

DESCRIPTION OF THE COLORADO-BIG THOMPSON PROJECT

The Colorado-Big Thompson Project (C-BT) is one of the largest and most complex natural resource developments undertaken by the Bureau of Reclamation. It consists of over 100 structures integrated into a transmountain water diversion system through which multiple benefits are provided.

The C-BT spreads over approximately 250 miles in the State of Colorado. It stores, regulates, and diverts water from the Colorado River west of the Rocky Mountains, providing supplemental water for irrigation of 720,000 acres of land east of the Rocky Mountains. It also provides water for municipal use, industrial use, hydroelectric power, and water-oriented recreation.

Major features of the C-BT include dams, dikes, reservoirs, powerplants, pumping plants, pipelines, tunnels, transmission lines, substations, and other associated structures (table 1, exhibits 1 and 2).

Historically, the C-BT has diverted approximately 230,000 acre-feet of water annually (310,000 acre-feet maximum) from the Colorado River headwaters on the western slope to the South Platte River Basin on the eastern slope, for distribution to project lands and communities. The Northern Colorado Water Conservancy District apportions the water used for irrigation to more than 120 ditches and 60 reservoirs. Twenty-nine communities receive municipal and industrial water from the C-BT. The Western Division of the Pick-Sloan Missouri Basin Program markets the electric power produced at the six powerplants.

The western slope collection system captures runoff from the high mountains and stores, regulates, and conveys the water to Adams Tunnel for diversion to the east slope under the Continental Divide.

To ensure irrigation and power generation under prior rights on the Colorado River, Green Mountain Reservoir was constructed on the Blue River. Spring runoff is stored in this reservoir and later released to meet the requirements of the senior water rights holders downstream along the Colorado River and to allow east slope diversion of water by the C-BT throughout the year.

Pursuant to authorities in Senate Document 80, (which authorized the C-BT), and the 1984 Green Mountain Operating Policy and the agreements in the September 1996 Stipulation and Agreement of the Orchard Mesa Check Case settlement (Case No. 91 CW247, Colorado Water Div. 5), the content of the Historic Users Pool (HUP) in Green Mountain Reservoir is evaluated during the summer to determine the availability of water surplus to historic beneficiaries needs. If it is determined that surplus water is available, it may be delivered based upon need, first to the federal Grand Valley powerplant and then to other uses based on a priority system or on specific agreements.

Irrigation systems on the Colorado River, above the Blue River confluence, were improved to enable continued use of existing rights. Releases are made from Lake Granby to maintain the Colorado River as a live fishing stream.

The C-BTs principal storage facilities on the west slope are Lake Granby, Grand Lake, and Shadow Mountain Reservoir located on the Colorado River near Granby, and Willow Creek Reservoir located on Willow Creek, a tributary to the Colorado River below Lake Granby. Willow Creek Pumping Plant lifts the water 175 feet. It then flows by gravity via the Willow Creek Feeder Canal

down to Lake Granby.

Granby Pumping Plant lifts the water 99 feet from Lake Granby to Granby Pump Canal. The canal conveys the water 1.8 miles to Shadow Mountain Lake, which also intercepts North Fork flows of the Colorado River. Shadow Mountain Lake connects with Grand Lake to make a single body of water from which diversions flow to Adams Tunnel to begin the journey to the eastern slope.

Emerging from Adams Tunnel into the East Portal Reservoir, the water flows across Aspen Creek Valley in a siphon and then under Rams Horn Mountain through a tunnel. At this point, it enters a steel penstock and falls 205 feet to Marys Lake Powerplant. This powerplant is located on the west shore of Marys Lake, which provides afterbay and forebay capacity for re-regulating the flow. The water is conveyed between Marys Lake and Estes PowerPlant, on the shore of Lake Estes, through Prospect Mountain Conduit and Prospect Mountain Tunnel.

Lake Estes, which serves as an afterbay for the Estes Powerplant, is formed by Olympus Dam. The storage in Lake Estes and the forebay storage in Marys Lake enable the Estes Powerplant to meet daily variations in energy demand.

Water from Lake Estes and the Big Thompson River flows are conveyed by Olympus Siphon and Tunnel, and Pole Hill Tunnel and Canal, to a penstock through which the water drops 815 feet to Pole Hill PowerPlant. The flow is then routed through Pole Hill PowerPlant Afterbay, Rattlesnake Tunnel, Pinewood Lake, and Bald Mountain Pressure Tunnel, and eventually dropped 1,055 feet through two penstocks to Flatiron PowerPlant. This powerplant discharges into Flatiron Reservoir, which regulates the water for release to the foothills storage and distribution system. The afterbay storage in Flatiron Reservoir and the forebay storage in Pinewood Lake enable Flatiron PowerPlant to meet daily power loads.

Southward, the Flatiron reversible pump/turbine lifts water from Flatiron Reservoir, a maximum of 297 feet, and delivers it through Carter Lake Reservoir Pressure Conduit and Tunnel to Carter Lake Reservoir. When the flow is reversed, the unit acts as a turbine-generator and produces electrical energy.

The Saint Vrain Supply Canal delivers water from Carter Lake Reservoir to the Little Thompson River, St. Vrain Creek, and Boulder Creek Supply Canal. The latter delivers water to Boulder Creek and Boulder Reservoir. The South Platte Supply Canal, diverting from Boulder Creek, delivers water to the South Platte River.

Northward, the Charles Hansen Feeder Canal transports water from Flatiron Reservoir to the Big Thompson River and Horsetooth Reservoir. The canal crosses the Big Thompson River in a siphon above the river and highway. Water from the Big Thompson River can be diverted into the canal by Dille Diversion Dam and utilized for power generation at Big Thompson PowerPlant.

C-BT water deliveries and Big Thompson River water to be returned to the river are dropped through a chute from the feeder canal ahead of the siphon crossing, or are passed through the Big Thompson PowerPlant to convert the available head to electrical energy.

Horsetooth Reservoir is located west of Fort Collins between two hogback ridges, where Horsetooth Dam closes the gap at one end. Soldier, Dixon, and Spring Canyon Dams and Satanka Dike close the remaining gaps. An outlet at Soldier Canyon Dam supplies water to the City of Fort Collins, three rural domestic water districts, Colorado State University, and the Dixon Feeder Canal for the irrigated area cut off from its original water supply by the reservoir. The principal outlet from Horsetooth Reservoir is through Horsetooth Dam into the Charles Hansen Supply Canal. This canal delivers water to a chute discharging into the Cache la Poudre River and to a siphon crossing the river to supply the Windsor Reservoir and Canal Company. A turnout from the Supply Canal supplies the City of Greeley municipal water works. Water is delivered to the river to replace, by exchange, water diverted upstream to the North Poudre Supply Canal, which conveys it to the North Poudre Irrigation Company System.

SUMMARY OF OPERATIONS DURING WATER YEAR 2007

The winter season during water year 2007 was extremely wet in some parts of the Upper Colorado River Basin, especially over the Blue River, the Eagle River and the Fryingpan River watersheds. Significant snow fell over that section of the state between the months of November and January. The east slope also experienced significant precipitation during winter, with back to back blizzards during the Christmas season. The cold temperatures and deep snow kept the ground blanketed through most of the winter and into the early spring. Area temperatures in general were relatively close to the winter averages for both the east and west slopes.

Snowpack totals during water year 2007 were mostly near average to above-average, with most of the precipitation concentrated over a period December to January. Precipitation after February was scarce. Over the North Central Colorado Region the Blue River watershed saw the highest percentage of precipitation during the winter and spring. Other watersheds saw significantly less precipitation. The Upper Colorado River above Granby and the Big Thompson and Poudre rivers experienced less-than-average precipitation. Summer temperatures were relatively mild during May and June, and hot during July and August. Routine shower during late spring and summer kept water demands low early in the water season. As summer temperatures climbed in July and August, so did the water demands. Diversions from the west slope continued through the summer to meet the high demands for C-BT water.

The snowpack over the Blue River basin during the winter months produced significant runoff volumes which pushed Dillon Reservoir, located upstream of Green Mountain Reservoir, up to its maximum capacity. The releases from Dillon Reservoir kept Green Mountain Reservoir near maximum storage capacity for most of the summer. Since the outlet works gate and turbine rehabilitation project was completed in 2006, all releases from Green Mountain in 2007 were made using its two turbines. Given the deep snowpack across the watershed and the low demands for water from the east slope during the spring and summer, inflow at Green Mountain during 2007 was very high. Unfortunately there was not a Coordinated Reservoir Operations in 2007.

The highest daily average inflow for Green Mountain Reservoir was observed on June 8th; a flow of 2,540 ft³/s. Depletions from the Blue River were low for most of the summer, which kept Green Mountain's inflow and water surface level high for a several weeks. Its highest reservoir content was 152,941 acre-feet recorded on June 24th. Green Mountain stayed almost completely full from the middle of June until early August. Its peak release during 2007 was a 24-hour average of 2,340 ft³/s, recorded on June 19th. That reservoir release was its highest since 1997.

Granby Reservoir did not experience inflow rates comparable to the ones seen at Green Mountain Reservoir. The Upper Colorado above Granby never received as much precipitation as the Blue River watershed. Granby's water surface level never approached its maximum storage capacity during water year 2007. Diversions through Adams Tunnel continued throughout most of the summer with only short interruptions. The low snowpack combined with the diversions through Adams Tunnel contributed to keep Granby's level below its maximum capacity. Granby Reservoir reached its highest level on July 10th. Its storage content at the end of the day was 437,457 acre-feet, higher than the previous water year. The reservoir elevation that day was 8265.25 feet. The highest

daily native computed inflow was observed on June 11, 2006, a 24-hour average of 655 ft³/s.

Granby Reservoir began the water year with a steady water surface elevation on a downward trend which continued throughout the winter and early spring. Transmountain diversions began on December 9th and continued until May, 2007, with only a few interruptions. Between the middle of December 9th and the end of April 2007, water from the west slope collection system was diverted at an average rate of 465 ft³/s. Lake Granby's lowest elevation for the year was reached on April 22nd, a water surface level for the year at 8239.60 feet. The transmountain diversions were interrupted in May before resuming once again in July. C-BT water diversions continued flowing through Adams Tunnel until the fall.

The total computed inflow for Willow Creek Reservoir during water year 2007 was 44,751 acre-feet, from which 38,174 acre-feet were diverted to Granby Reservoir. A total volume of 5,493 acre-feet were released into Willow Creek below the dam during the water year. From that only 721 acre-feet of that total volume were surcharged during the runoff season. The highest 24-hour average inflow for the year was 444 ft³/s, recorded on May 15th. Meanwhile, Windy Gap pumped a total of 24,994 acre-feet back to Granby Reservoir during water year 2007.

Natural inflow to Grand Lake/Shadow Mountain Reservoir was estimated at 125,930 acre-feet for the entire water year 2007. This volume does not include water pumped from Granby Reservoir. By comparison, inflow for the previous year was estimated at 132,000 acre-feet. Most of the inflow during water year 2007 was observed between late April and early July. Most of the natural inflow during May and June was bypassed and sent to Granby Reservoir, as transmountain diversion reached a low point for the year during skim operations at Olympus Dam. In addition to the natural inflow to Grand Lake/Shadow Mountain Reservoir in 2007, a total of 220,600 acre-feet were pumped from Granby through the Farr Pumping Plant, mainly between the months of December and April, and once again after July, when inflows were low and depletions high. Transmountain diversions for the year totaled 233,480 acre-feet, 40,000 acre-feet less than the previous year.

The water surface level at Shadow Mountain was dropped significantly for several weeks during the fall of 2006 as part of an operation to control aquatic weeds growth in the reservoir. The operation was conducted in coordination with numerous agencies and local groups. The drawdown began in late October. Stop logs were installed between Grand Lake and Shadow Mountain to keep Grand Lake's level steady during the Shadow Mountain drawdown. By early December the pumps at the Farr Plant began filling up Shadow Mountain once again.

Over the east slope, runoff once again began early this year. But with mild temperatures and frequent rain showers, the seasonal runoff lasted longer than normal although without the normal high peaks typical of late May and early June. The highest 24-hour average inflow computed for Lake Estes during water year 2007 was 515 ft³/s on June 18th.

After a very wet winter, many reservoirs on the east slope were left with near-capacity pools by April. A relatively wet spring followed, with demands for water below the normal trend. In despite of the wet conditions of winter and spring and the full reservoirs on the east slope, the C-BT never reached priority to capture east slope water. Demands for east slope decreed water

were high, mainly for agricultural purposes.

Demands for C-BT water finally began in late May, significantly later than the year before. Once deliveries of C-BT water began, they continued uninterrupted until September. Water deliveries from Horsetooth Reservoir began late in May while deliveries Carter Lake began after the middle of June. Tunnel No. 1 and the Big Thompson Diversion Structure (Dille Tunnel) were used to divert water from the Big Thompson River between late July and September. Most of the hydropower skimmed water between May and June was moved through Olympus Tunnel and the foothill's power system. Dille's contribution to the power skim was minimal this year. The Dille Tunnel diverted only 4,774 acre-feet during the entire water year.

The Big Thompson and Poudre rivers experienced a low runoff season during water year 2007. As expected, flows were slightly high during late May but moderate thereafter. With the high temperatures and dry conditions of the spring and summer, water demands were very high since early in the water season. Horsetooth Reservoir's elevation reached 5416.66 on May 15th, almost V2 foot lower than the previous year. The storage content recorded that day was 125,348 acre-feet. Water delivery releases were high throughout the summer keeping the water surface level lower than previously anticipated. The reservoir level dropped sharply during the summer months, especially in June and July. By September the water deliveries had subsided, and the reservoir water surface level had finally stabilized.

Carter Lake began the water year with a water surface significantly lower than the average. Before pumping began in January, the reservoir storage content had dropped to 22,457 acre- feet. Pumping to Carter began on January 18th, 2007 and continued through May 4th, with only one interruption in February to accommodate some equipment installation in February. Carter Lake Reservoir finally reached its highest level for the year on May 4th. The reservoir elevation that day was 5733.85 feet, with a storage content of 84,767 acre-feet.

Construction work of the new outlet work structure at Carter Lake was scheduled to begin on October 1st, 2007. However, drilling of the tunnel began during the summer. A number of reservoir elevation targets were agreed on in order to allow drilling to begin. Those water surface elevation targets were selected following contract specifications and Environmental Impact Statement provisions. The plan was to meet those targets by specific dates while still allowing recreation and water deliveries to continue with as little inconvenience as possible. The reservoir's water surface level continued dropping until it reached a content of 20,100 acre-feet on October 1st.

The dry and warm summer weather over the region fueled high demands for C-BT water from July on. As a consequence, the Carter Reservoir level began to drop immediately after pumping ended in May. Pumping to Carter resumed once again in July, twice in August, and once in late September in order to meet the established elevation targets. Water deliveries continued into the fall months. Flatiron Powerplant Unit No. 3 did not generate any power during water year 2007. The pumping flowrate was estimated to be as high as 450 ft³/s as Carter Lake approached its lowest level for the water year.

The initial quota declared by the Northern Colorado Water Conservancy District (NCWCD) in November, 2006 was 60% or 186,000 acre-feet. The quota was increased in April, 2007 to 80 %

or 248,000 acre-feet, to be used for the allocation of C-BT water to allotment contract holders. Potential carryover C-BT water for 2007 was 51,392 acre-feet. Alloties paid for 47,062.5 acre-feet of that volume. Final deliveries of carryover water in water year 2007 totaled 45,263.4 acre-feet.

Water diversions through Adams Tunnel totaled 233,480 acre-feet for the water year. The water deliveries through the C-BT between October, 2006 and September, 2007 totaled 202,066 acre-feet. That includes water delivered from Horsetooth Reservoir and Carter Lake Reservoir, Olympus Dam, the Trifurcation at the Charles Hansen Feeder Canal, and from some of the water conveyance facilities. The total C-BT deliveries do not include Big Thompson River decreed water diverted through the C-BT system for the cities of Loveland and Berthoud, or any Windy Gap project water deliveries.

Total C-BT generation for the water year 2007 was above average with 632.8 giga-watt-hours produced (GWh), which is 106 % of average. This includes power generated at Green Mountain, Marys, Estes, Pole Hill, Flatiron, and the Big Thompson powerplants.

WATER YEAR 2007 OPERATIONS

Green Mountain Reservoir

Green Mountain Reservoir and Powerplant, completed in 1943, are located south of the town of Kremmling, a few miles upstream of the confluence of the Blue River and the Colorado River in North Central Colorado. The reservoir, with a total capacity of 153,639 acre-feet, provides storage water releases for power production, replacement of out-of-priority depletions, and contract water deliveries. The powerplant has two units with a total installed capacity of 26 megawatts. The spillway, located on the left abutment, is controlled by three 25 x 22 foot radial gates and is capable of discharging 25,000 ft³/s.

Green Mountain Reservoir began the water year 2007 with a storage content of 112,341 acre-feet which is 90% of average. Meanwhile Dillon Reservoir, operated by the City of Denver just upstream from Green Mountain began the water year with 250,164 acre-feet in storage, slightly above average. The Green Mountain Reservoir's level was dropped 68,184 acre-feet. The reservoir reached that low point on April 23rd, 2007.

Winter precipitation in the Blue River watershed was significant during the winter of water year 2007. Precipitation recorded at the Green Mountain Powerplant was 115% of average between October of 2006 and May of 2007. The substantial precipitation and snowpack kept the inflow above average through the winter and spring, and into the summer. Releases from Dillon Reservoir were high, especially during the runoff season, as most the City of Denver reservoirs on the east slope continued running at near full capacities. As expected, Green Mountain's inflow also remained above average during most of the water year. By the end of September the total undepleted inflow for the water year had reached 401,756 acre-feet or 101% of average. The 30-year average undepleted inflow for Green Mountain is 395,600 acre-feet. The highest daily average inflow recorded during the summer was 2,540 ft³/s, recorded on June 18th.

Start of fill for 2007 was declared as April 27, with the reservoir holding 69,485 acre-feet in storage, somewhat above its historic 65,000 acre-foot start of fill target. Pursuant to the State Engineers Office's interim policy, "Administration of Green Mountain Reservoir for 2007" of May 31, 2007, Green Mountain Reservoir achieved a "paper fill" on May 28, 2007. On that date, Denver Water and Colorado Springs Utilities (Cities) owed Green Mountain Reservoir 11,343 acre-feet of water for their out-of priority diversions. A provision of the interim policy allowed Green Mountain Reservoir to continuing storing its inflow under a 1955 water right after "paper filling" to reduce the amount of water owed by the Cities. Under this provision, Green Mountain Reservoir was able to store sufficient water by June 5 to entirely eliminate the amount owed by the Cities.

By taking advantage of its junior and senior refill rights, Green Mountain Reservoir was able to continue storing some of its inflow after June 5, attaining a maximum physical content for the year of 152,941 acre-feet on June 18, and again on June 24. With the reservoir achieving a "paper fill" this year, the 52,000 acre-foot Colorado-Big Thompson Project replacement pool, the 5,000 acre-foot Silt Project reservation, the 66,000 acre-foot HUP allocation, and the 20,000 acre-feet set aside for contracts were all fully available this year.

The maximum drawdown rate limitations initially put in place in 2003 due to landslide concerns were continued in 2007. These drawdown rate limitations were to be initiated when the reservoir's water surface elevation dropped below 7880.0 feet. With the reservoir achieving both a "paper fill" and a physical fill in 2007, the water surface elevation remained above 7915.0 feet during the irrigation season, and therefore, the drawdown rate limitations were never triggered.

Pursuant to the interim policy, the HUP releases were charged to those HUP beneficiaries above Green Mountain Reservoir during the time the reservoir was "paper filling" and then during the operation of the 1955 water right and subsequent refill rights. This resulted in a total debit to the HUP account of 148 acre-feet between April 27 and June 20. Releases to augment the water rights of HUP beneficiaries downstream of Green Mountain began on August 13, with a total of 5,266 acre-feet being released for that purpose between August 13 and October 31. Therefore, the total volume of water debited from the HUP account for HUP beneficiaries this year was 5,413 acre-feet. With the Shoshone Power Plant being offline for the entire irrigation season, an additional 722 acre-feet of HUP releases had to be made directly to the Grand Valley to support the Cameo call. However, with the additional support of releases under the informal agreement to offset the Shoshone Power Plant outage, the remaining HUP allocation was well above the upper band of the drawdown curves and the Managing Entities declared that HUP surplus was available on August 29.

HUP surplus releases began on August 31 at an initial rate of 309 ft³/sec. As has been the historic practice, HUP surplus releases were allowed to vary throughout the flow augmentation period in such a manner as to maintain Green Mountain Reservoir's river account at zero. Therefore, with the exception of a few very wet and very dry periods, HUP surplus releases generally varied between about 200 ft³/sec and 400 ft³/sec, depending upon the native flow of the basin and the decisions of the managing entities in their attempts to support the endangered fish flow targets in the 15-Mile Reach. The HUP surplus releases were terminated for the remainder of the year on October 28 at the end of the irrigation season. HUP surplus releases totaled 32,745 acre-feet in 2007, with 2,428 acre-feet being released under the agreement for the Grand Valley Power Plant and 30,318 acre-feet being attributable to the Municipal/Recreation Contract. Together, the releases for HUP beneficiaries above and below Green Mountain Reservoir and the HUP surplus releases totaled 38,881 acre-feet in 2007. This resulted in an HUP balance of 27,119 acre-feet on October 31.

Green Mountain is one of the participating reservoirs in the Coordinated Reservoir Operations (CRO) effort which benefit the Upper Colorado River Endangered Fish Recovery Program (RIP). The effort is directed at augmenting the peak flow during the runoff season to a minimum of 12,000 ft³/sec along the 15-Mile Reach of the Colorado River. The purpose of this effort is to benefit habitat improvement and spawning for two of the endangered Colorado River fish species. The 15-Mile Reach is the 15-mile stretch of the Colorado River above the confluence with the Gunnison River in the Grand Valley. Unfortunately, the CRO for 2007 was cancelled by the middle of the spring. The determination was reached after looking at the river basin conditions, the levels at the different reservoirs and their expected inflows at the time, and after taking a close look at the river flow forecasts available from the Colorado Basin River Forecast Center in Salt Lake City. After careful consideration it was determined that such a flow could

not be reached and sustained for any reasonable period of time.

Operations at Blue River, Dillon, and Green Mountain reservoirs during water year 2007 are summarized in Table 2. Gross generation at the Green Mountain Powerplant totaled 60,700,000 kilowatt-hours during water year 2007. That total is 117% of the 30 year average.

Willow Creek Reservoir

Completed in 1953, Willow Creek Reservoir has a total storage capacity of 10,600 acre-feet. The uncontrolled spillway, located at the left abutment, has a maximum flow capacity of 3,200 ft³/s. The Willow Creek Feeder Canal also begins at the left abutment and it has a capacity of 400 ft³/s. The canal is used to transfer water to Granby Reservoir. Excess inflow into the reservoir is moved by way of the Willow Creek Feeder Canal and pumped to Lake Granby for storage.

The reservoir carryover content coming into water year 2007 was 8,831 acre-feet. By November that content had climbed up to more than 9,600 acre-feet. There was a pumping session between November 13 and November 16, 2006 to evacuate some of that water and position Willow Creek Reservoir for winter operations. The Willow Creek Canal was winterized after that. The winter months during water year 2007 saw significant snow over the region. The February 1, 2007 snow-water content for the Willow Creek Reservoir watershed was 7 inches, or 109% of average. The high snow-water content resulted in an April-July most-probable runoff forecast of 46,000 acre-feet. But the wet weather pattern subsided early in the spring. By the middle of April a dryer weather pattern had developed. The dryer weather over the region began to reduce the snowpack. By May 1st, the snow-water content was 6.9 inches, with a most probable runoff forecast of 27,000 acre-feet for the period May through July. That is only 70% of average.

Inflow to Willow Creek Reservoir was low the entire water year. By the end September, 2007, a total of 44,800 acre-feet had been captured by the reservoir, which is 80% of the 30-year average.

A large portion of the inflow to Willow Creek Reservoir was diverted to Granby Reservoir. A total of 38,174 acre-feet was pumped from the reservoir and sent to Granby Reservoir using the Willow Creek Canal. Most of the pumping took place between late April and June. Meanwhile, 5,493 acre-feet was released into Willow Creek below the dam, most of it to satisfy the flow requirements below the dam. With no significant releases out of the reservoir there was no peak flow. The highest reservoir release recorded for the water year was 20 ft³/s on May 16th and 17th.

Granby Reservoir

Completed in 1950, Granby Reservoir on the upper Colorado River collects and stores most of the water supply for the C-BT. The reservoir stores the flow of the Colorado River as well as water pumped from Willow Creek Reservoir. The reservoir has a total storage capacity of

539,800 acre-feet. The spillway is located on the left abutment. Flows over the spillway are controlled by two radial gates, with a total release capacity of 11,500 ft³/s. The Granby Pumping Plant has three units with a combined installed capacity of 600 ft³/s.

Granby Reservoir carryover content into water year 2007 was 381,772 acre-feet, or 87 % of the 30-year average. The water year began with above average precipitation during the winter month. A series of weather systems continued to impact the west slope between the months of November and January. By the end of January the snow-pack reports were promising. But as dry weather moved in during the early spring, that promise of high a runoff season never materialized. By April the snow-water content in the Granby Reservoir watershed was 8.7 inches or 112% of average. The snowpack water content on April 1st was only 12.0 inches or 99% of average. As drier and warmer weather settled over the region in the spring, that snowpack continued to dissipate. The most probable runoff forecast for April 1st predicted 175,000 acre-feet for Granby watershed between April and July. The total native inflow for Granby, Shadow Mountain and Grand Lake for those months was 150,850 acre-feet..

Total precipitation for the water year in the Granby Reservoir watershed was 14.41 inches or 83% of average. The 30-year average precipitation for the watershed is 17.35 inches. The total cumulative inflow for the entire water year was 199,950 acre-feet, lower than the 30-year average of 252,930 acre-feet. The highest daily average native inflow was 1,529 ft³/s recorded on June 18th.

The summer months were relatively dry and warm over Northern Colorado, which increased demands for C-BT water over the east slope. The high demands for C-BT water in combination with a low runoff in the Granby watershed kept the reservoir content relatively low. The maximum storage content for the water year at Granby Reservoir was 437,455 acre-feet recorded on July 10th

Granby Reservoir never reached its maximum capacity during water year 2007. The reservoir finished the water year with 376,346 acre-feet in storage, which represents 86% of the 30-year average. That volume was also 6,000 acre-feet lower than the volume recorded the previous year on September 30th

Grand Lake/Shadow Mountain Reservoir

During the fall of 2006, Shadow Mountain's water surface level was dropped 10 feet in an attempt to control aquatic weed growth in the reservoir. The drawdown operation involved numerous government agencies and local groups, and required closed coordination between the different parties. In order to reach the drawdown goals, flow from Grand Lake into Shadow Mountain was cut off by installing stop logs between the two bodies of water. The Grand Lake's water surface elevation was kept at normal levels while Shadow Mountain sat nearly empty for several weeks in cold weather.

The drawdown operation began on October 15th, 2006 and continued until December 1st. During that time Olympus Tunnel was also completely unavailable while Adams Tunnel was intermittently unavailable. All those outages made the Shadow Mountain drawdown operation more complicated.

To accommodate the outages while the drawdown was taking place, the reservoir levels for Marys Lake and Lake Estes were kept low, allowing any inflow into Grand Lake to be moved to the east slope as needed, normally once a week for a day. Meanwhile, the east slope demands for C-BT water were served using the stage content from Pinewood and Flatiron reservoirs.

Once the drawdown period ended, it took approximately 8 days to bring the Shadow Mountain level back to normal. On December 9th, 2006, once the reservoir levels at Grand Lake and Shadow Mountain were balanced, the stop logs were removed from the Grand Lake outlet structure and flow through Adams Tunnel resumed.

Initial results indicate that the drawdown operation was beneficial. There was a significant reduction in aquatic weeds within Shadow Mountain Reservoir. However, the operation failed to completely control weed growth within the reservoir. Aquatic weeds will continue to be a continual issue especially if consistent management strategies are not employed periodically.

Adams Tunnel

Total diversions through the Adams Tunnel during water year 2007 were 40,000 acre-feet lower than the previous year. The total volume diverted through the tunnel was 233,480 acre-feet. Most of the water was diverted between the middle of December, 2006 and September, 2007, with a two month pause between the middle of May and the middle of July. Demands for water out of Horsetooth and Carter Lake reservoirs began in late May and continued through the summer and into the fall months.

Lake Estes

Completed in 1949, Lake Estes on the Big Thompson River provides regulating capacity for power generation purposes. The reservoir has a total capacity of 3,100 acre-feet. It captures the discharge of Estes Powerplant and inflow coming from the Big Thompson River, regulates river flow below the dam, and releases of water to the Foothills Power System via Olympus Tunnel (550 ft³/s capacity). The Estes Powerplant has three hydroelectric units with a total installed capacity of 45 megawatts. The combined flow capacity for the three units is 1,300 ft³/s. The spillway, located on the right abutment, has five radial gates with a total discharge capacity of 21,200 ft³/s. The center gate has been automated, and is operated remotely from the Loveland Control Center (LCC). During the winter months, C-BT water is diverted through Adams and Olympus tunnels and routed through the Foothills Power System on its journey to terminal storage at Carter and Horsetooth reservoirs. This complete operation is controlled remotely from the LCC.

The winter season of water year 2007 brought needed precipitation to the Big Thompson River watershed. The March 1st snow-water content was 9.8 inches or 108% of average, but after that dry weather settled over the region. The snowpack totals for the Big Thompson river watershed began to drop. Runoff began by the middle of May. The April most-probable runoff forecast for the period April-July predicted 64,000 acre-feet of inflow for Lake Estes. Only 59,250 acre-feet of inflow were observed in water year 2007.

The C-BT did not enter priority to capture east slope water from the Big Thompson River during water year 2007. The demands for C-BT water were high during the summer months, fueled by warm weather, dry conditions and an 80% quota for C-BT alloties. Monsoonal storms in July and August helped to alleviate the dry conditions over the region, but the farming community and east slope municipalities continued their high demands for C-BT water. That kept the Adams Tunnel transmountain diversions flowing high until September. Power generation at Estes Powerplant benefited from the continuous flows from the west slope and produced 103.2 GWh of electric power during the water year. Average generation for the plant is 100.3 GWh.

The highest daily average inflow for Lake Estes this past water year was 515 ft³/sec. This peak inflow value was computed on June 18th, significantly later than the previous year. The total cumulative inflow for the water year was 82,182 acre-feet, representing 90% of the 30-year average. Despite the high demands for C-BT water during the summer of 2007, Olympus Tunnel was available to run skim operation between May and July. The total volume skimmed through the Olympus Tunnel during water year 2007 was 33,200 acre-feet or 97% of average.

Foothill's System

Some of the Big Thompson River natural inflow into Lake Estes in excess of the minimum outflow required by the State of Colorado below Olympus Dam was diverted as skim water through Olympus Tunnel, mainly between the months of May and July. Skim operations began on April 26th. Diversions through the Adams Tunnel were high during most of the year, with the exception of May, June and July. Between the middle of May and the middle of July a large portion of the Big Thompson River water was diverted as skim water. The skimmed water occupied most of the capacity of Olympus Tunnel during the operation. Only a small amount of C-BT water was diverted from the west slope during that time. Water diverted through Olympus Tunnel was used for power generation at Pole Hill, Flatiron and the Big Thompson powerplants. Most of the water was eventually returned to the Big Thompson River at the Big Thompson Canyon Mouth. Any decreed water belonging to the cities of Berthoud and Loveland remained in the system and was sent north via the Charles Hansen Feeder Canal. All the water belonging to the Big Thompson River was returned to the river using the Big Thompson Powerplant or the Charles Hansen Feeder Canal Wasteway. The total volume skimmed through the Olympus Tunnel during water year 2007 was 33,200 acre-feet, compared to 18,600 acre-feet in water year 2006.

Olympus Dam began bypassing potential skim water after the middle of July in order to transport C-BT water. However, Dille Tunnel was able to capture part of the extra flow from the Big Thompson River and skim it. The Dille Tunnel operations diverted a total of 4,774 acre-feet during the entire water year. The total was lower than the 30-year average of 24,100 acre-feet. Most of the water captured at the Dille Tunnel during the spring and summer was returned to the river after generating hydroelectric power at the Big Thompson Powerplant. Occasionally a small portion of the diversions was kept and stored at Horsetooth Reservoir as part of the contract with the cities of Loveland and Berthoud to capture their decree water. Water diverted through Dille Tunnel serves four purposes; 1) it can supply the City of Loveland and other users with their Big Thompson River decreed water; 2) it can be used as skim water and passed through the Big Thompson Powerplant to generate electricity; 3) it is used in an exchange to

supply the Town of Berthoud their Big Thompson River decreed water; 4) when the C-BT is declared by the State of Colorado to be in priority to catch Big Thompson River water, it can catch runoff which can be stored at Horsetooth Reservoir.

The Big Thompson River native flow skimmed through Olympus and Dille tunnels reduces the flows measured at the mouth of the Big Thompson Canyon, as the water is returned to the river below the canyon mouth stream gage. The Big Thompson River stream gage at the canyon mouth measured a total of 66,591 acre-feet of water during the water year which represents 50% of the 30-year average. The flow at the mouth of the canyon includes water releases from Olympus Dam, native flow from the North Fork of the Big Thompson River and local runoff. The bulk of the flow at the Canyon Mouth gage normally occurs between May and August.

A significant portion of the power generated in 2007 by the powerplants in the Foothill's System came from the skim operations. However, most of the power generated by the C-BT during the entire year was produced thanks to the high demands for water over the east slope. C-BT water diversions from the west slope kept all the powerplant generating almost the entire year. The five powerplants in the Foothill's System produced a total of 572.1 GWh of power during the water year 2007, which represents over 105% of the 30-year average.

