Research Technical Completion Report

WATER RESOURCES DATA AND MANAGEMENT MODEL FOR BEAVER CREEK, CAMAS CREEK AND MUD LAKE AREA OF EASTERN IDAHO

by

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Prepared for
U.S. Army Corps of Engineers
Walla Walla District

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The authors wish to acknowledge the assistance of Mr. Don Shenton, Watermaster for Water District 66, who provided a majority of the data on Mud Lake and spent considerable time in archival searches. Also, the assistance of the Idaho Department of Water Resources personnel who provided historical watermaster records is greatly appreciated.

INTRODUCTION

WATERSHEDS

Mud Lake, a natural closed basin in eastern Idaho, is used as a reservoir for storage of irrigation water. Mud Lake has been modified by the construction of dikes and levies to provide storage of approximately 64,200 acre feet. The water supply is furnished by surface runoff from Beaver Creek and Camas Creek and by artesian and pumped wells from the Snake Plain Aquifer. Beaver Creek, with a drainage area of approximately 510 square miles is tributary to Camas Creek at a point near Camas, Idaho, Figure 1, and normally dries up in late spring. There are irrigation diversions on Beaver Creek above Camas Creek serving approximately 5,800 acres. The topography of the Beaver Creek drainage confines the stream except for the lower reach just above Camas.

Camas Creek originates in the Beaverhead mountains and irrigates approximately 8,100 acres above Camas. Major tributaries are West Camas, East Camas, and Beaver Creeks. A dam was constructed on Camas Creek near Lone Tree but is not currently functioning. The diversion structure at Lone Tree is capable of diverting approximately 1000 cfs into the basalt and lava flows east of Camas Creek. This diversion has been used in the past to divert flood flows from Camas Creek which then sink into the fractured basalt. Another main diversion from Camas Creek is the Warm Creek channel through which up to 200 cfs can be diverted in the NE 1/4 SW 1/4 Sec 28 T 8N R 36E. Flows in Warm Creek fill depressions and ponds in the upper areas of the wildlife

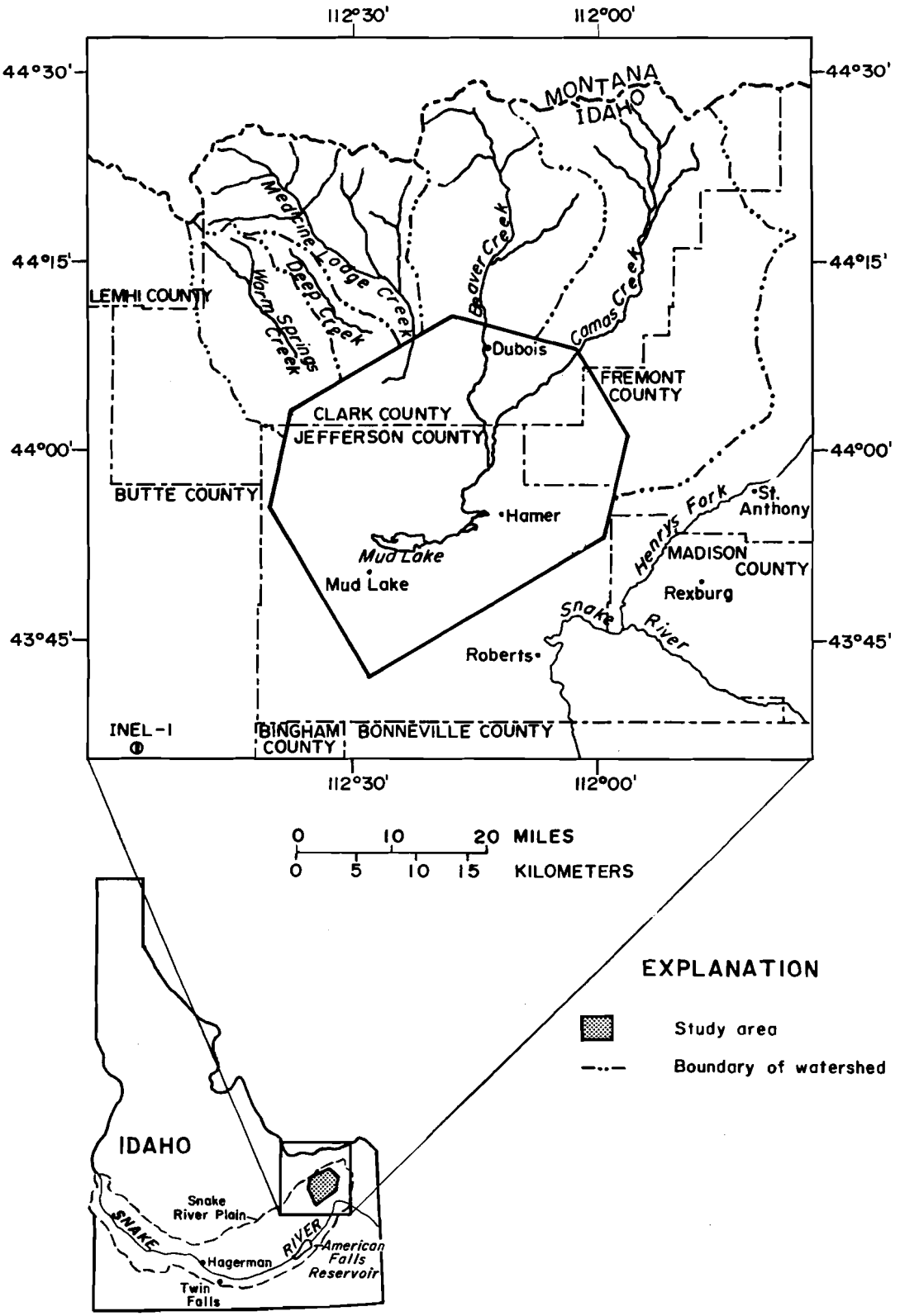


Figure 1.--Location and extent of study area.

refuge, with the remainder returning to the Camas Creek channel. Camas Creek drains an area of approximately 1130 square miles above Mud Lake and flows through the Camas Wildlife Refuge into Mud Lake through a regulating structure called the Bybee gates or Bybee structure. The gates at the Bybee structure can be closed to retain Camas Creek discharge in the refuge area or opened to fill Mud Lake. Rays Lake, within the Camas Wildlife Refuge, is served by Camas Creek and also serves as a reservoir for irrigation pumping for lands to the south of Camas Creek. Also within the Camas Wildlife Refuge are numerous artesian and pumped wells which are used by the Federal Fish and Wildlife Service to maintain water levels in the surface ponds. Figure 2 shows the major diversions and stream gaging stations on the watersheds contributing to Mud Lake.

WELLS

Artesian flow from wells is collected in ditches and transported to Mud Lake during both the winter and irrigation periods. These wells are generally shallow wells penetrating the basalts of the Snake Plain Aquifer which is partially confined in the area just north and east of Mud Lake. The primary groups of users which utilize well water are the Independent Water Users, the Owsley Canal Company (called the Bybee wells), and the Holly Water Users. Normally, these wells flow under artesian conditions in the winter and spring and are pumped after the irrigation season begins; however, the wells are pumped during late winter and spring during low water years. During years when flood conditions are eminent, these wells can be, and have been, capped to reduce inflow into Mud Lake.

MUD LAKE

Mud Lake is situated on alluvial deposits and lacustrine (lake deposits) formations overlying a perched ground-water aquifer. Sediments interfinger with basalts of the Snake Plain aquifer below Mud Lake which result in low aquifer transmissivities and semi confined conditions which cause the resulting artesian conditions in wells adjacent

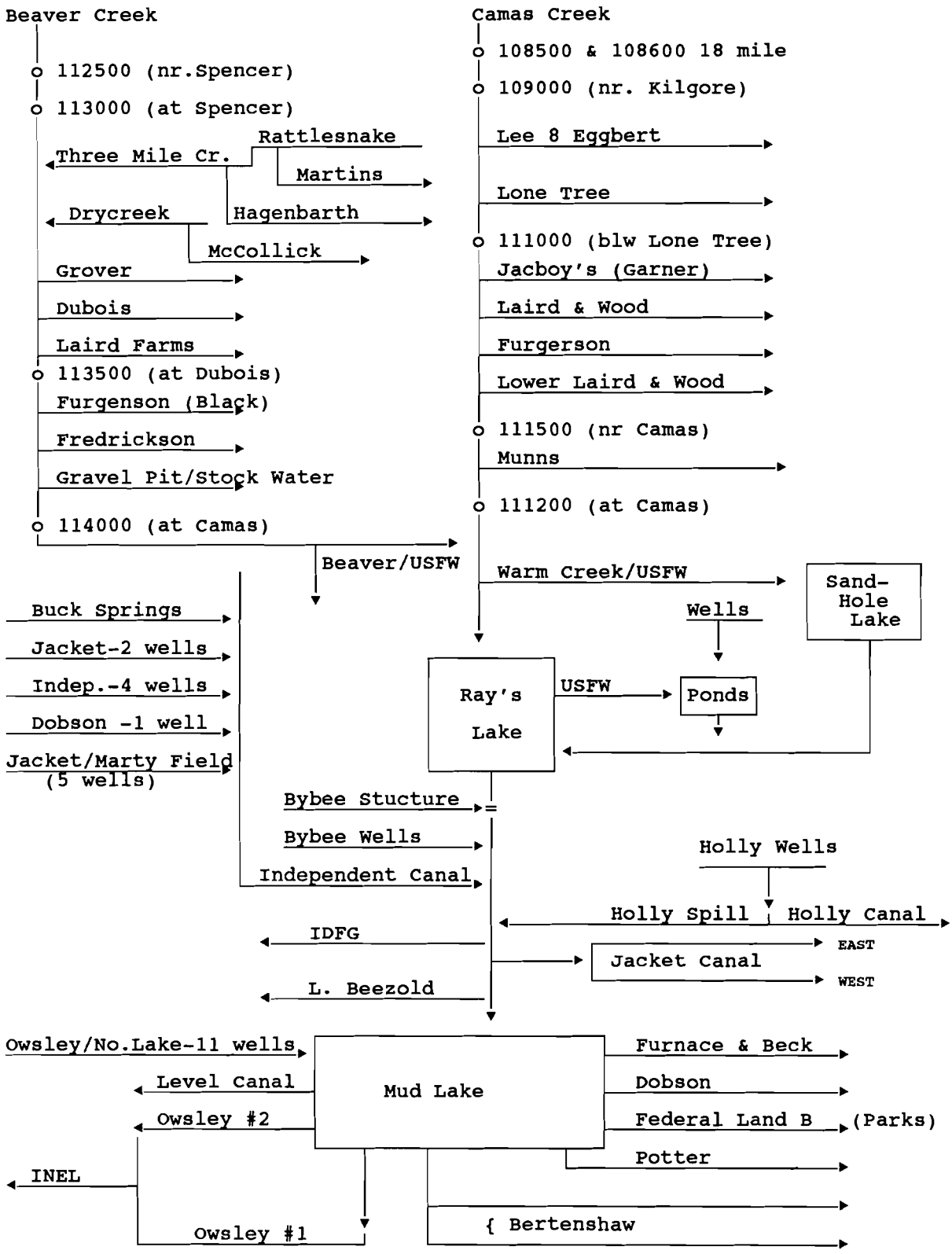


Figure 2. Major Diversions and Stream Gaging Stations - Mud Lake Watershed.

to the Lake. Inflow from ground-water sources directly into the lake is believed to be relatively low although, during extremely low lake levels, some inflow could take place. Water balance calculations on the lake indicate that seepage from the lake is significant even during low levels, depending upon ground water conditions.

Outflow from Mud Lake occurs only from pumping by the major water users with a maximum capacity of 576 cfs. The largest pumping system is the Owsley Canal Company, which operates two pumping plants. The largest, or main plant, has a capacity of 320 cfs, and the Owsley west lift has a capacity of 52 cfs. This system pumps to lands directly south of Mud Lake and, during emergencies, can pump up to 200 cfs through the canal systems to lands within the Idaho National Engineering Laboratory (INEL) where seepage from the resulting ponds recharges the Snake Plain Aquifer. The Jacket Canal has two pumping plants with capacities of 79 cfs and 30 cfs. Several independent water users pump directly from the lake to irrigate lands to the south and west. Holly water users can divert directly from their wells to irrigated land or divert flow directly into the lake.

MUD LAKE MANAGEMENT AND FLOOD OPERATIONS

Mud Lake and the watersheds of Beaver Creek and Camas Creek are administered by Water District 66. The watermaster for this district is Mr. Don Shenton, who has held that position since 1960. During the irrigation season, the watermaster allocates water according to a federal decree which includes all water users. From April through October, the watermaster maintains records of diversions of surface water natural flows, artesian well flows, pumped well flows, and all drafts from Mud Lake. There are some water users who have no storage rights in Mud Lake but who utilize the lake and Camas Creek channel to convey well water to pumping plants on the lake. These users, therefore, pump their wells even when Mud Lake is at a high level in order to be able to pump for irrigation from the lake. Flow records maintained by the watermaster

during the winter months are generally not complete since no regulation is required and, during normal years, all possible flow is stored in Mud Lake.

During high water years, when snow survey data indicate excess surface runoff, the artesian wells may be capped. In addition, during high runoff periods, diversions from Camas Creek through the Warm Creek channel near Camas into the wildlife refuge can be made. Diversions have also been made into gravel pits adjacent to Beaver Creek above Camas. The diversion from Camas Creek at the Lone Tree diversion has been used several times in the past to reduce surface inflows into Mud Lake.

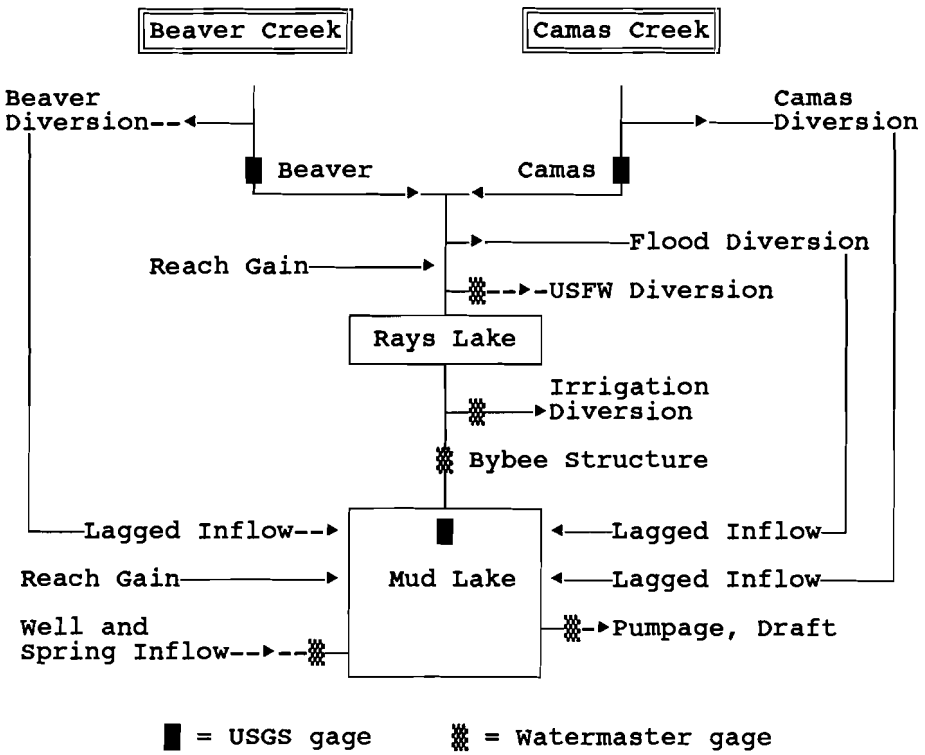
MUD LAKE SYSTEM SIMULATION

Because of the relationships between surface water and ground-water systems and the complicated operation of artesian well systems, evaluation of the effects of changes in surface flows or utilization of wells on Mud Lake is not possible without a computer based water balance model. In order to evaluate the efficiency and/or impacts of possible flood control measures on Mud Lake, a simplified water balance model of the system was developed. The model is written in Fortran 77 language and is operational on either mainframe or personal computer. A schematic drawing of the water balance model is shown in Figure 3.

The U.S.G.S. gaging stations, Camas Creek at Camas and Beaver Creek near Camas, measure essentially the entire surface water flow into the Mud Lake area. The record at these gages is the most complete of any stations on either Beaver or Camas Creek however there are some missing periods on both gages for the selected study period of 1960-1986. The Bybee structure, which regulates surface inflow into Mud Lake, is the next downstream control and/or measurement site and was, therefore, selected as the downstream terminus for the first reach of the system model. Some flow measurements at this site are made by the watermaster; however, during most years, the flow is zero for most of the summer and winter months. Estimated monthly flows at the Bybee structure are determined by the watermaster for the irrigation season from water

balance computations on Mud Lake. Outflows from this upper reach include pumping from Ray's Lake and flow through the Bybee structure. Lagged flows entering Mud Lake from projected flood diversions made within the first reach, such as at Warm Creek, can be specified by the user. Similarly, lagged flows from any projected diversion from Camas or Beaver Creek above Camas can be specified by the user.

Figure 3. Schematic drawing of Mud Lake Water Balance concepts.



The second reach in the model is from the Bybee structure to Mud Lake. Included input for this reach are flows through the Bybee structure and artesian and pumped well inflows. Output includes pumped volumes through the Owsley pumping plant and independent pumpers, evaporation from the lake surface, change in storage volume, and unaccounted for inflow or outflow, reach gains/losses. The unaccounted

for volumes result from unmeasured inflows or outflows including lake seepage or inflow and inaccuracy in measurement of any parameters.

The calibration program calculates the residual or unaccounted for volumes by month within each reach for the period October 1960 through September 1986. This calibration of residuals forces the inflow and outflow to balance for each month. For operations studies, in which inflows or outflows are changed to examine flood control alternatives, the same monthly residuals are assumed to occur, and the program calculates lake volumes and gage heights for the beginning of each month based on the changed inflow/outflow scenario.

DATA AND DATA BASE STRUCTURE

Published stream flow data for the Beaver Creek and Camas Creek watersheds is contained in U.S.G.S. Water Supply Papers and in publications of *Water Resources Data for Idaho* for specific years. The computerized U.S.G.S. data is also available from their WATSTORE network. The University of Idaho obtained these data files via the HYDRODATA™ system developed by U.S. West Optical Publishing. In some cases, the HYDRODATA™ files did not agree with the U.S.G.S. published data or were missing, in which case the published U.S.G.S. data was used. Table 1 shows the U.S.G.S. stations with significant data which have been published, including the period of record.

Records of irrigation diversions from Camas or Beaver Creek, pumped volumes from Ray's Lake and Mud Lake, and flows from artesian wells into Mud Lake are maintained by the watermaster. Additional records of flood diversions and miscellaneous stream flow measurements are contained in diaries and reports of the watermaster.

Table 1: U.S. Geological Survey Stream Gaging Stations - Beaver Creek and Camas Creek, Idaho.

Station	Parameter	Statistic	Beginning Year	Count
Camas Cr at 18Mi Shearing Corral nr Kilgore, ID	Flow	cfs	1937	23
Camas Cr Diversion above Lone Tree Res	--	--	--	--
Camas Creek at Red Road near Kilgore, ID	Flow	cfs	1986	2
Camas Creek near Kilgore, ID	Flow	cfs	1921	8
Camas Cr Diversion Above Lone Tree nr Dubois, ID	Flow	cfs	1980	4
Camas Cr Below Lone Tree Reservoir near Kilgore, ID	Flow	cfs	1930	1
Camas Creek near Camas, ID	Flow	cfs	1921	6
Camas Creek at Camas, ID	Flow	cfs	1925	63
Beaver Creek, Tributary to Camas Creek, ID	--	--	--	--
Beaver Creek nr Spencer, ID	Flow	cfs	1939	2
Huntley Canyon, Tributary to Beaver Creek, ID	--	--	--	--
Beaver Creek at Spencer, ID 12N-36E-23A	Flow	cfs	1941	29
Beaver Creek at Dubois, ID	Flow	cfs	1921	57
Beaver Creek at Camas, ID	Flow	cfs	1921	64
Camas Creek near Hamer, ID	Flow	cfs	1912	2
Mud Lake nr Terreton, ID	Stor	af	1921	65

BEAVER CREEK

The stream gaging station on Beaver Creek with the longest record is Beaver Creek near Camas, ID. This station was established in 1921 and has been operated through 1987 with the exception of a few periods. Beaver Creek gage at Spencer, ID is

the highest elevation stream gaging station in the watershed with a significant record. Beaver Creek at Dubois, ID began in 1921, but was terminated in 1978 and reestablished in 1983. Beaver Creek near Camas, ID provided an almost continuous record for the study period, water years 1960 through 1986, and was therefore selected as the location for the beginning reach of the management model. Published data for the stations Beaver Creek near Spencer, ID, Beaver Creek at Dubois, ID and Beaver Creek near Camas, ID for the period 1960 through 1986 are included in the separate volume for this report, entitled *Mud Lake Management Model Basic Streamflow Data.*

CAMAS CREEK

Camas Creek stream gaging stations with significant record include Camas Creek at 18mi Shearing Corral near Kilgore, ID and Camas Creek at Camas, ID. Only Camas Creek at Camas, ID has a reasonably continuous record for the study period, 1960 through 1986. The Camas Creek Diversion above Lone Tree near Dubois, ID station is a significant station in flood control evaluation; however, the published period of record includes only 1984 through 1986. Additional records for the flood diversion at Lone Tree were obtained from records of the Watermaster, Mr. Don Shenton. Published records for Camas Creek at 18 mile Shearing Corral, Camas Creek at Red Road, Camas Creek at Camas, and Camas Creek Diversions above Lone Tree near Dubois, ID for the period 1960 through 1986 are included in the *Basic Streamflow Data* volume.

Where published data for monthly flows of either Camas Creek or Beaver Creek were unavailable, estimates were made from simple correlations between stations or from additional Watermaster records. It was necessary to estimate monthly flows for Beaver Creek for the major part of the flood season of 1983. These monthly flows were estimated from regression analysis of Camas Creek at Camas and average monthly hydrograph relationships for Beaver Creek near Camas, ID and Camas Creek near Camas, ID.

MUD LAKE

End of month volume records published by the U.S.G.S. were used for the study period except where data were missing. Watermaster records were used when U.S.G.S. data were missing. The published record of daily volume measurements of Mud Lake near Terreton, ID for the period 1960 through 1986 is included in the separate volume on *Basic Streamflow Data.*

Monthly evaporated volumes for Mud Lake used in the management model were obtained from watermaster records. The watermaster maintains an evaporation pan (located approximately one mile southeast of Mud Lake) for determination of evaporated volume from the lake.

The stage-volume curve for Mud Lake was utilized in the water balance model to relate the elevation of the lake to lake contents. The revised extended curve was obtained from the U.S. Geological Survey in Boise and the volumes corresponding to lower lake elevations were furnished by the Watermaster. There are some irregularities in the stage-volume relationship for gage heights above 10 feet which are currently being investigated by the U.S.G.S. Fitted polynomial curves were developed for the relationships between elevation and volume and area. These curves are included in Appendix A.

FLOOD DIVERSIONS

During flood periods, when Mud Lake elevations are high and inflow or expected inflow is high, diversions from Camas Creek can be made either at Lone Tree or into the Warm Creek channel, which diverts just below the station Camas Creek at Camas ID and other locations. The timing and quantity of these historical diversions have not been documented fully. Recent diversions to the lava fields near Lone Tree since 1984 have been measured by the U.S.G.S.. Earlier diversions were estimated from measurements or notes contained in Watermaster diaries or reports. Diversions into the Warm Creek channel were estimated from Watermaster records.

Some percentages of flood diversions upstream of the Bybee structure can enter the channel above Mud Lake as ground-water return flow after some lag time. These relationships are not known and no estimates were made of lagged return flows for the calibration of the water balance model; however, provision was made in the operational model for lagged return flows if and when those relationships become known. The computed gain/loss for a reach may reflect lagged flows from the actual diversions made in the simulation period.

Diversions can also be made from Mud Lake utilizing the pumping facilities and canal distribution system of the Owsley Canal Company to convey water to the lava beds south of the Owsley Canal Company lands on the Idaho National Engineering Laboratory. These pumps have been used in the past for Mud Lake evacuation and flow data were obtained from Watermaster records and records of the Owsley Canal Company.

ARTESIAN WELLS

Wells drilled into the Snake Plain Aquifer north and east of Mud Lake are a supplemental source of irrigation water for the Mud Lake Waterusers. These wells are allowed to flow under artesian conditions during the winter months and into the spring season until pumping is required to supplement the flow. During the winter, periodic measurements of the flow of groups of wells are made by the Watermaster; however, continuous records are not maintained for any wells or well groups. Monthly flow volumes of winter time flow of the artesian wells were estimated graphically by plotting periodic discharge measurements of the Owsley (Bybee) wells, Independent Water Users, and Holly Water users, and assuming linear flow changes between measured values.

Flow from these wells during pumping is documented in the Watermaster's reports. For input into the water balance model, no differentiation is made between artesian well flow and pumped flow from the same wells.

BYBEE STRUCTURE FLOW

The Bybee structure, located at the downstream terminus of the wildlife refuge and immediately upstream of the Bybee or Owsley well field inflow to Camas Creek, is a strategic discharge location separating Mud Lake from the Refuge or Ray's Lake reach. This location is used by the Watermaster for determination of natural flow into Mud Lake as compared with well flow into the lake. Unfortunately, flows at this site are not continuously measured and the Watermaster either periodically measures the Camas Creek flow at the Bybee structure or calculates the flow as a residual in a water balance of Mud Lake. This is done for allocation of water rights from Mud Lake. For this study, the flow at the Bybee structure was determined from periodic measurements during a given month or obtained from the Watermaster's allocation sheets for Mud Lake. In cases where the water balance model indicated unreasonable monthly flow at the Bybee structure, the estimated flow was changed based on Watermaster diary entries or reasonable values for the water balance.

Diversions from Camas Creek in the Ray's Lake reach, from the Camas and Beaver Creek streamflow gages at Camas, ID to the Bybee structure, are made through the Ray's Lake pumps. These pumps divert water from Ray's Lake for irrigation of lands south of the lake; therefore, there is no expected return flow to Camas Creek or Mud Lake. Also within this reach are a series of diversions from Camas Creek operated by the U.S. Fish and Wildlife Service to fill ponds and depressions within the refuge, in addition to a series of wells. Records of these diverted volumes were secured by the Watermaster from the Fish and Wildlife Service for the period 1960 through 1986 and utilized in the water balance model.

MUD LAKE WATER BALANCE MODEL

A WATER BALANCE MODEL CONCEPT

The model developed by the University of Idaho balances the surface waters entering Mud Lake from the Beaver and Camas Creek drainages and leaving from

irrigation and flood diversions. The program is based upon the historical flow records published by the USGS and recorded by watermaster for the districts for water years 1960 through 1986. The program does not attempt to perform a water balance on the watersheds above the USGS gaging stations 13114000, Beaver Creek near Camas, and 13112000, Camas Creek near Camas. The model was developed using the concepts shown in the watershed schematic shown in Figure 3.

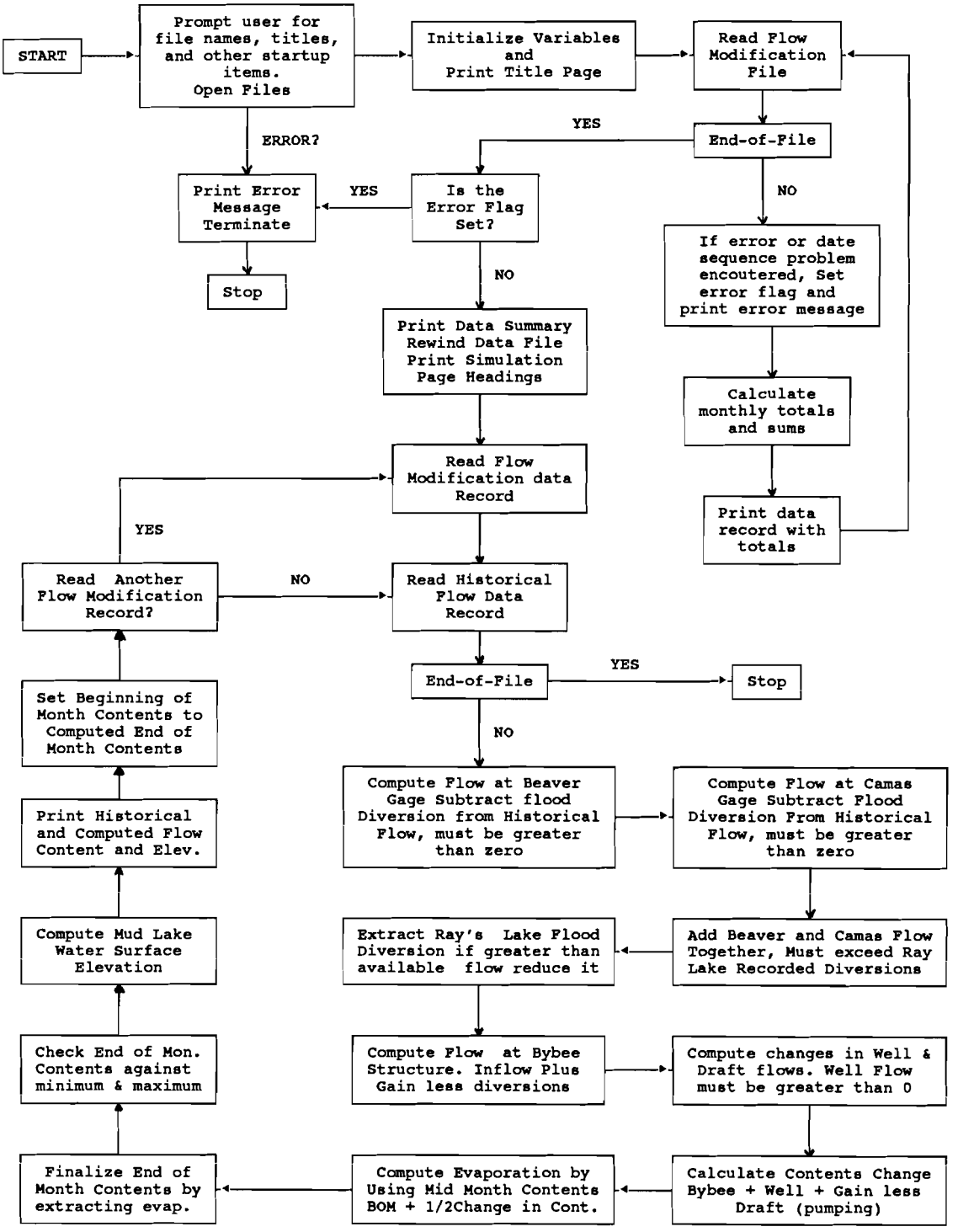
The program reads in the historical flows, reach gains, recorded diversions, well flows, pumpage, Mud Lake water surface elevations, and assessed Mud Lake evaporation from and historical data base. The reach gains or losses were calibrated from the historical flow data using the flow at the Bybee structure, Beaver and Camas Creek gaging stations, and the contents of Mud Lake as controls. The contents of this file, "MLHISTQ.DAT", are listed in Appendix B. The appropriate format specification for building the file is discussed in another portion of the report.

The flood diversions, resulting lagged inflows, and changes in the operation of the supply wells and irrigation pumps proposed by the program user are entered into a flow modification input file. An example flow modification file is listed in Appendix B. The user needs to input only data records for the months in which there is a modification to a flow resulting from the proposed operation of the watershed.

The model begins the simulation by asking the operator for various start up options and conditions. The model then proceeds to scan and list the flow modification file. If it encounters problems reading this file, the model terminates. As each record is read, the total flow reduction and total lagged inflow is computed for the month and printed. In addition to calculating monthly totals, the sum of net diversions are tabulated and summarized. After scanning and printing the contents and summary of the flow modification file, the model begins an operational monthly water balance of the system. For each month, the program begins by reading in the historical conditions for the month. The program then checks to see if there is a modification to the historical

record. If there is, the model uses those values as specified; otherwise, the model assumes zeros for the values. Figure 4 depicts the operational model program flow chart.

Figure 4. Operational Mud Lake Water Balance Model Program Flow Chart.



DATA BASE FOR THE WATER BALANCE MODEL

Tables 2 through 18 include the monthly volumes used as input to the water balance model for calibration for the period water year 1960 through 1986. The values in the tables are the published, estimated, or adjusted volumes utilized in the final calibration of reach gains/losses and correspond to values in the tabulated input data for the model (Appendix B).

WATER BALANCE MODEL OPERATION

The water balance model for the Mud Lake Watershed, MUDLAKE, operates on a calibrated historical water data base for the area and a user specified operational flood diversion data file created by the user. Running the water balance model does not require running the calibration programs unless there is a major change in an historical estimated data element. The University of Idaho has collated the available (measured or estimated) flow data from the U.S.G.S., Watermaster, and other sources. This data was used to determine the calibrated reach gains/losses found in the data file "MLHISTQ.DAT" supplied with the program.

To run the model, create a flood diversion file containing the year and month of the diversion and the amount of water diverted and where the diversion is located. The file created shall be in the same format as the "MUDFLOOD.DAT" supplied with the model which contains the best estimates of the major flood diversions during the simulation period (Appendix B).

Table 2. Monthly discharge of Beaver Creek near Camas, Idaho used in Mud Lake Water Balance Model. USGS Gage 13114000.

	Discharge in Acre Feet											
WY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	0.	0.	0.	0.	0.	0.	1230.	0.	0.	0.	0.	0.
1961	0.	0.	0.	0.	0.	0.	290.	0.	0.	0.	0.	0.
1962	0.	0.	0.	0.	643.	686.	7287.	2686.	2112.	0.	0.	0.
1963	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1964	0.	0.	0.	0.	0.	0.	226.	1301.	4719.	415.	0.	0.
1965	0.	0.	0.	0.	0.	9.	2836.	6159.	6240.	1472.	0.	0.
1966	0.	0.	0.	0.	0.	196.	2692.	13.	0.	0.	0.	0.
1967	0.	0.	0.	0.	0.	0.	0.	4614.	6710.	684.	0.	0.
1968	0.	0.	0.	0.	0.	0.	161.	1218.	2089.	56.	0.	0.
1969	0.	0.	0.	54.	0.	549.	6432.	13087.	9152.	2652.	230.	14.
1970	417.	543.	0.	0.	8.	20.	389.	5036.	3648.	1006.	1.	0.
1971	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	1470.[3]	2583.	11633.	9132.	1779.[5]	0.[4]	0.[4]
1972	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	1495.[3]	4437.	4987.	5008.	527.	0.[4]	0.[4]
1973	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	361.[3]	3481.	2864.	419.	242.[5]	0.[4]	0.[4]
1974	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	508.[3]	3122.	4023.	1150.	339.[5]	0.[4]	0.[4]
1975	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	0.[4]	1299.[2]	8561.	10879.	1150.	36.	0.
1976	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	0.	2944.	4546.	532.	383.[5]	0.[4]	0.[4]
1977	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	0.[4]	417.	0.[4]	0.[4]	0.[4]	0.[4]	0.[4]
1978	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	149.	4030.	3890.	549.	0.	0.	0.
1979	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	0.[4]	670.	206.	0.	0.	0.[4]	0.[4]
1980	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	323.[3]	1127.	2561.	4618.	292.	0.	0.
1981	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	734.[3]	2949.	5818.	2446.	0.	0.[4]	0.[4]
1982	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	1087.[3]	2955.	8604.	4875.	1210.	0.[4]	0.[4]
1983	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]	5137.[2]	13016.[2]	11814.[2]	3312.[2]	1438.[2]	952.[2]
1984	0.[1]	0.[1]	0.[1]	10.[3]	125.[3]	1880.[3]	3938.	14884.	14240.	4324.	2743.	1156.
1985	1238.	970.	44.[3]	2.[3]	12.[3]	190.[3]	6609.	1502.	177.	0.	0.	0.
1986	0.	0.	0.	0.	0.	139.	1077.	2953.	1359.	0.	0.	0.

[1]Data not reported by USGS; estimated by assuming zeros for winter flows.
[2]Station flows not reported by USGS; used Beaver near Dubois flow data to estimate flows.
[3]Data not reported by USGS; estimated by using available data and extrapolating values.
[4]Data not reported, value assumed to be zero.
[5]Partial values for month given by USGS; estimate made based on available data for month.

Table 3. Monthly discharge of Camas Creek at Camas, Idaho used in Mud Lake Water Balance Model. USGS Gage 13112000.

WY	Discharge in Acre Feet											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	111.	175.	137.	0.	0.	127.	7230.	2249.	301.	0.	0.	0
1961	0.	0.	0.	0.	6.	296.	2563.	4463.	1196.	0.	0.	0
1962	24.	0.	226.	60.	686.	190.	16461.	19867.	12072.	958.	631.	0
1963	0.	0.	73.	256.	117.	129.	3410.	5046.	5437.	615.	0.	0
1964	0.	240.	0.	0.	0.	0.	3749.	13161.	18784.	1369.	327.	0
1965	0.	69.	60.	93.	186.	456.	8957.	16090.	14267.	2940.	1035.	1051
1966	1277.	1666.	655.	462.	555.	591.	6024.	5036.	1428.	659.	0.	0
1967	0.	0.	0.	0.	0.	210.	1043.	21271.	22564.	2926.	613.	95
1968	36.	173.	0.	0.	0.	81.	4130.	5459.	7270.	1105.	676.	704
1969	998.	1023.	557.	712.	200.	1361.	3104.	32591.	16959.	4493.	910.	857
1970	1097.	1107.	732.	835.	1250.	1406.	1337.	16255.	12627.	2134.	916.	948
1971	1035.[1]	0.[2]	0.[2]	0.[2]	0.[2]	0.[2]	4352.[1]	20361.	14257.	4633.	1137.	1932
1972	1995.	1085.	992.	1164.	1006.	2327.	5931.	10021.	7845.	1351.	520.	827
1973	1613.	1502.	371.	389.	502.	744.	3312.	22620.	4372.	559.	210.	0
1974	607.	651.	234.	141.	196.	417.	10336.	17225.	7908.	79.	0.	0
1975	202.	502.	16.	0.	0.	0.	589.	11978.	20601.	4231.	339.	40
1976	750.	599.	377.	371.	278.	222.	3316.	22239.	3047.	40.	0.	186
1977	543.	480.	8.	2.	0.	0.	1755.	502.	218.	0.	0.	0
1978	0.	0.	0.	0.	0.	75.	6831.	21884.	5318.	0.	0.	0
1979	0.	0.	0.	0.	0.	0.	3947.	8158.	335.	0.	0.	0
1980	0.	0.	0.	0.	133.	0.	6585.	11784.	11034.	809.	0.	15
1981	236.	262.	131.	198.	208.	419.	8468.	15557.	4578.	0.	0.	0
1982	0.	0.	18.	48.	77.	145.	5621.	28842.	10437.	2075.	24.	0
1983	0.[2]	0.[2]	0.[2]	0.[2]	0.[2]	0.[2]	8109.[1]	32672.	21041.	7097.	1787.	968
1984	4790.	3558.	1081.	1129.	901.	1131.	3066.	26835.	18353.	1859.	1059.	137
1985	228.	69.	234.	52.	153.	329.	8529.	8349.	1952.	234.	0.	0
1986	0.	0.	0.	0.	0.	1119.	8043.	11165.	8658.	448.	0.	0

[1]Partial values for month given by USGS; estimate made based on available data for month.
[2]Data not reported by USGS, assumed value of zero.

Table 4. U.S. Fish and Wildlife Diversion from Camas Creek near Hamer, Idaho used in Mud Lake Water Balance Model. Reported by USFWS to Watermaster.

	Discharge in Acre Feet											
WY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	0.	0.	0.	0.	0.	173.	2832.	1345.	133.	301.	129.	129.
1961	85.	0.	0.	0.	0.	190.	762.	1759.	1331.	333.	143.	143.
1962	95.	0.	0.	0.	643.	1043.	3445.	2874.	2079.	542.	331.	329.
1963	218.	0.	0.	0.	0.	331.	2168.	2013.	2196.	1930.	250.	250.
1964	167.	0.	0.	0.	0.	234.	1180.	1597.	1761.	968.	327.	175.
1965	117.	0.	0.	0.	0.	391.	1200.	3314.	2981.	799.	770.	413.
1966	284.	0.	0.	0.	0.	99.	397.	1507.	819.	157.	75.	75.
1967	50.	0.	0.	0.	0.	173.	686.	1825.	2138.	1248.	286.	129.
1968	85.	0.	0.	0.	0.	0.	0.	2741.	2328.	609.	842.	321.
1969	332.	0.	0.	0.	0.	0.	0.	3444.	2764.	1548.	542.	413.
1970	829.	0.	0.	0.	0.	0.	0.	2073.	2753.	1230.	599.	698.
1971	709.	0.	0.	0.	0.	0.	0.	3021.	2331.	1738.	851.	1271.
1972	1460.	0.	0.	0.	0.	0.	0.	1877.	2267.	1232.	488.	780.
1973	1526.	0.	0.	0.	0.	0.	0.	3633.	2423.	668.	261.	0.
1974	742.	0.	0.	0.	0.	0.	0.	3566.	1636.	0.	0.	0.
1975	0.	0.	0.	0.	0.	0.	0.	3566.	3451.	257.	0.	0.
1976	0.	0.	0.	0.	0.	0.	0.	1242.	639.	0.	0.	0.
1977	0.	0.	0.	0.	0.	0.	627.	186.	141.	0.	0.	0.
1978	0.	0.	0.	0.	0.	0.	3753.	2122.	1674.	0.	0.	0.
1979	0.	0.	0.	0.	0.	0.	1632.	3227.	205.	0.	0.	0.
1980	0.	0.	0.	0.	1021.	0.	1608.	3509.	3328.	307.	0.	0.
1981	0.	0.	0.	0.	628.	88.	1986.	3413.	2096.	0.	0.	0.
1982	0.	0.	0.	207.	415.	215.	3192.	3804.	3361.	754.	0.	0.
1983	0.	919.	0.	148.	98.	1169.	1821.	4010.	4396.	1481.	1792.	1374.
1984	2452.	2218.	0.	0.	0.	0.	2569.	3555.	2462.	2211.	1572.	910.
1985	1000.	0.	0.	0.	0.	0.	1394.	1596.	1333.	226.	0.	0.
1986	0.	0.	0.	0.	0.	148.	1331.	1109.	1398.	254.	0.	0.

Table 5. Pumped Irrigation Diversion from Ray's Lake used in Mud Lake Water Balance Model from Watermaster records.

