River Basins. In addition, the appropriate irrigation or reclamation districts have the responsibility of operating and maintaining Box Butte, Merritt and Sherman Reservoirs. The remaining 12 reservoirs in the projects area are operated and maintained by either the Corps of Engineers or the Service.

The States of Nebraska, Colorado and Kansas are responsible for the administration and enforcement of the laws of their respective States pertaining to the water rights and priorities of all parties concerned with the use of water.

The Service will cooperate with all State agencies and Compact Commissions to ensure that all operations are in compliance with State laws and Compact requirements.

TABLES AND EXHIBITS

Records for the facilities reported herein are attached as tables and exhibits.

WATER SUPPLY

For forecasting purposes, values of annual inflows that will be statistically equalled or exceeded 10, 50 and 90 percent of the time were selected from the probability curve to be "reasonable maximum" (wet year), "most probable" (normal year), and "reasonable minimum" (dry year) inflow conditions respectively.

RESERVOIR OPERATIONS

All operations are scheduled for optimum benefits of the various authorized project functions. Monthly or as often as runoff and weather conditions dictate, the Service evaluates the carryover storage and estimated inflow at each reservoir to determine whether or not excess water is anticipated. If excess inflow is apparent, controlled releases will be made to maximize the downstream benefits, including flood control.

MAJOR FEATURES

The Mirage Flats Project was constructed under the Water Conservation and Utilization Act and includes an irrigation storage reservoir, diversion dam, and canal system. The other features discussed in this report are a part of the Pick-Sloan Missouri Basin Program and include multipurpose reservoirs, diversion dams, pump stations, and canal systems. The 15 storage facilities now in operation are as follows:

Constructed by the Water and Power Resources Service:

1. Operated by irrigation or reclamation districts--Box Butte and Merritt Dams in the Niobrara River Basin and Sherman Dam in the Lower Platte River Basin.

2. Operated by the Water and Power Resources Service--Bonny, Trenton, Enders, Red Willow, Medicine Creek, Norton, Lovewell, Kirwin, Webster, Glen Elder and Cedar Bluff Dams in the Kansas River Basin.

Constructed and operated by the Corps of Engineers:

1. Harlan County Dam in the Kansas River Basin.

IRRIGATION DISTRICTS

Thirteen irrigation districts and one reclamation district in the Niobrara, Lower Platte, and Kansas River Basins have contracted with the Water and Power Resources Service for water supply and irrigation facilities. The Sargent and Farwell Irrigation Districts have contracted their operation and maintenance responsibilities to the Loup Basin Reclamation District.

The normal irrigation season for Mirage Flats Irrigation District is April through September. The contracted irrigation season for Frenchman Valley, H & RW, Frenchman-Cambridge and Cedar Bluff Irrigation Districts is from May 1 through October 15; and for all other districts the contracted irrigation season is from May 1 through September 30th.

MUNICIPAL AND INDUSTRIAL WATER

Three municipalities, two oil companies and one rural water district have executed water service contracts for full or supplemental water supplies.

FISH HATCHERY

The Fish and Wildlife Service operates a warm-water fish hatchery below Cedar Bluff Reservoir.

ENVIRONMENTAL CONSIDERATIONS

A "Statement of Operational Objectives" for Harlan County Lake sets forth the general operational objectives and the specific reservoir uses that are considered desirable. It indicates that fish and wildlife interests will be best served by high reservoir levels with minimum fluctuations and regulation of the outflow in excess of the minimum desired flows. Although the statement recognizes flood control and irrigation as the primary purposes, it indicates that comprehensive operational plans should be developed to permit the maximum integration of the secondary uses.

Insofar as practicable, the above-mentioned objectives are also considered in the operation of all reservoirs in the Kansas River Basin, Merritt and Box Butte Reservoirs in the Niobrara River Basin, and Sherman Reservoir in the Lower Platte River Basin. The regulated outflow will also benefit farmers, ranchers, industries, cities, and other interests below the reservoirs.

CHAPTER II - NIOBRARA AND LOWER PLATTE RIVER BASINS

MIRAGE FLATS PROJECT IN NEBRASKA

GENERAL

The flow of the Niobrara River and Box Butte Reservoir storage provide a water supply for the 11,662-acre Mirage Flats Project. During the 10-year period from 1969 to 1978 the project water supply averaged 17,505 acre-feet, which is about 1.50 acre-feet per acre. This is about 0.82 acre-foot per acre short of the average diversion requirement of 2.32 acre-feet per acre that was estimated to be necessary for a full water supply in the March 1965 report on the Mirage Flats Project, Nebraska. Records of farm deliveries for several previous years indicate a gradual decline in project water supply. Many irrigators supplement the water supply by private wells.

The Mirage Flats Irrigation District cooperates with the Nebraska Game and Parks Commission by operating the Box Butte Dam outlet works gates and the Dunlap Diversion Dam gates in a manner that avoids sudden large changes in the flows of the Niobrara River.

1979 SUMMARY

The flows of the Niobrara River plus the carryover storage in Box Butte Reservoir were not adequate to provide a full water supply for the project lands. Runoff from significant precipitation near the end of the irrigation season provided carryover storage for use in the 1980 irrigation season. There were 2,419 acre-feet of active storage on September 30th. The total precipitation in the Mirage Flats area was 14.47 inches, which is 95 percent of normal. The total inflow (18,124 acre-feet) was slightly above the reasonable minimum forecast.

During July, August and September 13,329 acre-feet were diverted to the Mirage Flats Canal for irrigation of 11,139 acres, which is 96 percent of the acres with service available. The farm deliveries from the project water supply were 6,506 acre-feet (0.58 acre-foot per acre), giving the district a delivery efficiency of 49 percent. Project deliveries were supplemented by privately owned irrigation wells. Although a destructive hailstorm on June 24, 1979, in the south and west parts of the project reduced crop yields, the gross crop value was $2,847,031, which is $460,135 more than the 1978 value (as a result of price increases).

1980 OUTLOOK

Since there was a small amount of carryover storage, the project water supply is expected to be inadequate in 1980 as it has been for the last several years. The Mirage Flats Irrigation District will announce to their water users in the spring the amount of water that will be available from storage in Box Butte Reservoir. However, the district plans for the irrigators to continue the use

of water from privately owned irrigation wells as a supplemental supply. There are 11,000 acres expected to be irrigated in 1980.

AINSWORTH UNIT, SANDHILLS DIVISION IN NEBRASKA

GENERAL

Within the Ainsworth Irrigation District there are 34,539 acres with service available. The project water supply is provided by storage of Snake River flows in Merritt Reservoir. The reservoir is filled after the irrigation season each fall to a level varying from 2 to 6 feet below the top of conservation capacity in order to avoid ice damage to the soil cement at the same elevation. The reservoir is regulated to maintain this level until the ice clears each spring and then slowly filled. This operation greatly enhances spring spawning of fish. Although not required, minimum releases up to 15 ft^3/s are made into the Snake River below Merritt Dam for fish, wildlife and recreational purposes.

The basic water supply for the 34,539 acres with service available is 63,712 acre-feet. Additional water, if available, can be purchased by the district as a supplemental supply.

1979 SUMMARY

Precipitation, as recorded near Merritt Dam, totaled 19.94 inches of rainfall which was 114 percent of normal. The water supply was more than adequate to meet the project's irrigation requirement. There were 60,881 acre-feet diverted from Merritt Reservoir into the Ainsworth Canal with 39,754 acre-feet being delivered to the farm headgates (delivery efficiency of 65 percent). There were 30,475 acres of land irrigated in 1979 and the gross crop value was $8,000,679, which is $1,475,302 more than the previous year. A large portion of the project area received crop damage as a result of hail.

The District executed several temporary water service contracts which provided a total of 142 acre-feet of irrigation water from holding ponds located within the district's service area.

1980 OUTLOOK

Merritt Reservoir will be regulated to maintain an elevation 3.5 feet below the top of conservation capacity during the 1979-80 winter months to prevent erosion from occurring on the face of the dam at the same elevation year after year.

Releases from Merritt Reservoir will be regulated to slowly fill the conservation capacity during the spring months. The water supply is expected to be adequate in 1980 for the irrigation of an estimated 34,000 acres.

SARGENT UNIT, MIDDLE LOUP DIVISION IN NEBRASKA

GENERAL

The Sargent Irrigation District has contracted with the Loup Basin Reclamation District for the operation and maintenance of the Milburn Diversion Dam and the Sargent Canal system which serves 13,363 acres. The water supply is diverted from the Middle Loup River into the Sargent Canal under an appropriated natural flow right from the State of Nebraska. These diversions may exceed the natural flow appropriation of 198 ft^3/s by an exchange of storage from Sherman Reservoir, provided that water is available after all senior appropriations are satisfied and the excess is not greater than the storage releases from Sherman Reservoir.

A detention dike at mile post 24.1 on the Sargent Canal was modified to serve as a holding pond with a capacity of 425 acre-feet. Water will be stored in the pond prior to the irrigation season and used for regulation of the supply for lands under main canal lateral mile post 23.7.

1979 SUMMARY

The precipitation over the Sargent Unit (25.98 inches at district headquarters) was 111 percent of normal. The diversions into the Sargent Canal totaled 29,854 acre-feet (16,620 acre-feet were delivered to the farm headgates--delivery efficiency 56 percent). The diversions exceeded the appropriated right for 29 days during 1979. There were 11,597 acres irrigated with a gross crop value of $2,996,724, which is $449,893 more than in 1978. The increase in corn acreage throughout the district (approximately 82 percent) has created very high water demands in July and August. The demands cannot be met within canal capacity so the district has instituted a rationing process through the peak period.

1980 OUTLOOK

The Loup Basin Reclamation District estimates that 13,000 acres in the Sargent Unit will be irrigated in 1980. The water supply is expected to be adequate.

FARWELL UNIT, MIDDLE LOUP DIVISION IN NEBRASKA

GENERAL

The Loup Basin Reclamation District operates and maintains the Arcadia Diversion Dam, Sherman Feeder Canal, Sherman Dam and Reservoir, and the Farwell Canal system, which serves 50,051 acres of land. Diversions are also made through the Arcadia Diversion Dam to 15,000 acres of non-project lands in the Middle Loup Public Power and Irrigation District under appropriated natural flow water rights.

During the winter months, Sherman Reservoir is normally regulated to five feet below the top of the conservation capacity to minimize seepage from the reservoir into the groundwater table. Maintenance of the pool below the top of conservation provides time for seeding of drawdown areas. This seeding area

prevents wind erosion and provides winter food and cover for wildlife and fish with spawning habitat in the spring when these areas are inundated. Each spring, diversions into Sherman Feeder Canal from the Middle Loup River are regulated to fill the conservation capacity of Sherman Reservoir by mid-June. The gradually rising water surface in the spring is ideal for fish spawning.

Whenever the flows in the Middle Loup River at Arcadia, Nebraska, exceed 6,000 ft^3/s, safe capacity flows will be diverted through Sherman Feeder Canal into Sherman Reservoir. Flood control benefits can be accrued to Sherman Reservoir by such operations.

1979 SUMMARY

The diversions from the Middle Loup River at Arcadia Diversion Dam were 28,155 acre-feet to the Middle Loup Public Power and Irrigation District and 113,003 acre-feet into the Sherman Feeder Canal.

Sherman Feeder Canal diversions into Sherman Reservoir were started on March 30, and the conservation capacity was filled on May 21, 1979. The precipitation at Sherman Dam was 23.62 inches, which is 114 percent of normal. Releases into the Farwell Canals totaled 96,386 acre-feet (52,572 acre-feet were delivered to the farm headgates--delivery efficiency 55 percent). The Farwell Irrigation District reported that 48,231 acres of land were irrigated in 1979. The gross crop value was $12,549,707, which is $870,565 more than in 1978. Sherman Feeder Canal was shut off November 6, 1979.

At the end of the irrigation season after investigation and temporary repair of a toe drain, the reservoir was filled to elevation 2152.7 (9.6 feet below top of conservation storage). It will be maintained at this elevation until filling in the spring. Permanent repairs will be made as soon as engineering designs are completed and funds are available.

1980 OUTLOOK

Diversions from the Middle Loup River into the Sherman Feeder Canal for the normal spring filling of the conservation capacity of Sherman Reservoir are expected to start in early spring.

Under most probable and reasonable minimum inflow conditions, irrigation shortages are expected in 1980. These shortages are attributable to large irrigation requirements for corn production during the months of July and August.

CHAPTER III - REPUBLICAN RIVER BASIN

ARMEL UNIT, UPPER REPUBLICAN DIVISION IN COLORADO

GENERAL

Bonny Reservoir storage is transferred as required to Swanson Lake where releases into the Republican River are regulated to meet the industrial needs of the AMOCO Production Company and Rex Monahan for their waterflood operations in the Sleepy Hollow Oil Field south of Bartley, Nebraska.

Bonny Reservoir inflows from the South Fork of the Republican River and Landsman Creek are released into Hale Ditch as requested by Colorado's State Engineer. Bonny storage water will be available to Hale Ditch and other natural flow appropriators under short-term water service letter agreements. Most of the 700 acres served by Hale Ditch are now owned and operated by the Colorado Department of Natural Resources, Division of Wildlife.

The normal operation pattern of Bonny Reservoir, with a slowly rising or stable pool, enhances fish spawning in the spring and affords excellent hunting conditions each fall.

1979 SUMMARY

The 18.29 inches of precipitation during 1979 was 112 percent of normal, while the inflow (14,907 acre-feet) to Bonny Reservoir was less than the reasonable minimum inflow forecast. The water supply was adequate to furnish 335 acre-feet to AMOCO Production Company and 11 acre-feet to Rex Monahan. As directed by the Colorado Water Commissioner 1,285 acre-feet of reservoir inflows from the South Fork of the Republican River and Landsman Creek were passed through Bonny Reservoir into Hale Ditch.

A short-term water service letter agreement for sale of storage water was made to one user. The State of Colorado Department of Natural Resources purchased 15 acre-feet for industrial or irrigation purposes.

1980 OUTLOOK

AMOCO Production Company and Rex Monahan will have an adequate water supply in 1980. Water stored in Bonny Reservoir will also be available for sale to Hale Ditch and other private irrigators under short-term water service letter agreements.

The water surface will be held constant during the winter months at the December 31 level of 3668.7 until the ice thaws. Each winter releases will be made to maintain a constant elevation during the period when the reservoir is ice-covered.

FRENCHMAN UNIT, FRENCHMAN-CAMBRIDGE DIVISION IN NEBRASKA

GENERAL

The transportation of water from Enders Reservoir through 52 miles of Frenchman River channel to the Culbertson Diversion Dam created an erosion problem that made it necessary to initiate a control and stabilization program in 1964. All contract work has been completed and the remaining work consists of a small maintenance program.

The Culbertson Canal and the Culbertson Extension Canal systems serve 9,600 acres in the Frenchman Valley Irrigation District and 11,490 acres in the H & RW Irrigation District. The water supply for these lands is furnished by flows from Frenchman Creek and Stinking Water Creek and off-season storage in Enders Reservoir.

The normal operation of Enders Reservoir, with the gradual rise in water surface during the spring months, provides desirable fish spawning conditions. Irrigation releases will normally deplete the conservation storage by late summer, thereby limiting the fishing and recreational usage.

1979 SUMMARY

The 19.35 inches of precipitation at Enders Dam was 103 percent of normal, while the 1979 inflow into Enders Reservoir (26,526 acre-feet) was below the dry-year forecast. Due to extensive groundwater pumping above the reservoir the inflow was only 44 percent of the average historical pre-construction runoff at the Enders damsite (60,700 acre-feet, 1929-1947). This was the twelfth consecutive year with below-normal inflows. The conservation pool was not filled during 1979. A total of 2,655 acre-feet of water was conserved between the 1978 and 1979 irrigation seasons by pumping seepage back into the reservoir. Irrigation releases were stopped on August 25th.

The farm delivery averaged about 0.68 acre-foot per acre for the two districts. A few farmers were able to supplement their project water supply from private irrigation wells. The Frenchman Valley Irrigation District reports that 8,511 acres received water in 1979, and the H & RW Irrigation District reports 10,467 acres, which are 89 and 91 percent, respectively, of the lands with service available. The gross crop value for Frenchman Valley Irrigation District was $2,221,899, which is an increase of $121,428 from the previous year; and the gross crop value for the H & RW Irrigation District was $2,596,229, which is an increase of $329,170 from the previous year.

1980 OUTLOOK

The fall and early winter inflows into Enders Reservoir were a little below the dry-year forecast. If reasonable minimum runoff conditions prevail, the project water supply is expected to be inadequate to irrigate 7,000 acres in the Frenchman Valley Irrigation District and 7,000 acres in the H & RW Irrigation District. As much as 2,600 acre-feet are expected to be conserved by pumping seepage water back into the Enders Reservoir.

MEEKER-DRIFTWOOD, RED WILLOW, AND CAMBRIDGE UNITS, FRENCHMAN-CAMBRIDGE DIVISION IN NEBRASKA

GENERAL

During the spring months, Swanson, Hugh Butler and Harry Strunk Lakes normally have a rising or stable pool which enhances the spawning of northern pike and walleye. These lakes provide excellent opportunities for fishing, water sports and recreation. The seepage below Red Willow and Medicine Creek Dams provides excellent fishing.

Service is provided for Frenchman-Cambridge Irrigation District by Meeker-Driftwood Canal to 16,476 acres; Red Willow Canal to 4,932 acres; Bartley Canal to 6,539 acres; and Cambridge Canal to 17,053 acres. The water supply for these lands is provided by storage in Swanson, Hugh Butler and Harry Strunk Lakes, and flows of the Republican River and Red Willow and Medicine Creeks.

1979 SUMMARY

The precipitation of 26.77 inches at Trenton Dam was 138 percent of normal and the inflow to Swanson Lake was 92 percent of the dry-year forecast. At the beginning of the 1979 irrigation season (June 27), there was 54,290 acre-feet of water stored in Swanson Lake, which is 65,870 acre-feet below the top of conservation capacity. This carryover storage, storage releases from Hugh Butler Lake and the inflows furnished full water supplies to project lands served by the Meeker-Driftwood and Bartley Canal systems. At the time release of water was to be made to prime the Meeker-Driftwood Canal system, a silt and sand plug was discovered in Trenton Dam's outlet works conduit. After a few days the obstruction was removed and water releases were started. Farm deliveries were not delayed. The Frenchman-Cambridge Irrigation District diverted 24,344 acre-feet into Meeker-Driftwood Canal to irrigate 16,160 acres, and 6,553 acre-feet into Bartley Canal for 6,290 acres.

The precipitation of 23.09 inches at Red Willow Dam was 117 percent of normal while the inflow into Hugh Butler Lake was slightly above the most probable forecast. The water supply was adequate to meet the diversion requirements for Red Willow Canal. The district diverted 5,778 acre-feet of water to irrigate 4,790 acres of land served by Red Willow Canal. During the latter part of the irrigation season, in order to conserve water in Swanson Lake, demands for the Bartley Canal were satisfied by supplementing natural flows with storage water from Hugh Butler Lake.

The precipitation of 28.05 inches was 146 percent of normal at Medicine Creek Dam while the inflow was a little less than the normal-year forecast. Due to high precipitation in July and August irrigation demands were less than normal. The water supply was adequate and 22,768 acre-feet of water was diverted to irrigate 16,720 acres of land served by the Cambridge Canal.

The Frenchman-Cambridge Rehabilitation and Betterment Program for placing laterals in pipe was continued during 1979. Pipe lateral installations on the Bartley and Red Willow Canal systems have been completed and work has started on the Cambridge and Meeker-Driftwood Canal systems. The pipe lateral installations reduced system losses and also reduced the time required for operation and maintenance activities.

The 1979 gross crop value from the lands served by Meeker-Driftwood, Bartley, Red Willow, and Cambridge Canals was $13,029,986, which is $2,178,299 more than in 1978.

1980 OUTLOOK

Forecasts show that almost all the conservation storage of the three lakes supplying the Frenchman-Cambridge Irrigation District would be used to meet the full dry-year irrigation requirement.

It is estimated that 16,200 acres will be served from the Meeker-Driftwood Canal, 16,700 acres will be served from the Cambridge Canal, 4,800 acres will be served from Red Willow Canal, and 6,300 acres will be served from the Bartley Canal.

No surplus storage is expected to be available for sale as a supplemental supply to non-project lands in 1980.

ALMENA UNIT, KANASKA DIVISION IN KANSAS

GENERAL

There are 5,763 acres with service available in the Almena Irrigation District. The project water supply is provided by Prairie Dog Creek flows and Norton Reservoir storage.

The water service contract for the City of Norton, Kansas, provides for a maximum annual use of 1,600 acre-feet from Norton Reservoir.

1979 SUMMARY

The precipitation at Norton Dam was 26.81 inches of rainfall, which is 132 percent of normal. The total inflow was 4,816 acre-feet, which is about 2,400 acre-feet less than the dry-year forecast. The Almena Irrigation District decided not to make any irrigation releases from storage; however, 4,902 acres were irrigated from 120 private wells that furnished 10,600 acre-feet. This is the ninth consecutive year that the district has had to use water from privately owned irrigation wells as a supplemental water supply to project lands.

The 4,902 acres irrigated in 1979 produced a gross crop value of $1,811,243. This is $500,143 more than the crop value for 1978.

The City of Norton used 794 acre-feet of municipal water during 1979.

1980 OUTLOOK

The Almena Irrigation District expects to deliver water to 5,763 acres if an adequate water supply is available. If 1980 is a dry year without significant run-off producing storms above Norton Reservoir, a shortage of 17,200 acre-feet may be experienced. If normal inflow into the reservoir and normal rainfall over the irrigated area occur in 1980, a full water supply can be furnished from Norton Reservoir storage and Prairie Dog Creek flows.

Requirements for the City of Norton are expected to be met in full in 1980.

FRANKLIN, SUPERIOR-COURTLAND, AND COURTLAND UNITS, BOSTWICK DIVISION IN NEBRASKA AND KANSAS

GENERAL

Harlan County Lake storage and Republican River flows provide a project water supply for 22,787 acres in the Bostwick Irrigation District in Nebraska, and 12,771 acres in the Kansas-Bostwick Irrigation District No. 2 above Lovewell Reservoir; and, together with White Rock Creek flows and Lovewell Reservoir storage, furnish a water supply for 27,329 acres below Lovewell Reservoir in the Kansas-Bostwick Irrigation District.

The lands in the Franklin and Superior-Courtland Units are in the Bostwick Irrigation District in Nebraska. The lands in the Courtland Unit are in the Kansas-Bostwick Irrigation District.

Beginning in 1981 the following Harlan County Lake minimum flow operational procedures will be used to conserve water, to aid the Nebraska Department of Water Resources in storage water right administration, and also to meet our objective that any water supply shortages will be shared between users.

1. No releases will be made if the end of October elevation is 1935.0 or below. If total inflows since the end of irrigation season exceed dry-year forecast, 5 ft^3/s release will begin.

Releases will be discontinued whenever the Service anticipates requesting administration of storage facilities above Harlan County Lake.

If necessary, small short-duration releases could be made to prevent the stilling basin from becoming stagnant.

2. Releases of 5 ft^3/s will be made if irrigation shortages are anticipated or the reservoir water surface is near or below dry-year conditions.

3. Releases of 10 ft^3/s will be made if no shortages to irrigation uses are anticipated based on recent inflow conditions. If inflows are considered dry-year flows, these flows will be used for all projections.

As recommended by the Kansas State Board of Health, the Nebraska State Department of Health, and the U. S. Public Health Service, it is desirable for the sanitary quality of the stream, to maintain daily flows of 40 ft^3/s in the Republican River below Superior, Nebraska, from June through September. During normal years when the Superior Canal and Courtland Canal (in Nebraska) are in operation, the return flows, seepage and surface irrigation runoff, plus the natural flow gain in the Republican River below the Superior-Courtland Diversion Dam, will meet this recommended flow. If through normal reservoir operations it is possible to comply with the above recommendations, the Service will do so as it has done in the past. However, during dry years when the forecasted reasonable minimum inflows will not fill Harlan County Lake before the start of the next irrigation season, the available flows in the Republican River below Harlan County Dam, plus the minimum releases from Harlan County Lake, are

diverted into the Courtland Canal to be stored in Lovewell Reservoir. When this condition exists, the flow in the Republican River below Superior, Nebraska, will be less than the 40 ft^3/s that was recommended.

The Kansas Fish and Game Commission has requested that the Kansas-Bostwick Irrigation District and the Water and Power Resources Service maintain, when it is possible, a flow of 20 ft^3/s into Lovewell Reservoir when the Courtland Canal is in operation and the conservation pool is below capacity. This recommended inflow provides excellent fishing around the canal inlet to the reservoir. The seepage below Lovewell Dam into White Rock Creek maintains a small live stream throughout the year.

Plans are being formulated to add riprap along the upstream face of Lovewell Dam. Prolonged reservoir operation at elevations near the top of conservation pool is causing riprap damage and bank erosion. To facilitate placement of the riprap (scheduled for fall 1982 and spring 1983) the reservoir water level will be five to seven feet below the top of conservation pool. In the interim damage and erosion will be minimized by maintaining the fall and winter reservoir water levels at elevations below 1581.0.

1979 SUMMARY - BOSTWICK DIVISION
HARLAN COUNTY LAKE OPERATIONS

The precipitation at Harlan County Dam totaled 28.20 inches of rainfall which was 135 percent of normal, while the inflow (155,770 acre-feet) was between dry- and normal-year forecasts. The conservation capacity of Harlan County Lake lacked about 67,000 acre-feet of being filled at the beginning of the 1979 irrigation season.

The 33,350 irrigated acres in the Bostwick Division in Nebraska and Kansas above Lovewell Dam were furnished a full water supply. In addition, 16,081 acre-feet were delivered to Lovewell Reservoir through the Courtland Canal.

1979 SUMMARY - BOSTWICK DIVISION - NEBRASKA

The Bostwick Irrigation District in Nebraska diverted 33,418 acre-feet for the irrigation of 20,492 acres. The gross crop value was $5,507,132, which is $571,976 more than in 1978.

1979 SUMMARY - BOSTWICK DIVISION - KANSAS

The 1979 precipitation at Lovewell Dam totaled 30.88 inches of rainfall which was 125 percent of normal.

The Kansas-Bostwick Irrigation District diverted a total of 56,927 acre-feet to serve 12,858 acres above Lovewell Dam and 20,671 acres below Lovewell Dam. The gross crop value was $9,692,096, which is $2,073,747 higher than the previous year. Prior to the start of the irrigation season, Lovewell Reservoir's conservation pool was filled and 6,800 acre-feet were stored in the flood pool by July 1st. Flood control benefits were $13,000.

1980 OUTLOOK - BOSTWICK DIVISION

The Bostwick Irrigation District in Nebraska and the Kansas-Bostwick Irrigation District No. 2 expect to deliver water to 20,600 and 35,100 acres, respectively. The storage in Harlan County Lake and Lovewell Reservoir and the return flows of the Republican River and White Rock Creek flows are expected to furnish an adequate water supply for the Bostwick lands.

Inflow to Lovewell Reservoir from the Courtland Canal will be started in the spring to allow for filling the reservoir from natural flow in the Republican River without storage releases from Harlan County Lake.

In order to minimize riprap damage and bank erosion, the Lovewell Reservoir water level will be maintained at elevations below 1581.0 next fall and winter.

KIRWIN UNIT, SOLOMON DIVISION IN KANSAS

GENERAL

The water supply for the 11,435 acres of land in the Kirwin Irrigation District is furnished by storage from Kirwin Reservoir and inflows from the North Fork of the Solomon River and Bow Creek.

The operation of Kirwin Dam and Reservoir affords many opportunities for recreation, fishing, hunting, water sports, fish spawning and for preservation of waterfowl species.

1979 SUMMARY

The precipitation totaled 29.99 inches of rainfall which was 134 percent of normal. The inflow (23,894 acre-feet) was between dry- and normal-year forecasts. On September 30, after furnishing a full water supply, 5,773 acre-feet of active conservation storage remained.

The Kirwin Irrigation District diverted 16,215 acre-feet for irrigation of 7,648 acres. There were 3,615 acres supplemented from wells that furnished an additional 1,808 acre-feet. The gross crop value was $1,922,723, which is $223,294 more than in 1978. Flood control benefits were $35,000.

1980 OUTLOOK

The Kirwin Irrigation District estimates that 9,000 acres will be irrigated in 1980. Carryover storage in Kirwin Reservoir, combined with normal precipitation and normal forecasted inflows from the North Fork of the Solomon River, is expected to be adequate to irrigate these lands. However, under dry-year forecasts, a shortage of about 7,200 acre-feet may be experienced.

WEBSTER UNIT, SOLOMON DIVISION IN KANSAS

GENERAL

The Webster Irrigation District has service available to 8,500 acres. The project water supply is provided by Webster Reservoir storage and flows of the South Fork of the Solomon River.

1979 SUMMARY

In 1979, the precipitation at Webster Dam was 150 percent of normal (35.80 inches). The inflow of 21,737 acre-feet was between dry- and normal-year forecasts.

On September 30, there was 16,547 acre-feet of active conservation storage remaining in the reservoir. The Webster Irrigation District reported a gross 1979 crop value of $1,392,271, which is $377,701 more than the previous year. Flood control benefits were $16,000.

1980 OUTLOOK

The carryover storage and the flows in the South Fork of the Solomon River are expected to be adequate under normal- or wet-year forecasts to irrigate 7,000 acres in the Webster Irrigation District in 1980. Dry-year forecasts show a shortage of 8,500 acre-feet.

GLEN ELDER UNIT, SOLOMON DIVISION IN KANSAS

GENERAL

Releases from Waconda Lake will be regulated as outlined in two Memorandums of Understanding between the State of Kansas and the Water and Power Resources Service. Releases are made for the City of Beloit, temporary short-term water service letter agreements, and water right administration. The water service contract with Beloit, Kansas, provides for annual use of up to 2,000 acre-feet of Waconda Lake storage, and is measured at the Glen Elder Dam river outlet works. In any water year that the City's water supply is insufficient and there is surplus water in Waconda Lake, such additional water may be delivered to the City at a rate of $15.00 per acre-foot.

The water service contract with the WCH&T Rural Water District No. 2 provides for use of storage water, as available from Waconda Lake, not to exceed 1,009 acre-feet per calendar year.

To lessen ice damage to the upstream face of Glen Elder Dam during winter months, releases from Waconda Lake will be regulated each year to maintain a water surface level from zero to five feet below the top of conservation capacity and will be held at this level as long as it is frozen over.

The available facilities along the shores of Waconda Lake and the large water surface area afford opportunities to many thousands of people for picnics, sightseeing, recreation, water sports, hunting and fishing.

When compatible with flood control operations, the operating criteria for Waconda Lake provide for a stable or rising pool level during the fish spawning period each spring.

Whenever possible drawdowns will be scheduled for late summer and early fall so that seeding of drawdown areas can be accomplished. This seeding prevents wind erosion and provides winter food and cover for wildlife and fish with spawning habitat in the spring when these areas are inundated.

1979 SUMMARY

The precipitation at Glen Elder Dam was 103 percent of normal (26.16 inches) and the inflow (202,603 acre-feet) was between normal- and wet-year forecasts. A

total of 174 acre-feet was released for use by the City of Beloit, Kansas; 559 acre-feet was released for use by the WCH&T Rural Water District No. 2; and 1,506 acre-feet of storage water was sold to private irrigators in the Solomon Valley under short-term water service letter agreements. Flood control benefits were $959,000.

1980 OUTLOOK

The municipal requirements of Beloit and the requirements of the WCH&T Rural Water District No. 2 will be met in full with releases as required from Waconda Lake. It is expected that the Water Commissioner of the State of Kansas will request that inflows be passed through the lake for water right administration. Waconda Lake storage water will be available to natural flow appropriators under short-term water service letter agreements. To aid in the administration of storage water releases, all water purchasers must install meters on their pumps. The reservoir will be regulated to maintain the December 31 level of 1452.7 during the winter months to minimize ice damage. During 1980 Waconda Lake will be operated with a stable or slowly rising pool early in the year. Under dry- or normal-year conditions, Waconda Lake will be lowered to about 3.5 feet below the top of the conservation pool for next winter.

CEDAR BLUFF UNIT, SMOKY HILL DIVISION IN KANSAS

GENERAL

Cedar Bluff Reservoir storage and Smoky Hill River flows provide a full water supply for the 6,800 acres in the Cedar Bluff Irrigation District and up to 4,000 acre-feet for the Cedar Bluff National Fish Hatchery. Cedar Bluff storage also furnishes a maximum of 2,000 acre-feet per annum, if required, for the City of Russell, Kansas.

The return flows from the Cedar Bluff National Fish Hatchery and seepage from Cedar Bluff Reservoir maintain the fisheries and enhance fishing in the Smoky Hill River below Cedar Bluff Dam.

1979 SUMMARY

The precipitation was 131 percent of normal (28.95 inches). The inflow (8,991 acre-feet) was below the dry-year forecast. The maximum content of 36,712 acre-feet, reached on May 17, was less than 1,400 acre-feet of active content. Because of anticipated severe shortages, the Cedar Bluff Irrigation District No. 6 elected to forgo irrigation releases in 1979. The Cedar Bluff National Fish Hatchery diverted 2,637 acre-feet, most of which was passed through the facilities and returned to the Smoky Hill River below Cedar Bluff Dam.

No releases were required by the City of Russell, Kansas, in 1979.

Flood control benefits were $2,000.

1980 OUTLOOK

The present reservoir level of 2105.66 on December 31, 1979, is in the inactive pool and the current inflow approximates dry-year conditions. With dry-year inflows, a severe shortage of over 20,000 acre-feet is expected. However, with normal- or wet-year conditions, the inflows would be adequate for irrigation of 6,800 acres in 1980.

The requirements of the Cedar Bluff National Fish Hatchery and the City of Russell will be satisfied in full in 1980.

TABLES AND EXHIBITS

TABLE 1

RESERVOIR DATA - NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS

RESERVOIR		CAPACITY ALLOCATIONS 1/			
			LIVE CONSERVATION		FLOOD
		DEAD	Inactive	Active	CONTROL
Box Butte	- Elevation Ft.	3969.0	3976.5	4007.0	---
	Total Acre-feet	640	2,275	31,060	---
	Net Acre-feet	640	1,635	28,785	---
Merritt	- Elevation Ft.	2875.0	2896.0	2946.0	---
	Total Acre-feet	1,614	6,800	74,486	---
	Net Acre-feet	1,614	5,186	67,686	---
Sherman	- Elevation Ft.	2118.5	2129.0	2162.3	---
	Total Acre-feet	3,839	10,496	69,076	---
	Net Acre-feet	3,839	6,657	58,580	---
Bonny	- Elevation Ft.	3635.5	3638.0	3672.0	3710.0
	Total Acre-feet	1,418	2,134	41,340	170,160
	Net Acre-feet	1,418	716	39,206	128,820
Swanson Lake	- Elevation Ft.	2710.0	2720.0	2752.0	2773.0
	Total Acre-feet	4,101	15,510	120,160	253,950
	Net Acre-feet	4,101	11,409	104,650	133,790
Enders	- Elevation Ft.	3080.0	3082.4	3112.3	3127.0
	Total Acre-feet	8,467	9,968	44,480	74,520
	Net Acre-feet	8,467	1,501	34,512	30,040
Hugh Butler Lake	- Elevation Ft.	2552.0	2558.0	2581.8	2604.9
	Total Acre-feet	6,313	10,450	37,776	86,630
	Net Acre-feet	6,313	4,137	27,326	48,854
Harry Strunk Lake	- Elevation Ft.	2335.0	2343.0	2366.1	2386.2
	Total Acre-feet	4,911	9,548	37,141	89,313
	Net Acre-feet	4,911	4,637	27,593	52,172
Norton	- Elevation Ft.	2275.0	2280.4	2304.3	2331.4
	Total Acre-feet	2,718	5,284	35,935	134,740
	Net Acre-feet	2,718	2,566	30,651	98,805
Harlan County Lake	- Elevation Ft.	1885.0	1927.0	1946.0	1973.5
	Total Acre-feet	0	126,727	319,787	828,776
	Net Acre-feet	0	126,727	193,060	508,989
Lovewell	- Elevation Ft.	1562.0	1571.7	1582.6	1595.3
	Total Acre-feet	5,054	16,760	41,690	92,150
	Net Acre-feet	5,054	11,706	24,930	50,460
Kirwin	- Elevation Ft.	1693.0	1697.0	1729.25	1757.3
	Total Acre-feet	6,385	9,785	99,435	314,550
	Net Acre-feet	6,385	3,400	89,650	215,115
Webster	- Elevation Ft.	1855.5	1860.0	1892.45	1923.7
	Total Acre-feet	2,184	5,300	77,370	260,740
	Net Acre-feet	2,184	3,116	72,070	183,370
Waconda Lake	- Elevation Ft.	1407.8	1428.0	1455.6	1488.3
	Total Acre-feet	1,236	36,671	241,460	963,775
	Net Acre-feet	1,236	35,435	204,789	722,315
Cedar Bluff	- Elevation Ft.	2090.0	2107.8	2144.0	2166.0
	Total Acre-feet	8,261	35,320	185,090	376,950
	Net Acre-feet	8,261	27,059	149,770	191,860
Total Storage (A.F.)		57,141	303,028	1,456,286	3,646,254
Total Net Acre-feet		57,141	245,887	1,153,258	2,364,590

1/ Includes space for sediment storage.

TABLE 2
SUMMARY OF 1979 OPERATIONS

MIRAGE FLATS PROJECT
BOX BUTTE RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	MIRAGE FLATS CANAL Diversions To Canal (AF)	MIRAGE FLATS CANAL Delivered To Farms (AF)
Jan.	886	48	60	0.30	8,218	0	0
Feb.	1,754	31	69	0	9,872	0	0
Mar.	3,410	61	144	0.90	13,077	0	0
Apr.	2,340	41	292	0.60	15,084	0	0
May	1,333	46	378	1.12	15,993	0	0
June	347	46	477	2.98	15,817	0	0
July	114	6,984	439	2.27	8,508	7,030	2,985
Aug.	1,894	4,576	294	4.43	5,532	4,389	2,644
Sep.	1,353	1,956	235	0.26	4,694	1,910	877
Oct.	1,530	32	201	1.25	5,991	0	0
Nov.	1,693	60	149	0.36	7,475	0	0
Dec.	1,470	61	78	0	8,806	0	0
TOTAL	18,124	13,942	2,816	14.47	---	13,329	6,506

NOTE.--Mirage Flats Canal:
Acres irrigated 1979 -- 11,139

SANDHILLS DIVISION
AINSWORTH UNIT
MERRITT RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	AINSWORTH CANAL Diversions To Canal (AF)	AINSWORTH CANAL Delivered To Farms (AF)
Jan.	11,857	12,605	217	0.53	57,211	0	0
Feb.	12,137	11,385	270	0.06	57,693	0	0
Mar.	16,990	15,636	381	1.53	58,666	0	0
Apr.	15,356	6,696	666	1.18	66,660	0	0
May	14,757	5,976	955	2.22	74,486	2,103	126
June	13,313	12,020	1,293	5.61	74,486	3,984	250
July	14,055	23,316	1,221	2.87	64,004	21,185	15,001
Aug.	16,253	27,699	897	2.23	51,661	26,620	19,914
Sep.	12,772	7,073	873	1.12	56,487	6,989	4,463
Oct.	14,060	4,748	738	2.04	65,061	0	0
Nov.	13,685	13,503	446	0.55	64,797	0	0
Dec.	14,373	14,063	310	0	64,797	0	0
TOTAL	169,608	154,720	8,267	19.94	---	60,881	39,754

NOTE.--Ainsworth Canal:
Acres irrigated 1979 -- 30,475

MIDDLE LOUP DIVISION

SARGENT UNIT

MONTH	SARGENT CANAL Diversions To Canal (AF)	SARGENT CANAL Delivered To Farms (AF)	MIDDLE LOUP UNIT 1/ MIDDLE LOUP PUBLIC POWER CANALS Diversions To Canals (AF)	Diversion To Sherman Feeder Canal (AF)
Jan.	0	0	0	0
Feb.	0	0	0	0
Mar.	0	0	0	230
Apr.	0	0	0	17,006
May	1,254	0	978	10,151
June	3,418	61	3,548	15,416
July	9,697	5,817	8,277	19,162
Aug.	11,643	8,246	10,405	15,112
Sep.	3,842	2,496	4,947	11,048
Oct.	0	0	0	21,673
Nov.	0	0	0	3,205
Dec.	0	0	0	0
TOTAL	29,854	16,620	28,155	113,003

1/ Non-Project.

NOTE.--Sargent Canal:
Acres irrigated 1979 -- 11,597

FARWELL UNIT
SHERMAN RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	FARWELL CANALS Release To Canals (AF)	FARWELL CANALS Delivered To Farms (AF)
Jan.	201	1,301	84	0.67	50,110	0	0
Feb.	250	1,283	116	0.08	48,961	0	0
Mar.	1,307	1,309	228	3.45	48,731	0	0
Apr.	1,142	1,303	431	3.03	62,139	0	0
May	9,707	1,533	948	3.55	69,365	0	0
June	13,447	12,222	1,225	3.25	69,365	10,350	68
July	20,486	34,185	993	2.42	54,673	32,215	15,548
Aug.	15,608	43,561	810	1.01	25,910	41,389	28,429
Sep.	11,254	13,468	546	1.74	23,150	12,432	8,527
Oct.	20,462	1,083	570	2.09	41,959	0	0
Nov.	3,949	1,303	318	1.55	44,287	0	0
Dec.	549	1,309	104	0.78	43,423	0	0
TOTAL	112,362	113,860	6,373	23.62	---	96,386	52,572

NOTE.--Middle Loup P. P. Canals:
Acres irrigated 1979 -- 14,356

NOTE.--Farwell Canals:
Acres irrigated 1979 -- 48,231

UPPER REPUBLICAN DIVISION
ARMEL UNIT
BONNY RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Outflow To Hale Ditch (AF)	Industrial Uses (AF)
Jan.	1,579	338	167	0.56	35,375	0	28
Feb.	1,399	1,106	186	0.14	35,482	0	25
Mar.	1,848	960	291	1.55	36,079	0	31
Apr.	1,683	311	744	0.59	36,707	0	32
May	1,714	643	758	3.53	37,020	259	32
June	1,482	848	929	2.27	36,725	448	30
July	590	434	1,118	3.08	35,763	23	30
Aug.	766	504	985	3.28	35,040	177	29
Sep.	0	463	907	0.30	33,670	174	28
Oct.	530	522	547	1.45	33,131	189	28
Nov.	1,636	345	338	0.78	34,084	30	25
Dec.	1,680	546	196	0.76	35,022	0	28
TOTAL	14,907	7,020 2/	7,166	18.29	---	1,300 2/	346

2/ Includes 15 A.F. under short-term water service letter agreements.