Carter Lake Reservoir

Completed in 1952 with three dams, Carter Lake Reservoir has a total storage capacity of 112,200 acre-feet. Inflow of C-BT water to Carter Lake Reservoir is from the Flatiron Pumping Plant with a capacity of up to 450 ft³/s.

The Carter Lake Reservoir storage content at the beginning of water year 2007 was 35,391 acre-feet. That content continued to drop until pumping began in January, 2007. By January 17th, the storage content at Carter had dropped to 22,457 acre-feet. Once pumping began the reservoir level bounced back and reached a maximum content for the water year of 84,762 acre-feet on May 4th

During any normal year the pumping to Carter Lake would have continued until reaching a higher level later in the spring. But this year marked the beginning of construction for the new outlet works structure and water delivery tunnel at Dam #1. ECAO, in close coordination with the Northern Colorado Water Conservancy District, the Bureau of Reclamation's Technical Center in Denver, Colorado, and private contractors in charge of construction developed a drawdown plan to drop the reservoir water surface level during the summer and fall months. The lower reservoir level allowed construction work to begin and normal water deliveries to continue while minimizing the impact on recreation. The reservoir content target for Carter Lake was 20,100 acre-feet on October 1st. That October 1st target, along with several other reservoir level targets chased during the summer were all met on time. Impact on recreation was minimal and all water demands were met in a timely fashion.

Pumping from Flatiron Reservoir to Carter Lake Reservoir began by the middle of January, and continued uninterrupted until late in February. Pumping was interrupted for several days to allow work on a CO₂ fire response system. Once the work was completed on February 28th,

pumping operations resumed. Pumping continued until early May, when Carter Lake reached the desired level based on the drawdown plan for the summer and fall months. Pumping was resumed a few times for brief periods during the summer and fall in order to meet specific targets of the drawdown plan.

Carter Reservoir reached its highest level for the water year on May 4th. The elevation that day was measured at 5733.85 feet with a storage content of 84,767 acre-feet. A total of 82,500 acre-feet of water was pumped into Carter Lake Reservoir during the water year 2007. The 30-year average total is 79,500 acre-feet. The pumping operation required a total of 24,000,000 kilowatt-hours of energy, 89.5% of the 30-year average. Water deliveries to the Saint Vrain Supply Canal for water year 2007 totaled 83,900 acre-feet. The 30-year annual average water delivery total is 70,150 acre-feet. The month of July had the highest volume delivered, a total of 22,500 acre-feet. Carter Lake Reservoir ended the water year at elevation 5657.23 feet and a storage content of 20,226 acre-feet. The elevation target of 5657.02 feet for October 1st was met.

Horsetooth Reservoir

Completed in 1949, with four dams, Horsetooth Reservoir has a total constructed capacity of 156,700 acre-feet. Inflow to Horsetooth comes via the Charles Hansen Feeder Canal, primarily from Flatiron Reservoir.

Operations at Horsetooth Reservoir during water year 2007 were relatively normal. Horsetooth began the year at elevation 5378.63 feet, with 70,127 acre-feet of water in storage. With Flatiron's Unit #3 unavailable to pump to Carter Lake in December, 2006 and part of January, 2007, C-BT water began flowing towards Horsetooth Reservoir earlier than usual. Full flows through the Charles Hansen Feeder Canal continued from early December through late January. Once Unit #3 was made available pumping to Carter Lake began and the flows to Horsetooth were reduced significantly. However, flows through the Charles Hansen Feeder Canal were continued at a lower rate throughout the entire year. The cumulative total inflow to Horsetooth for the water year 2007 was 119% of the 30-year average. A total of 127,900 acre-feet entered the reservoir in water year 2007.

Horsetooth Reservoir reached its highest level of 5413.66 feet on May 15th. The storage content at that level was 125,346 acre-feet. High water demands began in June. The reservoir level began to drop sharply later that month. Water deliveries from Horsetooth through the Charles Hansen Supply Canal totaled 101,000 acre-feet during the water year 2007, which is 3,250 acre-feet more than the 30-year average. The highest monthly total delivery was observed in August, a total of 28,900 acre-feet. The highest daily average flow through the Charles Hansen Supply Canal was 646 ft³/s observed on August 28th. Horsetooth ended the water year at a water surface elevation of 5386.14 feet, with a storage content of 80,626 acre-feet. That elevation is eight feet higher than the previous year. That storage content represented 97% of the 30-year average for October 1st.

FLOOD BENEFITS

Precipitation over the Colorado River Basin was not evenly distributed during the water year 2007. Most of the precipitation took place during the winter months. The rest of the year precipitation was near average, except for the Blue River watershed which continued receiving precipitation well into the spring. The upper Colorado had a wet month of October, followed by lower precipitation totals in November and December. By January 1st the snowpack was at 102% of average. That total dropped to 81% of average by April 1st. By the contrary, the Blue River watershed had above average snowpack totals the entire season.

The east slope experienced tremendous amounts of snow in December and January. But after January precipitation totals dropped significantly while cold weather settled in. By May the snowpack was below average for the east slope and the possibilities of a high runoff year had dissipated. As usual, the highest reservoir inflows for Lake Estes were observed during late May and June. Monsoonal storms moved into the area by July and kept stream flows relatively healthy the rest of the season.

Based on the data collected from the Colorado River Basin, and according to figures provided by the U.S. Army Corps of Engineers, C-BT reservoirs over the west slope prevented flood damages during water year 2007. According to the Corps of Engineers report, Green Mountain Reservoir prevented a total \$6,000 in possible flood damages during water year 2007. Willow Creek and Granby/Shadow Mountain/Grand Lake did not prevent any damages.

Runoff across the Big Thompson River watershed was also evenly distributed from late spring and throughout the summer months. The C-BT reservoirs over the east slope did not face any significant flooding conditions during water year 2007. Therefore, there were no flood protection benefits attributed to those reservoirs for the water year. However, every spring the diversions through the C-BT Foothill's System help promote recreational activities and allow tourism to prosper along the Big Thompson River Canyon by diverting high flows during the runoff season, keeping steady and more manageable flow rates through the canyon.

Since construction, the C-BT has prevented flood damages totaling \$393,300.

C-BT PLANNING AND CONTROL

The C-BT is operated to provide supplemental municipal and industrial water supply, irrigation water supplies, hydroelectric power production, flood control, recreation, fish and wildlife preservation, and other purposes. The C-BT is operated for the purposes for which it was authorized and constructed.

The integrated operation of the C-BT is planned and coordinated by the Bureau of Reclamation, Water Scheduling and Control Group, Eastern Colorado Area Office in Loveland, Colorado. Staff at this office collects and analyzes information daily and makes the decisions necessary for successful operation of the C-BT. This continuous water management function involves coordination between the Department of Water Resources of the State of Colorado, the Northern Colorado Water Conservancy District, Upper Colorado and Great Plains Regions of Reclamation, the Department of Energy, and many other local, state, and Federal agencies.

Experience has proven that proper utilization of the available water resource in a multi-purpose project such as this can be achieved only through careful budgeting and management of the anticipated water supply. One end product of this budgeting and management process is an Annual Operating Plan (AOP).

The C-BT is operated on a water year basis (October 1 through September 30). The AOP is prepared in January of each year, following the plan's review and necessary public meetings. AOPs are prepared for reasonable maximum and reasonable minimum conditions of water supply and requirements as well as for the most probable runoff conditions. The C-BT is operated to optimize the most probable water supply without jeopardizing operational position should either the reasonable maximum or the reasonable minimum water supply conditions occur. The plan is reviewed and revised as necessary during the year as new information or changing conditions occur. Flexibility is a keynote and a necessity of the plan. Computer programs and models are used by Reclamation to develop the AOP and water supply forecasts.

GREEN MOUNTAIN RESERVOIR OPERATIONS

Paragraph 6 of the October 5, 1955, Stipulation, in the decree for the Consolidated Cases Nos. 2782, 5016, and 5017 in the United States District Court for the District of Colorado (Blue River Decree), calls for periodic plans for the operation of Green Mountain Reservoir to be developed. The plans addressing this requirement are included as a part of this report.

Provisions guiding the operations of Green Mountain Reservoir are contained in the following documents:

Manner of Operation of Project Facilities and Auxiliary Features, Senate Document No. 80, 75th Congress, 1st Session

Consolidated Cases Nos. 2782, 5016, and 5017
October 12, 1955, Stipulation and Decree
April 16, 1964, Stipulation and Decree

Operating Policy for Green Mountain Reservoir, Colorado-Big Thompson Project, published in the Federal Register, Vol. 48, No. 247, December 22, 1983,

September 4, 1996, Stipulation and Agreement in Colorado Water Div. 5, Case No. 91CW247 (Orchard Mesa Check Case), and attached HUP Operating Criteria.

Operations will be consistent with the applicable provisions in these documents.

The general operations guided by these provisions are given below:

1. Winter operation (November-March)

- a. Bypass inflow to supply downstream vested senior rights.
- b. Make releases to replace water diverted or stored out of priority by the C-BT collection system, as required.
- c. Make releases for west slope irrigation and domestic uses per Green Mountain Operating Policy and the HUP Operating Criteria.
- d. Make releases for water service contracts pursuant to the Operating Policy.
- e. Maximize power generation, while maintaining:
 - (1) Adequate storage to meet the anticipated needs under the guiding documents.
 - (2) A minimum power head consistent with the integrated system power operations.

2. Operation during snowmelt period (April-July)

- a. Bypass inflow to supply downstream vested senior rights.
- b. Make releases to replace water diverted or stored out of priority by the C-BT collection system, as required.
- c. Make releases for west slope irrigation and domestic uses per Green Mountain Operating Policy and the HUP Operating Criteria.
- d. Make releases for water service contracts pursuant to the Operating Policy.
- e. Participate in the Coordinated Reservoir Operations effort to enhance peak flows for the Colorado River Endangered Fishes. Reduce releases from traditional levels before and after the peak flow period on the Colorado River in the Grand Junction area. During peak flow period, release the lesser of inflows or turbine capacity for approximately a ten-day period.
- f. Fill without spilling to maximize power generation by utilizing the storage and power rights concurrently.
- g. On or before June 30, each year, meet with Managing Entities established under the settlement of the Orchard Mesa Check Case to assess availability of surplus water in the Historic Users Pool (HUP).
 - Confer with Managing Entities on a regular basis through the irrigation season to assess availability of surplus water in the Historic Users Pool (HUP).
 - If a surplus condition is declared, make releases up to the amount of surplus, under agreements, to:
 - the Grand Valley Powerplant up to its need or capacity; then to
 - the Grand Valley under the Municipal Recreation contract in excess of that needed by the powerplant
- j. Maximize power operation consistent with 1.e.
- k. Make releases as outlined in the above referenced documents. ¹

3. Operation after snowmelt period (August-October)

- a. Bypass inflow to supply downstream vested senior rights.

¹ By the use of these provisions for current operating purposes, the United States does not intend to imply any definition of rights and obligations. The order in which these criteria are listed does

- b. Make releases to replace water diverted or stored out of priority by the C-BT collection system, as required.
- c. Make releases for west slope irrigation and domestic uses per Green Mountain Operating Policy and the HUP Operating Criteria.
- d. Make releases for water service contracts pursuant to the Operating Policy.
- g. Confer with Managing Entities on a regular basis through the irrigation season to assess availability of surplus water in the Historic Users Pool (HUP).
 - If a surplus condition is declared, make releases up to the amount of surplus, under agreements, to:
 - the Grand Valley Powerplant up to its need or capacity; then to
 - the Grand Valley under the Municipal Recreation contract in excess of that needed by the powerplant
- j. Maximize power operation consistent with 1.e.
- k. Make releases as outlined in the above referenced documents.

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¹ By the use of these criteria for current operating purposes, the United States does not intend to imply any definition of rights and obligations. The order in which these criteria are listed does not reflect any intended priority.

² By the use of these provisions for current operating purposes, the United States does not intend to imply any definition of rights and obligations. The order in which these criteria are listed does not reflect any intended priority.

GREEN MOUNTAIN HISTORIC USERS POOL AND THE ORCHARD MESA CHECK CASE SETTLEMENT

Background and Authority

The Orchard Mesa Check (Check) is a structure below the common afterbay of the Orchard Mesa Irrigation District (OMID) Pumping Plant and the federal Grand Valley PowerPlant in the Grand Valley of Colorado. The operation of the Check provides the ability to raise the water level in the common afterbay to a level, which causes water to flow through the bypass channel and return to the Colorado River upstream of the Grand Valley Irrigation Company (GVIC) diversion dam.

Operation of the Check was determined to constitute an 'exchange' of water whereby water destined for the senior GVIC irrigation water rights is borrowed for pumping and hydroelectric power generation purposes and returned to GVIC for irrigation use. Operation of the Check influences the supply of water available to Grand Valley irrigation systems; to the Grand Valley PowerPlant for power production; Green Mountain Reservoir releases; and the flow in the 15-Mile Reach of the Colorado River. The 15-Mile Reach is that section of the Colorado River from the GVIC diversion dam to the confluence of the Gunnison River and has been designated critical habitat by the Upper Colorado River Endangered Fish Recovery Program.

The Check has been operated on an informal basis without a decreed right since approximately 1926 to manage flows in the Colorado River for the benefit of the United States, Grand Valley Water Users Association (GVWUA), and OMID (Co-applicants). In the late 1980's, a hydropower development was proposed in a reach of the Colorado River between the Grand Valley Diversion Dam, the point where the exchange water is diverted, and the GVIC diversion dam where the exchange water is returned. The Co-applicants were concerned that a water right awarded for this development would have the ability to interfere with the exchange of water. In response to this potential threat to the continued operation of the exchange, the Co-applicants filed an application in State Water Court on December 30, 1991, for approval of an exchange of water. This case (Water Division 5, Case No. 91CW247) was informally known as the Orchard Mesa Check Case. Resolution of the case resulted in a negotiated Stipulation and Agreement entered into the District Court, Water Division No. 5, State of Colorado, on September 4, 1996.

Overview of the Stipulated Settlement

The settlement contains two major components: the Stipulation and Agreement and the Green Mountain Reservoir Historic Users Pool Operating Criteria (Operating Criteria). The Operating Criteria further defines operation of the Green Mountain Reservoir Historic Users Pool (HUP) consistent with Senate Document 80 and the 1984 Operating Policy. The parts of the Stipulation and Agreement pertinent to the operation of the HUP are summarized below:

As part of the Stipulation and Agreement the Co-applicants and GVIC agree not to exercise their irrigation rights against any upstream HUP beneficiary provided that the Check is physically

operable; there is at least 66,000 acre-feet of water in storage in the Green Mountain Reservoir HUP, or approved substitute storage reservoir, when Green Mountain Reservoir storage rights cease to be in priority; and the water rights for the Shoshone PowerPlant continue to be exercised in a manner consistent with their historical operation. (Section 3.b. of the Stipulation and Agreement)

The Stipulation and Agreement also provides that Reclamation will declare surplus water which is in excess of the needs of HUP beneficiaries for a given water year. Water declared surplus might be delivered through agreements to beneficial uses in Western Colorado. This is to be done in accordance with the provisions of the HUP Operating Criteria, which are summarized below:

Management of the HUP Under the Operating Criteria

The management of the HUP is accomplished through the process defined in Sections 3.d. and 3.e. of the Operating Criteria. This process requires the development of this Annual HUP Operating Plan on or before June 30 of each year.

The Annual HUP Operating Plan is developed by the Bureau of Reclamation, in consultation with the Grand Valley Water Users Association, the Orchard Mesa Irrigation District, the Grand Valley Irrigation Company, the Division 5 Engineer, the Colorado Water Conservation Board and, Fish and Wildlife Service. These entities are collectively known as the 'Managing Entities'. The Managing Entities agree to make a good faith effort to develop an Annual HUP Operating Plan that is unanimously supported. However, the Bureau of Reclamation reserves the right to establish a release schedule, should unanimous consent be unattainable.

The Annual HUP Operating Plan is based upon actual HUP storage conditions; projected runoff forecasts; operational and climatological conditions; projected irrigation demands; and, 15-Mile Reach flow needs. It is expressly recognized, however, that in some years, release of the entire HUP by the end of the irrigation season will not be necessary or possible.

On or before June 30 of each year, the Bureau of Reclamation assembles initial information on storage in the HUP and comparative runoff years. Based upon the information assembled, a meeting is held with the other Managing Entities. During this meeting, a review of the forecasts is analyzed, and initial determinations of the level of "checking" required to preserve water in the HUP, as well as any determination of water surplus to HUP beneficiaries needs are made.

The HUP operations are reviewed and modified by the Managing Entities as necessary to respond to changing conditions. Subsequent meetings or conference calls are held on an as needed basis to reexamine HUP storage conditions, runoff forecasts, climatological conditions, irrigation demands, 15-Mile Reach flow needs, and other operational conditions. Based upon this information, the Managing Entities adjust the checking. They also determine the water surplus for HUP beneficiary needs, as well as the release of such water. During periods of below average river flows, review meetings or conference calls may be held as frequently as every week.

This mechanism provides a way to integrate management of releases from the HUP with operation of the Check to accomplish the purposes of the Operating Criteria. The mechanism is also used to

integrate releases from the HUP with releases for the endangered fish from other reservoirs including Ruedi and Wolford Mountain.

OPERATION SKIM

Big Thompson River water in excess of the minimum requirements, as recommended by the State of Colorado Division of Wildlife and the United States Fish and Wildlife Service, is diverted at Olympus Dam into the Foothills System to be used for power generation. This operation is known as operation "skim." The amount diverted depends on the flow at the Big Thompson River and the tributaries above Lake Estes, C-BT water imported through the Adams Tunnel, and the capacity of the Foothills System.

The water taken from the Big Thompson River can be used for power generation immediately. It can also be held in storage and replaced to the river with water from other sections of the system, depending on the power requirements. In general, water taken from the Big Thompson River at a variable rate, on a given date, is returned to the river at a flat rate, on the following day. This operation indirectly benefits the tourist and fishing industries along the Big Thompson Canyon by attenuating and diverting high flows, and by maintaining a steady stream during the runoff season.

Operation "skim" and storage of surplus water from the Big Thompson River in C-BT reservoirs are managed according to the AOP and as prescribed by the ECAO Water Scheduling staff.

During water year 2007, a total of 33,211 acre-feet of water was diverted through Olympus Tunnel for "skim" operations. Skim operations through Olympus Tunnel took place between May and September. Dille Tunnel diversions totaled only 1,979 acre-feet for water year 2007. The reason for Dille's low total was the Big Thompson Powerplant, which became available in late July. By then the peak of the run-off was over.

Appendix A (Table 1 of 38)
Green Mountain Reservoir, CO

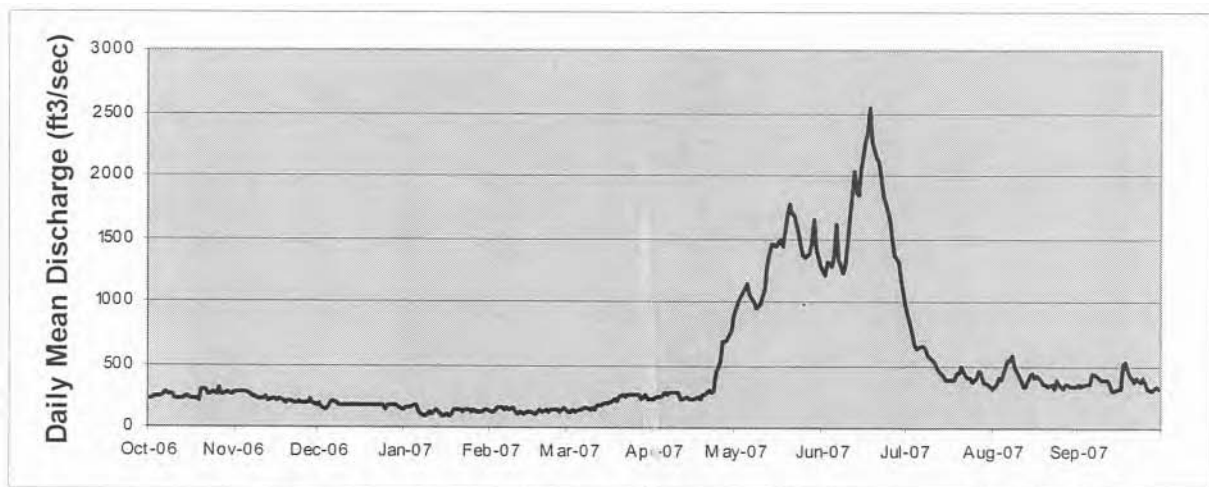
Location. --Lat 39°52'42", long 106°19'42", Summit County, Hydrologic Unit 14010002, cn Green Mountain Dam, 13 miles southeast of Kremmling, Colorado, on the Blue River.

Gage. —Water level recorder with satellite telemetry. Elevation of gage is 7960 from topographic map.

Remarks. -- Inflow computed daily based on change in content from midnight to midnight, and on the 24-hour average releases from Green Mountain Reservoir. Recorders were operated from 01-Oct-2006 to 30-Sep-2007. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Inflow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	233	272	188	153	128	118	235	953	1239	961	317	355
2	233	275	161	161	119	118	247	992	1206	830	354	325
3	252	274	146	161	132	134	253	1063	1323	753	402	356
4	243	282	157	170	152	119	252	1112	1287	669	390	344
5	239	272	199	183	150	137	287	1135	1376	635	431	359
6	261	269	207	115	142	148	262	1054	1611	651	549	444
7	279	254	196	99	150	152	274	1007	1335	642	542	413
8	267	246	180	94	144	150	272	944	1230	636	571	400
9	260	236	172	103	156	143	279	961	1274	586	483	391
10	235	227	174	115	119	156	275	984	1452	545	425	392
11	235	228	184	113	114	148	232	1099	1663	528	386	383
12	220	246	179	140	126	167	231	1290	2039	499	328	354
13	224	209	170	116	111	178	239	1390	1874	454	339	303
14	241	228	177	110	124	186	225	1451	1845	413	417	298
15	244	220	177	87	123	193	233	1437	2056	390	446	312
16	226	207	177	105	121	199	236	1468	2277	388	410	314
17	220	226	183	91	105	205	249	1488	2348	386	414	515
18	221	208	182	105	120	224	232	1443	2540	386	381	528
19	211	200	167	141	132	218	259	1680	2260	434	354	419
20	298	205	184	141	118	238	257	1779	2149	447	356	396
21	296	202	167	136	132	260	293	1695	2099	492	325	367
22	270	195	169	130	128	249	280	1691	1984	414	348	395
23	268	189	169	132	136	263	299	1536	1847	411	316	369
24	276	202	169	141	132	269	436	1445	1724	400	392	402
25	266	192	147	124	135	258	533	1365	1648	373	355	367
26	309	191	172	132	129	257	680	1352	1485	409	316	315
27	256	195	171	125	142	263	681	1386	1363	462	345	303
28	260	220	174	131	150	235	705	1476	1315	446	343	313
29	288	187	168	131		259	773	1649	1167	372	334	337
30	270	169	157	133		233	889	1415	1069	348	327	308
31	270		143	135		233		1272		331	330	
Min	211	169	143	87	105	118	225	944	1069	331	316	298
Max	309	282	207	183	156	269	889	1779	2540	961	571	528
Mean	254	224	173	128	131	197	353	1323	1670	506	388	369
ac.ft	15585	13317	10625	7827	7267	12098	20984	81204	99168	31068	23811	21932



Appendix A (Table 2 of 38)
 Elliot Creek Canal near Green Mountain Reservoir, CO

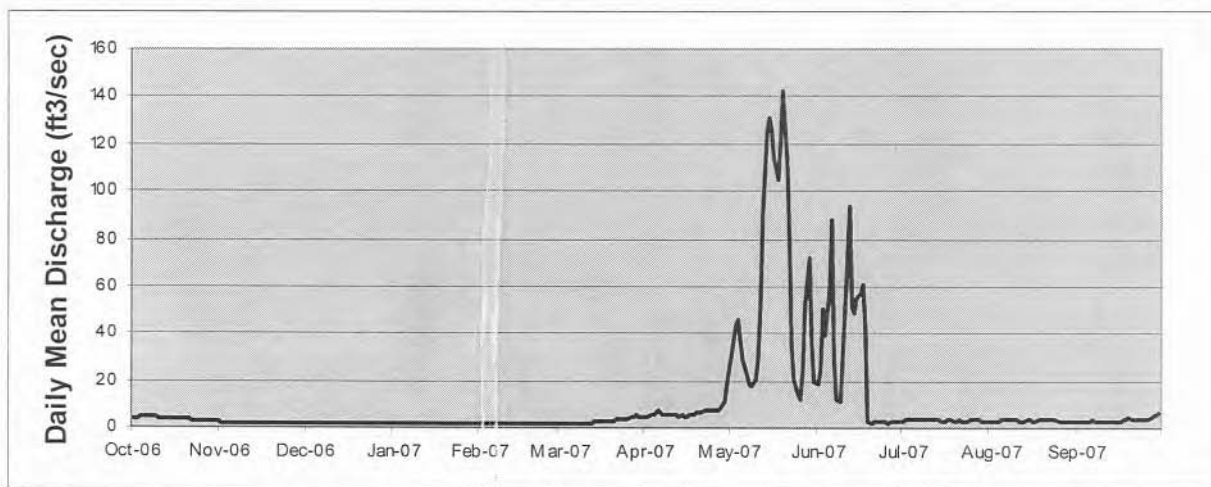
Location. --Lat 39°52'25", long 106°19'49", Summit County, Hydrologic Unit 14010002 , m left bank at concrete flume structure, and 1.1 mi west of Heeney.

Gage.--Water-stage recorder with satellite telemetry. Elevation of gage is 8050 ft from topographic map.

Remarks.—This is a diversion from Elliot Creek in the Blue River Basin to Green Mountain Reservoir. Recorder was operated 01-October-2005 through 31-October-2004 and 30-March-2005 through 30-September-2006. Maximum Discharge 200 (Estimated) cfs, 22-May-2005. Records are complete and fair. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	4	2	2	2	2	2	5	25	19	3	3	3
2	4	2	2	2	2	2	5	31	25	3	3	3
3	4	2	2	2	2	2	5	44	50	4	3	3
4	5	2	2	2	2	2	5	46	40	4	3	3
5	5	2	2	2	2	2	6	36	59	4	3	3
6	5	2	2	2	2	2	7	29	88	4	4	3
7	5	2	2	2	2	2	5	22	30	4	4	3
8	5	2	2	2	2	2	5	19	12	4	4	3
9	5	2	2	2	2	2	6	18	11	4	3	3
10	4	2	2	2	2	2	6	20	32	3	3	3
11	4	2	2	2	2	2	6	30	52	3	3	3
12	4	2	2	2	2	2	6	52	94	3	3	3
13	4	2	2	2	2	2	5	90	51	3	3	3
14	4	2	2	2	2	3	5	125	49	3	3	3
15	4	2	2	2	2	3	5	131	55	3	3	3
16	4	2	2	2	2	3	5	126	57	3	3	3
17	4	2	2	2	2	3	5	113	61	3	3	4
18	4	2	2	2	2	3	6	105	44	3	3	4
19	4	2	2	2	2	3	6	121	3	3	4	4
20	4	2	2	2	2	3	6	142	2	3	4	4
21	4	2	2	2	2	3	7	112	3	3	4	4
22	3	2	2	2	2	4	7	79	3	3	3	4
23	3	2	2	2	2	4	7	35	2	3	3	3
24	3	2	2	2	2	4	8	21	2	3	3	4
25	3	2	2	2	2	4	8	14	2	3	3	4
26	3	2	2	2	2	4	8	12	2	3	3	4
27	3	2	2	2	2	5	8	24	2	3	3	4
28	3	2	2	2	2	5	8	52	3	3	3	5
29	3	2	2	2	2	6	12	72	3	3	3	6
30	3	2	2	2	2	5	19	36	3	3	3	7
31	3		2	2		5		19		3	3	
Min	3	2	2	2	2	2	5	12	2	3	3	3
Max	5	2	2	2	2	6	19	142	94	4	4	7
Mean	4	2	2	2	2	3	7	58	29	3	3	4
ac-ft	238	119	123	123	111	190	402	3561	1699	208	203	216



Appendix A (Table 3 of 38)
Green Mountain Reservoir, CO

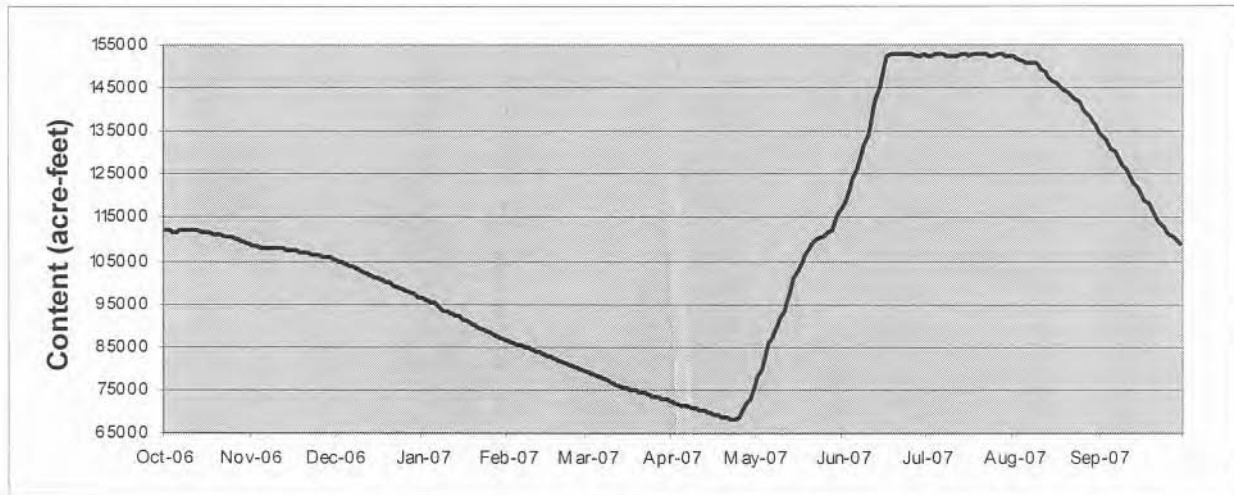
Location. --Lat 39°52'42", long 106°19'42", Summit County, Hydrologic Unit 14010002, cn Green Mountain Dam, 13 miles southeast of Kremmling, Colorado, on the Blue River..

Gage. -Water level recorder with satellite telemetry. Elevation of gage is 7960 from topographic map.

Remarks.--Reservoir is formed by an earth-fill dam. Construction completed in 1943. Impoundment began on 16-Nov-1942. Green Mountain Reservoir provides storage for replacement water for the Colorado-Big Thompson Project. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Maximum capacity is 153,639 acre-feet at elevation 7950.00 ft, with 146,779 acre-feet of active capacity. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	112,341	108,510	105,147	96,255	86,377	79,377	72,134	76,202	117,608	152,497	152,243	134,761
2	112,099	108,325	104,884	95,952	86,097	79,086	71,924	77,942	118,880	152,412	151,841	133,807
3	111,892	108,190	104,591	95,648	85,846	78,822	71,727	79,814	120,378	152,518	151,524	132,916
4	111,806	108,123	104,315	95,360	85,636	78,531	71,531	81,787	121,963	152,687	151,126	132,010
5	111,806	108,039	104,056	95,104	85,426	78,255	71,408	83,805	123,913	152,772	150,895	131,087
6	111,910	108,005	103,814	94,714	85,202	77,955	71,236	85,678	126,371	152,730	150,874	130,208
7	112,048	107,988	103,555	94,294	84,994	77,642	71,089	87,380	128,308	152,687	150,853	129,274
8	112,168	107,955	103,263	93,859	84,773	77,328	70,941	88,847	130,017	152,645	150,895	128,308
9	112,255	107,905	102,957	93,443	84,579	77,003	70,806	90,332	131,798	152,476	150,644	127,345
10	112,220	107,839	102,654	93,117	84,316	76,706	70,673	91,790	133,963	152,328	150,078	126,352
11	112,134	107,772	102,366	92,821	84,040	76,409	70,454	93,340	136,563	152,476	149,428	125,324
12	111,996	107,739	102,079	92,584	83,791	76,138	70,236	95,149	139,834	152,645	148,660	124,303
13	111,892	107,640	101,775	92,302	83,517	75,892	70,030	97,155	142,609	152,730	147,933	123,250
14	111,823	107,573	101,488	92,010	83,257	75,662	69,799	99,101	145,110	152,730	147,330	122,146
15	111,754	107,473	101,204	91,673	82,984	75,445	69,581	100,873	147,538	152,708	146,713	120,997
16	111,651	107,341	100,920	91,365	82,710	75,241	69,366	102,494	150,036	152,645	146,076	119,853
17	111,478	107,241	100,652	90,985	82,409	75,049	69,174	103,895	152,137	152,666	145,582	118,988
18	111,256	107,108	100,384	90,578	82,139	74,896	68,935	104,934	152,941	152,708	145,110	118,322
19	111,017	106,975	100,084	90,245	81,895	74,730	68,744	106,229	152,730	152,814	144,601	117,430
20	110,949	106,842	99,818	89,912	81,625	74,539	68,552	107,656	152,835	152,856	144,071	116,415
21	110,881	106,709	99,506	89,564	81,381	74,362	68,433	108,746	152,941	152,899	143,479	115,339
22	110,779	106,560	99,226	89,205	81,125	74,161	68,291	109,621	152,878	152,730	142,932	114,286
23	110,676	106,410	98,946	88,890	80,897	73,985	68,184	110,182	152,899	152,582	142,346	113,152
24	110,540	106,295	98,665	88,647	80,656	73,821	68,350	110,540	152,941	152,560	141,760	112,358
25	110,336	106,164	98,339	88,360	80,402	73,632	68,708	110,762	152,814	152,603	140,935	111,703
26	110,216	106,032	98,062	88,060	80,134	73,443	69,485	110,966	152,708	152,687	140,034	111,119
27	109,944	105,901	97,785	87,748	79,894	73,267	70,527	111,478	152,412	152,856	139,193	110,523
28	109,621	105,819	97,509	87,450	79,667	73,030	71,690	112,323	152,476	152,708	138,341	109,944
29	109,335	105,606	97,217	87,167		72,844	72,993	113,693	152,645	152,539	137,469	109,419
30	109,032	105,360	96,909	86,899		72,607	74,539	114,986	152,666	152,476	136,563	108,880
31	108,746		96,574	86,644		72,371		116,274		152,433	135,640	
Min	108,746	105,360	96,574	86,644	79,667	72,371	68,184	76,202	117,608	152,328	135,640	108,880
Max	112,341	108,510	105,147	96,255	86,377	79,377	74,539	116,274	152,941	152,899	152,243	134,761
EOM	108,746	105,360	96,574	86,644	79,667	72,371	74,539	116,274	152,666	152,433	135,640	108,880



Appendix A (Table 4 of 38)
 Blue River below Green Mountain Reservoir, CO

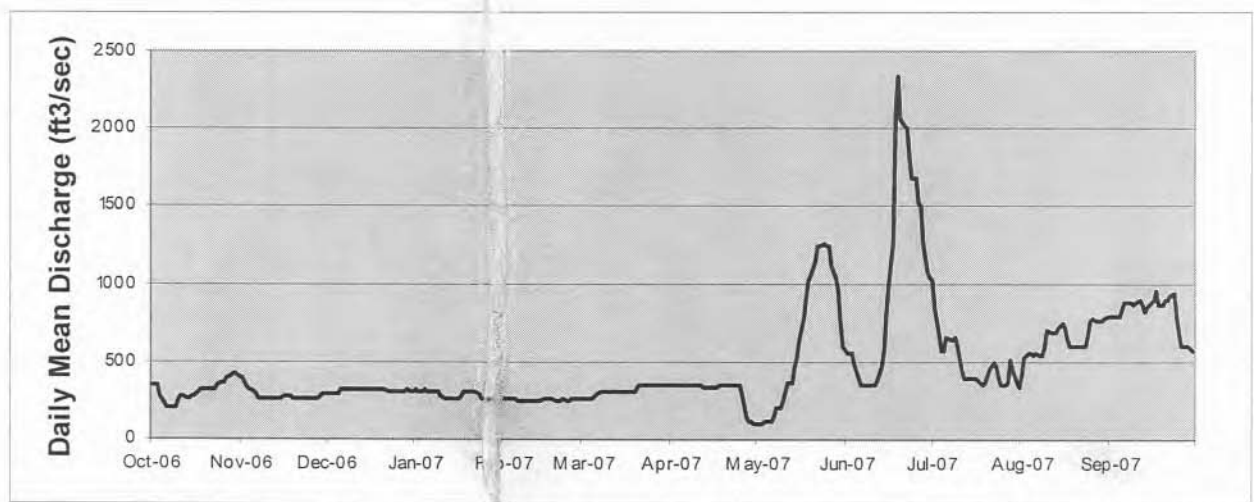
Location.--Lat 39°52'49", long 106°20'00", Summit County, Hydrologic Unit 14010002, on left bank 0.3 miles upstream from Elliot Creek, 0.3 miles downstream from Green Mountain Reservoir and 13 miles southeast of Kremmling.

