

US Army Corps of Engineers Hydrologic Engineering Center

Water Supply Simulation Using HEC-5

August 1985

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US Army Corps of Engineers Institute for Water Resources Hydrologic Engineering Center 609 Second Street Davis, CA 95616

(530) 756-1104 (530) 756-8250 FAX www.hec.usace.army.mil

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FOREWORD

This document is intended to assist users of computer program HEC-5 who are engaged in modeling surface water systems for water supply. Using a single reservoir operation for illustration, the document describes the input data needed to utilize a variety of analysis capabilities available in HEC-5. Input data for multiple reservoir systems are similar to those for single reservoirs but include certain data which specify the system linkages and operation. A description of this information is also included. Two Appendices are part of the document. The first describes the method of automatically determining conservation storage. It was felt that such an explanation would be useful since the capability exists in HEC-5 to derive a number of important reservoir parameters and a better understanding of the methodology would be helpful. A second Appendix contains summary output for the runs developed to illustrate input preparation.

All data in this document were developed for and output from the March 1985 version of HEC-5 on the Hydrologic Engineering Center's (HEC) Harris 500. Older versions of the computer program may require somewhat different input or give somewhat different output.

Preparation of the input data, analysis of output, and research into some of the methodology used by HEC-5 was performed by Chau-ling Tyan, graduate student at the University of California, Davis. Subsequent modifications and invaluable assistance was provided by Richard Hayes, Marilyn Hurst and Teresa Bowen of the HEC staff. Bill S. Eichert, author of HEC-5 and Director of the Hydrologic Engineering Center, gave generously of his time in developing the routines, debugging tests, and in review and editing. LIST OF FIGURES

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Introduction

It is the purpose of this document to illustrate the use of computer program HEC-5, <u>Simulation of Flood Control and Conservation Systems</u>, for simulating the operation of surface water reservoirs for water supply. HEC-5 is a widely used, comprehensive, computer model which has been used for a wide range of applications in flood control and hydroelectric power. Modifications to the program over the past few years have extended and improved its capability for water supply purposes. This document describes and illustrates this capability.

The principal components of a surface water reservoir operation which are necessary for simulations include: streamflow records, including local inflow between gaged points; physical and operational characteristics of system storage facilities, and in-stream, diversion and operation requirements at control points within the system. These components are common to all surface water simulations regardless of purpose. What differs with each purpose is the nature of the streamflow. operational criteria. and demand. For water supply, low-flow periods are of special concern because it is during these periods that the possibility of not meeting water supply needs is greatest. Low-flows normally have the characteristic that they are relatively constant over a week or month period and therefore monthly streamflows are commonly used in simulation. Also, low-flows are commonly within channel and consequently routing criteria and water surface elevations, which are especially significant in flood control simulation, are of less importance in water supply. Yet, low-flow, because it is low, can be significantly affected by local inflow, effluent discharge from waste-water treatment plants, seepage to or from a river, evaporation and other manmade and natural phenomena. Operating criteria for water supply is principally concerned with meeting demands over prolonged low-flow periods (droughts). Determining which is the critical low-flow period is itself part of the task of water supply simulation. For most streamflow records a number of possible critical periods exist. In addition. criteria needs to be developed to distinguish between what is "desired" and what is "required". What is desired can be supplied when there is ample conservation storage in the reservoir to meet demands. Desired flows will be released when the reservoir pool elevation is above the buffer level. Required flows have a higher priority than desired flows and are attempted to be met when the reservoir storage level is between the buffer and inactive levels.

This document is designed to illustrate how HEC-5 input data are to be prepared to model a variety of features often desired for water supply simulation. For each feature a number of options exist. A simulation, for example, may be run for a period of record, partial record, or critical period. Desired and required flow requirements may be specified as constant for the simulation period, vary monthly or vary by period. The same three options exist for specifying diversions. In addition, diversion may be a function of reservoir storage, or inflow. Optimization capability exists for determining minimum conservation storage requirements given flow and diversion needs. Conversely, the dependable desired flow, required flow or diversion at a reservoir may be determined given a specified conservation storage. The capability also exists in the March 1985 version of the program to optimize the yield at a downwstream control point. Most of the features and options described in this document are illustrated with single reservoir examples. They also apply to multiple-reservoir systems. Multiple-reservoirs also have operating features which are unique: parallel and tandem reservoir operations, for example. These features are also described and illustrated. Lastly, example output and the optimization methodology of the program are described in the Appendices.

Other capabilities at HEC which aid the user in creating input files are programs INFIVE and MATHPAK. INFIVE is an interactive program designed to generate a data file for input into the HEC-5 program. Through a series of questions and answers, a list of cards necessary to simulate the system is created, and optionally, variable names can be requested on a comment card for each card field.

MATHPAK allows the user to manipulate data stored in an HECDSS data file. The program can be useful in water supply simulations to compute natural flows, instream flows, diversions, etc., to be used as input into HEC-5.

A recent option to HEC-5 (but not illustrated in this document) is the capability to provide different priority releases by allowing reservoirs to be drawn down to a level specified on the CP card, field 7. This capability is in the March 1985 program version. More information on this option can be found in the March 1985 Exhibit 8 (Input Description).

Basic Reservoir System

<u>Input data</u>. Figure 1 shows a schematic diagram of a single reservoir system. One downstream control point is specified at Control Point (CP) 213. Water supply requirements at CP 213 are met from conservation storage releases at the reservoir. Figure 2 shows the storage levels and volumes for the reservoir. Conservation storage is 71,200 acre-feet with 1700 acre-feet of it in the buffer zone. Releases to meet downstream water supply requirements are made from conservation storage. Tables 1 through 3 show data on the reservoir and downstream flow requirements. The elevation-area-storage-outflow data are necessary to define reservoir storage levels, to compute the volume evaporated, and to determine outflows under flood conditions. Net evaporation (Table 2) multiplied times the reservoir surface area is the volume lost from storage. Negative evaporation values indicate rainfall in excess of evaporation is occurring. The monthly desired flows, required flows and diversions in Table 3 are the average monthly water supply requirements at control point 213.

Monthly streamflow into the reservoir is shown in Table 4. All values are monthly averages. They cover the period October 1927 to September 1937, a low-flow period in the streamflow record. The full record is 1927-1977.

The foregoing data constitute the basic reservoir system to be simulated. Table 5 shows these data as input for the HEC-5 simulation model. In addition various job control data are also specified. The reader is referred to the HEC-5 Users Manual, Exhibit 8, Input Description (March 1985), for instructions on the preparation of these data.

Simulation Period Options

It is often desired to select different periods of record for simulation or output. While the entire available record is commonly input, it may be that only a portion of that record is desired for computation or output. Two options exist for specifying shorter records: partial record and critical period. These, together with the option of using the entire record are described below.

<u>Period of record</u>. The basic reservoir system shown in Table 5 (Run 1) illustrates the use of a low-flow period for simulation. Partial HEC-5 output from Run 1 corresponding to Table 5 input is shown in Appendix B along with output from other examples (Runs 1-24). Data shown on the IN cards in Table 5 are inflow data to the reservoir for October 1927 to September 1937, a total of 120 monthly periods. The number of periods is specified in field 2 of the BF Card.

<u>Partial record</u>. The simulation period can be truncated and only part of the record used in the computations. This option is specified on the BF Card, field 6 (Table 6, Run 2). In this example the simulation period is truncated after 60 periods and only the first 60 monthly periods of inflow are used in the computations. See also description below of the use of negative value in field 5, J3 Card. This option should always be used to reduce computation time and output volume when making the first few runs for a new data set. When the operations and output are correct for the initial set of input (normally 12-30 periods), then the full period of simulation should be initiated by removing the ending period from field 6 of the BF card.

<u>Critical period</u>. Three options exist for selecting the period of low-flow referred to as the "critical period". The critical period can be selected from within the flow record (IN Cards) based upon the option specified. The three options are specified in field 5, J3 Card.

One option is to directly specify the critical period or any partial period desired. In this case the simulation output will be for the periods specified. Table 7 (Run 3) illustrates the option. A value, -10.060, is specified (J3 Card, field 5). This indicates the period to be simulated is from period 10 through 60 which corresponds to July 1928 through September 1932.

A second option for specifying critical period is to specify a specific reservoir drawdown duration. HEC-5 automatically examines the period of record and finds the beginning and ending periods for the duration specified corresponding to the minimum flow volume. To help insure the critical period is within this duration for the simulation run, five periods are added to the end and the beginning is set back to the first month of the simulation year (see Jl card, field 2). If the minimum flow duration is eight months (period 9 to 16) the ending period is extended five periods to period 21. If period 9 represents June 1928 and the month of the first monthly value of demand data (Jl, field 2) is January then the beginning period is extended back to January 1928. This procedure of extension helps to insure that the low-flow period is properly bracketed. To specify this option the duration desired is entered in field 5, J3 Card. A third critical period option is to use as the duration a preselected multiplier times the ratio of conservation storage to mean annual flow. The multiplier automatically used by the program is 70. It has been found from looking at numerous projects throughout the United States, that a reasonable estimate of critical period duration is the numerical value of 70 times the specified ratio. If the ratio of conservation storage to mean annual flow were .2 then the duration for the simulation run would be 14 months (assuming a monthly simulation). The beginning and ending periods of this duration would be those which correspond to the minimum flow volume for the 14 months duration which is determined in HEC-5 by examining the whole period of record. This option may be specified by using a 1 or 2 in field 5, J3 Card.

Required and Desired Flow Options

Instream flow demands may be specified at control points within the system being simulated. They may represent a variety of low-flow requirements: minimum flows for fishery or wildlife, navigation, stream recreation, minimum water quality flows, and various other water supply conditions. Two types of low-flow may be specified: minimum desired and minimum required. Minimum desired flows are those which are the target when reservoir storage is above the top of the buffer level. When streamflow is low and reservoir storage is low (below the top of the buffer) the minimum required flow allows the user to cut-back and reduce requirements allowing minimum needs to be met until supplies are replenished.

Four options exist for specifying required or desired flow: constant, monthly, period by period or seasonally. A constant value means that the required or desired flow is the same for each time period in the simulation. A monthly specification allows required or desired flows to vary from month to month (but not year to year). A period by period specification allows the user to vary the flow by period throughout the period or record. For example, a monthly desired or required flow can be varied each month and each year for the entire simulation period. In the seasonal option, up to 18 seasons (in number of days from January 1) can be defined on the CS card. Minimum desired or required flows (on QM cards) can vary throughout the year and the release is based on the reservoir level for the specified season.

<u>Constant required and desired flow</u>. The basic reservoir system (Table 5) illustrates the specification of constant desired and required flows. These values, 400 cfs and 100 cfs respectively, are shown on the CP Card for control point 213.

<u>Monthly required and desired flow</u>. To change desired or required flows from a constant to a monthly varying value QM Cards are used. An example is shown in Table 8 (Run 4) for desired flow. In this example desired flow varies by month and required flow is a constant 100 cfs.

When required flow varies by month and desired flow is constant, or when both required and desired flow vary by month it is necessary to put in a fictitious control point because only one QM array is available for a given control point. Whenever desired flow is specified either constant (CP Card, field 3) or monthly varying (QM Cards), this array is used. Therefore, when specifying a minimum required flow varying monthly it is necessary to create a fictitious control point to use the QM array. Table 9 (Run 5) illustrates the input for specifying monthly varying required flow with constant desired flow. The monthly required flows are entered on the QM Cards for the control point 213. A negative value (-1) is entered in field 4 of the CP Card to indicate that the QM Cards will be used for required flow instead of desired flow. The constant desired flow is shown in field 3 of the CP Card for dummy location 212. Table 10 (Run 6) illustrates the input data where both required and desired flows vary monthly.

<u>Period varying required and desired flow</u>. Tables 11, 12, and 13 illustrate the manner of specifying period by period desired and required flows. Each period is assigned a minimum flow value on an MR Card. In Table 11 (Run 7) the desired flow varies by period and the required flow is a constant 100 cfs. When required flows vary by period and desired flows are also used then a fictitious (dummy) control point must be specified because there is only one MR array and it is normally used by the desired flow. The use of dummy control points is illustrated in Tables 12 (Run 8) and 13 (Run 9). As in the monthly varying illustration (Tables 9 and 10) a -1 in field 4 of the CP Card is required to indicate period varying required flows.

<u>Seasonally varying required and desired flows</u>. In addition to desired or required flows varying monthly, the user can also specify a seasonal rule curve to vary required or desired flows. Figure 4, Table 15 (Run 11) illustrate this option. This example, using additional RL cards and a CS card, also shows a conservation pool varying by season, though this is not required to vary the releases seasonally. The CS card for location 213 defines the seasons for each year (for the CG and QM cards) and the CG card specifies the elevations corresponding to the defined seasons. Each minimum desired flow given on the QM card corresponds to one seasonal guide curve on the CG card. To vary required flows instead of desired flows, use a -1 in field 4 of the CP card as previously illustrated for monthly varying flows (Tables 9 and 10).

Seasonally varying conservation and buffer pools.

Table 14 (Run 10) and Figure 3 illustrate the option of varying storage allocation levels which change during the year. Additional RL cards are required for each level; the first field of the additional RL card indicates the reservoir level number; field 2 is the control point number, the varying storages are given on fields 5-10. A second additional RL card with storages in fields 5-10 can be used if more than six storages are required. Seasons are specified on the CS card if the seasons are not monthly: field one indicates the number of seasons, (maximum of 11), Fields 2-19 are the cumulative number of days from the beginning of the calendar year for each season which correspond to the storages on the additional RL cards. This example illustrates a common method of storage allocation in the west where less flood control storage is required in the dry summer months, thereby increasing the top of conservation pool (level 3, Jl.4) and top of buffer pools (level 2, Jl.6).

Diversion Options

Diversions allow water to be withdrawn from the main surface system to meet water supply needs elsewhere. There are three characteristics of a diversion which need to be specified: location, magnitude, and timing of source and return flow. A number of options exist for specifying each and these will be described and illustrated in the subsequent sections.

Diversions may be made at reservoirs and at downstream control points. Only one diversion can be made from a given location, but any number of diversions can return to a given location. Return flows must be downstream of the point of withdrawal (i.e., cards later in sequence) unless a special pumping option is specified (DR.7=-4). Both diversion and return flow locations must be designated as control points. Seepage from a river can be simulated by specifying a series of diversions at discrete control points along the river. The amount diverted at each point would equal the seepage rate for the reach of river represented by the point.

The magnitude of water diverted and returned may be expressed in several ways. It may be a direct quantity unrelated to anything except the water needs supplied by the diversion. Alternately, diversion may be a function of the flow at the control point; a function of the reservoir storage where water is diverted at a reservoir; or a function of off-peak energy in pumped storage projects. These options provide flexibility in relating diversions to in-stream and in-reservoir conditions.

Return flow is commonly expressed as a percentage of the diversion. This is usually adequate since what is returned is often a function of what is diverted. Thus, a 20% return could apply to each time period whether the diversion is constant, varies monthly, or by period. An additional characteristic of timing is the time lag or routing desired for return flow. When diverted flow travels out of the river and eventually returns, it may travel at a different rate than the river flow traveling from the diversion point to the return flow point. Consequently, routing criteria for the diverted flow may be specified on the DR card (only linear routing criteria can be used).

<u>Constant diversion</u>. Table 16 (Run 12) illustrates the use of the DR Card (field 8) to specify a constant diversion of 150 cfs each time period. A return flow of 20% is also specified (field 6). The flow is diverted at control point 4 and returned at control point 213 (fields 1 and 2). No routing is used either between the two control points or for the diversion (field 3, RT Card and DR Card).

<u>Monthly varying diversion</u>. A diversion varying by month may be specified by using the QD Card. This is illustrated in Table 17 (Run 13). Twelve monthly flow values are specified on the QD Cards beginning with January (Field 2, Jl Card). As shown in Table 17, field 7 of the DR Card is used to indicate that monthly diversions will be specified on QD cards for control point 213.

<u>Period varying diversion.</u> Period by period diversions are specified by using a -5 in field 7, DR Card. In this option the QD Cards, with period varying diversions, are inserted after the BF Card. Table 18 (Run 14) shows the input data for this option.

<u>Diversion as a function of reservoir storage</u>. Diversions are sometimes a function of reservoir storage. Such diversions must be at a reservoir and return flow must be downstream. Field 7 of the DR Card is used to indicate that diversions will be a function of storage. The value -2 is entered in field 7. The diversion rates are specified on the RD Card for corresponding storages on the RS Card. Table 19 (Run 15) illustrates this capability.

<u>Diversion of flood waters at a reservoir</u>. A variation of the reservoir storage option is to divert excess flood waters above the top of conservation pool. This may be specified in field 1 of the RD Card with a -1. This option can be useful in considering artificial recharge using flood waters. Using this option the quantity which may be diverted can be limited by the capacity of the diversion outlet. Also, in making the decision on how much to divert, the reservoir first meets the desired and required flow requirements at the reservoir (CP4). Example input are shown in Table 20 (Run 16).

<u>Diversion as a function of inflow</u>. Where it is desired to specify diversions at a control point as a function of inflow, a table of inflow versus diversion needs to be specified. In HEC-5 the diversion as a function of inflow option is indicated by a -1 in field 7, DR Card and the table of inflows and diversions are specified on the QS and QD Cards respectively. Table 21 (Run 17) illustrates the data required . Inflows at the control point are compared with data on the QS Card and corresponding diversion flows are determined from data on the QD Cards.

Diversion options also exist for pumping-diversion and an off-peak energy and pump-back storage diversion.

Optimization Options

In water supply planning it is often desired to know the minimum conservation storage required to meet reservoir or downstream flow and diversion requirements. The solution is an iterative process of assuming different storage volumes until the minimum storage is found that will meet requirements. The inverse is also common. Given a fixed storage volume, what is the maximum desired flow, required flow, or diversion which the reservoir will yield? In this case two of the three requirements are held fixed while the third is varied until the maximum is reached for a given reservoir storage. The maximum desired flow, for example, can be determined while holding the required flow and diversion constant.

The foregoing task of finding minimum conservation storage or maximum yield (desired flow, required flow or diversion) is handled in HEC-5 through its optimization capability. In addition to water supply yield the program can optimize monthly firm energy and monthly plant factors for hydropower. The time interval of inflow for optimizing must be monthly. Also, only single reservoirs or up to four independent reservoirs in a system can be optimized. Each reservoir must be optimized for its own independent set of flow requirements or conservation storage. At this time tandem reservoirs cannot be derived automatically in the same run. Optimization of an upstream reservoir for yield at a downstream control point can be accomplished in the March 1985 version of the program. <u>Optimization period options</u>. The same options for selection of the simulation period discussed under "Simulation Period Options" are available using the optimization capability. These are period-of-record, partial record, and critical period. Period of record and partial record options are specified using the BF Card discussed previously. For the critical period, the options are specified on the J7 Card, Field 8 instead of on the J3 Card for non-optimizing runs (See Table 22, Run 18). These options include: specifying the time periods desired for the simulation run; specifying a monthly reservoir drawdown duration; and specifying a duration equal to 70 times the ratio of conservation storage to mean annual flow. These are referred to as the "critical period" options.

In addition to the options described in the preceding paragraph, there also exists the capability to simulate using several combinations of critical period and period of records simulations. For this option, a code is input in field 9, J7 Card (See Table 22). Five such options exist and are summarized below, however, it is strongly recommended that code 6 be used.

OPTIMIZATION OPTIONS FOR COMBINATIONS OF PERIODS

Simulation Periods

Indicator (Field 9, J7 Card)

dutor (ritera b) or duruf	<u></u>
0, 1	Optimize for period of record (flow data on IN Cards)
2	Optimize for critical period and period of record
3	Optimize for critical period and check with period of record (1 cycle)
4	Optimize for critical period, check with period of record; adjust critical period; optimize for adjusted critical period and check with period-of-record (2 cycles).
6	Make three cycles of adjusting, optimizing and checking as opposed to one and two cycles, as described above. (Recommended option)

These options allow for both critical period and period of record simulation. A check is made to see if the optimal storage (or flow, or diversion) computed for the assumed critical period can be maintained for the period of record. If the assumed critical period is in fact, the true critical period then the firm yield can be maintained for the period-of-record. If the drawdown using the period-of-record is greater than the drawdown using the assumed critical period, and not within the specified allowable error, then a new critical period is selected and the storage optimized. This capability also applies to optimizing desired flow, required flow and diversion. Optimization of reservoir conservation storage. Table 22 (Run 18) illustrates the use of the J7 Card to specify the optimization routine for conservation storage. In field 1 a value of 4.0 specifies the location where optimization is to take place (control point 4), and that conservation storage above the top of buffer pool will be optimized (specified by .0.). Field 8 (value of 2) specifies the optimization will start with an initial critical duration equal to 70 times the ratio of conservation storage to mean annual flow. An allowable error ratio (positive and negative) of .05 is specified in field 10. This is the ratio of the storage error (difference between the target drawdown storage and the minimum storage in the simulation) to the total conservation storage above the target drawdown storage.

When reservoir storage is being optimized, the desired and required flow requirements may be specified for either the reservoir or a downstream control point. When optimizing for any yield (required or desired flow or diversions), the water yield being optimized is <u>at</u> the reservoir unless the downstream control point (J7. field 5) is specified.

The methodology used to optimize conservation storage is described and illustrated in Appendix A.

Optimization of desired flow. This optimization option determines the maximum desired flow available during the critical period or period of record given a specified volume of conservation storage. Other system requirements such as diversions and required flow are met as specified. Note however, that required flow is not competitive with desired flow because it is not drawn upon until the storage reaches the top of buffer at which time desired flow is no longer met.

Table 23 (Run 19) illustrates the input and output for this option. In field 1 of the J7 card a 4.2 is specified which indicated the desired flow (.2) at control point 4 (4.) will be optimized. The other input on the J7 Card are the same as used for the storage optimization. The monthly varying desired flow to be optimized is specified using the QM Card. Constant and period varying desired flow may also be optimized.

Table 24 (Run 20) illustrates input data necessary to optimize desired flow when it is varied by period. Data on the J7 Card remain unchanged from that described in the previous paragraph. The desired flows are required as input on the MR Cards in order to provide an initial estimate of the optimal flows and as a pattern for determining the optimal ratios of the MR Card values.

Optimization of required flow. This option determines the maximum required flow for the critical period or period of record that can be maintained through the period of historical flow data given a specified volume of conservation storage. Other system requirements such as diversions and desired flows are met as specified. Table 25 illustrates the input required on the J7 Card to specify this option (Run 21). The 4.3 in field 1 specifies optimization of required flow at control point 4. The other input on the J7 Card are the same as for the storage optimization. An initial estimate of 200 cfs for the required flow (constant for each period) is input on the CP Card, field 4. Monthly and period varying required flow may also be optimized.

Optimization of monthly diversion. Optimization of diversion determines the maximum diversion flow for the critical period or period of record. A given volume of conservation storage, with other system requirements being met, is specified. Both desired and required flow requirements may be competitive with diversions since the diversion requirement applies to storage above and below the buffer level.

Table 26 (Run 22) shows the input required on the J7 Card. A 4.4 is used in field 1 to specify optimization of diversion (.4) at control point 4 (4.). The other input data on the J7 Card are the same as for the preceding optimization runs. An initial estimate of the monthly varying diversion is input on the QD Card. Subsequent estimates for the optimal values will be proportional to these initial estimates.

Optimization of all reservoir yields. By specifying a 4.9 in field 1 (Table 27, Run 23) of the J7 Card, all yields i.e., desired flow, required flow and diversion, are optimized for a given storage at the reservoir. Each of the yields is multiplied iteratively by the same constant until the drawdown storage is within the target error specified. All yields must be at the reservoir.

<u>Optimization at a downstream control point</u>. In addition to optimization of reservoir yields at the reservoir, yield can also be optimized at a downstream control point. This option is available in the March 1985 program version and is accomplished by inputting the downstream control point number to be optimized in field 5 of the J7 card.

Multiple Reservoir System Simulation

Basic system specifications. A multiple reservoir system is made up of individual reservoirs which operate either independently or in conjunction with the other reservoirs. The requirements for computer simulation are the same as for single reservoirs with the added requirement of linking the individual reservoirs together as required for system operations. The descriptions and examples for single reservoirs presented earlier in this document apply also to multiple reservoir systems. Linkages between reservoirs are additional specifications which are added to the single reservoir cards. To illustrate the input data necessary for a multiple reservoir system consider the three reservoir are shown in Figure 5. Storage levels and volumes for each reservoir are shown in Figure 6. To simulate the operation of this system using HEC-5 the input data listed in Table 28 (Run 24) was prepared. Note that all flows and volumes are in metric units (Field 1, Jl Card). Parallel reservoir operation. Reservoirs are in parallel when they are on different streams above a common control point. All parallel reservoirs that are operated for a common downstream control point are operated as a system. In Figure 5 reservoir 2 is in parallel with reservoir 3. Reservoir 1 operates independently of reservoir 3; reservoir 2 operates with reservoir 3 to meet the requirements of control point 4. The operating criteria used by HEC-5 for parallel reservoirs can be illustrated by the system in Figure 5. Reservoir 3 will meet its own flow requirements and make releases for control point 4. Reservoir 2 will do the same. In operating jointly reservoirs 2 and 3 will make releases for control point 4 such that their levels are nearly the same at the end of each period. Releases are made from reservoirs beginning with the highest level. Thus, in Figure 6 releases are not made from reservoirs 1 and 3 until reservoir 2 reaches level 4, since reservoir 2 has storage in zone 4-5 and the other reservoirs do not.

Tandem reservoir operation. Reservoirs are in tandem when two or more reservoirs are on the same stream. They may operate independently of one another or as a reservoir system. In Figure 5 reservoirs 1 and 2 are in tandem with each other, reservoir 1 operates for downstream reservoir 2 and reservoir 2 operates for control point 4. Using HEC-5, two options are available for balancing the storage levels between reservoirs 1 and 2 (J2 Card. field 4). The first uses the storage index level for the downstream reservoir, the second the equivalent index level for the two tandem reservoirs. The equivalent index level is determined by weighting the level of each reservoir in a subsystem by the storage in the reservoir to determine a storage-weighted level for the subsystem. For the current time period the upstream tandem reservoir (reservoir 1) attempts to release water to draw its level to the previous period's index level (or equivalent level under option 2) for reservoir 2. With releases from reservoir 1 known for the current period, releases from reservoir 2 can be determined. The objective is to meet downstream flow requirements and keep the tandem reservoirs in balance. Depending upon the storage and flow requirements for the reservoirs this balancing may occur immediately or may take several time periods. The HEC-5 users manual presents an equivalent reservoir example.

Simulation of complicated water supply systems. When simulation results for complicated water supply models indicate shortages in meeting minimum flow demands while water supply storage exists in the system, a recycle option in HEC-5 (J2 card, field 4, include 32 in sum), can be used to provide better results. This code causes the program to recycle through the solution process twice (instead of once). It is suggested that this option be applied only when water supply simulation results are unsatisfactory, producing reservoir release error messages. Output error messages must be requested by including 4 (output error check) in the sum of values on the J3 card, field 1. For analyses it is helpful to request user-defined output tables with J8 cards which include a listing of shortages (codes .06, .08, and .31), for each control point with minimum flow or diversion requirements. The execution time for HEC5A may be increased by 100% by using this recycle option; it is suggested that it be used only after a complete review of the output indiates shortages are occurring. This option is available in the March 1985 version of the program and documented in the January 1985. Exhibit 8 of the HEC-5 Users Manual.

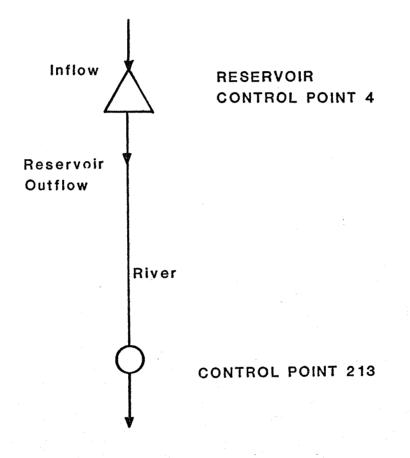


Figure 1. SINGLE RESERVOIR WATER SUPPLY SYSTEM

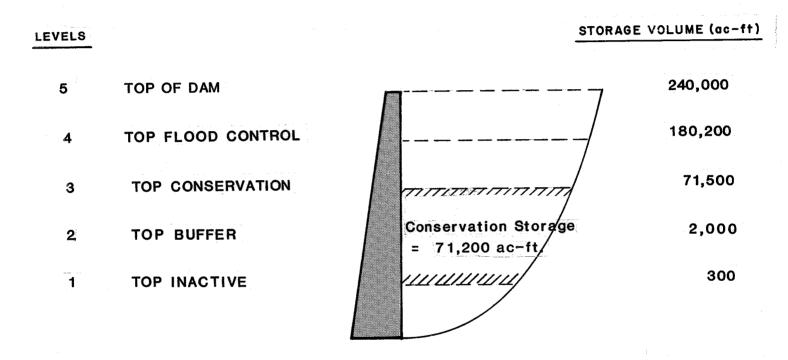
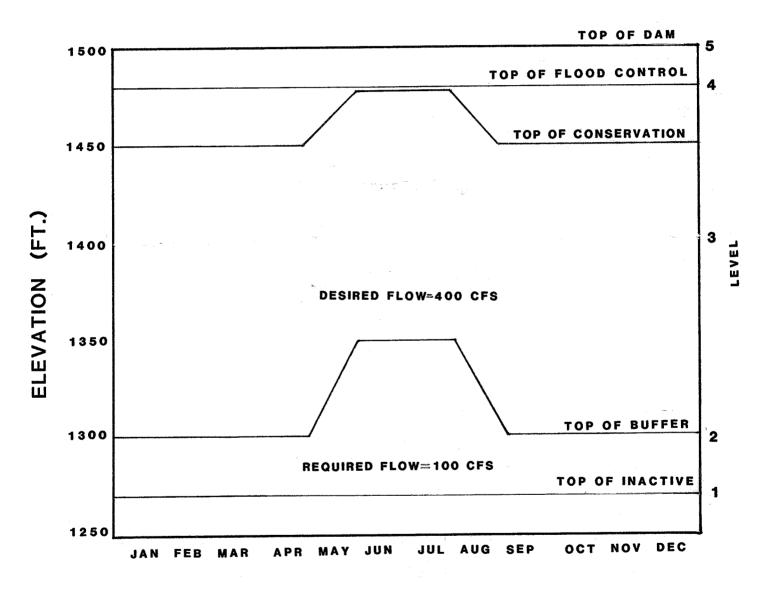


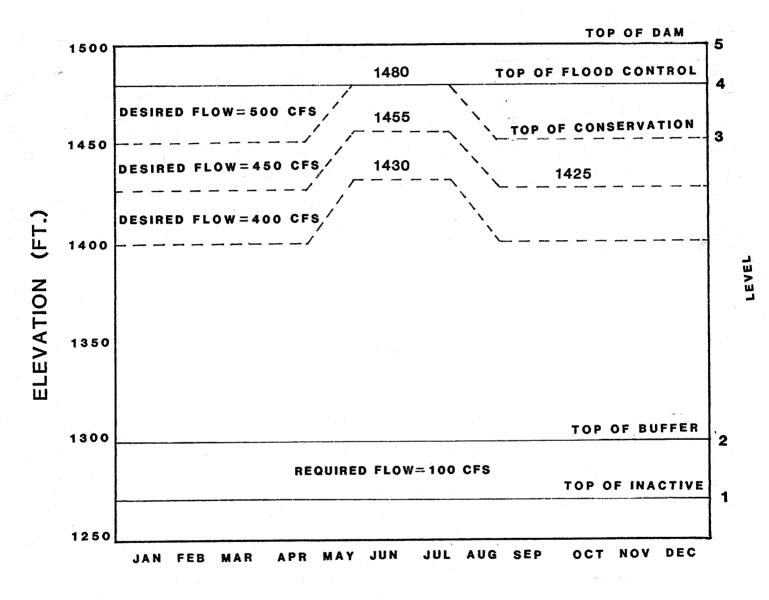
Figure 2. RESERVOIR STORAGE LEVELS AND VOLUMES



MONTH

Figure 3. SEASONALLY VARYING CONSERVATION

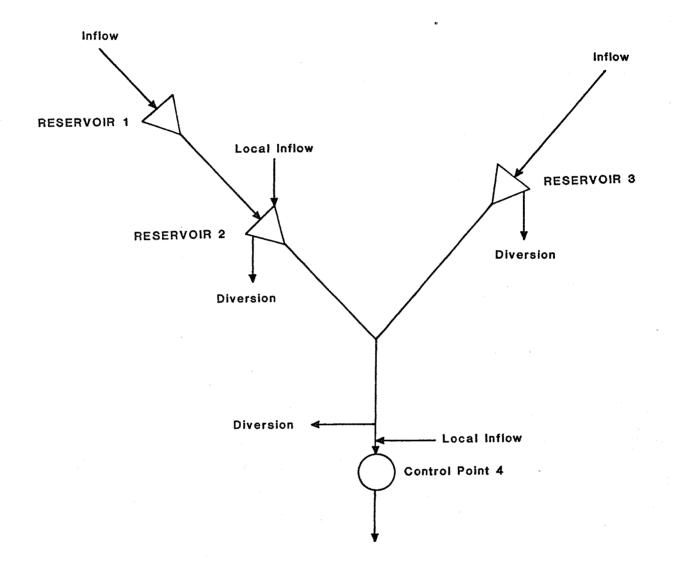
AND BUFFER POOLS



MONTH



15

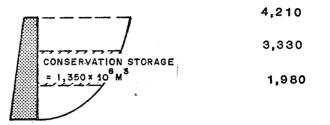




VOLUME (10⁶ M³)

LEVELS

6	Top Flood Control
5,4	Top Conservation
3, 2, 1	Top Buffer
	(= Top Inactive)



RESERVOIR 1

6	Top Flood Control	M	6,670
5	Tcp Conservation		3,760
4		CONSERVATION	3,320
3,2	Top Buffer	STORAGE 1,170 × 10 ⁶ M ³	2,880
1	Top Inactive		2,590
			-

RESERVOIR 2

6	Top Flood Control	m 7	2,440
5,4	Top Conservation		1,540
3		CONSERVATION	1,325
2	Top Buffer	570 × 10 ⁶ M ³	1,110
1	Top Inactive		970

RESERVOIR 3

Figure 6 THREE RESERVOIR STORAGE LEVELS AND VOLUMES

Reservoir Elevation, Area, Storage, Outflow Data

		Reservoir	
<u>Elevation (ft.)</u>	Area (Acre)	<u>Storage (acre-feet)</u>	Outflow (cfs)
1250.	0	0	0
1265.	20.	150.	100.
1280.	40.	580.	100.
1300.	80.	2000.	9000.
1325.	185.	5380.	10500.
1350.	350.	12020.	12000.
1370.	587.	21410.	13000.
1390.	800.	35560.	14000.
1410.	1040.	54300.	15000.
1430.	1390.	78340.	16000.
1450.	1830.	110,690.	17000.
1454.	1922.	118,140.	30000.
1458.	2014.	126,000.	54000.
1462.	2106.	134,200.	86000.
1466.	2198.	142,800.	128000.
1469.	2267.	149,700.	160000.
1472.	2336.	156,500.	198000.
1481.	2500.	180,200.	218000.

Monthly Reservoir Net Evaporation (inches)

<u>Jan</u>	Feb	Mar	<u>Apr</u>	May	Jun	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>0ct</u>	Nov	Dec
-1.59	-1.54	-2.03	-2.39	-0.52	-0.36	-0.54	40	-0.02	0.52	-2.63	-2.38

TABLE 3

Monthly Desired Flow, Required Flow and Diversion (cfs) Control Point 213

	<u>Jan</u>	<u>Feb</u>	Mar	Apr	May	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	Nov	Dec
Desired Flow	420	440	480	500	520	540	550	530	49 0	440	410	400
Required Flow	100	120	130	140	150	150	140	130	120	110	100	100
Diversion	150	140	120	100	100	100	100	100	100	100	140	150

MONTHLY RESERVOIR INFLOW (cfs) (Period l = Oct 1927; Period l20 = Sep 1937)

<u>Date</u>	P	eriod	Inflow	<u>Date</u>	<u>Pe</u>	eriod	Inflow	<u>Date</u>	Period	<u>Inflow</u>
0ct 1	927	1	1222.	Feb		41	669.	Jun	81	194.
Nov		2	1268.	Mar		42	878.	Jul	82	171.
Dec		3	497.	Apr		43	804.	Aug	83	513.
Jan 1	982	4	733.	May		44	367.	Sep	84	424.
Feb		5	647.	Jun		45	420.	0ct	85	620.
Mar		6	1385.	Jul		46	206.	Nov	86	1219.
Apr		7	999.	Aug		47	145.	Dec	87	566.
May		8	1365.	Sep		48	74.	Jan	1935 88	354.
Jun		9	1308.	0ct		49	80.	Feb	89	1044.
Jul		10	360.	Nov		50	133.	Mar	90	763.
Aug		11	282.	Dec		51	475.	Apr	91	545.
Sep		12	176.	Jan	1932	52	433.	May	92	388.
Oct		13	193.	Feb		53	530.	Jun	93	1177.
Nov		14	261.	Mar		54	1106.	Jul	94	252.
Dec		15	481.	Apr		55	506.	Aug	95	187.
Jan 1	929	16	431.	May		56	513.	Sep	96	179.
Feb		17	1130.	Jun		57	276.	Oct	97	872.
Mar		18	1230.	Jul		58	130.	Nov	98	697.
Apr		19	810.	Aug		59	77.	Dec	99	613.
May		20	283.	Sep		60	429.	Jan	1936 100	331.
Jun		21	163.	0ct		61	1205.	Feb	101	3094.
Jul		22	150.	Nov		62	400.	Mar	102	820.
Aug		23	208.	Dec		63	438.	Apr	103	354.
Sep		24	608.	Jan	1933	64	526.	May	104	268.
Oct		25	614.	Feb		65	909.	Jun	105	126.
Nov		26	553.	Mar		66	1224.	Jul	106	65.
Dec		27	524.	Apr		67	655.	Aug	107	43.
Jan 19	930	28	475.	May		68	348.	Sep	108	140.
Feb		29	760.	Jun		69	212.	0ct	109	172.
Mar		30	891.	Jul		70	1032.	Nov	110	560.
Apr		31	491.	Aug		71	1237.	Dec	111	1004.
May		32	575.	Sep		72	524.		1937 112	859.
Jun		33	317.	0ct		73	385.	Feb	113	679.
Jul		34	105.	Nov		74	354.	Mar	114	1282.
Aug		35	94.	Dec		75	712.	Apr	115	793.
Sep		36	75.		1934	76	139.	May	116	364.
Oct		37	76.	Feb		77	459.	Jun	117	270.
Nov		38	102.	Mar		78	1195.	Jul	118	319.
Dec		39	124.	Apr		79	550.	Aug	119	224.
Jan 19	931	40	164.	May		80	307.	Sep	120	753.