TABLE 2
SUMMARY OF 1979 OPERATIONS

FRENCHMAN-CAMBRIDGE DIVISION
FRENCHMAN UNIT

	ENDERS RESERVOIR					CULBERTSON CANAL		CULBERTSON EXT. CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	2,314	85	72	0.72	19,910	0	0	0	0
Feb.	2,447	117	82	0.55	22,158	0	0	0	0
Mar.	2,497	14	161	2.60	24,480	0	0	0	0
Apr.	2,120	0	453	1.14	26,147	2,122	225	0	0
May	1,948	0	541	1.48	27,554	2,012	619	1,166	0
June	1,968	1,018	646	2.44	27,858	145	69	3,330	20
July	2,253	8,285	647	2.48	21,179	3,893	2,720	5,547	1,759
Aug.	1,905	10,502	512	4.51	12,070	4,313	3,072	7,186	4,205
Sep.	2,153	113	346	0.16	13,764	402	174	0	0
Oct.	2,179	36	248	1.87	15,659	0	0	0	0
Nov.	2,267	4	151	1.05	17,771	0	0	0	0
Dec.	2,475	0	86	0.35	20,160	0	0	0	0
TOTAL	26,526	20,174	3,945	19.35	---	12,887	6,879	17,229	5,984

NOTE.--Culbertson Canal: Acres irrigated 1979 -- 8,511 Culbertson Extension Canal: Acres irrigated 1979 -- 10,467

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
MEEKER-DRIFTWOOD UNIT

	SWANSON LAKE					MEEKER-DRIFTWOOD		BARTLEY CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	1,124	61	163	0.81	29,970	0	0	0	0
Feb.	5,272	56	186	0.02	35,000	0	0	0	0
Mar.	10,666	61	385	2.63	45,220	0	0	0	0
Apr.	7,037	60	1,087	2.43	51,110	0	0	0	0
May	3,495	61	1,354	2.62	53,190	0	0	0	0
June	3,919	1,180	1,439	2.90	54,490	760	0	441	0
July	12,229	8,630	1,849	9.17	56,240	6,958	1,906	1,394	379
Aug.	3,847	18,149	1,648	2.17	40,290	13,893	10,048	3,892	2,936
Sep.	55	2,860	1,205	0.31	36,280	2,723	1,658	826	553
Oct.	428	61	727	2.46	35,920	0	0	0	0
Nov.	3,344	172	432	0.83	38,660	0	0	0	0
Dec.	4,762	61	241	0.42	43,120	0	0	0	0
TOTAL	56,178	31,412	10,716	26.77	---	24,334	13,612	6,553	3,868

NOTE.--Meeker-Driftwood Canal: Acres irrigated 1979 -- 16,160 Bartley Canal: Acres irrigated 1979 -- 6,290

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
RED WILLOW UNIT

	HUGH BUTLER LAKE					RED WILLOW CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	1,272	241	69	0.49	21,195	0	0
Feb.	2,319	202	79	0	23,233	0	0
Mar.	2,879	253	158	2.07	25,701	0	0
Apr.	2,727	260	508	3.53	27,660	0	0
May	1,556	247	616	2.58	28,353	0	0
June	1,794	1,408	662	2.18	28,077	774	0
July	2,386	2,566	631	5.14	27,266	1,302	377
Aug.	1,562	4,368	692	4.33	23,768	2,922	2,022
Sep.	819	1,310	573	0.36	22,704	780	405
Oct.	1,132	258	438	1.34	23,140	0	0
Nov.	1,330	235	188	0.69	24,047	0	0
Dec.	1,463	241	96	0.38	25,173	0	0
TOTAL	21,239	11,589	4,710	23.09	---	5,778	2,804

NOTE.--Red Willow Canal: Acres irrigated 1979 -- 4,790

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
CAMBRIDGE UNIT

	HARRY STRUNK LAKE					CAMBRIDGE CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	2,499	63	65	0.90	17,740	0	0
Feb.	4,795	78	79	0.02	22,378	0	0
Mar.	4,935	71	171	3.04	27,071	0	0
Apr.	3,855	61	517	3.50	30,348	0	0
May	3,278	61	730	2.68	32,835	0	0
June	3,979	1,471	878	4.19	34,465	1,973	0
July	9,804	2,387	861	6.38	41,021	7,437	3,429
Aug.	6,168	9,469	966	4.25	36,754	10,505	6,850
Sep.	1,614	2,348	767	0.55	35,253	2,853	1,434
Oct.	2,394	351	524	0.86	36,772	0	0
Nov.	2,380	2,327	288	1.33	36,537	0	0
Dec.	2,583	2,460	141	0.35	36,519	0	0
TOTAL	48,284	21,147	5,987	28.05	---	22,768	11,713

NOTE.--Cambridge Canal: Acres irrigated 1979 -- 16,720

TABLE 2
SUMMARY OF 1979 OPERATIONS

KANASKA DIVISION
ALMENA UNIT

	NORTON RESERVOIR						ALMENA CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Release To City Of Norton (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	140	48	33	0.67	4,378	48	0	0
Feb.	516	40	40	0.04	4,814	40	0	0
Mar.	574	43	79	3.58	5,266	47	0	0
Apr.	381	53	215	2.31	5,379	48	0	0
May	558	82	287	3.32	5,568	76	Due to a severe water	
June	441	97	350	4.52	5,562	91	shortage no irrigation	
July	695	84	340	5.20	5,833	81	releases were made into	
Aug.	1,309	88	374	3.17	6,680	80	Almena Canal in 1979.	
Sep.	0	104	498	0.31	6,078	112	0	0
Oct.	55	83	230	2.88	5,820	82	0	0
Nov.	44	45	103	0.53	5,716	44	0	0
Dec.	103	44	52	0.28	5,723	45	0	0
TOTAL	4,816	811	2,601	26.81	---	794	0	0

NOTE.--Almena Canal:
Acres irrigated in 1979 -- None

BOSTWICK DIVISION
FRANKLIN UNIT

	HARLAN COUNTY LAKE					FRANKLIN CANAL		NAPONEE CANAL	
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	2,848	620	558	0.67	187,060	0	0	0	0
Feb.	8,258	762	676	0.22	193,880	0	0	0	0
Mar.	25,482	620	1,312	3.83	217,430	0	0	0	0
Apr.	20,769	460	4,182	2.77	233,557	0	0	0	0
May	17,393	307	5,240	3.67	245,403	0	0	0	0
June	12,096	298	5,601	6.38	251,600	0	0	4	0
July	21,490	18,122	4,528	3.11	250,440	6,678	1,841	678	298
Aug.	20,106	35,342	5,953	3.36	229,251	10,524	4,884	1,534	895
Sep.	4,137	662	4,918	0.94	227,808	0	0	0	0
Oct.	5,190	615	4,631	2.24	227,752	0	0	0	0
Nov.	8,082	595	1,309	0.68	233,930	0	0	0	0
Dec.	9,919	615	1,470	0.33	241,764	0	0	0	0
TOTAL	155,770	59,018	40,378	28.20	---	17,202	6,725	2,216	1,193

NOTE.--Franklin Canal:
Acres irrigated 1979 -- 10,099
Naponee Canal:
Acres irrigated 1979 -- 1,613

BOSTWICK DIVISION (Continued)
SUPERIOR-COURTLAND UNIT

	FRANKLIN PUMP CANAL		SUPERIOR CANAL		COURTLAND CANAL - ABOVE LOVEWELL				
						NEBRASKA USE		KANSAS USE	
MONTH	Diversions To Canal (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)	Total Diversion (AF)	Total (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	0	0	0	0	0	0	0	0	0
Feb.	0	0	0	0	0	0	0	0	0
Mar.	0	0	0	0	0	0	0	0	0
Apr.	0	0	0	0	0	0	0	0	0
May	0	0	0	0	5,010	0	0	15	4
June	0	0	0	0	6,363	8	6	73	28
July	730	525	4,338	1,276	9,903	277	247	7,124	2,523
Aug.	1,413	991	6,181	3,041	17,486	1,038	958	12,772	7,434
Sep.	0	0	15	0	6,572	0	0	653	258
Oct.	0	0	0	0	3,646	0	0	0	0
Nov.	0	0	0	0	0	0	0	0	0
Dec.	0	0	0	0	0	0	0	0	0
TOTAL	2,143	1,516	10,534	4,317	48,980	1,323	1,211	20,637	10,247

NOTE.--Franklin Pump Canal:
Acres irrigated 1979 -- 2,021
Superior Canal:
Acres irrigated 1979 -- 5,334

NOTE.--Courtland Canal--Nebraska Use:
Acres irrigated 1979 -- 1,425
Courtland Canal--Kansas Use:
Acres irrigated 1979 -- 12,858

BOSTWICK DIVISION (Continued)
COURTLAND UNIT

	LOVEWELL RESERVOIR					COURTLAND (Below)	
MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	441	68	143	1.50	33,640	0	0
Feb.	3,909	21	178	0.41	37,350	0	0
Mar.	22,634	9,422	382	5.40	50,180	0	0
Apr.	4,241	11,559	902	2.24	41,960	0	0
May	3,398	580	1,208	1.45	43,570	534	0
June	8,186	1,481	1,785	5.81	48,490	1,458	16
July	9,227	9,709	1,378	5.17	46,630	9,679	3,977
Aug.	5,167	22,270	1,287	1.98	28,240	22,245	13,747
Sep.	5,421	2,386	935	1.05	30,340	2,374	789
Oct.	5,130	15	645	4.79	34,810	0	0
Nov.	2,361	16	405	0.84	36,750	0	0
Dec.	809	1,315	194	0.24	36,050	0	0
TOTAL	70,924	58,842	9,442	30.88	---	36,290	18,529

NOTE.--Courtland Canal below Lovewell:
Acres irrigated 1979 -- 20,671

TABLE 2
SUMMARY OF 1979 OPERATIONS

SOLOMON DIVISION
KIRWIN UNIT
KIRWIN RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	KIRWIN CANAL Release To Canal (AF)	KIRWIN CANAL Delivered To Farms (AF)
Jan.	135	0	83	0.86	14,702	0	0
Feb.	1,736	0	110	0.40	16,328	0	0
Mar.	4,805	0	207	6.62	20,926	0	0
Apr.	7	0	803	1.91	20,130 1/	0	0
May	5,603	0	725	3.67	25,008	0	0
June	1,909	0	864	3.44	26,053	0	0
July	3,061	7,660	848	4.06	20,606	7,660	2,947
Aug.	4,610	8,555	935	3.17	15,726	8,555	4,571
Sep.	474	0	642	1.00	15,558	0	0
Oct.	573	0	503	3.74	15,628	0	0
Nov.	446	0	222	0.72	15,852	0	0
Dec.	535	0	115	0.40	16,272	0	0
TOTAL	23,894	16,215	6,057	29.99	---	16,215	7,518

NOTE.--Kirwin Canal:
Acres irrigated 1979 -- 7,648

1/ Reservoir level gage adjusted -1.52 feet on April 24, 1979.

SOLOMON DIVISION (Continued)
WEBSTER UNIT
WEBSTER RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	OSBORNE CANAL Diversions To Canal (AF)	OSBORNE CANAL Delivered To Farms (AF)
Jan.	307	0	124	1.62	22,217	0	0
Feb.	1,714	0	147	0.38	23,784	0	0
Mar.	4,174	0	286	4.47	27,672	0	0
Apr.	3,279	0	704	1.83	30,247	0	0
May	8,341	0	1,195	8.43	37,393	0	0
June	1,504	1,043	1,336	2.36	36,518	535	49
July	1,136	5,875	1,334	6.56	30,445	4,467	1,903
Aug.	726	7,204	1,114	3.42	22,853	5,435	3,481
Sep.	1	0	1,007	0.52	21,847	0	0
Oct.	279	0	570	4.87	21,556	0	0
Nov.	28	0	298	0.47	21,286	0	0
Dec.	248	0	266	0.87	21,268	0	0
TOTAL	21,737	14,122	8,381	35.80	---	10,437	5,433

NOTE.--Osborne Canal:
Acres irrigated 1979 -- 5,637

SOLOMON DIVISION (Continued)
GLEN ELDER UNIT
WACONDA LAKE

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	OUTFLOW TO RIVER City of Beloit (AF)	OUTFLOW TO RIVER Controlled Releases 2/ (AF)	Release To W.C.H.&T. R.W.D. No. 2 (AF)
Jan.	3,661	1,266	695	1.62	225,665	174	1,047	45
Feb.	19,971	2,426	871	0.16	242,339	0	2,382	44
Mar.	95,606	26,010	1,822	4.88	310,113	0	25,964	46
Apr.	12,492	50,587	4,145	1.49	267,873	0	50,545	42
May	19,962	43,940	5,701	1.78	238,194	0	43,892	48
June	11,651	6,005	7,405	3.33	236,435	0	5,951	54
July	13,923	6,225	6,693	3.45	237,440	0	6,178	47
Aug.	6,624	9,358	7,098	2.70	227,608	0	9,308	50
Sep.	3,955	10,414	6,040	1.08	215,109	0	10,362	52
Oct.	4,888	4,790	4,428	4.22	210,779	0	4,743	47
Nov.	6,210	5,441	1,809	0.96	209,739	0	5,399	42
Dec.	3,660	5,364	886	0.49	207,149	0	5,322	42
TOTAL	202,603	171,826	47,593	26.16	---	174	171,093	559

2/ Flood control and water right administration. Includes 1,506 A.F. under temporary contracts.

SMOKY HILL DIVISION
ELLIS UNIT
CEDAR BLUFF RESERVOIR

MONTH	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End Of Month Content (AF)	CEDAR BLUFF CANAL Release To Canal (AF)	CEDAR BLUFF CANAL Delivered To Farms (AF)	Release To Fish Hatchery (AF)	City of Russell (AF)
Jan.	233	85	148	1.40	33,610	0	0	86	0
Feb.	325	80	164	0.19	33,691	0	0	81	0
Mar.	1,877	102	314	4.31	35,152	0	0	100	0
Apr.	1,516	207	868	2.55	35,593	0	0	203	0
May	2,394	258	1,061	3.00	36,668	Due to a severe water		260	0
June	652	285	1,379	1.59	35,656	shortage no irrigation		273	0
July	1,319	287	1,263	8.85	35,425	releases were made		295	0
Aug.	241	289	1,177	2.38	34,200	into Cedar Bluff Canal		283	0
Sep.	0	316	1,184	0.41	32,700	in 1979.		294	0
Oct.	311	329	792	3.24	31,890	0	0	299	0
Nov.	0	255	375	0.18	31,260	0	0	246	0
Dec.	123	195	184	0.85	31,004	0	0	217	0
TOTAL	8,991	2,688	8,909	28.95	---	0	0	2,637	0 3/

3/ No releases were requested by the City of Russell, Kansas.

NOTE.--Cedar Bluff Canal:
Acres irrigated 1979 -- None

TABLE 3

ACRES IRRIGATED IN 1979 AND ESTIMATES FOR 1980

Irrigation District and Canal	Acres With Service Available	Acres Irrigated in 1979	Estimated Acres to be Irrigated in 1980
Mirage Flats Irrigation District			
Mirage Flats Canal	11,662	11,139	11,000
Ainsworth Irrigation District			
Ainsworth Canal	34,539	30,475	34,000
Sargent Irrigation District			
Sargent Canal	13,363	11,597	13,000
Farwell Irrigation District			
Farwell Canal	50,051	48,231	48,000
Frenchman Valley Irrigation District			
Culbertson Canal	9,600	8,511	7,000
H & RW Irrigation District			
Culbertson Extension Canal	11,490	10,467	7,000
Frenchman-Cambridge Irrigation District			
Meeker-Driftwood Canal	16,476	16,160	16,200
Bartley Canal	6,539	6,290	6,300
Red Willow Canal	4,932	4,790	4,800
Cambridge Canal	17,053	16,720	16,700
Total Frenchman-Cambridge Irr. Dist.	45,000	43,960	44,000
Almena Irrigation District			
Almena Canal	5,763	0	5,763
Bostwick Irrigation District in Nebraska			
Franklin Canal	11,116	10,099	10,100
Naponee Canal	1,737	1,613	1,700
Franklin Pump Canal	2,091	2,021	2,050
Superior Canal	5,863	5,334	5,150
Courtland Canal (Nebr.)	1,980	1,425	1,600
Total Bostwick Irr. Dist. in Nebraska	22,787	20,492	20,600
Kansas-Bostwick Irrigation District			
Courtland Canal above Lovewell	12,771	12,858	11,600
Courtland Canal below Lovewell	27,329	20,671	23,500
Total Kansas-Bostwick Irr. District	40,100	33,529	35,100
Kirwin Irrigation District			
Kirwin Canal	11,435	7,648	9,000
Webster Irrigation District			
Osborne Canal	8,500	5,637	7,000
Cedar Bluff Irrigation District			
Cedar Bluff Canal	6,800	0	6,800
TOTAL PROJECT USES	271,090	231,686	248,263
Non-Project Uses			
Middle Loup Public Power & I.D. Canals	15,000	14,356	14,800
Hale Ditch	700	700	700
TOTAL NON-PROJECT USES	15,700	15,056	15,500
TOTAL PROJECT AND NON-PROJECT	286,790	246,742	263,763

BOX BUTTE RESERVOIR OPERATION ESTIMATES - 1980

MONTH	HISTORICAL INFLOW MEAN CFS	HISTORICAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	33.	2.0	1.09	.1	2.	.1	0.0	0.0	3990.4	10.6	1.8
FEB	38.	2.1	1.15	.1	2.	.1	0.0	0.0	3992.4	12.5	1.9
MAR	52.	3.2	2.07	.2	2.	.1	0.0	0.0	3995.3	15.4	2.9
APR	44.	2.6	3.76	.3	29.	1.7	0.0	0.0	3995.8	16.0	.6
MAY	23.	1.4	6.32	.6	55.	3.4	0.0	0.0	3993.3	13.4	-2.6
JUN	13.	.8	7.22	.6	57.	3.4	0.0	0.0	3989.9	10.2	-3.2
JUL	8.	.5	8.60	.5	166.	10.2	0.0	2.3	3976.5	2.3	-7.9
AUG	8.	.5	7.98	.2	166.	10.2	0.0	9.9	3976.5	2.3	0.0
SEP	8.	.5	5.81	.2	86.	5.1	0.0	4.8	3976.5	2.3	0.0
OCT	11.	.7	4.64	.1	2.	.1	0.0	0.0	3977.9	2.8	.5
NOV	25.	1.5	2.97	.1	2.	.1	0.0	0.0	3980.8	4.1	1.3
DEC	36.	2.2	1.39	.1	2.	.1	0.0	0.0	3984.3	6.1	2.0
TOTAL		18.0	53.00	3.1		34.6	0.0	17.0			-2.7
					MOST PROBABLE INFLOW CONDITIONS						
JAN	37.	2.3	.99	.1	2.	.1	0.0	0.0	3990.7	10.9	2.1
FEB	43.	2.4	1.04	.1	2.	.1	0.0	0.0	3993.0	13.1	2.2
MAR	55.	3.4	1.89	.2	2.	.1	0.0	0.0	3996.0	16.2	3.1
APR	49.	2.9	3.41	.3	20.	1.2	0.0	0.0	3997.2	17.6	1.4
MAY	24.	1.5	5.71	.6	18.	1.1	0.0	0.0	3997.1	17.4	-.2
JUN	24.	1.4	6.54	.6	42.	2.5	0.0	0.0	3995.5	15.7	-1.7
JUL	18.	1.1	7.80	.6	141.	8.7	0.0	0.0	3986.5	7.5	-8.2
AUG	16.	1.0	7.23	.3	143.	8.8	0.0	2.9	3976.5	2.3	-5.2
SEP	12.	.7	5.24	.1	40.	2.4	0.0	1.8	3976.5	2.3	0.0
OCT	16.	1.0	4.19	.1	2.	.1	0.0	0.0	3978.6	3.1	.8
NOV	32.	1.9	2.70	.1	2.	.1	0.0	0.0	3982.1	4.8	1.7
DEC	41.	2.5	1.26	.1	2.	.1	0.0	0.0	3985.9	7.1	2.3
TOTAL		22.1	48.00	3.2		25.3	0.0	4.7			-1.7
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	42.	2.6	.91	.1	2.	.1	0.0	0.0	3991.0	11.2	2.4
FEB	49.	2.7	.95	.1	2.	.1	0.0	0.0	3993.6	13.7	2.5
MAR	76.	4.7	1.72	.2	2.	.1	0.0	0.0	3997.6	18.1	4.4
APR	62.	3.7	3.12	.3	10.	.6	0.0	0.0	3999.9	20.9	2.8
MAY	39.	2.4	5.25	.6	13.	.8	0.0	0.0	4000.7	21.9	1.0
JUN	54.	3.2	6.00	.7	27.	1.6	0.0	0.0	4001.3	22.8	.9
JUL	34.	2.1	7.14	.8	107.	6.6	0.0	0.0	3997.1	17.5	-5.3
AUG	26.	1.6	6.63	.6	106.	6.5	0.0	0.0	3991.9	12.0	-5.5
SEP	22.	1.3	4.82	.4	29.	1.7	0.0	0.0	3991.0	11.2	-.8
OCT	29.	1.8	3.85	.3	2.	.1	0.0	0.0	3992.5	12.6	1.4
NOV	42.	2.5	2.46	.2	2.	.1	0.0	0.0	3994.7	14.8	2.2
DEC	47.	2.9	1.15	.1	2.	.1	0.0	0.0	3997.1	17.5	2.7
TOTAL		31.5	44.00	4.4		18.4	0.0	0.0			8.7

MERRITT RESERVOIR OPERATION ESTIMATES - 1980

MONTH	HISTORICAL INFLOW MEAN CFS	HISTORICAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	236.	14.5	1.13	.2	16.	1.0	13.3	0.0	2942.5	64.8	0.0
FEB	254.	14.1	1.43	.3	18.	1.0	12.8	0.0	2942.5	64.8	0.0
MAR	270.	16.6	1.99	.5	16.	1.0	5.4	0.0	2946.0	74.5	9.7
APR	257.	15.3	3.31	.8	17.	1.0	13.5	0.0	2946.0	74.5	0.0
MAY	257.	15.8	4.79	1.2	104.	6.4	8.2	0.0	2946.0	74.5	0.0
JUN	235.	14.0	6.20	1.5	165.	9.8	2.7	0.0	2946.0	74.5	0.0
JUL	216.	13.3	8.03	1.6	719.	44.2	0.0	0.0	2932.3	42.0	-32.5
AUG	218.	13.4	7.33	.7	719.	44.2	0.0	0.0	2903.5	10.5	-31.5
SEP	224.	13.3	5.39	.3	143.	8.5	0.0	0.0	2910.3	15.0	4.5
OCT	241.	14.8	3.76	.3	16.	1.0	0.0	0.0	2923.6	28.5	13.5
NOV	245.	14.6	2.15	.3	17.	1.0	0.0	0.0	2932.2	41.8	13.3
DEC	246.	15.1	1.49	.3	16.	1.0	0.0	0.0	2938.8	55.6	13.8
TOTAL		174.8	47.00	8.0		120.1	55.9	0.0			-9.2
					MOST PROBABLE INFLOW CONDITIONS						
JAN	263.	16.2	1.07	.2	16.	1.0	15.0	0.0	2942.5	64.8	0.0
FEB	274.	15.2	1.34	.3	18.	1.0	13.9	0.0	2942.5	64.8	0.0
MAR	283.	17.4	1.87	.4	16.	1.0	6.3	0.0	2946.0	74.5	9.7
APR	284.	16.9	3.10	.8	17.	1.0	15.1	0.0	2946.0	74.5	0.0
MAY	280.	17.2	4.48	1.1	83.	5.1	11.0	0.0	2946.0	74.5	0.0
JUN	260.	15.5	5.80	1.4	131.	7.8	6.3	0.0	2946.0	74.5	0.0
JUL	241.	14.8	7.50	1.6	530.	32.6	0.0	0.0	2938.6	55.1	-19.4
AUG	241.	14.8	6.85	1.1	530.	32.6	0.0	0.0	2928.9	36.2	-18.9
SEP	249.	14.8	5.04	.7	109.	6.5	0.0	0.0	2933.2	43.8	7.6
OCT	259.	15.9	3.52	.6	16.	1.0	0.0	0.0	2939.9	58.1	14.3
NOV	266.	15.8	2.02	.4	17.	1.0	6.4	0.0	2943.0	66.1	8.0
DEC	262.	16.1	1.41	.3	16.	1.0	14.8	0.0	2943.0	66.1	0.0
TOTAL		190.6	44.00	8.9		91.6	88.8	0.0			1.3
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	281.	17.3	.94	.2	16.	1.0	16.1	0.0	2942.5	64.8	0.0
FEB	293.	16.3	1.19	.3	18.	1.0	15.0	0.0	2942.5	64.8	0.0
MAR	304.	18.7	1.65	.4	16.	1.0	7.6	0.0	2946.0	74.5	9.7
APR	316.	18.8	2.75	.7	17.	1.0	17.1	0.0	2946.0	74.5	0.0
MAY	299.	18.4	3.97	1.0	55.	3.4	14.0	0.0	2946.0	74.5	0.0
JUN	279.	16.6	5.15	1.2	86.	5.1	10.3	0.0	2946.0	74.5	0.0
JUL	265.	16.3	6.66	1.6	348.	21.4	0.0	0.0	2943.6	67.8	-6.7
AUG	257.	15.8	6.08	1.3	348.	21.4	0.0	0.0	2941.0	60.9	-6.9
SEP	266.	15.8	4.47	1.0	74.	4.4	5.2	0.0	2943.0	66.1	5.2
OCT	275.	16.9	3.12	.7	16.	1.0	15.2	0.0	2943.0	66.1	0.0
NOV	279.	16.6	1.78	.4	17.	1.0	15.2	0.0	2943.0	66.1	0.0
DEC	285.	17.5	1.24	.3	16.	1.0	16.2	0.0	2943.0	66.1	0.0
TOTAL		205.0	39.00	9.1		62.7	131.9	0.0			1.3

SHERMAN RESERVOIR OPERATION ESTIMATES - 1980

MONTH	HISTORICAL INFLOW MEAN CFS	HISTORICAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	0.	0.0	.65	.1	28.	1.7	0.0	0.0	2151.1	41.6	-1.8
FEB	0.	0.0	.71	.1	31.	1.7	0.0	0.0	2150.2	39.8	-1.8
MAR	0.	0.0	1.59	.3	28.	1.7	0.0	0.0	2149.2	37.8	-2.0
APR	301.	17.9	3.85	.7	29.	1.7	0.0	0.0	2156.3	53.3	15.5
MAY	303.	18.6	3.74	.8	33.	2.0	0.0	0.0	2162.3	69.1	15.8
JUN	200.	11.9	4.67	1.1	182.	10.8	0.0	0.0	2162.3	69.1	0.0
JUL	179.	11.0	7.91	1.3	1270.	78.1	0.0	9.8	2129.0	10.5	-58.6
AUG	120.	7.4	7.12	.5	1241.	76.3	0.0	69.4	2129.0	10.5	0.0
SEP	424.	25.2	4.27	.4	187.	11.1	0.0	0.0	2141.1	24.2	13.7
OCT	546.	33.6	4.16	.7	23.	1.4	0.0	0.0	2157.3	55.7	31.5
NOV	0.	0.0	2.26	.5	29.	1.7	0.0	0.0	2156.4	53.5	-2.2
DEC	0.	0.0	.79	.2	28.	1.7	0.0	0.0	2155.6	51.6	-1.9
TOTAL		125.6	41.72	6.7		189.9	0.0	79.2			8.2
					MOST PROBABLE INFLOW CONDITIONS						
JAN	0.	0.0	.43	.1	28.	1.7	0.0	0.0	2151.1	41.6	-1.8
FEB	0.	0.0	.60	.1	31.	1.7	0.0	0.0	2150.2	39.8	-1.8
MAR	0.	0.0	1.19	.2	28.	1.7	0.0	0.0	2149.3	37.9	-1.9
APR	252.	15.0	2.08	.4	29.	1.7	0.0	0.0	2155.3	50.8	12.9
MAY	338.	20.8	2.22	.5	33.	2.0	0.0	0.0	2162.3	69.1	18.3
JUN	148.	8.8	3.32	.8	134.	8.0	0.0	0.0	2162.3	69.1	0.0
JUL	296.	18.2	5.59	1.1	872.	53.6	0.0	0.0	2146.4	32.6	-36.5
AUG	207.	12.7	5.12	.6	851.	52.3	0.0	18.1	2129.0	10.5	-22.1
SEP	541.	32.2	3.23	.4	129.	7.7	0.0	0.0	2147.5	34.6	24.1
OCT	377.	23.2	3.81	.7	23.	1.4	0.0	0.0	2157.3	55.7	21.1
NOV	0.	0.0	1.76	.4	29.	1.7	0.0	0.0	2156.5	53.6	-2.1
DEC	0.	0.0	.58	.1	28.	1.7	0.0	0.0	2155.7	51.8	-1.8
TOTAL		130.9	29.93	5.4		135.2	0.0	18.1			8.4
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	0.	0.0	.21	0.0	28.	1.7	0.0	0.0	2151.2	41.7	-1.7
FEB	0.	0.0	.32	.1	31.	1.7	0.0	0.0	2150.3	39.9	-1.8
MAR	0.	0.0	.42	.1	28.	1.7	0.0	0.0	2149.4	38.1	-1.8
APR	277.	16.5	.59	.1	29.	1.7	0.0	0.0	2156.1	52.8	14.7
MAY	299.	18.4	.39	.1	33.	2.0	0.0	0.0	2162.3	69.1	16.3
JUN	106.	6.3	.91	.2	103.	6.1	0.0	0.0	2162.3	69.1	0.0
JUL	384.	23.6	4.82	1.1	598.	36.8	0.0	0.0	2156.9	54.8	-14.3
AUG	181.	11.1	4.02	.7	577.	35.5	0.0	0.0	2144.7	29.7	-25.1
SEP	541.	32.2	2.14	.4	97.	5.8	0.0	0.0	2157.3	55.7	26.0
OCT	0.	0.0	3.37	.7	23.	1.4	0.0	0.0	2156.5	53.6	-2.1
NOV	0.	0.0	.40	.1	29.	1.7	0.0	0.0	2155.7	51.8	-1.8
DEC	0.	0.0	.24	0.0	28.	1.7	0.0	0.0	2155.0	50.1	-1.7
TOTAL		108.1	17.83	3.6		97.8	0.0	0.0			6.7

BONNY RESERVOIR OPERATION ESTIMATES - 1980

MONTH	HISTORICAL INFLOW MEAN CFS	HISTORICAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT HALE 1000 AF	RELEASE REQUIREMENT RIVER 1000 AF	RELEASE REQUIREMENT TOTAL MEAN CFS	RELEASE REQUIREMENT TOTAL 1000 AF	RES SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS								
JAN	23.	1.4	1.45	.2	0.0	1.2	20.	1.2	0.0	0.0	3668.7	35.0	0.0
FEB	25.	1.4	1.55	.2	0.0	1.2	22.	1.2	0.0	0.0	3668.7	35.0	0.0
MAR	28.	1.7	2.45	.4	0.0	.3	5.	.3	0.0	0.0	3669.3	36.0	1.0
APR	27.	1.6	4.30	.7	.3	.3	10.	.6	0.0	0.0	3669.4	36.3	.3
MAY	55.	3.4	5.35	.8	.9	.3	20.	1.2	0.0	0.0	3670.2	37.7	1.4
JUN	45.	2.7	6.95	1.1	.9	.3	20.	1.2	0.0	0.0	3670.4	38.1	.4
JUL	26.	1.6	8.30	1.3	.9	.3	20.	1.2	0.0	0.0	3669.9	37.2	-.9
AUG	23.	1.4	7.00	1.1	.8	.3	18.	1.1	0.0	0.0	3669.5	36.4	-.8
SEP	17.	1.0	5.20	.8	.6	.3	15.	.9	0.0	0.0	3669.1	35.7	-.7
OCT	18.	1.1	5.05	.8	.5	.3	13.	.8	0.0	0.0	3668.8	35.2	-.5
NOV	22.	1.3	3.05	.5	.3	.3	10.	.6	0.0	0.0	3668.9	35.4	.2
DEC	21.	1.3	1.85	.3	0.0	.3	5.	.3	0.0	0.0	3669.3	36.1	.7
TOTAL		19.9	52.50	8.2	5.2	5.4		10.6	0.0	0.0			1.1
					MOST PROBABLE INFLOW CONDITIONS								
JAN	28.	1.7	1.20	.2	0.0	1.5	24.	1.5	0.0	0.0	3668.7	35.0	0.0
FEB	31.	1.7	1.40	.2	0.0	1.5	27.	1.5	0.0	0.0	3668.7	35.0	0.0
MAR	36.	2.2	1.85	.3	0.0	.3	5.	.3	0.0	0.0	3669.6	36.6	1.6
APR	34.	2.0	2.80	.4	.4	.3	12.	.7	0.0	0.0	3670.1	37.5	.9
MAY	67.	4.1	3.00	.5	.6	.3	15.	.9	0.0	0.0	3671.4	40.2	2.7
JUN	55.	3.3	4.60	.8	.6	.3	15.	.9	.5	0.0	3672.0	41.3	1.1
JUL	33.	2.0	6.25	1.1	.4	.3	11.	.7	.2	0.0	3672.0	41.3	0.0
AUG	28.	1.7	6.10	1.0	.4	.3	11.	.7	0.0	0.0	3672.0	41.3	0.0
SEP	20.	1.2	4.30	.7	.6	.3	15.	.9	0.0	0.0	3671.8	40.9	-.4
OCT	21.	1.3	4.55	.8	.6	.3	15.	.9	0.0	0.0	3671.6	40.5	-.4
NOV	27.	1.6	2.80	.5	.2	.3	8.	.5	0.0	0.0	3671.9	41.1	.6
DEC	26.	1.6	1.55	.3	0.0	.3	5.	.3	.8	0.0	3672.0	41.3	.2
TOTAL		24.4	40.40	6.8	3.8	6.0		9.8	1.5	0.0			6.3
					REASONABLE MAXIMUM INFLOW CONDITIONS								
JAN	52.	3.2	.90	.1	0.0	3.1	50.	3.1	0.0	0.0	3668.7	35.0	0.0
FEB	58.	3.2	1.25	.2	0.0	3.0	54.	3.0	0.0	0.0	3668.7	35.0	0.0
MAR	65.	4.0	1.35	.2	0.0	.3	5.	.3	0.0	0.0	3670.6	38.5	3.5
APR	62.	3.7	2.40	.4	.3	.3	10.	.6	0.0	0.0	3671.9	41.2	2.7
MAY	124.	7.6	2.05	.3	.5	.3	13.	.8	6.4	0.0	3672.0	41.3	.1
JUN	104.	6.2	2.50	.4	.2	.3	8.	.5	5.3	0.0	3672.0	41.3	0.0
JUL	60.	3.7	5.05	.9	.2	.3	8.	.5	2.3	0.0	3672.0	41.3	0.0
AUG	50.	3.1	4.00	.7	.4	.3	11.	.7	1.7	0.0	3672.0	41.3	0.0
SEP	37.	2.2	3.20	.5	.4	.3	12.	.7	1.0	0.0	3672.0	41.3	0.0
OCT	41.	2.5	3.40	.6	.3	.3	10.	.6	1.3	0.0	3672.0	41.3	0.0
NOV	49.	2.9	2.60	.4	.3	.3	10.	.6	1.9	0.0	3672.0	41.3	0.0
DEC	49.	3.0	1.30	.2	0.0	.3	5.	.3	2.5	0.0	3672.0	41.3	0.0
TOTAL		45.3	30.00	4.9	2.6	9.1		11.7	22.4	0.0			6.3

SWANSON LAKE OPERATION ESTIMATES - 1980

MONTH	UNDEPLETED INFLOW 1000 AF	UPSTREAM DEPLETIONS 1000 AF	DEPLETED INFLOW MEAN CFS	DEPLETED INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RES SPILL 1000 AF	REQ SHORT 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RES CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS								
JAN	7.5	-.2	119.	7.3	1.05	.3	2.	.1	0.0	0.0	2734.9	50.0	6.9
FEB	9.5	-.2	167.	9.3	1.20	.3	2.	.1	0.0	0.0	2737.6	58.9	8.9
MAR	11.1	-1.4	158.	9.7	1.95	.6	2.	.1	0.0	0.0	2740.0	67.9	9.0
APR	8.5	-1.0	126.	7.5	3.85	1.2	2.	.1	0.0	0.0	2741.6	74.1	6.2
MAY	7.7	-2.2	89.	5.5	4.10	1.3	99.	6.1	0.0	0.0	2741.1	72.2	-1.9
JUN	6.9	-1.5	91.	5.4	5.20	1.7	123.	7.3	0.0	0.0	2740.2	68.6	-3.6
JUL	2.4	-.5	31.	1.9	7.70	2.2	338.	20.8	0.0	0.0	2734.1	47.5	-21.1
AUG	1.9	-.4	24.	1.5	6.90	1.5	320.	19.7	0.0	0.0	2726.5	27.8	-19.7
SEP	.5	-.1	7.	.4	5.25	.9	175.	10.4	0.0	0.0	2720.8	16.9	-10.9
OCT	2.6	-.3	37.	2.3	4.60	.6	50.	3.1	0.0	.0	2720.0	15.5	-1.4
NOV	5.7	-.7	84.	5.0	2.70	.4	2.	.1	0.0	0.0	2722.6	20.0	4.5
DEC	6.7	-1.0	93.	5.7	1.30	.2	2.	.1	0.0	0.0	2725.4	25.4	5.4
TOTAL	71.0	-9.5		61.5	45.80	11.2		68.0	0.0	.0			-17.7
					MOST PROBABLE INFLOW CONDITIONS								
JAN	9.6	-.2	153.	9.4	.75	.2	2.	.1	0.0	0.0	2735.6	52.2	9.1
FEB	12.0	-.2	212.	11.8	1.00	.3	2.	.1	0.0	0.0	2738.9	63.6	11.4
MAR	14.3	-1.9	202.	12.4	1.40	.4	2.	.1	0.0	0.0	2742.0	75.5	11.9
APR	12.0	-1.3	180.	10.7	2.40	.8	2.	.1	0.0	0.0	2744.4	85.3	9.8
MAY	13.5	-3.2	168.	10.3	2.10	.8	24.	1.5	0.0	0.0	2746.2	93.3	8.0
JUN	15.7	-1.9	232.	13.8	3.70	1.4	30.	1.8	0.0	0.0	2748.6	103.9	10.6
JUL	5.7	-1.2	73.	4.5	6.10	2.3	265.	16.3	0.0	0.0	2745.4	89.8	-14.1
AUG	6.0	-1.1	80.	4.9	5.70	2.0	299.	18.4	0.0	0.0	2741.7	74.3	-15.5
SEP	5.0	-.3	79.	4.7	3.40	1.1	91.	5.4	0.0	0.0	2741.2	72.5	-1.8
OCT	4.6	-.4	68.	4.2	4.30	1.4	26.	1.6	0.0	0.0	2741.5	73.7	1.2
NOV	8.1	-1.1	118.	7.0	2.10	.7	2.	.1	0.0	0.0	2743.1	79.9	6.2
DEC	8.5	-.5	130.	8.0	1.10	.4	2.	.1	0.0	0.0	2744.9	87.4	7.5
TOTAL	115.0	-13.3		101.7	34.05	11.8		45.6	0.0	0.0			44.3
					REASONABLE MAXIMUM INFLOW CONDITIONS								
JAN	11.8	-.1	190.	11.7	.55	.1	2.	.1	0.0	0.0	2736.3	54.6	11.5
FEB	14.5	-.2	257.	14.3	.60	.2	2.	.1	0.0	0.0	2740.2	68.6	14.0
MAR	19.3	-3.7	254.	15.6	.60	.2	2.	.1	0.0	0.0	2744.0	83.9	15.3
APR	16.3	-3.1	222.	13.2	.60	.2	2.	.1	0.0	0.0	2747.0	96.8	12.9
MAY	23.1	-.4	369.	22.7	.80	.3	13.	.8	0.0	0.0	2751.6	118.4	21.6
JUN	27.4	-.4	454.	27.0	1.90	.8	17.	1.0	23.4	0.0	2752.0	120.2	1.8
JUL	29.3	-1.0	460.	28.3	4.00	1.7	145.	8.9	17.7	0.0	2752.0	120.2	0.0
AUG	18.3	-.8	285.	17.5	5.00	2.1	166.	10.2	5.2	0.0	2752.0	120.2	0.0
SEP	10.5	-.5	168.	10.0	2.40	1.0	30.	1.8	7.2	0.0	2752.0	120.2	0.0
OCT	8.7	-.6	132.	8.1	3.80	1.6	16.	1.0	5.5	0.0	2752.0	120.2	0.0
NOV	10.1	-.4	163.	9.7	1.60	.7	2.	.1	8.9	0.0	2752.0	120.2	0.0
DEC	10.7	-.2	171.	10.5	.65	.3	2.	.1	10.1	0.0	2752.0	120.2	0.0
TOTAL	200.0	-11.4		188.6	22.50	9.2		24.3	78.0	0.0			77.1

ENDERS RESERVOIR OPERATION ESTIMATES - 1980

MONTH	HISTORICAL INFLOW MEAN CFS	HISTORICAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	44.	2.7	1.05	.1	0.	0.0	0.0	0.0	3096.8	22.8	2.6
FEB	47.	2.6	1.20	.1	0.	0.0	0.0	0.0	3099.0	25.3	2.5
MAR	44.	2.7	1.95	.2	3.	.2	0.0	0.0	3100.8	27.6	2.3
APR	40.	2.4	4.10	.4	3.	.2	0.0	0.0	3102.2	29.4	1.8
MAY	42.	2.6	4.65	.5	31.	1.9	0.0	0.0	3102.4	29.6	.2
JUN	47.	2.8	5.25	.6	40.	2.4	0.0	0.0	3102.2	29.4	-.2
JUL	42.	2.6	8.60	.8	250.	15.4	0.0	0.0	3090.0	15.8	-13.6
AUG	39.	2.4	6.85	.4	231.	14.2	0.0	6.4	3082.4	10.0	-5.8
SEP	44.	2.6	5.50	.3	84.	5.0	0.0	2.7	3082.4	10.0	0.0
OCT	39.	2.4	4.60	.3	0.	0.0	0.0	0.0	3085.4	12.1	2.1
NOV	44.	2.6	2.65	.2	0.	0.0	0.0	0.0	3088.5	14.5	2.4
DEC	42.	2.6	1.20	.1	0.	0.0	0.0	0.0	3091.3	17.0	2.5
TOTAL		31.0	47.60	4.0		39.3	0.0	9.1			-3.2
					MOST PROBABLE INFLOW CONDITIONS						
JAN	52.	3.2	.75	.1	0.	0.0	0.0	0.0	3097.3	23.3	3.1
FEB	54.	3.0	.95	.1	0.	0.0	0.0	0.0	3099.7	26.2	2.9
MAR	54.	3.3	1.35	.1	3.	.2	0.0	0.0	3102.1	29.2	3.0
APR	49.	2.9	2.60	.3	3.	.2	0.0	0.0	3103.9	31.6	2.4
MAY	52.	3.2	3.00	.3	3.	.2	0.0	0.0	3105.8	34.3	2.7
JUN	57.	3.4	3.55	.4	5.	.3	0.0	0.0	3107.6	37.0	2.7
JUL	52.	3.2	5.90	.7	174.	10.7	0.0	0.0	3101.8	28.8	-8.2
AUG	47.	2.9	6.50	.6	182.	11.2	0.0	0.0	3094.2	19.9	-8.9
SEP	50.	3.0	3.45	.3	34.	2.0	0.0	0.0	3094.8	20.6	.7
OCT	49.	3.0	4.30	.4	0.	0.0	0.0	0.0	3097.2	23.2	2.6
NOV	52.	3.1	2.30	.2	0.	0.0	0.0	0.0	3099.6	26.1	2.9
DEC	52.	3.2	.90	.1	0.	0.0	0.0	0.0	3102.1	29.2	3.1
TOTAL		37.4	35.55	3.6		24.8	0.0	0.0			9.0
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	63.	3.9	.55	.1	0.	0.0	0.0	0.0	3097.9	24.0	3.8
FEB	63.	3.5	.30	0.0	0.	0.0	0.0	0.0	3100.8	27.5	3.5
MAR	63.	3.9	.95	.1	3.	.2	0.0	0.0	3103.5	31.1	3.6
APR	59.	3.5	.80	.1	3.	.2	0.0	0.0	3105.8	34.3	3.2
MAY	60.	3.7	1.25	.2	3.	.2	0.0	0.0	3108.0	37.6	3.3
JUN	67.	4.0	2.40	.3	3.	.2	0.0	0.0	3110.3	41.1	3.5
JUL	59.	3.6	4.35	.6	96.	5.9	0.0	0.0	3108.4	38.2	-2.9
AUG	54.	3.3	4.50	.6	107.	6.6	0.0	0.0	3105.8	34.3	-3.9
SEP	57.	3.4	2.30	.3	10.	.6	0.0	0.0	3107.5	36.8	2.5
OCT	55.	3.4	3.35	.4	0.	0.0	0.0	0.0	3109.4	39.8	3.0
NOV	61.	3.6	1.90	.3	0.	0.0	0.0	0.0	3111.5	43.1	3.3
DEC	60.	3.7	.65	.1	0.	0.0	2.2	0.0	3112.3	44.5	1.4
TOTAL		43.5	23.30	3.1		13.9	2.2	0.0			24.3

HUGH BUTLER LAKE OPERATION ESTIMATES - 1980

MONTH	HISTORICAL INFLOW MEAN CFS	HISTORICAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	16.	1.0	.92	.1	5.	.3	0.0	0.0	2573.4	25.8	.6
FEB	20.	1.1	1.11	.1	5.	.3	0.0	0.0	2574.0	26.5	.7
MAR	24.	1.5	2.01	.2	5.	.3	0.0	0.0	2574.8	27.5	1.0
APR	22.	1.3	4.39	.5	5.	.3	0.0	0.0	2575.1	28.0	.5
MAY	26.	1.6	4.45	.5	29.	1.8	0.0	0.0	2574.6	27.3	-.7
JUN	39.	2.3	7.01	.7	30.	1.8	0.0	0.0	2574.4	27.1	-.2
JUL	23.	1.4	8.45	.8	89.	5.5	0.0	0.0	2570.3	22.2	-4.9
AUG	15.	.9	6.73	.6	99.	6.1	0.0	0.0	2564.8	16.4	-5.8
SEP	17.	1.0	6.08	.5	62.	3.7	0.0	0.0	2561.3	13.2	-3.2
OCT	15.	.9	4.72	.3	28.	1.7	0.0	0.0	2560.0	12.1	-1.1
NOV	15.	.9	2.63	.2	5.	.3	0.0	0.0	2560.5	12.5	.4
DEC	16.	1.0	1.20	.1	5.	.3	0.0	0.0	2561.2	13.1	.6
TOTAL		14.9	49.70	4.6		22.4	0.0	0.0			-12.1
					MOST PROBABLE INFLOW CONDITIONS						
JAN	21.	1.3	.70	.1	5.	.3	0.0	0.0	2573.6	26.1	.9
FEB	27.	1.5	.75	.1	5.	.3	0.0	0.0	2574.5	27.2	1.1
MAR	34.	2.1	1.35	.1	5.	.3	0.0	0.0	2575.8	28.9	1.7
APR	32.	1.9	2.70	.3	5.	.3	0.0	0.0	2576.8	30.2	1.3
MAY	37.	2.3	2.80	.3	16.	1.0	0.0	0.0	2577.5	31.2	1.0
JUN	54.	3.2	2.99	.4	15	.9	0.0	0.0	2578.8	33.1	1.9
JUL	33.	2.0	6.09	.7	68.	4.2	0.0	0.0	2576.8	30.2	-2.9
AUG	21.	1.3	5.52	.6	73.	4.5	0.0	0.0	2573.9	26.4	-3.8
SEP	25.	1.5	3.81	.4	22.	1.3	0.0	0.0	2573.7	26.2	-.2
OCT	20.	1.2	3.88	.4	11.	.7	0.0	0.0	2573.8	26.3	.1
NOV	22.	1.3	1.84	.2	5.	.3	0.0	0.0	2574.4	27.1	.8
DEC	21.	1.3	.87	.1	5.	.3	0.0	0.0	2575.1	28.0	.9
TOTAL		20.9	33.30	3.7		14.4	0.0	0.0			2.8
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	31.	1.9	.40	0.0	5.	.3	0.0	0.0	2574.2	26.8	1.6
FEB	38.	2.1	.47	.1	5.	.3	0.0	0.0	2575.5	28.5	1.7
MAR	47.	2.9	.85	.1	5.	.3	0.0	0.0	2577.4	31.0	2.5
APR	44.	2.6	1.52	.2	5.	.3	0.0	0.0	2578.8	33.1	2.1
MAY	52.	3.2	1.78	.2	13.	.8	0.0	0.0	2580.3	35.3	2.2
JUN	74.	4.4	1.82	.2	12.	.7	1.0	0.0	2581.8	37.8	2.5
JUL	46.	2.8	3.42	.5	47.	2.9	0.0	0.0	2581.4	37.2	-.6
AUG	29.	1.8	4.12	.5	47.	2.9	0.0	0.0	2580.4	35.6	-1.6
SEP	34.	2.0	3.09	.4	17.	1.0	0.0	0.0	2580.8	36.2	.6
OCT	26.	1.6	3.21	.4	8.	.5	0.0	0.0	2581.3	36.9	.7
NOV	30.	1.8	1.15	.2	5.	.3	.4	0.0	2581.8	37.8	.9
DEC	29.	1.8	.77	.1	5.	.3	1.4	0.0	2581.8	37.8	0.0
TOTAL		28.9	22.60	2.9		10.6	2.8	0.0			12.6