Gage.-- Water-stage recorder with satellite telemetry. Datum of gage is 7682.66 feet (levels by U.S. Bureau of Reclamation).

Remarks.--Drainage area is 599 mi² including 15.3 mi² of Elliot Creek above the diversion for Elliot Creek feeder canal. Flow regulated by Green Mountain Reservoir since 1942. Diversions for irrigation of 5,000 acres upstream from station. Transmountain diversions upstream from station. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes. Official revised data is published by the United States Geological Survey.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	348	390	295	314	262	264	352	107	556	1022	405	790
2	349	367	294	314	260	264	350	107	554	853	532	796
3	350	342	294	314	258	266	349	109	559	672	551	796
4	280	315	296	315	258	265	348	110	477	565	550	793
5	233	313	299	312	256	276	346	110	387	575	547	826
6	202	285	328	312	255	299	346	110	358	658	549	879
7	203	261	326	311	255	309	345	144	354	639	542	875
8	200	261	327	313	255	308	344	201	346	638	545	874
9	210	260	326	307	254	305	344	203	350	664	599	861
10	247	259	327	280	252	305	346	246	350	601	696	878
11	272	261	329	262	253	305	347	307	352	433	692	888
12	284	261	324	259	251	303	341	363	379	398	691	861
13	270	258	323	258	249	302	340	372	462	399	688	822
14	270	261	322	257	255	301	339	464	570	401	721	847
15	272	269	320	257	260	302	340	532	815	401	748	881
16	272	272	320	260	259	301	342	642	995	400	718	891
17	301	276	318	283	257	300	343	770	1274	375	646	943
18	327	274	317	310	256	301	350	913	2099	348	605	858
19	325	266	318	309	255	301	353	1018	2335	367	600	861
20	326	270	318	309	254	334	351	1049	2068	414	605	898
21	324	268	324	311	255	349	350	1143	2022	453	604	897
22	324	269	310	311	257	350	349	1236	1998	499	603	915
23	324	263	310	291	251	351	350	1246	1819	463	598	941
24	348	259	311	263	253	351	350	1257	1680	401	673	795
25	372	257	311	268	263	353	350	1243	1676	347	755	689
26	373	256	312	270	263	352	285	1241	1519	347	768	598
27	390	260	311	269	263	351	153	1118	1504	363	765	598
28	416	267	313	268	263	354	116	1045	1261	511	763	597
29	421	293	315	271		352	113	949	1066	457	761	582
30	417	292	312	268		352	107	752	1040	361	776	571
31	407		312	263		352		604		341	785	
Min	200	256	294	257	249	264	107	107	346	341	405	571
Max	421	390	329	315	263	354	353	1257	2335	1022	785	943
Mean	311	280	315	287	257	316	315	636	1041	496	648	810
ac-ft	19116	16646	19332	17640	14225	19366	18687	39028	61826	30428	39762	48114



Appendix A (Table 5 of 38)
Willow Creek Reservoir, CO

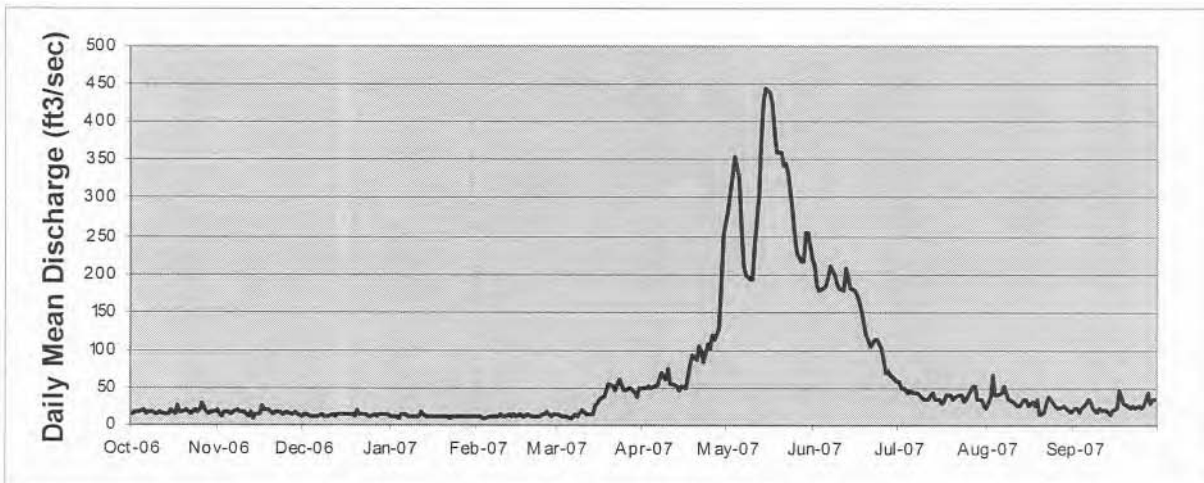
Location. — Lat 40°08'52", long 105°56'28", Grand County, Hydrologic Unit 14010001, at Willow Creek Dam, 4 miles north of Granby, Colorado, on Willow Creek, a tributary of the Colorado River.

Gage. — Water level recorder with satellite telemetry. Elevation of gage is 8130 from topographic map.

Remarks. — Inflow computed daily using change in content from midnight to midnight, and on the 24-hour average releases through the Willow Creek Pump Canal and the reservoir outlet works. Recorders were operated from 01-Oct-2006 to 30-Sep-2007. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Inflow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	32	30	31	23	21	31	102	565	419	116	47	46
2	33	25	32	23	22	29	102	608	367	101	77	45
3	36	38	26	24	19	23	104	648	355	98	135	38
4	37	36	23	16	20	21	97	704	358	89	84	44
5	39	31	25	28	22	24	107	648	365	91	79	57
6	30	36	23	28	21	20	103	526	388	88	85	71
7	36	39	30	21	21	21	122	422	419	87	107	63
8	36	38	25	26	22	29	138	397	395	81	90	45
9	32	38	23	24	28	26	119	383	371	77	72	36
10	31	34	23	25	25	39	149	380	357	72	64	43
11	33	22	28	24	26	32	112	472	353	68	57	42
12	29	33	25	33	28	28	110	602	410	82	53	39
13	28	18	30	26	26	32	104	748	388	86	54	35
14	32	31	28	26	28	28	96	844	358	70	70	32
15	39	32	30	25	26	52	104	880	352	70	69	40
16	28	49	30	24	31	59	97	868	341	60	53	45
17	50	39	30	21	26	67	129	840	324	66	61	94
18	36	40	32	24	23	76	163	763	299	83	51	77
19	36	34	26	26	28	96	189	717	238	79	69	55
20	41	31	40	23	26	111	177	715	228	70	31	50
21	34	36	29	24	23	106	207	679	211	75	36	48
22	31	33	28	18	26	92	199	684	225	81	57	50
23	39	32	30	22	26	113	167	659	228	82	74	47
24	33	32	24	21	29	123	213	564	214	65	71	50
25	39	36	25	21	28	96	200	497	201	67	49	48
26	56	29	28	21	36	91	237	452	138	92	48	50
27	34	30	26	24	26	99	227	430	143	104	45	87
28	31	36	28	21	28	98	258	427	134	107	50	58
29	40	30	28	21	28	88	371	506	125	68	46	72
30	37	23	28	23	23	73	497	501	117	72	41	69
31	42		28	24		102		437		49	38	
Min	28	18	23	16	19	20	96	380	117	49	31	32
Max	56	49	40	33	36	123	497	880	419	116	135	94
Mean	36	33	28	24	25	62	167	599	294	81	63	53
ac-ft	2198	1962	1707	1445	1408	3812	9900	36761	17466	4942	3887	3120



Appendix A (Table 6 of 38)
Willow Creek Reservoir, CO

Location. -Lat 40° 08'52", long 105° 56'28", Grand County, Hydrologic Unit 14010001, at Willow Creek Dam, 4 miles north of Granby, Colorado, on Willow Creek, a tributary of the Colorado River.

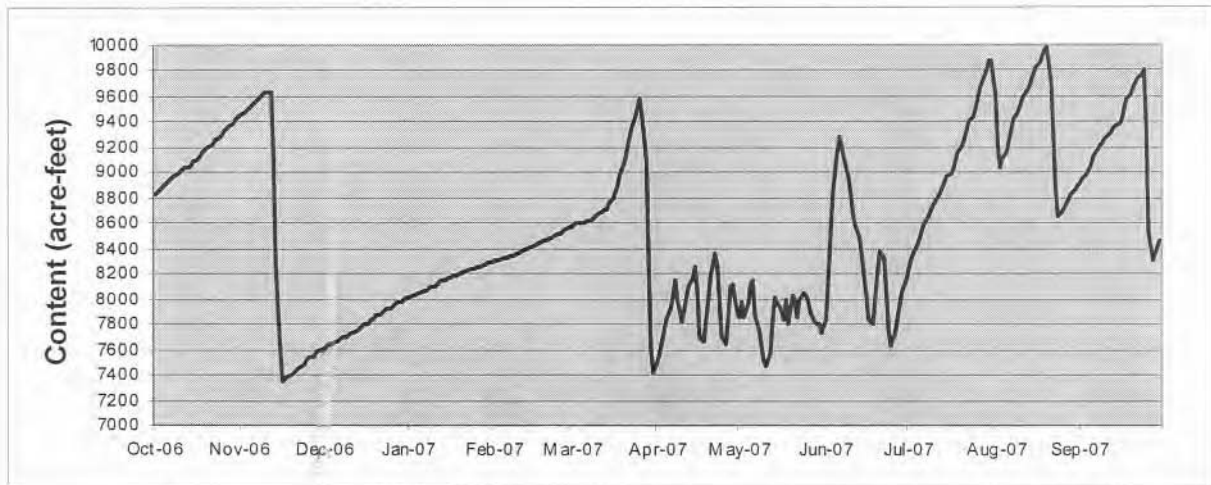
Gage.- Water level recorder with satellite telemetry. Elevation of gage is 8130 from topographic map.

Remarks.-Reservoir is formed by an earth-fill dam. Construction completed in 1953. Impoundment began on April 2, 1953. Willow Creek Reservoir stores water from Willow Creek for diversion to Granby Reservoir via the Willow Creek Canal. Recorder was operated from 01-Oct 2006 to 30-Sep-2007.

Record is complete and fair. Maximum capacity is 10,600 acre-feet at elevation 8,130.00 ft, with 9,100 acre-feet of active capacity between elevations 8077.00 and 8130.00 feet. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	8.831	9.462	7.610	8.018	8.300	8.577	7.499	7.860	7.829	8.230	9.617	8.927
2	8.849	9.473	7.628	8.027	8.308	8.590	7.584	7.978	8.168	8.303	9.208	8.958
3	8.870	9.495	7.640	8.037	8.313	8.597	7.671	7.853	8.495	8.369	9.034	8.984
4	8.890	9.517	7.649	8.039	8.317	8.602	7.753	7.962	8.826	8.430	9.105	9.018
5	8.914	9.534	7.660	8.051	8.325	8.610	7.843	8.120	9.163	8.490	9.171	9.065
6	8.929	9.556	7.667	8.065	8.332	8.612	7.929	8.156	9.286	8.549	9.246	9.126
7	8.950	9.581	7.683	8.072	8.339	8.617	8.032	7.880	9.208	8.607	9.343	9.177
8	8.971	9.603	7.694	8.084	8.347	8.630	8.153	7.744	9.105	8.658	9.424	9.211
9	8.986	9.611	7.703	8.094	8.357	8.640	7.995	7.624	8.973	8.706	9.484	9.235
10	9.002	9.631	7.712	8.103	8.366	8.663	7.820	7.506	8.828	8.746	9.537	9.267
11	9.020	9.639	7.724	8.113	8.376	8.678	7.913	7.477	8.680	8.782	9.581	9.297
12	9.034	9.636	7.735	8.132	8.388	8.690	8.004	7.577	8.592	8.831	9.620	9.324
13	9.047	9.105	7.751	8.144	8.398	8.706	8.091	7.827	8.480	8.885	9.662	9.348
14	9.062	8.257	7.765	8.156	8.408	8.718	8.170	8.006	8.337	8.927	9.718	9.370
15	9.086	7.593	7.781	8.165	8.418	8.754	8.257	7.973	8.187	8.963	9.777	9.397
16	9.099	7.342	7.795	8.175	8.433	8.795	8.065	7.913	8.025	8.989	9.819	9.430
17	9.134	7.365	7.811	8.182	8.443	8.846	7.705	7.832	7.843	9.028	9.868	9.512
18	9.155	7.389	7.829	8.192	8.450	8.906	7.671	7.987	7.802	9.091	9.908	9.578
19	9.174	7.407	7.841	8.204	8.460	8.986	7.841	7.811	8.009	9.155	9.965	9.623
20	9.200	7.422	7.867	8.211	8.470	9.081	7.999	8.037	8.206	9.211	9.982	9.662
21	9.219	7.442	7.880	8.221	8.477	9.171	8.187	7.999	8.386	9.270	9.729	9.698
22	9.235	7.461	7.894	8.225	8.487	9.243	8.369	7.846	8.330	9.337	9.299	9.735
23	9.259	7.479	7.910	8.233	8.497	9.332	8.281	7.990	8.049	9.400	8.882	9.774
24	9.275	7.497	7.920	8.240	8.510	9.441	7.995	8.039	7.753	9.449	8.665	9.802
25	9.299	7.519	7.931	8.245	8.522	9.523	7.696	8.025	7.631	9.504	8.698	9.353
26	9.340	7.532	7.943	8.252	8.542	9.584	7.642	7.971	7.740	9.581	8.729	8.537
27	9.359	7.548	7.955	8.262	8.552	9.435	7.850	7.894	7.855	9.670	8.762	8.308
28	9.375	7.570	7.969	8.269	8.564	9.089	8.091	7.813	7.959	9.763	8.800	8.354
29	9.397	7.586	7.983	8.276		8.269	8.122	7.811	8.058	9.816	8.836	8.413
30	9.419	7.595	7.997	8.283		7.608	7.890	7.804	8.146	9.871	8.867	8.472
31	9.446		8.009	8.293		7.418		7.731		9.879	8.893	
Min	8.831	7.342	7.610	8.018	8.300	7.418	7.499	7.477	7.631	8.230	8.665	8.308
Max	9.446	9.639	8.009	8.293	8.564	9.584	8.369	8.156	9.286	9.879	9.982	9.802
EOM	9.446	7.595	8.009	8.293	8.564	7.418	7.890	7.731	8.146	9.879	8.893	8.472



Appendix A (Table 7 of 38)
Willow Creek below Willow Creek Reservoir, CO

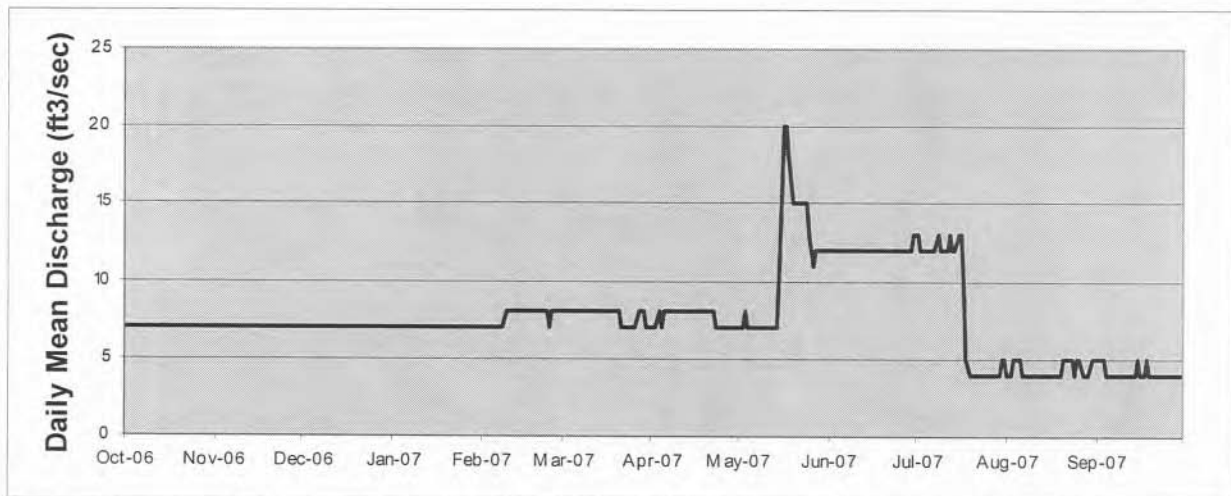
Location.--Lat 40°08'50", long 105°56'16", Grand County, Hydrologic Unit 14010001, at Willow Creek Dam, 4 miles north of Granby, Colorado, on Willow Creek, a tributary of the Colorado River.

Gage.--Water-stage recorder with satellite telemetry. Elevation of gage is 8040 feet from topographic map.

Remarks.-- Drainage area is 127 square miles. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	7	7	7	7	7	8	7	7	12	13	4	5
2	7	7	7	7	7	8	7	7	12	12	4	5
3	7	7	7	7	7	8	8	8	12	12	5	5
4	7	7	7	7	7	8	7	7	12	12	5	4
5	7	7	7	7	7	8	8	7	12	12	5	4
6	7	7	7	7	7	8	8	7	12	12	4	4
7	7	7	7	7	7	8	8	7	12	12	4	4
8	7	7	7	7	7	8	8	7	12	13	4	4
9	7	7	7	7	8	8	8	7	12	12	4	4
10	7	7	7	7	8	8	8	7	12	12	4	4
11	7	7	7	7	8	8	8	7	12	12	4	4
12	7	7	7	7	8	8	8	7	12	13	4	4
13	7	7	7	7	8	8	8	7	12	12	4	4
14	7	7	7	7	8	8	8	7	12	12	4	4
15	7	7	7	7	8	8	8	11	12	13	4	5
16	7	7	7	7	8	8	8	20	12	13	4	4
17	7	7	7	7	8	8	8	20	12	10	4	4
18	7	7	7	7	8	8	8	18	12	5	4	5
19	7	7	7	7	8	8	8	15	12	4	4	4
20	7	7	7	7	8	8	8	15	12	4	5	4
21	7	7	7	7	8	7	8	15	12	4	5	4
22	7	7	7	7	8	7	8	15	12	4	5	4
23	7	7	7	7	8	7	7	15	12	4	5	4
24	7	7	7	7	7	7	7	15	12	4	4	4
25	7	7	7	7	8	7	7	13	12	4	5	4
26	7	7	7	7	8	7	7	11	12	4	5	4
27	7	7	7	7	8	8	7	12	12	4	4	4
28	7	7	7	7	8	8	7	12	12	4	4	4
29	7	7	7	7	8	7	7	12	12	4	4	4
30	7	7	7	7	7	7	7	12	13	5	5	4
31	7	7	7	7	7	7	7	12	12	5	5	5
Min	7	7	7	7	7	7	7	7	12	4	4	4
Max	7	7	7	7	8	8	8	20	13	13	5	5
Mean	7	7	7	7	8	8	8	11	12	9	4	4
ac-ft	430	416	430	430	426	475	453	677	715	527	267	248



Appendix A (Table 8 of 38)
Willow Creek Pump Canal, CO

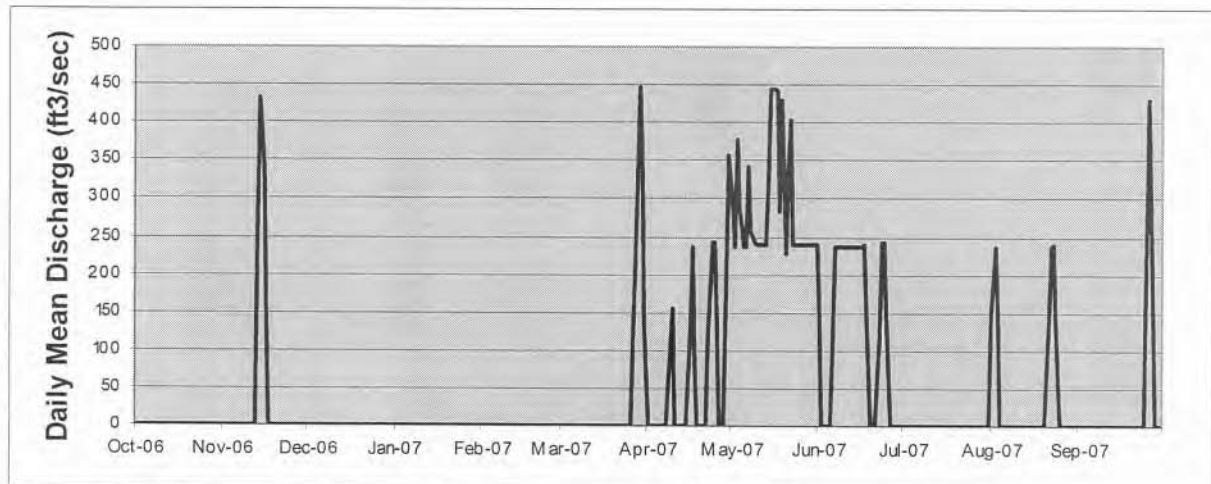
Location. —Lat 40°08'39", long 105°54'10", Grand County, Hydrologic Unit 14010001, at Willow Creek Pump Canal, 4 miles north of Granby, Colorado, on Willow Creek, a tributary of the Colorado River.

Gage.— Water-stage recorder with satellite telemetry at 15 foot Parshall Flume. Elevation of gage is 8300 feet from topographic map.

Remarks.—Canal is used to divert water from Willow Creek Reservoir to Granby Reservoir. Diversions are seasonal, mainly during late spring and early summer. Construction completed in 1953. Length of the canal is 3.4 miles, maximum capacity is 400 ft³/sec. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Records are complete and reliable but it contains operational data which could be subject to further revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	290	147	0	148	0
2	0	0	0	0	0	0	0	237	0	0	237	0
3	0	0	0	0	0	0	0	378	0	0	149	0
4	0	0	0	0	0	0	0	289	0	0	0	0
5	0	0	0	0	0	0	0	237	0	0	0	0
6	0	0	0	0	0	0	0	237	109	0	0	0
7	0	0	0	0	0	0	0	342	237	0	0	0
8	0	0	0	0	0	0	0	258	237	0	0	0
9	0	0	0	0	0	0	109	242	237	0	0	0
10	0	0	0	0	0	0	154	241	237	0	0	0
11	0	0	0	0	0	0	0	241	237	0	0	0
12	0	0	0	0	0	0	0	241	237	0	0	0
13	0	256	0	0	0	0	0	241	237	0	0	0
14	0	434	0	0	0	0	0	326	237	0	0	0
15	0	341	0	0	0	0	0	445	237	0	0	0
16	0	142	0	0	0	0	123	444	237	0	0	0
17	0	0	0	0	0	0	237	441	239	0	0	0
18	0	0	0	0	0	0	89	285	154	0	0	0
19	0	0	0	0	0	0	0	431	0	0	0	0
20	0	0	0	0	0	0	0	228	0	0	0	0
21	0	0	0	0	0	0	0	342	0	0	138	0
22	0	0	0	0	0	0	0	403	118	0	237	0
23	0	0	0	0	0	0	121	241	242	0	239	0
24	0	0	0	0	0	0	242	241	242	0	139	0
25	0	0	0	0	0	0	242	241	146	0	0	236
26	0	0	0	0	0	0	136	241	0	0	0	430
27	0	0	0	0	0	113	0	241	0	0	0	152
28	0	0	0	0	0	215	0	241	0	0	0	0
29	0	0	0	0	0	448	163	241	0	0	0	0
30	0	0	0	0	0	360	358	241	0	0	0	0
31	0	0	0	0	0	137	0	241	0	0	0	0
Min	0	0	0	0	0	0	0	228	0	0	0	0
Max	0	434	0	0	0	448	358	445	242	0	239	430
Mean	0	39	0	0	0	41	66	290	126	0	42	27
ac.ft	0	2323	0	0	0	2521	3909	17796	7459	0	2548	1620



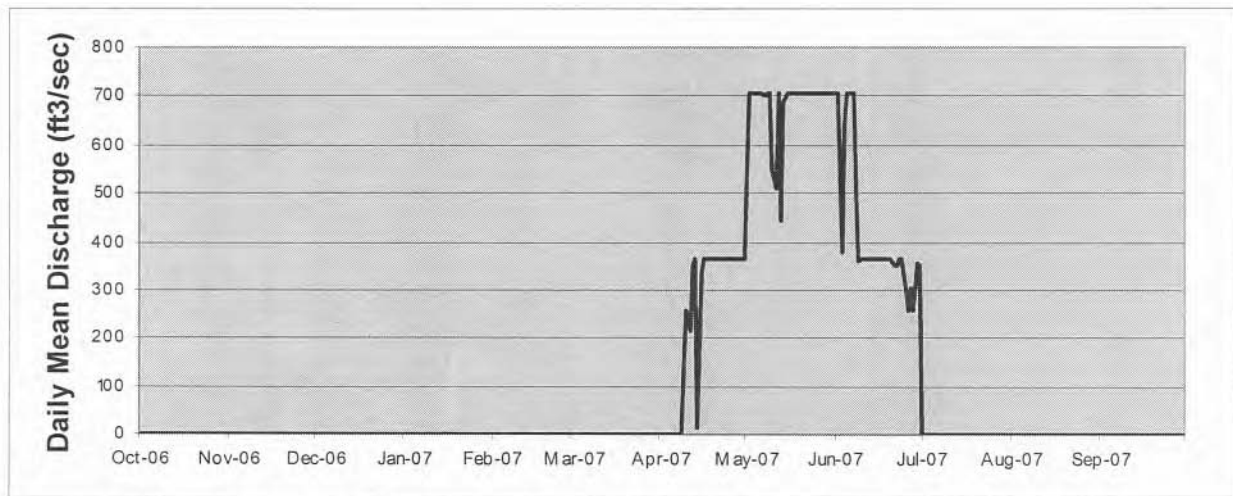
Appendix A (Table 9 of 38)
 Windy Gap Pumping Plant, CO

Location. --Lat 40°0624", long 105°58'48", Grand County, Hydrologic Unit 14010001, 5.5 miles northeast of Granby, Colorado, on the Colorado River.
 Gage.-- Reading taken directly from the pumps. Elevation of the pumping plant is 7823 from topographic map.

Remarks.— Water is pumped from Windy Gap Reservoir to Granby Reservoir. Water is stored at Granby Reservoir before delivery through Adams Tunnel, Data was provided by Fan Pumping Plant operators each morning. Data was collected from 01-Oct-2006 to 30-Sep-2007. Records are complete and fair. This record contains operational data which could be subject to future revisions and changes.

Windy Gap Pump Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	543	708	0	0	0
2	0	0	0	0	0	0	0	708	708	0	0	0
3	0	0	0	0	0	0	0	708	381	0	0	0
4	0	0	0	0	0	0	0	708	651	0	0	0
5	0	0	0	0	0	0	0	708	708	0	0	0
6	0	0	0	0	0	0	0	708	708	0	0	0
7	0	0	0	0	0	0	0	702	708	0	0	0
8	0	0	0	0	0	0	0	708	518	0	0	0
9	0	0	0	0	0	0	129	708	361	0	0	0
10	0	0	0	0	0	0	258	549	365	0	0	0
11	0	0	0	0	0	0	214	508	365	0	0	0
12	0	0	0	0	0	0	349	708	365	0	0	0
13	0	0	0	0	0	0	363	446	363	0	0	0
14	0	0	0	0	0	0	16	688	365	0	0	0
15	0	0	0	0	0	0	335	708	365	0	0	0
16	0	0	0	0	0	0	365	708	365	0	0	0
17	0	0	0	0	0	0	365	708	365	0	0	0
18	0	0	0	0	0	0	365	708	365	0	0	0
19	0	0	0	0	0	0	365	708	365	0	0	0
20	0	0	0	0	0	0	365	708	365	0	0	0
21	0	0	0	0	0	0	365	708	349	0	0	0
22	0	0	0	0	0	0	365	708	349	0	0	0
23	0	0	0	0	0	0	365	708	365	0	0	0
24	0	0	0	0	0	0	365	708	365	0	0	0
25	0	0	0	0	0	0	365	708	298	0	0	0
26	0	0	0	0	0	0	365	708	258	0	0	0
27	0	0	0	0	0	0	365	708	303	0	0	0
28	0	0	0	0	0	0	365	708	258	0	0	0
29	0	0	0	0	0	0	365	708	357	0	0	0
30	0	0	0	0	0	0	365	708	349	0	0	0
31	0	0	0	0	0	0	0	708	0	0	0	0
Min	0	0	0	0	0	0	0	446	258	0	0	0
Max	0	0	0	0	0	0	365	708	708	0	0	0
Mean	0	0	0	0	0	0	238	682	424	0	0	0
ac-ft	0	0	0	0	0	0	14135	41849	25176	0	0	0



Appendix A (Table 10 of 38)
Granby Reservoir, CO

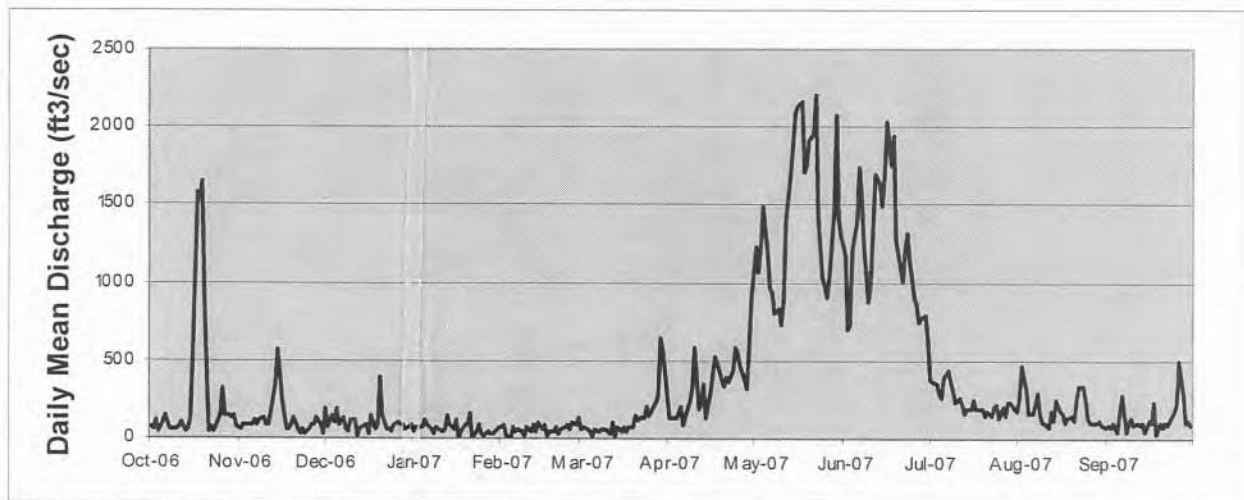
Location.--Lat 40°08'54", long 105°51'48", Grand County, Hydrologic Unit 14010001, m Granby Dam, 5.5 miles northeast of Granby, Colorado, on the Colorado River.