WY	Discharge in Acre Feet											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	4.[1]	0.	0.	0.	0.	0.	0.	46.[1]	34.[1]	40.[1]	26.[1]	10.[1]
1961	0.	0.	0.	0.	0.	0.	6.[1]	157.[1]	119.[1]	137.[1]	85.[1]	32.[1]
1962	6.[1]	0.	0.	0.	0.	0.	10.[1]	294.[1]	222.[1]	258.[1]	161.[1]	60.[1]
1963	10.[1]	0.	0.	0.	0.	0.	10.[1]	290.[1]	220.[1]	256.[1]	161.[1]	60.[1]
1964	10.[1]	0.	0.	0.	0.	0.	6.[1]	165.[1]	125.[1]	143.[1]	89.[1]	34.[1]
1965	6.[1]	0.	0.	0.	0.	0.	10.[1]	323.[1]	244.[1]	282.[1]	177.[1]	65.[1]
1966	12.[1]	0.	0.	0.	0.	0.	8.[1]	260.[1]	196.[1]	228.[1]	143.[1]	52.[1]
1967	10.[1]	0.	0.	0.	0.	0.	14.[1]	454.[1]	343.[1]	399.[1]	250.[1]	91.[1]
1968	16.[1]	0.	0.	0.	0.	0.	0.	327.	0.	333.	288.	135.
1969	0.	0.	0.	0.	0.	0.	0.	292.	0.	0.	0.	0.
1970	0.	0.	0.	0.	0.	0.	0.	234.	363.	190.	369.	60.
1971	0.	0.	0.	0.	0.	0.	0.	317.	476.	319.	155.	0.
1972	0.	0.	0.	0.	0.	0.	0.	369.	357.	337.	307.	0.
1973	0.	0.	0.	0.	0.	0.	0.	387.	387.	345.	292.	61.
1974	0.	0.	0.	0.	0.	0.	0.	399.	407.	401.	385.	242.
1975	0.	0.	0.	0.	0.	0.	0.	206.	0.	369.	369.	89.
1976	0.	0.	0.	0.	0.	0.	0.	466.	440.	405.	337.	327.
1977	163.	0.	0.	0.	0.	0.	69.	374.	370.	352.	0.	0.
1978	0.	0.	0.	0.	0.	0.	0.	324.	442.	305.	222.	0.
1979	0.	0.	0.	0.	0.	0.	0.	288.	331.	252.	0.	0.
1980	0.	0.	0.	0.	1022.	0.	0.	553.	300.	389.	111.	0.
1981	0.	0.	0.	0.	0.	0.	139.	262.	379.	365.	63.	0.
1982	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1983	0.	0.	0.	0.	0.	0.	0.	262.	140.	347.	345.	149.
1984	0.	0.	0.	0.	0.	0.	0.	303.	421.	397.	348.	357.
1985	238.	0.	0.	0.	0.	0.	0.	208.	190.	196.	145.	83.
1986	0.	0.	0.	0.	0.	0.	0.	181.	194.	333.	95.	69

[1]Monthly data for Ray's Lake not available prior to 1968; estimates based on reported annual diversion distributed according to mean percentages for years 1960-1967.

Table 6. Monthly Reach Gains for the Ray's Lake Reach used in the Mud Lake Water Balance Model.

	Acre Feet											
WY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	-107.	-175.	-137.	0.	0.	46.	-5628.	-108.	-134.	341.	155.	139.
1961	85.	0.	0.	0.	-6.	-106.	-2085.	-2547.	254.	470.	228.	175.
1962	77.	0.	-226.	-60.	-686.	167.	-7260.	935.	-5131.	-158.	-139.	389.
1963	228.	0.	-73.	-256.	-117.	202.	-760.	-1853.	-2321.	1571.	411.	310.
1964	177.	-240.	0.	0.	0.	234.	911.	-5700.	-5317.	507.	89.	209.
1965	123.	-69.	-60.	-93.	-186.	-74.	-4183.	-512.	-4382.	1669.	-88.	-573.
1966	-981.	-1666.	-655.	-462.	-555.	-688.	-6311.	2331.	-413.	-274.	218.	127.
1967	60.	0.	0.	0.	0.	-37.	-343.	-4974.	-4408.	207.	-77.	125.
1968	65.	-173.	0.	0.	0.	-81.	-4291.	3679.	-1031.	-219.	454.	-248.
1969	-666.	-1023.	-557.	-766.	-200.	-1910.	-536.	-7222.	756.	-2943.	-598.	-458.
1970	-685.	-1650.	-732.	-835.	-1258.	-1426.	-1726.	-1043.	648.	-297.	51.	-190.
1971	-326.	0.	0.	0.	0.	-1470.	-6935.	-2206.	377.	-3455.	-131.	-661.
1972	-535.	-1085.	-992.	-1164.	-1006.	-3822.	-4068.	-1136.	-1323.	1776.	275.	-47.
1973	-87.	-1502.	-371.	-389.	-502.	-1105.	-6793.	-5285.	-709.	212.	343.	61.
1974	135.	-651.	-234.	-141.	-196.	-925.	-1142.	1117.	317.	-17.	385.	242.
1975	-202.	-502.	-16.	0.	0.	0.	-1888.	-2305.	-5029.	425.	-6.	49.
1976	-750.	-599.	-377.	-371.	-278.	-222.	-260.	1879.	-642.	-18.	337.	141.
1977	-380.	-480.	-8.	-2.	0.	0.	-1476.	58.	293.	352.	0.	0.
1978	0.	0.	0.	0.	0.	-224.	-7108.	-6731.	-1436.	305.	222.	0.
1979	0.	0.	0.	0.	0.	0.	-2985.	-275.	201.	252.	0.	0.
1980	0.	0.	0.	0.	1910.	-323.	-6104.	-5256.	-1827.	758.	111.	-15.
1981	-236.	-262.	-131.	-198.	420.	-1065.	-1792.	-3618.	4073.	365.	63.	0.
1982	0.	0.	-18.	159.	338.	-1017.	-4384.	-6631.	1368.	-506.	-24.	0.
1983	0.	919.	0.	148.	98.	1169.	-3193.	-2723.	5886.	3419.	-1088.	-397.
1984	-338.	1660.	1219.	1461.	1274.	-411.	2949.	-2097.	859.	2125.	-1882.	-26.
1985	-228.	4161.	3822.	3646.	2635.	3381.	-1744.	6974.	4373.	188.	145.	83.
1986	0.	4500.	1800.	1800.	2000.	2690.	-1789.	1202.	3569.	139.	95.	69.

Table 7. Monthly Discharge of Camas Creek at Bybee Structure near Hamer, Idaho used in Mud Lake Water Balance Model from Watermaster Records.

	Discharge in Acre Feet											
WY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	0.	0.	0.	0.	0.	0.	0.	750.	0.	0.	0.	0.
1961	0.	0.	0.	0.	0.	0.	0.	0.[1]	0.[1]	0.[1]	0.[1]	0.[1]
1962	0.[1]	0.	0.	0.	0.	0.	9033.	16320.	3752.	0.	0.	0.
1963	0.	0.	0.	0.	0.	0.	472.	890.	700.	0.	0.	0.
1964	0.	0.	0.	0.	0.	0.	3700.	7000.	16300.	1180.	0.	0.
1965	0.	0.	0.	0.	0.	0.	6400.	18100.	6400.	5000.	0.	0.
1966	0.	0.	0.	0.	0.	0.	2000.	5613.	0.	0.	0.	0.
1967	0.	0.	0.	0.	0.	0.	0.	8632.	17385.	2170.	0.	0.
1968	0.	0.	0.	0.	0.	0.	0.	7288.[3]	6000.	0.	0.	0.
1969	0.	0.	0.	0.	0.	0.	6000.[2]	19720.[3]	18152.	2654.	0.	0.
1970	0.	0.	0.	0.	0.	0.	0.	11197.	10772.	1423.	0.	0.
1971	0.	0.	0.	0.	0.	0.	0.	19756.	16000.[3]	900.	0.	0.
1972	0.	0.	0.	0.	0.	0.	6300.	11626.	8906.	2085.	0.	0.
1973	0.	0.	0.	0.	0.	0.	0.	16179.	1272.	0.	0.	0.
1974	0.	0.	0.	0.	0.	0.	2200.[2]	18400.	7332.	0.	0.	0.
1975	0.	0.	0.	0.	0.	0.	0.	14462.	23000.	5180.	0.	0.
1976	0.	0.	0.	0.	0.	0.	0.	19270.	1858.	0.	0.	0.
1977	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1978	0.	0.	0.	0.	0.	0.	0.	16597.	2315.	0.	0.	0.
1979	0.	0.	0.	0.	0.	0.	0.	4574.	0.	0.	0.	0.
1980	0.	0.	0.	0.	0.	0.	0.	5027.	7942.	1163.	0.	0.
1981	0.	0.	0.	0.	0.	0.	7500.	14082.	8622.	0.	0.	0.
1982	0.	0.	0.	0.	0.	0.	1000.	27011.	13319.	2025.	0.	0.
1983	0.	0.	0.	0.	0.	0.	2500.	28193.	33205.	12000.	0.	0.
1984	2000.	3000.	2300.	2600.	2300.	2600.	3000.	25311.	24837.	5700.	0.	0.
1985	0.	5200.	4100.	3700.	2800.	3900.	12000.[2]	15021.	4979.	0.	0.	0.
1986	0.	4500.	1800.	1800.	2000.	3800.	6000.[2]	14030.	11994.	0.	0.	0.

[1]Not reported by Watermaster.
[2]Estimated by University of Idaho based on conversations with Watermaster.
[3]Adjusted values reported by Watermaster due to either errors on allocation sheet or to resolve gain/loss.

Table 8. Artesian and pumped well inflows to Mud Lake used in Mud Lake Water Balance Model from Watermaster records and observations.

WY	Discharge in Acre Feet											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	3534.	4092.	5146.	5456.	4956.	5952.	6060.	10172.	13309.	12651.	11244.	10973.
1961	6709.	3193.	3379.	4123.	4172.	5952.	6870.	12841.	13810.	12802.	11070.	8024.
1962	2240.	3162.	3379.	3658.	3360.	3330.	3360.	1294.	1500.	4062.	11585.	11394.
1963	7494.	4247.	4371.	4594.	4458.	5323.	12451.	4159.	5413.	11280.	12770.	6854.
1964	1576.	0.	0.	0.	0.	0.	8400.	3198.	3282.	12453.	13932.	10882.
1965	4118.	5006.	4944.	4786.	4273.	4858.	2431.	2201.	4683.	11434.	7012.	2928.
1966	2046.	6471.	7210.	5536.	5250.	5995.	5757.	9292.	13579.	14478.	14554.	14000.
1967	2976.	4404.	4622.	4622.	4189.	4963.	5067.	9689.	8554.	4320.	12819.	7644.
1968	4208.	3570.	3903.	4135.	3993.	4616.	4034.	12448.	11464.	13528.	10620.	1732.
1969	2302.	3450.	3782.	3782.	1800.	0.	0.	992.	2220.	4162.	15226.	12266.
1970	3872.	1200.	600.	4473.	4813.	5685.	4866.	2321.	1635.	9873.	14059.	9747.
1971	1674.	4239.	4191.	4625.	4827.	5806.	5742.	2255.	2113.	1748.	8489.	8600.
1972	4424.	5103.	4703.	5961.	5216.	1485.	1101.	512.	4080.	12482.	15974.	4580.
1973	1388.	8100.	5890.	5487.	5208.	5589.	5208.	1472.	3430.	11438.	7429.	2314.
1974	5685.	4026.	6460.	4982.	5734.	6966.	6486.	611.	4792.	13584.	13845.	8854.
1975	5284.	4908.	4870.	4765.	4318.	4703.	4374.	440.	1821.	5137.	9222.	1368.
1976	5613.	3150.	3091.	4365.	5524.	6907.	6384.	1512.	10266.	16495.	10138.	1388.
1977	1832.	4194.	4365.	4411.	4452.	19200.	5187.	17825.	15051.	13617.	10106.	7866.
1978	7901.	3270.	3091.	3751.	4259.	4718.	12400.	4986.	13689.	14989.	11944.	5432.
1979	5494.	2619.	2747.	3577.	3609.	4191.	9792.	17010.	14947.	14121.	11529.	8152.
1980	6975.	1815.	1764.	2716.	2528.	11236.	13100.	9131.	0.	9076.	12618.	6048.
1981	1982.	2121.	2396.	2542.	2738.	8236.	11317.	5684.	6516.	14063.	11490.	11198.
1982	5302.	813.	1317.	1965.	2164.	8100.	2292.	2700.	8296.	11150.	13294.	4107.
1983	1466.	2259.	3887.	3289.	3416.	4135.	4509.	1114.	1200.	1208.	2512.	1560.
1984	4328.	5112.	4269.	1860.	1733.	2040.	2292.	2480.	1800.	450.	475.	1072.
1985	2060.	2538.	2849.	2951.	2912.	3351.	2634.	1304.	2460.	15230.	8052.	5439.
1986	5094.	6888.	5814.	5863.	6619.	6981.	7260.	2774.	1990.	5964.	9476.	5508.

Winter flows, November through April, estimated from periodic discharge measurements.

Table 9. Well Water Users Monthly Pumping from Mud Lake used in Mud Lake Water Balance Model from Watermaster records and observations.

	Discharge in Acre Feet											
WY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	0.	0.	0.	0.	0.	0.	0.	3613.	7829.	16558.	7440.	6278.
1961	8306.	0.	0.	0.	0.	0.	0.	1099.	11974.	15227.	8907.	473.
1962	1462.	0.	0.	0.	0.	0.	0.	84.	185.	4668.	8011.	7636.
1963	8053.	0.	0.	0.	0.	0.	0.	0.	79.	10496.	9820.	2290.
1964	8522.	0.	0.	0.	0.	0.	0.	0.	142.	4583.	10690.	8082.
1965	10070.	0.	0.	0.	0.	0.	0.	28.	216.	4583.	6778.	4214.
1966	7846.	0.	0.	0.	0.	0.	0.	625.	11726.	17307.	7559.	5656.
1967	9501.	0.	0.	0.	0.	0.	0.	105.	72.	10499.	6369.	7884.
1968	9447.	0.	0.	0.	0.	0.	0.	0.	3176.	17583.	7870.	3985.
1969	7677.	0.	0.	0.	0.	0.	0.	168.	373.	2927.	7977.	7785.
1970	5119.	0.	0.	0.	0.	0.	0.	0.	155.	1871.	13597.	6043.
1971	6705.	0.	0.	0.	0.	0.	0.	126.	84.	3102.	4728.	9787.
1972	2706.	0.	0.	0.	0.	0.	0.	56.	689.	7045.	8243.	6064.
1973	5161.	0.	0.	0.	0.	0.	0.	122.	229.	4514.	15740.	6210.
1974	7086.	0.	0.	0.	0.	0.	0.	98.	437.	13945.	7820.	9410.
1975	5444.	0.	0.	0.	0.	0.	0.	0.	168.	1077.	2520.	8722.
1976	6266.	0.	0.	0.	0.	0.	0.	112.	1189.	13715.	7990.	6090.
1977	4598.	0.	0.	0.	0.	0.	0.	122.	5330.	17729.	8769.	11700.
1978	7357.	0.	0.	0.	0.	0.	0.	0.	4087.	17741.	7942.	8097.
1979	6541.	0.	0.	0.	0.	0.	0.	1085.	11739.	19026.	6762.	7778.
1980	6976.	0.	0.	0.	0.	0.	0.	289.	0.	6705.	10062.	5061.
1981	7817.	0.	0.	0.	0.	0.	0.	2140.	20607.	10039.	14328.	10906.
1982	6263.	0.	0.	0.	0.	0.	0.	525.	8033.	2077.	10060.	12562.
1983	5402.	0.	0.	0.	0.	0.	0.	144.	962.	3087.	705.	2551.
1984	724.	0.	0.	0.	0.	0.	0.	0.	0.	706.	106.	1753.
1985	437.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11090.	6079.
1986	3334.	0.	0.	0.	0.	0.	0.	0.	1152.	2442.	10815.	912.

Table 10. Mud Lake Water Users Monthly Pumping from Mud Lake used in Mud Lake Water Balance Model from Watermaster records.

	Discharge in Acre Feet											
WY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	0.	0.	0.	0.	0.	0.	226.	8933.	10426.	301.	0.	0.
1961	0.	0.	0.	0.	0.	0.	75.	13302.	8619.	351.	0.	0.
1962	0.	0.	0.	0.	0.	0.	0.	11869.	18180.	9375.	747.	0.
1963	305.	0.	0.	0.	0.	0.	2596.	6109.	8125.	9537.	1145.	360.
1964	94.	0.	0.	0.	0.	0.	986.	7833.	11057.	16790.	1442.	0.
1965	0.	0.	0.	0.	0.	0.	0.	9609.	17813.	10918.	1669.	534.
1966	0.	0.	0.	0.	0.	0.	1800.	18933.	7647.	1532.	216.	170.
1967	225.	0.	0.	0.	0.	0.	334.	14167.	11054.	1931.	7892.	176.
1968	12.	0.	0.	0.	0.	0.	1738.	13808.	12337.	2638.	557.	57.
1969	60.	0.	0.	0.	0.	0.	0.	17265.	16892.	14528.	3914.	144.
1970	144.	0.	0.	0.	0.	0.	0.	8785.	18094.	10894.	3983.	232.
1971	183.	0.	0.	0.	0.	0.	0.	13371.	19227.	18487.	7670.	882.
1972	450.	0.	0.	0.	0.	0.	0.	16786.	18271.	15381.	774.	142.
1973	13.	0.	0.	0.	0.	0.	0.	17533.	17062.	9524.	1655.	942.
1974	492.	0.	0.	0.	0.	0.	360.	18576.	24030.	8931.	1642.	1011.
1975	0.	0.	0.	0.	0.	0.	0.	5940.	23756.	16753.	11328.	638.
1976	86.	0.	0.	0.	0.	0.	0.	16788.	20480.	11106.	871.	103.
1977	22.	0.	0.	0.	0.	0.	2314.	12608.	13811.	211.	177.	0.
1978	0.	0.	0.	0.	0.	0.	0.	12868.	17151.	2997.	821.	500.
1979	0.	0.	0.	0.	0.	0.	0.	15125.	7586.	412.	0.	0.
1980	0.	0.	0.	0.	0.	0.	1000.	5829.	11950.	16048.	870.	118.
1981	90.	0.	0.	0.	0.	0.	720.	12346.	2420.	11173.	1324.	558.
1982	300.	0.	0.	0.	0.	0.	500.	14035.	9890.	17390.	455.	39.
1983	0.	0.	0.	0.	0.	0.	227.	13427.	24396.	15677.	8997.	10426.
1984	2572.	0.	0.	0.	0.	0.	0.	20067.	10945.	16108.	4425.	10784.
1985	3900.	0.	0.	0.	0.	0.	0.	15893.	19927.	14140.	1130.	0.
1986	0.	0.	0.	0.	0.	0.	0.	14044.	20671.	15328.	2042.	745

Table 11. Mud Lake Monthly Evaporation Volume used in Mud Lake Water Balance Calibration from Watermaster Records.

	Volume in Acre Feet											
WY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	1000.[1]	0.	0.	0.	0.	0.	0.	2000.[1]	2500.[1]	1700.[1]	1700.[1]	1200.[1]
1961	600.[1]	0.	0.	0.	0.	0.	0.	3675.	2871.	2827.	1989.	1890.
1962	1342.	0.	0.	0.	0.	0.	0.	2400.	2080.	3505.	1138.	1270.
1963	1244.	0.	0.	0.	0.	0.	0.	1665.	3984.	3910.	3238.	2411.
1964	1410.	0.	0.	0.	0.	0.	0.	1416.	3816.	4355.	1510.	1725.
1965	1146.[1]	0.	0.	0.	0.	0.	0.	1942.	1923.	2705.	1953.	1088.
1966	1093.	0.	0.	0.	0.	0.	0.	3033.	3450.	2810.	2402.	1836.
1967	1410.	0.	0.	0.	0.	0.	0.	2061.	2605.	2245.	1858.	1610.
1968	1062.	0.	0.	0.	0.	0.	0.	2280.	2180.	2514.	987.	863.
1969	842.	0.	0.	0.	0.	0.	0.	2676.	3050.	2106.	2012.	1713.
1970	1462.	0.	0.	0.	0.	0.	0.	1936.	2330.	2220.	1840.	1682.
1971	984.	0.	0.	0.	0.	0.	0.	2404.	3418.	1890.	1487.	1090.
1972	754.	0.	0.	0.	0.	0.	0.	2025.	1835.	2076.	1652.	1620.
1973	1141.	0.	0.	0.	0.	0.	0.	1741.	1630.	1382.	1054.	1040.
1974	760.	0.	0.	0.	0.	0.	0.	2544.	2618.	1710.	1135.	1466.
1975	1433.	0.	0.	0.	0.	0.	0.	1636.	2528.	2146.	1369.	882.
1976	520.	0.	0.	0.	0.	0.	0.	2118.	2033.	1671.	1629.	1139.
1977	1050.	0.	0.	0.	0.	0.	0.	2162.	2513.	2408.	2189.	946.
1978	854.	0.	0.	0.	0.	0.	0.	2028.	1632.	2024.	1873.	830.
1979	600.	0.	0.	0.	0.	0.	0.	2383.	2891.	2428.	1413.	1310.
1980	787.	0.	0.	0.	0.	0.	0.	420.	3632.	2608.	1717.	480.
1981	399.	0.	0.	0.	0.	0.	0.	2098.	2181.	1813.	1829.	1072.
1982	849.	0.	0.	0.	0.	0.	0.	1802.	1597.	1978.	2207.	708.
1983	152.	0.	0.	0.	0.	0.	0.	1893.	683.	2379.	1329.	1093.
1984	1230.	0.	0.	0.	0.	0.	0.	1400.[1]	2500.[1]	2400.[1]	1500.[1]	800.[1]
1985	600.[1]	0.	0.	0.	0.	0.	0.	1380.	2220.	1500.	1800.	414.
1986	402.	0.	0.	0.	0.	0.	0.	1200.	2460.	2160.	1440.	684

[1]Data not reported on Mud Lake alotments and disbursements for Watermaster sheets; estimated values based on 1960-86 average reported values.

Table 12. Mud Lake Monthly Evaporation Depths used in Mud Lake Water Balance Model computed from Watermaster Records.

WY	Depth in Feet											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	.40	.00	.00	.00	.00	.00	.00	.39	.57	.53	.63	.42
1961	.23	.00	.00	.00	.00	.00	.00	.67	.63	.78	.64	.52
1962	.35	.00	.00	.00	.00	.00	.00	.36	.36	.84	.39	.38
1963	.35	.00	.00	.00	.00	.00	.00	.25	.64	.79	.80	.57
1964	.35	.00	.00	.00	.00	.00	.00	.24	.61	.78	.34	.39
1965	.29	.00	.00	.00	.00	.00	.00	.31	.33	.52	.42	.25
1966	.28	.00	.00	.00	.00	.00	.00	.52	.72	.74	.67	.44
1967	.35	.00	.00	.00	.00	.00	.00	.39	.45	.40	.40	.38
1968	.29	.00	.00	.00	.00	.00	.00	.41	.38	.51	.22	.19
1969	.22	.00	.00	.00	.00	.00	.00	.45	.51	.42	.46	.40
1970	.35	.00	.00	.00	.00	.00	.00	.29	.39	.44	.42	.39
1971	.24	.00	.00	.00	.00	.00	.00	.32	.45	.34	.36	.28
1972	.18	.00	.00	.00	.00	.00	.00	.30	.33	.45	.40	.41
1973	.32	.00	.00	.00	.00	.00	.00	.25	.29	.29	.24	.28
1974	.22	.00	.00	.00	.00	.00	.00	.35	.44	.39	.31	.38
1975	.37	.00	.00	.00	.00	.00	.00	.23	.35	.36	.28	.23
1976	.17	.00	.00	.00	.00	.00	.00	.29	.32	.34	.37	.29
1977	.33	.00	.00	.00	.00	.00	.00	.30	.38	.47	.50	.24
1978	.25	.00	.00	.00	.00	.00	.00	.35	.30	.44	.48	.24
1979	.20	.00	.00	.00	.00	.00	.00	.42	.57	.60	.38	.35
1980	.24	.00	.00	.00	.00	.00	.00	.06	.52	.51	.41	.12
1981	.11	.00	.00	.00	.00	.00	.00	.32	.38	.42	.53	.36
1982	.31	.00	.00	.00	.00	.00	.00	.32	.25	.35	.44	.16
1983	.05	.00	.00	.00	.00	.00	.00	.30	.09	.34	.23	.24
1984	.29	.00	.00	.00	.00	.00	.00	.17	.27	.27	.24	.17
1985	.16	.00	.00	.00	.00	.00	.00	.17	.35	.32	.44	.12
1986	.11	.00	.00	.00	.00	.00	.00	.16	.35	.42	.36	.19

Table 13. Mud Lake End-of-Month Contents used in Mud Lake Water Balance Model. USGS Gage 13115000.

WY	Discharge in Acre Feet											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	3860.	6250.	10300.	14300.	18200.	20900.	25000.	20500.	10000.	4580.	5300.	6480.
1961	4290.	5950.	8950.	12300.	14800.	19300.	27500.	22300.	11700.	6460.	6820.	12400.
1962	10900.	12400.	15500.	18300.	21200.	23900.	33100.	35700.	20200.	6120.	6220.	10300.
1963	8530.	11200.	14700.	17900.	20800.	25400.	37600.	32800.	28000.	12100.	12000.	16100.
1964	9050.	9730.	13900.	17700.	21000.	23500.	30100.	28900.	33200.	17800.	15900.	16100.
1965	8500.	12100.	16300.	20600.	23400.	25600.	31300.	32400.	24900.	20300.	16700.	14800.
1966	8630.	13300.	18400.	22900.	26800.	29500.	32200.	23200.	13900.	7010.	11000.	15900.
1967	9080.	11100.	14400.	17900.	20400.	22900.	24100.	23100.	33600.	20900.	15000.	13600.
1968	7490.	10400.	14800.	19000.	21800.	23800.	25000.	28600.	25900.	15100.	18500.	15100.
1969	7840.	11400.	15600.	20500.	22300.	22200.	29100.	29400.	28100.	15300.	15100.	15100.
1970	12700.	17400.	22500.	26700.	29900.	32400.	34600.	34400.	24200.	19000.	13300.	16800.
1971	9790.	15300.	21400.	26100.	29500.	33300.	37700.	42400.	37300.	16700.	11400.	12300.
1972	15400.	19800.	24400.	27600.	29400.	33900.	38500.	30700.	22500.	12900.	13900.	10200.
1973	9120.	15300.	21100.	26500.	30600.	34100.	38300.	35000.	20700.	19700.	11600.	8890.
1974	9180.	14000.	19400.	24200.	28000.	32300.	39100.	36500.	22300.	9420.	11600.	11900.
1975	11800.	15000.	19400.	23800.	27400.	30700.	34800.	39500.	35600.	24400.	16900.	6330.
1976	8340.	12000.	17200.	23000.	28000.	32100.	37700.	37600.	26100.	15700.	16300.	8240.
1977	6930.	10700.	15500.	20800.	24400.	40900.	37000.	38500.	28700.	16200.	15200.	9590.
1978	8600.	9450.	11300.	14100.	16800.	19900.	28000.	29400.	22500.	12100.	11600.	7400.
1979	6310.	7690.	10900.	13200.	15500.	18500.	27300.	26300.	16600.	8800.	12000.	8890.
1980	7660.	7720.	9250.	10700.	12200.	22900.	36000.	40900.	30600.	14500.	13700.	12300.
1981	7580.	8240.[1]	9760.	11800.	13500.	20600.	33400.	34500.	20200.	10000.	7040.	5700.[1]
1982	5603.[1]	8832.[1]	8694.[1]	8790.	10600.	20300.	23000.	31500.	32500.	21600.	22500.	10100.
1983	7093.[1]	8621.[1]	10600.	13300.	16000.	19200.	24900.	37900.	42400.	31000.	24900.	11500.
1984	18500.	27000.	30400.	33500.	36400.	39300.	40900.	49200.	58600.	38100.	26900.	11600.
1985	10400.	20000.	26800.	33100.	38600.	39300.	47200.	42700.	22300.	15600.	10100.	9280.[1]
1986	10000.	16500.	23900.	30300.	37300.	37200.	42000.	41100.	30700.	14900.	10800.	8210

[1]Partial data for month reported by USGS; estimate made based on available USGS and Watermaster data for month.

Table 14. Mud Lake End-of-Month Lake Elevations used in the Mud Lake Water Balance Model computed from USGS records.

	Lake Elevation in Feet Above Mean Sea Level											
WY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	4775.05	4776.25	4777.73	4778.76	4779.55	4780.04	4780.76	4779.97	4777.64	4775.45	4775.81	4776.36
1961	4775.29	4776.12	4777.30	4778.29	4778.87	4779.75	4781.20	4780.29	4778.13	4776.35	4776.50	4778.31
1962	4777.91	4778.31	4779.02	4779.57	4780.09	4780.57	4782.20	4782.66	4779.91	4776.20	4776.24	4777.73
1963	4777.16	4777.99	4778.85	4779.49	4780.02	4780.83	4782.98	4782.15	4781.29	4778.24	4778.21	4779.14
1964	4777.34	4777.56	4778.67	4779.45	4780.06	4780.50	4781.67	4781.45	4782.22	4779.47	4779.10	4779.14
1965	4777.15	4778.24	4779.18	4779.98	4780.48	4780.86	4781.88	4782.08	4780.74	4779.93	4779.26	4778.87
1966	4777.19	4778.53	4779.59	4780.39	4781.08	4781.56	4782.04	4780.44	4778.67	4776.58	4777.94	4779.10
1967	4777.35	4777.97	4778.78	4779.49	4779.95	4780.39	4780.60	4780.43	4782.29	4780.04	4778.91	4778.60
1968	4776.77	4777.76	4778.87	4779.70	4780.20	4780.55	4780.76	4781.40	4780.92	4778.94	4779.60	4778.94
1969	4776.91	4778.05	4779.04	4779.97	4780.29	4780.27	4781.49	4781.54	4781.31	4778.98	4778.94	4778.94
1970	4778.39	4779.40	4780.32	4781.06	4781.63	4782.08	4782.47	4782.43	4780.62	4779.70	4778.53	4779.28
1971	4777.58	4778.98	4780.13	4780.95	4781.56	4782.24	4783.00	4783.73	4782.93	4779.26	4778.05	4778.29
1972	4779.00	4779.84	4780.65	4781.22	4781.54	4782.34	4783.13	4781.77	4780.32	4778.44	4778.67	4777.70
1973	4777.36	4778.98	4780.07	4781.02	4781.75	4782.38	4783.10	4782.54	4780.00	4779.82	4778.10	4777.28
1974	4777.38	4778.69	4779.77	4780.62	4781.29	4782.06	4783.23	4782.80	4780.29	4777.46	4778.10	4778.18
1975	4778.16	4778.91	4779.77	4780.55	4781.18	4781.77	4782.50	4783.29	4782.64	4780.65	4779.30	4776.29
1976	4777.09	4778.21	4779.36	4780.41	4781.29	4782.02	4783.00	4782.98	4780.95	4779.06	4779.18	4777.05
1977	4776.55	4777.85	4779.02	4780.02	4780.65	4783.51	4782.88	4783.13	4781.42	4779.16	4778.96	4777.51
1978	4777.18	4777.47	4778.02	4778.72	4779.28	4779.86	4781.29	4781.54	4780.32	4778.24	4778.10	4776.74
1979	4776.28	4776.85	4777.91	4778.51	4779.02	4779.60	4781.17	4780.99	4779.24	4777.25	4778.21	4777.28
1980	4776.84	4776.86	4777.40	4777.85	4778.26	4780.39	4782.71	4783.51	4781.75	4778.81	4778.63	4778.29
1981	4776.81	4777.05	4777.57	4778.16	4778.58	4779.98	4782.26	4782.45	4779.91	4777.64	4776.59	4776.00
1982	4775.96	4777.26	4777.22	4777.25	4777.82	4779.93	4780.41	4781.92	4782.10	4780.16	4780.32	4777.67
1983	4776.61	4777.19	4777.82	4778.53	4779.12	4779.73	4780.74	4783.03	4783.73	4781.83	4780.74	4778.08
1984	4779.60	4781.11	4781.72	4782.27	4782.78	4783.26	4783.51	4784.55	4785.33	4783.07	4781.09	4778.10
1985	4777.76	4779.88	4781.08	4782.20	4783.15	4783.26	4784.34	4783.77	4780.29	4779.04	4777.67	4777.41
1986	4777.64	4779.22	4780.57	4781.70	4782.93	4782.92	4783.67	4783.54	4781.77	4778.89	4777.88	4777.04

Table 15. Monthly Reach Gains for the Mud Lake Reach used in the Mud Lake Water Balance Model.

	Acre Feet											
WY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	-4014.	-1702.	-1096.	-1456.	-1056.	-3252.	-1734.	-876.	-3054.	488.	-1384.	-2315.
1961	7.	-1533.	-379.	-773.	-1672.	-1452.	1405.	35.	-946.	363.	186.	-81.
1962	-936.	-1662.	-279.	-858.	-460.	-630.	-3193.	-661.	-307.	-594.	-1589.	1592.
1963	338.	-1577.	-871.	-1394.	-1558.	-723.	3956.	-1926.	1275.	-3237.	1333.	2307.
1964	1400.	680.	4170.	3800.	3300.	2500.	-4514.	-2149.	-267.	-3305.	-2190.	-875.
1965	-502.	-1406.	-744.	-486.	-1473.	-2658.	-3131.	-1196.	1369.	-2828.	-212.	1008.
1966	723.	-1801.	-2110.	-1036.	-1350.	-3295.	-1348.	1686.	-56.	281.	-387.	-1438.
1967	1340.	-2384.	-1322.	-1122.	-1689.	-2463.	-3533.	-2988.	-1708.	-4515.	-2600.	626.
1968	203.	-660.	497.	65.	-1193.	-2616.	-25.	-48.	-2471.	-1593.	2194.	-227.
1969	-983.	110.	418.	1118.	0.	1800.	5660.	-303.	-1357.	-55.	-1523.	-2624.
1970	453.	3500.	4500.	-273.	-1613.	-3185.	-2666.	-2997.	-2028.	-1511.	-339.	1710.
1971	-812.	1271.	1909.	75.	-1427.	-2006.	-1342.	-1410.	-484.	231.	96.	4059.
1972	2586.	-703.	-103.	-2761.	-3416.	4086.	3625.	-1071.	-391.	335.	-4305.	-454.
1973	3847.	-1920.	-90.	-87.	-1108.	-2089.	-1008.	-1555.	-81.	2982.	2920.	3168.
1974	2943.	794.	-1060.	-182.	-1934.	-2666.	-1526.	-393.	761.	-1878.	-1068.	3333.
1975	1493.	-1708.	-470.	-365.	-718.	-1403.	-274.	-2626.	-2269.	-1541.	-1505.	-1696.
1976	3269.	510.	2109.	1435.	-524.	-2807.	-784.	-1864.	78.	-403.	952.	-2116.
1977	2528.	-424.	435.	889.	-852.	-2700.	-6773.	-1433.	-3197.	-5769.	29.	-830.
1978	-680.	-2420.	-1241.	-951.	-1559.	-1618.	-4300.	-5287.	-34.	-2627.	-1808.	-205.
1979	557.	-1239.	463.	-1277.	-1309.	-1191.	-992.	-3991.	-2431.	-55.	-154.	-2174.
1980	-442.	-1755.	-234.	-1266.	-1028.	-536.	1000.	-2720.	-2660.	-978.	-769.	-1789.
1981	1604.	-1461.	-876.	-502.	-1038.	-1136.	-5297.	-2082.	-4230.	-1238.	3031.	-2.
1982	2013.	2416.	-1455.	-1869.	-354.	1600.	-92.	-4849.	-1095.	-2630.	328.	-3198.
1983	1081.	-731.	-1908.	-589.	-716.	-935.	-1082.	-843.	-1664.	-3465.	2419.	-890.
1984	5198.	388.	-3169.	-1360.	-1133.	174.	1528.	7308.	1688.	-4272.	1796.	1869.
1985	6137.	1862.	-149.	-351.	-212.	-1136.	3766.	1080.	-5692.	-6290.	468.	234.
1986	-638.	-4888.	-214.	-1263.	-1619.	-3231.	-300.	1800.	-101.	-1834.	721.	-5757.

Table 16. Flood Diversions Upstream of Camas Creek Gage used in Mud Lake Water Balance Model. Specifically, the Lone Tree Diversion, USGS Gage 1310960.

	Discharge in Acre Feet											
WY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1961	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1962	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1963	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1964	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1965	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1966	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1967	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1968	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1969	0.	0.	0.	0.	0.	0.	0.7570	0.22400	0.	0.	0.	0.
1970	0.	0.	0.	0.	0.	0.	0.	0.5880	0.	0.	0.	0.
1971	0.	0.	0.	0.	0.	0.	0.1740	0.17150	0.10130	0.	0.	0.
1972	0.	0.	0.	0.	0.	0.	0.4743	0.4451	0.	0.	0.	0.
1973	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1974	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1975	0.	0.	0.	0.	0.	0.	0.	0.13030	0.7170	0.	0.	0.
1976	0.	0.	0.	0.	0.	0.	0.	0.2600	0.	0.	0.	0.
1977	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1978	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1979	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1980	0.	0.	0.	0.	0.	0.	0.	0.	8421.	0.	0.	0.
1981	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1982	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1983	0.	0.	0.	0.	0.	0.	0.	12841.	16124.	2491.	0.	0.
1984	0.	0.	0.	0.	0.	0.	2500.	21342.	16639.	3894.	2769.	2460.
1985	0.	0.	0.	0.	0.	0.	12615.	8561.	1171.	0.	0.	0.
1986	0.	0.	0.	0.	0.	0.	7940.	10590.	0.	0.	0.	0

Data after 1982 obtained from USGS. Other data from University of Idaho and Watermaster. 1983 & 1984 Lone Tree diversion flowed all winter but was not measured. 1969 throuth 1976 data supplied by Don Shenton, Watermaster, via telephone 1/16/89. From USGS data, but no published record.

Table 17. Flood Diversions in Ray's Lake Reach used in Mud Lake Water Balance Model, from Watermaster records and observations*.

WY	Discharge in Acre Feet											
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1961	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1962	0.	0.	0.	0.	0.	0.	4000.	4000.	3000.	0.	0.	0.
1963	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1964	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1965	0.	0.	0.	0.	0.	0.	0.	0.	6500.	0.	0.	0.
1966	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1967	0.	0.	0.	0.	0.	0.	0.	10000.	5000.	0.	0.	0.
1968	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1969	0.	0.	0.	0.	0.	0.	3000.	15000.	5951.	0.	0.	0.
1970	0.	0.	0.	0.	0.	0.	0.	6744.	3035.	0.	0.	0.
1971	0.	0.	0.	0.	0.	0.	0.	6694.	4959.	0.	0.	0.
1972	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1973	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1974	0.	0.	0.	0.	0.	0.	10116.	0.	0.	0.	0.	0.
1975	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1976	0.	0.	0.	0.	0.	0.	6000.	7686.	0.	0.	0.	0.
1977	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1978	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1979	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1980	0.	0.	0.	0.	0.	0.	0.	0.	2255.	0.	0.	0.
1981	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1982	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1983	0.	0.	0.	0.	0.	0.	5732.	10500.	1000.	0.	0.	0.
1984	0.	0.	0.	0.	0.	0.	4384.	10453.	5732.	0.	0.	0.
1985	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1986	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

*Primarily Warm Creek diversion.

Table 18. Pumped Diversions from Mud Lake to the desert (INEL) for flood control used in Mud Lake Water Balance Model, based on Watermaster records and observations.

	Discharge in Acre Feet											
WY	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep
1960	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1961	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1962	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1963	0.	0.	0.	0.	0.	0.	2083.	149.	0.	0.	0.	0.
1964	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1965	0.	0.	0.	0.	0.	0.	0.	6426.	0.	0.	0.	0.
1966	0.	0.	0.	0.	0.	0.	1909.	3000.	0.	0.	0.	0.
1967	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1968	0.	0.	0.	0.	0.	0.	1071.	0.	0.	0.	0.	0.
1969	0.	0.	0.	0.	0.	1900.	4760.	0.	0.	0.	0.	0.
1970	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1971	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1972	0.	0.	0.	0.	0.	1071.	6426.	0.	0.	0.	0.	0.
1973	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1974	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1975	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1976	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1977	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1978	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1979	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1980	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1981	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1982	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
1983	0.	0.	0.	0.	0.	0.	0.	0.	2200.	0.	0.	0.
1984	0.	0.	0.	0.	0.	1914.	5220.	5332.	5480.	3164.	7440.	4904.
1985	4460.	0.	0.	0.	0.	5415.	10500.	4632.	0.	0.	0.	0.
1986	0.	0.	0.	0.	0.	7650.	8160.	4260.	0.	0.	0.	0

Flow Modification Data File

The operational flood diversion file format is crucial to the proper execution of the model. Each record in the file represents a month during the simulation period when a flow modification is scheduled. The contents of the record are listed in Table 19.

The data entered in this file is expected to be in chronological order. If it is not, the program will terminate with an error.

Table 19. Operational Flood Diversion File Contents and Format.

Column	Format	Field	Contents/Comments
1-2	I2	YEAR	Numerical Representation of the year of the flow modification, IE 1960 is 60.
3-5	I3	MONTH	Numerical Representation of the month for the flow modification; Jan = 1, Feb = 2, ...
6-14	F9.0	BFDIV	The amount of water (af) diverted, stored, or released above the Beaver Crk near Camas gaging station. Positive numbers represent diversions or storage, negative numbers represent releases.
15-23	F9.0	BLAG	The amount of water (af) previously diverted above the Beaver Crk near Camas gaging station which enters Mud Lake through ground water.
24-32	F9.0	CFDIV	The amount of water (af) diverted, stored, or released above the Camas Crk near Camas gaging station. Positive numbers represent diversions or storage, negative numbers represent releases.
33-41	F9.0	CLAG	The amount of water (af) previously diverted above the Camas Crk near Camas gaging station which enters Mud Lake through ground water.
42-50	F9.0	RFDIV	The amount of water (af) diverted, stored, or released below the Camas Crk near Camas and Beaver Crk near Camas gaging stations and above the Bybee structure. Positive numbers represent diversions or storage, negative numbers represent releases.
51-59	F9.0	RLAG	The amount of water (af) previously diverted below the Camas Crk near Camas and Beaver Crk near Camas gaging stations and above the Bybee structure which enters Mud Lake through ground water.
60-68	F9.0	WRED	The amount of well water inflow to Mud Lake reduced by shutting off pumps, capping wells, damming springs. Positive numbers reduce inflows, negative numbers increase inflows.
69-77	F9.0	DINC	The increase in desert/INEL pumping from Mud Lake.

Running the Water Balance Model

Once the flow modification scenario file has been developed, the water balance model is ready to run. For IBM PC computers and compatibles with math co-processors, simply type in "MUDLAKE" from the DOS prompt and follow the instructions:

(dosprompt)> MUDLAKE
Mud Lake Watershed Mass Balance Program
Version: 1.10-BETA cc. UOFI 1988
Please enter output file/device name? [printer or file]
    File " ... " exists, overwrite? [yes or no]
-or-
    File " ... " does not exist, create? [yes or no]
Analysis Title: [text for output identification]
Flow modification data file name? [file containing Table 19 information]
Prepare a plotting data file? [yes or no]
-if yes- **Plotting data file name?** [file name]
        File " ... " exists, overwrite? [yes or no]
    -or-
        File " ... " does not exist, create? [yes or no]
Starting Mud Lake Contents (5340)? [contents in acre feet]
Minimum Allowable Mud Lake WSE [4773.99]? [water surface elevation, ft]
Maximum Allowable Mud Lake WSE [4785.99]? [water surface elevation, ft]

The water balance program then begins to run and no further responses are required. The program will terminate after completing a successful simulation with the following response:

-----> NORMAL TERMINATION <-----
Stop - Program terminated.

If the program encounters errors reading the data files or if the storage in Mud Lake falls below 1790 acre feet, a legal constraint, the program will terminate with an error message and the following message:

[error message text]
-----> ABNORMAL TERMINATION <-----
Stop - Program terminated.

Output from the Water Balance Model

The output from the program will go the file or device as directed. Appendix B contains the output from the program when actual flood diversions are used. If the output was sent to a file it can be printed by copying the file to a printer. The output

contains form feeds (ASCII character 012) and requires a printer capable of 132 character output. The first page will contain the information entered from the program prompts. The next set of pages will contain the data read by the model from the flow modification file and is titled

"Flow Modification Data File " ... " Listing

The two rightmost columns contain the total effective flood diversions and lagged flows for that record. After listing the entire data set contained in the file, the program summarizes the total diversions for the simulation period. The calibrated reach gains/losses were based on net effective out-of-basin diversions upstream of Mud Lake of approximately 282,000 acre feet, during water years 1960 to 1986.

The last part of the output contains the historical and computed flows (acre feet per month), end of month water surface elevation (feet above mean sea level), and end of month contents (acre feet) by month for the simulation period, water years 1960 through 1986. Interjected in this portion of the output may be warnings concerning the results of the flow modification resulting in insufficient computed flows at Beaver Creek, Camas Creek, insufficient water to meet water rights, and exceeding the minimum/maximum Mud Lake water surface elevation, or insufficient water for the flood diversion.