HARRY STRUNK LAKE OPERATION ESTIMATES - 1980

MONTH	HISTORICAL INFLOW MEAN CFS	HISTORICAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	36.	2.2	.76	.1	34.	2.1	0.0	0.0	2365.8	36.5	0.0
FEB	45.	2.5	.89	.1	43.	2.4	0.0	0.0	2365.8	36.5	0.0
MAR	52.	3.2	1.87	.3	2.	.1	2.2	0.0	2366.1	37.1	.6
APR	54.	3.2	4.23	.7	2.	.1	2.4	0.0	2366.1	37.1	0.0
MAY	63.	3.9	4.07	.6	60.	3.7	0.0	0.0	2365.9	36.7	-.4
JUN	106.	6.3	5.02	.8	62.	3.7	1.4	0.0	2366.1	37.1	.4
JUL	62.	3.8	8.41	1.1	228.	14.0	0.0	0.0	2359.1	25.8	-11.3
AUG	41.	2.5	7.42	.7	226.	13.9	0.0	0.0	2348.3	13.7	-12.1
SEP	37.	2.2	4.64	.3	106.	6.3	0.0	.2	2343.0	9.5	-4.2
OCT	36.	2.2	4.52	.3	23.	1.4	0.0	0.0	2343.7	10.0	.5
NOV	35.	2.1	2.57	.2	2.	.1	0.0	0.0	2346.0	11.8	1.8
DEC	34.	2.1	1.10	.1	2.	.1	0.0	0.0	2348.3	13.7	1.9
TOTAL		36.2	45.50	5.3		47.9	6.0	.2			-22.8
					MOST PROBABLE INFLOW CONDITIONS						
JAN	52.	3.2	.50	.1	50.	3.1	0.0	0.0	2365.8	36.5	0.0
FEB	65.	3.6	.75	.1	63.	3.5	0.0	0.0	2365.8	36.5	0.0
MAR	75.	4.6	1.40	.2	2.	.1	3.7	0.0	2366.1	37.1	.6
APR	77.	4.6	2.29	.4	2.	.1	4.1	0.0	2366.1	37.1	0.0
MAY	93.	5.7	2.41	.4	5.	.3	5.0	0.0	2366.1	37.1	0.0
JUN	151.	9.0	3.57	.6	8.	.5	7.9	0.0	2366.1	37.1	0.0
JUL	89.	5.5	5.95	.9	177.	10.9	0.0	0.0	2362.4	30.8	-6.3
AUG	57.	3.5	5.33	.6	205.	12.6	0.0	0.0	2355.4	21.1	-9.7
SEP	54.	3.2	3.51	.4	37.	2.2	0.0	0.0	2355.9	21.7	.6
OCT	50.	3.1	4.14	.4	5.	.3	0.0	0.0	2357.8	24.1	2.4
NOV	49.	2.9	2.00	.2	2.	.1	0.0	0.0	2359.7	26.7	2.6
DEC	49.	3.0	.81	.1	2.	.1	0.0	0.0	2361.6	29.5	2.8
TOTAL		51.9	32.66	4.4		33.8	20.7	0.0			-7.0
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	80.	4.9	.25	0.0	80.	4.9	0.0	0.0	2365.8	36.5	0.0
FEB	101.	5.6	.40	.1	99.	5.5	0.0	0.0	2365.8	36.5	0.0
MAR	115.	7.1	.49	.1	2.	.1	6.3	0.0	2366.1	37.1	.6
APR	121.	7.2	.65	.1	2.	.1	7.0	0.0	2366.1	37.1	0.0
MAY	141.	8.7	.42	.1	2.	.1	8.5	0.0	2366.1	37.1	0.0
JUN	235.	14.0	.98	.2	2.	.1	13.7	0.0	2366.1	37.1	0.0
JUL	138.	8.5	5.13	.8	91.	5.6	2.1	0.0	2366.1	37.1	0.0
AUG	89.	5.5	4.19	.6	106.	6.5	0.0	0.0	2365.2	35.5	-1.6
SEP	82.	4.9	2.33	.4	10.	.6	2.3	0.0	2366.1	37.1	1.6
OCT	78.	4.8	3.66	.6	2.	.1	4.1	0.0	2366.1	37.1	0.0
NOV	76.	4.5	.46	.1	2.	.1	4.3	0.0	2366.1	37.1	0.0
DEC	76.	4.7	.34	.1	2.	.1	4.5	0.0	2366.1	37.1	0.0
TOTAL		80.4	19.30	3.2		23.8	52.8	0.0			.6

NORTON RESERVOIR OPERATION ESTIMATES - 1980

MONTH	HISTORICAL INFLOW MEAN CFS	HISTORICAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	2.	.1	.95	0.0	2.	.1	0.0	0.0	2281.1	5.7	0.0
FEB	4.	.2	1.00	.1	2.	.1	0.0	0.0	2281.1	5.7	0.0
MAR	7.	.4	1.98	.1	2.	.1	0.0	0.0	2281.4	5.9	.2
APR	5.	.3	4.34	.2	2.	.1	0.0	0.0	2281.4	5.9	0.0
MAY	16.	1.0	4.10	.2	7.	.4	0.0	0.0	2282.0	6.3	.4
JUN	32.	1.9	7.86	.5	10.	.6	0.0	0.0	2283.1	7.1	.8
JUL	23.	1.4	8.77	.5	140.	8.6	0.0	4.9	2278.6	4.3	-2.8
AUG	11.	.7	7.38	.3	135.	8.3	0.0	7.9	2278.6	4.3	.0
SEP	10.	.6	6.12	.3	57.	3.4	0.0	3.1	2278.6	4.3	.0
OCT	7.	.4	4.66	.2	24.	1.5	0.0	1.3	2278.6	4.3	.0
NOV	2.	.1	2.62	.1	2.	.1	0.0	0.0	2278.4	4.2	-.1
DEC	2.	.1	1.22	.1	2.	.1	0.0	0.0	2278.2	4.1	-.1
TOTAL		7.2	51.00	2.6		23.4	0.0	17.2			-1.6
					MOST PROBABLE INFLOW CONDITIONS						
JAN	5.	.3	.80	0.0	2.	.1	0.0	0.0	2281.4	5.9	.2
FEB	11.	.6	.85	0.0	2.	.1	0.0	0.0	2282.2	6.4	.5
MAR	13.	.8	1.24	.1	2.	.1	0.0	0.0	2283.0	7.0	.6
APR	10.	.6	2.78	.2	2.	.1	0.0	0.0	2283.4	7.3	.3
MAY	37.	2.3	2.55	.2	2.	.1	0.0	0.0	2286.0	9.3	2.0
JUN	74.	4.4	3.85	.3	2.	.1	0.0	0.0	2290.1	13.3	4.0
JUL	55.	3.4	5.97	.5	81.	5.0	0.0	0.0	2288.1	11.2	-2.1
AUG	26.	1.6	5.89	.4	89.	5.5	0.0	0.0	2282.9	6.9	-4.3
SEP	24.	1.4	4.38	.3	22.	1.3	0.0	0.0	2282.6	6.7	-.2
OCT	16.	1.0	4.14	.2	7.	.4	0.0	0.0	2283.1	7.1	.4
NOV	5.	.3	2.12	.1	2.	.1	0.0	0.0	2283.3	7.2	.1
DEC	5.	.3	1.03	.1	2.	.1	0.0	0.0	2283.4	7.3	.1
TOTAL		17.0	35.60	2.4		13.0	0.0	0.0			1.6
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	11.	.7	.50	0.0	2.	.1	0.0	0.0	2282.0	6.3	.6
FEB	27.	1.5	.52	0.0	2.	.1	0.0	0.0	2284.0	7.7	1.4
MAR	33.	2.0	.54	0.0	2.	.1	0.0	0.0	2286.3	9.6	1.9
APR	27.	1.6	1.43	.1	2.	.1	0.0	0.0	2287.9	11.0	1.4
MAY	94.	5.8	1.16	.1	2.	.1	0.0	0.0	2292.9	16.6	5.6
JUN	185.	11.0	2.52	.3	2.	.1	0.0	0.0	2299.9	27.2	10.6
JUL	137.	8.4	4.42	.7	18.	1.1	0.0	0.0	2303.3	33.8	6.6
AUG	63.	3.9	5.23	.9	36.	2.2	0.0	0.0	2303.7	34.6	.8
SEP	61.	3.6	3.07	.6	2.	.1	1.6	0.0	2304.3	35.9	1.3
OCT	41.	2.5	2.72	.5	2.	.1	1.9	0.0	2304.3	35.9	0.0
NOV	12.	.7	1.25	.2	2.	.1	.4	0.0	2304.3	35.9	0.0
DEC	11.	.7	.64	.1	2.	.1	.5	0.0	2304.3	35.9	0.0
TOTAL		42.4	24.00	3.5		4.3	4.4	0.0			30.2

HARLAN COUNTY LAKE OPERATION ESTIMATES - 1980

MONTH	UNDEPLETED INFLOW 1000 AF	UPSTREAM DEPLETIONS 1000 AF	DEPLETED INFLOW MEAN CFS	DEPLETED INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RES SPILL 1000 AF	REQ SHORT 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RES CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS								
JAN	19.2	-9.6	156.	9.6	.90	.8	10.	.6	0.0	0.0	1940.4	249.9	8.2
FEB	24.3	-11.9	223.	12.4	.78	.8	11.	.6	0.0	0.0	1941.4	260.9	11.0
MAR	32.1	-14.8	281.	17.3	1.74	1.7	10.	.6	0.0	0.0	1942.6	275.9	15.0
APR	28.0	-11.4	279.	16.6	4.70	4.9	10.	.6	0.0	0.0	1943.5	287.0	11.1
MAY	36.5	-14.6	356.	21.9	4.38	4.6	247.	15.2	0.0	0.0	1943.6	289.1	2.1
JUN	42.0	-14.9	455.	27.1	6.60	7.0	262.	15.6	0.0	0.0	1944.0	293.6	4.5
JUL	15.4	7.6	374.	23.0	9.71	10.0	626.	38.5	0.0	0.0	1942.0	268.1	-25.5
AUG	13.6	8.9	366.	22.5	8.41	8.1	756.	46.5	0.0	0.0	1939.2	236.0	-32.1
SEP	6.2	1.9	136.	8.1	5.56	4.9	287.	17.1	0.0	0.0	1937.9	222.1	-13.9
OCT	5.6	-5.6	0.	0.0	4.52	3.8	5.	.3	0.0	0.0	1937.5	218.0	-4.1
NOV	13.2	-8.7	76.	4.5	2.58	2.2	5.	.3	0.0	0.0	1937.7	220.0	2.0
DEC	16.9	-10.1	111.	6.8	1.12	1.0	5.	.3	0.0	0.0	1938.2	225.5	5.5
TOTAL	253.0	-83.2		169.8	51.00	49.8		136.2	0.0	0.0			-16.2
					MOST PROBABLE INFLOW CONDITIONS								
JAN	22.4	-12.7	158.	9.7	.65	.6	10.	.6	0.0	0.0	1940.5	250.2	8.5
FEB	31.2	-15.6	281.	15.6	.61	.6	11.	.6	0.0	0.0	1941.7	264.6	14.4
MAR	38.0	-19.5	301.	18.5	1.13	1.1	10.	.6	0.0	0.0	1943.0	281.4	16.8
APR	38.8	-16.0	383.	22.8	1.31	1.4	10.	.6	0.0	0.0	1944.7	302.2	20.8
MAY	59.9	-21.8	620.	38.1	3.27	3.6	24.	1.5	15.4	0.0	1946.0	319.8	17.6
JUN	106.6	-27.2	1334.	79.4	5.46	6.1	29.	1.7	71.6	0.0	1946.0	319.8	0.0
JUL	42.1	-7.4	564.	34.7	7.70	8.6	382.	23.5	2.6	0.0	1946.0	319.8	0.0
AUG	26.6	-2.6	390.	24.0	6.01	6.6	468.	28.8	0.0	0.0	1945.1	308.4	-11.4
SEP	19.7	-9.6	170.	10.1	4.47	4.9	128.	7.6	0.0	0.0	1944.9	306.0	-2.4
OCT	16.4	-12.4	65.	4.0	3.43	3.7	10.	.6	0.0	0.0	1944.9	305.7	-.3
NOV	20.8	-13.0	131.	7.8	1.55	1.7	10.	.6	0.0	0.0	1945.3	311.2	5.5
DEC	23.5	-13.9	156.	9.6	.71	.8	10.	.6	0.0	0.0	1946.0	319.4	8.2
TOTAL	446.0	-171.7		274.3	36.30	39.7		67.3	89.6	0.0			77.7
					REASONABLE MAXIMUM INFLOW CONDITIONS								
JAN	28.1	-16.5	189.	11.6	0.00	0.0	10.	.6	0.0	0.0	1940.7	252.7	11.0
FEB	42.6	-20.1	405.	22.5	.28	.3	11.	.6	0.0	0.0	1942.5	274.3	21.6
MAR	57.1	-27.0	490.	30.1	.70	.7	10.	.6	0.0	0.0	1944.7	303.1	28.8
APR	55.8	-22.3	563.	33.5	.21	.2	10.	.6	16.0	0.0	1946.0	319.8	16.7
MAY	105.5	-34.9	1148.	70.6	1.78	2.0	13.	.8	67.8	0.0	1946.0	319.8	0.0
JUN	166.5	-21.5	2437.	145.0	1.58	1.8	13.	.8	142.4	0.0	1946.0	319.8	0.0
JUL	105.4	-28.3	1254.	77.1	6.53	7.3	99.	6.1	63.7	0.0	1946.0	319.8	0.0
AUG	63.8	-21.6	686.	42.2	3.43	3.8	104.	6.4	32.0	0.0	1946.0	319.8	0.0
SEP	75.0	-12.7	1047.	62.3	3.84	4.3	25.	1.5	56.5	0.0	1946.0	319.8	0.0
OCT	34.4	-8.3	424.	26.1	2.28	2.5	10.	.6	23.0	0.0	1946.0	319.8	0.0
NOV	31.4	-4.0	460.	27.4	1.03	1.1	10.	.6	25.7	0.0	1946.0	319.8	0.0
DEC	30.4	-.5	486.	29.9	.40	.4	10.	.6	28.9	0.0	1946.0	319.8	0.0
TOTAL	796.0	-217.7		578.3	22.06	24.4		19.8	456.0	0.0			78.1

LOVEWELL RESERVOIR OPERATION ESTIMATES - 1980

MONTH	WHITE ROCK CREEK INFLOW 1000 AF	COURTLAND CANAL INFLOW 1000 AF	TOTAL INFLOW MEAN CFS	TOTAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RES SPILL 1000 AF	REQ SHORT 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RES CHANGE 1000 AF
REASONABLE MINIMUM INFLOW CONDITIONS													
JAN	.1	0.0	2.	.1	.77	.2	0.	0.0	0.0	0.0	1580.6	36.0	-.1
FEB	.2	0.0	4.	.2	.75	.2	0.	0.0	0.0	0.0	1580.6	36.0	.0
MAR	.2	1.2	23.	1.4	1.69	.4	0.	0.0	0.0	0.0	1581.0	37.0	1.0
APR	.2	1.2	24.	1.4	3.79	.9	0.	0.0	0.0	0.0	1581.1	37.5	.5
MAY	.6	7.8	137.	8.4	3.55	.8	99.	6.1	0.0	0.0	1581.7	39.0	1.5
JUN	1.3	8.9	171.	10.2	5.84	1.4	103.	6.1	0.0	0.0	1582.6	41.7	2.7
JUL	.8	10.0	176.	10.8	7.75	1.8	294.	18.1	0.0	0.0	1579.3	32.6	-9.1
AUG	.5	12.7	215.	13.2	6.09	1.2	343.	21.1	0.0	0.0	1575.3	23.5	-9.1
SEP	.4	3.0	57.	3.4	5.15	.8	155.	9.2	0.0	0.0	1571.8	16.9	-6.6
OCT	.3	1.2	24.	1.5	3.45	.5	0.	0.0	0.0	0.0	1572.3	17.9	1.0
NOV	.1	1.2	22.	1.3	2.37	.4	0.	0.0	0.0	0.0	1572.9	18.8	.9
DEC	.1	0.0	2.	.1	.96	.1	0.	0.0	0.0	0.0	1572.9	18.8	.0
TOTAL	4.8	47.2		52.0	42.16	8.7		60.6	0.0	0.0			-17.3
MOST PROBABLE INFLOW CONDITIONS													
JAN	.3	0.0	5.	.3	.50	.1	0.	0.0	0.0	0.0	1580.7	36.3	.2
FEB	.9	0.0	16.	.9	.40	.1	0.	0.0	0.0	0.0	1581.0	37.1	.8
MAR	1.0	0.0	16.	1.0	.92	.2	0.	0.0	0.0	0.0	1581.3	37.9	.8
APR	1.1	0.0	18.	1.1	1.97	.5	0.	0.0	0.0	0.0	1581.5	38.5	.6
MAY	3.0	1.2	68.	4.2	1.58	.4	34.	2.1	0.0	0.0	1582.1	40.2	1.7
JUN	5.9	1.2	119.	7.1	1.75	.4	35.	2.1	3.1	0.0	1582.6	41.7	1.5
JUL	3.9	4.2	132.	8.1	5.22	1.2	283.	17.4	0.0	0.0	1578.7	31.2	-10.5
AUG	2.2	6.6	143.	8.8	4.22	.8	286.	17.6	0.0	0.0	1574.3	21.6	-9.6
SEP	2.0	3.0	84.	5.0	3.36	.5	76.	4.5	0.0	0.0	1574.3	21.6	0.0
OCT	1.2	1.2	39.	2.4	2.09	.3	0.	0.0	0.0	0.0	1575.4	23.7	2.1
NOV	.4	1.2	27.	1.6	1.41	.2	0.	0.0	0.0	0.0	1576.1	25.1	1.4
DEC	.3	0.0	5.	.3	.43	.1	0.	0.0	0.0	0.0	1576.1	25.3	.2
TOTAL	22.2	18.6		40.8	23.85	4.8		43.7	3.1	0.0			-10.8
REASONABLE MAXIMUM INFLOW CONDITIONS													
JAN	.8	0.0	13.	.8	.16	0.0	0.	0.0	0.0	0.0	1580.9	36.9	.8
FEB	2.5	0.0	45.	2.5	.26	.1	0.	0.0	0.0	0.0	1581.8	39.3	2.4
MAR	2.9	0.0	47.	2.9	.35	.1	0.	0.0	.4	0.0	1582.6	41.7	2.4
APR	3.1	0.0	52.	3.1	.44	.1	0.	0.0	3.0	0.0	1582.6	41.7	0.0
MAY	8.5	1.2	158.	9.7	.54	.1	15.	.9	8.7	0.0	1582.6	41.7	0.0
JUN	16.8	1.2	303.	18.0	-1.08	-.3	20.	1.2	17.1	0.0	1582.6	41.7	0.0
JUL	11.1	1.2	200.	12.3	4.30	1.1	138.	8.5	2.7	0.0	1582.6	41.7	0.0
AUG	6.1	1.2	119.	7.3	3.06	.7	138.	8.5	0.0	0.0	1582.0	39.8	-1.9
SEP	5.7	0.0	96.	5.7	1.78	.4	35.	2.1	1.3	0.0	1582.6	41.7	1.9
OCT	3.4	0.0	55.	3.4	1.49	.4	0.	0.0	3.0	0.0	1582.6	41.7	0.0
NOV	1.1	0.0	18.	1.1	1.00	.2	0.	0.0	.9	0.0	1582.6	41.7	0.0
DEC	.8	0.0	13.	.8	-.15	0.0	0.	0.0	.8	0.0	1582.6	41.7	0.0
TOTAL	62.8	4.8		67.6	12.15	2.9		21.2	37.9	0.0			5.6

KIRWIN RESERVOIR OPERATION ESTIMATES - 1980

MONTH	HISTORICAL INFLOW MEAN CFS	HISTORICAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
REASONABLE MINIMUM INFLOW CONDITIONS											
JAN	5.	.3	.91	.1	0.	0.0	0.0	0.0	1702.4	16.5	.2
FEB	9.	.5	1.04	.1	0.	0.0	0.0	0.0	1702.7	16.9	.4
MAR	13.	.8	1.79	.2	0.	0.0	0.0	0.0	1703.1	17.5	.6
APR	17.	1.0	4.60	.6	0.	0.0	0.0	0.0	1703.4	17.9	.4
MAY	31.	1.9	4.77	.6	39.	2.4	0.0	0.0	1702.6	16.8	-1.1
JUN	72.	4.3	6.32	.8	40.	2.4	0.0	0.0	1703.4	17.9	1.1
JUL	46.	2.8	8.80	1.0	117.	7.2	0.0	0.0	1699.4	12.5	-5.4
AUG	33.	2.0	7.74	.7	137.	8.4	0.0	4.4	1697.0	9.8	-2.7
SEP	22.	1.3	5.66	.5	61.	3.6	0.0	2.8	1697.0	9.8	.0
OCT	13.	.8	4.61	.4	0.	0.0	0.0	0.0	1697.4	10.2	.4
NOV	7.	.4	2.54	.2	0.	0.0	0.0	0.0	1697.6	10.4	.2
DEC	5.	.3	1.22	.1	0.	0.0	0.0	0.0	1697.7	10.6	.2
TOTAL		16.4	50.00	5.3		24.0	0.0	7.2			-5.7
MOST PROBABLE INFLOW CONDITIONS											
JAN	10.	.6	.73	.1	0.	0.0	0.0	0.0	1702.6	16.8	.5
FEB	23.	1.3	.77	.1	0.	0.0	0.0	0.0	1703.5	18.0	1.2
MAR	29.	1.8	1.04	.1	0.	0.0	0.0	0.0	1704.6	19.7	1.7
APR	39.	2.3	1.89	.3	0.	0.0	0.0	0.0	1705.8	21.7	2.0
MAY	73.	4.5	3.60	.5	13.	.8	0.0	0.0	1707.6	24.9	3.2
JUN	168.	10.0	4.65	.8	13.	.8	0.0	0.0	1711.7	33.3	8.4
JUL	107.	6.6	6.33	1.2	106.	6.5	0.0	0.0	1711.2	32.2	-1.1
AUG	76.	4.7	5.56	1.0	106.	6.5	0.0	0.0	1709.9	29.4	-2.8
SEP	50.	3.0	4.25	.8	27.	1.6	0.0	0.0	1710.2	30.0	.6
OCT	33.	2.0	3.59	.7	0.	0.0	0.0	0.0	1710.8	31.3	1.3
NOV	15.	.9	1.85	.3	0.	0.0	0.0	0.0	1711.1	31.9	.6
DEC	11.	.7	.74	.1	0.	0.0	0.0	0.0	1711.3	32.5	.6
TOTAL		38.4	35.00	6.0		16.2	0.0	0.0			16.2
REASONABLE MAXIMUM INFLOW CONDITIONS											
JAN	24.	1.5	.45	.1	0.	0.0	0.0	0.0	1703.3	17.7	1.4
FEB	54.	3.0	.50	.1	0.	0.0	0.0	0.0	1705.1	20.6	2.9
MAR	65.	4.0	.56	.1	0.	0.0	0.0	0.0	1707.4	24.5	3.9
APR	87.	5.2	.53	.1	0.	0.0	0.0	0.0	1710.0	29.6	5.1
MAY	169.	10.4	1.68	.3	8.	.5	0.0	0.0	1714.0	39.2	9.6
JUN	383.	22.8	1.66	.5	8.	.5	0.0	0.0	1720.5	61.0	21.8
JUL	247.	15.2	5.47	1.8	65.	4.0	0.0	0.0	1722.9	70.4	9.4
AUG	174.	10.7	4.67	1.6	67.	4.1	0.0	0.0	1724.1	75.4	5.0
SEP	118.	7.0	2.75	1.0	17.	1.0	0.0	0.0	1725.2	80.4	5.0
OCT	73.	4.5	2.27	.9	0.	0.0	0.0	0.0	1726.0	84.0	3.6
NOV	37.	2.2	1.02	.4	0.	0.0	0.0	0.0	1726.4	85.8	1.8
DEC	26.	1.6	.54	.2	0.	0.0	0.0	0.0	1726.7	87.2	1.4
TOTAL		88.1	22.10	7.1		10.1	0.0	0.0			70.9

WEBSTER RESERVOIR OPERATION ESTIMATES - 1980

MONTH	HISTORICAL INFLOW MEAN CFS	HISTORICAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	3.	.2	.96	.1	0.	0.0	0.0	0.0	1871.9	21.4	.1
FEB	7.	.4	1.11	.2	0.	0.0	0.0	0.0	1872.0	21.6	.2
MAR	10.	.6	2.08	.3	0.	0.0	0.0	0.0	1872.1	21.9	.3
APR	12.	.7	4.92	.8	0.	0.0	0.0	0.0	1872.1	21.8	-.1
MAY	24.	1.5	4.75	.7	49.	3.0	0.0	0.0	1870.9	19.6	-2.2
JUN	47.	2.8	7.50	1.1	66.	3.9	0.0	0.0	1869.6	17.4	-2.2
JUL	36.	2.2	9.04	1.1	135.	8.3	0.0	0.0	1864.6	10.2	-7.2
AUG	20.	1.2	8.08	.7	151.	9.3	0.0	3.9	1860.0	5.3	-4.9
SEP	15.	.9	6.70	.5	84.	5.0	0.0	4.6	1860.0	5.3	.0
OCT	11.	.7	4.71	.4	0.	0.0	0.0	0.0	1860.3	5.6	.3
NOV	5.	.3	2.45	.2	0.	0.0	0.0	0.0	1860.4	5.7	.1
DEC	3.	.2	1.20	.1	0.	0.0	0.0	0.0	1860.5	5.8	.1
TOTAL		11.7	53.50	6.2		29.5	0.0	8.5			-15.5
					MOST PROBABLE INFLOW CONDITIONS						
JAN	10.	.6	.67	.1	0.	0.0	0.0	0.0	1872.1	21.8	.5
FEB	22.	1.2	.81	.1	0.	0.0	0.0	0.0	1872.7	22.9	1.1
MAR	26.	1.6	1.48	.2	0.	0.0	0.0	0.0	1873.4	24.3	1.4
APR	32.	1.9	2.72	.4	0.	0.0	0.0	0.0	1874.2	25.8	1.5
MAY	65.	4.0	3.13	.5	13.	.8	0.0	0.0	1875.5	28.5	2.7
JUN	131.	7.8	4.40	.8	17.	1.0	0.0	0.0	1878.2	34.5	6.0
JUL	99.	6.1	7.02	1.3	120.	7.4	0.0	0.0	1877.1	31.9	-2.6
AUG	55.	3.4	5.72	1.0	120.	7.4	0.0	0.0	1874.7	26.9	-5.0
SEP	39.	2.3	4.69	.8	37.	2.2	0.0	0.0	1874.4	26.2	-.7
OCT	29.	1.8	3.37	.6	0.	0.0	0.0	0.0	1875.0	27.4	1.2
NOV	13.	.8	1.61	.3	0.	0.0	0.0	0.0	1875.2	27.9	.5
DEC	10.	.6	.78	.1	0.	0.0	0.0	0.0	1875.5	28.4	.5
TOTAL		32.1	36.40	6.2		18.8	0.0	0.0			7.1
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	29.	1.8	.53	.1	0.	0.0	0.0	0.0	1872.7	23.0	1.7
FEB	59.	3.3	.48	.1	0.	0.0	0.0	0.0	1874.4	26.2	3.2
MAR	72.	4.4	.70	.1	0.	0.0	0.0	0.0	1876.4	30.5	4.3
APR	92.	5.5	1.00	.2	0.	0.0	0.0	0.0	1878.8	35.8	5.3
MAY	181.	11.1	1.74	.4	0.	0.0	0.0	0.0	1882.9	46.5	10.7
JUN	366.	21.8	.72	.2	0.	0.0	0.0	0.0	1889.9	68.1	21.6
JUL	278.	17.1	5.63	1.7	62.	3.8	2.3	0.0	1892.4	77.4	9.3
AUG	155.	9.5	4.03	1.3	63.	3.9	4.3	0.0	1892.4	77.4	0.0
SEP	109.	6.5	3.75	1.2	5.	.3	5.0	0.0	1892.4	77.4	0.0
OCT	85.	5.2	2.83	.9	0.	0.0	4.3	0.0	1892.4	77.4	0.0
NOV	37.	2.2	.99	.3	0.	0.0	1.9	0.0	1892.4	77.4	0.0
DEC	29.	1.8	.60	.2	0.	0.0	1.6	0.0	1892.4	77.4	0.0
TOTAL		90.2	23.00	6.7		8.0	19.4	0.0			56.1

WACONDA LAKE OPERATION ESTIMATES - 1980

MONTH	UNDEPLETED INFLOW 1000 AF	UPSTREAM DEPLETIONS 1000 AF	DEPLETED INFLOW MEAN CFS	DEPLETED INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RES SPILL 1000 AF	REQ SHORT 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RES CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS								
JAN	1.8	0.0	29.	1.8	.89	.8	16.	1.0	0.0	0.0	1452.7	207.1	0.0
FEB	3.2	-.5	49.	2.7	1.00	.9	32.	1.8	0.0	0.0	1452.7	207.1	0.0
MAR	4.4	-.9	57.	3.5	1.83	1.7	15.	.9	0.0	0.0	1452.8	208.0	.9
APR	5.3	-1.1	71.	4.2	4.55	4.3	2.	.1	0.0	0.0	1452.8	207.8	-.2
MAY	8.0	-1.9	99.	6.1	4.48	4.3	2.	.1	0.0	0.0	1452.9	209.5	1.7
JUN	15.1	-4.6	176.	10.5	6.57	6.3	2.	.1	0.0	0.0	1453.3	213.6	4.1
JUL	11.1	-2.3	143.	8.8	8.05	7.8	34.	2.1	0.0	0.0	1453.2	212.5	-1.1
AUG	6.0	-.3	93.	5.7	8.50	8.1	34.	2.1	0.0	0.0	1452.8	208.0	-4.5
SEP	4.5	-.8	62.	3.7	6.19	5.8	34.	2.0	0.0	0.0	1452.4	203.9	-4.1
OCT	2.0	-.8	20.	1.2	4.42	4.1	33.	2.0	0.0	0.0	1452.0	199.0	-4.9
NOV	1.9	-.3	27.	1.6	2.46	2.3	34.	2.0	0.0	0.0	1451.8	196.3	-2.7
DEC	2.2	.1	37.	2.3	1.16	1.1	20.	1.2	0.0	0.0	1451.8	196.3	0.0
TOTAL	65.5	-13.4		52.1	50.10	47.5		15.4	0.0	0.0			-10.8
					MOST PROBABLE INFLOW CONDITIONS								
JAN	4.4	-.7	60.	3.7	.53	.5	52.	3.2	0.0	0.0	1452.7	207.1	0.0
FEB	6.3	-2.1	76.	4.2	.63	.6	65.	3.6	0.0	0.0	1452.7	207.1	0.0
MAR	7.5	-2.9	75.	4.6	.84	.8	28.	1.7	0.0	0.0	1452.9	209.2	2.1
APR	11.6	-3.6	134.	8.0	2.90	2.8	77.	4.6	0.0	0.0	1453.0	209.8	.6
MAY	27.5	-7.7	322.	19.8	2.96	2.8	226.	13.9	0.0	0.0	1453.2	212.9	3.1
JUN	49.0	-16.8	541.	32.2	3.32	3.3	301.	17.9	0.0	0.0	1454.2	223.9	11.0
JUL	24.1	-10.3	224.	13.8	6.05	6.1	26.	1.6	0.0	0.0	1454.7	230.0	6.1
AUG	13.0	-5.5	122.	7.5	4.46	4.6	26.	1.6	0.0	0.0	1454.8	231.3	1.3
SEP	13.8	-3.6	171.	10.2	3.96	4.0	264.	15.7	0.0	0.0	1454.0	221.8	-9.5
OCT	6.0	-3.1	47.	2.9	3.24	3.1	242.	14.9	0.0	0.0	1452.7	206.7	-15.1
NOV	4.8	-1.3	59.	3.5	1.85	1.7	190.	11.3	0.0	0.0	1451.8	197.2	-9.5
DEC	5.0	-.7	70.	4.3	.76	.7	59.	3.6	0.0	0.0	1451.8	197.2	0.0
TOTAL	173.0	-58.3		114.7	31.50	31.0		93.6	0.0	0.0			-9.9
					REASONABLE MAXIMUM INFLOW CONDITIONS								
JAN	9.5	-2.8	109.	6.7	.36	.3	104.	6.4	0.0	0.0	1452.7	207.1	0.0
FEB	15.5	-5.9	173.	9.6	.21	.2	169.	9.4	0.0	0.0	1452.7	207.1	0.0
MAR	19.0	-7.9	181.	11.1	.34	.3	125.	7.7	0.0	0.0	1453.0	210.2	3.1
APR	36.4	-10.1	442.	26.3	1.39	1.3	301.	17.9	0.0	0.0	1453.6	217.3	7.1
MAY	56.6	-21.2	576.	35.4	.87	.9	299.	18.4	0.0	0.0	1455.0	233.4	16.1
JUN	165.9	-44.3	2044.	121.6	-.20	-.2	2.	.1	113.6	0.0	1455.6	241.5	8.1
JUL	69.8	-29.0	664.	40.8	4.46	4.7	2.	.1	36.0	0.0	1455.6	241.5	0.0
AUG	41.8	-14.6	442.	27.2	3.27	3.4	2.	.1	23.7	0.0	1455.6	241.5	0.0
SEP	53.5	-8.1	763.	45.4	2.29	2.4	2.	.1	42.9	0.0	1455.6	241.5	0.0
OCT	28.5	-4.7	387.	23.8	2.41	2.5	299.	18.4	2.9	0.0	1455.6	241.5	0.0
NOV	14.9	-2.1	215.	12.8	.92	1.0	301.	17.9	0.0	0.0	1455.1	235.4	-6.1
DEC	9.6	-1.2	137.	8.4	.38	.4	130.	8.0	0.0	0.0	1455.1	235.4	0.0
TOTAL	521.0	-151.9		369.1	16.70	17.2		104.5	219.1	0.0			28.3

CEDAR BLUFF RESERVOIR OPERATION ESTIMATES - 1980

MONTH	HISTORICAL INFLOW MEAN CFS	HISTORICAL INFLOW 1000 AF	NET EVAPORATION INCHES	NET EVAPORATION 1000 AF	RELEASE REQUIREMENT MEAN CFS	RELEASE REQUIREMENT 1000 AF	RESERVOIR SPILL 1000 AF	REQUIREMENT SHORTAGE 1000 AF	END OF MONTH ELEV FT	END OF MONTH CONT 1000 AF	RESERVOIR CHANGE 1000 AF
					REASONABLE MINIMUM INFLOW CONDITIONS						
JAN	3.	.2	1.23	.2	8.	.5	0.0	0.0	2105.4	30.5	-.5
FEB	5.	.3	1.39	.2	7.	.4	0.0	0.0	2105.2	30.2	-.3
MAR	8.	.5	2.48	.4	10.	.6	0.0	0.0	2105.0	29.7	-.5
APR	15.	.9	5.30	.8	7.	.4	0.0	0.0	2104.8	29.4	-.3
MAY	34.	2.1	5.10	.8	44.	2.7	0.0	2.1	2105.2	30.1	.7
JUN	79.	4.7	7.76	1.2	44.	2.6	0.0	2.1	2106.7	33.1	3.0
JUL	39.	2.4	9.16	1.5	111.	6.8	0.0	6.3	2106.9	33.5	.4
AUG	36.	2.2	8.88	1.4	115.	7.1	0.0	6.3	2106.9	33.5	0.0
SEP	20.	1.2	6.41	1.0	72.	4.3	0.0	3.1	2106.4	32.5	-1.0
OCT	15.	.9	4.93	.8	29.	1.8	0.0	1.1	2106.1	31.9	-.6
NOV	5.	.3	2.90	.5	7.	.4	0.0	0.0	2105.8	31.3	-.6
DEC	3.	.2	1.46	.2	7.	.4	0.0	0.0	2105.6	30.9	-.4
TOTAL		15.9	57.00	9.0		28.0	0.0	21.0			-.1
					MOST PROBABLE INFLOW CONDITIONS						
JAN	8.	.5	1.08	.2	8.	.5	0.0	0.0	2105.5	30.8	-.2
FEB	16.	.9	1.13	.2	7.	.4	0.0	0.0	2105.7	31.1	.3
MAR	21.	1.3	1.72	.3	10.	.6	0.0	0.0	2105.9	31.5	.4
APR	37.	2.2	3.77	.6	7.	.4	0.0	0.0	2106.5	32.7	1.2
MAY	86.	5.3	3.22	.6	21.	1.3	0.0	0.0	2108.2	36.1	3.4
JUN	200.	11.9	4.29	.8	20.	1.2	0.0	0.0	2112.5	46.0	9.9
JUL	101.	6.2	7.39	1.5	93.	5.7	0.0	0.0	2112.1	45.0	-1.0
AUG	93.	5.7	6.04	1.2	107.	6.6	0.0	0.0	2111.2	42.9	-2.1
SEP	49.	2.9	4.48	.9	35.	2.1	0.0	0.0	2111.2	42.8	-.1
OCT	37.	2.3	3.73	.7	21.	1.3	0.0	0.0	2111.3	43.1	.3
NOV	13.	.8	2.46	.5	7.	.4	0.0	0.0	2111.2	43.0	-.1
DEC	10.	.6	1.20	.2	7.	.4	0.0	0.0	2111.2	43.0	0.0
TOTAL		40.6	40.51	7.7		20.9	0.0	0.0			12.0
					REASONABLE MAXIMUM INFLOW CONDITIONS						
JAN	23.	1.4	.92	.2	8.	.5	0.0	0.0	2106.0	31.7	.7
FEB	45.	2.5	.87	.1	7.	.4	0.0	0.0	2107.0	33.7	2.0
MAR	60.	3.7	1.20	.2	10.	.6	0.0	0.0	2108.4	36.6	2.9
APR	104.	6.2	2.32	.4	7.	.4	0.0	0.0	2110.8	42.0	5.4
MAY	239.	14.7	2.02	.4	18.	1.1	0.0	0.0	2116.0	55.2	13.2
JUN	553.	32.9	1.25	.3	17.	1.0	0.0	0.0	2125.6	86.8	31.6
JUL	276.	17.0	5.22	1.8	62.	3.8	0.0	0.0	2128.3	98.2	11.4
AUG	257.	15.8	4.25	1.6	70.	4.3	0.0	0.0	2130.6	108.1	9.9
SEP	136.	8.1	3.86	1.5	24.	1.4	0.0	0.0	2131.7	113.3	5.2
OCT	106.	6.5	2.56	1.0	16.	1.0	0.0	0.0	2132.6	117.8	4.5
NOV	37.	2.2	1.62	.7	7.	.4	0.0	0.0	2132.9	118.9	1.1
DEC	24.	1.5	.92	.4	7.	.4	0.0	0.0	2133.0	119.6	.7
TOTAL		112.5	27.01	8.6		15.3	0.0	0.0			88.6

TABLE 5

FLOOD DAMAGES PREVENTED BY KANSAS RIVER PROJECTS RESERVOIRS

BONNY

Year	Damages Prevented	Cumulative Total
1951	$ 293,000	$ 293,000
1953	135,000	428,000
1957	1,050,000	1,478,000
1960	169,000	1,647,000
1965	273,000	1,920,000
1967	42,000	1,962,000
1969	200,000	2,162,000

SWANSON

Year	Damages Prevented	Cumulative Total
1957	$ 233,000	$ 233,000
1960	900,000	1,133,000
1962	126,000	1,259,000
1964	50,000	1,309,000
1965	477,000	1,786,000
1967	182,000	1,968,000
1969	1,000	1,969,000

ENDERS

Year	Damages Prevented	Cumulative Total
1951	$ 220,000	$ 220,000
1956	104,000	324,000
1960	412,000	736,000
1962	37,000	773,000
1965	137,000	910,000
1967	42,000	952,000
1969	1,000	953,000

HUGH BUTLER

Year	Damages Prevented	Cumulative Total
1962	$ 2,000	$ 2,000
1965	137,000	139,000
1967	42,000	181,000

HARRY STRUNK

Year	Damages Prevented	Cumulative Total
1951	$ 14,000	$ 14,000
1957	5,000	19,000
1960	198,000	217,000
1962	29,000	246,000
1967	129,000	375,000
1969	6,000	381,000

NORTON

Year	Damages Prevented	Cumulative Total
1966	$ 132,000	$ 132,000
1967	885,000	1,017,000
1972	498,000	1,515,000

HARLAN COUNTY

Year	Damages Prevented	Cumulative Total
1957	$1,045,000	$ 1,045,000
1960	4,853,000	5,898,000
1961	255,000	6,153,000
1962	45,000	6,198,000
1964	182,000	6,380,000
1965	60,000	6,440,000
1966	1,658,000	8,098,000
1967	3,539,000	11,637,000
1969	14,000	11,651,000
1971	64,000	11,715,000
1973	1,310,000	13,025,000
1974	1,000	13,026,000
1975	200,000	13,226,000

LOVEWELL

Year	Damages Prevented	Cumulative Total
1957	$ 349,000	$ 349,000
1960	178,000	527,000
1961	165,000	692,000
1962	5,000	697,000
1971	9,000	706,000
1973	1,728,000	2,434,000
1975	98,000	2,532,000
1978	25,000	2,557,000
1979	13,000	2,570,000

KIRWIN

Year	Damages Prevented	Cumulative Total
1957	$ 522,000	$ 522,000
1958	10,000	532,000
1960	499,000	1,031,000
1961	1,000	1,032,000
1962	1,000	1,033,000
1964	34,000	1,067,000
1965	325,000	1,392,000
1967	191,000	1,583,000
1968	44,000	1,627,000
1969	2,000	1,629,000
1971	3,000	1,632,000
1973	40,000	1,672,000
1975	618,000	2,290,000
1978	4,000	2,294,000
1979	35,000	2,329,000

WEBSTER

Year	Damages Prevented	Cumulative Total
1957	$ 326,000	$ 326,000
1958	114,000	440,000
1960	1,018,000	1,458,000
1961	1,000	1,459,000
1962	1,000	1,460,000
1964	17,000	1,477,000
1965	325,000	1,802,000
1967	85,000	1,887,000
1968	2,000	1,889,000
1969	1,000	1,890,000
1971	3,000	1,893,000
1973	54,000	1,947,000
1975	885,000	2,832,000
1978	2,000	2,834,000
1979	16,000	2,850,000

WACONDA

Year	Damages Prevented	Cumulative Total
1968	$ 280,000	$ 280,000
1969	606,000	886,000
1971	9,000	895,000
1973	3,797,000	4,692,000
1974	1,000	4,693,000
1975	967,000	5,660,000
1978	11,000	5,671,000
1979	959,000	6,630,000

CEDAR BLUFF

Year	Damages Prevented	Cumulative Total
1951	$ 597,000	$ 597,000
1955	357,000	954,000
1956	19,000	973,000
1957	4,812,000	5,785,000
1958	829,000	6,614,000
1960	1,573,000	8,187,000
1961	101,000	8,288,000
1962	1,000	8,289,000
1964	17,000	8,306,000
1965	38,000	8,344,000
1967	42,000	8,386,000
1969	1,000	8,387,000
1971	8,000	8,395,000
1973	536,000	8,931,000
1975	11,000	8,942,000
1979	2,000	8,944,000

PROJECT TOTALS

Year	Damages Prevented	Cumulative Total
1951	$1,124,000	$ 1,124,000
1953	135,000	1,259,000
1955	357,000	1,616,000
1956	123,000	1,739,000
1957	8,342,000	10,081,000
1958	953,000	11,034,000
1960	9,800,000	20,834,000
1961	523,000	21,357,000
1962	247,000	21,604,000
1964	300,000	21,904,000
1965	1,772,000	23,676,000
1966	1,790,000	25,466,000
1967	5,179,000	30,645,000
1968	326,000	30,971,000
1969	832,000	31,803,000
1971	96,000	31,899,000
1972	498,000	32,397,000
1973	7,465,000	39,862,000
1974	2,000	39,864,000
1975	2,779,000	42,643,000
1978	42,000	42,685,000
1979	1,025,000	43,710,000

NOTE.--Construction cost of storage dams -- $208,954,130.

TABLE 6
OTHER USES AT FEDERALLY CONSTRUCTED STORAGE AND DIVERSION DAMS
NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS
DURING 1979
Annual Totals

Features	Visitors	Cars in Area	Water Craft	Sport Fish Caught	Season Take Ducks	Season Take Geese
Colorado						
Bonny Reservoir	301,933	56,074	10,625	44,300	2,450	75
Kansas						
Norton Reservoir	134,738	38,496	2,220	38,000	200	15
Almena Diversion Dam	1,235	308	0	100	0	0
Lovewell Reservoir	274,186	91,160	6,115	55,000	1,100	40
Kirwin Reservoir	68,216	34,012	370	15,000(est.)	5	135
Webster Reservoir	220,378	66,350	3,883	31,000	590	110
Woodston Diversion Dam	2,150	1,075	0	1,300	15	0
Waconda Lake	303,929	86,064	4,982	185,000	1,250	300
Cedar Bluff Reservoir	133,590	38,168	3,695	57,000	250	40
Nebraska						
Box Butte Reservoir	65,420	21,807	3,250	19,866	475	25
Merritt Reservoir	152,774	50,925	33,520	187,764	2,225	Closed
Arcadia Diversion Dam	9,850	2,000	0	6,000	100	0
Milburn Diversion Dam	1,215	450	0	600	12	0
Sherman Reservoir	234,000	78,000	19,850	60,000	900	75
Swanson Lake	38,735	7,966	1,026	36,000	500	100
Enders Reservoir	53,448	13,807	2,280	30,000	800	150
Hugh Butler Lake	195,610	50,084	9,529	30,000	300	20
Harry Strunk Lake	115,704	29,485	4,312	34,000	300	50
Harlan County Lake	930,373	308,052	650 1/	98,000 2/	600	325
TOTAL REPORTED	3,237,484	974,283	106,307	928,930	12,072	1,460

Visitors - Total visitor days which include fishing, hunting, boating, skiing, camping, picnicking, and sightseeing.
Water Craft - Boating days which include rentals, inboards, outboards, rowboats, and sailboats.
1/ Peak day (May 28) - excluded from total.
2/ lbs. - excluded from total.

