

# **VOLUMETRIC SURVEY OF WRIGHT PATMAN LAKE**

**Prepared for:**

**U. S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT**

**In cooperation with**

**CITY OF TEXARKANA**



**Prepared by:**

**The Texas Water Development Board**

**March 10, 2003**

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# **WRIGHT PATMAN LAKE HYDROGRAPHIC SURVEY REPORT**

## **INTRODUCTION**

Staff of the Hydrographic Survey Unit of the Texas Water Development Board (TWDB) conducted a hydrographic survey of Wright Patman Lake during the period December 16 - January 16, 1997. The purpose of the survey was to determine the capacity of the lake at the conservation pool elevation, to perform the survey while the lake was in the flood pool, and to mathematically estimate any remaining volume to the top of the flood pool. From this information, future surveys will be able to determine the location and rates of sediment deposition in the conservation pool over time. Survey results are presented in the following pages in both graphical and tabular form. All elevations presented in this report will be reported in feet above mean sea level based on the National Geodetic Vertical Datum of 1929 (NGVD '29) unless noted otherwise. The conservation pool elevation for Wright Patman Lake is 220.0 feet. At this elevation, the original estimate for the surface area of the lake in 1956 was 20,300 acres and the estimated volume was 145,300 acre-feet of water. At the top of the flood control pool elevation (259.5 feet), the surface area was estimated to cover 119,700 acres with a corresponding capacity of 2,654,300 acre-feet.

## **HISTORY AND GENERAL INFORMATION OF THE RESERVOIR**

Wright Patman Lake and the dam facility are owned by the United States Federal Government and is under the supervision of the United States Army Corps of Engineers, Fort Worth District. The lake is located on the Sulphur River in Bowie and Cass Counties, approximately nine miles southwest of Texarkana, Texas (see Figure 1). Records indicate the drainage area is approximately 3,400 square miles. At the conservation pool elevation, the lake is approximately nineteen miles long. The widest point of the lake (located about 2.5 miles upstream of the dam) is approximately five miles.

The project was authorized by the Flood Control Act on July 24, 1946, of the 79th Congress, 2nd Session. Originally known as Texarkana Dam and Reservoir, the project is part of a

comprehensive plan for flood control in the Red River Basin. On December 15, 1973, the President of the United States officially designated the project as Wright Patman Dam and Lake in honor of Congressman Patman of the First Congressional District of Texas.

The water rights to Wright Patman Lake were issued to the City of Texarkana by the State Board of Water Engineers on April 18, 1951. Permit No. 1563 authorized the City of Texarkana to divert 14,572 acre-feet of water annually from Texarkana Reservoir for municipal use. On October 26, 1967, Permit No. 1563 was amended to allow the City of Texarkana to increase the volume of water used annually for municipal use to 20,000 acre-feet and to use 100,000 acre-feet of water annually for industrial use. The City of Texarkana entered into a contractual agreement with the Federal Government that all uses of the stored water are contingent upon the reservoir being maintained between elevations 218.0 and 225.0 feet.

According to the Texas Water Development Board's Report 126, dam construction began August 20, 1948 and was completed May 19, 1954. Deliberate impoundment began June 27, 1956. The water level of the reservoir reached conservation pool elevation (220.0) in February of 1957. The City of Texarkana began diverting water from the reservoir in December of 1957. The project was designed by the U.S. Army Corps of Engineers, New Orleans District. The general contractors were Edward Peterson Company, Foley Brother, Inc., and Tellepsen Construction Company. The total cost of the project was \$35,048,603.00 (June, 1971).

The dam facility is an earth-rolled embankment, 18,500 feet in length, with a maximum height of 100 feet. The crest is at elevation 286.0 feet. The embankment contains 7,370,000 cubic-yards of earthfill. The upstream face of the embankment is protected by 33 inches of rock riprap on a sand and gravel base. The spillway is an uncontrolled concrete chute, 200 feet in length at elevation 259.5 feet. Outlet Works consist of two conduits, each 20 feet in diameter with an invert elevation of 200 feet and are controlled by four gates, each 10 feet by 20 feet.

