

SYNOPSIS

General

This year is the 54th consecutive year that an Annual Operating Plans (AOP) has been prepared for the Federally-owned dams and reservoirs in the Niobrara, Lower Platte, and Kansas River Basins. The plan has been developed by the Water Operations Group in McCook, Nebraska for the 16 dams and reservoirs that are located in Colorado, Nebraska, and Kansas. These reservoirs, together with 9 diversion dams, 9 pumping plants, and 20 canal systems, serve approximately 269,532 acres of project lands in Nebraska and Kansas. In addition to irrigation and municipal water, these features serve flood control, recreation, and fish and wildlife purposes. A map at the end 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. The reservoirs in the Kansas River Basin are operated by either the Bureau of Reclamation (Reclamation), or the Corps of Engineers. Kirwin Irrigation District provides operational and maintenance assistance for Kirwin Dam. The diversion dams, pumping plants, and canal systems are operated by either irrigation or reclamation districts.

A Supervisory Control and Data Acquisition System (SCADA) located at McCook is used to assist in operational management of all 11 dams under Reclamation's jurisdiction that are located in the Kansas River Basin. A Hydromet system collects and stores near real-time data at selected stations in the Nebraska-Kansas Projects. The data includes water levels in streams, canals, and reservoirs and also gate openings. This data is transmitted to a satellite and downloaded to a Reclamation receiver in Boise, Idaho. The data can then be accessed by anyone interested in monitoring water levels or water usage in an irrigation system. The Nebraska-Kansas Projects currently has 110 Hydromet stations that can be accessed. The McCook Field Office has installed and maintains 56 Hydromet stations with plans to install more as time permits. When fully implemented, the projects will have a Hydromet station installed to provide real-time data on all reservoirs, most diversion dams, and most of the measuring structures in the irrigation systems. These stations can be found on the Internet by accessing Reclamation's home page at <http://www.usbr.gov/gp>. From the home page, select "Hydromet Data Center" under the Water Operations heading.

The Headlines 2006 that follows this synopsis is indicative of the awareness that the local people have of the natural resource development and conservation in the Niobrara, Lower Platte, and Kansas River Basins.

2006 Summary

Climatic Conditions

Precipitation at the project dams during 2006 ranged from 72 percent of normal at Virginia Smith Dam to 122 percent of normal near Davis Creek Dam. Temperatures during the first four months of the year were generally above normal throughout the projects area. Precipitation during the first four months of the year varied throughout the projects area. Precipitation totals were below normal at 13 of the 16 project dams, varying from 38 to 160 percent. Glen Elder Dam recorded zero precipitation for the month of January while six project dams recorded zero precipitation for the month of February.

Precipitation during May, June and July was generally below normal throughout the basin. All project dams recorded below normal precipitation during May, while nine project dams recorded below normal precipitation in June, and only three project dams recorded above normal precipitation in July. Merritt, Virginia Smith, and Davis Creek dams recorded the lowest precipitation total ever recorded for the month of May at the respective sites. Virginia Smith Dam recorded the lowest July precipitation total ever at the site. Average temperatures were above normal in May, June and July. August and September precipitation improved considerably with only four project dams recording below normal precipitation during August and only three dams recording below normal precipitation in September. Kiriwn Dam recorded the greatest August precipitation total ever for the month and Davis Creek Dam recorded the greatest September precipitation total at the respective sites. Temperatures in August and September were generally normal throughout the projects area.

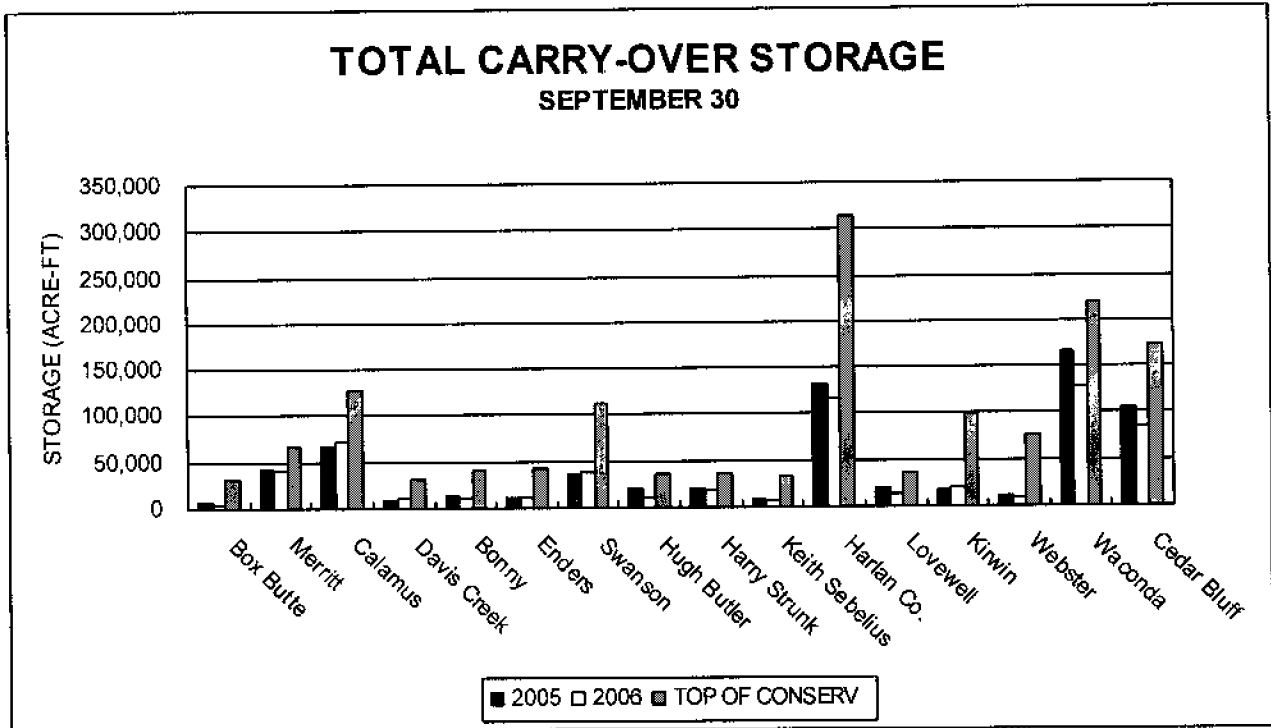
October was generally wetter than normal while November was generally drier than normal. Only five dams recorded below normal precipitation during October and all project dams recorded below normal precipitation during the month of November. Precipitation during November was only 24 percent of normal over the projects. Precipitation during December was well above normal at all project dams. December precipitation was the greatest ever recorded for the month at 13 of the 16 project dams. Temperatures were near normal in October and above normal in November and December.

Storage Reservoirs

1. Conservation Operations. The 2006 inflow was below the dry-year forecast at Box Butte, Bonny, Enders, Lovewell, and Webster Reservoirs, and Swanson, Hugh Butler, Harry Strunk, Harlan County, and Waconda Lakes. Merritt, Calamus, Davis Creek, Kirwin, and Cedar Bluff Reservoirs along with Keith Sebelius Lake had inflows between the dry- and normal-year forecasts. None of the project reservoirs had inflows above the normal-year forecast.

All project reservoirs had below average carryover storage from the 2005 water year with the exception of Box Butte Reservoir. Of the 12 project reservoirs in the Kansas River Basin, only Keith Sebelius Lake, and Lovewell and Cedar Bluff reservoirs did not record below average inflows during all 12 months of 2006. Cedar Bluff Reservoir recorded below average inflows during 11 months of 2006, and Keith Sebelius Lake recorded below average inflows during 10 of the months. Reservoir releases were made from Merritt and Virginia Smith Dams to maintain reservoir levels prior to the 2006 irrigation season. Just prior to the irrigation season, Enders, Kirwin, Webster and Box Butte Reservoirs, along with Keith Sebelius, Swanson, Hugh Butler, Harry Strunk and Harlan County Lakes, did not have sufficient storage to provide water users with a full water supply. Harry Strunk Lake and Lovewell Reservoir had some flood storage occupied prior to the irrigation season. The high irrigation demand months of July and August significantly reduced storage in those project reservoirs that had storage available for irrigation. Precipitation during late July and August was of little help in reducing the demands on project reservoirs. Storage in all the Kansas River Basin project reservoirs was below normal at the end of the irrigation season.

The following summarized graph shows a comparison of 2005 and 2006 carry-over storage conditions as compared to the top of conservation storage for all reservoirs in the Niobrara, Lower Platte, and Kansas River Basins as of September 30th



2. Flood Control Operations. Harry Strunk Lake and Lovewell Reservoir utilized flood pool storage in 2006. Flood releases were not required to reduce or maintain pool levels. The fiscal year 2006 flood control benefits accrued by the operation of Reclamation's Nebraska-Kansas Projects facilities was \$36,000 as determined by the Corps of Engineers. An additional benefit of \$7,000 was credited to Harlan County Lake. The accumulative total of flood control benefits for the years 1951 through 2006 by facilities in this report total \$1,873,595,000 (see Table 5). To date no benefits have been accrued by the operation of Box Butte, Merritt, Calamus, or Davis Creek Reservoirs.

A summary of precipitation, reservoir storage and inflows at Nebraska-Kansas Projects facilities can be found in Table 7.

Water Service

There was 266,671 acre-feet (AF) of water diverted to irrigate approximately 156,517 acres of project lands in the 12 irrigation districts (see tables 3 and 6). The project water supply was either inadequate or limited for 169,258 acres of the total project lands. This includes lands in Mirage Flats, Frenchman Valley, H&RW, Frenchman-Cambridge, Almena, Bostwick in Nebraska, Kansas Bostwick, Kirwin and Webster Irrigation Districts. The project water supplies for the other units mentioned in this report were more than adequate in 2006.

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

Irrigation Production

The 2006 crop yields on lands receiving project water in the Nebraska-Kansas Projects were lower than 2005 for two of the four reporting districts. The average corn yield, the principal crop of all reporting districts, was 174 bushels per acre. This was approximately four bushels per acre less than in 2005. The average unit price of corn when harvested was higher than the previous year at approximately \$3.25/bu. The start of irrigation releases from project reservoirs varied considerably depending on storage water available. Much of the growing season was warmer and drier than normal. Most districts experienced some relief from the dry conditions during the middle part of August. Crop maturity progressed near normal during the growing season. Several irrigation districts had finished making irrigation releases by mid September. Twelve canals did not divert water in 2006 as a result of extremely short water supplies. All irrigation districts had finished delivering water by the end of September with corn harvest commencing by late October.

Fish and Wildlife and Recreation Benefits

The National Recreational Fisheries Policy declares that the Government's vested stewardship responsibilities must work in concert with the state managing agency's recreational fisheries constituency and the general public to conserve, restore, and enhance recreational fisheries and their habitats. The Nebraska-Kansas Area Office is available for meetings if requested with Nebraska, Colorado, and Kansas state management agencies to discuss the Annual Operating Plans (AOP). Information is solicited that will allow Reclamation the flexibility to enhance fisheries resources while still meeting contractual obligations with the various irrigation districts.

During the early part of the 2006 season, normal reservoir operations were favorable for recreation and fish and wildlife uses at project reservoirs with full or nearly full conservation pool levels. Lower water levels have been experienced at most reservoirs in the Kansas River Basin over the past few years somewhat limiting the recreation benefits. Normal summer drawdown due to irrigation releases did allow for some late summer shoreline revegetation.

The Calamus Fish Hatchery is located below Virginia Smith Dam and Calamus Reservoir. The hatchery consists of an office/visitor center, laboratory, 2 residences, a shop and feed storage building, 51 rearing ponds lined with VLDPE and-covering 45.5 acres, 24 concrete raceways, 2 lined effluent ponds, 8 groundwater wells, a 36-inch diameter buried pipeline from Virginia Smith Dam, a groundwater degassing tank, and a computerized monitoring and alarm system. The hatchery is operated and maintained by the Commission and produces approximately 53 million fish per year. The water supply is provided by natural flows passed through Virginia Smith Dam and from Calamus Reservoir storage through an agreement dated July 28, 1988, between the Commission and the Twin Loups Reclamation District.

Headlines 2006

Bureau officially declares 2006 a water-short year

Dedication Wednesday
The U.S. Bureau of Reclamation will dedicate the new McCook Field Office at 1706 W. Third in McCook on Wednesday.
A public open house is set for 1 to 4 p.m., including tours of the new office.

Bureau's role in our area remains vital

■ Join us in welcoming the agency into a new home in McCook.

Kansas compact official: 'We want our water'

Interior secretary signs Platte River agreement

NEW DIGS

Public tours Bureau of Reclamation office

Farmers wonder: What's our water worth?

Water: Issue of the Decade

Drought could mean restrictions on water

Gov. Heineman plans meetings to discuss future of Republican River Basin

Compact compliance could get more painful for irrigators in 2008

Lakes recovering, slowly

State officials discuss Republican River

Agreement may boost river flow

Gauge sought to monitor Cedar Bluff dam leak

McCook Daily Gazette

Farmers being paid not to irrigate

CHAPTER I – INTRODUCTION

Purpose of This Report

This AOP advises water users, cooperating agencies, and other interested groups or persons of the actual operations during 2006 and serves as a guideline for the 2007 operations. This report also describes the responsibilities of Reclamation, Corps of Engineers, and the irrigation and reclamation districts in the Niobrara, Lower Platte, and Kansas River Basins.

Operational Responsibilities

Reclamation is responsible for irrigation operations at all federal reservoirs in the Nebraska-Kansas Projects. Reclamation is also responsible for the operation and maintenance (O&M), safety of the structure, and reservoir operations not specifically associated with regulation of the flood control storage at the reservoirs constructed by Reclamation. Regulation of the flood control storage is the responsibility of the Corps of Engineers. In addition to irrigation and flood control, these reservoirs provide recreation, fish and wildlife, and municipal benefits.

By contractual arrangements with Reclamation, the irrigation or reclamation districts in the Niobrara, Lower Platte, and Kansas River Basins are responsible for the O&M of the canals and irrigation distribution facilities constructed or rehabilitated by Reclamation. In addition, the appropriate irrigation or reclamation districts are responsible for operating and maintaining Box Butte, Merritt, Virginia Smith and Davis Creek Dams. The Corps of Engineers operates and maintains Harlan County Dam and Lake. The state of Colorado provides operational guidelines for Bonny Reservoir. Operational guidelines for Cedar Bluff Reservoir will be provided by the State of Kansas. Reclamation operates and maintains 11 dams and reservoirs in the Republican, Solomon, and Smoky Hill River Basins. Under a contract with Reclamation, Kirwin Irrigation District performs certain operational and maintenance functions at Kirwin Dam.

An updated Field Working Agreement was executed on July 17, 2001 between the Corps of Engineers and Reclamation regarding operation of Harlan County Dam and Lake. The agreement provides for a sharing of the decreasing water supply into Harlan County Lake. Storage capacity allocations were redefined based on the latest sediment survey (2000) and a procedure was established for sharing the reduced inflow and summer evaporation among the various lake uses.

The states of Nebraska, Colorado, and Kansas are responsible for the administration and enforcement of their state laws pertaining to the water rights and priorities of all parties concerned with the use of water. As provided by the lease agreement between Reclamation and the states, the states are responsible for administering the water surface activities and the federal lands around the reservoirs. The U.S. Fish and Wildlife Service administers the water surface activities and most of the federal lands at Kirwin Reservoir.

Reclamation cooperates 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 in the AOP are included as tables and exhibits and are located following page 35.

Water Supply

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

Inflow records from 1987 through 2006 were used for the analysis of reservoirs in the Niobrara, Lower Platte and Kansas River Basins.

Reservoir Operations

All operations are scheduled for optimum benefits of the authorized project functions. Monthly, or as often as runoff and weather conditions dictate, Reclamation evaluates the carry-over storage and estimated inflow at each reservoir to determine whether 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 all a part of the Pick-Sloan Missouri Basin Program and include single and multipurpose reservoirs, diversion dams, pump stations, and canal systems. The 16 storage facilities now in operation are listed below.

Constructed by Reclamation

1. Operated by irrigation or reclamation districts--Box Butte and Merritt Dams in the Niobrara River Basin and Virginia Smith and Davis Creek Dams in the Lower Platte River Basin.
2. Operated by Reclamation--Bonny, Trenton, Enders, Red Willow, Medicine Creek, Norton, Lovewell, Kirwin, Webster, Glen Elder, and Cedar Bluff Dams in the Kansas River Basin. A contract provides for Kirwin Irrigation District to perform certain operational and maintenance functions at Kirwin Dam.

Constructed and Operated by the Corps of Engineers

1. Harlan County Dam in the Kansas River Basin.

Irrigation and Reclamation Districts

Twelve irrigation districts and one reclamation district in the Niobrara, Lower Platte, and Kansas River Basins have contracted with Reclamation for water supply and irrigation facilities. The Twin Loups Irrigation District has contracted their O&M responsibilities to the Twin Loups Reclamation District. Bostwick Irrigation District in Nebraska has contracted their O&M responsibilities for Guide Rock Diversion Dam and the Courtland Canal between the headgates and the Nebraska-Kansas state line to Kansas Bostwick Irrigation District.

The contracted irrigation season for the Mirage Flats Irrigation District is April through September. The contracted irrigation season for Frenchman Valley, H&RW and Frenchman-Cambridge Irrigation Districts is from May 1st through October 15th or such additional period from April 1st through May 1st of each year as determined between the District and Reclamation. The contracted irrigation season for Almena, Bostwick in Nebraska, Kansas-Bostwick and Twin Loups Reclamation District is May 1st through September 30th or such additional period from April 1st through November 15th of each year as determined between the District and Reclamation. For all other districts, the contracted irrigation season is from May 1st through September 30th.

Long Term Water Service Contract Renewal

The renewal of the long-term water service contract with Ainsworth Irrigation District (AID) was completed in 2006. Negotiations to renew the long term water service contract began in May 2006 and were completed in September. A draft environmental assessment (EA) was made available for public review in May and the final EA was completed in December. The repayment contract was signed on December 26, 2006, and became effective on January 1, 2007.

Municipal Water

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

Fish and Wildlife

The State of Kansas is presently using the fish hatchery facility below Cedar Bluff Reservoir for waterfowl habitat. The Calamus Fish Hatchery located below Calamus Reservoir is operated by the State of Nebraska for fish production.

State of Colorado Division of Wildlife

The Colorado Division of Wildlife provides operational guidelines for Bonny Reservoir. The entire conservation pool storage was purchased by the State of Colorado on June 24, 1982.

State of Kansas Department of Wildlife and Parks

The State of Kansas acquired the use and control of portions of the conservation capacity at Cedar Bluff Reservoir following the reformulation of the Cedar Bluff Unit in October of 1992. The City of Russell's existing water storage right and contract with the United States remained unchanged.

Power Interference Considerations

A Power Interference Agreement exists between Reclamation, the Twin Loups Reclamation District, and the Loup River Public Power District. A Subordination Agreement also exists between Reclamation, the Ainsworth Irrigation District and the Nebraska Public Power District. Provisions of these agreements will be incorporated into the 2007 operations.

Environmental Considerations

A "Statement of Operational Objectives" for Harlan County Lake sets forth the general operational objectives and the specific reservoir uses that are desirable. The operational objectives indicate that fish and wildlife interests are 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 primary purposes, it indicates that comprehensive operational plans should be developed for maximum integration of the secondary uses.

These objectives are also considered in the operation of all Reclamation reservoirs in the Kansas River Basin, Niobrara River Basin, and the Lower Platte River Basin. The regulated outflow will also benefit farmers, ranchers, cities, and other interests below the reservoirs.

Republican River Compact – Kansas v. Nebraska

On May 26, 1998, Kansas filed a petition with the U. S. Supreme Court complaining that Nebraska had violated the Republican River Compact by using more than its share of the Republican River water supply. The three original parties to the Compact; Kansas, Nebraska and Colorado, became parties to the case. Because all of the major water development structures in the Republican River Basin were constructed by the Bureau of Reclamation and the Corps of Engineers, the United States was allowed to participate as an *amicus curiae*. After seventeen months of negotiations the Final Settlement Stipulation was signed by each respective governor and attorney general and was filed with the Special Master on December 16, 2002. The United States Supreme Court approved the settlement and dismissed the case on May 19, 2003.

The settlement provides for a moratorium on new groundwater wells, special rules for administration of water during water-short years, protection of storage releases, minimized flood flow effects on the accounting, recognition by Nebraska of a 1948 priority date for the Kansas-Bostwick Irrigation District, inclusion of the impacts of groundwater pumping from tableland wells in the accounting, and accounting for all reservoirs 15 acre-feet and larger within the river basin.

With the support of Kansas and Nebraska, Reclamation completed the Lower Republican River Basin Appraisal Report, which analyzed system improvement alternatives in the lower portion of the Republican River basin that would provide for more efficient use of the water supply. This report was published and distributed in January 2005. The study met requirements of the Final Settlement Stipulation by investigating system improvements in the Basin, including measures to improve the ability to utilize the water supply below Hardy, Nebraska. This study also met the responsibilities of the Republican River Compact by investigating the most efficient use of the water of the Republican River Basin for multiple purposes.

Nine alternatives were formulated using the recommended proposals provided by the Compact Commissioners. Three other alternatives were investigated for supplying water in meeting Minimum Desirable Streamflow (MDS) related needs in Kansas. The appraisal report concluded that additional water can be made available for storage in Lovewell Reservoir. The appraisal report recommends further Federal participation in a feasibility study and that such a study be undertaken to investigate solutions. Specific congressional authorization is required for Reclamation to perform a feasibility study. The purpose of a feasibility study is to identify, evaluate, and recommend to decision makers an appropriate, viable solution to the identified

problems and opportunities. The States have indicated they would provide in-kind support and/or funding for the feasibility study. Both states have expressed interest in pursuing legislation for the study. Legislation for authorizing the study was introduced in 2003 but the legislation was not advanced. On February 13th, 2007, congressmen from both Nebraska and Kansas reintroduced the Lower Republican River Basin Study Act (H.R. 1025). The language in the re-introduced legislation is essentially the same as the legislation originally introduced in 2003.

The Stipulation also required that the States, in cooperation with the United States, form a Conservation Committee to develop a proposed study plan to determine the quantitative effects of non-federal reservoirs and land terracing practices on water supplies in the Republican River Basin above Hardy, Nebraska. The Study Plan supported by the three states, the Natural Resources Conservation Service, and Reclamation was completed and signed on April 28, 2004. Cooperative agreements for completing the five year study were developed between Reclamation, the University of Nebraska-Lincoln (UNL), and Kansas State University. Installation of data loggers on 35 reservoirs throughout the basin was completed in 2004. Advanced monitoring equipment for terraces and additional reservoirs was installed by UNL in 2006. Data collection and model development will continue in 2007. The study is expected to be complete in 2009.

Water-Short Year Administration will be in effect in those years in which the projected or actual irrigation supply is less than 119,000 acre feet of storage available for use from Harlan County Lake as determined by Reclamation. It was determined in 2006 that a "Water-Short Year Administration" was in effect.

Frenchman Valley Appraisal Study

In 2004, the Nebraska Department of Natural Resources (DNR) requested Reclamation prepare an Appraisal Study (AS) to examine opportunities for more efficient management of water supplies in the Frenchman River Valley including Reclamation's Enders Reservoir, a feature of the Frenchman-Cambridge Division in Nebraska. The study will focus on problems and opportunities in an area that has experienced dramatically reduced ground and surface water supplies, including reduced reservoir inflows. Pre-planning activities, including developing a Plan of Study began in 2005. Agencies participating in the study include, Reclamation, Nebraska DNR, Frenchman Valley and H&RW Irrigation Districts, Nebraska Game and Parks Commission, and the Upper and Middle Republican Natural Resources Districts. The POS is anticipated to be completed in calendar year 2007, along with model development and selection of alternatives.

Emergency Management

The Nebraska-Kansas Area Office (NKAO) continued to coordinate with local jurisdictions that could potentially be impacted by flooding from large operational releases and/or dam failure. Three tabletop exercises and two functional exercises were conducted during calendar year 2006. Orientation meetings were held for all of the NKAO dams. Tabletop exercises were held for the Norton Dam Emergency Action Plan (EAP), Virginia Smith Dam EAP, and the Davis Creek Dam EAP. Functional exercises were held for the Webster Dam EAP and Glen Elder Dam EAP. Emergency radios have been installed at all dams. These radios will be used as a backup means of communication when notifying the local emergency management officials in the event of an emergency at the dam. Both the Nebraska-Kansas Area Office and the McCook Field Office have a satellite phone that can be used in an emergency. Management and the dam operators have been trained on the use of these phones.

An internal alert at Red Willow Dam continues from 2005 due to discovery of material in the outlet works stilling basin under drain system. Additional analysis of the outlet works stilling basin under drain system will continue in 2007. An internal alert at Enders Dam is still in effect until the investigation of the stability of the outlet works stilling basin and risk assessment are complete.

Five functional exercises are planned in 2007. EAP orientation meetings will be held at all other NKAO dams. Site security plans for Trenton, Lovewell, and Glen Elder Dams were finalized and published in 2006. Site security plans for the other 12 project dams are scheduled to be finalized and published in 2007.

Public Safety Reviews

The Annual Safety Training for field personnel was held at the Community College in McCook, NE in February 2006. An invitation letter was sent to all of the water users within the NKAO jurisdiction. This letter included some safety tips, an invitation to the Annual Safety Training, and promoted the utilization of assistance from Reclamation when developing or maintaining safety programs for the water districts. This training provided maintenance personnel the opportunity to renew their 10 hour certification with respect to OSHA construction standards. First Aid and CPR training was also provided to all interested NKAO personnel. The First Aid and CPR training was provided by the McCook Fire Department.

The ongoing safety reviews of project facilities continues to identify potential safety hazards to the public and operating personnel. NKAO combines the Safety Reviews of the major facilities with the Dam Safety Facility Reviews. This format provides for input from both the Area Safety Manager, and teams of Dam Safety Specialists. Some recommendations included enhanced confined space signage, expanding the public knowledge of safety issues around our facilities, and provide training to employees regarding some of the new OSHA requirements for record keeping.

Formal training for the Automatic External Defibrillators (AEDs) was provided to all NKAO employees in early 2006. The AEDs were acquired for the McCook Office, the Grand Island Office, and two field ready models. This process involved developing a protocol with the Federal Occupational and Health Services center in Denver.

An effort to focus on the NKAO Hazardous Communication Program was undertaken during 2006. Training focused on supplying employees the information and equipment to maintain a healthy and safe work environment. This program encouraged compliance with 29 CFR 1910.1200 and our own Reclamation Safety and Health Standard. The training stressed container labeling, material safety data sheets, storage of chemicals, and understanding the different terminologies and definitions. As a result of this type of training, some lead based material was removed from the McCook yard by a hazardous materials removal contractor.

In order to ensure facility accessibility, reliability and safety, achieving compliance with accessibility standards continues. Evaluations and the development of the action plans continued during 2006. The action plans identify work activities and provide estimated funding requirements for the needed accessibility retrofits at public facilities. These improvements are being coordinated with our managing partners, and are implemented as budget allows.

Attention continues with regards to issues concerning ergonomics, West Nile Virus, hazardous materials, pesticide use, arc flash hazards, extraction of injured personnel, and communications. Employees were provided safety and health training, and given information related to these and several other issues throughout the year.

Facility Reviews, Maintenance and Construction

Comprehensive Facility Reviews were conducted at Davis Creek, Medicine Creek, Red Willow Dams during 2006. Periodic Facility Reviews were conducted at Virginia Smith, Merritt, Lovewell, and Glen Elder Dams. Annual Site Inspections were conducted at the other eight NKAO dams in 2006.

Technical surveys were completed at Medicine Creek and Merritt Dams in 2006.

Video inspection of the toe drain system at Box Butte Dam was completed in April 2006. A program to examine all of our toe drain systems was initiated in 2001.

The Reclamation Dive team conducted underwater exams at Red Willow and Glen Elder stilling basins in 2006.

Security enhancements continue at NKAO dams.

CHAPTER II - NIOBRARA AND LOWER PLATTE RIVER BASINS

Mirage Flats Project in NebraskaGeneral

Flows in the Niobrara River along with Box Butte Reservoir storage provide a water supply for the 11,662 acre Mirage Flats Project. From 1997 to 2006, the project water supply averaged 11,700 AF, which is about 1.00 acre-foot per irrigable acre. Many irrigators supplement their water supply with private wells.

The Mirage Flats Irrigation District cooperates with the Nebraska Game and Parks Commission (Commission) by operating the Box Butte Dam outlet works gate and the Dunlap Diversion Dam gates in a manner to avoid sudden large changes in the flows of the Niobrara River. A 30-year agreement was made in 1990 between the district and the Commission whereby the district would not draw the reservoir water level below elevation 3978.00 feet (2,819 AF). In return the district received an up-front payment which was used to improve the efficiency of the project's delivery system. On March 17, 2000, the district agreed to increasing the minimum reservoir level by one additional foot to elevation 3979.00 feet (3,244 AF). In return the district received an additional payment from the Commission for the 20 years left on the original agreement.

A data collection platform (DCP) was installed in May of 1992 to monitor the reservoir elevation and outflow at Box Butte Dam. A telephone (primary communication system) and a radio (backup communication system) have been installed at the outlet works for contacting the Region 23 Emergency Management Agency.

2006 Summary

The flows of the Niobrara River plus the carry-over storage in Box Butte Reservoir were not adequate to provide a full water supply for the project lands. Precipitation at the Mirage Flats Irrigation District Office totaled 14.77 inches, which is 87 percent of normal. The 2006 total inflow of 10,391 AF was below the dry-year forecast and the lowest annual computed inflow ever recorded at the reservoir.

From early July through early September, diversions of 10,423 AF to the Mirage Flats Canal provided irrigation water for approximately 11,092 acres, 95 percent of the service available acreage. The farm deliveries from the project water supply totaled 4,244 AF (0.38 acre-foot per irrigable acre), which is a delivery efficiency of 41 percent. Total reservoir storage was only 3,676 AF at the end of the irrigation season. Privately owned irrigation wells supplemented the project water supply.

An orientation meeting to review the Box Butte Dam EAP took place in April and the Annual Site Inspection of Box Butte Dam was conducted in September.

A video inspection of the toe drain system was conducted in April 2006. The inspections revealed significant sediment deposition in several elements of the toe drain system. Several recommended actions were outlined in a Report of Findings issued in November 2006 including: cleaning the remaining sediments from the toe drains and outfall drain pipes, cleaning and

measuring the sediments from the seepage monitoring weir boxes, and performing a new risk analysis during the next Comprehensive Facility Review process.

The District continued to implement water conservation measures as outlined in their Water Management Plan and their Long Range Plan. Assistance to project irrigators provided by the District include delivery system improvements that provide on-farm efficiency improvements, such as relocation of turnouts, burying pipe for better access, and on-farm efficiency incentives. The District continues to modify and update their computer software to improve system operations, scheduling, and accounting and continued development of their web page that allows irrigators to place water orders, review water accounts, and keep updated on district operations. In 2006, Reclamation's Water Resources Research Laboratory (WRRL) visited the District to assist with the continued development of the canal automation and remote monitoring system.

Ainsworth Unit, Sandhills Division in Nebraska

General

Within the Ainsworth Irrigation District, there are approximately 35,000 acres with available service. The project water supply is provided by storage of Snake River flows in Merritt Reservoir. The reservoir is filled to elevation 2944.0 feet each fall after the irrigation season. This level is approximately two feet below the top of conservation capacity and within the repaired area of soil cement on the upstream face of the dam. The reservoir is regulated to maintain this level until the ice clears each spring. Maintaining the reservoir at this elevation during the winter will help avoid ice damage to the older existing soil cement at lower elevations. Upon ice-out the outlet pipe is drained, inspected, and repaired as necessary. The reservoir will then be rapidly filled to elevation 2946.0 feet to reduce shoreline erosion around the reservoir and minimize sand accumulations on the face of the dam. This filling process generally takes place in April. The reservoir level is maintained until irrigation releases begin to draw on the pool around mid May. Seepage, pickup and toe drain flow normally result in flows of up to 15 cfs below Merritt Dam.