TABLE 7

WATER DIVERTED IN 1979 AND THE
ESTIMATED DIVERSION FOR 1980

Irrigation District and Canal	1979 Irrigation Operations From	To	10-Year Average Diversion (1969-78)	1979 Diversion	Estimated Diversion in 1980
Mirage Flats Irrigation District					
Mirage Flats Canal	7/02	9/15	17,505	13,329	18,000
Ainsworth Irrigation District					
Ainsworth Canal	5/16	9/23	68,788	60,881	80,000
Sargent Irrigation District					
Sargent Canal	5/21	9/17	26,091	29,854	29,000
Farwell Irrigation District					
Farwell Canal	6/08	9/13	90,949	96,386	97,000
Frenchman Valley Irrigation District					
Culbertson Canal	4/09	9/05	19,330	12,887	13,000
H & RW Irrigation District					
Culbertson Extension Canal	5/22	8/27	26,318	17,229	18,000
Frenchman-Cambridge Irrigation District					
Meeker-Driftwood Canal	6/26	9/14	38,036	24,334	31,000
Bartley Canal	6/21	9/14	12,395	6,553	11,000
Red Willow Canal	6/13	9/14	9,759	5,778	9,000
Cambridge Canal	6/14	9/14	34,787	22,768	28,000
Total Frenchman-Cambridge Irrigation District			94,977	59,433	79,000
Almena Irrigation District					
Almena Canal	No irrigation in 1979		5,759	0	3,000
Bostwick Irrigation District in Nebraska					
Franklin Canal	7/05	8/28	29,229	17,202	23,000
Naponee Canal	6/26	8/26	3,530	2,216	3,800
Franklin Pump Canal	7/12	8/26	3,408	2,143	4,600
Superior Canal	7/04	9/01	14,589	10,534	11,000
Courtland Canal (Nebraska)	5/01	10/22	2,056	1,323	3,000
Total Bostwick Irrigation District in Nebraska			52,812	33,418	45,400
Kansas-Bostwick Irrigation District					
Courtland Canal above Lovewell	5/04	10/31	25,430	20,637	22,000
Courtland Canal below Lovewell	5/29	9/11	45,803	36,290	44,500
Total Kansas-Bostwick Irrigation District			71,233	56,927	66,000
Kirwin Irrigation District					
Kirwin Canal	7/02	8/28	20,730	16,215	16,000
Webster Irrigation District					
Osborne Canal	6/25	8/31	11,711	10,437	10,000
Cedar Bluff Irrigation District					
Cedar Bluff Canal	No irrigation in 1979		14,710	0	5,000
TOTAL			520,913	406,996	479,400

EXHIBIT 1A

BOX BUTTE RESERVOIR OPERATION

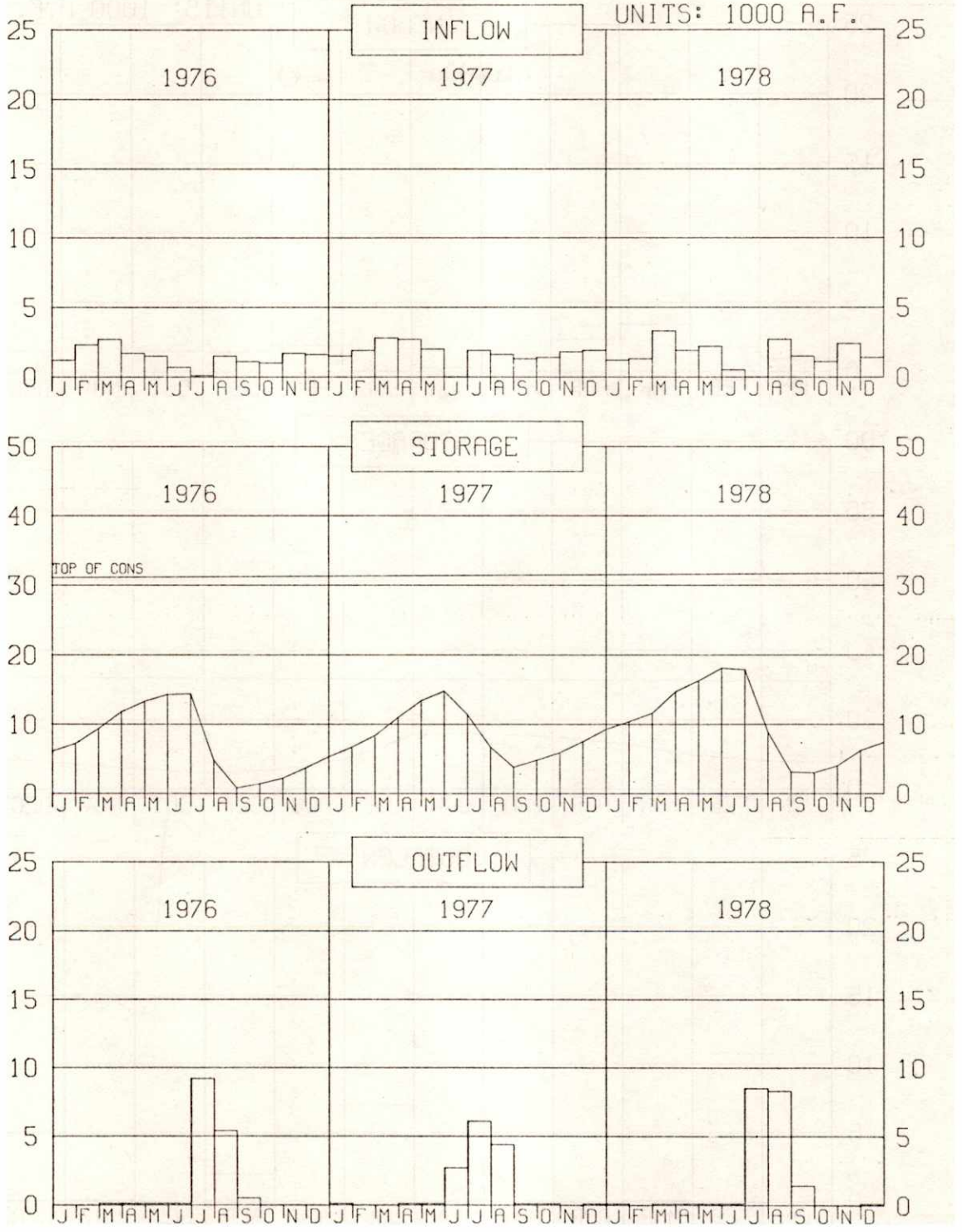


EXHIBIT 1B

BOX BUTTE RESERVOIR 1979 OPERATION

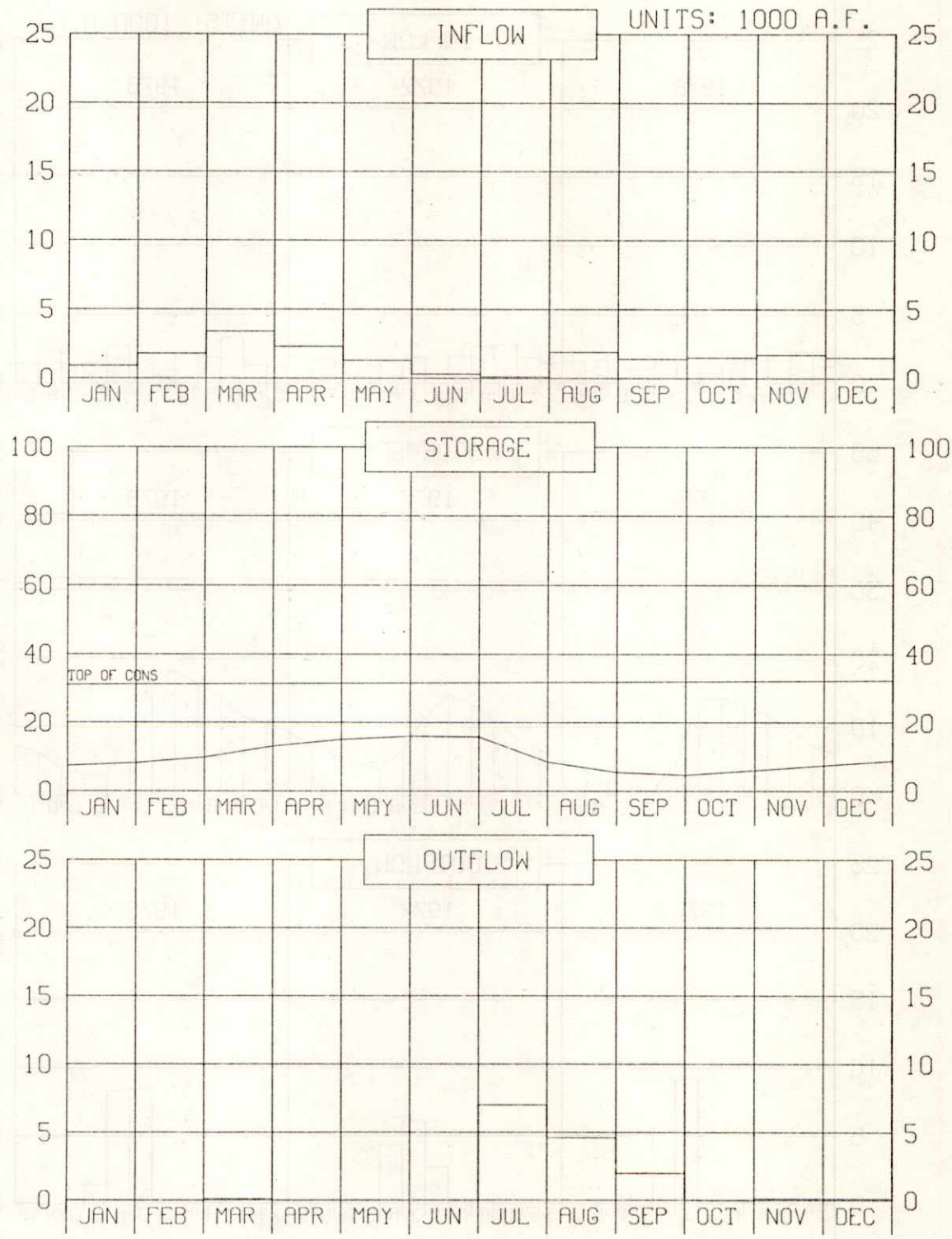


EXHIBIT 1C

BOX BUTTE RESERVOIR

CAL YEAR 1980 OPERATION PLAN

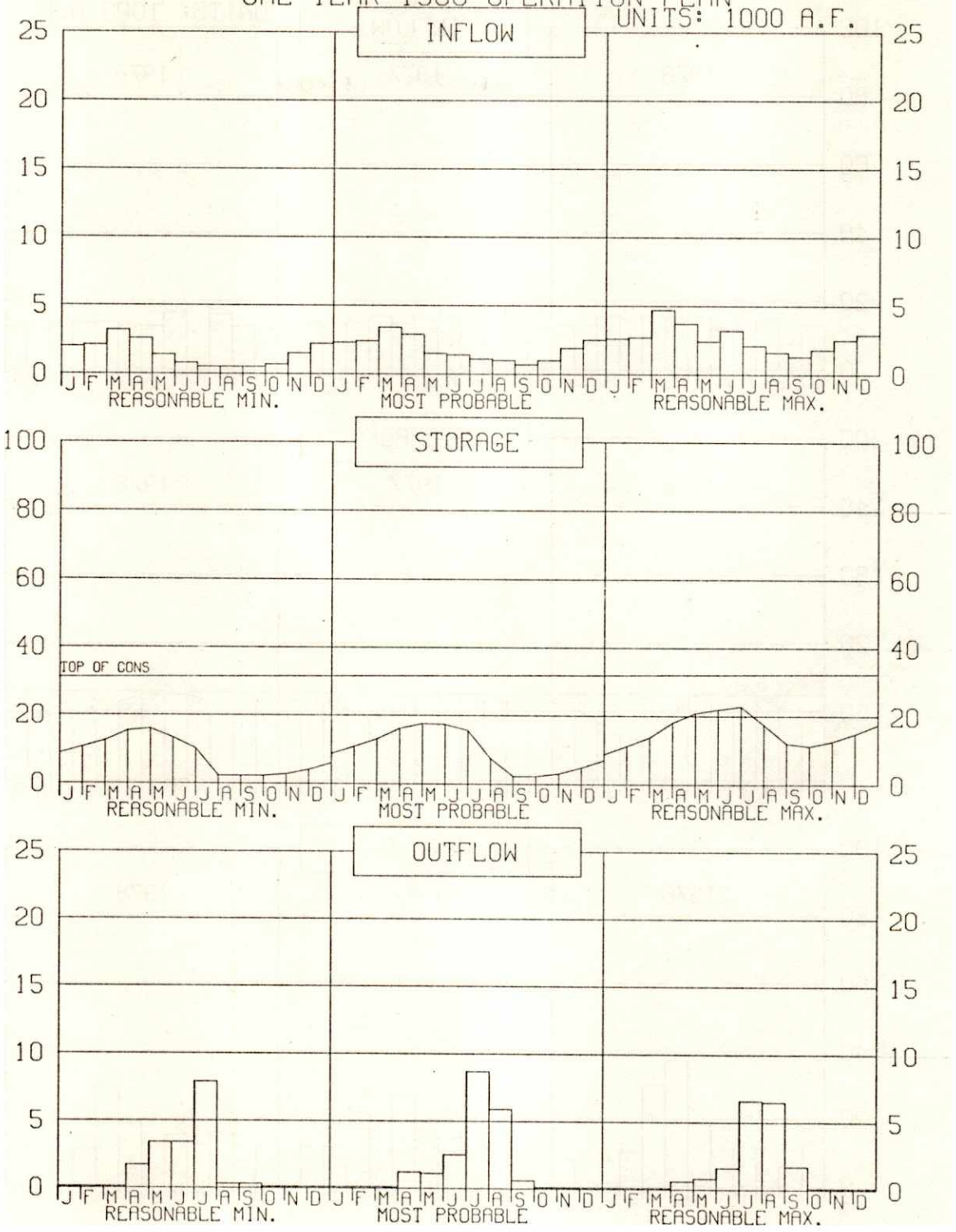


EXHIBIT 2A

MERRITT RESERVOIR OPERATION

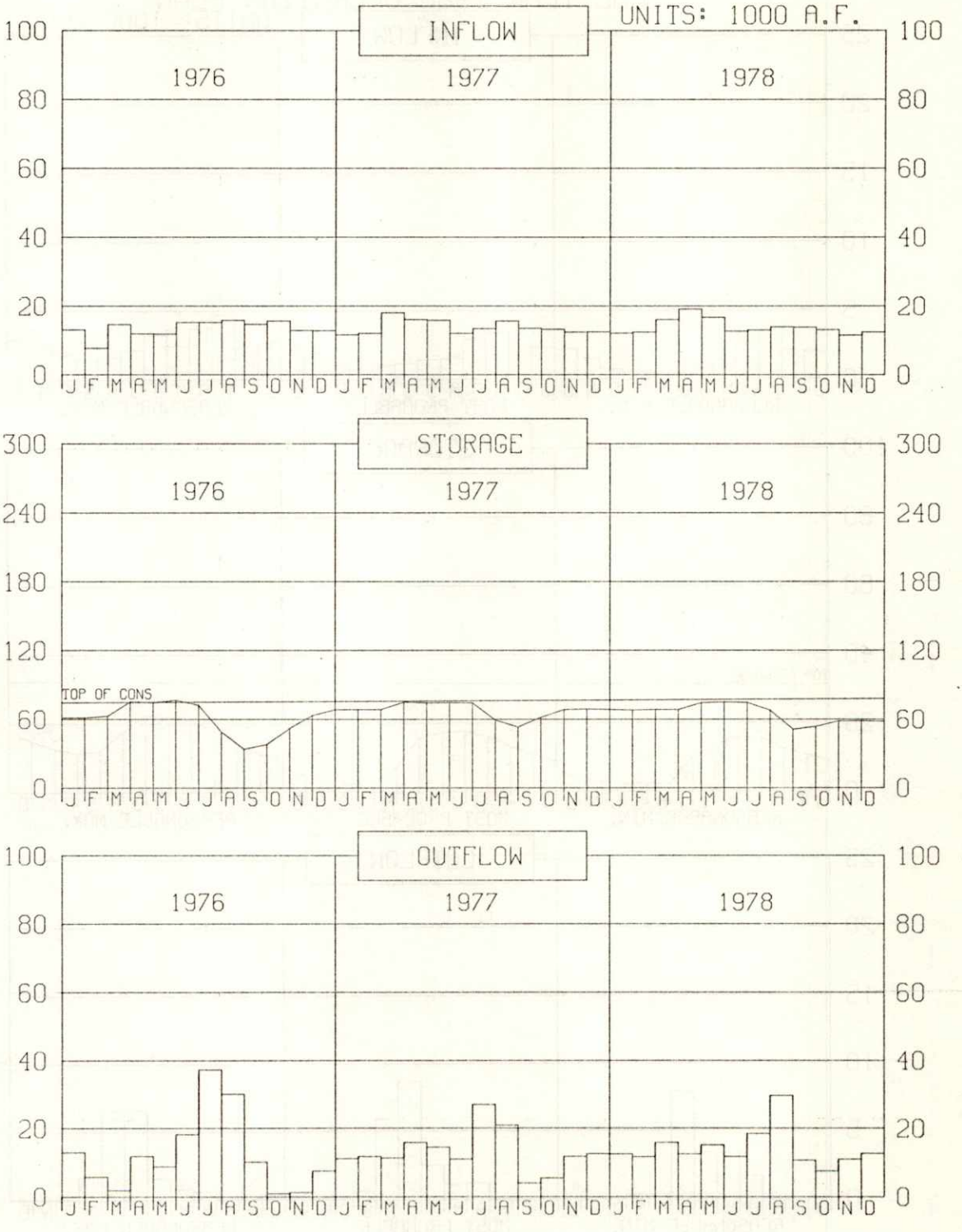


EXHIBIT 2B

MERRITT RESERVOIR 1979 OPERATION

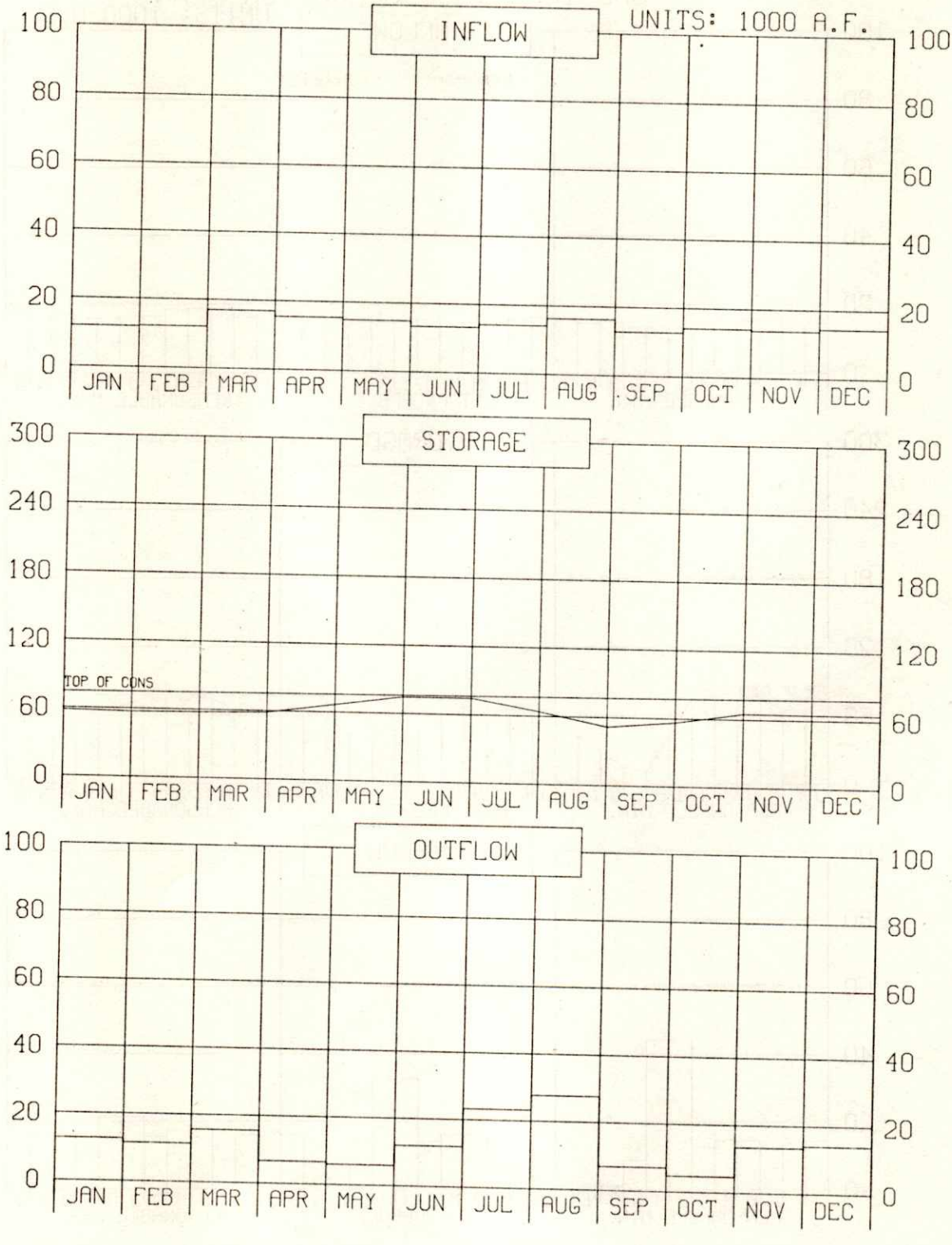


EXHIBIT 2C

MERRITT RESERVOIR

CAL YEAR 1980 OPERATION PLAN

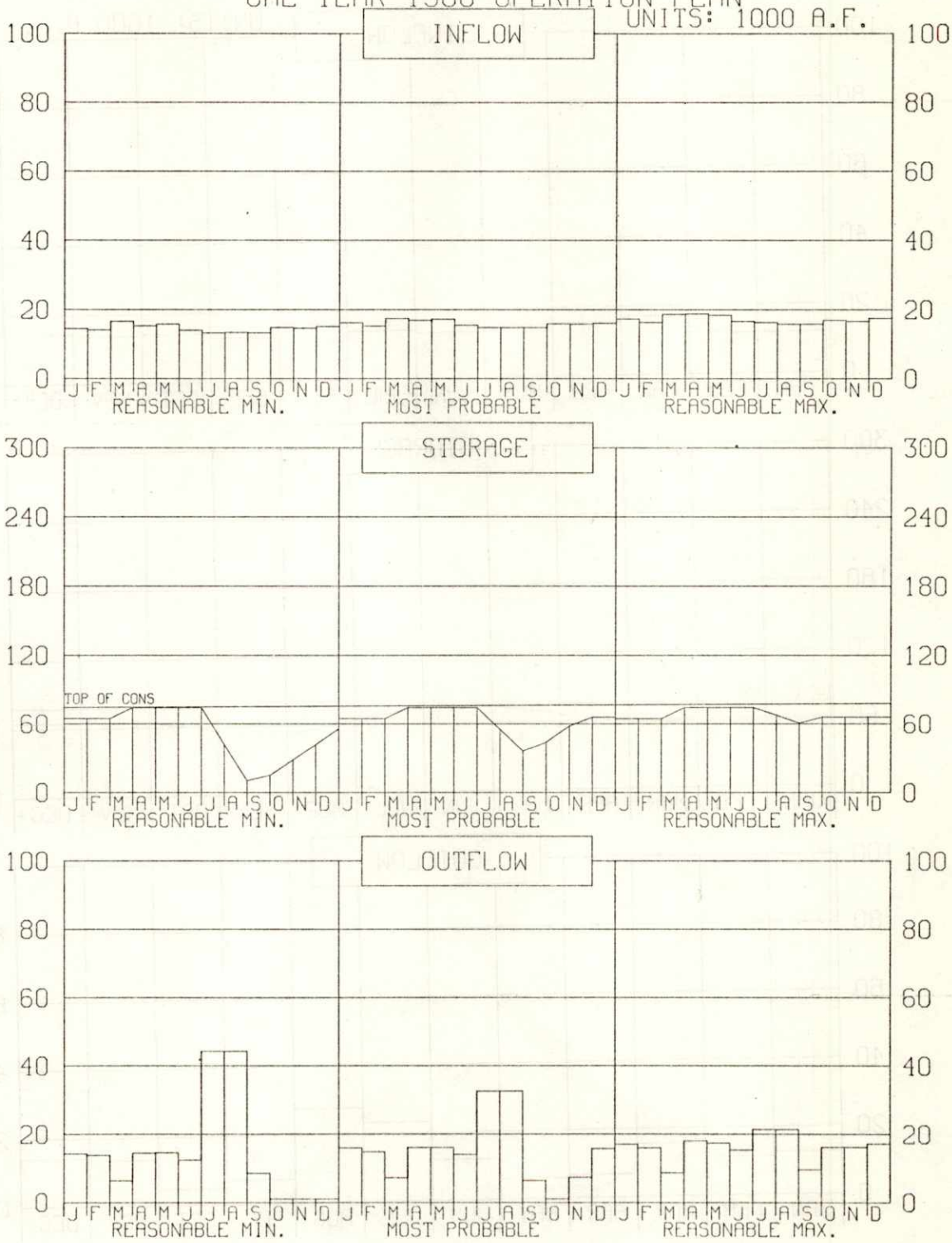


EXHIBIT 3A

SHERMAN RESERVOIR OPERATION

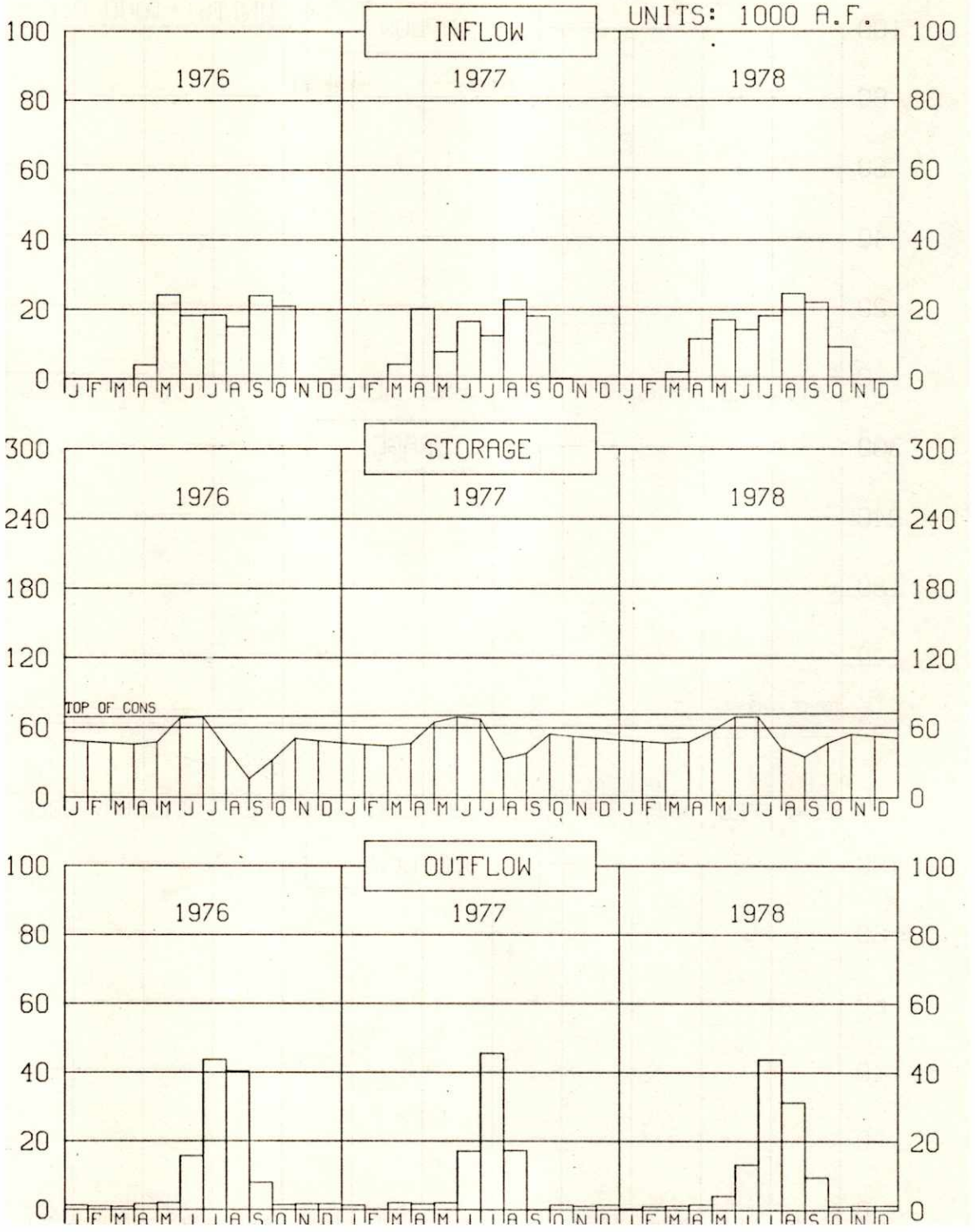


EXHIBIT 3B

SHERMAN RESERVOIR 1979 OPERATION

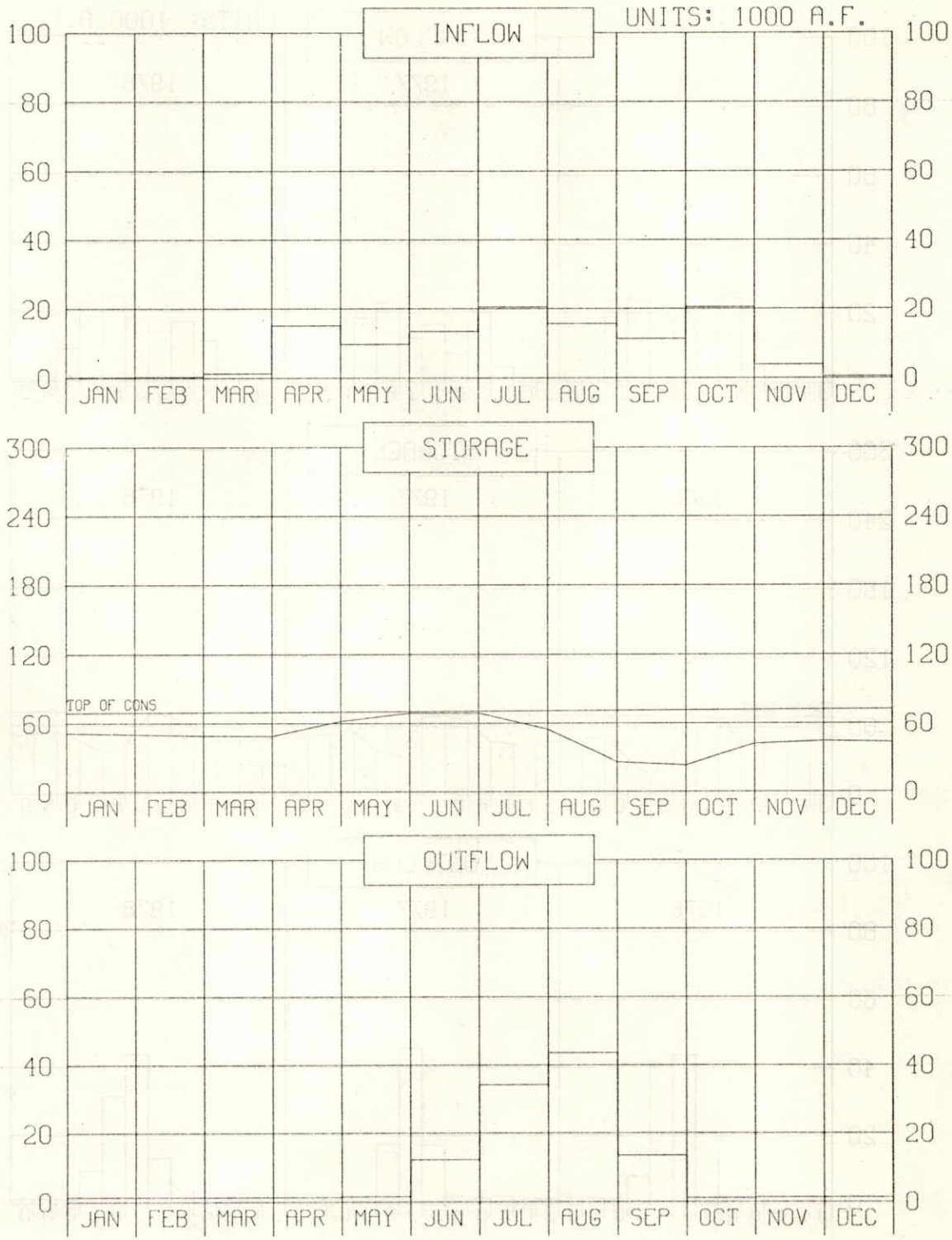


EXHIBIT 3C

SHERMAN RESERVOIR

CAL YEAR 1980 OPERATION PLAN

UNITS: 1000 A.F.

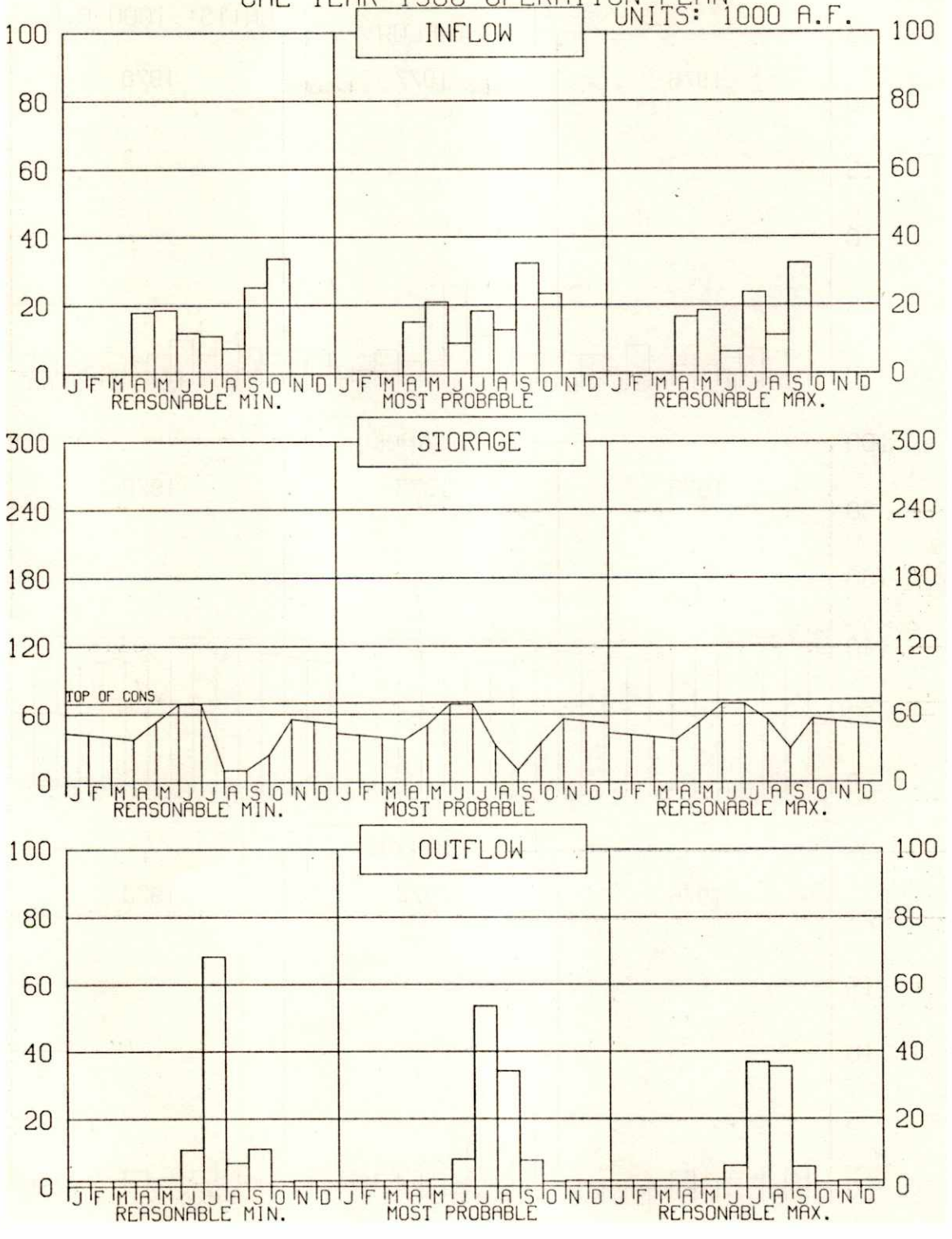
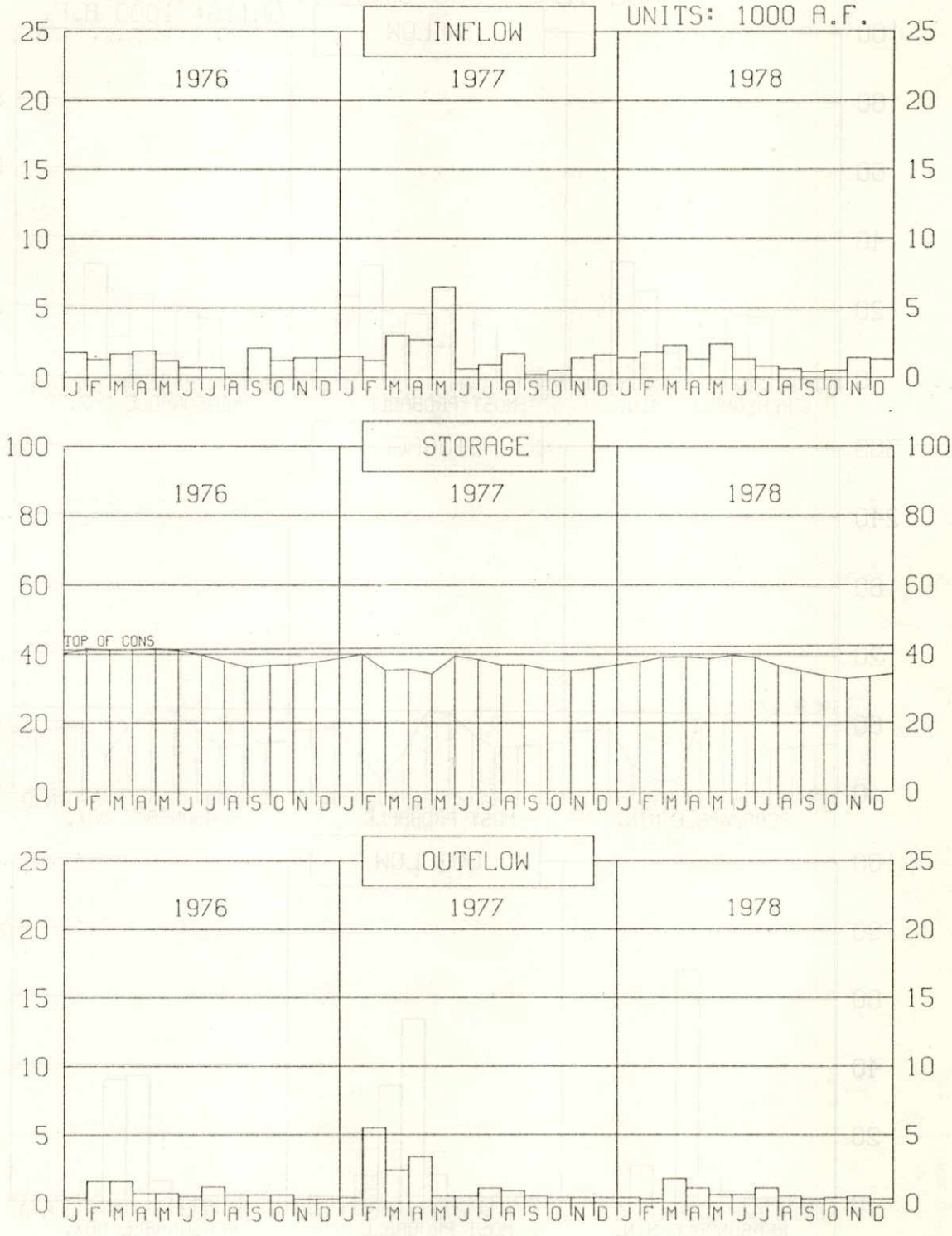