Ţi	SINGLE RE * BASIC #	SERVOIR	WATER SU	PPLY SYS	TEM Run				
T2 T3	MONTHLY P				20 PERIO				
J1	1	5	3	4	2				
J3 J6 -1.5	6 10 -1 EA	-2.03	-2.39	-0.52	1 -0.36	-0.54	40	0.02	0.52
J6 -1.1 J6 -2.0	59 -1.54 53 -2.38	-2.03	-2.37	-0.52	-0.30	-0.04	~, 40	V. V4	V: J4
JB 4.	4.22	4.13	4.12	4.10	213.05	213.06	213.07	213.08	213.04
RL	4 71500	300	2000	71500	180200	240000			
RO	1 213 18 0	150	580	2000	5380	12020	21410	35560	54300
RS RS 7834		118140	126000	134200	142800	149700	156500	180200	34300
	18 0	600	1000	9000	10500	12000	13000	14000	15000
RQ 160	0 17000	30000	54000	86000	128000	160000	198000	218000	
RA	18 0	20	40	80	185	350 2267	587	800 2500	1040
RA 13 RE	70 1830 18 1250	1922 1265	2014 1280	2106 1300	2198 1325	1350	2336 1370	1390	1410
RE 14	so 1450	1454	1458	1462	1466	1469	1472	1481	
CP	4 8500								
ID RES	NO.4								
RT CP 23	4 213 3 12000	400	100						
ID C.P.	. 213	700	100						
RT 21	3								
ED				****		720			
BF IN	2 120 40CT 1927		4	7100100		120			
ÎN 12	1268	497	733	647	1385	999	1365	1308	360
IN 21	32 176	193	261	481	431	1130	1230	810	283
IN 1	53 150	208	608	614	553 75	524	475 102	760 124	891 164
IN 49 IN 60	71 575 59 878	317 804	105 367	94 420	206	76 145	74	80	133
IN 41	75 433	530	1106	506	513	276	130	77	429
IN 12	400	438 385	526	909 712	1224	655	348	212	1032
IN 12 IN 19	57 524 74 171	385 513	354 424	712 620	139 1219	459 566	1195 354	550 1044	307 763
IN 5	5 388	1177	252	187	177	872	697	613	331
IN 30	94 820	354	268	126	65	43	140	172	560
IN 10)4 859	679	1282	793	364	270	319	224	753
EJ Er									
<u>6</u> 11							1		

21

T1 T2 T3	¥	PARTIA	SERVOIR NL RECORD "Low 1927	SIMULAT	ION * Cord (1	RU 20 PERIO	IN2 IDS)			
31		1	5	3	4	2				
J3 J6 J6	6 -1.59 -2.63	-1.54 -2.38	-2.03	-2.39	-0.52	1 -0.36	-0.54	40	0.02	0.52
J8 RL	4.11	4.22 71500	4.13 300	4.12 2000	4.10 71500	213.05 180200	213 .06 240000	213.07	213.08	213.04
RO RS RS	i 18 78340	213 0 110690	150 118140	580 126000	2000 134200	5380 142800	12020 149700	21410 156500	35560 180200	54300
RQ R Q	18 16000	0 17000	600 30000	1000 54000	9000 86000	10500 128000	12000 160000	13000 198000	14000 218000	15000
RA	18	0	20	40	80	185	350	587	800	1040
RA Re	1390 18	1830 1250	1 922 1265	2014 1280	2106 1300	2198 1325	2267 1350	2336 1370	2500 1390	1410
RE CP	1430 4	1450 8500	1454	1458	1462	1466	1469	1472	1481	
ID RT CP ID RT ED	RES NO 4 213 C.P. 2 213	.4 213 12000	400	100						
BF	2	120		2	7100100	60	720			
IN IN IN IN IN IN IN IN IN IN IN IN EJ	40 1222 282 163 491 669 475 1205 1237 124 545 3094 1004	CT 1927 1268 176 575 878 433 400 524 171 388 820 859	497 193 208 317 804 530 438 513 513 1177 354 679	733 261 608 105 367 1106 526 354 424 252 268 1282	647 481 614 94 506 909 712 620 187 126 793	1385 431 553 75 206 513 1224 139 1219 1219 1219 5364	999 1130 524 76 145 276 655 455 566 872 43 270	1365 1230 475 102 74 130 348 1195 354 697 140 319	1308 810 760 124 80 77 212 550 1044 613 172 224	360 283 891 164 133 429 1032 307 763 331 560 753

T1 T2 T3	ŧ	CRITIC	SERVOIR AL PERIO LON 1927	D SIMULA	TION *	TEM RUN 3 20 PERIO	DS)			
J1		1	5	3	4	2	_			
]3	6_				-10.060]			
Jó	-1.59	-1.54	-2.03	-2.39	-0,52	-0.36	-0.54	40	0.02	0.52
J6 J8	-2.63	-2.38 4.22	4.13	4.12	4.10	213.05	213.06	213.07	213.08	213.04
RL	7111	71500	300	2000	71500	180200	240000	210.07	210.00	210.04
RŌ	ī	213	~~~	2000	/ 1000	104744	47VVVV			
RŠ	18	ĨÕ	150	580	2000	5380	12020	21410	35560	54300
RS	78340	110690	118140	126000	134200	142800	149700	156500	180200	
RQ	18	0	600	1000	9000	10500	12000	13000	14000	15000
RQ	16000	17000	30000	54000	86000	128000	160000	198000	218000	
RA	18	0	20	40	80	185	350	587	800	1040
RA	1390	1830	1922	2014	2106	2198	2267	2336	2500	
RE RE	18 1430	1250 1450	1265 1454	1280 1458	1300 1462	1325 1466	1350 1469	1370 1472	1390 1481	1410
CP	1430	8500	1434	1430	1402	1400	1407	14/2	1401	
ID	RES NO									
ŔŤ	4	213								
ĈP	213	12000	400	100						
ID	C.P. 2									
RT	213									
ED	-			-						
BF	2	120		2	7100100		720			
IN IN	40 1222	CT 1927 1268	497	777	1.87	1385	999	1365	1308	360
IN	282	176	193	733 261	647 481	431	1130	1230	810	283
IN	163	150	208	608	614	553	524	475	760	891
ÎN	491	575	317	105	94	75	76	102	124	164
ĪN	669	878	804	367	420	206	145	74	80	133
IN	475	433	530	1106	506	513	276	130	77	429
IN	1205	400	438	526	909	1224	655	348	212	1032
IN	1237	524	385	354	712	139	459	1195	.550	307 763
ÎN	194	171	513	424	620	1219	566	354	1044	703
IN IN	545 3094	388 820	1177 354	252 268	187 126	179 65	872 43	697 140	613 172	331 560
IN	1004	859	679	1282	793	364	270	319	224	753
ÊĴ	4444	ww/	977	1472	//0	447	tar V	v #1		
ĒR										

T1 T2 T3 J1	H	DESIRED	SERVOIR FLOWS V LOW 1927 5	ARIED MO	NTHLY. R	EQUIRED 20 PERIO 2	FLOWS CO DS)	INSTANT #	RUN 4	
12 12	-1.59	-1.54	-2.03	-2.39	-0.52	1 -0.36	-0.54	40	0.02	0.52
J8 RL RO	-2.63 4.11 4	-2.38 4.22 71500 213	4.13 300	4.12 2000	4.10 71500	213.05 180200	213.06 2 400 00	213.07	213.08	213.04
RS RS		0 110690	150 118140	580 126000	2000 134200	5380 142800	12020 149700	21410 156500	35560 180200	54300
RQ	18	0	600 30000	1000 54000	9000 86000	10500 128000	12000 160000	13000 198000	14000 218000	15000
RA	18 1390	0 1830	20 1922	40 2014	80 2106	185 2198	350 2267	587 2336	800 2500	1040
RE	1370 18 1430	1250 1450	1265 1454	1280 1458	1300 1462	1325 1466	1350 1469	1370 1472	1390 1481	1410
CP	4	8500	1404	1438	1902	1400	1407	14/2	1401	
	RES NO	213	·							
CP ID	213 C.P. 2 213	12000 13		100						
RT QM QM	213 420 410	440 400	480	500	520	540	550	530	490	440
ED BF	2	120		2	7100100		720			
IN IN IN IN IN IN IN IN EJ ER	40 1222 282 163 491 669 475 1205 1237 194 545 3094 1004	CT 1927 1268 176 575 878 433 400 524 171 388 820 859	497 193 208 317 804 530 438 513 513 1177 354 679	733 261 608 105 367 1106 526 354 424 252 268 1282	647 481 614 94 506 506 709 712 620 187 126 793	1385 431 553 75 206 513 1224 139 1219 179 65 364	999 1130 524 76 145 276 459 566 872 43 270	1365 1230 475 102 74 130 348 1195 354 697 140 319	1308 810 760 124 80 77 212 550 1044 613 172 224	360 283 891 164 133 429 1032 307 763 331 560 753

- -

T1 T2 T3 J1 J3	ł	REQUIRE	SERVOIR D FLOWS Low 1927 5	VARY MON	THLY , D	ESIRED F 20 PERIO 2	LOWS CON IDS)	ISTANT. +	RUN	5
	6 -1.59 -2.63	-1.54 -2.38	-2.03	-2.39	-0.52	-0.36	-0.54	40	0.02	0.52
J8 RL RO	4.11	4.22 71500 212	4.13 300 213	4.12 2000	4. 10 71500	212.05 180200	212.06 240000	213.07	213.08	213.04
RS	18 78340	0	150 118140	580 126000	2000 134200	5380 142800	12020 1 4 9700	21410 156500	35 56 0 180200	54300
RQ	18	0	600	1000	9000	10500	12000	13000	14000	15000
RQ	16000	17000	30000	54000	86000	128000	160000	198000	218000	****
RA Ra	18 1390	0 1830	20 1922	40 2014	80 2106	185 2198	350 2267	587 2336	800 2500	1040
RE	18	1250	1265	1280	1300	1325	1350	1370	1390	1410
RE	1430	1450	1454	1458	1462	1466	1469	1472	1481	
CP ID	4 Res No	8500								
RT	ALD NU	212								
	212 C.P. 2	12000	400							
RT	212	213								1
CP ID	213 C.P. 2	12000		-1						
RT	213									
QM	100	120	130	140	150	150	140	130	120	110
ED	100	100								
BF In		120 CT 1927			7100100		720			
IN IN	1222 282	1268 176	497 193	733 261	647 481	1385 431	999 1130	1365 1230	1308 810	360 283
	163	170	208	608	481 614	431 553	524	475	760	283 891
ÎN	491	575	317	105	94	75	76	102	124	164
IN	669	878	804	367	420	206	145	.74	80	133
IN IN	475 1205	433 400	530 438	1106 526	506 909	513 1224	276 655	130 348	77 212	429 1032
IN	1237	524	385	354	712	139	459	1195	550	307
IN	194	171	513	424	620	1219	566	354	1044	763
IN	545	388	1177	252	187	179	872	697	613	331
IN IN	3094 1004	820 859	354 679	268 1282	126 793	65 364	43 270	140 319	172 224	560 753
EJ ER	4 * * 7		w; /	****	114	707	27 V	¥4 ?	267	/00

T1 T2 T3 J1 J3	¥ M	IONTHLY	DESIRED	WATER SU And Requ -1937 Re 3	IRED FLO	TEM WS # 20 PERIO 2 1	RUN 6 DS)			
J6	-1.59	-1.54	-2.03	-2.39	-0.52	-0.36	-0.54	-,40	0.02	0.52
J6 J8 RL	-2.63 4.11 4	-2.38 4.22 71500	4.13 300	4.12 2000	4.10 71500	212.05 180200	212.06 240000	213.07	213.08	213.04
RO RS	2 18	212 0	213 150	580	2000	5380	12020	21410	35560	54300
rs Rq	78340 18	110690	118140 600	126000 1000	134200 9000	142800 10500	149700 12000	156500 13000	180200 14000	15000
RQ RA		17000	30000 20	54000 40	86000 80	128000 185	160000 350	198000 587	218000 800	1040
RA	1390	1830	1922	2014	2106	2198	2267	2336	2500	
RE RE	18 1430	1250 1450	1265 1454	1280 1458	1300 1462	1325 1466	1350 1469	1370 1472	1390 1481	1410
CP TD	4 Res No	8500								
RT	4	212								
CP ID	212 Dummy	12000 CP								
RT	212	213	0		***	54A	88A	874	400	
QM QM	420 410	440 400	480	500	520	540	550	530	490	440
CP ID	213 C.P. 2	12000		-i						
RT	213									
QM QM	100 100	120 100	130	140	150	150	140	130	120	110
ED	*									
BF IN	2 40	120 ICT 1927		2	7100100		720			
IN	1222	1268	497	733	647	1385	999	1365	1308	360
IN	282 163	176	193	261 608	481 614	431 553	1130 524	1230 475	810 760	283 891
IN IN	491	150 575	208 317	105	94	75	76	102	124	164
IN	669	878	804	367	420	206	145	74	80	133 429
IN	475	433	804 530	1106	506	513	276	130	77	429
IN	1205	400	438	526	909	1224	655	348	<u>212</u>	1032
IN	1237	524	385	354	712	139	459	1195	550	307
IN	194	171	513	424	620	1219	566	354	1044	705
IN	545		11//	232	18/	1/9			013	331 510
1 N T N	3074 1004	02V 050	504 170	200			43 270	319	1/2 774	753
EJ	1004	507	u//	1644	, , ,	~~~	270		40 4 0 1	
IN IN IN IN IN	475 1205 1237 194 545 3094 1004	433 400 524 171 388 820 859	530 438 385 513 1177 354 679	1108 526 354 424 252 269 1282	506 909 712 620 187 126 793	133 1224 139 1219 179 65 364	278 655 459 566 872 43 270	130 348 1195 354 697 140 319	212 550 1044 613 172 224	427 1032 307 763 331 560 753

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T1 T2 T3 J1	4	DESIRED	FLOWS V	WATER SU Ary by P -1937 re 3	ERIOD #	RU 20 PERIO	IN 7 DS)			
J3 J6	6 -1.59	-1.54	-2.03	-2.39	-0.52	2 1 -0.36	-0.54	40	0.02	0.52
J6	-2.63	-2.38								
J8 RL	4.11	4.22 71500	4.13 300	4.12 2000	4.10 71500	213.05 180200	213.06 240000	213.07	213.08	213.04
RO	ī	213	300				240000			
RS	18	0	150	580	2000	5380	12020	21410	35560	54300
RS RQ	78340 18	110690 0	118140	126000 1000	134200 9000	142800 10500	149700 12000	156500 13000	180200 14000	15000
RQ	16000	17000	30000	54000	86000	128000	160000	198000	218000	
ra Ra	18 1390	0 1830	20 1922	40	80 2106	185	350	587 2336	800	1040
RE	1370	1250	1722	2014 1280	1300	2198 1325	2267 1350	2336	2500 1390	1410
RE	1430	1450	1454	1458	1462	1466	1469	1472	1481	•
CP ID	4 RES NO	8500								
RT	4	213								
	213	12000	0	100						
RT	C.P. 2 213	.15								
ED				-						
BF IN	2	120 ICT 1927		2	7100100		720			
IN	1222	1268	497	733	647	1385	999	1365	1308	360
IN IN	282 163	176 150	193 208	261 608	481 614	431 553	1130 524	1230 475	810 760	283 891
IN	491	575	317	105	94		76	102	124	164
IN	669	878	804	367	420	206	145	74	80	133
IN In	475	433 400	530 438	1106 526	506 909	513 1224	276 655	130 348	77 212	429 1032
IN	1205 1237	524	385	354	712	139	459	1195	550	307
IN	194	171	513	424	620	1219	566	354	1044	763
IN IN	545 3094	388 820	1177 354	252 268	187 126	179 65	872 43	697 140	613 172	331 560
IN	1004	859	679	1282	793	364	270	319	224	753_
MR	2130 200	CT 1927 190	180	170	160	170	160	150	155	140
MR	110	120	115	145	155	120	110	140	110	125
MR	110	140	160	180	175	165	150	140	145	155
MR MR	170 160	180 145	190 150	195 110	400 120	190 110	180 145	185 120	175 140	165 150
MR	110	115	140	145	120	115	100	110	105	110
MR	120	125	120	225	225	245	240	255	260	270
HR MR	110 160	125 145	240 150	260 110	265 120	255 110	265 145	270 120	260 140	255 150
MR	110	115	140	145	120	115	100	110	105	110
MR MR	120 110	125 125	120 240	225 260	225 265	245 255	240 265	255 270	260 260	270 255
EJ	110	120	240	200	203	200	203	2/0	200	200

EJ ER

T1 T2 T3 J1	* M	REQUIRE	D FLOWS	WATER SU Vary by -1937 re 3	PERIOD #	RL 20 PERIO 2	IN B (DS)			
J3 J6	-1.59	-1.54	-2.03	-2.39	-0.52	1 -0.36	-0.54	40	0.02	0.52
J6 Je Rl Rc	4.11	-2.38 4.22 71500 212	4.13 300 213	4.12 2000	4.10 71500	212.05 180200	212.06 240000	213.07	213.08	213.04
RS	18	0 110690	150 118140	580	2000	5380	12020	21410	35560	54300
RG	18	0	600	126000 1000	134200 9000	142800 10500	149700 12000	156500 13000	180200 14000	15000
RO Ra		17000	30000 20	54000 40	86000 80	128000 185	160000 350	198000 587	218000 800	1040
RA	1390	1830	1922	2014	2106	2198	2267	2336	2500	
RE Re	18 1430	1250 1450	1265 1454	1280 1458	1300 1462	1325 1466	1350 1469	1370 1472	1390 1481	1410
CP	4	8500	1101	1700		4 700	1797	17/2	1701	
ID RT	RES NO	.4 212								
	212	12000	400							
ID RT	DUMMY 212	CP 213								
CP	213	12000		-1						
ID Rt	C.P. 2 213	13								
ED	214									
BF	2	120 T 1927		21	7100100		720			
IN IN	2 40 1222	CT 1927 1268	497	733	7100100 647	1385	720 999	1365	1308	360
IN In In	2 40 1222 282	CT 1927 1268 176	193	733 261	647 481	431	999 1130	1230	810	283
IN IN IN IN IN	2 40 1222 282 163 491	CT 1927 1268 176 150 575	193 208 317	733 261 608 105	647 481 614	431 553	999 1130 52 4	1230 475	810 760	283 891
IN IN IN IN IN IN	2 401 1222 282 163 491 669	CT 1927 1268 176 150 575 878	193 208 317 804	733 261 608 105 367	647 481 614 94 420	431 553 75 206	999 1130 524 76 145	1230 475 102 74	810 760 124 80	283 891 164 133
IN IN IN IN IN IN	2 401 1222 282 163 491 669 475	CT 1927 1268 176 150 575 878 433	193 208 317 804 530	733 261 608 105 367 1106	647 481 614 94 420 506	431 553 75 206 513	999 1130 524 76 145 276	1230 475 102 74 130	810 760 124 80 77	283 871 164 133 429
IN IN IN IN IN IN IN IN	2 401 1222 282 163 491 669 475 1205 1237	CT 1927 1268 176 150 575 878 433 400 524	193 208 317 804 530 438 385	733 261 608 105 367 1106 526 354	647 481 614 94 420 506 909 712	431 553 75 206 513 1224 139	999 1130 524 76 145 276 655 459	1230 475 102 74 130 348 1195	810 760 124 80 77 212 550	283 871 164 133 429 1032 307
IN IN IN IN IN IN IN IN	2 401 1222 282 163 491 669 475 1205 1205 1237 194	CT 1927 1268 176 150 575 878 433 400 524 171	193 208 317 804 530 438 385 513	733 261 608 105 367 1106 526 354 424	647 481 614 94 420 506 909 712 620	431 553 206 513 1224 139 1219	999 1130 524 76 145 276 655 459 566	1230 475 102 74 130 348 1195 354	810 760 124 80 77 212 550 1044	283 891 164 133 429 1032 307 763
IN IN IN IN IN IN IN IN IN	2 401 1222 282 163 491 669 475 1205 1205 1205 1237 194 545 3094	CT 1927 1268 176 575 878 433 400 524 171 388 820	193 208 317 804 530 438 385 513 1177 354	733 261 608 105 367 1106 526 354 424 252 268	647 481 614 420 506 709 712 620 187 126	431 553 206 513 1224 139 1219 179 65	999 1130 524 76 145 276 655 459 566 872 43	1230 475 102 74 130 348 1195 354 697 140	810 760 124 80 77 212 550 1044 613 172	283 891 164 133 429 1032 307 763 331 560
IN IN IN IN IN IN IN IN IN	2 401 1222 282 163 491 669 475 1237 1237 1237 194 545 3094 1004	CT 1927 1268 176 575 878 433 400 524 171 388 820 859	193 208 317 804 530 438 385 513 1177	733 261 608 105 367 1106 526 354 424 252	647 481 614 94 420 506 909 712 620 187	431 553 206 513 1224 139 1219 179	999 1130 524 76 145 276 655 459 566 872	1230 475 102 74 130 348 1195 354 697	810 760 124 80 77 212 550 1044 613	283 891 164 133 429 1032 307 763 331
IN IN IN IN IN IN IN IN IN IN IN IN IN I	2 401 1222 282 163 491 669 475 1205 1237 194 545 3094 1004 21301 100	CT 1927 1268 176 575 878 433 400 524 171 171 388 820 859 CT 1927 190	193 208 317 804 530 438 385 513 1177 354 679 180	733 261 608 105 367 1106 526 354 424 252 268 1282 170	647 481 614 94 420 506 909 712 620 187 126 793 160	431 553 75 206 513 1224 139 1219 179 65 364 170	999 1130 524 76 145 276 655 459 566 872 43 270 160	1230 475 102 74 130 348 1195 354 697 140 319 150	810 760 124 80 77 212 550 1044 613 172 224 155	283 891 164 133 429 1032 307 763 331 560 753 140
INNINN INNINN INNINN INNINN INN INN MR MR	2 401 1222 282 163 491 669 475 1205 1237 194 545 3094 1004 100 110	CT 1927 1268 176 575 878 433 400 524 171 388 820 859 CT 1927 190 110	193 208 317 804 530 438 385 513 1177 354 679 180 115	733 261 608 105 367 1106 526 354 424 252 268 1282 170 145	647 481 614 94 420 506 909 712 620 187 126 793 160 155	431 553 75 206 513 1224 139 1219 179 65 364 170 110	999 1130 524 76 145 276 655 459 566 872 43 270 160 110	1230 475 102 74 130 348 1195 354 697 140 319 150 140	810 760 124 80 77 212 550 1044 613 172 224 155 110	283 891 164 133 429 1032 307 763 331 560 753 140 115
INNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN	2 401 1222 282 163 491 669 475 1205 1237 194 545 3094 1004 100 110 110 110 170	CT 1927 1268 176 575 878 433 400 524 171 388 820 859 CT 1927 190 110 140 180	193 208 317 804 530 438 385 513 1177 354 679 180 115 160 190	733 261 608 105 367 1106 526 354 424 252 268 1282 170 145 180 195	647 481 614 94 420 506 909 712 620 187 126 793 160 155 175 400	431 553 75 206 513 1224 139 1219 179 65 364 170 110 165 190	999 1130 524 76 145 276 655 459 566 872 43 270 160 110 150 180	1230 475 102 74 130 348 1195 354 497 140 319 150 140 140 185	810 760 124 80 77 212 550 1044 613 172 224 155 110 145 175	283 891 164 133 429 1032 307 763 331 560 753 140 115 155 165
IN IN IN IN IN IN IN IN IN IN IN IN IN I	2 401 1222 282 163 491 669 1237 124 545 3094 1004 21300 100 110 110 110 110 110	CT 1927 1268 176 575 878 433 400 524 171 388 820 859 CT 1927 190 110 140 145	193 208 317 804 530 438 385 513 1177 354 679 180 115 160 190 150	733 261 608 105 367 1106 526 354 424 252 268 1282 170 145 180 195 110	647 481 614 94 506 909 712 620 187 126 793 160 155 175 400 110	431 553 75 206 513 1224 139 1219 179 179 65 364 170 110 165 190 110	999 1130 524 76 145 276 655 459 566 872 43 270 160 110 150 180 145	1230 475 102 74 130 348 1195 354 697 140 319 150 140 140 185 110	810 760 124 80 77 212 550 1044 613 172 224 155 110 110 145 175 140	283 891 164 133 429 1032 307 763 331 560 753 140 115 155 165 155
IN IN IN IN IN IN IN IN IN IN IN IN IN I	2 401 1222 282 163 491 667 1205 1205 1237 124 545 3094 1004 100 100 110 110 110 110 110	CT 1927 1268 176 150 575 878 433 400 524 171 388 820 859 CT 1927 190 110 140 180 145 115	193 208 317 804 530 438 385 513 1177 354 679 180 115 160 190 150 150 150 110	733 261 608 105 367 1106 526 354 424 252 268 1282 170 145 180 195 110 145 115	647 481 614 94 506 909 712 620 187 126 793 160 155 175 400 110 110 115	431 553 75 206 513 1224 139 1219 179 65 364 170 110 165 190 110 115 145	999 1130 524 76 145 276 655 459 566 872 43 270 160 110 150 180 145 145 145	1230 475 102 74 130 348 1195 354 697 140 319 150 140 140 185 110 110 155	810 760 124 80 77 212 550 1044 613 172 224 155 110 145 175 140 105 160	283 891 164 133 429 1032 307 763 331 560 753 140 115 155 165 150 150 150 110 170
IN INN INN INN INN INN INN INN INN INN	2 401 1222 282 163 491 669 475 1237 1237 1237 1237 1237 1237 1237 1237	CT 1927 1268 176 150 575 878 433 400 524 171 388 820 859 CT 1927 190 110 140 180 145 115 115	193 208 317 804 530 438 513 1177 354 679 180 115 160 190 150 140 140	733 261 608 105 367 1106 526 354 424 252 268 1282 170 145 180 195 110 145 115 160	647 481 614 94 506 909 712 620 187 126 793 160 155 175 400 110 110 115 165	431 553 75 206 513 1224 139 1219 179 65 364 170 110 165 190 110 115 145 155	999 1130 524 76 145 276 655 459 566 872 43 270 160 110 150 180 145 100 145	1230 475 102 74 130 348 1195 354 697 140 319 150 140 140 185 110 110 1155 170	810 760 124 80 77 212 550 1044 613 172 224 155 110 145 175 140 105 160 160	283 891 164 133 429 1032 307 763 331 560 753 140 115 155 165 155 165 150 110 110 155
IN I	2 401 1222 282 163 491 669 475 1205 1237 194 545 3094 1004 100 110 110 110 110 110 110 110 1	CT 1927 1268 176 150 575 878 433 400 524 171 388 820 859 CT 1927 190 110 140 140 145 115 115 115 115 115 115 115	193 208 317 804 530 438 385 513 1177 354 679 180 115 160 190 150 140 110 140 110 140 190	733 261 608 105 367 1106 526 354 424 252 268 1282 170 145 180 195 115 160 170 195	647 481 614 94 420 506 909 712 620 187 126 793 160 155 175 400 110 115 165 165 160 400	431 553 75 206 513 1224 139 1219 179 1219 179 65 364 170 110 165 190 110 1155 145 155 155 155 170 190	999 1130 524 76 145 276 655 459 566 872 43 270 160 110 150 180 145 100 140 165 160 180	1230 475 102 74 130 348 1195 354 697 140 319 150 140 140 140 185 110 155 110 155 150 150 150 155 150 155 150	810 760 124 80 77 212 550 1044 613 172 224 155 110 145 175 140 105 160 160 155 175	283 891 164 133 429 1032 307 763 331 560 753 140 115 155 165 155 165 150 110 170 155 140 165
IN IN INNINNINNINNINNINNINNINNINNINNINNINNI	2 401 1222 282 163 491 669 475 1205 1237 1237 124 545 3094 1004 100 110 110 110 110 110 110 110	CT 1927 1268 176 150 575 878 433 400 524 171 388 820 859 CT 1927 190 110 140 180 145 115 115 115 190	193 208 317 804 530 438 513 1177 354 679 180 115 160 190 150 140 110 110 140 180	733 261 608 105 367 1106 526 354 424 252 268 1282 170 145 180 195 110 145 115 115 160 170	647 481 614 94 420 506 909 712 620 187 126 793 160 155 175 400 110 115 165 165 160	431 553 75 206 513 1224 139 1219 179 1219 179 65 364 170 165 190 110 115 145 155	999 1130 524 76 145 276 655 459 566 872 43 270 160 110 150 180 145 100 145 160	1230 475 102 74 130 348 1195 354 697 140 319 150 140 140 140 140 155 110 155 110 155	810 760 124 80 77 212 550 1044 613 172 224 155 100 145 175 140 105 160 160 155	283 891 164 133 429 1032 307 763 331 560 753 140 115 155 165 155 165 150 110 110 155

EJ ER

T1 T2 T3 J1	* PERIOD Monthly	RESERVOIR VARYING DE FLOW 1927 1 5	SIRED AN	D REQUIR		; * DS)	RUN 9		
J3 J6	-1.59 -1.5		-2.39	-0.52	-0.36	-0,54	-,40	0.02	0.52
J6 J8 RL	-2.63 -2.3 4.11 4.2 4 7150	22 4.13 0 300	4.12 2000	4.10 71500	212.05 180200	212 .06 240000	213.07	213.08	213.04
RO RS RS		0 150 0 118140	580 126000	2000 134200	5380 142800	12020 149700	21410 156500	35560 180200	54300
RQ RQ	18 16000 1700		1000 54000	9000 86000	10500 128000	12000	13000 198000	14000 218000	15000
RA Ra	18 1390 183		40 2014	80 2106	185 2198	350 2267	587 2336	800 2500	1040
RE RE	18 125 1430 145		1280 1458	1300 1462	1325 1466	1350 1469	1370 1472	1390 1481	1410
CP ID	4 850 RES NO.4	0							
RT CP	4 21 212 1200								
ID RT	DUMMY CP 212 21								
CP ID	213 1200 C.P. 213		-1						
RT ED	213								
BF	2 12 40CT 192	20	2	7100100		720			
IN	1222 120	68 497	733	647	1385	999	1365	1308	360 283
IN IN	282 17 163 15	50 208	261 608	481 614	431 553	1130 524	1230 475	810 760	891
IN IN	491 57 669 87	78 804	105 367	94 420	75 206	76 145	102 74	124 80	164 133
IN In	475 43 1205 40)0 438	1106 526	506 909	513 1224	276 655	130 348	77 212	429 1032
IN IN	1237 52 194 17		354 424	712 620	139 1219	459 566	1195 354	550 1044	307 76 3
IN IN	545 38 3094 82	38 1177	252 268	187 126	179 65	872 43	697 140	613 172	331 560
IN	1004 B	59 679	1282	793	364	270	319	224	753
MR	200 29 220 22	70 280	270 245	260 255	270 220	260 220	250 240	255 220	240 225
MR	220 24 270 28	10 260	280 295	275 400	265 290	250 280	240 285	245 275	255 265
MR	260 24 220 22	5 250	220 245	220 220	220 225	245 200	220 220	240 205	250 220
MR	220 22	25 220	225	225	245	240	255 270	260 260	270 255
MR	220 22 200 24	70 280	260 270	265 260 255	255 270	265 260	250	255	240
MR MR	220 22 220 24	10 260	245 280	275	220 265	220 250	240 240	220 2 45	225 255
MR MR	270 28 2130CT 192	30 29 0 27	295	400	290	280	285	275	265
MR MR	100 19 110 11	70 180 10 115	170 145	160 155 175	170 110	160 110	150 140	155 110	140 115 155
MR MR	110 14 170 18	10 160 30 190	180 195	400	165	150 180	140 185	145 175	165
MR MR	160 14 110 11	5 150	110 145	110 110	110 115	145 100	110	140 105	150 110
MR	110 11 110 11	15 110	115 160	115 165	110 115 145 155	140 165	110 155 170	160 160	170 155
MR	100 19 170 18	70 180	170 195	160 400	170 190	160 180	150 185	1 55 175	140 165
MR	160 14	15 150	110	110	110	145	110	140	150 110
MR EJ	110 11	140	145	110	115	100	110	105	110

EJ ER

T1 T2 T3 J1		* seasi	RESRVOIR DNALLY VA DW 1929 5	RYING BL Record 3	IPPLY SYS IFFER AND (365 PER 4	CONSERV	ATION PO	IOLS * Run	10	
J2 J3	6			32		1				
6	-1.59	-1.54 -2.38	-2.03	-2.39	-0.52	-0.36	-0.54	40	0.02	0.5
18 RL	4.09	4.38 110690	4.11	4.13	4.22	213.05	213.06	213.07	213.08	213.04
	1 2 3 4 5	4 4 4 4 4	-1 5 -1 -1		300 2000 110690 180200 240000	12020 180000	12020 180000	2000 110690	2000 110690	
0 S	18	213 0	150	580	2000	5380	12020	21410	35560	54300
2	18	110690 0	118140 100	126000 100	134200 9000	142800 10500	156500 12000	180200 13000	240000 14000	15000
	16000 18	17000	30000 20	54000 40	86000 80	128000 185	198000 350	218000 587	218000 800	1040
	1390	1830	1922	2014	2106	2198	2336	2500	2600	
	18 1430	1250 1450	1265 1454	1280 1458	1300 1462	1325 1466	1350 1472	1370 1481	1390 1500	1410
) 5	4 RES 4	8500								
	4	213								
	5 213	120 12000	151 400	240 100	265	365				
	C P 2 213	13								
	2	365		2	9010100		24			
	4 1104	01JAN29 1090	1076	1062	1048	1034	1020	1006	992	978
	964	950	936	922	908	894	880	866	852	838
	824 651	810 634	792 616	774 599	757 581	739 564	722 546	704 528	687 511	669 493
	476 300	458 283 243	441 279	423	405 271	388 267	370 263	353 259	335 255	318 251
	247	243	239	275 235	231	227	223	219	215	211
	207 167	203 163	199 162	195 162	191 161	187 161	183 160	179 160	175 159	171 159
	159 154	158 154	158 153	157 153	157 153	156 152	156 152	156 151	155 151	155 150
	150	148	145	142	135	130	125	119	117	113
	112 90	109 91	99 86	99 85	98 86	96 86	94 86	94 87	92 88	91 87
	75	75	74	85 75	73	71	70	60	60	87 50
	56 55 45	53 59	50 50	50 50 43	51 54	51 53 43	53 55	52 55	58 58	00 50
	45	46 43	47 40	43 40	43 40	43	43	52 55 38 35 51 92 101 157 161	43 30	56 50 43 37 35 38 52 95 107
V	43 30	30	40 29 37 48 89 96	30	34	40 34	38 33 39 50 91 100 151 159 179 178 274 408	35	36	35
N V	34 45 88 98 128	35 45 88	37 48	57 49	38 49	39 50	39 50	39 51	39 52	58 52
N	88	88	89	89	90 91	92	91	92	93	95
N	128	135	140 151	144	147	150	151	157	159	161 165
NN	150 167	90 135 150 169 188 208	171	153 173	155 175	157 177	159 179	161 180	163 182	165 184
N	186	188	190 221	192	194 247	196	198	200 287	202	204 314
N	206 327	208 341	354	234 367	24/ 381	261 394	408	421	501 434	447
N	461 594	341 474 608	487 608	501	381 514 608	527	541 608	554 609	60 53 58 43 38 36 93 105 159 163 201 4367 567 4367 609 611	581 609 611
N	609 611	609	610	610	610	39 50 92 98 150 157 177 196 261 394 527 608 610 612	611 612	611	611	611
N N	613	611 614	612 611	40 30 37 49 99 143 153 192 2367 501 612 608 612 609 569	612 607	612 605	612 603	613 601	613 599	613
NN	595 575	593 573	591 571	589	607 587	605 585	603 583	581	599 579	597 577
1	3/3	3/3	J/1	307	567					
J R					3	0				