## **HYDROGRAPHIC SURVEYING TECHNOLOGY**

The following sections will describe the theory behind Global Positioning System (GPS) technology and its accuracy. Equipment and methodology used to conduct the subject survey and previous hydrographic surveys are also addressed.

### **GPS Information**

The following is a brief and simple description of Global Positioning System (GPS) technology. GPS is a relatively new technology that uses a network of satellites, maintained in precise orbits around the earth, to determine locations on the surface of the earth. GPS receivers continuously monitor the broadcasts from the satellites to determine the position of the receiver. With only one satellite being monitored, the point in question could be located anywhere on a sphere surrounding the satellite with a radius of the distance measured. The observation of two satellites decreases the possible location to a finite number of points on a circle where the two spheres intersect. With a third satellite observation, the unknown location is reduced to two points where all three spheres intersect. One of these points is obviously in error because its location is in space, and it is ignored. Although three satellite measurements can fairly accurately locate a point on the earth, the minimum number of satellites required to determine a three dimensional position within the required accuracy is four. The fourth measurement compensates for any time discrepancies between the clock on board the satellites and the clock within the GPS receiver.

GPS technology was developed in the 1960's by the United States Air Force and the defense establishment. After program funding in the early 1970's, the initial satellite was launched on February 22, 1978. A four year delay in the launching program occurred after the Challenger space shuttle disaster. In 1989, the launch schedule was resumed. Full operational capability was reached on April 27, 1995 when the NAVSTAR (NAVigation System with Time And Ranging) satellite constellation was composed of 24 Block II satellites. Initial operational capability, a full constellation of 24 satellites, in a combination of Block I (prototype) and Block II satellites, was achieved December 8, 1993. The NAVSTAR satellites provide data based on the World Geodetic System (WGS '84) spherical datum. WGS '84 is essentially identical to NAD '83.

The United States Department of Defense (DOD) is currently responsible for implementing and maintaining the satellite constellation. In an attempt to discourage the use of these survey units as a guidance tool by hostile forces, the DOD has implemented means of false signal projection called Selective Availability (S/A). Positions determined by a single receiver when S/A is active result in errors to the actual position of up to 100 meters. These errors can be reduced to centimeters by performing a static survey with two GPS receivers, one of which is set over a point with known coordinates. The errors induced by S/A are time-constant. By monitoring the movements of the satellites over time (one to three hours), the errors can be minimized during post processing of the collected data and the unknown position computed accurately.

Differential GPS (DGPS) can determine positions of moving objects in real-time or "on-the-fly." In the early stages of this program, one GPS receiver was set up over a benchmark with known coordinates established by the hydrographic survey crew. This receiver remained stationary during the survey and monitored the movements of the satellites overhead. Position corrections were determined and transmitted via a radio link once per second to a second GPS receiver located on the moving boat. The boat receiver used these corrections, or differences, in combination with the satellite information it received to determine its differential location. The large positional errors experienced by a single receiver when S/A is active are greatly reduced by utilizing DGPS. The reference receiver calculates satellite corrections based on its known fixed position, which results in positional accuracies within three meters for the moving receiver. DGPS was used to determine horizontal position only. Vertical information was supplied by the depth sounder.

The need for setting up a stationary shore receiver for current surveys has been eliminated with the development of fee-based reference position networks. These networks use a small network of GPS receivers to create differential corrections for a large network of transmitting stations, Wide Area Differential GPS (WADGPS). The TWDB receives this service from ACCQPOINT, a WADGPS correction network over a FM radio broadcast. A small radio receiver purchased from ACCQPOINT, collects positional correction information from the closest broadcast station and provides the data to the GPS receiver on board the hydrographic surveying boat to allow the position to be differentially corrected.