Reclamation is in the process of developing a Memorandum of Agreement (MOA) between Reclamation, the Nebraska Game and Parks Commission and the Ainsworth Irrigation District for the Development of Criteria for Releases to the Snake River below Merritt Reservoir. The

purpose of this MOA is to establish the protocol that will be used to make future releases of water from Merritt Reservoir to the lower Snake River. The development of the MOA is an environmental commitment outlined in the Ainsworth Irrigation District Final Environmental Assessment (FEA) for the conversion of a Long-Term water Service Contract to a Repayment Contract (December 2006).

Release criteria will be based on the best available scientific data to determine when local conditions warrant releases to the Snake River. When it becomes necessary to release water from Merritt Reservoir, Reclamation will direct the Ainsworth Irrigation District to make the necessary releases to the river.

2006 Summary

Precipitation, as recorded near Merritt Dam, totaled 18.40 inches, which was 90 percent of normal. April and June precipitation was the highest on record for the respective months. The inflow for the year totaled 176,810 AF. This inflow was between the dry- and normal-year forecasts. The water supply was more than adequate to meet the project's irrigation requirement. There were 83,497 AF diverted from Merritt Reservoir into Ainsworth Canal, with 55,339 AF delivered to the farm headgates (delivery efficiency of 66 percent). There were 34,452 acres of land irrigated in 2006.

The district provided a total of 577 AF of irrigation water from holding ponds located within the district's service area.

An orientation meeting to review the Merritt Dam EAP took place in April 2006 and a Periodic Facility Review of Merritt Dam was conducted in October.

A technical survey of Merritt Dam was conducted in October.

The Ainsworth Irrigation District, along with Reclamation and the local Natural Resource District, continued to provide support to the University of Nebraska Extension Service for an irrigation scheduling/nitrogen management demonstration that will educate and improve irrigation management in the area. The first demonstration site included a center pivot in the District and a field day was held in the fall of 2005. In 2006 a furrow irrigated site was added to this project and another field day was held. This project will continue in 2007.

Working with Reclamation's technical and financial assistance through a cooperative agreement, the District installed a new ramp flume on the Airport Lateral. This flume will improve district delivery operations and reduce operational waste.

North Loup Division in Nebraska

General

The North Loup Division is located in the Loup River drainage basin. Water is diverted from both the Calamus and North Loup Rivers for the irrigation of approximately 54,900 acres of project lands. Operation of the division will also provide a sustained groundwater supply for an additional 17,000 acres. Principal features of the division include Virginia Smith Dam and Calamus Reservoir, Calamus Fish Hatchery, Kent Diversion Dam, Davis Creek Dam and Reservoir, five principal canals, one major and one small pumping plant and numerous open ditch and buried pipe laterals.

Calamus Reservoir is normally regulated at three to four feet below the top of conservation capacity during the winter months. Maintaining the reservoir at this elevation during the winter will help avoid ice damage to the soil cement on the upstream face of the dam. After the ice clears in the spring, the reservoir will be filled to conservation capacity. The North Loup Division project operation is restricted to no water diversions from the Calamus and North Loup Rivers during the months of July and August, and also during the month of September whenever sufficient water is available in storage reservoirs to deliver canal design capacity. During this time, inflows to Calamus Reservoir are required to be bypassed under the Power Interference Agreement between Reclamation, the Twin Loups Reclamation District, and the Loup River Public Power District and as required in the authorizing legislation.

Davis Creek Reservoir will be regulated near elevation 2048.0 feet following the irrigation season and through the winter months. This carry-over elevation provides a minimal recreational pool while reducing increases in groundwater storage due to reservoir seepage. The reservoir is filled via Mirdan Canal, starting in April and reaching full content by the end of June. A 160-acre recreation area adjoining the reservoir continues to be managed by the Lower Loup Natural Resources District. The area includes a boat ramp, a handicapped accessible fishing pier, a day-use area, a primitive camping area, shelter and a hiking path. Kent Diversion Dam is managed by the Nebraska Game and Parks Commission and is also open to day-use fishing with handicapped accessibility provided.

2006 Summary

Precipitation at Virginia Smith Dam was 17.80 inches which is 72 percent of normal. The inflow totaled 236,764 AF which was between the dry- and normal-year forecasts. There were 86,054 AF of water released into Mirdan Canal and 26,091 AF diverted through Kent Canal from the North Loup River. A total of 55,376 AF was diverted for district use above Davis Creek

Reservoir. The farm headgate delivery was 31,764 AF which is a delivery efficiency of 57 percent. Land irrigated in 2006 totaled 34,040 acres above Davis Creek Reservoir. Calamus Reservoir inflows were bypassed during July, August, and September as required. The reservoir elevation at the end of the year was at 2239.86 feet. The Calamus Fish Hatchery used bypassed natural flows and storage from Calamus Reservoir totaling 5,908 AF during 2006.

The precipitation of 28.50 inches near Davis Creek Dam was 122 percent of normal. Inflow to Davis Creek Reservoir totaled 50,048 AF during 2006. Beginning in mid April, Davis Creek Reservoir was filled from an elevation of approximately 2047.0 feet to a peak elevation of 2072.65 feet on June 26th using diversions from the North Loup River and Calamus Reservoir. A release of 39,878 AF was made from Davis Creek Dam into Fullerton Canal, with 21,908 AF delivered to the farm headgates (55 percent delivery efficiency). There were 20,861 acres irrigated below Davis Creek Reservoir. The reservoir elevation at the end of 2006 was near the normal wintering level at 2051.24 feet.

A tabletop exercise of the Virginia Smith Dam and Davis Creek Dam EAPs took place in September 2006. A Comprehensive Facility Review of Davis Creek Dam was conducted in May and a Periodic Facility Review of Virginia Smith Dam was conducted in October.

The Standing Operations Procedures for Davis Creek Dam were updated and republished in June 2006.

Through a cooperative agreement with Reclamation, the District began installing remote monitoring equipment at key canal sites to improve delivery system operations. In 2006 the District installed remote monitoring equipment at three sites.

CHAPTER III - REPUBLICAN RIVER BASIN

Armel Unit, Upper Republican Division in ColoradoGeneral

Normal reservoir operations for Bonny Reservoir are primarily for recreation and fish and wildlife support, although water will be available for water right administration and irrigation purposes.

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

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

2006 Summary

The annual precipitation total of 16.41 inches at Bonny Dam was 95 percent of normal. The annual computed inflow of 6,350 AF to Bonny Reservoir was below the dry-year forecast and the second lowest ever recorded at the site. Below normal inflows were recorded during every month of the year. April inflows were the lowest on record for the month since first filling. The reservoir level was 19.0 feet below the top of conservation at the first of the year. The reservoir level gradually increased 0.65 foot to a maximum reservoir level of 3653.71 feet on April 12th. The reservoir level gradually decreased throughout the remainder of the year. Bonny Dam recorded a maximum one day precipitation total of 1.49 inches overnight on July 9th. A new historical low reservoir elevation of 3650.49 feet was recorded on December 14th. The reservoir elevation at the end of the year was 21.3 feet below the top of conservation at 3650.69. The Corps of Engineers determined that \$7,000 in flood prevention benefits were realized from the operation of Bonny Reservoir during 2006.

The Colorado Water Commissioner did not direct inflows from the South Fork of the Republican River and Landsman Creek passed through Bonny Reservoir into Hale Ditch. Likewise, the Colorado Department of Natural Resources did not request storage releases for irrigation purposes into Hale Ditch.

An EAP orientation meeting and an Annual Site Inspection of Bonny Dam were conducted in June.

Concrete repairs were made on the spillway inlet apron and the crack in the transverse portion of the curved vertical wall in 2006. A large void was discovered during the concrete repairs on the right side of the inlet where the upper horizontal floor slab met the sloping floor slab. Work is planned for 2007 to core the slab and backfill with flowable fill.

Frenchman Unit, Frenchman-Cambridge Division in Nebraska

General

The Culbertson Canal and the Culbertson Extension Canal systems serve 9,292 acres in the Frenchman Valley Irrigation District and 11,915 acres in the H&RW Irrigation District. The water supply for these lands is furnished by flows from Frenchman and Stinking Water Creeks and off-season storage in Enders Reservoir located on Frenchman Creek, a tributary of the Republican River in southwest Nebraska. Irrigation releases are conveyed via Frenchman Creek from Enders Reservoir to Culbertson Diversion Dam. Reclamation maintains/clears this section of Frenchman Creek prior to the irrigation season each spring.

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.

2006 Summary

The annual precipitation total of 20.08 inches at Enders Dam was above normal (106 percent). The 2006 inflow into Enders Reservoir of 4,284 AF was below the dry-year forecast and the lowest ever recorded at the site. January and April inflows were the lowest ever recorded for the respective months. Due to extensive groundwater pumping above the reservoir, the inflow was only seven percent of the average historical reconstruction runoff at the Enders Dam site (60,700 AF from 1929-1947). This year was the 39th consecutive year with below-normal inflows in which the conservation pool did not fill. The reservoir level was 26.0 feet below the top of conservation at the first of the year. The reservoir pool gradually increased with late winter and spring inflows peaking at 3086.97 feet (25.3 feet below the top of conservation) on April 7th. Due to the extremely low water supply available, no water was released from Enders Reservoir. The greatest 24-hour precipitation total recorded during the year at Enders Dam was 3.08 inches overnight on May 23'. The end of the year reservoir level was 26.4 feet below the top of conservation.

The Frenchman Valley Irrigation District did not divert water into Culbertson Canal in 2006. In the spring of 2006, the Nebraska Department of Natural Resources entered into a Memorandum of Agreement (MOA) with the Frenchman Valley Irrigation District to purchase the district's natural flow rights for calendar year 2006. The MOA, approved by the irrigators within the district, provided that no water would be diverted into the Culbertson Canal during 2006. The

H&RW Irrigation District did not divert water into Culbertson Extension Canal in 2006 due to the extremely low water supply. This was the fifth consecutive year that the district did not deliver water. H&RW Irrigation District storage water in Enders Reservoir was carried over into 2007.

In August 2004, a small depression was discovered near the outlet works stilling basin at Enders Dam. An Internal Alert remains in effect until investigation of the stability of the outlet works stilling basin and risk assessment are complete. A Safety of Dams recommendation in 2006 recommend filling the stilling basin under drain system and potential voids with low-pressure grout and backfilling the existing sinkhole with compacted material after completion of the grouting program.

An Annual Site Inspection of Enders Dam was conducted in June 2006 and an orientation meeting to review the Enders Dam EAP took place in November.

In 2006, the Frenchman Valley Irrigation District (along with Reclamation) again provided support for a Limited Irrigation Demonstration Project with the University of Nebraska Extension Service. One demonstration site was located near Benkelman and demonstrated various irrigation strategies with a very limited water supply.

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.

Service is provided for Frenchman-Cambridge Irrigation District by Meeker-Driftwood Canal to 16,855 acres; Red Willow Canal to 4,797 acres; Bartley Canal to 6,353 acres; and Cambridge Canal to 17,644 acres. The water supply for these lands is provided by storage in Swanson, Hugh Butler, and Harry Strunk Lakes, and inflows of the Republican River and Red Willow and Medicine Creeks. The Frenchman-Cambridge Irrigation District has replaced all of the open ditch laterals which were economically feasible with buried pipe which has significantly increased both system and on-farm efficiencies. The District is currently placing the lower reaches of the open ditch Cambridge Canal into buried pipe.

2006 Summary

The annual precipitation total of 20.76 inches at Trenton Dam was 104 percent of normal. The inflow of 12,047 AF to Swanson Lake was well below the dry-year forecast and the lowest annual computed inflow ever recorded at the lake. The inflow was below normal for all twelve months. The reservoir level began the year approximately 20.6 feet below the top of conservation pool. The reservoir level gradually increased during the spring and peaked at 2733.69 feet on April 18th (approximately 18.3 feet below full). Due to the extremely low water supply available, no water was released from Swanson Lake. Irrigation diversions were not made into Meeker-Driftwood Canal. This was the fourth consecutive year that the district did not deliver water from the Meeker-Driftwood Canal. At the end of the year the reservoir level was 20.2 feet below the top of conservation at 2731.85 feet.

The annual precipitation total of 19.65 inches at Red Willow Dam was 100 percent of normal. The greatest precipitation event recorded at Red Willow Dam in 2006 was 1.91 inches overnight on July 20th. The annual inflow of 8,638 AF into Hugh Butler Lake was below the dry-year forecast and the lowest ever recorded at the site. The computed inflow for all twelve months of the year was below normal with record lows recorded during January, February, March and April. The reservoir level at the first of the year was 11.5 feet below the top of conservation. Inflows gradually increased the level of the reservoir to a peak of 2571.32 feet (10.5 feet below full) on April 8th. Irrigation releases began on June 24th and were discontinued on August 18th. Approximately 9,200 acre-feet of water was released from Hugh Butler Lake for irrigation in Bartley Canal. Irrigation diversions were not made into Red Willow Canal for the fourth consecutive year. The level of Hugh Butler Lake at the end of the year was 18.6 feet below the top of conservation, the second lowest end of year storage ever recorded.

The water supply was limited with 5,830 AF diverted to irrigate 5,722 acres served by the Bartley Canal (farm delivery efficiency was 45 percent).

The annual precipitation total of 22.88 inches at Medicine Creek Dam was 111 percent of normal. The inflow of 27,009 AF was below the dry-year forecast and the lowest annual total ever recorded. The computed inflow was below normal during all twelve months with record lows

recorded in February and April. The reservoir level at the beginning of 2006 was 5.4 feet below the top of conservation. The reservoir pool gradually increased peaking at 2366.41 feet on June 24th (0.3 foot into flood pool). Irrigation releases began on June 25th and were shut off on September 1st with nearly 23,700 AF of water released from the reservoir for irrigation. The greatest 24-hour precipitation event recorded at Medicine Creek Dam was 2.07 inches overnight on June 18th. Harry Strunk Lake was 7.7 feet below the top of conservation at the end of the year. The Corps of Engineers determined that the reservoir prevented \$15,000 in flood damages.

The water supply was limited with 19,692 AF of water diverted to irrigate 15,077 acres of land served by the Cambridge Canal (farm delivery efficiency was 47 percent).

An orientation meeting to review the Trenton, Red Willow, and the Medicine Creek Dams' EAPs took place in September 2006. An Annual Site Inspections was conducted in March at Trenton Dam. Comprehensive Facility Reviews were conducted at Medicine Creek and Red Willow Dams in June 2006.

A technical survey of Medicine Creek Dam was completed in May 2006.

In July 2005, a small quantity of fine sand was discovered near the river outlet works stilling basin drain outlet during an inspection at Red Willow Dam. Five piezometers were installed in April 2006 adjacent to the outlet works and spillway stilling basins and temporary plugs were placed in the underdrain outlets in May. An Internal Alert remains in effect until additional analysis of the underdrain system is complete.

Painting of the spillway gate and associated metal work at Trenton Dam began in 2006 but was discontinued due to winter weather. The painting contractor will complete the painting in 2007. Initial site prep work for a new storage building at Trenton Dam was completed in 2006. The building will be completed in 2007.

The District (along with Reclamation) continued to provide support for a Limited Irrigation Demonstration Project with the University of Nebraska Extension Service. The demonstration site was located just east of Arapahoe and demonstrated various irrigation strategies with a short water supply. The project received water from the Cambridge Canal and a field day was well attended.

In 2006 the District began a pipe project that will replace approximate 3 miles of the end section of Cambridge Canal with buried pipe. Reclamation is providing technical and financial assistance for this project through a cooperative agreement with the District. This project will eliminate approximately 3 miles of open ditch canal and will also provide improved delivery service to a number of project irrigators.

A Periodic Facility Review of Trenton Dam is scheduled for 2007. On-site dam operator training is also scheduled to take place at Red Willow and Medicine Creek Dams in 2007.

The Standing Operating Procedures for Trenton Dam are being updated and are expected to be republished in 2007.

The district plans to support the limited irrigation demonstration again in 2007. The district is planning to finish the Cambridge Canal pipe project prior to the 2007 irrigation season. The district is also investigating expanding the operational capabilities of two check structures on Cambridge Canal to improve operations.

Almena Unit, Kanaska Division in Kansas

General

Service is available to 5,764 acres in the Almena Irrigation District. The project water supply is provided by Prairie Dog Creek flows and Keith Sebelius Lake storage.

The water service contract for the City of Norton, Kansas, provides for a maximum annual use of 1,600 AF from Keith Sebelius Lake.

2006 Summary

The annual precipitation at Norton Dam totaled 27.56 inches, which is 113 percent of normal. The total inflow of 4,329 AF was between the dry- and normal-year forecasts. The reservoir level was 17.8 feet below the top of conservation on December 31, 2005. Late winter and early spring inflows gradually increased the reservoir level to a peak elevation of 2287.27 feet on April 14th (17.0 feet below full pool). Irrigation releases were not made from the reservoir in 2006. Keith Sebelius Lake was 18.1 feet below the top of conservation (2286.22 feet) at the end of the year.

The city of Norton used 456 AF of municipal water during 2006.

An Annual Site Inspection of Norton Dam was conducted in June and a tabletop exercise of the Norton Dam EAP took place in August 2006.

A Safety of Dams recommendation was made in 2000 concerning the seepage through the left abutment and around the outlet works house at Norton Dam. Technical Service Center personnel inspected the seepage areas in June 2001 and recommended consideration of monitoring improvement and additional instrumentation. A final issue evaluation report of findings (Technical Memorandum ND-8312-2) in 2003 concluded that the assessed risks for seepage and piping through the foundation in the left abutment falls in the range of "justification to take action to reduce risk." Topographic surveys and additional instrumentation were installed near the outlet works in 2004. In December 2005, a Corrective Action Study Technical Memorandum evaluated various alternatives for risk reduction and produced two new recommendations. Design of a weighted filter drain system and a seepage stability berm was completed in 2006. Construction is scheduled to occur in 2007.

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 22,454 acres in the Bostwick Irrigation District in Nebraska, and 13,378 acres in the Kansas-Bostwick Irrigation District No. 2 above Lovewell Reservoir. This storage and natural flows, together with White Rock Creek flows and Lovewell Reservoir storage, furnish a water supply for 29,122 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 downstream of the Kansas state line are in the Kansas-Bostwick Irrigation District.

In accordance with the off-season flow alternative outlined in Reclamation's final environmental assessment dated December 16, 1983, and amended on November 21, 2002, Harlan County Lake releases will be 10 cfs during the months of December, January, and February, except when the reservoir is at low levels. During water-short years releases for these three months will be either zero or 5 cfs depending on reservoir levels. At the request of the State of Nebraska, releases of 30 cfs for a maximum 5-day period may be made to relieve icing conditions in the river.

Natural gain in streamflow, plus irrigation return flows, and operational bypass at Superior-Courtland Diversion Dam will provide some flow **downstream**.

The Kansas Department of Wildlife and Parks has requested that the Kansas-Bostwick Irrigation District and Reclamation maintain, when possible, a flow of 20 cfs 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.

2006 Summary - Bostwick Division - Harlan County Lake Operations

The annual precipitation at Harlan County Dam totaled 20.62 inches of rainfall, which is 91 percent of normal. The 2006 inflow of 30,077 AF was below the dry-year forecast and the second lowest ever recorded. The inflow was below normal for all twelve months of the year. A release was not required during January, February or December in accordance to the environmental assessment and the annual operating plan.

Harlan County Lake began 2006 approximately 17.4 feet below the top of conservation pool, at 1928.31 feet. Inflows during the late winter and early spring slowly increased the reservoir pool to a peak of 1929.68 feet on May 9th (top of conservation pool is elevation 1945.73 feet). Harlan County Dam recorded 2.55 inches of rain overnight on June 16th (the greatest one day total in 2006). Irrigation releases began on June 22nd and continued until July 23rd. The reservoir level continued to decline throughout the remainder of the year. The level of Harlan County Lake at the end of 2005 was 1926.75 feet (19.0 feet below the top of conservation). Harlan County Lake prevented \$7,000 of downstream flood damages during 2006 according to the Corps of Engineers.

Approximately 5,925 acres in the Kansas Bostwick Irrigation District above Lovewell Dam were furnished a limited water supply.

A total of 19,063 AF (approximately 63 percent of total inflow) was delivered to Lovewell Reservoir through the Courtland Canal.

2006 Summary - Bostwick Division - Nebraska

Irrigation diversions were not made into Franklin, Naponee, Franklin Pump, Superior, or Courtland Canal in Nebraska in 2006. In the spring of 2006, the Nebraska Department of Natural Resources and the Bostwick Irrigation District entered into a Memorandum of Agreement (MOA) to purchase the district's water supply for the 2006 calendar year. The MOA was approved by the irrigators within the district which provided that the district relinquish the rights to use its share of natural flow and storage water for the 2006 irrigation season.

The district continued to replace open ditch laterals with buried pipe to reduce losses and improve system operations. In 2005 the District was selected for a Water 2025 Challenge Grant Project that will replace approximately 10 miles of open ditch laterals with buried pipe. Identified laterals to be placed in pipe include all or portions of Superior Laterals 9.5, 17.5, 21.2, and 27.3. These pipe projects provide delivery system improvements by eliminating seepage losses, eliminating operational wasteways, improve water measurement and accounting by utilizing water meters, and provide on-farm benefits by allowing land owners the opportunity to convert to sprinkler irrigation. Due to the rising pipe prices, the District was only able to replace 3 of the 4 planned laterals in 2006.

The District applied and was selected for a 2006 Water 2025 project that will allow the District to complete the original Water 2025 proposal. With this 2006 project, the District will be able to complete the Superior Lateral 27.3 pipe project.

2006 Summary - Bostwick Division - Kansas

The 2006 precipitation at Lovewell Dam totaled 23.87 inches, which was 87 percent of normal. Lovewell Reservoir began 2006 with a water surface elevation only 3.6 feet below the top of conservation. Inflows during the first four months of the year from White Rock Creek and diversion of Republican River flows via Courtland Canal slowly increased the reservoir filling the reservoir conservation pool on April 14th (elevation 1582.6 feet), and in filling the reservoir to an elevation of 1584.20 feet on May 10th. Releases were made into the lower Courtland Canal beginning on May 11th to season the canal and maintain the reservoir level. Irrigation demands reduced the pool elevation to 1576.04 feet on August 23. The greatest 24-hour precipitation total for the year occurred overnight on September 9th with 1.89 inches recorded. Diversions of Republican River natural flows into Lovewell Reservoir continued after the irrigation release had ended and were maintained throughout the remainder of December. The water surface elevation gradually increased to 1576.22 feet on December 31, 2006 (6.4 feet below the top of active conservation). Lovewell Reservoir prevented \$7,000 of downstream flood damages during 2006 according to the Corps of Engineers

The Kansas-Bostwick Irrigation District diverted a total of 38,446 AF to serve 5,925 acres above Lovewell Dam and 22,655 acres below Lovewell Dam. Farm delivery efficiency averaged 47 percent in the district.

An orientation meeting to review the Lovewell Dam EAP and a Periodic Facility Review of Lovewell Dam were conducted in November.

Initial site prep work for a new storage building at Lovewell Dam was completed in 2006. The building will be completed in 2007.

In 2006 the district continued to replace open ditch laterals with buried pipe. The district and Reclamation also provided assistance to Kansas State University (KSU) for a sprinkler irrigation demonstration located northeast of Courtland, Kansas. Courtland Canal supplies water for this demonstration and a field day was held at the site in the fall. In 2006, the District replaced open ditch Ridge lateral 5.0 and Courtland West lateral 0.3-1.3 with buried pipe. These pipe projects provide delivery system improvements by eliminating seepage losses, eliminating operational wasteways, improve water measurement and accounting by utilizing water meters, and provide on-farm benefits by allowing land owners the opportunity to convert to sprinkler irrigation. The District has identified additional laterals proposed to be replaced with buried pipe in 2007.

Diversions from the Republican River via Courtland Canal will continue through the winter and again in early spring to insure that Lovewell Reservoir is filled prior to the irrigation season. Reclamation submitted a deviation request to the Corps of Engineers that would allow Lovewell Reservoir to be filled to elevation 1584.6 feet (2.0 feet into flood pool) prior to the irrigation season. The Corps of Engineers has approved the storing of 1.6 feet into the flood pool to elevation 1584.2 feet. The additional storage will be used for irrigation purposes due to persistent drought conditions. The Corps of Engineers allowed the reservoir to be filled to elevation 1584.2 feet prior to the irrigation season in 2006.

A functional exercise of the Lovewell Dam EAP is scheduled for 2007.

Both Districts will continue to investigate remote monitoring site installation that will provide system operations improvements. The Bostwick Irrigation District in Nebraska was selected for a Water 2025 challenge grant that would expand the District buried pipe program in 2006. Kansas Bostwick Irrigation District is also providing support to KSU for the installation of a sub-surface drip irrigation project, which was installed in late 2006 and will be operational for the 2007 irrigation season.

The Kansas Department of Agriculture submitted a Water 2025 Challenge Grant proposal which was selected for funding in 2005. Through this project, the Kansas Division of Water Resources (KDWR) will install flow meter data logging equipment and remote monitoring equipment on approximately 100 diversions in the Republican River Basin. The real time monitoring of the diversions will enhance administration of water rights, improve water management, and expand water marketing opportunities between senior and junior water rights holders. 38 sites were installed in 2006, but equipment problems delayed the project. These delays resulting in most sites not operating until the 2006 irrigation season was complete. KDWR believes that they will be close to the target of 100 sites prior to the 2007 irrigation season.

CHAPTER IV - SMOKY HILL RIVER BASIN

Kirwin Unit, Solomon Division in Kansas

General

The water supply for the 11,465 acres of land in the Kirwin Irrigation District is furnished by Kirwin Reservoir storage and inflows from the North Fork Solomon River and Bow Creek.

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

The U.S. Fish and Wildlife Service (Service) has completed the Kirwin National Wildlife Refuge Comprehensive Conservation Plan (CCP). The 1997 National Refuge System Improvement Act required the Service to develop a CCP for each of its refuges. The Kirwin Refuge CCP will guide the refuge management activities through 2025.

2006 Summary

The annual precipitation total of 25.96 inches at Kirwin Dam was 111 percent of normal. The inflow of 6,269 AF was between the dry- and normal-year forecast. Kirwin Reservoir was 23.9 feet below the top of conservation pool at the first of the year. The reservoir level continued to gradually increase to a peak elevation of 1706.23 feet (23.0 feet below full) on May 31st. Due to the extremely low water supply, no irrigation releases were made from Kirwin Reservoir. Precipitation during August (7.50 inches) was the greatest ever recorded for the month

An orientation meeting to review the Kirwin Dam EAP took place in May and an Annual Site Inspection of Kirwin Dam was conducted in August.

The Standing Operating Procedures (SOP) were updated and republished in 2006.

The District and Reclamation continue to participate in the Solomon Basin Working Group meetings as part of the State of Kansas' Subbasin Water Resources Management Program. This group is designed to take a proactive approach in developing water management strategies that address declines in stream flows and groundwater levels.

Webster Unit, Solomon Division in Kansas

General

The Webster Irrigation District has service available to 8,537 acres. The project water supply is provided by Webster Reservoir storage and flows of the South Fork Solomon River.

2006 Summary

In 2006, the precipitation at Webster Dam was 112 percent of normal (26.33 inches). The inflow of 3,187 AF was below the dry-year forecast and the lowest annual computed inflow ever recorded. Webster Reservoir began 2006, 27.1 feet (elevation 1865.36 feet) below the top of conservation pool. The reservoir pool peaked at an elevation of 1865.39 feet on January 5th and gradually declined throughout the remainder of the year. Irrigation releases were not made from the reservoir in 2006. December precipitation (3.97 inches) was the highest total ever recorded for the month. Webster Dam received 3.87 inches of rainfall overnight on August 18th, the greatest 24-hour precipitation event during the year. The reservoir level was 28.5 feet below the top of conservation on December 31, 2006. The Corps of Engineers determined Webster Reservoir prevented \$7,000 in flood damages.

An Annual Site Inspection of Webster Dam was conducted in June and an functional exercise of the Webster Dam EAP took place in September.

Concrete repairs in the spillway chute began in 2006. Approximately 3,500 ft² of concrete was repaired in the flat portion of the spillway by NKAO personnel in 2006. Repairs to this area of the spillway will continue in 2007.

The district continued to explore opportunities to cost share with Reclamation and district irrigators for the replacement of open ditch laterals with buried pipe. In late fall of 2005 and spring of 2006, the District replaced open ditch Osborne Laterals 25.0 and 26.1 with buried pipe. Future conservation projects include the possibility of installing remote monitoring equipment at the key canal measurement sites on Osborne Canal. Future conservation projects may be delayed due to the declining water supply and availability of cost-share funding.

In addition to the repairs to the flat portion of the spillway, a concrete repair specification is scheduled to be issued in the spring of 2007 for the sloped portion of the chute floor with the contract awarded and work to be completed during the summer of 2007.

The District is not planning to install any large lateral pipe projects in 2007 but will continue to solicit interest from project irrigators. Interest in investing in delivery system improvements has been hampered by the uncertainty of future water supplies. The District is investigating improvements to the water measurement structure between the 2nd and 3rd sections of Osborne Canal. Future conservation projects include the possibility of installing remote monitoring equipment at the wasteways and at the beginning of the second and third sections of Osborne Canal.

The District and Reclamation continue to participate in the Solomon Basin Working Group meetings as part of the State of Kansas' Subbasin Water Resources Management Program. This group is designed to take a proactive approach in developing water management strategies that address declines in stream flows and groundwater levels.

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 Reclamation. Releases are made for the city of Beloit, the Mitchell County Rural Water District, the long-term water service contract with Glen Elder Irrigation District, and for water right administration.

The water service contract with Beloit, Kansas, provides for the annual use of up to 2,000 AF of Waconda Lake storage. Water is measured at the Glen Elder Dam river outlet works. In any year that the city's water supply is insufficient and there is surplus water in Waconda Lake, such additional water may be released for the city at a rate of \$15.00 per acre-foot.

The water service contract with the Mitchell County Rural Water District No. 2 provides for 1,009 AF of storage water as available from Waconda Lake.

The water service contract with the Glen Elder Irrigation District provides for the use of up to 18,000 AF of storage water each year. Based on the current State of Kansas Certificate of Appropriation, water usage is not to exceed 15,170 AF per calendar year. Water is released and measured through the river outlet works.

The available facilities along the shores of Waconda Lake and the large water surface area afford opportunities to 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.

When possible, Waconda Lake will be allowed to fill during the late summer and early fall to flood exposed shoreline vegetation. This flooded aquatic vegetation is very beneficial to waterfowl management.

Waconda Lake will normally be regulated at one to two feet below the top of conservation capacity during the winter months. Maintaining the lake at this level will reduce shoreline erosion, provide a buffer for spring runoff and lessen ice damage to the upstream face of Glen Elder Dam. Releases from Waconda Lake will be regulated each year to maintain a constant water surface level while the lake is ice-covered.

2006 Summary

The annual precipitation total of 21.54 inches at Glen Elder Dam was 84 percent of normal. The inflow of 27,032 AF was below the dry-year forecast and the lowest ever recorded. Waconda Lake began the year 5.1 feet below the top of conservation. The lake level peaked at elevation 1450.53 feet on January 8th (5.1 feet below the top of conservation). This was the lowest annual peak since first filling of the reservoir. Irrigation releases began on March 8th and continued through September 9th reducing the lake level to 1447.00 feet. The reservoir continued to decline throughout the remainder of the year and a historic low reservoir level of 1446.18 feet was reached on December 19th. On December 31, 2006 the lake level was 1446.51 feet (9.1 feet below full).