Output Warnings and Errors

One of the possible errors encountered when executing the model involves formatting errors in the data files. Errors of this nature will produce an error message in the output file and on the screen and usually will result in termination of the run. These error messages are display in the following manner:

Error occurred reading ... file: *[filename]*
ERROR CODE RETURNED WAS ####

Another error type which will cause early termination of the run is improper date information or records out of date sequence. The errors result in the following displayed error messages.

Error involving input data from *"filename"* **Invalid month**
Data sequencing error on input data from [filename]

There are many simulation warning messages which deal with improper effective flood diversions being specified in the flow modification file. The warning messages listed below are usually self explanatory.

WARNING: Beaver Creek flood diversion in excess of Beaver Creek flow at Camas.
Diversion = #### Flow at Camas = ####
Will assume a zero flow at Camas for Beaver Creek.

WARNING: Camas Creek flood diversion in excess of Camas Creek flow at Camas.
Diversion = #### Flow at Camas = ####
Will assume a zero flow at Camas for Camas Creek.

WARNING: Beaver and Camas Creek flood diversions resulted in water rights not
being satisfied in the Camas to Bybee structure Reach.
Reach Inflow = #### Required Inflow = ####
Decreasing total Beaver and Camas flood diversions by ####

[Also setting Rays Lake flood diversion to zero.]

WARNING Beaver and Camas Creek flow insufficient to meet Rays Lake flood diversion.
Flood Diversion = #### Right Diversion = #### Available Flow = ####
Continuing on assuming that right diversion occur below the reach gain.

WARNING: Well inflows to Mud Lake smaller than the proposed reduction.
Reduction = #### Well Flow = ####
Will assume a zero flow for the wells and springs.

ERROR: Mud Lake contents below the legal minimum of 1790 af. Excess draft of ####, acre-feet
You are not familiar with the Mud Lake System.
Review your flood diversions before running the program again.
- - TERMINATION BEGINS - -

WARNING: Mud Lake water elevation above your specified maximum!
This corresponds to an overflow volume of #### acre-ft.
Continuing on assuming your maximums for end of month conditions.

WARNING: Mud Lake water elevation below your specified minimum!
This corresponds to an over draft of #### acre-ft.
Continuing on assuming your minimums for end of month conditions.

If one of these warning occur, the flow modification data set should be edited to eliminate the warning. Most of the warnings will result in a flow modification value being reduced in the program to a value that will work in the simulation, but that value is not changed in the data file.

Plotting Data File

If a plotting data file was requested, the simulation data found in the last part of the output will be written to the specified file. Each record in that file will contain a year and month data values for historical and computed flows, and end of month elevations and contents. This ASCII file contains pure numbers and no column or title information. The month is represented numerically and the record format is shown in Table 20.

Compiling the Water Balance Model

The program source code for the Mud Lake water balance model is contained in the file "MUDLAKE.FOR" and listed in Appendix C. The program was developed using the MICROSOFT OPTIMIZING FORTRAN 4.1 compiler. The source code contains the various compiler commands for recognizing long variable names and explicitly defining each variable. Using the FORTRAN 4.1 compiler, the program is compiled and linked by issuing the following command from the DOS prompt:

(dosprompt)> fl /AL mudlake.for

For other compilers, the user should refer to the compiler's documentation for compiling instructions.

Table 20. Operational Plotting Data File Contents and Format.

Column	Format	Field	Contents/Comments
1-3	I3	YEAR	Numerical Representation of the year of the flow modification, IE 1960 is 60.
4-6	I3	MONTH	Numerical Representation of the month for the flow modification; Jan = 1, Feb = 2, ...
7-15	F9.2	BHIST	Historical Beaver Creek near Camas Flows
16-24	F9.2	BCOMP	Computed Beaver Creek near Camas Flows
25-33	F9.2	CHIST	Historical Camas Creek near Camas Flows
34-42	F9.2	CCOMP	Computed Camas Creek near Camas Flows
43-51	F9.2	SHIST	Historical Camas Creek at the Bybee structure Flows
52-60	F9.2	SCOMP	Computed Camas Creek at the Bybee structure Flows
61-69	F9.2	WHIST	Historical well inflows to Mud Lake
70-78	F9.2	WCOMP	Computed, reduced, inflows to Mud Lake
79-87	F9.2	DHIST	Historical, irrigation, drafts from Mud Lake
88-96	F9.2	DCOMP	Computed drafts, (irrigation and desert pumping), from Mud Lake.
97-105	F9.2	EHIST	Historical end of month Mud Lake water surface elevations.
106-114	F9.2	ECOMP	Computed end of month Mud Lake water surface elevations.
115-123	F9.2	CONTH	Historical end of month Mud Lake contents
124-131	F9.2	CONTC	Computed end of month Mud Lake contents

USING THE WATER BALANCE CALIBRATION PROGRAM

The water balance model uses an historical data set of flows and calibrated reach gains/losses contained in a data file named "MLHISTQ.DAT". This file was created by running a calibration program developed by the University of Idaho on an historical flow data set, "MUDLDATA.008". The data contained in the historical flow and diversion file are the available flow measurements and the best possible estimates of flow when and where data was not available from the U.S.G.S. or the watermaster. When and if better data becomes available it may be necessary to re-calibrate the reach gains/losses contained in "MLHISTQ.DAT" file. To perform a recalibration, the input data set will need to be updated with the new data. Table 21 contains the record description of the data contained in input data set.

Table 21. Calibration Input Data File Contents and Format.

Column	Format	Field	Contents/Comments
1-2	I2	YEAR	Numerical Representation of the year of the flow modification, IE 1960 is 60.
3-5	I3	MONTH	Numerical Representation of the month for the flow modification, Jan = 1, Feb = 2, ...
6-12	F7.0	BEAVER	Beaver Creek near Camas monthly flow volume in acre feet.
13	A1	FLG1	Single Character flag denoting quality of the BEAVER value, ' '-actual measurement, '?'-estimated by UI.
14-20	F7.0	CAMAS	Camas Creek at Camas monthly flow volume in acre feet.
21	A1	FLG2	Single Character flag denoting quality of the CAMAS value, ' '-actual measurement, '?'-estimated by UI.
22-28	F7.0	USFW	Monthly diversion by the US Fish and Wildlife Service in acre feet.
29	A1	FLG3	Single Character flag denoting quality of the USFW value, ' '-actual measurement, '?'-estimated by UI.
30-36	F7.0	RAYS	Monthly irrigation diversion of Ray's Pump in acre feet.
37	A1	FLG4	Single Character flag denoting quality of the RAYS value, ' '-actual measurement, '?'-estimated by UI.
38-44	F7.0	BYBEE	Camas Creek at the Bybee structure monthly flow volume in acre feet.
45	A1	FLG5	Single Character flag denoting quality of the BYBEE value, ' '-actual measurement, '?'-estimated by UI.
46-52	F7.0	WFLOW	Well, pumped or artesian, monthly inflow to Mud Lake in acre feet.
53	A1	FLG6	Single Character flag denoting quality of the WFLOW value, ' '-actual measurement, '?'-estimated by UI.
54-60	F7.0	WUSE	Monthly diversion from Mud Lake by well water accounts in acre feet.
61	A1	FLG7	Single Character flag denoting quality of the WUSE value, ' '-actual measurement, '?'-estimated by UI.
62-68	F7.0	LUSE	Monthly diversion from Mud Lake by lake water accounts in acre feet
69	A1	FLG8	Single Character flag denoting quality of the LUSE value, ' '-actual measurement, '?'-estimated by UI.
70-76	F7.0	EOM	End of month contents of Mud Lake
77	A1	FLG9	Single Character flag denoting quality of the EOM value, ' '-actual measurement, '?'-estimated by UI.
78-94	F7.0	EVAPV	Monthly evaporation volume from Mud Lake in acre feet.
95	A1	FLG10	Single Character flag denoting quality of the EVAPV value, ' '-actual measurement, '?'-estimated by UI.
96-102	F7.0	BFLOOD	Monthly flood diversion in acre feet upstream of the Beaver Crk near Camas gage.
103-109	F7.0	CFLOOD	Monthly flood diversion in acre feet upstream of the Camas Crk at Camas gage.
110-116	F7.0	RFLOOD	Monthly flood diversion in acre feet in the Ray's Lake reach.
117-123	F7.0	MFLOOD	Monthly flood diversion in acre feet from Mud Lake, IE Desert or INEL Pumping.

The data entered in this file is expected to be in chronological order. If it is not, the program will terminate with an error.

Running the Calibration Program

Once the historical data file has been modified and corrected, the calibration program is ready to run. For IBM PC computers and compatibles with math co-processors, simply type in "MUDLAKEC" from the DOS prompt and follow the instructions:

(dosprompt)> MUDLAKEC
Mud Lake Water Balance Calibration Program
Version 1.00-Beta
Please enter output file name? [printer or file]
    File " ... " exists, overwrite? [yes or no]
-or-
    File " ... " does not exist, create? [yes or no]
Please enter file name containing flow data? [file with Table 21 data]
Prepare a plotting data file? [yes or no]
-if yes- **Plotting data file name?** [file name]
        File " ... " exists, overwrite? [yes or no]
    -or-
        File " ... " does not exist, create? [yes or no]
Please enter starting contents of Mud Lake? 5340

The calibration program then begins to run and no further responses are required. The program will terminate after completing the calibration with the following response:

-----> NORMAL TERMINATION <-----
Stop - Program terminated.

If the program encounters errors reading the data files the program will terminate with an error message and the following message:

[error message text]
-----> ABNORMAL TERMINATION <-----
Stop - Program terminated.

Output from the Calibration Program

In addition to creating the calibrated historical flow data set, "MLHISTQ.DAT", for the water balance model, the printable output from the program will go to the file or device as directed. Appendix B contains the output from the program. If the output was sent to a file, it can be printed by copying the file to a printer. The output

contains form feeds (ASCII character 012) and requires a printer capable of 132 character output. The output consists of the input data and the calculated reach gains. Each page contains columnar heading describing the column. The USFW and Ray's Pump diversions have been added together and are shown in the 'Rights' column under Ray's Lake. The well and lake water account diversions have also been added together and are shown in the 'Draft' column under Mud Lake. Question marks next to the value indicate the number was based on estimated data.

If a plotting file was specified, it will contain the same information in the same order without any form feeds or heading information. The only exception is that year and month have been replaced with the decimal year, year+(month-1)/12. The FORMAT statement used to create the plotting file is:

FORMAT(F9.4,9F8.0,2F9.3,4F8.0)

Compiling the Calibration Program

The program source code for the calibration program is contained in the file "MUDLAKEC.FOR" and listed in Appendix C. The program was developed using the MICROSOFT OPTIMIZING FORTRAN 4.1 compiler. The source code contains the various compiler commands for recognizing long variable names and explicitly defining each variable. Using the FORTRAN 4.1 compiler, the program is compiled and linked by issuing the following command from the DOS prompt:

dosprompt)> fl /AL mudlakec.for

For other compilers the user should refer to their compiler's documentation for compiling instructions.

APPENDIX A

Appendix A

MUD LAKE GAGE VS. CAPACITY CURVE
AS PUBLISHED BY THE USGS

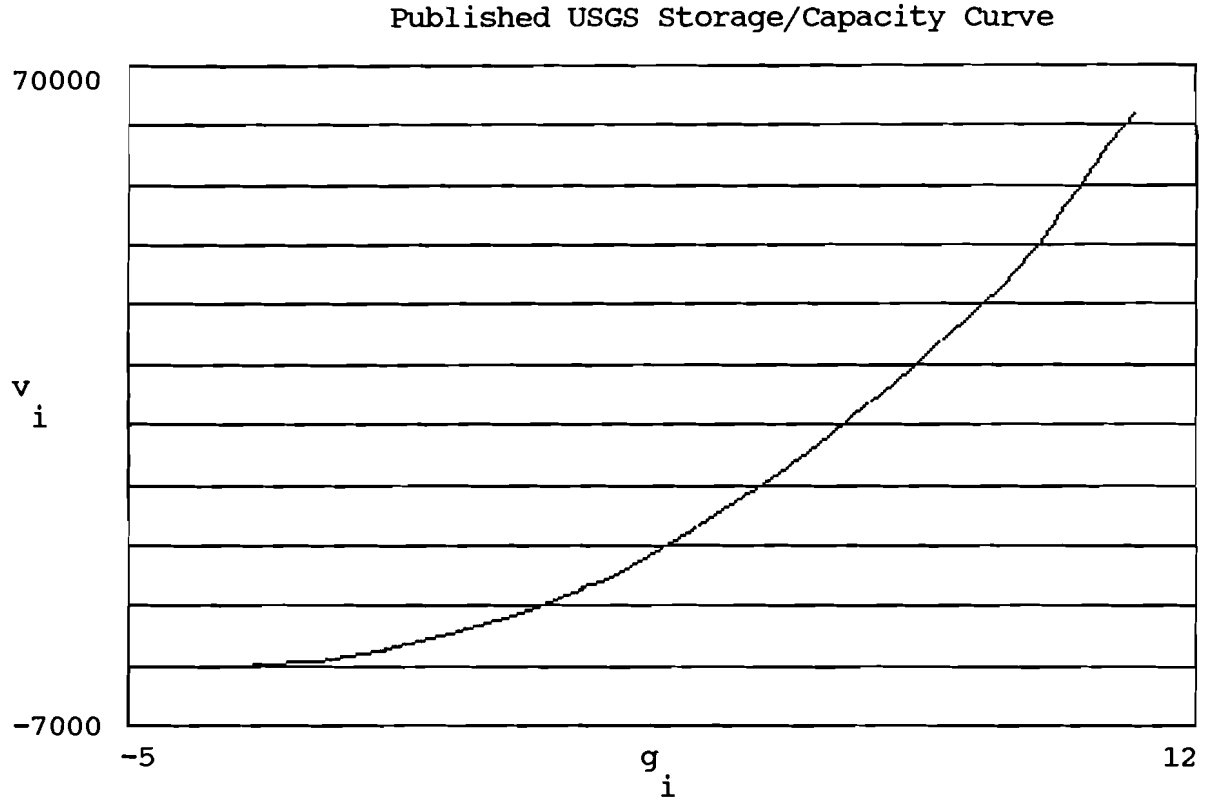
The Mud Lake gage consists of a water stage recorder located some 670 feet north of the mouth of Camas Creek. The gage datum was determined to be 4774.99 feet above sea level by the USGS. The area and capacity of the lake has varied from time to time due to changes in the dike system around the lake. To develop the various relationships for relating contents and surface area and gage, 25 data points relating gage elevation in feet to capacity in acre-feet were selected from the USGS and Watermaster capacity table. The USGS table contains spurious data from gage elevations from 9.5 feet to 11.0 feet indicating an overhanging banks around Mud Lake. Data values for this part of the table have been interpolated for development of the relationships. For the purposes of this document the following variable definitions are used.

g_i = gage elevation, feet v_i = lake capacity, acre-feet

Number of data points $n := 25$ $i := 0 \ldots n - 1$

$g_i :=$	$v_i :=$	Source of Data
-3.0	111	Watermaster
-2.0	587	Watermaster
-1.0	1790	Watermaster, legal minimum
0.0	3410	Watermaster
1.0	5460	Watermaster and USGS
1.5	6714	USGS
2.0	8150	USGS
2.5	9794	USGS
3.0	11600	USGS
3.5	13640	USGS
4.0	15810	USGS
4.5	18090	USGS
5.0	20510	USGS
5.5	23040	USGS
6.0	25740	USGS
6.5	28590	USGS
7.0	31580	USGS
7.5	34700	USGS
8.0	37930	USGS
8.5	41270	USGS
9.0	44730	USGS
9.5	48950	USGS
10.0	54033	Interpolated USGS (54450)
10.5	59117	Interpolated USGS (60000)
11.0	64200	USGS

To determine the gage vs storage contents relationship, the general type must be determined. The published storage/capacity relationship to gage height plot show a curvilinear relationship.



By examination a simple linear regression will not work; therefore a five degree polynominal equation will be assumed. First, compute the power terms.

$g2 := \overrightarrow{\begin{bmatrix} 2 \\ g \end{bmatrix}}$ $g3 := \overrightarrow{\begin{bmatrix} 3 \\ g \end{bmatrix}}$ $g4 := \overrightarrow{\begin{bmatrix} 4 \\ g \end{bmatrix}}$ $g5 := \overrightarrow{\begin{bmatrix} 5 \\ g \end{bmatrix}}$

Now create the G matrix:

$G_{i,0} := 1$ $G^{\langle 1 \rangle} := g$ $G^{\langle 2 \rangle} := g2$ $G^{\langle 3 \rangle} := g3$

$G^{\langle 4 \rangle} := g4$ $G^{\langle 5 \rangle} := g5$

Now solve for the coefficient matrix: $a := (G^T \cdot G)^{-1} \cdot (G^T \cdot v)$

Resulting Polynomial Coefficients:

$$a = \begin{bmatrix} 3241.0904 \\ 1766.5858 \\ 333.6983 \\ 17.3981 \\ -4.8127 \\ 0.3021 \end{bmatrix}$$

Fitted Polynomial Function where z is gage height:

$$vol(z) := a_0 + a_1 \cdot z + a_2 \cdot z^2 + a_3 \cdot z^3 + a_4 \cdot z^4 + a_5 \cdot z^5$$

Compute mean square error for the fitted polynomial:

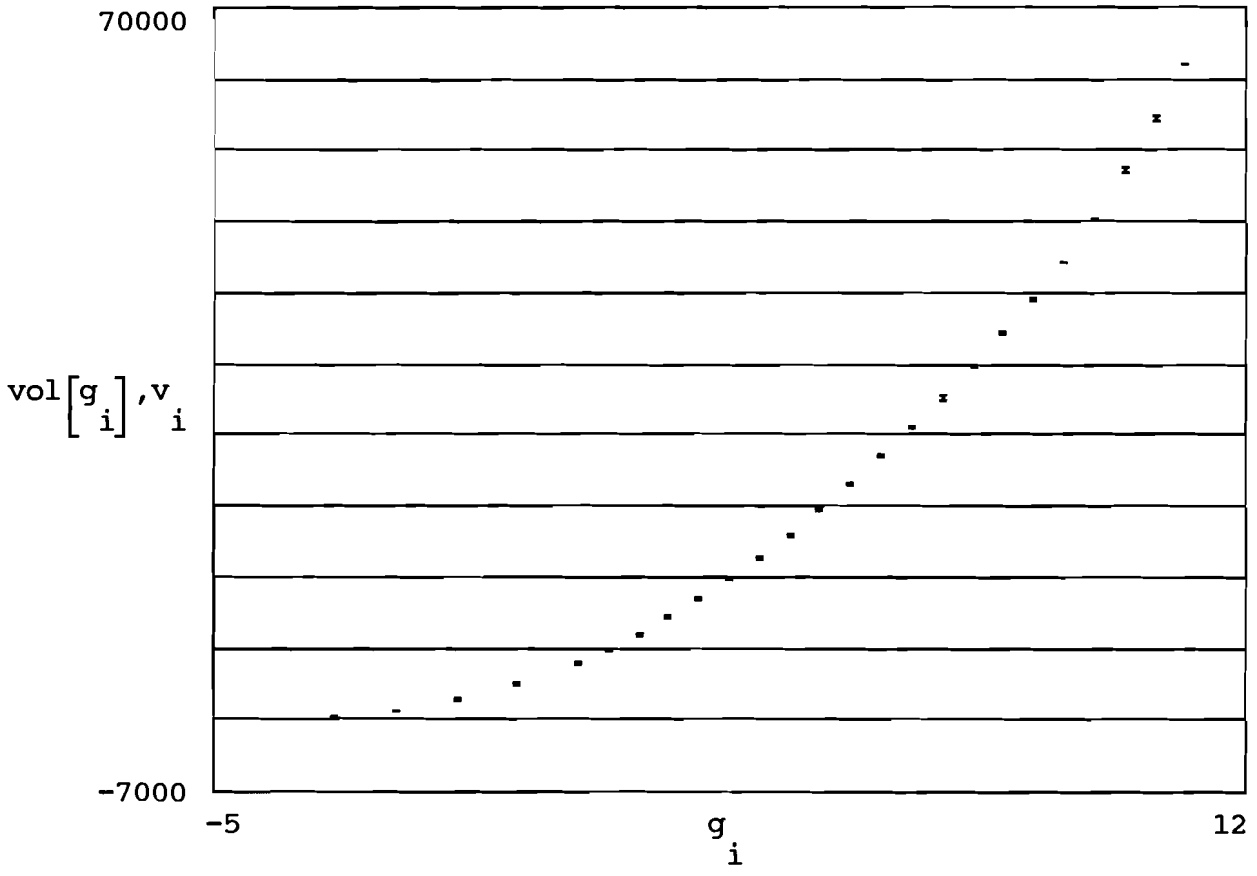
$$SSE_v := \Sigma\left[(v - vol(g))^2\right]$$

$$MSE_v := \frac{SSE_v}{n - 2}$$

$$MSE_v = 28042.0638$$

Plot the error between the fitted polynomial and the orginal data.

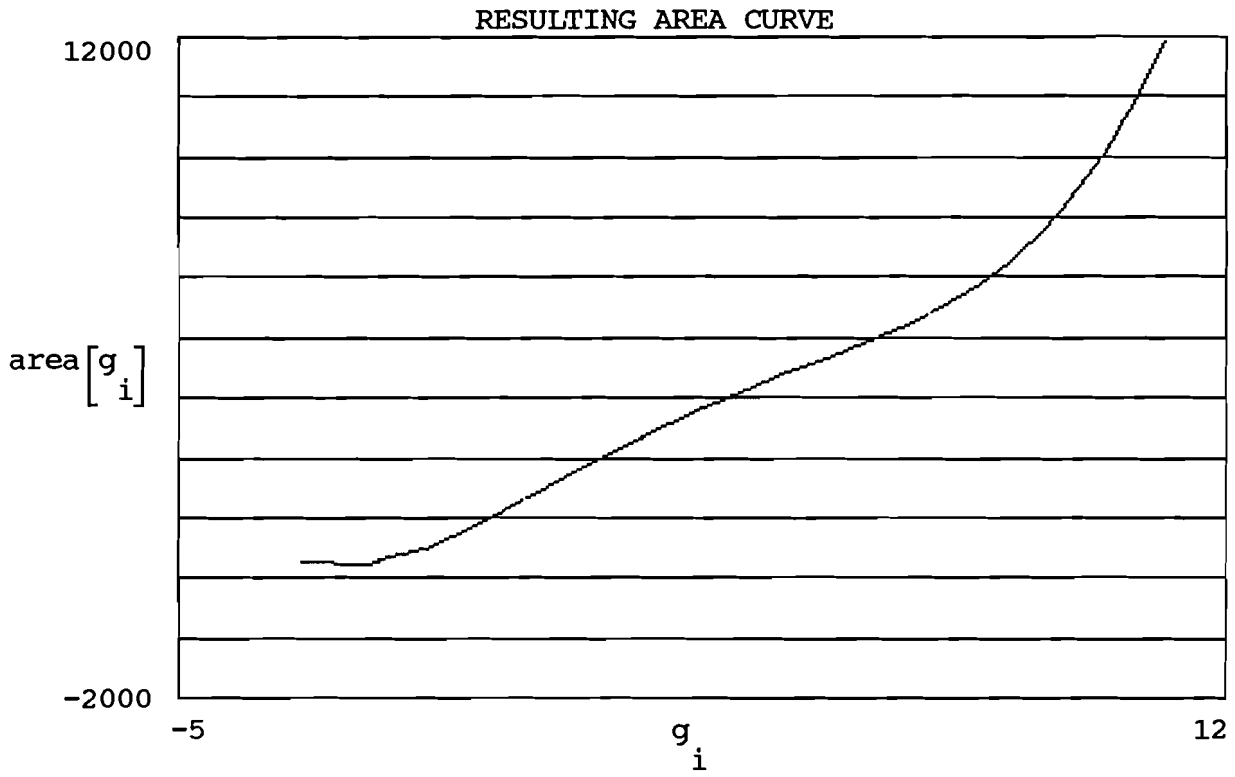
Residuals: $vol[g_i] - v_i$
-99.4
229.9
-4.3
-168.9
-105.7
-35.6
30.9
62.5
97.5
54.4
27.4
27.5
17.4
22.9
-16.2
-74.9
-131.6
-157.4
-104.7
64
386.9
284.4
-273.1
-335.7
201.9



Area vs Elevation Relationship

With a satisfactory volume/capacity function we can now take the derivative of the function to determine the surface area function.

$$area(z) := \frac{d}{dz} vol(z)$$



ELEVATION AS A FUNCTION OF CAPACITY

A reciprocal or gage height to volume relationship is needed. Because a fifth degree polymonial was required to fitted the first equation a fifth degree polynomial will be used for this relationship. First, compute the power terms.

$$\overrightarrow{v2 := \begin{bmatrix} 2 \\ v \end{bmatrix}} \qquad \overrightarrow{v3 := \begin{bmatrix} 3 \\ v \end{bmatrix}} \qquad \overrightarrow{v4 := \begin{bmatrix} 4 \\ v \end{bmatrix}} \qquad \overrightarrow{v5 := \begin{bmatrix} 5 \\ v \end{bmatrix}}$$

Now Create the X matrix

$$X_{i,0} := 1 \qquad X^{\langle 1 \rangle} := v \qquad X^{\langle 2 \rangle} := v2 \qquad X^{\langle 3 \rangle} := v3$$

$$X^{\langle 4 \rangle} := v4 \qquad X^{\langle 5 \rangle} := v5$$

Now solve for the coefficient matrix: $b := (X^T \cdot X)^{-1} \cdot (X^T \cdot g)$

Resulting Polynomial Coefficients:

$$b = \begin{bmatrix} -2.6339 \\ -4 \\ 8.4821 \cdot 10 \\ -8 \\ -4.3656 \cdot 10 \\ -12 \\ 1.3598 \cdot 10 \\ -17 \\ -2.0077 \cdot 10 \\ -22 \\ 1.1041 \cdot 10 \end{bmatrix}$$

Fitted Polynomial Function, where z is contents:

$$gag(z) := b_0 + b_1 \cdot z + b_2 \cdot z^2 + b_3 \cdot z^3 + b_4 \cdot z^4 + b_5 \cdot z^5$$

Compute mean square error for the fitted polynomial:

$$SSE_g := \overrightarrow{\Sigma\left[(g - gag(v))^2\right]}$$

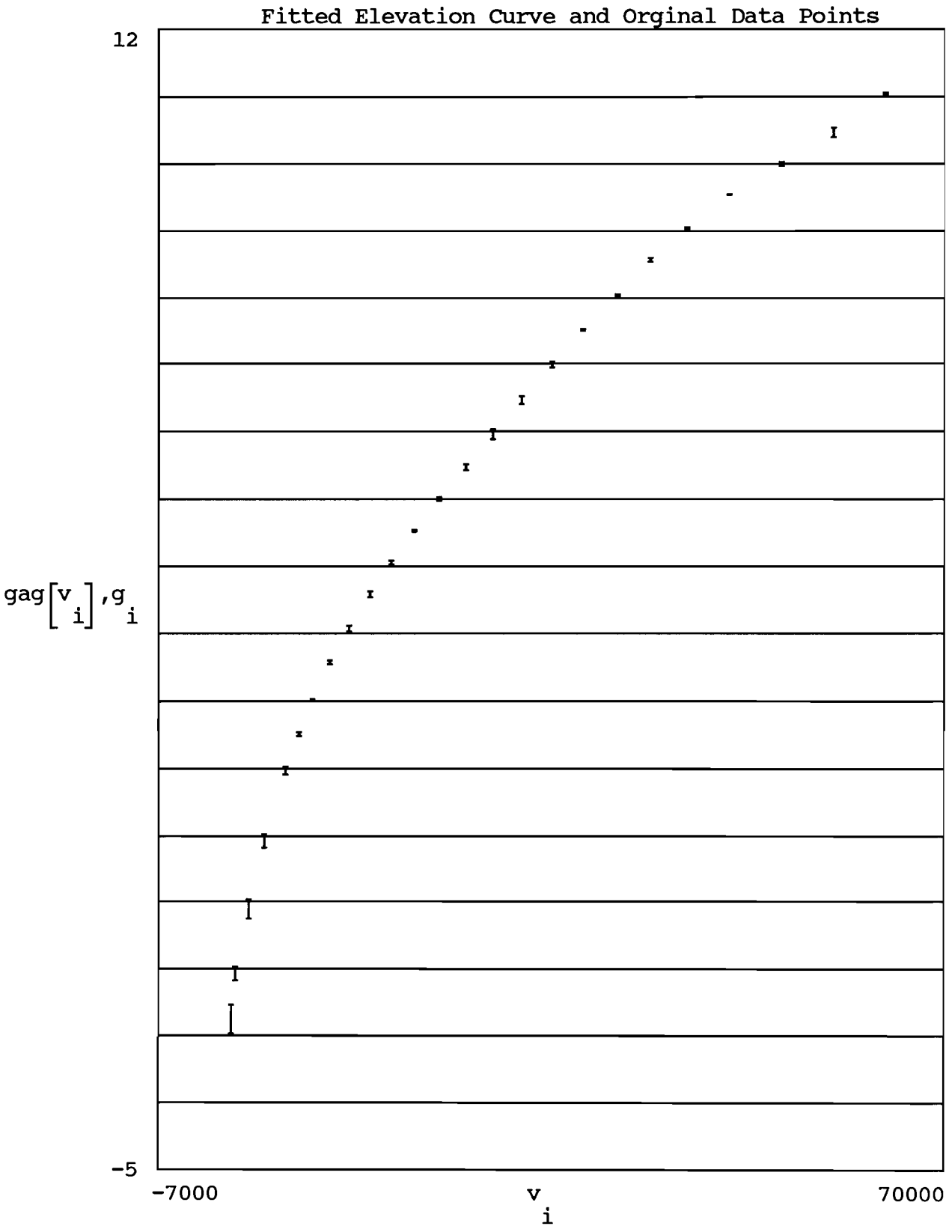
$$MSE_g := \frac{SSE_g}{n - 2}$$

$$MSE_g = 0.0196$$

Residuals: $gag[v_i] - g_i$

0.46
-0.151
-0.248
-0.198
-0.1
-0.035
0.031
0.089
0.113
0.122
0.093
0.038
-0.021
-0.075
-0.1
-0.094
-0.059
-0.004
0.049
0.077
0.057
0.035
-0.025
-0.111
0.059

The fitted polynomial appears to fit the orginal data points favorably. The mean error is small and probably well within the accuracy that the observer can read the gage with the exception of a couple of the data points. The error between the orginal data points and the estimated gage height from the polynomial is plotted:


Fitted Elevation Curve and Orginal Data Points
12
gag[v i],g i
-5
-7000
v i
70000

APPENDIX B

Listing of MUDLDATA.008	1
Listing of MUDLAKEC.OUT	7
Listing of MLHISTQ.DAT	14
Listing of MUDFLOOD.DAT	22
Listing of MUDLAKE.OUT	24

This appendix was revised due to data becoming avaible in early 1989 from the watermaster of the study area and reflects the changes in the data files for the undocumented flood diversions at or above the Lone Tree diversion. This totally replaces the orginal appendix found in the technical completion report.

1																
2	59	10	0.	111.	0.	4.?	0.	3534.	0.	0.	3860.	1000.	0.	0.	0.	0.
3	59	11	0.	175.	0.	0.	0.	4092.	0.	0.	6250.	0.	0.	0.	0.	0.
4	59	12	0.	137.	0.	0.	0.	5146.	0.	0.	10300.	0.	0.	0.	0.	0.
5	60	1	0.	0.	0.	0.	0.	5456.	0.	0.	14300.	0.	0.	0.	0.	0.
6	60	2	0.	0.	0.	0.	0.	4956.	0.	0.	18200.	0.	0.	0.	0.	0.
7	60	3	0.	127.	173.	0.	0.	5952.	0.	0.	20900.	0.	0.	0.	0.	0.
8	60	4	1230.	7230.	2832.	0.	0.	6060.	0.	226.	25000.	0.	0.	0.	0.	0.
9	60	5	0.	2249.	1345.	46.?	750.	10172.	3613.	8933.	20500.	2000.?	0.	0.	0.	0.
10	60	6	0.	301.	133.	34.?	0.	13309.	7829.	10426.	10000.	2500.?	0.	0.	0.	0.
11	60	7	0.	0.	301.	40.?	0.	12651.	16558.	301.	4580.	1700.?	0.	0.	0.	0.
12	60	8	0.	0.	129.	26.?	0.	11244.	7440.	0.	5300.	1700.?	0.	0.	0.	0.
13	60	9	0.	0.	129.	10.?	0.	10973.	6278.	0.	6480.	1200.?	0.	0.	0.	0.
14	60	10	0.	0.	85.	0.	0.	6709.	8306.	0.	4290.	600.?	0.	0.	0.	0.
15	60	11	0.	0.	0.	0.	0.	3193.	0.	0.	5950.	0.	0.	0.	0.	0.
16	60	12	0.	0.	0.	0.	0.	3379.	0.	0.	8950.	0.	0.	0.	0.	0.
17	61	1	0.	0.	0.	0.	0.	4123.	0.	0.	12300.	0.	0.	0.	0.	0.
18	61	2	0.	6.	0.	0.	0.	4172.	0.	0.	14800.	0.	0.	0.	0.	0.
19	61	3	0.	296.	190.	0.	0.	5952.	0.	0.	19300.	0.	0.	0.	0.	0.
20	61	4	290.	2563.	762.	6.?	0.	6870.	0.	75.	27500.	0.	0.	0.	0.	0.
21	61	5	0.	4463.	1759.	157.?	0.?	12841.	1099.	13302.	22300.	3675.	0.	0.	0.	0.
22	61	6	0.	1196.	1331.	119.?	0.?	13810.	11974.	8619.	11700.	2871.	0.	0.	0.	0.
23	61	7	0.	0.	333.	137.?	0.?	12802.	15227.	351.	6460.	2827.	0.	0.	0.	0.
24	61	8	0.	0.	143.	85.?	0.?	11070.	8907.	0.	6820.	1989.	0.	0.	0.	0.
25	61	9	0.	0.	143.	32.?	0.?	8024.	473.	0.	12400.	1890.	0.	0.	0.	0.
26	61	10	0.	24.	95.	6.?	0.?	2240.	1462.	0.	10900.	1342.	0.	0.	0.	0.
27	61	11	0.	0.	0.	0.	0.	3162.	0.	0.	12400.	0.	0.	0.	0.	0.
28	61	12	0.	226.	0.	0.	0.	3379.	0.	0.	15500.	0.	0.	0.	0.	0.
29	62	1	0.	60.	0.	0.	0.	3658.	0.	0.	18300.	0.	0.	0.	0.	0.
30	62	2	643.	686.	643.	0.	0.	3360.	0.	0.	21200.	0.	0.	0.	0.	0.
31	62	3	686.	190.	1043.	0.	0.	3330.	0.	0.	23900.	0.	0.	0.	0.	0.
32	62	4	7287.	16461.	3445.	10.?	9033.	3360.	0.	0.	33100.	0.	0.	0.	4000.	0.
33	62	5	2686.	19867.	2874.	294.?	16320.	1294.	84.	11869.	35700.	2400.	0.	0.	4000.	0.
34	62	6	2112.	12072.	2079.	222.?	3752.	1500.	185.	18180.	20200.	2080.	0.	0.	3000.	0.
35	62	7	0.	958.	542.	258.?	0.	4062.	4668.	9375.	6120.	3505.	0.	0.	0.	0.
36	62	8	0.	631.	331.	161.?	0.	11585.	8011.	747.	6220.	1138.	0.	0.	0.	0.
37	62	9	0.	0.	329.	60.?	0.	11394.	7636.	0.	10300.	1270.	0.	0.	0.	0.
38	62	10	0.	0.	218.	10.?	0.	7494.	8053.	305.	8530.	1244.	0.	0.	0.	0.
39	62	11	0.	0.	0.	0.	0.	4247.	0.	0.	11200.	0.	0.	0.	0.	0.
40	62	12	0.	73.	0.	0.	0.	4371.	0.	0.	14700.	0.	0.	0.	0.	0.
41	63	1	0.	256.	0.	0.	0.	4594.	0.	0.	17900.	0.	0.	0.	0.	0.
42	63	2	0.	117.	0.	0.	0.	4458.	0.	0.	20800.	0.	0.	0.	0.	0.
43	63	3	0.	129.	331.	0.	0.	5323.	0.	0.	25400.	0.	0.	0.	0.	0.
44	63	4	0.	3410.	2168.	10.?	472.	12451.	0.	2596.	37600.	0.	0.	0.	0.	2083.
45	63	5	0.	5046.	2013.	290.?	890.	4159.	0.	6109.	32800.	1665.	0.	0.	0.	149.
46	63	6	0.	5437.	2196.	220.?	700.	5413.	79.	8125.	28000.	3984.	0.	0.	0.	0.
47	63	7	0.	615.	1930.	256.?	0.	11280.	10496.	9537.	12100.	3910.	0.	0.	0.	0.
48	63	8	0.	0.	250.	161.?	0.	12770.	9820.	1145.	12000.	3238.	0.	0.	0.	0.
49	63	9	0.	0.	250.	60.?	0.	6854.	2290.	360.	16100.	2411.	0.	0.	0.	0.
50	63	10	0.	0.	167.	10.?	0.	1576.	8522.	94.	9050.	1410.	0.	0.	0.	0.
51	63	11	0.	240.	0.	0.	0.	0.	0.	0.	9730.	0.	0.	0.	0.	0.
52	63	12	0.	0.	0.	0.	0.	0.	0.	0.	13900.	0.	0.	0.	0.	0.
53	64	1	0.	0.	0.	0.	0.	0.	0.	0.	17700.	0.	0.	0.	0.	0.
54	64	2	0.	0.	0.	0.	0.	0.	0.	0.	21000.	0.	0.	0.	0.	0.
55	64	3	0.	0.	234.	0.	0.	0.	0.	0.	23500.	0.	0.	0.	0.	0.
56	64	4	226.	3749.	1180.	6.?	3700.	8400.	0.	986.	30100.	0.	0.	0.	0.	0.
57	64	5	1301.	13161.	1597.	165.?	7000.	3198.	0.	7833.	28900.	1416.	0.	0.	0.	0.

58	64	6	4719.	18784.	1761.	125.?	16300.	3282.	142.	11057.	33200.	3816.	0.	0.	0.	0.
59	64	7	415.	1369.	968.	143.?	1180.	12453.	4583.	16790.	17800.	4355.	0.	0.	0.	0.
60	64	8	0.	327.	327.	89.?	0.	13932.	10690.	1442.	15900.	1510.	0.	0.	0.	0.
61	64	9	0.	0.	175.	34.?	0.	10882.	8082.	0.	16100.	1725.	0.	0.	0.	0.
62	64	10	0.	0.	117.	6.?	0.	4118.	10070.	0.	8500.	1146.?	0.	0.	0.	0.
63	64	11	0.	69.	0.	0.	0.	5006.	0.	0.	12100.	0.	0.	0.	0.	0.
64	64	12	0.	60.	0.	0.	0.	4944.	0.	0.	16300.	0.	0.	0.	0.	0.
65	65	1	0.	93.	0.	0.	0.	4786.	0.	0.	20600.	0.	0.	0.	0.	0.
66	65	2	0.	186.	0.	0.	0.	4273.	0.	0.	23400.	0.	0.	0.	0.	0.
67	65	3	9.	456.	391.	0.	0.	4858.	0.	0.	25600.	0.	0.	0.	0.	0.
68	65	4	2836.	8957.	1200.	10.?	6400.	2431.	0.	0.	31300.	0.	0.	0.	0.	0.
69	65	5	6159.	16090.	3314.	323.?	18100.	2201.	28.	9609.	32400.	1942.	0.	0.	0.	6426.
70	65	6	6240.	14267.	2981.	244.?	6400.	4683.	216.	17813.	24900.	1923.	0.	0.	6500.	0.
71	65	7	1472.	2940.	799.	282.?	5000.	11434.	4583.	10918.	20300.	2705.	0.	0.	0.	0.
72	65	8	0.	1035.	770.	177.?	0.	7012.	6778.	1669.	16700.	1953.	0.	0.	0.	0.
73	65	9	0.	1051.	413.	65.?	0.	2928.	4214.	534.	14800.	1088.	0.	0.	0.	0.
74	65	10	0.	1277.	284.	12.?	0.	2046.	7846.	0.	8630.	1093.	0.	0.	0.	0.
75	65	11	0.	1666.	0.	0.	0.	6471.	0.	0.	13300.	0.	0.	0.	0.	0.
76	65	12	0.	655.	0.	0.	0.	7210.	0.	0.	18400.	0.	0.	0.	0.	0.
77	66	1	0.	462.	0.	0.	0.	5536.	0.	0.	22900.	0.	0.	0.	0.	0.
78	66	2	0.	555.	0.	0.	0.	5250.	0.	0.	26800.	0.	0.	0.	0.	0.
79	66	3	196.	591.	99.	0.	0.	5995.	0.	0.	29500.	0.	0.	0.	0.	0.
80	66	4	2692.	6024.	397.	8.?	2000.	5757.	0.	1800.	32200.	0.	0.	0.	0.	1909.
81	66	5	13.	5036.	1507.	260.?	5613.	9292.	625.	18933.	23200.	3033.	0.	0.	0.	3000.
82	66	6	0.	1428.	819.	196.?	0.	13579.	11726.	7647.	13900.	3450.	0.	0.	0.	0.
83	66	7	0.	659.	157.	228.?	0.	14478.	17307.	1532.	7010.	2810.	0.	0.	0.	0.
84	66	8	0.	0.	75.	143.?	0.	14554.	7559.	216.	11000.	2402.	0.	0.	0.	0.
85	66	9	0.	0.	75.	52.?	0.	14000.	5656.	170.	15900.	1836.	0.	0.	0.	0.
86	66	10	0.	0.	50.	10.?	0.	2976.	9501.	225.	9080.	1410.	0.	0.	0.	0.
87	66	11	0.	0.	0.	0.	0.	4404.	0.	0.	11100.	0.	0.	0.	0.	0.
88	66	12	0.	0.	0.	0.	0.	4622.	0.	0.	14400.	0.	0.	0.	0.	0.
89	67	1	0.	0.	0.	0.	0.	4622.	0.	0.	17900.	0.	0.	0.	0.	0.
90	67	2	0.	0.	0.	0.	0.	4189.	0.	0.	20400.	0.	0.	0.	0.	0.
91	67	3	0.	210.	173.	0.	0.	4963.	0.	0.	22900.	0.	0.	0.	0.	0.
92	67	4	0.	1043.	686.	14.?	0.	5067.	0.	334.	24100.	0.	0.	0.	0.	0.
93	67	5	4614.	21271.	1825.	454.?	8632.	9689.	105.	14167.	23100.	2061.	0.	0.	10000.	0.
94	67	6	6710.	22564.	2138.	343.?	17385.	8554.	72.	11054.	33600.	2605.	0.	0.	5000.	0.
95	67	7	684.	2926.	1248.	399.?	2170.	4320.	10499.	1931.	20900.	2245.	0.	0.	0.	0.
96	67	8	0.	613.	286.	250.?	0.	12819.	6369.	7892.	15000.	1858.	0.	0.	0.	0.
97	67	9	0.	95.	129.	91.?	0.	7644.	7884.	176.	13600.	1610.	0.	0.	0.	0.
98	67	10	0.	36.	85.	16.?	0.	4208.	9447.	12.	7490.	1062.	0.	0.	0.	0.
99	67	11	0.	173.	0.	0.	0.	3570.	0.	0.	10400.	0.	0.	0.	0.	0.
100	67	12	0.	0.	0.	0.	0.	3903.	0.	0.	14800.	0.	0.	0.	0.	0.
101	68	1	0.	0.	0.	0.	0.	4135.	0.	0.	19000.	0.	0.	0.	0.	0.
102	68	2	0.	0.	0.	0.	0.	3993.	0.	0.	21800.	0.	0.	0.	0.	0.
103	68	3	0.	81.	0.	0.	0.	4616.	0.	0.	23800.	0.	0.	0.	0.	0.
104	68	4	161.	4130.	0.	0.	0.	4034.	0.	1738.	25000.	0.	0.	0.	0.	1071.
105	68	5	1218.	5459.	2741.	327.	7288.?	12448.	0.	13808.	28600.	2280.	0.	0.	0.	0.
106	68	6	2089.	7270.	2328.	0.	6000.	11464.	3176.	12337.	25900.	2180.	0.	0.	0.	0.
107	68	7	56.	1105.	609.	333.	0.	13528.	17583.	2638.	15100.	2514.	0.	0.	0.	0.
108	68	8	0.	676.	842.	288.	0.	10620.	7870.	557.	18500.	987.	0.	0.	0.	0.
109	68	9	0.	704.	321.	135.	0.	1732.	3985.	57.	15100.	863.	0.	0.	0.	0.
110	68	10	0.	998.	332.	0.	0.	2302.	7677.	60.	7840.	842.	0.	0.	0.	0.
111	68	11	0.	1023.	0.	0.	0.	3450.	0.	0.	11400.	0.	0.	0.	0.	0.
112	68	12	0.	557.	0.	0.	0.	3782.	0.	0.	15600.	0.	0.	0.	0.	0.
113	69	1	54.	712.	0.	0.	0.	3782.	0.	0.	20500.	0.	0.	0.	0.	0.
114	69	2	0.	200.	0.	0.	0.	1800.	0.	0.	22300.	0.	0.	0.	0.	0.