## **Equipment and Methodology**

The equipment used in the performance of the hydrographic survey consisted of a 23-foot aluminum tri-hull SeaArk craft with cabin, equipped with twin 90-Horsepower Johnson outboard motors. Installed within the enclosed cabin are an Innerspace Helmsman Display (for navigation), an Innerspace Technology Model 449 Depth Sounder and Model 443 Velocity Profiler, a Trimble Navigation, Inc. 4000SE GPS receiver, an ACCQPOINT FM receiver, and an on-board 486 computer. Power was provided by a water-cooled generator through an in-line uninterruptible power supply. Reference to brand names does not imply endorsement by the TWDB.

The GPS equipment, survey vessel, and depth sounder combine together to provide an efficient hydrographic survey system. As the boat travels across the lake surface, the depth sounder gathers approximately ten readings of the lake bottom each second. The depth readings are stored on the survey vessel's on-board computer along with the corrected positional data generated by the boat's GPS receiver. The daily data files collected are downloaded from the computer and brought to the office for editing after the survey is completed. During editing, bad data is removed or corrected, multiple data points are averaged to get one data point per second, and average depths are converted to elevation readings based on the daily recorded lake elevation on the day the survey was performed. Accurate estimates of the lake volume can be quickly determined by building a 3-D model of the reservoir from the collected data. The level of accuracy is equivalent to or better than previous methods used to determine lake volumes, some of which are discussed below.

## **Previous Survey Procedures**

Originally, reservoir surveys were conducted with a rope stretched across the reservoir along pre-determined range lines. A small boat would manually pole the depth at selected intervals along the rope. Over time, aircraft cable replaced the rope and electronic depth sounders replaced the pole. The boat was hooked to the cable, and depths were again recorded at selected intervals. This method, used mainly by the Soil Conservation Service, worked well for small reservoirs.



Larger bodies of water required more involved means to accomplish the survey, mainly due to increased size. Cables could not be stretched across the body of water, so surveying instruments were utilized to determine the path of the boat. Monumentation was set for the end points of each line so the same lines could be used on subsequent surveys. Prior to a survey, each end point had to be located (and sometimes reestablished) in the field and vegetation cleared so that line of sight could be maintained. One surveyor monitored the path of the boat and issued commands via radio to insure that it remained on line while a second surveyor determined depth measurement locations by turning angles. Since it took a major effort to determine each of the points along the line, the depth readings were spaced quite a distance apart. Another major cost was the land surveying required prior to the reservoir survey to locate the range line monuments and clear vegetation.

Electronic positioning systems were the next improvement. If triangulation could determine the boat location by electronic means, then the boat could take continuous depth soundings. A set of microwave transmitters positioned around the lake at known coordinates would allow the boat to receive data and calculate its position. Line of site was required, and the configuration of the transmitters had to be such that the boat remained within the angles of 30 and 150 degrees in respect to the shore stations. The maximum range of most of these systems was about 20 miles. Each shore station had to be accurately located by survey, and the location monumented for future use. Any errors in the land surveying resulted in significant errors that were difficult to detect. Large reservoirs required multiple shore stations and a crew to move the shore stations to the next location as the survey progressed. Land surveying was still a major cost.

Another method used mainly prior to construction utilized aerial photography to generate elevation contours which could then be used to calculate the volume of the reservoir. Fairly accurate results could be obtained, although the vertical accuracy of the aerial topography was generally one-half of the contour interval or  $\pm$  five feet for a ten-foot contour interval. This method could be quite costly and was only applicable in areas that were not inundated.

## **PRE-SURVEY PROCEDURES**

The reservoir's surface area was determined prior to the survey by digitizing with AutoCad software the lake's pool boundary (elevation 225.0) from USGS quad sheets. The name of the quad sheets are as follows: WRIGHT PATMAN, TX (Photo-revised 1970), MAUD, TX (Photo-revised 1970), CORLEY, TX (Provisional 1969), ATLANTA NORTH, TX (Provisional 1969), DOUGLASSVILLE, TX (Provisional 1969), and BRYANS MILL, TX (Provisional 1969). The graphic boundary file created was then transformed into the proper datum, from NAD '27 datum to NAD '83, using Environmental Systems Research Institutes's (ESRI) Arc/Info project command with the NADCOM parameters. The area of the lake boundary was checked to verify that the area was the same in both datums. For data processing purposes, each of the contours from elevation 230.0 to 260.0 were also digitized so that the lake could be modeled to the top of the flood pool.