A total of 23,174 AF of water was released from Glen Elder Dam in 2006. Storage releases of 13,529 AF combined with natural flow releases of 2,458 AF for the irrigation of 6,693 acres in the Glen Elder Irrigation District. Storage releases totaling 754 AF were made for the City of Beloit, with an additional 5,596 AF bypassed for water quality as directed by the State Water Commissioner. Releases to the Mitchell County Rural Water District No. 2 totaled 837 AF.

A functional exercise of the Glen Elder Dam EAP took place in September 2006 and a Periodic Facility Review of Glen Elder Dam was conducted in November.

Cedar Bluff Unit, Smoky Hill Division in Kansas

General

Cedar Bluff Reservoir storage furnishes a maximum of 2,000 AF each year for the City of Russell, Kansas when required. Prior to 1993, Cedar Bluff Reservoir storage and Smoky Hill River flows had provided a water supply for 6,800 acres in the Cedar Bluff Irrigation District. Reformulation of the Cedar Bluff Unit in October of 1992 resulted in the dissolution of the Cedar Bluff Irrigation District with the Kansas Water Office and Kansas Department of Wildlife and Parks acquiring the use and control of portions of the reservoir conservation capacity. A "designated operating pool" was established for Cedar Bluff Reservoir and includes the following sub allocation pools: The City of Russell's existing water storage right which remained unchanged (2,700 AF); an artificial recharge pool under control of the Kansas Water Office (5,110 AF); and a fish, wildlife and recreation pool under control of the Kansas Department of Wildlife and Parks (21,061 AF). A "joint-use pool" has been established between the operating pool and the flood control pool for water supply, flood control, environmental and fish, wildlife and recreation purposes. Water rights for the "joint-use pool" are held jointly between the Kansas Department of Wildlife and Parks and the Kansas Water Office. A Contract Administration Memorandum between the United States of America, represented by Reclamation, the State of Kansas and the City of Russell was signed in November/December of 2003, establishing an accounting procedure for water storage in Cedar Bluff Reservoir. In January, 2006 a Memorandum of Understanding was signed by the State of Kansas agencies, Kansas Water Office, and Kansas Department of Wildlife and Parks. Kansas Department of Wildlife and Parks will be responsible for the joint pool releases and for the water rights.

2006 Summary

The annual precipitation total at Cedar Bluff Dam was 19.43 inches which is 92 percent of normal. Precipitation in December was the greatest precipitation total ever recorded for the month. The inflow (7,418 AF) was between the dry- and normal-year forecasts. At the beginning of the year, the level of Cedar Bluff Reservoir was 2131.66 feet (top of active conservation is 2144.00 feet). The reservoir level declined throughout the entire year and by December 31, 2006, the reservoir level had decreased to 2127.96 feet (16.0 feet below the top of active conservation).

The State of Kansas used the fish hatchery facility located below Cedar Bluff Dam for waterfowl habitat with 1 AF released to the facility. A total of 1,683 AF of water was released from Cedar Bluff Reservoir during 2006 for the City of Russell. A total of 1,368 AF of water was released from the Artificial Recharge pool at the request of the Kansas Water Office.

TABLE 1
RESERVOIR DATA - NIOBRARA, LOWER PLATTE AND KANSAS RIVER BASINS
CAPACITY ALLOCATIONS 1/
LIVE CONSERVATION

RESERVOIR		DEAD	Inactive	Active	FLOOD CONTROL
Box Butte	- Elevation Ft.	3969.0	3979.0	4007.0	---
	Total Acre-feet	640	3,244	31,060	---
	Net Acre-feet	640	2,604	27,816	---
Merritt	- Elevation Ft.	2875.0	2896.0	2946.0	---
	Total Acre-feet	774	4,662	66,726	---
	Net Acre-feet	774	3,888	62,064	---
Calamus	- Elevation Ft.	2185.0	2213.3	2244.0	---
	Total Acre-feet	817	24,646	127,400	---
	Net Acre-feet	817	23,829	102,754	---
Davis Creek	- Elevation Ft.	1998.5	2003.0	2076.0	---
	Total Acre-feet	76	172	31,158	---
	Net Acre-feet	76	96	30,986	---
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
Enders	- Elevation Ft.	3080.0	3082.4	3112.3	3127.0
	Total Acre-feet	7,516	8,948	42,910	72,958
	Net Acre-feet	7,516	1,432	33,962	30,048
Swanson Lake	- Elevation Ft.	2710.0	2720.0	2752.0	2773.0
	Total Acre-feet	2,118	12,430	112,214	246,291
	Net Acre-feet	2,118	10,312	99,784	134,077
Hugh Butler Lake	- Elevation Ft.	2552.0	2558.0	2581.8	2604.9
	Total Acre-feet	5,185	8,921	36,224	85,070
	Net Acre-feet	5,185	3,736	27,303	48,846
Harry Strunk Lake 4/	- Elevation Ft.	2335.0	2343.0	2366.1	2386.2
	Total Acre-feet	3,408	7,897	34,647	87,361
	Net Acre-feet	3,408	4,489	26,750	52,714
Keith Sebelius Lake	- Elevation Ft.	2275.0	2280.4	2304.3	2331.4
	Total Acre-feet	1,636	3,993	34,510	133,740
	Net Acre-feet	1,636	2,357	30,517	99,230
Harlan County Lake 3/	- Elevation Ft.	1885.0	1927.0	1945.73	1973.5
	Total Acre-feet	0	118,099	314,111	814,111
	Net Acre-feet	0	118,099	196,012	500,000
Lovewell	- Elevation Ft.	1562.07	1571.7	1582.6	1595.3
	Total Acre-feet	1,659	11,644	35,666	86,131
	Net Acre-feet	1,659	9,970	24,022	50,465
Kirwin	- Elevation Ft.	1693.0	1697.0	1729.25	1757.3
	Total Acre-feet	4,969	8,515	98,154	313,290
	Net Acre-feet	4,969	3,546	89,639	215,136
Webster	- Elevation Ft.	1855.5	1860.0	1892.45	1923.7
	Total Acre-feet	1,256	4,231	76,157	259,510
	Net Acre-feet	1,256	2,975	71,926	183,353
Waconda Lake	- Elevation Ft.	1407.8	1428.0	1455.6	1488.3
	Total Acre-feet	248	26,237	219,420	942,408
	Net Acre-feet	248	25,989	193,183	722,988
Cedar Bluff	- Elevation Ft.	2090.0	2107.8	2144.0	2166.0
	Total Acre-feet	4,402	28,574	172,452	364,342
	Net Acre-feet	4,402	24,172	143,878	191,890
Total Storage (A.F.)		36,122	274,347	1,474,149	3,909,611 2/
Total Net Acre-feet		36,122	238,210	1,199,802	2,357,568

1/ Includes space for sediment storage.

2/ Includes total active storage for Box Butte, Merritt, Calamus, and Davis Creek Reservoirs.

3/ Bottom of irrigation pool for Harlan County Lake is 1932.5 feet, 164,111 AF.

4/ New Area-Capacity Tables in effect 1-1-07. Sedimentation survey conducted in May 2006.

TABLE 2
SUMMARY OF 2006 OPERATIONS
MIRAGE FLATS PROJECT

Month	BOX BUTTE RESERVOIR				End of	MIRAGE FLATS CANAL	
	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	1,328	36	74	0.24	10,385	0	0
Feb.	1,248	34	99	0.47	11,500	0	0
Mar.	2,204	42	187	1.90	13,475	0	0
Apr.	1,575	42	325	0.97	14,683	0	0
May	769	46	482	1.04	14,924	0	0
June	397	555	498	1.84	14,268	0	0
July	315	6,908	525	1.12	7,150	6,446	2,340
Aug.	310	2,908	286	3.80	4,266	3,084	1,553
Sep.	585	853	175	2.32	3,823	893	351
Oct.	494	61	125	0.51	4,131	0	0
Nov.	771	60	72	0.03	4,770	0	0
Dec.	395	40	44	0.53	5,081	0	0
TOTAL	10,391	11,585	2,892	14.77	-	10,423	4,244

NOTE - Acres irrigated 2006: Mirage Flats Canal 11,092 acres.

SANDHILLS DIVISION
AINSWORTH UNIT

Month	MERRITT RESERVOIR				End of	AINSWORTH CANAL	
	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	Month Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	14,197	14,231	236	0.26	61,100	0	0
Feb.	12,867	12,298	299	0.40	61,370	0	0
Mar.	16,886	15,372	421	2.37	62,463	0	0
Apr.	16,118	12,000	724	3.34	65,857	0	0
May	13,962	11,792	1,301	0.47	66,726	4,739	1,215
June	14,140	12,982	1,738	3.40	66,146	9,660	3,334
July	14,230	36,218	1,604	0.67	42,554	36,391	26,863
Aug.	16,111	29,147	933	2.67	28,585	29,381	22,610
Sep.	15,815	4,175	402	2.37	39,823	3,326	1,317
Oct.	15,054	2,460	576	0.67	51,841	0	0
Nov.	13,064	3,669	405	0.22	60,831	0	0
Dec.	14,366	13,785	312	1.56	61,100	0	0
TOTAL	176,810	168,129	8,951	18.40	-	83,497	55,339

NOTE - Acres irrigated 2006: Ainsworth Canal 34,452 acres.

NORTH LOUP DIVISION
CALAMUS RESERVOIR

Month	CALAMUS RESERVOIR				End of	ABOVE DAVIS CREEK MIRDAN CANAL			Delivered To Farms (AF)
	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	Month Content (AF)	Release to Calamus Fish Hatch. (AF)	Release to Canal (AF)	Canal Use (AF)	
Jan.	20,455	6,329	446	0.00	114,241	361	0	0	0
Feb.	16,378	5,825	595	0.05	124,199	326	0	0	0
Mar.	20,611	16,883	1,089	2.26	126,838	371	0	0	0
Apr.	23,703	20,999	1,783	1.66	127,759	571	1,254	0	0
May	18,753	19,611	2,349	0.21	124,552	498	8,243	4,165	2,240
June	19,735	17,280	2,556	2.66	124,451	613	12,637	8,252	4,768
July	18,855	48,607	2,738	0.51	91,961	703	35,058	23,776	14,023
Aug.	20,275	39,356	1,515	3.19	71,365	920	24,540	16,529	9,336
Sep.	19,230	18,450	816	3.72	71,329	653	4,322	2,654	1,397
Oct.	20,031	8,118	455	1.24	82,787	366	0	0	0
Nov.	18,595	6,383	621	0.00	94,378	234	0	0	0
Dec.	20,143	6,803	392	2.30	107,326	292	0	0	0
TOTAL	236,764	214,644	15,355	17.80	-	5,908	86,054	55,376	31,764

NOTE -- Acres irrigated 2006: Mirdan Canal 34,040 acres.

NORTH LOUP DIVISION (Continued)

Month	DAVIS CREEK RESERVOIR				End of Mo.	BELOW DAVIS CREEK FULLERTON CANAL	
	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	1	198	48	0.04	8,951	0	0
Feb.	1	175	58	0.03	8,719	0	0
Mar.	96	93	102	2.45	8,620	0	0
Apr.	5,417	476	193	2.99	13,368	0	0
May	13,301	4,090	352	0.33	22,227	2,723	140
June	12,456	7,622	535	3.63	26,526	6,180	3040
July	9,615	17,869	506	2.65	17,766	16,786	13,447
Aug.	6,731	8,414	327	3.74	15,756	8,269	4,221
Sep.	2,147	6,204	202	7.91	11,497	5,920	1,060
Oct.	124	276	161	1.39	11,184	0	0
Nov.	11	248	86	0.45	10,861	0	0
Dec.	148	248	49	2.89	10,712	0	0
TOTAL	50,048	45,913	2,619	28.50	-	39,878	21,908

NOTE - Acres irrigated 2006: Fullerton Canal 20,861 acres.

TABLE 2
SUMMARY OF 2006 OPERATIONS

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)
Jan.	576	307	114	0.53	12,420	0
Feb.	626	333	117	0.15	12,596	0
Mar.	808	369	174	0.54	12,861	0
Apr.	714	357	478	0.74	12,740	0
May	638	369	629	2.10	12,380	0
June	464	357	727	2.24	11,760	0
July	492	369	723	2.95	11,160	0
Aug.	286	369	558	1.17	10,519	0
Sep.	412	357	334	2.45	10,240	0
Oct.	405	369	274	1.84	10,002	0
Nov.	324	357	172	0.04	9,797	0
Dec.	605	369	98	1.66	9,935	0
TOTAL	6,350	4,282	4,398	16.41	—	

TABLE 2
SUMMARY OF 2006 OPERATIONS

FRENCHMAN-CAMBRIDGE DIVISION
FRENCHMAN UNIT

ENDERS RESERVOIR

Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of CULBERTSON CANAL			CULBERTSON EXT. CANAL	
					Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	375	184	66	0.24	11,691	0	0	0	0
Feb.	387	167	65	0.24	11,846	0	0	0	0
Mar.	464	184	109	0.81	12,017	0	0	0	0
Apr.	397	179	247	0.50	11,988	0	0	0	0
May	440	184	413	1.69	11,831	0	0	0	0
June	315	179	452	2.82	11,515	0	0	0	0
July	349	184	427	4.77	11,253	0	0	0	0
Aug.	74	184	311	2.07	10,832	0	0	0	0
Sep.	280	179	220	3.06	10,713	0	0	0	0
Oct.	295	184	118	1.50	10,706	0	0	0	0
Nov.	364	179	115	0.12	10,776	0	0	0	0
Dec.	544	184	62	2.26	11,074	0	0	0	0
TOTAL	4,284	2,171	2,605	20.08	-	0	0	0	0

NOTE: Acres irrigated 2006: Culbertson Canal - 0 acres; Culbertson Extension Canal - 0 acres.

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
MEEKER-DRIFTWOOD UNIT

SWANSON LAKE

Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of MEEKER-DRIFTWOOD		
					Month Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	1,799	61	233	0.19	36,573	0	0
Feb.	1,705	56	236	0.13	37,986	0	0
Mar.	2,920	61	403	0.94	40,442	0	0
Apr.	1,894	60	1,125	0.20	41,151	0	0
May	841	61	1,489	1.60	40,442	0	0
June	621	60	1,684	4.12	39,519	0	0
July	240	61	1,739	1.60	37,959	0	0
Aug.	1,166	61	1,132	4.23	37,932	0	0
Sep.	204	60	815	3.22	37,261	0	0
Oct.	0	61	549	1.78	36,651	0	0
Nov.	1	60	439	0.01	36,153	0	0
Dec.	456	61	238	2.74	36,310	0	0
TOTAL	12,047	723	10,082	20.76	--	0	0

NOTE: Acres irrigated 2006: Meeker-Driftwood Canal - 0 acres.

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
RED WILLOW UNIT

HUGH BUTLER LAKE

Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of RED WILLOW CANAL			BARTLEY CANAL	
					Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	627	246	94	0.06	20,529	0	0	0	0
Feb.	537	222	95	0.02	20,749	0	0	0	0
Mar.	933	246	161	1.08	21,275	0	0	0	0
Apr.	725	238	464	0.69	21,298	0	0	0	0
May	557	246	674	1.29	20,935	0	0	424	0
June	543	787	768	3.34	19,923	0	0	349	1,478
July	869	5,835	727	2.96	14,230	0	0	3,263	1,142
Aug.	965	2,874	440	3.24	11,881	0	0	1,794	0
Sep.	703	238	289	2.20	12,057	0	0	0	0
Oct.	724	246	188	1.62	12,347	0	0	0	0
Nov.	713	238	139	0.01	12,683	0	0	0	0
Dec.	742	246	74	3.14	13,105	0	0	0	0
TOTAL	8,638	11,662	4,113	19.65	-	0	0	5,830	2,620

NOTE - Acres irrigated 2006: Red Willow Canal - 0 acres; Bartley Canal 5,722 acres.

FRENCHMAN-CAMBRIDGE DIVISION (Continued)
CAMBRIDGE UNIT

HARRY STRUNK LAKE

Month	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of CAMBRIDGE CANAL		
					Month Content (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	2,033	61	120	0.13	28,685	0	0
Feb.	2,062	56	128	0.12	30,563	0	0
Mar.	2,874	61	224	1.19	33,152	0	0
Apr.	2,618	60	735	0.64	34,975	0	0
May	1,898	61	1,015	1.24	35,797	0	0
June	1,696	1,557	1,123	4.87	34,813	1,163	125
July	2,812	14,202	996	2.44	22,427	11,593	5,826
Aug.	2,552	7,851	531	3.83	16,597	6,854	3,109
Sep.	1,717	266	332	2.48	17,716	82	118
Oct.	2,017	61	245	1.98	19,427	0	0
Nov.	2,043	60	184	0.00	21,226	0	0
Dec.	2,687	61	101	3.96	23,751	0	0
TOTAL	27,009	24,357	5,734	22.88	--	19,692	9,174

NOTE -- Acres irrigated 2006: Cambridge Canal 15,077 acres.

TABLE 2
SUMMARY OF 2006 OPERATIONS

KANSASKA DIVISION
ALMENA UNIT
KEITH SEBELIUS LAKE

Month	KEITH SEBELIUS LAKE				End of	Release	ALMENA CANAL	
	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	Month Content (AF)	To City Of Norton (AF)	Diversions To Canal (AF)	Delivered To Farms (AF)
Jan.	312	56	63	0.02	8,515	25	0	0
Feb.	226	44	71	0.18	8,626	16	0	0
Mar.	428	49	122	1.93	8,883	18	0	0
Apr.	567	65	441	2.11	8,944	35	0	0
May	452	85	497	2.97	8,814	54	0	0
June	637	75	631	5.52	8,745	45	0	0
July	218	103	654	1.49	8,206	73	0	0
Aug.	402	94	520	3.74	7,994	63	0	0
Sep.	146	76	312	2.18	7,752	46	0	0
Oct.	255	66	205	3.13	7,736	34	0	0
Nov.	132	58	130	0.27	7,680	28	0	0
Dec.	554	50	69	4.02	8,115	19	0	0
TOTAL	4,329	821	3,715	27.56	-	456	0	0

NOTE: Acres irrigated 2006: Almena Canal - 0 acres.

BOSTWICK DIVISION
FRANKLIN UNIT

Month	HARLAN COUNTY LAKE Data from Corps of Engineers				End of	FRANKLIN CANAL		NAPONEE CANAL	
	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	Month Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	2,569	0	589	0.03	130,091	0	0	0	0
Feb.	1,874	0	607	0.00	131,358	0	0	0	0
Mar.	5,445	0	825	1.60	135,978	0	0	0	0
Apr.	4,879	0	2,478	1.07	138,379	0	0	0	0
May	2,705	0	3,367	1.17	137,717	0	0	0	0
June	3,104	4,457	4,372	5.16	131,992	0	0	0	0
July	1,305	7,823	4,730	2.04	120,744	0	0	0	0
Aug.	1,732	0	4,226	3.48	118,250	0	0	0	0
Sep.	1,291	0	3,458	2.07	116,083	0	0	0	0
Oct.	1,533	0	2,469	2.40	115,147	0	0	0	0
Nov.	1,002	0	1,722	0.39	114,427	0	0	0	0
Dec.	2,638	0	766	1.21	116,299	0	0	0	0
TOTAL	30,077	12,280	29,609	20.62	-	0	0	0	0

NOTE: Acres irrigated 2006: Franklin Canal - 0 acres; Naponee Canal - 0 acres.

BOSTWICK DIVISION (Continued)
SUPERIOR-COURTLAND UNIT

Month	FRANKLIN PUMP CANAL		SUPERIOR CANAL		Total Diversion (AF)	NEBRASKA USE		KANSAS USE	
	Diverted To Canal (AF)	Delivered To Farms (AF)	Diverted To Canal (AF)	Delivered To Farms (AF)		Total (AF)	Delivered To Farms (AF)	Diversion 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	0	0	0	75	15
June	0	0	0	0	0	0	0	2,389	274
July	0	0	0	0	0	0	0	6,514	2,765
Aug.	0	0	0	0	0	0	0	1,423	258
Sep.	0	0	0	0	0	0	0	194	41
Oct.	0	0	0	0	0	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	0	0	0	0	0	0	0	10,595	3,353

NOTE: Acres irrigated 2006: Franklin Pump Canal - 0 acres; Superior Canal - 0 acres.
Courtland Canal-Nebraska use - 0 acres.
Courtland Canal-Kansas use - 5,925 acres.

BOSTWICK DIVISION (Continued)
COURTLAND UNIT
LOVEWELL RESERVOIR

Month	Est. Flow from White Rock Creek (AF)	Inflow from Courtland 34.8 (AF)	Total Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	End of Month Content (AF)	COURTLAND (Below)	
								Release To Canal (AF)	Delivered To Farms (AF)
Jan.	750	2,473	3,223	12	167	0.02	28,880	0	0
Feb.	523	1,968	2,491	11	197	0.00	31,163	0	0
Mar.	1,575	2,862	4,437	12	368	1.69	35,220	0	0
Apr.	905	3,509	4,414	12	1,049	1.96	38,573	0	0
May	2,646	1,004	3,650	463	1,411	2.46	40,349	492	0
June	0	478	478	4,423	1,833	2.37	34,571	4,796	1,601
July	1,110	1,863	2,973	13,641	1,408	3.53	22,495	13,730	7,310
Aug.	851	91	942	9,426	821	3.11	13,190	8,833	5,699
Sep.	1,170	399	1,569	18	501	4.26	14,240	0	0
Oct.	520	873	1,393	18	330	1.46	15,285	0	0
Nov.	215	1,611	1,826	18	274	0.05	16,819	0	0
Dec.	977	1,964	2,941	12	143	2.96	19,605	0	0
TOTAL	11,244	19,093	30,337	28,066	8,502	23.87	-	27,851	14,610

NOTE: Acres irrigated 2006: Courtland Canal below Lovewell 22,655 acres.

TABLE 2
SUMMARY OF 2006 OPERATIONS

SOLOMON DIVISION
KIRVVIN UNIT

Month	KIRVVIN RESERVOIR				End of	KIRWIN CANAL	
	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	Month Content (AF)	Release To Canal (AF)	Delivered To Farms (AF)
Jan.	365	0	112	0.05	19,505	0	0
Feb.	232	0	137	0.00	19,600	0	0
Mar.	815	0	224	1.61	20,191	0	0
Apr.	813	0	635	0.98	20,369	0	0
May	1,050	0	822	3.61	20,597	0	0
June	607	0	1,061	3.15	20,143	0	0
July	238	0	1,081	2.00	19,300	0	0
Aug.	1,070	0	786	7.50	19,584	0	0
Sep.	144	0	569	1.99	19,159	0	0
Oct.	124	0	327	1.67	18,956	0	0
Nov.	136	0	245	0.55	18,847	0	0
Dec.	675	0	128	2.85	19,394	0	0
TOTAL	6,269	0	6,127	25.96	--	0	0

NOTE: Acres irrigated 2006: Kirwin Canal - 0 acres.

SOLOMON DIVISION (Continued)
WEBSTER UNIT

Month	WEBSTER RESERVOIR				End of	OSBORNE CANAL	
	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	Month Content (AF)	Diversion To Canal (AF)	Delivered To Farms (AF)
Jan.	10	0	103	0.02	10,234	0	0
Feb.	18	0	112	0.00	10,140	0	0
Mar.	277	0	197	1.74	10,220	0	0
Apr.	384	0	611	1.98	9,993	0	0
May	736	0	722	1.85	10,007	0	0
June	430	0	839	4.58	9,598	0	0
July	17	0	840	0.74	8,775	0	0
Aug.	600	0	587	2.58	8,788	0	0
Sep.	99	0	437	2.29	8,450	0	0
Oct.	75	0	200	2.07	8,325	0	0
Nov.	49	0	196	0.51	8,178	0	0
Dec.	492	0	108	3.97	8,562	0	0
TOTAL	3,187	0	4,952	26.33	0	0	0

NOTE: Acres irrigated 2006: Osborne Canal - 0 acres.

SOLOMON DIVISION (Continued)
GLEN ELDER UNIT

Month	WACONDA LAKE				End of	OUTFLOW TO RIVER				
	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	Month Content (AF)	City of Beloit Storage Release (AF)	Quality Bypass (AF)	Irrig. District Storage Release (AF)	Other Controlled Releases (AF)	Release To Mitchell Co. RWD No. 2 (AF)
Jan.	1,653	982	671	0.00	161,594	0	922	0	0	60
Feb.	833	890	1,736	0.00	159,801	0	833	0	0	57
Mar.	3,252	1,184	1,373	1.93	160,496	0	801	171	149	63
Apr.	3,322	1,255	4,145	2.26	158,418	0	728	339	119	69
May	4,721	1,710	5,552	3.59	155,877	0	509	746	387	68
June	3,079	2,635	6,548	2.95	149,773	10	221	1,640	686	78
July	2,055	6,744	6,790	1.38	138,294	0	0	6,192	452	99
Aug.	2,647	4,297	5,119	2.88	131,525	0	0	3,894	315	88
Sep.	1,902	1,467	3,284	2.44	128,676	125	380	547	349	66
Oct.	169	697	2,281	1.08	125,867	282	351	0	0	64
Nov.	205	636	1,690	0.08	123,746	204	369	0	0	63
Dec.	3,194	677	642	7.95	118,621	133	482	0	0	62a
TOTAL	27,032	23,174	39,831	21.54	--	754	5,596	13,529	2,457	837

NOTE: Acres irrigated 2006: Glen Elder District 6,693 acres.

SMOKY HILL DIVISION
ELLIS UNIT

Month	CEDAR BLUFF RESERVOIR				End of	Release to	Release	Release
	Inflow (AF)	Outflow (AF)	Gross Evap. (AF)	Precip. (Inches)	Month Content (AF)	City of Russell (AF)	To Fish Hatchery (AF)	to Kansas Water Office (AF)
Jan.	0	0	642	0.03	100,539	0	0	0
Feb.	0	0	865	0.00	99,674	0	0	0
Mar.	266	0	718	0.72	99,222	0	0	0
Apr.	663	0	2,098	0.92	97,787	0	0	0
May	884	0	2,693	1.09	95,978	0	0	0
June	1,426	1	3,202	3.52	94,201	0	1	0
July	905	468	3,361	1.85	91,277	0	0	468
Aug.	1,024	2,583	2,597	2.17	87,121	1683	0	900
Sep.	256	0	1,622	2.67	85,755	0	0	0
Oct.	232	0	1,107	1.61	84,880	0	0	0
Nov.	0	0	907	0.25	83,973	0	0	0
Dec.	1,762	0	378	4.60	85,357	0	0	0
TOTAL	7,418	3,052	20,190	19.43	--	1,683	1	1,368

TABLE 3
ACRES IRRIGATED IN 2006

Irrigation District and Canal	Acres With Service Available	Acres Irrigated in 2006
Mirage Flats Irrigation District		
Mirage Flats Canal	11,662	11,092
Ainsworth Irrigation District		
Ainsworth Canal	35,000	34,452
Twin Loups Irrigation District		
Above Davis Creek	34,053	34,040
Below Davis Creek	20,851	20,861
Total Twin Loups Irrigation District	54,904	54,901
Frenchman Valley Irrigation District		
Culbertson Canal	9,292	0
H & RW Irrigation District		
Culbertson Extension Canal	11,915	0
Frenchman-Cambridge Irrigation District		
Meeker-Driftwood Canal	16,855	0
Red Willow Canal	4,797	0
Bartley Canal	6,353	5,722
Cambridge Canal	17,664	15,077
Total Frenchman-Cambridge Irrigation District	45,669	20,799
Almena Irrigation District		
Almena Canal	5,764	0
Bostwick Irrigation District in Nebraska		
Franklin Canal	10,920	0
Naponee Canal	1,650	0
Franklin Pump Canal	2,090	0
Superior Canal	5,848	0
Courtland Canal (Nebraska)	1,946	0
Total Bostwick Irrigation Dist. in Nebraska	22,454	0
Kansas-Bostwick Irrigation District		
Courtland Canal above Lovewell	13,378	5,925
Courtland Canal below Lovewell	29,122	22,655
Total Kansas-Bostwick Irrigation District	42,500	28,580
Kirwin Irrigation District		
Kirwin Canal	11,465	0
Webster Irrigation District		
Osborne Canal	8,537	0
Glen Elder Irrigation District	10,370	6,693
TOTAL PROJECT USES	269,532	156,517
Non-Project Uses		
Hale Ditch	700	0
TOTAL PROJECT AND NON-PROJECT	270,232	156,517

TABLE 5

FLOOD DAMAGES PREVENTED BY NEBRASKA-KANSAS PROJECTS RESERVOIRS

RESERVOIR	DURING FY 2006	PRIOR TO 2006	ACCUMULATED TOTAL
BONNY	\$7,000	\$2,780,000	\$2,787,000
ENDERS	\$0	\$3,281,000	\$3,281,000
SWANSON	\$0	\$19,157,000	\$19,157,000
HUGH BUTLER	\$0	\$2,665,000	\$2,665,000
HARRY STRUNK	\$15,000	\$5,022,000	\$5,037,000
KEITH SEBELIUS	\$0	\$3,958,000	\$3,958,000
HARLAN COUNTY	\$7,000	\$150,554,000	\$150,561,000
LOVEWELL	\$7,000	\$146,608,000	\$146,615,000
KIRWIN	\$0	\$86,870,000	\$86,870,000
WEBSTER	\$7,000	\$110,313,000	\$110,320,000
WACONDA	\$0	\$1,213,454,000	\$1,213,454,000
CEDAR BLUFF	\$0	\$128,890,000	\$128,890,000
TOTAL	\$43,000	\$1,873,552,000	\$1,873,595,000

Estimates of damages prevented are received from the Army Corps of Engineer's Kansas City District Office. The Accumulated Totals date from 1951 through 2006. Cumulative totals are revised by the Corps of Engineers in some cases to reflect data not previously included in the reporting and may not match previous cumulative totals.

Construction Cost of storage dams was \$208,954,130.

The reservoirs upstream of Harlan County Lake did not receive benefits for damages prevented from 1972 to 1993.