115	69	3	549.	1361.	0.	0.	0.	0.	0.	0.	22200.	0.	0.	0.	0.	1900.
116	69	4	6432.	3104.	0.	0.	6000.?	0.	0.	0.	29100.	0.	0.	7570.	3000.	4760.
117	69	5	13087.	32591.	3444.	292.	19720.?	992.	168.	17265.	29400.	2676.	0.	22400.	15000.	0.
118	69	6	9152.	16959.	2764.	0.	18152.	2220.	373.	16892.	28100.	3050.	0.	0.	5951.	0.
119	69	7	2652.	4493.	1548.	0.	2654.	4162.	2927.	14528.	15300.	2106.	0.	0.	0.	0.
120	69	8	230.	910.	542.	0.	0.	15226.	7977.	3914.	15100.	2012.	0.	0.	0.	0.
121	69	9	14.	857.	413.	0.	0.	12266.	7785.	144.	15100.	1713.	0.	0.	0.	0.
122	69	10	417.	1097.	829.	0.	0.	3872.	5119.	144.	12700.	1462.	0.	0.	0.	0.
123	69	11	543.	1107.	0.	0.	0.	1200.	0.	0.	17400.	0.	0.	0.	0.	0.
124	69	12	0.	732.	0.	0.	0.	600.	0.	0.	22500.	0.	0.	0.	0.	0.
125	70	1	0.	835.	0.	0.	0.	4473.	0.	0.	26700.	0.	0.	0.	0.	0.
126	70	2	8.	1250.	0.	0.	0.	4813.	0.	0.	29900.	0.	0.	0.	0.	0.
127	70	3	20.	1406.	0.	0.	0.	5685.	0.	0.	32400.	0.	0.	0.	0.	0.
128	70	4	389.	1337.	0.	0.	0.	4866.	0.	0.	34600.	0.	0.	0.	0.	0.
129	70	5	5036.	16255.	2073.	234.	11197.	2321.	0.	8785.	34400.	1936.	0.	5880.	6744.	0.
130	70	6	3648.	12627.	2753.	363.	10772.	1635.	155.	18094.	24200.	2330.	0.	0.	3035.	0.
131	70	7	1006.	2134.	1230.	190.	1423.	9873.	1871.	10894.	19000.	2220.	0.	0.	0.	0.
132	70	8	1.	916.	599.	369.	0.	14059.	13597.	3983.	13300.	1840.	0.	0.	0.	0.
133	70	9	0.	948.	698.	60.	0.	9747.	6043.	232.	16800.	1682.	0.	0.	0.	0.
134	70	10	0.?	1035.?	709.	0.	0.	1674.	6705.	183.	9790.	984.	0.	0.	0.	0.
135	70	11	0.?	0.?	0.	0.	0.	4239.	0.	0.	15300.	0.	0.	0.	0.	0.
136	70	12	0.?	0.?	0.	0.	0.	4191.	0.	0.	21400.	0.	0.	0.	0.	0.
137	71	1	0.?	0.?	0.	0.	0.	4625.	0.	0.	26100.	0.	0.	0.	0.	0.
138	71	2	0.?	0.?	0.	0.	0.	4827.	0.	0.	29500.	0.	0.	0.	0.	0.
139	71	3	1470.?	0.?	0.	0.	0.	5806.	0.	0.	33300.	0.	0.	0.	0.	0.
140	71	4	2583.	4352.?	0.	0.	0.	5742.	0.	0.	37700.	0.	0.	1740.	0.	0.
141	71	5	11633.	20361.	3021.	317.	19756.	2255.	126.	13371.	42400.	2404.	0.	17150.	6694.	0.
142	71	6	9132.	14257.	2331.	476.	16000.?	2113.	84.	19227.	37300.	3418.	0.	10130.	4959.	0.
143	71	7	1779.?	4633.	1738.	319.	900.	1748.	3102.	18487.	16700.	1890.	0.	0.	0.	0.
144	71	8	0.?	1137.	851.	155.	0.	8489.	4728.	7670.	11400.	1487.	0.	0.	0.	0.
145	71	9	0.?	1932.	1271.	0.	0.	8600.	9787.	882.	12300.	1090.	0.	0.	0.	0.
146	71	10	0.?	1995.	1460.	0.	0.	4424.	2706.	450.	15400.	754.	0.	0.	0.	0.
147	71	11	0.?	1085.	0.	0.	0.	5103.	0.	0.	19800.	0.	0.	0.	0.	0.
148	71	12	0.?	992.	0.	0.	0.	4703.	0.	0.	24400.	0.	0.	0.	0.	0.
149	72	1	0.?	1164.	0.	0.	0.	5961.	0.	0.	27600.	0.	0.	0.	0.	0.
150	72	2	0.?	1006.	0.	0.	0.	5216.	0.	0.	29400.	0.	0.	0.	0.	0.
151	72	3	1495.?	2327.	0.	0.	0.	1485.	0.	0.	33900.	0.	0.	0.	0.	1071.
152	72	4	4437.	5931.	0.	0.	6300.	1101.	0.	0.	38500.	0.	0.	4743.	0.	6426.
153	72	5	4987.	10021.	1877.	369.	11626.	512.	56.	16786.	30700.	2025.	0.	4451.	0.	0.
154	72	6	5008.	7845.	2267.	357.	8906.	4080.	689.	18271.	22500.	1835.	0.	0.	0.	0.
155	72	7	527.	1351.	1232.	337.	2085.	12482.	7045.	15381.	12900.	2076.	0.	0.	0.	0.
156	72	8	0.?	520.	488.	307.	0.	15974.	8243.	774.	13900.	1652.	0.	0.	0.	0.
157	72	9	0.?	827.	780.	0.	0.	4580.	6064.	142.	10200.	1620.	0.	0.	0.	0.
158	72	10	0.?	1613.	1526.	0.	0.	1388.	5161.	13.	9120.	1141.	0.	0.	0.	0.
159	72	11	0.?	1502.	0.	0.	0.	8100.	0.	0.	15300.	0.	0.	0.	0.	0.
160	72	12	0.?	371.	0.	0.	0.	5890.	0.	0.	21100.	0.	0.	0.	0.	0.
161	73	1	0.?	389.	0.	0.	0.	5487.	0.	0.	26500.	0.	0.	0.	0.	0.
162	73	2	0.?	502.	0.	0.	0.	5208.	0.	0.	30600.	0.	0.	0.	0.	0.
163	73	3	361.?	744.	0.	0.	0.	5589.	0.	0.	34100.	0.	0.	0.	0.	0.
164	73	4	3481.	3312.	0.	0.	0.	5208.	0.	0.	38300.	0.	0.	0.	0.	0.
165	73	5	2864.	22620.	3633.	387.	16179.	1472.	122.	17533.	35000.	1741.	0.	0.	0.	0.
166	73	6	419.	4372.	2423.	387.	1272.	3430.	229.	17062.	20700.	1630.	0.	0.	0.	0.
167	73	7	242.?	559.	668.	345.	0.	11438.	4514.	9524.	19700.	1382.	0.	0.	0.	0.
168	73	8	0.?	210.	261.	292.	0.	7429.	15740.	1655.	11600.	1054.	0.	0.	0.	0.
169	73	9	0.?	0.	0.	61.	0.	2314.	6210.	942.	8890.	1040.	0.	0.	0.	0.
170	73	10	0.?	607.	742.	0.	0.	5685.	7086.	492.	9180.	760.	0.	0.	0.	0.
171	73	11	0.?	651.	0.	0.	0.	4026.	0.	0.	14000.	0.	0.	0.	0.	0.

172	73	12	0.?	234.	0.	0.	0.	6460.	0.	0.	19400.	0.	0.	0.	0.	0.
173	74	1	0.?	141.	0.	0.	0.	4982.	0.	0.	24200.	0.	0.	0.	0.	0.
174	74	2	0.?	196.	0.	0.	0.	5734.	0.	0.	28000.	0.	0.	0.	0.	0.
175	74	3	508.?	417.	0.	0.	0.	6966.	0.	0.	32300.	0.	0.	0.	0.	0.
176	74	4	3122.	10336.	0.	0.	2200.?	6486.	0.	360.	39100.	0.	0.	0.	10116.	0.
177	74	5	4023.	17225.	3566.	399.	18400.	611.	98.	18576.	36500.	2544.	0.	0.	0.	0.
178	74	6	1150.	7908.	1636.	407.	7332.	4792.	437.	24030.	22300.	2618.	0.	0.	0.	0.
179	74	7	339.?	79.	0.	401.	0.	13584.	13945.	8931.	9420.	1710.	0.	0.	0.	0.
180	74	8	0.?	0.	0.	385.	0.	13845.	7820.	1642.	11600.	1135.	0.	0.	0.	0.
181	74	9	0.?	0.	0.	242.	0.	8854.	9410.	1011.	11900.	1466.	0.	0.	0.	0.
182	74	10	0.?	202.	0.	0.	0.	5284.	5444.	0.	11800.	1433.	0.	0.	0.	0.
183	74	11	0.?	502.	0.	0.	0.	4908.	0.	0.	15000.	0.	0.	0.	0.	0.
184	74	12	0.?	16.	0.	0.	0.	4870.	0.	0.	19400.	0.	0.	0.	0.	0.
185	75	1	0.?	0.	0.	0.	0.	4765.	0.	0.	23800.	0.	0.	0.	0.	0.
186	75	2	0.?	0.	0.	0.	0.	4318.	0.	0.	27400.	0.	0.	0.	0.	0.
187	75	3	0.?	0.	0.	0.	0.	4703.	0.	0.	30700.	0.	0.	0.	0.	0.
188	75	4	1299.?	589.	0.	0.	0.	4374.	0.	0.	34800.	0.	0.	0.	0.	0.
189	75	5	8561.	11978.	3566.	206.	14462.	440.	0.	5940.	39500.	1636.	0.	13030.	0.	0.
190	75	6	10879.	20601.	3451.	0.	23000.	1821.	168.	23756.	35600.	2528.	0.	7170.	0.	0.
191	75	7	1150.	4231.	257.	369.	5180.	5137.	1077.	16753.	24400.	2146.	0.	0.	0.	0.
192	75	8	36.	339.	0.	369.	0.	9222.	2520.	11328.	16900.	1369.	0.	0.	0.	0.
193	75	9	0.	40.	0.	89.	0.	1368.	8722.	638.	6330.	882.	0.	0.	0.	0.
194	75	10	0.?	750.	0.	0.	0.	5613.	6266.	86.	8340.	520.	0.	0.	0.	0.
195	75	11	0.?	599.	0.	0.	0.	3150.	0.	0.	12000.	0.	0.	0.	0.	0.
196	75	12	0.?	377.	0.	0.	0.	3091.	0.	0.	17200.	0.	0.	0.	0.	0.
197	76	1	0.?	371.	0.	0.	0.	4365.	0.	0.	23000.	0.	0.	0.	0.	0.
198	76	2	0.?	278.	0.	0.	0.	5524.	0.	0.	28000.	0.	0.	0.	0.	0.
199	76	3	0.	222.	0.	0.	0.	6907.	0.	0.	32100.	0.	0.	0.	0.	0.
200	76	4	2944.	3316.	0.	0.	0.	6384.	0.	0.	37700.	0.	0.	0.	6000.	0.
201	76	5	4546.	22239.	1242.	466.	19270.	1512.	112.	16788.	37600.	2118.	0.	0.	7686.	0.
202	76	6	532.	3047.	639.	440.	1858.	10266.	1189.	20480.	26100.	2033.	0.	2600.	0.	0.
203	76	7	383.?	40.	0.	405.	0.	16495.	13715.	11106.	15700.	1671.	0.	0.	0.	0.
204	76	8	0.?	0.	0.	337.	0.	10138.	7990.	871.	16300.	1629.	0.	0.	0.	0.
205	76	9	0.?	186.	0.	327.	0.	1388.	6090.	103.	8240.	1139.	0.	0.	0.	0.
206	76	10	0.?	543.	0.	163.	0.	1832.	4598.	22.	6930.	1050.	0.	0.	0.	0.
207	76	11	0.?	480.	0.	0.	0.	4194.	0.	0.	10700.	0.	0.	0.	0.	0.
208	76	12	0.?	8.	0.	0.	0.	4365.	0.	0.	15500.	0.	0.	0.	0.	0.
209	77	1	0.?	2.	0.	0.	0.	4411.	0.	0.	20800.	0.	0.	0.	0.	0.
210	77	2	0.?	0.	0.	0.	0.	4452.	0.	0.	24400.	0.	0.	0.	0.	0.
211	77	3	0.?	0.	0.	0.	0.	19200.	0.	0.	40900.	0.	0.	0.	0.	0.
212	77	4	417.	1755.	627.	69.	0.	5187.	0.	2314.	37000.	0.	0.	0.	0.	0.
213	77	5	0.?	502.	186.	374.	0.	17825.	122.	12608.	38500.	2162.	0.	0.	0.	0.
214	77	6	0.?	218.	141.	370.	0.	15051.	5330.	13811.	28700.	2513.	0.	0.	0.	0.
215	77	7	0.?	0.	0.	352.	0.	13617.	17729.	211.	16200.	2408.	0.	0.	0.	0.
216	77	8	0.?	0.	0.	0.	0.	10106.	8769.	177.	15200.	2189.	0.	0.	0.	0.
217	77	9	0.?	0.	0.	0.	0.	7866.	11700.	0.	9590.	946.	0.	0.	0.	0.
218	77	10	0.?	0.	0.	0.	0.	7901.	7357.	0.	8600.	854.	0.	0.	0.	0.
219	77	11	0.?	0.	0.	0.	0.	3270.	0.	0.	9450.	0.	0.	0.	0.	0.
220	77	12	0.?	0.	0.	0.	0.	3091.	0.	0.	11300.	0.	0.	0.	0.	0.
221	78	1	0.?	0.	0.	0.	0.	3751.	0.	0.	14100.	0.	0.	0.	0.	0.
222	78	2	0.?	0.	0.	0.	0.	4259.	0.	0.	16800.	0.	0.	0.	0.	0.
223	78	3	149.	75.	0.	0.	0.	4718.	0.	0.	19900.	0.	0.	0.	0.	0.
224	78	4	4030.	6831.	3753.	0.	0.	12400.	0.	0.	28000.	0.	0.	0.	0.	0.
225	78	5	3890.	21884.	2122.	324.	16597.	4986.	0.	12868.	29400.	2028.	0.	0.	0.	0.
226	78	6	549.	5318.	1674.	442.	2315.	13689.	4087.	17151.	22500.	1632.	0.	0.	0.	0.
227	78	7	0.	0.	0.	305.	0.	14989.	17741.	2997.	12100.	2024.	0.	0.	0.	0.
228	78	8	0.	0.	0.	222.	0.	11944.	7942.	821.	11600.	1873.	0.	0.	0.	0.

229	78	9	0.	0.	0.	0.	0.	5432.	8097.	500.	7400.	830.	0.	0.	0.	0.
230	78	10	0.?	0.	0.	0.	0.	5494.	6541.	0.	6310.	600.	0.	0.	0.	0.
231	78	11	0.?	0.	0.	0.	0.	2619.	0.	0.	7690.	0.	0.	0.	0.	0.
232	78	12	0.?	0.	0.	0.	0.	2747.	0.	0.	10900.	0.	0.	0.	0.	0.
233	79	1	0.?	0.	0.	0.	0.	3577.	0.	0.	13200.	0.	0.	0.	0.	0.
234	79	2	0.?	0.	0.	0.	0.	3609.	0.	0.	15500.	0.	0.	0.	0.	0.
235	79	3	0.?	0.	0.	0.	0.	4191.	0.	0.	18500.	0.	0.	0.	0.	0.
236	79	4	670.	3947.	1632.	0.	0.	9792.	0.	0.	27300.	0.	0.	0.	0.	0.
237	79	5	206.	8158.	3227.	288.	4574.	17010.	1085.	15125.	26300.	2383.	0.	0.	0.	0.
238	79	6	0.	335.	205.	331.	0.	14947.	11739.	7586.	16600.	2891.	0.	0.	0.	0.
239	79	7	0.	0.	0.	252.	0.	14121.	19026.	412.	8800.	2428.	0.	0.	0.	0.
240	79	8	0.?	0.	0.	0.	0.	11529.	6762.	0.	12000.	1413.	0.	0.	0.	0.
241	79	9	0.?	0.	0.	0.	0.	8152.	7778.	0.	8890.	1310.	0.	0.	0.	0.
242	79	10	0.?	0.	0.	0.	0.	6975.	6976.	0.	7660.	787.	0.	0.	0.	0.
243	79	11	0.?	0.	0.	0.	0.	1815.	0.	0.	7720.	0.	0.	0.	0.	0.
244	79	12	0.?	0.	0.	0.	0.	1764.	0.	0.	9250.	0.	0.	0.	0.	0.
245	80	1	0.?	0.	0.	0.	0.	2716.	0.	0.	10700.	0.	0.	0.	0.	0.
246	80	2	0.?	133.	1021.	1022.	0.	2528.	0.	0.	12200.	0.	0.	0.	0.	0.
247	80	3	323.?	0.	0.	0.	0.	11236.	0.	0.	22900.	0.	0.	0.	0.	0.
248	80	4	1127.	6585.	1608.	0.	0.	13100.	0.	1000.	36000.	0.	0.	0.	0.	0.
249	80	5	2561.	11784.	3509.	553.	5027.	9131.	289.	5829.	40900.	420.	0.	0.	0.	0.
250	80	6	4618.	11034.	3328.	300.	7942.	0.	0.	11950.	30600.	3632.	0.	8421.	2255.	0.
251	80	7	292.	809.	307.	389.	1163.	9076.	6705.	16048.	14500.	2608.	0.	0.	0.	0.
252	80	8	0.	0.	0.	111.	0.	12618.	10062.	870.	13700.	1717.	0.	0.	0.	0.
253	80	9	0.	15.	0.	0.	0.	6048.	5061.	118.	12300.	480.	0.	0.	0.	0.
254	80	10	0.?	236.	0.	0.	0.	1982.	7817.	90.	7580.	399.	0.	0.	0.	0.
255	80	11	0.?	262.	0.	0.	0.	2121.	0.	0.	8240.?	0.	0.	0.	0.	0.
256	80	12	0.?	131.	0.	0.	0.	2396.	0.	0.	9760.	0.	0.	0.	0.	0.
257	81	1	0.?	198.	0.	0.	0.	2542.	0.	0.	11800.	0.	0.	0.	0.	0.
258	81	2	0.?	208.	628.	0.	0.	2738.	0.	0.	13500.	0.	0.	0.	0.	0.
259	81	3	734.?	419.	88.	0.	0.	8236.	0.	0.	20600.	0.	0.	0.	0.	0.
260	81	4	2949.	8468.	1986.	139.	7500.	11317.	0.	720.	33400.	0.	0.	0.	0.	0.
261	81	5	5818.	15557.	3413.	262.	14082.	5684.	2140.	12346.	34500.	2098.	0.	0.	0.	0.
262	81	6	2446.	4578.	2096.	379.	8622.	6516.	20607.	2420.	20200.	2181.	0.	0.	0.	0.
263	81	7	0.	0.	0.	365.	0.	14063.	10039.	11173.	10000.	1813.	0.	0.	0.	0.
264	81	8	0.?	0.	0.	63.	0.	11490.	14328.	1324.	7040.	1829.	0.	0.	0.	0.
265	81	9	0.?	0.	0.	0.	0.	11198.	10906.	558.	5700.?	1072.	0.	0.	0.	0.
266	81	10	0.?	0.	0.	0.	0.	5302.	6263.	300.	5603.?	849.	0.	0.	0.	0.
267	81	11	0.?	0.	0.	0.	0.	813.	0.	0.	8832.?	0.	0.	0.	0.	0.
268	81	12	0.?	18.	0.	0.	0.	1317.	0.	0.	8694.?	0.	0.	0.	0.	0.
269	82	1	0.?	48.	207.	0.	0.	1965.	0.	0.	8790.	0.	0.	0.	0.	0.
270	82	2	0.?	77.	415.	0.	0.	2164.	0.	0.	10600.	0.	0.	0.	0.	0.
271	82	3	1087.?	145.	215.	0.	0.	8100.	0.	0.	20300.	0.	0.	0.	0.	0.
272	82	4	2955.	5621.	3192.	0.	1000.	2292.	0.	500.	23000.	0.	0.	0.	0.	0.
273	82	5	8604.	28842.	3804.	0.	27011.	2700.	525.	14035.	31500.	1802.	0.	0.	0.	0.
274	82	6	4875.	10437.	3361.	0.	13319.	8296.	8033.	9890.	32500.	1597.	0.	0.	0.	0.
275	82	7	1210.	2075.	754.	0.	2025.	11150.	2077.	17390.	21600.	1978.	0.	0.	0.	0.
276	82	8	0.?	24.	0.	0.	0.	13294.	10060.	455.	22500.	2207.	0.	0.	0.	0.
277	82	9	0.?	0.	0.	0.	0.	4107.	12562.	39.	10100.	708.	0.	0.	0.	0.
278	82	10	0.?	0.?	0.	0.	0.	1466.	5402.	0.	7093.?	152.	0.	0.	0.	0.
279	82	11	0.?	0.?	919.	0.	0.	2259.	0.	0.	8621.?	0.	0.	0.	0.	0.
280	82	12	0.?	0.?	0.	0.	0.	3887.	0.	0.	10600.	0.	0.	0.	0.	0.
281	83	1	0.?	0.?	148.	0.	0.	3289.	0.	0.	13300.	0.	0.	0.	0.	0.
282	83	2	0.?	0.?	98.	0.	0.	3416.	0.	0.	16000.	0.	0.	0.	0.	0.
283	83	3	0.?	0.?	1169.	0.	0.	4135.	0.	0.	19200.	0.	0.	0.	0.	0.
284	83	4	5137.?	8109.?	1821.	0.	2500.	4509.	0.	227.	24900.	0.	0.	0.	5732.	0.
285	83	5	13016.?	32672.	4010.	262.	28193.	1114.	144.	13427.	37900.	1893.	0.	12841.	10500.	0.

286	83	6	11814.?	21041.	4396.	140.	33205.	1200.	962.	24396.	42400.	683.	0.	16124.	1000.	2200.
287	83	7	3312.?	7097.	1481.	347.	12000.	1208.	3087.	15677.	31000.	2379.	0.	2491.	0.	0.
288	83	8	1438.?	1787.	1792.	345.	0.	2512.	705.	8997.	24900.	1329.	0.	0.	0.	0.
289	83	9	952.?	968.	1374.	149.	0.	1560.	2551.	10426.	11500.	1093.	0.	0.	0.	0.
290	83	10	0.?	4790.	2452.	0.	2000.	4328.	724.	2572.	18500.	1230.	0.	0.	0.	0.
291	83	11	0.?	3558.	2218.	0.	3000.	5112.	0.	0.	27000.	0.	0.	0.	0.	0.
292	83	12	0.?	1081.	0.	0.	2300.	4269.	0.	0.	30400.	0.	0.	0.	0.	0.
293	84	1	10.?	1129.	0.	0.	2600.	1860.	0.	0.	33500.	0.	0.	0.	0.	0.
294	84	2	125.?	901.	0.	0.	2300.	1733.	0.	0.	36400.	0.	0.	0.	0.	0.
295	84	3	1880.?	1131.	0.	0.	2600.	2040.	0.	0.	39300.	0.	0.	0.	0.	1914.
296	84	4	3938.	3066.	2569.	0.	3000.	2292.	0.	0.	40900.	0.	0.	2500.	4384.	5220.
297	84	5	14884.	26835.	3555.	303.	25311.	2480.	0.	20067.	49200.	1400.?	0.	21342.	10453.	5332.
298	84	6	14240.	18353.	2462.	421.	24837.	1800.	0.	10945.	58600.	2500.?	0.	16639.	5732.	5480.
299	84	7	4324.	1859.	2211.	397.	5700.	450.	706.	16108.	38100.	2400.?	0.	3894.	0.	3164.
300	84	8	2743.	1059.	1572.	348.	0.	475.	106.	4425.	26900.	1500.?	0.	2769.	0.	7440.
301	84	9	1156.	137.	910.	357.	0.	1072.	1753.	10784.	11600.	800.?	0.	2460.	0.	4904.
302	84	10	1238.	228.	1000.	238.	0.	2060.	437.	3900.	10400.	600.?	0.	0.	0.	4460.
303	84	11	970.	69.	0.	0.	5200.	2538.	0.	0.	20000.	0.	0.	0.	0.	0.
304	84	12	44.?	234.	0.	0.	4100.	2849.	0.	0.	26800.	0.	0.	0.	0.	0.
305	85	1	2.?	52.	0.	0.	3700.	2951.	0.	0.	33100.	0.	0.	0.	0.	0.
306	85	2	12.?	153.	0.	0.	2800.	2912.	0.	0.	38600.	0.	0.	0.	0.	0.
307	85	3	190.?	329.	0.	0.	3900.	3351.	0.	0.	39300.	0.	0.	0.	0.	5415.
308	85	4	6609.	8529.	1394.	0.	12000.?	2634.	0.	0.	47200.	0.	0.	12615.	0.	10500.
309	85	5	1502.	8349.	1596.	208.	15021.	1304.	0.	15893.	42700.	1380.	0.	8561.	0.	4632.
310	85	6	177.	1952.	1333.	190.	4979.	2460.	0.	19927.	22300.	2220.	0.	1171.	0.	0.
311	85	7	0.	234.	226.	196.	0.	15230.	0.	14140.	15600.	1500.	0.	0.	0.	0.
312	85	8	0.	0.	0.	145.	0.	8052.	11090.	1130.	10100.	1800.	0.	0.	0.	0.
313	85	9	0.	0.	0.	83.	0.	5439.	6079.	0.	9280.?	414.	0.	0.	0.	0.
314	85	10	0.	0.	0.	0.	0.	5094.	3334.	0.	10000.	402.	0.	0.	0.	0.
315	85	11	0.	0.	0.	0.	4500.	6888.	0.	0.	16500.	0.	0.	0.	0.	0.
316	85	12	0.	0.	0.	0.	1800.	5814.	0.	0.	23900.	0.	0.	0.	0.	0.
317	86	1	0.	0.	0.	0.	1800.	5863.	0.	0.	30300.	0.	0.	0.	0.	0.
318	86	2	0.	0.	0.	0.	2000.	6619.	0.	0.	37300.	0.	0.	0.	0.	0.
319	86	3	139.	1119.	148.	0.	3800.	6981.	0.	0.	37200.	0.	0.	0.	0.	7650.
320	86	4	1077.	8043.	1331.	0.	6000.?	7260.	0.	0.	42000.	0.	0.	7940.	0.	8160.
321	86	5	2953.	11165.	1109.	181.	14030.	2774.	0.	14044.	41100.	1200.	0.	10590.	0.	4260.
322	86	6	1359.	8658.	1398.	194.	11994.	1990.	1152.	20671.	30700.	2460.	0.	0.	0.	0.
323	86	7	0.	448.	254.	333.	0.	5964.	2442.	15328.	14900.	2160.	0.	0.	0.	0.
324	86	8	0.	0.	0.	95.	0.	9476.	10815.	2042.	10800.	1440.	0.	0.	0.	0.
325	86	9	0.	0.	0.	69.	0.	5508.	912.	745.	8210.	684.	0.	0.	0.	0.

				---Rays Lake---		--Bybee--	----------Mud Lake----------							-- Known Flood Diversions ---			
		Beaver	Camas	Rights	Gain	Structure	Well	Draft	Evap-V	Delta	Gain	EOM-WSE	Evap-D	Beaver	Camas	Rays	Mud
59	10	0.	111.	4.?	-107.	0.	3534.	0.	1000.	-1480.	-4014.	4775.05	.400	0.	0.	0.	0.
59	11	0.	175.	0.	-175.	0.	4092.	0.	0.	2390.	-1702.	4776.25	.000	0.	0.	0.	0.
59	12	0.	137.	0.	-137.	0.	5146.	0.	0.	4050.	-1096.	4777.73	.000	0.	0.	0.	0.
60	1	0.	0.	0.	0.	0.	5456.	0.	0.	4000.	-1456.	4778.76	.000	0.	0.	0.	0.
60	2	0.	0.	0.	0.	0.	4956.	0.	0.	3900.	-1056.	4779.55	.000	0.	0.	0.	0.
60	3	0.	127.	173.	46.	0.	5952.	0.	0.	2700.	-3252.	4780.04	.000	0.	0.	0.	0.
60	4	1230.	7230.	2832.	-5628.	0.	6060.	226.	0.	4100.	-1734.	4780.76	.000	0.	0.	0.	0.
60	5	0.	2249.	1391.?	-108.	750.	10172.	12546.	2000.?	-4500.	-876.	4779.97	.390?	0.	0.	0.	0.
60	6	0.	301.	167.?	-134.	0.	13309.	18255.	2500.?	-10500.	-3054.	4777.64	.573?	0.	0.	0.	0.
60	7	0.	0.	341.?	341.	0.	12651.	16859.	1700.?	-5420.	488.	4775.45	.528?	0.	0.	0.	0.
60	8	0.	0.	155.?	155.	0.	11244.	7440.	1700.?	720.	-1384.	4775.81	.632?	0.	0.	0.	0.
60	9	0.	0.	139.?	139.	0.	10973.	6278.	1200.?	1180.	-2315.	4776.36	.419?	0.	0.	0.	0.
60	10	0.	0.	85.	85.	0.	6709.	8306.	600.?	-2190.	7.	4775.29	.225?	0.	0.	0.	0.
60	11	0.	0.	0.	0.	0.	3193.	0.	0.	1660.	-1533.	4776.12	.000	0.	0.	0.	0.
60	12	0.	0.	0.	0.	0.	3379.	0.	0.	3000.	-379.	4777.30	.000	0.	0.	0.	0.
61	1	0.	0.	0.	0.	0.	4123.	0.	0.	3350.	-773.	4778.29	.000	0.	0.	0.	0.
61	2	0.	6.	0.	-6.	0.	4172.	0.	0.	2500.	-1672.	4778.87	.000	0.	0.	0.	0.
61	3	0.	296.	190.	-106.	0.	5952.	0.	0.	4500.	-1452.	4779.75	.000	0.	0.	0.	0.
61	4	290.	2563.	768.?	-2085.	0.	6870.	75.	0.	8200.	1405.	4781.20	.000	0.	0.	0.	0.
61	5	0.	4463.	1916.?	-2547.	0.?	12841.	14401.	3675.	-5200.	35.	4780.29	.671	0.	0.	0.	0.
61	6	0.	1196.	1450.?	254.	0.?	13810.	20593.	2871.	-10600.	-946.	4778.13	.628	0.	0.	0.	0.
61	7	0.	0.	470.?	470.	0.?	12802.	15578.	2827.	-5240.	363.	4776.35	.781	0.	0.	0.	0.
61	8	0.	0.	228.?	228.	0.?	11070.	8907.	1989.	360.	186.	4776.50	.638	0.	0.	0.	0.
61	9	0.	0.	175.?	175.	0.?	8024.	473.	1890.	5580.	-81.	4778.31	.521	0.	0.	0.	0.
61	10	0.	24.	101.?	77.	0.?	2240.	1462.	1342.	-1500.	-936.	4777.91	.346	0.	0.	0.	0.
61	11	0.	0.	0.	0.	0.	3162.	0.	0.	1500.	-1662.	4778.31	.000	0.	0.	0.	0.
61	12	0.	226.	0.	-226.	0.	3379.	0.	0.	3100.	-279.	4779.02	.000	0.	0.	0.	0.
62	1	0.	60.	0.	-60.	0.	3658.	0.	0.	2800.	-858.	4779.57	.000	0.	0.	0.	0.
62	2	643.	686.	643.	-686.	0.	3360.	0.	0.	2900.	-460.	4780.09	.000	0.	0.	0.	0.
62	3	686.	190.	1043.	167.	0.	3330.	0.	0.	2700.	-630.	4780.57	.000	0.	0.	0.	0.
62	4	7287.	16461.	3455.?	-7260.	9033.	3360.	0.	0.	9200.	-3193.	4782.20	.000	0.	0.	4000.	0.
62	5	2686.	19867.	3168.?	935.	16320.	1294.	11953.	2400.	2600.	-661.	4782.66	.358	0.	0.	4000.	0.
62	6	2112.	12072.	2301.?	-5131.	3752.	1500.	18365.	2080.	-15500.	-307.	4779.91	.361	0.	0.	3000.	0.
62	7	0.	958.	800.?	-158.	0.	4062.	14043.	3505.	-14080.	-594.	4776.20	.836	0.	0.	0.	0.
62	8	0.	631.	492.?	-139.	0.	11585.	8758.	1138.	100.	-1589.	4776.24	.389	0.	0.	0.	0.
62	9	0.	0.	389.?	389.	0.	11394.	7636.	1270.	4080.	1592.	4777.73	.378	0.	0.	0.	0.
62	10	0.	0.	228.?	228.	0.	7494.	8358.	1244.	-1770.	338.	4777.16	.351	0.	0.	0.	0.
62	11	0.	0.	0.	0.	0.	4247.	0.	0.	2670.	-1577.	4777.99	.000	0.	0.	0.	0.
62	12	0.	73.	0.	-73.	0.	4371.	0.	0.	3500.	-871.	4778.85	.000	0.	0.	0.	0.
63	1	0.	256.	0.	-256.	0.	4594.	0.	0.	3200.	-1394.	4779.49	.000	0.	0.	0.	0.
63	2	0.	117.	0.	-117.	0.	4458.	0.	0.	2900.	-1558.	4780.02	.000	0.	0.	0.	0.
63	3	0.	129.	331.	202.	0.	5323.	0.	0.	4600.	-723.	4780.83	.000	0.	0.	0.	0.
63	4	0.	3410.	2178.?	-760.	472.	12451.	2596.	0.	12200.	3956.	4782.98	.000	0.	0.	0.	2083.
63	5	0.	5046.	2303.?	-1853.	890.	4159.	6109.	1665.	-4800.	-1926.	4782.15	.246	0.	0.	0.	149.
63	6	0.	5437.	2416.?	-2321.	700.	5413.	8204.	3984.	-4800.	1275.	4781.29	.640	0.	0.	0.	0.
63	7	0.	615.	2186.?	1571.	0.	11280.	20033.	3910.	-15900.	-3237.	4778.24	.791	0.	0.	0.	0.
63	8	0.	0.	411.?	411.	0.	12770.	10965.	3238.	-100.	1333.	4778.21	.801	0.	0.	0.	0.
63	9	0.	0.	310.?	310.	0.	6854.	2650.	2411.	4100.	2307.	4779.14	.570	0.	0.	0.	0.

				---Rays Lake---		--Bybee--	----------	----------	----------	Mud Lake ----------	----------	----------	----------	-- Known Flood Diversions ---			
		Beaver	Camas	Rights	Gain	Structure	Well	Draft	Evap-V	Delta	Gain	EOM-WSE	Evap-D	Beaver	Camas	Rays	Mud
63	10	0.	0.	177.?	177.	0.	1576.	8616.	1410.	-7050.	1400.	4777.34	.353	0.	0.	0.	0.
63	11	0.	240.	0.	-240.	0.	0.	0.	0.	680.	680.	4777.56	.000	0.	0.	0.	0.
63	12	0.	0.	0.	0.	0.	0.	0.	0.	4170.	4170.	4778.67	.000	0.	0.	0.	0.
64	1	0.	0.	0.	0.	0.	0.	0.	0.	3800.	3800.	4779.45	.000	0.	0.	0.	0.
64	2	0.	0.	0.	0.	0.	0.	0.	0.	3300.	3300.	4780.06	.000	0.	0.	0.	0.
64	3	0.	0.	234.	234.	0.	0.	0.	0.	2500.	2500.	4780.50	.000	0.	0.	0.	0.
64	4	226.	3749.	1186.?	911.	3700.	8400.	986.	0.	6600.	-4514.	4781.67	.000	0.	0.	0.	0.
64	5	1301.	13161.	1762.?	-5700.	7000.	3198.	7833.	1416.	-1200.	-2149.	4781.45	.239	0.	0.	0.	0.
64	6	4719.	18784.	1886.?	-5317.	16300.	3282.	11199.	3816.	4300.	-267.	4782.22	.605	0.	0.	0.	0.
64	7	415.	1369.	1111.?	507.	1180.	12453.	21373.	4355.	-15400.	-3305.	4779.47	.778	0.	0.	0.	0.
64	8	0.	327.	416.?	89.	0.	13932.	12132.	1510.	-1900.	-2190.	4779.10	.337	0.	0.	0.	0.
64	9	0.	0.	209.?	209.	0.	10882.	8082.	1725.	200.	-875.	4779.14	.392	0.	0.	0.	0.
64	10	0.	0.	123.?	123.	0.	4118.	10070.	1146.?	-7600.	-502.	4777.15	.290?	0.	0.	0.	0.
64	11	0.	69.	0.	-69.	0.	5006.	0.	0.	3600.	-1406.	4778.24	.000	0.	0.	0.	0.
64	12	0.	60.	0.	-60.	0.	4944.	0.	0.	4200.	-744.	4779.18	.000	0.	0.	0.	0.
65	1	0.	93.	0.	-93.	0.	4786.	0.	0.	4300.	-486.	4779.98	.000	0.	0.	0.	0.
65	2	0.	186.	0.	-186.	0.	4273.	0.	0.	2800.	-1473.	4780.48	.000	0.	0.	0.	0.
65	3	9.	456.	391.	-74.	0.	4858.	0.	0.	2200.	-2658.	4780.86	.000	0.	0.	0.	0.
65	4	2836.	8957.	1210.?	-4183.	6400.	2431.	0.	0.	5700.	-3131.	4781.88	.000	0.	0.	0.	0.
65	5	6159.	16090.	3637.?	-512.	18100.	2201.	9637.	1942.	1100.	-1196.	4782.08	.309	0.	0.	0.	6426.
65	6	6240.	14267.	3225.?	-4382.	6400.	4683.	18029.	1923.	-7500.	1369.	4780.74	.329	0.	0.	6500.	0.
65	7	1472.	2940.	1081.?	1669.	5000.	11434.	15501.	2705.	-4600.	-2828.	4779.93	.525	0.	0.	0.	0.
65	8	0.	1035.	947.?	-88.	0.	7012.	8447.	1953.	-3600.	-212.	4779.26	.417	0.	0.	0.	0.
65	9	0.	1051.	478.?	-573.	0.	2928.	4748.	1088.	-1900.	1008.	4778.87	.250	0.	0.	0.	0.
65	10	0.	1277.	296.?	-981.	0.	2046.	7846.	1093.	-6170.	723.	4777.19	.283	0.	0.	0.	0.
65	11	0.	1666.	0.	-1666.	0.	6471.	0.	0.	4670.	-1801.	4778.53	.000	0.	0.	0.	0.
65	12	0.	655.	0.	-655.	0.	7210.	0.	0.	5100.	-2110.	4779.59	.000	0.	0.	0.	0.
66	1	0.	462.	0.	-462.	0.	5536.	0.	0.	4500.	-1036.	4780.39	.000	0.	0.	0.	0.
66	2	0.	555.	0.	-555.	0.	5250.	0.	0.	3900.	-1350.	4781.08	.000	0.	0.	0.	0.
66	3	196.	591.	99.	-688.	0.	5995.	0.	0.	2700.	-3295.	4781.56	.000	0.	0.	0.	0.
66	4	2692.	6024.	405.?	-6311.	2000.	5757.	1800.	0.	2700.	-1348.	4782.04	.000	0.	0.	0.	1909.
66	5	13.	5036.	1767.?	2331.	5613.	9292.	19558.	3033.	-9000.	1686.	4780.44	.524	0.	0.	0.	3000.
66	6	0.	1428.	1015.?	-413.	0.	13579.	19373.	3450.	-9300.	-56.	4778.67	.724	0.	0.	0.	0.
66	7	0.	659.	385.?	-274.	0.	14478.	18839.	2810.	-6890.	281.	4776.58	.737	0.	0.	0.	0.
66	8	0.	0.	218.?	218.	0.	14554.	7775.	2402.	3990.	-387.	4777.94	.672	0.	0.	0.	0.
66	9	0.	0.	127.?	127.	0.	14000.	5826.	1836.	4900.	-1438.	4779.10	.445	0.	0.	0.	0.
66	10	0.	0.	60.?	60.	0.	2976.	9726.	1410.	-6820.	1340.	4777.35	.354	0.	0.	0.	0.
66	11	0.	0.	0.	0.	0.	4404.	0.	0.	2020.	-2384.	4777.97	.000	0.	0.	0.	0.
66	12	0.	0.	0.	0.	0.	4622.	0.	0.	3300.	-1322.	4778.78	.000	0.	0.	0.	0.
67	1	0.	0.	0.	0.	0.	4622.	0.	0.	3500.	-1122.	4779.49	.000	0.	0.	0.	0.
67	2	0.	0.	0.	0.	0.	4189.	0.	0.	2500.	-1689.	4779.95	.000	0.	0.	0.	0.
67	3	0.	210.	173.	-37.	0.	4963.	0.	0.	2500.	-2463.	4780.39	.000	0.	0.	0.	0.
67	4	0.	1043.	700.?	-343.	0.	5067.	334.	0.	1200.	-3533.	4780.60	.000	0.	0.	0.	0.
67	5	4614.	21271.	2279.?	-4974.	8632.	9689.	14272.	2061.	-1000.	-2988.	4780.43	.394	0.	0.	10000.	0.
67	6	6710.	22564.	2481.?	-4408.	17385.	8554.	11126.	2605.	10500.	-1708.	4782.29	.445	0.	0.	5000.	0.
67	7	684.	2926.	1647.?	207.	2170.	4320.	12430.	2245.	-12700.	-4515.	4780.04	.395	0.	0.	0.	0.
67	8	0.	613.	536.?	-77.	0.	12819.	14261.	1858.	-5900.	-2600.	4778.91	.402	0.	0.	0.	0.
67	9	0.	95.	220.?	125.	0.	7644.	8060.	1610.	-1400.	626.	4778.60	.382	0.	0.	0.	0.