The survey layout was designed by placing survey track lines at 500 foot intervals across the lake. The survey design for this lake required approximately 427 survey lines to be placed along the length of the lake. Survey setup files were created using Coastal Oceanographics, Inc. Hypack software for each group of track lines that represented a specific section of the lake. The setup files were copied onto diskettes for use during the field survey.

## **SURVEY PROCEDURES**

The following procedures were followed during the hydrographic survey of Wright Patman Lake performed by the TWDB. Information regarding equipment calibration and operation, the field survey, and data processing is presented.

### **Equipment Calibration and Operation**

At the beginning of each surveying day, the depth sounder was calibrated with the Innerspace Velocity Profiler. The Velocity Profiler calculates an average speed of sound through the water column of interest for a designated draft value of the boat (draft is the vertical distance that the boat

penetrates the water surface). The draft of the boat was previously determined to average 1.2 ft. The velocity profiler probe is placed in the water to moisten and acclimate the probe. The probe is then raised to the water surface where the depth is zeroed. The probe is lowered on a cable to just below the maximum depth set for the water column, and then raised to the surface. The unit displays an average speed of sound for a given water depth and draft, which is entered into the depth sounder. The depth value on the depth sounder was then checked manually with a measuring tape to ensure that the depth sounder was properly calibrated and operating correctly. During the survey of Wright Patman Lake, the speed of sound in the water column varied daily between 4722 and 4787 feet per second. Based on the measured speed of sound for various depths, and the average speed of sound calculated for the entire water column, the depth sounder is accurate to within  $\pm 0.2$  feet, plus an estimated error of  $\pm 0.3$  feet due to the plane of the boat for a total accuracy of  $\pm 0.5$  feet for any instantaneous reading. These errors tend to be minimized over the entire survey, since some are positive readings and some are negative readings. Further information on these calculations is presented in Appendix A.

During the survey, the onboard GPS receiver was set to a horizontal mask of  $10^\circ$  and a PDOP (Position Dilution of Precision) limit of 7 to maximize the accuracy of horizontal positions. An internal alarm sounds if the PDOP rises above seven to advise the field crew that the horizontal position has degraded to an unacceptable level. The lake's initialization file used by the Hypack data collection program was setup to convert the collected DGPS positions on-the-fly to state plane coordinates. Both sets of coordinates were then stored in the survey data file.

## **Field Survey**

Data was collected on Wright Patman Lake during the period December 16, 1996 through January 16, 1997. Approximately 282,410 data points were collected over the 610 miles traveled along the pre-planned survey lines and the random data-collection lines. These points were stored digitally on the boat's computer in 513 data files. Data were not collected in areas of shallow water (depths less than 3.0 feet) or with significant obstructions unless these areas represented a large amount of water. Some random data lines were also collected, perpendicular to the survey layout, by the field crew during the survey. Figure 2 shows the actual location of all data collection points.

The field survey began the week prior to the Christmas and New Year's holidays in December of 1996. The water level at that time was 233.71 feet. The field crew decided to collect data in the upper reaches of Elliott and Big Creek while accessibility was possible with the high water levels. The water level was high enough for the boat to pass over the low water crossing bridge (County Road 991) at Big Creek. After the holidays, the field crew resumed data collection on January 3, 1997. The water level had dropped to an elevation of 229.62 feet. Staff began collecting data in the head waters of Wright Patman Lake upstream of the Highway 8 bridge. Noting the water levels were continually dropping as the survey was in progress, personnel were rotated weekly, without any stoppage periods for the remainder of the survey. The water level continued to decrease during the survey and was at elevation 224.0 feet on the last day, January 16, 1997.