TABLE 6
WATER DIVERTED IN 2006
(Units - Acre-Feet)

Irrigation District and Canal	2006 Irrigation Operations		10-Year Average Diversion (1996-2005)	2006 Diversion
	From	To		
Mirage Flats Irrigation District				
Mirage Flats Canal	7/5	9/12	11,952	10,423
Ainsworth Irrigation District				
Ainsworth Canal	5/14	9/15	74,842	83,497
Twin Loups Irrigation District				
Above Davis Creek	4/21	9/15	40,984	55,376
Below Davis Creek	5/8	9/16	38,225	39,878
Total Twin Loups Irrigation District			79,209	95,254
Frenchman Valley Irrigation District				
Culbertson Canal	Did not run.		8,664	0
H & RW Irrigation District				
Culbertson Extension Canal	Did not run.		6,740	0
Frenchman-Cambridge Irrigation District				
Meeker-Driftwood Canal	Did not run.		16,780	0
Red Willow Canal	Did not run.		4,478	0
Bartley Canal	4/15	8/20	5,100	5,830
Cambridge Canal	7/1	9/11	22,017	19,692
Total Frenchman-Cambridge Irrigation District			48,375	25,522
Almena Irrigation District				
Almena Canal	Did not run.		4,109	0
Bostwick Irrigation District in Nebraska				
Franklin Canal	Did not run.		23,136	0
Naponee Canal	Did not run.		2,104	0
Franklin Pump Canal	Did not run.		2,316	0
Superior Canal	Did not run.		11,573	0
Courtland Canal (Nebraska)	Did not run.		1,690	0
Total Bostwick Irrigation District in Nebraska			40,819	0
Kansas-Bostwick Irrigation District				
Courtland Canal above Lovewell	5/25	9/5	21,230	10,595
Courtland Canal below Lovewell	5/11	8/16	44,261	27,851
Total Kansas-Bostwick Irrigation District			65,491	38,446
Kirwin Irrigation District				
Kirwin Canal	Did not run.		18,150	0
Webster Irrigation District				
Osborne Canal	Did not run.		11,806	0
Glen Elder Irrigation District				
Glen Elder Canal	3/8	9/9	5,950	13,529
TOTAL			376,107	266,671

TABLE 7
NEBRASKA-KANSAS PROJECTS
Summary of Precipitation, Reservoir Storage and Inflows
CALENDAR YEAR 2006

Reservoir	Total Precip. Inches	Percent Of Average %	Storage 12-31-05		Gain or Loss AF	Maximum Storage Content		Storage Date		Minimum Content AF	Storage Date		Total Inflow AF
			AF	AF		AF	AF	Date	Date		Date	Date	
Box Butte	14.77	87	9,167	5,081	-4,086	15,094	MAY 17	SEP 11	3,676	MAY 17	SEP 11	10,391	
Merritt	18.40	90	61,370	61,100	-270	67,222	JUN 16	AUG 27	28,625	JUN 16	AUG 27	176,810	
Calamus	17.80	72	100,561	107,326	6,765	129,150	MAR 24	SEP 8	69,542	MAR 24	SEP 8	236,764	
Davis Creek	28.50	122	9,196	10,712	1,516	27,492	JUN 26	APR 16	8,572	JUN 26	APR 16	50,048	
Bonny	16.41	95	12,265	9,935	-2,330	12,971	APR 12	DEC 14	9,752	APR 12	DEC 14	6,350	
Enders	20.08	106	11,566	11,074	-492	12,100	APR 7	SEP 21	10,643	APR 7	SEP 21	4,284	
Swanson	20.76	104	35,068	36,310	1,242	41,351	APR 18	JAN 1	35,119	APR 18	JAN 1	12,047	
Hugh Butler	19.65	100	20,242	13,105	-7,137	21,428	APR 18	AUG 19	11,831	APR 18	AUG 19	8,638	
Harry Strunk	22.88	111	26,833	23,751	-3,082	36,280	JUN 24	SEP 1	16,486	JUN 24	SEP 1	27,009	
Keith Sebelius	27.56	113	8,322	8,115	-207	9,005	APR 14	OCT 8	7,656	APR 14	OCT 8	4,329	
Harlan County	20.62	91	128,111	116,299	-11,812	139,207	MAY 9	DEC 8	114,066	MAY 9	DEC 8	30,077	
Lovewell	23.87	87	25,836	19,605	-6,231	40,931	MAY 11	AUG 16	12,967	MAY 11	AUG 16	30,337	
Kirwin	25.96	111	19,252	19,394	142	20,597	MAY 31	DEC 5	18,816	MAY 31	DEC 5	6,269	
Webster	26.33	112	10,327	8,562	-1,765	10,368	JAN 5	DEC 18	8,117	JAN 5	DEC 18	3,187	
Waconda	21.54	84	161,594	125,621	-35,973	161,895	JAN 8	DEC 19	122,936	JAN 8	DEC 19	26,963	
Cedar Bluff	19.43	92	101,181	85,357	-15,824	101,135	JAN 1	DEC 19	83,581	JAN 1	DEC 19	7,418	

EXHIBIT 1A

BOX BUTTE RESERVOIR ACTUAL OPERATION

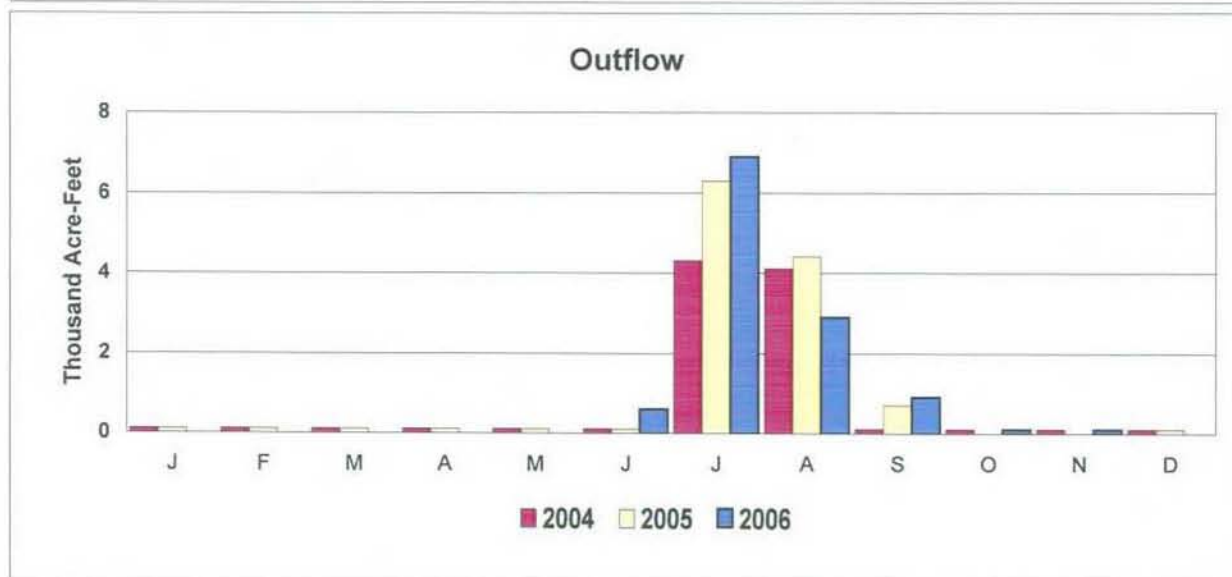
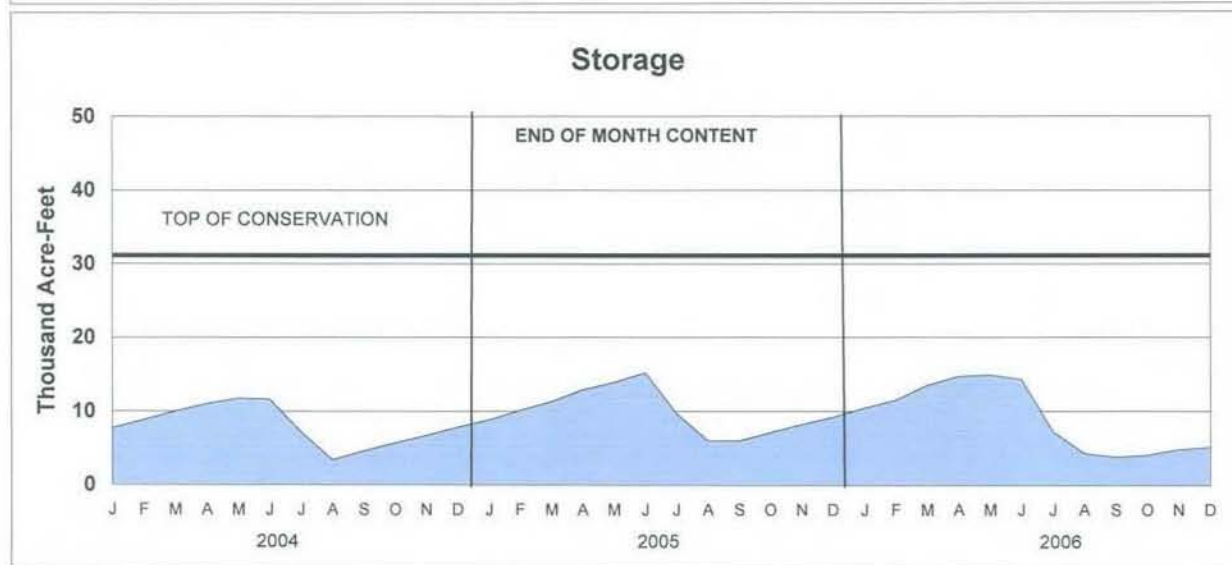
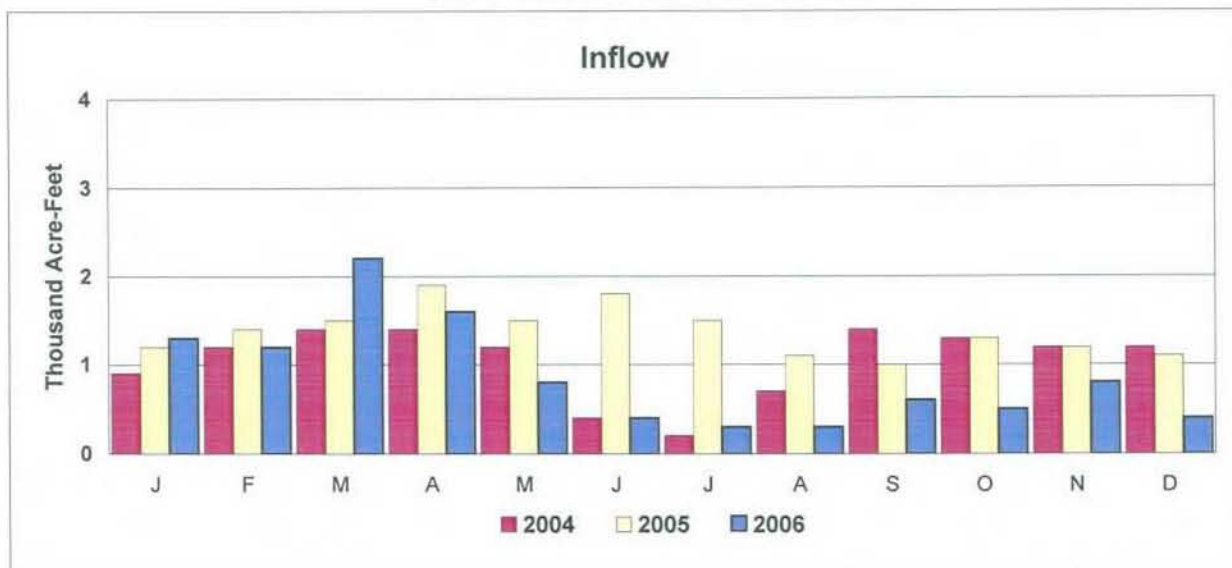


EXHIBIT 2A

MERRITT RESERVOIR ACTUAL OPERATION

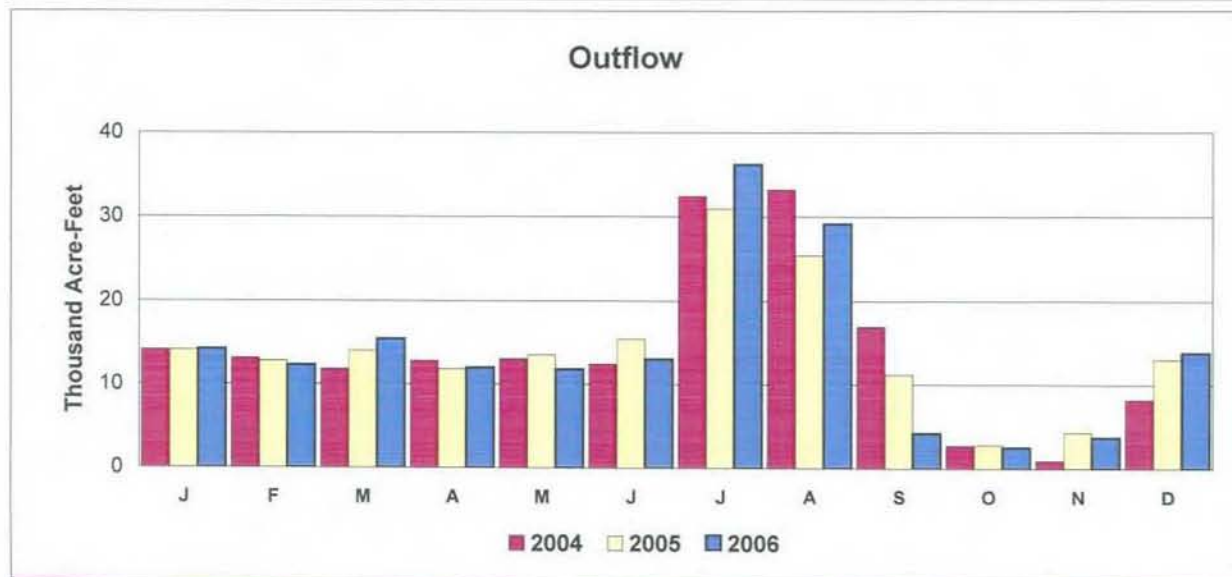
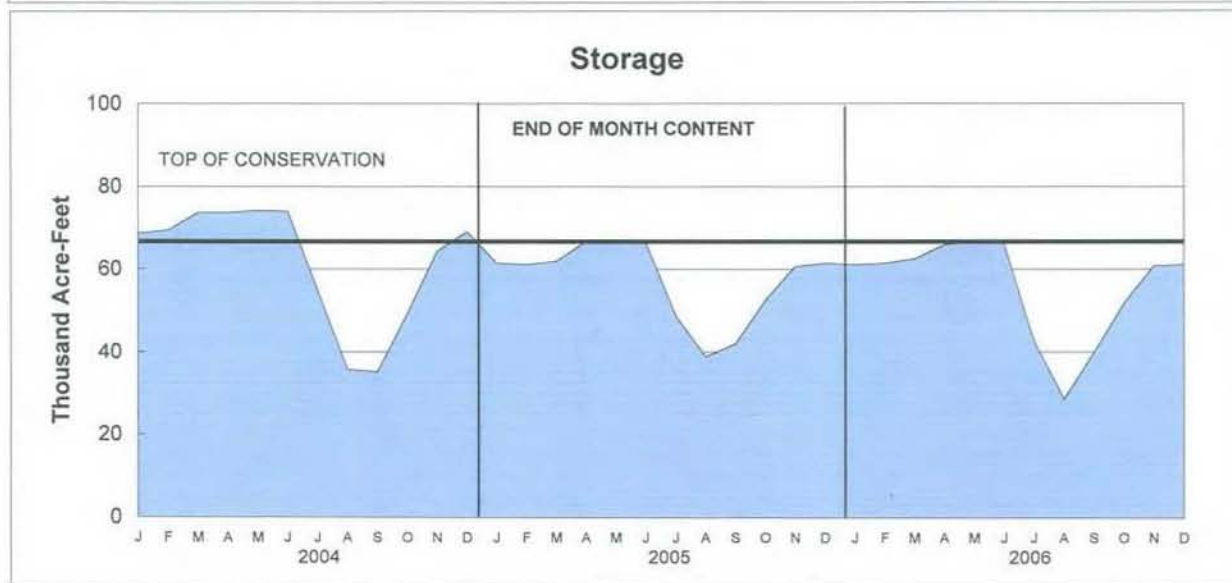
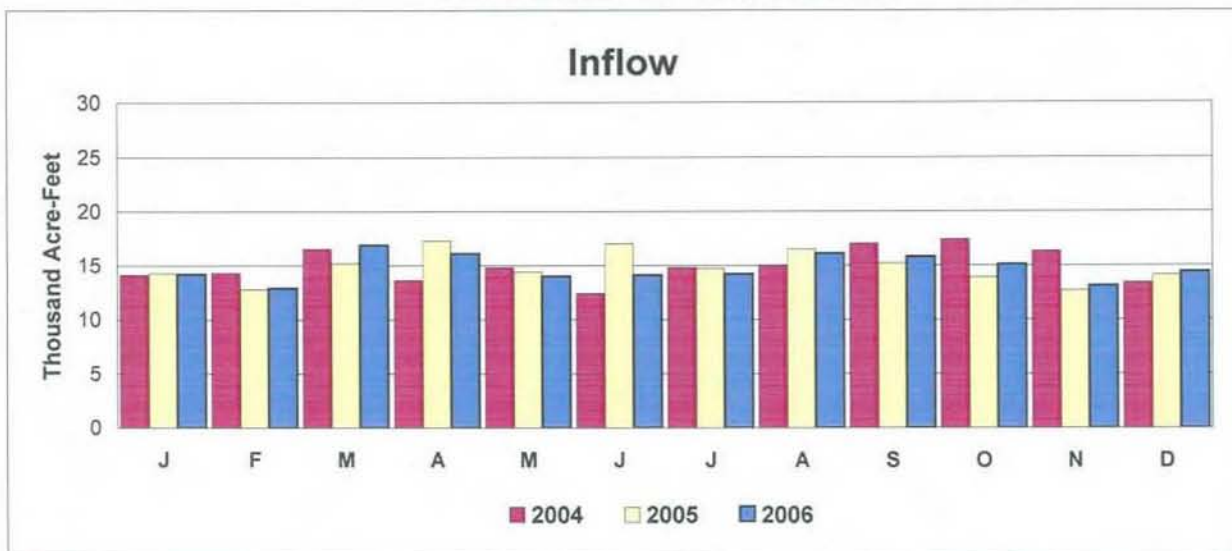


EXHIBIT 3A

CALAMUS RESERVOIR ACTUAL OPERATION

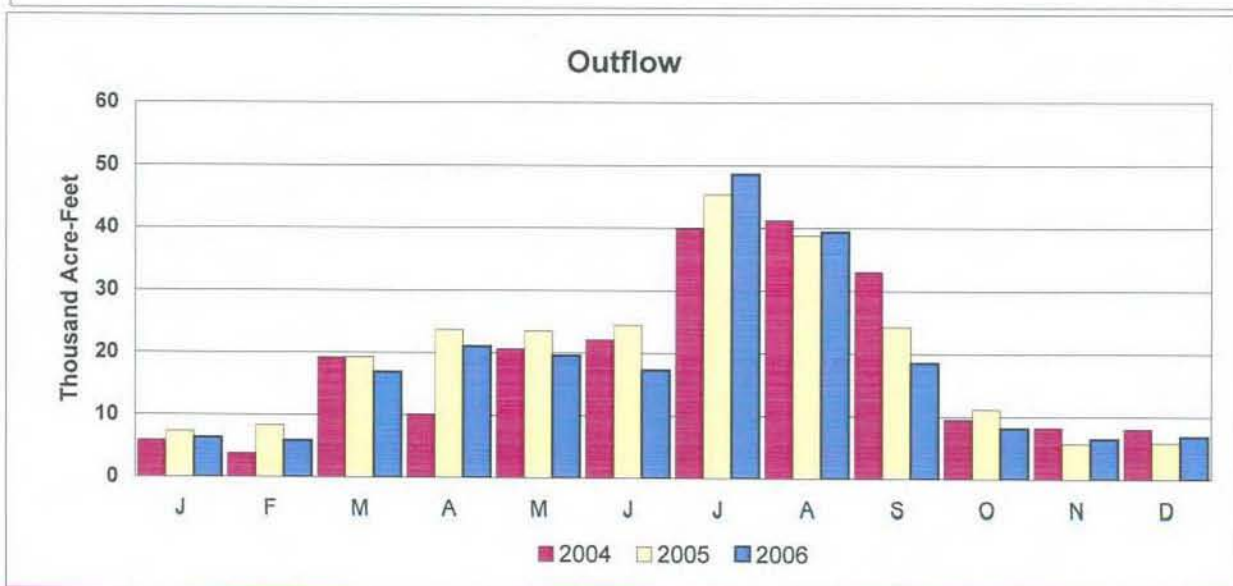
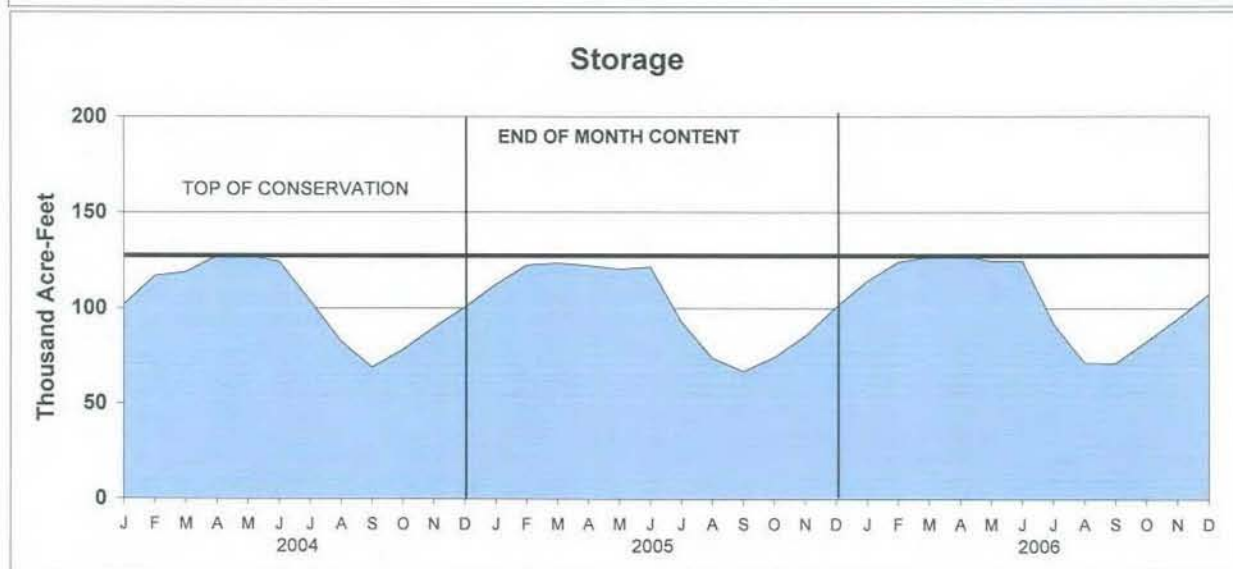
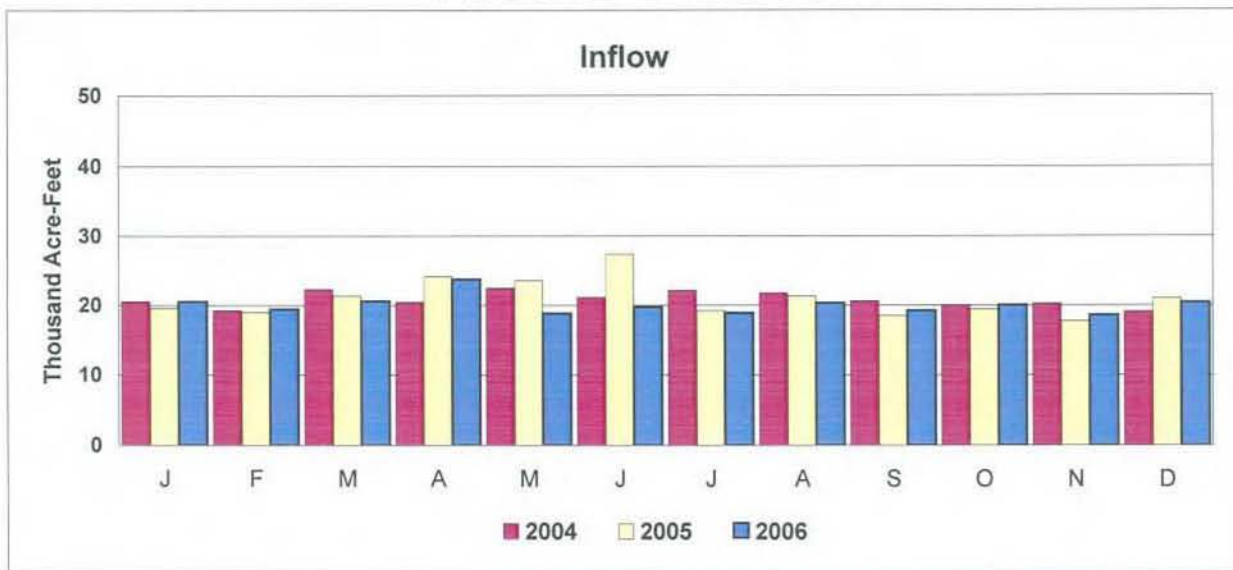


EXHIBIT 4A

DAVIS CREEK RESERVOIR ACTUAL OPERATION

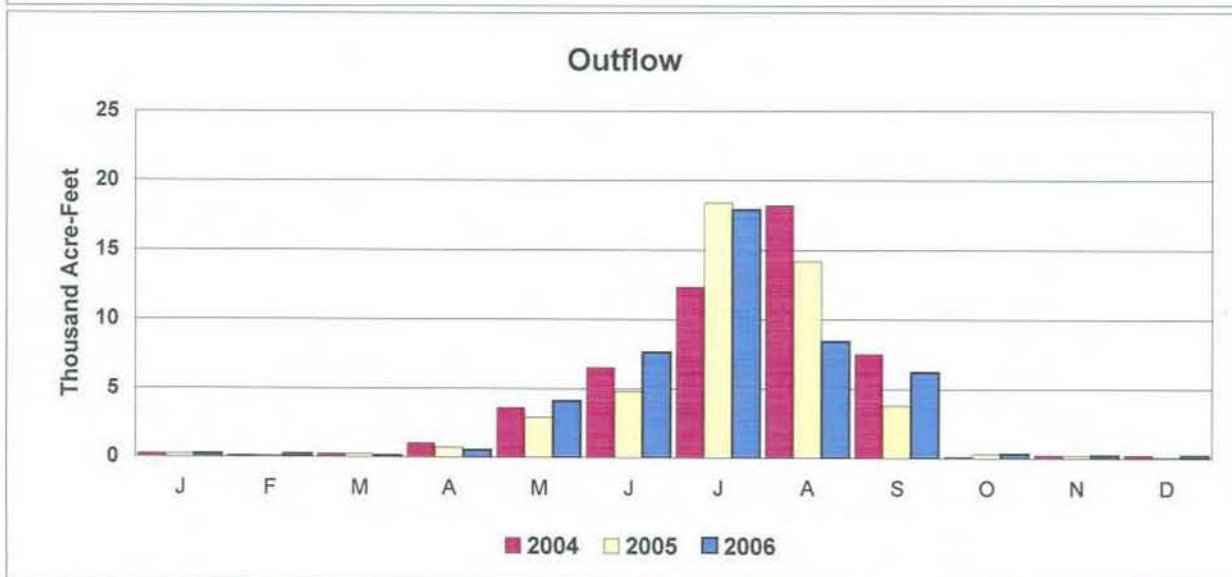
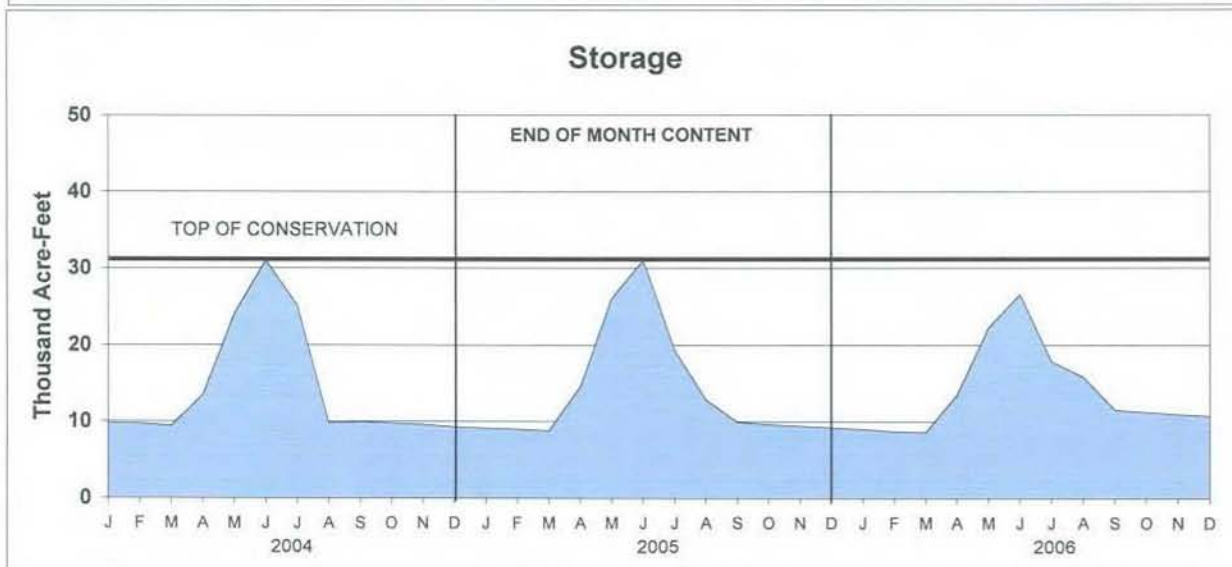
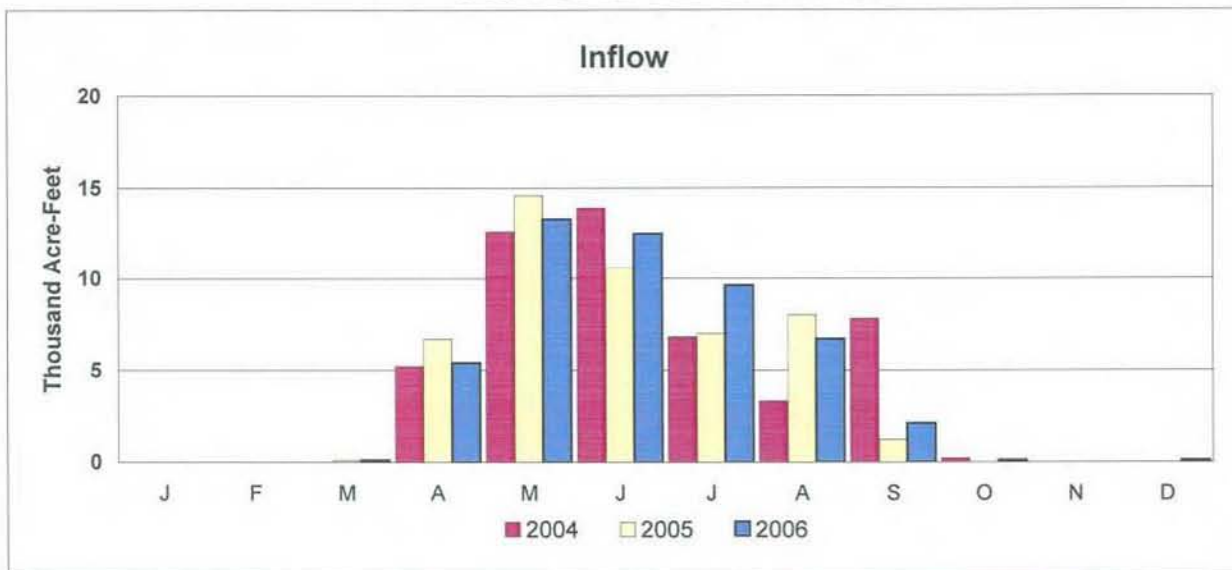