	T1 T2 T3	* {	BEASONALL DAILY FL	RESERVOIR Y VARYIN OW 1929	6 MINIMU Record	M DESIRE (365 PER	D FLOW TODS)	¥	RUN	11	
1	J1 J2		1	5	3 32	4	2				
1	J3 J6	6 -1.59 -2.63	-1.54 -2.38	-2.03	-2.39	-0.52	-0.36	-0.54	40	0.02	0.5
1	J8 RL	4.09	4.38 71500	4.11	4.13	4.22	213.05	213.06	213.07	213.08	213.04
Π	RL	i	4	-1		300			÷÷		1
	rl Rl	2 3 4	4 4	-1 5		2000 110690	180000	180000	110690	110690	
	rl Rl	4 5	4	-1 -1		180200 240000					
	ro Rs	1 18	213	150	580	2000	5380	12020	21410	35560	54300
1	RS	78340	110690	118140	126000	134200	142800	156500	180200 13000	240000	
1		18 16000	0 17000	100 30000	100 54000	9000 86000	10500 128000	12000 198000	218000	14000 218000	15000
	ra Ra	18 1390	0 1830	20 1922	40 2014	80 2106	185 2198	350 2336	587 2500	800 2600	1040
	RE	18	1250	1265	1280	1300	1325	1350	1370	1390 1500	1410
1	RE CP	1430	1450 8500	1454	1458	1462	1466	1472	1481	1900	
	RT	ES 4 4	213					- 1			
Ľ	CS.	5 213	120 12000	151	240	265	365	1			
	CP 1D	C P 21	12000		100						
Н	RT CS	213 5	120	151	240	265	365	1			
	C6	-1.40 -1.45	1400	1430 1455	1430 1455	1400 1425	1400 1425				
1	CG	-1.50	1425 1450	1480	1480	1450	1450				
	ED	-4	400	450	500]			
1	BF IN	2	365 01JAN29		2	9010100		24			
	IN	1104	1090	1076	1062	1048	1034	1020	1006	992	978
	IN IN	964 824	950 810	936 792	922 774	908 757	894 739	880 722	866 704	852 687	838 669
	IN IN	651 476	634 458	616 441	599	581 405	564 388	546 370	528 353	511 335	493 318
1	IN	300	283	279	423 275	271	267	263	259	255	251
	IN IN	247 207	243 203	239 199	235 195	231 191	227 187	223 183	219 179	215 175	211 171
	IN	167	163	162 158	162 157	161 157	161 156	160 156	160 156	159 155	159 155
	IN In	159 154	158 154	153	153	153	152	152	151	151	150
	IN IN	150 112	148 109	145 99	142 99	135 98	130 96	125 94	119 94	117 92	113 91
	IN	90	91	86	85	86	86	86 70	87 60	88 60	87 50
	IN In	75 56 55	75 53 59	74 50	75 50	73 51	71 51	53	52	53	56
	IN In	55 45	59 46	50 47	50 43	54 43	53 43	55 43	55 43	58 43	50 43
	IN	45 43	43	40	40	40	40	38	38	38	37
	IN In	30 34	30 35	29 37	30 37	34 38	34 39	33 39	38 35 39	36 39	35 38
	IN In	45	45 88	48 89	49 89	49 90	50 92	50 91	51 92	52 93	52 95
	IN	88 98	90	96	99	91	98	100	101 157	105	107
	IN IN	128 150 167	135 150	140 151 171	144 153	147 155	98 150 157 177	151 159	161	159 163	161 165
	IN	167	169	171	173	155 175	177 196	179 198	180 200	182 202	184
	IN IN	186 206 327	188 208	190 221 354	192 234	194 247	176 261 394	274	287	301	107 161 185 184 204 314 447 581 609
	IN IN	327 461	341 474	354 487	367 501	381 514	394 527	408 541	421 554	4 34 567	447 581
	IN	594	608	608	608	608	608	608	609	609	609
]	IN In	609 611	609 611	610 612	610 612	610 612	610 612	611 612	611 613	611 613	611 613
	IN In	613	614 593	611 591	609 589	607 587	605 585	603 583	601 581	599 579	597 577
1		595 575	573	571	569	567	484	444		wr i	ur i

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T1 T2 T3 J1	# M	CONSTAN	SERVOIR IT DIVERS LOW 1927 5	ION AT R	ESERVOIR	# 20 PERIO 2	RUN12 DS)			
	-1.59	-1.54	-2.03	-2.39	-0.52	-0.36	-0.54	40	0.02	0.52
J6 J8 RL	-2.63 4.11 4	-2.38 4.22 71500 213	4.13 300	4.12 2000	4.10 71500	4.30 180200	4.03 240000	4.31	213.03	213.04
RO RS RS	1 18 78340	213 0 110690	150 118140	580 126000	2000 134200	5380 142800	12020 149700	21410 156500	35560 180200	54300
RQ RQ	18 16000	0	600 30000	1000 54000	9000 86000	10500	12000	13000	14000 218000	15000
RA	18	0	20	40	80	185	350	587	800	1040
RA Re Re CP	1390 18 1430 4	1830 1250 1450 8500	1922 1265 1454	2014 1280 1458	2106 1300 1462	2198 1325 1466	2267 1350 1469	2336 1370 1472	2500 1390 1481	1410
ID RT	RES NO									
DR	4	213				0.2		150	1	
CP ID RT ED	213 C.P. 2 213	12000 13	400	100						
BF	2	120		2	7100100		720			
INNINNINNINNINNINININININININININININI	40 1222 282 163 491 669 475 1205 1237 194 545 3094 1004		497 193 208 317 804 530 438 513 1177 354 679	733 261 608 105 367 1106 526 354 424 252 268 1282	647 481 614 94 420 506 909 712 620 187 126 793	1385 431 553 75 206 513 1224 139 1219 179 65 364	999 1130 524 76 145 276 455 459 566 872 43 270	1365 1230 475 102 74 130 348 1195 354 697 140 319	1308 810 760 124 80 77 212 550 1044 613 172 224	360 283 891 164 133 429 1032 307 763 331 560 753

T1 T2 T3 J1		MONTHLY	SERVOIR DIVERSI LOW 1927 5	ON DOWNS	TREAM +	RUN13 20 PERIO	DS)				
J3 J6	6	-1.54 -2.38	-2.03	-2.39	-0.52	2 1 -0.36	-0.54	40	0.02	0.52	
J8 RL	4.11	4.22 71500	4.13 300	4.12 2000	4. 10 71500	213.05 180200	213.06 240000	213.30	213.03	213.04	
RD RS RS	18 78340	213 0 110690	150 118140	580 126000	2000 134200	5380 142800	12020 149700	21410 156500	35560 180200	54300	
RQ RQ RA	16000	0 17000 0	600 30000 20	1000 54000 40	9000 86000 80	10500 128000 185	12000 160000 350	13000 198000 587	14000 218000 800	15000 1040	
RA RE RE		1830 1250 1450	1922 1265 1454	2014 1280 1458	2106 1300 1462	2198 1325 1466	2267 1350 1469	2336 1370 1472	2500 1390 1481	1410	
CP ID RT	4	8500									
CP ID RT	213	12000	400	100							
DR QD QD	213 12 100	150 140	140 150	120	100	100	1 100	100	100	100	
ED BF IN	2	120 CT 1927		2	7100100		720				
	1222 282 163 491 669 475 1205 1237 194 545 3094 1004	1268 176 150 575 878 433 400 524 171 388 820 859	497 193 208 317 804 530 438 513 1177 354 679	733 261 608 105 367 1106 526 354 424 252 268 1282	647 481 614 420 506 909 712 620 187 126 793	1385 431 553 206 513 1224 139 1219 1219 65 364	999 1130 524 76 145 276 655 459 566 872 43 270	1365 1230 475 102 74 130 348 1195 354 697 140 319	1308 810 760 124 80 77 212 550 1044 613 172 224	360 283 891 164 133 429 1032 307 763 331 560 753	

T1 T2 T3 J1	÷	DIVERSIO	SERVOIR IN DOWNST LOW 1927 5	REAM VAR	YS BY PE	TEN RIOD# 20 PERIO 2	RUN 1 DS)	4		
13 14	6 -1.59	-1.54	-2.03	-2.39	-0.52	ī -0.36	-0.54	~.40	0.02	0.52
J6 J8	-2.63 4.11	-2.38	4.13	4.12	4.10	213.05	213.06	213.30	213.03	213.04
RL	4	71500	300	2000	71500	180200	240000	213.30	213.VJ	210.07
RORS	1 18	213 0	150	580	2000	5380	12020	21410	35560	54300
RS RQ	78340 18	110690	118140	126000	134200 9000	142800 10500	149700	156500 13000	180200	15000
RQ	16000	17000	30000	54000	86000	128000	160000	198000	218000	
ra Ra	18 1390	0 1830	20 1922	40 2014	80 2106	185 21 98	350 2267	587 2336	800 2500	1040
RE	18	1250	1265	1280	1300	1325	1350	1370	1390	1410
RE CP	1430	1450	1454	1458	1462	1466	1469	1472	1481	
ID	RES NO	8500 .4								
RT CP	4 213	213 12000	100	144						
ID	C.P. 2	13	400	100						
RT	213									
DR ED	213						-5	<u> </u>		
BF	2	120		2	7100100		720			
IN IN	40 1222	CT 1927 1268	497	733	647	1385	999	1365	1308	360
IN	282	176	193	261	481	431	1130	1230	810	283
IN	163	150	208	608	614	553	524	475	760	891
IN IN	491 669	575 878	317 804	105 367	94 420	75 206	76 145	102 74	124 80	164 133
IN	475	433	530	1106	506	513	276	130	77	429
IN	1205	400	438	526	909	1224	655	348	212	1032
IN IN	1237 194	524 171	385 513	354 424	712	139 1219	459 566	1195 354	550 1044	307 763
IN	545	388	1177	252	187	179	872	697	613	331
IN	3094 1004	820 859	354	268	126	65	43	140 319	172 224	560 753
	2130		679	1282	793	364	270	317	229	/33
QD	200	190	180	170	160	170	160	150	155	140
00 00	110 110	120 140	115 160	145 180	155 175	120 165	110 150	140 140	110 145	125 155
QD	170	180	190	195	200	185	180	185	175	165
QD	160	145	150	110	120	110	145	120	140	150
QD QD	110 120	115 125	140 120	145	120 225	115 245	100 240	110 255	105 260	110 270
QD an	110	125	240	225 260	265	255	240	270	260	255
QD	160	145	150	110	120	110	145	120 110	140	150
00 00	110 120	115 125	140 120	145 225	120 225	115 245	100 240	110 255	105 260	110 270
QD	110	125	240	260	265	255	265	270	260	255

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T1 T2 T3 J1	¥ Mi	DIVERSI	SERVDIR ON AT RE LOW 1927 5	SERVOIR	A FUNCTI	TEM ON OF RE 20 Perio 2		STORAGE	* RUN	15
19 19	6 -1.59	-1.54	-2.03	-2.39	-0.52	-0.36	-0.54	40	0.02	0.52
J6 J8 RL RD	-2.63 4.11 4	-2.38 4.22 71500 213	4.13 300	4.12 2000	4.10 71500	4.03 180200	213.03 240000	213.05	213.06	213.04
RS	18 78340	0 110690	150 118140	580 126000	2000 134200	5380 142800	12020 149700	21410 156500	35560 180200	54300
RQ RQ	18 16000	17000	600 30000	1000	9000 86000	10500	12000	13000	14000 218000	15000
RA	18	0	20	40	80	185	350 2267	175000 587 2336	800 2500	1040
RA RE RE	1390 18 1430	1830 1250 1450	1922 1265 1454	2014 1280 1458	2106 1300 1462	2198 1325 1466	1350 1469	1370 1472	1390 1481	1410
RD RD	0 120	0 150	0 150	0	0 150	20 150	40 150	60 150	80 150	100
CP ID	4 RES NO	8500								••••••
RT	4	213	0					r .		
DR	4 213	213	400	100	<u></u>	0.2	-2			
CP ID RT ED	C.P. 2 213		400	100						
BF IN	2	120 CT 1927		2	7100100		720			
IN	1222	1268	497	733	647	1385	999	1365	1308	360
IN	282	176	193	261	481	431	1130	1230	810	283
IN	163	150	208	608	614	553	524	475	760	891
IN IN	491 669	575 878	317 804	105 367	94 420	75 206	76 145	102 74	124 80	164 133
IN	475	433	530	1106	506	513	276	130	77	429
ĪŇ	1205	400	438	526	909	1224	655	348	212	1032
IN	1237	524	385	354	712	139	459	1195	550	307
IN IN	194 545	171 388	513 1177	424 252	620 187	1219 179	566 872	354 697	1044 613	763 331
IN	3094	820	354	268	126	65	43	140	172	560
ÎN Ej Er	1004	859	679	1282	793	364	270	319	224	753

T1 T2 T3	* M	DIVERSI	SERVOIR ON OF FL LOW 1927	00D WATE -1937 RE	RS AT RE	SERVOIR 20 PERIO	* RUN DS)	16		
J1		1	5	3	4	2				
19 12	-1.59	-1.54	-2.03	-2.39	-0.52	1 -0.36	-0.54	40	0.02	0.52
J6 J8 RL	4.11	-2.38 4.22 71500	4.13 300	4.12 2000	4. 10 71500	4. 03 180200	213.03 240000	4.05	4.06	213.04
RORS	1	213	150	580	2000	5380	12020	21410	35560	54300
RS Rg	78340 18	110690 0	118140 600	126000 1000	134200 9000	142800 10500	149700 12000	156500 13000	180200 14000	15000
RQ Ra Ra	18	17000 0 1830	30000 20 1922	54000 40 2014	86000 80 2106	128000 185 2198	160000 350 2267	198000 587 2336	218000 800 2500	1040
RE	18	1250 1450	1722 1265 1454	1280 1458	1300	1325 1466	1350 1469	1370 1472	1390 1481	1410
RD	-1 1000	100 1100	200 1200	300 1300	400 1400	500 1500	600 1600	700 1700	800 1800	900
	4	8500	400	100]					
ID		• 4								
	<u>a</u>	217								
RT		213				0.2	1			
DR	4	213				0.2	l			
DR CP	4 213	213 12000				0.2				
DR	4 213 C.P. 2	213 12000				0.2				
DR CP 10 RT ED	4 213 C.P. 2 213	213 12000 13				0.2				
DR CP 1D RT ED BF	4 213 C.P. 2 213 2	213 12000 13 120		2	7100000	0.2	l 720			
DR CP ID RT ED BF	4 213 C.P. 2 213 2 40	213 12000 13 120 13				2 ₈ .	720			N/ A
DR CP ID RT ED BF IN IN	4 213 C.P. 2 213 2 213 40 1222.	213 12000 13 120 CT 1927 1268.	497.	733.	647.	1385.	720	1365.	1308.	360.
DR CP ID RT ED BF IN IN IN	4 213 C.P. 2 213 2 40 1222. 282.	213 12000 13 120 CT 1927 1268. 176.	193.	733. 261.	647. 481.	1385. 431.	720 999. 1130.	1230.	810.	283.
DR CP ID RT ED BF IN IN IN	4 213 C.P. 2 213 2 40 1222. 282. 163.	213 12000 13 120 CT 1927 1268. 176. 150.	193. 208.	733. 261. 608.	647. 481. 614.	1385. 431. 553.	720 999. 1130. 524.	1230. 475.	810. 760.	283. 891.
DR CP ID RT ED BF IN IN IN IN	4 213 C.P. 2 213 2 40 1222. 282. 163. 491.	213 12000 13 120 120 120 1268. 176. 150. 575.	193. 208. 317.	733. 261. 608. 105.	647. 481. 614. 94.	1385. 431. 553. 75.	720 999. 1130. 524. 76.	1230. 475. 102.	810. 760. 124.	283. 891. 164.
DR CP ID R DF EDF IN IN IN IN IN	4 213 C.P. 2 213 2 40 1222. 282. 163. 491. 669.	213 12000 13 120 120 120 1268 176. 150. 575. 878.	193. 208. 317. 804.	733. 261. 608. 105. 367.	647. 481. 614. 94. 420.	1385. 431. 553. 75. 206.	720 999. 1130. 524. 76. 145.	1230. 475. 102. 74.	810. 760. 124. 80.	283. 891. 164. 133.
DR CP ID R ED B IN IN IN IN IN IN	4 213 C.P. 2 213 2 40 1222. 282. 163. 491. 669. 475.	213 12000 13 120 CT 1927 1268. 176. 150. 575. 878. 433.	193. 208. 317. 804. 530.	733. 261. 608. 105. 367. 1106.	647. 481. 614. 94. 420. 506.	1385. 431. 553. 75. 206. 513.	720 999. 1130. 524. 76. 145. 276.	1230. 475. 102. 74. 130.	810. 760. 124. 80. 77.	283. 891. 164. 133. 429.
DR CP II EDF IN IN IN IN IN IN IN	4 213 C.P. 2 213 2 40 1222. 282. 163. 491. 669. 475. 1205.	213 12000 13 CT 1927 1268. 176. 150. 575. 875. 875. 433. 400.	193. 208. 317. 804. 530. 438.	733. 261. 608. 105. 367. 1106. 526.	647. 481. 614. 94. 420. 506. 909.	1385. 431. 553. 75. 206. 513. 1224.	720 999. 1130. 524. 76. 145. 276. 655.	1230. 475. 102. 74. 130. 348.	810. 760. 124. 80. 77. 212.	283. 891. 164. 133. 429. 1032.
DR CPDT EBF INNIN INNIN INNIN INNIN INNIN	4 213 C.P. 2 213 2 40 1222. 282. 163. 491. 649. 475. 1205. 1237.	213 12000 13 120 CT 1927 1268. 176. 150. 575. 878. 433. 400. 524.	193. 208. 317. 804. 530. 438. 385.	733. 261. 608. 105. 367. 1106. 526. 354.	647. 481. 614. 94. 420. 506. 909. 712.	1385. 431. 553. 75. 206. 513. 1224. 129. 1219.	720 999. 1130. 524. 76. 145. 276. 655. 459.	1230. 475. 102. 74. 130. 348. 1195.	810. 760. 124. 80. 77. 212. 550.	283. 891. 164. 133. 429. 1032. 307.
DR CPD R C CPD R C CPD R C CPD R C CPD R C CPD R C CPD R C CPD R C CPD R C CPD R C C CPD R C CPD R C C CPD R C C C C C C C C C C C C C C C C C C	4 213 C.P. 2 213 2 40 1222. 282. 163. 491. 6475. 1205. 1237. 194.	213 12000 13 120 CT 1927 1268. 176. 150. 575. 878. 433. 400. 524. 171.	193. 208. 317. 804. 530. 438. 385. 513.	733. 261. 608. 105. 367. 1106. 526. 354.	647. 481. 614. 94. 420. 506. 709. 712. 620.	1385. 431. 553. 75. 206. 513. 1224. 129. 1219.	720 999. 1130. 524. 76. 145. 276. 655. 459. 566.	1230. 475. 102. 74. 130. 348. 1195. 354.	810. 760. 124. 80. 77. 212. 550. 1044.	283. 891. 164. 133. 429. 1032.
DR CP IT EB IN IN IN IN IN IN IN IN IN IN	4 213 C.P. 2 213 2 40 1222. 282. 163. 491. 669. 475. 1205. 1237. 194. 545.	213 12000 13 120 CT 1927 1268. 176. 150. 575. 878. 433. 400. 524. 171. 388.	193. 208. 317. 804. 530. 438. 385. 513. 1177.	733. 261. 608. 105. 367. 1106. 526. 354. 424. 252.	647. 481. 614. 94. 506. 709. 712. 620. 187.	1385. 431. 553. 75. 206. 513. 1224. 139. 1219. 1219. 179. 65.	720 999. 1130. 524. 76. 145. 276. 655. 459. 566. 872.	1230. 475. 102. 74. 130. 348. 1195. 354. 697. 140.	810. 760. 124. 80. 77. 212. 550. 1044. 613. 172.	283. 891. 164. 133. 429. 1032. 307. 763. 331. 560.
DR CPD R C CPD R C CPD R C CPD R C CPD R C CPD R C CPD R C CPD R C CPD R C CPD R C C CPD R C CPD R C C CPD R C C C C C C C C C C C C C C C C C C	4 213 C.P. 2 213 40 1222. 282. 163. 491. 669. 475. 1205. 1237. 194. 545. 3094. 1004.	213 12000 13 120 CT 1927 1268. 176. 150. 575. 878. 433. 400. 524. 171.	193. 208. 317. 804. 530. 438. 385. 513.	733. 261. 608. 105. 367. 1106. 526. 354.	647. 481. 614. 94. 420. 506. 709. 712. 620.	1385. 431. 553. 75. 206. 513. 1224. 129. 1219.	720 999. 1130. 524. 76. 145. 276. 655. 459. 566.	1230. 475. 102. 74. 130. 348. 1195. 354.	810. 760. 124. 80. 77. 212. 550. 1044. 613.	283. 891. 164. 133. 429. 1032. 307. 763. 331.

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Ti T2 T3 J1		SINGLE RE DIVERSI Sonthly P 1	ION A FUN	CTION OF	INFLOW					
J3 J6	6 -1.59 -2.63	-1.54 -2.38	-2.03	-2.39	-0.52	-0.36	-0,54	40	0.02	0.52
J8 RL	4.24	4.11 71500	4.22 300	4.13 2000	4. 12 71500	4.10 180200	4.03 240000	213.03	213.06	213.04
RO RS RS	18 78340	213 0 110690	150 118140	580 126000	2000 134200	5380 142800	12020 149700	21410 156500	35560 1 8 0200	54300
RQ RQ RA	16000	0 17000 0	600 30000 20	1000 54000 40	9000 86000 80	10500 128000 185	12000 160000 350	13000 198000	14000 218000	15000 1040
RA RE	1390 18	1830 1250	1922 1265	2014 1280	2106 1300	2198 1325	2267 1350	587 2336 1370	800 2500 1390	1040
RE CP ID	4	1450 8500). 4	1454	1458	1462	1466	1469	1472	1481	
RT DR	4	<u>213</u> 213			<u></u>	0.2	-1	1		
QS QD	6	0	100 0	200 80	400 160	800 160	10000 160			
CP ID RT	C.P. 2 213	12000 213	400	100				-		
ED BF IN	2 40	120 ICT 1927		2	7100100		720			
IN IN IN IN IN IN IN IN IN IN	282 163 491 669 475 1205 1237 194	1268 176 150 575 878 433 400 524 171 388	497 193 208 317 804 530 438 385 513 1177	733 261 608 105 367 1106 526 354 424 252	647 481 614 94 506 909 712 620 187	1385 431 553 206 513 1224 139 1219 179	999 1130 524 145 276 455 459 566 872	1365 1230 475 102 74 130 348 1195 354 697	1308 810 760 124 80 77 212 550 1044 613	360 283 891 164 133 429 1032 307 763 331
IN IN EJ ER	3094 1004	820 859	354 679	268 1282	126 793	65 364	43 270	140 319	172 224	560 753

T1 T2 T3 J1		¥	INGLE RE OPTIMIZA ONTHLY F 5	TION OF	CONSERVA	TION STO CORD (1 2	TEM RAGE * 20 perio	RUN 18 DS)		
J3 J6 J6	6 -1.59 -2.63	-1.54 -2.38	-2.03	-2.39	-0.52	-0.36	-0.54	40	0.02	0.52
137	4.0				to an			2	6	.05
J8 RL RD	4.11 4 1	4.13 71500 213	4.12 300	4.09 2000	4.10 71500	4.05 160500	4.06 180200	213.04		
RS	18	0	150	580	2000	5380	12020	21410	35560	54300
RS	78340	110690	118140	126000	134200	142800	149700	156500	180200	48000
RQ	18	0	600	1000 54000	9000	10500 128000	12000	13000 198000	14000 218000	15000
RQ RA	16000 18	17000 0	30000 20	54000 40	86000 80	128000	160000 350	587	800	1040
RA	1390	1830	1922	2014	2106	2198	2267	2336	2500	1040
RE	18	1250	1265	1280	1300	1325	1350	1370	1390	1410
RE	1430	1450	1454	1458	1462	1466	1469	1472	1481	
CP	4	8500	400							
	RES NO			•						
RT	4	213								
CP ID	213 C.P. 2	12000								
RT	213	12								
ED	210									
BF	2	120		2	7100100		720			
ĪŇ	40	CT 1927		-						
IN	1222	1268	497	733	647	1385	999	1365	1308	360
IN	282	176	193	261	481	431	1130	1230	810	283
IN	163	150	208	608	614	553	524	475	760	891
IN	491 669	575 878	317 804	105 367	94 420	75 206	76 145	102 74	124 80	164 133
IN In	475	433	530	1106	506	513	276	130	77	429
IN	1205	400	438	526	909	1224	655	348	212	1032
ĪŇ	1237	524	385	354	712	139	459	1195	550	307
IN	194	171	513	424	620	1219	566	354	1044	763
IN	545	388	1177	252	187	179	872	697	613	331
IN	3094	820	354	268	126	65	43	140	172	560
IN Ej Er	1004	859	679	1282	793	364	270	319	224	753

T1 T2 T3 J1		Ħ	OPTIMIZ	SERVOIR Ation of Low 1927 3	HONTHLY	DESIRED	TEN Flow * 20 perio	RUN 1 DS)	9	
J6	6 -1.59 -2.63	-1.54 -2.38	-2.03	-2.39	-0.52	1 -0.36	-0.54	40	0.02	0.52
J7	4.2							2	6	. 05
J 8		4.12	4.09	4.10	4.05	4.06	4.07	4.08	213.04	
RL	4	71500	300	2000	71500	180200	240000			
RO		213								
RS		0	150	580	2000	5380	12020	21410	35560	54300
RS		110690	118140	126000	134200	142800	149700	156500	180200	
RQ	18	0	600	1000	9000	10500	12000	13000	14000	15000
RQ		17000	30000	54000	86000	128000	160000	198000	218000	
RA	18	0	20	40	80	185	350	587	800	1040
RA	1390	1830	1922	2014	2106	2198	2267	2336	2500	
RE		1250	1265	1280	1300	1325	1350	1370	1390	1410
RE I CP	1430	1450 8500	1454	<u>1458</u> 100	1462	1466	1469	1472	1481	
ID				100						I
RT	ACO NU	213								
QM		440	480	500	520	540	550	530	490	440
QM		400	46V	200	320	34V	706	220	470	440
CP	213	12000	-							
ID										
RT	213	10								
ËD	210									
BF	2	120		7	7100100		720			
ĨN	. În	CT 1927		-	/ 100100		/40			
ÎN		1268	497	733	647	1385	999	1365	1308	360
ÎN		176	193	261	481	431	1130	1230	810	283
ĪN	163	150	208	608	614	553	524	475	760	891
ÎŇ		575	317	105	94	75	76	102	124	164
ĪN		878	804	367	420	206	145	74	80	133
ĪŇ	475	433	530	1106	506	513	276	130	77	429
IN	1205	400	438	526	909	1224	655	348	212	1032
ĪN	1237	524	385	354	712	139	459	1195	550	307
IN	194	171	513	424	620	1219	566	354	1044	763
IN	545	388	1177	252	187	179	872	697	613	331
IN	3094	820	354	268	126	65	43	140	172	560
IN	1004	859	679	1282	793	364	270	319	224	753
EJ										
ER										

T1 T2 T3 J1 J3	,	ŧ	INGLE RE OPTIMIZA ONTHLY F 5	TION OF	PERIOD V	ARYING D Cord (1 2	TEN Esired F 20 Perio	LOWS* DS)	RUN 20	
J6	6 -1.59 -2.63	-1.54 -2.38	-2.03	-2.39	-0.52	-0,36	-0.54	40	0.02	0.52
37	4.2		· .					2	6	.05
J8 RL	4.11	4.12 71500	4.09 300	4.10 2000	4.05 71500	4.06 180200	4.07 240000	4.08	213.04	
RO	1	213						*****		
RS RS	18 78340	0 110690	150 118140	580 126000	2000 134200	5380 142800	12020 149700	21410 156500	35560 180200	54300
RQ	18	0	600	1000	9000	10500	12000	13000	14000	15000
RQ	16000	1700Ŏ	30000	54000	86000	128000	160000	198000	218000	
RA	18	0	20	40	80	185	350	587	800	1040
RA	1390	1830	1922	2014	2106	2198	2267	2336	2500	
RE	18 1430	1250	1265	1280	1300	1325	1350	1370 1472	1390	1410
RE I CP	<u>1430</u> 4	1450 8500	1454	1458	1462	1466	1469	14/2	1481	
	RES NO.			100						
RT	4	213								
CP	213	12000								
	C.P. 2	13								
RT	213									
ED BF	2	120			7100100		720			
IN	- Án	CT 1927		4	7100100		/ 4V			
ÎN	1222	1268	497	733	647	1385	999	1365	1308	360
IN	282	176	193	261	481	431	1130	1230	810	283
IN	163	150	208	608	614	553	524	475	760	891
IN	491	575	317	105	94	75	.76	102	124	164
IN In	669 475	878 433	804 530	367 1106	420 506	206 513	145 276	74 130	80 77	133 429
IN	1205	400	438	526	909	1224	655	348	212	1032
IN	1237	524	385	354	712	139	459	1195	550	307
IN	194	171	513	424	620	1219	566	354	1044	763
IN	545	388	1177	252	187	179	872	697	613	331
IN In	3094 1004	820	354	268 1282	126 793	65	43	140 319	172 224	560 753
1 MR	40	859 CT 1927	679	1202	173	364	270	317		
MR	400	390	380	370	360	370	360	350	355	340
MR	330	320	335	345	355	320	310	340	330	325
MR	778	340	360	380	375	365	350	340	345	355
MR	330	010								7/2
	370	380	390	395	400	390	380	385	375	365
MR	370 360	380 345	390 350	330	320	330	345	320	340	350
HR MR	370 360 330	380 345 335	390 350 340	330 345	320 320	330 315	345 300	320 310	340 305	350 310
MR MR MR	370 360 330 320	380 345 335 325	390 350 340 330	330 345 325	320 320 335	330 315 345	345 300 340	320 310 355	340 305 360	350 310 370
MR MR MR MR	370 360 330 320 330 360	380 345 335 325 335 345	390 350 340 330 340 350	330 345 325 360 330	320 320 335 365 320	330 315 345 355 330	345 300 340 365 345	320 310 355 370 320	340 305 360 360 340	350 310 370 355 350
MR MR MR MR MR	370 360 320 330 330 360 330	380 345 335 325 335 345 335	390 350 340 330 340 350 340	330 345 325 360 330 345	320 320 335 365 320 320 320	330 315 345 355 330 315	345 300 340 365 345 300	320 310 355 370 320 310	340 305 360 360 340 305	350 310 370 355 350 310
HR HR HR HR HR	370 360 320 330 330 360 330 320	380 345 335 325 335 345 335 325	390 350 340 330 340 350 340 330	330 345 325 360 330 345 325	320 320 335 365 320 320 335	330 315 345 355 330 315 345	345 300 340 365 345 300 340	320 310 355 370 320 310 355	340 305 360 360 340 305 360	350 310 355 355 350 310 370
HR HR HR HR HR HR	370 360 320 330 330 360 330	380 345 335 325 335 345 335	390 350 340 330 340 350 340	330 345 325 360 330 345	320 320 335 365 320 320 320	330 315 345 355 330 315	345 300 340 365 345 300	320 310 355 370 320 310	340 305 360 360 340 305	350 310 370 355 350 310
HR HR HR HR HR	370 360 320 330 330 360 330 320	380 345 335 325 335 345 335 325	390 350 340 330 340 350 340 330	330 345 325 360 330 345 325	320 320 335 365 320 320 335	330 315 345 355 330 315 345	345 300 340 365 345 300 340	320 310 355 370 320 310 355	340 305 360 360 340 305 360	350 310 355 355 350 310 370

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T1 T2 T3	ł	SINGLE RE OPTIMIZA IONTHLY_F	TION OF	REQUIRED -1937 Re	FLONS* Cord (1	ITEM Run 2 20 perio			
J1 J3 6	1	5	3	4	2 1				
J6 -1.59 J6 -2.63	-1.54	-2.03	-2.39	-0.52	-0.36	-0.54	40	0.02	0.52
J7 4.3							2	6	.05
J8 4.11		4.12	4.09	4.10	4.05	4.06	4.07	4.08	213.04
RL 4		300	2000	71500	180200	240000			
RO 1 RS 18		150	580	2000	5380	12020	21410	35560	54300
RS 78340		118140	126000	134200	142800	149700	156500	180200	34300
RQ 18		600	1000	9000	10500	12000	13000	14000	15000
RQ 16000	17000	30000	54000	86000	128000	160000	198000	218000	
RA 18	0	20	40	80	185	350 2267	587	800	1040
RA 1390		1922	2014	2106	2198	2267	2336	2500	
RE 18 RE 1430		1265 1454	1280 1458	1300	1325	1350	1370	1390	1410
RE 1430 CP 4		400	200	1462	1466	1469	1472	1481	
ID RES N		400	200						
RT 4									
CP 213									
ID C.P.	213								
RT 213									
ED BF 2	120		2	7100100		720			
IN 4	OCT 1927		-	/100100		724			
IN 1222	1268	497	733	647	1385	999	1365	1308	360
IN 282	176	193	261	481	431	1130	1230	810	283
IN 163	150	208	608	614	553	524	475	760	891
IN 491	575	317	105	94	75	76	102	124	164 133
IN 669 IN 475	878 433	804 530	367 1106	420 506	206 513	145 276	74 130	80 77	429
IN 1205		438	526	909	1224	655	348	212	1032
IN 1237	524	385	354	712	139	459	1195	550	307
IN 194	171	513	424	620	1219	566	354	1044	763
IN 545	388	1177	252	187	179	872	697	613	331
IN 3094	820	354	268 1282	126 793	65	43	140	172 224	560 753
IN 1004 Ej	859	679	1202	173	364	270	319	224	192
ĒR									

T1 T2 T3 J1	SINGLE RE *OPTIMIZA MONTHLY F 1 5	TION OF	MONTHLY	DIVERSIO CORD (1 2		RUN 22 DS)		
J3 6 J6 -1.59 -1.5 J6 -2.63 -2.3		-2.39	-0.52	1 -0.36	-0.54	40	0.02	0.52
J7 4.4 JB 4.11 4.1 RL 4 7150	0 300	4.24 2000	4.09 71500	4.10 180200	4.30 240000	2 4.03	6 213.03	.05 213.04
RS 78340 11069) 150) 118140	580 126000	2000 134200	5380 142800	12020 149700	21410 156500	35560 180200	54300
RQ 16000 1700		1000 54000	9000 86000	10500 128000	12000 160000	13000 198000	14000 218000	15000
RA 18 Ra 1390 183) 20) 1922	40 2014	80 2106	185 2198	350 2267	587 2336	800 2500	1040
RE 18 125 RE 1430 145 CP 4 850) 1265) 1454	1280 1458	1300 1462	1325 1466	1350 1469	1370 1472	1390 1481	1410
ID RES NO.4 RT 4 21 DR 4 21 QD 12 25 QD 200 24 CP 213 1200 ID C.P. 213 RT 213	3 3) 240) 250	220 100	200	0.2 200	1 200	200	200	200
ED BF 2 124 IN 40CT 192)	2	7100100		720			
IN 1222 126 IN 282 17 IN 163 15 IN 491 57 IN 669 87 IN 475 43 IN 1205 40 IN 1237 52 IN 194 17 IN 545 38 IN 3094 82 IN 1004 85 EJ ER	3 497 5 193 0 208 5 317 8 804 3 530 0 438 3 513 3 1177 0 354	733 261 608 105 367 1106 526 354 424 252 268 1282	647 481 614 420 506 709 712 620 187 126 793	1385 431 553 75 206 513 1224 139 1219 129 179 65 364	999 1130 524 76 145 276 655 459 566 872 43 270	1365 1230 475 102 74 130 348 1195 354 697 140 319	1308 810 760 124 80 77 212 550 1044 613 172 224	360 283 891 164 133 429 1032 307 763 331 560 753

T1 T2 T3 J1	+	SINGLE RE DPTIMIZA NONTHLY F 5	TION OF	ALL RESE	RVDIR YI	TEM Elds# 20 perio	RUN 2 DS)	3	
J3 6 J6 -1.59 J6 -2.63	-1.54 -2.38	-2.03	-2.39	-0.52	-0.36	-0.54	40	0.02	0.52
J7 4.9 J8 4.11 RL 4	4.13 71500	4.12 300	4.24 2000	4.09 71500	4.10 180200	4.30 240000	2 4.03	6 213.03	.05 213.04
RO 1 RS 18 RS 78340	213 0 110690	150 118140	580 126000	2000 134200	5380 142800	12020 149700	21410 156500	35560 180200	54300
RQ 18 RQ 16000 RA 18	0 17000 0	600 30000	1000 54000	9000 86000	10500 128000	12000 160000	13000 198000	14000 218000	15000
RA 1390 RE 18 RE 1430	1830 1250 1450	20 1922 1265 1454	40 2014 1280 1458	80 2106 1300 1462	185 2198 1325 1466	350 2267 1350 1469	587 2336 1370 1472	800 2500 1390 1481	1040 1410
CP 4 ID RES NO RT 4 DR 4 QD 12 QD 200 CP 213 ID C.P. 2 RT 213	213 213 250 240 12000	240 250 150	220 100	200	0.2 200	1 200	200	200	200
ED BF 2 IN 40	120 ICT 1927		2	7100100		720			
IN 1222 IN 1222 IN 282 IN 163 IN 491 IN 669 IN 475 IN 1205 IN 1205 IN 1237 IN 124 IN 545 IN 3094 IN 1004 EJ ER	1268 176 150 575 878 433 400 524 171 388 820 859	497 193 208 317 804 530 438 513 513 1177 354 679	733 261 608 105 367 1106 526 354 424 252 268 1282	647 481 614 94 506 709 712 620 187 126 793	1385 431 553 206 513 1224 139 1219 179 65 364	999 1130 524 76 145 276 655 459 566 872 43 270	1365 1230 475 102 74 130 348 1195 354 697 140 319	1308 810 760 124 80 77 212 550 1044 613 172 224	360 283 891 164 133 429 1032 307 763 331 560 753

APPENDIX A

OPTIMIZATION OF CONSERVATION STORAGE

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APPENDIX A OPTIMIZATION OF CONSERVATION STORAGE (RUN 18)

This example illustrates the method used by HEC-5 for automatically determining conservation storage for a single reservoir operating for minimum monthly desired flow. The input and output data follows on Tables A-1 through A-5.

The J7 Card is used to request the optimization routine to determine the minimum conservation storage at reservoir 4 (J7.1 = 4.0) needed to meet desired flow requirements during the low-flow period (input in Table A-1).