EXHIBIT 4A

BONNY RESERVOIR OPERATION



BONNY RESERVOIR 1979 OPERATION

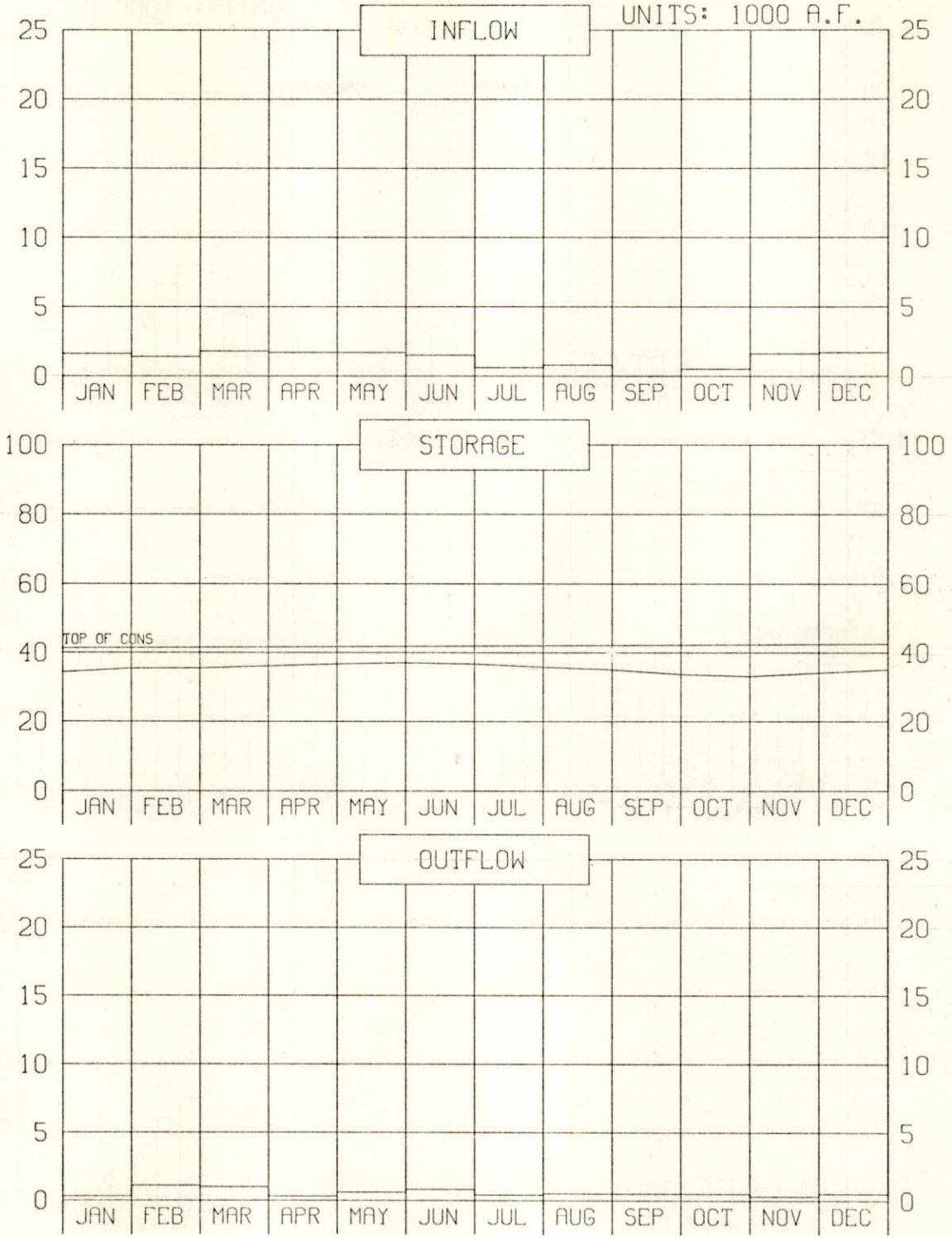


EXHIBIT 4C

BONNY RESERVOIR

CAL YEAR 1980 OPERATION PLAN

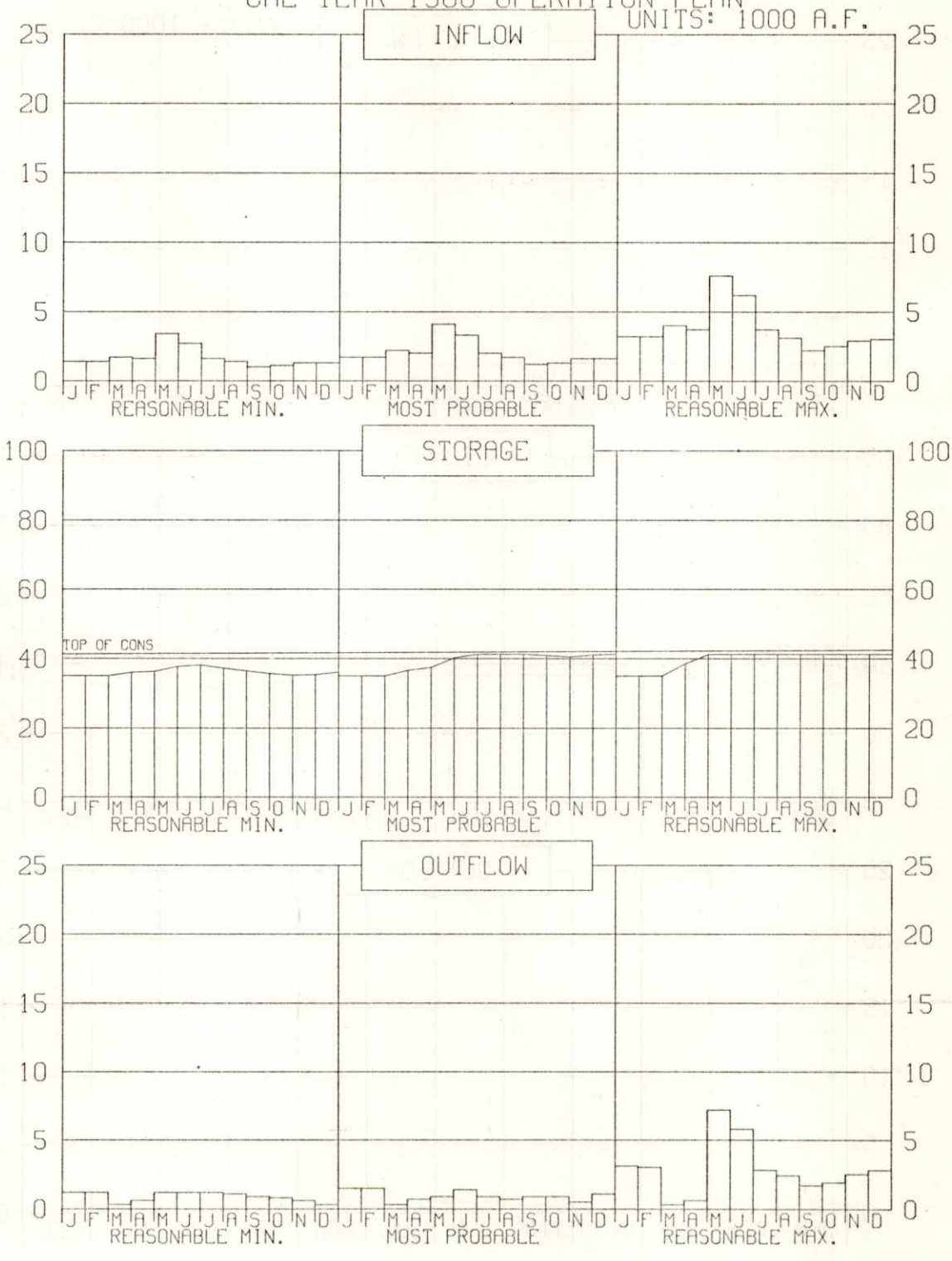


EXHIBIT 5A

SWANSON LAKE OPERATION

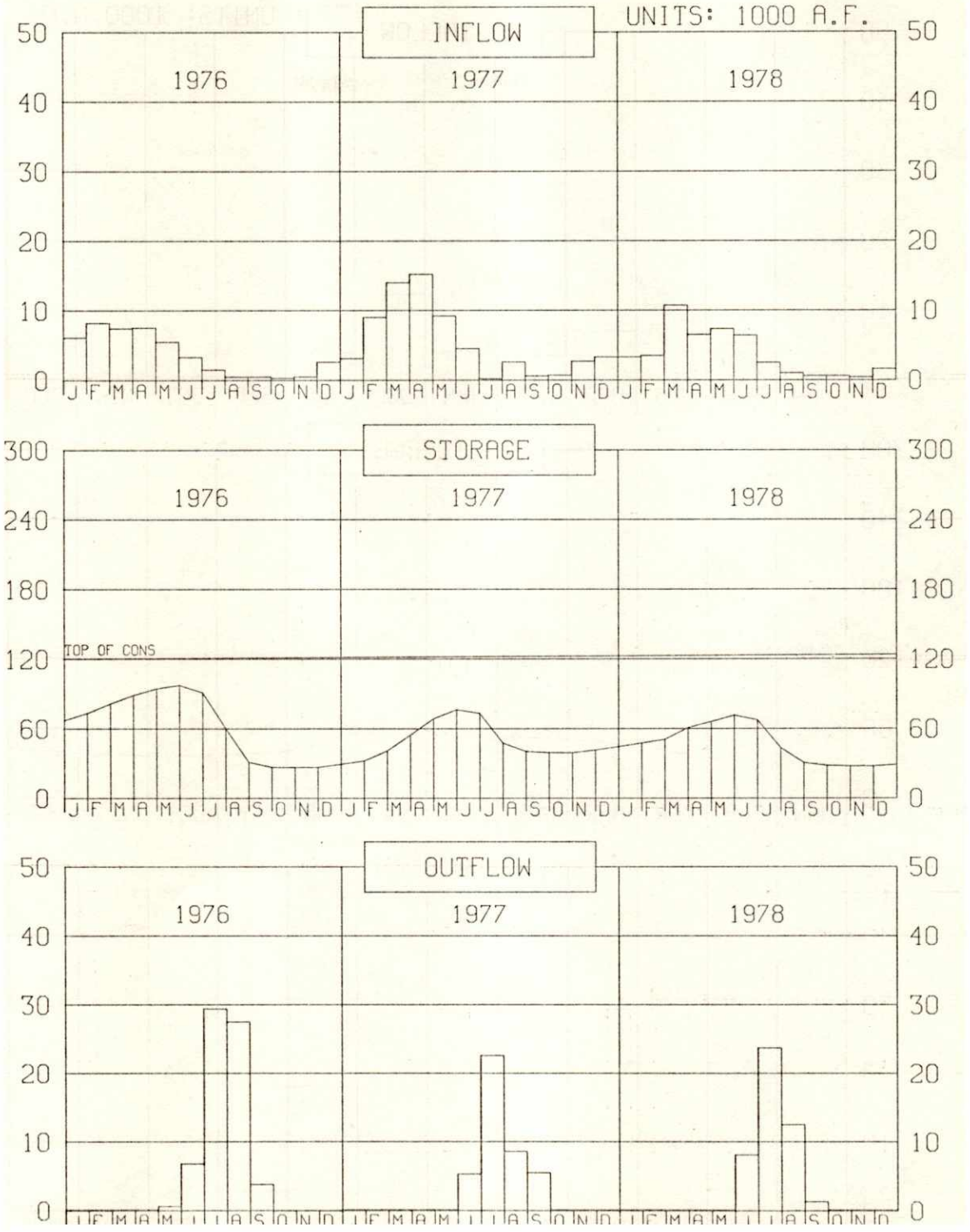


EXHIBIT 5B

SWANSON LAKE 1979 OPERATION

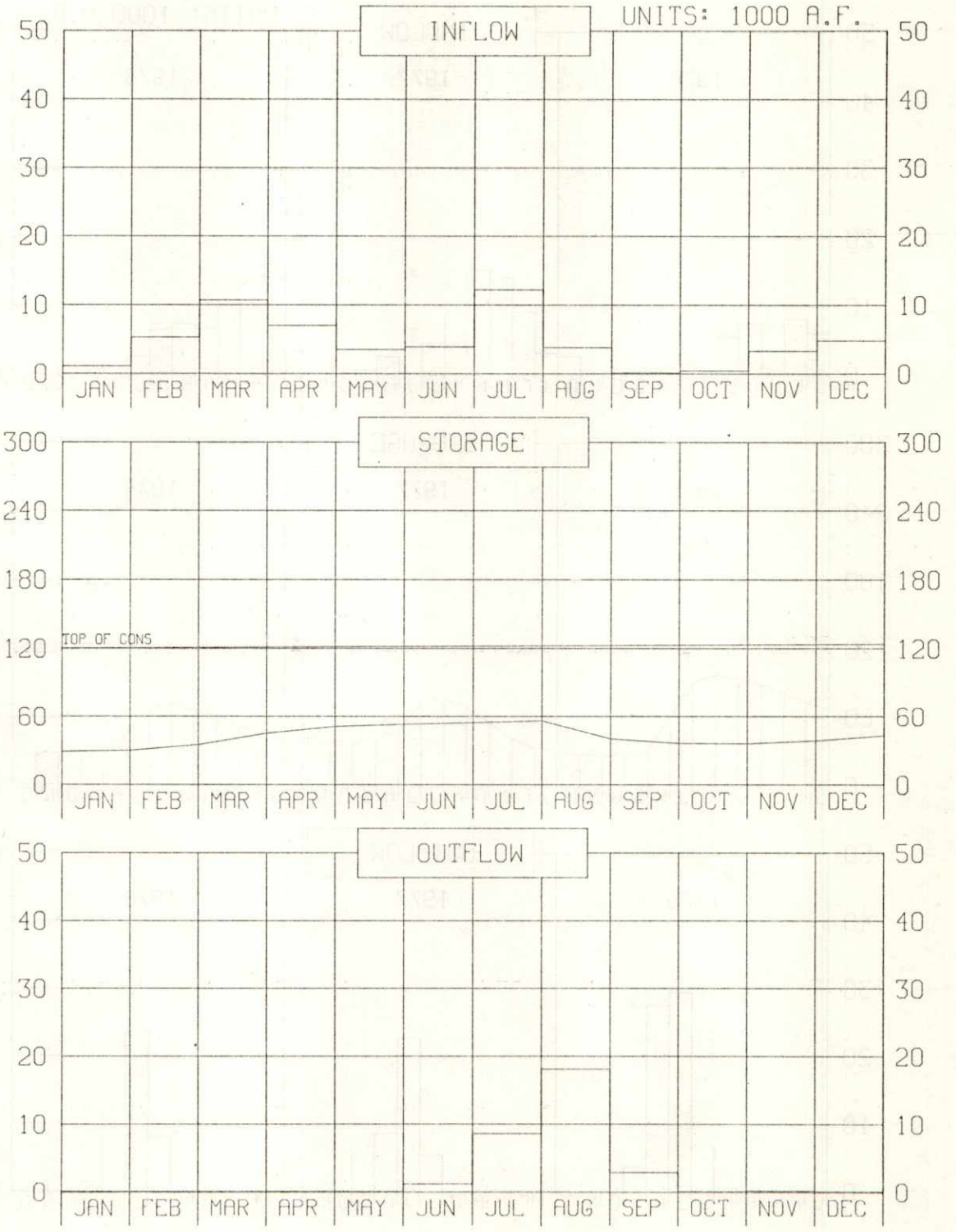


EXHIBIT 5C

SWANSON LAKE

CAL YEAR 1980 OPERATION PLAN

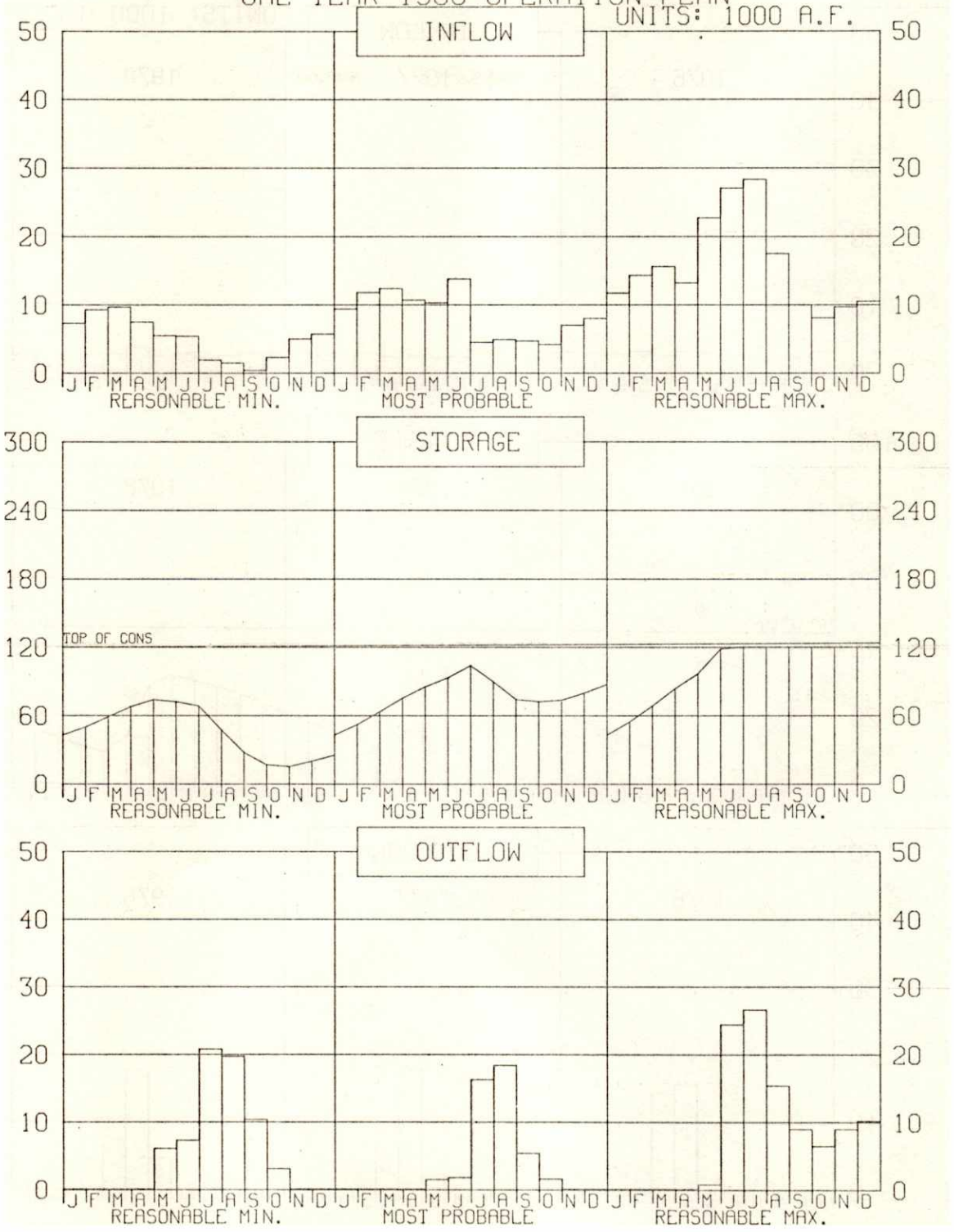


EXHIBIT 6A

ENDERS RESERVOIR OPERATION

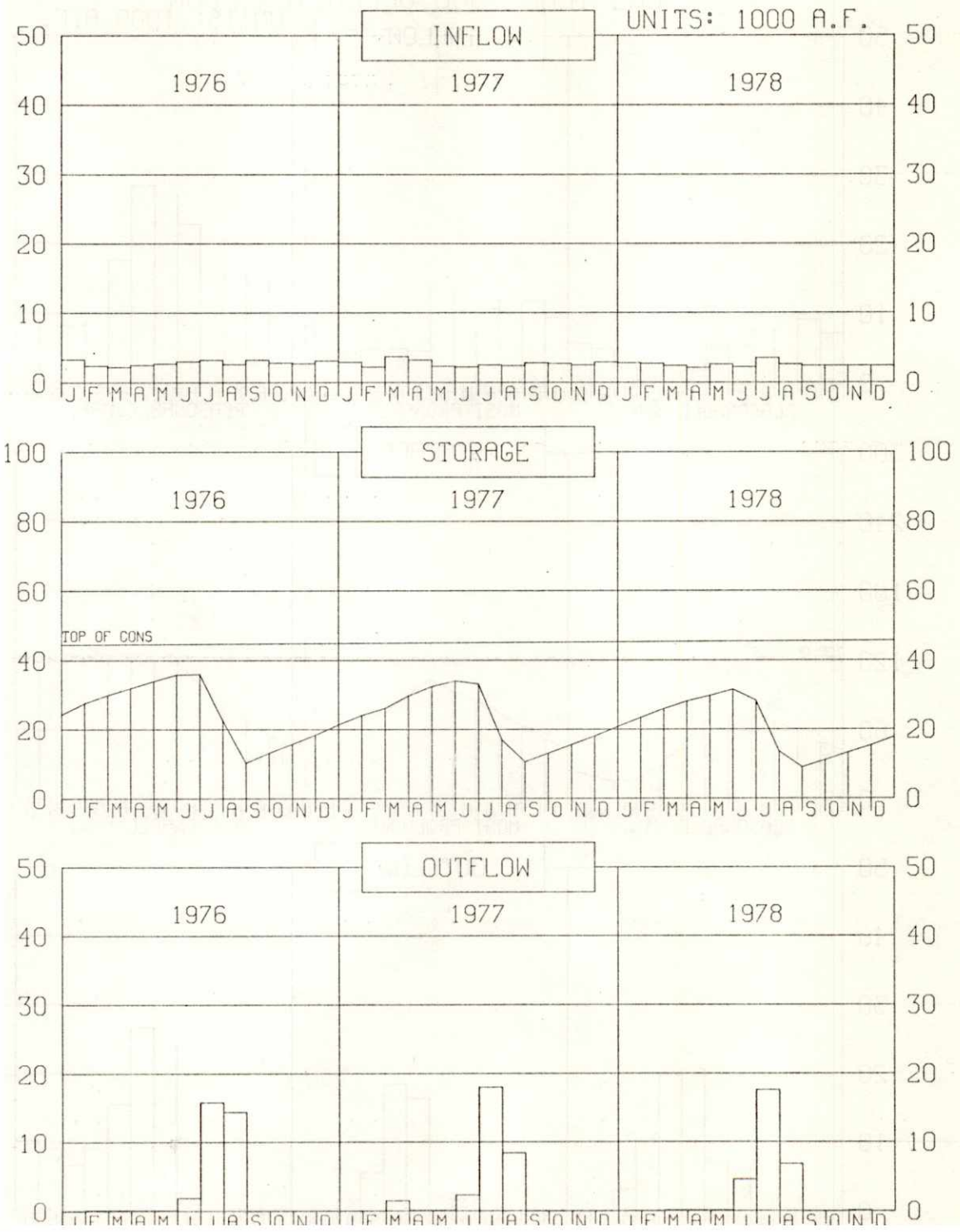


EXHIBIT 6B

ENDERS RESERVOIR 1979 OPERATION

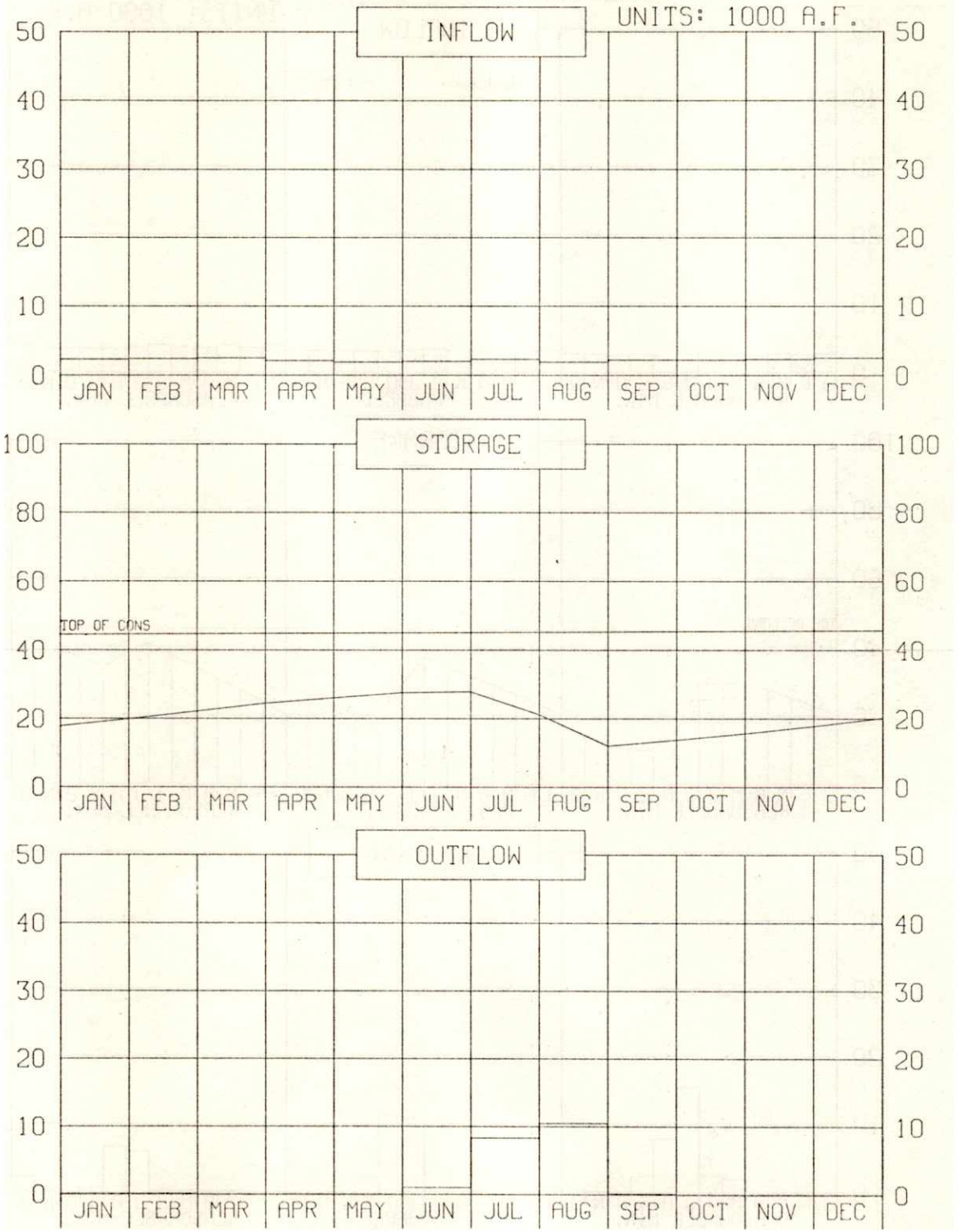


EXHIBIT 6C

ENDERS RESERVOIR

CAL YEAR 1980 OPERATION PLAN

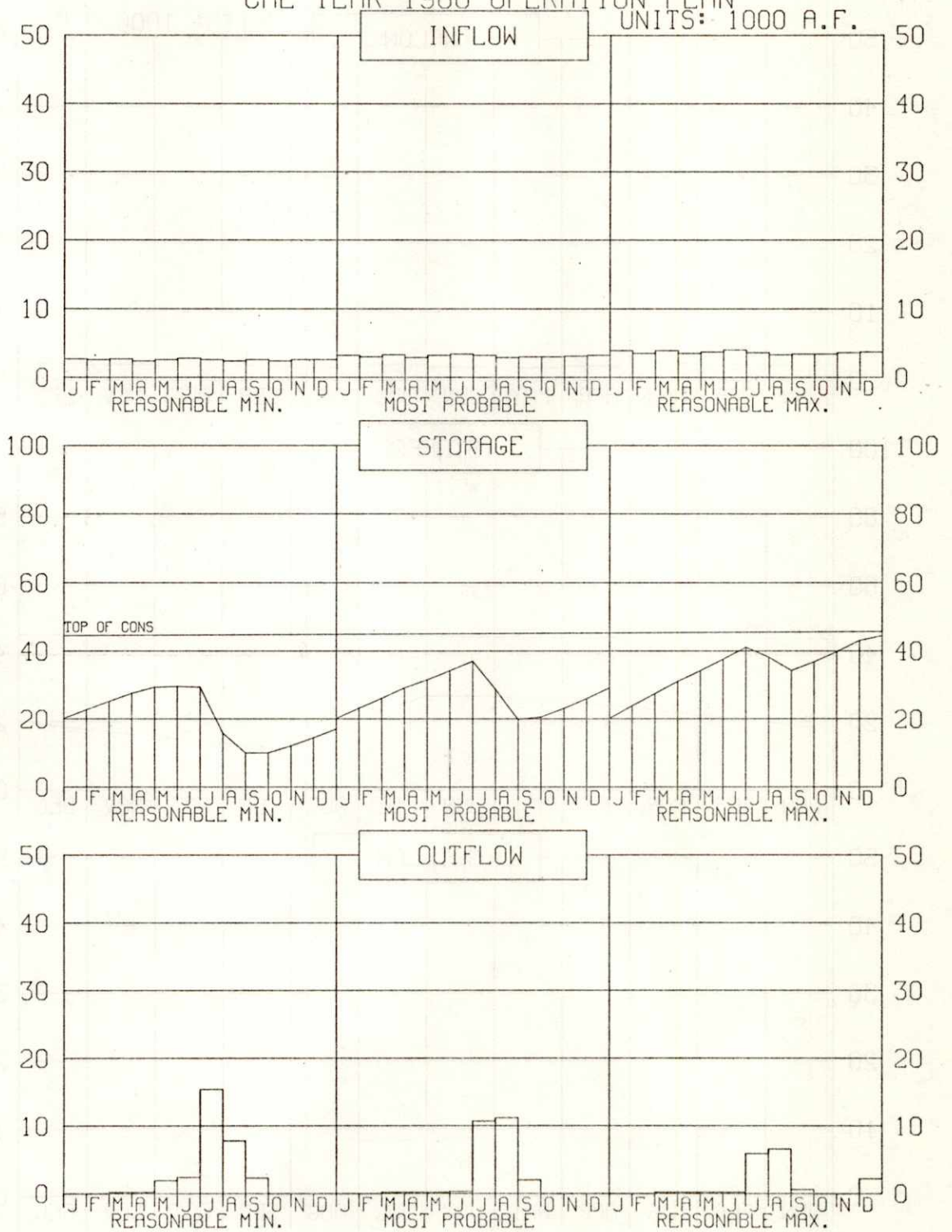
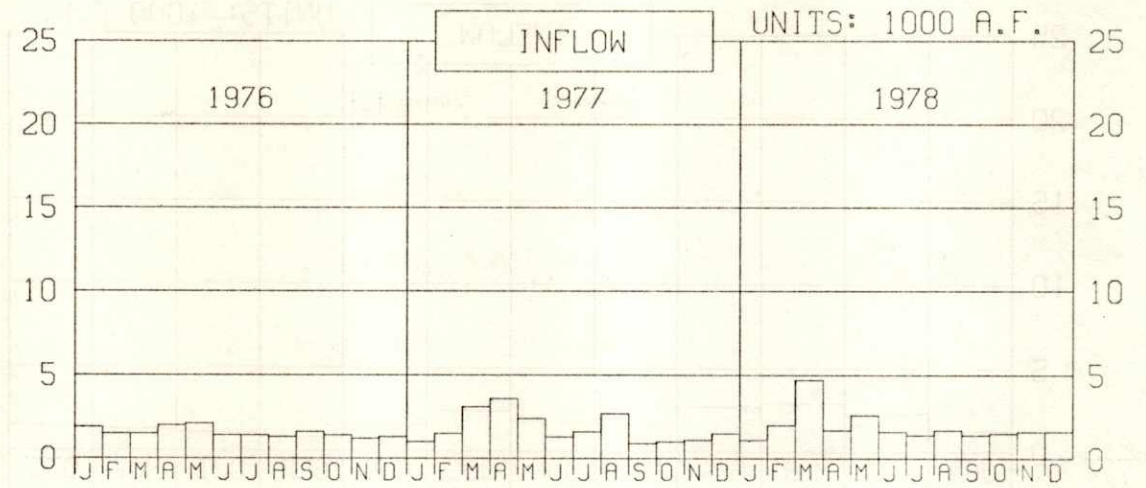
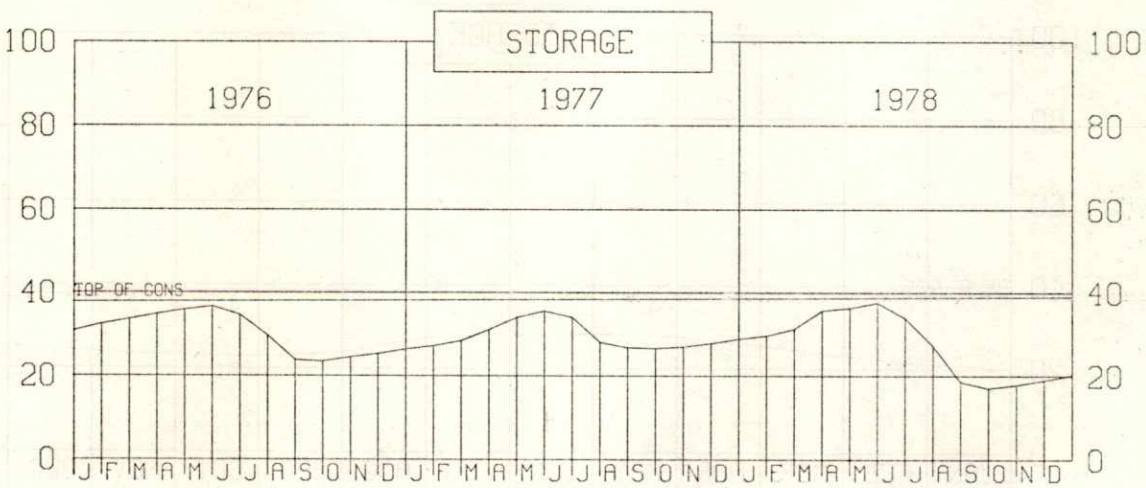