EXHIBIT 5A

BONNY RESERVOIR ACTUAL OPERATION

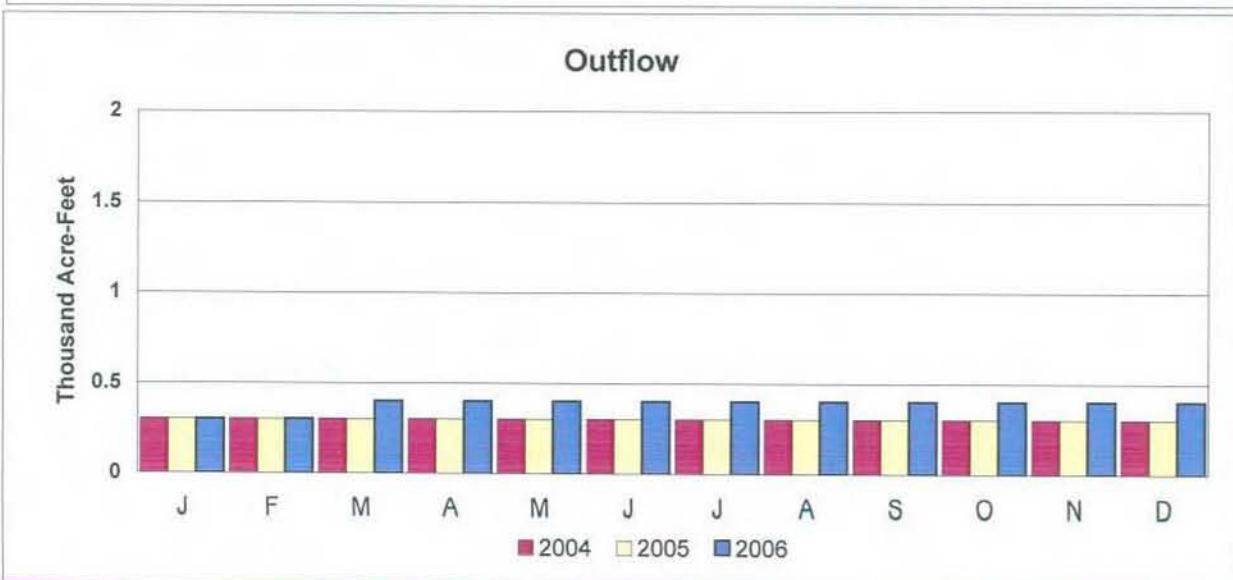
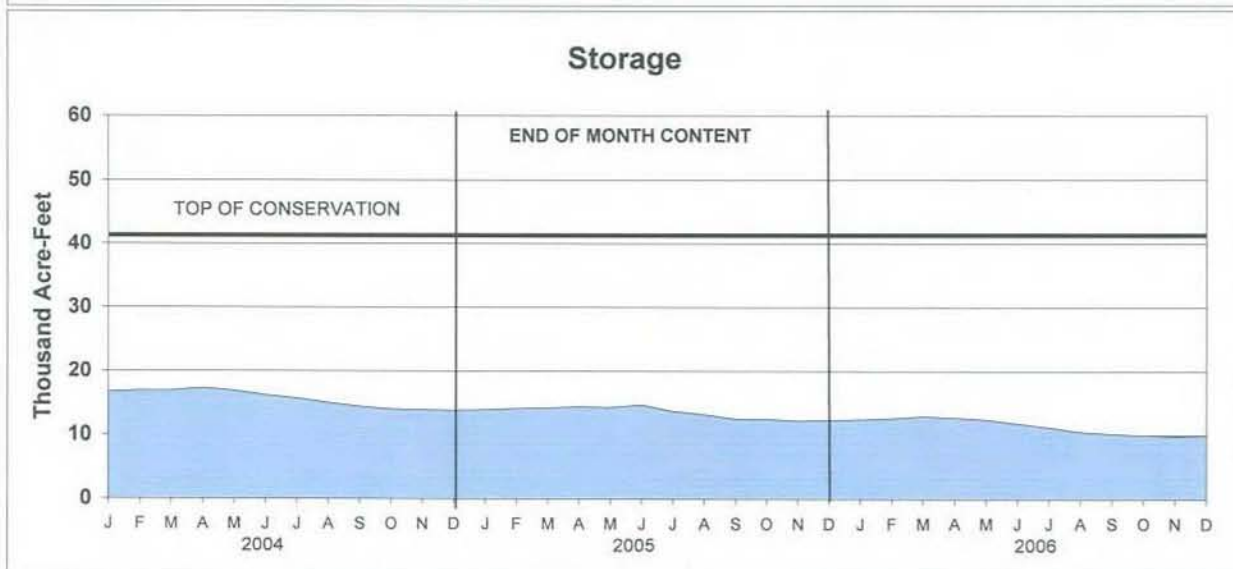
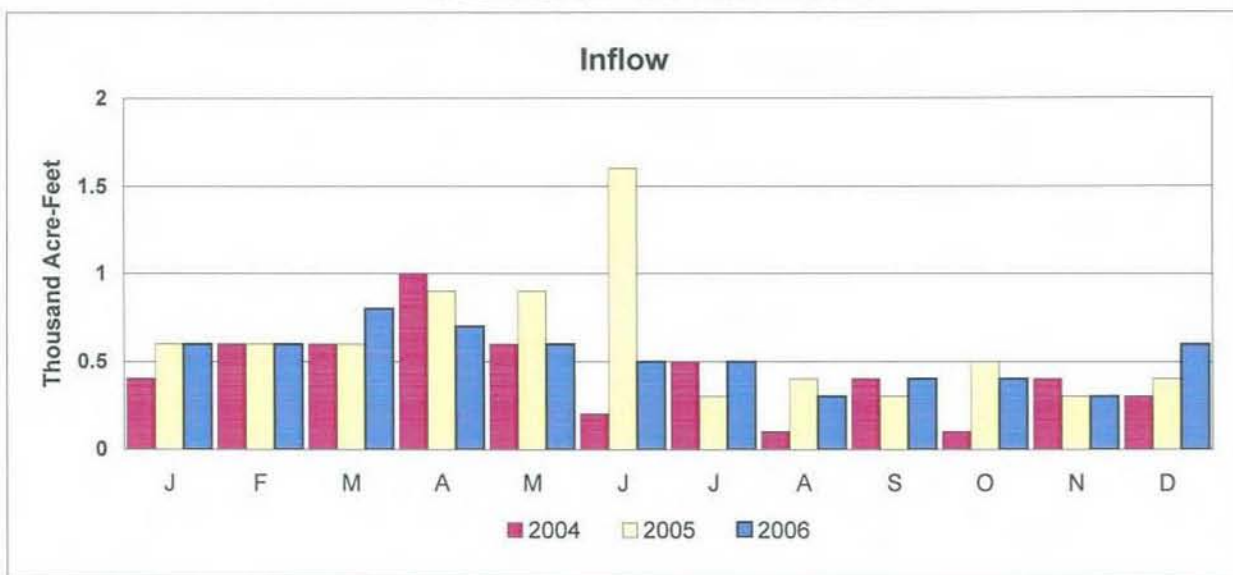


EXHIBIT 6A

ENDERS RESERVOIR ACTUAL OPERATION

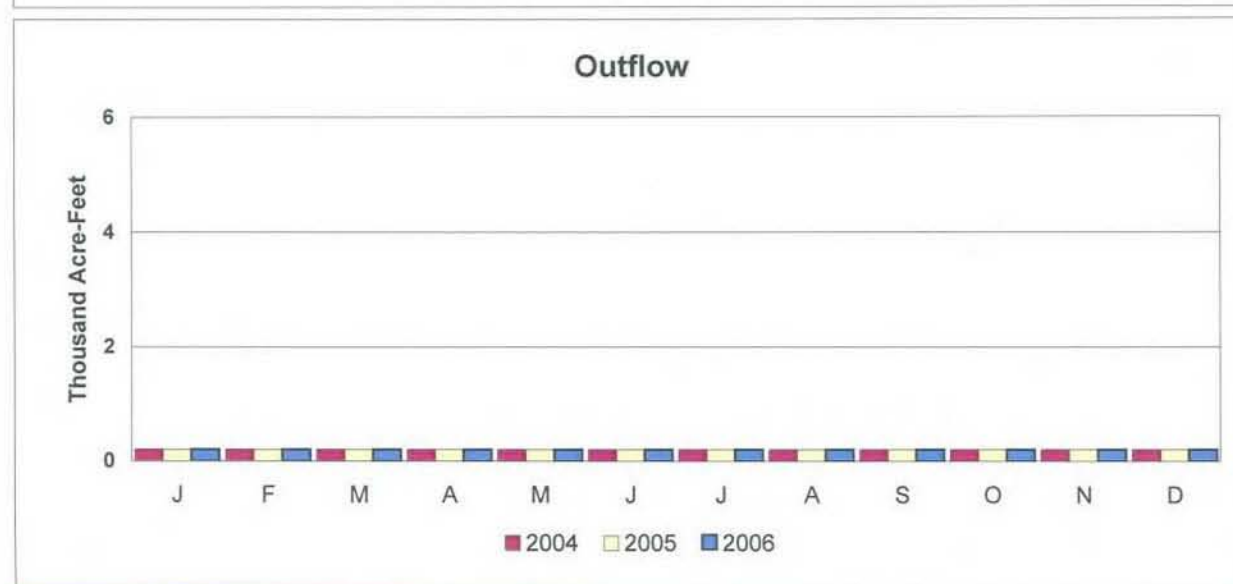
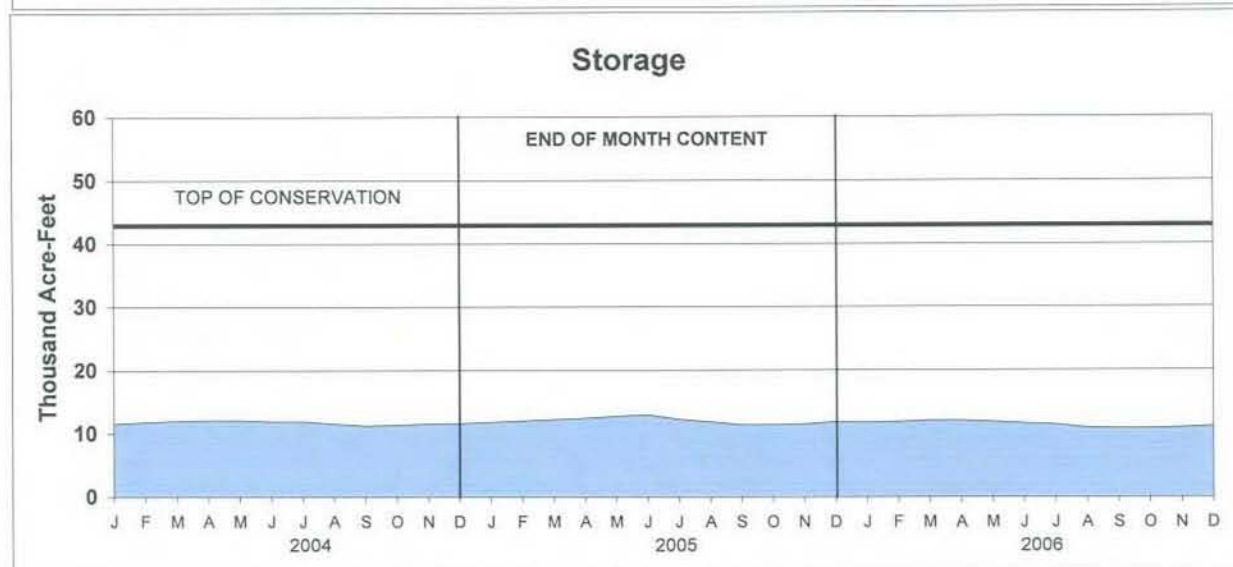
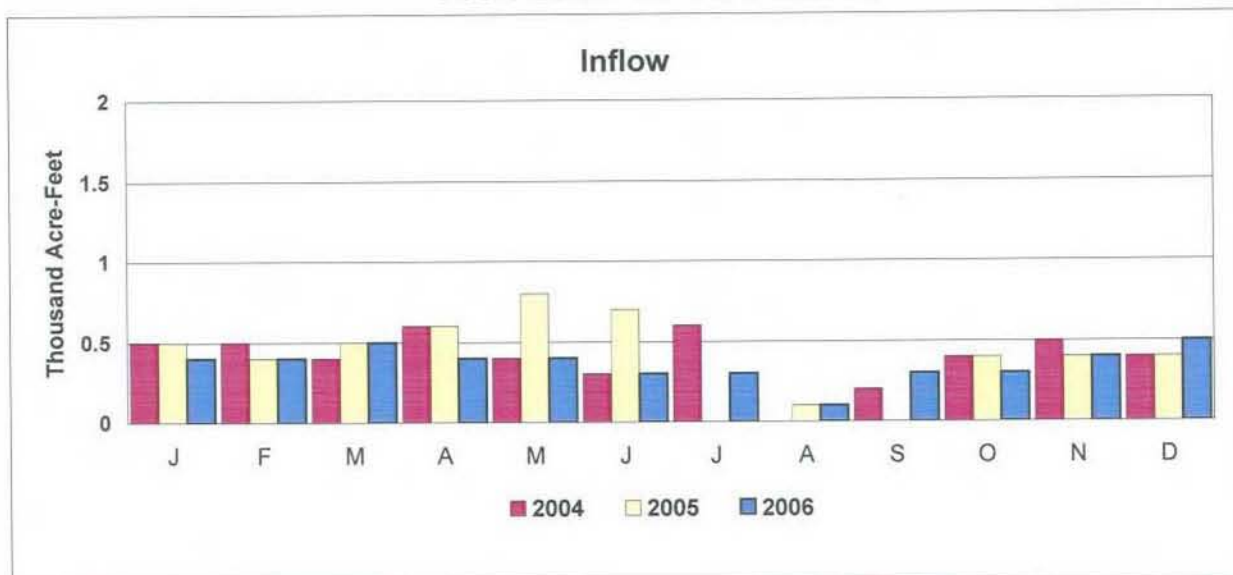


EXHIBIT 7A

SWANSON LAKE ACTUAL OPERATION

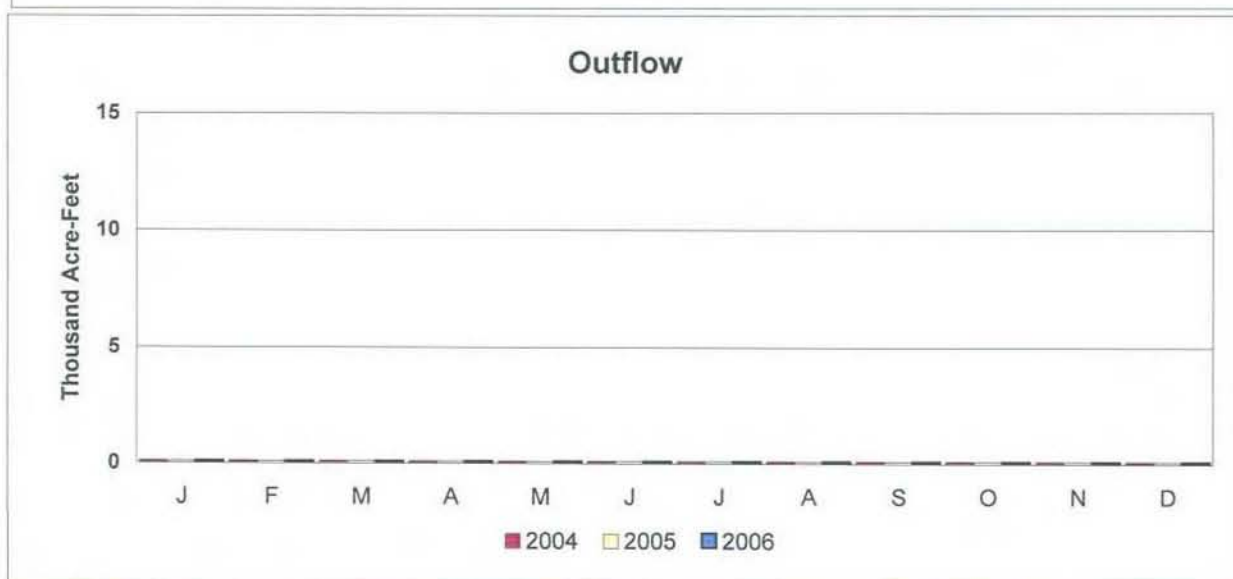
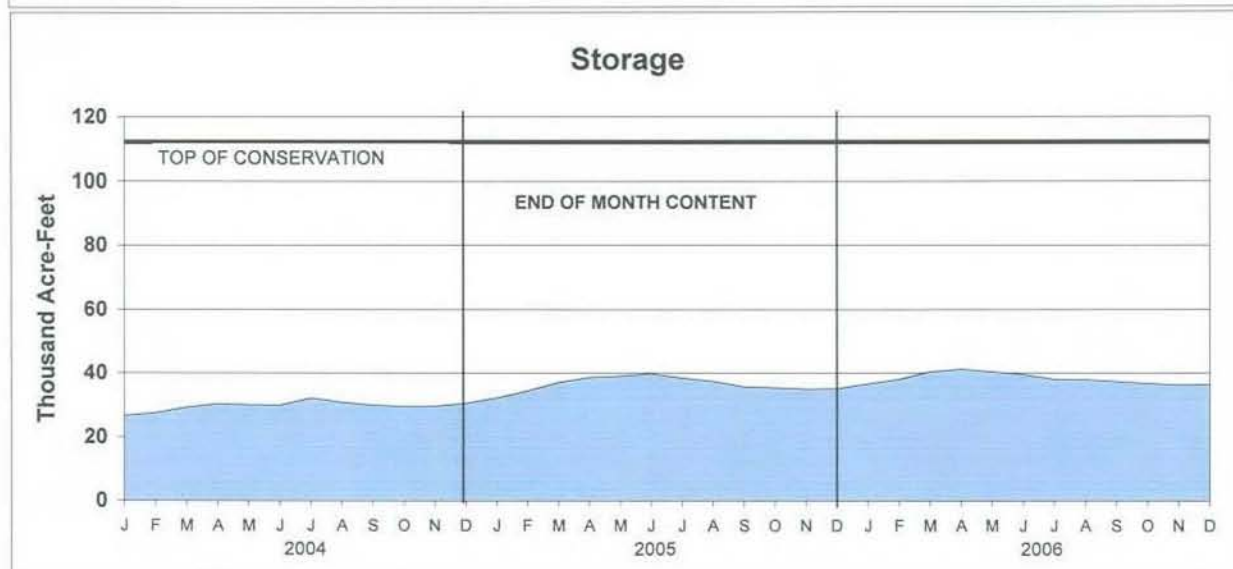
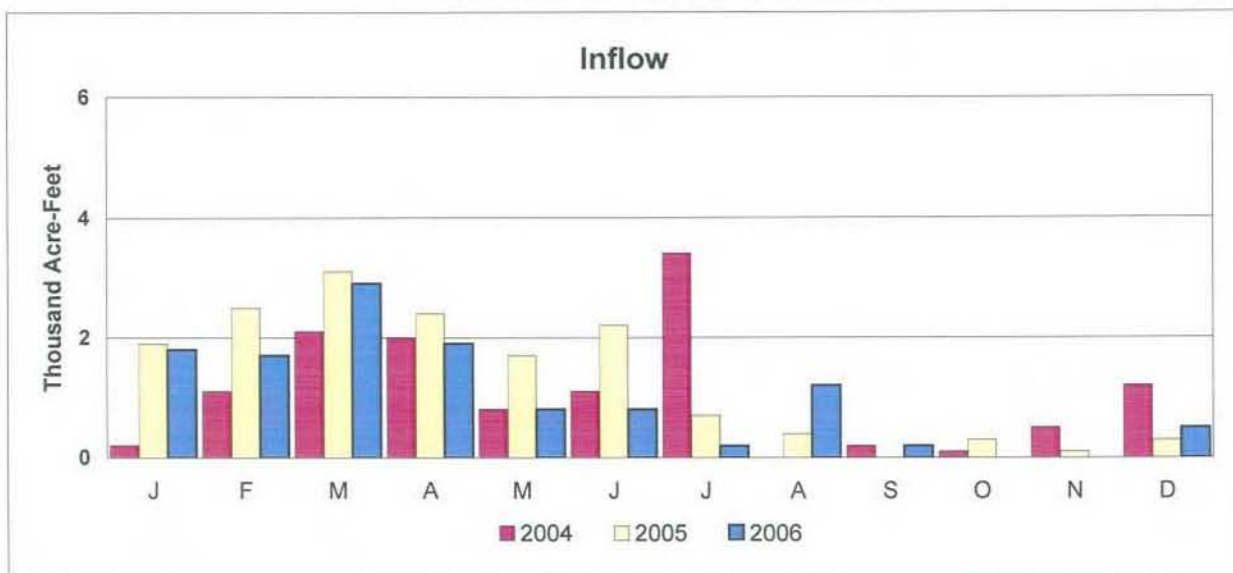


EXHIBIT 8A

HUGH BUTLER LAKE ACTUAL OPERATION

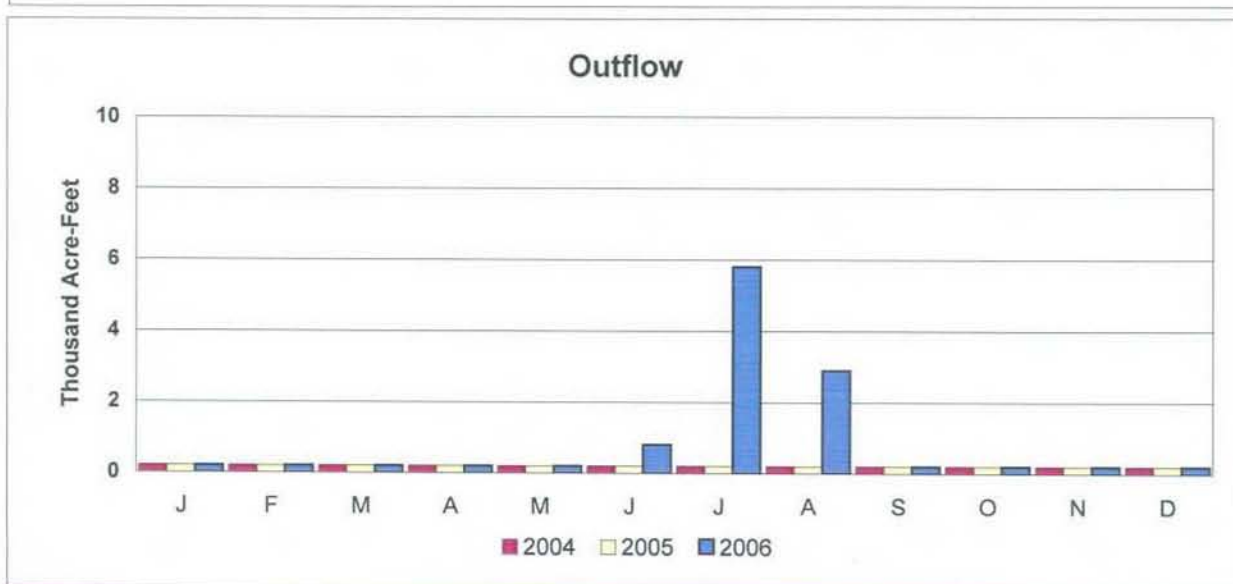
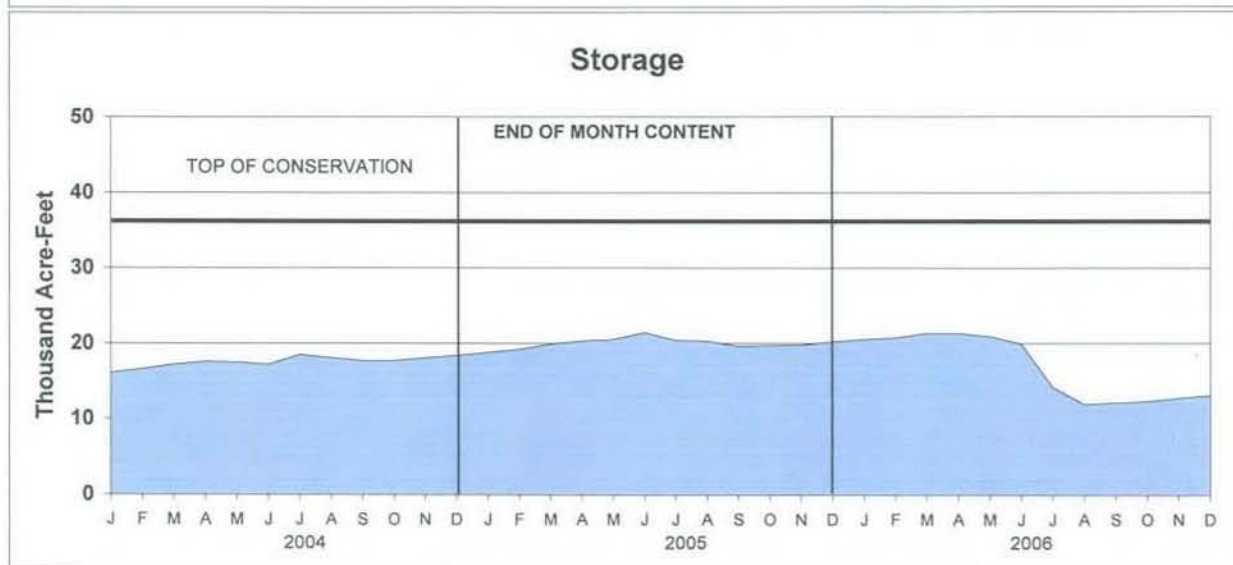
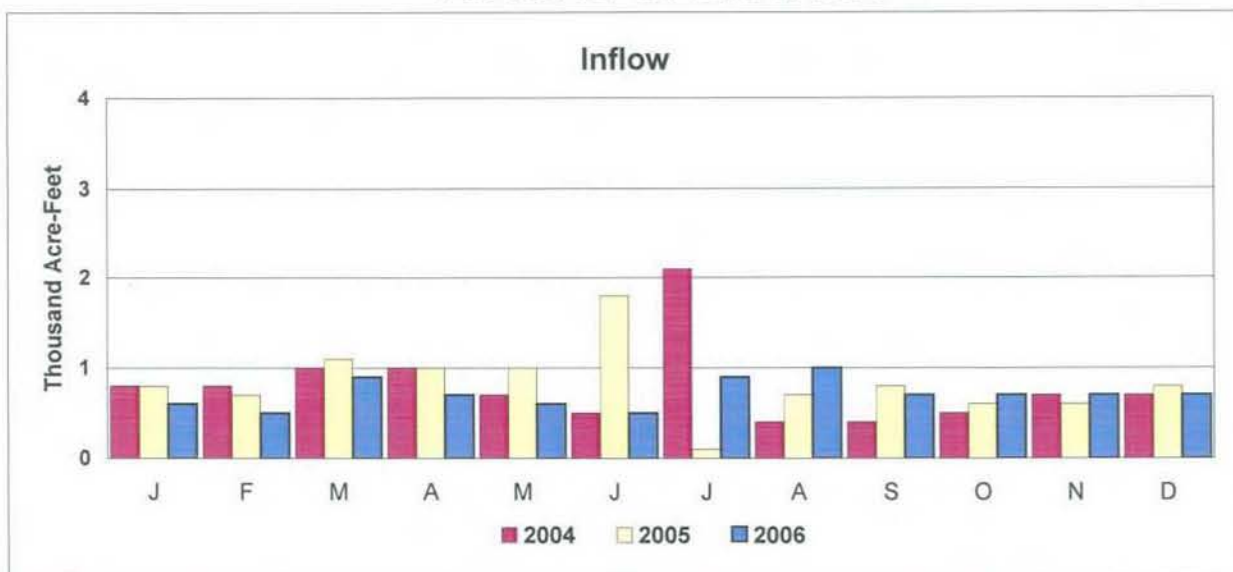


EXHIBIT 9A

HARRY STRUNK LAKE ACTUAL OPERATION

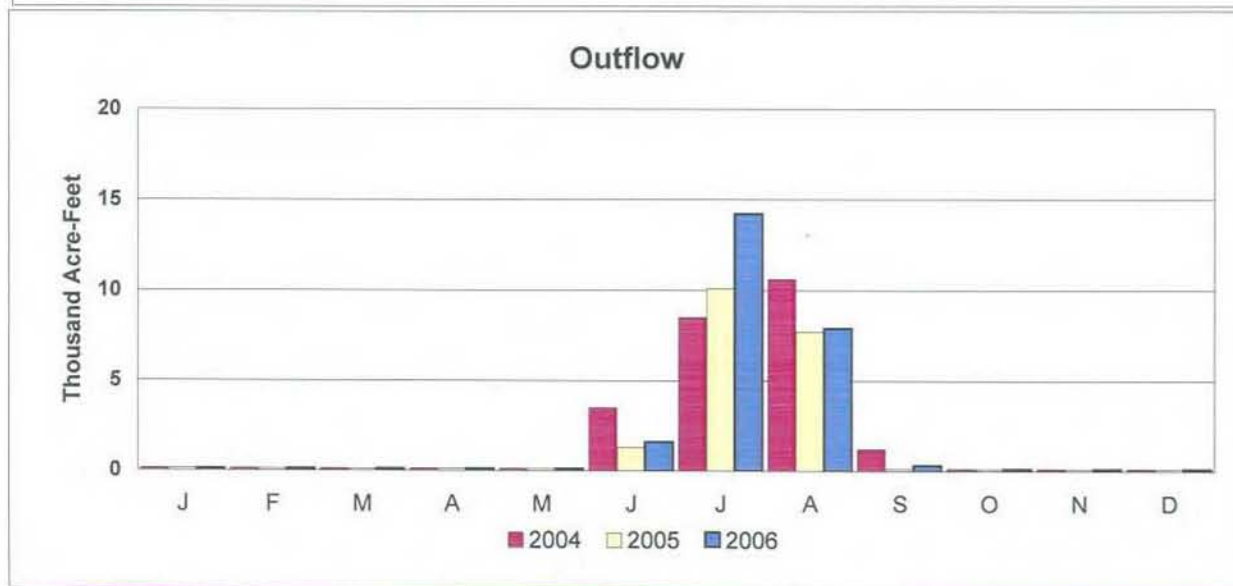
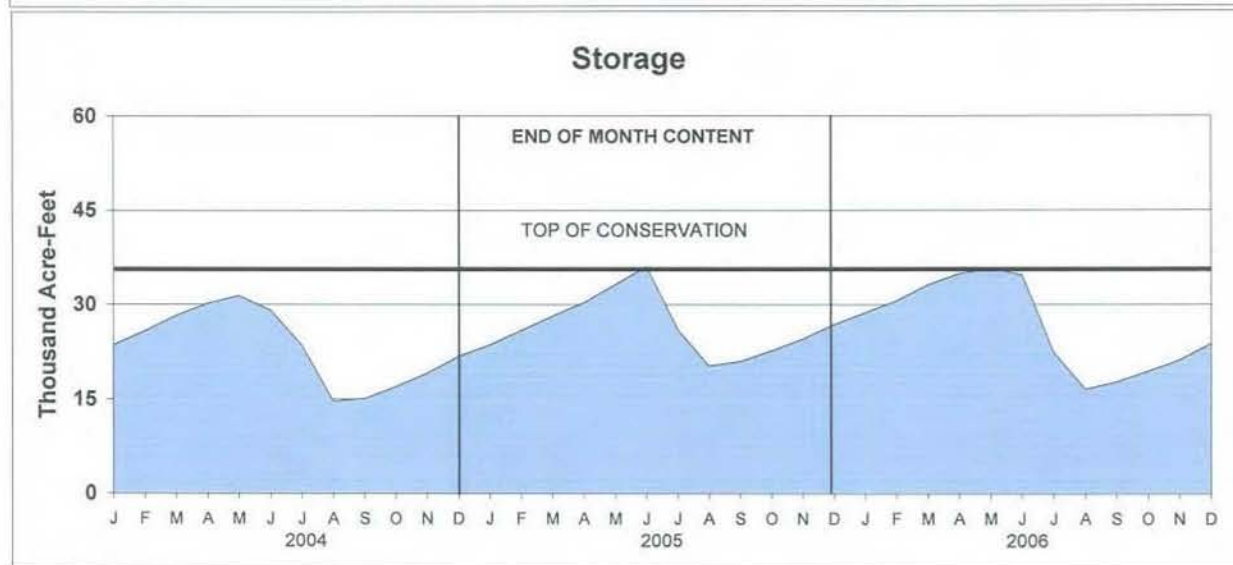
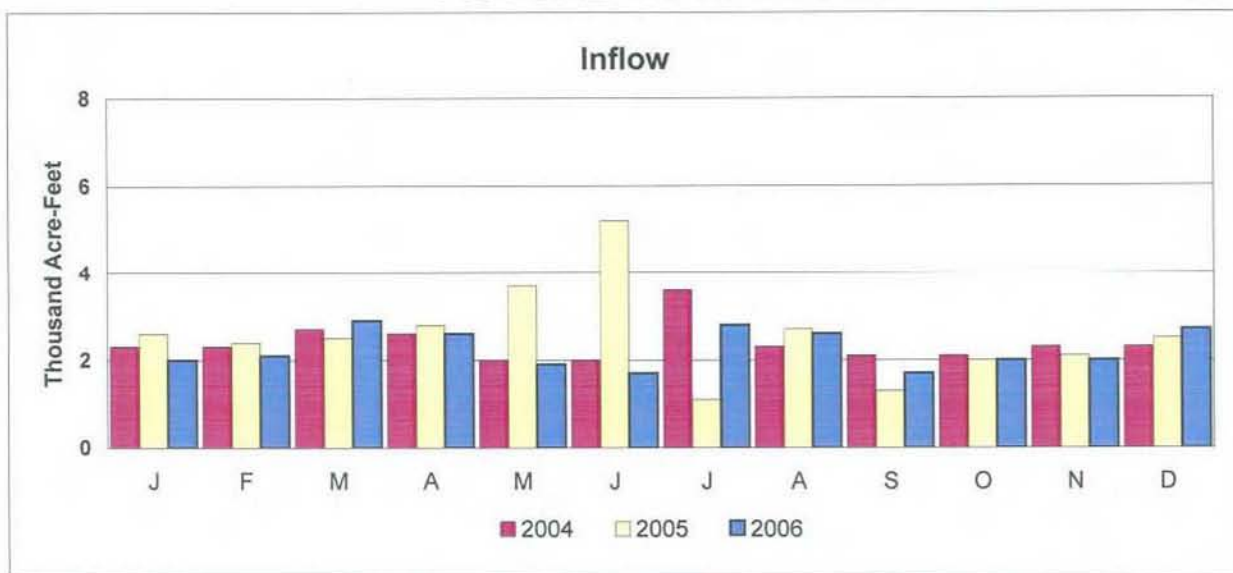