				---Rays Lake---		--Bybee--	----------	----------	----------	Mud Lake ----------	----------	----------	----------	-- Known Flood Diversions ---			
		Beaver	Camas	Rights	Gain	Structure	Well	Draft	Evap-V	Delta	Gain	EOM-WSE	Evap-D	Beaver	Camas	Rays	Mud
67	10	0.	36.	101.?	65.	0.	4208.	9459.	1062.	-6110.	203.	4776.77	.287	0.	0.	0.	0.
67	11	0.	173.	0.	-173.	0.	3570.	0.	0.	2910.	-660.	4777.76	.000	0.	0.	0.	0.
67	12	0.	0.	0.	0.	0.	3903.	0.	0.	4400.	497.	4778.87	.000	0.	0.	0.	0.
68	1	0.	0.	0.	0.	0.	4135.	0.	0.	4200.	65.	4779.70	.000	0.	0.	0.	0.
68	2	0.	0.	0.	0.	0.	3993.	0.	0.	2800.	-1193.	4780.20	.000	0.	0.	0.	0.
68	3	0.	81.	0.	-81.	0.	4616.	0.	0.	2000.	-2616.	4780.55	.000	0.	0.	0.	0.
68	4	161.	4130.	0.	-4291.	0.	4034.	1738.	0.	1200.	-25.	4780.76	.000	0.	0.	0.	1071.
68	5	1218.	5459.	3068.	3679.	7288.?	12448.	13808.	2280.	3600.	-48.	4781.40	.405	0.	0.	0.	0.
68	6	2089.	7270.	2328.	-1031.	6000.	11464.	15513.	2180.	-2700.	-2471.	4780.92	.384	0.	0.	0.	0.
68	7	56.	1105.	942.	-219.	0.	13528.	20221.	2514.	-10800.	-1593.	4778.94	.511	0.	0.	0.	0.
68	8	0.	676.	1130.	454.	0.	10620.	8427.	987.	3400.	2194.	4779.60	.222	0.	0.	0.	0.
68	9	0.	704.	456.	-248.	0.	1732.	4042.	863.	-3400.	-227.	4778.94	.194	0.	0.	0.	0.
68	10	0.	998.	332.	-666.	0.	2302.	7737.	842.	-7260.	-983.	4776.91	.221	0.	0.	0.	0.
68	11	0.	1023.	0.	-1023.	0.	3450.	0.	0.	3560.	110.	4778.05	.000	0.	0.	0.	0.
68	12	0.	557.	0.	-557.	0.	3782.	0.	0.	4200.	418.	4779.04	.000	0.	0.	0.	0.
69	1	54.	712.	0.	-766.	0.	3782.	0.	0.	4900.	1118.	4779.97	.000	0.	0.	0.	0.
69	2	0.	200.	0.	-200.	0.	1800.	0.	0.	1800.	0.	4780.29	.000	0.	0.	0.	0.
69	3	549.	1361.	0.	-1910.	0.	0.	0.	0.	-100.	1800.	4780.27	.000	0.	0.	0.	1900.
69	4	6432.	3104.	0.	-536.	6000.?	0.	0.	0.	6900.	5660.	4781.49	.000	0.	7570.	3000.	4760.
69	5	13087.	32591.	3736.	-7222.	19720.?	992.	17433.	2676.	300.	-303.	4781.54	.448	0.	22400.	15000.	0.
69	6	9152.	16959.	2764.	756.	18152.	2220.	17265.	3050.	-1300.	-1357.	4781.31	.514	0.	0.	5951.	0.
69	7	2652.	4493.	1548.	-2943.	2654.	4162.	17455.	2106.	-12800.	-55.	4778.98	.419	0.	0.	0.	0.
69	8	230.	910.	542.	-598.	0.	15226.	11891.	2012.	-200.	-1523.	4778.94	.464	0.	0.	0.	0.
69	9	14.	857.	413.	-458.	0.	12266.	7929.	1713.	0.	-2624.	4778.94	.398	0.	0.	0.	0.
69	10	417.	1097.	829.	-685.	0.	3872.	5263.	1462.	-2400.	453.	4778.39	.352	0.	0.	0.	0.
69	11	543.	1107.	0.	-1650.	0.	1200.	0.	0.	4700.	3500.	4779.40	.000	0.	0.	0.	0.
69	12	0.	732.	0.	-732.	0.	600.	0.	0.	5100.	4500.	4780.32	.000	0.	0.	0.	0.
70	1	0.	835.	0.	-835.	0.	4473.	0.	0.	4200.	-273.	4781.06	.000	0.	0.	0.	0.
70	2	8.	1250.	0.	-1258.	0.	4813.	0.	0.	3200.	-1613.	4781.63	.000	0.	0.	0.	0.
70	3	20.	1406.	0.	-1426.	0.	5685.	0.	0.	2500.	-3185.	4782.08	.000	0.	0.	0.	0.
70	4	389.	1337.	0.	-1726.	0.	4866.	0.	0.	2200.	-2666.	4782.47	.000	0.	0.	0.	0.
70	5	5036.	16255.	2307.	-1043.	11197.	2321.	8785.	1936.	-200.	-2997.	4782.43	.290	0.	5880.	6744.	0.
70	6	3648.	12627.	3116.	648.	10772.	1635.	18249.	2330.	-10200.	-2028.	4780.62	.391	0.	0.	3035.	0.
70	7	1006.	2134.	1420.	-297.	1423.	9873.	12765.	2220.	-5200.	-1511.	4779.70	.442	0.	0.	0.	0.
70	8	1.	916.	968.	51.	0.	14059.	17580.	1840.	-5700.	-339.	4778.53	.416	0.	0.	0.	0.
70	9	0.	948.	758.	-190.	0.	9747.	6275.	1682.	3500.	1710.	4779.28	.391	0.	0.	0.	0.
70	10	0.?	1035.?	709.	-326.	0.	1674.	6888.	984.	-7010.	-812.	4777.58	.242	0.	0.	0.	0.
70	11	0.?	0.?	0.	0.	0.	4239.	0.	0.	5510.	1271.	4778.98	.000	0.	0.	0.	0.
70	12	0.?	0.?	0.	0.	0.	4191.	0.	0.	6100.	1909.	4780.13	.000	0.	0.	0.	0.
71	1	0.?	0.?	0.	0.	0.	4625.	0.	0.	4700.	75.	4780.95	.000	0.	0.	0.	0.
71	2	0.?	0.?	0.	0.	0.	4827.	0.	0.	3400.	-1427.	4781.56	.000	0.	0.	0.	0.
71	3	1470.?	0.?	0.	-1470.	0.	5806.	0.	0.	3800.	-2006.	4782.24	.000	0.	0.	0.	0.
71	4	2583.	4352.?	0.	-6935.	0.	5742.	0.	0.	4400.	-1342.	4783.00	.000	0.	1740.	0.	0.
71	5	11633.	20361.	3338.	-2206.	19756.	2255.	13497.	2404.	4700.	-1410.	4783.73	.317	0.	17150.	6694.	0.
71	6	9132.	14257.	2807.	377.	16000.?	2113.	19311.	3418.	-5100.	-484.	4782.93	.448	0.	10130.	4959.	0.
71	7	1779.?	4633.	2057.	-3455.	900.	1748.	21589.	1890.	-20600.	231.	4779.26	.336	0.	0.	0.	0.
71	8	0.?	1137.	1006.	-131.	0.	8489.	12398.	1487.	-5300.	96.	4778.05	.356	0.	0.	0.	0.
71	9	0.?	1932.	1271.	-661.	0.	8600.	10669.	1090.	900.	4059.	4778.29	.281	0.	0.	0.	0.

				---Rays Lake---		--Bybee--	----------Mud Lake----------							-- Known Flood Diversions ---			
		Beaver	Camas	Rights	Gain	Structure	Well	Draft	Evap-V	Delta	Gain	EOM-WSE	Evap-D	Beaver	Camas	Rays	Mud
71	10	0.?	1995.	1460.	-535.	0.	4424.	3156.	754.	3100.	2586.	4779.00	.183	0.	0.	0.	0.
71	11	0.?	1085.	0.	-1085.	0.	5103.	0.	0.	4400.	-703.	4779.84	.000	0.	0.	0.	0.
71	12	0.?	992.	0.	-992.	0.	4703.	0.	0.	4600.	-103.	4780.65	.000	0.	0.	0.	0.
72	1	0.?	1164.	0.	-1164.	0.	5961.	0.	0.	3200.	-2761.	4781.22	.000	0.	0.	0.	0.
72	2	0.?	1006.	0.	-1006.	0.	5216.	0.	0.	1800.	-3416.	4781.54	.000	0.	0.	0.	0.
72	3	1495.?	2327.	0.	-3822.	0.	1485.	0.	0.	4500.	4086.	4782.34	.000	0.	0.	0.	1071.
72	4	4437.	5931.	0.	-4068.	6300.	1101.	0.	0.	4600.	3625.	4783.13	.000	0.	4743.	0.	6426.
72	5	4987.	10021.	2246.	-1136.	11626.	512.	16842.	2025.	-7800.	-1071.	4781.77	.302	0.	4451.	0.	0.
72	6	5008.	7845.	2624.	-1323.	8906.	4080.	18960.	1835.	-8200.	-391.	4780.32	.329	0.	0.	0.	0.
72	7	527.	1351.	1569.	1776.	2085.	12482.	22426.	2076.	-9600.	335.	4778.44	.451	0.	0.	0.	0.
72	8	0.?	520.	795.	275.	0.	15974.	9017.	1652.	1000.	-4305.	4778.67	.402	0.	0.	0.	0.
72	9	0.?	827.	780.	-47.	0.	4580.	6206.	1620.	-3700.	-454.	4777.70	.411	0.	0.	0.	0.
72	10	0.?	1613.	1526.	-87.	0.	1388.	5174.	1141.	-1080.	3847.	4777.36	.319	0.	0.	0.	0.
72	11	0.?	1502.	0.	-1502.	0.	8100.	0.	0.	6180.	-1920.	4778.98	.000	0.	0.	0.	0.
72	12	0.?	371.	0.	-371.	0.	5890.	0.	0.	5800.	-90.	4780.07	.000	0.	0.	0.	0.
73	1	0.?	389.	0.	-389.	0.	5487.	0.	0.	5400.	-87.	4781.02	.000	0.	0.	0.	0.
73	2	0.?	502.	0.	-502.	0.	5208.	0.	0.	4100.	-1108.	4781.75	.000	0.	0.	0.	0.
73	3	361.?	744.	0.	-1105.	0.	5589.	0.	0.	3500.	-2089.	4782.38	.000	0.	0.	0.	0.
73	4	3481.	3312.	0.	-6793.	0.	5208.	0.	0.	4200.	-1008.	4783.10	.000	0.	0.	0.	0.
73	5	2864.	22620.	4020.	-5285.	16179.	1472.	17655.	1741.	-3300.	-1555.	4782.54	.249	0.	0.	0.	0.
73	6	419.	4372.	2810.	-709.	1272.	3430.	17291.	1630.	-14300.	-81.	4780.00	.285	0.	0.	0.	0.
73	7	242.?	559.	1013.	212.	0.	11438.	14038.	1382.	-1000.	2982.	4779.82	.286	0.	0.	0.	0.
73	8	0.?	210.	553.	343.	0.	7429.	17395.	1054.	-8100.	2920.	4778.10	.243	0.	0.	0.	0.
73	9	0.?	0.	61.	61.	0.	2314.	7152.	1040.	-2710.	3168.	4777.28	.284	0.	0.	0.	0.
73	10	0.?	607.	742.	135.	0.	5685.	7578.	760.	290.	2943.	4777.38	.221	0.	0.	0.	0.
73	11	0.?	651.	0.	-651.	0.	4026.	0.	0.	4820.	794.	4778.69	.000	0.	0.	0.	0.
73	12	0.?	234.	0.	-234.	0.	6460.	0.	0.	5400.	-1060.	4779.77	.000	0.	0.	0.	0.
74	1	0.?	141.	0.	-141.	0.	4982.	0.	0.	4800.	-182.	4780.62	.000	0.	0.	0.	0.
74	2	0.?	196.	0.	-196.	0.	5734.	0.	0.	3800.	-1934.	4781.29	.000	0.	0.	0.	0.
74	3	508.?	417.	0.	-925.	0.	6966.	0.	0.	4300.	-2666.	4782.06	.000	0.	0.	0.	0.
74	4	3122.	10336.	0.	-1142.	2200.?	6486.	360.	0.	6800.	-1526.	4783.23	.000	0.	0.	10116.	0.
74	5	4023.	17225.	3965.	1117.	18400.	611.	18674.	2544.	-2600.	-393.	4782.80	.351	0.	0.	0.	0.
74	6	1150.	7908.	2043.	317.	7332.	4792.	24467.	2618.	-14200.	761.	4780.29	.437	0.	0.	0.	0.
74	7	339.?	79.	401.	-17.	0.	13584.	22876.	1710.	-12880.	-1878.	4777.46	.390	0.	0.	0.	0.
74	8	0.?	0.	385.	385.	0.	13845.	9462.	1135.	2180.	-1068.	4778.10	.306	0.	0.	0.	0.
74	9	0.?	0.	242.	242.	0.	8854.	10421.	1466.	300.	3333.	4778.18	.376	0.	0.	0.	0.
74	10	0.?	202.	0.	-202.	0.	5284.	5444.	1433.	-100.	1493.	4778.16	.367	0.	0.	0.	0.
74	11	0.?	502.	0.	-502.	0.	4908.	0.	0.	3200.	-1708.	4778.91	.000	0.	0.	0.	0.
74	12	0.?	16.	0.	-16.	0.	4870.	0.	0.	4400.	-470.	4779.77	.000	0.	0.	0.	0.
75	1	0.?	0.	0.	0.	0.	4765.	0.	0.	4400.	-365.	4780.55	.000	0.	0.	0.	0.
75	2	0.?	0.	0.	0.	0.	4318.	0.	0.	3600.	-718.	4781.18	.000	0.	0.	0.	0.
75	3	0.?	0.	0.	0.	0.	4703.	0.	0.	3300.	-1403.	4781.77	.000	0.	0.	0.	0.
75	4	1299.?	589.	0.	-1888.	0.	4374.	0.	0.	4100.	-274.	4782.50	.000	0.	0.	0.	0.
75	5	8561.	11978.	3772.	-2305.	14462.	440.	5940.	1636.	4700.	-2626.	4783.29	.231	0.	13030.	0.	0.
75	6	10879.	20601.	3451.	-5029.	23000.	1821.	23924.	2528.	-3900.	-2269.	4782.64	.351	0.	7170.	0.	0.
75	7	1150.	4231.	626.	425.	5180.	5137.	17830.	2146.	-11200.	-1541.	4780.65	.355	0.	0.	0.	0.
75	8	36.	339.	369.	-6.	0.	9222.	13848.	1369.	-7500.	-1505.	4779.30	.281	0.	0.	0.	0.
75	9	0.	40.	89.	49.	0.	1368.	9360.	882.	-10570.	-1696.	4776.29	.230	0.	0.	0.	0.

CALIBRATION RESULTS WHEN USING "MUDLDATA.008" INPUT DATA FILE

				---Rays Lake---		--Bybee--	----------	----------	----------	Mud Lake ----------	----------	----------	----------	-- Known Flood Diversions ---			
		Beaver	Camas	Rights	Gain	Structure	Well	Draft	Evap-V	Delta	Gain	EOM-WSE	Evap-D	Beaver	Camas	Rays	Mud
75	10	0.?	750.	0.	-750.	0.	5613.	6352.	520.	2010.	3269.	4777.09	.167	0.	0.	0.	0.
75	11	0.?	599.	0.	-599.	0.	3150.	0.	0.	3660.	510.	4778.21	.000	0.	0.	0.	0.
75	12	0.?	377.	0.	-377.	0.	3091.	0.	0.	5200.	2109.	4779.36	.000	0.	0.	0.	0.
76	1	0.?	371.	0.	-371.	0.	4365.	0.	0.	5800.	1435.	4780.41	.000	0.	0.	0.	0.
76	2	0.?	278.	0.	-278.	0.	5524.	0.	0.	5000.	-524.	4781.29	.000	0.	0.	0.	0.
76	3	0.	222.	0.	-222.	0.	6907.	0.	0.	4100.	-2807.	4782.02	.000	0.	0.	0.	0.
76	4	2944.	3316.	0.	-260.	0.	6384.	0.	0.	5600.	-784.	4783.00	.000	0.	0.	6000.	0.
76	5	4546.	22239.	1708.	1879.	19270.	1512.	16900.	2118.	-100.	-1864.	4782.98	.295	0.	0.	7686.	0.
76	6	532.	3047.	1079.	-642.	1858.	10266.	21669.	2033.	-11500.	78.	4780.95	.323	0.	2600.	0.	0.
76	7	383.?	40.	405.	-18.	0.	16495.	24821.	1671.	-10400.	-403.	4779.06	.340	0.	0.	0.	0.
76	8	0.?	0.	337.	337.	0.	10138.	8861.	1629.	600.	952.	4779.18	.370	0.	0.	0.	0.
76	9	0.?	186.	327.	141.	0.	1388.	6193.	1139.	-8060.	-2116.	4777.05	.289	0.	0.	0.	0.
76	10	0.?	543.	163.	-380.	0.	1832.	4620.	1050.	-1310.	2528.	4776.55	.327	0.	0.	0.	0.
76	11	0.?	480.	0.	-480.	0.	4194.	0.	0.	3770.	-424.	4777.85	.000	0.	0.	0.	0.
76	12	0.?	8.	0.	-8.	0.	4365.	0.	0.	4800.	435.	4779.02	.000	0.	0.	0.	0.
77	1	0.?	2.	0.	-2.	0.	4411.	0.	0.	5300.	889.	4780.02	.000	0.	0.	0.	0.
77	2	0.?	0.	0.	0.	0.	4452.	0.	0.	3600.	-852.	4780.65	.000	0.	0.	0.	0.
77	3	0.?	0.	0.	0.	0.	19200.	0.	0.	16500.	-2700.	4783.51	.000	0.	0.	0.	0.
77	4	417.	1755.	696.	-1476.	0.	5187.	2314.	0.	-3900.	-6773.	4782.88	.000	0.	0.	0.	0.
77	5	0.?	502.	560.	58.	0.	17825.	12730.	2162.	1500.	-1433.	4783.13	.300	0.	0.	0.	0.
77	6	0.?	218.	511.	293.	0.	15051.	19141.	2513.	-9800.	-3197.	4781.42	.381	0.	0.	0.	0.
77	7	0.?	0.	352.	352.	0.	13617.	17940.	2408.	-12500.	-5769.	4779.16	.470	0.	0.	0.	0.
77	8	0.?	0.	0.	0.	0.	10106.	8946.	2189.	-1000.	29.	4778.96	.498	0.	0.	0.	0.
77	9	0.?	0.	0.	0.	0.	7866.	11700.	946.	-5610.	-830.	4777.51	.240	0.	0.	0.	0.
77	10	0.?	0.	0.	0.	0.	7901.	7357.	854.	-990.	-680.	4777.18	.247	0.	0.	0.	0.
77	11	0.?	0.	0.	0.	0.	3270.	0.	0.	850.	-2420.	4777.47	.000	0.	0.	0.	0.
77	12	0.?	0.	0.	0.	0.	3091.	0.	0.	1850.	-1241.	4778.02	.000	0.	0.	0.	0.
78	1	0.?	0.	0.	0.	0.	3751.	0.	0.	2800.	-951.	4778.72	.000	0.	0.	0.	0.
78	2	0.?	0.	0.	0.	0.	4259.	0.	0.	2700.	-1559.	4779.28	.000	0.	0.	0.	0.
78	3	149.	75.	0.	-224.	0.	4718.	0.	0.	3100.	-1618.	4779.86	.000	0.	0.	0.	0.
78	4	4030.	6831.	3753.	-7108.	0.	12400.	0.	0.	8100.	-4300.	4781.29	.000	0.	0.	0.	0.
78	5	3890.	21884.	2446.	-6731.	16597.	4986.	12868.	2028.	1400.	-5287.	4781.54	.346	0.	0.	0.	0.
78	6	549.	5318.	2116.	-1436.	2315.	13689.	21238.	1632.	-6900.	-34.	4780.32	.298	0.	0.	0.	0.
78	7	0.	0.	305.	305.	0.	14989.	20738.	2024.	-10400.	-2627.	4778.24	.444	0.	0.	0.	0.
78	8	0.	0.	222.	222.	0.	11944.	8763.	1873.	-500.	-1808.	4778.10	.476	0.	0.	0.	0.
78	9	0.	0.	0.	0.	0.	5432.	8597.	830.	-4200.	-205.	4776.74	.235	0.	0.	0.	0.
78	10	0.?	0.	0.	0.	0.	5494.	6541.	600.	-1090.	557.	4776.28	.199	0.	0.	0.	0.
78	11	0.?	0.	0.	0.	0.	2619.	0.	0.	1380.	-1239.	4776.85	.000	0.	0.	0.	0.
78	12	0.?	0.	0.	0.	0.	2747.	0.	0.	3210.	463.	4777.91	.000	0.	0.	0.	0.
79	1	0.?	0.	0.	0.	0.	3577.	0.	0.	2300.	-1277.	4778.51	.000	0.	0.	0.	0.
79	2	0.?	0.	0.	0.	0.	3609.	0.	0.	2300.	-1309.	4779.02	.000	0.	0.	0.	0.
79	3	0.?	0.	0.	0.	0.	4191.	0.	0.	3000.	-1191.	4779.60	.000	0.	0.	0.	0.
79	4	670.	3947.	1632.	-2985.	0.	9792.	0.	0.	8800.	-992.	4781.17	.000	0.	0.	0.	0.
79	5	206.	8158.	3515.	-275.	4574.	17010.	16210.	2383.	-1000.	-3991.	4780.99	.423	0.	0.	0.	0.
79	6	0.	335.	536.	201.	0.	14947.	19325.	2891.	-9700.	-2431.	4779.24	.574	0.	0.	0.	0.
79	7	0.	0.	252.	252.	0.	14121.	19438.	2428.	-7800.	-55.	4777.25	.596	0.	0.	0.	0.
79	8	0.?	0.	0.	0.	0.	11529.	6762.	1413.	3200.	-154.	4778.21	.381	0.	0.	0.	0.
79	9	0.?	0.	0.	0.	0.	8152.	7778.	1310.	-3110.	-2174.	4777.28	.353	0.	0.	0.	0.

				---Rays Lake---		--Bybee--	----------			Mud Lake	----------			-- Known Flood Diversions ---			
		Beaver	Camas	Rights	Gain	Structure	Well	Draft	Evap-V	Delta	Gain	EOM-WSE	Evap-D	Beaver	Camas	Rays	Mud
79	10	0.?	0.	0.	0.	0.	6975.	6976.	787.	-1230.	-442.	4776.84	.237	0.	0.	0.	0.
79	11	0.?	0.	0.	0.	0.	1815.	0.	0.	60.	-1755.	4776.86	.000	0.	0.	0.	0.
79	12	0.?	0.	0.	0.	0.	1764.	0.	0.	1530.	-234.	4777.40	.000	0.	0.	0.	0.
80	1	0.?	0.	0.	0.	0.	2716.	0.	0.	1450.	-1266.	4777.85	.000	0.	0.	0.	0.
80	2	0.?	133.	2043.	1910.	0.	2528.	0.	0.	1500.	-1028.	4778.26	.000	0.	0.	0.	0.
80	3	323.?	0.	0.	-323.	0.	11236.	0.	0.	10700.	-536.	4780.39	.000	0.	0.	0.	0.
80	4	1127.	6585.	1608.	-6104.	0.	13100.	1000.	0.	13100.	1000.	4782.71	.000	0.	0.	0.	0.
80	5	2561.	11784.	4062.	-5256.	5027.	9131.	6118.	420.	4900.	-2720.	4783.51	.058	0.	0.	0.	0.
80	6	4618.	11034.	3628.	-1827.	7942.	0.	11950.	3632.	-10300.	-2660.	4781.75	.518	0.	8421.	2255.	0.
80	7	292.	809.	696.	758.	1163.	9076.	22753.	2608.	-16100.	-978.	4778.81	.507	0.	0.	0.	0.
80	8	0.	0.	111.	111.	0.	12618.	10932.	1717.	-800.	-769.	4778.63	.409	0.	0.	0.	0.
80	9	0.	15.	0.	-15.	0.	6048.	5179.	480.	-1400.	-1789.	4778.29	.120	0.	0.	0.	0.
80	10	0.?	236.	0.	-236.	0.	1982.	7907.	399.	-4720.	1604.	4776.81	.112	0.	0.	0.	0.
80	11	0.?	262.	0.	-262.	0.	2121.	0.	0.	660.	-1461.	4777.05?	.000?	0.	0.	0.	0.
80	12	0.?	131.	0.	-131.	0.	2396.	0.	0.	1520.	-876.	4777.57	.000?	0.	0.	0.	0.
81	1	0.?	198.	0.	-198.	0.	2542.	0.	0.	2040.	-502.	4778.16	.000	0.	0.	0.	0.
81	2	0.?	208.	628.	420.	0.	2738.	0.	0.	1700.	-1038.	4778.58	.000	0.	0.	0.	0.
81	3	734.?	419.	88.	-1065.	0.	8236.	0.	0.	7100.	-1136.	4779.98	.000	0.	0.	0.	0.
81	4	2949.	8468.	2125.	-1792.	7500.	11317.	720.	0.	12800.	-5297.	4782.26	.000	0.	0.	0.	0.
81	5	5818.	15557.	3675.	-3618.	14082.	5684.	14486.	2098.	1100.	-2082.	4782.45	.317	0.	0.	0.	0.
81	6	2446.	4578.	2475.	4073.	8622.	6516.	23027.	2181.	-14300.	-4230.	4779.91	.383	0.	0.	0.	0.
81	7	0.	0.	365.	365.	0.	14063.	21212.	1813.	-10200.	-1238.	4777.64	.420	0.	0.	0.	0.
81	8	0.?	0.	63.	63.	0.	11490.	15652.	1829.	-2960.	3031.	4776.59	.530	0.	0.	0.	0.
81	9	0.?	0.	0.	0.	0.	11198.	11464.	1072.	-1340.	-2.	4776.00?	.362?	0.	0.	0.	0.
81	10	0.?	0.	0.	0.	0.	5302.	6563.	849.	-97.	2013.	4775.96?	.307?	0.	0.	0.	0.
81	11	0.?	0.	0.	0.	0.	813.	0.	0.	3229.	2416.	4777.26?	.000?	0.	0.	0.	0.
81	12	0.?	18.	0.	-18.	0.	1317.	0.	0.	-138.	-1455.	4777.22?	.000?	0.	0.	0.	0.
82	1	0.?	48.	207.	159.	0.	1965.	0.	0.	96.	-1869.	4777.25	.000?	0.	0.	0.	0.
82	2	0.?	77.	415.	338.	0.	2164.	0.	0.	1810.	-354.	4777.82	.000	0.	0.	0.	0.
82	3	1087.?	145.	215.	-1017.	0.	8100.	0.	0.	9700.	1600.	4779.93	.000	0.	0.	0.	0.
82	4	2955.	5621.	3192.	-4384.	1000.	2292.	500.	0.	2700.	-92.	4780.41	.000	0.	0.	0.	0.
82	5	8604.	28842.	3804.	-6631.	27011.	2700.	14560.	1802.	8500.	-4849.	4781.92	.319	0.	0.	0.	0.
82	6	4875.	10437.	3361.	1368.	13319.	8296.	17923.	1597.	1000.	-1095.	4782.10	.254	0.	0.	0.	0.
82	7	1210.	2075.	754.	-506.	2025.	11150.	19467.	1978.	-10900.	-2630.	4780.16	.351	0.	0.	0.	0.
82	8	0.?	24.	0.	-24.	0.	13294.	10515.	2207.	900.	328.	4780.32	.435	0.	0.	0.	0.
82	9	0.?	0.	0.	0.	0.	4107.	12601.	708.	-12400.	-3198.	4777.67	.162	0.	0.	0.	0.
82	10	0.?	0.?	0.	0.	0.	1466.	5402.	152.	-3007.	1081.	4776.61?	.046?	0.	0.	0.	0.
82	11	0.?	0.?	919.	919.	0.	2259.	0.	0.	1528.	-731.	4777.19?	.000?	0.	0.	0.	0.
82	12	0.?	0.?	0.	0.	0.	3887.	0.	0.	1979.	-1908.	4777.82	.000?	0.	0.	0.	0.
83	1	0.?	0.?	148.	148.	0.	3289.	0.	0.	2700.	-589.	4778.53	.000	0.	0.	0.	0.
83	2	0.?	0.?	98.	98.	0.	3416.	0.	0.	2700.	-716.	4779.12	.000	0.	0.	0.	0.
83	3	0.?	0.?	1169.	1169.	0.	4135.	0.	0.	3200.	-935.	4779.73	.000	0.	0.	0.	0.
83	4	5137.?	8109.?	1821.	-3193.	2500.	4509.	227.	0.	5700.	-1082.	4780.74	.000	0.	0.	5732.	0.
83	5	13016.?	32672.	4272.	-2723.	28193.	1114.	13571.	1893.	13000.	-843.	4783.03	.304	0.	12841.	10500.	0.
83	6	11814.?	21041.	4536.	5886.	33205.	1200.	25358.	683.	4500.	-1664.	4783.73	.091	0.	16124.	1000.	2200.
83	7	3312.?	7097.	1828.	3419.	12000.	1208.	18764.	2379.	-11400.	-3465.	4781.83	.337	0.	2491.	0.	0.
83	8	1438.?	1787.	2137.	-1088.	0.	2512.	9702.	1329.	-6100.	2419.	4780.74	.233	0.	0.	0.	0.
83	9	952.?	968.	1523.	-397.	0.	1560.	12977.	1093.	-13400.	-890.	4778.08	.237	0.	0.	0.	0.

CALIBRATION RESULTS WHEN USING "MUDLDATA.008" INPUT DATA FILE

				---Rays Lake---		--Bybee--	----------	----------	----------	Mud Lake ----------	----------	----------	----------	-- Known Flood Diversions ---			
		Beaver	Camas	Rights	Gain	Structure	Well	Draft	Evap-V	Delta	Gain	EOM-WSE	Evap-D	Beaver	Camas	Rays	Mud
83	10	0.?	4790.	2452.	-338.	2000.	4328.	3296.	1230.	7000.	5198.	4779.60	.288	0.	0.	0.	0.
83	11	0.?	3558.	2218.	1660.	3000.	5112.	0.	0.	8500.	388.	4781.11	.000	0.	0.	0.	0.
83	12	0.?	1081.	0.	1219.	2300.	4269.	0.	0.	3400.	-3169.	4781.72	.000	0.	0.	0.	0.
84	1	10.?	1129.	0.	1461.	2600.	1860.	0.	0.	3100.	-1360.	4782.27	.000	0.	0.	0.	0.
84	2	125.?	901.	0.	1274.	2300.	1733.	0.	0.	2900.	-1133.	4782.78	.000	0.	0.	0.	0.
84	3	1880.?	1131.	0.	-411.	2600.	2040.	0.	0.	2900.	174.	4783.26	.000	0.	0.	0.	1914.
84	4	3938.	3066.	2569.	2949.	3000.	2292.	0.	0.	1600.	1528.	4783.51	.000	0.	2500.	4384.	5220.
84	5	14884.	26835.	3858.	-2097.	25311.	2480.	20067.	1400.?	8300.	7308.	4784.55	.170?	0.	21342.	10453.	5332.
84	6	14240.	18353.	2883.	859.	24837.	1800.	10945.	2500.?	9400.	1688.	4785.33	.267?	0.	16639.	5732.	5480.
84	7	4324.	1859.	2608.	2125.	5700.	450.	16814.	2400.?	-20500.	-4272.	4783.07	.274?	0.	3894.	0.	3164.
84	8	2743.	1059.	1920.	-1882.	0.	475.	4531.	1500.?	-11200.	1796.	4781.09	.236?	0.	2769.	0.	7440.
84	9	1156.	137.	1267.	-26.	0.	1072.	12537.	800.?	-15300.	1869.	4778.10	.170?	0.	2460.	0.	4904.
84	10	1238.	228.	1238.	-228.	0.	2060.	4337.	600.?	-1200.	6137.	4777.76	.161?	0.	0.	0.	4460.
84	11	970.	69.	0.	4161.	5200.	2538.	0.	0.	9600.	1862.	4779.88	.000	0.	0.	0.	0.
84	12	44.?	234.	0.	3822.	4100.	2849.	0.	0.	6800.	-149.	4781.08	.000	0.	0.	0.	0.
85	1	2.?	52.	0.	3646.	3700.	2951.	0.	0.	6300.	-351.	4782.20	.000	0.	0.	0.	0.
85	2	12.?	153.	0.	2635.	2800.	2912.	0.	0.	5500.	-212.	4783.15	.000	0.	0.	0.	0.
85	3	190.?	329.	0.	3381.	3900.	3351.	0.	0.	700.	-1136.	4783.26	.000	0.	0.	0.	5415.
85	4	6609.	8529.	1394.	-1744.	12000.?	2634.	0.	0.	7900.	3766.	4784.34	.000	0.	12615.	0.	10500.
85	5	1502.	8349.	1804.	6974.	15021.	1304.	15893.	1380.	-4500.	1080.	4783.77	.167	0.	8561.	0.	4632.
85	6	177.	1952.	1523.	4373.	4979.	2460.	19927.	2220.	-20400.	-5692.	4780.29	.347	0.	1171.	0.	0.
85	7	0.	234.	422.	188.	0.	15230.	14140.	1500.	-6700.	-6290.	4779.04	.319	0.	0.	0.	0.
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85	10	0.	0.	0.	0.	0.	5094.	3334.	402.	720.	-638.	4777.64	.114?	0.	0.	0.	0.
85	11	0.	0.	0.	4500.	4500.	6888.	0.	0.	6500.	-4888.	4779.22	.000	0.	0.	0.	0.
85	12	0.	0.	0.	1800.	1800.	5814.	0.	0.	7400.	-214.	4780.57	.000	0.	0.	0.	0.
86	1	0.	0.	0.	1800.	1800.	5863.	0.	0.	6400.	-1263.	4781.70	.000	0.	0.	0.	0.
86	2	0.	0.	0.	2000.	2000.	6619.	0.	0.	7000.	-1619.	4782.93	.000	0.	0.	0.	0.
86	3	139.	1119.	148.	2690.	3800.	6981.	0.	0.	-100.	-3231.	4782.92	.000	0.	0.	0.	7650.
86	4	1077.	8043.	1331.	-1789.	6000.?	7260.	0.	0.	4800.	-300.	4783.67	.000	0.	7940.	0.	8160.
86	5	2953.	11165.	1290.	1202.	14030.	2774.	14044.	1200.	-900.	1800.	4783.54	.155	0.	10590.	0.	4260.
86	6	1359.	8658.	1592.	3569.	11994.	1990.	21823.	2460.	-10400.	-101.	4781.77	.354	0.	0.	0.	0.
86	7	0.	448.	587.	139.	0.	5964.	17770.	2160.	-15800.	-1834.	4778.89	.420	0.	0.	0.	0.
86	8	0.	0.	95.	95.	0.	9476.	12857.	1440.	-4100.	721.	4777.88	.357	0.	0.	0.	0.
86	9	0.	0.	69.	69.	0.	5508.	1657.	684.	-2590.	-5757.	4777.04	.195	0.	0.	0.	0.

End of File Encountered

-----> N O R M A L T E R M I N A T I O N <-----

1													
2	5910	0.	0.	111.	0.	4.	-107.	0.	3534.	0.	-4014.	3860.	.40019
3	5911	0.	0.	175.	0.	0.	-175.	0.	4092.	0.	-1702.	6250.	.00000
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8	60 4	1230.	0.	7230.	0.	2832.	-5628.	0.	6060.	226.	-1734.	25000.	.00000
9	60 5	0.	0.	2249.	0.	1391.	-108.	750.	10172.	12546.	-876.	20500.	.38953
10	60 6	0.	0.	301.	0.	167.	-134.	0.	13309.	18255.	-3054.	10000.	.57259
11	60 7	0.	0.	0.	0.	341.	341.	0.	12651.	16859.	488.	4580.	.52844
12	60 8	0.	0.	0.	0.	155.	155.	0.	11244.	7440.	-1384.	5300.	.63198
13	60 9	0.	0.	0.	0.	139.	139.	0.	10973.	6278.	-2315.	6480.	.41888
14	6010	0.	0.	0.	0.	85.	85.	0.	6709.	8306.	7.	4290.	.22537
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19	61 3	0.	0.	296.	0.	190.	-106.	0.	5952.	0.	-1452.	19300.	.00000
20	61 4	290.	0.	2563.	0.	768.	-2085.	0.	6870.	75.	1405.	27500.	.00000
21	61 5	0.	0.	4463.	0.	1916.	-2547.	0.	12841.	14401.	35.	22300.	.67071
22	61 6	0.	0.	1196.	0.	1450.	254.	0.	13810.	20593.	-946.	11700.	.62807
23	61 7	0.	0.	0.	0.	470.	470.	0.	12802.	15578.	363.	6460.	.78149
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25	61 9	0.	0.	0.	0.	175.	175.	0.	8024.	473.	-81.	12400.	.52109
26	6110	0.	0.	24.	0.	101.	77.	0.	2240.	1462.	-936.	10900.	.34632
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28	6112	0.	0.	226.	0.	0.	-226.	0.	3379.	0.	-279.	15500.	.00000
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34	62 6	2112.	0.	12072.	0.	2301.	-5131.	3752.	1500.	18365.	-307.	20200.	.36105
35	62 7	0.	0.	958.	0.	800.	-158.	0.	4062.	14043.	-594.	6120.	.83642
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45	63 5	0.	0.	5046.	0.	2303.	-1853.	890.	4159.	6109.	-1926.	32800.	.24596
46	63 6	0.	0.	5437.	0.	2416.	-2321.	700.	5413.	8204.	1275.	28000.	.63995
47	63 7	0.	0.	615.	0.	2186.	1571.	0.	11280.	20033.	-3237.	12100.	.79068
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49	63 9	0.	0.	0.	0.	310.	310.	0.	6854.	2650.	2307.	16100.	.57008
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52	6312	0.	0.	0.	0.	0.	0.	0.	0.	0.	4170.	13900.	.00000
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58	64 6	4719.	0.	18784.	0.	1886.	-5317.	16300.	3282.	11199.	-267.	33200.	.60502
59	64 7	415.	0.	1369.	0.	1111.	507.	1180.	12453.	21373.	-3305.	17800.	.77850
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62	6410	0.	0.	0.	0.	123.	123.	0.	4118.	10070.	-502.	8500.	.29042
63	6411	0.	0.	69.	0.	0.	-69.	0.	5006.	0.	-1406.	12100.	.00000
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73	65 9	0.	0.	1051.	0.	478.	-573.	0.	2928.	4748.	1008.	14800.	.25047
74	6510	0.	0.	1277.	0.	296.	-981.	0.	2046.	7846.	723.	8630.	.28263
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79	66 3	196.	0.	591.	0.	99.	-688.	0.	5995.	0.	-3295.	29500.	.00000
80	66 4	2692.	0.	6024.	0.	405.	-6311.	2000.	5757.	1800.	-1348.	32200.	.00000
81	66 5	13.	0.	5036.	0.	1767.	2331.	5613.	9292.	19558.	1686.	23200.	.52379
82	66 6	0.	0.	1428.	0.	1015.	-413.	0.	13579.	19373.	-56.	13900.	.72436
83	66 7	0.	0.	659.	0.	385.	-274.	0.	14478.	18839.	281.	7010.	.73690

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93	67 5	4614.	0.	21271.	0.	2279.	-4974.	8632.	9689.	14272.	-2988.	23100.	.39384
94	67 6	6710.	0.	22564.	0.	2481.	-4408.	17385.	8554.	11126.	-1708.	33600.	.44549
95	67 7	684.	0.	2926.	0.	1647.	207.	2170.	4320.	12430.	-4515.	20900.	.39513
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114	69 2	0.	0.	200.	0.	0.	-200.	0.	1800.	0.	0.	22300.	.00000
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124	6912	0.	0.	732.	0.	0.	-732.	0.	600.	0.	4500.	22500.	.00000

125	70	1	0.	0.	835.	0.	0.	-835.	0.	4473.	0.	-273.	26700.	.00000
126	70	2	8.	0.	1250.	0.	0.	-1258.	0.	4813.	0.	-1613.	29900.	.00000
127	70	3	20.	0.	1406.	0.	0.	-1426.	0.	5685.	0.	-3185.	32400.	.00000
128	70	4	389.	0.	1337.	0.	0.	-1726.	0.	4866.	0.	-2666.	34600.	.00000
129	70	5	5036.	0.	16255.	5880.	2307.	-1043.	11197.	2321.	8785.	-2997.	34400.	.28971
130	70	6	3648.	0.	12627.	0.	3116.	648.	10772.	1635.	18249.	-2028.	24200.	.39115
131	70	7	1006.	0.	2134.	0.	1420.	-297.	1423.	9873.	12765.	-1511.	19000.	.44216
132	70	8	1.	0.	916.	0.	968.	51.	0.	14059.	17580.	-339.	13300.	.41561
133	70	9	0.	0.	948.	0.	758.	-190.	0.	9747.	6275.	1710.	16800.	.39119
134	70	10	0.	0.	1035.	0.	709.	-326.	0.	1674.	6888.	-812.	9790.	.24243
135	70	11	0.	0.	0.	0.	0.	0.	0.	4239.	0.	1271.	15300.	.00000
136	70	12	0.	0.	0.	0.	0.	0.	0.	4191.	0.	1909.	21400.	.00000
137	71	1	0.	0.	0.	0.	0.	0.	0.	4625.	0.	75.	26100.	.00000
138	71	2	0.	0.	0.	0.	0.	0.	0.	4827.	0.	-1427.	29500.	.00000
139	71	3	1470.	0.	0.	0.	0.	-1470.	0.	5806.	0.	-2006.	33300.	.00000
140	71	4	2583.	0.	4352.	1740.	0.	-6935.	0.	5742.	0.	-1342.	37700.	.00000
141	71	5	11633.	0.	20361.	17150.	3338.	-2206.	19756.	2255.	13497.	-1410.	42400.	.31686
142	71	6	9132.	0.	14257.	10130.	2807.	377.	16000.	2113.	19311.	-484.	37300.	.44768
143	71	7	1779.	0.	4633.	0.	2057.	-3455.	900.	1748.	21589.	231.	16700.	.33584
144	71	8	0.	0.	1137.	0.	1006.	-131.	0.	8489.	12398.	96.	11400.	.35602
145	71	9	0.	0.	1932.	0.	1271.	-661.	0.	8600.	10669.	4059.	12300.	.28060
146	71	10	0.	0.	1995.	0.	1460.	-535.	0.	4424.	3156.	2586.	15400.	.18340
147	71	11	0.	0.	1085.	0.	0.	-1085.	0.	5103.	0.	-703.	19800.	.00000
148	71	12	0.	0.	992.	0.	0.	-992.	0.	4703.	0.	-103.	24400.	.00000
149	72	1	0.	0.	1164.	0.	0.	-1164.	0.	5961.	0.	-2761.	27600.	.00000
150	72	2	0.	0.	1006.	0.	0.	-1006.	0.	5216.	0.	-3416.	29400.	.00000
151	72	3	1495.	0.	2327.	0.	0.	-3822.	0.	1485.	0.	4086.	33900.	.00000
152	72	4	4437.	0.	5931.	4743.	0.	-4068.	6300.	1101.	0.	3625.	38500.	.00000
153	72	5	4987.	0.	10021.	4451.	2246.	-1136.	11626.	512.	16842.	-1071.	30700.	.30203
154	72	6	5008.	0.	7845.	0.	2624.	-1323.	8906.	4080.	18960.	-391.	22500.	.32919
155	72	7	527.	0.	1351.	0.	1569.	1776.	2085.	12482.	22426.	335.	12900.	.45102
156	72	8	0.	0.	520.	0.	795.	275.	0.	15974.	9017.	-4305.	13900.	.40186
157	72	9	0.	0.	827.	0.	780.	-47.	0.	4580.	6206.	-454.	10200.	.41069
158	72	10	0.	0.	1613.	0.	1526.	-87.	0.	1388.	5174.	3847.	9120.	.31895
159	72	11	0.	0.	1502.	0.	0.	-1502.	0.	8100.	0.	-1920.	15300.	.00000
160	72	12	0.	0.	371.	0.	0.	-371.	0.	5890.	0.	-90.	21100.	.00000
161	73	1	0.	0.	389.	0.	0.	-389.	0.	5487.	0.	-87.	26500.	.00000
162	73	2	0.	0.	502.	0.	0.	-502.	0.	5208.	0.	-1108.	30600.	.00000
163	73	3	361.	0.	744.	0.	0.	-1105.	0.	5589.	0.	-2089.	34100.	.00000
164	73	4	3481.	0.	3312.	0.	0.	-6793.	0.	5208.	0.	-1008.	38300.	.00000
165	73	5	2864.	0.	22620.	0.	4020.	-5285.	16179.	1472.	17655.	-1555.	35000.	.24869