EXHIBIT 7A

HUGH BUTLER LAKE OPERATION





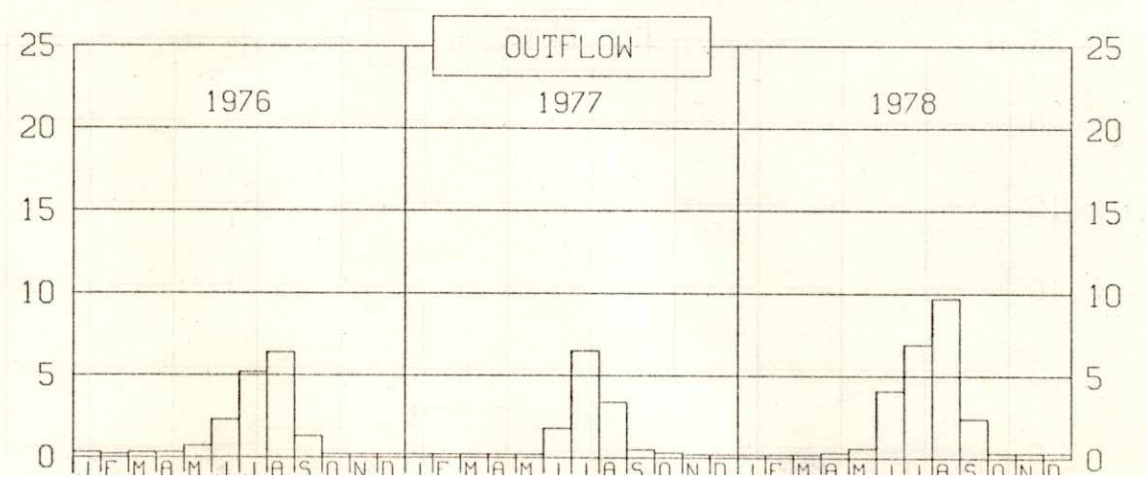


EXHIBIT 7B

HUGH BUTLER LAKE 1979 OPERATION

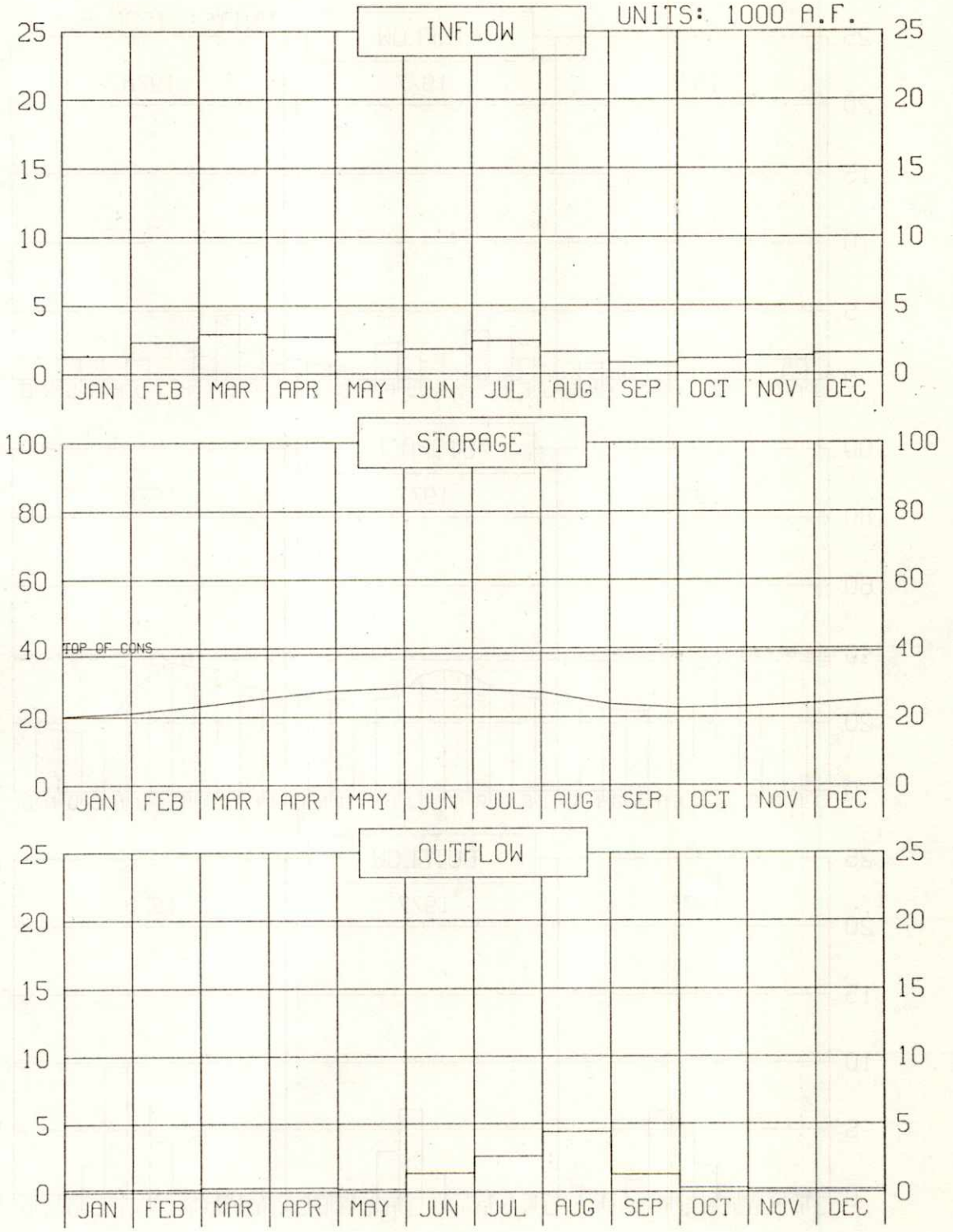


EXHIBIT 7C

HUGH BUTLER LAKE

CAL YEAR 1980 OPERATION PLAN

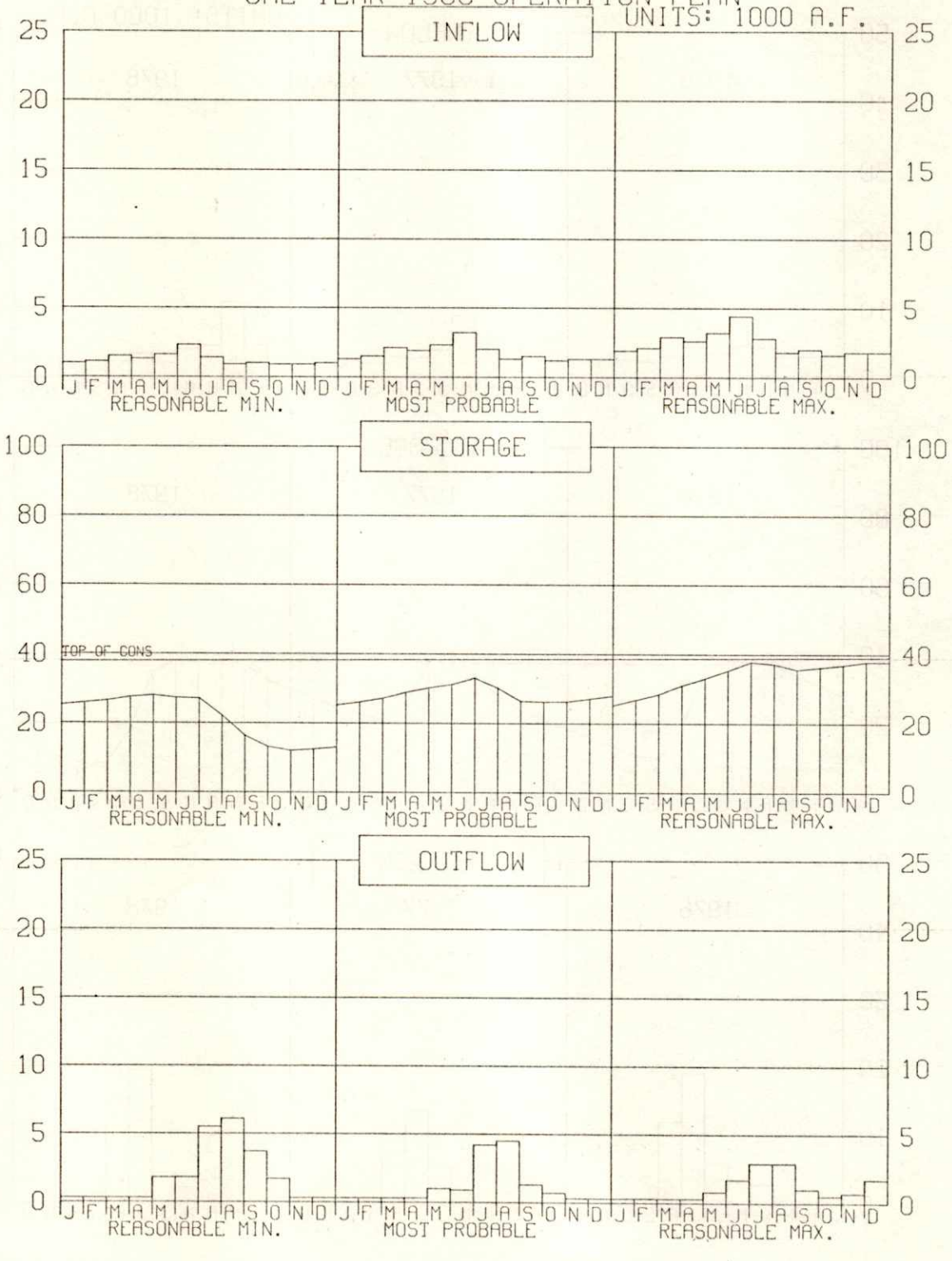


EXHIBIT 8A

HARRY STRUNK LAKE OPERATION

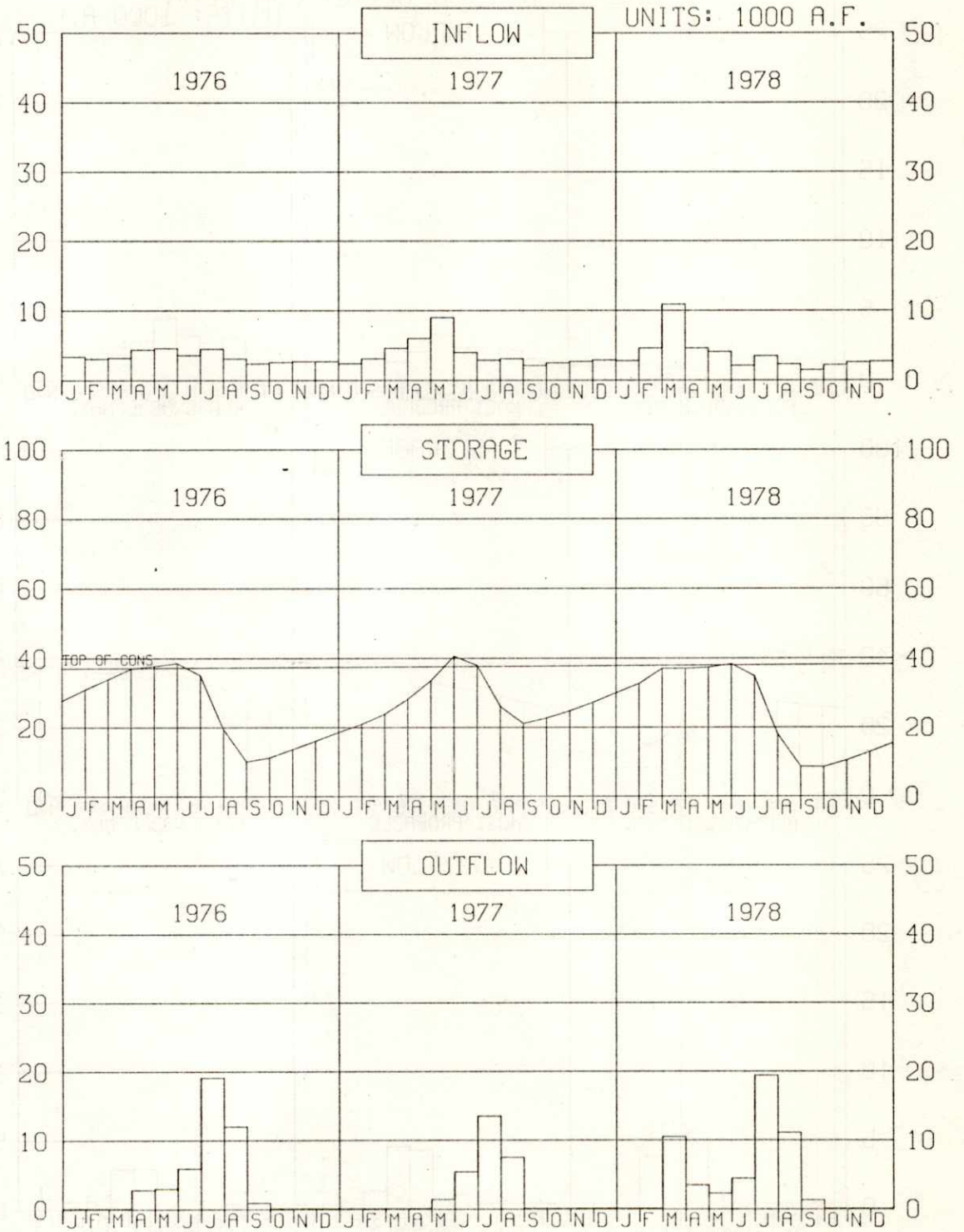


EXHIBIT 8B

HARRY STRUNK LAKE 1979 OPERATION

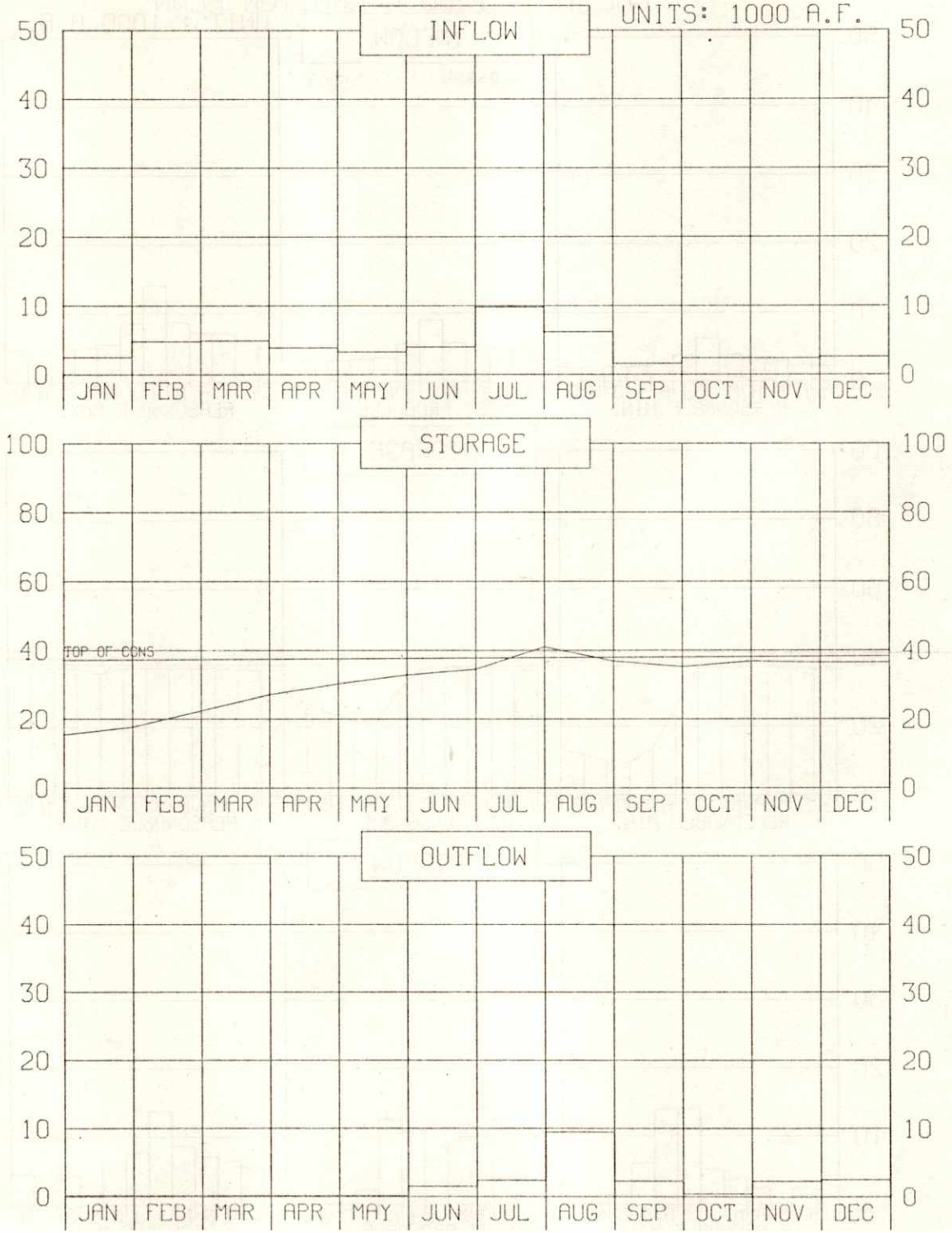


EXHIBIT 8C

HARRY STRUNK LAKE

CAL YEAR 1980 OPERATION PLAN

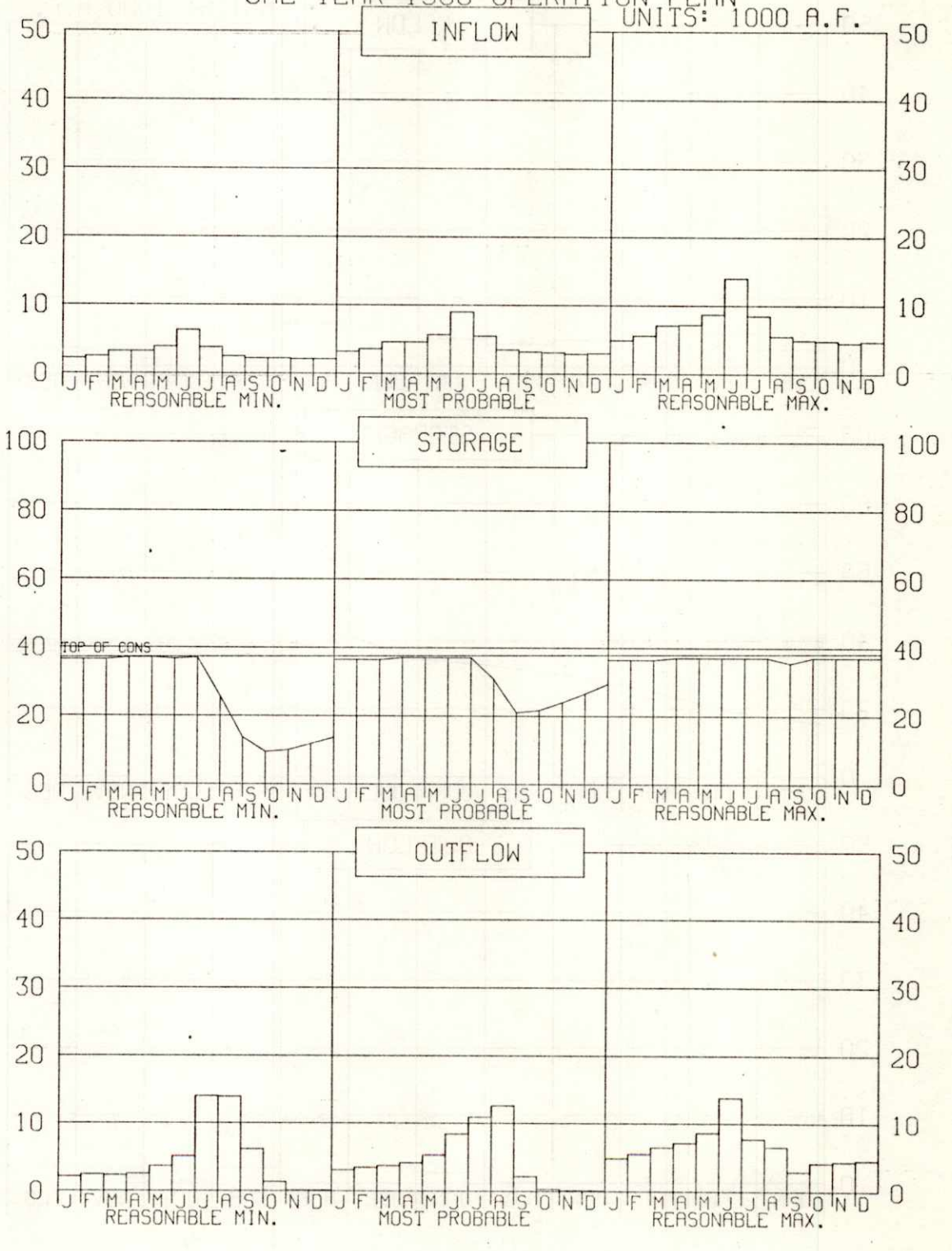


EXHIBIT 9A

NORTON RESERVOIR OPERATION

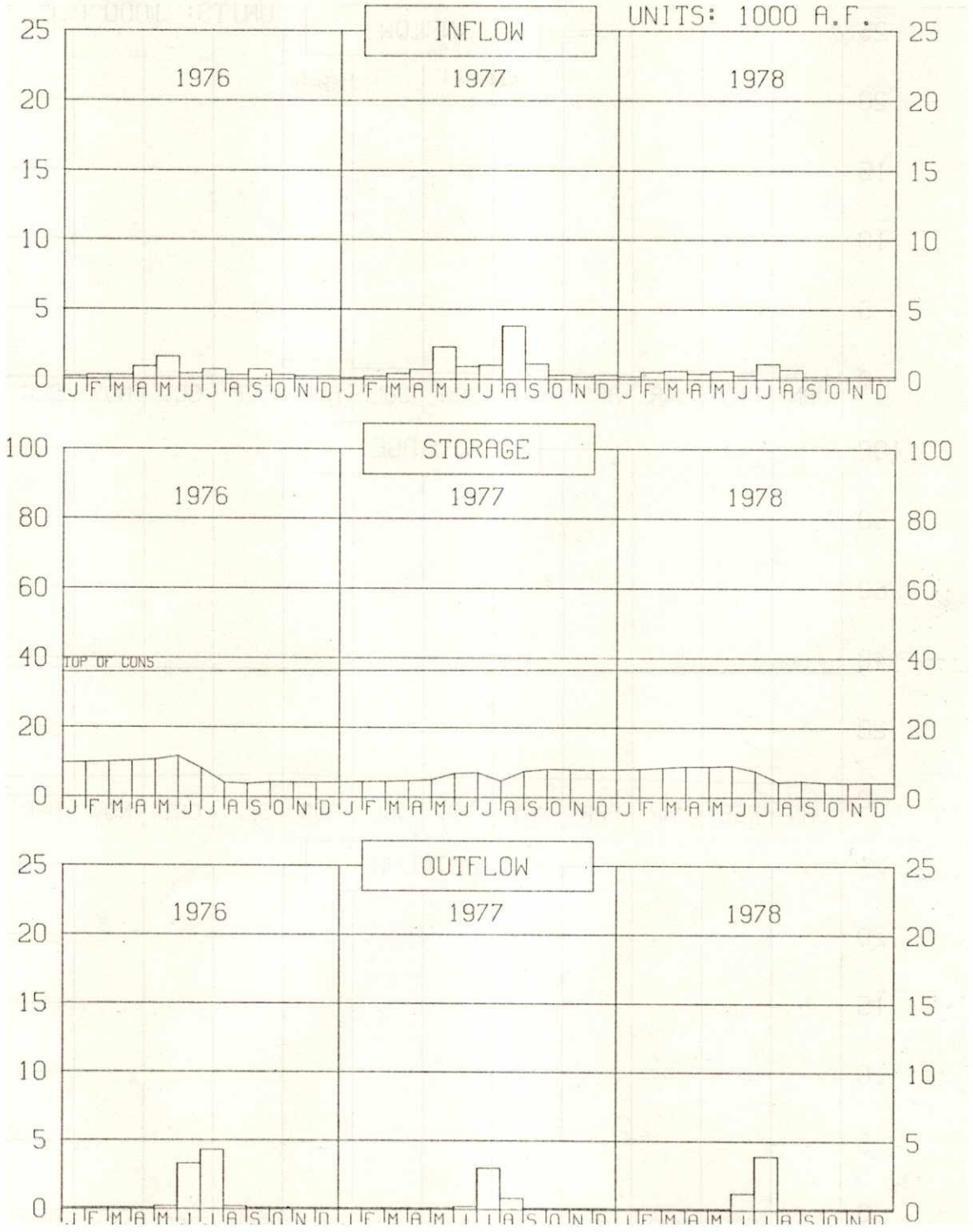


EXHIBIT 9B

NORTON RESERVOIR 1979 OPERATION

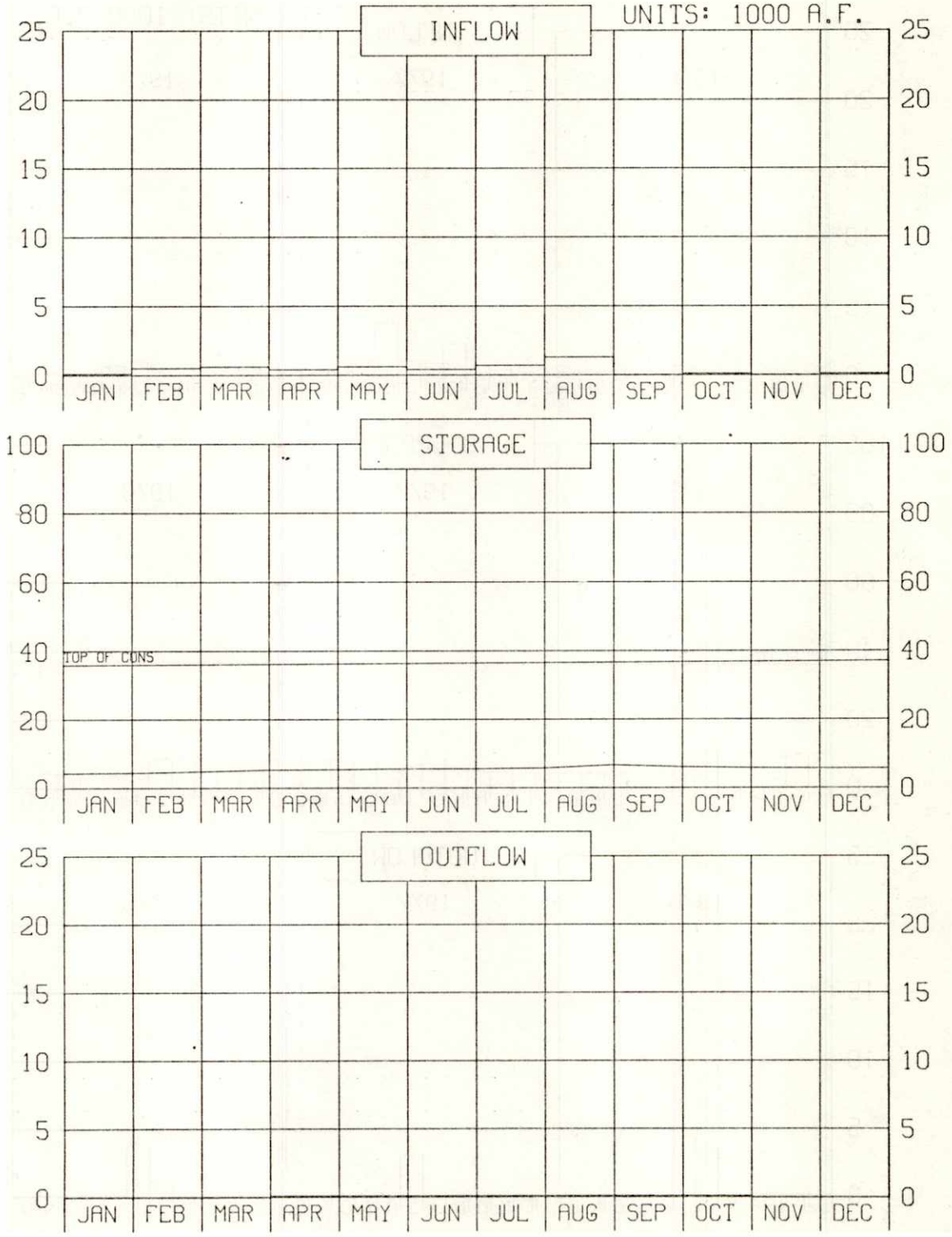


EXHIBIT 9C

NORTON RESERVOIR

CAL. YEAR 1980 OPERATION PLAN

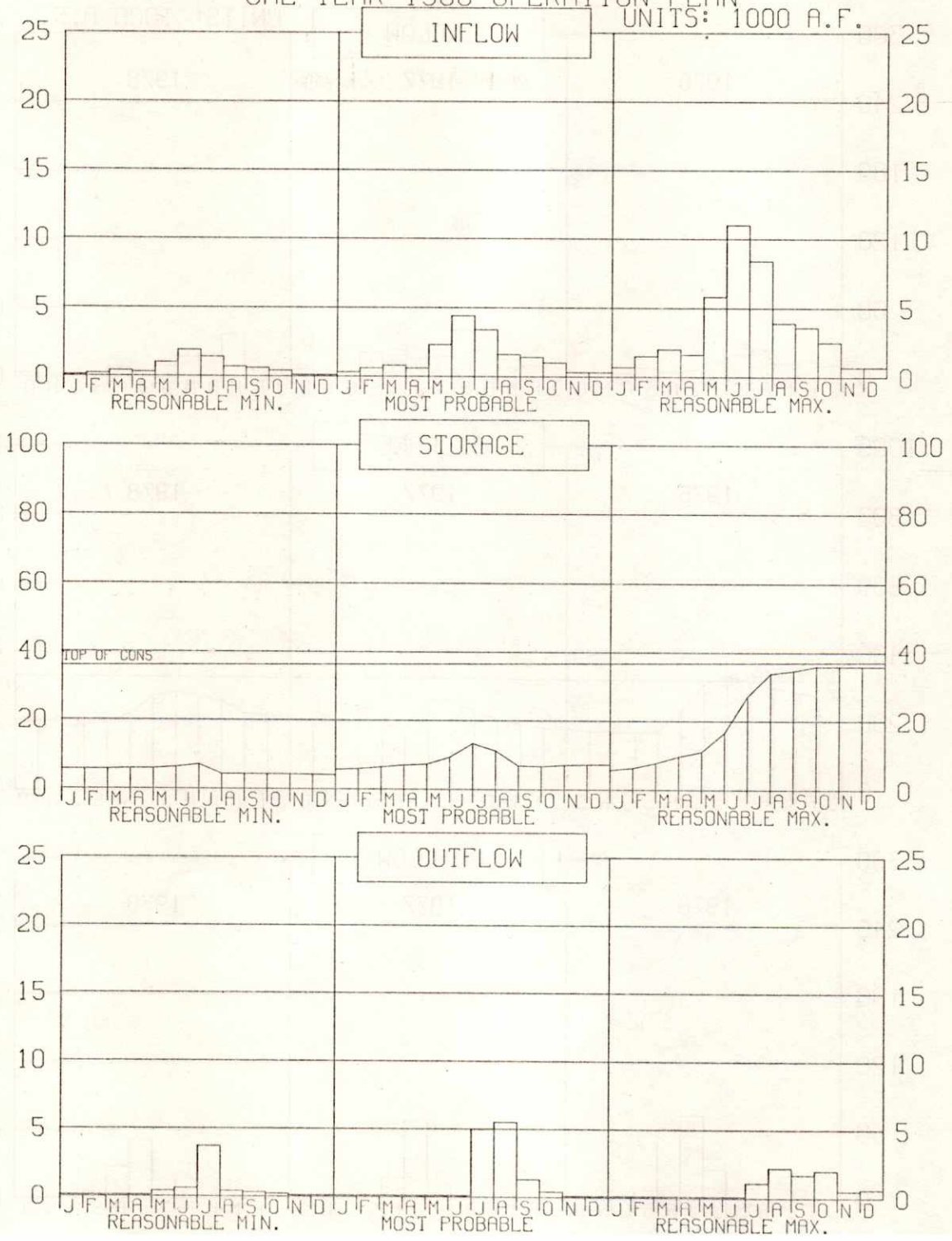


EXHIBIT 10A

HARLAN COUNTY LAKE OPERATION

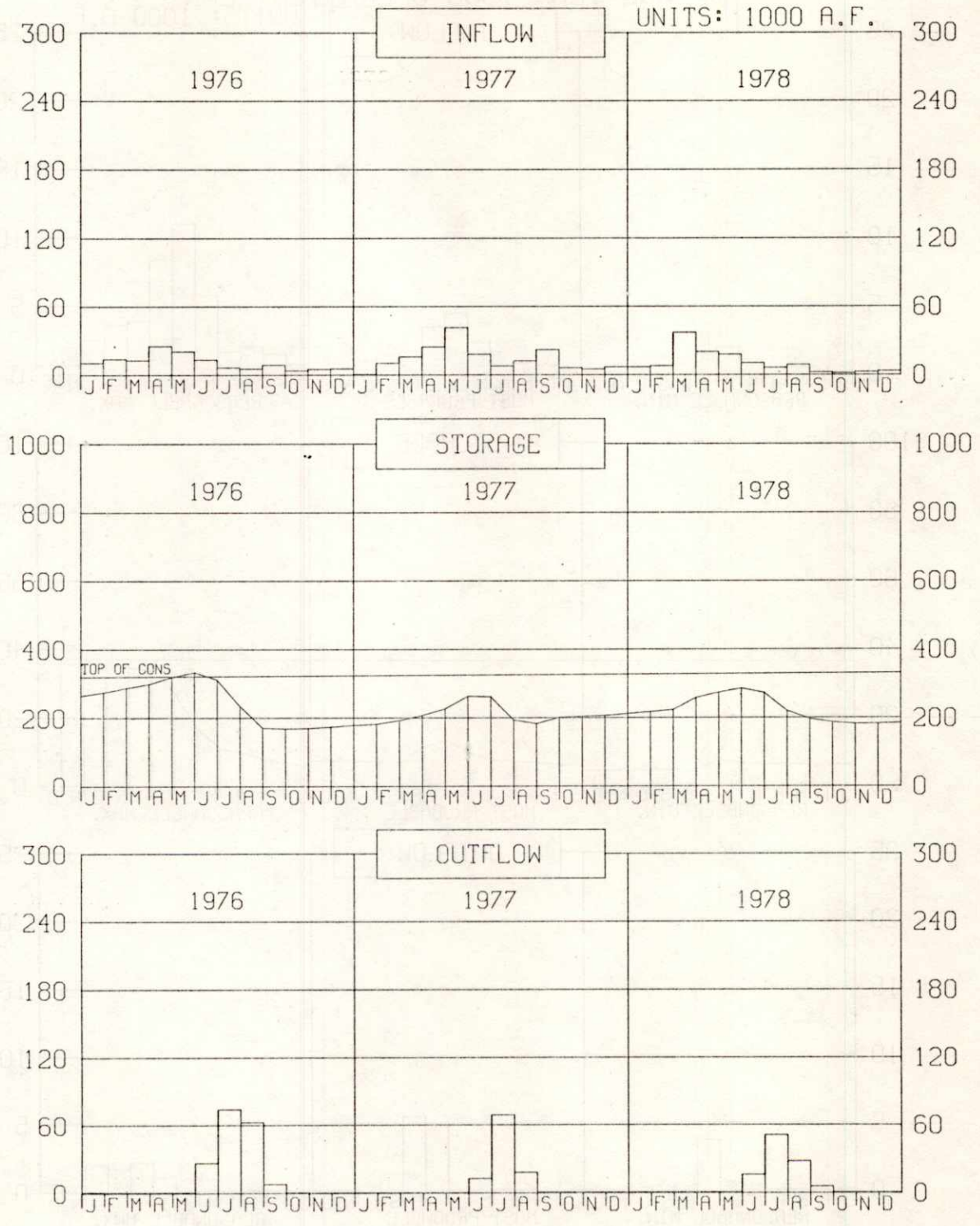


EXHIBIT 10B

HARLAN COUNTY LAKE 1979 OPERATION

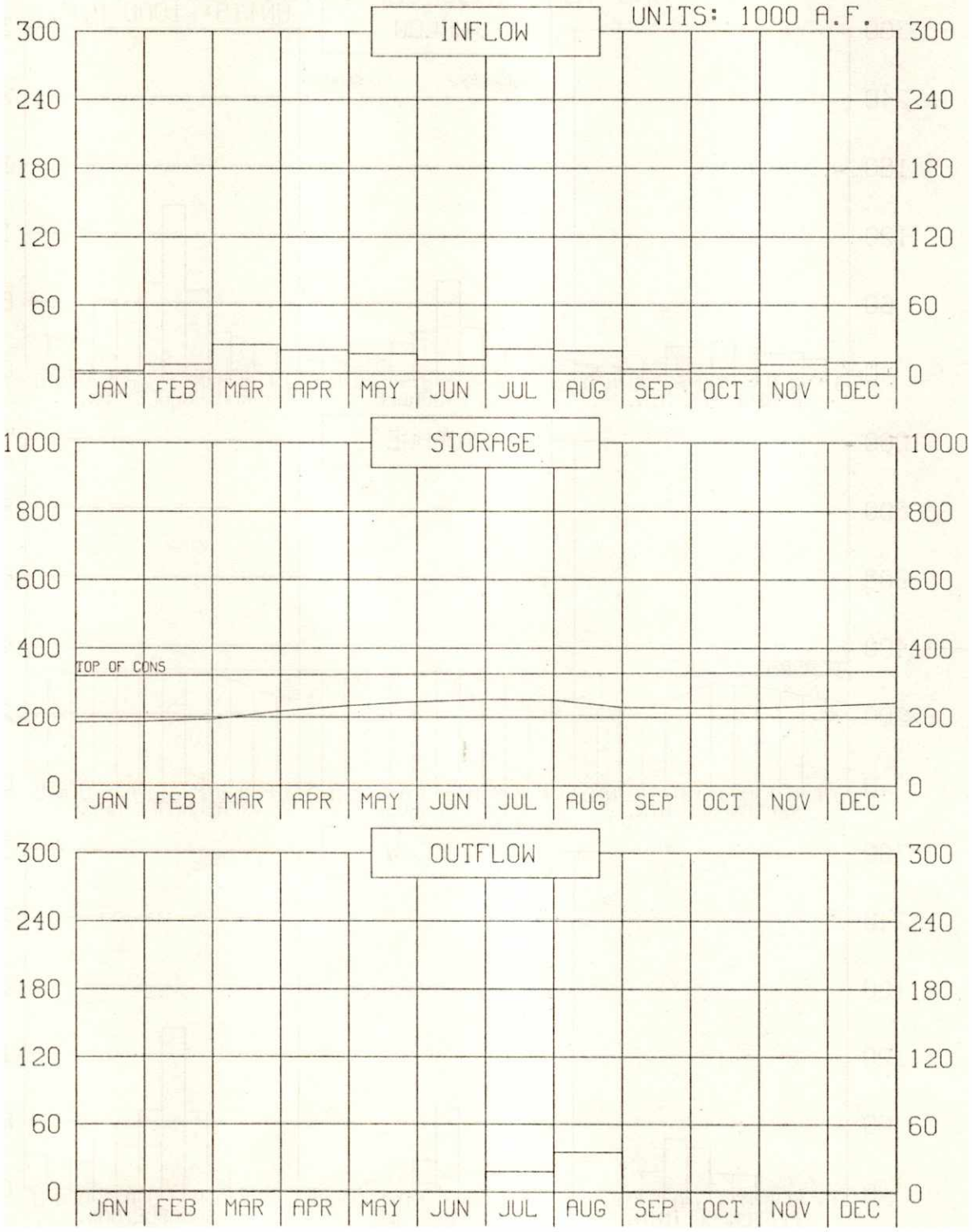


EXHIBIT 10C

HARLAN COUNTY LAKE

CAL YEAR 1980 OPERATION PLAN

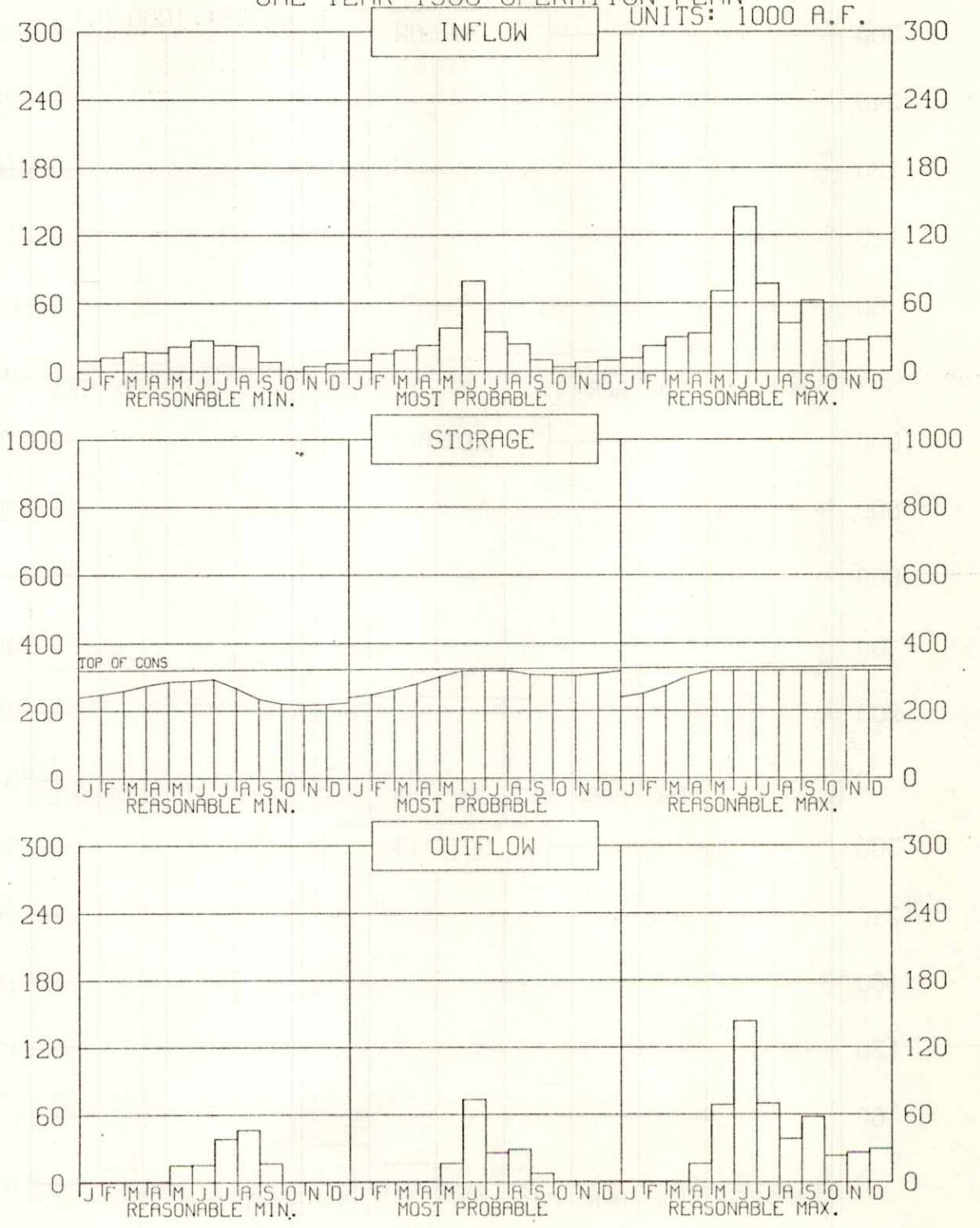


EXHIBIT 11A

LOVEWELL RESERVOIR OPERATION

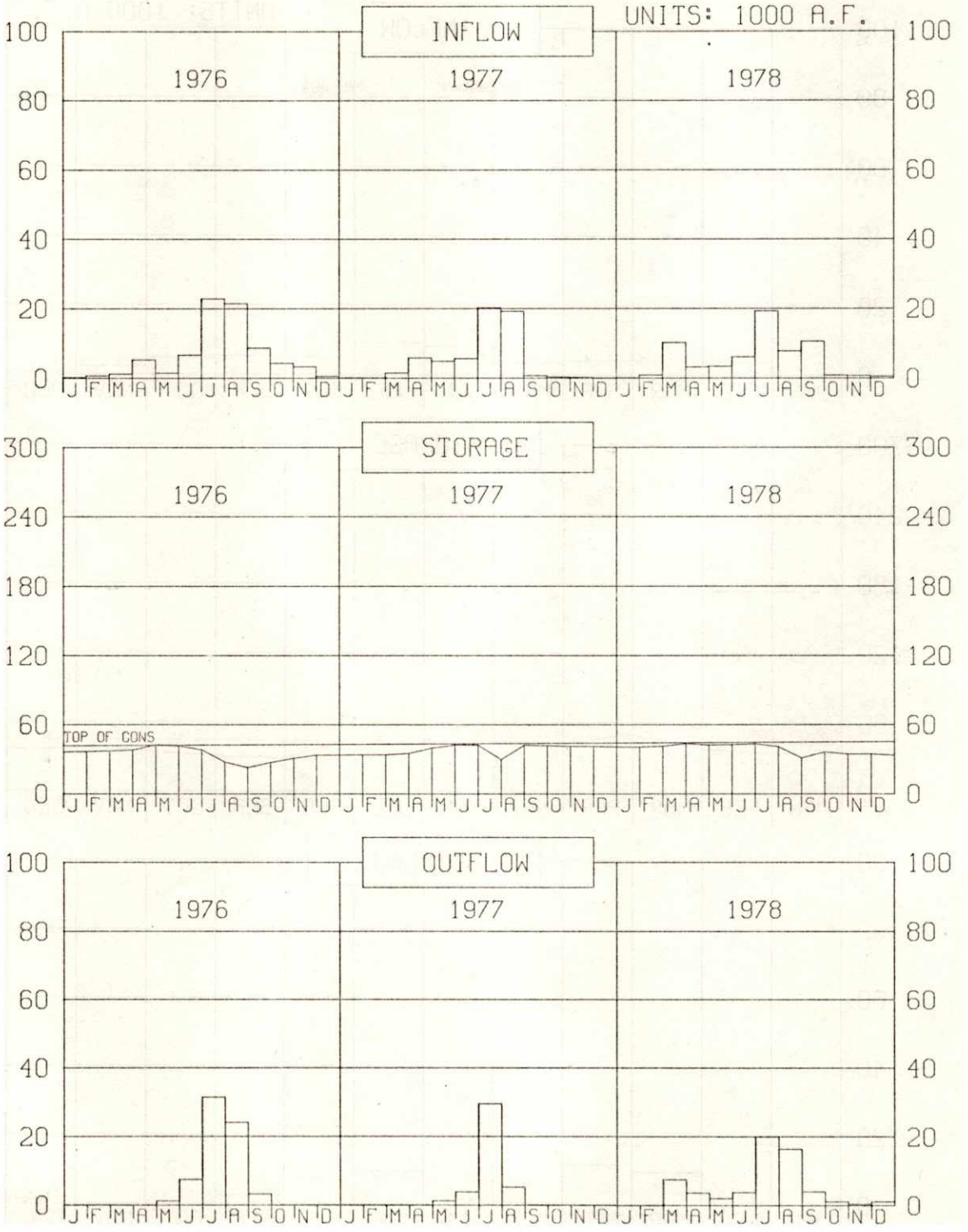


EXHIBIT 11B

LOVEWELL RESERVOIR 1979 OPERATION

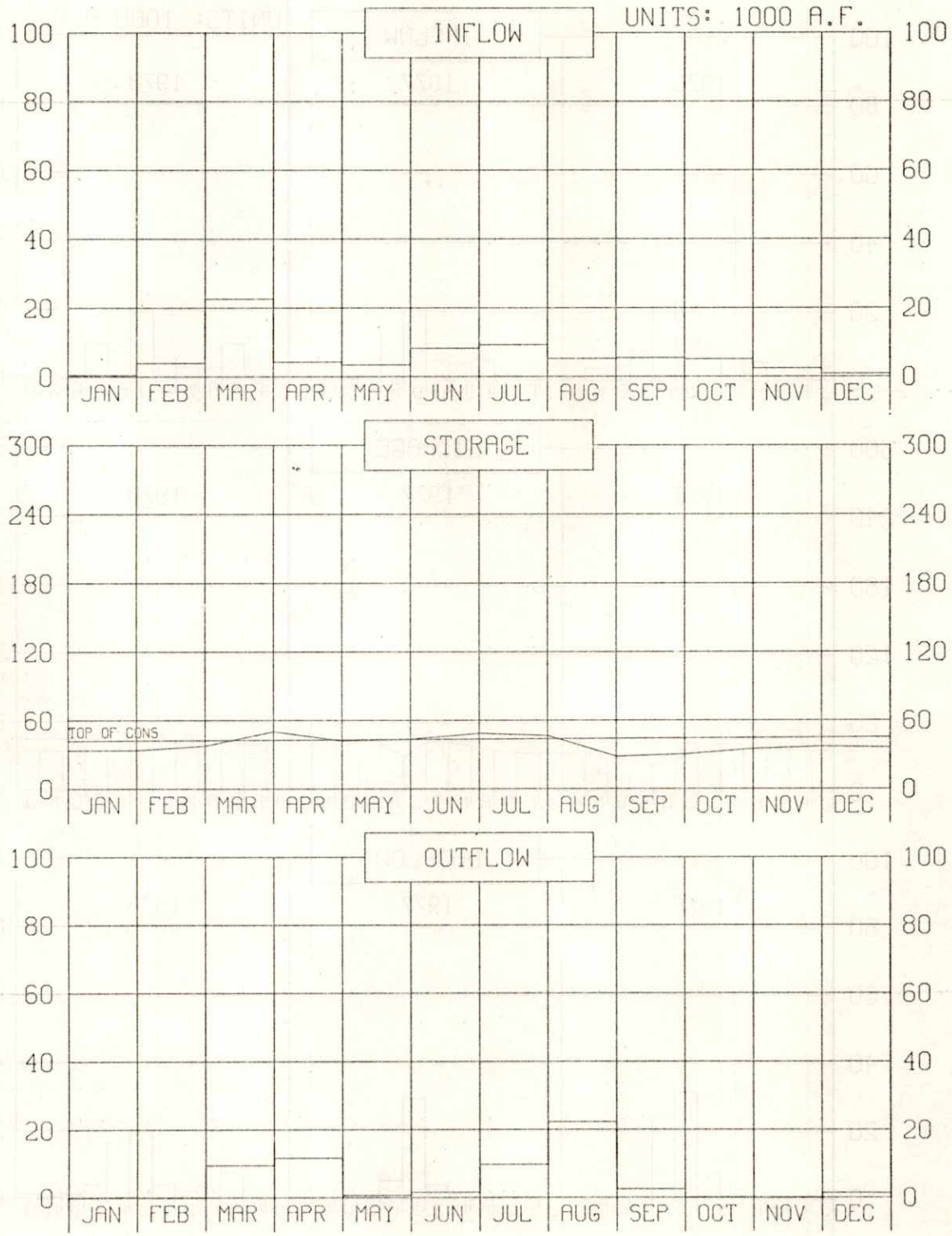


EXHIBIT 11C

LOVEWELL RESERVOIR

CAL YEAR 1980 OPERATION PLAN

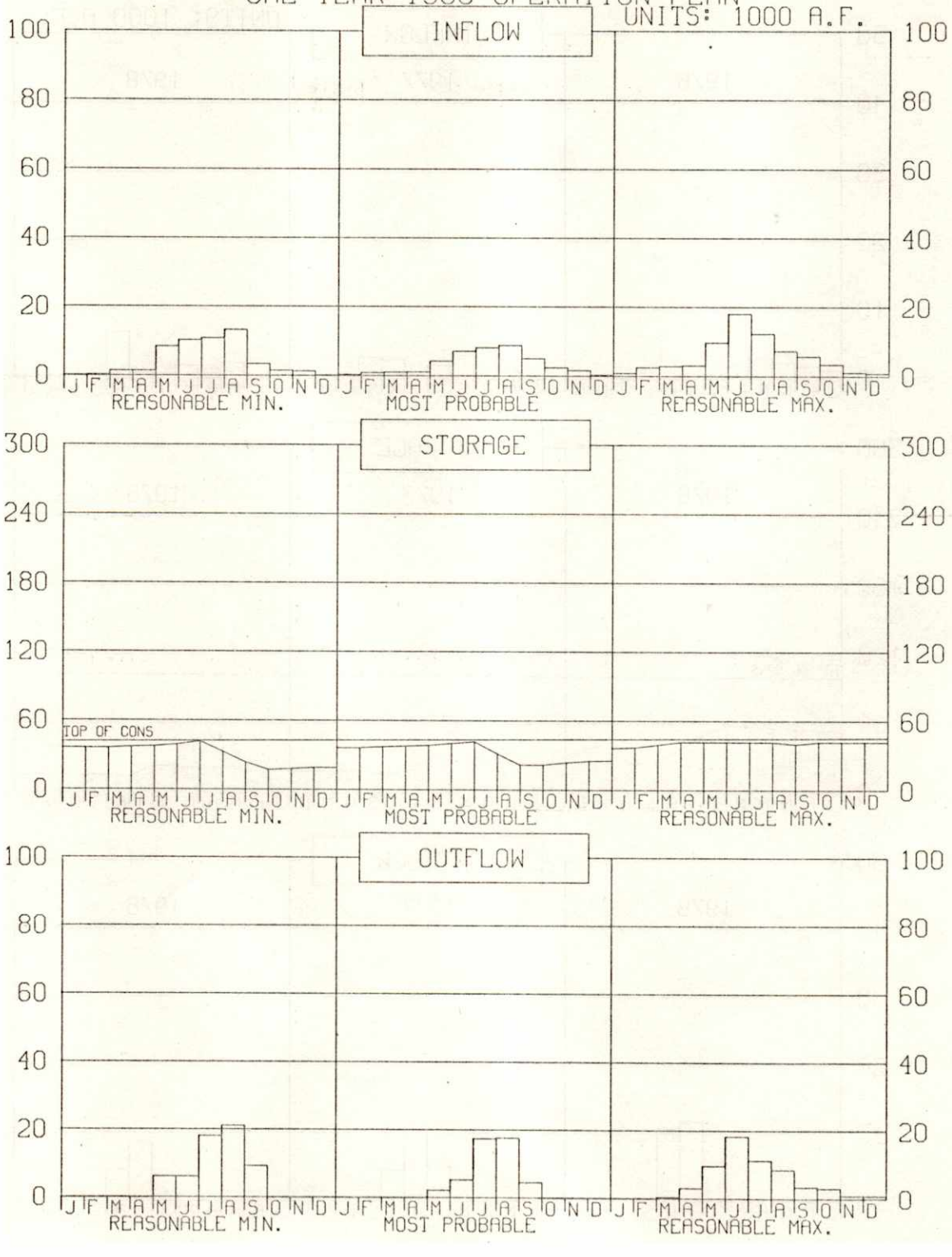


EXHIBIT 12A

KIRWIN RESERVOIR OPERATION

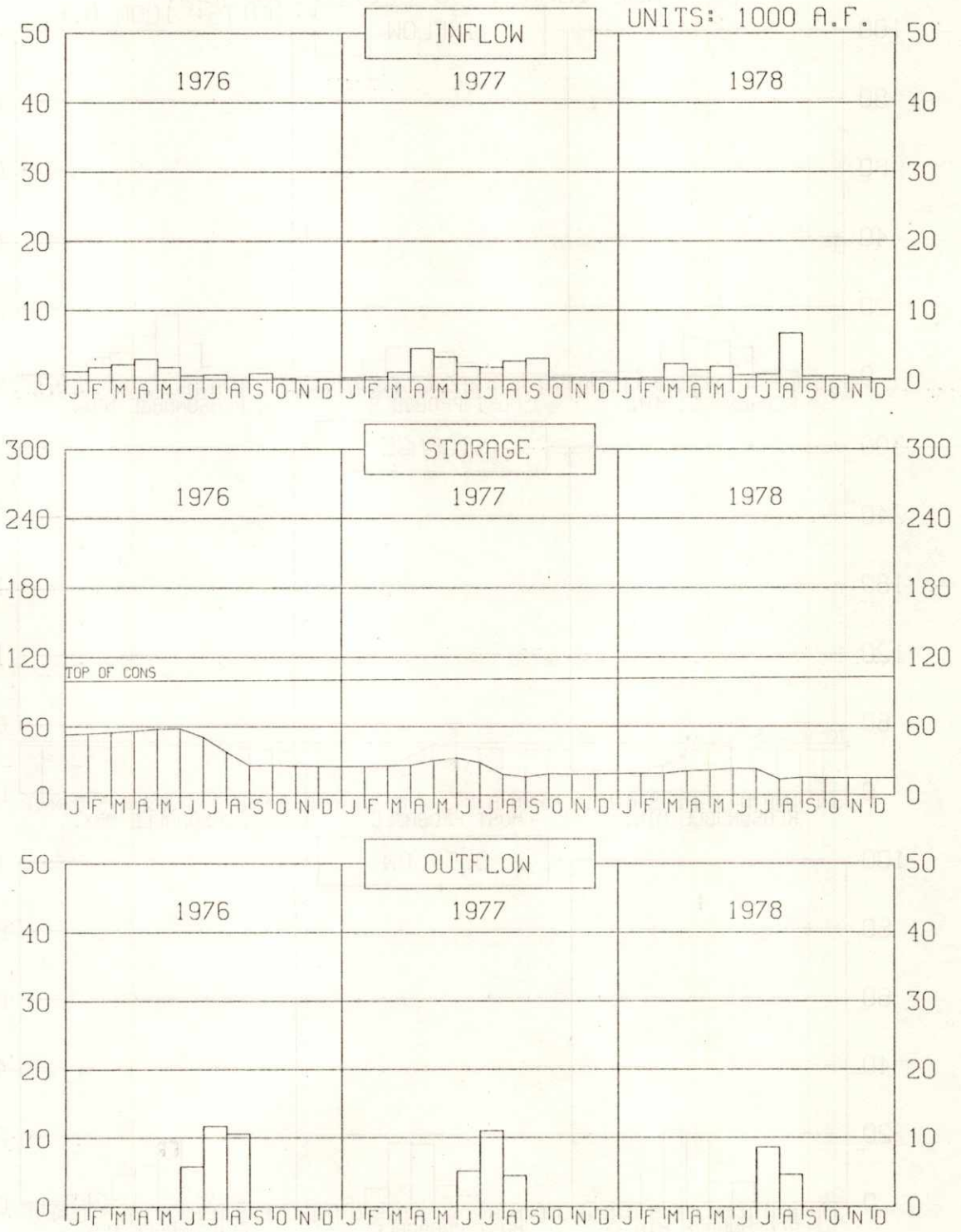


EXHIBIT 12B

KIRWIN RESERVOIR 1979 OPERATION

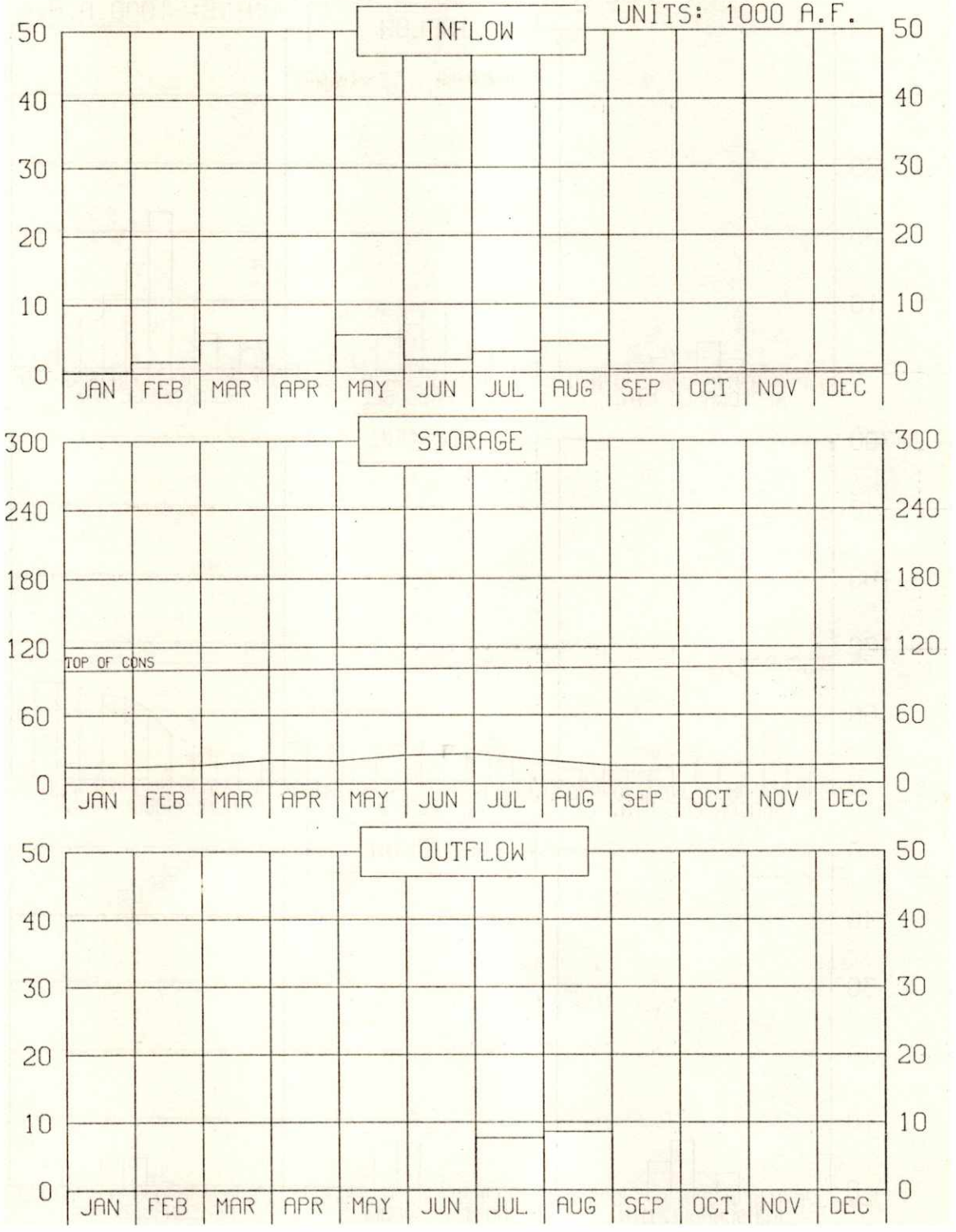


EXHIBIT 12C

KIRWIN RESERVOIR

CAL YEAR 1980 OPERATION PLAN

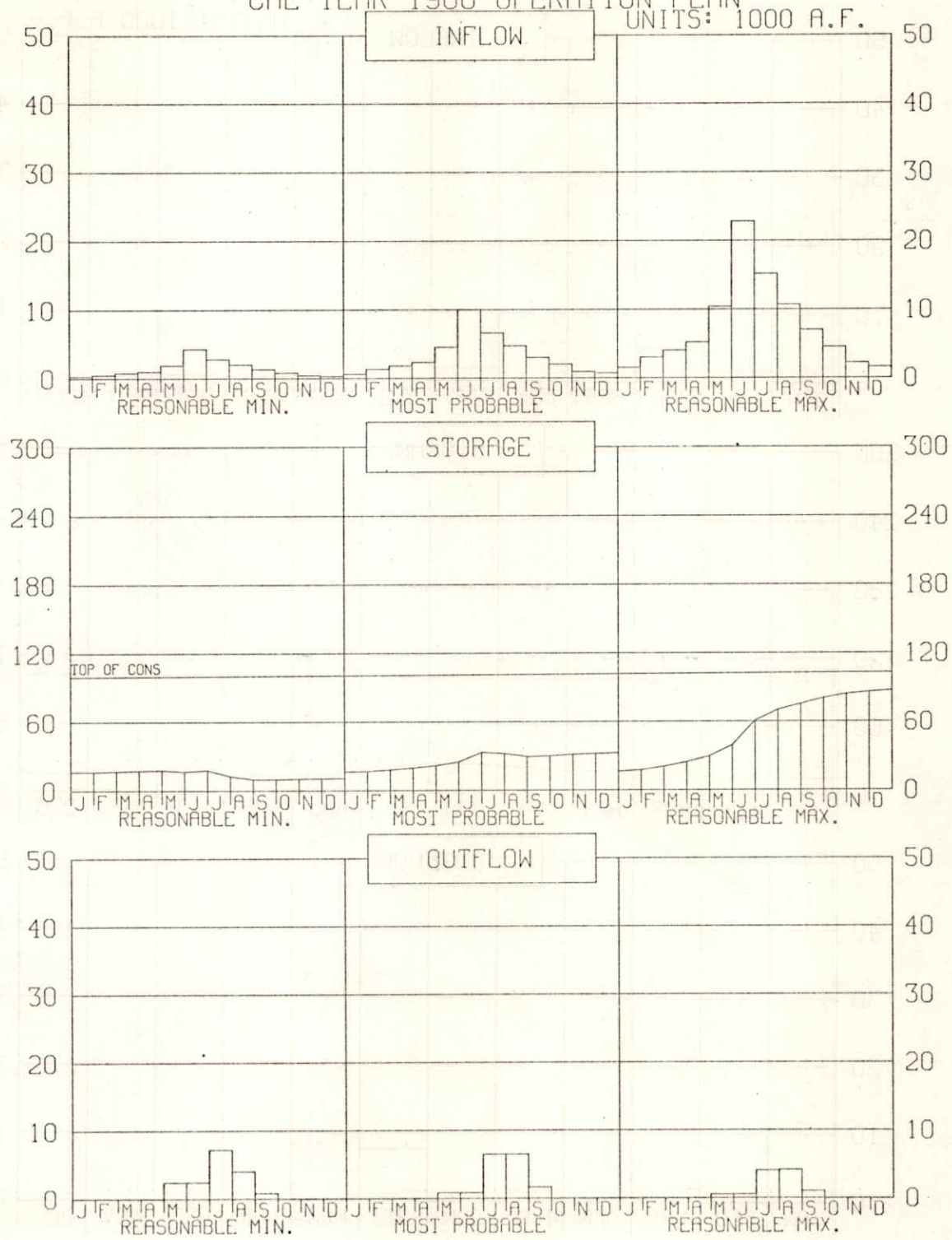
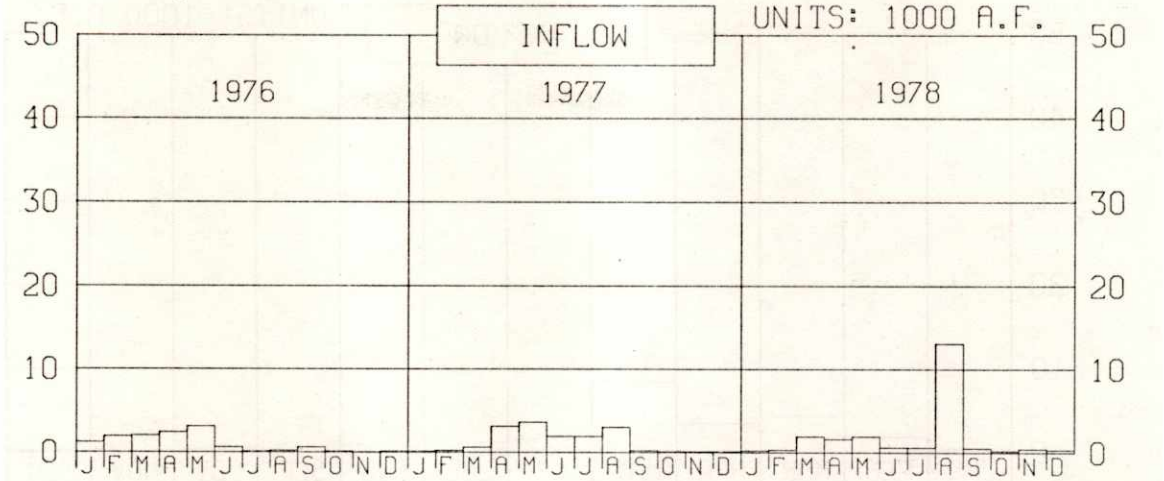
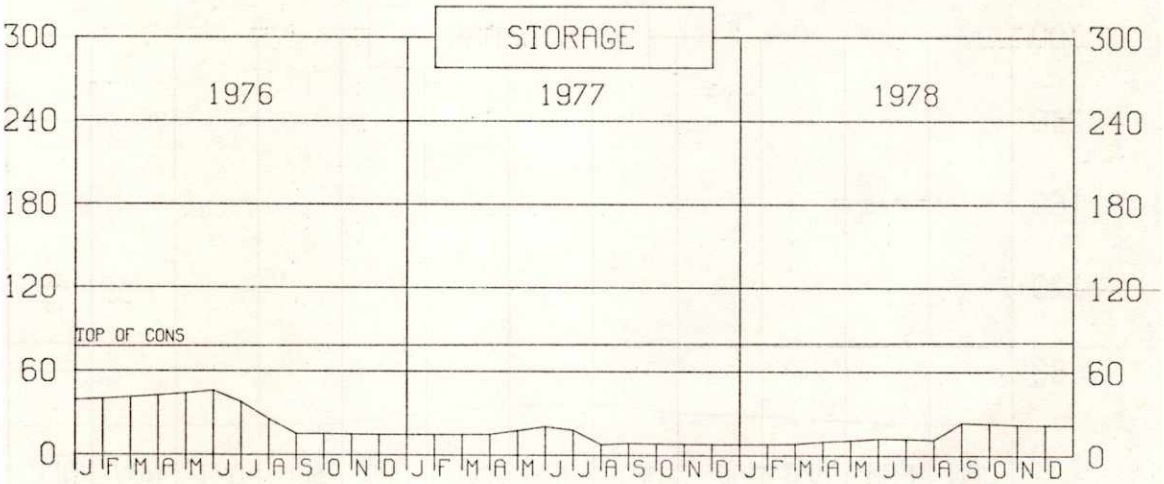