EXHIBIT 11A

HARLAN COUNTY LAKE ACTUAL OPERATION

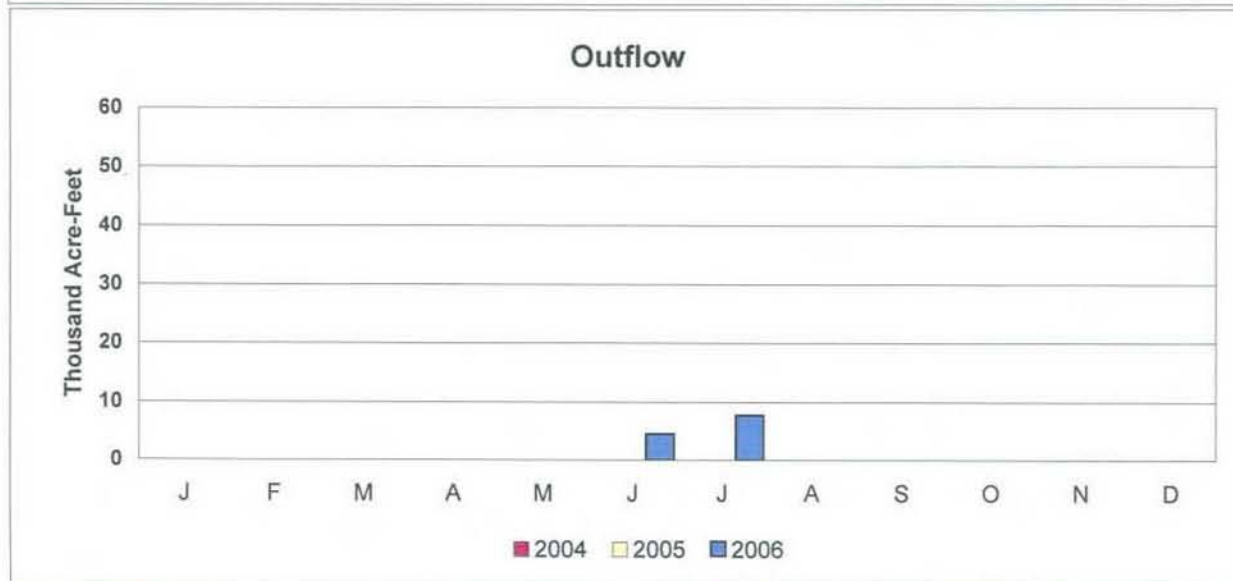
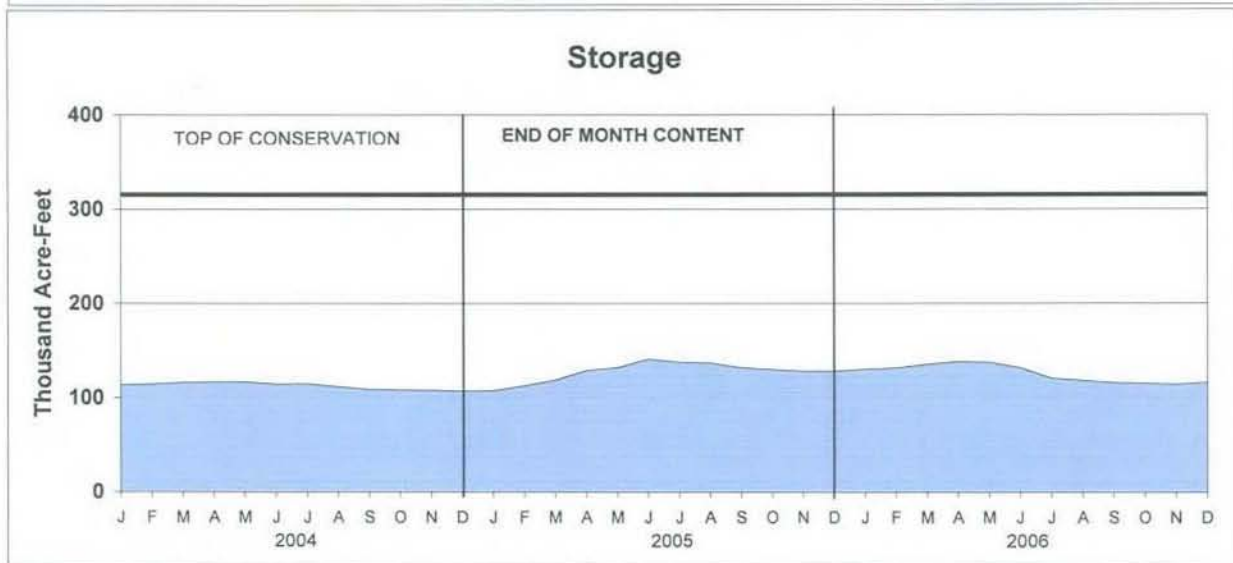
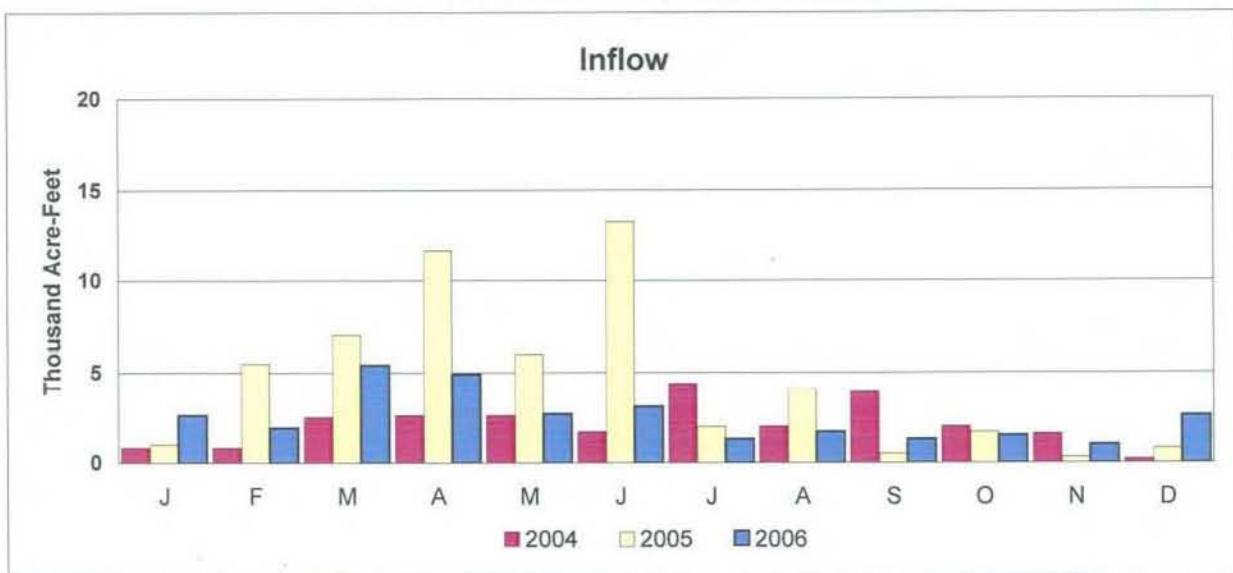


EXHIBIT 12A

LOVEWELL RESERVOIR ACTUAL OPERATION

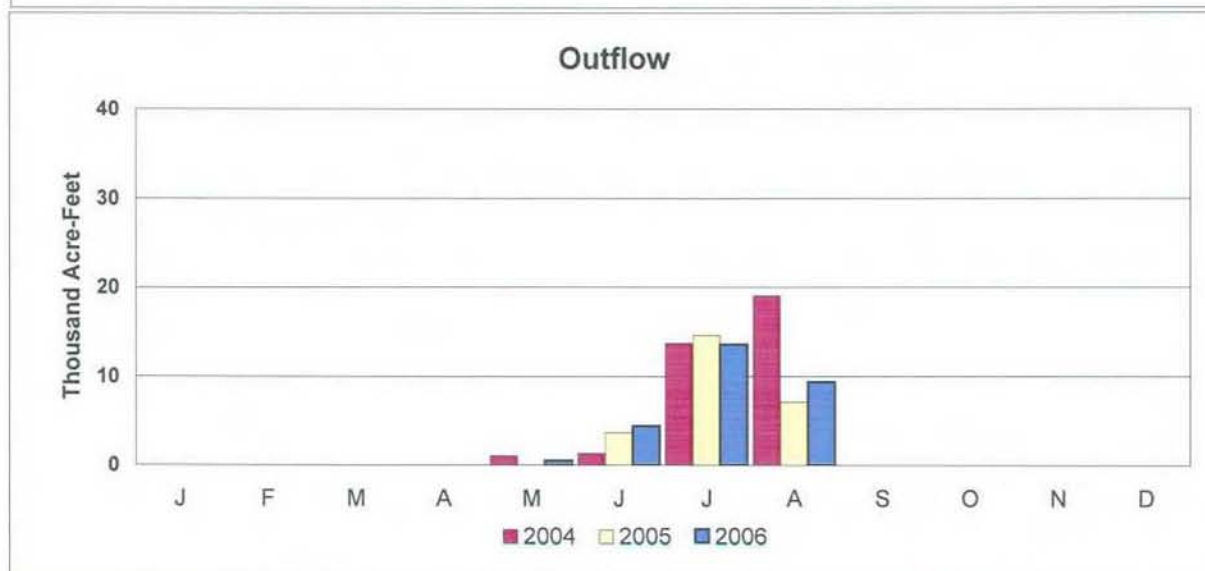
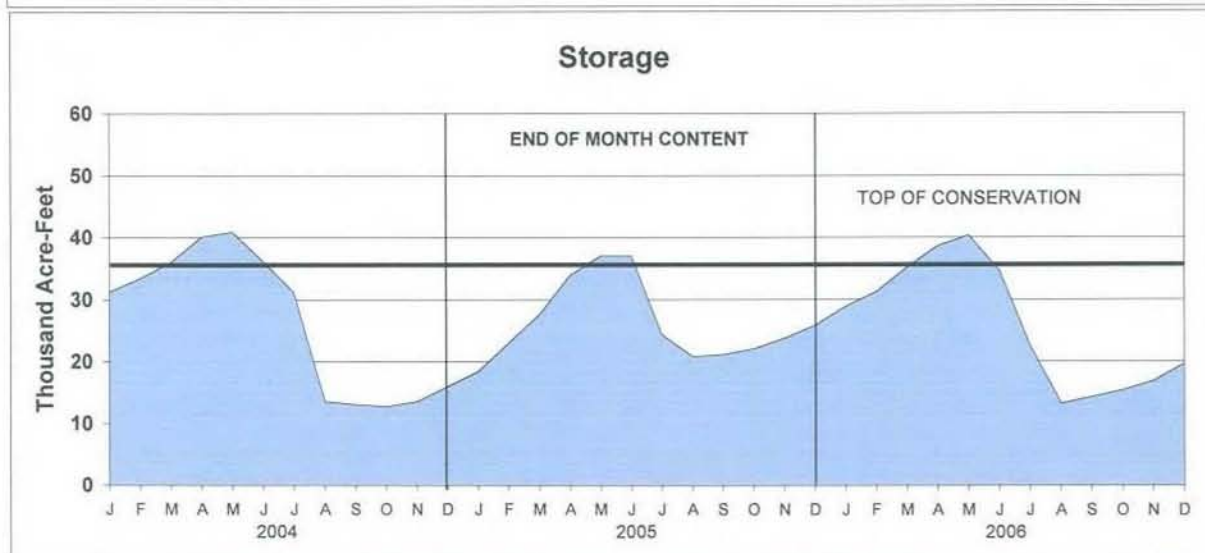
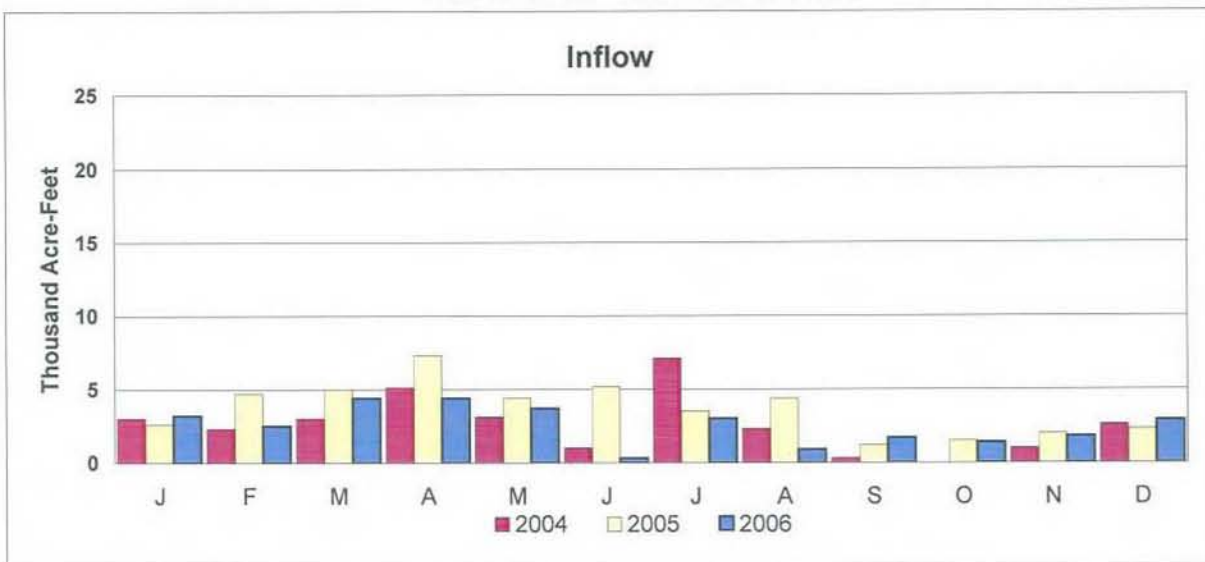


EXHIBIT 13A

KIRWIN RESERVOIR ACTUAL OPERATION

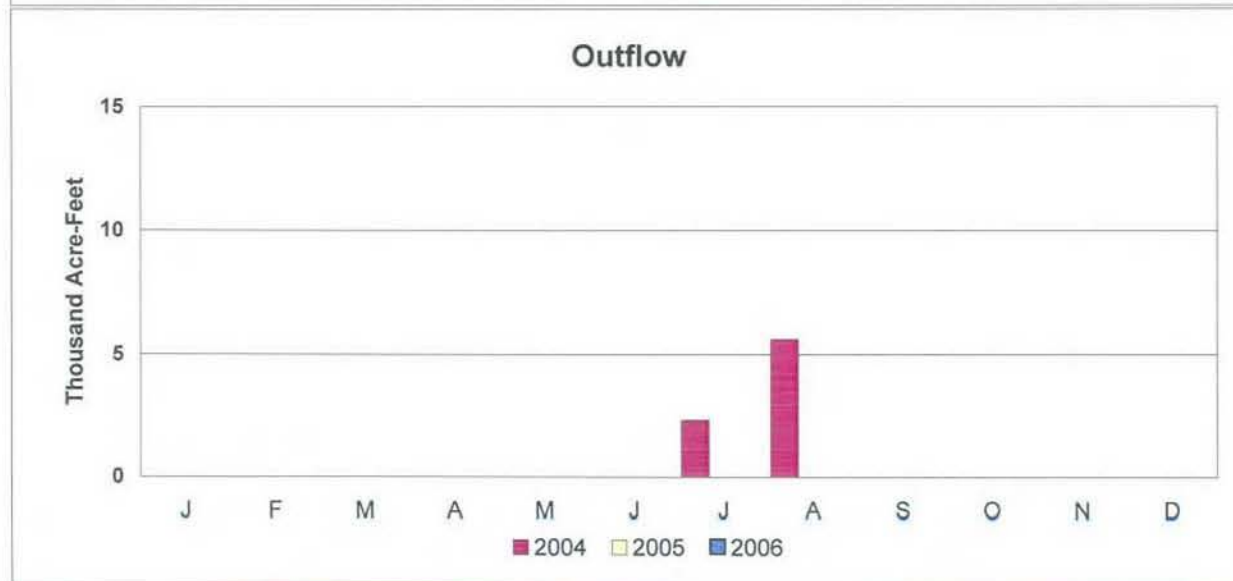
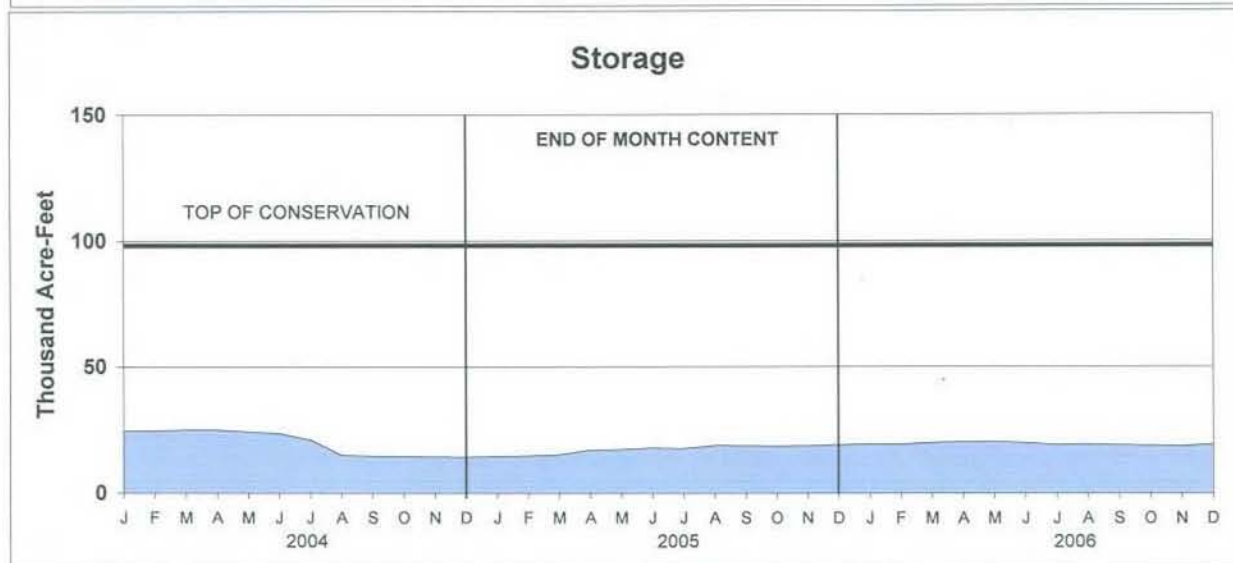
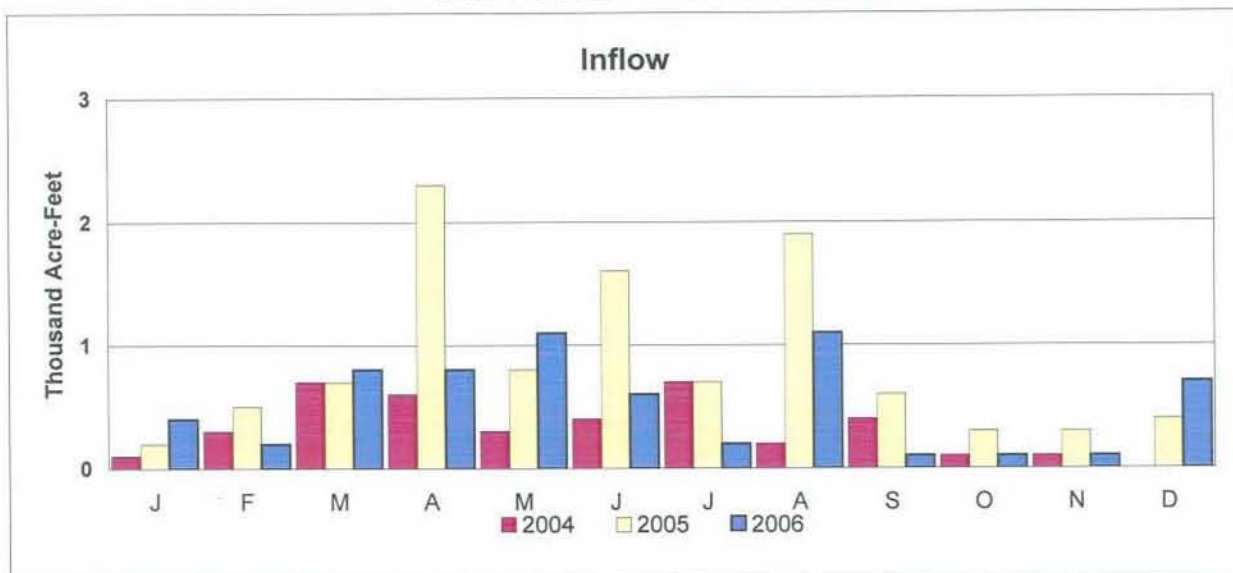


EXHIBIT 14A

WEBSTER RESERVOIR ACTUAL OPERATION

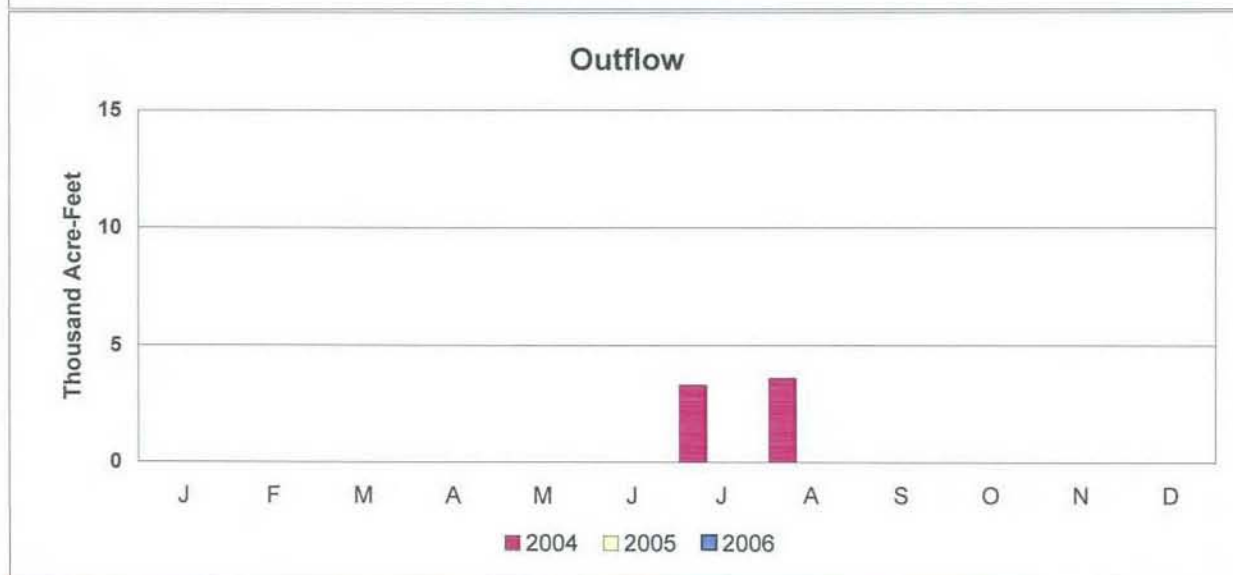
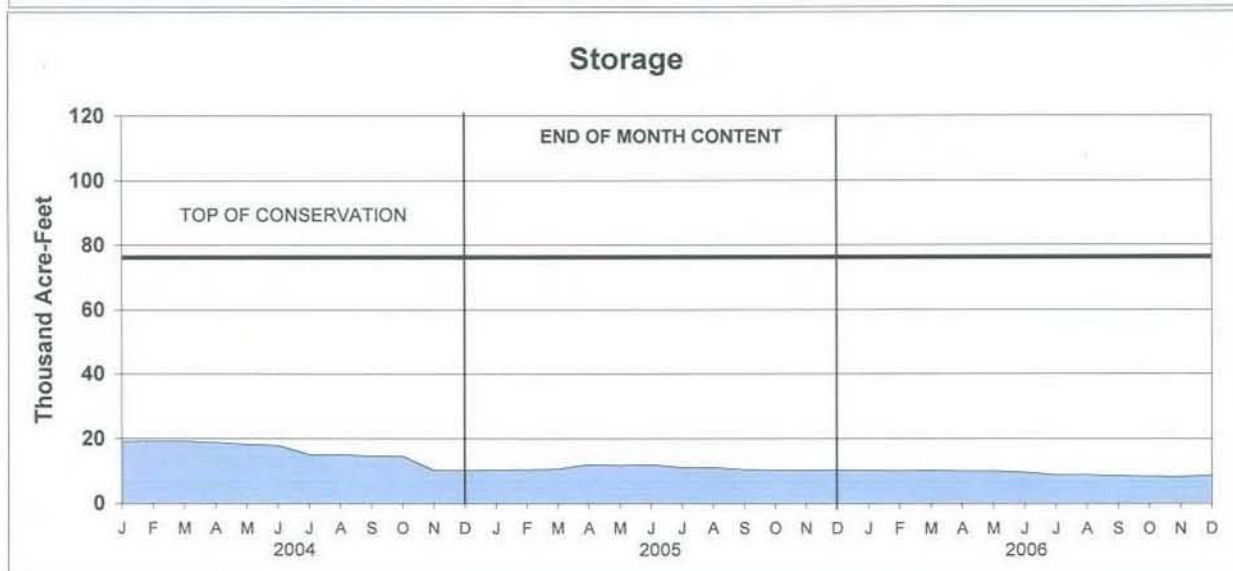
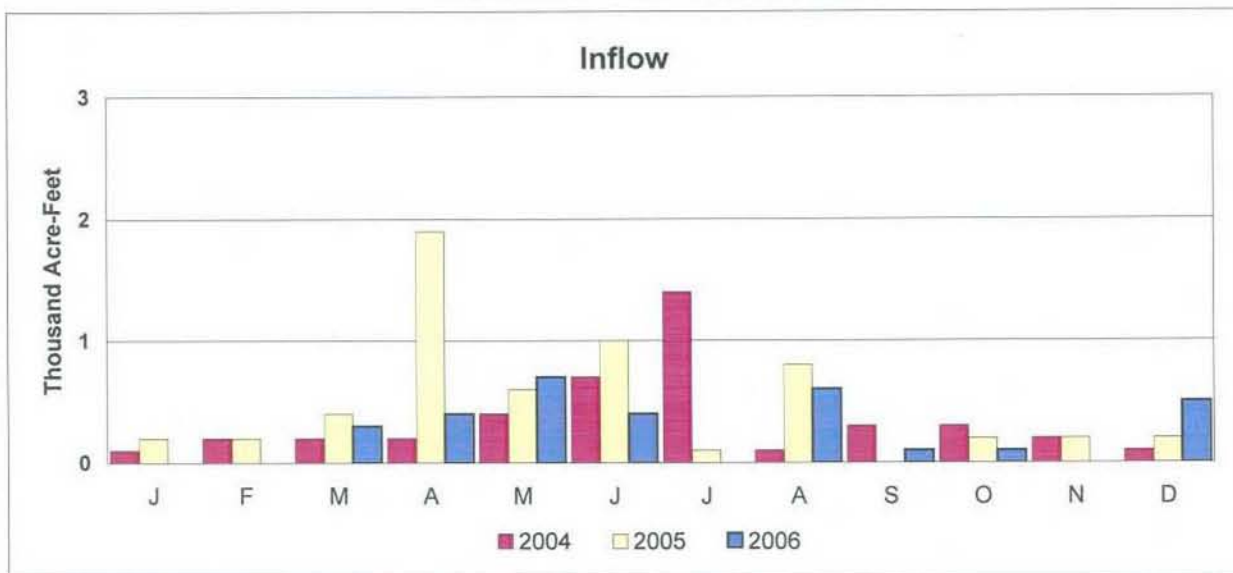