166	73 6	419.	0.	4372.	0.	2810.	-709.	1272.	3430.	17291.	-81.	20700.	.28501
167	73 7	242.	0.	559.	0.	1013.	212.	0.	11438.	14038.	2982.	19700.	.28629
168	73 8	0.	0.	210.	0.	553.	343.	0.	7429.	17395.	2920.	11600.	.24336
169	73 9	0.	0.	0.	0.	61.	61.	0.	2314.	7152.	3168.	8890.	.28428
170	7310	0.	0.	607.	0.	742.	135.	0.	5685.	7578.	2943.	9180.	.22057
171	7311	0.	0.	651.	0.	0.	-651.	0.	4026.	0.	794.	14000.	.00000
172	7312	0.	0.	234.	0.	0.	-234.	0.	6460.	0.	-1060.	19400.	.00000
173	74 1	0.	0.	141.	0.	0.	-141.	0.	4982.	0.	-182.	24200.	.00000
174	74 2	0.	0.	196.	0.	0.	-196.	0.	5734.	0.	-1934.	28000.	.00000
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176	74 4	3122.	0.	10336.	0.	0.	-1142.	2200.	6486.	360.	-1526.	39100.	.00000
177	74 5	4023.	0.	17225.	0.	3965.	1117.	18400.	611.	18674.	-393.	36500.	.35113
178	74 6	1150.	0.	7908.	0.	2043.	317.	7332.	4792.	24467.	761.	22300.	.43708
179	74 7	339.	0.	79.	0.	401.	-17.	0.	13584.	22876.	-1878.	9420.	.38959
180	74 8	0.	0.	0.	0.	385.	385.	0.	13845.	9462.	-1068.	11600.	.30643
181	74 9	0.	0.	0.	0.	242.	242.	0.	8854.	10421.	3333.	11900.	.37626
182	7410	0.	0.	202.	0.	0.	-202.	0.	5284.	5444.	1493.	11800.	.36679
183	7411	0.	0.	502.	0.	0.	-502.	0.	4908.	0.	-1708.	15000.	.00000
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188	75 4	1299.	0.	589.	0.	0.	-1888.	0.	4374.	0.	-274.	34800.	.00000
189	75 5	8561.	0.	11978.	13030.	3772.	-2305.	14462.	440.	5940.	-2626.	39500.	.23136
190	75 6	10879.	0.	20601.	7170.	3451.	-5029.	23000.	1821.	23924.	-2269.	35600.	.35091
191	75 7	1150.	0.	4231.	0.	626.	425.	5180.	5137.	17830.	-1541.	24400.	.35530
192	75 8	36.	0.	339.	0.	369.	-6.	0.	9222.	13848.	-1505.	16900.	.28088
193	75 9	0.	0.	40.	0.	89.	49.	0.	1368.	9360.	-1696.	6330.	.22971
194	7510	0.	0.	750.	0.	0.	-750.	0.	5613.	6352.	3269.	8340.	.16728
195	7511	0.	0.	599.	0.	0.	-599.	0.	3150.	0.	510.	12000.	.00000
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199	76 3	0.	0.	222.	0.	0.	-222.	0.	6907.	0.	-2807.	32100.	.00000
200	76 4	2944.	0.	3316.	0.	0.	-260.	0.	6384.	0.	-784.	37700.	.00000
201	76 5	4546.	0.	22239.	0.	1708.	1879.	19270.	1512.	16900.	-1864.	37600.	.29466
202	76 6	532.	0.	3047.	2600.	1079.	-642.	1858.	10266.	21669.	78.	26100.	.32300
203	76 7	383.	0.	40.	0.	405.	-18.	0.	16495.	24821.	-403.	15700.	.33988
204	76 8	0.	0.	0.	0.	337.	337.	0.	10138.	8861.	952.	16300.	.37023
205	76 9	0.	0.	186.	0.	327.	141.	0.	1388.	6193.	-2116.	8240.	.28894
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77 4	417.	0.	1755.	0.	696.	-1476.	0.	5187.	2314.	-6773.	37000.	.00000
77 5	0.	0.	502.	0.	560.	58.	0.	17825.	12730.	-1433.	38500.	.29999
77 6	0.	0.	218.	0.	511.	293.	0.	15051.	19141.	-3197.	28700.	.38138
77 7	0.	0.	0.	0.	352.	352.	0.	13617.	17940.	-5769.	16200.	.46996
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78 3	149.	0.	75.	0.	0.	-224.	0.	4718.	0.	-1618.	19900.	.00000
78 4	4030.	0.	6831.	0.	3753.	-7108.	0.	12400.	0.	-4300.	28000.	.00000
78 5	3890.	0.	21884.	0.	2446.	-6731.	16597.	4986.	12868.	-5287.	29400.	.34632
78 6	549.	0.	5318.	0.	2116.	-1436.	2315.	13689.	21238.	-34.	22500.	.29767
78 7	0.	0.	0.	0.	305.	305.	0.	14989.	20738.	-2627.	12100.	.44403
78 8	0.	0.	0.	0.	222.	222.	0.	11944.	8763.	-1808.	11600.	.47596
78 9	0.	0.	0.	0.	0.	0.	0.	5432.	8597.	-205.	7400.	.23529
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79 4	670.	0.	3947.	0.	1632.	-2985.	0.	9792.	0.	-992.	27300.	.00000
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79 6	0.	0.	335.	0.	536.	201.	0.	14947.	19325.	-2431.	16600.	.57353
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293	84 1	10.	0.	1129.	0.	0.	1461.	2600.	1860.	0.	-1360.	33500.	.00000
294	84 2	125.	0.	901.	0.	0.	1274.	2300.	1733.	0.	-1133.	36400.	.00000
295	84 3	1880.	0.	1131.	0.	0.	-411.	2600.	2040.	0.	174.	39300.	.00000
296	84 4	3938.	0.	3066.	2500.	2569.	2949.	3000.	2292.	0.	1528.	40900.	.00000
297	84 5	14884.	0.	26835.	21342.	3858.	-2097.	25311.	2480.	20067.	7308.	49200.	.16956
298	84 6	14240.	0.	18353.	16639.	2883.	859.	24837.	1800.	10945.	1688.	58600.	.26729
299	84 7	4324.	0.	1859.	3894.	2608.	2125.	5700.	450.	16814.	-4272.	38100.	.27432
300	84 8	2743.	0.	1059.	2769.	1920.	-1882.	0.	475.	4531.	1796.	26900.	.23623
301	84 9	1156.	0.	137.	2460.	1267.	-26.	0.	1072.	12537.	1869.	11600.	.17030
302	8410	1238.	0.	228.	0.	1238.	-228.	0.	2060.	4337.	6137.	10400.	.16062
303	8411	970.	0.	69.	0.	0.	4161.	5200.	2538.	0.	1862.	20000.	.00000
304	8412	44.	0.	234.	0.	0.	3822.	4100.	2849.	0.	-149.	26800.	.00000
305	85 1	2.	0.	52.	0.	0.	3646.	3700.	2951.	0.	-351.	33100.	.00000
306	85 2	12.	0.	153.	0.	0.	2635.	2800.	2912.	0.	-212.	38600.	.00000
307	85 3	190.	0.	329.	0.	0.	3381.	3900.	3351.	0.	-1136.	39300.	.00000
308	85 4	6609.	0.	8529.	12615.	1394.	-1744.	12000.	2634.	0.	3766.	47200.	.00000
309	85 5	1502.	0.	8349.	8561.	1804.	6974.	15021.	1304.	15893.	1080.	42700.	.16745
310	85 6	177.	0.	1952.	1171.	1523.	4373.	4979.	2460.	19927.	-5692.	22300.	.34673
311	85 7	0.	0.	234.	0.	422.	188.	0.	15230.	14140.	-6290.	15600.	.31894
312	85 8	0.	0.	0.	0.	145.	145.	0.	8052.	12220.	468.	10100.	.44395
313	85 9	0.	0.	0.	0.	83.	83.	0.	5439.	6079.	234.	9280.	.11746
314	8510	0.	0.	0.	0.	0.	0.	0.	5094.	3334.	-638.	10000.	.11434
315	8511	0.	0.	0.	0.	0.	4500.	4500.	6888.	0.	-4888.	16500.	.00000
316	8512	0.	0.	0.	0.	0.	1800.	1800.	5814.	0.	-214.	23900.	.00000
317	86 1	0.	0.	0.	0.	0.	1800.	1800.	5863.	0.	-1263.	30300.	.00000
318	86 2	0.	0.	0.	0.	0.	2000.	2000.	6619.	0.	-1619.	37300.	.00000
319	86 3	139.	0.	1119.	0.	148.	2690.	3800.	6981.	0.	-3231.	37200.	.00000
320	86 4	1077.	0.	8043.	7940.	1331.	-1789.	6000.	7260.	0.	-300.	42000.	.00000
321	86 5	2953.	0.	11165.	10590.	1290.	1202.	14030.	2774.	14044.	1800.	41100.	.15531
322	86 6	1359.	0.	8658.	0.	1592.	3569.	11994.	1990.	21823.	-101.	30700.	.35448
323	86 7	0.	0.	448.	0.	587.	139.	0.	5964.	17770.	-1834.	14900.	.41951
324	86 8	0.	0.	0.	0.	95.	95.	0.	9476.	12857.	721.	10800.	.35710
325	86 9	0.	0.	0.	0.	69.	69.	0.	5508.	1657.	-5757.	8210.	.19451

1									
2	62 04	0.	0.	0.	0.	4000.	0.	0.	0.
3	62 05	0.	0.	0.	0.	4000.	0.	0.	0.
4	62 06	0.	0.	0.	0.	3000.	0.	0.	0.
5	63 04	0.	0.	0.	0.	0.	0.	0.	2083.
6	63 05	0.	0.	0.	0.	0.	0.	0.	149.
7	65 05	0.	0.	0.	0.	0.	0.	0.	6426.
8	65 06	0.	0.	0.	0.	6500.	0.	0.	0.
9	66 04	0.	0.	0.	0.	0.	0.	0.	1909.
10	66 05	0.	0.	0.	0.	0.	0.	0.	3000.
11	67 05	0.	0.	0.	0.	10000.	0.	0.	0.
12	67 06	0.	0.	0.	0.	5000.	0.	0.	0.
13	68 04	0.	0.	0.	0.	0.	0.	0.	1071.
14	69 03	0.	0.	0.	0.	0.	0.	0.	1900.
15	69 04	0.	0.	7570.	0.	3000.	0.	0.	4760.
16	69 05	0.	0.	22400.	0.	15000.	0.	0.	0.
17	69 06	0.	0.	0.	0.	5951.	0.	0.	0.
18	70 05	0.	0.	5880.	0.	6744.	0.	0.	0.
19	70 06	0.	0.	0.	0.	3035.	0.	0.	0.
20	71 04	0.	0.	1740.	0.	0.	0.	0.	0.
21	71 05	0.	0.	17150.	0.	6694.	0.	0.	0.
22	71 06	0.	0.	10130.	0.	4959.	0.	0.	0.
23	72 03	0.	0.	0.	0.	0.	0.	0.	1071.
24	72 04	0.	0.	4743.	0.	0.	0.	0.	6426.
25	72 05	0.	0.	4451.	0.	0.	0.	0.	0.
26	74 04	0.	0.	0.	0.	10116.	0.	0.	0.
27	75 05	0.	0.	13030.	0.	0.	0.	0.	0.
28	75 06	0.	0.	7170.	0.	0.	0.	0.	0.
29	76 04	0.	0.	0.	0.	6000.	0.	0.	0.
30	76 05	0.	0.	2600.	0.	7686.	0.	0.	0.
31	80 06	0.	0.	8421.	0.	2255.	0.	0.	0.
32	83 04	0.	0.	0.	0.	5732.	0.	0.	0.
33	83 05	0.	0.	12841.	0.	10500.	0.	0.	0.
34	83 06	0.	0.	16124.	0.	1000.	0.	0.	2200.
35	83 07	0.	0.	2491.	0.	0.	0.	0.	0.
36	84 03	0.	0.	0.	0.	0.	0.	0.	1914.
37	84 04	0.	0.	2500.	0.	4384.	0.	0.	5220.
38	84 05	0.	0.	21342.	0.	10453.	0.	0.	5332.
39	84 06	0.	0.	16639.	0.	5732.	0.	0.	5480.
40	84 07	0.	0.	3894.	0.	0.	0.	0.	3164.
41	84 08	0.	0.	2769.	0.	0.	0.	0.	7440.
42	84 09	0.	0.	2460.	0.	0.	0.	0.	4904.

43	84	10	0.	0.	0.	0.	0.	0.	0.	4460.
44	85	03	0.	0.	0.	0.	0.	0.	0.	5415.
45	85	04	0.	0.	12615.	0.	0.	0.	0.	10500.
46	85	05	0.	0.	8561.	0.	0.	0.	0.	4632.
47	85	06	0.	0.	1171.	0.	0.	0.	0.	0.
48	86	03	0.	0.	0.	0.	0.	0.	0.	7650.
49	86	04	0.	0.	7940.	0.	0.	0.	0.	8160.
50	86	05	0.	0.	10590.	0.	0.	0.	0.	4260.

MUD LAKE LOWER WATERSHED MASS BALANCE PROGRAM
Version 1.10-BETA cc. 1988 University of Idaho

Analysis Date: 11/06/1990 at 13:05

Analysis Title: Orginal Flood Diversion Data

Flow Modification File: MUDFLOOD.DAT

Output File: MUDLAKE.OUT

Minimum allowable water surface elevation in Mud Lake: 4773.99 ft. Contents: 1786. af.

Maximum allowable water surface elevation in Mud Lake: 4785.99 ft. Contents: 64402. af.

Starting Mud Lake water surface elevation: 4775.83 ft. Contents: 5340. af.

MUD LAKE WATERSHED SURFACE WATER BALANCE PROGRAM -- VERSION 1.10-BETA -- PAGE: 1

Analysis Title: Orginal Flood Diversion Data

Flow Modification Data File "MUDFLOOD.DAT" Listing

		------Flood Diversions-----			---------- Mud Lake Proper ----------			--Well--		----Watershed---- --Monthly Total--	
Mon.	YR	Beaver	Camas	Rays Lake	-Lagged Flows from Flood Diversions- Beaver	Camas	Rays Lake	-Inflow- Decrease	-Drafts- Increase	Flood Diversion	Lagged Inflow
62	4	0.	0.	4000.	0.	0.	0.	0.	0.	4000.	0.
62	5	0.	0.	4000.	0.	0.	0.	0.	0.	4000.	0.
62	6	0.	0.	3000.	0.	0.	0.	0.	0.	3000.	0.
63	4	0.	0.	0.	0.	0.	0.	0.	2083.	2083.	0.
63	5	0.	0.	0.	0.	0.	0.	0.	149.	149.	0.
65	5	0.	0.	0.	0.	0.	0.	0.	6426.	6426.	0.
65	6	0.	0.	6500.	0.	0.	0.	0.	0.	6500.	0.
66	4	0.	0.	0.	0.	0.	0.	0.	1909.	1909.	0.
66	5	0.	0.	0.	0.	0.	0.	0.	3000.	3000.	0.
67	5	0.	0.	10000.	0.	0.	0.	0.	0.	10000.	0.
67	6	0.	0.	5000.	0.	0.	0.	0.	0.	5000.	0.
68	4	0.	0.	0.	0.	0.	0.	0.	1071.	1071.	0.
69	3	0.	0.	0.	0.	0.	0.	0.	1900.	1900.	0.
69	4	0.	7570.	3000.	0.	0.	0.	0.	4760.	15330.	0.
69	5	0.	22400.	15000.	0.	0.	0.	0.	0.	37400.	0.
69	6	0.	0.	5951.	0.	0.	0.	0.	0.	5951.	0.
70	5	0.	5880.	6744.	0.	0.	0.	0.	0.	12624.	0.
70	6	0.	0.	3035.	0.	0.	0.	0.	0.	3035.	0.
71	4	0.	1740.	0.	0.	0.	0.	0.	0.	1740.	0.
71	5	0.	17150.	6694.	0.	0.	0.	0.	0.	23844.	0.
71	6	0.	10130.	4959.	0.	0.	0.	0.	0.	15089.	0.
72	3	0.	0.	0.	0.	0.	0.	0.	1071.	1071.	0.
72	4	0.	4743.	0.	0.	0.	0.	0.	6426.	11169.	0.
72	5	0.	4451.	0.	0.	0.	0.	0.	0.	4451.	0.
74	4	0.	0.	10116.	0.	0.	0.	0.	0.	10116.	0.
75	5	0.	13030.	0.	0.	0.	0.	0.	0.	13030.	0.
75	6	0.	7170.	0.	0.	0.	0.	0.	0.	7170.	0.
76	4	0.	0.	6000.	0.	0.	0.	0.	0.	6000.	0.
76	5	0.	2600.	7686.	0.	0.	0.	0.	0.	10286.	0.
80	6	0.	8421.	2255.	0.	0.	0.	0.	0.	10676.	0.
83	4	0.	0.	5732.	0.	0.	0.	0.	0.	5732.	0.
83	5	0.	12841.	10500.	0.	0.	0.	0.	0.	23341.	0.
83	6	0.	16124.	1000.	0.	0.	0.	0.	2200.	19324.	0.
83	7	0.	2491.	0.	0.	0.	0.	0.	0.	2491.	0.
84	3	0.	0.	0.	0.	0.	0.	0.	1914.	1914.	0.
84	4	0.	2500.	4384.	0.	0.	0.	0.	5220.	12104.	0.
84	5	0.	21342.	10453.	0.	0.	0.	0.	5332.	37127.	0.
84	6	0.	16639.	5732.	0.	0.	0.	0.	5480.	27851.	0.
84	7	0.	3894.	0.	0.	0.	0.	0.	3164.	7058.	0.
84	8	0.	2769.	0.	0.	0.	0.	0.	7440.	10209.	0.
84	9	0.	2460.	0.	0.	0.	0.	0.	4904.	7364.	0.
84	10	0.	0.	0.	0.	0.	0.	0.	4460.	4460.	0.
85	3	0.	0.	0.	0.	0.	0.	0.	5415.	5415.	0.
85	4	0.	12615.	0.	0.	0.	0.	0.	10500.	23115.	0.

Analysis Title: Orginal Flood Diversion Data

Flow Modification Data File "MUDFLOOD.DAT" Listing

		Flood Diversions			Mud Lake Proper: Lagged Flows from Flood Diversions			Mud Lake Proper: Well Inflow Decrease	Mud Lake Proper: Drafts Increase	Watershed: Monthly Total Flood Diversion	Watershed: Monthly Total Lagged Inflow
Mon.	YR	Beaver	Camas	Rays Lake	Beaver	Camas	Rays Lake				
85	5	0.	8561.	0.	0.	0.	0.	0.	4632.	13193.	0.
85	6	0.	1171.	0.	0.	0.	0.	0.	0.	1171.	0.
86	3	0.	0.	0.	0.	0.	0.	0.	7650.	7650.	0.
86	4	0.	7940.	0.	0.	0.	0.	0.	8160.	16100.	0.
86	5	0.	10590.	0.	0.	0.	0.	0.	4260.	14850.	0.

NET OUT OF BASIN PROPOSED FLOOD DIVERSIONS FOR SIMULATION PERIOD:

Beaver Creek Flood Diversions:	0. af
Camas Creek Flood Diversions:	227222. af
Rays Lake Flood Diversions:	141741. af
SUBTOTAL UPSTREAM FLOOD DIVERSIONS:	368963. af
Mud Lake Well Inflow Reductions:	0. af
Desert Pumping from Mud Lake (INEL):	109526. af
TOTAL FLOOD DIVERSIONS:	478489. af

Analysis Title: Orginal Flood Diversion Data

Mon. YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
OCT. 59	0.	0.	111.	111.	0.	0.	3534.	3534.	0.	0.	4775.83	4775.83	5340.	5340.
NOV. 59	0.	0.	175.	175.	0.	0.	4092.	4092.	0.	0.	4775.05	4775.05	3860.	3860.
DEC. 59	0.	0.	137.	137.	0.	0.	5146.	5146.	0.	0.	4776.25	4776.25	6250.	6250.
JAN. 60	0.	0.	0.	0.	0.	0.	5456.	5456.	0.	0.	4777.73	4777.73	10300.	10300.
FEB. 60	0.	0.	0.	0.	0.	0.	4956.	4956.	0.	0.	4778.76	4778.76	14300.	14300.
MAR. 60	0.	0.	127.	127.	0.	0.	5952.	5952.	0.	0.	4779.55	4779.55	18200.	18200.
APR. 60	1230.	1230.	7230.	7230.	0.	0.	6060.	6060.	226.	226.	4780.04	4780.04	20900.	20900.
MAY 60	0.	0.	2249.	2249.	750.	750.	10172.	10172.	12546.	12546.	4780.76	4780.76	25000.	25000.
JUNE 60	0.	0.	301.	301.	0.	0.	13309.	13309.	18255.	18255.	4779.97	4779.97	20500.	20500.
JULY 60	0.	0.	0.	0.	0.	0.	12651.	12651.	16859.	16859.	4777.64	4777.64	10000.	10000.
AUG. 60	0.	0.	0.	0.	0.	0.	11244.	11244.	7440.	7440.	4775.45	4775.45	4580.	4580.
SEP. 60	0.	0.	0.	0.	0.	0.	10973.	10973.	6278.	6278.	4775.81	4775.81	5300.	5300.
OCT. 60	0.	0.	0.	0.	0.	0.	6709.	6709.	8306.	8306.	4776.36	4776.36	6480.	6480.
NOV. 60	0.	0.	0.	0.	0.	0.	3193.	3193.	0.	0.	4775.29	4775.29	4290.	4290.
DEC. 60	0.	0.	0.	0.	0.	0.	3379.	3379.	0.	0.	4776.12	4776.12	5950.	5950.
JAN. 61	0.	0.	0.	0.	0.	0.	4123.	4123.	0.	0.	4777.30	4777.30	8950.	8950.
FEB. 61	0.	0.	6.	6.	0.	0.	4172.	4172.	0.	0.	4778.29	4778.29	12300.	12300.
MAR. 61	0.	0.	296.	296.	0.	0.	5952.	5952.	0.	0.	4778.87	4778.87	14800.	14800.
APR. 61	290.	290.	2563.	2563.	0.	0.	6870.	6870.	75.	75.	4779.75	4779.75	19300.	19300.
MAY 61	0.	0.	4463.	4463.	0.	0.	12841.	12841.	14401.	14401.	4781.20	4781.20	27500.	27500.
JUNE 61	0.	0.	1196.	1196.	0.	0.	13810.	13810.	20593.	20593.	4780.29	4780.29	22300.	22300.
JULY 61	0.	0.	0.	0.	0.	0.	12802.	12802.	15578.	15578.	4778.13	4778.13	11700.	11700.
AUG. 61	0.	0.	0.	0.	0.	0.	11070.	11070.	8907.	8907.	4776.35	4776.35	6460.	6460.
											4776.50	4776.50	6820.	6820.

Analysis Title: Orginal Flood Diversion Data

Mon.	YR	Beaver Hist	Beaver Comp	Camas Hist	Camas Comp	Bybee Hist	Bybee Comp	Well Hist	Well Comp	Draft Hist	Draft Comp	Elevation Hist	Elevation Comp	Contents Hist	Contents Comp
SEP.	61	0.	0.	0.	0.	0.	0.	8024.	8024.	473.	473.	4776.50	4776.50	6820.	6820.
OCT.	61	0.	0.	24.	24.	0.	0.	2240.	2240.	1462.	1462.	4778.31	4778.31	12400.	12400.
NOV.	61	0.	0.	0.	0.	0.	0.	3162.	3162.	0.	0.	4777.91	4777.91	10900.	10900.
DEC.	61	0.	0.	226.	226.	0.	0.	3379.	3379.	0.	0.	4778.31	4778.31	12400.	12400.
JAN.	62	0.	0.	60.	60.	0.	0.	3658.	3658.	0.	0.	4779.02	4779.02	15500.	15500.
FEB.	62	643.	643.	686.	686.	0.	0.	3360.	3360.	0.	0.	4779.57	4779.57	18300.	18300.
MAR.	62	686.	686.	190.	190.	0.	0.	3330.	3330.	0.	0.	4780.09	4780.09	21200.	21200.
APR.	62	7287.	7287.	16461.	16461.	9033.	9033.	3360.	3360.	0.	0.	4780.57	4780.57	23900.	23900.
MAY	62	2686.	2686.	19867.	19867.	16320.	16320.	1294.	1294.	11953.	11953.	4782.20	4782.20	33100.	33100.
JUNE	62	2112.	2112.	12072.	12072.	3752.	3752.	1500.	1500.	18365.	18365.	4782.66	4782.66	35700.	35700.
JULY	62	0.	0.	958.	958.	0.	0.	4062.	4062.	14043.	14043.	4779.91	4779.91	20200.	20200.
AUG.	62	0.	0.	631.	631.	0.	0.	11585.	11585.	8758.	8758.	4776.20	4776.20	6120.	6120.
SEP.	62	0.	0.	0.	0.	0.	0.	11394.	11394.	7636.	7636.	4776.24	4776.24	6220.	6220.
OCT.	62	0.	0.	0.	0.	0.	0.	7494.	7494.	8358.	8358.	4777.73	4777.73	10300.	10300.
NOV.	62	0.	0.	0.	0.	0.	0.	4247.	4247.	0.	0.	4777.16	4777.16	8530.	8530.
DEC.	62	0.	0.	73.	73.	0.	0.	4371.	4371.	0.	0.	4777.99	4777.99	11200.	11200.
JAN.	63	0.	0.	256.	256.	0.	0.	4594.	4594.	0.	0.	4778.85	4778.85	14700.	14700.
FEB.	63	0.	0.	117.	117.	0.	0.	4458.	4458.	0.	0.	4779.49	4779.49	17900.	17900.
MAR.	63	0.	0.	129.	129.	0.	0.	5323.	5323.	0.	0.	4780.02	4780.02	20800.	20800.
APR.	63	0.	0.	3410.	3410.	472.	472.	12451.	12451.	2596.	4679.	4780.83	4780.83	25400.	25400.
MAY	63	0.	0.	5046.	5046.	890.	890.	4159.	4159.	6109.	6258.	4782.98	4782.98	37600.	37600.
JUNE	63	0.	0.	5437.	5437.	700.	700.	5413.	5413.	8204.	8204.	4782.15	4782.15	32800.	32800.
JULY	63	0.	0.	615.	615.	0.	0.	11280.	11280.	20033.	20033.	4781.29	4781.29	28000.	28000.
												4778.24	4778.24	12100.	12100.

Analysis Title: Orginal Flood Diversion Data

Mon. YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
AUG. 63	0.	0.	0.	0.	0.	0.	12770.	12770.	10965.	10965.	4778.24	4778.24	12100.	12100.
SEP. 63	0.	0.	0.	0.	0.	0.	6854.	6854.	2650.	2650.	4778.21	4778.21	12000.	12000.
OCT. 63	0.	0.	0.	0.	0.	0.	1576.	1576.	8616.	8616.	4779.14	4779.14	16100.	16100.
NOV. 63	0.	0.	240.	240.	0.	0.	0.	0.	0.	0.	4777.34	4777.34	9050.	9050.
DEC. 63	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4777.56	4777.56	9730.	9730.
JAN. 64	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4778.67	4778.67	13900.	13900.
FEB. 64	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4779.45	4779.45	17700.	17700.
MAR. 64	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	4780.06	4780.06	21000.	21000.
APR. 64	226.	226.	3749.	3749.	3700.	3700.	8400.	8400.	986.	986.	4780.50	4780.50	23500.	23500.
MAY 64	1301.	1301.	13161.	13161.	7000.	7000.	3198.	3198.	7833.	7833.	4781.67	4781.67	30100.	30100.
JUNE 64	4719.	4719.	18784.	18784.	16300.	16300.	3282.	3282.	11199.	11199.	4781.45	4781.45	28900.	28900.
JULY 64	415.	415.	1369.	1369.	1180.	1180.	12453.	12453.	21373.	21373.	4782.22	4782.22	33200.	33200.
AUG. 64	0.	0.	327.	327.	0.	0.	13932.	13932.	12132.	12132.	4779.47	4779.47	17800.	17800.
SEP. 64	0.	0.	0.	0.	0.	0.	10882.	10882.	8082.	8082.	4779.10	4779.10	15900.	15900.
OCT. 64	0.	0.	0.	0.	0.	0.	4118.	4118.	10070.	10070.	4779.14	4779.14	16100.	16100.
NOV. 64	0.	0.	69.	69.	0.	0.	5006.	5006.	0.	0.	4777.15	4777.15	8500.	8500.
DEC. 64	0.	0.	60.	60.	0.	0.	4944.	4944.	0.	0.	4778.24	4778.24	12100.	12100.
JAN. 65	0.	0.	93.	93.	0.	0.	4786.	4786.	0.	0.	4779.18	4779.18	16300.	16300.
FEB. 65	0.	0.	186.	186.	0.	0.	4273.	4273.	0.	0.	4779.98	4779.98	20600.	20600.
MAR. 65	9.	9.	456.	456.	0.	0.	4858.	4858.	0.	0.	4780.48	4780.48	23400.	23400.
APR. 65	2836.	2836.	8957.	8957.	6400.	6400.	2431.	2431.	0.	0.	4780.86	4780.86	25600.	25600.
MAY 65	6159.	6159.	16090.	16090.	18100.	18100.	2201.	2201.	9637.	16063.	4781.88	4781.88	31300.	31300.
JUNE 65	6240.	6240.	14267.	14267.	6400.	6400.	4683.	4683.	18029.	18029.	4782.08	4782.08	32400.	32400.
											4780.74	4780.74	24900.	24900.

Analysis Title: Orginal Flood Diversion Data

Mon. YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
JULY 65	1472.	1472.	2940.	2940.	5000.	5000.	11434.	11434.	15501.	15501.	4780.74	4780.74	24900.	24900.
AUG. 65	0.	0.	1035.	1035.	0.	0.	7012.	7012.	8447.	8447.	4779.93	4779.93	20300.	20300.
SEP. 65	0.	0.	1051.	1051.	0.	0.	2928.	2928.	4748.	4748.	4779.26	4779.26	16700.	16700.
OCT. 65	0.	0.	1277.	1277.	0.	0.	2046.	2046.	7846.	7846.	4778.87	4778.87	14800.	14800.
NOV. 65	0.	0.	1666.	1666.	0.	0.	6471.	6471.	0.	0.	4777.19	4777.19	8630.	8630.
DEC. 65	0.	0.	655.	655.	0.	0.	7210.	7210.	0.	0.	4778.53	4778.53	13300.	13300.
JAN. 66	0.	0.	462.	462.	0.	0.	5536.	5536.	0.	0.	4779.59	4779.59	18400.	18400.
FEB. 66	0.	0.	555.	555.	0.	0.	5250.	5250.	0.	0.	4780.39	4780.39	22900.	22900.
MAR. 66	196.	196.	591.	591.	0.	0.	5995.	5995.	0.	0.	4781.08	4781.08	26800.	26800.
APR. 66	2692.	2692.	6024.	6024.	2000.	2000.	5757.	5757.	1800.	3709.	4781.56	4781.56	29500.	29500.
MAY 66	13.	13.	5036.	5036.	5613.	5613.	9292.	9292.	19558.	22558.	4782.04	4782.04	32200.	32200.
JUNE 66	0.	0.	1428.	1428.	0.	0.	13579.	13579.	19373.	19373.	4780.44	4780.44	23200.	23200.
JULY 66	0.	0.	659.	659.	0.	0.	14478.	14478.	18839.	18839.	4778.67	4778.67	13900.	13900.
AUG. 66	0.	0.	0.	0.	0.	0.	14554.	14554.	7775.	7775.	4776.58	4776.58	7010.	7010.
SEP. 66	0.	0.	0.	0.	0.	0.	14000.	14000.	5826.	5826.	4777.94	4777.94	11000.	11000.
OCT. 66	0.	0.	0.	0.	0.	0.	2976.	2976.	9726.	9726.	4779.10	4779.10	15900.	15900.
NOV. 66	0.	0.	0.	0.	0.	0.	4404.	4404.	0.	0.	4777.35	4777.35	9080.	9080.
DEC. 66	0.	0.	0.	0.	0.	0.	4622.	4622.	0.	0.	4777.97	4777.97	11100.	11100.
JAN. 67	0.	0.	0.	0.	0.	0.	4622.	4622.	0.	0.	4778.78	4778.78	14400.	14400.
FEB. 67	0.	0.	0.	0.	0.	0.	4189.	4189.	0.	0.	4779.49	4779.49	17900.	17900.
MAR. 67	0.	0.	210.	210.	0.	0.	4963.	4963.	0.	0.	4779.95	4779.95	20400.	20400.
APR. 67	0.	0.	1043.	1043.	0.	0.	5067.	5067.	334.	334.	4780.39	4780.39	22900.	22900.
MAY 67	4614.	4614.	21271.	21271.	8632.	8632.	9689.	9689.	14272.	14272.	4780.60	4780.60	24100.	24100.
											4780.43	4780.43	23100.	23100.

Analysis Title: Orginal Flood Diversion Data

Mon. YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
JUNE 67	6710.	6710.	22564.	22564.	17385.	17385.	8554.	8554.	11126.	11126.	4780.43	4780.43	23100.	23100.
JULY 67	684.	684.	2926.	2926.	2170.	2170.	4320.	4320.	12430.	12430.	4782.29	4782.29	33600.	33600.
AUG. 67	0.	0.	613.	613.	0.	0.	12819.	12819.	14261.	14261.	4780.04	4780.04	20900.	20900.
SEP. 67	0.	0.	95.	95.	0.	0.	7644.	7644.	8060.	8060.	4778.91	4778.91	15000.	15000.
OCT. 67	0.	0.	36.	36.	0.	0.	4208.	4208.	9459.	9459.	4778.60	4778.60	13600.	13600.
NOV. 67	0.	0.	173.	173.	0.	0.	3570.	3570.	0.	0.	4776.77	4776.77	7490.	7490.
DEC. 67	0.	0.	0.	0.	0.	0.	3903.	3903.	0.	0.	4777.76	4777.76	10400.	10400.
JAN. 68	0.	0.	0.	0.	0.	0.	4135.	4135.	0.	0.	4778.87	4778.87	14800.	14800.
FEB. 68	0.	0.	0.	0.	0.	0.	3993.	3993.	0.	0.	4779.70	4779.70	19000.	19000.
MAR. 68	0.	0.	81.	81.	0.	0.	4616.	4616.	0.	0.	4780.20	4780.20	21800.	21800.
APR. 68	161.	161.	4130.	4130.	0.	0.	4034.	4034.	1738.	2809.	4780.55	4780.55	23800.	23800.
MAY 68	1218.	1218.	5459.	5459.	7288.	7288.	12448.	12448.	13808.	13808.	4780.76	4780.76	25000.	25000.
JUNE 68	2089.	2089.	7270.	7270.	6000.	6000.	11464.	11464.	15513.	15513.	4781.40	4781.40	28600.	28600.
JULY 68	56.	56.	1105.	1105.	0.	0.	13528.	13528.	20221.	20221.	4780.92	4780.92	25900.	25900.
AUG. 68	0.	0.	676.	676.	0.	0.	10620.	10620.	8427.	8427.	4778.94	4778.94	15100.	15100.
SEP. 68	0.	0.	704.	704.	0.	0.	1732.	1732.	4042.	4042.	4779.60	4779.60	18500.	18500.
OCT. 68	0.	0.	998.	998.	0.	0.	2302.	2302.	7737.	7737.	4778.94	4778.94	15100.	15100.
NOV. 68	0.	0.	1023.	1023.	0.	0.	3450.	3450.	0.	0.	4776.91	4776.91	7840.	7840.
DEC. 68	0.	0.	557.	557.	0.	0.	3782.	3782.	0.	0.	4778.05	4778.05	11400.	11400.
JAN. 69	54.	54.	712.	712.	0.	0.	3782.	3782.	0.	0.	4779.04	4779.04	15600.	15600.
FEB. 69	0.	0.	200.	200.	0.	0.	1800.	1800.	0.	0.	4779.97	4779.97	20500.	20500.
MAR. 69	549.	549.	1361.	1361.	0.	0.	0.	0.	0.	1900.	4780.29	4780.29	22300.	22300.
APR. 69	6432.	6432.	3104.	3104.	6000.	6000.	0.	0.	0.	4760.	4780.27	4780.27	22200.	22200.
											4781.49	4781.49	29100.	29100.

Analysis Title: Orginal Flood Diversion Data

Mon.	YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
MAY	69	13087.	13087.	32591.	32591.	19720.	19720.	992.	992.	17433.	17433.	4781.49	4781.49	29100.	29100.
JUNE	69	9152.	9152.	16959.	16959.	18152.	18152.	2220.	2220.	17265.	17265.	4781.54	4781.54	29400.	29400.
JULY	69	2652.	2652.	4493.	4493.	2654.	2654.	4162.	4162.	17455.	17455.	4781.31	4781.31	28100.	28100.
AUG.	69	230.	230.	910.	910.	0.	0.	15226.	15226.	11891.	11891.	4778.98	4778.98	15300.	15300.
SEP.	69	14.	14.	857.	857.	0.	0.	12266.	12266.	7929.	7929.	4778.94	4778.94	15100.	15100.
OCT.	69	417.	417.	1097.	1097.	0.	0.	3872.	3872.	5263.	5263.	4778.94	4778.94	15100.	15100.
NOV.	69	543.	543.	1107.	1107.	0.	0.	1200.	1200.	0.	0.	4778.39	4778.39	12700.	12700.
DEC.	69	0.	0.	732.	732.	0.	0.	600.	600.	0.	0.	4779.40	4779.40	17400.	17400.
JAN.	70	0.	0.	835.	835.	0.	0.	4473.	4473.	0.	0.	4780.32	4780.32	22500.	22500.
FEB.	70	8.	8.	1250.	1250.	0.	0.	4813.	4813.	0.	0.	4781.06	4781.06	26700.	26700.
MAR.	70	20.	20.	1406.	1406.	0.	0.	5685.	5685.	0.	0.	4781.63	4781.63	29900.	29900.
APR.	70	389.	389.	1337.	1337.	0.	0.	4866.	4866.	0.	0.	4782.08	4782.08	32400.	32400.
MAY	70	5036.	5036.	16255.	16255.	11197.	11197.	2321.	2321.	8785.	8785.	4782.47	4782.47	34600.	34600.
JUNE	70	3648.	3648.	12627.	12627.	10772.	10772.	1635.	1635.	18249.	18249.	4782.43	4782.43	34400.	34400.
JULY	70	1006.	1006.	2134.	2134.	1423.	1423.	9873.	9873.	12765.	12765.	4780.62	4780.62	24200.	24200.
AUG.	70	1.	1.	916.	916.	0.	0.	14059.	14059.	17580.	17580.	4779.70	4779.70	19000.	19000.
SEP.	70	0.	0.	948.	948.	0.	0.	9747.	9747.	6275.	6275.	4778.53	4778.53	13300.	13300.
OCT.	70	0.	0.	1035.	1035.	0.	0.	1674.	1674.	6888.	6888.	4779.28	4779.28	16800.	16800.
NOV.	70	0.	0.	0.	0.	0.	0.	4239.	4239.	0.	0.	4777.58	4777.58	9790.	9790.
DEC.	70	0.	0.	0.	0.	0.	0.	4191.	4191.	0.	0.	4778.98	4778.98	15300.	15300.
JAN.	71	0.	0.	0.	0.	0.	0.	4625.	4625.	0.	0.	4780.13	4780.13	21400.	21400.
FEB.	71	0.	0.	0.	0.	0.	0.	4827.	4827.	0.	0.	4780.95	4780.95	26100.	26100.
MAR.	71	1470.	1470.	0.	0.	0.	0.	5806.	5806.	0.	0.	4781.56	4781.56	29500.	29500.
												4782.24	4782.24	33300.	33300.

Analysis Title: Orginal Flood Diversion Data

Mon. YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
APR. 71	2583.	2583.	4352.	4352.	0.	0.	5742.	5742.	0.	0.	4782.24	4782.24	33300.	33300.
MAY 71	11633.	11633.	20361.	20361.	19756.	19756.	2255.	2255.	13497.	13497.	4783.00	4783.00	37700.	37700.
JUNE 71	9132.	9132.	14257.	14257.	16000.	16000.	2113.	2113.	19311.	19311.	4783.73	4783.73	42400.	42400.
JULY 71	1779.	1779.	4633.	4633.	900.	900.	1748.	1748.	21589.	21589.	4782.93	4782.93	37300.	37300.
AUG. 71	0.	0.	1137.	1137.	0.	0.	8489.	8489.	12398.	12398.	4779.26	4779.26	16700.	16700.
SEP. 71	0.	0.	1932.	1932.	0.	0.	8600.	8600.	10669.	10669.	4778.05	4778.05	11400.	11400.
OCT. 71	0.	0.	1995.	1995.	0.	0.	4424.	4424.	3156.	3156.	4778.29	4778.29	12300.	12300.
NOV. 71	0.	0.	1085.	1085.	0.	0.	5103.	5103.	0.	0.	4779.00	4779.00	15400.	15400.
DEC. 71	0.	0.	992.	992.	0.	0.	4703.	4703.	0.	0.	4779.84	4779.84	19800.	19800.
JAN. 72	0.	0.	1164.	1164.	0.	0.	5961.	5961.	0.	0.	4780.65	4780.65	24400.	24400.
FEB. 72	0.	0.	1006.	1006.	0.	0.	5216.	5216.	0.	0.	4781.22	4781.22	27600.	27600.
MAR. 72	1495.	1495.	2327.	2327.	0.	0.	1485.	1485.	0.	1071.	4781.54	4781.54	29400.	29400.
APR. 72	4437.	4437.	5931.	5931.	6300.	6300.	1101.	1101.	0.	6426.	4782.34	4782.34	33900.	33900.
MAY 72	4987.	4987.	10021.	10021.	11626.	11626.	512.	512.	16842.	16842.	4783.13	4783.13	38500.	38500.
JUNE 72	5008.	5008.	7845.	7845.	8906.	8906.	4080.	4080.	18960.	18960.	4781.77	4781.77	30700.	30700.
JULY 72	527.	527.	1351.	1351.	2085.	2085.	12482.	12482.	22426.	22426.	4780.32	4780.32	22500.	22500.
AUG. 72	0.	0.	520.	520.	0.	0.	15974.	15974.	9017.	9017.	4778.44	4778.44	12900.	12900.
SEP. 72	0.	0.	827.	827.	0.	0.	4580.	4580.	6206.	6206.	4778.67	4778.67	13900.	13900.
OCT. 72	0.	0.	1613.	1613.	0.	0.	1388.	1388.	5174.	5174.	4777.70	4777.70	10200.	10200.
NOV. 72	0.	0.	1502.	1502.	0.	0.	8100.	8100.	0.	0.	4777.36	4777.36	9120.	9120.
DEC. 72	0.	0.	371.	371.	0.	0.	5890.	5890.	0.	0.	4778.98	4778.98	15300.	15300.
JAN. 73	0.	0.	389.	389.	0.	0.	5487.	5487.	0.	0.	4780.07	4780.07	21100.	21100.
FEB. 73	0.	0.	502.	502.	0.	0.	5208.	5208.	0.	0.	4781.02	4781.02	26500.	26500.
											4781.75	4781.75	30600.	30600.