Conservation storage optimization is based upon the storage volume above top of buffer pool. For each trial the assumed conservation storage is computed by a program determined multiplier times the previous trial's conservation storage (a monthly variation may be input on RL Cards). The trials are repeated until the drawdown storage is within the error limit specified (J7.10). (The HEC-5 optimization routine adds 500,000 acre-ft of storage to all input storage values to avoid working with negative values). Table A-2 shows the optimization routing cycle 1, trial 1.

Error = <u>target minimum storage minus minimum storage from simulation</u> assumed maximum top-of-construction storage minus target minimum storage

 $Error = \frac{(502,000) - (426,228)}{(571,500) - (502,000)} = 1.09 \text{ for trial } 1$

The allowable error is specified on J7.10 (+.05 in this example.)

The output, Table A-3, provides a listing of minimum runoff volumes plus starting and ending periods of drought durations from 1 to 38 months based on the given inflow data on IN cards since J7.8 = 2. The estimated critical drawdown period of 13 months from period 34 (July 1930) to period 46 (July 1931) is based on 70 times 0.173. The value 0.173 is the ratio of conservation storage to mean annual flow computed by the program (J7.8 = 2). The program extends that period to start at the beginning of a water year (Oct. 1929, period 25) and adds five periods to the end (Dec. 1931, period 51) to increase the chance for including the true critical period. The initial number of periods of inflow used for the critical period simulation is now reduced from 120 monthly values to the estimated 27 months from periods 25 (Oct. 1929) to 51 (Dec. 1931). On a scale beginning with 1 the program identifies period 25 as 1 and period 51 as 27. This identification applies throughout each cycle.

The initial estimates of top-of-conservation storage was specified on the input (RL .5 = 71,500 acre-feet), the initial volume of conservation storage is 69,500 acre-feet (71,500 minus 2000). In order to insure that the reservoir does not compute negative reservoir storages, 500,000 acre-feet is added internally by the program to each reservoir storage. The output listing (Table A-5) of storage volumes has this 500,000 acre-feet added to it.

The summary of all trials (Table A-4) contains the location of the reservoir, trial number, ratio of storage error, storage error, starting date of critical period, average reservoir inflow and release, average spill, top-of-conservation storage (excluding the 500,000 acre-feet added during optimization), ratio of conservation storage to mean annual flow, the period which had the minimum end-of-period storage (year, month), the length of critical period used to determine the adjusting multiplier (period 9 to 26), average release during the critical period, the average desired and required flow, and the average diversion.

For the first routing a period of maximum drawdown within the critical period 1 to 27 is identified by the program (Table A-2). This maximum drawdown period extends from period 9 to period 26 with period 1 representing Oct. 1929.

An initial estimate of 71,500 acre-feet is used for simulating this maximum drawdown period (first end-of-period storage below top-of-conservation storage (period 9) to minimum end-of-period storage (period 26)). A storage multiplier 1.206494 (Table A-2) is determined by the program for periods 9 to 26 then applied to estimate the storage for the second trial.

The initial value of 71,500 acre-feet when routed through the 27 monthly periods (1-27) gave an error ratio of 1.0902 (Table A-4). The second estimate of conservation storage of 86,264 acre-feet (71,500 x 1.206494) produced an error ratio of 0.7225.

The same procedure was repeated for each trial until the error was within the limits specified (.05). In this example the error reached is 0.0151 on the seventh trial (TRIAL = 7).

The estimated conservation storage for trial seven, 143,929 acre-feet, is next routed through the entire low-flow period (120 months) to see if the conservation storage is adequate.

A listing (Table A-5) of the final simulation (120 months) shows the final top of conservation storage value is 643,928 (143,928 + 500,000) acre-feet. Based upon end-of-period storage for the 120 month simulation maximum drawdown period extends from period 33 to 50, the allowable error was .05 (5%) and the final error was 0.0151 (1.5%).

The user designed output (Table A-5) is printed for each simulation, but is only shown for simulation eight here. The minimum end-of-period storage (EOP STOR) was 499,862 acre-feet which was too low for the target minimum storage 502,000 (2,000 + 500,000) acre-feet (error = 1.5%).

INPUT DATA FOR OPTIMIZATION OF CONSERVATION STORAGE TABLE A-1

	0.52	.05		54300	15000	1040	1410				360 283	164	1032	192 192 192	
	0.02	9		35560 180200	14000 218000	80	1390				1308 810 740	9 <u>7</u> 8	212	1044 613 224 224	
RUN 18 005)	40	213.04		21410 156500	13000	587	1370				1365 1230	102	130 348 195	354 354 140 319	
SYSTEM STORAGE * (120 PERIO 2	-0.54	4.06	180200	12020 149700	12000	350	1350		-	720	999 1130	145	276 655 459	566 872 43 270	
	-0.36	4.05	160500	5380 142800	10500	185	1325				1385 431	35.35 26.35	513 1224 139	1219 179 65 364	
SINGLE RESERVDIR WATER SUPPLY +OPTIMIZATION OF CONSERVATION MONTHLY FLOW 1927-1937 RECORD	-0.52	4.10	71500	2000 134200	9006 86000	80	1462			27100100	647 481 414	420	206 209 213	620 1287 793	
ISERVOIR Ition of Low 1927	-2.39	4.09	2000	580 126000	1000	40	1280			N	733 261 261	367	1106 526	424 252 268 1282	
INGLE RE Optimiza Ionthly 5	-2.03	4.12	300	150 118140	30000	220	1265	400			497 193 200	317	530 438 785	513 354 579	
<i>₩</i> ₽ ,,	-1.54	4.13	71500	110690	17000	0201	1250	8500 1.4 213	213	+ 1.1	2			820 820 859	
-	-1.59	4.0 4.11	च -	18 78340	18 16000	1100	1430	RES NO.	213 C.P.2 213	~~~	1222 282	491	475 1205 1237	194 545 3094 1004	
22235		18	직업	588 8	8 8 8	Å Å	臣能能	907	9825	325				NNNN	38

OPTMIZATION ROUTING CYCLE 1, TRIAL 1 TABLE A-2

***OPTRY**

1 OPT TRIAL= ROUTING CYCLE=

0 0.0500 IND FOR DNE MORE TRY= 0.050 POSITIVE ERROR= ALL. PERC NEGATIVE ERROR=

26 9 10 AVG. CRITICAL DRAW DOWN RESULTS FROM PER

EN-RE0 0.00		
ELEV -601.92		H-B0T-C 1300.00
STORAGE 488408.22		H. T0P-C 1424. 31
RELEASE 400.00		RELEASE 463.17
EVAP-P -7.57	27	TAILWATER 0.00
0.00 0.00	1 TO	0SP1LL 63.17
DRAW-RAT 16.30	FROM PER	DRAW-RAT 1.00
EL-BTW -601.92	RESUL TS	HEAD 0.00
POW-REL 0.00	ROUTING PERIOD	POW-REL 0.00
INFLDW 268.50	AVG.	INFLOW 377.44

LDC.TYP 4.00 DP TRIAL ERROR-RAT ERR-STG TAR-MIN-STG MIN-STG PER-MIN-STG TOP-STG 1 1.090246 -75772. 502000. 426228. 26 571500. *******

INS CAP ANN FIRM E AVG ANN E 0. 0. 0. ANN DES D ANN RED D ANN DIV D 400.0 0.00 0.00

1.206494 0 MULTIPLIER= =140711

ERR-BN-MIN -75772.07 ERR-BN-MAX 0.00 BNDMIN 571500.00 ER-IMPROVE EST-BOUND BNDMAX 1.00 0.00 10000000.00 EST3 586264.34 PTWD 0.00 NEXT-ASSUM 586264.34 ASSUMED 571500.00

***RTCOF**

DURATIONS
FOR LOW-FLOW DURA
PERIODS FOR
AND ENDING PE
STARTING AND
TABLE A-3

4 5 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		
215555 215555 215555 215555 215555 215555 215555 215555 215555 215556 215556 215556 215556 215556 215566 215566 215566 215566 215566 215577 215576 215576 215576 215576 215576 215576 215576 215576 215576 215576 215576 215776 215776 215756 215756 215776 215756 215776 215776 215756 215776 215776 215776 215756 215777 21577 2157777 215777 215777 215777 215777 215777 215777 215777 215777		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		APPROX. DEP CAP. 0.
÷%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%		DRAH-DUR 13.
뵭뎡엃엃겯셠엃껆혂혂혂혂혂혂혂혂혂혂혂혂혂혂혂혂혂혂혂혂혂혂햳엳隆O Ħ	DATE 29100100.	RAT-ST6/0 0.173
VDL-DUR 208. 208. 208. 208. 208. 2123. 2124. 2123. 2124. 2123. 2124. 2123. 2124. 2125. 2124. 2125. 2124. 2125. 2124. 2125. 2124. 2125. 2124. 2125. 2124. 2125. 2124. 2125. 2124. 2125. 2125. 2125. 2124. 2125.	END-PER 51	GMEAN 554.
퓙ᅼज़ਲ਼ ₳₼৵₼ఴ౿⋶⋣ਗ਼ਗ਼ੑੑੑੑੑੑਜ਼ਗ਼ਗ਼ਗ਼ਫ਼ਗ਼ਗ਼ਗ਼ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼ਲ਼	START-PER 25	CON-ST6 69500.

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TABLE A-4 OPTIMIZATION SUMMARY

NU290*

		ANNUAL DIV 4		5 0
		ANNUAL Reg g	0000000	6
		ANNUAL DES Q	444444 4000000000000000000000000000000	400.
		DRAW Av Rel Loc=		400.
	0.05	DRAW Length	*****	
	9.00	DRAW ST PER	1930.06 1930.06 1930.06 1930.06 1930.06 1930.06	1930.06
STEM Orage * Run 18 120 Periods)	2.00	RAT10 ST6/0	0.1731 0.2099 0.2442 0.2525 0.3376 0.3576	0.3536
	0.00	TOP. CON STOR.	71500. 86264. 100019. 1111886. 2233772. 137525. 143929.	
25~	0*00	AVG		
SUPPLY RVATION Record	0.00 0.	AVG REL	4444633 46643 46643 46643	556.
RESERVOIR WATER SUITATION OF CONSERVE Y FLOW 1927-1937 RE	0.00 0.	AVG INF.		554.
INGLE RESER OPTIMIZATIO ONTHLY FLOW	00"0	ROUTING ST PER	1929.10 1929.10 1929.10 1929.10 1929.10 1929.10	1927.10
NO*	0.00	PERIODS	2222222	120
	4.00	ERROR (STG)	-75772. -60883. -46955. -34863. 79242. -2138.	-2138.
122	37	ERRDR RATIO	1.0902 0.7225 0.3173 0.3573 0.0642 0.0551	0.0151
		IRIAL	-01041047	
		T	SINGLE RES SINGLE RES SINGLE RES SINGLE RES SINGLE RES SINGLE RES SINGLE RES SINGLE RES	SINGLE RES

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TABLE A-5 SIMULATION SUMMARY FOR ALL PERIODS

213. 213.040	C.P. 213 Flow Reg	1276 1276
4.060	RES ND.4 DEQ-SHOR	888888888888888888888888888888888888888
8 4. 4.050	RES NO.4 MIN DESI	\$
FL000= 4.100	RES NO.4 OUTFLOW	1220 1276
PERIOD 4. 4.090	RES ND.4 INFLOW	$\begin{array}{c} 1222\\ 1268\\ 1268\\ 1268\\ 1268\\ 1268\\ 1268\\ 1268\\ 1268\\ 1266\\ 1266\\ 1266\\ 1266\\ 1256\\ 1256\\ 1256\\ 1256\\ 1256\\ 1256\\ 1256\\ 106\\ 1256\\ 106\\ 1256\\ 106\\ 1256\\ 106\\ 106\\ 106\\ 106\\ 106\\ 106\\ 106\\ 10$
SUMMARY BY 4. 4.120	RES ND.4 Case	88888888888888888888888888888888888888
4.130	RES ND.4 Level	
4. 110	RES NO.4 EOP STOR	643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 6536293.94 643928.69 64333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 6433333.91 6433333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 643333.91 64333.
	M	मा म
	YR I	NTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
	£	0111-00040-0-0111-00040-0-0111-00040-0-0111-00040-0
	٨d	
LOC NO= CODE=	PER	

0.000

0.000

TABLE A-5 (CONTINUED)

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c	د
c	
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213.	C.P. 213 FLOW REG	400.00 400.00 400.00	66666 66666 666666 666666	400.00 400.00	400-00 400-00	400.00 400.00	807.23 662.39 400.00	400.00 802.21 1238.20	523.94 400.00	400.00 400.00	557.39 400.00	400.00 400.00	1059.94 573.13	1003.39 769.08 552.39 400.00
¢.	RES NO.4 DEQ-SHOR	888888		8888	8888	888	888	 888	8888	8888	8888	8888	8888	8888
4.	RES NO.4 MIN DESI	4444 400.00 00.000 000.000		400.00 400.00	60.09 60.09 60.09 60.09 60.09	400.00 400.00	400.00 400.00	400.00 400.00	400.00 400.00 400.00	400 60 60 60 60 60 60 60 60 60 60 60 60 6	400.00 600.00	460.08 460.08	400.00 400.00	400.00 400.00 400.00
4,	RES NO.4 OUTFLOW	4400.00 4400.00 400.00 000.00	400.00 400.00	400.00 400.00	8000 8000 8000 8000 8000 8000 8000 800	400.00 400.00 400.00	807.23 662.39 400.00	400.00 802.21 1238.20	523.94 400.00 400.00	400.00 400.00	557.39 400.00 400.00	400.00 400.00	573.13 573.13	1003.39 769.08 552.39 400.00
4,	RES NO.4 INFLOW	206.00 745.00 80.00 133.00	433.00 530.00 1106.00	513.00 130.00	429.00 1205.00 400.00	438.00 526.00 909.00	1224.00 655.00 348.00	212.00 1032.00 1237.00	524.00 385.00 354.00	139.00 139.00 459.00	550.00 307.00 194.00	171.00 513.00 424.00	1219.00 566.00 354.00	1044.00 763.00 388.00 388.00
4.	RES NO.4 CASE	8888888	88888	8888	3888	 	0.03 0.03	0.00 0.00 0.00	 	300 30 0 0			0.03	0.00
4.	RES ND.4 LEVEL	22.88 2.78 2.78 2.78 2.78 2.78 2.78 2.78	2.80 2.80 88 2.80	55888 5555 5555 5555 5555 5555 5555 55	22.90 29.92 29.92	2.92 2.92	888 888 888	8888 8988	22.08 25.09 25.09 26.09 27.09	22.288 26.26	5.99	2.95 2.96 2.96 2.95	0000 1777	8888 7777
4.	RES NO.4 EOP STOR	570441.96 554801.10 535400.93 515696.48 499862.25 504490.85	506544.93 514062.17 557608.98 564142.71	571144.40 563802.73 547248.44 577415.08	529139.57 578592.99 578898.84	581516.13 589460.73 617952.24	643928.69 643928.69 640826.34	629702.92 643928.69 643928.69	642728.67 642910.85 640652.96 447070 45	628161.85 631702.72 643978.49	643928.69 638304.73 626109.21	612115.34 619126.57 620551.45 633991.03	643928.69 643928.69 641391.26	643928.69 643928.69 643928.69 643286.42
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TABLE A-5 (CONTINUED)

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RES NO.4 DEG-SHOR 0.00 0.00 0.00 0.0 8.1 ÷ RES ND.4 MIN DESI
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 40 18000°00 400.00 100.00 1.00 00.00 1.00 4 RES ND.4 DUTFLOW 6766.96 3030.17 400.00 10.00 101.00 556.39 4 $\begin{smallmatrix} 1177.00\\ 1872.00\\ 1872.00\\ 179.00\\ 179.00\\ 179.00\\ 172.00\\ 126.00\\$ 6490.00 107.00 3094.00 43.00 RES ND. 101.00 554.08 4. RES ND.4 CASE 1.08 0.03 0.0 1.00 0.01 0.0 4 RES NO.4 LEVEL 2.78 53.79 3.00 4.00 2.95 50.00 4. ND.4 STOR 643928.69 634925.68 638946.66 638946.66 653976.65 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 641561.41 555464.53 555461.51 6417561.41 555545.79 643760.06 643760.06 643828.69 641810.35 64181 643928.69 4.00 50.00 =7.3274909.54 499862.25 610624.25 ÷ ដ្ឋីដ 11 PMAX= H . M AVG MIN MS ЯΑХ H ¥ ************************ арарони-ималарарарони,-ималарарар Ŵ Z Ř ₫

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APPENDIX B

SELECTED OUTPUT FOR RUNS 1-24

RUNI - SUMMARY OUTPUT

213. 213.040	C.P. 213 FLOW REG	12721.09 12721.09 12721.09 12721.09 12721.09 12721.09 12721.09 12721.09 12721.09 12721.09 12721.09 12721.09 1272.09 1000.000.000.000.000.000.000.000.000 1272.09 1000.000.000.000.000.000.000.000.000.00
213. 213.080	C.P. 213 REQ-SHOR	888888888888888888888888888888888888888
213. 213.070	C.P. 213 MIN REQU	88888888888888888888888888888888888888
213. 213.060	C.P. 213 DEQ-SHOR	888341488888888888888888888888888888888
1 213. 213.050	C.P. 213 MIN DESI	\$
FL000= 4.100	RES NO.4 Outflow	1222 1222 1222 1222 1222 1222 1222 122
PERIOD 4. 120	RES ND.4 Case	88888888888888888888888888888888888888
SUMMARY BY 4. 4.130	RES ND.4 LEVEL	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
4. 4.220	RES ND.4 EDP ELEV	424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 1536.10 1556.10 1556.10 1556.100 1556.1000000000000000000000000000000000
4. 4.110	RES NO.4 EOP STOR	71500.00 700.00 700
LDC ND= CODE=	PER DY MO YR DW	444438338383838383838383838383838383838

RUNI (CONTINUED)

213.	C.P. 213 FLOW REG	400.00 400.000 400.000 400.000 400.000 400.000 400.000 400.000 400.000 400.000 400.000 400.000 400.000 400.000 400.000 400.000 400.0000 400.0000 400.0000 400.0000 400.00000000
213.	C.P. 213 REQ-SHOR	88888888888888888888888888888888888888
213.	C.P. 213 Min Regu	88888888888888888888888888888888888888
213.	C.P. 213 DEQ-SHOR	88888888888888888888888888888888888888
213.	C.P. 213 MIN DESI	
4.	RES NO.4 OUTFLOW	400.00 400.00
4.	RES NO.4 Case	8336833686868883686833688883333333333888888
ŧ.	RES NO.4 LEVEL	00000000000000000000000000000000000000
4.	RES NO.4 EOP ELEV	1423.05 1423.05 1423.05 1423.05 1423.05 1423.05 1423.05 1527.0
*	RES NO.4 EDP STOR	70753.35 68779.06 68779.06 58131.38 73026.95 55131.38 73592.06 6641.88 55778.64 6641.88 71500.00 6641.88 71500.00 70 71500.00 70 70 70 70 70 70 70 70 70 70 70 70 7
LDC NO=	PER DY NO YR DW	

RUNI (CONTINUED)

213.	C.P. 213 FLON REG	549.32 400.00	400.00	400.00	596.06	617.16 400.00	3025.96	400.00	400.00	400.00 400.00	142.95	400.00	400.00	493.08 681.98	1285.55	797.32	400.00	400.00	400.00	66678.20	3025.96	102.29	101.00	555.65	38.00
213.	C.P. 213 REQ-SHOR	0.00	88	88	38	0.0	88	888	0.00	0.0	0.0	0.0	0.00	0.0	0.00	89	80.0	0.0 0	0.0	0.00	0.00	0.00	1.00	0.00	1.00
213.	C.P. 213 MIN REQU	100.00	100.00	100.00	100.00	100.00	100.00	0.001	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	12000.00	100.00	100.00	1.00	100.00	1.00
213.	C.P. 213 DEQ-SHOR	0000	000	000	000	0.00	000	000	0.00	0.00	257.05	228.06 0.00	0.0	0.00	0.00	800	0.00	0.0	0.0	1725.45	297.71	0.00	38.00	14.38	1.00
213.	C.P. 213 MIN DESI	400.00 400.00	400.00	400.00	400.00	400.00 400.00	400.00	400.00	400.00	400.00 400.00	400.00	400.00	400.00	400.00 400.00	400.00	400.00	400.00	400.00	400.00	48000.00	400.00	400.00	1.00	400.00	1.00
4	RES ND.4 Outflow	549.32 400.00 1166.18	400.00	400.00	596.06	61/.16 400.00	3025.96 873.55	400.00	400.00	400.00 400.00	142.95	400.00	400.00	473.08 681.98	1285.55	797.52 400.00	400.00	400.00	400.00	66678.20	3025.96	102.29	101.00	555.65	38.00
Å.	RES NO.4 Case	213.00 0.03 0.03	213.00 213.00	213.00	0.03	213.00	0.03	213.00	213.00	213.00	213.00	213.00	213.00	0.03	0.03	0.05 713.00	213.00	213.00	213.00	16189.32	213.00	0*03	10.00	134.91	1.00
4.	RES NO.4 Level	3.00 3.09 3.00	2.87 2.68	2.49	- 83 - 83 - 84	2.94	88 28	2.96	5.65	2. 52 2. 00	2.8 2.8	2.14	2.67	38 28	8°5	85 26	2.8	2.79	2.93	329.79	3.00	2.00	1.00	2.75	37.00
4.	RES NO.4 EOP ELEV	1424.31 1423.74 1424.31	1416.78 1404.76	1390.73	1424 31	1420.92	1424.31 1424.31	1422.24	1399.73	13/3.82	1300.00	1348.30	1404.18	1424.31	1424.31	1429.51	1416.11	1412.01 1401.06	1420.50	68291.95	1424.31	1300.00	1.00	1402.43	37.00
4.	RES NO.4 EOP STOR	71500.00 70817.84 71500.00	4 M		500	oi •₹-	00	- ē -		പ്പ	Öe	ວ່ໝີ	00	50	ō<	5-	2	Чe	i di l	6480173.11 1	71500.00	2000.00	2.00	54001.44	109.00
=ON (PER DY MO YR DW	4 35 5 35 5 35 6 35 7 6 35 7 7 7 8		1 6 22 1			1 2 36 1	1 4 36 1	1 92 9	1 8 36 1	1 9 36 1	1 11 36 1	1 12 36 1	1 2 37 1			1 22	1 / 3/ 1 1 8 37 1	1 9 37 1	SUM = 64	MAX =	= NIW	PMAX=	AVG =	=NIW4
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RUNZ - SUMMARY DUTPUT

213. 213.040	C.P. 213 FLON REG	12721 17721 177217
213. 213.080	C.P. 213 REQ-SHOR	888888888888888888888888888888888888888
213. 213.070	C.P. 213 Nin Redu	88888888888888888888888888888888888888
213. 213.060	C.P. 213 DEQ-SHOR	2777 2777 2777 2777 2777 2777 2777 277
1 213. 213.050	C.P. 213 MIN DESI	6666666666666666666666666666666666666
FL000= 4.100	RES NO.4 OUTFLOW	12221 12721 177217
PERIOD 4. 120	RES NO.4 Case	88888888888888888888888888888888888888
SUMMARY BY 4. 4.130	RES NO.4 LEVEL	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
4 . 4.220	RES ND.4 EOP ELEV	4244 4244 4244 4244 4244 4244 4224 4244 4224 4244 4224 424
4. 4.110	RES NO.4 EOP STOR	71500.00 70 70 70 70 70 70 70 70 70 70 70 70 7
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RUNZ (CONTINUED)

213.	C.P. 213 FLOW REG	860220000000000000000000000000000000000	400.00 400.00	31069.02	102.29	6.00	517.82	38.00
213.	C.P. 213 REQ-SHOR	888888888888888888888888888888888888888		0.0	0.00	1.00	0.00	1.00
213.	C. P. 213 MIN REQU	88888888888888888888888888888888888888	100.00	00.000	100.00	1.00	100.00	1.00
213.	C.P. 213 DEQ-SHOR	×		1240.35	0.00	38.00	20.67	1.00
213.	C.P. 213 MIN DESI		400.00	24000.00	400.00	1.00	400.00	1.00
4.	RES NO.4 Outflow	400.00 400.00	400.00	31069.02 1700 55	102.29	6.00	517.82	38.00
4.	RES ND.4 Case		213.00	12.9219	0.03	10.00	152.66	1.00
-	RES ND.4 LEVEL	44444444444444444444444444444444444444	2.40	40.YCI	2.00	1.00	2.66	37.00
4	res no.4 Eop elev	1422, 69 1422, 05 1422, 05 1422, 05 1372, 07 1372, 37 1372, 37 142, 18 1418, 20 1418, 20 1418, 20 1418, 20	1381.43	1424.31	1300.00	1.00	1394.20	37.00
4.	RES NO.4 EOP STOR	70753.35 68779.06 538131.38 538131.38 538131.38 23984.88 23984.88 23994.88 2394.88 16219.88 8641.88 16227.14 86318.68 66318.68 6158.49 71500.00 71500.00	29495.71	2867378.48 71500.00	2000.00	2.00	47826.64	39.00
=ON	PER DY MO YR DW	2423255556444444444444444444444444444444		17 = UNC = XVH		PMAX=	AVB =	=NIN4
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RUN3 - SUMMARY OUTPUT

213. 213.040	C.P. 213 FLOW REG	144446000000000000000000000000000000000
213. 213.080	C.P. 213 REQ-SHOR	888888888888888888888888888888888888888
213. 213.070	C.P. 213 MIN REQU	88888888888888888888888888888888888888
213. 213.060	C.P. 213 DEQ-SHOR	88888888888888888888888888888888888888
1 213.050 213.050	C.P. 213 MIN DESI	\$
FL00D= 4.100	RES NO.4 OUTFLOW	1 1 1 1 1 1 1 1 1 1 1 1 1 1
PERIOD FI 4. 4.120	RES NO.4 Case	88888888888888888888888888888888888888
SUNMARY BY 4. 4.130	RES ND.4 LEVEL	44444444444444444444444444444444444444
4. 4.220	RES ND.4 EDP ELEV	41472 41474 414747 414747 414747 414747 414747 4147477 4147477 414747
4. 4.110	RES NO.4 EOP STOR	69097.74 512576.37 33799.72 33799.72 33799.72 34908.35 48551.37 55550.90 55555.75 715500.00 255550.77 715500.00 25555.75 715500.00 255555.75 70757.75 707577.75 707577.75 707577.75 707577.75 707577.75 707577.75 707577.75 707577.75 7075777.75 7075777.75 707577.75 707577.75 70757777777777
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RUN3 (CONTINUED)

21621.93	1233.55	102.29	9.00	423.96	29.00
0.00	0.00	0.00	1.00	0.00	1.00
5100.00	100.00	100.00	1.00	100.00	1.00
1240.35	297.71	0°00	29.00	24.32	1.00
20400.00	400.00	400.00	1.00	400.00	1.00
21621.93	1233.55	102.29	9.00	423.96	29.00
9159.24	213.00	0*02	1.00	179.59	8.00
132.56	3.00	2.00	8.00	2.60	28.00
70833.23	1424.31	1300.00	8.00	1388.89	28.00
2226098.48	71500.00	2000.00	8.00	43648.99	30.00
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RUN4 - SUMMARY DUTPUT

213. 213.040	C.P. 213 FLON REG	12721 17721 177217
213. 213.080	C.P. 213 Reg-Shor	888888888888888888888888888888888888888
213. 213.070	C.P. 213 Min Requ	\$
213. 213.060	C.P. 213 DEQ-SHOR	88877888888888888888888888888888888888
1 213. 213.050	C.P. 213 MIN DESI	44444422222222222222222222222222222222
FL000= 4.100	RES NO.4 Outflow	12721 27221
PERIOD 4. 4.120	RES NO.4 Case	88888888888888888888888888888888888888
SUMMARY BY 4. 4.130	RES NO.4 LEVEL	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
4. 220	RES NO.4 EDP ELEV	14244 14244 14244 14244 14244 14244 14244 14244 14244 122000 12000 10000 120000 120000 120000 120000 120000 120000 1200000 1200000 1200000000
4. 4.110	RES NO.4 EOP STOR	71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 7011.87 7000.00 71500.00 717500.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 7000.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 70 7000.00 70000.00 70000.00 70000.00 70000.00 70000.000
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RUN4 (CONTINUED)

213.	C.P. 213 FLOW REG	7420.00000000000000000000000000000000000
213.	C.P. 213 REQ-SHOR	88888888888888888888888888888888888888
213.	C.P. 213 MIN REQU	88888888888888888888888888888888888888
213.	C.P. 213 DEQ-SHOR	88888888888888888888888888888888888888
213.	C.P. 213 MIN DESI	8442600000000000000000000000000000000000
4.	RES ND.4 OUTFLOM	74200.0808080274446446080802755090808644404018086666666666666666666666666
4.	RES NO.4 Case	33833888888888888888888888888888888888
4.	RES NO.4 LEVEL	000000000000000000000000000000000000
4.	res No.4 Edp elev	
4.	RES NO.4 EOP STOR	57619.37 48255.94 41142.86 48255.94 48255.94 452.77 2000.00 5500.00 551504.91 751500.00 70 70 70 70 70 70 70 70 70 70 70 70 7
	DV NO VR DW	40.9~8~9112-0046.9~86912-0046.9~86912-0046.9~869212-009 5556669785555555555555555555555555555555
LOC NO=	PER	44444466666666666666666666666666666666

213.	C.P. 213 FLOW REG	700.000 770.0000 770.000 700.0000 700.0000 700.0000 700.0000 700.0000 700.0000 700.0000 700.0000 700.0000 700.0000 700.0000 700.00000 700.0000 700.0000 700.0	67238.86	2992.63	70.68	101.00	560.32	107.00
213.	C.P. 213 REQ-SHOR	88888888888888888888888888888888888888	46.86	29.32	0.00	107.00	0.39	1.00
213.	C.P. 213 MIN REQU	88888888888888888888888888888888888888	12000.00	100.00	100.00	1.00	100.00	1.00
213.	C.P. 213 DEQ-SHOR	20000000000000000000000000000000000000	4552.82	459.32	0.00	107.00	37.94	1.00
213.	C.P. 213 MIN DESI	68888888888888888888888888888888888888	57200.00	550.00	400.00	10.00	476.67	3.00
4.	RES NO.4 DUTFLOW	10000000000000000000000000000000000000	67238.86	2992.63	70.68	101.00	560.32	107.00
4.	RES NO.4 Case	88888888888888888888888888888888888888	18319.10	213.00	0*03	10.00	152.66	1.00
4.	RES NO.4 LEVEL	Nanagagagagagagagagagagagagagagagagagaga	305.56	3.00	1.00	1.00	2.55	49.00
4	RES NO.4 EOP ELEV	1424.51 1424.51 1424.51 1424.51 1424.51 1424.51 1424.51 1424.51 1520.000 15300.00 15300.00 15300.00 1532.01 1424.51 1424.51 1424.51 1424.51 1532.00 1532.01 15	66099.80	1424.31	1270.23	1.00	1384.16	49.00
4.	RES NO.4 EOP STOR	71500.00 63456.89 71500.00 53256.89 53256.89 532167.67 532167.67 55508.99 2000.00 2000.00 2000.00 2000.00 2000.00 71500.00 70 71500.00 70 70 70 70 70 70 70 70 70 70 70 70 7	106616.44 1	71500.00	300.00	2.00	42555.14	49.00
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LOC NO	PER							

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RUNS - SUMMARY OUTPUT

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213. 213.040	C.P. 213 FLOW REG	12721.05 12721.05 12721.05 12721.05 12721.05 12721.05 12751.05 127
213. 213.080	C.P. 213 REQ-SHOR	888888888888888888888888888888888888888
213. 213.070	C.P. 213 MIN REQU	88888888888888888888888888888888888888
212. 212.060	C.P. 212 DEQ-SHOR	888341488888888888888888888888888888888
1 212. 212.050	C.P. 212 MIN DESI	\$
FL000= 4.100	RES NO.4 Outflow	1221.09 1272.175 1272.175 1272.175 1272.175 1272.175 1272.175 1272.175 1272.175 1272.91 1272.91 1273.75 100.000 1277.75 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.0000 100.00000 100.00000000
PERIOD FL 4. 4.120	RES ND.4 Case	88888888888888888888888888888888888888
SUMMARY BY 4. 4.130	RES NO.4 LEVEL	nnnnnnnnnggggggggggggggggggggggggggggg
4. 220	RES ND.4 EDP ELEV	62000000000000000000000000000000000000
4. 110	RES NO.4 EOP STOR	71500.00 70 70 70 70 70 70 70 70 70 70 70 70 7
	ĤQ	ومحاجبا ومراجعا ومراجع
	YR	RE128888888888883333333333333333333333333
	ę	010-00469-000010-00469-000010-00469-000010-00
	λ	مال المراجعة وما يسم وما
LOC NO= CODE=	PER	448938388888888888888888888828282828282828

213.	C.P. 213 FLOW REG	400.00 400.00
213.	C.P. 213 REG-SHOR	888888888888888888888888888888888888888
213.	C.P. 213 MIN REQU	88888888888888888888888888888888888888
212.	C.P. 212 DEQ-SHOR	88888888888888888888888888888888888888
212.	C.P. 212 MIN DESI	**************************************
4.	RES NO.4 DUTFLOW	749000000000000000000000000000000000000
а Ф	RES ND.4 Case	83883888888888888888888888888888888888
4	RES NO.4 LEVEL	00000000000000000000000000000000000000
4.	RES NO.4 EOP ELEV	
4.	RES NO.4 EOP STOR	70753. 35 68779. 06 58131. 38 53921. 38 55064. 95 55064. 95 55778. 64 65318. 68 65318. 68 71500. 00 71500. 00 7000. 00 7000. 00 7000. 00 7000. 00 7000. 00 7000. 00 7000. 00 700
LOC ND=	PER DY MO YR DW	24844484858998585899926262628639999648484888888888888888888888888888
ت		

213.	C.P. 213 FLOW REG	1166-11 166-18 166-18 166-18 166-18 166-18 166-18 166-18 166-18 166-18 166-18 166-18 166-18 166-18 166-18 166-18 166-18 166-18 166-18 171-16 171-1	66678.20	3025.96	102.29	101.00	555. 65	38.00
213.	C.P. 213 REQ-SHOR	888888888888888888888888888888888888888	0.00	0.00	0.00	1.00	0.00	1.00
213.	C.P. 213 MIN REQU	88888888888888888888888888888888888888	14900.00	150.00	100.00	8.00	124.17	2.00
212.	C.P. 212 DEQ-SHOR	88888888888888888888888888888888888888	1725.45	297.71	0.00	38.00	14.38	1.00
212.	C.P. 212 MIN DESI	44444444444444444444444444444444444444	48000.00	400.00	400.00	1.00	400.00	1.00
4	res no.4 Outflow	1142 144 146 146 146 146 146 146 147 147 147 147 147 147 147 147	66678.20	3025.96	102.29	101.00	555, 65	38.00
*	RES ND.4 Case	88888833333888888888883838338888888888	16113.32	212.00	0.03	10.00	134.28	1.00
4.	RES NO.4 LEVEL	NGNGGGGASSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS	329.79	3.00	2.00	1.00	2.75	37.00
* **	RES NO.4 EOP ELEV	1424.31 1424.31 1424.31 1424.31 1424.31 1424.33 1424.33 1424.33 1373.95.73 1424.33 1373.95.73 1424.33 1373.95.73 14224.33 1373.95.73 14224.33 1373.95.73 14224.33 1373.95.73 14224.33 14244.33 1444.43 1444.43 1444.43 1444.43 1444.444.43 1444.444.44	168291.95	1424.31	1300.00	1.00	1402.43	37.00
4.	RES ND.4 EOP STOR	71500.00 70817.84 71500.00 62454.81 71500.00	480173.11	71500.00	2000.00	2.00	54001.44	109.00
LDC ND=	PER DY MO YR DW	91 4 35 92 5 35 93 5 35 94 5 35 95 6 35 96 7 35 97 5 35 98 7	SUM = 64	MAX ==	#IN #	PMAX=	AVB =	PMIN=

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RUN6 - SUMMARY OUTPUT

213. 213.040	C.P. 213 FLON REG	12721 17721 177217
213. 213.080	C.P. 213 Red-Shor	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
213. 213.070	C.P. 213 MIN REQU	\$
212. 212.060	DUMNY CP DEQ-SHOR	88338888888888888888888888888888888888
1 212. 212.050	DUMMY CP MIN DESI	440.0000000000000000000000000000000000
FL000= 4.100	RES NO.4 Dutflow	12221.09 12721.75 12721.75 12721.75 12721.75 12721.75 12721.75 12721.75 12721.75 12721.75 1270.00 12700.00 12700.00 12700.00 12700.00 12700.00
PERIOD 4.120	RES NO.4 Case	
SUNMARY BY 4. 4.130	RES NO.4 Level	
4. 4.220	RES NO.4 EOP ELEV	1424-31 1424-31 1424-31 1424-31 1424-31 1424-31 1424-31 1424-31 1424-31 1424-31 1424-31 15350-52 15550-52 15550-52 15550
4. 4.110	RES NO.4 EOP STOR	71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 7011.87 7000.00 715500.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 7775510.00 77755000.00 77755000.00 77755000.00 77755000.00 77755000.00 77755000.000
LOC NO= CODE=	PER DY MO YR DW	4448383333383838383333583832828283833333333

213.	C.P. 213 FLOW REG	742000000000000000000000000000000000000
213.	C.P. 213 RED-SHOR	88888888888888888888888888888888888888
213.	C.P. 213 MIN REQU	88888888888888888888888888888888888888
212.	DUMMY CP Deq-Shor	88888888888888888888888888888888888888
212.	DUMMY CP MIN DESI	84444448888888888888888888888888888888
4	RES NO.4 Dutflow	288038200000000000000000000000000000000
4.	RES NO.4 Case	338538888888833885388538883338888888888
4.	RES NO.4 Level	44444
-	RES NO.4 EDP ELEV	1412-222-22200-22220-2220-2220-22200-2200-22200-2200-22200-220
4.	RES NO.4 EOP STOR	71500.00 71500.
	MQ	
	YR I	***************************************
	Ŵ	40.9080910-00409080910-00409080910-00409080910-000
£1	R DY	
LOC NO:	PER	**************************************