EXHIBIT 15A

WACONDA LAKE ACTUAL OPERATION

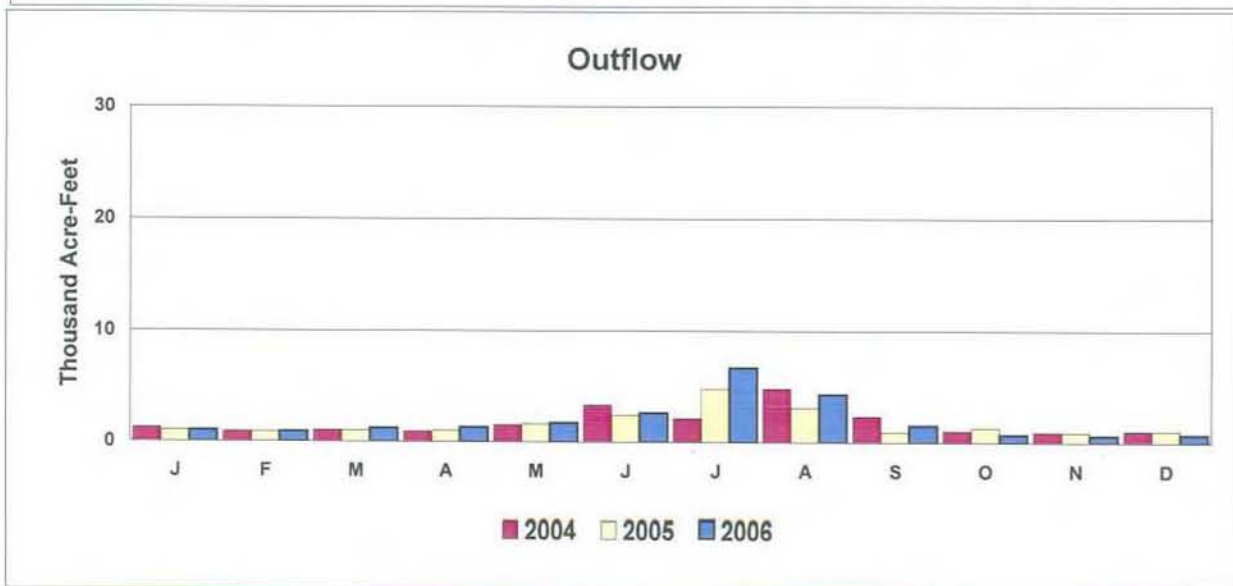
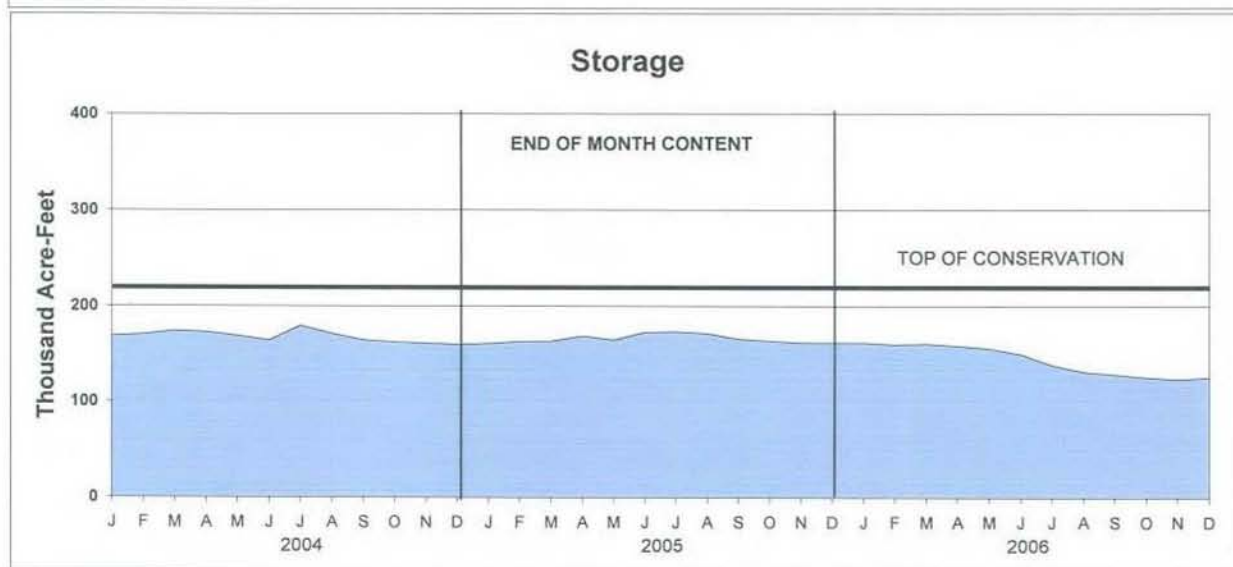
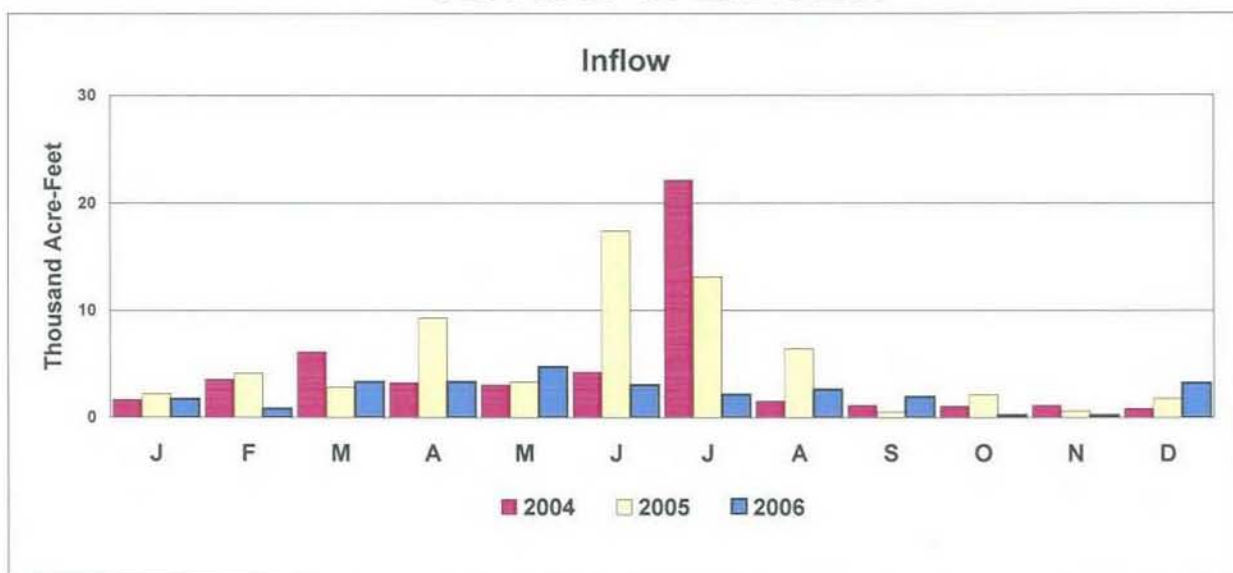


EXHIBIT 16A

CEDAR BLUFF RESERVOIR ACTUAL OPERATION

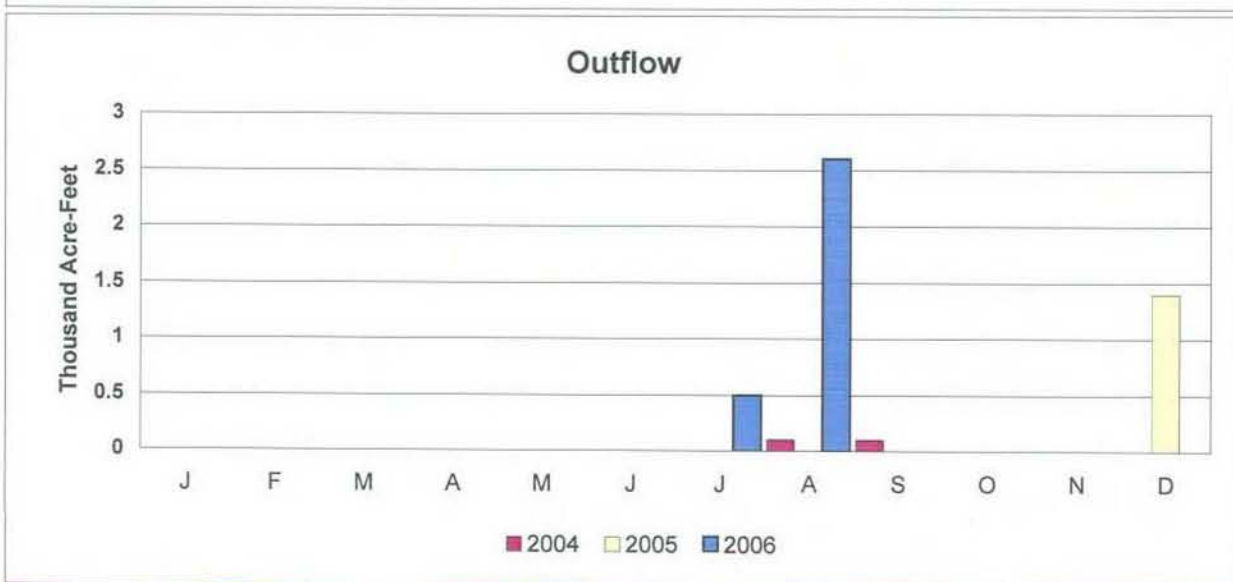
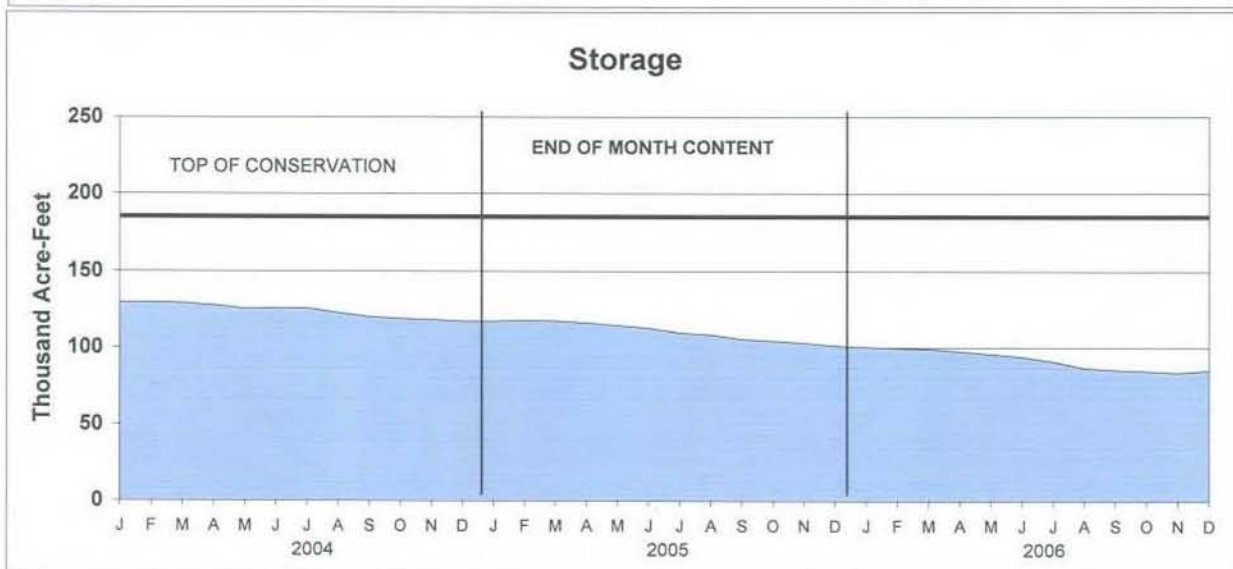
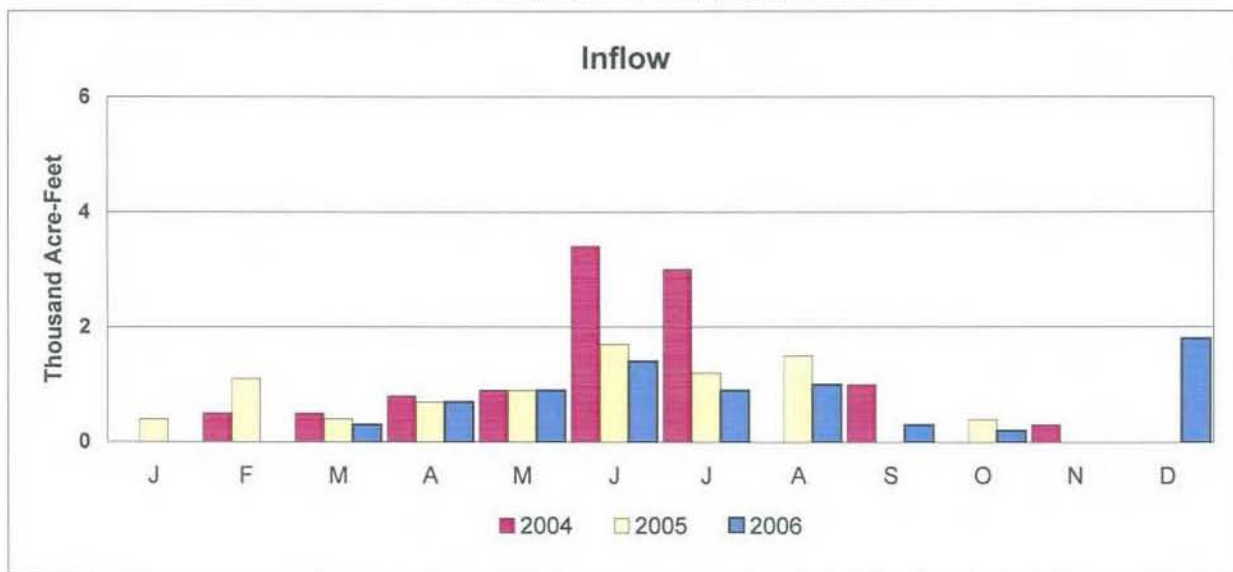
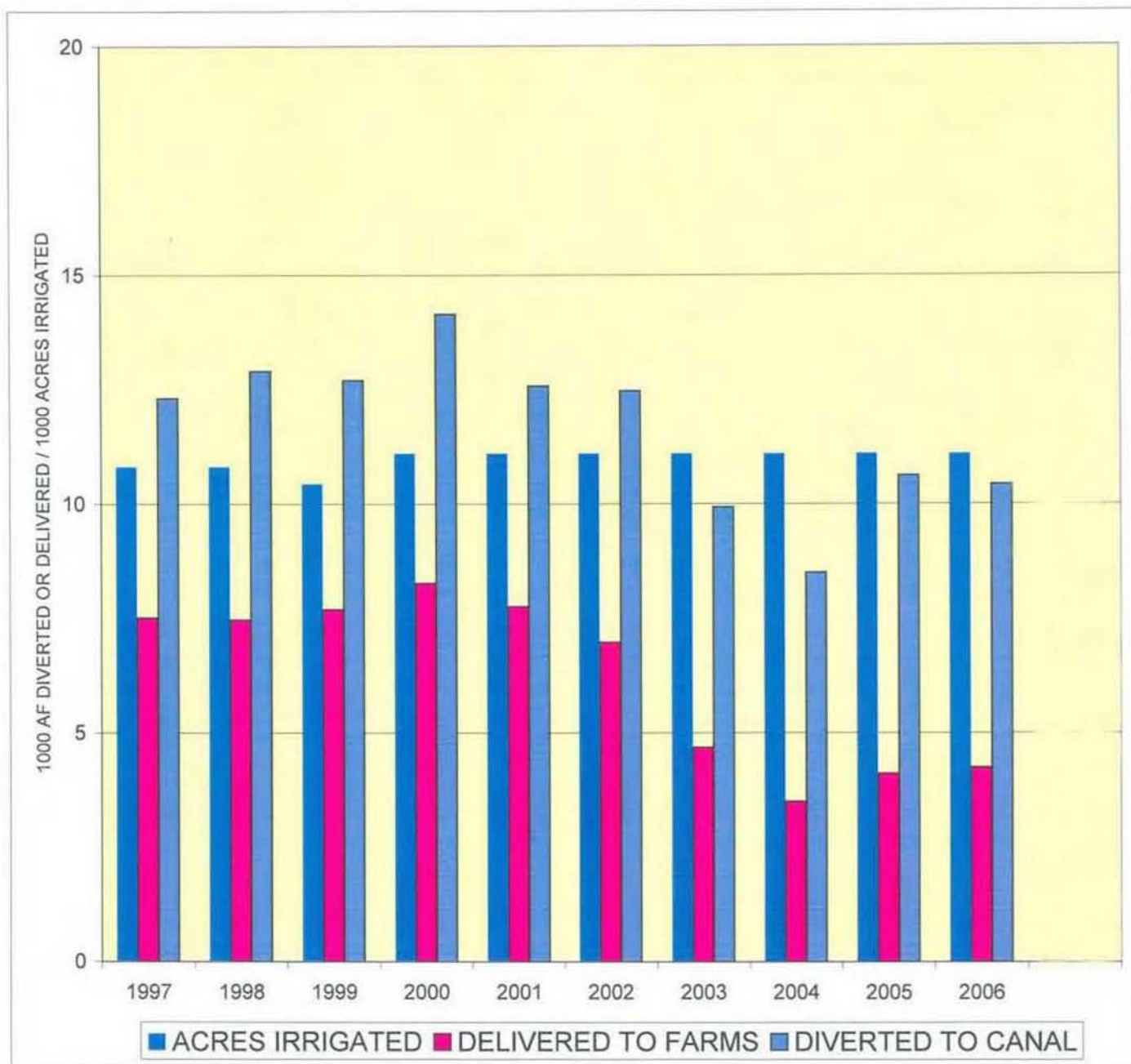


EXHIBIT 17

MIRAGE FLATS IRRIGATION DISTRICT

CANAL DIV., FARM DEL., AND ACRES IRRIG.

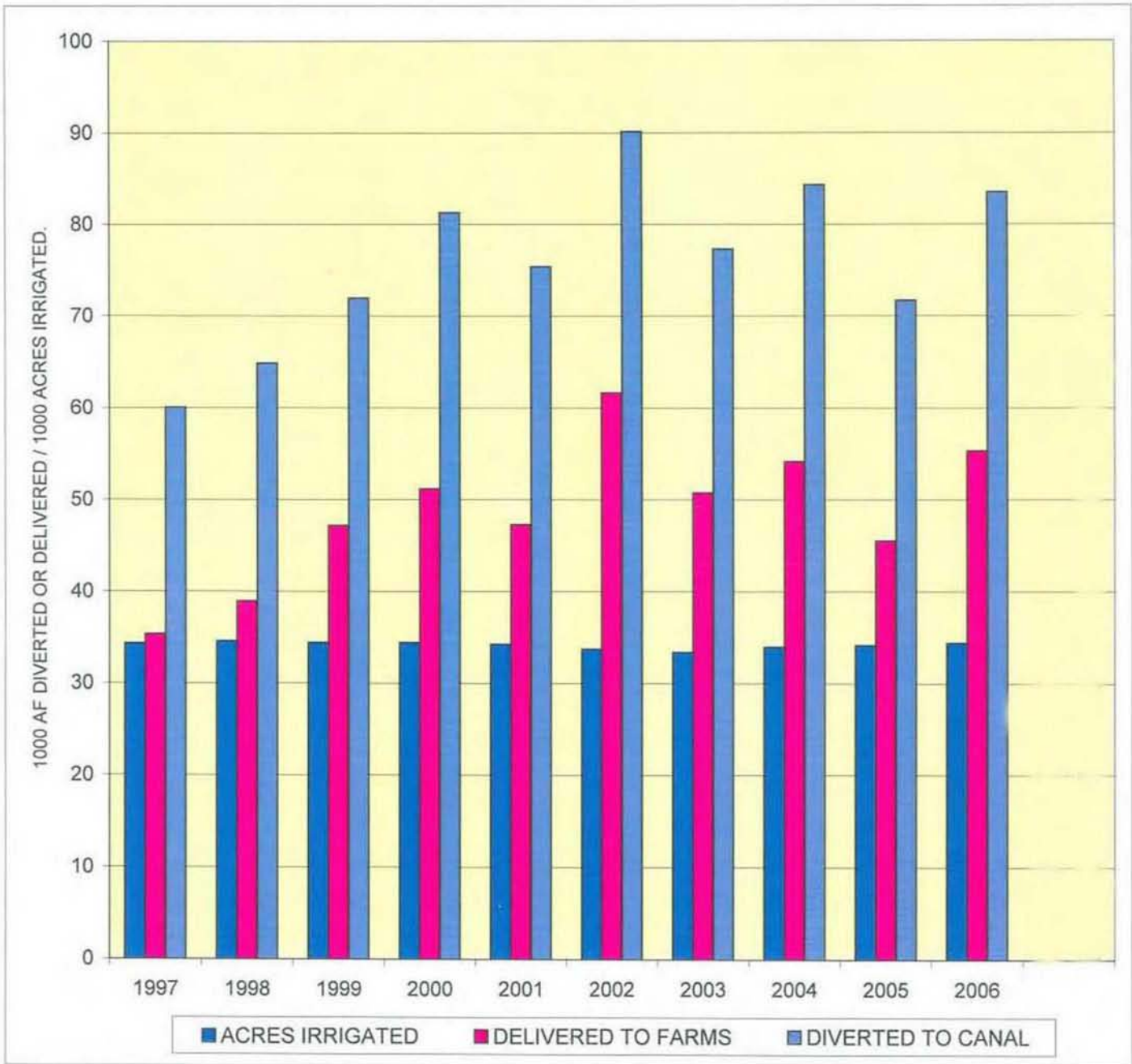


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DIVERTED af/acre	1.14	1.20	1.22	1.28	1.13	1.12	0.90	0.77	0.96	0.94
DELIVERED af/acre	0.70	0.69	0.74	0.75	0.70	0.63	0.42	0.32	0.37	0.38
EFFICIENCY	61%	58%	61%	58%	62%	56%	47%	41%	39%	41%

EXHIBIT 18

AINSWORTH IRRIGATION DISTRICT

CANAL DIV., FARM DEL., AND ACRES IRRIG.

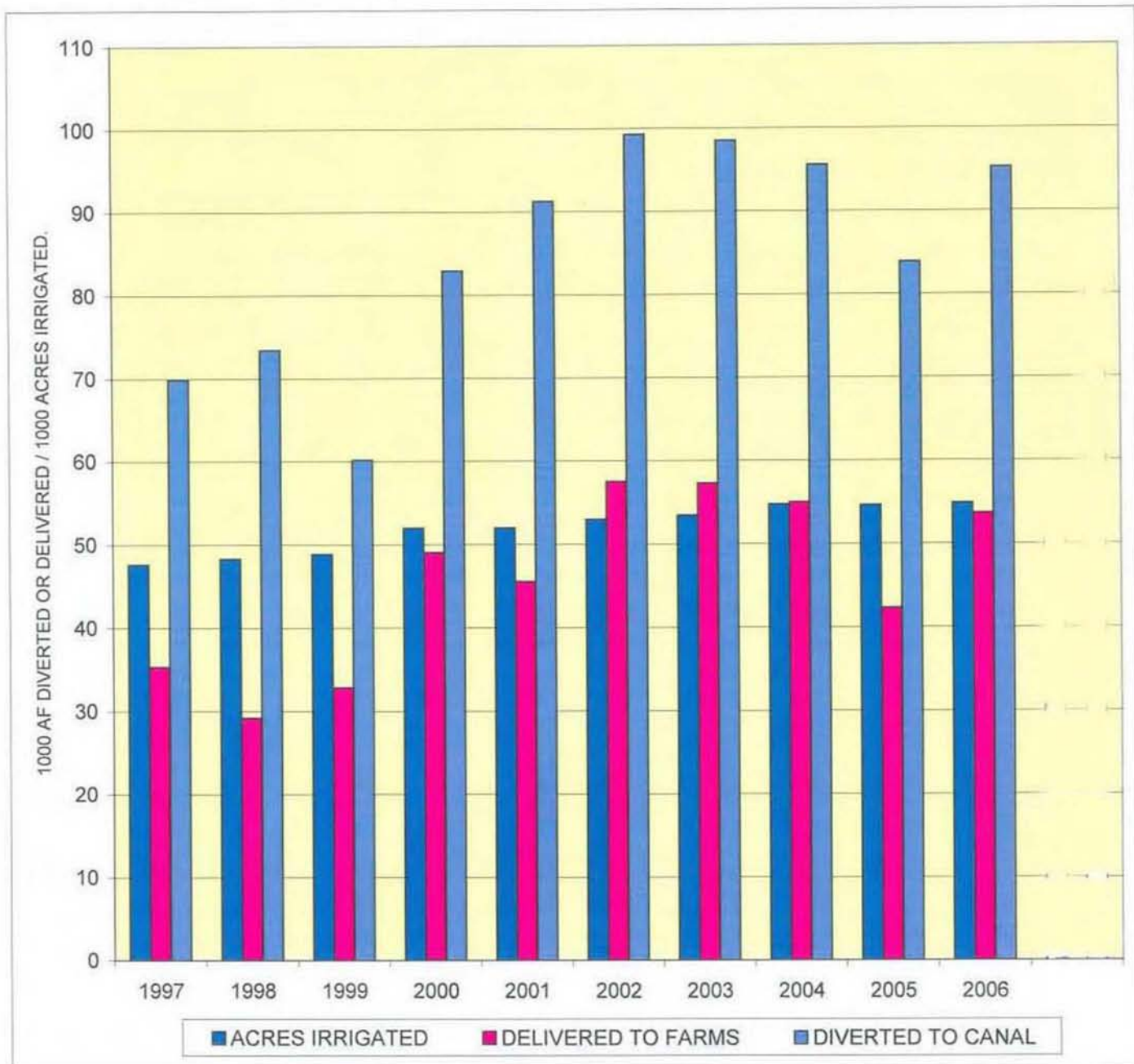


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DIVERTED af/acre	1.75	1.87	2.09	2.36	2.20	2.67	2.31	2.48	2.10	2.42
DELIVERED af/acre	1.03	1.13	1.37	1.49	1.38	1.83	1.52	1.59	1.33	1.61
EFFICIENCY	59%	60%	66%	63%	63%	68%	66%	64%	63%	66%

EXHIBIT 19

TWIN LOUPS IRRIGATION DISTRICT

CANAL DIV., FARM DEL., AND ACRES IRRIG.

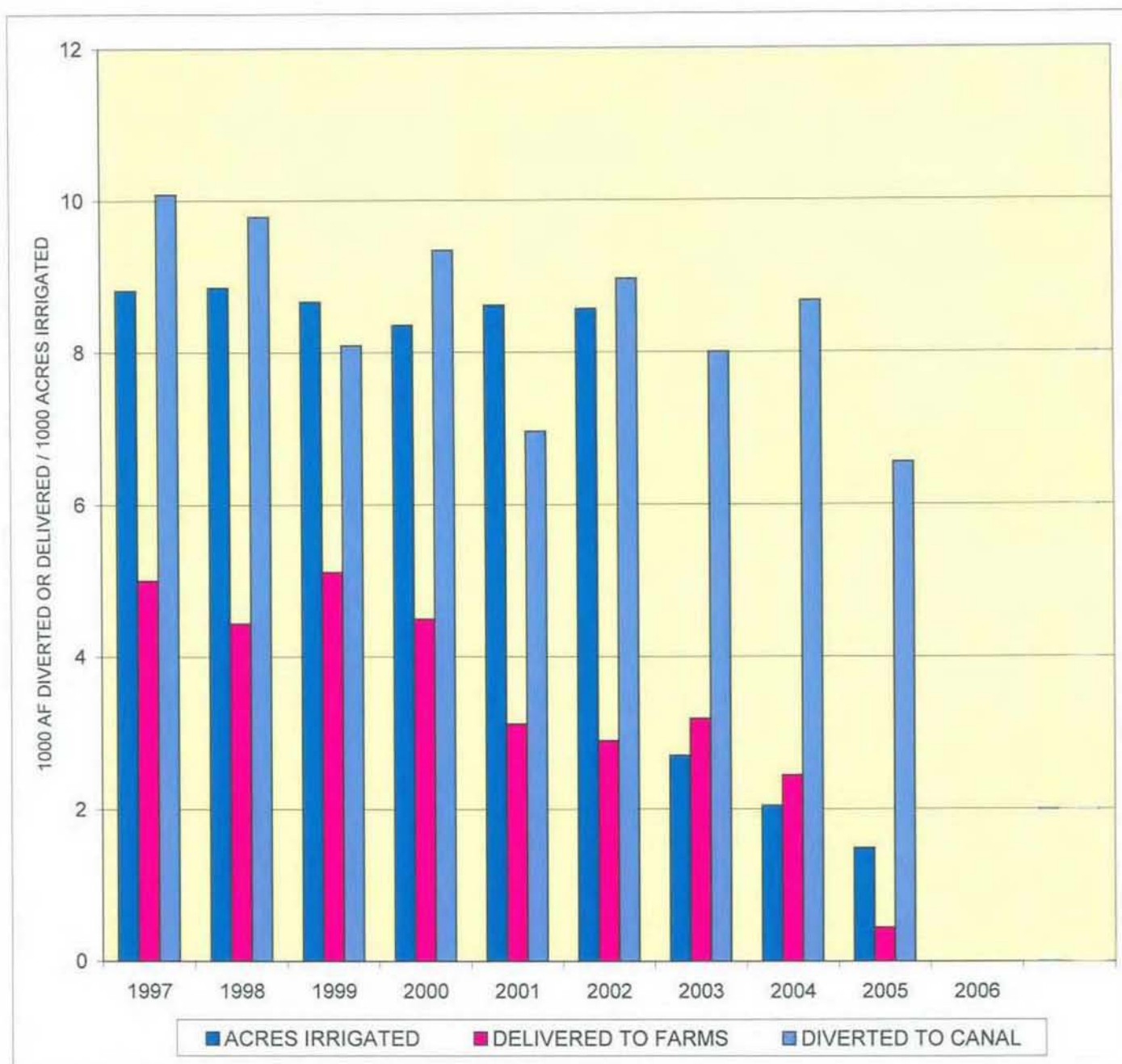


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DIVERTED af/acre	1.47	1.52	1.23	1.60	1.76	1.87	1.84	1.75	1.53	1.74
DELIVERED af/acre	0.74	0.60	0.67	0.94	0.88	1.09	1.07	1.00	0.77	0.98
EFFICIENCY	51%	40%	55%	59%	50%	58%	58%	58%	50%	56%

EXHIBIT 20

FRENCHMAN VALLEY IRRIGATION DISTRICT

CANAL DIV., FARM DEL., AND ACRES IRRIG.

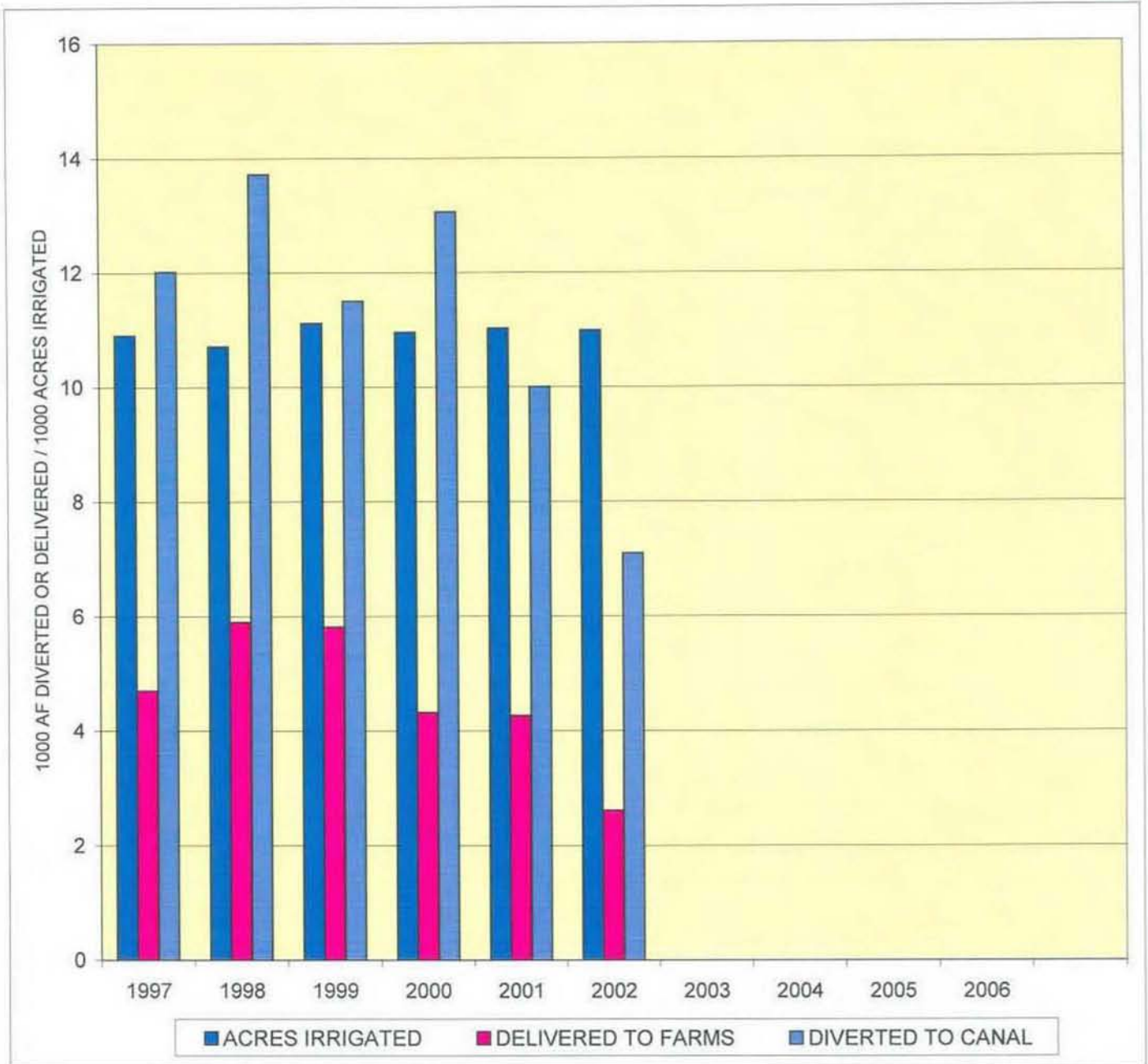


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DIVERTED <i>af/acre</i>	1.14	1.11	0.93	1.12	0.81	1.05	2.97	4.24	4.43	0.00
DELIVERED <i>af/acre</i>	0.57	0.50	0.59	0.54	0.36	0.34	1.18	1.19	0.30	0.00
EFFICIENCY	50%	45%	63%	48%	45%	32%	40%	28%	7%	0%

EXHIBIT 21

H AND RW IRRIGATION DISTRICT

CANAL DIV., FARM DEL., AND ACRES IRRIG.