Gage.-- Water level recorder with satellite telemetry. Elevation of gage is 8300 from topographic map.

Remarks.-- Inflow computed daily based on change in content from midnight to midnight, and on the average daily releases through the reservoir outlet works. Recorders were operated from 01-Oct-2006 to 30-Sep-2007. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Inflow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	72	62	185	44	68	54	126	1231	1183	378	257	82
2	64	95	79	68	88	69	137	1071	697	362	472	74
3	113	94	142	66	21	55	130	1224	733	347	317	102
4	43	93	96	75	5	44	163	490	1214	286	161	48
5	109	92	190	122	67	19	203	1193	1382	260	166	175
6	142	124	83	81	42	61	95	972	735	402	166	271
7	107	93	128	61	57	45	193	934	1558	433	288	44
8	55	124	62	28	47	64	239	804	243	369	156	103
9	61	125	44	71	12	60	325	835	875	306	108	133
10	65	95	120	64	66	59	582	735	986	239	106	86
11	73	94	123	46	50	30	187	878	1358	263	71	101
12	99	155	10	53	95	104	230	400	1690	223	74	90
13	48	343	55	140	51	20	355	1697	1637	161	118	105
14	63	563	80	84	100	67	38	1884	487	191	253	45
15	133	438	95	53	61	44	294	2093	1698	195	174	119
16	527	250	34	114	94	71	409	2128	2039	247	158	102
17	1584	62	139	6	21	40	530	2170	1753	191	105	239
18	1530	62	55	45	45	77	478	1714	1941	193	137	34
19	1659	93	81	95	49	74	384	1751	1276	193	149	99
20	918	25	389	89	76	149	343	1922	1178	147	120	80
21	47	62	139	155	35	115	401	1952	1016	179	248	108
22	78	31	54	2	57	132	366	2212	1220	144	336	95
23	47	65	62	46	72	130	439	1439	1313	205	337	147
24	79	31	51	81	86	207	581	1029	1138	222	244	177
25	141	62	92	34	53	153	558	976	908	138	127	215
26	328	93	108	13	96	78	461	904	867	205	99	492
27	141	94	84	49	88	234	373	1031	748	150	102	290
28	141	126	92	36	125	282	325	1443	770	238	102	80
29	136	93	59	26	647	581	2073	788	230	113	22	22
30	141	30	75	44	575	911	421	638	196	83	89	89
31	78	94	70	284	1298	173	80					
Min	43	30	10	2	5	19	95	735	638	138	71	34
Max	1659	563	389	155	125	647	911	2212	2039	433	472	492
Mean	285	129	100	61	62	134	351	1416	1236	241	178	132
ac-ft	17468	7661	6138	3383	3419	8203	20863	86930	73397	14783	10943	7815



Appendix A (Table 11 of 38)
Granby Reservoir, CO

Location. --Lat 40°08'54", long 105°51'48", Grand County, Hydrologic Unit 14010001, cn Granby Dam, 5.5 miles northeast of Granby, Colorado, on the Colorado River,

Gage.-- Water level recorder with satellite telemetry. Elevation of gage is 8300 from topographic map.

Remarks.--Reservoir is formed by an earth-fill dam and four earth-fill dikes. Construction completed in 1950. Impoundment began on 14-Sep-1949.

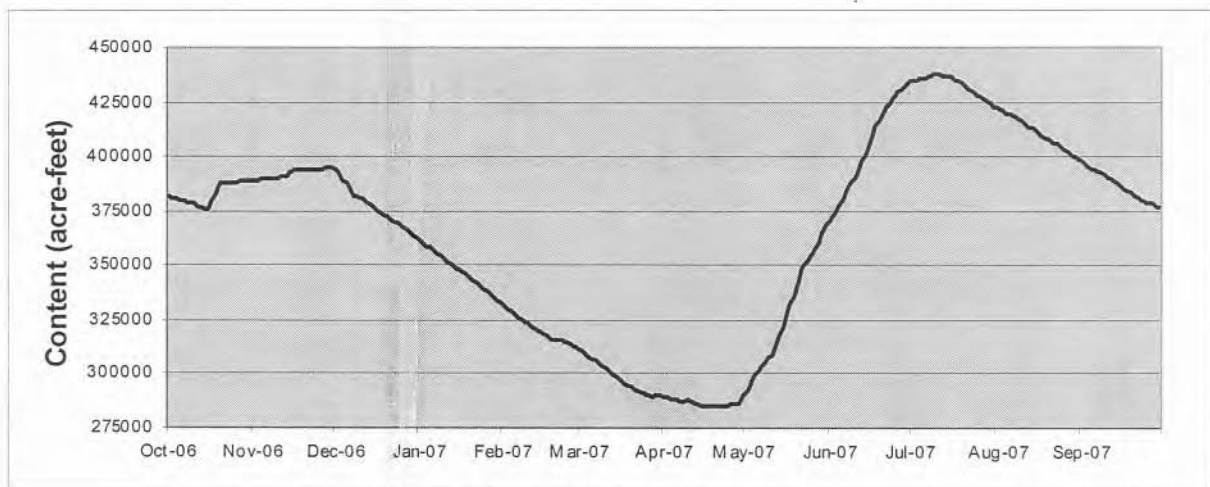
Granby Reservoir provides west-slope storage for the Colorado-Big Thompson Project. Recorder was operated from 01-Oct-2006 to 30-Sep-2007.

Maximum capacity is 539,800 acre-feet at elevation 8,280.00, with 463,300 acre-feet of active capacity between elevations 8186.90 and 8280.00 fact.

Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	381,722	389,173	394,388	361,697	332,388	311,840	289,700	290,558	371,069	434,316	422,256	397,820
2	381,293	389,297	393,019	360,802	331,358	310,949	289,218	292,494	372,218	434,708	421,934	396,758
3	381,048	389,421	391,342	359,848	330,329	310,004	289,110	294,708	373,430	435,034	421,419	395,821
4	380,558	389,545	389,359	358,836	329,187	309,004	288,629	297,473	375,616	435,296	420,776	395,073
5	380,191	389,668	387,566	358,123	328,275	308,007	288,361	299,652	378,114	435,492	419,941	394,388
6	379,885	389,854	385,593	357,173	327,251	307,011	287,880	301,401	381,293	436,015	419,170	394,076
7	379,518	389,978	383,685	356,224	326,285	306,072	287,453	303,100	384,177	436,538	418,785	393,392
8	379,090	390,164	382,273	355,217	325,252	305,135	287,400	304,529	386,394	436,997	418,208	392,522
9	378,724	390,350	381,783	354,153	324,170	304,144	287,293	305,962	387,813	437,324	417,312	391,838
10	378,358	390,474	381,170	353,149	323,375	303,210	287,773	307,232	389,483	437,455	416,480	391,156
11	377,565	390,598	380,436	352,265	322,410	302,167	287,346	308,727	391,900	437,390	415,585	390,412
12	377,138	390,846	379,396	351,381	321,559	301,291	286,919	311,227	395,073	437,259	414,818	389,668
13	376,468	391,466	378,480	350,498	320,654	300,252	286,600	314,353	398,071	437,062	413,798	388,555
14	375,981	392,522	377,565	349,617	320,032	299,270	285,747	317,889	400,765	436,931	413,224	387,443
15	375,738	393,330	376,773	348,620	319,298	298,235	285,375	321,786	403,847	436,538	412,332	386,455
16	376,529	393,765	375,677	347,858	318,565	297,310	285,428	325,765	407,572	435,884	411,505	385,716
17	379,579	393,827	374,887	346,862	317,720	296,441	285,535	329,872	410,743	435,100	410,552	385,162
18	382,519	393,890	373,915	345,927	316,933	295,574	285,588	333,076	414,180	434,316	409,663	384,116
19	385,716	394,014	373,127	345,051	316,203	294,654	285,481	336,353	416,352	433,467	408,776	383,501
20	387,443	394,201	372,885	344,177	316,203	293,951	285,322	339,993	418,337	432,685	407,825	382,764
21	387,443	394,263	372,037	343,419	316,090	293,249	285,322	343,652	420,005	431,969	407,066	381,783
22	387,504	394,263	371,069	342,372	315,754	292,602	285,109	347,858	422,127	430,797	406,434	380,680
23	387,504	394,326	370,042	341,327	315,529	291,902	285,162	350,557	424,448	429,822	405,865	380,068
24	387,566	394,326	369,137	340,341	315,137	291,579	285,322	352,441	426,387	428,849	405,171	379,457
25	387,751	394,388	368,233	339,298	314,185	290,827	285,588	354,153	427,811	427,941	404,099	378,785
26	388,308	394,512	367,270	338,257	313,458	290,236	285,960	355,750	429,238	427,163	402,902	378,907
27	388,493	394,637	366,368	337,333	312,955	289,807	285,960	357,589	430,472	426,257	402,022	378,663
28	388,678	394,824	365,527	336,296	312,732	289,539	285,907	360,206	431,708	425,804	401,016	377,809
29	388,864	394,948	364,508	335,259		290,397	286,600	364,089	432,946	424,835	400,200	377,138
30	389,050	394,948	363,610	334,282		290,558	288,308	366,669	433,924	424,060	399,762	376,346
31	389,111		362,652	333,363		290,397		368,956		423,029	398,822	
Min	375,738	389,173	362,652	333,363	312,732	289,539	285,109	290,558	371,069	423,029	398,822	376,346
Max	389,111	394,948	394,388	361,697	332,388	311,840	289,700	368,956	433,924	437,455	422,256	397,820
EOM	389,111	394,948	362,652	333,363	312,732	290,397	288,308	368,956	433,924	423,029	398,822	376,346



Appendix A (Table 12 of 38)
Granby Reservoir, CO

Location.--Lat 40°08'54", long 105°51'48", Grand County, Hydrologic Unit 14010001, m Granby Dam, 5.5 miles northeast of Granby, Colorado, on the Colorado River.

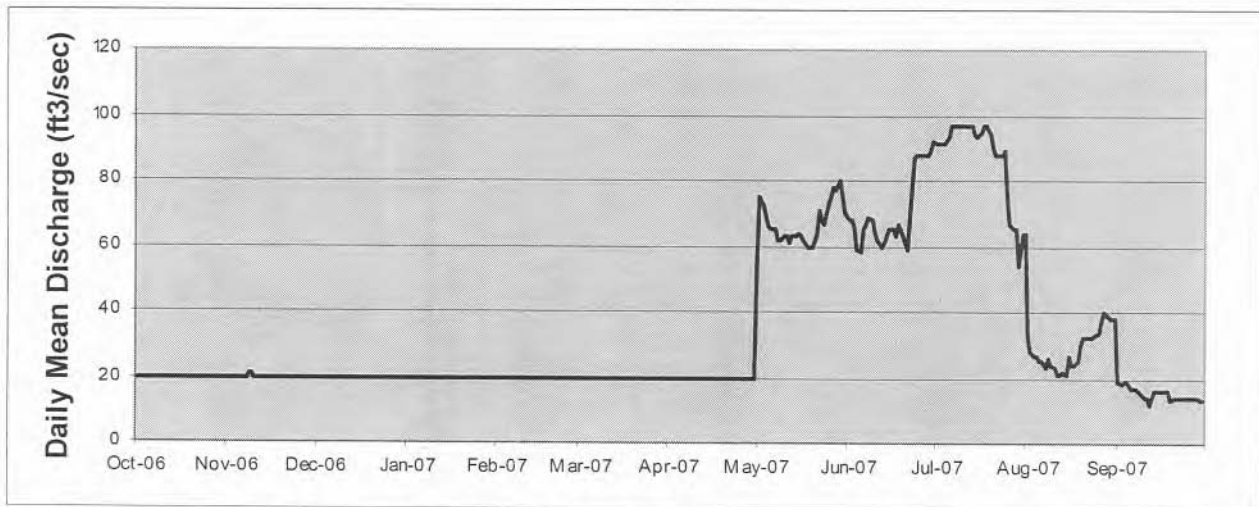
Gage.-- Water level recorder with satellite telemetry. Elevation of gage is 8300 from topographic map.

Remarks.--Reservoir is formed by an earth-fill dam and four earth-fill dikes. Construction completed in 1950. Impoundment began on 14-Sep-1949.

Granby Reservoir provides west-slope storage for the Colorado-Big Thompson Project. Data was provided by personnel from the Northern Colorado Water Conservancy District. Releases were made through the outlet works valve. The stream gage directly below the dam is used to measure flows during winter. A USGS station further downstream is used to measure flows between spring and fall. Data was recorded from 01-Oct-2006 to 30-Sep-2007. Records are complete and fair. This record contains operational data which could be i to future revisions and changes.

Discharge, Cubic Feet per Second, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	20	20	20	20	20	20	20	55	68	91	33	19
2	20	20	20	20	20	20	20	75	68	91	28	18
3	20	20	20	20	20	20	20	72	66	91	27	19
4	20	20	20	20	20	20	20	69	59	91	27	19
5	20	20	20	20	20	20	20	66	58	93	25	17
6	20	20	20	20	20	20	20	65	65	97	25	17
7	20	20	20	20	20	20	20	65	67	97	23	17
8	20	21	20	20	20	20	20	62	69	97	26	16
9	20	21	20	20	20	20	20	62	68	97	24	15
10	20	20	20	20	20	20	20	63	64	97	23	14
11	20	20	20	20	20	20	20	63	62	97	21	14
12	20	20	20	20	20	20	20	61	60	97	21	12
13	20	20	20	20	20	20	20	63	61	97	22	16
14	20	20	20	20	20	20	20	63	63	94	21	16
15	20	20	20	20	20	20	20	64	65	93	27	16
16	20	20	20	20	20	20	20	63	65	95	24	16
17	20	20	20	20	20	20	20	62	63	97	24	16
18	20	20	20	20	20	20	20	60	67	97	25	16
19	20	20	20	20	20	20	20	60	65	94	30	13
20	20	20	20	20	20	20	20	60	61	90	32	14
21	20	20	20	20	20	20	20	64	59	88	32	14
22	20	20	20	20	20	20	20	71	69	88	32	14
23	20	20	20	20	20	20	20	68	87	88	32	14
24	20	20	20	20	20	20	20	67	88	89	33	14
25	20	20	20	20	20	20	20	73	88	76	34	14
26	20	20	20	20	20	20	20	75	88	67	37	14
27	20	20	20	20	20	20	20	78	88	65	40	14
28	20	20	20	20	20	20	20	77	88	65	39	14
29	20	20	20	20	20	20	20	80	89	54	38	13
30	20	20	20	20	20	20	20	75	92	64	38	13
31	20	20	20	20	20	20	20	70	64	64	38	
Min	20	20	20	20	20	20	20	55	58	54	21	12
Max	20	21	20	20	20	20	20	80	92	97	40	19
Mean	20	20	20	20	20	20	20	67	71	87	29	15
ac-ft	1228	1192	1228	1228	1109	1228	1188	4101	4198	5348	1784	907



Appendix A (Table 13 of 38)
Farr Pumping Plant, Granby Reservoir, CO

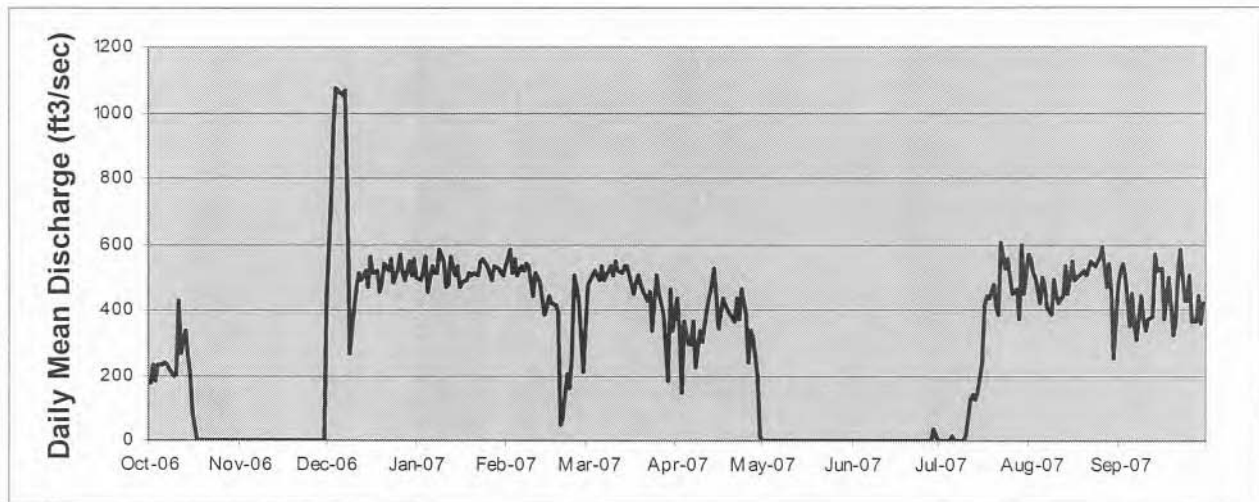
Location. --Lat 40°11'30", long 105°52'52", Grand County, Hydrologic Unit 14010001, at Farr Pumping Plant on the north end of Granby Reservoir, 8 miles northeast of Granby, Colorado, on the Colorado River.

Gage.-- Reading taken directly from the pumps, based on conduit pressure and Granby Reservoir's elevation. Elevation of the pumping plant is 8320 from topographic map.

Remarks.-- Water is pumped from Granby to the Granby Pump Canal which discharges into Shadow Mountain Reservoir. The operation keeps Shadow Mountain Reservoir/Grand Lake at a steady water surface level when transmountain diversions are taking place via Adams Tunnel. Data was provided by Fan Plant operators each morning. Data was collected from 01-Oct-2006 to 30-Sep-2007. Daily data provided by the Northern Colorado Water Conservancy District. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	175	0	442	501	534	475	438	0	0	0	554	517
2	233	0	744	494	582	489	340	0	0	0	514	542
3	184	0	962	522	515	503	145	0	0	0	497	502
4	233	0	1071	560	556	520	368	0	0	0	421	350
5	233	0	1069	456	502	493	297	0	0	17	495	447
6	240	0	1053	535	532	534	297	0	0	0	478	353
7	234	0	1065	514	518	490	368	0	0	0	407	311
8	219	0	749	511	542	508	225	0	0	0	389	443
9	199	0	266	582	531	531	338	0	0	0	488	370
10	202	0	404	545	441	502	299	0	0	19	447	336
11	425	0	468	467	512	550	361	0	0	129	420	374
12	268	0	509	474	499	517	405	0	0	137	442	382
13	337	0	492	560	481	514	476	0	0	123	536	568
14	260	0	516	503	388	532	528	0	0	145	452	520
15	207	0	469	531	406	536	442	0	0	241	547	528
16	81	0	562	472	439	508	342	0	0	417	490	375
17	0	0	512	482	422	449	436	0	0	445	497	434
18	0	0	520	492	417	484	414	0	0	437	506	496
19	0	0	453	512	392	508	401	0	0	478	520	326
20	0	0	486	505	51	474	386	0	0	404	502	357
21	0	0	541	512	67	440	364	0	0	388	528	522
22	0	0	517	505	202	429	436	0	0	602	547	583
23	0	0	555	548	160	453	375	0	0	525	536	429
24	0	0	482	553	259	340	463	0	0	557	544	429
25	0	0	523	535	508	503	387	0	0	495	563	505
26	0	0	569	513	438	447	236	0	0	450	587	367
27	0	0	514	490	317	421	336	0	0	462	472	367
28	0	0	491	534	212	389	315	0	0	370	539	442
29	0	0	548	524		185	195	0	37	599	451	355
30	0	0	503	511		465	12	0	0	448	256	422
31	0	0	552	508		337		0	0	571	480	
Min	0	0	266	456	51	185	12	0	0	0	256	311
Max	425	0	1071	582	582	550	528	0	37	602	587	583
Mean	120	0	600	515	408	469	348	0	1	273	487	432
ac.ft	7385	0	36842	31583	22618	28761	20642	0	73	16749	29908	25645



Appendix A (Table 14 of 38)
Shadow Mountain/Grand Lake, CO

Location.--Lat 40°1226", long 105°50'28", Grand County, Hydrologic Unit 14010001, at the Colorado River below the confluence with Grand Lake outlet, 10 miles northeast of Granby, Colorado.

Gage.--Water-stage recorder with satellite telemetry. Elevation of gage is 8375 feet from topographic map.

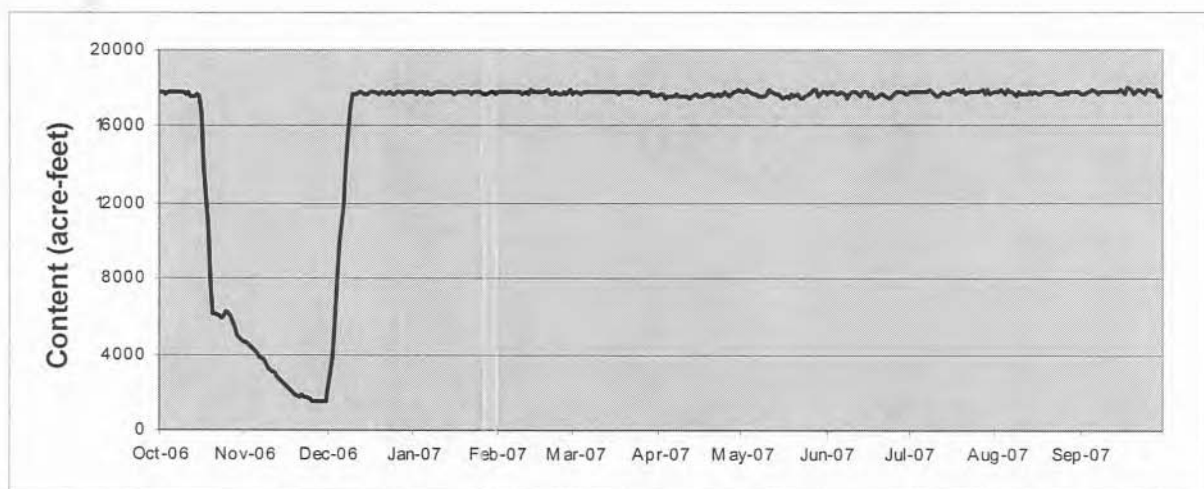
Remarks.--Constructed between 1944 and 1946. Impoundment began in 1946. Active capacity between elevations 8,366 and 8,367 is 1,800 acre-feet.

Grand Lake is used as forebay storage for Adams Tunnel. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Records are complete and reliable.

This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	17.738	4.641	2.311	17.787	17.780	17.793	17.706	17.818	17.705	17.815	17.811	17.729
2	17.802	4.520	3.827	17.732	17.793	17.742	17.697	17.823	17.820	17.805	17.840	17.719
3	17.710	4.350	5.736	17.746	17.769	17.719	17.398	17.949	17.813	17.787	17.892	17.790
4	17.752	4.178	7.762	17.843	17.833	17.774	17.550	17.805	17.712	7.836	17.716	17.753
5	17.752	4.068	9.797	17.732	17.764	17.772	17.559	17.700	17.714	17.792	17.929	17.939
6	17.783	3.882	11.896	17.737	17.769	17.800	17.572	17.634	17.845	17.815	17.790	17.792
7	17.802	3.717	14.024	17.732	17.746	17.814	17.687	17.576	17.694	17.826	17.756	17.727
8	17.802	3.545	15.594	17.638	7.803	17.795	17.559	17.571	17.434	17.884	17.611	7.807
9	17.788	3.251	16.826	17.772	17.838	17.772	17.583	17.576	17.687	17.742	17.753	17.810
10	17.697	3.125	17.691	17.833	17.714	17.767	17.509	17.689	17.807	17.548	17.661	17.760
11	17.765	3.014	17.674	17.746	17.769	17.795	17.559	17.911	17.796	17.603	17.702	17.797
12	17.608	2.788	17.806	17.741	17.732	17.785	17.494	17.805	17.714	17.654	7.702	17.758
13	17.548	2.678	17.767	17.843	17.858	17.751	17.544	17.652	17.594	17.805	17.761	17.787
14	7.674	2.582	17.718	17.769	17.747	17.772	17.654	17.665	17.778	17.700	7.714	17.800
15	17.550	2.467	17.732	17.769	17.751	17.777	17.588	17.546	17.764	17.700	17.740	17.892
16	16.694	2.178	17.793	17.701	7.811	17.795	17.542	7.492	17.514	17.831	17.697	17.772
17	13.826	2.063	17.780	17.793	17.820	17.732	17.572	17.540	17.629	17.767	17.701	17.639
18	10.870	1.952	17.764	17.790	7.780	17.751	17.651	17.424	17.417	17.899	17.767	17.975
19	7.762	1.836	17.651	17.793	17.884	17.742	17.681	17.725	17.502	17.772	17.767	17.904
20	6.168	1.791	17.747	17.774	17.713	17.774	17.687	17.612	7.626	17.860	17.753	17.694
21	6.128	1.806	17.774	17.769	17.641	17.806	17.564	17.690	17.652	17.684	17.753	17.758
22	6.097	1.762	17.716	17.704	17.734	7.746	17.701	17.483	17.586	17.808	7.767	17.937
23	5.960	1.706	17.761	17.747	17.697	17.774	17.559	17.447	17.463	17.780	17.706	17.740
24	5.996	1.598	17.711	17.751	17.721	17.722	17.724	7.595	17.541	17.821	17.676	17.658
25	6.283	1.549	17.714	17.772	17.811	17.798	17.747	17.636	17.725	17.838	17.658	17.934
26	6.012	1.508	17.774	17.724	17.711	17.793	17.603	17.839	17.780	17.751	17.747	17.857
27	5.720	1.454	17.825	17.692	17.911	17.769	17.638	17.881	17.810	17.889	17.666	17.797
28	5.490	1.544	7.732	17.701	17.674	17.806	17.753	17.909	17.733	17.706	17.753	17.860
29	5.054	1.494	17.793	17.746		17.525	17.790	17.581	17.618	17.871	17.831	17.559
30	4.797	1.505	17.764	17.756		7.687	17.929	17.738	17.715	17.721	17.782	17.613
31	4.687		17.793	17.714		17.577		17.786		17.753	17.767	
Min	4.687	1.454	2.311	17.638	17.641	17.525	17.398	17.424	17.417	17.548	17.611	7.559
Max	17.802	4.641	17.825	17.843	17.911	17.814	17.929	17.949	17.845	17.899	17.929	17.975
EOM	4.687	1.505	17.793	17.714	17.674	17.577	17.929	17.786	17.715	17.753	17.767	17.613



Appendix A (Table 15 of 38)
 Alva B. Adams Tunnel at East Portal, near Estes Park, CO

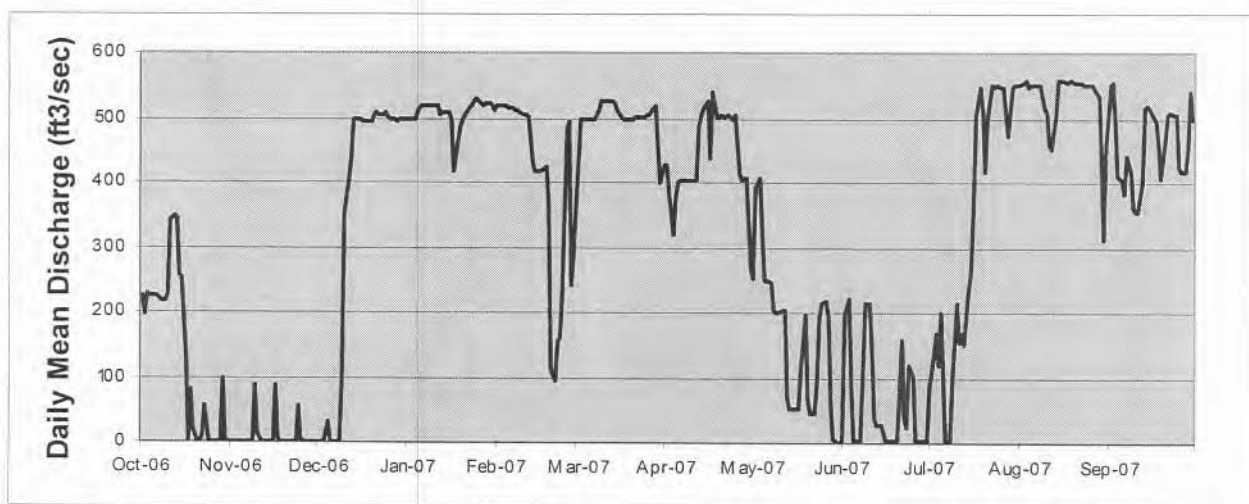
Location. --Lat 40°19'40", long 105°34'39", Larimer County, Hydrologic Unit 10190006, 4.5 miles southwest of Estes Park, Colorado.

Gage.-- Water-stage recorder with satellite telemetry at 15 foot Parshall flume. Elevation of gage is 8250 from topographic map.

Remarks.-- Constructed between 1940 and 1947. Tunnel is 13.1 miles long, between Grand Lake and Estes Park. Maximum capacity is 550 cubic feet per second. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	226	0	0	499	518	428	429	253	2	89	551	551
2	198	0	0	499	519	499	382	394	195	109	555	556
3	228	0	0	499	520	499	320	407	222	170	558	491
4	226	0	33	508	519	499	380	323	85	121	549	410
5	226	0	0	515	516	499	400	250	3	199	551	402
6	226	0	0	520	515	498	402	248	4	0	552	384
7	222	0	0	521	513	498	405	247	4	0	552	442
8	218	0	0	519	514	512	404	205	110	0	550	417
9	218	88	93	518	509	525	404	200	213	100	515	360
10	227	14	352	521	504	525	404	200	214	214	508	353
11	340	0	405	520	505	526	404	203	132	156	461	355
12	347	0	437	506	501	526	486	203	37	168	454	400
13	345	0	497	509	427	526	504	71	29	152	507	515
14	255	0	497	509	418	524	516	53	29	235	557	518
15	252	0	497	510	419	511	528	53	18	259	557	516
16	130	86	496	498	418	501	437	53	2	354	557	502
17	2	6	496	418	422	500	540	53	2	504	556	495
18	80	0	495	467	423	499	502	118	2	547	558	461
19	21	0	495	489	360	500	503	198	3	512	558	407
20	0	0	506	498	112	500	504	65	3	419	555	467
21	0	0	508	506	95	501	502	47	158	498	554	507
22	12	0	507	515	153	501	504	47	37	550	553	509
23	56	0	507	519	161	501	501	93	25	549	552	506
24	0	57	509	528	225	502	499	194	120	551	551	506
25	0	2	502	529	483	505	507	214	101	549	551	424
26	0	0	499	522	494	505	413	219	3	546	551	417
27	0	0	499	520	243	517	402	193	2	504	544	416
28	0	0	496	522	289	518	406	63	2	473	533	451
29	98	0	497	523		456	406	6	2	549	426	542
30	3	0	499	519		401	268	1	2	550	314	500
31	0		499	514		428		1		550	459	
Min	0	0	0	418	95	401	268	1	2	0	314	353
Max	347	88	509	529	520	526	540	407	222	551	558	556
Mean	134	8	349	508	403	498	442	157	59	328	527	459
ac-ft	8229	501	21426	31205	22364	30551	26259	9653	3487	20150	32371	27284



Appendix A (Ta)IMO of 38)
Marys Lake, CO

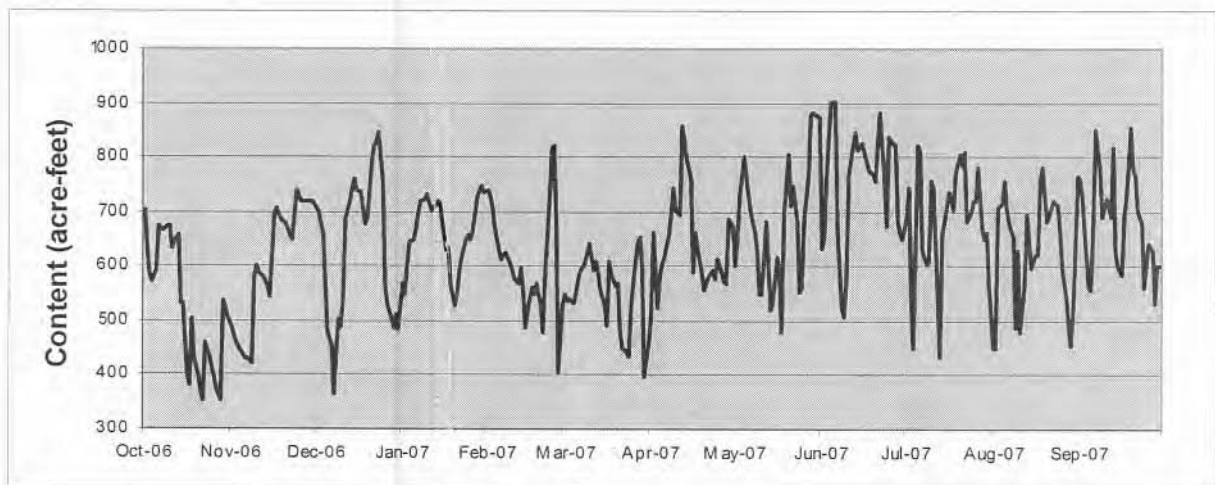
Location. --Lat 40°22'40", long 105°31'50", Larimer County, Hydrologic Unit 10190006, 2 miles southwest of Estes Park, Colorado.

Gage.-- Water-level recorder with satellite telemetry. Elevation of gage is 8060 feet from topographic map.