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213.	C.P. 213 FLOW REG	10000000000000000000000000000000000000	67239.47	2992.63	70.68	101.00	560.33	107.00
213.	C.P. 213 REG-SHOR	88888888888888888888888888888888888888	121.71	59.32	0.00	107.00	1.01	1.00
213.	C.P. 213 Min Regu	536688888888888888888888888888888888888	14900.00	150.00	100.00	8.00	124.17	2.00
212.	DUMNY CP Deq-Shor	414 45 45 45 45 45 45 45 45 45 45 45 45 45	4552.22	459.32	0.00	107.00	37.94	1.00
212.	DUMMY CP MIN DESI	452500000000000000000000000000000000000	57200.00	550.00	400.00	10.00	476.67	3.00
4.	RES ND.4 Outflow	10000000000000000000000000000000000000	67239.47	2992.63	70.68	101.00	560.33	107.00
4 .	RES ND.4 Case	88888888888888888888888888888888888888	17813.24	213.00	0.03	36.00	148.44	1.00
-	RES ND.4 LEVEL	888282988838882888888888888888888888888	304.55	3.00	1.00	1.00	2.54	37.00
4.	RES NO.4 EOP ELEV	1424.51 1424.51 1424.51 1424.51 1428.85 1555.21 1428.55 1555.25 1555.25 1428.55 1555.2	66064.55	1424.31	1270.23	1.00	1383.87	37.00
4.	RES NO.4 EOP STOR	71500.00 63456.87 71500.00 53228.81 53228.51 53228.51 71500.00 71500.00 147607.65 22996.45 22000.00 14700.00 147607.65 22996.45 22000.00 117500.00 71500.00 70 70 70 70 70 70 70 70 70 70 70 70 7	104894.99	71500.00	300.00	2.00	42540.79	37.00
LOC NO=	PER DY MO YR DW	92 1 5 33 1 5 33 1 5 33 1 5 33 1 6 9 8 7 5 35 1 6 9 8 7 35 1 7 33 1 8 35 1 8 3	SUM = 51	MAX =	= NIW	PMAX=	avg =	-NIN-

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RUN7 - SUMMARY DUTPUT

213. 213.040	C.P. 213 FLOW REG	12721 12721 12721 12721 12721 12721 12721 12721 12721 12721 12721 12722
213. 213. 080	C.P. 213 REQ-SHOR	888888888888888888888888888888888888888
213 . 213.070	C.P. 213 MIN REQU	88888888888888888888888888888888888888
213. 213.060	C.P. 213 DEQ-SHOR	888888888888888888888888888888888888888
1 213. 213.050	C.P. 213 MIN DESI	88888888888888888888888888888888888888
FL000= 4.100	RES NO.4 Outflow	12721 12721
PERIOD 4. 120	RES NO.4 Case	88888888888888888888888888888888888888
SUMMARY BY 4. 1.130	RES NO.4 LEVEL	2799948888888888888888888888888888888888
4.220	RES NO.4 EOP ELEV	424-33 445-45 445-45 445-45 445-45 445-45 445-45 45 45 45 45 45 45 45 45 45 45 45 45 4
4. 110	RES NO.4 EOP STOR	71500.00 700.00 700.00 700.00 700.00 700.00 700.00 700.00 700.00 700.00 700
LOC NO= CODE=	PER DY MO YR DW	4446389383838989898983832285886466666666666666666666666666666666

72

213.	C.P. 213 FLOW REG	256.00 252.00
213.	C.P. 213 RED-SHOR	888888888888888888888888888888888888888
213.	C.P. 213 Min Requ	88888888888888888888888888888888888888
213.	C.P. 213 DEB-SHOR	888888888888888888888888888888888888888
213.	C.P. 213 MIN DESI	86888888888888888888888888888888888888
4.	RES ND.4 OUTFLOW	808 807 807 807 807 807 807 807 807 807
4.	RES ND.4 Case	
4.	RES NO.4 LEVEL	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
* *	RES ND.4 EDP ELEV	
4.	RES NO.4 EOP STOR	71500.00 71500.
	MO	مس وسر مسر مسر مسر مسر مسر مسر مسر مسر مسر م
	MD YR	459786210100459788222210100459469101004594782222333333333333333333333333333333333
20	λ	ا وہ ہے
LOC NO=	PER	***************************************

213.	C.P. 213 FLOW REG	117775 17775 17775 17775 17775 17775 17775 17775 17775 17775 178555 178555 178555 178555 178555 1785555 178555 178555 17855555 1785555 1785555555555	66671.84	3096.88	105.00	101.00	555.60	59.00
213.	C.P. 213 REQ-SHOR	888888888888888888888888888888888888888	0.00	0.00	0.00	1.00	0.00	1.00
213.	C.P. 213 MIN REQU	88888888888888888888888888888888888888	12000.00	100.00	100.00	1.00	100.00	1.00
213.	C. P. 213 DEG-SHOR	888888888888888888888888888888888888888	0.00	0.00	0.00	1.00	0.00	1.00
213.	C.P. 213 MIN DESI	88888888888888888888888888888888888888	20295.00	400.00	100.00	35.00	169.13	57.00
4.	RES NO.4 OUTFLOW	255.25 255.25	66671.84	3096.88	105.00	101.00	555.60	59.00
4.	RES ND.4 Case	00000000000000000000000000000000000000	4475.97	213.00	0.03	34.00	37.30	1.00
4.	RES ND.4 Level		353.80	3.00	2.35	1.00	2.95	39.00
4.	RES ND.4 EOP ELEV	1424.31 1445.31 1445.31 1445.31 1445.31 1445.31 1445.31 1445.31 1455.3	170504.49	1424.31	1376.76	1.00	1420.87	39.00
4.	RES NO.4 EOP STOR	71500.00 70 71500.00 70 70 70 70 70 70 70 70 70 70 70 70 7	49221.44	71500.00	26190.22	101.00	67910.18	39.00
DC ND=	PER DY MO YR DW	23333333333333333333333333333333333333	SUM = 81	MAX =	= NIN	PMAX=	AVG =	PHIN=

RUNB - SUMMARY OUTPUT

213. 213.040	C.P. 213 FLOW REG	1221.16 501.16 501.16 501.16 501.16 501.16 501.16 501.16 501.16 700.00 700.00 747.55 78 76 76 76 76 76 76 76 76 76 76 76 76 76
213. 213.080	C.P. 213 REQ-SHOR	88828888888888888888888888888888888888
213. 213.070	C.P. 213 NIN REQU	80000000000000000000000000000000000000
212. 212.060	DUMMY CP Deq-Shor	8841738888888888888888888888888888888888
1 212. 212.050	DUMNY CP MIN DESI	
FL000= 4.100	RES NO.4 DUTFLOW	12721.75 12721.
PERIOD FI 4. 4.120	RES ND.4 Case	88000088888888888888888888888888888888
SUMMARY BY 4. 4.130	RES ND.4 Level	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
4. 220	RES ND.4 EDP ELEV	4244.31 1424.31 144.31 144.31
4. 4.110	RES NO.4 EOP STOR	71500.00 700.00 700.
	M	جسو عنو غنو غنو غنو غنو غنو غنو غنو غنو غنو غ
	YR	5555888888888888832323232323232323288888888
	멅	912-044646466912-064646466912-064646464646464646464646464646464646464
Ë RO	PER DY	4448383838383838383838383838383828282828

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213.	C.P. 213 FLOW REG	400.00 40
213.	C.P. 213 REQ-SHOR	888888888888888888888888888888888888888
213.	C.P. 213 MIN REQU	
212.	DUMMY CP DEQ-SHOR	88888888888888888888888888888888888888
212.	DUMMY CP Min Desi	
4.	RES ND.4 Outflow	20000000000000000000000000000000000000
4	RES ND.4 Case	33833388888888888888888888888888888888
4.	RES NO.4 LEVEL	000000-0000000000000000000000000000000
4.	RES NO.4 EOP ELEV	
4.	res No.4 EOP Stor	69038.61 670633.61 670633.23 6670633.23 6670633.23 6670633.23 667063.34 715002.87 715002.87 715002.87 715002.00 70002.00 70002.00 70002.00 70002.00 70000000000
	MD YR DW	40.90.00040.90.000000000000000000000000
LOC NO=	PER DY 1	84844488888888888888888888888888888888

213.	C.P. 213 FLOW REG	549.32 400.00 1166.18	400.00 400.00	400.00 596.06	400.00 3025.96	823.55 400.00	400.00 400.00	400.00 400.00	142.95 171.94	400.00	493.08	1285.55	797.32	400.00	400.00	400.00	66677.84	3025.96	124.09	101.00	555. 65	39.00
213.	C.P. 213 RED-SHOR	 8888	888	888	388	88°	000	88. 00	°.°	88	888	88	0.0	 88.	88		106.08	54.22	0,00	38.00	0.88	1.00
213.	C.P. 213 MIN REQU	170.00 180.00 190.00	400.00 190.00	180.00 185.00	165.00	145.00	110.00	110.00	110.00 140.00	120.00	112.00	145.00	110.00	100.00	110.00	110.00	17760.00	400.00	100.00	35.00	148.00	1.00
212.	DUMMY CP Deq-Shor	8888		000	 	0.00	000	0.00	257.05 228.06	000	0.00	0.0	0.0	38.0	0.0	0.00	1709.31	275.91	0.00	39.00	14.24	1.00
212.	DUMMY CP MIN DESI	400.00 400.00 400.00	400.00	400.00 400.00	400.00	400.00	400.00	400.00	400.00 400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	48000.00	400.00	400.00	1.00	400.00	1.00
ф.	RES ND.4 Dutflow	549.32 400.00 1166.18	400.00	400.00 596.06 617.16	400.00	823.55 400.00	400.00 400.00	400.00	142.95	400.00 400.00	493.08	1285.55	797.32	400.00	400.00 400.00	400.00	66677.84	3025.96	124.09	101.00	555. 65	39.00
4.	res No.4 Case	212.00 0.03	212.00	212.00 0.03	212.00	212.00	212-00	212.00	212.00 212.00	212.00	0.03	0.03	20 ° 03	212.00	212.00	212.00	15478.53	213.00	0.03	50.00	128.99	1.00
4.	RES NO.4 LEVEL	2.00 2.09 87 2.09	5-68 5-68 5-68	7.91 7.02	7.94 2.94	3.98 2.98	2.61 19:2	2.82	2.00 2.00	2.14 2.67	00 20 20	88 5 m	2.8 2.8	2.86	2.79	2.93	325.91	3.00	1.00	1.00	2.72	38.00
4.	res no.4 Eop elev	1424.31 1423.74 1424.31 1424.31	1404.76	1419.09 1424.31 1424.31	1420.92	1424 51 1422 24	1413.35	13/3.82	1300.00 1300.00	1348.30 1404.18	1424.31	1424.31	1424.31	1416.11	1412.01 1401.06	1420.50	68151.44	1424.31	1270.23	1.00	1401.26	38.00
ţ,	RES NO.4 EOP STOR	71500.00 70817.84 71500.00 62454.81	:	ందింది	-0	ວ່າວ່າ		ະທໍ	00	ຜໍວ່	oc	: °	å-	ŝ		i -a	53920.31 1	71500.00	300.00	2,00	53782.67	38.00
	MO YR DW	4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		ននន	222	3237	222	2%;	8 PS	28 28	55	ı م	55	5	55		SUM = 64	MAX =	= NIM	PMAX=	AVG =	=NIM4
OC ND=	PER DY	91 1 92 1 94 1																				

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RUN9 - SUMMARY OUTPUT

213. 213.040	C.P. 213 FLOW REG	12721.00 12721.00 12721.00 12721.00 12721.00 12721.00 12721.00 12721.00 12721.00 12721.00 12721.00 12721.00 1272.00 10
213. 213.080	C.P. 213 REQ-SHOR	888888888888888888888888888888888888888
213. 213.070	C.P. 213 MIN REQU	
212. 212.060	DUMMY CP Ded-Shor	**************************************
1 212. 212.050	DUMNY CP MIN DESI	220.00 200.00 200.00
FL00D= 4. 4.100	RES ND.4 Outflow	12221.09 501.275.75 501.275.75 501.275.75 501.275.75 501.275.75 501.275.91 501.275.91 501.275.91 2255.00 255.00 2
PERIOD 4. 4.120	RES ND.4 Case	
SUNMARY BY 4.130	RES ND.4 Level	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
4. 220	RES NO.4 EOP ELEV	1424.31 1445.31 1445.3
4. 4,110	RES NO.4 EOP STOR	71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 88879.66 88879.66 88879.60 71500.00 70 71500.00 70 70 70 70 70 70 70 70 70 70 70 70 7
	D YR DW	
	DY MO	
LOC NO= CODE=	PER 1	644838888888888888888888888888888888888

213.	C.P. 213 FLOW REG	5250.000 5250.0000 5250.000 5250.000 5250.000 5250.000 5250.000 5250.
213.	C.P. 213 REQ-SHOR	888888888888888888888888888888888888888
213.	C.P. 213 Min Redu	\$22662686888888888888888888888888888888
212.	DUMMY CP DEQ-SHOR	888888888888888888888888888888888888888
212.	DUMMY CP MIN DESI	88888888888888888888888888888888888888
4.	RES NO.4 Outflow	52825555555555555555555555555555555555
4.	RES ND.4 Case	
4.	RES ND.4 LEVEL	**************************************
	RES ND.4 EOP ELEV	
4	RES NO.4 EOP STOR	71500.00 71500.00 71500.00 64589.25 5519.16 55519.15 55519.15 71500.00 700.00 700.00 700.00 700.00 700.00 700.00 700.00 700.00 700.00 700.
ND=	PER DY MO YR DW	248388888888888888888888888888888888888

213.	C. P. 213 FLOW REG	2250.00 2755.0	66668.95	3096.88	165.00	101.00	555.57	40.00
213.	C.P. 213 REQ-SHOR	888888888888888888888888888888888888888	0.00	0.00	0.00	1.00	0.00	1.00
213.	C.P. 213 MIN REQU	170 170 170 170 170 170 170 170 170 170	17760.00	400.00	100.00	35.00	148.00	1.00
212.	DUMMY CP Deq-Shor	888888888888888888888888888888888888888	200.00	100.00	0.00	39.00	1.67	1.00
212.	DUMMY CP MIN DESI	88888888888888888888888888888888888888	30140.00	400.00	200.00	35.00	251.17	1.00
4.	RES NO.4 OUTFLOM	1172 1772 1772 1772 1772 1775	66668.95	3096.88	165.00	101.00	555.57	40.00
4.	RES NO.4 CASE	88838888888888888888888888888888888888	8485.40	213.00	0.03	39.00	70.71	1.00
Å.	RES NO.4 LEVEL	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	348.43	3.00	1.85	1.00	2.90	40.00
4.	RES NO.4 EOP ELEV	1424.31 1445.31 1445.31 1445.31 1445.31 1445.31 1455.3	70004.79	1424.31	1296.33	1.00	1416.71	40.00
4.	RES ND.4 EDP STOR	71500.00 70 70 70 70 70 70 70 70 70 70 70 70 7	7794348.64	71500.00	1739.12	101.00	64952.91	40.00
18	R DY NO YR DW		ll = NNS	max =	= NIN	PMAX=	AVG =	=NIWd
LOC NO=	PER	259876558282828282828282828282828282828282828						

RUNIO - SUMMARY OUTPUT

213. 213.040	C P 213 FLOW REG	1108.07 1074.07 1074.07 1075.07 1075.07 1075.07 1075.07 1075.07 1010.07 1010.07 1075.07 1010.07 1010.07 1074.07 1074.07 178.07 1
213. 213.080	c P 213 Red-Shor	888888888888888888888888888888888888888
213. 213.070	C P 213 Min Requ	
213. 213.060	C P 213 DEQ-SHOR	888888888888888888888888888888888888888
1 213.050 213.050	C P 213 MIN DEST	**************************************
FL000= 4. 220	RES 4 EOP ELEV	1450.00 1450.0
130	RES 4 LEVEL	88888888888888888888888888888888888888
SUNMARY BY PERIOD 4. 4.110 4.	RES 4 EOP STOR	110670.00 10070.00 100
4. 380	res 4 Top con.	06400111 06400 0640011 064000 0640000 0640000000000
4. 4.090	RES 4 INFLOW	11000 1000 1000 1000 1000 1000 1000 10
=0N	PER DY MO YR DW	469480253525252525252525252525252525252525252
LOC NC	2	

213.	C P 213 Flow Reg	
213.	C P 213 Reg-Shor	888888888888888888888888888888888888888
213.	C P 213 MIN REQU	88888888888888888888888888888888888888
213.	C P 213 DEQ-SHOR	888888888888888888888888888888888888888
213.	C P 213 MIN DESI	644446464444646464646464646464646666666
4.	RES 4 EOP ELEV	$\begin{array}{c} 1445.00\\ 1445.$
4.	RES 4 LEVEL	
4.	RES 4 EOP STOR	110690.00 110670.00 110670.00 1106756.94 110622.35 1106670.00 1106675.94 1106675.94 1107681.15 109655.51 109655.51 109755.97 109755.97 109755.64 107175.65 107175.65 107175.14 1071755.65 1071755.14 1071755.55 1071755.14 1071755.55 10717555.55 10717555.55
*	RES 4 TOP CON.	110690.00 10000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00000000
4.	RES 4 Inflow	444 441 1226 1226 1226 1226 1226 1226 12
	MO	
	A KR	222222222222222222222222222222222222222
	DM YQ	00409000000000000000000000000000000000
LOC ND=	PER D	\$

213.	C P 213 Flow Reg	\$
213.	C P 213 Red-Shor	888888888888888888888888888888888888888
213.	C P 213 Min Requ	
213.	C P 213 Deq-Shor	**************************************
213.	C P 213 MIN DESI	
4.	RES 4 EOP ELEV	1440. 1440.
4.	RES 4 LEVEL	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
4,	RES 4 EOP STOR	95281.49 94812.22 94812.22 94812.22 94812.22 94812.22 94812.22 94812.22 94812.22 94812.22 94625.78 95551.15 95555.16 85751.25 85751.55 85751.55 85751.55 85751.55 85751.55 85751.55 85751.55 85751.55 77474.09 77555.55 775555.55 775555.55 775555555.55 7755555.55 7755555.55 7755555555
4.	RES 4 TOP CON.	110690.00 110690
4.	RES 4 INFLON	88888888888888888888888888888888888888
	DY NO YR DW	ーの2444444444444444444444444444444444444
OC ND=	PER	8282332328238232222248111111112088282828282838323 8282323232323232323232

213.	C P 213 FLOW REG	4444 400.00 400.00 400.00 00 00 00 00 00 00 00 00 00 00 00 0	44444000000000000000000000000000000000	44446 600000000000000000000000000000000	444400 444400 6000000000000000000000000	60000000000000000000000000000000000000	44400 44000 44000 44000 4000000
213.	C P 213 Req-Shor		8888888	8888888		888888888888888888888888888888888888888	888888888888888888888888888888888888888
213.	C P 213 Min Requ	88888888888888888888888888888888888888	8888888	8888888		888888888888888888888888888888888888888	
213.	C P 213 DEQ-SHOR		8888888	888888		888888888888888888888888888888888888888	
213.	C P 213 MIN DESI	400 400 400 400 400 400 400 400 400 400	444444 400.00 60.0	60000000000000000000000000000000000000	00000000000000000000000000000000000000	6444460 6460 660 660 660 660 660 660 660	
4	RES 4 EOP ELEV	1422.63 1422.11 1421.58 1421.04 1421.04 1419.97 1419.43 1418.89	1417.79 1417.23 1417.23 1416.65 1416.09 1415.51	1413.79 1413.79 1413.21 1412.64 1412.07	1410.93 1410.36 1409.74 1409.00 1408.26 1406.80	1406.07 1405.34 1403.61 1403.87 1403.12 1401.63 1401.63	1399.37 1399.37 1398.61 1397.16 1394.59 1394.08 1394.08 1393.35 1391.79 1391.79
-		240000041	2788858	882228	222222222	*****	222222222222222222222222222222222222222
4	RES 4 LEVEL	000000000 444000000			0000000	ด้นุ่มหนุ่มหนุ่ม	า่ต่อต่อต่อต่อต่อต่อต่อต่อต่อต่อต่อต่อต่อ
4. 4	RES 4 RES 4 EOP STOR LEVEL						43045-84 44535-85 44535-85 427214-02 427214-02 40799-55 40799-55 37754-16 37754-16 37754-16 37754-16 37754-16 37754-16 377241-53 37241-53
4. 4. 4	5TOR		63641.94 63861.94 62296.70 61226.04 6126.04 60328.90	00 59542.71 00 58851.58 00 588160.44 00 57473.25 00 55784.08 00 56794.08	00.00 55415.61 00.00 54637.05 00.00 54637.02 00.00 53353.83 00.00 532670.63 00.00 51985.35 00.00 51298.08	00 50614.77 00 49731.45 00 49731.45 00 49254.07 00 485560.82 00 47857.64 00 45750.03 156.43 00 45750.03	
4. 4. 4. 4	H RES 4 Con. Eop Stor	00 153170.32 69477.59 00 155406.13 68858.57 00 157441.94 68215.73 00 159877.74 67572.88 00 162113.55 66928.03 00 164585.16 65638.30 00 166882.16 65638.30 00 166882.16 65638.30	00 173292.58 53651.94 00 173292.58 53661.94 00 177564.19 52295.70 00 180000.00 60528.70 00 180000.00 60528.90 00 180000.00 60735.81	00 180000.00 57542.71 00 180000.00 58851.58 00 180000.00 58851.58 00 180000.00 57475.25 00 180000.00 57475.25 00 180000.00 56784.08	00 180000.00 55415.61 00 180000.00 54732.55 00 180000.00 54057.02 00 180000.00 5305.83 00 180000.00 52670.63 00 180000.00 51985.35 00 180000.00 51298.08	00 180000.00 50614.77 00 180000.00 49731.45 00 180000.00 49254.07 00 180000.00 48550.82 00 180000.00 47857.64 00 180000.00 47156.43 00 180000.00 45750.03	00 44352.84 00 44235.65 00 42214.02 00 42921.24 00 40799.55 00 40072.74 00 33579.96 00 37954.35 00 37954.35 00 37241.53
4. 4. 4. 4	RES 4 RES 4 RES 4 DM INFLOM TOP CON, EOP STOR	6 B8.00 153170.32 69477.59 7 B7.00 155406.13 6858.57 1 75.00 157404.194 68215.73 2 75.00 159877.74 67572.88 74.00 162113.55 66928.03 74.00 5 73.00 164349.35 66285.16 65 71.00 166820.97 64928.03 71.00 166820.97 64977.46	1 50.00 173292.51 54561.94 2 60.00 173292.53 629661.94 3 50.00 177564.19 62296.70 4 55.00 180000.00 61616.04 5 53.00 180000.00 60728.91	7 50.00 180000.00 59542.71 51.00 180000.00 58851.58 51.00 180000.00 58851.58 53.00 180000.00 58473.25 4 52.00 180000.00 57873.25 57.00 180000.00 56784.08	56.00 180000.00 55415.61 7 55.00 180000.00 54732.55 1 59.00 180000.00 54757.02 2 50.00 180000.00 53553.83 3 50.00 180000.00 52670.63 5 54.00 180000.00 52670.63 5 55.00 180000.00 52670.63 5 55.00 180000.00 51985.35 5 53.00 180000.00 51298.08	6 55.00 180000.00 50614.77 7 55.00 180000.00 9931.45 2 56.00 180000.00 49254.07 3 45.00 180000.00 47254.07 4 45.00 180000.00 47560.82 5 47.00 180000.00 47156.43 5 47.00 180000.00 45750.03	75.00 180000.00 75042.64 75.00 180000.00 4555.65 7 43.00 180000.00 7 43.00 180000.00 8 43.00 180000.00 4 43.00 180000.00 4 43.00 180000.00 4 43.00 180000.00 4 43.00 180000.00 4 43.00 180000.00 4 40.00 180000.00 4 40.00 180000.00 4 40.00 180000.00 4 40.00 180000.00 77541.53 40.00 180000.00
4. 4. 4. 4	RES 4 RES 4 RES 4 Yr dw inflow top con. Eop stor	29 6 88.00 153170.32 69477.59 29 7 81.00 155406.13 68858.57 29 1 75.00 157404.13 68858.57 29 2 75.00 157404.13 68858.57 29 2 75.00 157441.94 68215.73 29 3 74.00 162113.55 66928.03 29 4 75.00 164349.35 66285.16 29 5 73.00 164585.16 65585.16 29 5 73.00 164585.16 65583.30 29 5 71.00 166820.97 64987.46	29 700 173292.57 9433.48 29 1 60.00 173292.58 63661.94 29 2 60.00 175528.39 6276.79 29 3 50.00 17764.19 62296.70 29 4 56.00 180000.00 61616.04 29 5 53.00 180000.00 60728.90	29 7 50.00 180000.00 59542.71 27 51.00 180000.00 58851.58 27 51.00 180000.00 58851.58 27 5 51.00 180000.00 58160.44 27 5 51.00 180000.00 58160.44 27 5 51.00 180000.00 57473.25 29 4 52.00 180000.00 57473.25 29 5 57.00 180000.00 56744.08	29 5 56.00 180000.00 55415.61 29 7 55.00 180000.00 5732.35 29 1 59.00 180000.00 5457.02 29 2 50.00 180000.00 5457.02 29 2 50.00 180000.00 5355.83 29 3 50.00 180000.00 52670.63 29 5 50.00 180000.00 52670.63 29 5 55.00 180000.00 52670.63 29 5 55.00 180000.00 51985.35	29 55.00 180000.00 50614.77 29 7 55.00 180000.00 49731.45 29 1 55.00 180000.00 49731.45 29 1 58.00 180000.00 49731.45 29 2 50.00 180000.00 49560.82 29 3 45.00 180000.00 47560.82 29 4 46.00 180000.00 47560.82 29 5 47.00 180000.00 47550.03 29 5 47.00 180000.00 47550.03	45.00 180000.00 4545.84 45.00 180000.00 4535.65 45.00 180000.00 45214.02 45.00 180000.00 45214.02 45.00 180000.00 4755.65 45.00 180000.00 47514.02 45.00 180000.00 40799.55 45.00 180000.00 40799.55 45.00 180000.00 40972.74 40.00 180000.00 3779.436 40.00 180000.00 37241.53
4. 4. 4. 4	RES 4 RES 4 RES 4 DM INFLOM TOP CON, EOP STOR	5 29 6 B8.00 153170.32 69477.59 5 29 7 87.00 155406.13 68858.57 5 29 1 75.00 155406.13 68858.57 5 29 2 75.00 155406.13 68215.73 5 29 2 75.00 15741.94 68215.73 5 29 3 74.00 152113.55 64928.03 5 29 4 75.00 164349.35 64286.03 5 29 5 73.00 166820.97 64987.46 5 29 71.00 166820.97 64987.46	2 2 7 60.00 173292.58 5461.94 5 29 1 60.00 173292.58 63661.94 5 29 2 60.00 173292.58 632661.94 5 29 3 50.00 17754.19 62296.70 5 29 4 56.00 180000.00 61616.04 6 29 5 53.00 180000.00 60728.90 6 29 5 53.00 180000.00 60728.90	5 29 7 50.00 180000.00 59542.71 6 29 1 51.00 180000.00 59542.71 6 29 2 51.00 180000.00 58160.44 6 29 3 53.00 180000.00 58160.44 6 29 3 53.00 180000.00 58160.44 6 29 3 53.00 180000.00 58784.08 6 29 5 55.00 180000.00 5473.25 6 29 5 55.00 180000.00 5473.25	6 29 5 56.00 180000.00 55415.61 6 29 7 55.00 180000.00 55415.61 6 29 1 55.00 180000.00 54457.02 6 29 1 59.00 180000.00 54057.02 6 29 2 50.00 180000.00 53545.02 6 29 3 50.00 180000.00 53565.83 6 29 3 50.00 180000.00 53265.85 6 29 4 54.00 180000.00 532670.65 6 29 555.00 180000.00 51985.35	6 29 6 55.00 180000.00 50614.77 6 29 7 55.00 180000.00 49731.45 6 29 1 58.00 180000.00 49254.07 6 29 2 50.00 180000.00 49254.67 6 29 3 45.00 180000.00 49254.67 6 29 4 45.00 180000.00 47550.82 6 29 5 47.00 180000.00 4757.20 6 29 5 47.00 180000.00 45750.03	27 1 45.00 180000.00 455.65 27 1 43.00 180000.00 4335.65 27 3 43.00 180000.00 4355.65 27 5 43.00 180000.00 4375.65 27 5 43.00 180000.00 47213.24 27 5 43.00 180000.00 4779.75 27 5 43.00 180000.00 4079.75 27 43.00 180000.00 4079.75 27 43.00 180000.00 4079.75 27 43.00 180000.00 3779.45 27 40.00 180000.00 3774.15 27 40.00 180000.00 3774.35
LOC NO= 4, 4, 4, 4	MO VR DW INFLOW TOP CON. EOP STOR	19 5 29 6 B8.00 153170.32 69477.59 20 5 29 7 87.00 155406.13 68858.57 21 5 29 1 75.00 155404.194 68215.73 22 5 29 2 75.00 157441.94 68215.73 23 5 29 3 74.00 165817.74 67572.88 23 5 29 3 74.00 162113.55 64928.03 24 5 29 5 75.00 164349.35 64286.16 25 5 29 5 73.00 164820.97 64787.14 25 5 29 5 73.00 164820.197 64787.14 26 5 29 5 73.00 164820.977 64787.14 26 5 29 5 75.00 164820.977 64787.14	28 29 7 70.00 173292.58 6461.78 28 5 29 1 60.00 173292.58 65461.78 29 5 29 2 60.00 175528.39 62989.25 30 5 29 3 50.00 177564.19 6276.70 31 5 29 4 56.00 180000.00 61616.04 1 6 29 5 53.00 180000.00 60728.90 2 6 29 5 53.00 180000.00 60728.90	3 5 29 7 50.00 180000.00 55542.71 4 6 29 1 51.00 180000.00 595542.71 5 6 29 2 51.00 180000.00 58150.44 6 6 29 3 53.00 180000.00 58160.44 7 6 29 4 52.00 180000.00 57473.25 7 6 29 4 52.00 180000.00 5473.25 8 29 5 55.00 180000.00 5473.25	7 6 29 5 56.00 180000.00 55415.61 10 6 29 7 55.00 180000.00 54732.35 11 6 29 1 59.00 180000.00 54732.05 11 6 29 1 59.00 180000.00 54057.02 12 6 29 2 50.00 180000.00 54057.02 13 6 29 3 50.00 180000.00 53263.83 13 6 29 4 54.00 180000.00 522670.65 14 6 29 4 54.00 180000.00 51985.35 15 6 29 5 53.00 180000.00 51298.08	16 6 29 55.00 180000.00 50614.77 17 6 29 7 55.00 180000.00 49731.45 18 6 29 1 58.00 180000.00 49731.45 19 6 29 2 50.00 180000.00 49554.07 20 6 29 3 45.00 180000.00 48550.82 21 6 29 4 46.00 180000.00 41557.64 21 6 29 4 45.00 180000.00 41557.20 22 6 29 6 43.00 180000.00 4557.20 23 6 29 6 43.00 180000.00 4557.20	27 7 7.00 180000.00 455.65 6 29 1 45.00 180000.00 4555.65 6 29 3 45.00 180000.00 4555.65 6 29 5 45.00 180000.00 47355.65 6 29 5 45.00 180000.00 47355.65 6 29 5 45.00 180000.00 47975.74 6 29 5 45.00 180000.00 40795.74 7 29 1 40.00 180000.00 40072.74 7 29 1 40.00 180000.00 3757.75 7 29 2 40.00 180000.00 3754.35 7 29 4 0.00 180000.00 3754.35 7 29 4 0.00 180000.00 3754.35 7 29 4 0.00 180000.00 3754.35

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213.	C P 213 Flow Reg	<pre>4400.000000000000000000000000000000000</pre>
213.	C P 213 Req-Shor	888888888888888888888888888888888888888
213.	C P 213 Min requ	88888888888888888888888888888888888888
213.	C P 213 Deq-Shor	88888888888888888888888888888888888888
213.	C P 213 MIN DESI	\$
4.	RES 4 EOP ELEV	1389.25 1200.25 1200.2
4.	RES 4 LEVEL	22222222222222222222222222222222222222
4.	RES 4 EOP STOR	35524, 73 35524, 73 35572, 25 35572, 25 35572, 25 35572, 25 35572, 25 35572, 25 35572, 25 35572, 25 35572, 25 355725, 25 35575, 25 35575, 25 117511, 55 117511, 55 117511, 55 117511, 55 117572, 25 117572, 25 11
4.	res 4 Top con.	
4.	RES 4 Inflow	1.358.8888888888888888888888888888888888
	MO	ちゅてょうちゅちゅてょうさゅちゅうょうさゅちゅうょうさゅちゅうょうさゅちゅうょうさゅちゅうょうさゅ
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LOC NO=	PER D	
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213.	C P 213 Flow Reg	2200.00 200.00 200.000 200.000 200.000 200.00
213.	C P 213 Req-shor	888888888888888888888888888888888888888
213.	C P 213 MIN REQU	88888888888888888888888888888888888888
213.	C P 213 DEQ-SHOR	88888888888888888888888888888888888888
213.	C P 213 MIN DESI	\$
4.	RES 4 EDP ELEV	1349-33 1349-33 1349-33 1349-33 1349-33 1349-33 1349-49 149-49 149
4.	RES 4 LEVEL	
4.	res 4 Eop stor	11833.73 11833.73 11833.73 11833.73 11846.05 11846.05 11846.05 11846.05 11846.05 11846.05 11846.05 11846.05 11846.05 11846.05 10016.00 10000.00 100000.00 100000000
4.	res 4 Top con.	180000.00 180000.00 180000.00 177277.60 177277.60 177227.60 177227.60 177227.60 177227.60 1661310.00 165355.20 155641.60 1557555.60 15575555.60 1557555.60 1557555.60 1557555.60 1557555.60 1557555.60 1557555.60 15575555.60 15575555.60 1557555.60 1557555.60 1557555.60 1557555.60 15575555.60 15575555.60 15575555.60 1557555.60 1557555.60 15575555.60 1557555555555.60 15575555555555555555555555555555555555
4.	RES 4 INFLOW	78.00 100000000
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	W	88888888888888888888888888888888888888
	YU S	
LOC ND:	PER	88888383222222222888888888888888888888

213.	C P 213 Flow Reg	22222 2223 2223 2223 2223 2224 2225 2225
213.	C P 213 Red-Shor	888888888888888888888888888888888888888
213.	C P 213 Min Requ	\$
213.	C P 213 DEQ-SHOR	111111 8888888888888888888888888888888
213.	C P 213 MIN DESI	\$
4.	RES 4 EDP ELEV	846440000000000000000000000000000000000
4.	RES 4 LEVEL	00000000000000000000000000000000000000
4.	RES 4 EOP STOR	2000.00 2000.0
4.	res 4 Top con.	110690.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110000.00 110000.00 110000.00 110000.00 110000.00 110000.00 110000.00 110000.00 110000.00 110000.00 110000.00 110000.00 110000.00 110000.00 10000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000000
4.	RES 4 Inflow	234.00 2474.00 2474.00 2474.00 2577.00 2577.00
LOC NO=	PER DY MO YR DW	288 288 288 288 288 288 288 288 288 288

213.	C P 213 Flow Reg	00000000000000000000000000000000000000	151486.39	1108.07	100.00	1.00	415.03	223.00
213.	C P 213 Reg-shor	888888888888888888888888888888888888888	0.00	0.00	0.00	1.00	0.00	1.00
213.	C P 213 Min requ	88888888888888888888888888888888888888	36500.00	100.00	100.00	1.00	100.00	1.00
213.	C P 213 Deq-Shor	888888888888888888888888888888888888888	11519.24	300.00	0.00	223.00	31.56	1.00
213.	C P 213 MIN DESI	\$	146000.00	400.00	400.00	1.00	400.00	1.00
р.	RES 4 EDP ELEV	2525-552 2525-5	506801.49	1450.00	1300.00	1.00	1388.50	265.00
т. Т	RES 4 LEVEL	222222222222222222222222222222222222222	873.40	3.00	1.98	1.00	2.39	236.00
4.	RES 4 EOP STOR	13772.04 146185.46 15642.25 15642.25 15645.60 15745.60 15745.60 15745.60 15740.05 15740.05 15740.05 15740.05 15740.05 15740.05 15740.05 19858.99 19858.99 225575.57 22566.14 225576.00 225576.01 225576.01 225576.01 225576.13 225576.13 225576.01 225576.00 2255776.00 225576.00 225576.00 225576.00 225576.00 225576.00 225576.00 225576.00 225576.00 225576.00 225576.00 225576.00 225576.00 225576.00 225576.00 225576.00 225576.00 225576.00 2255776.00 2255776.00 2255776.00 2255777777777777777777777777777777777	504089.79	110690.00	2000.00	1.00	50696.14	266.00
4.	RES 4 TOP CON.	110690.00 100690.00 100600.00 100600.00 100600.00 10000.00000000	65.0048511120.0018504089.79	180000.00	110690.00	151.00	132907.18	1.00
4.	RES 4 Inflow	611.00 612.00 60	108465.0048	1104.00	29.00	1.00	297.16	193.00
LOC ND=	PER DY MO YR DW	55555555555555555555555555555555555555	= WDS	HAX =	" NIW	PNAX=	AVG =	=NIW4