Analysis Title: Orginal Flood Diversion Data

Mon.	YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
MAR.	73	361.	361.	744.	744.	0.	0.	5589.	5589.	0.	0.	4781.75	4781.75	30600.	30600.
APR.	73	3481.	3481.	3312.	3312.	0.	0.	5208.	5208.	0.	0.	4782.38	4782.38	34100.	34100.
MAY	73	2864.	2864.	22620.	22620.	16179.	16179.	1472.	1472.	17655.	17655.	4783.10	4783.10	38300.	38300.
JUNE	73	419.	419.	4372.	4372.	1272.	1272.	3430.	3430.	17291.	17291.	4782.54	4782.54	35000.	35000.
JULY	73	242.	242.	559.	559.	0.	0.	11438.	11438.	14038.	14038.	4780.00	4780.00	20700.	20700.
AUG.	73	0.	0.	210.	210.	0.	0.	7429.	7429.	17395.	17395.	4779.82	4779.82	19700.	19700.
SEP.	73	0.	0.	0.	0.	0.	0.	2314.	2314.	7152.	7152.	4778.10	4778.10	11600.	11600.
OCT.	73	0.	0.	607.	607.	0.	0.	5685.	5685.	7578.	7578.	4777.28	4777.28	8890.	8890.
NOV.	73	0.	0.	651.	651.	0.	0.	4026.	4026.	0.	0.	4777.38	4777.38	9180.	9180.
DEC.	73	0.	0.	234.	234.	0.	0.	6460.	6460.	0.	0.	4778.69	4778.69	14000.	14000.
JAN.	74	0.	0.	141.	141.	0.	0.	4982.	4982.	0.	0.	4779.77	4779.77	19400.	19400.
FEB.	74	0.	0.	196.	196.	0.	0.	5734.	5734.	0.	0.	4780.62	4780.62	24200.	24200.
MAR.	74	508.	508.	417.	417.	0.	0.	6966.	6966.	0.	0.	4781.29	4781.29	28000.	28000.
APR.	74	3122.	3122.	10336.	10336.	2200.	2200.	6486.	6486.	360.	360.	4782.06	4782.06	32300.	32300.
MAY	74	4023.	4023.	17225.	17225.	18400.	18400.	611.	611.	18674.	18674.	4783.23	4783.23	39100.	39100.
JUNE	74	1150.	1150.	7908.	7908.	7332.	7332.	4792.	4792.	24467.	24467.	4782.80	4782.80	36500.	36500.
JULY	74	339.	339.	79.	79.	0.	0.	13584.	13584.	22876.	22876.	4780.29	4780.29	22300.	22300.
AUG.	74	0.	0.	0.	0.	0.	0.	13845.	13845.	9462.	9462.	4777.46	4777.46	9420.	9420.
SEP.	74	0.	0.	0.	0.	0.	0.	8854.	8854.	10421.	10421.	4778.10	4778.10	11600.	11600.
OCT.	74	0.	0.	202.	202.	0.	0.	5284.	5284.	5444.	5444.	4778.18	4778.18	11900.	11900.
NOV.	74	0.	0.	502.	502.	0.	0.	4908.	4908.	0.	0.	4778.16	4778.16	11800.	11800.
DEC.	74	0.	0.	16.	16.	0.	0.	4870.	4870.	0.	0.	4778.91	4778.91	15000.	15000.
JAN.	75	0.	0.	0.	0.	0.	0.	4765.	4765.	0.	0.	4779.77	4779.77	19400.	19400.
												4780.55	4780.55	23800.	23800.

Analysis Title: Orginal Flood Diversion Data

Mon.	YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
FEB.	75	0.	0.	0.	0.	0.	0.	4318.	4318.	0.	0.	4780.55	4780.55	23800.	23800.
MAR.	75	0.	0.	0.	0.	0.	0.	4703.	4703.	0.	0.	4781.18	4781.18	27400.	27400.
APR.	75	1299.	1299.	589.	589.	0.	0.	4374.	4374.	0.	0.	4781.77	4781.77	30700.	30700.
MAY	75	8561.	8561.	11978.	11978.	14462.	14462.	440.	440.	5940.	5940.	4782.50	4782.50	34800.	34800.
JUNE	75	10879.	10879.	20601.	20601.	23000.	23000.	1821.	1821.	23924.	23924.	4783.29	4783.29	39500.	39500.
JULY	75	1150.	1150.	4231.	4231.	5180.	5180.	5137.	5137.	17830.	17830.	4782.64	4782.64	35600.	35600.
AUG.	75	36.	36.	339.	339.	0.	0.	9222.	9222.	13848.	13848.	4780.65	4780.65	24400.	24400.
SEP.	75	0.	0.	40.	40.	0.	0.	1368.	1368.	9360.	9360.	4779.30	4779.30	16900.	16900.
OCT.	75	0.	0.	750.	750.	0.	0.	5613.	5613.	6352.	6352.	4776.29	4776.29	6330.	6330.
NOV.	75	0.	0.	599.	599.	0.	0.	3150.	3150.	0.	0.	4777.09	4777.09	8340.	8340.
DEC.	75	0.	0.	377.	377.	0.	0.	3091.	3091.	0.	0.	4778.21	4778.21	12000.	12000.
JAN.	76	0.	0.	371.	371.	0.	0.	4365.	4365.	0.	0.	4779.36	4779.36	17200.	17200.
FEB.	76	0.	0.	278.	278.	0.	0.	5524.	5524.	0.	0.	4780.41	4780.41	23000.	23000.
MAR.	76	0.	0.	222.	222.	0.	0.	6907.	6907.	0.	0.	4781.29	4781.29	28000.	28000.
APR.	76	2944.	2944.	3316.	3316.	0.	0.	6384.	6384.	0.	0.	4782.02	4782.02	32100.	32100.
MAY	76	4546.	4546.	22239.	19639.	19270.	16670.	1512.	1512.	16900.	16900.	4783.00	4783.00	37700.	37700.
JUNE	76	532.	532.	3047.	3047.	1858.	1858.	10266.	10266.	21669.	21669.	4782.98	4782.55	37600.	35060.
JULY	76	383.	383.	40.	40.	0.	0.	16495.	16495.	24821.	24821.	4780.95	4780.53	26100.	23675.
AUG.	76	0.	0.	0.	0.	0.	0.	10138.	10138.	8861.	8861.	4779.06	4778.55	15700.	13362.
SEP.	76	0.	0.	186.	186.	0.	0.	1388.	1388.	6193.	6193.	4779.18	4778.71	16300.	14058.
OCT.	76	0.	0.	543.	543.	0.	0.	1832.	1832.	4620.	4620.	4777.05	4776.18	8240.	6087.
NOV.	76	0.	0.	480.	480.	0.	0.	4194.	4194.	0.	0.	4776.55	4775.63	6930.	4933.
DEC.	76	0.	0.	8.	8.	0.	0.	4365.	4365.	0.	0.	4777.85	4777.22	10700.	8703.
												4779.02	4778.58	15500.	13503.

Analysis Title: Orginal Flood Diversion Data

Mon.	YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
JAN.	77	0.	0.	2.	2.	0.	0.	4411.	4411.	0.	0.	4779.02	4778.58	15500.	13503.
FEB.	77	0.	0.	0.	0.	0.	0.	4452.	4452.	0.	0.	4780.02	4779.66	20800.	18803.
MAR.	77	0.	0.	0.	0.	0.	0.	19200.	19200.	0.	0.	4780.65	4780.30	24400.	22403.
APR.	77	417.	417.	1755.	1755.	0.	0.	5187.	5187.	2314.	2314.	4783.51	4783.20	40900.	38903.
MAY	77	0.	0.	502.	502.	0.	0.	17825.	17825.	12730.	12730.	4782.88	4782.54	37000.	35003.
JUNE	77	0.	0.	218.	218.	0.	0.	15051.	15051.	19141.	19141.	4783.13	4782.81	38500.	36597.
JULY	77	0.	0.	0.	0.	0.	0.	13617.	13617.	17940.	17940.	4781.42	4781.10	28700.	26905.
AUG.	77	0.	0.	0.	0.	0.	0.	10106.	10106.	8946.	8946.	4779.16	4778.80	16200.	14496.
SEP.	77	0.	0.	0.	0.	0.	0.	7866.	7866.	11700.	11700.	4778.96	4778.60	15200.	13589.
OCT.	77	0.	0.	0.	0.	0.	0.	7901.	7901.	7357.	7357.	4777.51	4776.98	9590.	8031.
NOV.	77	0.	0.	0.	0.	0.	0.	3270.	3270.	0.	0.	4777.18	4776.62	8600.	7111.
DEC.	77	0.	0.	0.	0.	0.	0.	3091.	3091.	0.	0.	4777.47	4776.95	9450.	7961.
JAN.	78	0.	0.	0.	0.	0.	0.	3751.	3751.	0.	0.	4778.02	4777.58	11300.	9811.
FEB.	78	0.	0.	0.	0.	0.	0.	4259.	4259.	0.	0.	4778.72	4778.36	14100.	12611.
MAR.	78	149.	149.	75.	75.	0.	0.	4718.	4718.	0.	0.	4779.28	4778.98	16800.	15311.
APR.	78	4030.	4030.	6831.	6831.	0.	0.	12400.	12400.	0.	0.	4779.86	4779.59	19900.	18411.
MAY	78	3890.	3890.	21884.	21884.	16597.	16597.	4986.	4986.	12868.	12868.	4781.29	4781.03	28000.	26511.
JUNE	78	549.	549.	5318.	5318.	2315.	2315.	13689.	13689.	21238.	21238.	4781.54	4781.29	29400.	27977.
JULY	78	0.	0.	0.	0.	0.	0.	14989.	14989.	20738.	20738.	4780.32	4780.08	22500.	21127.
AUG.	78	0.	0.	0.	0.	0.	0.	11944.	11944.	8763.	8763.	4778.24	4777.88	12100.	10792.
SEP.	78	0.	0.	0.	0.	0.	0.	5432.	5432.	8597.	8597.	4778.10	4777.76	11600.	10375.
OCT.	78	0.	0.	0.	0.	0.	0.	5494.	5494.	6541.	6541.	4776.74	4776.24	7400.	6224.
NOV.	78	0.	0.	0.	0.	0.	0.	2619.	2619.	0.	0.	4776.28	4775.76	6310.	5189.
												4776.85	4776.39	7690.	6569.

Analysis Title: Orginal Flood Diversion Data

Mon. YR	Beaver Hist	Beaver Comp	Camas Hist	Camas Comp	Bybee Hist	Bybee Comp	Well Hist	Well Comp	Draft Hist	Draft Comp	Elevation Hist	Elevation Comp	Contents Hist	Contents Comp
DEC. 78	0.	0.	0.	0.	0.	0.	2747.	2747.	0.	0.	4776.85	4776.39	7690.	6569.
JAN. 79	0.	0.	0.	0.	0.	0.	3577.	3577.	0.	0.	4777.91	4777.57	10900.	9779.
FEB. 79	0.	0.	0.	0.	0.	0.	3609.	3609.	0.	0.	4778.51	4778.23	13200.	12079.
MAR. 79	0.	0.	0.	0.	0.	0.	4191.	4191.	0.	0.	4779.02	4778.78	15500.	14379.
APR. 79	670.	670.	3947.	3947.	0.	0.	9792.	9792.	0.	0.	4779.60	4779.39	18500.	17379.
MAY 79	206.	206.	8158.	8158.	4574.	4574.	17010.	17010.	16210.	16210.	4781.17	4780.97	27300.	26179.
JUNE 79	0.	0.	335.	335.	0.	0.	14947.	14947.	19325.	19325.	4780.99	4780.80	26300.	25237.
JULY 79	0.	0.	0.	0.	0.	0.	14121.	14121.	19438.	19438.	4779.24	4779.04	16600.	15603.
AUG. 79	0.	0.	0.	0.	0.	0.	11529.	11529.	6762.	6762.	4777.25	4776.92	8800.	7876.
SEP. 79	0.	0.	0.	0.	0.	0.	8152.	8152.	7778.	7778.	4778.21	4777.97	12000.	11128.
OCT. 79	0.	0.	0.	0.	0.	0.	6975.	6975.	6976.	6976.	4777.28	4776.99	8890.	8064.
NOV. 79	0.	0.	0.	0.	0.	0.	1815.	1815.	0.	0.	4776.84	4776.52	7660.	6872.
DEC. 79	0.	0.	0.	0.	0.	0.	1764.	1764.	0.	0.	4776.86	4776.55	7720.	6932.
JAN. 80	0.	0.	0.	0.	0.	0.	2716.	2716.	0.	0.	4777.40	4777.13	9250.	8462.
FEB. 80	0.	0.	133.	133.	0.	0.	2528.	2528.	0.	0.	4777.85	4777.62	10700.	9912.
MAR. 80	323.	323.	0.	0.	0.	0.	11236.	11236.	0.	0.	4778.26	4778.05	12200.	11412.
APR. 80	1127.	1127.	6585.	6585.	0.	0.	13100.	13100.	1000.	1000.	4780.39	4780.25	22900.	22112.
MAY 80	2561.	2561.	11784.	11784.	5027.	5027.	9131.	9131.	6118.	6118.	4782.71	4782.57	36000.	35212.
JUNE 80	4618.	4618.	11034.	11034.	7942.	7942.	0.	0.	11950.	11950.	4783.51	4783.39	40900.	40119.
JULY 80	292.	292.	809.	809.	1163.	1163.	9076.	9076.	22753.	22753.	4781.75	4781.63	30600.	29882.
AUG. 80	0.	0.	0.	0.	0.	0.	12618.	12618.	10932.	10932.	4778.81	4778.65	14500.	13822.
SEP. 80	0.	0.	15.	15.	0.	0.	6048.	6048.	5179.	5179.	4778.63	4778.47	13700.	13054.
OCT. 80	0.	0.	236.	236.	0.	0.	1982.	1982.	7907.	7907.	4778.29	4778.12	12300.	11664.
											4776.81	4776.56	7580.	6956.

Analysis Title: Orginal Flood Diversion Data

Mon. YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
NOV. 80	0.	0.	262.	262.	0.	0.	2121.	2121.	0.	0.	4776.81	4776.56	7580.	6956.
DEC. 80	0.	0.	131.	131.	0.	0.	2396.	2396.	0.	0.	4777.05	4776.82	8240.	7616.
JAN. 81	0.	0.	198.	198.	0.	0.	2542.	2542.	0.	0.	4777.57	4777.37	9760.	9136.
FEB. 81	0.	0.	208.	208.	0.	0.	2738.	2738.	0.	0.	4778.16	4777.99	11800.	11176.
MAR. 81	734.	734.	419.	419.	0.	0.	8236.	8236.	0.	0.	4778.58	4778.43	13500.	12976.
APR. 81	2949.	2949.	8468.	8468.	7500.	7500.	11317.	11317.	720.	720.	4779.98	4779.87	20600.	19976.
MAY 81	5818.	5818.	15557.	15557.	14082.	14082.	5684.	5684.	14486.	14486.	4782.26	4782.14	33400.	32776.
JUNE 81	2446.	2446.	4578.	4578.	8622.	8622.	6516.	6516.	23027.	23027.	4782.45	4782.34	34500.	33906.
JULY 81	0.	0.	0.	0.	0.	0.	14063.	14063.	21212.	21212.	4779.91	4779.81	20200.	19634.
AUG. 81	0.	0.	0.	0.	0.	0.	11490.	11490.	15652.	15652.	4777.64	4777.47	10000.	9461.
SEP. 81	0.	0.	0.	0.	0.	0.	11198.	11198.	11464.	11464.	4776.59	4776.39	7040.	6550.
OCT. 81	0.	0.	0.	0.	0.	0.	5302.	5302.	6563.	6563.	4776.00	4775.79	5700.	5251.
NOV. 81	0.	0.	0.	0.	0.	0.	813.	813.	0.	0.	4775.96	4775.76	5603.	5190.
DEC. 81	0.	0.	18.	18.	0.	0.	1317.	1317.	0.	0.	4777.26	4777.12	8832.	8419.
JAN. 82	0.	0.	48.	48.	0.	0.	1965.	1965.	0.	0.	4777.22	4777.07	8694.	8281.
FEB. 82	0.	0.	77.	77.	0.	0.	2164.	2164.	0.	0.	4777.25	4777.10	8790.	8377.
MAR. 82	1087.	1087.	145.	145.	0.	0.	8100.	8100.	0.	0.	4777.82	4777.70	10600.	10187.
APR. 82	2955.	2955.	5621.	5621.	1000.	1000.	2292.	2292.	500.	500.	4779.93	4779.86	20300.	19887.
MAY 82	8604.	8604.	28842.	28842.	27011.	27011.	2700.	2700.	14560.	14560.	4780.41	4780.34	23000.	22587.
JUNE 82	4875.	4875.	10437.	10437.	13319.	13319.	8296.	8296.	17923.	17923.	4781.92	4781.85	31500.	31103.
JULY 82	1210.	1210.	2075.	2075.	2025.	2025.	11150.	11150.	19467.	19467.	4782.10	4782.03	32500.	32118.
AUG. 82	0.	0.	24.	24.	0.	0.	13294.	13294.	10515.	10515.	4780.16	4780.10	21600.	21235.
SEP. 82	0.	0.	0.	0.	0.	0.	4107.	4107.	12601.	12601.	4780.32	4780.26	22500.	22152.
											4777.67	4777.57	10100.	9758.

Analysis Title: Orginal Flood Diversion Data

Mon. YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
OCT. 82	0.	0.	0.	0.	0.	0.	1466.	1466.	5402.	5402.	4777.67	4777.57	10100.	9758.
NOV. 82	0.	0.	0.	0.	0.	0.	2259.	2259.	0.	0.	4776.61	4776.47	7093.	6754.
DEC. 82	0.	0.	0.	0.	0.	0.	3887.	3887.	0.	0.	4777.19	4777.07	8621.	8282.
JAN. 83	0.	0.	0.	0.	0.	0.	3289.	3289.	0.	0.	4777.82	4777.72	10600.	10261.
FEB. 83	0.	0.	0.	0.	0.	0.	3416.	3416.	0.	0.	4778.53	4778.45	13300.	12961.
MAR. 83	0.	0.	0.	0.	0.	0.	4135.	4135.	0.	0.	4779.12	4779.05	16000.	15661.
APR. 83	5137.	5137.	8109.	8109.	2500.	2500.	4509.	4509.	227.	227.	4779.73	4779.67	19200.	18861.
MAY 83	13016.	13016.	32672.	32672.	28193.	28193.	1114.	1114.	13571.	13571.	4780.74	4780.68	24900.	24561.
JUNE 83	11814.	11814.	21041.	21041.	33205.	33205.	1200.	1200.	25358.	27558.	4783.03	4782.98	37900.	37576.
JULY 83	3312.	3312.	7097.	7097.	12000.	12000.	1208.	1208.	18764.	18764.	4783.73	4783.68	42400.	42080.
AUG. 83	1438.	1438.	1787.	1787.	0.	0.	2512.	2512.	9702.	9702.	4781.83	4781.77	31000.	30697.
SEP. 83	952.	952.	968.	968.	0.	0.	1560.	1560.	12977.	12977.	4780.74	4780.69	24900.	24606.
OCT. 83	0.	0.	4790.	4790.	2000.	2000.	4328.	4328.	3296.	3296.	4778.08	4778.00	11500.	11213.
NOV. 83	0.	0.	3558.	3558.	3000.	3000.	5112.	5112.	0.	0.	4779.60	4779.55	18500.	18223.
DEC. 83	0.	0.	1081.	1081.	2300.	2300.	4269.	4269.	0.	0.	4781.11	4781.06	27000.	26723.
JAN. 84	10.	10.	1129.	1129.	2600.	2600.	1860.	1860.	0.	0.	4781.72	4781.67	30400.	30123.
FEB. 84	125.	125.	901.	901.	2300.	2300.	1733.	1733.	0.	0.	4782.27	4782.22	33500.	33223.
MAR. 84	1880.	1880.	1131.	1131.	2600.	2600.	2040.	2040.	0.	1914.	4782.78	4782.73	36400.	36123.
APR. 84	3938.	3938.	3066.	3066.	3000.	3000.	2292.	2292.	0.	5220.	4783.26	4783.22	39300.	39023.
MAY 84	14884.	14884.	26835.	26835.	25311.	25311.	2480.	2480.	20067.	25399.	4783.51	4783.47	40900.	40623.
JUNE 84	14240.	14240.	18353.	18353.	24837.	24837.	1800.	1800.	10945.	16425.	4784.55	4784.52	49200.	48929.
JULY 84	4324.	4324.	1859.	1859.	5700.	5700.	450.	450.	16814.	19978.	4785.33	4785.30	58600.	58337.
AUG. 84	2743.	2743.	1059.	1059.	0.	0.	475.	475.	4531.	11971.	4783.07	4783.02	38100.	37845.
											4781.09	4781.05	26900.	26654.

Analysis Title: Orginal Flood Diversion Data

Mon. YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
SEP. 84	1156.	1156.	137.	137.	0.	0.	1072.	1072.	12537.	17441.	4781.09	4781.05	26900.	26654.
OCT. 84	1238.	1238.	228.	228.	0.	0.	2060.	2060.	4337.	8797.	4778.10	4778.04	11600.	11359.
NOV. 84	970.	970.	69.	69.	5200.	5200.	2538.	2538.	0.	0.	4777.76	4777.69	10400.	10164.
DEC. 84	44.	44.	234.	234.	4100.	4100.	2849.	2849.	0.	0.	4779.88	4779.83	20000.	19764.
JAN. 85	2.	2.	52.	52.	3700.	3700.	2951.	2951.	0.	0.	4781.08	4781.04	26800.	26564.
FEB. 85	12.	12.	153.	153.	2800.	2800.	2912.	2912.	0.	0.	4782.20	4782.16	33100.	32864.
MAR. 85	190.	190.	329.	329.	3900.	3900.	3351.	3351.	0.	5415.	4783.15	4783.11	38600.	38364.
APR. 85	6609.	6609.	8529.	8529.	12000.	12000.	2634.	2634.	0.	10500.	4783.26	4783.22	39300.	39064.
MAY 85	1502.	1502.	8349.	8349.	15021.	15021.	1304.	1304.	15893.	20525.	4784.34	4784.31	47200.	46964.
JUNE 85	177.	177.	1952.	1952.	4979.	4979.	2460.	2460.	19927.	19927.	4783.77	4783.74	42700.	42470.
JULY 85	0.	0.	234.	234.	0.	0.	15230.	15230.	14140.	14140.	4780.29	4780.25	22300.	22081.
AUG. 85	0.	0.	0.	0.	0.	0.	8052.	8052.	12220.	12220.	4779.04	4779.00	15600.	15389.
SEP. 85	0.	0.	0.	0.	0.	0.	5439.	5439.	6079.	6079.	4777.67	4777.61	10100.	9900.
OCT. 85	0.	0.	0.	0.	0.	0.	5094.	5094.	3334.	3334.	4777.41	4777.35	9280.	9084.
NOV. 85	0.	0.	0.	0.	4500.	4500.	6888.	6888.	0.	0.	4777.64	4777.58	10000.	9807.
DEC. 85	0.	0.	0.	0.	1800.	1800.	5814.	5814.	0.	0.	4779.22	4779.18	16500.	16307.
JAN. 86	0.	0.	0.	0.	1800.	1800.	5863.	5863.	0.	0.	4780.57	4780.53	23900.	23707.
FEB. 86	0.	0.	0.	0.	2000.	2000.	6619.	6619.	0.	0.	4781.70	4781.67	30300.	30107.
MAR. 86	139.	139.	1119.	1119.	3800.	3800.	6981.	6981.	0.	7650.	4782.93	4782.90	37300.	37107.
APR. 86	1077.	1077.	8043.	8043.	6000.	6000.	7260.	7260.	0.	8160.	4782.92	4782.88	37200.	37007.
MAY 86	2953.	2953.	11165.	11165.	14030.	14030.	2774.	2774.	14044.	18304.	4783.67	4783.65	42000.	41807.
JUNE 86	1359.	1359.	8658.	8658.	11994.	11994.	1990.	1990.	21823.	21823.	4783.54	4783.51	41100.	40912.
JULY 86	0.	0.	448.	448.	0.	0.	5964.	5964.	17770.	17770.	4781.77	4781.74	30700.	30522.
											4778.89	4778.86	14900.	14731.

Analysis Title: Orginal Flood Diversion Data

Mon. YR	---Beaver--- Hist	Comp	----Camas--- Hist	Comp	----Bybee--- Hist	Comp	----Well---- Hist	Comp	----Draft--- Hist	Comp	---Elevation--- Hist	Comp	--Contents-- Hist	Comp
AUG. 86	0.	0.	0.	0.	0.	0.	9476.	9476.	12857.	12857.	4778.89	4778.86	14900.	14731.
SEP. 86	0.	0.	0.	0.	0.	0.	5508.	5508.	1657.	1657.	4777.88	4777.83	10800.	10638.
											4777.04	4776.99	8210.	8053.

-----> NORMAL TERMINATION <-----

APPENDIX C

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
C Microsoft FORTRAN 4.1 Optimizing Compiler Under DOS 3.2 c/ 8...87
$TITLE:'MUDLAKE.FOR'
$LINESIZE:80
$PAGESIZE:54
$STORAGE:2
$DECLARE
$NOTRUNCATE
$DEBUG
C
C*************************************************************************
C*************************************************************************
C*                                                                       *
C*  PROGRAM:  MUDLAKE.FOR                          AUTHOR: C.W. ROBISON  *
C*                                                                       *
C*  VERSION:  1.10 BETA                           12-Oct-1988            *
C*                                                                       *
C*  PURPOSE:  This program attempts to model the surface waters          *
C*  entering Mud Lake from the Camas Creek Watershed.  The model         *
C*  expects two input data sets. -- The first data set consists of the   *
C*  historical monthly flows at Beaver Creek near Camas, Camas Creek     *
C*  near Camas, Camas at the Bybee Structure, Camas to Bybee reach       *
C*  gain/loss, well inflows to Mud Lake/Camas Creek below the Bybee      *
C*  structure, drafts from Mud Lake/Camas Creek, Mud Lake Evaporation    *
C*  unit depth, Camas Creek from Bybee structure to Mud Lake including   *
C*  Mud Lake reach gain/loss, and the End of Month Mud Lake Water        *
C*  Surface elevation.  -- The second data set contains flood flow       *
C*  adjustments as determined by the user of the model.  The specific    *
C*  data contained in the file is Beaver Creek and Camas Creek           *
C*  diversions above Camas, lagged groundwater inflows to Mud Lake       *
C*  resulting from flood diversions upstream of Camas, well inflow       *
C*  reductions, increased Mud Lake drafts.                               *
C*                                                                       *
C*************************************************************************
C*************************************************************************
C
      program mudlake
c
c *** variable definitions, internal variables
c
      character title*72, ofile*64, mfile*64, pfile*64, months*4(12),
     &          hfile*64, ans*4
      integer*2 i, j, k, l, m, p, trim, err, lines, lmax, page, r_year,
     &          r_mon, r_day, r_hour, r_min, r_sec, r_hsec, sequence
      logical*2 T_F, plot, next, eof, modify
c
c *** Startup data and options
c
      real*4    elev_min, elev_max, elev_beg, store_beg
c
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
c *** Historical Flow data
c
      integer*2 year_hist, month_hist
      real*4    beaver_hist, camas_hist, diver, camas_to_bybee,
     &          bybee_hist, well_hist, draft_hist, store_hist,
     &          evap_hist, bybee_to_lake, bprior, cprior
c
c *** Flood Managment Diversion, Lag, and reduction data
c
      integer*2 year_modi, month_modi
      real*4    beaver_fdiv, beaver_lag, camas_fdiv, camas_lag,
     &          rays_fdiv, rays_lag, well_reduce, draft_incr
c
c *** Computed data elements
c
      real*4    beaver_flow, camas_flow, bybee_flow, well_flow,
     &          draft_flow, store_end, elev_end, stor_delta,
     &          elev_delta, store_min, store_max, store_last,
     &          elev_last, camas, delta, area, rays_flow,
     &          rays_hist, storage, elevation, surface, needed,
     &          div_tot, lag_tot
c
c *** default data items
c
      data months /'JAN.','FEB.','MAR.','APR.','MAY ','JUNE',
     &            'JULY','AUG.','SEP.','OCT.','NOV.','DEC.'  /
      data hfile /'MLHISTQ.DAT' /
      data lmax /56/
c
c *** Start_Up_Section
c *** For HP1000 capabilities, open LU 1 as the console, LU 6 as the
c *** primary output file, user will supply name.
c
      open(1,file='CON')
      write(1,1) 'Mud Lake Watershed Mass Balance Program'
      write(1,1) 'Version: 1.10-BETA cc. UOFI 1988'
      write(1,2) 'Please enter output file/device name? '
  100 read(1,3) ofile
      call cfoldu(ofile)
      l=trim(ofile)
      if (ofile(:5).eq.'EXIT ') goto 9999
      inquire(file=ofile,exist=T_F)
      if (T_F) then
        write(1,2) 'File "'//ofile(:1)//'" exists, overwrite? '
      else
        write(1,2) 'File "'//ofile(:1)//'" doesnot exist, create? '
      endif
      read(1,3) ans
      call cfoldu(ans)
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
 99        if(ans(:1).ne.'Y') goto 100
100  c
101  c *** Open the output file and write out the title page.
102  c
103        open(6,file=ofile,status='UNKNOWN',iostat=err)
104        if (err.ne.0) then
105          write(1,1) 'Error on opening: '//ofile
106          write(1,5) err
107          goto 9999
108        endif
109        call getdat(r_year,r_mon,r_day)
110        call gettim(r_hour,r_min,r_sec,r_hsec)
111        write(6,101) r_mon,r_day,r_year, r_hour,r_min
112  c
113  c *** Open up the historical data file, must exist.
114  c
115        open(7,file=hfile,status='OLD',iostat=err)
116        if (err.ne.0) then
117          write(1,1)'Error on opening the historical file:',hfile
118          write(6,1)'Error on opening the historical data file: '//hfile
119          write(1,5) err
120          write(6,5) err
121          goto 9998
122        endif
123  c
124  c *** Obtain the analysis title
125  c
126        write(1,2) 'Analysis Title? '
127        read(1,3) title
128  c
129  c *** Obtain the flow modification data file name.
130  c
131    110 write(1,2) 'Flow modification data file name? '
132        read(1,3) mfile
133        call cfoldu(mfile)
134        m=trim(mfile)
135        if (mfile(:5).eq.'EXIT') goto 9997
136        inquire(file=mfile,exist=T_F)
137        if (.NOT. T_F) then
138          write(1,1) 'File "'//mfile(:m)//'" does not exist, try again!'
139          goto 110
140        endif
141        open(8,file=mfile,status='OLD',iostat=err)
142        if (err.ne.0) then
143          write(1,1)'Error on opening file:',hfile
144          write(6,1)'Error on opening the modification data file: '//hfile
145          write(1,5) err
146          write(6,5) err
147          goto 9997
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
      endif
c
c *** Check to see if the user wants a plot data file prepared.
c
  120 plot = .false.
      write(1,2) 'Prepare a plotting data file? '
      read(1,3) ans
      call cfoldu(ans)
      if (ans(:1).eq.'Y') then
        write(1,2) 'Plotting data file name? '
        read(1,3) pfile
        call cfoldu(pfile)
        p=trim(pfile)
        inquire(file=pfile,exist=T_F)
        if (T_F) then
          write(1,2) 'File "'//pfile(:p)//'" exists, overwrite? '
        else
          write(1,2) 'File "'//pfile(:p)//'" doesnot exist, create? '
        endif
        read(1,3) ans
        call cfoldu(ans)
        if(ans(:1).ne.'Y') goto 120
        open(9,file=pfile,status='UNKNOWN',iostat=err)
        if(err.ne.0) then
          write(1,1) 'Error on opening: '//pfile
          write(6,1) 'Error on opening plot data file: '//pfile
          write(1,5) err
          write(6,5) err
          goto 9996
        endif
        plot=.true.
      endif
c
c *** Obtain other startup items from the user
c
      write(1,2) 'Starting Mud Lake Contents (5340)? '
      read(1,*) store_beg
      write(1,2) 'Minimum Allowable Mud Lake WSE (4773.99)? '
      read(1,*) elev_min
      write(1,2) 'Maximum Allowable Mud Lake WSE (4785.99)? '
      read(1,*) elev_max
c
c *** Print out the start up data
c
      write(6,102) title, mfile, ofile
      if (plot) write(6,103) pfile
      store_min = storage(elev_min)
      store_max = storage(elev_max)
      write(6,104) elev_min, store_min, elev_max, store_max
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
197         elev_beg = elevation(store_beg)
198         write(6,105) elev_beg, store_beg
199   c
200   c *** Print out a listing of the flow diversion data file
201   c
202         page=0
203         eof=.false.
204         beaver_hist=0.0
205         camas_hist=0.0
206         bybee_hist=0.0
207         draft_hist=0.0
208         well_hist=0.0
209         sequence=0
210       500 call header(lines,page,title,mfile(:m))
211       600 read(8,1001,iostat=err) year_modi, month_modi, beaver_fdiv,
212          & beaver_lag, camas_fdiv, camas_lag, rays_fdiv, rays_lag,
213          & well_reduce, draft_incr
214           if (err.lt.0) then
215             goto 700
216           elseif (err.gt.0) then
217             write(1,1) 'Error occured reading modification file: '//mfile
218             write(6,1) 'Error occured reading modification file: '//mfile
219             write(1,5) err
220             write(6,5) err
221             eof=.true.
222             goto 600
223           endif
224           if ( month_modi.lt.1 .or. month_modi.gt.12) then
225             write(1,1) 'Error involving input data from "'//mfile(:m)//'" In
226          &valid month'
227             write(6,1) 'Error involving input data from "'//mfile(:m)//'" In
228          &valid month'
229             eof = .true.
230           endif
231           if ( year_modi*100+month_modi .le. sequence ) then
232             write(1,1) 'Data sequencing error on input data from '//mfile
233             write(6,1) 'Data sequencing error on input data from '//mfile
234             eof =.true.
235           endif
236           div_tot = beaver_fdiv+camas_fdiv+rays_fdiv+well_reduce+draft_incr
237           lag_tot = beaver_lag+camas_lag+rays_lag
238           write(6,501) year_modi, month_modi, beaver_fdiv, camas_fdiv,
239          & rays_fdiv, beaver_lag, camas_lag, rays_lag, well_reduce,
240          & draft_incr, div_tot, lag_tot
241           lines = lines + 1
242           sequence = year_modi*100+month_modi
243           beaver_hist = beaver_hist + beaver_fdiv - beaver_lag
244           camas_hist = camas_hist + camas_fdiv - camas_lag
245           bybee_hist = bybee_hist + rays_fdiv - rays_lag
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
      well_hist = well_hist + well_reduce
      draft_hist = draft_hist + draft_incr
      if (lines.gt.lmax) goto 500
      goto 600
c
c *** Check for errors encounterd reading the flow diversion data file
c
  700 if (eof) goto 9995
c
c *** Print mass balance of flood diversions
c
      if (lines+19.gt.lmax) call header(lines,page,title,mfile(:m))
      diver = beaver_hist + camas_hist + bybee_hist
      write(6,701) beaver_hist, camas_hist, bybee_hist, diver
      diver = diver + well_hist + draft_hist
      write(6,702) well_hist, draft_hist, diver
c
c *** Ready to begin simulation
c
      rewind(8)
      call heading(lines,page,title)
      eof = .false.
      write(6,8012) 4775.83,elev_beg,5340.0,store_beg
      lines=lines+1
c
c *** Read a flow modification record.
c
 1000 read(8,1001,iostat=err) year_modi, month_modi, beaver_fdiv,
     & beaver_lag, camas_fdiv, camas_lag, rays_fdiv, rays_lag,
     & well_reduce, draft_incr
      if (err.lt.0) then
        eof = .true.
        year_modi = 0
      endif
      next = .true.
c
c *** Read Historical Flow Record
c
 1010 read(7,1002,iostat=err) year_hist, month_hist, beaver_hist,
     &  bprior, camas_hist, cprior, diver, camas_to_bybee, bybee_hist,
     &  well_hist, draft_hist, bybee_to_lake, store_hist, evap_hist
      if (err.lt.0) then
        goto 2000
      elseif (err.gt.0) then
        write(1,1) 'Error occured reading historical file: '//hfile
        write(6,1) 'Error occured reading historical file: '//hfile
        write(1,5) err
        write(6,5) err
        goto 9995
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
      endif
      modify = .false.
c
c *** Infow to Camas to Bybee Reach.
c
      if (year_hist.eq.year_modi .and. month_hist.eq.month_modi) then
        next=.false.
        modify = .true.
        if ( beaver_hist+bprior .ge. beaver_fdiv ) then
          beaver_flow = beaver_hist - beaver_fdiv + bprior
        else
          write(6,3001) beaver_fdiv, beaver_hist+bprior
          beaver_flow = 0.0
          lines = lines + 7
          if (lines.gt.lmax) then
            call heading(lines,page,title)
            write(6,8012) elev_last, elev_end, store_last, store_end
            lines = lines + 1
          endif
        endif
        if ( camas_hist+cprior .ge. camas_fdiv ) then
          camas_flow = camas_hist - camas_fdiv + cprior
        else
          write(6,3002) camas_fdiv, camas_hist+cprior
          camas_flow = 0.0
          lines = lines + 7
          if (lines.gt.lmax) then
            call heading(lines,page,title)
            write(6,8012) elev_last, elev_end, store_last, store_end
            lines = lines + 1
          endif
        endif
      else
        beaver_flow = beaver_hist + bprior
        camas_flow = camas_hist + bprior
      endif
      rays_flow = beaver_flow + camas_flow
      rays_hist = beaver_hist + camas_hist
c
c *** Ray's Lake Reach -- Operational Constraints
c ***   1)  Flood Diversions occur only Upstream of any reach gain;
c ***       therefore, they can not exceed the inflow to the reach.
c ***   2)  Two rights must be satisifed after the possible diversion
c ***       using reach gain and remaining flow.
c
c *** First, handle no flow modifications for current month.
c
      if ( .NOT. modify ) then
        bybee_flow = rays_flow - diver + camas_to_bybee
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
      else
c
c *** Flow Modifications, First Calculate required inflow to satisify
c *** water rights.
c
        needed = diver - camas_to_bybee
        if ( needed.lt. 0.0 ) needed = 0.0
        if ( rays_flow .lt. needed ) then
          write(6,3003) rays_flow, needed, needed-rays_flow
          rays_flow = needed
          lines = lines + 8
          if (rays_fdiv.gt.0) then
            rays_fdiv = 0.0
            write(6,3004)
            lines = lines + 1
          endif
          if (lines.gt.lmax) then
            call heading(lines,page,title)
            write(6,8012) elev_last, elev_end, store_last, store_end
            lines = lines + 1
          endif
        endif
c
c *** Check on proposed flood diversion
c
        if ( rays_flow .lt. rays_fdiv+needed ) then
          write(6,3005) rays_fdiv, diver, rays_flow
          lines = lines + 7
          if (lines.gt.lmax) then
            call heading(lines,page,title)
            write(6,8012) elev_last, elev_end, store_last, store_end
            lines = lines + 1
          endif
        endif
        bybee_flow = rays_flow - diver + camas_to_bybee - rays_fdiv
      endif
c
c *** Check bybee_flow being non negative, it should not be
c
      if (bybee_flow.lt.0) bybee_flow = 0.0
c
c *** Now to process the Bybee to Mud Lake Reach.
c
      if ( modify ) then
        well_flow = well_hist - well_reduce
        if ( well_flow.lt. 0.0 ) then
          write(6,3006) well_reduce, well_hist
          lines = lines + 7
          well_flow = 0.0
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
393             if (lines.gt.lmax) then
394               call heading(lines,page,title)
395               write(6,8012) elev_last, elev_end, store_last, store_end
396               lines = lines + 1
397             endif
398           endif
399           draft_flow = draft_hist + draft_incr
400           bybee_to_lake=bybee_to_lake + beaver_lag+camas_lag+rays_lag
401         else
402           well_flow = well_hist
403           draft_flow = draft_hist
404         endif
405   c
406   c *** Compute preliminary change in Mud Lake contents
407   c
408         delta = bybee_flow + well_flow + bybee_to_lake - draft_flow
409   c
410   c *** compute intermediate water surface area for evaporation component.
411   c *** and decrease the change in storage
412   c
413         area = surface( elevation( store_beg+(delta/2.0) ) )
414         delta = delta - (evap_hist * area)
415   c
416   c *** Compute Lake contents at end of month
417   c
418         store_end = store_beg + delta
419   c
420   c *** Totally emptied Mud Lake, Abort Program with error message
421   c
422         if ( store_end.lt.1790. ) then
423           write(6,3007) 1790.0-store_end
424           goto 9996
425         endif
426         elev_end = elevation(store_end)
427   c
428   c *** Check to see if Mud Lake over topped the dikes, ie overflowed
429   c
430         if ( store_end .gt. store_max ) then
431           stor_delta = store_end - store_max
432           write(6,3008) stor_delta
433           store_end = store_max
434           elev_end = elev_max
435           lines = lines + 7
436           if (lines.gt.lmax) then
437             call heading(lines,page,title)
438             write(6,8012) elev_last, elev_end, store_last, store_end
439             lines = lines + 1
440           endif
441   c
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
c *** Check to see if Mud Lake Elevation less than minimum specified
c
      elseif ( elev_end .lt. elev_min ) then
        stor_delta = store_min - store_end
        elev_delta = elev_min - elev_end
        write(6,3009) elev_delta, stor_delta
        store_end = store_min
        elev_end = elev_min
        lines = lines + 7
        if (lines.gt.lmax) then
          call heading(lines,page,title)
          write(6,8012) elev_last, elev_end, store_last, store_end
          lines = lines + 1
        endif
      endif
c
c *** Save historical EOM values for later printing if necessary.
c
      store_last = store_hist
      elev_last = elevation(store_hist)
c
c *** Ok, Now lets print_out the summary for the month.
c
      write(6,8010) months(month_hist), year_hist, beaver_hist,
     &  beaver_flow, camas_hist, camas_flow, bybee_hist, bybee_flow,
     &  well_hist, well_flow, draft_hist, draft_flow
      write(6,8012) elev_last, elev_end, store_last, store_end
      lines = lines + 2
      if (lines.gt.lmax) then
        call heading(lines,page,title)
        write(6,8012) elev_last, elev_end, store_last, store_end
        lines = lines + 1
      endif
      if ( plot ) then
        write(9,8014) year_hist, month_hist, beaver_hist, beaver_flow,
     &    camas_hist, camas_flow, bybee_hist, bybee_flow, well_hist,
     &    well_flow, draft_hist, draft_flow, elev_last, elev_end,
     &    store_last, store_end
      endif
c
c *** Back for more data please ...
c
      store_beg = store_end
      elev_beg = elev_end
      if ( NEXT .or. EOF ) then
       goto 1010
      else
       goto 1000
      endif
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
   491  c
#  492  c *** End of Data encountered on Historical Data Set -- Terminate Normal
   493  c
   494   2000 write(6,1)
   495        write(6,1) '-----> NORMAL TERMINATION <-----'
   496        write(1,1) '-----> NORMAL TERMINATION <-----'
   497        if (plot) close(9,status='KEEP')
   498        close(8,status='KEEP')
   499        close(7,status='KEEP')
   500        close(6,status='KEEP')
   501        close(1,status='KEEP')
   502        stop
   503  c
   504  c *** Error terminating code
   505  c
   506   9995 if (plot) close(9,status='KEEP')
   507   9996 close(8,status='KEEP')
   508   9997 close(7,status='KEEP')
   509   9998 write(6,1) '-----> PROGRAM TERMINATED ABNORMALLY <------'
   510        close(6,status='KEEP')
   511   9999 write(1,1) '-----> PROGRAM TERMINATED ABNORMALLY <------'
   512        close(1)
   513        stop
   514  c
   515  c *** Format Statements, first general console formats
   516  c
   517      1 format(1X,A)
   518      2 format(1X,A\)
   519      3 format(A)
   520      5 format(1X,'ERROR CODE RETURNED WAS',I5)
   521  c
   522  c *** Input data format statements, 1001 -> Modification file
   523  c ***                               1002 -> Historical file
   524  c
   525   1001 format(i2,i3,8f9.0)
   526   1002 format(2i2,11f7.0,f7.3)
   527  c
   528  c *** Title Page Output statements
   529  c
   530    101 format(////
   531       & 25x,'MUD LAKE LOWER WATERSHED MASS BALANCE PROGRAM'/
   532       & 25x,'Version 1.10-BETA cc. 1988 University of Idaho'//
   533       & 25x,'Analysis Date: ',i2.2,'/',i2.2,'/',i4,' at ',i2.2,':',i2.2)
   534    102 format(//
   535       & 15x,'        Analysis Title: ',A//
   536       & 15x,'Flow Modification File: ',A//
   537       & 15x,'           Output File: ',A/)
   538    103 format(
   539       & 15x,'    Plotting Data File: ',A//)
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
  104 format(//
     & 5x,'Minimum allowable water surface elevation in Mud Lake:',
     &     f8.2,' ft. Contents:',f8.0,' af.'//
     & 5x,'Maximum allowable water surface elevation in Mud Lake:',
     &     f8.2,' ft. Contents:',f8.0,' af.')
  105 format(///
     & 5x,'            Starting Mud Lake water surface elevation:',
     &     f8.2,' ft. Contents:',f8.0,' af.')
c
c *** Input data listing listing format
c
  501 format(i14,i4,2f9.0,f11.0,f15.0,f9.0,f11.0,f14.0,f10.0,f12.0,f9.0)
  701 format(//20x,'NET OUT OF BASIN PROPOSED FLOOD DIVERSIONS FOR ',
     & 'SIMULATION PERIOD:'//31x,'Beaver Creek Flood Diversions:',f9.0,
     & ' af'/32x,'Camas Creek Flood Diversions:',f9.0,' af'/34x,
     & 'Rays Lake Flood Diversions:',f9.0,' af'/62x,'--------'//25x,
     & ' SUBTOTAL UPSTREAM FLOOD DIVERSIONS:',f9.0,' af')
  702 format(/25x,
     & '    Mud Lake Well Inflow Reductions:',f9.0,' af'/25x,
     & 'Desert Pumping from Mud Lake (INEL):',f9.0,' af'//62x,'========'
     & //25x,'             TOTAL FLOOD DIVERSIONS:',f9.0,' af')
c
c *** Simulation WARNING format statements.
c
 3001 format(//6x,'WARNING: Beaver Creek flood diversion in excess of ',
     &'Beaver Creek flow at Camas.'/15x,'Diversion =',f8.0,' Flow at ',
     &'Camas =',f8.0/15x,'Will assume a zero flow at Camas for Beaver',
     & ' Creek'//)
 3002 format(//6x,'WARNING: Camas Creek flood diversion in excess of ',
     & 'Camas Creek flow at Camas.'/15x,'Diversion =',f8.0,' Flow at ',
     & 'Camas =',f8.0/15x,'Will assume a zero flow at Camas for Camas',
     & ' Creek'//)
 3003 format(//6x,'WARNING: Beaver and Camas Creek flood diversions ',
     & 'resulted in water rights not'/15x,'being satisfied in the Cama',
     & 's to Bybee Structure Reach.'/15X,'Reach inflow =',f8.0,
     & ' Required Inflow =',f8.0,/15x,'Decreasing total Beaver ',
     & 'and Camas flood diversions by',f8.0//)
 3004 format(15x,'Also setting Rays Lake flood diversion to zero.')
 3005 format(//6x,'WARNING: Beaver and Camas Creek flow insufficient ',
     & 'to meet Rays Lake flood diversion.'/15x,'Flood Diversion =',
     & f8.0,' Right Diverson =',f8.0,' Available Flow =',f8.0/15x,
     & 'Continuing on assuming that diversions occur below the reach ',
     & 'gain.'//)
 3006 format(//6x,'WARNING: Well inflows to Mud Lake smaller than the',
     & 'proposed reduction.'/15x,'Reduction =',f8.0,
     & ' Well Flow =',f8.0/15x,'Will assume a zero flow for the ',
     & ' wells and springs.'//)
 3007 format(//6x,'WARNING: Mud Lake contents below the legal minimum ',
     & 'of 1790 af.  Excess draft of',f8.0,
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
   589       & ' acre-feet.'/15x,'You are not familar with the Mud Lake ',
   590       & 'system.'/15x,'Review your flood diversions before running the ',
   591       & 'program again'/15x,' - - TERMINATION BEGINS - -')
   592    3008 format(//6x,'WARNING: Mud Lake water elevation above your '
   593       & 'specified maximum! '/15x,'This corresponds ',
   594       & 'an overflow volume of ',f8.0,' acre-ft.'/15x,'Continuing on ',
   595       & 'assuming your maximums for end of month conditions.'//)
   596    3009 format(//6x,'WARNING: Mud Lake water elevation below your '
   597       & 'specified minimum by ',f5.2, ' feet.'/15x,'This corresponds '
   598       & 'to an over draft of ',f8.0,' acre-ft.'/15x,'Continuing on ',
   599       & 'assuming your minimums for end of month conditions.'//)
   600  c
   601  c *** Output format statements
   602  c
   603    8010 format(11x,A4,i3,5(1x,2f7.0))
   604    8012 format(94x,2f8.2,1x,2f7.0)
   605    8014 format(2i3,14f9.2)
   606         end
```

main Local Symbols

Name	Class	Type	Size	Offset
TITLE	local	CHAR*72	72	0002
STORE_END	local	REAL*4	4	004a
EVAP_HIST	local	REAL*4	4	004e
RAYS_FDIV	local	REAL*4	4	0052
DRAFT_FLOW	local	REAL*4	4	0056
DRAFT_HIST	local	REAL*4	4	005a
YEAR_HIST	local	INTEGER*2	2	005e
MODIFY	local	LOGICAL*2	2	0060
WELL_FLOW	local	REAL*4	4	0062
WELL_REDUCE	local	REAL*4	4	0066
WELL_HIST	local	REAL*4	4	006a
BEAVER_FLOW	local	REAL*4	4	006e
BEAVER_HIST	local	REAL*4	4	0072
R_SEC	local	INTEGER*2	2	0076
L	local	INTEGER*2	2	0078
M	local	INTEGER*2	2	007a
MONTH_MODI	local	INTEGER*2	2	007c
BPRIOR	local	REAL*4	4	007e
CPRIOR	local	REAL*4	4	0082
R_DAY	local	INTEGER*2	2	0086
STORE_MIN	local	REAL*4	4	0088
P	local	INTEGER*2	2	008c
STOR_DELTA	local	REAL*4	4	008e
STORE_MAX	local	REAL*4	4	0092
R_HSEC	local	INTEGER*2	2	0096

main Local Symbols

Name	Class	Type	Size	Offset
R_MIN	local	INTEGER*2	2	0098
RAYS_HIST	local	REAL*4	4	009a
RAYS_FLOW	local	REAL*4	4	009e
CAMAS_LAG	local	REAL*4	4	00a2
AREA	local	REAL*4	4	00a6
ELEV_BEG	local	REAL*4	4	00aa
SEQUENCE	local	INTEGER*2	2	00ae
EOF	local	LOGICAL*2	2	00b0
R_MON	local	INTEGER*2	2	00b2
MONTH_HIST	local	INTEGER*2	2	00b4
PAGE	local	INTEGER*2	2	00b6
STORE_LAST	local	REAL*4	4	00b8
ELEV_END	local	REAL*4	4	00bc
R_YEAR	local	INTEGER*2	2	00c0
ANS	local	CHAR*4	4	00c2
STORE_HIST	local	REAL*4	4	00c6
NEEDED	local	REAL*4	4	00ca
BYBEE_TO_LAKE	local	REAL*4	4	00ce
BEAVER_LAG	local	REAL*4	4	00d2
ERR	local	INTEGER*2	2	00d6
LAG_TOT	local	REAL*4	4	00d8
DELTA	local	REAL*4	4	00dc
CAMAS_FDIV	local	REAL*4	4	00e0
CAMAS_TO_BYBEE	local	REAL*4	4	00e4
MFILE	local	CHAR*64	64	00e8
ELEV_MIN	local	REAL*4	4	0128
R_HOUR	local	INTEGER*2	2	012c
OFILE	local	CHAR*64	64	012e
PFILE	local	CHAR*64	64	016e
ELEV_MAX	local	REAL*4	4	01ae
RAYS_LAG	local	REAL*4	4	01b2
ELEV_DELTA	local	REAL*4	4	01b6
DIV_TOT	local	REAL*4	4	01ba
YEAR_MODI	local	INTEGER*2	2	01be
T_F	local	LOGICAL*2	2	01c0
DIVER	local	REAL*4	4	01c2
STORE_BEG	local	REAL*4	4	01c6
LINES	local	INTEGER*2	2	01ca
CAMAS_FLOW	local	REAL*4	4	01cc
DRAFT_INCR	local	REAL*4	4	01d0
CAMAS_HIST	local	REAL*4	4	01d4
BEAVER_FDIV	local	REAL*4	4	01d8
BYBEE_FLOW	local	REAL*4	4	01dc
BYBEE_HIST	local	REAL*4	4	01e0

Microsoft FORTRAN Optimizing Compiler Version 4.10

main Local Symbols

Name	Class	Type	Size	Offset
ELEV_LAST	local	REAL*4	4	01e4
NEXT	local	LOGICAL*2	2	01e8
PLOT	local	LOGICAL*2	2	01ea
MONTHS	local	CHAR*4	48	04c0
HFILE	local	CHAR*64	64	04f0
LMAX	local	INTEGER*2	2	0530