Remarks.-- Constructed between 1947 and 1949. Impoundment began in August, 1950. Active capacity between elevations 8,025 and 8,040 is 500 acre-feet. Used as a forebay storage for Estes Powerplant. The only measurable inflow into the reservoir comes from Adams Tunnel. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Record is not complete. Reservoir was partially drained between 22-Nov-2006 and 5-Dec-2007. The gage does not record water surface levels below elevation 8,022.62 feet, content of 318 acre-feet. Record is reliable except for estimated values while the reservoir was drained. These are operational data which could be subject to further revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	701	488	709	567	740	550	504	602	632	689	449	761
2	631	470	697	547	729	537	664	651	649	743	450	727
3	584	460	680	601	709	539	525	727	761	549	706	668
4	572	450	663	644	672	533	580	799	900	449	716	559
5	593	439	482	648	631	551	604	765	903	819	754	557
6	674	432	468	669	614	577	616	728	902	810	704	688
7	669	432	454	698	623	592	659	698	667	628	679	849
8	666	422	365	718	625	604	693	664	523	607	655	782
9	676	582	505	723	606	625	743	624	508	610	486	692
10	674	600	489	730	592	641	702	548	570	757	628	706
11	635	590	537	715	577	591	693	547	767	744	481	723
12	646	580	686	704	570	610	856	684	822	541	561	689
13	657	571	721	713	596	589	828	607	845	436	693	816
14	533	560	743	720	556	558	797	518	813	662	654	628
15	532	545	761	716	487	528	759	533	825	684	597	600
16	397	700	741	682	540	493	590	617	809	736	622	586
17	383	705	734	629	560	611	661	582	792	725	620	696
18	504	695	702	635	549	585	634	478	778	703	759	729
19	435	685	677	564	570	566	590	697	767	773	781	854
20	399	677	692	527	526	568	558	804	756	803	681	777
21	369	670	792	548	481	484	570	712	829	786	692	769
22	352	660	821	595	595	452	582	748	880	808	709	704
23	459	649	831	617	657	442	591	681	755	683	719	678
24	435	740	844	650	815	434	576	552	676	698	713	559
25	414	732	752	657	819	524	613	561	838	718	663	598
26	396	721	567	650	671	572	589	685	830	721	597	643
27	375	718	531	668	407	644	574	767	820	782	541	628
28	353	719	504	726	530	655	569	878	682	667	486	532
29	536	719	488	738		594	686	882	664	652	454	602
30	525	719	511	748		398	676	878	648	663	514	603
31	508		485	736		456		874		564	762	
Min	352	422	365	527	407	398	504	478	508	436	449	532
Max	701	740	844	748	819	655	856	882	903	819	781	854
EOM	508	719	485	736	530	456	676	874	648	564	762	603



Appendix A (Table 17 of 38)
 Big Thompson River above Lake Estes, CO

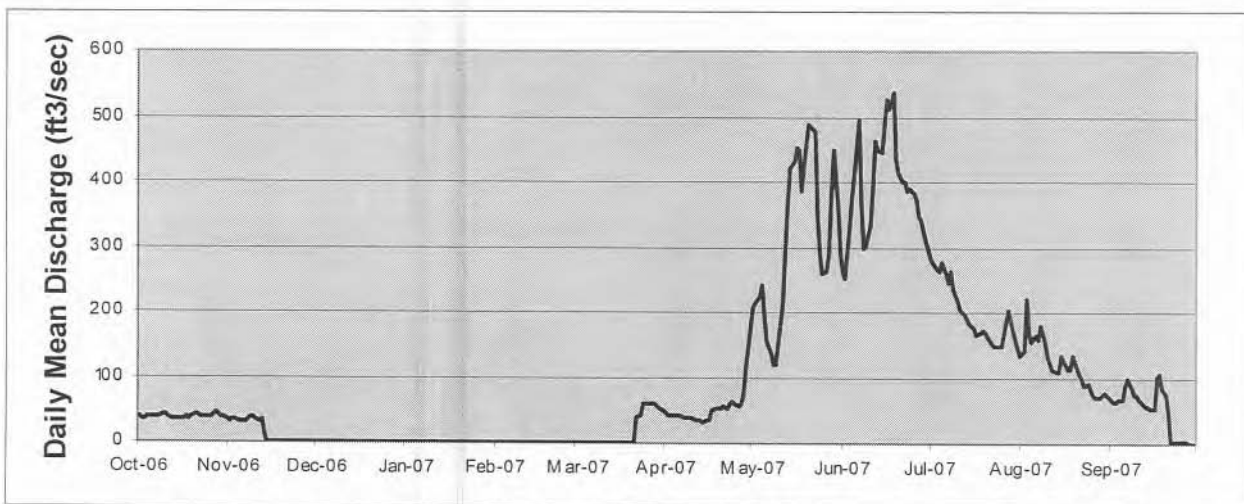
Location. --Lat 40°22'42", long 105°30'48", Larimer County, Hydrologic Unit 10190006, 600 feet downstream from bridge on state highways 7 and 36 in Estes Park, Colorado, downstream from Black Canyon Creek, and 0.3 miles northwest of Estes Powerplant.

Gage.-- Water-stage recorder with satellite telemetry. 15 foot Parshall flume with overflow weirs and supplemental outside gage. Datum of gage at 7492.5 feet.

Remarks.— Drainage area is 137 mi². Station consists of data collection platform as primary record with graphic chart recorder as backup. Recorder was operated from 01-Oct-2006 to 13-Nov-2006 and from 22-Mar-2007 to 21-Sep-2007. The station is shutdown during winter, however the available data is reliable. This record contains operational data which could be subject to future revisions and changes. The official record for this station is published by the State of Colorado, Department of Water Resources.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	38	31	0	0	0	0	44	207	262	284	132	68
2	36	34	0	0	0	0	43	213	253	278	141	64
3	36	34	0	0	0	0	41	226	332	267	221	65
4	39	33	0	0	0	0	41	244	380	263	168	67
5	38	32	0	0	0	0	41	192	413	278	154	67
6	38	31	0	0	0	0	41	156	494	261	166	87
7	38	33	0	0	0	0	38	136	369	244	160	97
8	38	38	0	0	0	0	38	120	299	262	180	82
9	41	37	0	0	0	0	39	121	301	234	154	74
10	42	34	0	0	0	0	40	151	333	218	134	73
11	39	30	0	0	0	0	34	211	391	205	121	66
12	36	34	0	0	0	0	34	291	463	199	114	59
13	36	15	0	0	0	0	35	366	450	196	108	57
14	36	0	0	0	0	0	32	422	445	182	108	55
15	36	0	0	0	0	0	34	432	488	179	134	54
16	35	0	0	0	0	0	37	452	528	175	126	54
17	37	0	0	0	0	0	50	448	514	167	112	101
18	34	0	0	0	0	0	51	387	536	169	113	104
19	39	0	0	0	0	0	54	455	435	172	133	84
20	43	0	0	0	0	0	51	488	413	168	121	73
21	42	0	0	0	0	0	55	484	399	160	107	45
22	38	0	0	0	0	37	54	479	400	152	97	0
23	38	0	0	0	0	41	61	347	386	148	87	0
24	40	0	0	0	0	61	64	296	389	147	90	0
25	38	0	0	0	0	59	59	259	383	146	82	0
26	39	0	0	0	0	60	57	261	373	166	75	0
27	46	0	0	0	0	59	60	291	346	186	72	0
28	42	0	0	0	0	59	75	383	339	202	71	0
29	40	0	0	0	0	56	116	448	310	172	73	0
30	39	0	0	0	0	51	176	360	298	156	78	0
31	36	0	0	0	0	47	0	290	0	143	73	0
Min	34	0	0	0	0	0	32	120	253	143	71	0
Max	46	38	0	0	0	61	176	488	536	284	221	104
Mean	38	14	0	0	0	17	53	310	391	199	120	50
ac-ft	2356	822	0	0	0	1052	3161	19040	23210	2228	7336	2957



Appendix A (Table 18 of 38)
Olympus Dam, CO

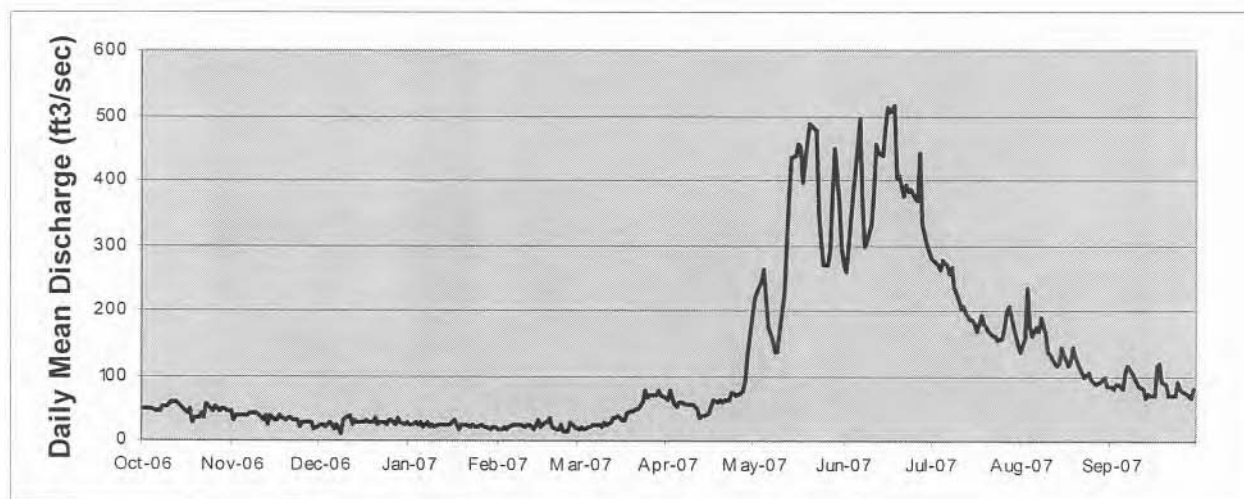
Location. --Lat 40°22'31", long 105°29'15", Larimer County, Hydrologic Unit 10190006, 1.5 miles east of Estes Park, Colorado, on the Big Thompson River.

Gage.—Water-stage recorders with satellite telemetry. Inflow computed daily based on the change in content from midnight to midnight at Marys Lake and Lake Estes, daily average releases from Olympus Dam, and daily average discharge at Olympus Tunnel and Adams Tunnel.

Remarks.—Olympus dam was constructed between 1947 and 1949. Impoundment began on November 1948. Total capacity at maximum water surface elevation of 7475.0 feet is 3,070 acre-feet. Recorders were operated from 01-Oct-2006 to 30-Sep-2007. Records are complete and reliable, but have not been revised. This record contains operational data which could be subject to future revisions and changes.

Inflow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	48	33	23	25	17	17	64	217	271	279	137	83
2	49	37	26	26	19	20	78	228	258	276	158	79
3	50	40	22	27	20	19	57	247	342	271	235	87
4	49	40	29	24	17	20	51	264	382	264	178	89
5	47	37	26	28	22	21	58	217	418	276	163	80
6	47	38	19	22	23	23	58	176	496	269	175	104
7	46	41	24	27	24	24	55	154	364	255	169	117
8	51	42	9	20	25	25	56	136	297	265	190	107
9	53	42	33	26	24	22	57	137	304	235	166	98
10	56	39	36	22	22	28	57	168	334	219	137	92
11	59	32	40	24	26	26	48	226	382	205	133	85
12	59	40	25	24	26	28	36	301	455	207	127	80
13	57	26	30	24	19	35	40	375	442	198	116	67
14	53	38	28	25	25	36	39	435	438	186	118	73
15	48	31	28	24	32	39	41	437	480	185	144	69
16	42	33	29	28	22	31	52	456	513	179	133	69
17	48	39	32	30	29	33	64	452	504	167	117	117
18	27	35	29	19	29	41	60	396	515	193	123	118
19	36	31	29	23	35	44	63	458	404	180	143	90
20	36	35	36	24	22	46	61	488	406	174	131	88
21	42	34	24	23	17	50	63	485	374	170	111	71
22	36	30	27	21	18	48	64	477	392	161	104	69
23	56	30	29	24	23	60	74	352	383	162	99	70
24	48	21	25	21	13	77	75	307	385	156	104	91
25	44	28	30	22	15	68	71	269	371	158	95	81
26	53	27	32	23	27	71	74	271	367	176	90	77
27	46	28	26	21	25	69	77	296	441	199	87	72
28	49	28	36	20	21	71	91	383	335	208	91	70
29	50	19	27	19		76	132	449	303	177	96	66
30	45	20	26	21		70	188	363	292	160	97	81
31	44		28	21		68		294		148	83	
Min	27	19	9	19	13	17	36	136	258	148	83	66
Max	59	42	40	30	35	77	188	488	515	279	235	118
Mean	48	33	28	23	23	42	67	320	388	205	131	85
ac-ft	2919	1968	1709	1441	1261	2586	3968	19630	23063	12589	8019	5029



Appendix A (Table 19 of 38)
Olympus Dam, CO

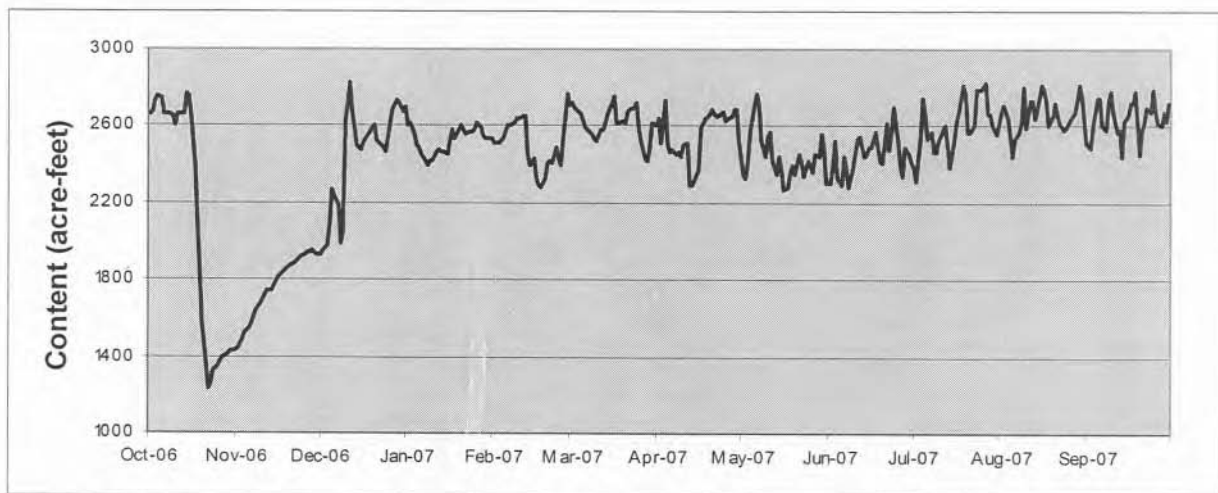
Location. --Lat 40°22'31", long 105°29'19", Larimer County, Hydrologic Unit 10190006, 1.5 miles east of Estes Park, Colorado, on the Big Thompson River.

Gage.-- Water-level recorder with satellite telemetry. Elevation of gage is 7490 feet from topographic map.

Remarks.-- Constructed between 1947 and 1949. Impoundment began in November, 1948. Active capacity between elevations 7,450.25 and 7,474.00 is 2,476 acre-feet. Used as afterbay storage for Estes Powerplant and forebay for Olympus Tunnel. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Content, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2,658	1,443	1,936	2,609	2,511	2,716	2,634	2,352	2,303	2,386	2,677	2,496
2	2,680	1,462	1,958	2,619	2,509	2,697	2,506	2,320	2,398	2,309	2,704	2,494
3	2,737	1,491	1,977	2,561	2,516	2,675	2,732	2,402	2,519	2,541	2,645	2,606
4	2,758	1,521	2,077	2,501	2,537	2,660	2,506	2,564	2,322	2,744	2,547	2,745
5	2,742	1,549	2,265	2,485	2,572	2,629	2,468	2,709	2,296	2,658	2,447	2,740
6	2,662	1,575	2,235	2,449	2,602	2,596	2,478	2,768	2,439	2,539	2,539	2,602
7	2,660	1,600	2,188	2,416	2,607	2,574	2,455	2,704	2,379	2,571	2,571	2,587
8	2,667	1,635	1,989	2,392	2,619	2,562	2,460	2,529	2,284	2,463	2,631	2,732
9	2,656	1,674	2,049	2,416	2,640	2,532	2,447	2,444	2,382	2,467	2,806	2,778
10	2,602	1,703	2,623	2,421	2,643	2,527	2,499	2,546	2,460	2,522	2,596	2,670
11	2,667	1,716	2,820	2,463	2,656	2,587	2,514	2,567	2,536	2,584	2,732	2,567
12	2,662	1,745	2,680	2,473	2,651	2,576	2,289	2,413	2,544	2,602	2,735	2,576
13	2,658	1,745	2,596	2,465	2,452	2,619	2,292	2,346	2,444	2,499	2,634	2,439
14	2,763	1,773	2,501	2,460	2,390	2,663	2,312	2,441	2,458	2,381	2,685	2,629
15	2,761	1,788	2,476	2,450	2,432	2,725	2,368	2,379	2,486	2,527	2,810	2,667
16	2,667	1,810	2,508	2,519	2,330	2,761	2,592	2,270	2,494	2,626	2,792	2,716
17	2,384	1,833	2,537	2,587	2,296	2,616	2,618	2,279	2,574	2,677	2,737	2,720
18	2,093	1,851	2,574	2,539	2,281	2,618	2,638	2,358	2,490	2,811	2,607	2,780
19	1,855	1,861	2,589	2,576	2,323	2,623	2,663	2,395	2,418	2,764	2,646	2,455
20	1,579	1,875	2,602	2,609	2,403	2,611	2,685	2,350	2,402	2,569	2,723	2,581
21	1,362	1,886	2,519	2,586	2,415	2,675	2,668	2,457	2,614	2,566	2,660	2,619
22	1,230	1,897	2,498	2,561	2,405	2,687	2,653	2,418	2,478	2,602	2,613	2,701
23	1,260	1,912	2,483	2,569	2,483	2,701	2,660	2,342	2,567	2,787	2,579	2,677
24	1,323	1,922	2,460	2,564	2,432	2,726	2,675	2,421	2,696	2,794	2,594	2,787
25	1,349	1,933	2,531	2,586	2,390	2,591	2,626	2,390	2,526	2,796	2,616	2,684
26	1,376	1,941	2,684	2,613	2,534	2,518	2,641	2,355	2,394	2,825	2,645	2,621
27	1,390	1,942	2,704	2,596	2,771	2,426	2,653	2,452	2,341	2,662	2,677	2,609
28	1,412	1,948	2,728	2,546	2,706	2,413	2,687	2,442	2,494	2,658	2,745	2,679
29	1,422	1,936	2,720	2,532	2,485	2,687	2,554	2,458	2,458	2,601	2,813	2,628
30	1,426	1,927	2,679	2,531	2,614	2,521	2,494	2,494	2,403	2,561	2,761	2,721
31	1,434		2,697	2,532		2,601		2,300		2,611	2,511	
Min	1,230	1,443	1,936	2,392	2,281	2,413	2,289	2,270	2,284	2,309	2,447	2,439
Max	2,763	1,948	2,820	2,619	2,771	2,761	2,732	2,768	2,696	2,825	2,813	2,787
EOM	1,434	1,927	2,697	2,532	2,706	2,601	2,521	2,300	2,403	2,611	2,511	2,721



Appendix A (Table 20 of 38)
Big Thompson River below Olympus Dam, CO

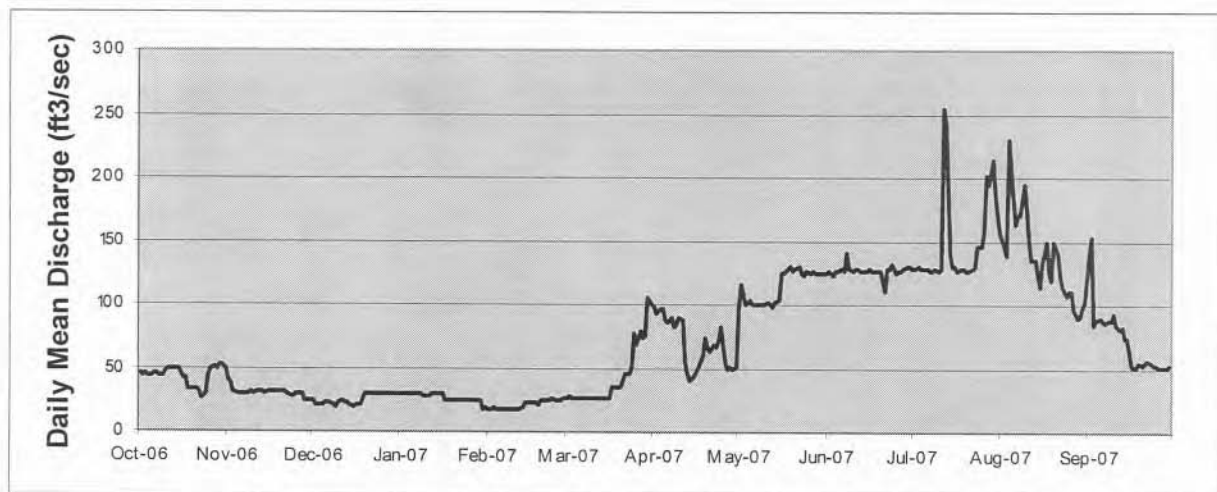
Location.—Lat 40°22'35", long 105°29'06", Larimer County, Hydrologic Unit 10190006, 600 feet downstream from Olympus Dam and 100 feet upstream of Dry Gulch, 2.0 miles east in Estes Park.

Gage.— Water-stage recorder with satellite telemetry. 15 foot Parshall flume with overflow weirs in a concrete shelter with a supplemental outside gage. Datum of gage at 7492.50 feet.

Remarks.— Drainage area is 155 me. Area at site used between 29-Jan-1934 and 21-Mar-1951 was 162 me. Station consists of data collection platform as primary record with graphic chart recorder as backup. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes. The official record for this station is published by the State of Colorado, Department of Water Resources.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	46	40	24	30	18	27	99	98	125	128	156	140
2	44	38	21	30	18	28	93	116	127	128	146	152
3	45	31	21	29	19	27	97	100	123	129	139	85
4	44	30	21	29	18	27	96	101	126	128	230	88
5	44	29	23	29	18	26	88	103	126	128	206	89
6	45	29	22	29	18	26	86	100	128	128	164	88
7	45	29	22	30	18	26	90	100	127	127	170	86
8	43	30	21	29	18	26	82	100	141	127	171	87
9	44	31	20	28	18	26	85	100	128	128	195	88
10	48	30	22	28	18	26	89	100	127	127	176	93
11	49	31	24	28	18	26	87	101	128	128	149	84
12	50	31	23	30	18	26	55	100	128	255	135	81
13	49	31	22	30	20	26	45	99	127	242	135	83
14	50	30	21	30	23	26	41	102	127	138	122	73
15	49	31	20	30	22	27	44	104	127	130	114	73
16	42	31	21	30	23	27	47	124	128	129	133	52
17	42	31	21	25	22	35	51	124	127	127	149	51
18	34	31	21	25	22	35	60	126	126	128	125	51
19	34	31	30	25	21	35	74	129	126	128	119	54
20	34	32	30	25	24	35	67	126	126	126	150	52
21	33	32	29	25	25	40	64	128	111	126	141	55
22	31	30	29	25	25	45	68	129	128	128	122	57
23	27	28	29	25	25	45	67	124	128	129	114	55
24	30	28	29	25	26	51	72	123	131	146	107	53
25	43	29	29	25	25	78	82	126	124	145	111	52
26	50	29	30	25	25	68	54	125	127	158	110	51
27	51	29	30	25	25	79	50	127	126	202	96	51
28	50	25	30	25	27	74	51	125	128	195	89	51
29	53	25	30	24	76	49	125	130	214	91	51	
30	53	25	30	18	105	51	125	129	186	99	52	
31	50	30	19	100	125	171	102					
Min	27	25	20	18	18	26	41	98	111	126	89	51
Max	53	40	30	30	27	105	99	129	141	255	230	152
Mean	44	30	25	27	21	43	69	114	127	149	138	73
ac-ft	2677	1796	1535	1643	1182	2622	4126	6999	7544	9126	8447	4312



Appendix A (Table 21 of 38)
Olympus Tunnel near Estes Park, CO

Location. —Lat 40°22'24", long 105°29'00", Larimer County, Hydrologic Unit 10190006, southeast of Estes Park, Colorado.

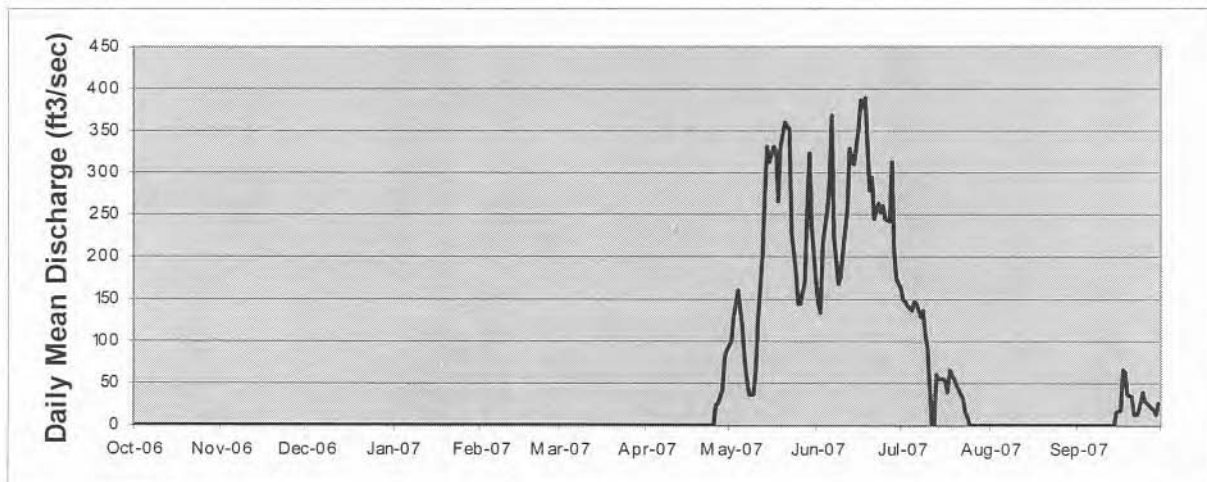
Gage.-- Water-stage recorder and satellite telemetry. Elevation of gage is 7460 from topographic map.

Remarks.— Constructed between 1949 and 1952. The tunnel is 7.2 miles long, between Estes Park and the Pole Hill Canal. Its diameter is 9.75 feet and maximum capacity is 550 cubic feet per second. The hydropower diversion operation, also known as the skim operation, diverts water from the Big Thompson River through Olympus Tunnel for power generation at three power plants, before returning it to the Big Thompson River near the canyon mouth.

The Skim daily value is determined based on the data from the gage in the system. Period of record includes from 01-Oct-2006 through 30-Sep-2007. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Hydropower Diversion (Skim), Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	101	144	151	0	0
2	0	0	0	0	0	0	0	128	135	147	0	0
3	0	0	0	0	0	0	0	146	216	143	0	0
4	0	0	0	0	0	0	0	161	256	136	0	0
5	0	0	0	0	0	0	0	117	290	148	0	0
6	0	0	0	0	0	0	0	76	369	144	0	0
7	0	0	0	0	0	0	0	54	223	129	0	0
8	0	0	0	0	0	0	0	36	169	138	0	0
9	0	0	0	0	0	0	0	37	177	108	0	0
10	0	0	0	0	0	0	0	67	206	91	0	0
11	0	0	0	0	0	0	0	126	254	0	0	0
12	0	0	0	0	0	0	0	202	328	0	0	0
13	0	0	0	0	0	0	0	273	315	60	0	0
14	0	0	0	0	0	0	0	331	311	56	0	0
15	0	0	0	0	0	0	0	313	352	56	0	17
16	0	0	0	0	0	0	0	332	386	52	0	18
17	0	0	0	0	0	0	0	326	378	39	0	66
18	0	0	0	0	0	0	0	267	389	65	0	64
19	0	0	0	0	0	0	0	332	278	54	0	38
20	0	0	0	0	0	0	0	360	295	48	0	33
21	0	0	0	0	0	0	0	356	246	42	0	14
22	0	0	0	0	0	0	0	353	264	32	0	14
23	0	0	0	0	0	0	0	229	252	16	0	17
24	0	0	0	0	0	0	0	181	261	11	0	39
25	0	0	0	0	0	0	0	144	244	0	0	30
26	0	0	0	0	0	0	24	144	241	0	0	26
27	0	0	0	0	0	0	26	171	313	0	0	21
28	0	0	0	0	0	0	42	258	205	0	0	19
29	0	0	0	0	0	0	81	324	174	0	0	14
30	0	0	0	0	0	0	90	238	164	0	0	27
31	0	0	0	0	0	0	0	169	0	0	0	0
Min	0	0	0	0	0	0	0	36	135	0	0	0
Max	0	0	0	0	0	0	90	360	389	151	0	66
Mean	0	0	0	0	0	0	9	205	261	60	0	15
ac-ft	0	0	0	0	0	0	521	12577	15513	3695	0	905



Appendix A (Table 22 of 38)
Olympus Tunnel, CO

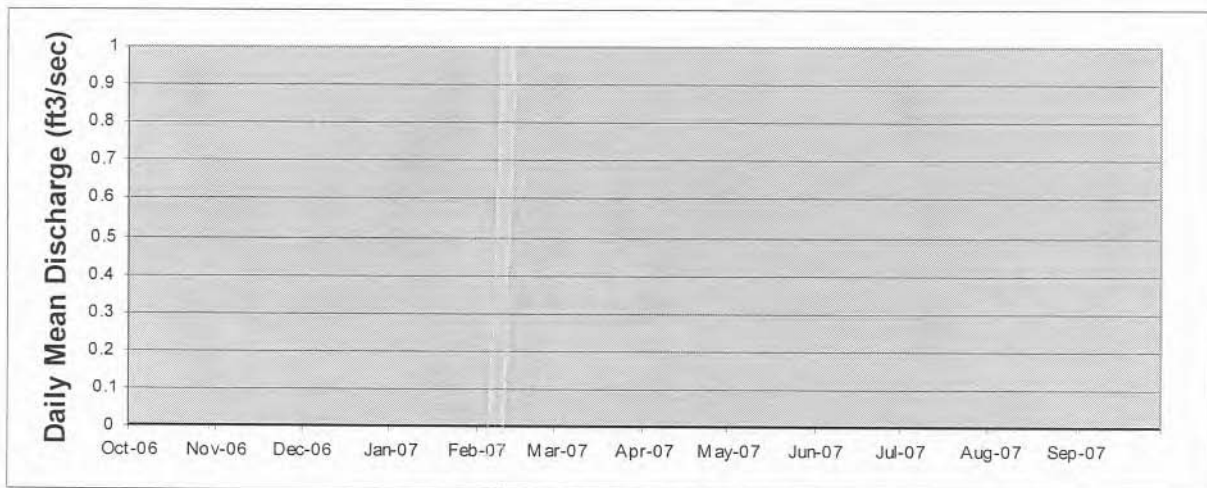
Location. --Lat 40°2224", long 105°2900", Larimer County, Hydrologic Unit 10190006, southeast of Estes Park, Colorado.

Gage.-- Water-stage recorder and satellite telemetry. Elevation of gage is 7460 from topographic map.

Remarks.— Constructed between 1949 and 1952. The tunnel is 7.2 miles long, between Estes Park and the Pole Hill Canal. Its diameter is 9.75 feet and maximum capacity is 550 cubic feet per second. The right to divert native run-off is determined by the State of Colorado. Period of record from 01-Oct-2006 through 30-Sep-2007. Record is complete and reliable.

Priority Diversion Flow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	0	0	0	0	0	0	0	0	0	0	0	0
Mean	0	0	0	0	0	0	0	0	0	0	0	0
ac-ft	0	0	0	0	0	0	0	0	0	0	0	0



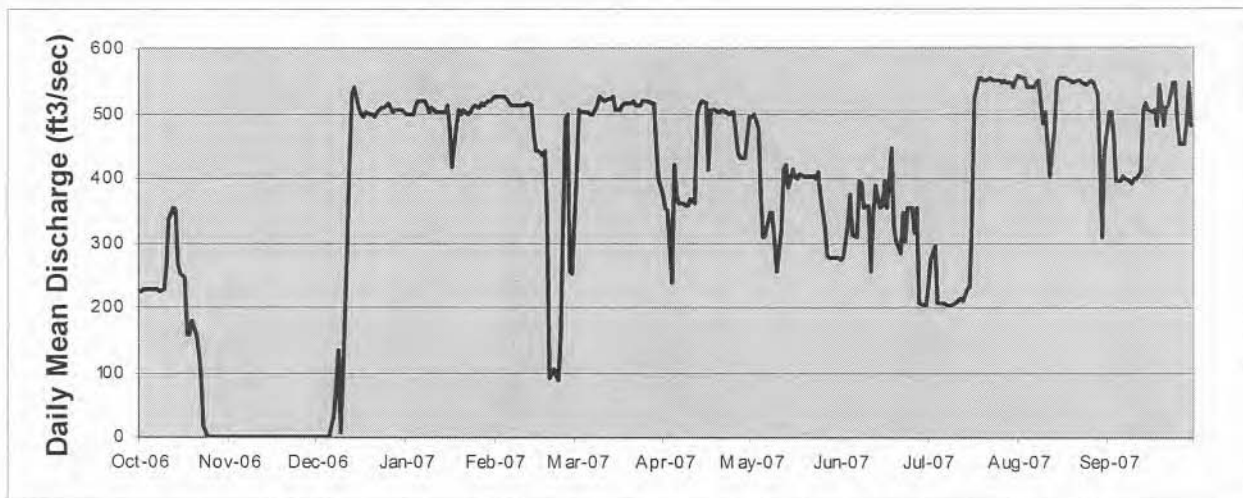
Appendix A (Table 23 of 38)
Olympus Tunnel, CO

Location. --Lat 40°2224", long 105°2900", Larimer County, Hydrologic Unit 10190006, southeast of Estes Park, Colorado, on the Big Thompson River.
Gage.-- Water-stage recorder with satellite telemetry. Elevation of gage is 7460 from topographic map.