RUN11 - SUMMARY OUTPUT

213. 213.040	C P 213 Flow Reg	
213. 213.080	C P 213 REQ-SHOR	888888888888888888888888888888888888888
213. 213.070	C P 213 Min requ	88888888888888888888888888888888888888
213. 213.060	C P 213 DEQ-SHOR	888888888888888888888888888888888888888
1 213. 213.050	C P 213 MIN DESI	
FL000= 4. 220	RES 4 EOP ELEV	1425.48 1425.48 1428.65 1428.65 1428.65 1428.65 1428.65 1428.65 1433.17 1435.18 1445.65 1444.65 1445.75 145.75 1
PERIOD 4. 4.130	RES 4 LEVEL	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
SUNNARY BY 4. 4.110	res 4 Eop stor	72702.13 74276.57 74276.57 75524.16 77736.57 79100.77 80237.59 80237.59 80237.59 80237.59 80237.59 80476.67 90913.85 9081.85 9081.85 9081.85 9081.85 91456.67 92554.57 92554.57 92554.57 92554.57 97555557 97555557 97555557 97555557 9755557 97555557 97555557 97555557 97555557 97555557 975555557 97555557 97555557 97555557 97555557 97555557 97555557 975555557 97555557 9755557 97555557 97555557 975555557 97555557 97555557 9755555555
4. 4.380	RES 4 Top con.	110690.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110600.00 110000.00 10000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00 1000000.00 100000000
4. 4.090	RES 4 Inflow	1104.00 1076.00 107777.00 107777.00 107777.00 107777.00 107777.00 107777.00 107777.00 107777.00 107777.00 1077777.00 1077777.00 1077777.00 107777777777
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	YR	<i><i>xxxxxxxxxxx</i></i>
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LOC NO= CODE=	PER	**************************************

213.	C P 213 FLOW REG	450.00 450.00	450.00 45	66666666666666666666666666666666666666
213.	C P 213 Req-Shor		888888888888888888888888888888888888888	888888888888888888888888888888888888888
213.	C P 213 Min Redu	88888888888888888888888888888888888888	88888888888888888888888888888888888888	88888888888888888888888888888888888888
213.	C P 213 DEQ-SHOR		888888888888888888888888888888888888888	888888888888888888888888888888888888888
213.	C P 213 MIN DESI	44450000000000000000000000000000000000	44444444444444444444444444444444444444	44444444444444444444444444444444444444
4	RES 4 EOP ELEV	1444.04 1444.04 1443.96 1443.68 1443.58 1443.58 1443.58 1443.20 1443.20	1442.80 1442.59 1442.59 1441.93 1441.93 1441.93 1441.22 1440.73 1440.73 1440.73 1440.73	1440.22 1439.29 1439.29 1439.29 1439.29 1439.29 1437.29 1435.29 1455.2
4.	RES 4 LEVEL	44444444444444444444444444444444444444		77777777777777777777777777777777777777
4. 4.	RES 4 RES 4 EOP STOR LEVEL	101042.90 2.91 100996.61 2.91 100914.62 2.91 100798.89 2.91 100647.46 2.91 100462.30 2.91 100241.42 2.90 99986.81 2.90 99572.42 2.90		
4. 4. 4.	5TOR	101042.90 100996.61 100914.62 100948.89 100647.46 100647.46 100642.30 9986.81 99696.49 99572.42	99040.40 98352.50 97996.62 97526.99 9756.99 96881.25 96495.78 96102.34 95700.94 952700.94	
4. 4. 4. 4.	RES 4 EDP STOR	101042.90 100996.61 100914.62 100788.89 100647.46 100642.30 100642.30 99986.81 99696.49 99572.42	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	00 94874.24 94015.68 94015.68 94015.68 94015.68 94015.68 94015.68 94015.68 97577.45 900 912282.95 900 912282.95 900 912282.69 900 89757.70 900 88173.77 900 88173.77 900 88735.62 900 88735.62 91471.69 91448.75 91268.81 91268.91 9
4. 4. 4. 4.	5.4 RES.4 RES.4 NFLON TOP CON. EOP STOR	441.00 110690.00 101042.90 423.00 110690.00 100996.61 405.00 110690.00 100994.61 770.00 110690.00 100798.89 570.00 110690.00 100647.46 555.00 110690.00 100462.30 535.00 110690.00 99986.81 538.00 110690.00 99986.81 500.00 110690.00 99595.42	277.00 110690.00 99040.40 275.00 110690.00 98752.50 265.00 110690.00 97556.62 265.00 110690.00 9755.79 255.00 110690.00 9756.62 255.00 110690.00 96891.25 251.00 110690.00 96495.78 247.00 110690.00 96102.34 247.00 110690.00 95102.34 235.00 110690.00 95102.34	0 110690.00 94874.24 0 110690.00 94448.95 0 110690.00 93574.45 0 110690.00 9352425.25 0 110690.00 91729.84 0 110690.00 91729.84 0 110690.00 91729.84 0 110690.00 9759.71 0 110690.00 89757.70 110690.00 87157.79 0 110690.00 87155.25 0 110690.00 87157.79 0 110690.00 87155.62 0 110690.00 87155.62 0 110690.00 87155.62 0 110690.00 87155.62 0 110690.00 87155.62 0 110690.00 87155.73 0 110690.00 87155.62 0 110690.00 87155.73 0 110690.00 87755.62 0 110690.00 87755.62 0 110690.00 87755.73 0 110690.00 87755.75 0 110690.00 87755.75 0 100000000000000000000000000000000000
4. 4. 4. 4.	RES 4 RES 4 RES 4 VR DM INFLOW TOP CON. EOP STOR	1 441.00 110690.00 101042.90 2 423.00 110690.00 100996.61 3 405.00 110690.00 100974.62 405.00 110690.00 100798.89 5 370.00 110690.00 100647.45 5 370.00 110690.00 100647.45 5 355.00 110690.00 100642.30 5 355.00 110690.00 100241.42 7 335.00 1106690.00 99986.81 318.00 1106690.00 99986.81 2300.00 7 3350.00 1106690.00 99986.81 300.00 1106690.00 99786.49 97572.42	7 2/7.00 110699.00 99040.40 5 2/7.00 110699.00 98700.43 6 271.00 110699.00 98352.50 7 267.00 110699.00 97355.50 1 255.00 110699.00 97352.50 2 257.00 110699.00 97352.79 2 257.00 110699.00 97495.65 2 255.00 110699.00 97881.25 2 255.00 110699.00 94851.78 2 255.00 110699.00 95495.79 2 247.00 110649.00 96495.78 2 247.00 110649.00 95102.34 2 237.00 110649.00 95102.34	235.00 110690.00 94874.24 2231.00 110690.00 94448.75 2237.00 1106490.00 93574.45 2217.00 1106490.00 93574.45 2217.00 1106490.00 93574.45 2219.00 1106490.00 93574.45 217.00 1106490.00 93557.445 211.00 1106490.00 93262.95 211.00 1106490.00 9757.70 197.00 1106490.00 9757.77 197.00 1106490.00 9757.77 197.00 1106490.00 9757.77 197.00 1106490.00 8757.77 197.00 1106490.00 8757.77 197.00 1106490.00 87557.77 197.00 1106490.00 87557.77 187.00 1106490.00 87557.77 167.00 1106490.00 87557.77 167.00 1106490.00 87556.62 167.00 1106490.00 87556.62 167.00 1106490.00 87536.62 1667.00 1106490.00 87536.62 1667.00
4. 4. 4. 4.	MD YR DW INFLOW TOP CON. EOP STOR	2 29 1 441.00 110690.00 101042.90 2 29 2 423.00 110690.00 100956.61 2 29 3 388.00 110690.00 100978.89 2 29 5 370.00 110690.00 100978.89 2 29 5 370.00 110690.00 100547.46 2 29 5 355.00 110690.00 100647.44 2 29 5 355.00 110690.00 100442.30 2 29 7 335.00 110690.00 99986.81 2 29 1 318.00 110690.00 99986.81 2 29 2 300.00 110690.00 99986.81 2 29 2 300.00 110690.00 99596.49	2 2 2 2 2 2 40 40 2 2 5 275.00 110690.00 99040.40 2 29 5 275.00 110690.00 98352.50 2 29 5 277.00 110690.00 97354.62 2 29 7 245.00 110690.00 97354.62 2 29 5 255.00 110690.00 9736.59 2 29 5 255.00 110690.00 97881.25 3 29 4 255.00 110690.00 94102.34 3 29 5 247.00 110690.00 94102.34 3 29 5 247.00 110690.00 95102.34 3 29 5 247.00 110690.00 95102.34 3 29 5 247.00 110690.00 95102.34	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
= 4, 4, 4, 4,	DY MD YR DW INFLOW TOP CON. EOP STOR	12 2 29 1 441.00 110690.00 101042.90 13 2 29 2 423.00 110690.00 100996.61 14 2 29 3 405.00 110690.00 100978.89 15 2 29 5 370.00 110690.00 100947.45 16 2 29 5 370.00 110690.00 100547.45 17 2 29 5 355.00 110690.00 100547.45 17 2 29 5 355.00 110690.00 100547.45 17 2 29 5 355.00 110690.00 100547.45 19 2 29 5 355.00 1106990.00 9996.81 19 2 29 5 355.00 1106990.00 9996.81 20 2 29 3 355.00 1106990.00 99596.49 20 2 29 3 355.00 1106990.00 99596.49	22 29940.40 23 29 25 29 25 29 25 29 26 271.00 27 20 26 271.00 27 20 26 271.00 27 29 28 29 29 255.00 21.00 110690.00 7 265.00 28 29 29 255.00 10690.00 96881.25 28 29 29 255.00 10690.00 96881.25 1 29 27 29 28 279 29 271.00 27 29 28 2700.00 29 271.00 20 110690.00 9495.78 3 29 279 237.00 100690.00 95700.94	$ \begin{bmatrix} 5 & 3 & 27 \\ 5 & 3 & 27 \\ 5 & 3 & 27 \\ 5 & 3 & 27 \\ 5 & 3 & 27 \\ 5 & 3 & 27 \\ 5 & 3 & 27 \\ 5 & 217.00 \\ 110690.00 \\ 93574.45 \\ 5 & 5 & 2137.00 \\ 110690.00 \\ 93574.45 \\ 73125.25 \\ 111 \\ 5 & 27 \\ 12 & 3 & 7 \\ 12 & 3 & 7 \\ 12 & 3 & 7 \\ 12 & 3 & 7 \\ 13 & 3 & 7 \\ 13 & 3 & 7 \\ 15 & 3 & 27 \\ 15 & 3 & 7 \\ 17 & 207.00 \\ 110690.00 \\ 9757.70 \\ 110690.00 \\ 9757.77 \\ 1729.81 \\ 177.00 \\ 110690.00 \\ 110690.00 \\ 110690.00 \\ 110597.77 \\ 177.00 \\ 110690.00 \\ 110690.00 \\ 110597.77 \\ 177.00 \\ 110690.00 \\ 110690.00 \\ 110597.77 \\ 177.00 \\ 110690.00 \\ 110690.00 \\ 110597.77 \\ 162.00 \\ 110690.00 \\ 110690.00 \\ 110590.00 \\ 110590.00 \\ 110590.00 \\ 110590.00 \\ 110590.00 \\ 110690.00 \\ 110690.00 \\ 110590.00 \\ 110600.00 \\ 110600.00 \\ 110600.00 \\ 110600.00 \\ 110600.00 \\ 110600.00$
OC ND= 4. 4. 4. 4.	MD YR DW INFLOW TOP CON. EOP STOR	12 2 29 1 441.00 110690.00 101042.90 13 2 29 2 423.00 110690.00 100996.61 14 2 29 3 405.00 110690.00 100978.89 15 2 29 5 370.00 110690.00 100947.45 16 2 29 5 370.00 110690.00 100547.45 17 2 29 5 355.00 110690.00 100547.45 17 2 29 5 355.00 110690.00 100547.45 17 2 29 5 355.00 110690.00 100547.45 19 2 29 5 355.00 1106990.00 9996.81 19 2 29 5 355.00 1106990.00 9996.81 20 2 29 3 355.00 1106990.00 99596.49 20 2 29 3 355.00 1106990.00 99596.49	22 29940.40 23 29 25 29 25 29 25 29 26 271.00 27 20 26 271.00 27 20 26 271.00 27 29 28 29 29 255.00 21.00 110690.00 7 265.00 28 29 29 255.00 10690.00 96881.25 28 29 29 255.00 10690.00 96881.25 1 29 27 29 28 279 29 271.00 27 29 28 2700.00 29 271.00 20 110690.00 9495.78 3 29 279 237.00 100690.00 95700.94	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

RUN11 (CONTINUED)

213.	C P 213 Flow Reg		400.00 400.00 400.00 400.00 400.00 400.00 400.00 400.00 400.00 00 00 00 00 00 00 00 00 00 00 00 0
213.	C P 213 Req-shor	888888888888888888888888888888888888888	888888888888888888888888888888888888888
213.	C P 213 MIN REQU	888888888888888888888888888888888888888	
213.	C P 213 DEQ-SHOR	888888888888888888888888888888888888888	
213.	C P 213 MIN DESI		
4.	RES 4 EOP ELEV	1421.25 1421.25 1422.25 1425.25 145	1415-75 1415-75 1414-95 1414-95 1415-94 1411-37 1411-37 1411-37 1411-37 1411-37 1411-37 1411-37 1411-37 1411-37 1411-37
4.	RES 4 LEVEL	20000000000000000000000000000000000000	10000000000000000000000000000000000000
4.	res 4 EOP Stor	80903.98 8034.23 79764.43 79764.43 79764.43 79764.43 78620.71 755325.71 755325.71 755325.71 755325.71 755325.71 755325.71 755325.71 755325.71 7755325.71 7755325.71 7755325.71 7755325.73 7755325.73 7755325.73 772265.23 772265.23 772265.23 772265.23 772265.23 772265.23 667238.77 772265.23 667245.23 667238.77 772265.23 667245.23 667245.23 66725.23 667265.23 667265.23 667265.23 667265.23 667265.23 667265.23 667265.23 667265.23 667265.23 662664.26 662664.26 66265.23 662664.26 66265.23 662664.26 66265.35	60860.69 60255.57 59645.57 59645.57 59645.57 59645.57 5788.92 5788.92 55555.67 55555.67 55701.81 55701.81 55701.81 55701.81
* 1	res 4 Top con.	110690.00 110600.00 10000000000	1264104-85 1265340-65 1308152-26 1308152-26 135519-65 135519-68 137519-68 137519-68 137555-48 144227,10 144227,10 144227,10 144227,10 144622,90 144622,90 146682,90 146682,90 146682,90
4.	RES 4 INFLOW	88882222222222222222222222222222222222	888888888888888888888888888888888888888
	MO	アークジルちゅアークジルちゅうしょうジルちゅうしょうろみちゅうしょう	
	D YR	44444444444444444444444444446666666666	
	DV MO	-00400-0080202020202020202020202020202020202	
-	PER D	2222222222687654222222222222222222222222222222222222	8283833333888826
LOC NO	æ		

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RUN11 (CONTINUED)

213.	C P 213 Flow Reg	\$
213.	C P 213 Red-Shor	888888888888888888888888888888888888888
213.	C P 213 MIN REQU	88888888888888888888888888888888888888
213.	C P 213 DEQ-SHOR	888888888888888888888888888888888888888
213.	C P 213 MIN DESI	\$
4.	res 4 Eop elev	1409.11 1409.11 1409.11 1409.11 1409.11 1409.12 1409.11 1409.12 1409.12 1409.12 1409.12 1409.12 1409.12 1509.1
4.	RES 4 LEVEL	44444444444444444444444444444444444444
4.	RES 4 EOP STOR	53345, 12 53345, 12 51559, 41 51559, 41 51559, 41 51559, 41 51559, 41 52259, 51 52259, 51 52259, 51 52259, 51 53259, 51 53259, 51 53259, 51 53259, 51 53259, 51 53255, 51 525484, 23 53555, 51 525484, 24 525484, 24 525484, 24 52555, 51 52555, 51 525555, 51 52555555, 51 525555, 51 5255555, 51 5255555, 51 5255555, 51 5255555, 51 5255555, 51 525555555555555555555555555555555555
4.	res 4 Top con.	153170.32 155866.13 155866.13 155866.13 155861.94 155866.13 155866.13 155866.13 155866.13 168585.16 1775282.58 1775528.77 17752827 1775282.77 1775282.77 1775282.77 1775282.77 177527 177527 177527 177527 177527 177527 177527 177527 177527 177527 177527 177527 177527 177527 177527 177527 177527 177577 177577 177577 177577 177577 1775777 1775777 1775777 177577777777
4.	RES 4 Inflow	89599999999999999999999999999999999999
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	D YR	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
	DN YO	-2010/2020202020-0040-0-2-222222222222222222
#	PER D	
LOC NO	<u>a.</u>	

213.	C P 213 Flow Reg		100.00
213.	C P 213 Reg-shor	888888888888888888888888888888888888888	0.00
213.	C P 213 Min Requ	88888888888888888888888888888888888888	100.00
213.	C P 213 DEQ-SHOR	28888888888888888888888888888888888888	200,00
213.	C P 213 MIN DESI	64444444444444444444444444444444444444	400.00
4.	res 4 EOP elev	1368.06 1368.55 1365.01 1365.01 1365.01 1365.01 1365.01 1365.01 1365.01 1365.01 1355.01 1355.01 1355.01 1355.01 1355.01 1355.05 1355.0	128/.00
4.	RES 4 LEVEL		7 • 1 0
4 .	RES 4 EOP STOR	20499, 84 19782, 64 19782, 64 19782, 64 19782, 64 15613, 05 15613, 05 15613, 05 15613, 05 15613, 05 15613, 05 15613, 05 15613, 05 1565, 07 1577, 65 1576, 05 1576, 05 1577, 41 1577, 41 1572, 55 1578, 55	01 • / //1
ţ,	RES 4 TOP CON.		10~~~~
4.	RES 4 INFLOW	238.88888888888888888888888888888888888	11111
	MQ	ちゅアークマルちゅうしてうなららしてうごみららしてうこすからゅうしてうこうみららしょうこみ	۲
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	DY MO	22222555555555555555555555555555555555	
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LOC NO=	PER		2

RUN11 (CONTINUED)

213.	C P 213 FLOW REG	8888888 888888 88888888	8888	00.00	100-00 117-98	121.00	157.00	163.00 165.00 167.00	173.00	175.00	180.00 182.00	188.00	191.94 193.94	197.94	203.94 203.94 205.94	220.94
213.	C P 213 Red-Shor	888888 8888888888888888888888888888888	8888	8888	8888	8888	888	888	 888	888	888	888	8888	8888	8888	0.00
213.	C P 213 Min Requ	000000000000000000000000000000000000000	8888	0000	8888	8888	100.00	00.00 00.00	100.00 100.00	00.00 00.00 00.00	889	0.00	0.00	0000	8888	100.00
213.	C P 213 DEQ-SHOR	200.00 200.00 200.00 200.00	8888 8888	8000 800 800 800 800 800 800 800 800 80	282.02 282.02 250.00	249.00 247.00 245.00	243.00 241.00 239.00	237.00 235.00 233.00	231.00 229.00 227.00	225.00 223.00 221.00	220.00 218.00	212.00	208.06 206.06	202.06 200.06	176.06 196.06 192.06	179.06
213.	C P 213 MIN DESI	400.00 400.00 400.00 000.00 000.00 000.00 000.00 000.00	4400 400 800 800 800 800 800 800 800 800	8888 8888 8888	400.00 400.00	400.00 400.00	400.00 400.00 400.00	400.00 400.00	400-00 400-00 400-00	400.00 400.00 00.00	400.00 400.00	400.00 400.00	400.00 400.00	400.00	800.00 800.00 800.00	400.00
4.	RES 4 EOP ELEV	1286.95 1286.95 1286.98 1287.12 1287.12 1287.10	1289.08 1290.19 1291.42	1294.13	1200.00 1300.00	00000000000000000000000000000000000000	1300.00 1300.00	1300.00 1300.00	1300.00 1300.00	1300.00 1300.00	1300.00 1300.00	1300.00	1300.00	1300.00	1200.00	1300.00
	_	003305	<u> </u>	۰ <u>۳</u> ۳۵		000		000	000		000	000		222	2000	8
4.	RES 4 LEVEL	45 46 50 47 47 47 47 47 47 47 47 47			-000	0000	000 000	000	000 1 1 1 1 1 1 1	000 100 100	000 NNN	000	2000	2000	10000 1000	5
4. 4.	RES 4 RES 4 EDP STOR LEVEL	1073.27 1073.33 1075.37 1075.37 1085.35 1.4 1085.35 1.4 1154.89														
4. 4. 4.	STOR	1073.27 1073.27 1075.37 1075.35 1085.35 1099.29 1154.89	1224.38 1303.79 1391.06	1583.45 1684.60 1797.66	2000.00 2000.00 2000.00	2000.00 2000.00 2000.00	2000.00 2000.00 2000.00	2000.00 2000.00 2000.00	2000.00 2000.00 2000.00	2000.00 2000.00 2000.00	2000.00 2000.00 2000.00	2000.00 2000.00 2000.00	2000.00 2000.00 2000.00	2000.00 2000.00	2000,00 2000,00 2000,00	2000.00
4. 4. 4. 4.	CON. EOP STOR		00 174455.20 1224.38 00 171682.80 1303.79 00 168910.40 1391.06 00 146138.00 1484.78	00 163365.60 1583.45 00 165363.20 1584.60 00 157820.80 1797.66	0 152276.00 2000.00 0 152276.00 2000.00 0 148737 20 2000.00	00 143958.80 2000.00 00 141186.40 2000.00 00 138414.00 2000.00	00 135641.60 2000.00 00 132869.20 2000.00 00 130096.80 2000.00	00 127324.40 2000.00 00 124552.00 2000.00 00 121779.60 2000.00	00 119007.20 2000.00 00 116234.80 2000.00 00 113462.40 2000.00	00 110690.00 2000.00 00 110690.00 2000.00 00 110690.00 2000.00	00 110 690.00 2000.00 00 110 690.00 2000.00 00 110 690.00 2000.00	00 110690.00 2000.00 00 110690.00 2000.00 01 110690.00 2000.00	00 110690.00 2000.00 00 110690.00 2000.00 01 110690.00 2000.00	00 110490.00 2000.00 00 110490.00 2000.00 00 110490.00 2000.00	0 110690.00 2000.00 0 110690.00 2000.00 0 110690.00 2000.00	00 110690.00 2000.00
4. 4. 4. 4.	RES 4 RES 4 RES 4 W INFLOW TOP CON. EDP STOR	98.00 180000.00 1073.27 100.00 180000.00 1073.33 101.00 180000.00 1075.37 105.00 180000.00 1075.35 107.00 180000.00 1099.29 128.00 177227.60 1154.89	135.00 174455.20 1224.38 140.00 171682.80 1303.79 144.00 168910.40 1391.06 147.00 164138.00 1484.28	150.00 163365.60 1583.45 151.00 160593.20 1584.60 157.00 1557820.80 1797.66	151.00 152276.00 2000.00 150.00 14277.50 2000.00 150.00 14277.50 2000.00	151.00 143958.80 2000.00 153.00 141186.40 2000.00 155.00 138414.00 2000.00	157.00 135641.60 2000.00 159.00 132869.20 2000.00 161.00 130096.80 2000.00	163.00 127324.40 2000.00 165.00 124552.00 2000.00 167.00 121779.60 2000.00	169.00 119007.20 2000.00 171.00 116234.80 2000.00 173.00 113462.40 2000.00	1/5.00 110690.00 2000.00 177.00 110690.00 2000.00 179.00 110690.00 2000.00	180.00 110690.00 2000.00 182.00 110690.00 2000.00 184.00 110690.00 2000.00	186.00 110690.00 2000.00 188.00 110690.00 2000.00 190.00 110690.00 2000.00	192.00 110690.00 2000.00 194.00 110690.00 2000.00 196.00 110690.00 2000.00	198.00 110690.00 2000.00 200.00 110690.00 2000.00 202 00 110690.00 2000.00	204.00 110690.00 2000.00 206.00 110690.00 2000.00 208.00 110690.00 2000.00	221.00 110690.00 2000.00
4. 4. 4. 4.	RES 4 RES 4 RES 4 DW INFLOW TOP CON. EDP STOR	5 98.00 180000.00 1073.27 6 100.00 180000.00 1073.33 7 101.00 180000.00 1075.37 1 105.00 180000.00 1075.35 2 107.00 180000.00 1099.29 3 128.00 177227.60 1154.89	4 135.00 174455.20 1224.38 5 140.00 171682.80 1303.79 6 144.00 168910.40 1391.06 7 147.00 144138.00 1484.98	1 150.00 163365.60 1583.45 2 151.00 160593.20 1584.60 3 157.00 157820.80 1797.66	5 141.00 152276.00 2000.00 5 150.00 155276.00 2000.00 7 150.00 144751 20 2000.00	i i51.00 143958.80 2000.00 2 153.00 141186.40 2000.00 3 155.00 138414.00 2000.00	4 157.00 135641.60 2000.00 5 159.00 132869.20 2000.00 6 161.00 130096.80 2000.00	7 165.00 127324.40 2000.00 1 165.00 124552.00 2000.00 2 167.00 121779.60 2000.00	5 169.00 119007.20 2000.00 6 171.00 116234.80 2000.00 5 173.00 113452.40 2000.00	6 1/5.00 110670.00 2000.00 7 177.00 110690.00 2000.00 1 177.00 110690.00 2000.00	2 180.00 110690.00 2000.00 3 182.00 110690.00 2000.00 4 184.00 110690.00 2000.00	5 186.00 110690.00 2000.00 6 188.00 110690.00 2000.00 7 190.00 110690.00 2000.00	1 192.00 110690.00 2000.00 2 194.00 110690.00 2000.00 3 196.00 110690.00 2000.00	4 198.00 110690.00 2000.00 5 200.00 110690.00 2000.00 6 207.00 110490.00 2000.00	7 204.00 110690.00 2000.00 1 206.00 110690.00 2000.00 2 208.00 110690.00 2000.00	3 221.00 110690.00 2000.00
4. 4. 4. 4.	RES 4 RES 4 RES 4 W INFLOW TOP CON. EDP STOR	98.00 180000.00 1073.27 100.00 180000.00 1073.33 101.00 180000.00 1075.37 105.00 180000.00 1075.35 107.00 180000.00 1099.29 128.00 177227.60 1154.89	29 4 135.00 174455.20 1224.38 29 5 140.00 171682.80 1303.79 29 6 144.00 168910.40 1391.06 29 7 147.00 144138.00 1484.78	27 1 150.00 163365.60 1583.45 27 2 151.00 16573.20 1584.60 29 3 157.00 157820.80 1797.66 29 3 157.00 157820.80 1797.66	29 5 161.00 152275.00 2000.00 29 5 161.00 152275.00 2000.00 29 6 150.00 149503.60 2000.00	27 1 151.00 143758.80 2000.00<	29 4 157.00 135641.60 2000.00 29 5 159.00 132869.20 2000.00 29 6 161.00 130096.80 2000.00	29 7 163.00 127324.40 2000.00 29 1 165.00 124552.00 2000.00 29 2 167.00 12179.60 2000.00	27 3 169.00 119007.20 2000.00 27 4 171.00 116234.80 2000.00 27 5 173.00 113462.40 2000.00	29 7 1/5.00 110690.00 2000.00 29 1 1/7.00 110690.00 2000.00 29 1 1/9.00 110690.00 2000.00	29 2 180.00 110690.00 2000.00 29 3 182.00 110690.00 2000.00 29 4 184.00 110690.00 2000.00	29 5 186.00 110690.00 2000.00 29 6 188.00 110690.00 2000.00 29 7 190.00 110690.00 2000.00	29 1 192.00 110690.00 2000.00 29 2 194.00 110690.00 2000.00 29 3 196.00 110690.00 2000.00	29 4 198.00 110690.00 2000.00 29 5 200.00 110690.00 2000.00 29 6 207.00 110690.00 2000.00	29 7 204.00 110690.00 2000.00 29 1 206.00 110690.00 2000.00 29 2 208.00 110690.00 2000.00	29 3 221,00 110690.00 2000.00
4. 4. 4. 4.	RES 4 RES 4 RES 4 RES 4 Yr dw Inflow Top Con. Edp Stor	29 5 98.00 180000.00 1073.27 279 6 100.00 180000.00 1073.33 279 7 101.00 180000.00 1075.37 279 1 105.00 180000.00 1075.37 279 1 105.00 180000.00 1075.37 279 1 105.00 180000.00 1075.37 279 1 105.00 180000.00 1085.35 279 2 107.00 180000.00 1099.27 279 3 128.00 177227.40 1154.89	B 29 4 135.00 174455.20 1224.38 B 29 5 140.00 171682.80 1303.79 9 29 6 144.00 168910.40 1391.06 9 29 7 147.00 164138.00 144.73	9 29 1 150.00 163365.60 1583.45 9 29 2 151.00 16593.20 1584.60 9 29 3 157.00 157820.80 1797.66	27 131.00 132375.00 131.00 9 29 5 150.00 147503.60 2000.00 9 29 7 150.00 147503.60 2000.00	9 29 1 151.00 143958.80 2000.00 9 29 2 153.00 14186.40 2000.00 9 29 3 155.00 138414.00 2000.00	9 29 4 157.00 135441.60 2000.00 9 29 5 159.00 132869.20 2000.00 9 29 6 161.00 130096.80 2000.00	9 29 7 163.00 127324.40 2000.00 9 29 1 165.00 124552.00 2000.00 9 29 2 167.00 121779.60 2000.00	9 29 3 169.00 119007.20 2000.00 9 29 5 171.00 116234.80 2000.00 9 29 5 173.00 113462.40 2000.00	9 29 7 1/5.00 110690.00 2000.00 9 29 7 1/7.00 110690.00 2000.00 9 29 1 1/9.00 110690.00 2000.00	9 29 2 180.00 110690.00 2000.00 9 29 3 182.00 110690.00 2000.00 9 29 4 184.00 110690.00 2000.00	9 29 5 186.00 110690.00 2000.00 9 29 6 188.00 110690.00 2000.00 9 29 7 190.00 110690.00 2000.00	10 29 1 192,00 110690,00 2000,00 10 29 2 194,00 110690,00 2000,00 10 29 3 196,00 110690,00 2000,00	10 29 4 198.00 110690.00 2000.00 10 29 5 200.00 110690.00 2000.00 10 29 5 200.00 110690.00 2000.00	10 29 7 204.00 110690.00 2000.00 10 29 1 206.00 110690.00 2000.00 10 29 2 208.00 110690.00 2000.00	10 29 3 221.00 110690.00 2000.00
LOC ND= 4, 4, 4, 4, 4,	MD YR DW INFLOW TOP CON. EDP STOR	8 29 5 98.00 180000.00 1073.27 8 29 6 100.00 180000.00 1073.33 8 29 7 101.00 180000.00 1075.37 8 29 1 101.00 180000.00 1075.37 8 29 1 105.00 180000.00 1075.37 8 29 1 105.00 180000.00 1085.35 8 29 2 107.00 180000.00 1097.29 8 29 3 128.00 177227.60 1154.89	30 8 29 4 135.00 17455.20 1224.38 31 8 29 5 140.00 171682.80 1303.79 1 1 9 29 6 144.00 168910.40 1391.06 1 1 9 29 5 147.00 1641.78 00 1641.78 0 1 9 29 7 147.00 1641.78 00 1641.78 00 1641.78 1641.78 1641.78 1641.78 1641.78 1641.78	3 9 29 1 150.00 163365.60 1583.45 4 9 29 2 151.00 165593.20 1684.60 5 9 2 157.00 157820.80 1797.66 5 9 3 157.00 157820.80 1797.66	7 9 29 5 150.00 152276.00 2000.00 9 9 7 7 150.00 147503.60 2000.00	10 9 29 1 151.00 143958.80 2000.00 11 9 29 2 153.00 141186.40 2000.00 12 9 29 3 155.00 138414.00 2000.00	13 9 29 4 157.00 135641.60 2000.00 14 9 29 5 159.00 132869.20 2000.00 15 9 29 6 161.00 130096.80 2000.00	16 9 29 7 163.00 127324.40 2000.00 17 9 29 1 165.00 124552.00 2000.00 18 9 29 2 167.00 121779.60 2000.00	19 9 29 3 169.00 119007.20 2000.00 20 9 29 4 171.00 116234.80 2000.00 21 9 29 5 173.00 113462.40 2000.00	22 7 27 6 1/5.00 110690.00 2000.00 23 9 29 7 177.00 110690.00 2000.00 24 9 29 1 179.00 110690.00 2000.00	Z5 7 27 2 180.00 110690.00 2000.00 Z6 7 27 3 182.00 110690.00 2000.00 Z7 9 29 4 184.00 110690.00 2000.00	28 9 29 5 186.00 110690.00 2000.00 29 9 29 6 188.00 110690.00 2000.00 30 9 29 7 190.00 110690.00 2000.00	1 10 29 1 192.00 110690.00 2000.00 2 10 29 2 194.00 110690.00 2000.00 3 10 29 3 196.00 110690.00 2000.00	4 10 27 4 198.00 110690.00 2000.00 5 10 27 5 200.00 110690.00 2000.00 6 10 27 5 200.00 110690.00 2000.00	7 10 29 7 204.00 110690.00 2000.00 8 10 29 1 206.00 110690.00 2000.00 9 10 29 2 208.00 110690.00 2000.00	10 10 29 3 221.00 110690.00 2000.00

213.	C P 213 Flow Reg	233.94 246.94 260.94 273.94	286.94 300.94 717 94	326.94 340.94	353.94 366.94	393,94 393,94 400,00	400.00	400.00	400.00	400.00 400.00	400.00	400.00	400.00 400.00	400.00 400.00	400.00 400.00	400.00	400.00	400.00 400.00	400.00	400.00	400.00	400.00 400.00	400.00 400.00	400.00 400.00
213.	C P 213 Req-Shor	8888 8888	888	888	888		000	000	0.00	000 000	000	88	0.00	000	0.0	88	88	0.00	80	0.0	0.00	000	00.00 00.00	888 888 888
213.	C P 213 Min Requ	100.00 100.00 00.00	0.00	00.00	8.83	100.001	100.00	100.00	100.00	100.00 100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
213.	C P 213 DEQ-SHOR	166.06 153.06 139.06 126.06	113.06 99.06 86.06	73.06	48.08 33.08	6.06 0.00	0.0	0.0 0.0	。。 。 。	88 88	80		000	00°	000	0.0		88. 88.	0.00 0.00	8.0	88.0	 	000	0000
213.	C P 213 MIN DESI	400.00 400.00 400.00	400.00 400.00	400.00	400.00	400.00 400.00	400.00 400.00	400.00 400.00	400.00 400.00	400.00 400.00	400.00	400.00	400.00	400.00 400.00	400.00 400.00	400.00	400.00	400.00 400.00	400.00 400.00	400.00	400.00	400.00	400.00	400.00 400.00
4.	RES 4 EOP ELEV	1300.00 1300.00 1300.00	1300.00 1300.00	1300.00	1300.00	1300.00	1300.42	1301.61	1303.59	1306.35	1309.89	1314.24	1319.36	1322.21	1326.70 1328.26	1329.82	1332.93	1336.07	1337.64	1340.78	1343.93	1347.08	1348.67	1351.94
4	RES 4 LEVEL	8888	5.25 5.50	88	888		5.80 5.80 5.80	2.00 2.00	2.00	2.01 2.01	2.01 2.01	22	555 575	5°03	2.04 2.04	2.04	5.02 7.02	2.08	2.06 2.07	2.07	586 577	2.09	5.09	2.10
4.	res 4 Eop stor	2000.00 2000.00 2000.00	2000.00 2000.00 2000.00	2000.00	2000.00 2000.00	2000.00	2057.30 2124.62	2217.72 2338.59	2485.24	2857.86 3084.78	3337.54 3618.14	3924.58	4617.03	5416.93	5830.90 6244.93	6659.05	7487.50	8320.22	8736.69 9153.24	9569.86	10407.31	11245.06	12087.08	12929.41
4	res 4 Top con.	110690.00 110690.00 110690.00	110690.00 110690.00 110690.00	110690.00	110690.00 110690.00	110690.00	110690.00	110690.00	110690.00	110690.00	110690.00	110690.00	110690.00	110690.00	110690.00 110690.00	110690.00	110690.00	110690.00	110690.00	110690.00	110690.00	110690.00	110690.00	110690.00 110690.00
4.	RES 4 Inflow	234.00 247.00 261.00 274.00		~				~						÷	ന് ന്	ന്ന്	ີດຕໍ່ດ	- 0-	<u> </u>	o c	്റ്റ	ം പ്	· ·	
	MQ	410-01-																						
	YR	22223																						
	QW /	99999																						
щ	PER DV	12221																						
LOC NG	3	286 286 286	។ ។ ភ	222	ជនាន	122	221	222	RR	381	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	8 S	577F	721	22	55	- F	551	38	25	121	323	325	888

213.	C P 213 FLOW REG	60000000000000000000000000000000000000	131639.99	450.00	100.00	3.00	360.66	214.00
213.	C P 213 Red-Shor	888888888888888888888888888888888888888	0.00	00.00	0.00	1.00	0.00	1.00
213.	C P 213 Min Requ	88888888888888888888888888888888888888	36500.00	100.00	100.00	1.00	100.00	1.00
213.	C P 213 DEQ-SHOR	888888888888888888888888888888888888888	19610.11	300.00	0.00	214.00	53, 73	1.00
213.	C P 213 MIN DESI	44444444444444444444444444444444444444	151250.00	450.00	400.00	3.00	414.38	1.00
*	RES 4 EOP ELEV	1355-54 1355-5	501144.58	1444.04	1286.95	42.00	1373.00	236.00
4.	RES 4 LEVEL	222222222222222222222222222222222222222	836.54	2.91	1.45	42.00	2,29	236.00
4.	RES 4 EOP STOR	13772.04 14648.96 15642.25 15642.25 15642.25 15545.60 15545.60 15545.60 15545.60 15545.60 15545.00 15545.00 19683.20 19683.20 19683.20 19683.20 19683.20 19683.20 19683.20 20491.85 20491.85 20491.85 22645.13 22645.13 22645.13 22657.99 225546.13 225546.13 225546.13 225546.14 25574.00 255745.08 225546.14 255745.08 225546.14 255745.08 225546.14 255745.08 225546.14 255745.08	727515.83	101053.49	1073.27	42.00	40349.36	236.00
4.	res 4 Top con.	110690.00 10000.00 100000.00 100000.00 100000.00 100000.00 100000.00 100000.00000000	45.0048511120.0014727515.83	180000.00	110690.00	151.00	132907.18	1.00
4.	RES 4 Inflow	611.00 612.00 60	108465.0048	1104.00	29.00	1.00	297.16	193.00
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RUN12 - SUMMARY OUTPUT