EXHIBIT 13A

WEBSTER RESERVOIR OPERATION





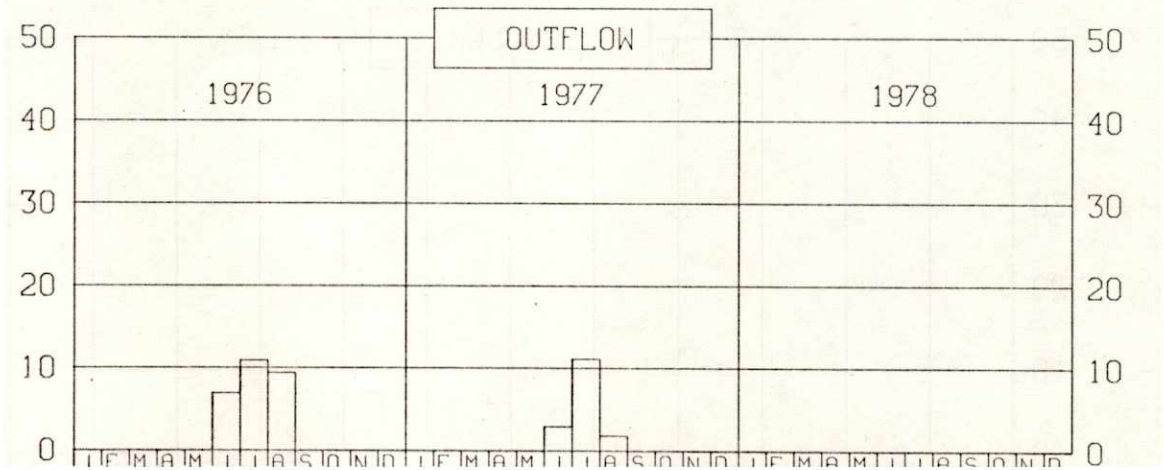


EXHIBIT 13B

WEBSTER RESERVOIR 1979 OPERATION

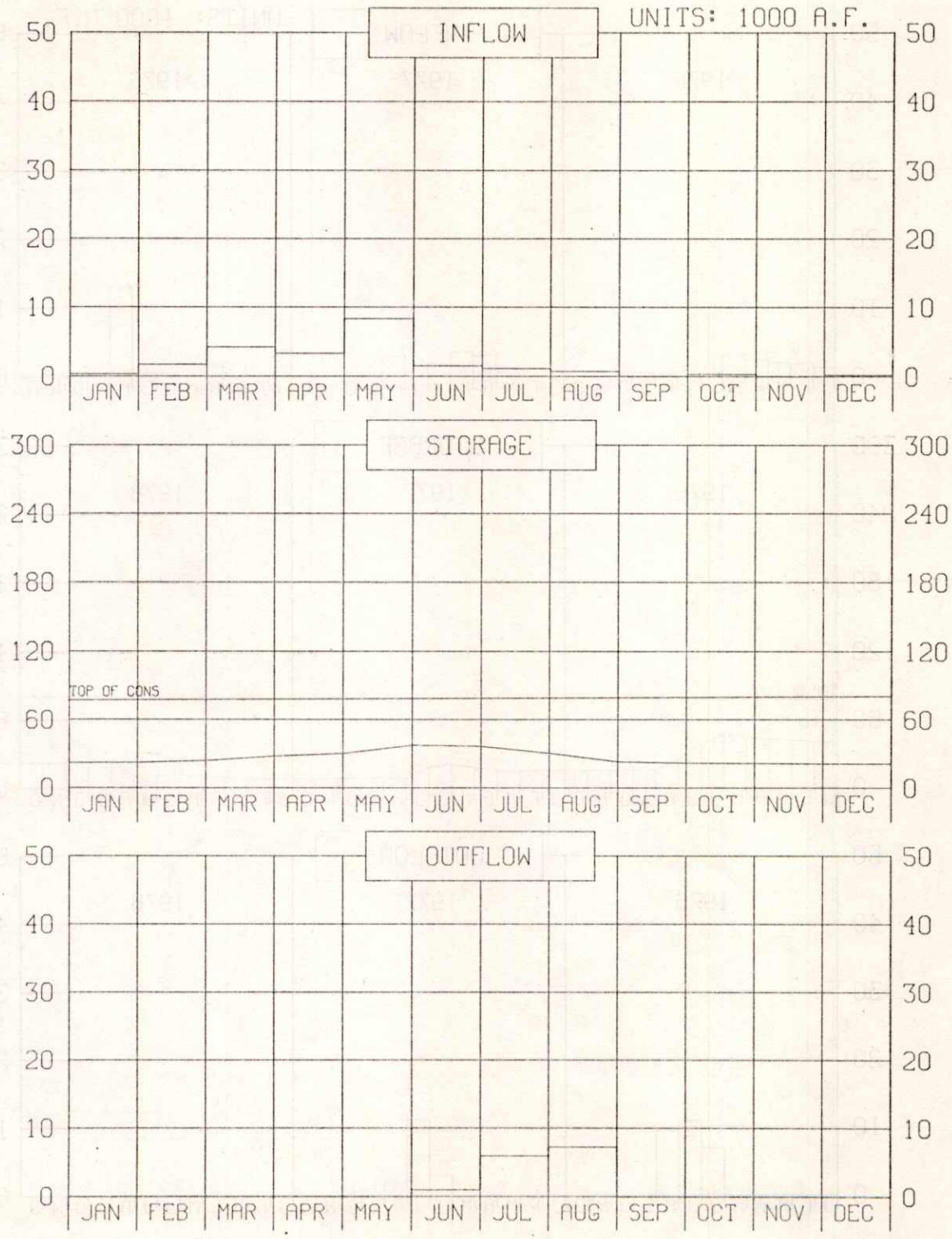


EXHIBIT 13C

WEBSTER RESERVOIR

CAL YEAR 1980 OPERATION PLAN

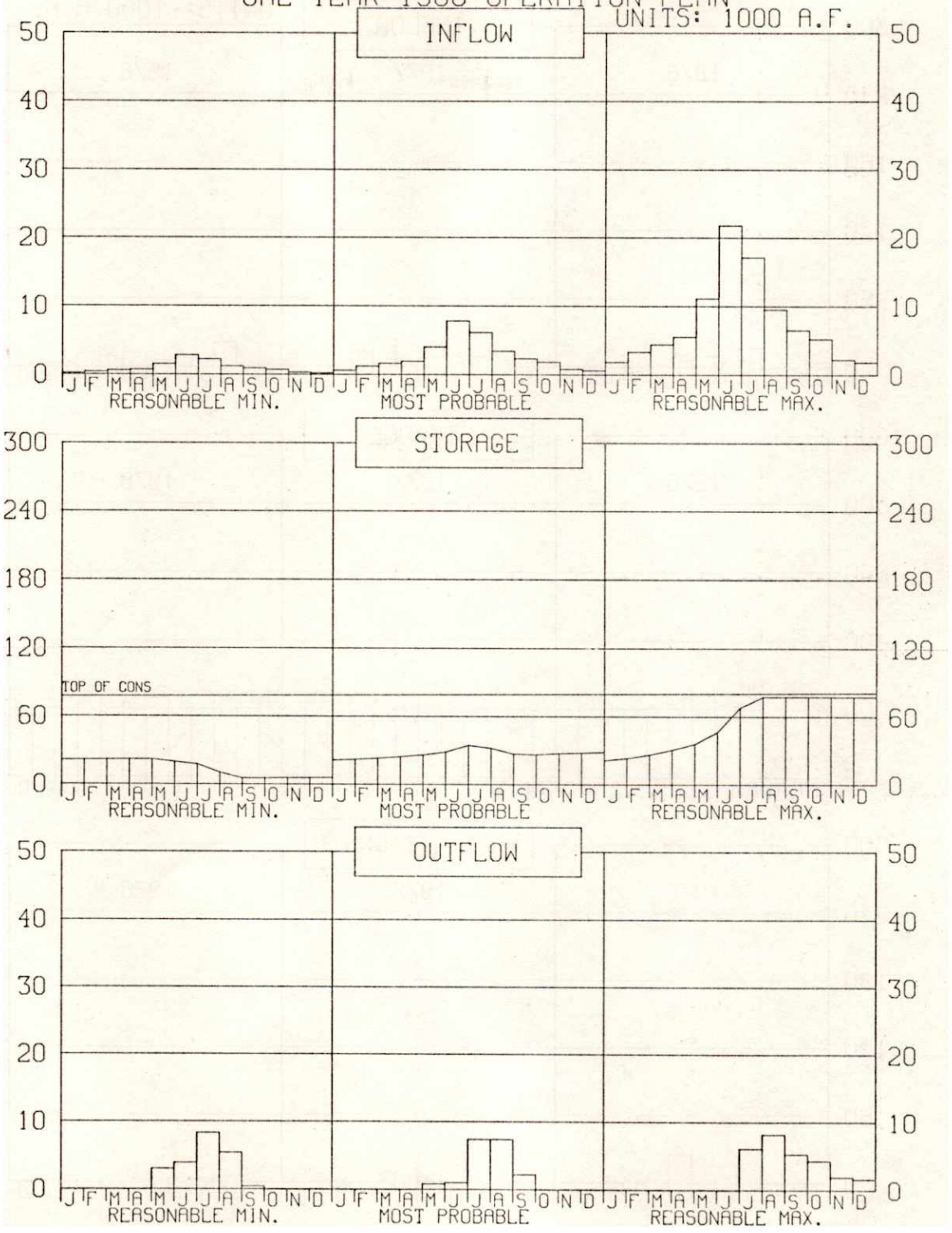


EXHIBIT 14A

WACONDA LAKE OPERATION

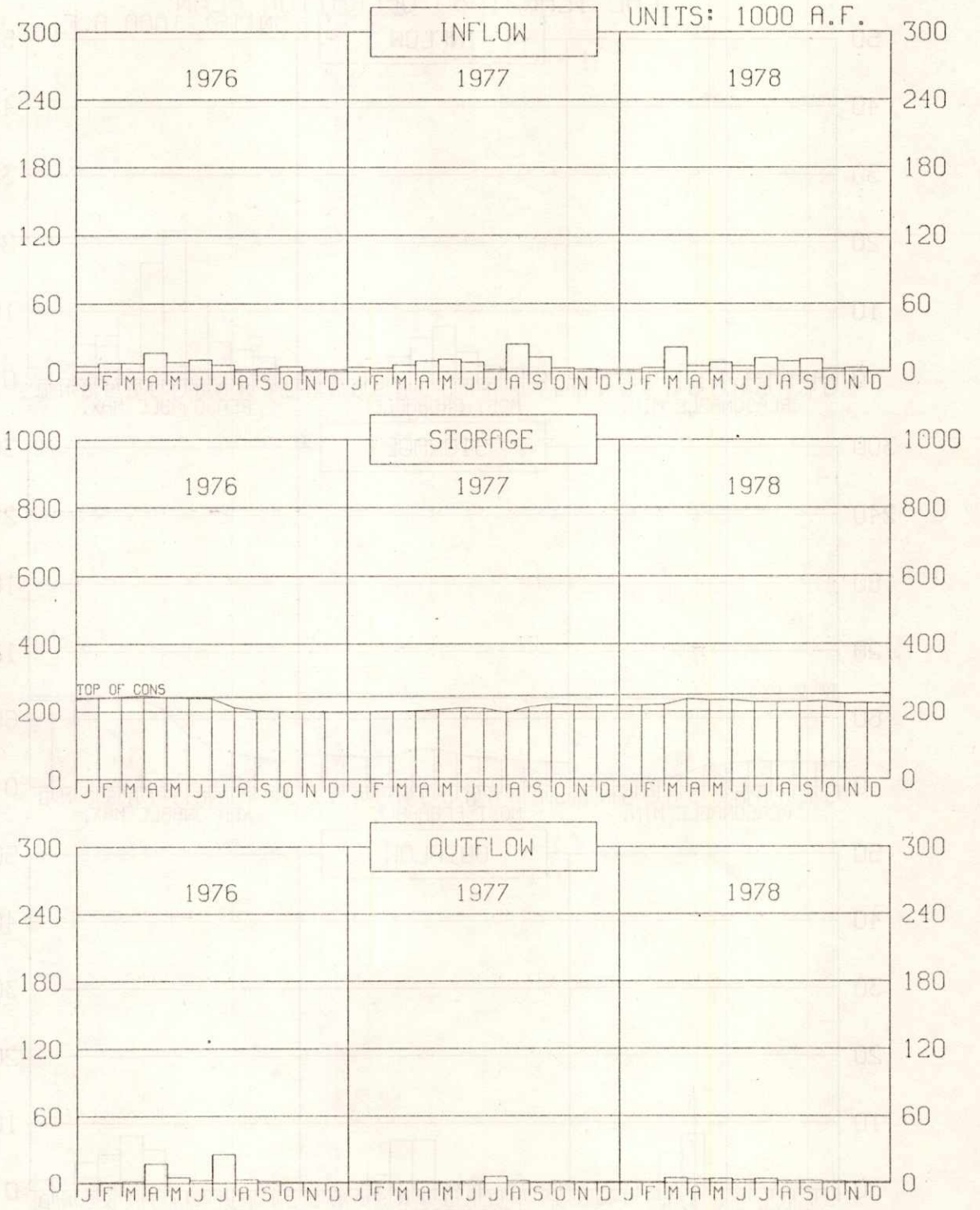


EXHIBIT 14B

WACONDA LAKE 1979 OPERATION

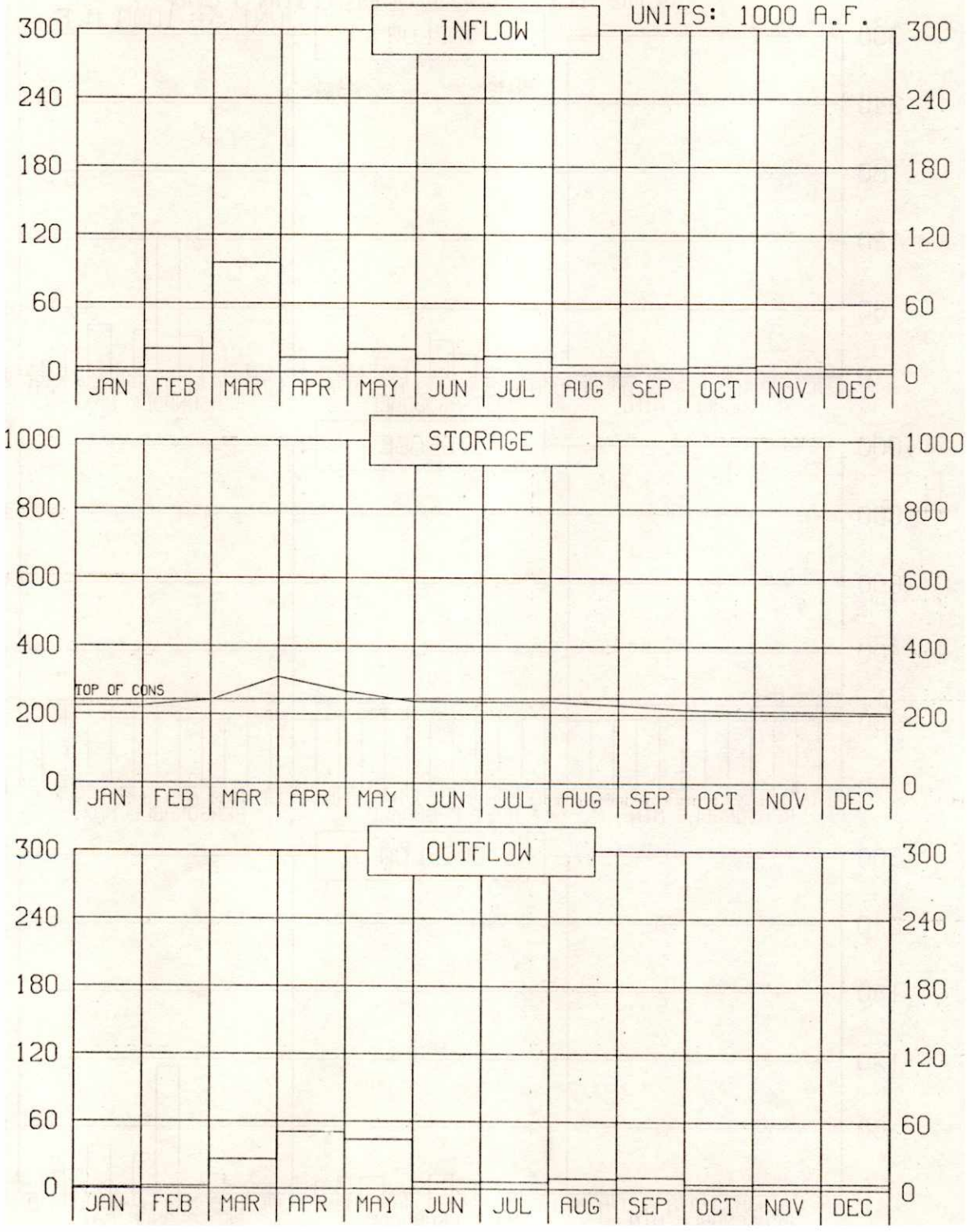


EXHIBIT 14C

WACONDA LAKE

CAL YEAR 1980 OPERATION PLAN

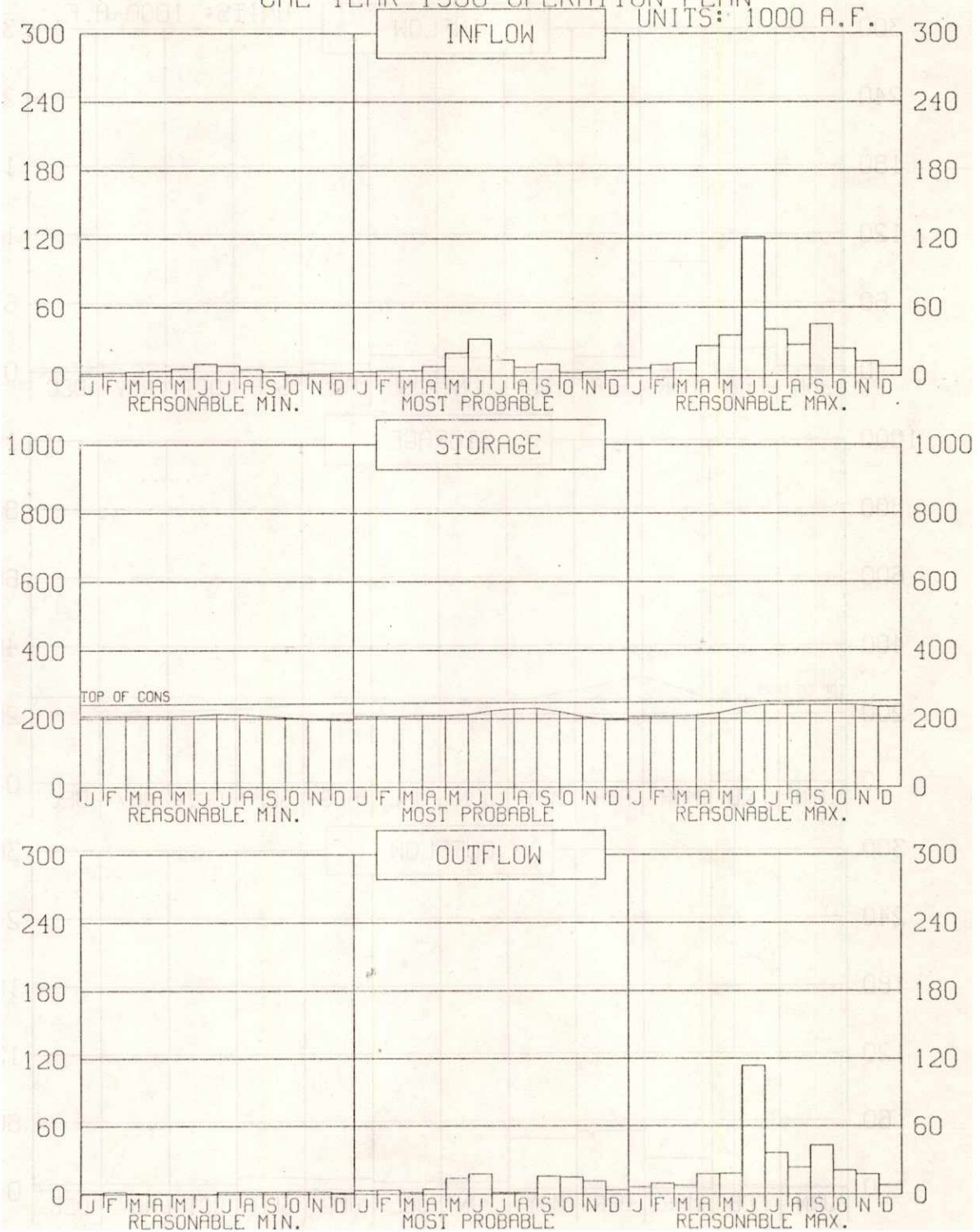


EXHIBIT 15A

CEDAR BLUFF RESERVOIR OPERATION

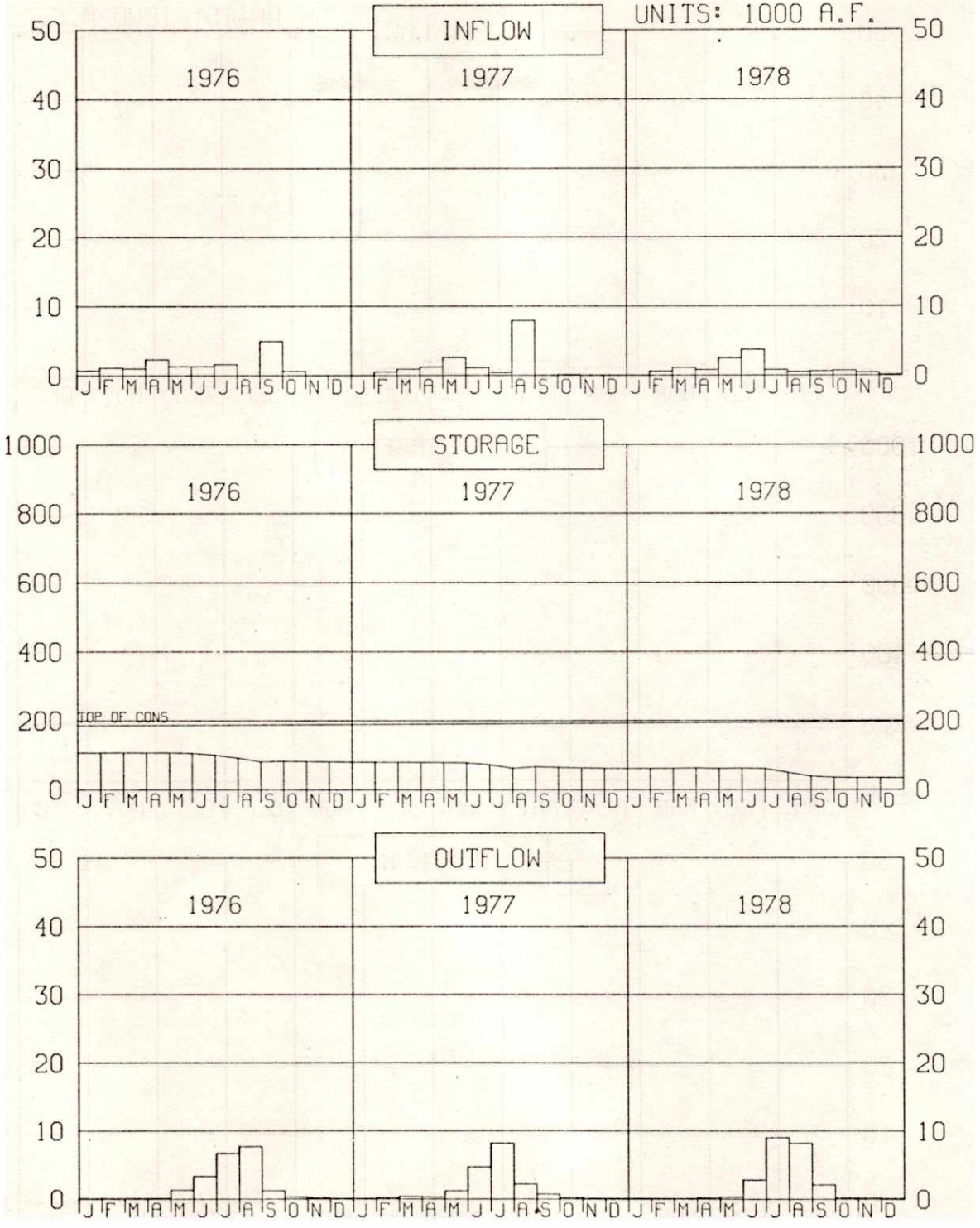


EXHIBIT 15B

CEDAR BLUFF RESERVOIR 1979 OPERATION

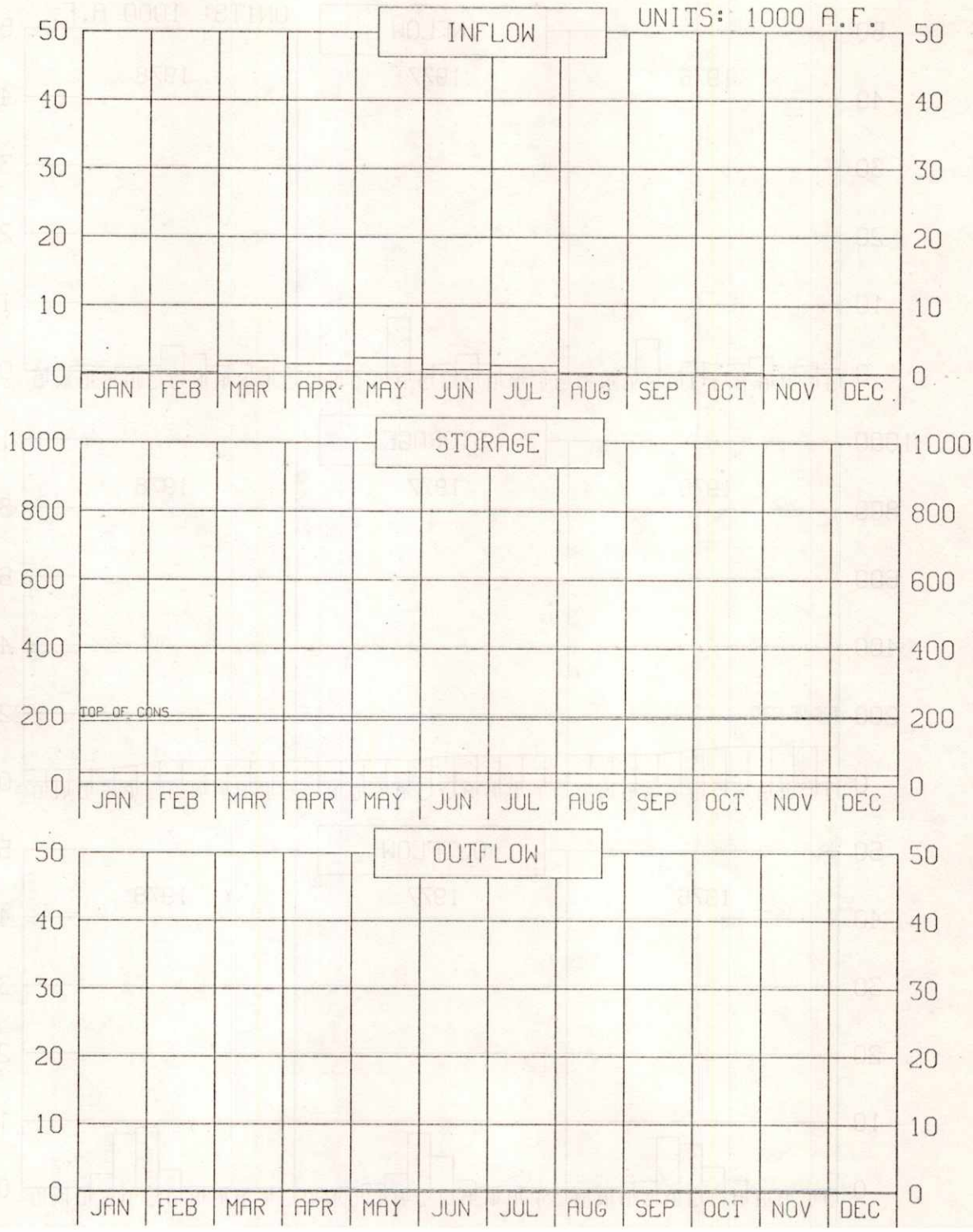


EXHIBIT 15C

CEDAR BLUFF RESERVOIR

CAL YEAR 1980 OPERATION PLAN

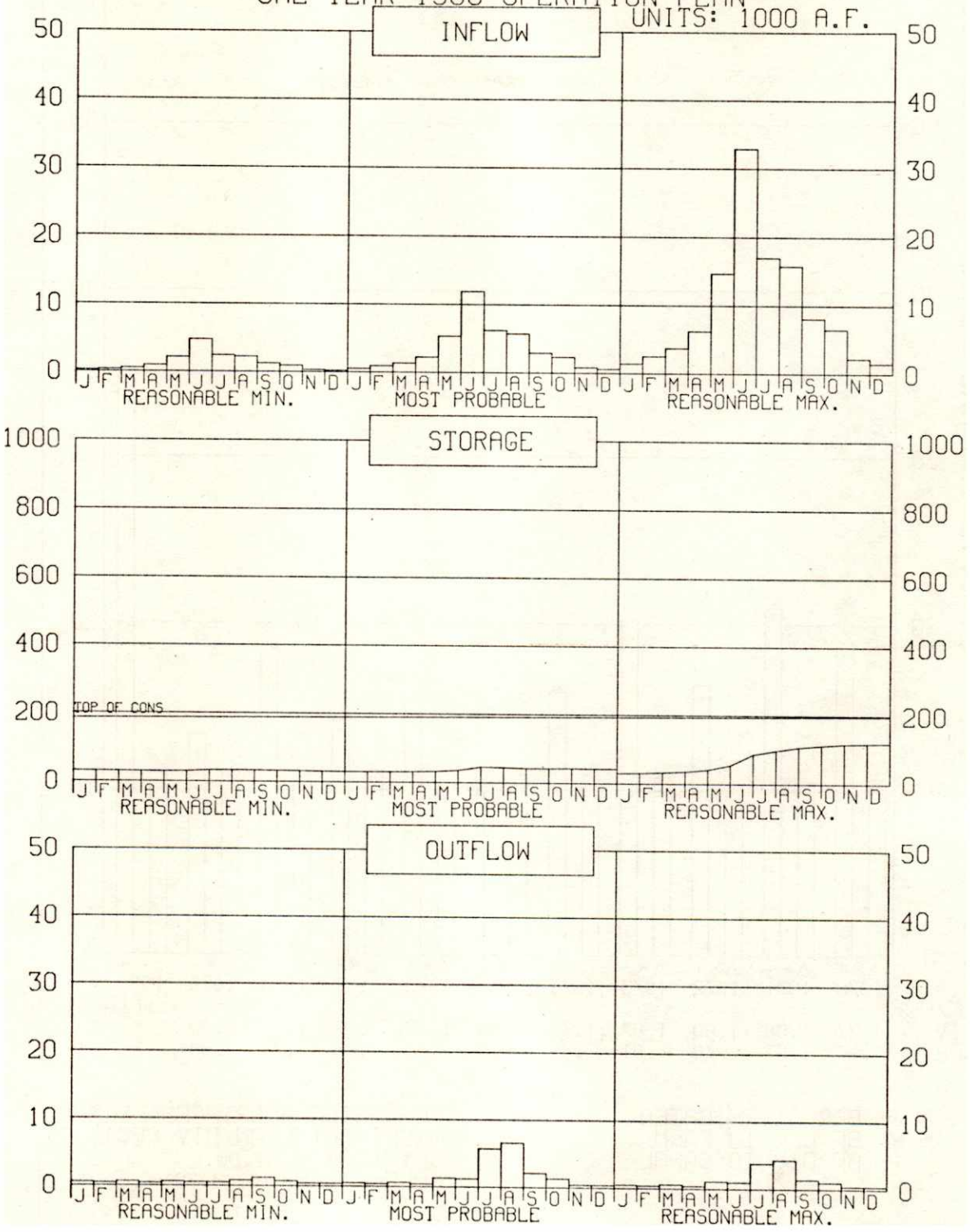


EXHIBIT 16

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
MIRAGE FLATS IRRIGATION DISTRICT

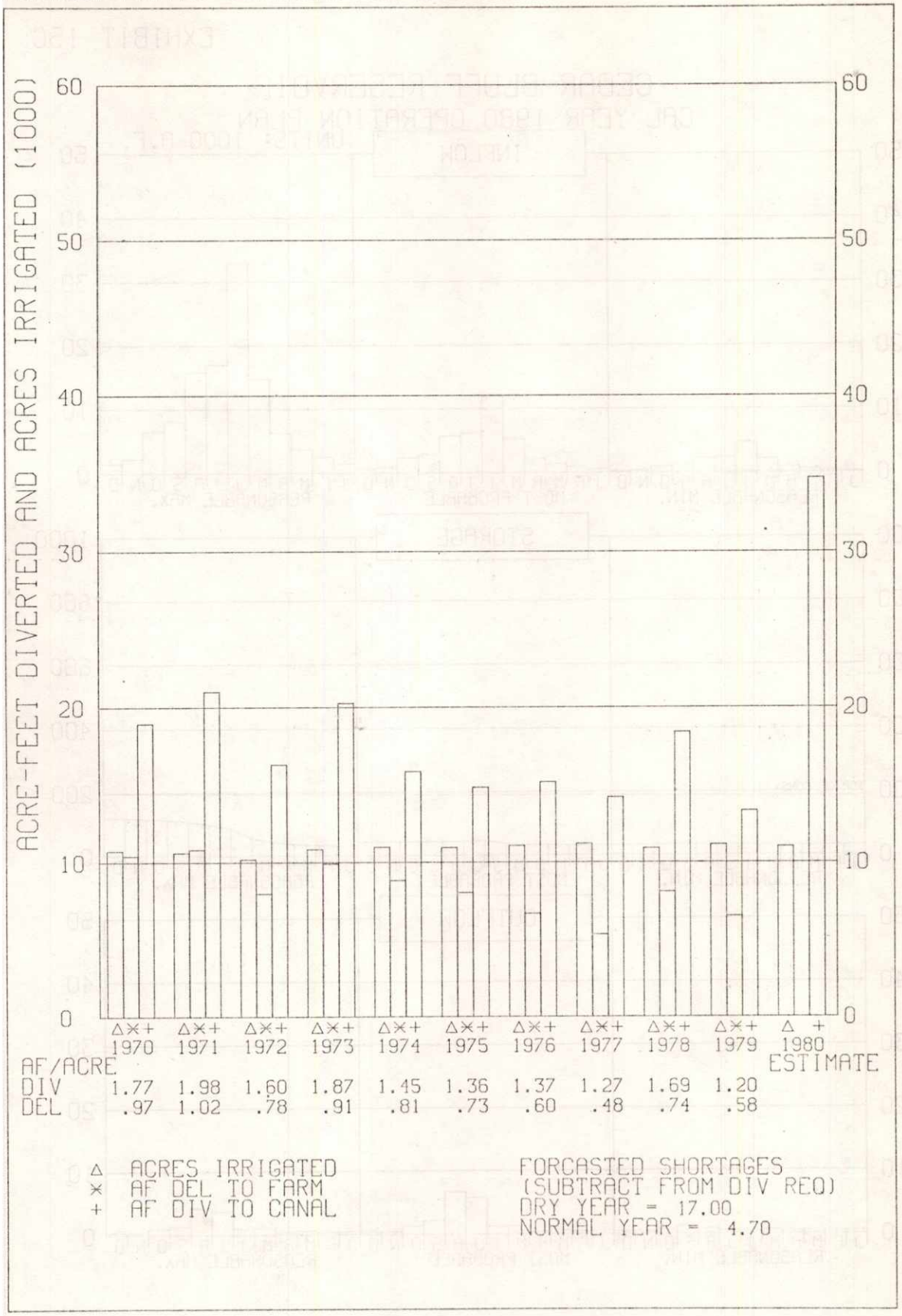


EXHIBIT 17

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
AINSWORTH IRRIGATION DISTRICT

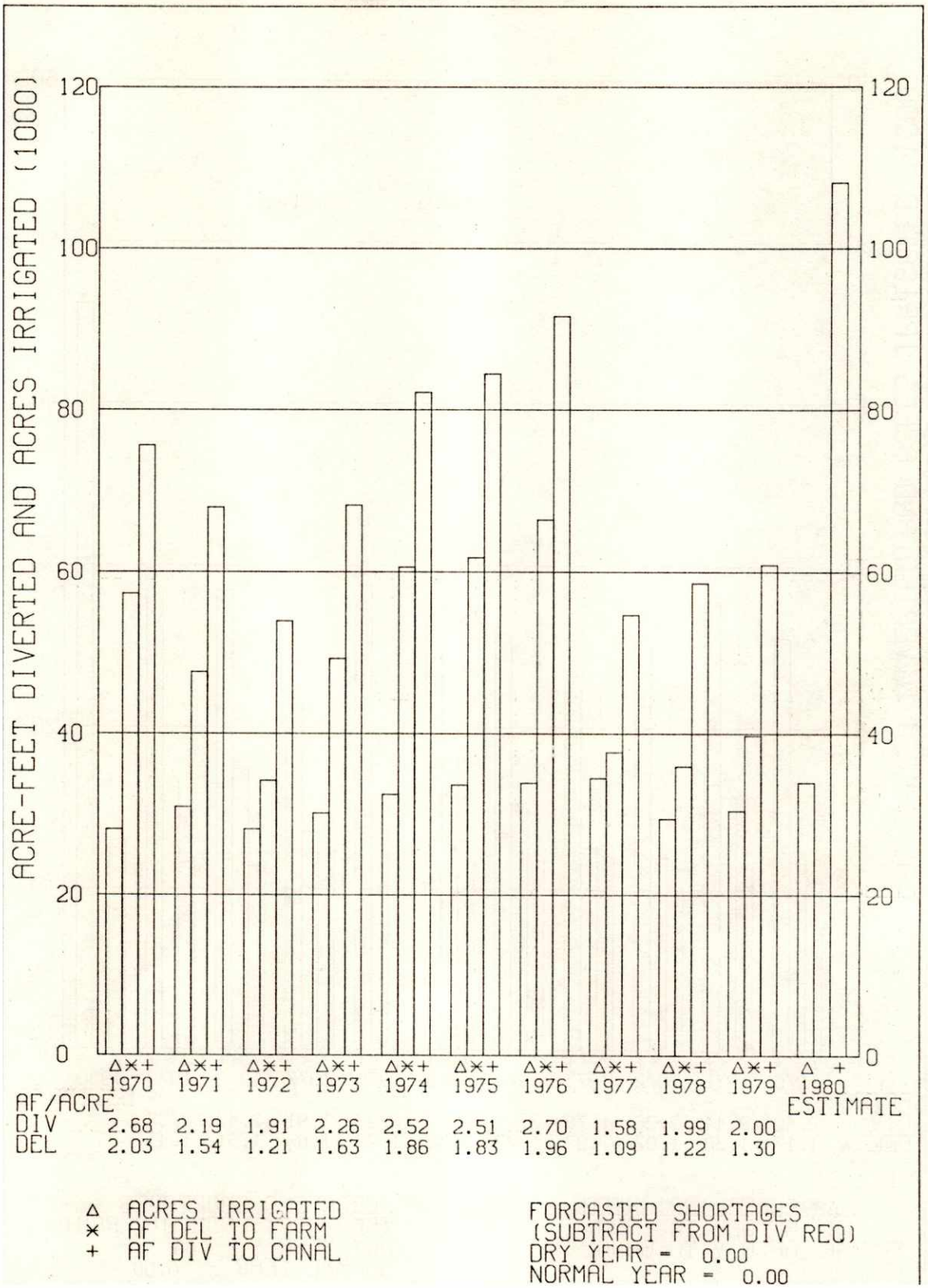
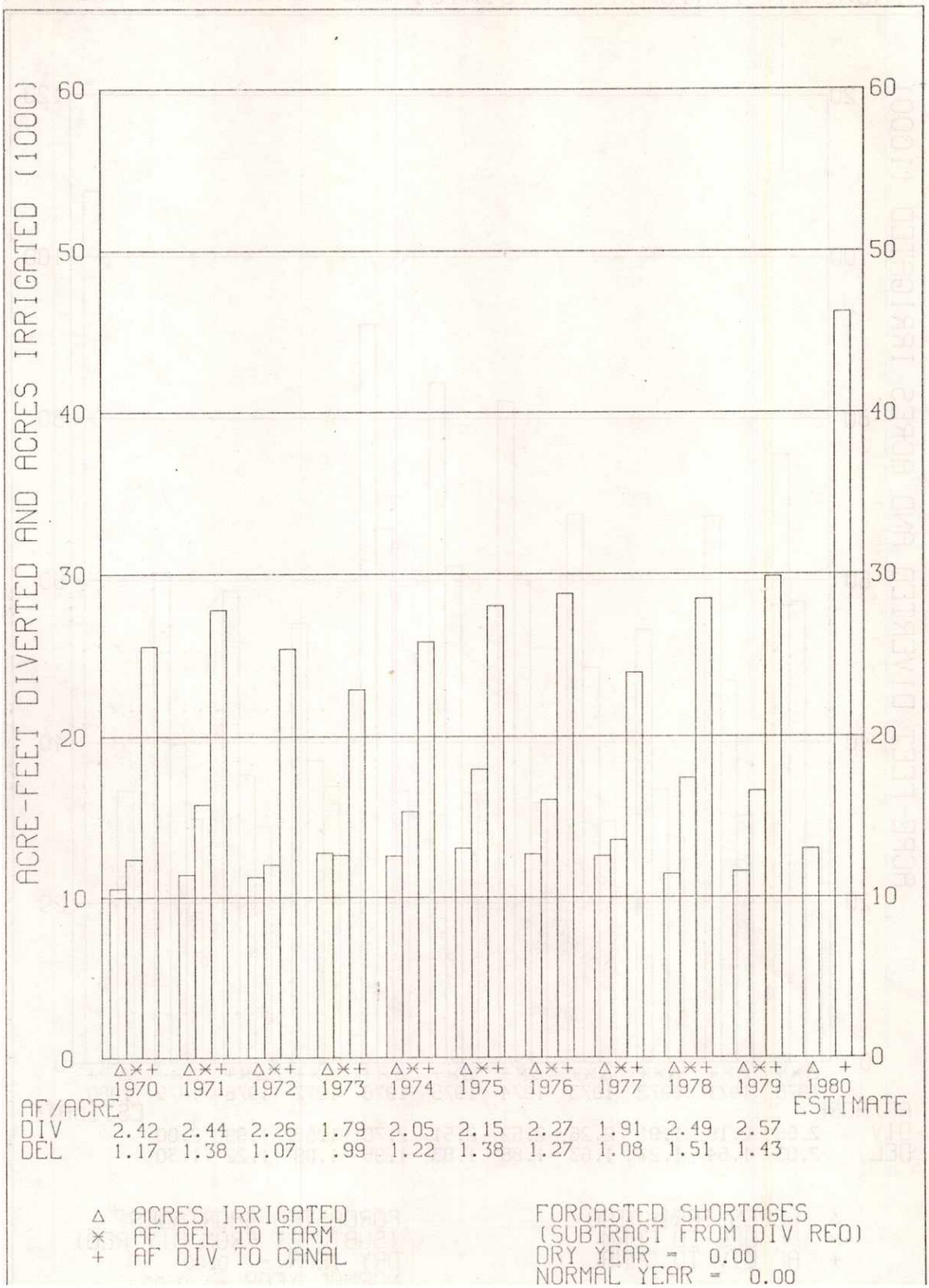


EXHIBIT 18

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
SARGENT IRRIGATION DISTRICT



AF/ACRE	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
DIV	2.42	2.44	2.26	1.79	2.05	2.15	2.27	1.91	2.49	2.57
DEL	1.17	1.38	1.07	.99	1.22	1.38	1.27	1.08	1.51	1.43

Δ ACRES IRRIGATED
✕ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR = 0.00
NORMAL YEAR = 0.00

EXHIBIT 19

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
FARWELL IRRIGATION DISTRICT