Remarks.— Constructed between 1949 and 1952. The tunnel is 7.2 miles long, between Estes Park and the Pole Hill Canal. Its diameter is 9.75 feet and maximum capacity is 550 cubic feet per second. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Records are complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	224	0	0	497	526	403	354	494	274	231	557	502
2	228	0	0	500	527	507	351	498	277	272	553	501
3	229	0	0	499	528	501	237	477	331	295	556	467
4	228	0	0	512	526	503	421	371	377	208	541	396
5	228	0	0	520	523	501	377	310	314	207	539	397
6	229	0	19	521	514	499	363	314	308	207	542	404
7	228	0	33	520	512	500	360	349	396	204	548	400
8	225	0	132	512	514	511	359	347	393	204	551	398
9	229	0	6	502	514	526	358	301	355	205	483	392
10	264	0	87	509	514	522	367	256	358	206	503	399
11	338	0	299	503	514	521	362	319	257	210	451	399
12	354	0	435	501	515	524	498	414	340	214	405	412
13	351	0	530	503	513	524	512	421	389	212	473	504
14	268	0	541	503	471	528	520	386	355	229	547	517
15	253	0	509	511	443	507	516	414	357	230	553	507
16	245	0	498	479	442	505	415	403	397	329	554	502
17	158	0	496	416	436	512	505	399	354	524	553	504
18	158	0	501	482	443	517	506	406	446	556	552	482
19	178	0	499	504	343	516	502	404	328	553	552	543
20	159	0	498	499	92	516	503	402	302	550	548	479
21	134	0	495	505	104	521	504	403	284	552	550	508
22	93	0	501	500	94	514	502	403	349	554	550	513
23	18	0	510	503	89	514	500	399	303	552	549	546
24	0	0	510	510	159	520	502	409	354	550	544	549
25	0	0	514	512	492	518	502	374	356	551	549	485
26	0	0	517	510	498	521	438	327	317	548	550	452
27	0	0	503	516	257	517	431	279	353	552	547	451
28	0	0	504	513	254	516	432	277	206	546	529	483
29	0	0	506	519	451	451	431	278	205	548	413	548
30	0	0	504	518	400	400	493	278	204	539	308	482
31	0	0	501	522	374	374	276	276	276	552	441	441
Min	0	0	0	416	89	374	237	256	204	204	308	392
Max	354	0	541	522	528	528	520	498	446	556	557	549
Mean	162	0	343	504	406	500	437	367	328	384	519	471
ac-ft	9938	0	21083	30930	22487	30708	25980	22548	19481	23542	31860	27962



Appendix A (Table 24 of 38)
Pinewood Reservoir near Loveland, Colorado , CO

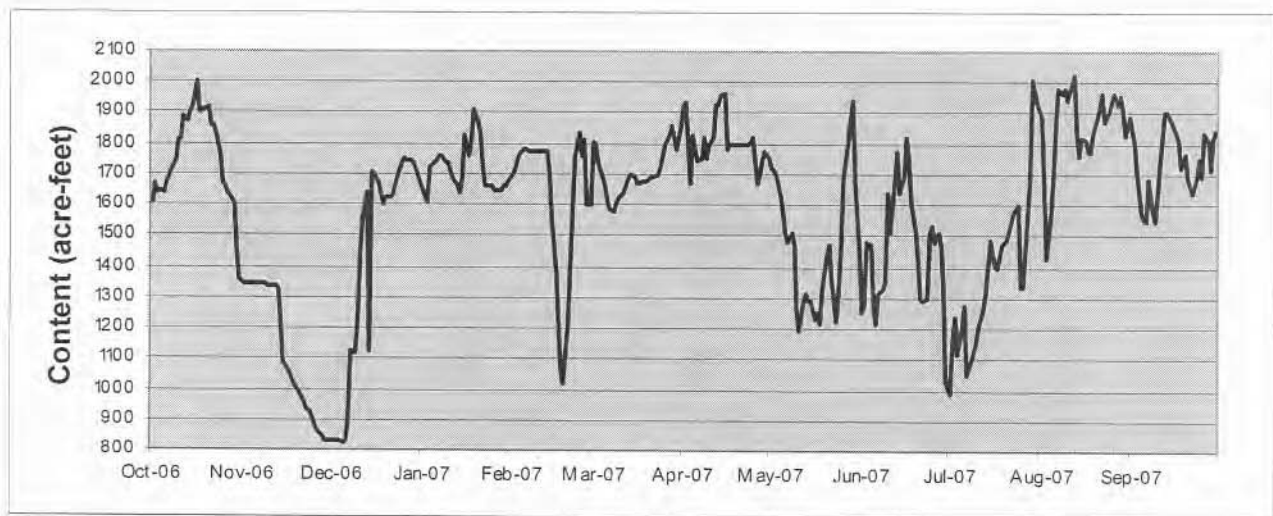
Location. --Lat 40°22', long 105°17.9', Larimer County, Hydrologic Unit 10190006, 10 miles southwest of Loveland, Colorado.

Gage.-- Water-level recorder with satellite telemetry. Elevation of gage is 6,600 feet from topographic map.

Remarks.-- Constructed between 1951 and 1952. Impoundment began in January 4, 1954. Active capacity between elevations 6,550.00 and 6,580.00 is 1,570 acre-feet. Used as the forebay storage for Flatiron Powerplant. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Record is complete and fair, except for periods when reservoir level was dropped below the reach of the reservoir level gage, when record is estimated. Reservoir was below that level between 28-Nov-2005 and 06-Dec-2005. The gage stops measuring the water surface elevation below 6556.30, a content of 629 acre-feet. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1,609	1,343	829	1,650	1,700	1,802	1,927	1,725	1,256	992	1,891	1,846
2	1,666	1,343	829	1,625	1,717	1,794	1,936	1,717	1,276	1,168	1,675	1,802
3	1,642	1,343	829	1,609	1,742	1,734	1,666	1,700	1,478	1,237	1,427	1,708
4	1,650	1,343	829	1,725	1,768	1,691	1,829	1,634	1,470	1,120	1,562	1,570
5	1,642	1,343	825	1,734	1,785	1,658	1,785	1,578	1,276	1,199	1,691	1,554
6	1,675	1,343	834	1,742	1,785	1,617	1,742	1,508	1,218	1,276	1,855	1,546
7	1,691	1,343	888	1,759	1,776	1,585	1,751	1,478	1,316	1,052	1,982	1,683
8	1,717	1,343	1,126	1,759	1,776	1,578	1,820	1,508	1,329	1,091	1,963	1,570
9	1,742	1,336	1,115	1,734	1,776	1,609	1,751	1,470	1,349	1,126	1,982	1,546
10	1,811	1,336	1,218	1,734	1,776	1,625	1,794	1,250	1,642	1,156	1,945	1,642
11	1,811	1,336	1,434	1,708	1,776	1,642	1,820	1,193	1,508	1,205	1,972	1,734
12	1,891	1,336	1,554	1,683	1,776	1,658	1,927	1,289	1,675	1,263	2,028	1,900
13	1,873	1,322	1,642	1,658	1,776	1,683	1,927	1,316	1,776	1,316	1,846	1,900
14	1,900	1,205	1,126	1,642	1,700	1,700	1,954	1,289	1,642	1,398	1,759	1,891
15	1,918	1,086	1,708	1,683	1,546	1,691	1,963	1,289	1,691	1,485	1,820	1,873
16	2,000	1,068	1,700	1,829	1,384	1,666	1,785	1,231	1,820	1,405	1,811	1,838
17	1,900	1,052	1,666	1,759	1,218	1,666	1,794	1,256	1,751	1,398	1,776	1,811
18	1,900	1,030	1,634	1,802	1,068	1,675	1,794	1,218	1,609	1,434	1,776	1,725
19	1,909	1,013	1,601	1,909	1,019	1,675	1,794	1,329	1,515	1,470	1,838	1,768
20	1,918	992	1,625	1,873	1,199	1,683	1,794	1,441	1,427	1,485	1,891	1,683
21	1,855	976	1,625	1,829	1,405	1,691	1,794	1,470	1,296	1,515	1,927	1,658
22	1,855	955	1,634	1,725	1,585	1,691	1,794	1,356	1,289	1,546	1,963	1,642
23	1,838	939	1,658	1,658	1,759	1,700	1,794	1,224	1,302	1,578	1,873	1,691
24	1,759	918	1,691	1,658	1,838	1,725	1,802	1,316	1,508	1,601	1,900	1,751
25	1,666	898	1,734	1,658	1,759	1,759	1,820	1,463	1,531	1,336	1,936	1,691
26	1,658	878	1,751	1,650	1,811	1,794	1,666	1,691	1,478	1,336	1,963	1,838
27	1,642	858	1,742	1,650	1,601	1,829	1,700	1,802	1,508	1,441	1,927	1,811
28	1,617	844	1,742	1,650	1,601	1,855	1,742	1,882	1,463	1,691	1,954	1,717
29	1,601	829	1,734	1,658		1,820	1,776	1,945	1,316	2,009	1,900	1,820
30	1,448	829	1,717	1,658		1,785	1,751	1,675	1,024	1,972	1,829	1,846
31	1,356		1,691	1,675		1,855		1,441		1,936	1,891	
Min	1,356	829	825	1,609	1,019	1,578	1,666	1,193	1,024	992	1,427	1,546
Max	2,000	1,343	1,751	1,909	1,838	1,855	1,963	1,945	1,820	2,009	2,028	1,900
EOM	1,356	829	1,691	1,675	1,601	1,855	1,751	1,441	1,024	1,936	1,891	1,846



Appendix A (Table 25 of 38)
Flatiron Reservoir, CO

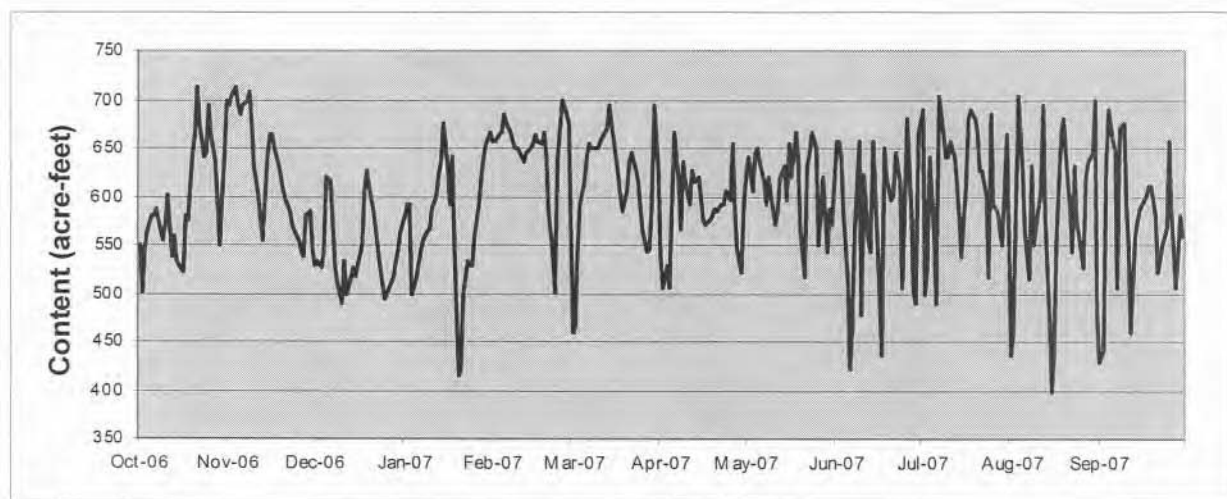
Location.--Lat 40°22.1', long 105°13.3', Larimer County, Hydrologic Unit 10190006, 8 miles southwest of Loveland, Colorado.

Gage.-- Water-level recorder with satellite telemetry. Elevation of gage is 5,600 feet from topographic map.

Remarks.-- Constructed between 1951 and 1953. Impoundment began in January, 1954. Active capacity between elevations 5,462.00 and 5,472.80 is 436 acre-feet. Used as the afterbay storage for Flatiron Powerplant. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Record is complete and fair, except for period November 13 through November 16, when the reservoir level was too low to be measured with current equipment. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	551	694	530	580	658	459	538	623	658	690	436	429
2	502	703	534	593	658	467	506	640	658	498	459	440
3	546	712	526	593	663	546	530	606	640	526	703	636
4	563	694	542	498	667	593	506	645	584	640	663	690
5	580	685	619	514	685	614	593	649	514	563	627	658
6	580	694	614	530	676	640	667	636	421	490	563	645
7	588	699	572	542	667	654	614	614	463	703	514	506
8	563	708	526	555	658	649	567	593	567	667	632	672
9	555	676	510	563	649	649	636	619	658	640	551	676
10	572	632	490	567	649	649	614	584	478	640	588	593
11	601	601	534	588	640	658	593	572	623	658	606	551
12	538	576	498	601	636	667	627	584	555	640	694	459
13	559	555	506	623	645	672	614	619	542	614	580	559
14	534	640	526	636	649	694	619	632	658	580	474	576
15	530	663	518	676	654	676	597	597	610	538	400	588
16	522	663	530	632	663	640	576	654	498	610	436	597
17	580	649	551	593	658	623	572	619	436	681	555	601
18	576	632	606	640	654	601	576	667	649	690	667	610
19	645	619	627	555	667	584	580	640	619	681	681	610
20	663	606	610	414	640	606	588	567	597	667	645	580
21	712	597	584	421	584	636	584	518	601	627	588	522
22	676	584	567	498	538	645	593	632	645	627	542	534
23	640	572	546	534	502	627	593	645	614	601	632	551
24	645	563	526	530	640	614	606	667	506	518	576	567
25	694	555	494	530	699	588	597	649	584	685	542	658
26	663	542	498	559	694	563	654	551	681	593	526	588
27	636	538	506	593	685	542	588	580	584	584	619	506
28	597	580	518	619	676	546	546	619	502	563	636	538
29	551	584	534	640		588	522	542	490	551	645	580
30	640	546	546	654		694	593	588	667	663	699	559
31	699		563	667		627		572		559	482	
Min	502	538	490	414	502	459	506	518	421	490	400	429
Max	712	712	627	676	699	694	667	667	681	703	703	690
EOM	699	546	563	667	676	627	593	572	667	559	482	559



Appendix A (Table 26 of 38)
 Flatiron Powerplant Unit #3 Pump, CO

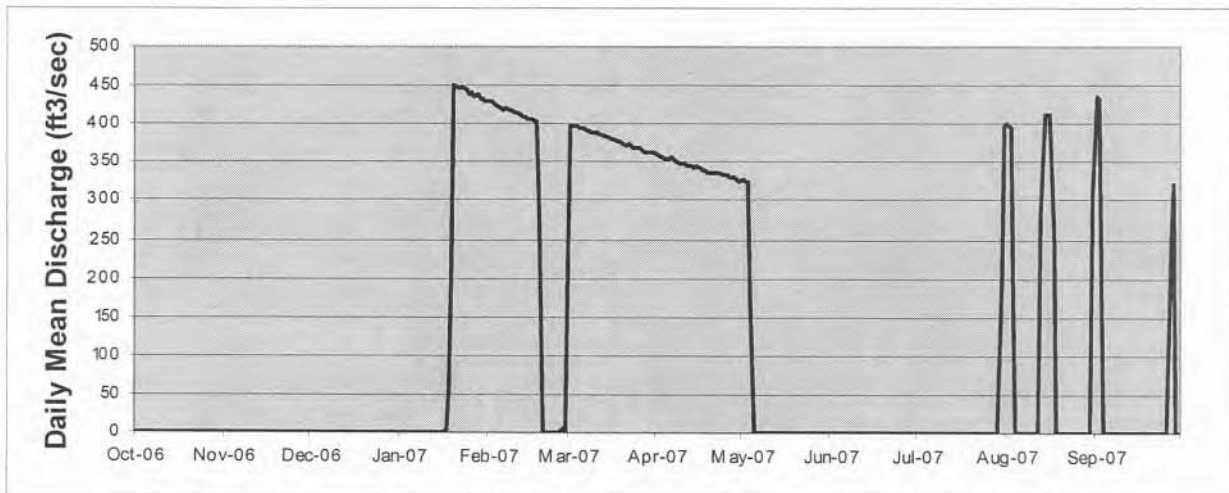
Location. --Lat 40°21'53", long 105°14'09", Larimer County, Hydrologic Unit 10190006, 9 miles west of Loveland, Colorado

Gage.-- There is no flow meter or gage in place. Flow is estimated by converting Megawatt-hours to cubic feet per second from calibrated tables.

Remarks.-- Constructed between 1951 and 1953. The Powerplant consists of three generating units. Unit #3 can be used to pump water from Flatiron Reservoir to Carter Lake. The maximum capacity is approximately 425 cubic feet per second, but the efficiency varies according to the water surface levels at Carter Lake and Flatiron Reservoir. Discharges are obtained by converting the electric energy needed to pump into flow using rating tables. Record is complete and fair but has not been revised. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	429	228	359	326	0	0	400	434
2	0	0	0	0	429	398	358	326	0	0	396	432
3	0	0	0	0	428	399	356	325	0	0	151	184
4	0	0	0	0	425	398	355	175	0	0	0	0
5	0	0	0	0	421	395	354	0	0	0	0	0
6	0	0	0	0	418	394	356	0	0	0	0	0
7	0	0	0	0	420	393	353	0	0	0	0	0
8	0	0	0	0	417	393	351	0	0	0	0	0
9	0	0	0	0	417	390	349	0	0	0	0	0
10	0	0	0	0	414	389	348	0	0	0	0	0
11	0	0	0	0	415	389	349	0	0	0	0	0
12	0	0	0	0	411	385	346	0	0	0	0	0
13	0	0	0	0	410	386	346	0	0	0	280	0
14	0	0	0	0	409	383	343	0	0	0	411	0
15	0	0	0	0	405	382	344	0	0	0	412	0
16	0	0	0	0	406	379	342	0	0	0	412	0
17	0	0	0	2	403	380	339	0	0	0	258	0
18	0	0	0	58	403	377	340	0	0	0	0	0
19	0	0	0	216	301	376	338	0	0	0	0	0
20	0	0	0	450	0	375	337	0	0	0	0	0
21	0	0	0	447	0	373	337	0	0	0	0	0
22	0	0	0	447	0	373	336	0	0	0	0	0
23	0	0	0	447	0	371	335	0	0	0	0	0
24	0	0	0	444	0	370	333	0	0	0	0	0
25	0	0	0	440	0	369	332	0	0	0	0	0
26	0	0	0	440	0	368	333	0	0	0	0	0
27	0	0	0	437	7	365	329	0	0	0	0	251
28	0	0	0	437	0	363	330	0	0	0	0	322
29	0	0	0	434		363	328	0	0	0	0	0
30	0	0	0	434		364	324	0	0	197	0	0
31	0	0	0	431		361		0		398	308	
Min	0	0	0	0	0	228	324	0	0	0	0	0
Max	0	0	0	450	429	399	359	326	0	398	412	434
Mean	0	0	0	179	278	375	343	37	0	19	98	54
ac-ft	0	0	0	11014	15420	23024	20347	2282	0	1179	5995	3214



Appendix A (Table 27 of 38)
Charles Hansen Feeder Canal 930 Section, CO

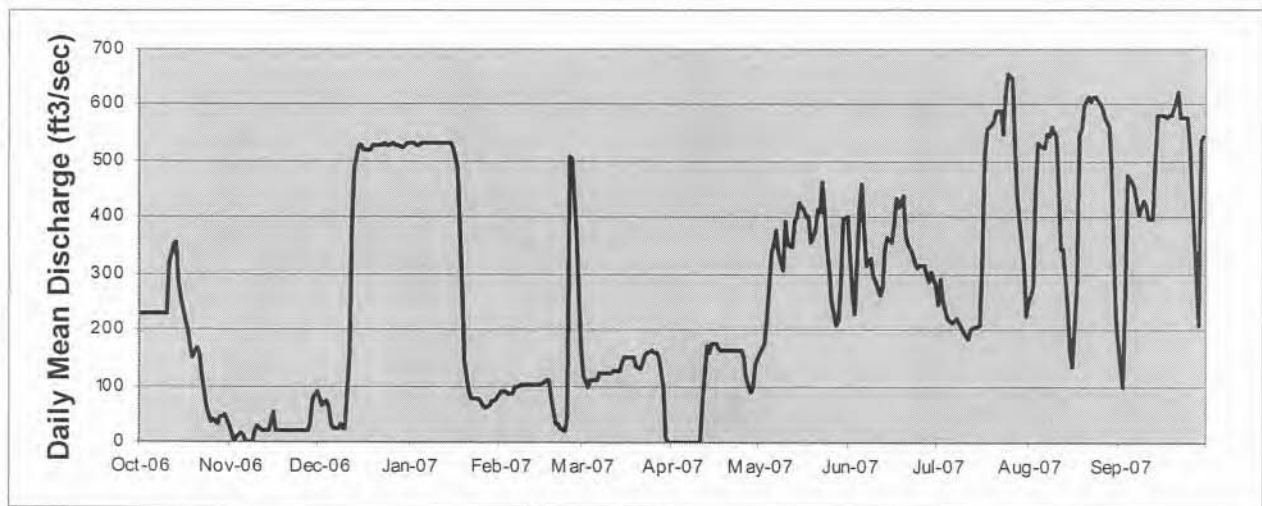
Location. --Lat 40°22'26", long 105°13'52", Larimer County, Hydrologic Unit 10190006, 8 miles southwest of Loveland, Colorado.

Gage.-- Water-stage recorder with satellite telemetry. Elevation of gage is 5470 feet from topographic map.

Remarks.-- Constructed between 1949 and 1953. The canal is 3.8 miles long and has a maximum capacity of 930 cubic feet per second. The canal is used to move Colorado-Big Thompson Project water and diverted native water to the Big Thompson River and/or Horsetooth Reservoir. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Flow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	231	16	80	532	90	168	0	159	326	247	251	131
2	231	2	67	531	88	118	0	169	265	291	276	97
3	230	9	74	530	89	98	0	175	229	255	443	267
4	228	17	59	526	86	110	0	221	413	220	534	474
5	228	12	32	534	85	112	0	339	457	216	530	461
6	228	1	26	533	98	112	0	352	380	215	524	451
7	228	1	25	533	98	121	0	375	316	220	548	427
8	228	1	31	532	103	124	0	337	328	211	543	405
9	228	20	23	534	103	124	0	309	293	206	559	429
10	228	29	23	534	103	125	0	395	287	198	543	422
11	321	20	157	532	102	125	0	350	261	182	457	395
12	352	19	379	534	102	126	72	349	275	200	342	397
13	354	19	487	532	103	127	172	392	345	205	345	505
14	285	22	528	533	103	128	161	400	363	206	241	581
15	256	55	528	530	104	143	177	426	356	211	158	581
16	217	19	518	524	105	151	175	412	388	325	135	581
17	202	22	519	486	109	151	168	401	434	507	280	579
18	173	21	521	385	110	151	165	401	418	556	548	581
19	152	21	528	278	78	151	164	357	436	567	555	582
20	166	21	528	144	32	135	164	377	370	574	598	604
21	161	20	529	89	32	129	164	414	353	590	612	623
22	123	20	529	78	26	143	165	407	337	590	608	577
23	64	20	531	78	22	157	165	463	320	550	613	578
24	50	19	529	79	47	158	164	349	309	618	614	579
25	35	19	529	74	508	163	162	306	314	657	602	534
26	39	19	532	65	504	159	153	248	316	646	593	450
27	35	21	530	62	372	160	113	208	300	533	578	285
28	43	37	528	67	262	153	91	216	286	443	561	210
29	46	79	526	74		98	94	282	301	396	480	536
30	47	90	530	76		7	141	397	277	318	341	546
31	28		532	80		0		401		224	219	
Min	28	1	23	62	22	0	0	159	229	182	135	97
Max	354	90	532	534	508	168	177	463	457	657	614	623
Mean	175	23	353	343	131	127	94	335	335	367	459	462
ac-ft	10762	367	21695	21025	7253	7783	5608	20573	19902	22528	28171	27460



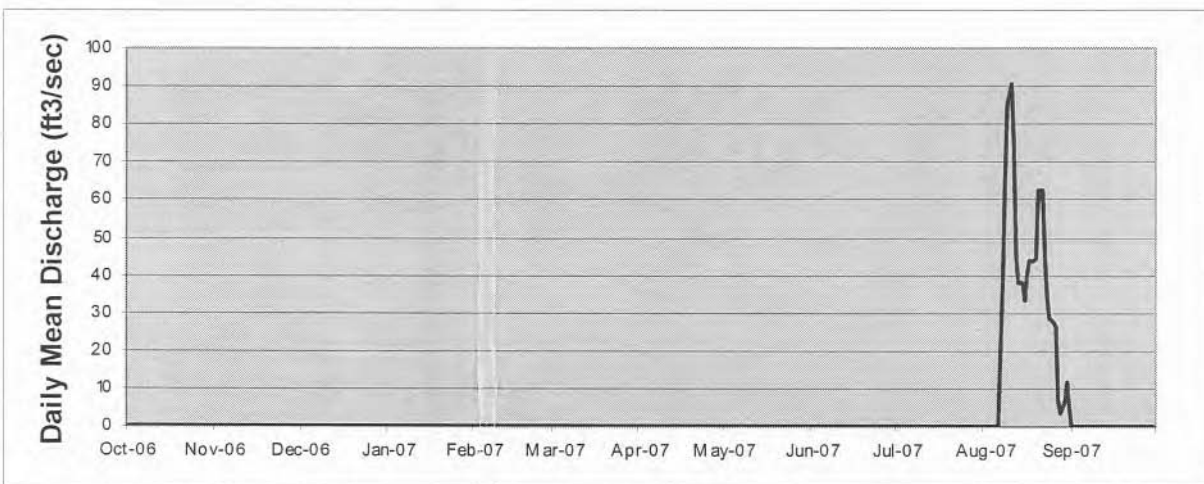
Appendix A (Table 28 of 38)
Dille Tunnel near Drake, CO

Location. --Lat 40°25'02", long 105°14'35", Larimer County, Hydrologic Unit 10190006, 11 miles west of Loveland, Colorado, on the Big Thompson River. Gage.-- Water-stage recorder with satellite telemetry at Parshall Flume. Elevation of gage is 5520 feet from topographic map.

Remarks.-- Constructed in 1950. Maximum capacity is 600 cubic feet per second. Dille Tunnel diverts water from the Big Thompson River for power generation and water supply. The hydropower diversion operation, also known as the skim operation, diverts water from the Big Thompson River through Dille Tunnel for power generation at the Big Thompson Power Plant, where the diverted water is returned to the river. The Skim daily value is determined based on the data from the gage. Recorder was operated from 01-Oct-2006 to 08-Nov-2006, and from 29-Mar-2007 to 30-Sep-2007. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Hydropower Diversion Flow (Skim), Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	37	0
8	0	0	0	0	0	0	0	0	0	0	65	0
9	0	0	0	0	0	0	0	0	0	0	86	0
10	0	0	0	0	0	0	0	0	0	0	91	0
11	0	0	0	0	0	0	0	0	0	0	74	0
12	0	0	0	0	0	0	0	0	0	0	46	0
13	0	0	0	0	0	0	0	0	0	0	38	0
14	0	0	0	0	0	0	0	0	0	0	38	0
15	0	0	0	0	0	0	0	0	0	0	34	0
16	0	0	0	0	0	0	0	0	0	0	41	0
17	0	0	0	0	0	0	0	0	0	0	44	0
18	0	0	0	0	0	0	0	0	0	0	44	0
19	0	0	0	0	0	0	0	0	0	0	44	0
20	0	0	0	0	0	0	0	0	0	0	63	0
21	0	0	0	0	0	0	0	0	0	0	62	0
22	0	0	0	0	0	0	0	0	0	0	45	0
23	0	0	0	0	0	0	0	0	0	0	35	0
24	0	0	0	0	0	0	0	0	0	0	29	0
25	0	0	0	0	0	0	0	0	0	0	27	0
26	0	0	0	0	0	0	0	0	0	0	26	0
27	0	0	0	0	0	0	0	0	0	0	7	0
28	0	0	0	0	0	0	0	0	0	0	4	0
29	0	0	0	0	0	0	0	0	0	0	6	0
30	0	0	0	0	0	0	0	0	0	0	12	0
31	0	0	0	0	0	0	0	0	0	0	6	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	0	0	0	0	0	0	0	0	0	0	91	0
Mean	0	0	0	0	0	0	0	0	0	0	32	0
ac-ft	0	0	0	0	0	0	0	0	0	0	1979	0



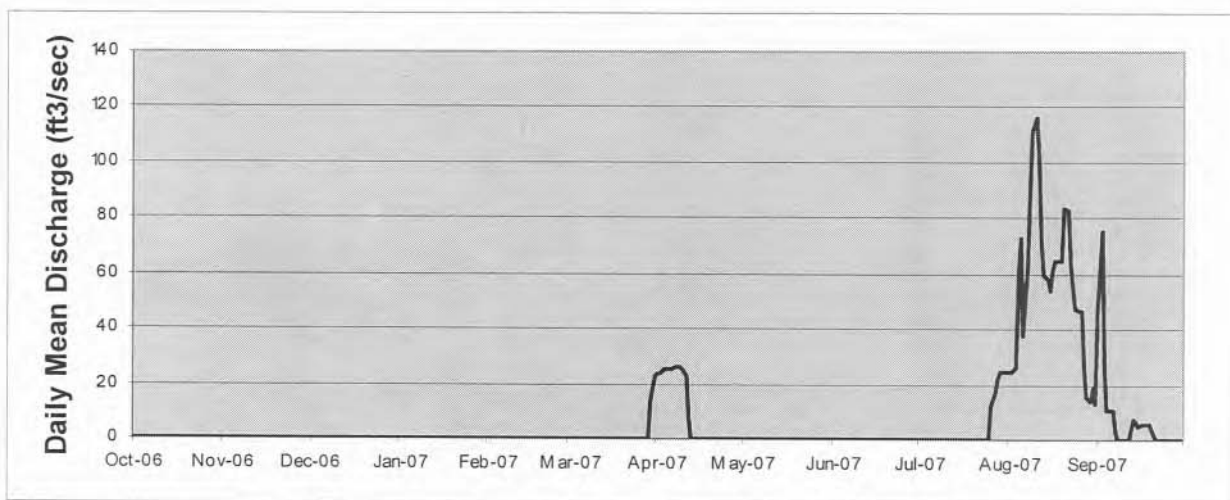
Appendix A (30 of 38)
Dille Tunnel near Drake, CO

Location. --Lat 40°25'02", long 105°14'35", Larimer County, Hydrologic Unit 10190006, 11 miles west of Loveland, Colorado, on the Big Thompson River. Gage.-- Water-stage recorder with satellite telemetry at Parshall Flume. Elevation of gage is 5520 feet from topographic map.

Remarks.— Constructed in 1950. Maximum capacity is 600 cubic feet per second. Dille Tunnel diverts water from the Big Thompson River for power generation and water supply. Recorder was operated from 01-Oct-2006 to 08-Nov-2006, and from 29-Mar-2007 to 30-Sep-2007. Record is complete and reliable, although data was not reviewed. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	0	0	0	0	0	0	24	0	0	0	24	49
2	0	0	0	0	0	0	24	0	0	0	25	75
3	0	0	0	0	0	0	25	0	0	0	27	28
4	0	0	0	0	0	0	25	0	0	0	61	10
5	0	0	0	0	0	0	25	0	0	0	73	11
6	0	0	0	0	0	0	25	0	0	0	38	10
7	0	0	0	0	0	0	26	0	0	0	62	3
8	0	0	0	0	0	0	26	0	0	0	90	0
9	0	0	0	0	0	0	26	0	0	0	111	0
10	0	0	0	0	0	0	25	0	0	0	116	0
11	0	0	0	0	0	0	23	0	0	0	100	0
12	0	0	0	0	0	0	7	0	0	0	71	0
13	0	0	0	0	0	0	0	0	0	0	60	8
14	0	0	0	0	0	0	0	0	0	0	58	7
15	0	0	0	0	0	0	0	0	0	0	54	5
16	0	0	0	0	0	0	0	0	0	0	61	6
17	0	0	0	0	0	0	0	0	0	0	64	6
18	0	0	0	0	0	0	0	0	0	0	64	6
19	0	0	0	0	0	0	0	0	0	0	65	6
20	0	0	0	0	0	0	0	0	0	0	83	2
21	0	0	0	0	0	0	0	0	0	0	83	0
22	0	0	0	0	0	0	0	0	0	0	63	0
23	0	0	0	0	0	0	0	0	0	0	55	0
24	0	0	0	0	0	0	0	0	0	0	47	0
25	0	0	0	0	0	0	0	0	0	0	47	0
26	0	0	0	0	0	0	0	0	0	12	47	0
27	0	0	0	0	0	0	0	0	0	17	27	0
28	0	0	0	0	0	0	0	0	0	22	16	0
29	0	0	0	0	0	0	0	0	0	24	14	0
30	0	0	0	0	0	14	0	0	0	24	19	0
31	0	0	0	0	0	23	0	0	0	24	13	0
Min	0	0	0	0	0	0	0	0	0	0	13	0
Max	0	0	0	0	0	23	26	0	0	24	116	75
Mean	0	0	0	0	0	1	9	0	0	4	56	8
ac-ft	0	0	0	0	0	73	556	0	0	247	3440	458



Appendix A (Table 31 of 38)
Big Thompson Power Plant, CO

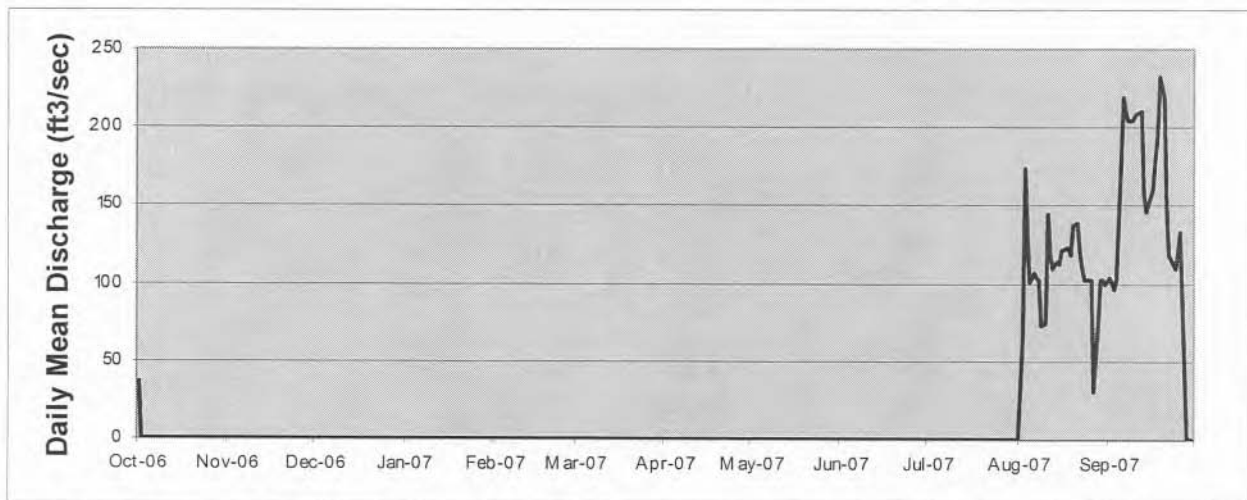
Location. --Lat 40°25'16", long 105°13'26", Larimer County, Hydrologic Unit 10190006, 9 miles west of Loveland, Colorado, on the Big Thompson River.