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213. 213.040	C.P. 213 FLOW REG	111 1152 1152 1152 1152 1152 152 152 152
213. 213.030	C.P. 213 DIVERSIO	88334774 999354 999358 999358 999358 999358 999358 9995 99958 99958 9995 99958 9995
4. 4.310	RES ND.4 DIV SHOR	00000000000000000000000000000000000000
4.030	RES ND.4 DIVERSIO	88888888888888888888888888888888888888
1 4. 300	RES ND.4 DIV REQU	88888888888888888888888888888888888888
FL000= 4,100	RES NO.4 Dutflow	0008838467470888888888888888888888888888888888
PERIOD 4. 4.120	RES ND.4 Case	88333338888888888888888888888888888888
SUMMARY BY 4. 4.130	RES ND.4 LEVEL	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
4. 4.220	RES ND.4 EDP ELEV	1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1329.09 1339.99 1355.45 1355.45 1355.45 1355.45 1355.45 1355.45 1355.65 1355.65 1355.65 1355.65 1355.65 1355.65 1355.65 1355.65 1355.65 1355.65 1355.65 1355.65 1355.65 1355.65 1355.70 1355.65 1355.65 1355.65 1355.70 1355.65 1355.70 1355.7
4. 4.110	RES ND.4 EOP STOR	71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 25644.09 55745.62 77236.17 7300.00 700.00 7000
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	DN NO	010-004040404040404040404040404040404040
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RUN12 (CONTINUED)

213.	C.P. 213 FLOW REG	400.00 400.00
213.	C.P. 213 DIVERSIO	88888888888888888888888888888888888888
4.	RES NO.4 DIV SHOR	
4.	RES ND.4 DIVERSIO	22222222222222222222222222222222222222
4.	RES ND.4 DIV REQU	88888888888888888888888888888888888888
4.	RES NO.4 Outflow	8373737373737373788888888873736268888888888
	RES NO.4 Case	83888888888888888888888888888888888888
4.	RES ND.4 LEVEL	0000000000000-000000000000000000000
4.	RES NO.4 EOP ELEV	1403 1363 1363 1363 1363 1363 1363 1363 13
4.	RES NO.4 EOP STOR	47767.97 47767.97 33899.07 33899.07 3000.00 2000.00
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	YR	88888888888888888888888888888888888888
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RUN12 (CONTINUED)

213.	C.P. 213 FLOW REG	24400.000000000000000000000000000000000	53372.12	2447.77	36.24	101.00	444.77	107.00
213.	C.P. 213 DIVERSIO	88888888888888888888888888888888888888	-3447.35	-8.61	-30,00	107.00	-28.73	1.00
4.	RES NO.4 DIV SHOR	56666666666666666666666666666666666666	763.27	106.96	0.00	107.00	6.36	1.00
4.	RES ND.4 DIVERSIO	88888888888845 ⁴ 2888888888888888888888888888888888888	17236.73	150.00	43.04	1.00	143.64	107.00
4.	RES NO.4 DIV REQU	88888888888888888888888888888888888888	18000.00	150.00	150.00	1.00	150.00	1.00
4.	RES NO.4 OUTFLOW	88888887488888642488888449888844888888448888888888	49924.78	2417.77	27.55	101.00	416.04	39.00
4.	RES NO.4 Case	88888883388883338888338888888888888888	17680.59	213.00	0.03	3.00	147.34	1.00
4.	RES NO.4 LEVEL	NGNGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG	289.42	3.00	1.00	1.00	2.41	38,00
4 .	RES ND.4 EOP ELEV	1424.31 1424.31 1424.31 1424.32 1424.32 1424.32 1424.32 1424.31 1425.33 1559.53 1559.55 1559.55 1559.55 1559.55 1559.55 1559.55 1559.55 1559.55 1559.55 1559.55 1559.55 1559.55 1559.55 1559.55 1559.55 1559.55 1559.5	64966.24	1424.31	1270.23	1.00	1374.72	36.00
е Ф	RES NO.4 EOP STOR	71500.00 55573.75 55573.75 55573.77 55573.77 55573.77 55573.77 55552.55 55552.55 715500.00 715500.00 55552.55 71550.00 715500.00 51766.74 55552.55 555552.55 555552.55 555552.55 555552.55 55555555	4488520.41	71500.00	300.00	2.00	37404.34	38.00
LOC ND=	PER DY MO YR DW	92 92	SUM = 4/	max =	NIN =	PNAX=	AVG =	=NIN4

RUN13 - SUMMARY OUTPUT

213. 213.040	C.P. 213 FLOW REG	11121-00 1265-91 12
213. 213.030	C.P. 213 DIVERSIO	8889953377588888888888888888888888888888
213. 213.300	C.P. 213 DIV REDU	
213. 213.060	C.P. 213 DEQ-SHOR	23:000000000000000000000000000000000000
1 213. 213.050	C.P. 213 MIN DESI	
FL000= 4. 4.100	RES NO.4 Outflow	1221.09 649.88 649.88 649.88 649.88 649.88 649.88 649.88 649.88 649.88 649.88 649.88 649.88 649.88 649.88 649.88 650.00 5500.00 50000.00 5000.00 50000
PERIOD 4. 120	RES NO.4 CASE	
SUMMARY BY 4. 4.130	RES ND.4 LEVEL	NNONNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
4. 4.220	RES NO.4 EOP ELEV	1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1424.31 1586.65 1555.46 1570.23 1556.45 1555.46 1556.72 1556.55 1556.73 1556.73 1556.73 1556.75 1556.73 1556.75 1556.7
4. 4.110	RES NO.4 EDP STOR	71500.00 68492.70 68492.70 68492.70 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 71500.00 775
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	YR	REESSER
ł	Q	919-00402020-00040202020-00402020-000 919-000402020-0004020-000990-0004020-000
	R DV	
LOC NO CODE=	PER	4288333333333333333333333333232222 ⁴ 44444

RUNI3 (CONTINUED)

213.	C.P. 213 FLOW REG	56000000000000000000000000000000000000
213.	C.P. 213 DIVERSIO	88888888888888888888888888888888888888
213.	C.P. 213 DIV REQU	88888888888888888888888888888888888888
213.	C.P. 213 DEQ-SHOR	86644 1 1 1 1 1 1 1 1 1 1 1 1 1
213.	C.P. 213 MIN DESI	**************************************
4.	RES NO.4 OUTFLOW	22000000000000000000000000000000000000
4.	RES NO.4 CASE	3338888888888338888883388883388888644888888644466666666
4.	RES NO.4 LEVEL	44444444444444444444444444444444444444
4.	RES NO.4 EOP ELEV	11400000000000000000000000000000000000
4.	RES NO.4 EOP STOR	47838.99 16916.33 377038.99 377038.99 377038.99 377772.75 3777772.75 377772.75 377777777777777777777777777777777777
	M	
	YR	
	DM AQ	404080910-000404040404040404040404040404040910-000
=ON	PER D	**************************************
LOC N	e .	

RUN13 (CONTINUED)

213.	C.P. 213 FLOW REG	447.32 447.32 460.00 460.00 460.00 400.00 373.15 400.000 400.000 400.000 400.000 400.000 400.000 400.000 400.0000 400.0000 400.00000000	53295.94	2428.10	0.00	101.00	444.13	36.00
213.	C.P. 213 DIVERSIO	88888888888888888888888888888888888888	13777.26	150.00	43.01	3.00	114.81	107.00
213.	C.P. 213 DIV REQU	88888888888888888888888888888888888888	14000.00	150.00	100.00	3.00	116.67	1.00
213.	C.P. 213 DEQ-SHOR	66888888888888888888888888888888888888	5544.13	400.00	0.00	36.00	46.20	1.00
213.	C.P. 213 MIN DESI		48000.00	400.00	400.00	1.00	400.00	1.00
4	RES NO.4 OUTFLOW	2560.00 549.32 569.00 560.00 560.00 560.00 560.00 550.0	67073.20	2568.10	43.01	101.00	558.94	107.00
4.	RES NO.4 CASE		15338.36	213.00	0.03	3.00	127.82	1.00
4.	RES NO.4 LEVEL	2220588888222888822288882228282228282828	278.50	3.00	1.00	1.00	2.32	36.00
4.	RES NO.4 EOP ELEV	1424.31 1414.67 1414.67 1414.67 1414.67 1416.63 1405.81 1405.81 1405.81 1405.81 1405.77 1577.35 1424.31 1404.77 1577.35 12770.23	164687.67	1424.31	1270.23	1.00	1372.40	14.00
4.	RES NO.4 EOP STOR	71500.00 64667.05 54567.05 55505.94 71500.00 55575.10 71500.00 55576.10 71500.00 300.00 55577.11 71500.00 300.00 556455.71 71500.00 556455.71 71500.00 556455.71 71500.00 556455.71 71500.00 556455.71 71500.00 556455.71 71500.00 556455.71 715500.00 556455.71 715500.00 556455.71 715500.00 551501.29 715500.00 551501.29 715500.00 551501.29 715500.00 551501.29 715500.00 551501.29 715500.00 551501.29 715500.00 551501.29 715500.00 551501.29 715500.00 551501.29 715500.00 551501.29 715500.00 5515000.00 5515000.00 55150000000000	4505553.95	71500.00	300.00	101.00	37546.28	37.00
LOC NO=	PER DY MO YR DW	222 222 222 222 222 222 222 222 222 22	4 = WNS	MAX =	# NIW	PNAX=	AV6 =	=NIN4

RUN14 - SUMMARY OUTPUT

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213. 213.040	C.P. 213 FLOW REG	1021.07 1022.05 1002.05 1002.05 1002.05 1002.05 1002.05 1002.05 1002.05 1002.05 1002.05 1002.05 1002.05 1002.05 1002.05 1002.05 1002.05 1002.05 1000.0
213.030	C.P. 213 DIVERSIO	6008990880080808080808080808080808080808
213. 213.300	C.P. 213 DIV REQU	1200 1200 1200 1200 1200 1200 1200 1200
213. 213.060	C.P. 213 DEQ-SHOR	88.34.40 8.60 8.
1 213. 213.050	C.P. 213 MIN DESI	
FL000= 4.100	RES NO.4 Outflow	1221.09 550.00 555.0
PERIOD FL 4. 4.120	RES ND.4 Case	212 212 212 212 212 212 212 212
SUMMARY BY 4. 4.130	RES ND.4 LEVEL	NNGNNNNNNNGGGGGGGGGGGGGGGGGGGGGGGGGGGG
4. 4.220	RES NO.4 EOP ELEV	1424.31 1520.233 1520.
4. 110	RES NO.4 EOP STOR	71500.00 71500.
LOC NO= CODE=	PER DY MO YR DW	446389888888898989898989898989898989898989

RUN14 (CONTINUED)

213.	C.P. 213 FLOW REG	400.00 100.00
213.	C.P. 213 DIVERSIO	150.00 15
213.	C.P. 213 DIV REQU	120.000 120.0000 120.000 120.000 120.0000 120.0000 120.0000 120.000
213.	C.P. 213 DEQ-SHOR	728 738 738 738 738 738 738 738 738 738 73
213.	C.P. 213 MIN DESI	\$
4,	RES NO.4 OUTFLOW	2522450.0808080555550808086555550808080808080808
4	RES NO.4 Case	8888886666688888888888888888888888886666
ф.	RES NO.4 Level	0000
4.	res no.4 Eop elev	1397.08 1387.08 1378.62 1378.62 1378.62 1270.23 1270.2
4.	res no.4 Eop stor	42194.44 27508.73 27508.73 27508.73 27508.73 27508.73 27508.73 27508.73 2700.000 271500.000 271500.000 271500.000 262557.71 20268.55 27705.95 262557.71 20268.55 262557.71 20268.55 262557.71 20268.55 262557.71 271500.000 262557.71 271500.000 262557.71 2715500.000 262557.71 262557.71 262557.71 262557.71 262557.71 262557.71 262557.71 2715500.000 262557.71 2715500.000 272500.000 2725000.000 2725000.0000 2725000.000 2725000.00000000000000000000000000000000
	3	
	YR DV	
	NO Y	<pre>%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%</pre>
	λα	
LOC NO=	PER	44444446600000000000000000000000000000

RUN14 (CONTINUED)

213.	C.P. 213 FLOW REG	4400.000 4400.0000 4400.0000 4400.0000 4400.0000 4400.0000 4400.0000	48515.38	2484.80	0.00	101.00	404.29	35.00
213.	C.P. 213 DIVERSIO	2255.0000000000000000000000000000000000	19066.82	270.00	43.01	70.00	158.89	107.00
213.	C.P. 213 DIV REQU	52000000000000000000000000000000000000	20095.00	270.00	100.00	70.00	167.46	57.00
213.	C.P. 213 DEQ-SHOR	83888888888888888888888888888888888888	8201.25	400.00	0.00	35.00	68.34	1.00
213.	C.P. 213 MIN DESI	44444444444444444444444444444444444444	48000.00	400.00	400.00	1.00	400.00	1.00
• •	RES NO.4 Outflow	22555.000 5575.000 5575.000 5575.000 5575.000 5575.000 5575.000 5555.0000 5555.0000 5555.0000 5555.0000 5555.0000 5555.0000 5555.0000 5555.000000 5555.00000000	67582.21	2604.80	43.01	101.00	563.19	107.00
4	RES ND.4 Case	20000000000000000000000000000000000000	14273.91	213.00	0.03	3.00	118.95	1.00
4.	RES NO.4 LEVEL	20000000000000000000000000000000000000	257.04	3.00	1.00	1.00	2.14	34.00
4	RES ND.4 EDP ELEV	1424.31 1424.31 1424.31 1424.31 1402.45 1352.29 1356.51 1358.51 1358.51 1358.51 1358.51 1358.29 1378.29 1370.23 1270.2	62810.35	1424.31	1270.23	1.00	1356.75	14.00
4.	RES NO.4 EOP STOR	71500.00 53744.43 53536.05 33095.35 33095.65 33095.65 33095.65 330955.65 13095.65 3305.00 300.00 300.00 10285.29 300.00 300.00 10285.21 10285.21 300.00 300.00 115501.06 131.29 114.85 30179.10 8520.00 115501.06 114.85 30179.10 8520.00 115501.06 114.85 30179.10 8520.00 115501.00 1155000.00 1155000.00 1155000.00 11550	3662980.86 1	71500.00	300.00	2.00	30524.84	35.00
OC ND=	PER DY MO YR DW	20168145141111110980666666666788888888888888888888888888	20M = 36	MAX =	= NIN	PNAX=	AVG =	=NIN4

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RUN15 - SUMMARY OUTPUT

213. 213.040	C.P. 213 FLOW REG	1129.64 1129.64 1181.31 1297.10 1297.10 1297.10 1297.10 1297.10 1297.10 1277.20 100 100 100 100 100 100 100 100 100 1
213. 213.060	C.P. 213 DEQ-SHOR	88874884888888888888888888888888888888
213. 213.050	C.P. 213 MIN DESI	**************************************
213. 213. 030	C.P. 213 DIVERSIO	
1 4.030	RES ND.4 DIVERSIO	20000000000000000000000000000000000000
FLDDD= 4.100	RES NO.4 Outflow	111 112 122 122 122 122 122 122 122 122
PERIOD 4. 4.120	RES ND.4 Case	88888888888888888888888888888888888888
SUMMARY BY 4. 4.130	RES NO.4 Level	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
4. 4.220	RES NO.4 EOP ELEV	
4. 4.110	RES NO.4 EOP STOR	71500.00 71555.95 71500.00 71555.95 71555.95 71550.00 71550.00 71555.95 71550.00 71550.00 71550.00 71555.95 71550.00 715500.00 71550.00 70 70 70 70 70 70 70 70 70 70 70 70 7
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	ΥR	NNN 8888888888888888888888888888888888
	Ŵ	919-004899086919-004899086919-008489086919-0M
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LOC NO= CODE=	PER	22888988888888888888888888888888888888

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RUNIS (CONTINUED)

213.	C.P. 213 FLOW REG	400.00 400.00
213.	C.P. 213 DEQ-SHOR	88888888888888888888888888888888888888
213.	C.P. 213 MIN DESI	
213.	C.P. 213 DIVERSIO	25555555555555555555555555555555555555
4.	RES ND.4 DIVERSIO	10011 10010 10010 10010 100000 100000 100000 100000 100000 1000000
• च	RES ND.4 Outflow	24945588833334474867544553356441125333566451556655566555665533333335665556555665556655333333
4.	RES ND.4 Case	338833888888338883388833388833388888888
4.	RES NO.4 LEVEL	000000-0000000000000000000000000000000
4.	RES NO.4 EOP ELEV	1418 1418 1418 1418 1418 1419 1359 1359 1359 1359 1359 1359 1359 1418 1412 1353 1353 1553 1553 1553 1553 1553 15
4.	RES NO.4 EOP STOR	64012.66 55515.17 55538.76 55538.76 755358.76 755358.76 75535.17 25535.91 75530.00 25535.91 75530.00 75535.91 255355.91 25535.91 255555.91 255555.91 255555.91 255555.91 255555.91 2555555.91 2555555.91 255555.91 255555.91 255555.91 255555.91 255555.91 2555555.91 2555555.91 255555.91 255555.91 255555.91 255555.91 2555555.91 2555555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 2555555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 255555.91 2555555.91 25555555.91 2555555.91 255555.91 255555555555.91 255555.91 255555.91 2555555555555.91 2555555555555555555555555555555555555
	YR DW	22222222222222222222222222222222222222
	OW	400/8001010004002000010100040020000101000400200000000
=ON	PER DY	848444460000000000000000000000000000000
LOC N	<u>a</u> _	

RUNIS (CONTINUED)

213.	C.P. 213 FLOW REG	457.87 457.87 400.000 400.000 400.00000000	59082.29	2806.98	100.00	101.00	492.35	37.00
213.	C.P. 213 DEQ-SHOR	88888888888888888888888888888888888888	2791.12	300.00	00"0	37.00	23.26	1.00
213.	C.P. 213 MIN DESI	\$	48000.00	400.00	400.00	1.00	400.00	1.00
213.	C.P. 213 DIVERSIO	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-1971.76	0.00	-22,86	37.00	-16.43	102.00
4.	RES ND.4 DIVERSIO	72222222222222222222222222222222222222	9858.78	114.31	0.00	102.00	82.16	37.00
4.	RES ND.4 OUTFLOW	775 778 778 778 778 778 778 778 778 778	57110.53	2786.09	96.11	101.00	475.92	107.00
-	RES NO.4 Case	88888833388888888888888888888888888888	18319.02	213.00	0.03	10.00	152.66	1.00
4.	RES NO.4 Level	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	311.74	3.00	1.13	1.00	2.60	37.00
4.	RES NO.4 EOP ELEV	1424.03 1424.03 1424.03 1424.03 1424.03 1422.44 1422.44 1422.45 1526.0	166807.02	1424.31	1277.97	1.00	1390.06	37.00
4.	RES NO.4 EOP STOR	71500.00 65173.09 65173.09 55827.99 55827.99 55827.99 651121.84 61121.84 61121.84 71500.00 550198.59 71500.00 22000.00 71500.00 70 70 70 70 70 70 70 70 70 70 70 70 7	434295.34	71500.00	521.71	101.00	45285.79	37.00
LOC NO=	PER DY MO YR DW	2019 2019 2019 2019 2019 2019 2019 2019	21 = 21 21 = 21	max =	= NIW	PMAX=	AVG =	PNIN=

RUN16 - SUMMARY OUTPUT

213. 213.040	C.P. 213 FLOW REG	44 F 1 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -
4. 4.060	RES NO.4 Deq-Shor	233471 23247 2327 232
4. 650	RES NO.4 MIN DESI	\$
213. 213.030	C.P. 213 DIVERSIO	144.22 17
1 4.030	RES ND.4 DIVERSIO	8821 101 101 101 101 101 101 102 102
FL000= 4.100	RES ND.4 Dutflow	661122366666666666666666666666666666666
PERIOD 4. 4.120	RES ND.4 CASE	88888888888888888888888888888888888888
SUMMARY BY 4. 4.130	RES ND. 4 LEVEL	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
4. 4.220	RES ND.4 EDP ELEV	424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 424.31 15300.000
4. 4.110	RES NO.4 EOP STOR	71500.00 70 70 70 70 70 70 70 70 70 70 70 70 7
		مساعبه والمحافظ والمحافظ والمحافظ والمحاجم والمحاجم والمحاجط والمحاصر والمحاجظ والمحاجظ والمحاصل والمحاجط والمحاجط والمحاجط
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	밅	010-0000000000000000000000000000000000
53	R DY	00000000000000000000000000000000000000
LOC ND= CODE=	PER	

RUN16 (CONTINUED)

213.	C.P. 213 FLOW REG	400.00 400.00	
4.	RES NO.4 Deg-shor	88888888888888888888888888888888888888	
4.	RES NO.4 MIN DESI	44444444444444444444444444444444444444	
213.	C.P. 213 DIVERSIO		
. 4	RES ND.4 DIVERSIO	22000000000000000000000000000000000000	
4.	RES ND.4 OUTFLOW		
4.	RES ND.4 CASE	338333888883388838888383838383838888888	
4.	RES NO.4 LEVEL	00000000000000000000000000000000000000	
*	RES NO.4 EOP ELEV		
4.	RES NO.4 EOP STOR	70753.35 618779.05 518151.38 518151.38 518151.38 518161.58 518161.58 518161.58 6641.58 6641.58 6641.58 6641.58 6641.58 6641.58 6641.58 6641.58 6641.58 6641.58 6641.58 6641.58 6641.58 6641.58 6641.58 6641.58 6641.58 6651.00 71500.00 70 7000.00 70000	
LOC ND=	PER DY MO YR DW	54844446528283889325256666666666666666666666666666666666	

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RUN16 (CONTINUED)

213.	C.P. 213 Flow Reg	429.86 400.00 479.27 400.000 400.000 400.000 400.000 400.0000 400.00000000	51705.97	2262.28	102.29	101.00	430.88	38.00
μ.	RES ND.4 DEQ-SHOR	88888888888888888888888888888888888888	1725.45	297.71	0.00	38.00	14.38	1.00
•	RES ND.4 MIN DESI		48000.00	400.00	400.00	1.00	400.00	1.00
213.	C.P. 213 DIVERSIO		-3743.06	0.00	-194.31	10.00	-31.19	6.00
-	RES NO.4 DIVERSIO	7 149 7 149 149 149 149 149 149 149 149 149 149	18715.29	971.55	0.00	6.00	155.96	10.00
4	RES NO.4 OUTFLOW	7 7 7 7 7 7 7 7 7 7 7 7 7 7	47962.91	2071.36	102.29	101.00	399.69	38.00
4.	RES NO.4 CASE		1.95	0.09	0.00	37.00	0.02	10.00
4.	RES NO.4 LEVEL	NGNGGGGNGGNGGGGGGGGGGGGGGGGGGGGGGGGGGG	329.79	3.00	2.00	1.00	2.75	37.00
4.	RES NO.4 EOP ELEV	1424 1424 1424 1424 1424 1424 1424 1424	68291.95	1424.31	1300.00	1.00	1402.43	37.00
å.	RES NO.4 EOP STOR	71500.00 71500.00 62454.81 62454.81 62454.81 71500.00 71500.00 71500.00 71500.00 24114.33 24114.33 2175.54 2114.33 2175.54 71500.00 7000.00 700000.00 70000.00 70000.00 70000.00 70000.00	6480173.11	71500.00	2000.00	8.00	54001.44	39.00
LOC ND=	PER DY MO YR DW	20000000000000000000000000000000000000	SUM = 64	MAX =	" NIW	PMAX=	AVG =	=NINd

RUN17 - SUMMARY OUTPUT

213. 213.040	C.P. 213 FLOW REG	1144.75 550.88 550.88 551.88 552.97 552.88 552.97 552.9
213.	C.P. 213 DEQ-SHOR	88338883888888888888888888888888888888
213 . 213.030	C.P. 213 DIVERSIO	2225466668888888888888888888888888888888
4. 4.030	RES NO.4 DIVERSIO	80000000000000000000000000000000000000
1 4. 100	RES NO.4 DUTFLOW	00011000000000000000000000000000000000
FL000= 4. 4.120	RES NO.4 Case	88888888888888888888888888888888888888
PERIOD 4. 4.130	RES NO.4 Level	2022-1-202020202020202020202020202020202
SUMMARY BY 4. 4.220	RES NO.4 EDP ELEV	1424 1424 1424 1424 1424 1424 1424 1424
4. 4.110	RES NO.4 EOP STOR	$\begin{array}{c} 71500\\ 71500\\ 69847\\ 71500\\ 71500\\ 71500\\ 71500\\ 71500\\ 00\\ 71500\\ 00\\ 71500\\ 00\\ 00\\ 00\\ 00\\ 00\\ 00\\ 00\\ 00\\ 00\\$
4. 240	RES NO.4 LOCAL IN	$ \begin{smallmatrix} 1222 \\ 1222$
LOC NO= CODE=	PER DY MO YR DW	4448389888888889898989898989898989898989

RUN17 (CONTINUED)

213.	C.P. 213 FLOW REG	60000000000000000000000000000000000000
213.	C.P. 213 DEQ-SHOR	28888888888888888888888888888888888888
213.	C.P. 213 DIVERSIO	88888888888888888888888888888888888888
¢.	RES NO.4 DIVERSIO	866199888888888888888888888888888888888
4.	RES NO.4 Outflow	56533333333333333333333333335555555555
4.	RES NO.4 Case	83888888888888888888888888888888888888
4.	RES ND.4 Level	0000000000000000000000000000000000
4.	RES NO.4 EOP ELEV	1202 1202 1202 1202 1202 1202 1202 1202
4.	RES NO.4 EOP STOR	238855.62 16499.51 16499.51 16499.51 16499.51 16499.51 16499.51 16499.51 23600.00 235726.000.00 235726.95 25569.91 171550.00 1
4.	RES NO.4 LOCAL IN	122510000000000000000000000000000000000
LOC ND=	PER DY MO YR DW	なまたあたまたのには、「「「「」」」」」」」」」」」」」」」」」」」」」」」」」」」」」」」」」

RUN17 (CONTINUED)

213.	C.P. 213 FLOW REG	421.32 400.000 400.000 400.00000000	55294.19	2613.40	82.46	101.00	460.78	49.00
213.	C.P. 213 DEQ-SHOR	28888888888888888888888888888888888888	3838.70	317.54	0.00	49.00	31.99	1.00
213.	C.P. 213 DIVERSIO	82585288888888888888888888888888888888	-2950.08	0.00	-32.00	35.00	-24.58	1.00
Ą.	RES NO.4 DIVERSIO	66666666666666666666666666666666666666	14750.40	160.00	0.00	1.00	122.92	35.00
4.	RES NO.4 OUTFLOW	252272000000000000000000000000000000000	52344.11	2581.40	82.46	101.00	436.20	49.00
4.	RES NO.4 Case	00000000000000000000000000000000000000	20235.79	213.00	0.03	3.00	168.63	1.00
*	RES ND.4 LEVEL		300.75	3.00	1.00	1.00	2.51	49.00
4 .	RES NO.4 EOP ELEV	1424.31 1424.31 1412.65 1424.31 1412.65 1424.31 1411.61 1374.86 1374.86 1374.86 1374.86 1374.46 1374.46 1370.00 1370.00 1370.00 1370.46 1416.55 1424.31 1532.12 1532.1	165752.86	1424.31	1270.23	1.00	1381.27	49.00
4.	RES ND.4 EOP STOR	71500.00 63181.02 63181.02 63181.02 63181.02 71500.00 70 70 70 70 70 70 70 70 70 70 70 70 7	4781885.80 1	71500.00	300.00	2.00	39849.05	49.00
4.	RES ND.4 LOCAL IN	$\begin{smallmatrix} & 1222 \\ & 2545 \\ & 2545 \\ & 2545 \\ & 2552 \\$	66490.00 47	3094.00	43.00	101.00	554.08	107.00
LOC ND=	PER DY MO YR DW	22 22 22 22 22 22 22 22 22 22	= WNS	= XAN	= NIW	PNAX=	AVG =	=NING

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RUN18 - SUMMARY OUTPUT

213. 213.040	C.P. 213 FLOW REG	1276.14 1276.14 1276.14 1276.14 1276.14 1276.14 1276.14 1276.14 1276.25 1276.25 1276.00 127
4. 4.060	RES ND.4 Deg-Shor	888888888888888888888888888888888888888
8 4,050	RES ND.4 MIN DESI	44444444444444444444444444444444444444
FLOOD= 4.100	RES ND.4 Outflow	1220.0000000000000000000000000000000000
PERIOD 4. 4.09(RES ND.4 INFLOW	$\begin{array}{c} 1222\\ 1222\\ 1222\\ 1222\\ 1222\\ 1222\\ 1226\\$
SUMMARY BY 4. 4.120	RES ND.4 Case	
4. 4.130	RES ND.4 LEVEL	
4. 4.110	RES NO.4 EOP STOR	643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 643928.69 656375.53 608241.89 656375.53 608241.89 65750.68 65750.68 65751.43 65751.43 65751.43 65751.68 65751.68 65751.68 65751.68 65751.68 65751.68 65751.68 65751.68 657528.69 657528.752 657528.559 657528.559 757527
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	YR D	11118888888888883333333333333333333333
	Q	919-0240-020-020-020-020-020-020-020-020-02
	Å	
LOC NO= LOC NO=	PER	22233333333333333333333333232322222222

RUN18 (CONTINUED)

213.	C.P. 213 FLOW REG	4400.000 4400.0000 4400.000 4400.000 4400.000 4400.000 4400.000 4400.
4.	RES NO.4 DEG-SHOR	888888888888888888888888888888888888888
4.	RES NO.4 MIN DESI	\$
4.	RES NO.4 Dutflow	
4	RES NO.4 Inflow	242 242 242 242 242 242 242 242
4.	RES NO.4 CASE	22222222222222222222222222222222222222
4.	RES NO.4 Level	00000000000000000000000000000000000000
4	RES NO.4 EOP STOR	5823092. 97 5823092. 97 5823092. 97 582309. 47 582309. 47 570441. 96 5535400. 93 5535400. 93 554152. 68 554152. 68 554152. 68 5547248. 48 5572415. 08 5572415. 08 55772415. 08 55777275. 08 5577775. 08 5577775. 08 55777575. 08 55777575. 08 55777575. 08 55777575. 08 55777575. 08 55777575. 08 57777575. 08 5777757575. 08 5777757575. 08 5777757575. 08 5777757575757575. 08 57777575757575757575757
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	YR D	
	MO /	-01-04849494949494949494949494949494994999999
	λ	
LOC ND=	PER	44444446600000000000000000000000000000
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RUNIB (CONTINUED)

213.	C.P. 213 FLOW REG	1003.37 769.08 552.39 400.00	400.00	400.00 600.00	620.13 400.00	3030.17 826.08	400.00	400.00 400.00	400.00	400.00	400.00	400.00	400.00	11/1.39 RAN.39	400.00	400.00	400.00	66766.96	3030.17	400.00	101.00	556.39	10.00
4.	RES NO.4 DEQ-SHOR	88888 88888 88888	888	888	80 80	000	000	88°	0.0	000	0.0	88	0.00	000	00.0	800	88	00.0	0.00	0,00	1.00	0.00	1.00
4	RES ND.4 MIN DESI	400.00 400.00 400.00 400.00	400.00	400.00 400.00	400-00 400-00	400.00 400.00	400.00	400.00 400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	48000.00	400.00	400.00	1.00	400.00	1.00
4.	RES ND.4 OUTFLOW	1003.39 769.08 552.39 400.00	400.00	400.00 600.00	620.13 400.00	3030.17 826.08	400.00 400.00	400.00 400.00	400.00	400.00	400.00	400.00	400.00	11/1.59 R00.39	400,00	400.00	400.00	66766.96	3030.17	400.00	101.00	556.39	10.00
4.	RES NO.4 Inflow	1044.00 763.00 545.00 388.00 1177.00	252.00 187.00	872.00	513.00 331.00	3094.00 820.00	25 4. 00	126.00 65.00	43.00	172.00	560.00	859.00	679.00	793,00	364.00	Z70.00 319.00	224.00 753.00	66490.00	3094.00	43.00	101.00	554.08	107.00
4	RES ND.4 Case		888	0.00	0.00		88	 	88	0.0	0.0 0.0	88.0	0.0	0.03	00.0	88	000	1.08	0.03	0.00	1.00	0.01	10.00
4.	res no.4 Level	88888 88888 88888	2.97	26-62 77-72	2-39	383 77	2-98 2-98	2.95	2.89	2.85	2.86	2.96	2.99	2.00 2.00	2.00	2.98	2.99	353.79	3.00	2.78	4.00	2.95	50.00
4.	RES NO.4 EOP STOR	643928.69 643928.69 643928.69 643928.69 643928.69	634925.68 621896.66 608743 61	637679.63 643928.69	643928.69 639976.02	643928.69 643928.69	641627.18 633605.55	617361.41 596842.92	574941.28	545404.53	555141.96 555141.96	621002.35	636760.06	043728.07 643928.69	641810.38	654159.12 629252.06	618496. 39 639498. 24	=73274909.54	643928.69	499862.25	4.00	610624.25	50.00
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	YR I	*****	285	222	s:s:	3.2:	22:	22	22	12	22	35	50	25		22	55	NUS	MAX	MIN	PMAX=	AVG	PMIN=
	Q	010410-0														<u>o</u> r	00.0-				_	-	-
	λ			4						• •		-44		-									
)C ND=	PER	92 92 93 94 95 95 95 95 95 95 95 95 95 95 95 95 95	46 426	258	66 00	523	301 101	201 102	108	5	<u>1</u>	112	213	115	116	11/	119						

LOC ND=

RUN19 - SUMMARY OUTPUT

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		0.05
		9.00
	SINGLE RESERVOIR WATER SUPPLY SYSTEM * OPTIMIZATION OF MONTHLY DESIRED FLOW * RUN 19 MONTHLY FLOW 1927-1937 RECORD (120 PERIODS)	0.00 0.00 0.00 0.00 0.00 0.00 2.00 6.00
280.	IEM FLOW * 20 PERIOD	0.00
257 . 309.	PPLY SYS1 DESIRED CORD (12	0.00
345. 321.	MATER SUI Monthly -1937 reg	0.00
004 33	ERVDIR I FION OF 30 1927-	0.00
233. 315. 050 (NGLE RESE Optimizai NTHLY Flu	0.00
TTON UES 303. 6 0.	10 8 8 9 10 8 10 8 10 8 10 8 10 8 10 8 1	0.00
PTIMIZA PT. VAL 57. 92. -33.04		J7 4.20
YIELD DETERMINED BY OPTIMIZATION Res-Loc Type-opt Opt. Values 4 2 257. 239. 233. New Critical Period= -33.046 0.050 0.004	1121	37
YIELD RES-L(MU290*	

ANNUAL DIV 4		
ANNUAL A Red Q	100.	100.
ANNUAL Des g	477. 329. 278.	278.
DRAM Av rel Loc=	482. 326. 270.	270.
DRAW ENGTH		7.
DRAW St Per L	1930.06 1930.06 1930.07	1930.07
RAT 10 576/0	0.1731 0.1731 0.1731	0.1731
TOP. CON STOR.	71500. 71500.	71500.
SPILL	48. 89. 123.	277.
AVG Rel	518. 414. 397.	556.
AVG. INF.	377. 377. 377.	554.
ROUTING ST PER	1929.10 1929.10 1929.10	1927.10
PERIODS	222	120
ERROR (STG)	165430. -24798. -283.	-283.
ERROR	1 2.3803-165430. 2 0.3568 -24798. 3 0.0041 -283.	1 0.0041
TRIAL		
LOCATION	SINGLE RES SINGLE RES SINGLE RES	SINGLE RES

RUN19 (CONTINUED)

213. 213.040	C.P. 213 FLOW REG	0.650 × 1.558 × 2.558
4. 80	res no.4 Reg-shor	888888888888888888888888888888888888888
4. 4.070	RES NO.4 Min requ	88888888888888888888888888888888888888
4 4. 4.060	RES ND.4 DEQ-SHOR	888888888888888888888888888888888888888
FL000= 4.050	RES NO.4 MIN DESI	06/03/16/8880328223228892016/22222222222222222222222222222222222
PERIOD 4. 4.100	RES ND.4 Outflow	2557.75 2557.75 2557.75 2557.75 2557.75 2557.75 2556.67 2557.75 2556.67 2557.75 2557.7
SUMMARY BY 4. 4.090	RES NO.4 INFLOW	1222.00 1268.00 1268.00 1385.00 1395.0
4. 4.120	res ND.4 Case	88888888888888888888888888888888888888
4. 4.110	res no.4 Eop stor	571500.00 571500
	M	
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	Q	0111-0048767860111-0048767860110-004876786011000
	λα	न्त
LOC NO= CODE=	PER	228898989898989898989898989898989898989

0.000

RUN19 (CONTINUED)