```
607  C
608  C**************************************************************************
609  C**************************************************************************
610  C**                                                                      **
611  C** ROUTINE HEADER.FOR                          WRITTEN: ROBISON, CW    **
612  C**                                                                      **
613  C** VERSION:  0.1                               15-Oct-1988             **
614  C**                                                                      **
615  C** Purpose to print out page headings for Mud Lake Water Balance        **
616  C** program.  This routine prints the page headings for listing the      **
617  C** the flow modification data file, flood diversions.  The routine      **
618  C** resets the page counter prior to printing the page header.           **
619  C**                                                                      **
620  C**************************************************************************
621  C**************************************************************************
622  c
623        subroutine header(line,page,title,file)
624  c
625  c *** Variable definitions
626  c
627        integer*2 line, page
628        character*(*) title, file
629  c
630  c *** Increment page number.
631  c
632        page = page + 1
633  c
634  c *** print out heading
635  c
636        write(6,1) char(12), page, title, file
637        write(6,2)
638  c
639  c *** Reset line counter
640  c
641        line = 13
642        return
643  c
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
   644  c *** Format Statements
   645  c
   646       1 format(1x,a1,//26X,'MUD LAKE WATERSHED SURFACE WATER BALANCE ',
   647        & 'PROGRAM -- VERSION 1.10-BETA -- PAGE:',I3//26X,'Analysis ',
   648        & 'Title:  ',a//26X,'Flow Modification Data File "',a,'" Listing')
   649       2 format(/50x,
   650        & '-------------------- Mud Lake Proper ------------------',
   651        & '   ----Watershed----'/88x,'--Well--              --Monthly Tot',
   652        & 'al--'/20x,
   653        & '------Flood Diversions-----   -Lagged Flows from Flood Divers',
   654        & 'ions-  -Inflow-  -Drafts-     Flood    Lagged'/11x,
   655        & 'Mon. YR  Beaver    Camas   Rays Lake        Beaver    Camas  ',
   656        & ' Rays Lake      Decrease  Increase   Diversion  Inflow'/)
   657         end


HEADER  Local Symbols

Name                      Class   Type              Size   Offset

FILE. . . . . . . . . . . param                            0006
TITLE . . . . . . . . . . param                            000a
PAGE. . . . . . . . . . . param                            000e
LINE. . . . . . . . . . . param                            0012

   658  C
   659  C*************************************************************************
   660  C*************************************************************************
   661  C**                                                                     **
   662  C** ROUTINE HEADING.FOR                          WRITTEN: ROBISON, CW  **
   663  C**                                                                     **
   664  C** VERSION:  0.1                                15-Oct-1988           **
   665  C**                                                                     **
   666  C** Purpose to print out page headings for Mud Lake Water Balance      **
   667  C** program.  The routine resets the line counter and increments the   **
   668  C** page counter prior to printing the page header.                     **
   669  C**                                                                     **
   670  C*************************************************************************
   671  C*************************************************************************
   672  c
   673        subroutine heading(line,page,title)
   674  c
   675  c *** Variable definitions
   676  c
   677        integer*2 line, page
   678        character*(*) title
   679  c
   680  c *** Increment page number.
   681  c
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
      page = page + 1
c
c *** print out heading
c
      write(6,1) char(12), page, title
      write(6,2)
c
c *** Reset line counter
c
      line = 10
      return
c
c *** Format Statements
c
    1 format(1x,a1,//26X,'MUD LAKE WATERSHED SURFACE WATER BALANCE ',
     & 'PROGRAM -- VERSION 1.10-BETA -- PAGE:',I3//26X,'Analysis ',
     & 'Title:  ',a)
    2 format(/20x,'---Beaver---   ----Camas---   ----Bybee---   ----',
     & 'Well----   ----Draft---   ---Elevation---  --Contents--'/11x,
     & 'Mon. YR   Hist   Comp    Hist   Comp    Hist   Comp    His',
     & 't   Comp    Hist   Comp     Hist    Comp    Hist   Comp'/)
      end
```

HEADING Local Symbols

Name	Class	Type	Size	Offset
TITLE	param			0006
PAGE.	param			000a
LINE.	param			000e

```
C
C*************************************************************************
C*************************************************************************
C**                                                                     **
C** ROUTINE TRIM.FOR                          WRITTEN: ROBISON, CW      **
C**                                                                     **
C** VERSION:  0.1                             26-Sep-1988               **
C**                                                                     **
C** Purpose to find the last non-blank character in a FORTRAN string    **
C**                                                                     **
C*************************************************************************
C*************************************************************************
c
      integer*2 function trim(string)
      character*(*) string
      integer*2     len, i, long, j
      long = len(string)
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
   721         j = long + 1
   722         do 10 i=1,long
   723         j = j - 1
   724         if ( string(j:j).ne.' ' ) goto 20
   725      10 continue
   726         trim=0
   727         return
   728      20 trim=j
   729         return
   730         end
```

TRIM Local Symbols

Name	Class	Type	Size	Offset
STRING.	param			0006
TRIM.	param			fffa
I	local	INTEGER*2	2	01ec
J	local	INTEGER*2	2	01ee
LONG.	local	INTEGER*2	2	01f0

```
   731  C
   732  C*************************************************************************
   733  C*************************************************************************
   734  C**                                                                     **
   735  C** ROUTINE CFOLDU                          WRITTEN BY: ROBISON, C.W.  **
   736  C**                                                                     **
   737  C** VERSION:  0.1                           20-Sep-1988                **
   738  C**                                                                     **
   739  C** Purpose to convert all characters in a string to upper case.       **
   740  C**                                                                     **
   741  C*************************************************************************
   742  C*************************************************************************
   743  c
   744        subroutine cfoldu(string)
   745        integer*2     slen, i, dec
   746        character*(*) string
   747  c
   748  c *** determine the string length
   749  c
   750        slen = len(string)
   751  c
   752  c *** process the entire length of the string
   753  c
   754        do 10 i=1,slen
   755        dec = ichar(string(i:i))
   756        if ( dec.lt.123 .and. dec.gt.96) then
   757          dec = dec - 32
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
   758          string(i:i) = char(dec)
   759        endif
   760     10 continue
   761        return
   762        end
```

CFOLDU Local Symbols

Name	Class	Type	Size	Offset
STRING.	param			0006
I	local	INTEGER*2	2	01f2
DEC	local	INTEGER*2	2	01f4
SLEN.	local	INTEGER*2	2	01f6

```
   763  C
   764  C*****************************************************************************
   765  C*****************************************************************************
   766  C**                                                                         **
   767  C** ROUTINE CFOLDL                          WRITTEN BY: ROBISON, C.W.      **
   768  C**                                                                         **
   769  C** VERSION:  0.1                           20-Sep-1988                    **
   770  C**                                                                         **
   771  C** Purpose to convert all characters in a string to lower case.           **
   772  C**                                                                         **
   773  C*****************************************************************************
   774  C*****************************************************************************
   775  c
   776        subroutine cfoldl(string)
   777        integer*2     slen, i, dec
   778        character*(*) string
   779  c
   780  c *** determine the string length
   781  c
   782        slen = len(string)
   783  c
   784  c *** process the entire length of the string
   785  c
   786        do 10 i=1,slen
   787        dec = ichar(string(i:i))
   788        if ( dec.lt.91 .and. dec.gt.64) then
   789          dec = dec + 32
   790          string(i:i) = char(dec)
   791        endif
   792     10 continue
   793        return
   794        end
```

Microsoft FORTRAN Optimizing Compiler Version 4.10

CFOLDL Local Symbols

Name	Class	Type	Size	Offset
STRING.	param			0006
I	local	INTEGER*2	2	01f8
DEC	local	INTEGER*2	2	01fa
SLEN.	local	INTEGER*2	2	01fc

```
795  C
796  C*************************************************************************
797  C*************************************************************************
798  C**                                                                     **
799  C** ROUTINE SURFACE                        WRITTEN BY: ROBISON, C.W.    **
800  C**                                                                     **
801  C** VERSION:  1.0                             20-Oct-1988               **
802  C**                                                                     **
803  C** Purpose to determine the water surface area for Mud Lake from a     **
804  C** water surface elevation.  The elevation entering is expected to     **
805  C** be referenced to sea level.  The equation used was determined by    **
806  C** taking the derivative of the volume/capacity function with          **
807  C** gage height.                                                        **
808  C**                                              2          3         4 **
809  C**  vol(h) = 3121.85 + 2054.52h + 322.201h - 15.3004h + 1.3420h       **
810  C**                                                                     **
811  C**                                                   2          3     **
812  C**  area(h) =    0.0 + 2054.52 + 644.402h - 45.9012h + 5.36800h       **
813  C**                                                                     **
814  C*************************************************************************
815  C*************************************************************************
816  c
817        real*4 function surface(elev)
818  c
819  c *** variable definitions
820  c
821        real*4    elev, h
822  c
823  c *** Determine gage height
824  c
825        h = elev - 4774.99
826  c
827  c *** Determine surface area, acres.
828  c
829        surface = 2054.52 + 644.402*h - 45.9012*h**2.0 + 5.3680*h**3.0
830        return
831        end
```

Microsoft FORTRAN Optimizing Compiler Version 4.10

SURFACE Local Symbols

Name	Class	Type	Size	Offset
SURFACE	param			0006
ELEV.	param			0008
H	local	REAL*4	4	01fe

```
   832  C
   833  C*************************************************************************
   834  C*************************************************************************
   835  C**                                                                     **
   836  C** ROUTINE STORAGE                        WRITTEN BY: ROBISON, C.W.    **
   837  C**                                                                     **
   838  C** VERSION:  1.0                             20-Oct-1988               **
   839  C**                                                                     **
   840  C** Purpose to determine the storage in Mud Lake from a computed        **
   841  C** water surface elevation.  The elevation entering is expected to     **
   842  C** be referenced to sea level.  The equation used was determined by    **
   843  C** fitting a fifth degree polynomial to the Published rating table     **
   844  C** from the USGS.  The polynomial is based on gage height 0=4774.99    **
   845  C**                                                                     **
   846  C**                                          2          3         4     **
   847  C**  vol(h) = 3241.09 + 1766.59h + 333.698h + 17.3981h - 4.8127h        **
   848  C**                     5                                               **
   849  C**          + 0.30212*h                                                **
   850  C**                                                                     **
   851  C*************************************************************************
   852  C*************************************************************************
   853  c
   854        real*4 function storage(elev)
   855  c
   856  c *** variable definitions
   857  c
   858        real*4    elev, h
   859  c
   860  c *** Determine gage height
   861  c
   862        h = elev - 4774.99
   863  c
   864  c *** Determine storage volume, acre-feet.
   865  c
   866        storage = 3241.09 + 1766.59*h + 333.698*h**2.0 + 17.3981*h**3.0
   867       &        - 4.8127*h**4.0 + 0.30212*h**5.0
   868        return
   869        end
```

Microsoft FORTRAN Optimizing Compiler Version 4.10

STORAGE Local Symbols

Name	Class	Type	Size	Offset
STORAGE	param			0006
ELEV.	param			0008
H	local	REAL*4	4	0202

```
C
C**************************************************************************
C**************************************************************************
C**                                                                      **
C** ROUTINE ELEVATION                    WRITTEN BY: ROBISON, C.W.      **
C**                                                                      **
C** VERSION:  1.0                           20-Oct-1988                  **
C**                                                                      **
C** Purpose to determine the water surface elevation in Mud Lake from **
C** a computed storage volume.  The storage entering is expected to   **
C** be in units of acre-feet.  The equation used was determined by    **
C** fitting a fifth degree polynomial to the Published rating table   **
C** from the USGS.  The polynomial is based on gage height 0=4774.99  **
C** The function returns an elevation referenced to sea level.        **
C**                                                                      **
C**                                              2             3         **
C**    h(v) = -2.6339 + 8.4821E-4v - 4.3656E-8v + 1.3598E-12v          **
C**                         4             5                            **
C**         - 2.0077E-17v + 1.1041E-22v                                  **
C**                                                                      **
C**************************************************************************
C**************************************************************************
c
      real*4 function elevation(volume)
c
c *** variable definitions
c
      real*4    volume
      real*8    vol, h
      vol = volume
c
c *** Determine gage height, feet.
c
      h = -2.6339 + 8.4821E-4*vol - 4.3656E-8*vol**2.0
     &  + 1.3598E-12*vol**3.0 - 2.0077E-17*vol**4.0
     &  + 1.1041E-22*vol**5.0
c
c *** referenced to sea-level
c
      elevation = h + 4774.99
      return
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
  911        end
```

ELEVATION Local Symbols

Name	Class	Type	Size	Offset
ELEVATION	param			0006
VOLUME.	param			0008
H	local	REAL*8	8	0206
VOL	local	REAL*8	8	020e

Global Symbols

Name	Class	Type	Size	Offset
CFOLDL.	FSUBRT	***	***	281d
CFOLDU.	FSUBRT	***	***	2707
ELEVATION	FFUNCT	REAL*4	***	2aad
GETDAT.	extern	***	***	***
GETTIM.	extern	***	***	***
HEADER.	FSUBRT	***	***	247b
HEADING	FSUBRT	***	***	254e
STORAGE	FFUNCT	REAL*4	***	29c7
SURFACE	FFUNCT	REAL*4	***	292d
TRIM.	FFUNCT	INTEGER*2	***	2614
main.	FSUBRT	***	***	0042

```
Code size = 2b85 (11141)
Data size = 0cff (3327)
Bss size  = 0216 (534)

No errors detected
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
    1  C Microsoft FORTRAN 4.1 Optimizing Compiler Under DOS 3.2 c/ 8...87
    2  $TITLE:'MUDLAKEC.FOR'
    3  $LINESIZE:80
    4  $PAGESIZE:54
    5  $STORAGE:2
    6  $NOTRUNCATE
    7  $LARGE
    8  $DECLARE
    9  $DEBUG
   10  C
   11  C*************************************************************************
   12  C*************************************************************************
   13  C**                                                                     **
   14  C** PROGRAM MUDLAKEC.FOR                          Author:  Robison, CW  **
   15  C**                                                                     **
   16  C** VERSION: 1.01 Beta                            24-Oct-1988           **
   17  C**                                                                     **
   18  C** This program calculates the various reach gain, loss, for the Mud **
   19  C** Lake Watershed Balance program.  The program also prepares the    **
   20  C** historical flow data file, MLHISTQ.DAT, for the program.  This    **
   21  C** program reads in the historical flow data from unit 7 and writes  **
   22  C** the historical data to unit 8.                                     **
   23  C**                                                                     **
   24  C*************************************************************************
   25  C*************************************************************************
   26  C
   27        program mudlakec
   28  c
   29  c *** variable definitions
   30  c
   31        character flow*64, title*72, hist*64, ans*3, plot*64, out*64
   32        character flag*1(12)
   33        integer*2 lines, err, year, month, previous, f, t, h, p, trim, o,
   34       &          lmax, page
   35        logical*2 plotting, t_f
   36        real*4    beaver, camas, usfw, rays, bybee, wflo, wuse, luse,
   37       &          evapv, eom, diver, camas_to_bybee, area, evapd, bom,
   38       &          delta, bybee_to_lake, years, elevation, surface, draft,
   39       &          elev, bflood, cflood, rflood, mflood
   40        data lmax/59/
   41  c
   42  c *** Open lu 1 as the console for HP-1000 capability
   43  c
   44        open(1,file='con')
   45        write(1,1) 'Mud Lake Water Balance Calibration Program'
   46        write(1,1) 'Version 1.00-Beta'
   47    100 write(1,2) 'Please enter output file name? '
   48        read(1,3) out
   49        call cfoldu(out)
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
      o = trim(out)
      if (out(:4).eq.'EXIT') goto 9999
      inquire(file=out,exist=t_f)
      if (t_f) then
        write(1,2) 'File "'//out(:o)//'" exists, overwrite? '
      else
        write(1,2) 'File "'//out(:o)//'" does not exists, create? '
      endif
      read(1,3) ans
      call cfoldu(ans)
      if (ans(:1).ne.'Y') goto 100
      open(6,file=out,status='unknown',iostat=err)
      if (err.ne.0) then
        write(1,1) 'Error encountered opening "'//out(:o)//'"'
        write(1,5) err
        goto 100
      endif
c
c *** Historical flow data from ??
c
  200 write(1,2) 'Please enter file name containing flow data? '
      read(1,3) flow
      call cfoldu(flow)
      f = trim(flow)
      if (flow(:4).eq.'EXIT') goto 9998
      inquire(file=flow,exist=t_f)
      if (.NOT. t_f) then
        write(1,1) 'File "'//flow(:f)//'" does not exist, try again. '
        goto 200
      endif
      open(7,file=flow,status='old',iostat=err)
      if (err.ne.0) then
        write(1,1) 'Error encountered opening "'//flow(:f)//'"'
        write(1,5) err
        goto 200
      endif
c
c *** Open Calibrated Historical Output file
c
      open(8,file='MLHISTQ.DAT',status='UNKNOWN',iostat=err)
      if (err.ne.0) then
        write(1,1) 'Error encountered opening output file "MLHISTQ.DAT"'
        write(1,5) err
        goto 9997
      endif
c
c *** Plotting file ??
c
  300 write(1,2) 'Prepare plotting data file? '
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
 99        read(1,3) ans
100        call cfoldu(ans)
101        plotting=.false.
102        if (ans(:1).eq.'Y') then
103          plotting=.true.
104          write(1,2) 'Enter file name for plotting data file? '
105          read(1,3) plot
106          call cfoldu(plot)
107          p = trim(plot)
108          if (plot(:4).eq.'EXIT') goto 9996
109          inquire(file=plot,exist=t_f)
110          if (t_f) then
111            write(1,2) 'File "'//plot(:p)//'" exists, overwrite? '
112          else
113            write(1,2) 'File "'//plot(:p)//'" does not exists, create? '
114          endif
115          read(1,3) ans
116          call cfoldu(ans)
117          if (ans(:1).ne.'Y') goto 300
118          open(9,file=plot,status='unknown',iostat=err)
119          if (err.ne.0) then
120            write(1,1) 'Error encountered opening "'//plot(:p)//'"'
121            write(1,5) err
122            goto 300
123          endif
124        endif
125  c
126  c *** Read in the previous end of month data
127  c
128        write(1,2) 'Please enter starting contents of Mud Lake? '
129        read(1,*) bom
130  c
131  c *** Read in the data
132  c
133        flag(12)=' '
134        previous = 0.0
135        page = 1
136     900 call header(lines,page,flow(:f))
137    1000 read(7,1001,iostat=err) year, month, beaver, flag(1), camas,
138       &  flag(2), usfw, flag(3), rays, flag(4), bybee, flag(5), wflo,
139       &  flag(6), wuse, flag(7), luse, flag(8), eom, flag(9), evapv,
140       &  flag(10), bflood, cflood, rflood, mflood
141  c
142  c *** Check for I/O Errors
143  c
144        if (err.lt.0) then
145          write(6,1) 'End of File Encountered'
146          goto 2000
147        elseif (err.gt.0) then
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
  148          write(6,1) 'I/O Error reading input file'
  149          write(6,5) err
  150          goto 9995
  151        endif
  152  c
  153  c *** Check for valid data
  154  c
  155        if ( month.lt.1 .or. month.gt.12) then
  156          write(6,1) 'Month field does contain valid month'
  157          goto 9995
  158        endif
  159        if ( beaver.lt.0.0 .or. camas.lt.0.0 .or. usfw.lt.0.0 .or.
  160       &     rays.lt.0.0 .or. bybee.lt.0.0 .or. wflo.lt.0.0 .or.
  161       &     wuse.lt.0.0 .or. luse.lt.0.0 .or. evapd.lt.0.0 .or.
  162       &     eom.lt.0.0 ) then
  163          write(6,1) 'Flow field contains a negative number, check data'
  164          lines = lines + 1
  165        endif
  166  c
  167  c *** Check data sequence.
  168  c
  169        if ( year*100+month .le. previous) then
  170          write(6,1) 'Input data out of sequence'
  171          goto 9995
  172        endif
  173        previous = year*100+month
  174  c
  175  c *** Compute plotting position
  176  c
  177        years = year + (month - 1)/12.0
  178  c
  179  c *** Compute total camas_to_bybee diversion
  180  c
  181        diver = usfw + rays
  182        if (flag(3).ne.' ' .or. flag(4).ne.' ') flag(3)='?'
  183  c
  184  c *** compute reach gain for camas_to_bybee
  185  c
  186        camas_to_bybee = bybee - beaver - camas + diver + rflood
  187  c
  188  c *** Compute Net Draft of Mud Lake, then compute net change in storage
  189  c
  190        draft = wuse + luse
  191        if (flag(7).ne.' ' .or. flag(8).ne.' ') flag(7)='?'
  192        delta = eom - bom
  193  c
  194  c *** Compute lake evaporation term
  195  c
  196        area = surface(elevation(bom+(delta+evapv)/2.0))
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
      evapd = evapv/area
      if (flag(9).ne.' ' .or. flag(10).ne.' ' .or. flag(12).ne.' ')
     &  flag(11)='?'
c
c *** Compute Bybee to Mudlake reach gain
c
      bybee_to_lake = delta + draft + evapv - bybee - wflo + mflood
      elev = elevation(eom)
c
c *** Write out the historical data, first to historical file, second
c *** to the print, third to the plotting file
c
      write(8,1002) year, month, beaver, bflood, camas, cflood, diver,
     &  camas_to_bybee, bybee, wflo, draft, bybee_to_lake, eom, evapd
      write(6,1003) year, month, beaver, flag(1), camas, flag(2),
     &  diver, flag(3), camas_to_bybee, bybee, flag(5), wflo, flag(6),
     &  draft, flag(7), evapv, flag(10), delta, bybee_to_lake, elev,
     &  flag(9), evapd, flag(11), bflood, cflood, rflood, mflood
      if (plotting) write(9,1004) years, beaver, camas, camas_to_bybee,
     &  bybee, wflo, draft, evapv, delta, bybee_to_lake, elev, evapd,
     &  bflood, cflood, rflood, mflood
      lines = lines + 1
      bom = eom
      flag(12)=flag(9)
      flag(11)=' '
      if (lines.gt.lmax) goto 900
      goto 1000
c
c *** Normal Termination
c
 2000 write(6,1) '-----> N O R M A L   T E R M I N A T I O N <-----'
      write(1,1) '-----> N O R M A L   T E R M I N A T I O N <-----'
      if (plotting) close(9,status='KEEP')
      close(8,status='KEEP')
      close(7,status='KEEP')
      close(6,status='KEEP')
      close(1)
      stop
c
c *** Abnormal Termination
c
 9995 if (plotting) close(9,status='KEEP')
 9996 close(8,status='KEEP')
 9997 close(7,status='KEEP')
 9998 write(6,1) '-----> A B N O R M A L   T E R M I N A T I O N <-----'
      close(6,status='KEEP')
 9999 write(1,1) '-----> A B N O R M A L   T E R M I N A T I O N <-----'
      close(1)
      stop
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
  246  c
  247  c *** Format Statements
  248  c
  249       1 format(1X,A)
  250       2 format(1X,A\)
  251       3 format(A)
  252       5 format(1X,'ERROR CODE RETURNED WAS',I5)
  253  c
  254  c *** Output data format statements
  255  c
  256   1001 format(i2,i3,10(f7.0,a1),4f7.0)
  257   1002 format(2i2,11f7.0,f7.5)
  258   1003 format(i5,i3,f7.0,a1,f7.0,a1,f7.0,a1,f7.0,f11.0,a1,f8.0,a1,
  259       & 2(f7.0,a1),2f8.0,f8.2,a1,f6.3,a1,4f8.0)
  260   1004 format(f9.4,9f8.0,2f9.3,4f8.0)
  261        end
```

main Local Symbols

Name	Class	Type	Size	Offset
FLAG	local	CHAR*1	12	0000
MFLOOD	local	REAL*4	4	0002
EVAPV	local	REAL*4	4	0006
YEARS	local	REAL*4	4	000a
WUSE	local	REAL*4	4	000e
USFW	local	REAL*4	4	0012
RFLOOD	local	REAL*4	4	0016
F	local	INTEGER*2	2	001a
MONTH	local	INTEGER*2	2	001c
O	local	INTEGER*2	2	001e
P	local	INTEGER*2	2	0020
AREA	local	REAL*4	4	0022
PAGE	local	INTEGER*2	2	0026
BOM	local	REAL*4	4	0028
EOM	local	REAL*4	4	002c
ANS	local	CHAR*3	3	0030
BYBEE_TO_LAKE	local	REAL*4	4	0034
CAMAS	local	REAL*4	4	0038
BYBEE	local	REAL*4	4	003c
ERR	local	INTEGER*2	2	0040
DELTA	local	REAL*4	4	0042
ELEV	local	REAL*4	4	0046
CAMAS_TO_BYBEE	local	REAL*4	4	004a
EVAPD	local	REAL*4	4	004e
DRAFT	local	REAL*4	4	0052
PLOTTING	local	LOGICAL*2	2	0056
YEAR	local	INTEGER*2	2	0058

Microsoft FORTRAN Optimizing Compiler Version 4.10

main Local Symbols

Name	Class	Type	Size	Offset
BEAVER.	local	REAL*4	4	005a
BFLOOD.	local	REAL*4	4	005e
CFLOOD.	local	REAL*4	4	0062
WFLO.	local	REAL*4	4	0066
OUT	local	CHAR*64	64	006a
FLOW.	local	CHAR*64	64	00aa
LUSE.	local	REAL*4	4	00ea
T_F	local	LOGICAL*2	2	00ee
DIVER	local	REAL*4	4	00f0
LINES	local	INTEGER*2	2	00f4
PREVIOUS.	local	INTEGER*2	2	00f6
RAYS.	local	REAL*4	4	00f8
PLOT.	local	CHAR*64	64	00fc
LMAX.	local	INTEGER*2	2	03be

```
  C
  C*************************************************************************
  C*************************************************************************
  C**                                                                     **
  C** ROUTINE HEADER.FOR                          Author: ROBISON, CW     **
  C**                                                                     **
  C** VERSION:  0.1                               25-Oct-1988             **
  C**                                                                     **
  C** Purpose to write out page heading for the calibration program       **
  C**                                                                     **
  C*************************************************************************
  C*************************************************************************
  C
        subroutine header(line, page, file)
        character*(*) file
        integer*2     page, line
        write(6,1) char(12), page, file
        write(6,2)
        page=page+1
        line=12
        return
  c
  c *** format statements
  c
      1 format(1x,a1/20x,'MUD LAKE WATER BALANCE CALIBRATION PROGRAM ',
       & '-- VERSION 0.01-BETA -- PAGE:',I3/20X,'CALIBRATION RESULTS ',
       & 'WHEN USING "',A,'" INPUT DATA FILE')
      2 FORMAT(/25X,'---Rays Lake---  --Bybee--   ',23('-'),'Mud',
       & ' Lake',23('-'),'  -- Known Flood Diversions ---',
```

Line# Source Line Microsoft FORTRAN Optimizing Compiler Version 4.10

```
      & /9X,'Beaver  Camas   Rights   Gain',
      & '    Structure   Well   Draft  Evap-V   Delta     Gain',
      & '  EOM-WSE  Evap-D  Beaver  Camas    Rays     Mud'/)
       end
```

HEADER Local Symbols

Name	Class	Type	Size	Offset
FILE.	param			0006
PAGE.	param			000a
LINE.	param			000e

```
C
C*************************************************************************
C*************************************************************************
C**                                                                     **
C** ROUTINE TRIM.FOR                          WRITTEN: ROBISON, CW      **
C**                                                                     **
C** VERSION:  1.1                             26-Sep-1988               **
C**                                                                     **
C** Purpose to find the last non-blank character in a FORTRAN string    **
C**                                                                     **
C*************************************************************************
C*************************************************************************
c
      integer*2 function trim(string)
      character*(*) string
      integer*2     len, i, long, j
      long = len(string)
      j = long + 1
      do 10 i=1,long
      j = j - 1
      if ( string(j:j).ne.' ' ) goto 20
   10 continue
      trim=0
      return
   20 trim=j
      return
      end
```

TRIM Local Symbols

Name	Class	Type	Size	Offset
STRING.	param			0006
TRIM.	param			fffa

Microsoft FORTRAN Optimizing Compiler Version 4.10

TRIM Local Symbols

Name	Class	Type	Size	Offset
I	local	INTEGER*2	2	013c
J	local	INTEGER*2	2	013e
LONG	local	INTEGER*2	2	0140

```
   322  C
   323  C*************************************************************************
   324  C*************************************************************************
   325  C**                                                                     **
   326  C** ROUTINE CFOLDU                        WRITTEN BY: ROBISON, C.W.     **
   327  C**                                                                     **
   328  C** VERSION:  0.1                         20-Sep-1988                   **
   329  C**                                                                     **
   330  C** Purpose to convert all characters in a string to upper case.        **
   331  C**                                                                     **
   332  C*************************************************************************
   333  C*************************************************************************
   334  c
   335        subroutine cfoldu(string)
   336        integer*2     slen, i, dec
   337        character*(*) string
   338  c
   339  c *** determine the string length
   340  c
   341        slen = len(string)
   342  c
   343  c *** process the entire length of the string
   344  c
   345        do 10 i=1,slen
   346        dec = ichar(string(i:i))
   347        if ( dec.lt.123 .and. dec.gt.96) then
   348          dec = dec - 32
   349          string(i:i) = char(dec)
   350        endif
   351     10 continue
   352        return
   353        end
```

CFOLDU Local Symbols

Name	Class	Type	Size	Offset
STRING	param			0006
I	local	INTEGER*2	2	0142

Microsoft FORTRAN Optimizing Compiler Version 4.10

CFOLDU Local Symbols

Name	Class	Type	Size	Offset
DEC	local	INTEGER*2	2	0144
SLEN.	local	INTEGER*2	2	0146

```
C
C**************************************************************************
C**************************************************************************
C**                                                                      **
C** ROUTINE SURFACE                        WRITTEN BY: ROBISON, C.W.     **
C**                                                                      **
C** VERSION:  1.0                             20-Oct-1988                **
C**                                                                      **
C** Purpose to determine the water surface area for Mud Lake from a      **
C** water surface elevation.  The elevation entering is expected to      **
C** be referenced to sea level.  The equation used was determined by     **
C** taking the derivative of the volume/capacity function with           **
C** gage height.                                                         **
C**                                              2          3         4  **
C**  vol(h) = 3121.85 + 2054.52h + 322.201h - 15.3004h + 1.3420h         **
C**                                                                      **
C**                                                        2          3  **
C**  area(h) =    0.0 + 2054.52 + 644.402h - 45.9012h + 5.36800h         **
C**                                                                      **
C**************************************************************************
C**************************************************************************
c
      real*4 function surface(elev)
c
c *** variable definitions
c
      real*4    elev, h
c
c *** Determine gage height
c
      h = elev - 4774.99
c
c *** Determine surface area, acres.
c
      surface = 2054.52 + 644.402*h - 45.9012*h**2.0 + 5.3680*h**3.0
      return
      end
```

Microsoft FORTRAN Optimizing Compiler Version 4.10

SURFACE Local Symbols

Name	Class	Type	Size	Offset
SURFACE	param			0006
ELEV.	param			0008
H	local	REAL*4	4	0148

```
   391  C
   392  C*************************************************************************
   393  C*************************************************************************
   394  C**                                                                     **
   395  C** ROUTINE ELEVATION                    WRITTEN BY: ROBISON, C.W.      **
   396  C**                                                                     **
   397  C** VERSION:  1.0                          20-Oct-1988                  **
   398  C**                                                                     **
   399  C** Purpose to determine the water surface elevation in Mud Lake from **
   400  C** a computed storage volume.  The storage entering is expected to   **
   401  C** be in units of acre-feet.  The equation used was determined by    **
   402  C** fitting a fifth degree polynomial to the Published rating table   **
   403  C** from the USGS.  The polynomial is based on gage height 0=4774.99  **
   404  C** The function returns an elevation referenced to sea level.         **
   405  C**                                                                     **
   406  C**                                          2             3          **
   407  C**    h(v) = -2.6339 + 8.4821E-4v - 4.3656E-8v + 1.3598E-12v           **
   408  C**                         4             5                           **
   409  C**          - 2.0077E-17v + 1.1041E-22v                               **
   410  C**                                                                     **
   411  C*************************************************************************
   412  C*************************************************************************
   413  c
   414        real*4 function elevation(volume)
   415  c
   416  c *** variable definitions
   417  c
   418        real*4    volume
   419        real*8    vol, h
   420        vol = volume
   421  c
   422  c *** Determine gage height, feet.
   423  c
   424        h = -2.6339 + 8.4821E-4*vol - 4.3656E-8*vol**2.0
   425       &  + 1.3598E-12*vol**3.0 - 2.0077E-17*vol**4.0
   426       &  + 1.1041E-22*vol**5.0
   427  c
   428  c *** referenced to sea-level
   429  c
   430        elevation = h + 4774.99
   431        return
```

APPENDIX D

APPENDIX D

CONTENTS OF THE MUDLAKE FLOPPY DISK

The supplied floppy disk, labeled MUDLAKE, contains the following files:

MUDLDATA.008
o

This is the calibration data file which contains all the surface water data collated by the University of Idaho for the Mud Lake area. The columns of the data file are: year, month, Beaver Crk nr Camas, Camas Crk at Camas, USFWS diversions, Ray's Lake irrigation diversion, Camas Crk at Bybee structure, well inflows, well water use, lake water use, end of month lake contents, lake evaporation volumes, flood diversions upstream of Beaver Crk nr Camas, flood diversions upstream of Camas Crk at Camas, flood diversions from the Ray's Lake reach, desert or INEL pumping from Mud Lake. These columns are followed by a single character column which may contain a question mark (?) denoting estimated data.

MUDLAKEC.FOR — This file contains the MICROSOFT FORTRAN 4.1 source code for the calibration program for the Water Balance Model.

MUDLAKEC.EXE — This is the IBM-PC with math co-processor executable for building the calibrated historical flow data set, MLHISTQ.DAT, used by the operational Mud Lake water balance model. This file should run on IBM PC and compatible computers as is without modification.

MUDLAKEC.OUT — Output summary created by running the calibration program.

MLHISTQ.DAT — Calibrated historical data file created by MUDLAKEC for use by MUDLAKE containing flows, end of month contents, and calibrated reach gains/losses.

MUDFLOOD.DAT — Operational flood diversions and lagged inflows for the Mud Lake Watershed used by MUDLAKE program. It contains the best estimates of volumes diverted for flood control during water years 1960 through 1986.

MUDLAKE.FOR — This file contains the MICROSOFT FORTRAN 4.1 source code for the Mud Lake Water Balance Model.

MUDLAKE.EXE — This is the IBM-PC with math co-processor executable file for running the water balance model. The program requires the MLHISTQ.DAT data file available in addition to the user specified operational flood diversions data file. This file should run on IBM PC and compatible computers as is without modification.

MUDLAKE.OUT — This is the primary output from the water balance model. The contents of this file reflect the flood diversions found in MUDFLOOD.DAT