Gage.-- Flow meter with satellite telemetry. Elevation of gage is 5280 feet from topographic map.

Remarks.-- Initial operation in 1959. Maximum capacity is 400 cubic feet per second. Power plant returns hydropower diversions to the Big Thompson River downstream of the canyon mouth. Power plant is also used to deliver Colorado-Big Thompson project water. Recorder was operated from 01-Oct-2006 to 02-Nov-2006 and from 30-Jul-2007 to 30-Sep-2007. The plant is winterized from November through April each year. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	37	0	0	0	0	0	0	0	0	0	0	104
2	0	0	0	0	0	0	0	0	0	0	64	101
3	0	0	0	0	0	0	0	0	0	0	174	96
4	0	0	0	0	0	0	0	0	0	0	133	102
5	0	0	0	0	0	0	0	0	0	0	101	178
6	0	0	0	0	0	0	0	0	0	0	106	220
7	0	0	0	0	0	0	0	0	0	0	104	211
8	0	0	0	0	0	0	0	0	0	0	102	205
9	0	0	0	0	0	0	0	0	0	0	73	204
10	0	0	0	0	0	0	0	0	0	0	74	207
11	0	0	0	0	0	0	0	0	0	0	145	209
12	0	0	0	0	0	0	0	0	0	0	120	211
13	0	0	0	0	0	0	0	0	0	0	110	158
14	0	0	0	0	0	0	0	0	0	0	114	146
15	0	0	0	0	0	0	0	0	0	0	112	151
16	0	0	0	0	0	0	0	0	0	0	22	161
17	0	0	0	0	0	0	0	0	0	0	123	180
18	0	0	0	0	0	0	0	0	0	0	23	195
19	0	0	0	0	0	0	0	0	0	0	119	232
20	0	0	0	0	0	0	0	0	0	0	37	219
21	0	0	0	0	0	0	0	0	0	0	139	151
22	0	0	0	0	0	0	0	0	0	0	20	119
23	0	0	0	0	0	0	0	0	0	0	110	115
24	0	0	0	0	0	0	0	0	0	0	103	109
25	0	0	0	0	0	0	0	0	0	0	103	120
26	0	0	0	0	0	0	0	0	0	0	103	133
27	0	0	0	0	0	0	0	0	0	0	31	42
28	0	0	0	0	0	0	0	0	0	0	73	0
29	0	0	0	0	0	0	0	0	0	0	102	0
30	0	0	0	0	0	0	0	0	0	0	103	0
31	0	0	0	0	0	0	0	0	0	0	99	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Max	37	0	0	0	0	0	0	0	0	0	174	232
Mean	1	0	0	0	0	0	0	0	0	0	105	143
ac-ft	73	0	0	0	0	0	0	0	0	0	6419	8472



Appendix A (Table 32 of 38)
Charles Hansen Feeder Canal Wasteway, CO

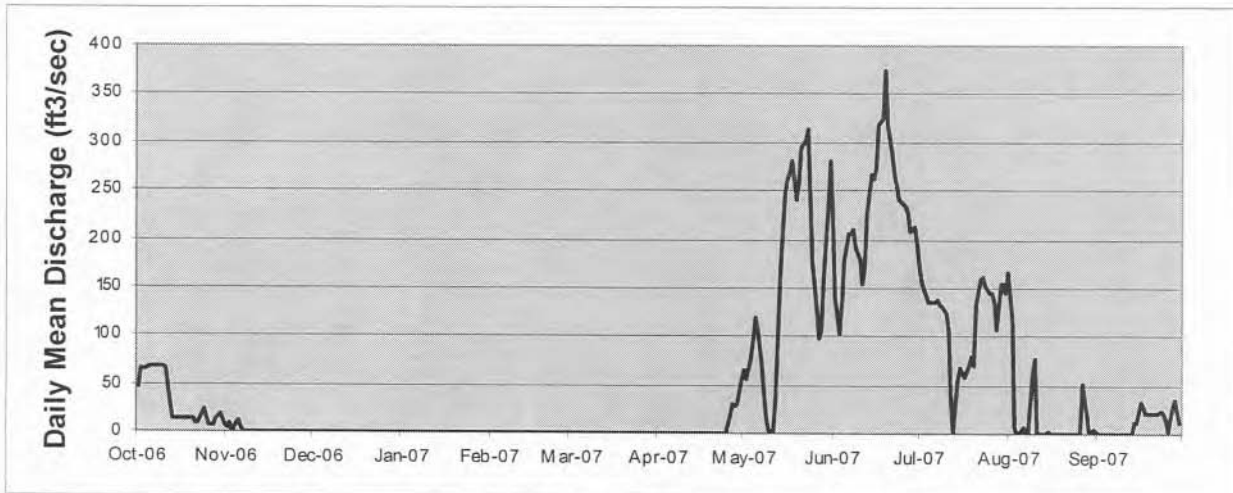
Location. --Lat 40°25'13", long 105°13'28", Larimer County, Hydrologic Unit 10190006, 9 miles west of Loveland, Colorado, on the Big Thompson River.

Gage. -- Water-stage recorder with satellite telemetry at 15 foot Parshall Flume. Elevation of gage is 5465 feet from Designer's Operating Criteria.

Remarks. -- Constructed between 1949 and 1953. Maximum capacity is 400 cubic feet per second. The structure is used to return diverted water and deliver Colorado-Big Thompson Project water to the Big Thompson River. Recorder was operated from 01-Oct-2006 to 15-Nov-2006, and from 12-Apr-2007 to 30-Sep-2007. Record is complete and reliable. These data are provisional operations data and are subject to further revision and change.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	46	5	0	0	0	0	0	65	225	173	166	0
2	66	9	0	0	0	0	0	57	141	156	118	0
3	66	1	0	0	0	0	0	78	102	142	7	0
4	65	10	0	0	0	0	0	97	130	136	0	0
5	67	12	0	0	0	0	0	119	178	136	0	0
6	68	4	0	0	0	0	0	107	206	135	7	0
7	68	0	0	0	0	0	0	69	206	137	0	0
8	68	0	0	0	0	0	0	37	211	134	0	0
9	68	0	0	0	0	0	0	14	191	132	64	0
10	67	0	0	0	0	0	0	3	181	125	77	0
11	65	0	0	0	0	0	0	3	154	106	0	0
12	29	0	0	0	0	0	0	37	171	35	0	0
13	14	0	0	0	0	0	0	105	226	0	0	0
14	13	0	0	0	0	0	0	169	266	56	0	12
15	13	0	0	0	0	0	0	247	262	67	2	11
16	15	0	0	0	0	0	0	262	273	64	0	33
17	15	0	0	0	0	0	0	270	319	58	0	27
18	15	0	0	0	0	0	0	281	325	70	0	21
19	15	0	0	0	0	0	0	241	374	79	0	21
20	14	0	0	0	0	0	0	257	319	71	0	20
21	10	0	0	0	0	0	0	295	287	134	0	20
22	9	0	0	0	0	0	0	301	267	158	0	20
23	15	0	0	0	0	0	0	313	254	161	0	24
24	23	0	0	0	0	0	0	245	240	151	0	21
25	14	0	0	0	0	0	0	177	236	146	0	14
26	8	0	0	0	0	0	19	128	233	146	0	3
27	8	0	0	0	0	0	31	98	226	135	52	28
28	15	0	0	0	0	0	27	105	208	108	22	35
29	17	0	0	0	0	0	31	159	212	154	0	23
30	18	0	0	0	0	0	56	235	196	155	0	12
31	6	0	0	0	0	0	0	280	0	145	5	0
Min	6	0	0	0	0	0	0	3	102	0	0	0
Max	68	12	0	0	0	0	56	313	374	173	166	35
Mean	32	1	0	0	0	0	5	157	227	116	17	12
ac-ft	1980	81	0	0	0	0	325	9610	13502	7138	1029	683



Appendix A (Table 33 of 38)
Charles Hansen Feeder Canal 550 Section, CO

Location. --Lat 40°25'25", long 105°13'34", Larimer County, Hydrologic Unit 10190006, 9 miles west of Loveland, Colorado.

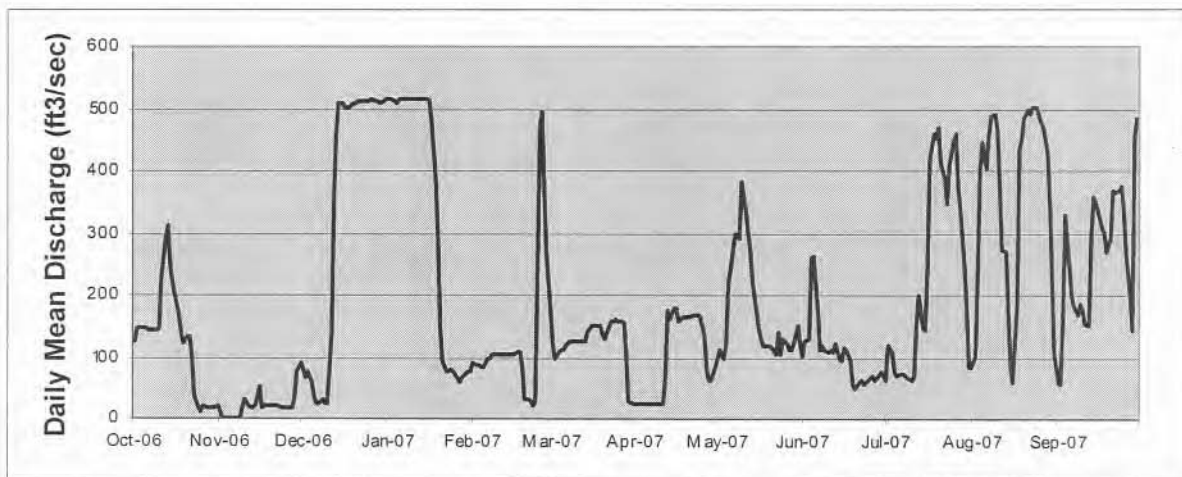
Gage.-- Water-stage recorder with satellite telemetry. Elevation of gage is 5460 feet from topographic map.

Remarks.-- Constructed between 1949 and 1953. The canal is 9.4 miles long and has a maximum capacity of 550 cubic feet per second. The canal is used to convey Colorado-Big Thompson Project water and diverted native water to Horsetooth Reservoir. Recorder was operated from 01-Oct-2006 to 30-Sep-2007.

Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	128	9	81	514	90	176	24	97	103	64	85	59
2	149	1	66	514	89	122	24	114	127	121	101	56
3	147	0	77	513	89	99	25	98	130	108	243	158
4	146	1	60	509	85	110	25	122	260	76	403	331
5	146	1	34	517	83	113	25	220	262	71	444	250
6	144	1	26	516	98	114	25	242	174	73	404	199
7	144	1	25	517	97	121	26	299	114	75	456	183
8	144	1	31	514	104	126	26	297	118	71	488	167
9	145	16	24	516	104	126	26	293	113	66	491	187
10	146	32	23	516	104	126	25	381	108	64	462	180
11	227	20	136	515	104	126	24	337	113	70	377	154
12	293	18	360	516	104	126	65	304	109	159	272	151
13	311	18	460	516	104	127	176	275	123	202	270	291
14	251	22	509	516	104	128	163	225	98	148	172	359
15	221	52	510	516	104	142	180	173	96	142	88	352
16	185	19	503	512	105	151	178	146	116	246	60	323
17	168	21	502	478	110	151	156	129	113	419	181	309
18	142	21	503	384	110	151	166	119	93	458	437	301
19	122	21	510	285	84	152	166	118	56	453	448	269
20	133	20	510	150	31	137	166	119	47	469	484	291
21	134	20	511	93	31	129	167	116	61	413	500	370
22	103	19	511	78	27	141	167	105	65	386	493	366
23	39	19	513	78	22	158	167	140	57	348	503	367
24	19	19	511	79	28	159	167	106	60	410	501	376
25	12	18	512	76	474	160	165	129	68	448	488	338
26	22	18	515	67	495	157	135	123	70	460	479	270
27	17	18	512	61	376	156	85	111	62	377	469	195
28	17	34	511	66	269	154	65	111	65	336	429	144
29	16	76	510	74		101	63	122	77	247	349	456
30	17	90	512	76		26	85	152	71	176	233	484
31	20		515	78		23		121		86	109	
Min	12	0	23	61	22	23	24	97	47	64	60	56
Max	311	90	515	517	495	176	180	381	262	469	503	484
Mean	126	21	341	334	129	129	99	176	104	234	352	264
ac-ft	7733	1238	20950	20512	7175	7895	5852	10775	6194	14339	21617	15706



Appendix A (34 of 38)
 Horsetooth Reservoir near Fort Collins, CO

Location. -Lat 40°36'00", long 105°10'05" , Larimer County, Hydrologic Unit 10190007, at Horsetooth Dam outlet works, 4.8 miles west of Fort Collins, Colorado.

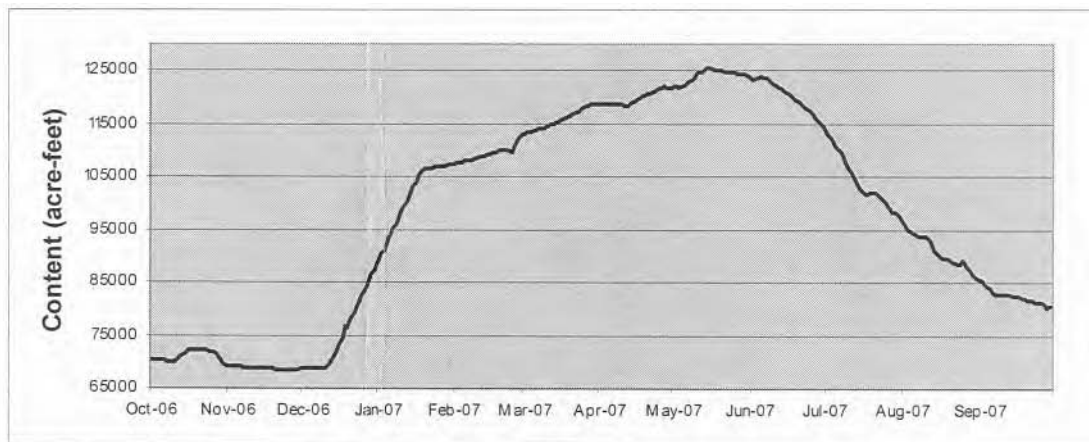
Gage.-- Water level recorder with satellite telemetry. Elevation of gage is 5300 from topographic map.

Remarks.-Reservoir is formed by four earth-fill dams. Construction completed in 1949. Impoundment began in 1951. Horsetooth Reservoir is one of two terminal reservoirs for Colorado-Big Thompson Project diversions. Transmountain diversions are stored at Horsetooth Reservoir before final delivery.

Maximum capacity is 156,735 acre-feet at elevation 5430.00 ft, with 142,038 acre-feet of active storage. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	70,112	69,196	68,660	89,289	107,497	113,080	118,720	121,885	123,511	113,715	96,662	85,453
2	70,207	69,156	68,754	90,311	107,547	113,200	118,649	121,957	123,386	113,011	95,699	85,274
3	70,247	69,102	68,861	91,262	107,647	113,337	118,632	121,868	123,404	112,344	95,039	84,740
4	70,274	69,035	68,901	92,234	107,798	113,491	118,597	121,903	123,565	111,525	94,740	84,310
5	70,247	68,982	68,901	93,242	107,932	113,612	118,632	122,188	123,852	110,880	94,349	83,764
6	70,126	68,982	68,901	94,224	107,999	113,783	118,544	122,492	123,744	110,236	94,005	83,058
7	70,004	68,888	68,888	95,148	108,166	113,973	118,544	122,956	123,529	109,612	93,896	82,794
8	69,991	68,767	68,861	96,141	108,267	114,162	118,544	123,314	123,135	108,720	93,818	82,838
9	70,072	68,794	68,848	97,138	108,384	114,300	118,509	123,708	122,742	107,748	93,756	82,853
10	70,058	68,794	68,821	98,141	108,501	114,472	118,562	124,229	122,367	106,813	93,678	82,926
11	70,261	68,767	69,009	99,084	108,736	114,679	118,439	124,571	122,046	105,767	93,522	82,912
12	70,681	68,714	69,681	100,065	108,871	114,852	118,456	124,823	121,779	104,874	92,884	82,897
13	71,170	68,593	70,559	101,017	108,972	115,042	118,720	125,148	121,583	104,199	92,110	82,604
14	71,578	68,620	71,428	102,040	109,140	115,180	118,948	125,310	121,245	103,444	91,139	82,531
15	71,865	68,687	72,357	103,002	109,292	115,440	119,177	125,346	120,926	102,626	90,311	82,472
16	72,110	68,647	73,361	104,002	109,511	115,752	119,459	125,328	120,518	101,991	89,807	82,385
17	72,247	68,633	74,316	104,891	109,612	115,943	119,723	125,256	120,165	101,617	89,456	82,239
18	72,329	68,647	76,697	105,651	109,780	116,151	120,023	125,238	119,705	101,634	89,563	82,063
19	72,302	68,607	76,218	106,231	109,882	116,360	120,182	125,076	119,282	101,877	89,456	81,845
20	72,357	68,513	77,460	106,480	109,865	116,569	120,465	124,967	118,930	102,105	89,197	81,583
21	72,357	68,540	78,413	106,547	109,831	116,708	120,625	124,877	118,526	102,203	88,878	81,466
22	72,274	68,540	79,401	106,680	109,831	116,969	120,855	124,841	118,333	101,780	88,651	81,452
23	72,192	68,460	80,365	106,713	109,865	117,266	121,050	124,805	117,948	101,098	88,393	81,350
24	71,960	68,433	81,365	106,846	109,747	117,633	121,334	124,733	117,563	100,549	88,575	81,408
25	71,796	68,380	82,385	106,946	110,608	117,913	121,619	124,625	117,231	99,968	89,091	81,350
26	71,701	68,380	83,367	106,996	111,559	118,263	121,796	124,517	116,708	99,534	88,863	81,161
27	71,455	68,339	84,310	107,013	112,293	118,456	121,903	124,427	116,169	99,036	88,166	80,770
28	70,830	68,366	85,393	107,080	112,823	118,684	121,832	124,247	115,596	98,364	87,457	80,250
29	70,193	68,460	86,377	107,146		118,772	121,850	124,265	115,007	98,141	86,616	80,409
30	69,546	68,674	87,367	107,230		118,807	121,850	123,996	114,403	97,870	86,064	80,625
31	69,290		88,333	107,363		118,755		123,816		97,472	85,661	
Min	69,290	68,339	68,660	89,289	107,497	113,080	118,439	121,868	114,403	97,472	85,661	80,250
Max	72,357	69,196	88,333	107,363	112,823	118,807	121,903	125,346	123,852	113,715	96,662	85,453
EOM	69,290	68,674	88,333	107,363	112,823	118,755	121,850	123,816	114,403	97,472	85,661	80,625



Appendix A (35 of 38)
Charles Hansen Supply Canal below Horsetooth Reservoir, CO

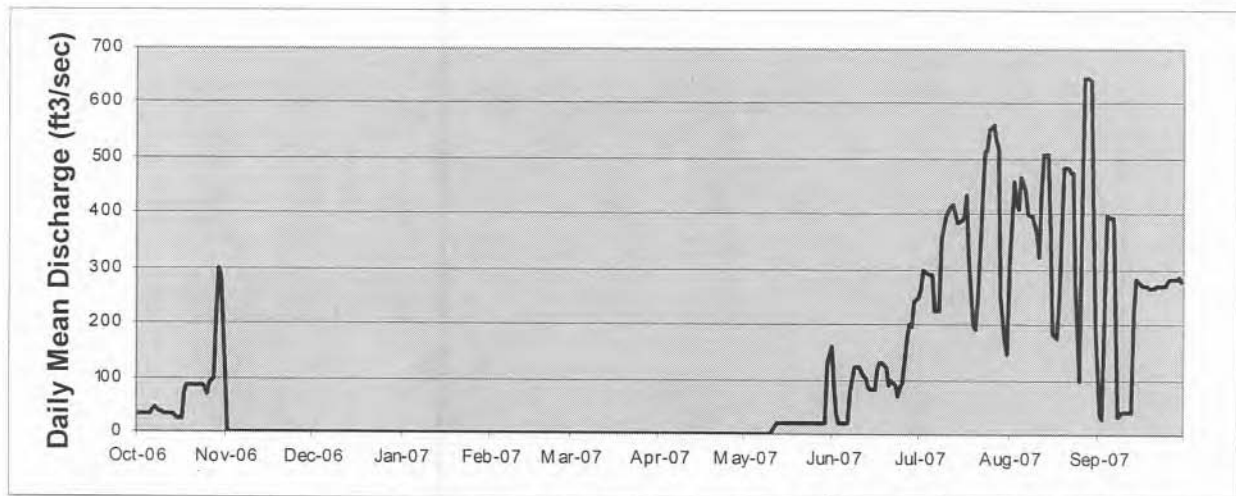
Location. --Lat 40°36'01", long 105°10'18", Larimer County, Hydrologic Unit 10190007, 4 miles west of Fort Collins, Colorado.

Gage.-- Water-stage recorder with satellite telemetry at concrete control. Elevation of gage is 5280 feet from topographic map.

Remarks.-- Constructed between 1950 and 1952. The canal is 5.1 miles long and has a maximum capacity of 1500 cubic feet per second. The canal is used to deliver Colorado-Big Thompson Project water stored at Horsetooth Reservoir. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Discharge, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	33	0	0	0	0	0	0	0	87	264	313	36
2	33	0	0	0	0	0	0	0	36	299	457	27
3	33	0	0	0	0	0	0	0	19	295	423	220
4	33	0	0	0	0	0	0	0	19	292	410	397
5	33	0	0	0	0	0	0	0	19	292	468	393
6	40	0	0	0	0	0	0	0	19	223	442	395
7	43	0	0	0	0	0	0	0	80	227	403	194
8	36	0	0	0	0	0	0	0	124	352	399	33
9	35	0	0	0	0	0	0	0	124	379	399	40
10	34	0	0	0	0	0	0	0	124	399	363	43
11	32	0	0	0	0	0	0	9	106	414	325	43
12	32	0	0	0	0	0	0	19	101	417	443	41
13	32	0	0	0	0	0	0	19	87	399	509	227
14	28	0	0	0	0	0	0	19	81	387	508	282
15	26	0	0	0	0	0	0	19	81	387	370	277
16	25	0	0	0	0	0	0	19	118	399	185	272
17	72	0	0	0	0	0	0	19	131	434	175	270
18	88	0	0	0	0	0	0	19	131	320	250	268
19	88	0	0	0	0	0	0	19	122	201	375	267
20	87	0	0	0	0	0	0	19	90	192	483	267
21	85	0	0	0	0	0	0	19	97	240	484	269
22	84	0	0	0	0	0	0	19	90	424	474	270
23	84	0	0	0	0	0	0	19	71	513	474	270
24	84	0	0	0	0	0	0	19	87	518	268	269
25	71	0	0	0	0	0	0	19	96	553	97	279
26	91	0	0	0	0	0	0	19	175	561	405	284
27	99	0	0	0	0	0	0	19	200	533	645	284
28	223	0	0	0	0	0	0	19	198	521	646	284
29	297	0	0	0	0	0	0	19	243	251	644	285
30	286	0	0	0	0	0	0	132	251	169	400	279
31	108	0	0	0	0	0	0	158	146	197		
Min	25	0	0	0	0	0	0	0	19	146	97	27
Max	297	0	0	0	0	0	0	158	251	561	646	397
Mean	77	0	0	0	0	0	0	20	107	355	401	225
ac-ft	4703	0	0	0	0	0	0	1251	6333	21770	24615	13387



Appendix A (36 of 38)
Carter Lake near Berthoud, Colorado, CO

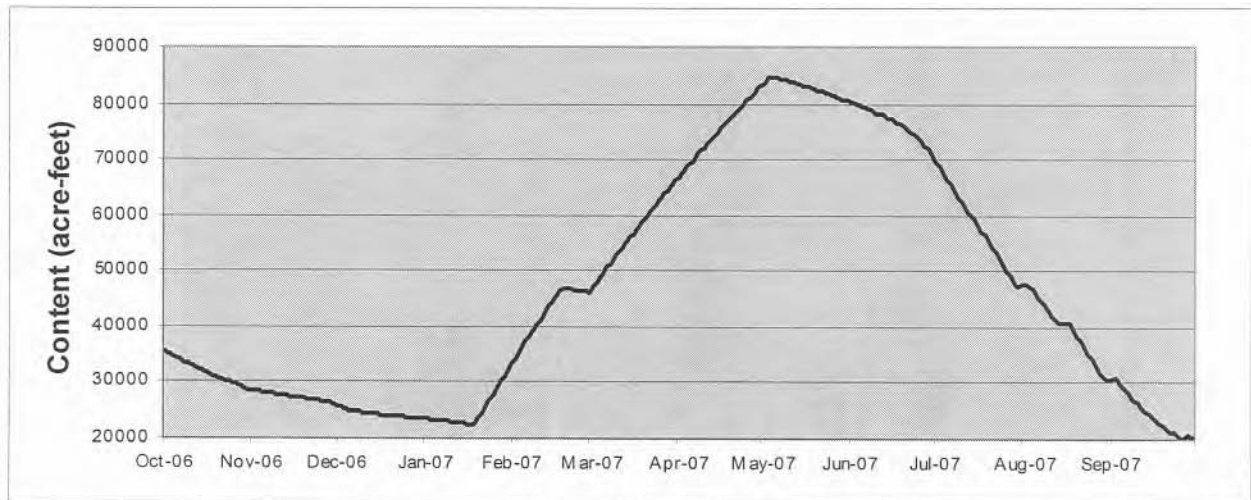
Location. --Lat 40°19' 28" , long 105°12' 41" , Larimer County, Hydrologic Unit 10190006, m Dam #1, 7 miles northwest of Berthoud, Colorado, and 10 miles west of Loveland, Colorado.

Gage.--Water level recorder with satellite telemetry. Elevation of gage is 5770 from topographic map.

Remarks-Reservoir is formed by three earth-fill dams. Construction completed in 1952. Carter Lake is one of two terminal reservoirs for Colorado-Big Thompson Project water diversions. Transmountain water diversions are stored at Carter Lake before final delivery. Maximum capacity is 112,200 acre-feet at elevation 5759.00 ft, with 108,900 acre-feet of active capacity. Recorder was operated from 01-Oct-2006 to 30-Sep-2007. Record is complete and reliable. This record contains operational data which could be subject to future revisions and changes.

Storage, Acre-Feet, 2400-hour Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	35,391	28,457	25,816	23,506	33,437	46,628	66,924	83,610	80,246	69,733	47,479	30,621
2	35,134	28,388	25,615	23,461	34,225	47,394	67,559	84,066	80,144	68,915	47,733	30,872
3	34,908	28,346	25,442	23,409	35,059	48,081	68,091	84,606	79,940	67,975	47,251	30,471
4	34,592	28,249	25,209	23,377	35,732	48,719	68,721	84,762	79,787	67,261	46,678	29,867
5	34,375	28,180	24,974	23,307	36,549	49,455	69,362	84,658	79,583	66,540	45,957	29,268
6	34,069	28,076	24,980	23,275	37,366	50,143	69,850	84,554	79,328	65,708	45,374	28,659
7	33,741	27,972	24,848	23,211	38,143	50,791	70,500	84,502	79,104	64,909	44,735	28,000
8	33,467	28,000	24,874	23,173	38,935	51,538	71,171	84,346	78,901	64,094	44,082	27,415
9	33,363	27,834	24,683	23,083	39,720	52,140	71,663	84,139	78,637	63,340	43,376	26,964
10	33,105	27,800	24,650	23,051	40,486	52,859	72,196	83,983	78,383	62,486	42,706	26,354
11	32,921	27,765	24,585	22,962	41,208	53,379	72,810	83,817	78,302	61,581	41,934	25,809
12	32,664	27,655	24,552	22,924	41,942	54,104	73,405	83,714	78,028	60,838	41,168	25,302
13	32,407	27,621	24,453	22,861	42,771	54,815	73,912	83,455	77,796	60,136	40,886	24,848
14	32,210	27,518	24,453	22,893	43,458	55,404	74,410	83,351	77,442	59,363	40,926	24,421
15	31,963	27,497	24,349	22,734	44,288	56,166	75,059	83,196	77,270	58,631	40,838	24,023
16	31,672	27,381	24,251	22,576	45,033	56,715	75,670	83,020	76,977	57,847	40,878	23,602
17	31,499	27,278	24,185	22,457	45,749	57,439	76,253	82,886	76,705	57,122	40,686	23,243
18	31,116	27,244	24,120	22,576	46,502	58,020	76,877	82,680	76,474	56,481	39,967	22,829
19	30,908	27,141	24,120	22,893	47,015	58,704	77,341	82,556	76,122	55,717	39,171	22,406
20	30,693	27,080	24,120	23,705	46,888	59,317	77,745	82,370	75,720	54,948	38,456	22,069
21	30,514	27,005	24,088	24,493	46,804	59,970	78,231	82,216	75,259	54,237	37,676	21,758
22	30,300	26,903	23,990	25,388	46,762	60,570	78,820	82,102	74,859	53,388	36,888	21,345
23	30,194	26,801	23,958	26,118	46,628	61,228	79,277	81,876	74,490	52,596	36,007	21,039
24	29,973	26,767	23,899	26,937	46,586	61,926	79,940	81,670	74,111	51,695	35,096	20,736
25	29,796	26,685	23,861	27,765	46,460	62,627	80,512	81,486	73,792	50,783	34,181	20,440
26	29,690	26,631	23,789	28,589	46,376	63,246	80,973	81,362	73,206	49,928	33,437	20,135
27	29,514	26,591	23,699	29,415	46,376	63,858	81,588	81,157	72,641	49,104	32,576	20,380
28	29,268	26,435	23,699	30,087	46,250	64,435	82,051	80,952	72,008	48,336	31,846	20,772
29	28,987	26,259	23,667	30,908		65,004	82,628	80,819	71,249	47,564	31,124	20,500
30	28,736	26,051	23,634	31,781		65,670	83,072	80,665	70,575	47,310	30,436	20,224
31	28,520		23,538	32,590		66,301		80,512		47,479	30,436	
Min	28,520	26,051	23,538	22,457	33,437	46,628	66,924	80,512	70,575	47,310	30,436	20,135
Max	35,391	28,457	25,816	32,590	47,015	66,301	83,072	84,762	80,246	69,733	47,733	30,872
EOM	28,520	26,051	23,538	32,590	46,250	66,301	83,072	80,512	70,575	47,479	30,436	20,224



Appendix A (37 of 38)
Saint Vrain Canal below Carter Reservoir, CO

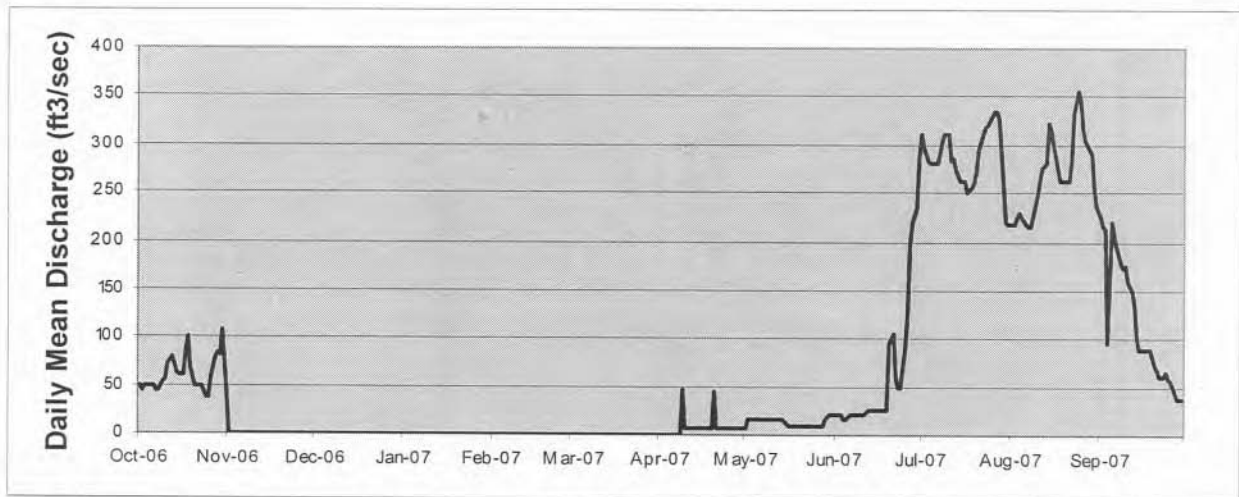
Location. --Lat 40°19'27", long 105°12'35", Larimer County, Hydrologic Unit 10190006, downstream from Carter Reservoir Dam #1, 7 miles northwest of Berthoud, Colorado, and 10 miles west of Loveland, Colorado.