213.	C.P. 213 FLOW REG	241 242 242 242 242 242 242 242 242 242
4	RES ND.4 Reg-shor	888888888888888888888888888888888888888
4.	res no.4 Min requ	\$
4.	RES NO.4 DEQ-SHOR	\$
4.	RES NO.4 MIN DESI	0.0004102880020000040000000000000000000000
4.	RES NO.4 Outflow	541 541 541 541 541 541 541 541 541 541
4,	RES NO.4 INFLOW	145.00 155.00 155.00
ъ.	RES ND.4 Case	88888888888888888888888888888888888888
4,	RES NO.4 EOP STOR	571500.00 571500
	Ma	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
	YR D	88888888888888888888888888888888888888
	Q.	450780910107780978090101077809780910107869980910107
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=ON	PER	44444446000000000000000000000000000000
LOC		

RUN19 (CONTINUED)

213.	C.P. 213 FLOW REG	549.32 388.91	1177.65	309.18	285.84	701.75	617.16 XXX.78	3096.88	358.32	303.34	320.84	309.18	285.84	239.17	356.05	861.78	1785.55	797.32	364.91	320. R4	309.18 620.30	66662.72	3096.88	233.34	101.00	555.52	39.00
4	RES ND.4 REQ-SHOR	0.00	0.00	00 0	00.0	00.0	00.0	000	00.00	0°.0	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	8.0	0.00	0.0	0.00	0.00	0.00	1.00	0.00	1.00
4.	RES NO.4 MIN REQU	100.00																			100.00	12000.00	100.00	100.00	1.00	100.00	1.00
4.	RES NO.4 Deq-Shor	00.0 00.0	88. 88.	0.00	8.0	8.0	000	88	00.0	0.0	0.00	0.00	000	00.00	0.00	0.00	0.0	0.00	000	000	0.00	00*0	0.00	0.00	1.00	0.00	1.00
-	RES NO.4 MIN DESI	291.68 303.34	315.01 320.84	309.18	285.67	239.17	245.01	256.67	291.68	303.34	320.84	309.18	285.84	239.17	233.34	245.01	280.01	291.68	303.34	320.84	309.18 285.84	33367.71	320.84	233.34	10.00	278.06	3.00
4.	RES NO.4 Outflow	549.32 388.91	1177.65 320.84	309.18	283.84 578.30	701.75	333.78	3096.88	358.32	303.34	320.84	309.18	285.84	239.17	356.05	861.78	1285.55	797.32	364.91	320.84	309.18	66662.72	3096.88	233.34	101.00	555.52	39.00
4.	RES ND.4 INFLOW	545.00 388.00	1177.00 252.00	187.00	1/7.00 872.00	697.00	331.00	3094.00	354.00	268.00	65.00	43.00	140.00 177.00	560.00	1004.00	859.00 470.00	1282.00	793.00	364.00 770 A0	319.00	224.00	66490.00	3094.00	43.00	101.00	554.08	107.00
Ф	RES ND.4 Case	0.03	0.00	0.0	0.03	0.03	 	0.03	0.03	0.0	0.0	0.0	0.0	0.00	0.03	0.03	0.03	0.03	0.03	0000	0.00	2.16	0.03	00"0	1.00	0.02	11.00
4.	RES NO.4 EOP STOR	571500.00	571500.00 567323.63	559850.36	571500.00	571500.00	571500.00	571500.00	571500.00	569382.07 558170 78	542483.47	526142.72	512238.61	531459.45	571500.00	00.002172	571500.00	571500.00	00.001/C	568802.80	563605.88 571500.00	=67511614.83	571500.00	501717.17	1.00	562596.79	40.00
ic ND=	PER DY MO YR DW	91 1 4 35 1 92 1 5 35 1	-10	∞ ¢	101	1:		сч м — —) - 1			∞ o 	1 10		1 12							.9= WNS	max =	HIN =	PMAX=	AVG =	=NIN4
LOC																											

RUNZO - SUMMARY DUTPUT

			ANNUAL ANNUAL Reg g DIV 4 4		0
			ANNUAL Red Q	100.	100.
			ANNUAL Des Q	371. 266.	259.
			DRAW AV REL LOC=	385. 276.	276.
		0.05	DRAW Ength	8.	7.
	RUN 20	6.00 0	DRAW DRAW DRAW St Per Length av Rel Loc-	1930.06 1930.07	71500. 0.1731 1930.07
		2.00	RAT10 ST6/0	0.1731	0.1731
266.	ed flows ERIODS)	.00 2	AV6 T0P.CON RATIO Spill Stor. St6/0	71500. 0.1731 1 71500. 0.1731 1	
	SYSTEM IG DESIG (120 F	00	AVG	75.	308.
258. 237.	SUPPLY Varyin Record	0	AV6 Rel	434. 390.	556.
266. 244.	DIR WATER Df Perioi 1927-1937	0.00 0.00 0.00	AVG INF.	377.	554.
273. 2 255. 0.039 050 0.039	SINGLE RESERVDIR WATER SUPPLY SYSTEM *Optimization of Period Varving Desired Flows* Monthly Flow 1927-1937 Record (120 Periods)	0.00	ERROR NUM. ROUTING (STG) PERIODS ST PER	1929.10 1929.10	120 1927.10
°	NUS NDM	0.00	NUM. Periods	512	120
TIMIZATION T. VALUES 7. 28 8. 25 -33.046		17 4.20		-53450. -2725.	1 0.0392 -2725.
D BY 0F 0PT 0P 28 10D= 25	112	11	ERROR RATIO	1 0.7691 -5345 2 0.0392 -272	0.0392
ERMINE TYPE- 2 AL PER			TRIAL		
VIELD DETERMINED BY OPTIMIZA Res-Loc type-opt opt. Val 4 2 287. New critical period= -33.04	NNS40*		LOCATION	SINGLE RES SINGLE RES	SINGLE RES

RUNZO (CONTINUED)

213. 213.040	C.P. 213 FLOW REG	12721 12721
4. 800	RES ND.4 Reg-Shor	888888888888888888888888888888888888888
4. 4.070	RES NO.4 Min requ	88888888888888888888888888888888888888
3 4.060	RES NO.4 DEQ-SHOR	888888888888888888888888888888888888888
FL000= 4.050	RES ND.4 MIN DESI	22222222222222222222222222222222222222
PERIOD 4. 4.100	RES ND.4 Outflow	12721 2721 2721 2721 2721 2721 272221 27221 27221 27221 27221 27221 2722
SUMMARY BY 4. 4.090	RES NO.4 INFLOW	1222 1268 1278 12 17 17 17 17 17 17 17 17 17 17 17 17 17
4. 4.120	RES ND.4 Case	88888888888888888888888888888888888888
4. 4.110	RES NO.4 EOP STOR	571500.00 571500
	MO	همة عبية غمة غمة غمة شمة غمة غمة غمة غمة غمة عمة عمة غمة غمة غمة غمة غمة غمة غمة غمة غمة عمة عمة عمة عمة عمة عمة عمة عمة عمة ع
	YR D	5555666666666666666666666666666666666
	P	919-094999299919-0949992939-0949996919-09
	λa	
LOC NO= CODE=	PER	44888888888888888888888888888888888888

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RUNZO (CONTINUED)

213.	C.P. 213 FLOW REG	5224.04 5224.05 5224.04 5224.04 5224.04 5224.04 5224.04 5224.04 5224.04 5224.04 5224.05 5224.05 5224.04 5224.05 5224.05 5224.05 5224.05 5224.05 5224.05 5224.05 5224.05 5224.05 5224.05 5224.05 5224.05 5224.05 5225.05 5225.05 5227.05 527
4.	RES NO.4 Reg-shor	88888888888888888888888888888888888888
4	RES ND.4 MIN REQU	88888888888888888888888888888888888888
-	RES ND.4 DEQ-SHOR	888888888888888888888888888888888888888
4.	RES NO.4 MIN DESI	286528588852558888888888888888888888888
4.	RES ND.4 Outflow	52555555555555555555555555555555555555
• य	RES NO.4 INFLOW	145.00 145.00 145.00 145.00 145.00 145.00 145.00 145.00 155.00
2 27	RES ND.4 Case	88888888888888888888888888888888888888
4.	res ND.4 EOP STOR	571500.00 571500
	M	المحافية ومحافظة ومحافظة ومحافظ ومحافظ ومحافظ ومحافظ ومحافظ ومحافظ ومحافظ ومحافظ ومحاجبها ومحاجبها ومحاجبها ومحاجبها ومحاجبها ومحاجبها ومحاجبها ومحاجبها
	YR D	nnakakakakakakakakakakakakakakakakakaka
	Q	40.9/00-0111-0040.9/00-0111-0040.9/00-0111-00040.9/00-0111-000
	λa	
LOC ND=	PER	848448482833338388888888888888888888888

RUNZO (CONTINUED)

213.	C.P. 213 FLOW REG	549.32 388.91 1177.65	252.94 229.69	226.10 783.51	701.75	333.78 3096.88	823.55 358.32	268.91 240.45	247.63 244.04	254.81	265.58	604.92	681.98	1285.55	364.91	270.65	258.40 718.13	66665.64	3096.88	218.92	101.00	555, 55	59.00
* ₩	RES ND.4 REG-SHOR	000	88 88	0.00	0.00	00.00	80 80	 	0.00	0.0	88. 0	0.00	00.00	0.0	00.0	0.0	0.00	0.00	0.00	0.00	1.00	0.00	1.00
4.	RES NO.4 MIN REQU	100.00 100.00	100.00	100.00 100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	12000.00	100.00	100.00	1.00	100.00	1.00
4.	RES ND.4 DEQ-SHOR	0000 0000	80 00	 	0.00	0000	00.0 0	88 80	0.0	0.0		88		000	0.0	0.0	88	0.00	0.00	0.00	1.00	0.00	1.00
4,	RES NO.4 MIN DESI	236.86 240.45 244.04	247.63 229.69	226.10 215.33	222.51 218.92	222.51	233.28 236.86	233.28 240.45	247.63 244.04	254.81	265.58	236.86	244.04	258.40 241.99	254.81	265.58	258.40 254.81	29740.87	287.11	215.33	1.00	247.84	57.00
4.	RES NO.4 Dutflow	549.32 388.91 1177.65	252.94 229.69	226.10 783.51	701.75	333.78 3096.88	823, 55 358, 32	268.91 240.45	247.63 244.04	254.81	265.58	604.92 841.78	681.98	1285.55	364.91	319.94	258.40 718.13	66665.64	3096.88	218.92	101.00	555, 55	59.00
4.	RES NO.4 INFLOW	545.00 388.00 1177.00	252.00 187.00	179.00 872.00	697.00 613.00	331.00 3094.00	820.00 354.00	268.00 126.00	65.00 43.00	140.00	560.00	1004.00 859.00	679.00	1282.00	364.00	319.00	224.00	66490.00	3094.00	43.00	101.00	554.08	107.00
4.	RES ND.4 Case	20 0 20 0	0.00	0.00	0°03	0.03	0.02	0.00	 	00.0	0.00	0.03	0.03	0.03	0.03	0.03	0.00	2.46	0.03	0.00	1.00	0.02	12.00
4.	RES NO.4 EOP STOR	571500.00 571500.00 571500.00	5/1500.00	566113.01 571500.00	571500.00 571500.00	571500.00	5/1500.00	564726.68	553546.93 541216.85	524383.76	546740.73	571500.00	571500.00	571500.00	571500.00	571500.00	569427.44 571500.00	=67837021.32	571500.00	499274.66	70.00	565308.51	40.00
=ON (PER DY MO YR DW	91 1 4 35 1 92 1 5 35 1 93 1 6 35 1		101	121		 	0~0) 	~ 68	6 0 1		1 12		^) at 			B 	19= WNS	max =	MIN =	PMAX=	AVG =	PHINE
LOC																							

RUN21 - SUMMARY OUTPUT

YIELD DETERMINED BY OPTIMIZATION Res-Loc type-opt opt. Values 4 3 200. New critical period= -102.115

0.024 0.050

MU290*

SINGLE RESERVOIR WATER SUPPLY SYSTEM *OPTIMIZATION OF REQUIRED FLOMS* RUN 21 Monthly flow 1927-1937 Record (120 Periods)	
SINGLE RESERVE #OPTIMIZATION MONTHLY FLOW 1	
11 12 13	

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ANNUAL DIV 4	.0	
ANNUAL A Reg g 4	200.	200.
ANNUAL DES Q	400.	400.
DRAW Av Rel LDC=	331.	331.
DRAW .ength	18.	7.
DRAN ST PER LI	1930.06	1936.04
RAT10 STG/0	0.1774	0.1774
TOP. CON STOR.	71500.	71500.
SPILL	63.	164.
AVG REL	417.	556.
AVG INF.	377.	554.
ROUTING ST PER	1929.10	1927.10
NUM. PERIODS	27	120
ERRDR (STG)	1700.	1700.
ERROR RATIO	0.0239	0.0239
TRIAL		 02
LOCATION	SINGLE RES	SINGLE RES

RUN21 (CONTINUED)

213. 213.040	C.P. 213 FLOW REG	
4. 4.080	RES NO.4 Reg-shor	00000000000000000000000000000000000000
4 . 4.070	RES ND.4 MIN REQU	88888888888888888888888888888888888888
4. 4.060	RES ND.4 DEQ-SHOR	2224 2224 2224 2224 2224 2224 2224 222
2 } 4.050	RES NO.4 MIN DESI	66666666666666666666666666666666666666
FL000= 4.100	RES NO.4 OUTFLOW	1221.16 1221.16 1221.16 1221.16 1221.16 1221.16 1221.16 1221.16 1221.16 1221.16 1221.16 1221.26 1222.26 1221.26 122
060	RES NO.4 Inflow	1222.00 12682.00 12682.00 12682.00 13685.00 13655.00 13755.00 136555.00 136555.00 136555.00 136555.00 136555.00 136555.00 136555.00 1365555.00 1365555.00 136555.00 136555.00 136555.00 13655555555.00 1365555.00 136555555555555555555555555555555555555
SUMMARY BY PERIOD 4. 4.120 4.	RES ND.4 CASE	
4.130	RES NO.4 LEVEL	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
4. 4.110	res no.4 Eop stor	571500.00 570500.00 570500.00 570500.00 570500.00 570500.00 570500.00 570500.00 570500.00 570500.00 570500.00 570500.00 57050000.00 57050000.00 57050000.00 57050000.00 57050000.00 57050000000000
	DY NO YR DW	2112255982555555555555555555555555555555
LOC NO= CODE=	PER	200403022222222222222222222222222222222

RUN21 (CONTINUED)

213.	C.P. 213 FLON REG	400.00 400.00	554.32 400.00 400.00 400.00 1054.75 1054.75 1054.75 1054.75 1054.75 1054.75 1054.75 100.00
4	RES NO.4 Reg-Shor	888888%8888888888888888888888888888888	
4.	RES NO.4 Min requ		88888888888888888888888888888888888888
4	RES ND.4 DEQ-SHOR	88888888888888888888888888888888888888	
* **	RES ND.4 MIN DESI	86888888888888888888888888888888888888	00000000000000000000000000000000000000
• •	RES ND.4 Dutflow	400.000 400.0000 400.000 400.000 400.000 400.000 400.000 400.000 40	400.00 400.00000000
*	RES ND.4 INFLOW	804 804 745 804 745 804 745 804 745 804 804 804 804 804 804 804 804	550.00 307.00 171.00 513.00 513.00 520.00 526.00 554.00 554.00 554.00
4,	RES ND.4 Case	00000000000000000000000000000000000000	
4.	RES ND.4 Level	00000000000000000000000000000000000000	00000000000000000000000000000000000000
4.	RES NO.4 EOP STOR	570753.35 5687755.35 5687755.35 5687755.35 5687755.35 558131.38 558131.38 558131.38 558257.35 5565318.68 5571500.00 55715	571500.00 553511.24 553511.24 5539572.73 545550.80 5445550.80 5445550.80 5445550.80 5445550.80 544550.80 551500.00 558839.94
	M		
	NO YR	409~869111-00489~869111-00469~869111-00 555555555555555555555555555555555	
	١٨	وسو	
LOC ND=	PER	84844848989999999999999999999999999999	83888888888 83888888888888888888888888

RUNZ1 (CONTINUED)

213.	C.P. 213 FLON REG	999.04 766.55	549.32 400.00	1166.18	400.00	400.00 400.00	596.06	400.00	3025.96 823.55	400.00	400.00	400.00	400.00 142.95	171.94	400.00	493.08	1285.55	797.32 400.00	400.00	400.00	66678.20	3025.96	102.29	101.00	555.65	38.00
4.	RES ND. 4 Reg-Shor	0.00	0.0	000	80.0	80 0 0	00.0	800	0.00	800	88.	00.0	0.00 57.05	28.06	0.0	8.0	30	88.0	0000	88	337.62	97.71	0.00	38.00	2.81	1.00
4	RES NO.4 MIN REQU	200.00	200.00 200.00	200.00	200.00	200.00 200.00	200.00	200.00	200 . 00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00	200.00 200.00	200.00 200.00	200.00	24000.00	200.00	200.00	1.00	200.00	1.00
4.	RES ND.4 DEQ-SHOR	0.00	000	0.0	000	0.00 0.00	0.00	0.0	0.0	00.0		0.00	257.05	228.06 0.00	0.0	8°0	8	0.0	0.00	800	1725.45	297.71	0.00	38.00	14.38	1.00
ъ.	RES NO.4 MIN DESI	400.00 400.00	400.00 400.00	400.00	400.00	400.00 400.00	400.00 400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00 400.00	400.00 400.00	400.00	48000.00	400.00	400.00	1.00	400.00	1.00
4.	RES ND.4 OUTFLOW	999.04 766.55	549.32 400.00	1166.18	400.00	400.00 400.00	596.06 617.16	400.00	823.55	400.00	400.00	400.00	142.95	400.00	400.00	493.08 681.98	1285.55	400.00	400.00 400.00	400.00 400.00	66678.20	3025.96	102.29	101.00	555, 65	38.00
4	RES ND.4 Inflow	1044.00 763.00	343.00 388.00	1177.00 252.00	187.00	872.00	697.00 613.00	331.00	820.00	354.00 248.00	126.00	65.00 47.00	140.00	560.00	1004.00	00.958	1282.00	364.00	270.00 319.00	224.00 753.00	66490.00	3094.00	43.00	101.00	554.08	107.00
4.	RES ND.4 CASE	0.03	0.00	0.03	0.0	00.0	0.03	0.0	0.03	88 0	.0	0.0	0.09	60°0	0.0	0.03	0.03	38	0.0 0.0	 	1.95	0.09	0.00	37.00	0.02	10.00
*	RES NO.4 LEVEL	888 5 7 7 7 7	2.99	3.00 2.87	2.68	2.91	3.00 3.00	2°44	2.00 2.0	2.96 2.85	2.61	2°32 2'00	88 171	2.14	2.67	88 ? 2	00°2	2.97	2.19	2.63	329.79	3.00	2.00	86.00	2.75	37.00
4	res no.4 Eop stor	571500.00	570817.84	571500.00 562454.81	549393.21	565220.60	5/1500.00	567424.34 571500 00	571500.00	569016.18 560951.50	544677.76	502175.54	502000.00	511568.99	548850.74 571500.74	571500.00	571500.00	569341.65	556711.52	545922.93 566926.41	480173.10	571500.00	502000.00	86.00	554001.44	37.00
-LDC ND=	PER DY NO YR DW	89 1 2 35 1 90 1 3 35 1 91 4 3 35 1			1 8 33		1 12 35 1	1 1 36 1		1 4 36 1 1 5 36 1	05 1 6 36 1	07 1 8 36 1 07 1 8 36 1	1 9 26		11 1 12 36 1		14 1 3 37 1 15 1 A 77 1		1 22/1	1 8 37 1 1 9 37 1	99= WNS	MAX =	= NIN	PMAX=	AV6 =	PMIN=

RUN22 - SUMMARY DUTPUT

			ANNUAL DIV 4	217. 179. 163.	156.
			ANNUAL ANNUAL Reg g div 4 4		0.
			NNUAL Des Q	0000	0.
			DRAW DRAW DRAW F F Per Length av rel Loc=	106. 114. 117.	118.
		0.05	DRAW	~~~~	7.
		6.00	2	1930.07 1930.07 1930.07 1930.07	1930.07
	22		RAT 10 576/0	71500. 0.1731 71500. 0.1731 71500. 0.1731 71500. 0.1731	71500. 0.1731
158.	EM 14 RUN 22 10 Periods)	0.00	AVG TOP.CON Spill Stor.	71500. 71500. 71500.	71500.
	SYSTEM SIDN* (120 P	0.00	AVG	191. 221. 234.	391.
173.	SUPPLY Y DIVER Record		AVG Rel	191. 221. 234.	400.
180 . 144.	RESERVOIR WATER Zation of Month Flow 1927-1937	0.00 0.00	AVG INF.	159. 197. 213. 221.	398.
180. 144. 0 0.043	SINGLE RESERVOIR WATER SUPPLY SYSTEM *OPTIMIZATION OF MONTHLY DIVERSION* MonthLy Flow 1927-1937 record (120	0.00	ROUTING St per	1929.10 1929.10 1929.10 1929.10	1927.10
GN S 173. 144. 0.050	SING MONN	0.00	NUM. GR1005	2222	120
TIMIZATION T. VALUES 4. 17 4. 14 -33.046		4.40	ERROR (STG) Pr	1 0.3489 -24247. 2 0.1611 -11197. 3 0.0819 -5691. 4 0.0434 -3018.	-3018.
10 BY 0P -0P1 0P 14 14 14	1221	17	ERROR Ratio	0.3489 0.1611 0.0819 0.0434	0.0434
TYPE- 4 L PEF			TRIAL	-0M4	
DETE				RES RES RES	RES
VIELD DETERMINED BY OPTIMIZAT Res-Loc Type-Opt Opt. Vall 4 144. New Critical Period= -33.044	NU290*		LOCATION	SINGLE I SINGLE I SINGLE I SINGLE I	SINGLE

-**e**-re-

RUN22 (CONTINUED)

213. 213.040	C.P. 213 FLOW REG	
213. 213.030	C.P. 213 DIVERSIO	ਸ਼
4. 030	RES ND.4 DIVERSIO	252424288888888888888888888888888888888
4.300	RES NO.4 DIV REQU	222-2222222222222222222222222222222222
5 4. 100	RES ND.4 DUTFLOW	11077 2221.228 2221.228 2221.228 2221.228 2221.228 2222.228 222.228 22.2
FL000= 4.090	RES NO.4 INFLOW	10078.11 10078.
PERIOD 4. 4.240	RES ND.4 Local in	1222 1268 1278 1268 1278 12 17 17 17 17 17 17 17 17 17 17 17 17 17
SUMMARY BY 4. 4.120	RES ND.4 CASE	88888888888888888888888888888888888888
4. 4.130	RES ND.4 LEVEL	20222222222222222222222222222222222222
4. 4.110	RES NO.4 EOP STOR	571500.00 571500
	DY MO YR DW	MALLE 08088888889999999999999999999999999999
LOC NO= CODE=	PER	22283838888888888888888888888888888888

RUNZZ (CONTINUED)

	213 RE6	
213.	C. P. 2 FLOW R	252 252 252 252 252 252 252 252 252 252
213.	C.P. 213 DIVERSIO	&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&
4.	RES ND.4 DIVERSIO	745,82828282828282828282828282828282828282
4	RES ND.4 DIV REQU	44224242424222224242424242422224242424
***	RES NO.4 OUTFLOW	2222 2222 2222 2222 2222 2222 2222 2222 2222
4 .	RES NO.4 Inflow	2224888888889744588888888888888888888888888
4.	RES ND.4 Local In	804 367-30 367-30 367-30 367-30 367-30 367-30 367-30 356-3
4.	RES ND.4 Case	222 2222 2222 2222 2222 2222 2222 2222 2222
4.	RES NO.4 Level	00000000000000000000000000000000000000
4.	RES NO.4 EOP STOR	571500.00 571500
	M	
	¥	88888888888888888888888888888888888888
	DY MO	
=ON	PER D	446448660000000000000000000000000000000
100		

RUN22 (CONTINUED)

213.	C.P. 213 FLOW REB	908.91 537.25 537.25 537.25 537.25 555.56 555.56 555.56 555.56 555.55 55	51703.32	2958.81	150.00	101.00	430.86	12.00
213,	C.P. 213 DIVERSIO	28,22,23,23,23,23,23,23,23,23,23,23,23,23,	-3739.43	-28.76	-35.96	1.00	-31.16	3.00
4.	RES ND.4 DIVERSIO	143.822 143.82	18697.15	179.78	143.82	3.00	155.81	1.00
4	RES NO.4 DIV REQU	172, 822 143, 822 144, 822 144, 822 144, 822 144, 822 144, 822 144, 822 144, 825 144, 825 145, 825 145, 825 145, 825 145	18697.15	179.78	143.82	3.00	155.81	1.00
4	RES NO.4 Outflow	874.37 874.37 874.37 808.334 808.334 808.334 808.334 805.434 805.434 855.05 855.156 855.34	47963.89	2924.29	114.04	101.00	399.70	39.00
4.	RES NO.4 INFLOW	871.41 604.79 604.79 604.79 604.79 604.79 728.18 729.18 729.18 729.18 720.18 729.18 720.18	47792.85	2921.41	-100.82	101.00	398.27	107.00
4.	RES ND.4 LOCAL IN	1044.00 763.00 763.00 388.00 1177.00 1177.00 1177.00 1177.00 1177.00 1177.00 677.00 677.00 1177.00 1177.00 1177.00 677.00 1177.00 1177.00 677.00 1177.	66490.00	3094.00	43.00	101.00	554.08	107.00
4.	RES NO.4 CASE	212.000 213.0000 213.000 213.000 213.000 213.000 213.000 213.000 21	8522.40	213.00	0.03	12.00	71.02	1.00
4.	res no.4 Level	88888888888888888888888888888888888888	358.49	3.00	2.87	1.00	2.99	40.00
4	res ND.4 EOP STOR	571500.00 571500	=67713574.85	571500.00	498981.54	1.00	564279.79	40.00
LOC NO=	PER DY MO YR DW	20198146124121210080260900000000000000000000000000000000	29= WNS	MAX =	HIN =	PNAX=	AVG =	=NIN=

RUN23 - SUMMARY OUTPUT

YIELD DETERMINED BY OPTIMIZATION Res-Loc type-opt opt, values New critical period= -33.046

0.024 0.050

WU290*

ANNUAL DIV 4	217. 173. 173. 173. 173.	150.
ANNUAL Reg g	******	0
ANNUAL Des q		°
DRAN Av rel Loc=	92. 97. 102. 108. 118.	118.
DRAW	~~~~~	٦.
DRAW ST PER L	1930.07 1930.07 1930.07 1930.07 1930.07 1930.07	1930.07
RAT10 ST6/Q	0.1774 0.1774 0.1774 0.1774 0.1774 0.1774 0.1774 0.1774	0.1774
TOP. CON STOR.	71500. 71500. 71500. 71500. 71500.	71500.
AVG	190. 212. 224. 361. 245.	397.
AVG REL	245. 245.	406.
AVE INF.	159. 197. 204. 252. 252.	404.
ROUTING ST PER	1929.10 1929.10 1929.10 1929.10 1929.10 1929.10 1929.10	1927.10
NUM. Periods	2222222	120
ERRUR (STG)	-16399. -7164. -4540. -4119. 46982. 9663. 1700.	1700.
ERROR RATIO	0.2303 0.1006 0.0578 0.0578 0.0578 0.0578 0.0578 0.0578	0.0239
TRIAL	-004090	
LOCATION	SINGLE RES SINGLE RES SINGLE RES SINGLE RES SINGLE RES SINGLE RES SINGLE RES SINGLE RES	SINGLE RES

0.05

6.00

2.00

0.00 0.00 0.00

0.00

0.00

0.00

J7 4.90

222 2

SINGLE RESERVOIR WATER SUPPLY SYSTEM +OPTIMIZATION OF ALL YIELDS+ RUN 23 Monthly Flow 1927-1937 Record (120 Periods)

RUN23 (CONTINUED)

213. 213.040	C.P. 213 FLON REG	1110.51 140.55 140.5
213.030	C.P. 213 DIVERSIO	ፘጜዿዿዿዄኇዸዸዸዸዸዸዸዿዿዿጜዸዸዸዸዸዸዸዸዿዿዿዿዸዸዸዸዸዸዸዸዸዸ ቔቘቔቔቘቔዼዼዼዼዼዼዼዼዼዼዼዼዼዼዼዼዼዼዼዼዼዼዼ
4. 4.030	RES ND.4 DIVERSIO	083388333333338833833333333333883488333333
4. 300	RES NO.4 DIV REQU	08343888888822232883438888888222328844388888888
8 4.100	RES ND.4 OUTFLOW	1082 1082
FL00D= 4.090	RES ND.4 Inflow	2011 2012 2012 2012 2012 2012 2012 2012
240	RES NO.4 Local in	1222 1262 1262 1262 1262 1262 1265 1275 1275 1275 1275 1275 1275 1275 127
SUMMARY BY PERIOD 4. 4.120 4.	RES ND.4 Case	88888888888888888888888888888888888888
4. 130	RES ND.4 Level	
4. 110	RES ND.4 EOP STOR	571500.00 570500.00 570500
LOC NO= CODE=	PER DY MO YR DN	22242333333333333333333333333333333333

RUN23 (CONTINUED)

213.	C.P. 213 FLON REG	251, 251, 251, 251, 251, 251, 251, 251,
213.	C.P. 213 DIVERSIO	ዿዿጜኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇኇ
4	RES ND.4 DIVERSIO	43855555558843885555555555883358833585555588335555558833555555
4	RES NO.4 DIV REQU	4483333333388444833333333884448833333333
4.	RES NO.4 OUTFLOW	82128822828888822828882888828888888888
4.	RES ND.4 INFLOW	2212 2212 22222 22222 22222 22222 22222 22222 2222
4.	RES ND.4 Local IN	1455-000 1555-0
4.	RES ND.4 CASE	3333333888333333333333333333333333388883333
4	RES ND.4 Level	
4.	RES NO.4 EOP STOR	571500.00 571500
	YR DW	
	V NO	403284933340040328493334004034034034034034034034034034
LOC NO=	PER DY	84844889999999999999999999999999999999

RUNZ3 (CONTINUED)

213.	C.P. 213 FLOW REG	150.00 264.73 150.00 150.00 150.00	52286.34	2964.18	135.39	101.00	435.72	40.00
213.	C.P. 213 DIVERSIO	85555555555555555555555555555555555555	-3594.02	-27.65	-34.56	1.00	-29.95	3.00
4.	RES ND.4 DIVERSIO	233333333834348333333333844483333333333	17970.12	172.79	138.23	3.00	149.75	1.00
4.	RES ND.4 DIV REQU	233333333834448333333338844483333333388 23383333333333	17970.12	172.79	138.23	3.00	149.75	1.00
4.	RES ND.4 Outflow	531-145899500-345833333589958959595959595959595959595959	48692.32	2931.00	100.84	101.00	405.77	40.00
4.	RES NO.4 INFLOW	610 610 610 610 610 610 610 610	48519.88	2928.12	-95.23	101.00	404.33	107.00
4.	RES ND.4 LOCAL IN	$\begin{smallmatrix} 1044\\ 1644$ 1644\\ 1644\\ 1644 1644\\ 1644 1644\\ 1644 1644\\ 1644 1644\\ 1644 1644 1644\\ 1644 1644 1644 1644 1644 1644 1644 1644 1644 1644 1644 1644 16	66490.00	3094.00	43.00	101.00	554.08	107.00
4.	RES ND.4 CASE	3883333333888888888833333333338888833333	8522.40	213.00	0.03	12.00	71.02	1.00
4.	RES NO.4 Level		348.12	3.00	2.00	1.00	2.90	40.00
4.	RES NO.4 EOP STOR	571500.00 570500.00 570500	=67753939.36	571500.00	502000.00	1.00	564616.16	40.00
	DY MO YR DW	22222222222222222222222222222222222222	(9= WNS	MAX =	= NIW	PMAX=	AVG =	=NIN4
IC NO=	PER D'							

RESERVOIR OPERATION BY PERIOD

CUM TIME= 1	CUM TIME= 5	
*ROPER 1	*ROPER 5	
RES ND= 1 2 3 TITLE= RES1 RES2 RES3 DIV Q 0. 0. 0. INFLOW 268. 305. 100. DUTFLOW 171. 193. 54. EOP STOR 3330000.3760000.1540000. CASE= 0.03 0.03 LEVEL 5.000 5.000 5.000 9.000 PCT FC 0.00 0.00 0.00 EQ LEVEL	RES NO= 1 2 3 TITLE= RES1 RES2 RES3 DIV Q 0. 18. 7. INFLOW 21. 13. 12. DUTFLOW 21. 127. 12. EDP STOR 3330000.3322384.1540000. CASE= 0.03 4.00 0.03 LEVEL 5.000 4.005 5.000 PCT FC 0.00 0.00 0.00 EQ LEVEL 5.000 4.005 5.000 5.000 EQ LEVEL 5.000	
CUM TIME= 2	CUM TIME= 6	
*ROPER 2	*ROPER 6	
RES NO= 1 2 3 TITLE= RES1 RES2 RES3 DIV Q 0. 0. 0. INFLDW 230. 345. 78. OUTFLDW 230. 345. 78. EUP STOR 3330000.3760000.1540000. CASE= 0.03 0.03 LEVEL 5.000 5.000 5.000 5.000 PCT FC 0.00 5.000 5.000	RES ND= 1 2 3 TITLE= RES1 RES2 RES3 DIV Q 0. 28. 9. INFLOW 7. -19. 3. OUTFLOW 7. 94. 58. EOP STOR 3330000.3021130.1393961. CASE= 0.03 4.00 4.00 LEVEL 5.000 3.321 3.321 7.321 9.00 0.00 0.00 PCT FC 0.00 0.00 0.00 0.00 0.00 2.00 2.833 3.321	
CUN TIME= 3	CUM TIME= 7	
*ROPER 3	*ROPER 7	
RES ND= 1 2 3 TITLE= RES1 RES2 RES3 DIV Q 0. 0. 0. INFLOW 211. 317. 66. OUTFLOW 211. 317. 66. EOP STOR 3330000.3760000.1540000. CASE= 0.03 0.03 LEVEL 5.000 5.000 5.000 5.000 PCT FC 0.00 0.00 5.000 EQ LEVEL 5.000 5.000 5.000	RES ND= 1 2 3 TITLE= RES1 RES2 RES3 DIV Q 0. 21. 7. INFLOW 4. 71. 4. OUTFLOW 90. 114. 25. EOP STOR 3104595.2911368.1340328. CASE= 0.05 4.00 LEVEL 3.833 3.071 3.071 PCT FC 0.00 0.00 0.00 EQ LEVEL 3.833 3.646 3.071	
CUM TIME= 4	CUM TIME= 8	
*ROPER 4	*ROPER 8	
RES NO= 1 2 3 TITLE= RES1 RES2 RES3 DIV Q 0. 9. 6. INFLOW 20. 22. 20. OUTFLOW 20. 71. 20. EOP STOR 3330000.3630400.1540000. CASE= 0.03 4.00 0.03 LEVEL 5.000 4.705 5.000 PCT FC 0.00 0.00 EQ LEVEL 5.000 4.705 5.000 1.705 5.000	RES ND= 1 2 3 TITLE= RES1 RES2 RES3 DIV Q 0. 7. 2. INFLDW 4. 93. 8. OUTFLDW 98. 63. 11. EOP STOR 2851816.2992730.1332292. CASE= 0.05 4.00 0.00 LEVEL 3.646 3.256 3.034 PCT FC 0.00 0.00 0.00 EQ LEVEL 3.646 3.550 3.034	

CUM TIME= 9

CUM TIME= 12

*****ROPER 9

RES NO=	1	2	3	
TITLE=	RES1	RES2	RES3	
DIV Q	0.	0.	0.	
INFLOW	4,	56.	11.	
OUTFLOW	54.	52.	11.	
EOP STOR	2722535.30	02779.13	332292.	
CASE=	0.05	4.00	0.00	
LEVEL	3.550	3,279	3.034	
PCT FC	0.00			
EQ LEVEL	3.550	3.483	3.034	

CUN TIME= 10

*ROPER 10

RES NO= TITLE= DIV Q INFLOW OUTFLOW EOP STOR 26 CASE= LEVEL PCT FC EQ LEVEL	1 RES1 0. 52611.29 0.05 3.483 0.00 3.483	2 RES2 43. 53. 774853.13 4.00 3.216 0.00 3.418	3 RES3 0. 11. 11. 332292. 0.00 3.034 0.00 3.034
	CUM	TIME=	11
*ROPER 11			
RES NO= TITLE= DIV Q INFLOW OUTFLOW EOP STOR 25 CASE= LEVEL PCT FC EQ LEVEL	1 RES1 0. 17. 50. 43730.30 0.05 3.418 0.00 3.418	2 RES2 58. 15. 190518.13 4.00 3.478 0.00 3.433	3 RES3 20. 11. 55057. 0.00 3.140 0.00 3.140

RES NO=	1	2	3
TITLE=	RES1	RES2	RES3
DIV Q	0.	0.	0.
INFLOW	15.	8.	24.
OUTFLOW	0.	14.	11.
EOP STOR	2580018.30	74793.13	86508.
CASE= Level	0.00		
PCT FC EQ LEVEL	0.00	0.00	0.00 3.286

CUM TIME=

13

14

***ROPER 13**

*ROPER 12

RES NO=	1	2	3
TITLE=	RESI	RES2	RES3
DIV Q	0.	0.	0.
INFLOW	47.	71.	34.
OUTFLOW	47.	44,	11.
EOP STOR	2579439.31	47689.14	48112.
CASE=	0.05	4.00	0.00
LEVEL	3.444	3.608	3.573
PCT FC	0.00	0.00	0.00
EQ LEVEL	3.444	3.484	3.573

CUM TIME=

***ROPER 14**

RES NO=	1	2	3
TITLE=	RES1	RES2	RES3
DIV Q	0.	0.	0.
INFLOW	59.	30.	31.
OUTFLOW	0.	20.	22.
	2732367.31		
CASE=		4.00	
LEVEL		3.670	3.670
PCT FC	0.00	0.00	0.00
EQ LEVEL	3.557	3.585	3.670