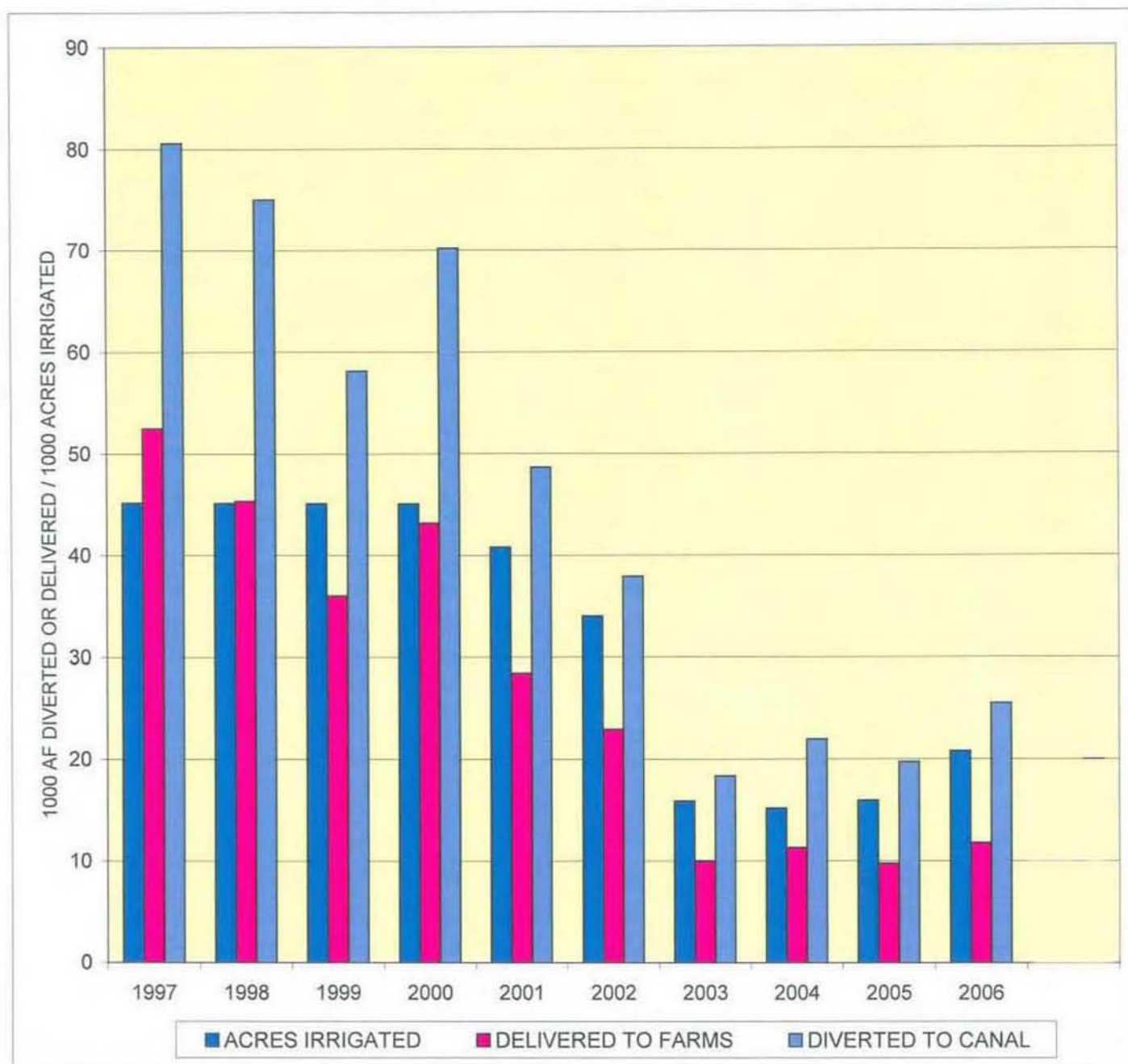


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DIVERTED af/acre	1.10	1.28	1.03	1.19	0.91	0.65	0.00	0.00	0.00	0.00
DELIVERED af/acre	0.43	0.55	0.52	0.39	0.39	0.24	0.00	0.00	0.00	0.00
EFFICIENCY	39%	43%	51%	33%	43%	37%	0%	0%	0%	0%

EXHIBIT 22

FRENCHMAN-CAMBRIDGE IRRIGATION DISTRICT

CANAL DIV., FARM DEL., AND ACRES IRRIG.

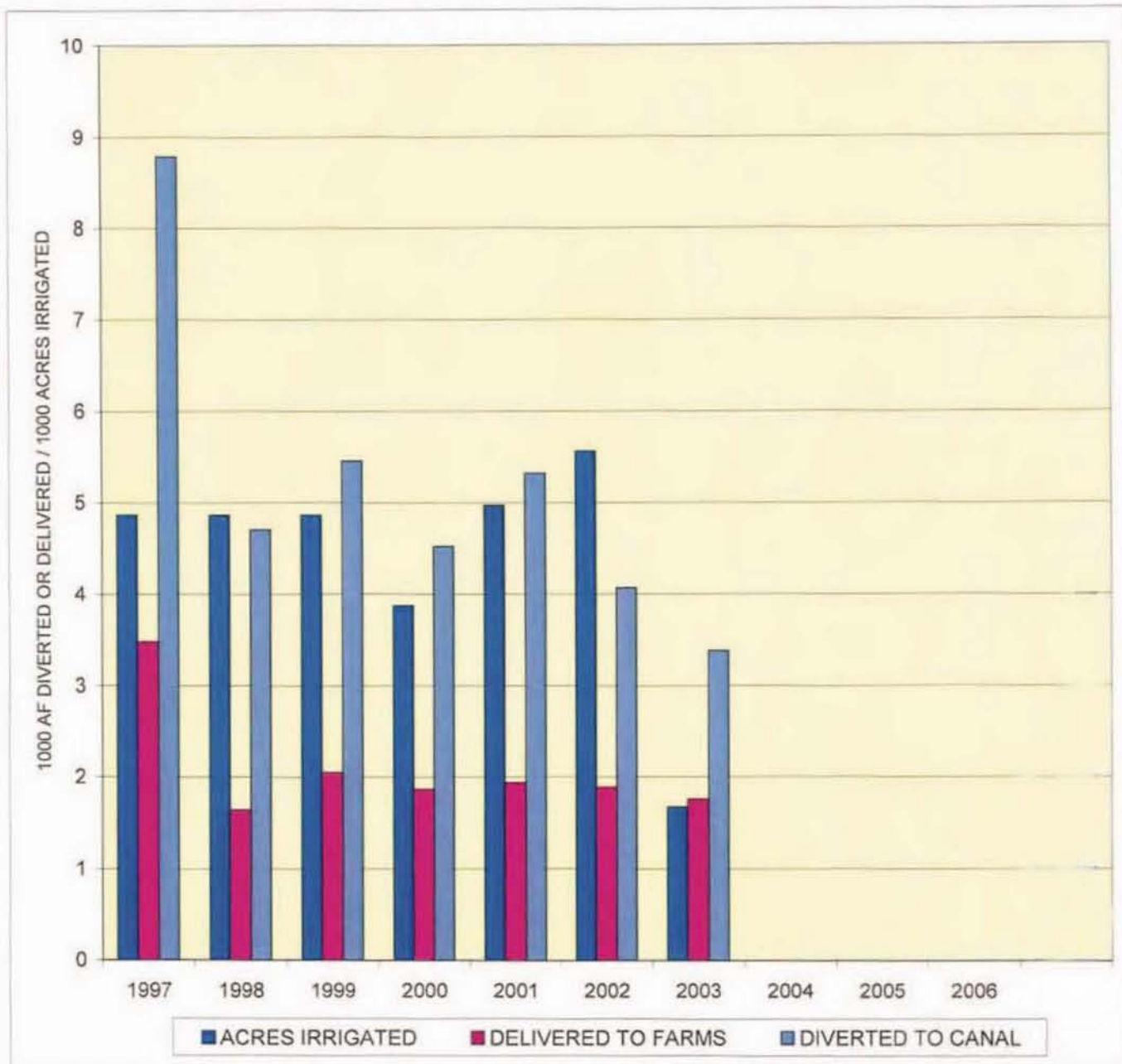


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DIVERTED af/acre	1.79	1.66	1.29	1.56	1.19	1.12	1.15	1.45	1.24	1.23
DELIVERED af/acre	1.16	1.00	0.80	0.96	0.70	0.67	0.63	0.74	0.61	0.57
EFFICIENCY	65%	60%	62%	61%	58%	61%	55%	52%	50%	46%

EXHIBIT 23

ALMENA IRRIGATION DISTRICT

CANAL DIV., FARM DEL., AND ACRES IRRIG.

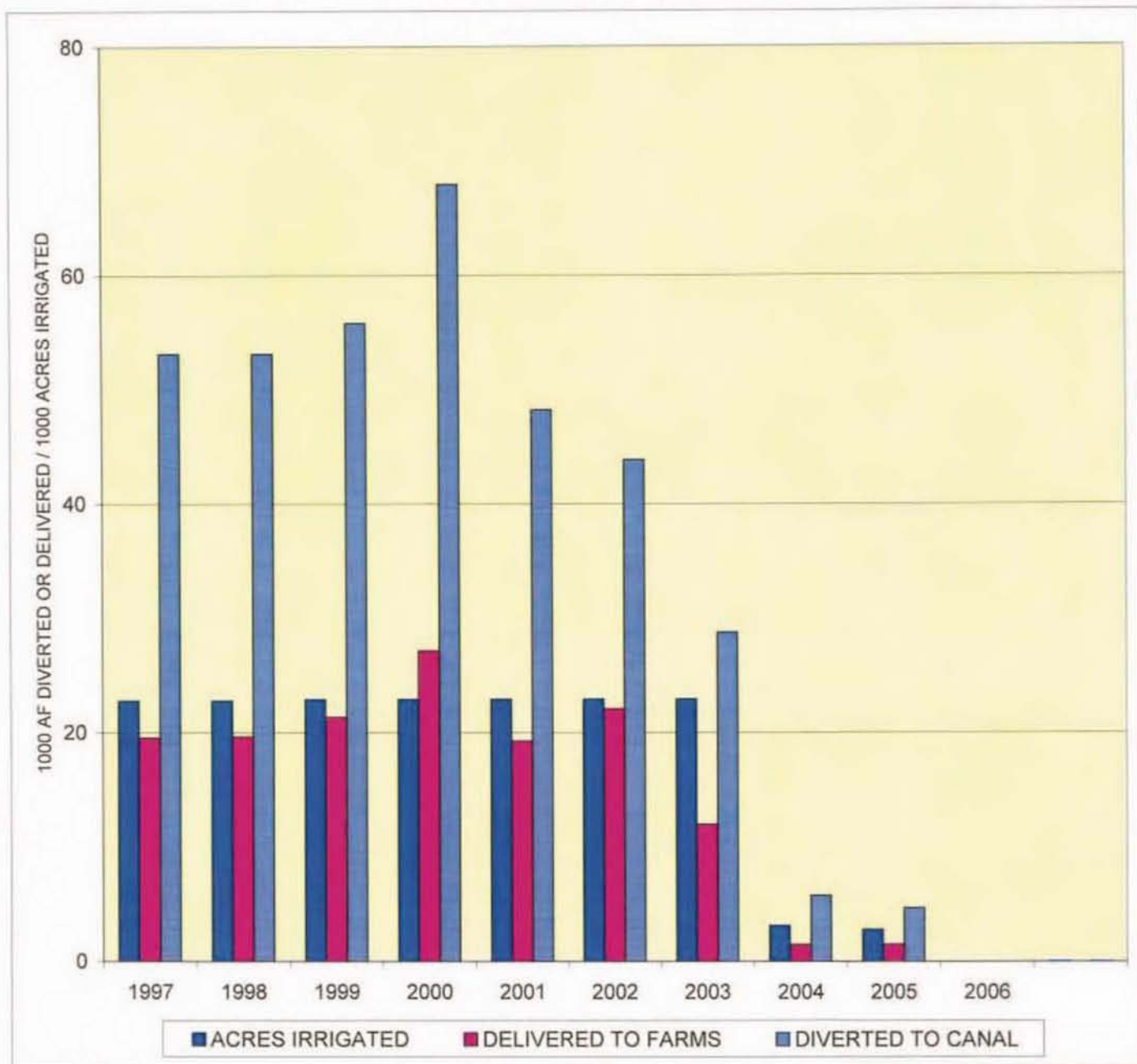


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DIVERTED af/acre	1.81	0.97	1.12	1.17	1.07	0.73	2.02	0.00	0.00	0.00
DELIVERED af/acre	0.72	0.34	0.42	0.48	0.39	0.34	1.05	0.00	0.00	0.00
EFFICIENCY	40%	35%	38%	41%	36%	46%	52%	0%	0%	0%

EXHIBIT 24

BOSTWICK IRRIGATION DISTRICT - NEBRASKA

CANAL DIV., FARM DEL., AND ACRES IRRIG.

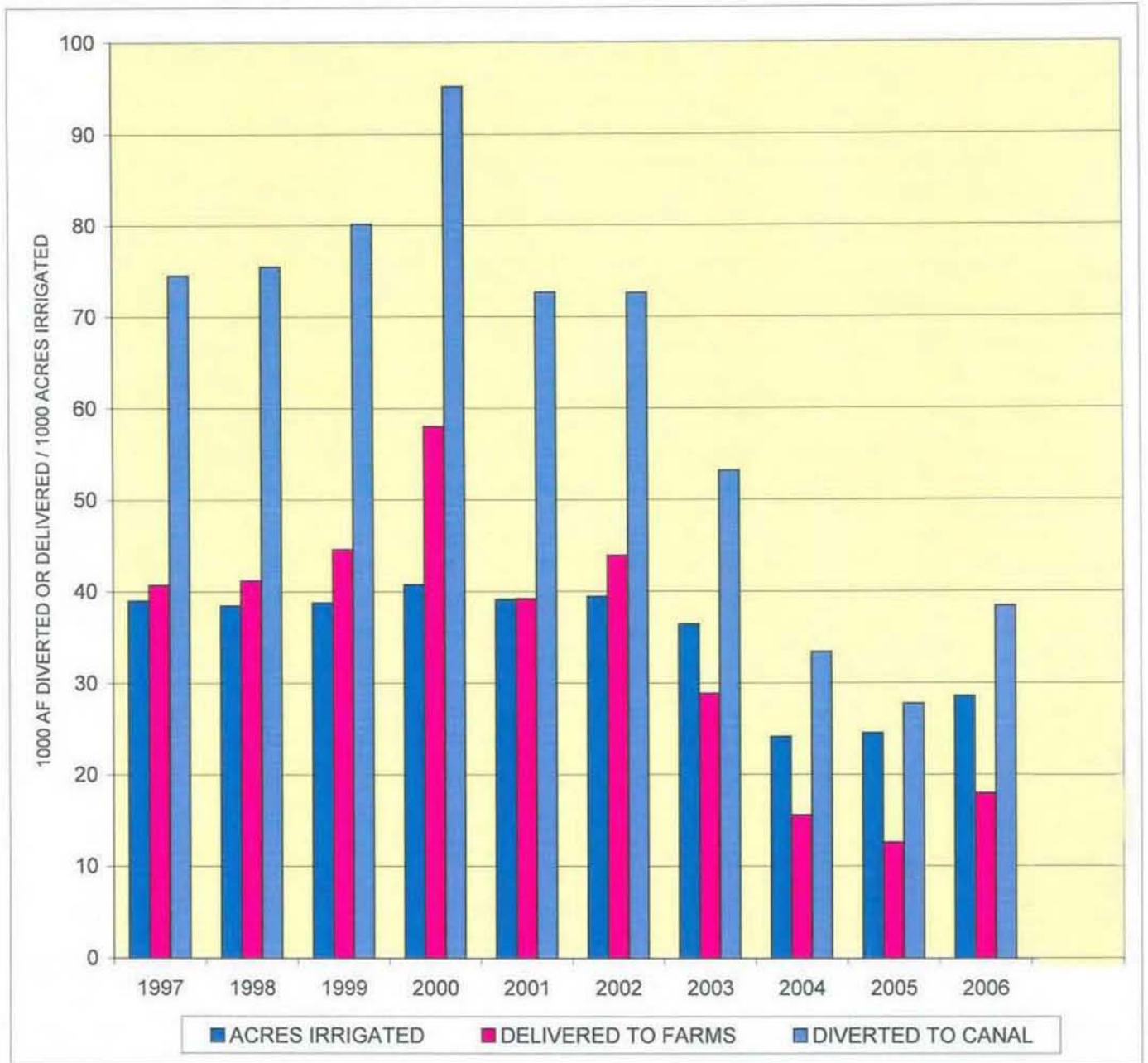


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DIVERTED af/acre	2.33	2.33	2.44	2.97	2.10	1.91	1.25	1.85	1.68	0.00
DELIVERED af/acre	0.86	0.86	0.93	1.19	0.84	0.96	0.52	0.47	0.53	0.00
EFFICIENCY	37%	37%	38%	40%	40%	50%	42%	25%	32%	0%

EXHIBIT 25

KANSAS-BOSTWICK IRRIGATION DISTRICT

CANAL DIV., FARM DEL., AND ACRES IRRIG.

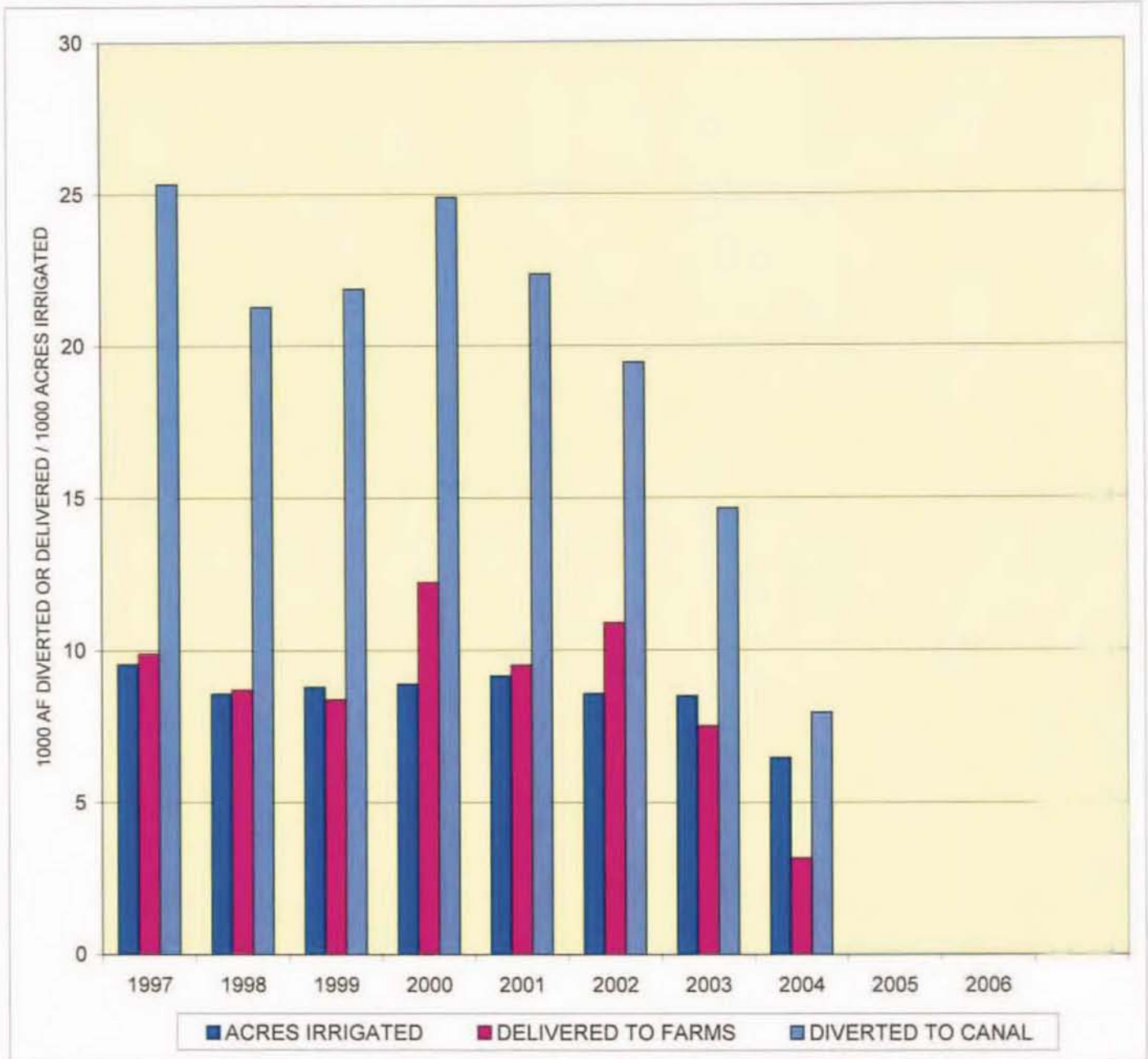


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DIVERTED af/acre	1.91	1.96	2.07	2.33	1.86	1.84	1.46	1.38	1.13	1.35
DELIVERED af/acre	1.04	1.07	1.15	1.42	1.00	1.11	0.79	0.65	0.51	0.63
EFFICIENCY	55%	55%	56%	61%	54%	61%	54%	47%	45%	47%

EXHIBIT 26

KIRWIN IRRIGATION DISTRICT

CANAL DIV., FARM DEL., AND ACRES IRRIG.

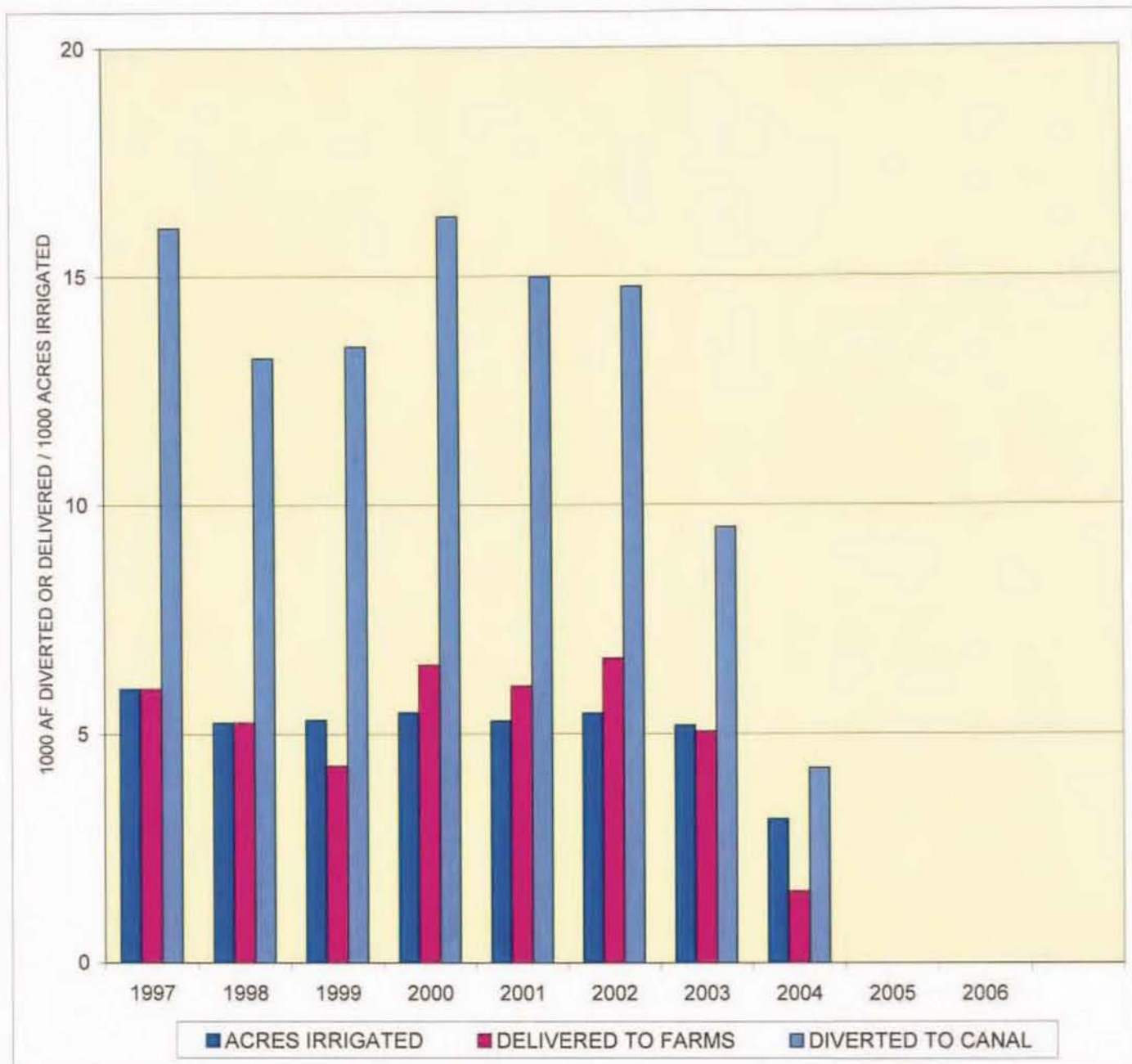


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DIVERTED af/acre	2.65	2.48	2.49	2.80	2.44	2.27	1.73	1.23	0.00	0.00
DELIVERED af/acre	1.04	1.01	0.95	1.37	1.04	1.27	0.88	0.49	0.00	0.00
EFFICIENCY	39%	41%	38%	49%	43%	56%	51%	40%	0%	0%

EXHIBIT 27

WEBSTER IRRIGATION DISTRICT

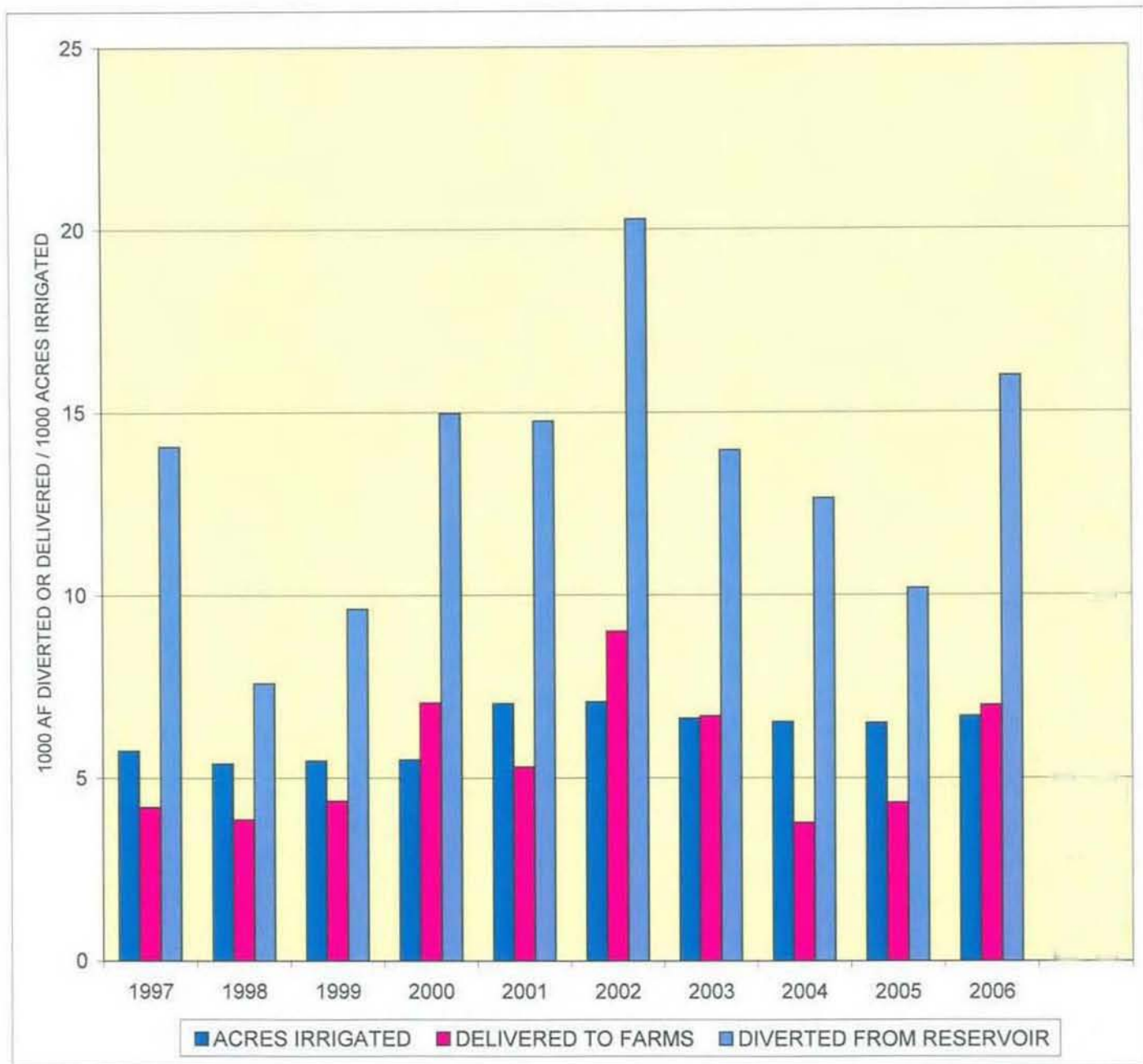
CANAL DIV., FARM DEL., AND ACRES IRRIG.



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DIVERTED af/acre	2.68	2.52	2.54	2.98	2.83	2.71	1.83	1.35	0.00	0.00
DELIVERED af/acre	1.00	1.00	0.81	1.19	1.14	1.22	0.97	0.50	0.00	0.00
EFFICIENCY	37%	40%	32%	40%	40%	45%	53%	37%	0%	0%

GLEN ELDER IRRIGATION DISTRICT

CANAL DIV., FARM DEL., AND ACRES IRRIG.



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DIVERTED af/acre	2.45	1.41	1.76	2.72	2.10	2.86	2.10	1.93	1.57	2.39
DELIVERED af/acre	0.73	0.71	0.80	1.28	0.75	1.27	1.01	0.58	0.66	1.04
EFFICIENCY	30%	51%	45%	47%	36%	44%	48%	30%	42%	44%