Gage.-- Water-stage recorder with telephone telemetry. Data provided by the Northern Colorado Water Conservancy District. Elevation of gage is 5,590 feet from topographic map.

Remarks.-- Constructed between 1952 and 1954. The canal is 9.8 miles long and has a maximum capacity of 625 cubic feet per second. The canal is used to deliver Colorado-Big Thompson Project water and diverted native water to project share holders. Recorder was operated by Northern Colorado Water Conservancy District from 01-Oct-2006 to 30-Sep-2007. Record is complete and fair. This record contains operational data which could be subject to future revisions and changes.

Flow, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	49	0	0	0	0	0	0	8	20	310	217	225
2	45	0	0	0	0	0	0	15	20	297	217	216
3	48	0	0	0	0	0	0	16	20	283	226	214
4	50	0	0	0	0	0	0	16	17	280	230	97
5	50	0	0	0	0	0	0	16	17	280	225	220
6	50	0	0	0	0	0	0	16	20	280	218	207
7	43	0	0	0	0	0	0	16	20	290	216	193
8	44	0	0	0	0	0	0	16	20	305	216	177
9	53	0	0	0	0	0	48	16	20	310	237	173
10	56	0	0	0	0	0	8	16	20	310	248	175
11	72	0	0	0	0	0	8	16	20	282	263	158
12	80	0	0	0	0	0	8	16	23	286	277	150
13	73	0	0	0	0	0	8	16	25	274	280	137
14	63	0	0	0	0	0	8	16	25	263	323	103
15	60	0	0	0	0	0	8	12	25	263	315	90
16	60	0	0	0	0	0	8	10	25	261	300	90
17	88	0	0	0	0	0	8	10	25	250	275	90
18	100	0	0	0	0	0	8	10	25	255	262	90
19	67	0	0	0	0	0	8	10	25	260	262	90
20	50	0	0	0	0	0	45	10	96	270	262	73
21	50	0	0	0	0	0	8	10	106	296	262	68
22	50	0	0	0	0	0	8	10	58	312	284	60
23	50	0	0	0	0	0	8	10	50	318	332	62
24	37	0	0	0	0	0	8	10	50	320	357	65
25	37	0	0	0	0	0	8	10	88	330	347	58
26	59	0	0	0	0	0	8	10	125	335	316	55
27	79	0	0	0	0	0	8	10	196	335	305	44
28	84	0	0	0	0	0	8	10	220	328	295	38
29	82	0	0	0	0	0	8	16	233	257	290	38
30	109	0	0	0	0	0	8	20	288	219	254	38
31	42	0	0	0	0	0	0	20	0	217	236	0
Min	37	0	0	0	0	0	0	8	17	217	216	38
Max	109	0	0	0	0	0	48	20	288	335	357	225
Mean	61	0	0	0	0	0	8	13	64	286	269	116
ac-ft	3719	0	0	0	0	0	501	818	3809	17576	16523	6919



Appendix A (38 of 38)
Colorado-Big Thompson Project, CO

Location. Larimer , Grand, Summit, Boulder, Weld counties in Colorado, hydrologic units 14010001, 14010002 and 10190006, 10190007, in the Colorado River, Big Thompson River and Cache La Poudre River basins.

Remarks.— This table presents a summation of all the daily deliveries of C-BT water through the Saint Vrain Canal, the Charles Hansen Supply Canal, the Dixon Canal and from the Charles Hansen Feeder Canal (it does not include metered water). The C-BT Project is a transmountain water diversion system that stores, regulates and transports water from the Colorado River Basin to the Big-Thompson River Basin. The water diverted is used for irrigation, municipal and industrial purposes, to generate hydroelectric power and for recreation. This record contains operational data which could be subject to future revisions and changes. Period of record between 01-Oct-2006 and 30-Sep-2007.

Total Daily Water Deliveries, Cubic Feet per Second, Daily Mean Values

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	166	1	0	0	0	1	1	9	228	624	729	388
2	145	0	0	0	0	1	1	39	152	647	884	370
3	176	0	0	0	0	1	1	51	124	622	888	561
4	190	0	0	0	0	1	6	51	106	615	841	742
5	216	0	0	0	0	1	8	51	100	616	870	814
6	237	0	0	0	0	1	3	51	104	547	804	847
7	233	0	0	0	0	1	1	51	165	560	709	627
8	226	0	0	0	0	1	1	51	209	711	672	442
9	231	0	0	0	0	1	49	51	209	741	707	446
10	230	0	0	0	0	1	9	51	209	764	689	450
11	204	0	0	0	1	1	9	77	191	754	676	434
12	147	0	0	0	1	1	9	95	189	778	812	424
13	120	0	0	0	1	1	9	95	177	750	879	545
14	106	0	0	0	1	1	9	95	171	712	930	563
15	101	0	0	0	1	1	9	91	171	706	788	553
16	100	0	0	0	1	1	9	89	209	715	592	566
17	174	0	0	0	1	1	9	89	221	738	558	573
18	203	0	0	0	1	1	9	89	198	644	619	585
19	169	0	0	0	1	1	9	89	171	533	732	587
20	151	0	0	0	1	1	46	89	214	526	835	569
21	146	0	0	0	1	1	9	89	236	663	837	523
22	144	0	0	0	1	1	9	89	174	893	847	497
23	144	0	0	0	1	1	9	90	144	895	895	498
24	130	0	0	0	1	1	9	89	160	1006	725	497
25	117	0	0	0	1	1	9	103	207	1052	552	494
26	166	0	0	0	1	1	9	102	323	1073	831	477
27	197	0	0	0	1	1	17	91	423	1043	1059	384
28	328	0	0	0	1	1	12	89	444	1036	1058	349
29	398	0	0	0	1	1	9	90	519	702	1052	339
30	412	0	0	0	1	1	9	206	586	583	769	329
31	156	0	0	0	1	1	274	543	554			
Min	100	0	0	0	0	1	1	9	100	526	552	329
Max	412	1	0	0	1	1	49	274	586	1073	1059	847
Mean	189	0	0	0	1	1	10	86	224	738	787	516
ac-ft	11607	1	0	0	35	61	612	5267	3328	45323	48292	30637

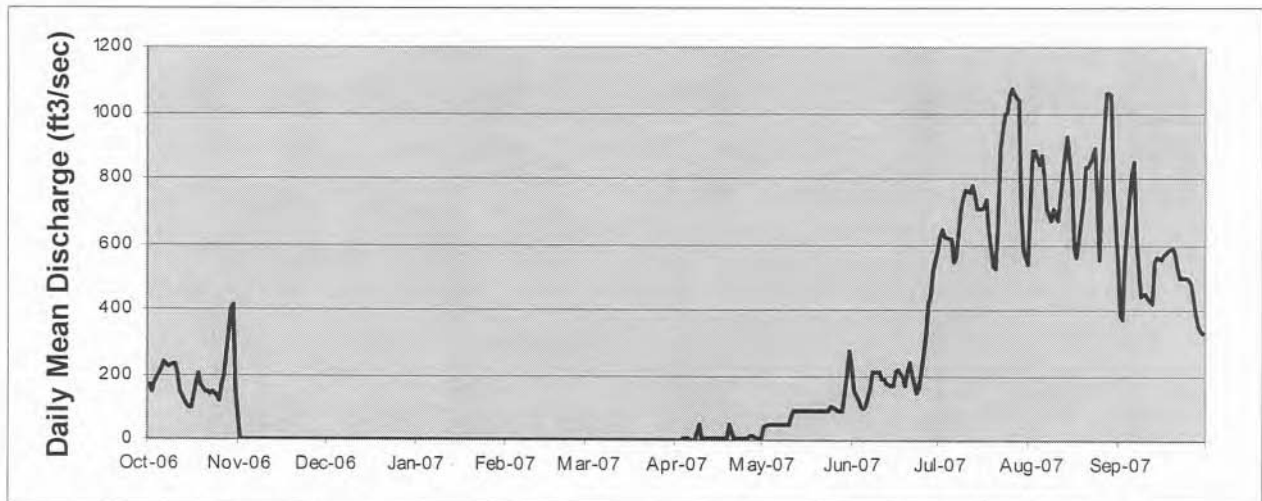


TABLE 1

WESTERN DIVISION - PICK-SLOAN MISSOURI BASIN PROGRAM
PERTINENT RESERVOIR DATA

(Data in Acre-feet)

Reservoir	Dead Storage <u>1/</u>	Active Storage <u>2/</u>	Total Storage	Normal Minimum Storage	Limitation on normal minimum storage
Green Mountain	6,860	146,779	153,639	47,684	Minimum elevation for rated power output
Willow Creek	1,486	9,779	10,553	6,675	Elevation of pump canal head-works
Lake Granby	74,190	465,568	539,758	74,190	Lowest outlet elevation
Shadow Mountain	506	16,848	17,354	16,026	Minimum permissible Grand Lake elevation; 8,366 ft.
Grand Lake	3/	511	1,015	504	Legislation limits fluctuation
Marys Lake	42	885	927	308	Minimum elevation for power generation
Lake Estes	409	2,659	3,068	740	Minimum elevation to release 550 ft ³ /s
Pinewood Lake	416	1,765	2,181	613	Minimum elevation for power generation
Flatiron	125	635	760	324	Minimum elevation to release 550 ft ³ /s
Carter Lake	3,306	108,924	112,230	306	Lowest outlet elevation
Horsetooth	7,003	149,732	156,735	17,600	Elevation on highest delivery works
Total	94,343	903,373	998,220	167,970	

1/ Storage capacity below elevation of lowest outlet

2/ Total storage minus dead storage

3/ Not determined

TABLE 2

COLORADO-BIG THOMPSON PROJECT														
WATER YEAR 2007	MONTHLY SUMMARY OF BLUE RIVER OPERATIONS												TOTAL	
	INI	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG		SEP
UNDEPLETED RUNOFF ABOVE GREEN MTN. RESERVOIR		17,900	11,200	9,700	8,800	8,700	13,300	20,600	92,600	112,100	50,400	33,900	22,300	401,500
UNDEPLETED RUNOFF ABOVE DILLON RES.		11,000	7,700	6,000	5,400	5,300	6,900	11,600	60,100	73,700	29,300	20,300	11,050	248,350
PERCENT OF TOTAL UN- DEPLETED RUNOFF ORI- GINATING ABOVE DILLON		0.615	0.688	0.619	0.614	0.609	0.519	0.563	0.649	0.657	0.581	0.599	0.496	0.619
DEPLETIONS BY 1929 COLORADO SPRINGS RIGHT		0	0	0	0	0	0	34	284	674	218	120	94	1424
DEPLETIONS BY 1948 COLORADO SPRINGS RIGHT		-28	-196	0	0	0	0	155	1767	551	1721	271	40	4,281
INFLOW TO DILLON		11,000	7,900	6,000	5,400	5,200	6,900	11,400	58,000	72,400	27,300	19,900	10,900	242,300
DILLON STORAGE (1000 AF)	250.1	246.4	241.5	240.0	241.0	241.8	243.0	242.4	251.0	256.7	254.1	253.2	251.8	
ROBERTS TUNNEL DIVERSIONS		4,800	2,000	500	0	500	0	0	0	5,000	18,900	9,500	400	41,600
DILLON OUTFLOW TO THE RIVER		8,700	9,900	7,000	4,400	3,900	5,800	12,000	48,700	60,800	9,800	10,100	10,700	191,800
TOTAL DEPLETIONS BY DENVER		2,300	-2,000	-1,000	900	1,400	1,200	-600	9,200	11,600	17,400	9,700	200	50,300
RUNOFF ORIGINATING BETWEEN DILLON AND GREEN MTN RESERVOIR		7,000	3,600	3,750	3,450	3,480	6,460	9,150	33,300	39,400	21,500	13,900	11,500	156,490
ACTUAL INFLOW TO GREEN MTN RESERVOIR		15,600	13,300	10,600	7,800	7,300	12,100	21,000	81,300	99,300	31,100	23,900	22,000	345,300
GREEN MTN RESERVOIR STORAGE (1000 AF)	112.6	108.7	105.4	96.6	86.6	79.7	72.4	74.5	116.3	152.7	152.4	135.6	108.9	
TOTAL GREEN MTN OUTFLOW		19,100	16,700	19,400	17,800	14,300	19,400	18,700	39,100	62,000	30,500	39,800	48,200	345,000

PICK-SLOAN MISSOURI BASIN PROGRAM
WESTERN DIVISION WATER AND POWER SYSTEM
COLORADO-BIG THOMPSON PROJECT

2007 ACTUAL OPERATIONS

	WATER IN 1000 ACRE-FEET							ENERGY IN GWH					
	INITIAL OR TOTAL	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
GREEN MOUNTAIN RESERVOIR													
Depleted Watershed Inflow	345.3	15.6	13.3	10.6	7.8	7.3	12.1	21.0	81.3	99.3	31.1	23.9	22.0
Turbine Release	331.9	19.1	16.7	19.4	17.8	14.3	19.4	18.7	39.1	49.0	30.4	39.8	48.2
Bypass	13.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	0.1	0.0	0.0
Spill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End of Month Content	112.6	108.7	105.4	96.6	86.6	79.7	72.4	74.5	116.3	152.7	152.4	135.6	108.9
Kwh/AF		199.0	197.6	185.6	168.5	153.8	159.8	160.4	184.1	200.0	190.8	178.4	182.6
Generation	60.7	3.8	3.3	3.6	3.0	2.2	3.1	3.0	7.2	9.8	5.8	7.1	8.8
WILLOW CREEK RESERVOIR													
Inflow	44.8	1.1	1.0	0.9	0.7	0.7	1.9	5.0	18.6	8.8	2.5	2.0	1.6
Release to River	5.45	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.7	0.7	0.5	0.3	0.25
Pumped to Granby	38.15	0.0	2.3	0.0	0.0	0.0	2.5	3.9	17.8	7.5	0.0	2.55	1.6
End of Month Content	8.8	9.4	7.6	8.0	8.3	8.6	7.4	7.9	7.7	8.1	9.9	8.9	8.5
Pump Energy	7.9	0.0	0.5	0.0	0.0	0.0	0.5	0.8	3.7	1.5	0.0	0.5	0.4
GRANBY - SHADOW MOUNTAIN - GRAND LAKE													
Natural Watershed Inflow	199.95	5.6	2.7	7.0	3.4	3.1	7.4	16.1	58.2	57.5	19.05	11.6	8.3
Total Inflow into Granby	261.9	17.5	7.7	6.1	3.9	3.4	8.2	20.9	87.1	73.5	14.8	11.0	7.8
Granby Fish Release	28.9	1.4	1.2	1.2	1.2	1.1	1.3	1.2	4.4	5.3	5.8	2.5	2.3
Granby Seepage	3.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.2	0.3	0.3	0.3
Granby Spill	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adams Tunnel	233.8	8.3	0.5	21.5	31.3	22.4	30.6	26.2	9.7	3.5	20.1	32.4	27.3
Granby End of Month content	382.0	389.1	394.9	362.7	333.4	312.7	290.4	288.3	369.0	433.9	423.0	398.8	376.3
SM-GL End of Month Content	17.8	4.7	1.5	17.8	17.7	17.7	17.6	17.9	17.8	17.7	17.8	17.8	17.6
Pumped from Granby	220.6	7.4	0.0	36.9	31.6	22.66	28.8	20.7	0.0	0.7	16.8	30.0	25.7
Granby Pump Kwh/AF		162.2	0.0	159.9	164.6	167.7	173.6	173.9	170.7	0.0	154.8	156.7	159.5
Granby Pump Energy	36.1	1.2	0.0	5.9	5.2	3.8	5.0	3.6	0.0	0.0	2.6	4.7	4.1

PICK-SLOAN MISSOURI BASIN PROGRAM
WESTERN DIVISION WATER AND POWER SYSTEM
COLORADO-BIG THOMPSON PROJECT

2007 ACTUAL OPERATIONS

	WATER IN 1000 ACRE-FEET												ENERGY IN GWH
	INITIAL OR TOTAL	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	
MARYS LAKE - ESTES - FLATIRON													
Adams Tunnel Water	233.8	8.3	0.5	21.5	31.3	22.4	30.6	26.2	9.7	3.5	20.1	32.4	27.3
Marys Lake Generation	41.1	1.3	0.0	3.9	5.8	4.0	5.7	4.6	1.4	0.3	3.4	5.8	4.9
Estes Generation	103.2	3.5	0.0	9.7	13.9	9.7	13.6	11.2	3.8	1.4	9.1	14.8	12.5
Divertible Big-Thompson	39.1	0.0	0.5	0.2	0.0	0.0	1.1	1.7	12.7	15.7	4.9	1.1	1.2
Diverted Big-Thompson Water	33.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	12.6	15.5	3.7	0.0	0.9
Olympus Tunnel	266.9	9.96	0.0	21.1	31.0	22.5	30.7	26.0	22.6	19.5	23.6	31.9	28.0
Pole Hill Generation	184.4	1.5	0.0	14.2	22.9	16.1	22.7	18.8	15.9	13.2	16.3	22.9	19.9
Flatiron 1 & 2 Generation	241.6	8.4	0.2	18.8	29.1	21.1	28.8	24.4	20.3	16.1	19.3	29.1	26.0
Flatiron 3 Turbine Release	0.03	0.0	0.0	0.0	.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flatiron 3 Kwh/AF Gen.		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flatiron 3 Generation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flatiron 3 Pumping	82.5	0.0	0.0	0.0	11.0	15.4	23.0	20.4	2.3	0.0	1.2	6.0	3.2
Flatiron 3 Kwh/AF Pump		0.0	0.0	0.0	263.6	272.7	295.6	318.6	348.7	0.0	250.0	283.3	250.0
Flatiron 3 Pump Energy	24.0	0.0	0.0	0.0	2.9	4.2	6.8	6.5	0.8	0.0	0.3	1.7	0.8
CARTER LAKE													
Pumped from Flatiron	82.5	0.0	0.0	0.0	11.0	15.4	23.0	20.4	2.3	0.0	1.2	6.0	3.2
Release to Flatiron	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Irrigation Delivery	83.9	6.5	1.5	1.4	1.3	1.3	1.7	2.3	4.1	8.3	22.5	20.8	12.2
Evaporation & Seepage	1.95	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.4	0.45	0.2	0.2
End of Month Content	35.7	28.5	26.1	23.5	32.6	46.2	66.3	83.07	80.5	70.6	47.5	30.4	20.2
BIG THOMPSON POWERPLANT													
Diverted Dille Tunnel Water	4.77	0.0	0.0	0.0	0.0	0.0	0.07	0.6	0.0	0.0	0.2	3.4	0.5
Irrigation Delivery	34.41	3.3	0.01	0.01	0.01	0.05	0.08	0.15	3.4	3.5	6.3	7.3	10.3
Turbine Release	14.97	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.4	8.5
Generation	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.1
HORSETOOTH RESERVOIR													
Hansen Feeder Canal Inflow	126.9	6.6	1.2	21.0	20.5	7.1	7.8	5.8	7.6	3.2	12.4	19.9	13.8
Irrigation Delivery	101.0	6.3	1.1	1.2	1.3	1.2	1.4	2.0	4.6	9.9	26.2	28.9	16.9
Evaporation	4.1	0.2	0.1	0.0	0.0	0.0	0.2	0.4	0.6	0.8	0.8	0.6	0.4
End of Month Content	70.1	69.3	68.7	88.3	107.4	112.8	118.8	121.85	123.8	114.4	97.5	85.7	80.6
TOTAL CBT DELIVERY	219.31	16.1	2.61	2.61	2.61	2.55	3.18	4.45	12.1	21.7	55.0	57.0	39.4

TABLE 3
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PICK-SLOAN MISSOURI BASIN PROGRAM
WESTERN DIVISION WATER AND POWER SYSTEM
COLORADO-BIG THOMPSON PROJECT

2007 ACTUAL OPERATIONS

	WATER IN 1000 ACRE-FEET							ENERGY IN GWH					
	INITIAL OR TOTAL	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
BASE GENERATION .													
Green Mountain	60.7	3.8	3.3	3.6	3.0	2.2	3.1	3.0	7.2	9.8	5.8	7.1	8.8
Flatiron 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Big Thompson	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.1
TOTAL	62.5	3.8	3.3	3.6	3.0	2.2	3.1	3.0	7.2	9.8	5.8	7.8	9.9
LOAD FOLLOWING GENERATION													
Marys Lake	41.1	1.3	0.0	3.9	5.8	4.0	5.7	4.6	1.4	0.3	3.4	5.8	4.9
Estes	103.2	3.5	0.0	9.7	13.9	9.7	13.6	11.2	3.8	1.4	9.1	14.8	12.5
Pole Hill	184.4	1.5	0.0	14.2	22.9	16.1	22.7	18.8	15.9	13.2	16.3	22.9	19.9
Flatiron 1 & 2	241.6	8.4	0.2	18.8	29.1	21.1	28.8	24.4	20.3	16.1	19.3	29.1	26.0
TOTAL	570.3	14.7	0.2	46.6	71.7	50.9	70.8	59.0	41.4	31.0	48.1	72.6	63.3
PUMP ENERGY													
Willow Creek	7.9	0.0	0.5	0.0	0.0	0.0	0.5	0.8	3.7	1.5	0.0	0.5	0.4
Granby	36.1	1.2	0.0	5.9	5.2	3.8	5.0	3.6	0.0	0.0	2.6	4.7	4.1
Flatiron 3	24.0	0.0	0.0	0.0	2.9	4.2	6.8	6.5	0.8	0.0	0.3	1.7	0.8
TOTAL	68.0	1.2	0.5	5.9	8.1	8.0	12.3	10.9	4.5	1.5	2.9	6.9	5.3
TOTAL GENERATION	632.8	18.5	3.5	50.2	74.7	53.1	73.9	62.0	48.6	40.8	53.9	80.4	73.2
TOTAL GENERATION MINUS PUMP	564.8	17.3	3.0	44.3	66.6	45.1	61.6	51.1	44.1	39.3	51.0	73.5	67.9

TABLE 4

COLORADO-BIG THOMPSON PROJECT
FLOOD DAMAGE PREVENTED IN WATER YEAR 2007

	Cumulative Total Prior to WY2006	WY2007	Cumulative Total Current
Granby	\$288,200	\$0.00	\$288,200
Green Mountain	\$99,100	\$6,000.00	\$105,100
Total	\$387,300	\$6,000.00	\$393,300

WESTERN DIVISION POWER SYSTEM WATER YEAR 2007 — GENERATION AND PUMP ENERGY

The Western Division Power System (System) boundaries are illustrated in Exhibit 1. Hydropower generation was above average for most of the powerplants in the Colorado-Big Thompson Project (C-BT) during water year 2007, including Green Mountain. The low power generation at Green Mountain during water year 2006 was caused by the ring seal gate work which took place during the summer and other maintenance work. Green Mountain Powerplant produced 29.6 giga-watt-hours (GWh) during water year 2006, only 50% of its average yearly production, compared to 60.7 GWh in 2007 or 117% of average.

During water year 2007, the Western Division System's total gross generation was 1474.5 GWh (numbers provided by Western Area Power Administration). The C-BT system diverted sufficient water to keep its powerplants running consistently most of the water year. The total of 632.8 GWh during water year 2007 represented over 106% of the 30-year average for the six C-BT powerplants.

Inflow for the C-BT collection system over the west slope was lower than anticipated in water year 2007. After a wet beginning of winter, relatively dry weather dominated the over eastern plains enter a long drought. Those factors combined with high demands for C-BT water during the spring and summer months produced a situation that required prolonged water diversions through Adams Tunnel. Pumping at Willow Creek Canal Pump, the Farr Plant pumps at Granby, and the Flatiron Powerplant were needed to bring C-BT water to the east slope well into the summer months. The energy used to pump that water during water year 2007 totaled 68 GWh, 107% of the 30-year average. That is significantly higher than recent years. The total energy used to pump that water during water year 2007 totaled, including Mount Elbert was 480.7 GWh. That total represents 196% of average.

After subtracting pumping energy from the gross Western Division System generation, the net generation during the water year 2007 was 1474.5 GWh. The total generation is the gross generation less the total C-BT pumping; gross generation includes one-half of the Yellowtail generation. The total Western Division System load includes firm energy deliveries, C-BT use energy, support energy, plant station service, and an estimate of transmission system losses. Table 1 includes the totals for every powerplant in the system. Table 3 shows monthly generation and pumping energy, by plant, as well as monthly System loads for water year 2007. The total energy that was required to operate the pumps in the Western Division System (Table 2) during water year 2007 was 480.7, compared to 502.8 GWh the previous year.

The Western Area Power Administration's Loveland Area Office sold 2,527,074 mega-watt-hours (MWh) of power during water year 2007, with the price of \$71,664,376 (numbers provided by Western Area Power Administration). Energy deficits were covered by a combination of scheduled interchange energy, use of the Mount Elbert pumped storage plant, and power purchases. The Western Area Power Administration's Loveland Area Office power purchases totaled 829,048 MWh for water year 2007, for which they paid \$49,449,857 (numbers provided by Western Area Power Administration).

WESTERN DIVISION SYSTEM
GROSS GENERATION - WATER YEAR 2007
(Energy in GWh)

Powerplant	<u>Accumulated</u> Gross Generation <u>1/</u>		
	WY 2007	Yearly Avg. ^{2/}	Percent of Avg.
Green Mountain	60.7	51.9	117
Marys Lake	41.1	37.3	110
Estes	103.2	100.3	103
Pole Hill	184.4	172.3	107
Flatiron 1 & 2	241.6	226.7	107
Big Thompson	1.8	10.9	17
Seminole	96.8	132.5	73
Kortes	123.5	140.3	88
Fremont Canyon	174.0	239.6	73
Alcova	92.5	118.1	78
Glendo	58.7	80.3	73
Guernsey	14.6	19.4	75
Boysen	39.1	69.3	56
Heart Mountain	14.2	15.2 ^{3/}	93
Buffalo Bill	41.6	69.4 ^{3/}	60
Shoshone	20.3	20.4 ^{3/}	100
Spirit Mountain	16.3	14.0 ^{3/}	116
Mt. Elbert	313.5	169.0 ^{4/}	186
Yellowtail ^{4/}	365.3	959.0 ^{5/}	38
Total	2003.2	2645.9	75

1/ October-September

2/ 1976-2005 average

3/ 1995-2005 average

4/ 1990-1999 average

5/ 1971 - 1990 average; one half of the Yellowtail energy is dedicated to the Western Division System through marketing arrangement. The other half is marketed through the Eastern Division System.

WESTERN DIVISION SYSTEM
PUMP ENERGY-WATER YEAR 2007

Pumping Plant	WY2007 (GWh)	October-September Pump Energy		Percent of Avg.
		Avg. 1/ (GWh)		
Willow Greek	7.9	5.7		139
Granby (Farr Plant)	36.1	30.6		118
Flatiron Unit #3	24.0	26.8		90
Mt. Elbert	412.7	182.1	2/	227
Total	480.7	245.2		196

1/ 1976-2005 average

2/ 1990-1999 average

TABLE 3

PICK-SLOAN MISSOURI BASIN PROGRAM WESTERN DIVISION POWER SYSTEM
WATER YEAR 2007 OPERATIONS
GROSS GENERATION LESS PUMPING IN GIGAWATT-HOURS

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
Mt. Elbert *	0.6	0.5	1.2	3.3	5.7	6.1	1.1	5.4	4.9	1.7	1.2	0.6	32.2
Green Mtn.	3.8	3.3	3.6	3.0	2.2	3.1	3.0	7.2	9.8	5.8	7.1	8.8	60.7
Willow Cr. pump -		0.5	0.0	0.0	0.0	0.5	0.8	3.7	1.5	0.0	0.5	0.4	7.9
Farr pump	1.2	0.0	5.9	5.2	3.8	5.0	3.6	0.0	0.0	2.6	4.7	4.1	36.1
Marys Lake	1.3	0.0	3.9	5.8	4.0	5.7	4.6	1.4	0.3	3.4	5.8	4.9	41.1
Estes	3.5	0.0	9.7	13.9	9.7	13.6	11.2	3.8	1.4	9.1	14.8	12.5	103.2
Pole Hill	1.5	0.0	14.2	22.9	16.1	22.7	18.8	15.9	13.2	16.3	22.9	19.9	184.4
Flatiron 1&2	8.4	0.2	18.8	29.1	21.1	28.8	24.4	20.3	16.1	19.3	29.1	26.0	241.6
Flatiron 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flatiron 3 pump	0.0	0.0	0.0	2.9	4.2	6.8	6.5	0.8	0.0	0.3	1.7	0.8	24.0
Big Thompson	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.1	1.8
Seminole	3.7	3.4	3.6	3.7	3.4	3.8	13.6	9.7	11.4	18.2	18.6	3.7	96.8
Kortes	4.9	4.7	5.0	5.1	4.5	5.2	17.5	11.4	13.1	22.1	24.6	5.4	123.5
Fremont Canyon	0.9	5.2	5.8	5.6	4.9	8.2	27.2	9.9	24.6	36.7	35.2	9.8	174.0
Alcova	3.1	3.0	3.0	3.0	2.7	4.0	12.4	4.0	12.6	19.9	20.2	4.6	92.5
Glendo	0.0	0.0	0.0	0.0	0.0	0.0	2.3	3.5	17.1	20.4	14.4	1.0	58.7
Guernsey	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.8	3.9	2.2	4.4	0.4	14.6
Pilot Butte **	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.9	1.1	1.0	0.0	3.2
Boysen	2.1	2.1	2.3	2.4	2.1	2.2	2.3	5.0	5.2	5.6	4.6	3.2	39.1
Shoshone	1.9	1.8	1.4	1.5	0.6	1.3	1.4	2.2	2.1	2.1	2.1	1.9	20.3
Buffalo Bill	0.8	0.0	0.9	1.0	0.7	0.8	1.2	7.8	5.9	9.9	8.0	4.6	41.6
Spirit Mtn.	1.1	0.0	0.0	0.0	0.0	0.0	0.0	2.7	3.2	3.1	3.2	3.0	16.3
Diamond Cr. pump	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heart Mtn.	0.9	0.0	0.0	0.0	0.0	0.0	0.0	2.6	3.0	2.9	2.4	2.4	14.2
Yellowtail/2	11.7	11.5	14.3	15.6	12.4	14.0	12.8	13.8	15.4	21.9	22.5	17.1	182.7
Fry-Ark	0.6	0.5	1.2	3.3	5.7	6.1	1.1	5.4	4.9	1.7	1.2	0.6	32.2
CBT	17.3	3.0	44.3	66.6	45.1	61.6	51.1	44.1	39.3	51.1	73.5	67.9	564.9
North Platte	12.6	16.3	17.4	17.4	15.5	21.2	73.9	41.3	82.7	119.5	117.4	24.9	560.1
Bighorn	18.5	15.4	18.9	20.5	15.8	18.3	17.7	34.3	35.7	46.6	43.8	32.2	317.4
TOTAL GEN	49.0	35.2	81.8	107.8	82.0	107.1	143.7	125.0	162.6	218.8	235.9	125.6	1474.5
TOTAL LOAD	162.5	162.3	177.2	172.6	137.1	149.2	176.3	184.8	211.2	262.2	211.2	156.8	2163.4
SURPLUS/DEFICIT	-113.5	-127.1	-95.4	-64.8	-55.1	-42.1	-32.6	-59.8	-48.6	-43.4	24.7	-31.2	-688.9

WESTERN DIVISION - PICK-SLOAN MISSOURI BASIN PROGRAM**POWERPLANT DATA**

Facility	No. Units	Capacity Each Unit	Total Installed Capacity	Normal Operating Head (ft)	Output at Rated Head (ft ³ /s)
Green Mountain	2	13,000	26,000	192-262	1,660
Marys Lake	1	8,100	8,100	202-217	550
Estes	3	16,500	49,500	551-571	1,300
Pole Hill	1	33,250	33,250	830-838	550
Flatiron	2	43,000	86,000	1,096 - 1,118	1,070
(Flatiron 1/)	1	8,500	8,500	158-287	440
Big Thompson	1	5,300	5,300	183- 184	350
Seminole	3	15,000	45,000	97-227	2,850
Kortes	3	12,000	36,000	192-204	2,700
Fremont Canyon	2	33,000	66,000	247-363	2,200
Alcova	2	18,000	36,000	153-165	2,200
Glendo	2	19,000	38,000	73-156	2,800
Guernsey	2	2,400	4,800	89-91	820
Pilot Butte2/	2	800	1,600	-- --	---
Boysen	2	7,500	15,000	72-112	2,415
Shoshone3/	1	3,000	3,000	-- --	---
Buffalo Bi113/	3	6,000	18,000	-- --	---
Heart Mountain	1	5,000	5,000	265-275	355
Mt. Elbert	2	103,000	206,000	447-477	6,400
Yellowtail	4	72,000	288,000	327-440	8,500
TOTAL	34		979,050		

WESTERN DIVISION - PICK-SLOAN MISSOURI BASIN PROGRAM

PUMPING PLANT DATA

Facilities	<u>Pumping Units</u>		<u>Plant Rating</u>		Kwh to Pump 1- Acre-ft at Maximum Head
	No	Capacity (ft ³ /s)	Normal Operating Head (ft)	Installed (Hp)	
Granby	3	600	92-186	18,000	227
Willow Creek	2	400	167-169	18,000	227
Flatiron	11/	440	173-287	13,000	391
Mt. Elbert	2	5,690	447-477	340,000	620

LAP GROSS GENERATION LESS PUMPING
WATER YEAR 2007