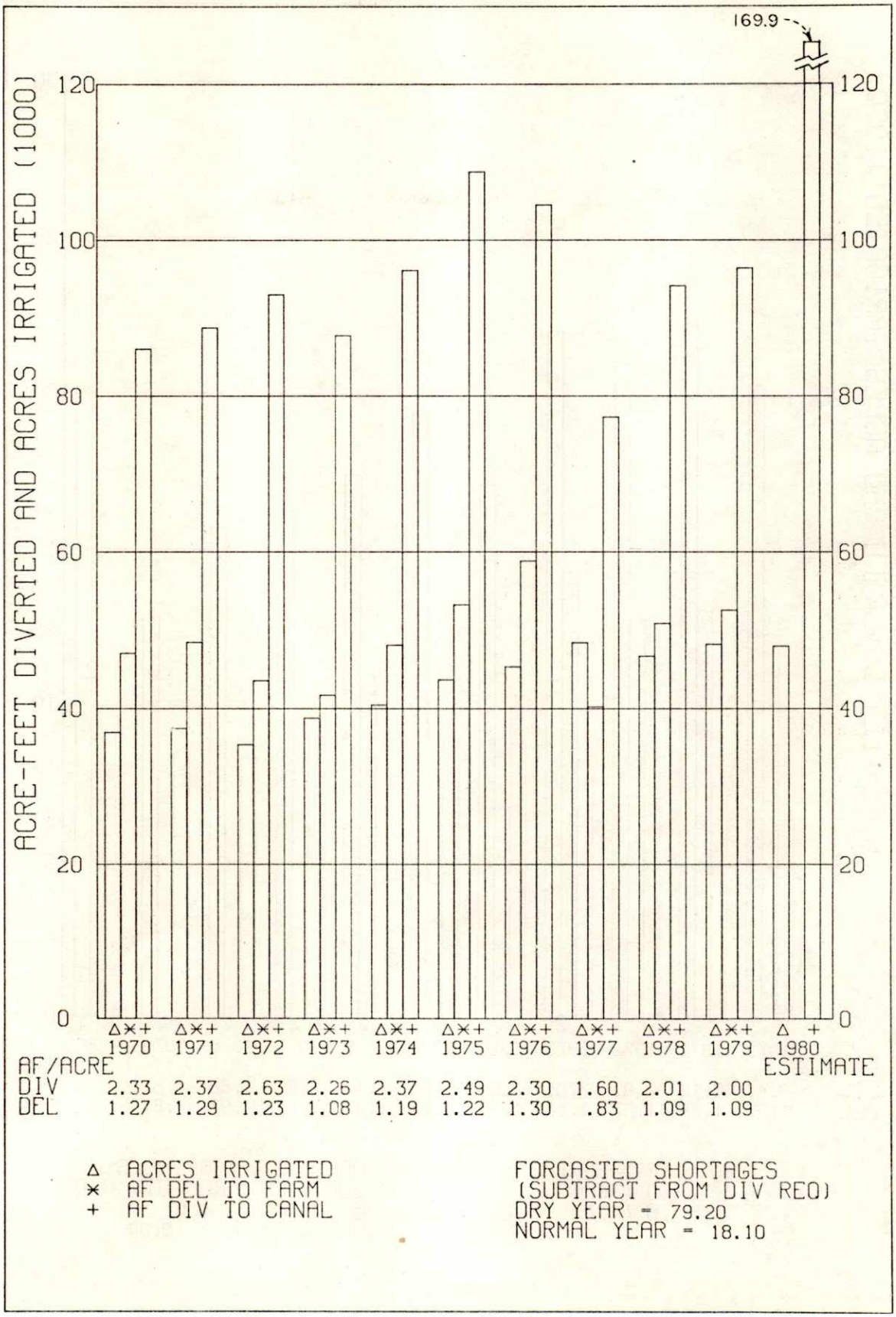
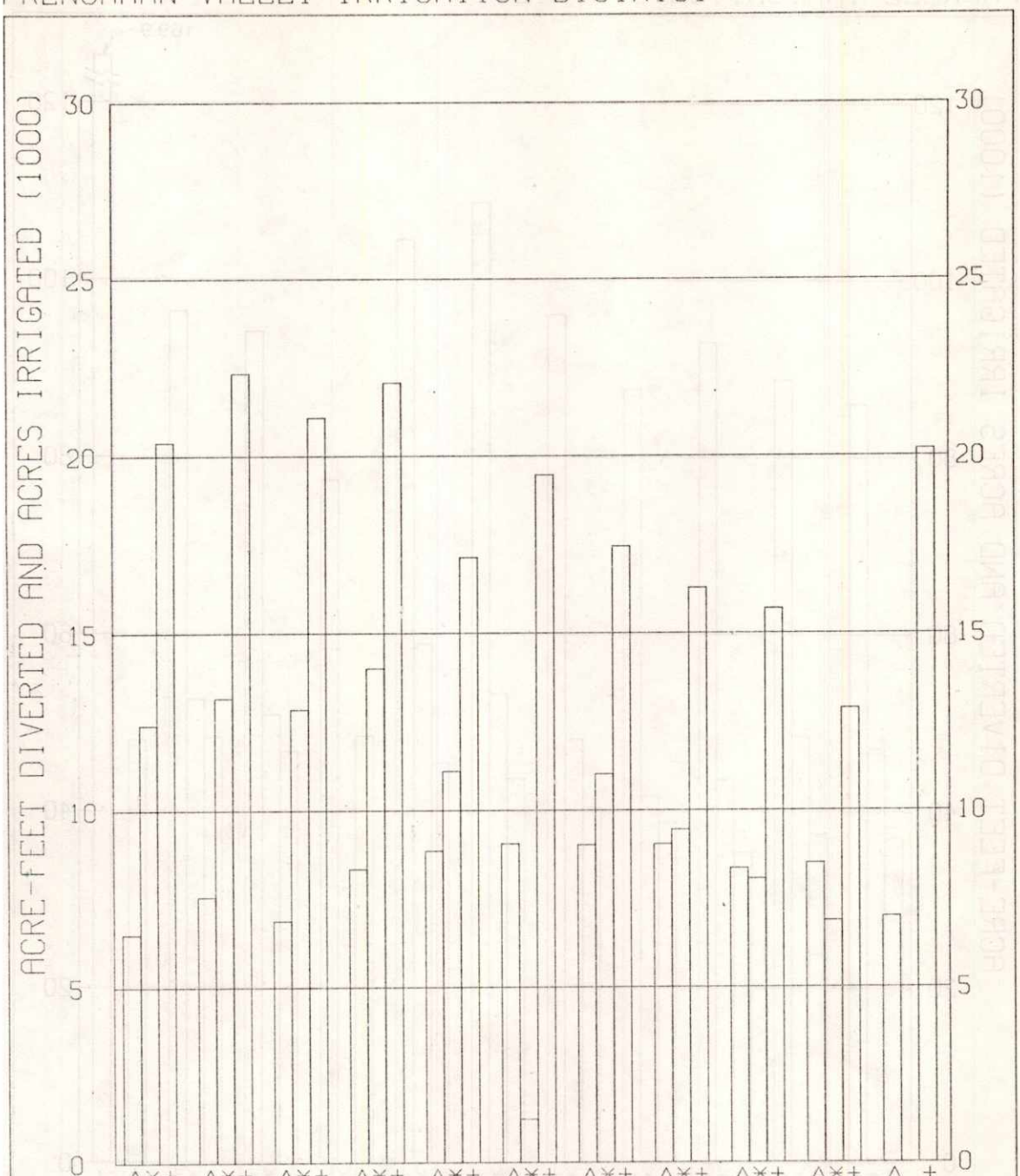


EXHIBIT 20

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
FRENCHMAN VALLEY IRRIGATION DISTRICT



AF/ACRE	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
DIV	2.43	3.14	2.95	3.06	2.64	1.93	2.15	1.80	1.88	1.51
DEL	1.91	1.74	1.87	1.68	1.25	1.35	1.22	1.04	.97	.81

Δ ACRES IRRIGATED
✳ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR = 4.10
NORMAL YEAR = 0.00

EXHIBIT 21

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
H AND RW IRRIGATION DISTRICT

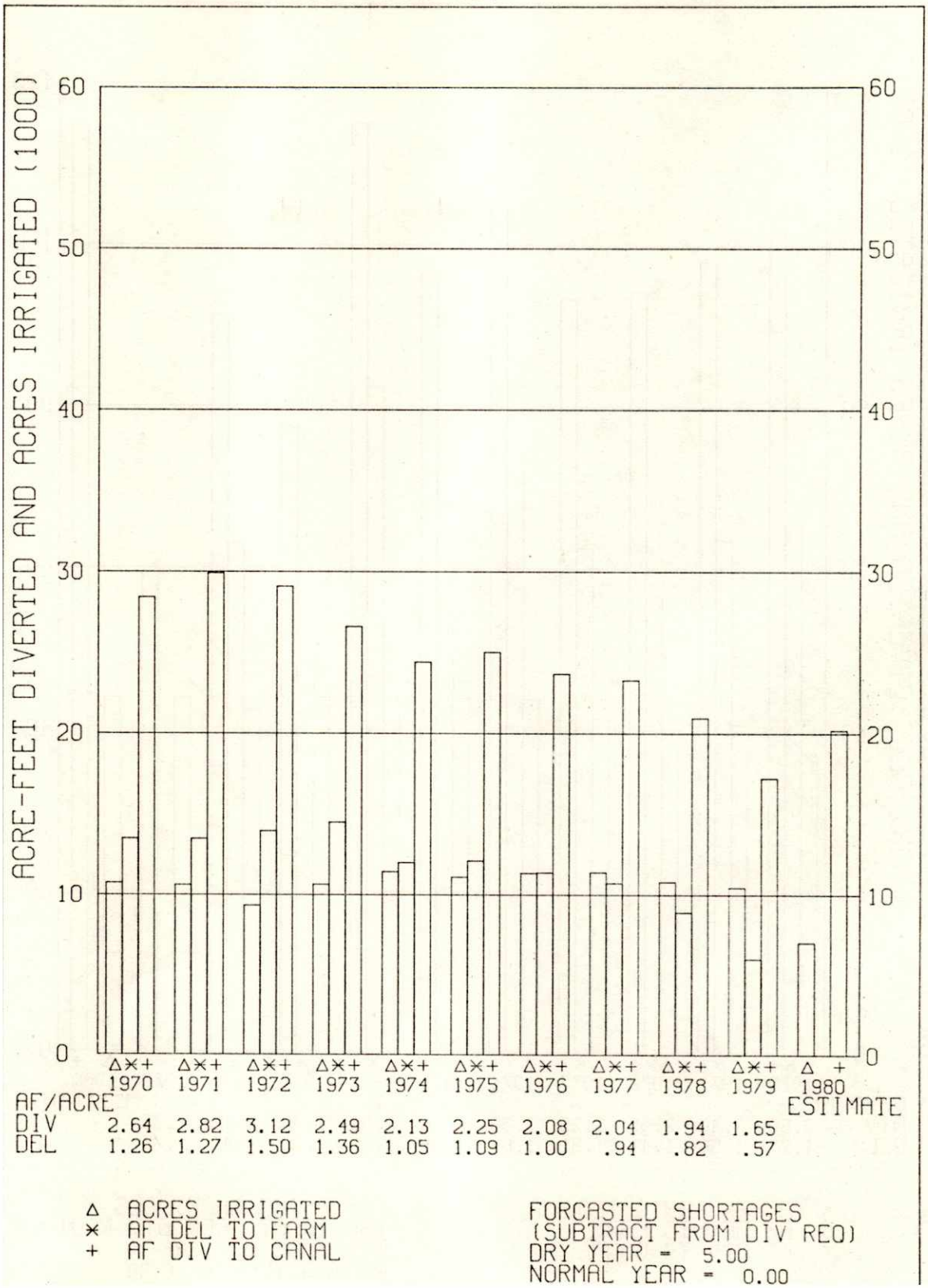
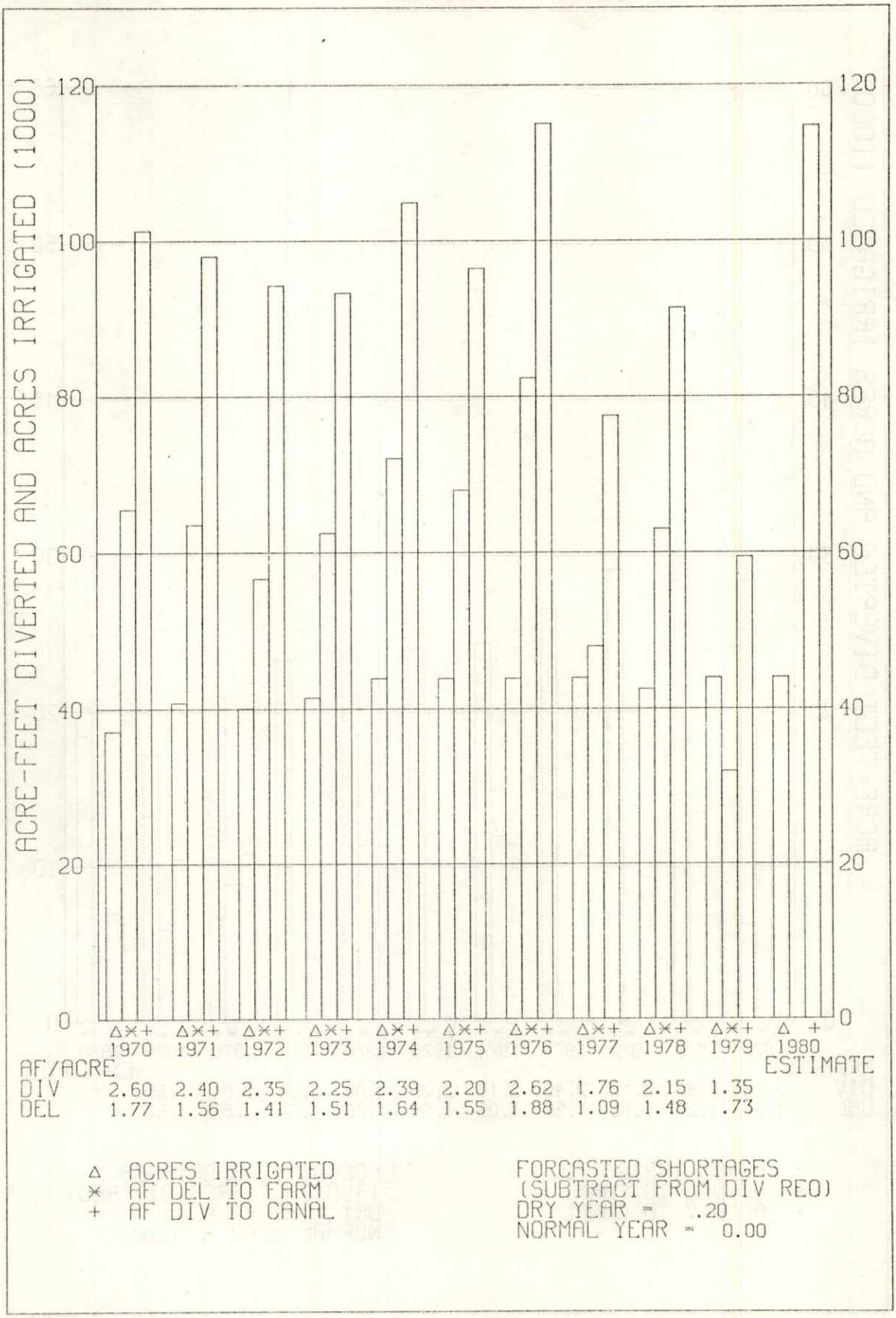


EXHIBIT 22

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
FRENCHMAN CAMBRIDGE IRRIGATION DISTRICT



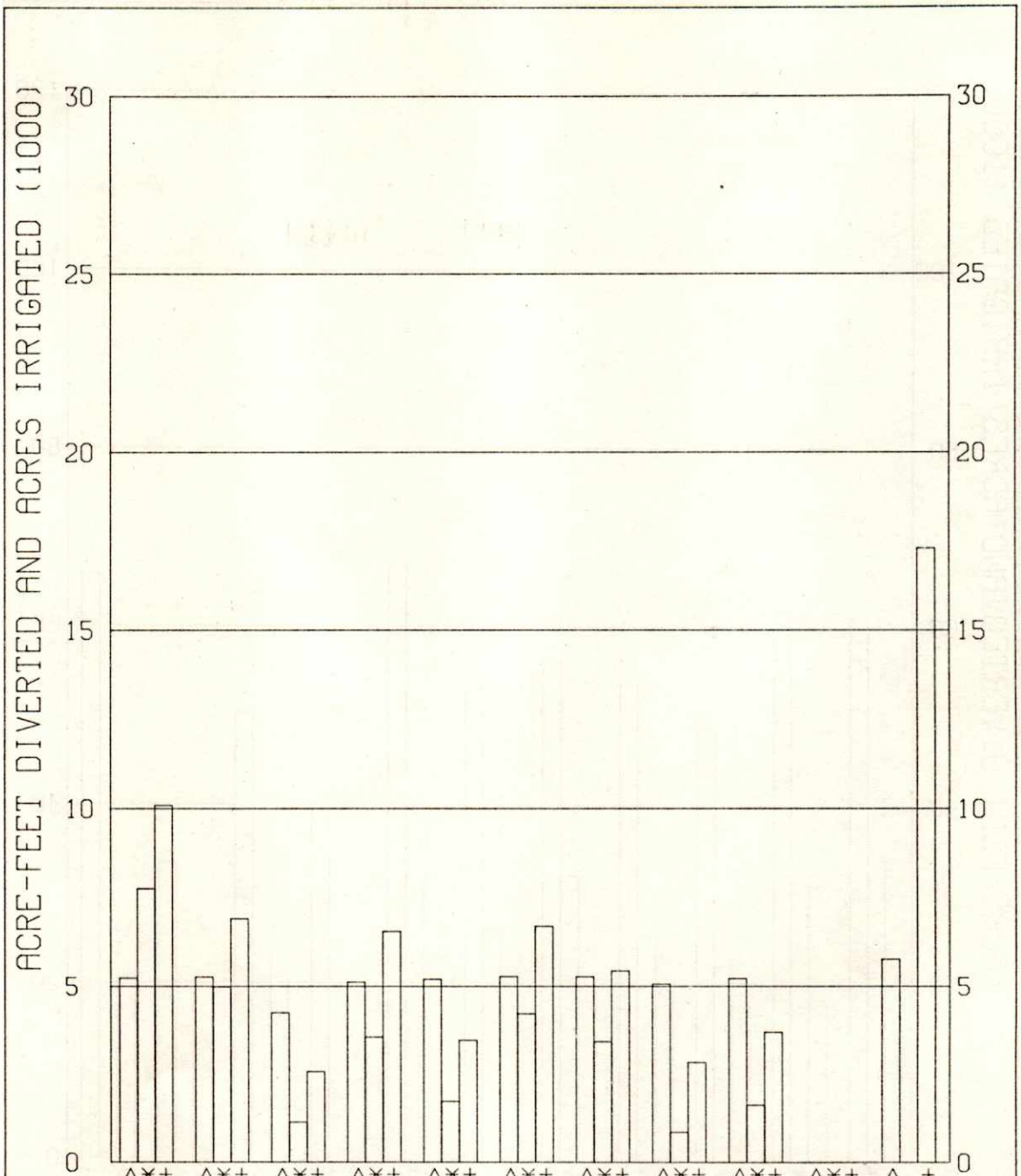
AF/ACRE	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980 ESTIMATE
DIV	2.60	2.40	2.35	2.25	2.39	2.20	2.62	1.76	2.15	1.35	
DEL	1.77	1.56	1.41	1.51	1.64	1.55	1.88	1.09	1.48	.73	

Δ ACRES IRRIGATED
✳ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR = .20
NORMAL YEAR = 0.00

EXHIBIT 23

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
ALMENA IRRIGATION DISTRICT



AF/ACRE	1970	1971	1672	1973	1974	1975	1976	1977	1978	1979
DIV	1.93	1.31	.61	1.28	.67	1.27	1.03	.56	.71	0.00
DEL	1.45	.95	.27	.70	.33	.80	.65	.17	.31	0.00

Δ ACRES IRRIGATED
✳ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR = 17.20
NORMAL YEAR = 0.00

EXHIBIT 24

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED BOSTWICK IRRIGATION DISTRICT IN NEBRASKA

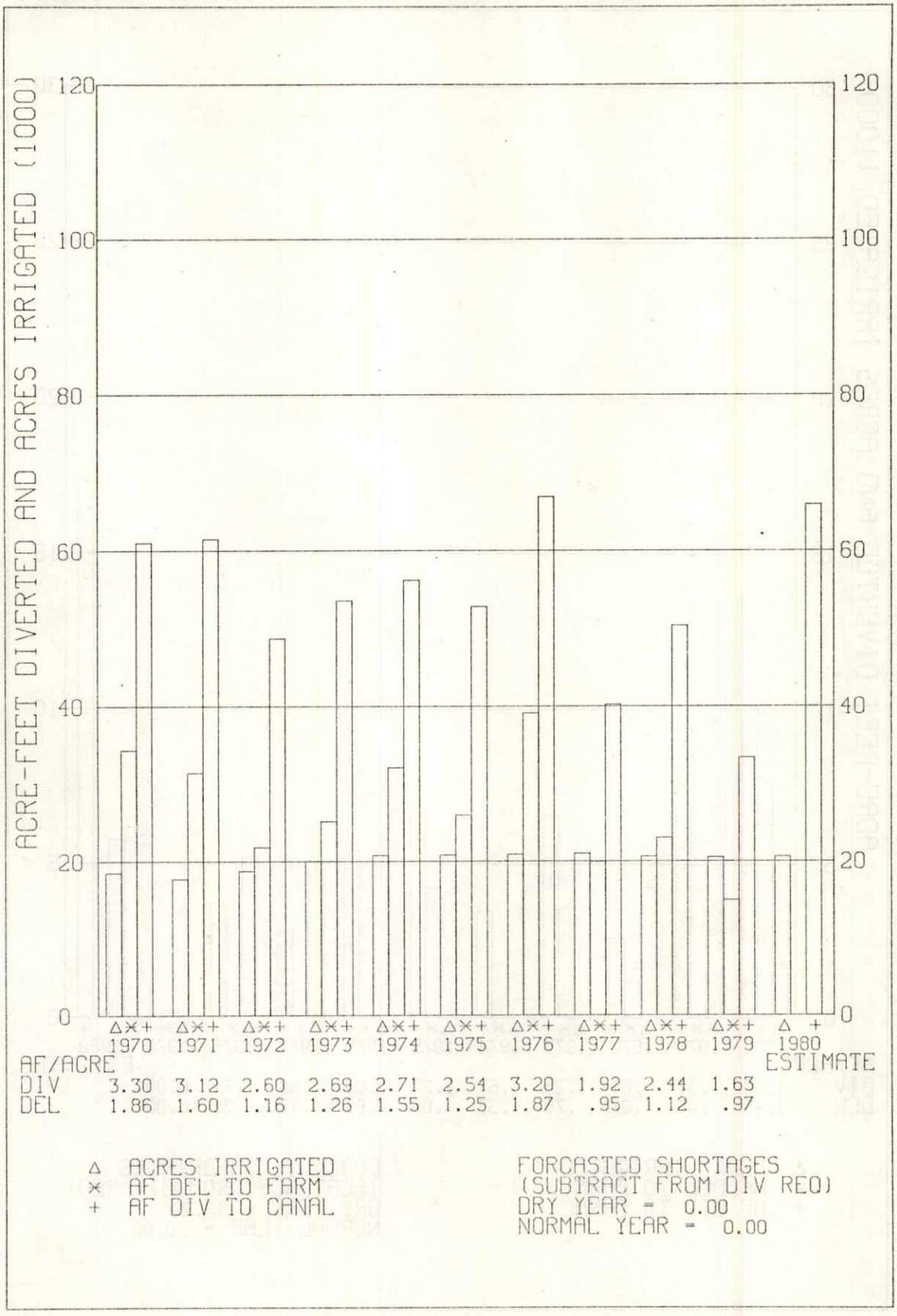
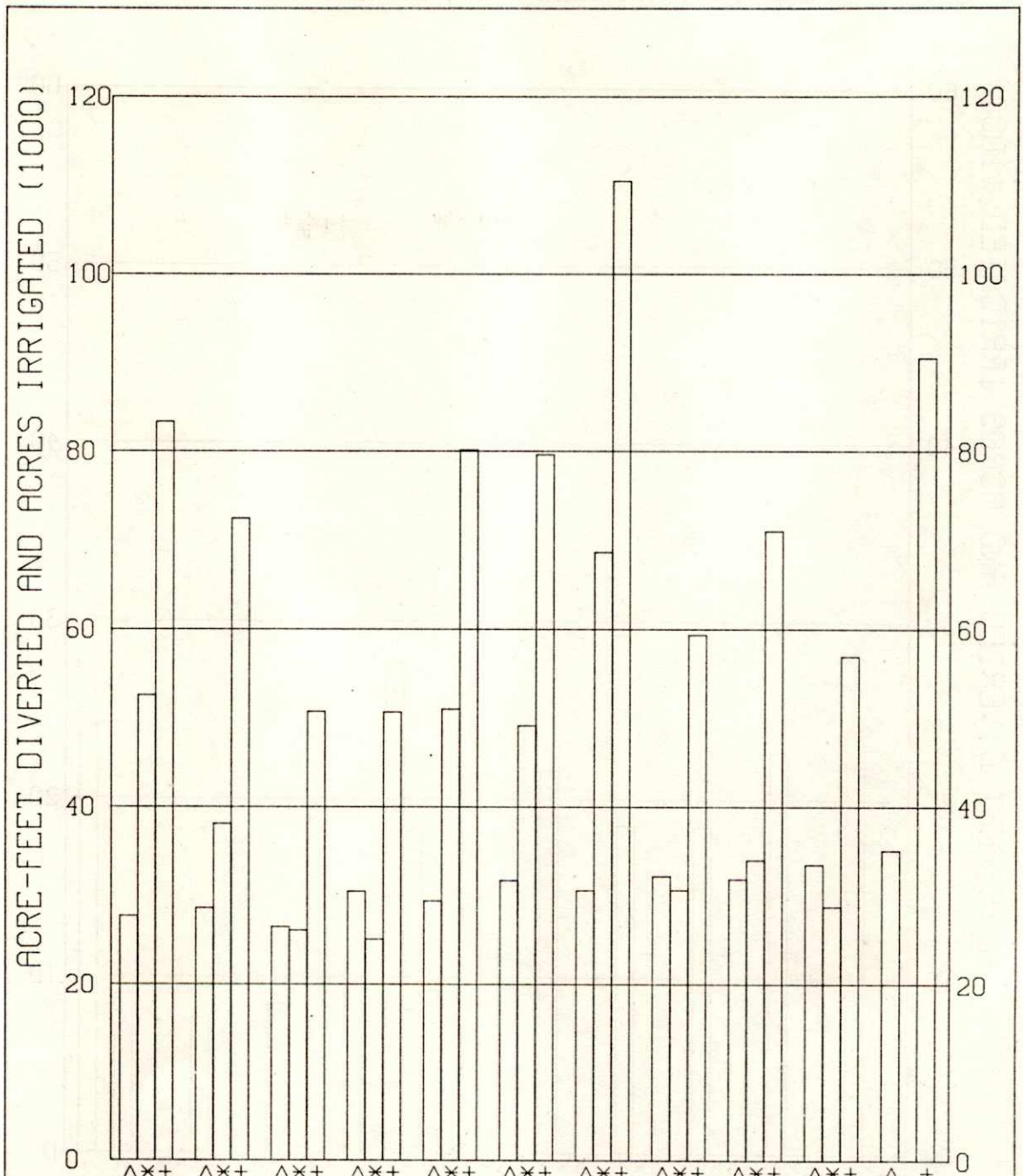


EXHIBIT 25

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
KANSAS-BOSTWICK IRRIGATION DISTRICT



AF/ACRE	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980 ESTIMATE
DIV	3.00	2.53	1.91	1.66	2.72	2.50	3.58	1.84	2.23	1.70	
DEL	1.89	1.33	.98	.82	1.73	1.55	2.23	.95	1.07	.86	

Δ ACRES IRRIGATED
✳ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR = 0.00
NORMAL YEAR = 0.00

EXHIBIT 26

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
KIRWIN IRRIGATION DISTRICT

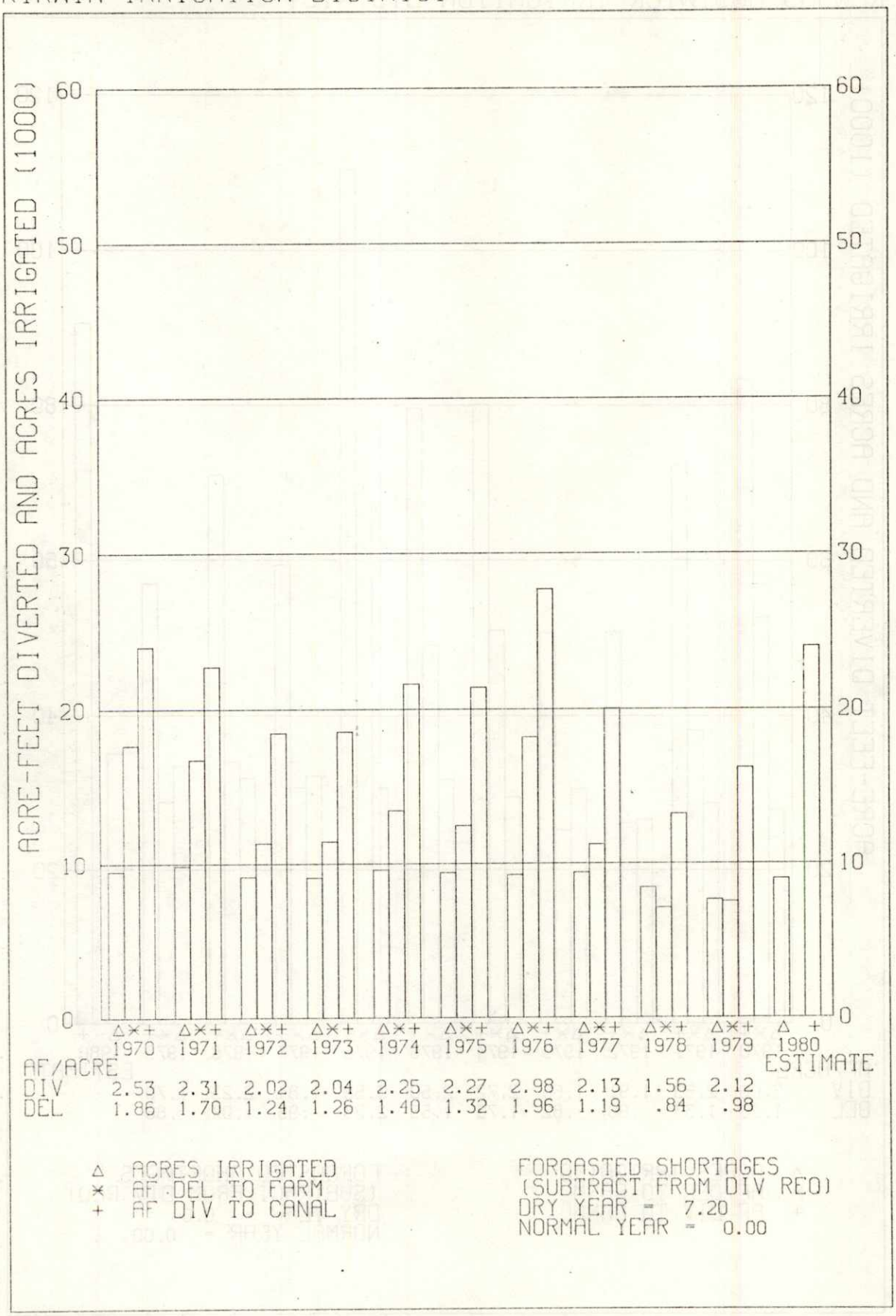
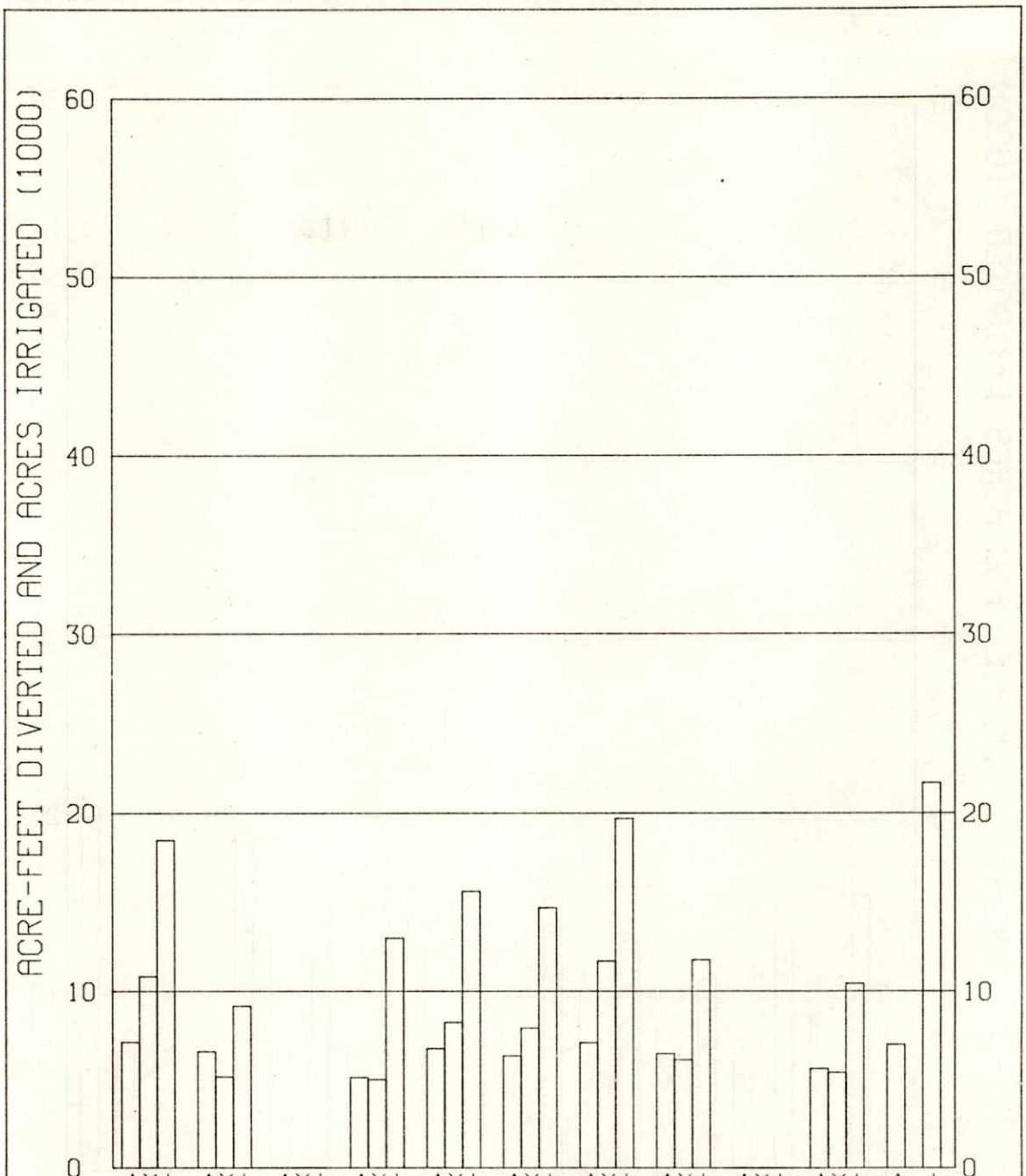


EXHIBIT 27

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
WEBSTER IRRIGATION DISTRICT



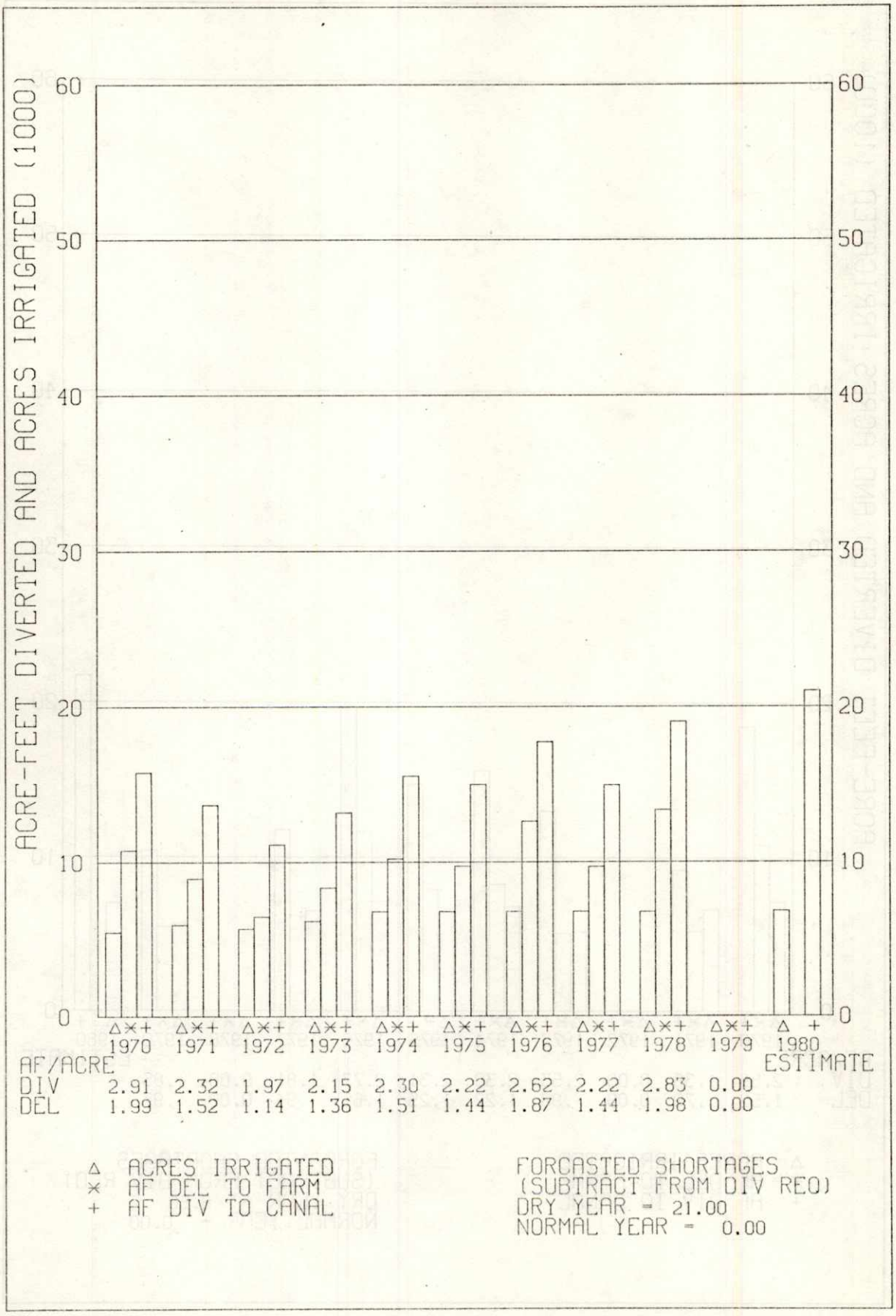
AF/ACRE	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980 ESTIMATE
DIV	2.59	1.39	0.00	2.53	2.30	2.31	2.77	1.81	0.00	1.85	
DEL	1.52	.79	0.00	.98	1.22	1.25	1.65	.94	0.00	.97	

Δ ACRES IRRIGATED
✳ AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR = 8.50
NORMAL YEAR = 0.00

EXHIBIT 28

CANAL DIVERSIONS, FARM DELIVERIES AND ACRES IRRIGATED
CEDAR BLUFF IRRIGATION DISTRICT



AF/ACRE	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
DIV	2.91	2.32	1.97	2.15	2.30	2.22	2.62	2.22	2.83	0.00
DEL	1.99	1.52	1.14	1.36	1.51	1.44	1.87	1.44	1.98	0.00

Δ ACRES IRRIGATED
× AF DEL TO FARM
\+ AF DIV TO CANAL

FORCASTED SHORTAGES
(SUBTRACT FROM DIV REQ)
DRY YEAR = 21.00
NORMAL YEAR = 0.00

MIRAGE FLATS PROJECT AND PICK-SLOAN MISSOURI BASIN PROGRAM
NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS
IRRIGATION AND FLOOD CONTROL FACILITIES

Mc COOK, NEBRASKA — JULY 1, 1970

DWG. NO. 60-701-250

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION – LM REGION

EXPLANATION

- RESERVOIR
- DIVERSION DAM
- PUMPING PLANT
- CANAL
- IRRIGATED LAND

MIRAGE FLATS PROJECT

BOX BUTTE RESERVOIR — Capacity Allocation: Conser. 30,420 a.f., Dead 640 a.f., Total 31,060 a.f.

BOX BUTTE DAM; Mirage Flats Canal; Dunlap Diversion Dam

SANDHILLS DIVISION

AINSWORTH UNIT

MERRITT RESERVOIR — Capacity Allocation: Conser. 72,872 a.f., Dead 1,614 a.f., Total 74,486 a.f.

MERRITT DAM; Ainsworth Canal

FRENCHMAN – CAMBRIDGE DIVISION

RED WILLOW UNIT

ENDERS RESERVOIR — Capacity Allocation: Flood 30,040 a.f., Conser. 36,010 a.f., Dead 8,470 a.f., Total 74,520 a.f.

HUGH BUTLER LAKE — Capacity Allocation: Flood 48,850 a.f., Conser. 31,470 a.f., Dead 6,310 a.f., Total 86,630 a.f.

ENDERS DAM; RED WILLOW DAM; Culbertson Diversion Dam; Culbertson Canal; Culbertson Extension Canal

SWANSON LAKE — Capacity Allocation: Flood 133,790 a.f., Conser. 116,060 a.f., Dead 4,100 a.f., Total 253,950 a.f.

TRENTON DAM; Upper Meeker Sub Canal; Upper Meeker Canal; Driftwood Canal; Driftwood West Canal; Meeker Extension Canal; Driftwood Sub Canal

FRENCHMAN UNIT

CAMBRIDGE UNIT

HARRY STRUNK LAKE — Capacity Allocation: Flood 52,170 a.f., Conser. 32,230 a.f., Dead 4,910 a.f., Total 89,310 a.f.

MEDICINE CREEK DAM; Red Willow Diversion Dam; Red Willow Canal; Cambridge Diversion Dam; Cambridge Canal; Bartley Canal; Bartley Diversion Dam

HARLAN COUNTY RESERVOIR — Capacity Allocation: Flood 508,989 a.f., Conser. & Sed. 319,787 a.f., Total 828,776 a.f.

HARLAN COUNTY DAM (U.S.C.E.)

FRANKLIN UNIT

Franklin Canal; Naponee Canal; Franklin Pump Canal

BOSTWICK – SUPERIOR-COURTLAND UNIT

Superior-Courtland Diversion Dam; Superior Canal; Courtland Canal; Pump No. 1 Canal; North Canal; Ridge Canal; White Rock Canal & Extension; Miller Canal; Pumps No. 3A & 3B Canals; Courtland West Canal; Pump No. 4 Canal

COURTLAND UNIT

LOVEWELL DAM

LOVEWELL RESERVOIR — Capacity Allocation: Flood 50,460 a.f., Conser. 36,640 a.f., Dead 5,050 a.f., Total 92,150 a.f.

KIRWIN RESERVOIR — Capacity Allocation: Flood 215,115 a.f., Conser. 93,050 a.f., Dead 6,385 a.f., Total 314,550 a.f.

KIRWIN DAM; Kirwin Main Canal; Kirwin North Canal; Kirwin South Canal

KIRWIN UNIT

GLEN ELDER DAM; Osborne Canal

WACONDA LAKE — Capacity Allocation: Flood 722,315 a.f., Conser. 240,224 a.f., Dead 1,236 a.f., Total 963,775 a.f.

GLEN ELDER UNIT

NORTON RESERVOIR — Capacity Allocation: Flood 98,800 a.f., Conser. 33,220 a.f., Dead 2,720 a.f., Total 134,740 a.f.

NORTON DAM; Almena Main Canal; Almena South Canal; Almena Diversion Dam

ALMENA UNIT

WEBSTER RESERVOIR — Capacity Allocation: Flood 183,370 a.f., Conser. 75,190 a.f., Dead 2,180 a.f., Total 260,740 a.f.

WEBSTER DAM; Woodston Diversion Dam

WEBSTER UNIT

SOLOMON DIVISION

CEDAR BLUFF RESERVOIR — Capacity Allocation: Flood 191,860 a.f., Conser. 176,830 a.f., Dead 8,260 a.f., Total 376,950 a.f.

CEDAR BLUFF DAM; Cedar Bluff Canal; FISH HATCHERY

CEDAR BLUFF UNIT

WILSON DAM (U.S.C.E.)

KANOPOLIS DAM (U.S.C.E.)

MILFORD DAM (U.S.C.E.)

TUTTLE CREEK DAM (U.S.C.E.)

SMOKY HILL DIVISION

UPPER REPUBLICAN DIVISION

ARMEL UNIT

BONNY RESERVOIR — Capacity Allocation: Flood 128,620 a.f., Conser. 39,920 a.f., Dead 1,420 a.f., Total 170,160 a.f.

BONNY DAM

KANASKA DIVISION

MEEKER-DRIFTWOOD UNIT

SARGENT UNIT

Milburn Diversion Dam; Sargent Canal; Woods Park Pumping Plant; Arcadia Diversion Dam; Sherman Feeder Canal; Deer Station Lateral and Pumping Plant

SHERMAN RESERVOIR — Capacity Allocation: Conser. 62,407 a.f., Dead 3,839 a.f., Total 66,246 a.f.

SHERMAN DAM

FARWELL UNIT

Farwell Main Canal; Farwell Lower Main Canal; Farwell Central Canal; Farwell Upper South Canal; Farwell South Canal

MIDDLE LOUP DIVISION

Cities: Chadron, Hay Springs, Gordon, Valentine, Niobrara, Ainsworth, O'Neill, Norfolk, Alliance, Scottsbluff, Thedford, Burwell, Broken Bow, Oshkosh, Lake McConaughy, Ogallala, Sidney, North Platte, Lexington, Kearney, Grand Island, Columbus, Omaha, Lincoln, Beatrice, Imperial, Holyoke, Wray, St. Francis, Hale, Burlington, Oberlin, Atwood, Norton, Phillipsburg, Stockton, Glen Elder, Beloit, Osborne, Wakeeney, Hays, Russell, Lindsborg, Salina, Abilene, Junction City, Manhattan, Topeka, Kansas City, Ness City

Rivers: Niobrara, Snake, North Middle Loup, Loup, Missouri, North Platte, South Platte, Platte, Republican, Frenchman, Arikaree, Beaver, North Fork, South Fork, Prairie Dog Creek, Solomon, Saline, Smoky Hill, Big Blue, Little Blue, Kansas, Sappa Creek, White Rock Creek, Water Creek, Red Willow Creek, Medicine Creek, Stinking Water Creek, Turkey Creek, Deer Creek

NEBRASKA / COLORADO

COLORADO / KANSAS

NEBRASKA / KANSAS

SCALE OF MILES: 10 0 10 20 30