TWDB staff observed the lake bottom to be fairly uniform with a gentle slope from the shoreline to the center of the lake. The bathymetry of the lake reflected similar characteristics of the terrain or topography surrounding the lake. Several creek channels could be distinguished on the depth sounder's analog charts. Approximately one-half of the lake was clear of navigational hazards such as standing timber, submerged trees, and stumps. As the water level dropped, navigation became increasingly difficult as more underwater hazards were exposed. Non-oriented, amateur aerial photography was taken mid-way thru the survey by a TWDB staff member to assist in navigating the upper reaches of the lake.

The field crew were exposed to a wide range of climatic conditions during the field survey of Wright Patman Lake. Temperatures ranged from the teens to the 70's. There were several days of snow during the data collection period. At times the winds picked up and there were three foot waves. During an extended period of below freezing temperatures, a thin layer of ice covered parts of various coves.

Data collection in the headwaters was discontinued when the the boat could no longer make transects across the lake due to shallow water, islands, and extensive vegetation. Deep water could still be found in the river channel. The collected data were stored in individual data files for each pre-plotted range line or random data collection event. These files were downloaded to diskettes at the end of each day for future processing.

## **Data Processing**

The collected data were down-loaded from diskettes onto the TWDB's computer network. Tape backups were made for future reference as needed. To process the data, the EDIT routine in the Hypack Program was run on each raw data file. Data points such as depth spikes or data with missing depth or positional information were deleted from the file. The depth information collected every 0.1 seconds was averaged to get one reading for each second of data collection. A correction for the lake elevation at the time of data collection was also applied to each file during the EDIT routine. During the survey, the water surface ranged daily from 233.7 to 224.09 feet. After all changes had been made to the raw data file, the edited file was saved with a different extension. After all the files were edited, the edited files were combined into a single data file, representative of the lake, to be used with the GIS software to develop a model of the lake's bottom surface.

The resulting DOS data file was imported into the UNIX operating system used to run Environmental System Research Institutes's (ESRI) Arc/Info GIS software and converted to a MASS points file. The graphic boundary files for each contour between 225.0 and 260.0 previously digitized were also imported. The MASS points and modified contour files were then used to create a Digital Terrain Model (DTM) of the reservoir's bottom surface using Arc/Info's TIN module. The module builds an irregular triangulated network from the data points and the boundary file. This software uses a method known as Delauney's criteria for triangulation. A triangle is formed between three non-uniformly spaced points, including all points along the boundary. If there is another point within the triangle, additional triangles are created until all points lie on the vertex of a triangle. All of the data points are preserved for use in determining the solution of the model by using this method. The generated network of three-dimensional triangular planes represents the actual bottom surface. Once the triangulated irregular network (TIN) is formed, the software then calculates elevations along the triangle surface plane by solving the equations for elevation along each leg of the triangle. Information for the entire reservoir area can be determined from the triangulated irregular network created using this method of interpolation.

The TIN module computed poor area and volume values in between the digitized contour lines above elevation 224.0. This was caused by the lack of data, and the criteria of the software in relation

to interpolation procedures. Therefore, a second TIN was built to elevation 240.0. The 230.0 contour file was graphically edited as necessary using the Arc/Edit module and the point coverage file from elevation 226.0 to 230.0 feet. If data points were collected outside the contour file, the contour was modified to include the data points. The contour file in areas of significant sedimentation was also down-sized as deemed necessary based on the data points and the observations of the field crew. The resulting boundary shape was used to develop each of the map presentations of the lake in this report.

There were still some areas where volume and area values could not be calculated by interpolation because of a lack of information along the 230.0 contour line of the reservoir. "Flat triangles" were drawn at these locations. Arc/Info does not use flat triangle areas in the volume or contouring features of the model. Approximately 399 additional points were required for interpolation and contouring of the entire lake surface at elevation 230.0 feet. Volumes and areas were then calculated from this modified TIN for the entire reservoir at one-hundredth of a foot intervals. From elevation 224.0 feet, the surface area and volume values for the lake were mathematically estimated up to elevation 260.0 feet. This was done by first distributing uniformly across the each contour interval, the surface areas digitized from USGS topographic maps. Volumes for each 0.01 interval were calculated by adding to the existing volume, 0.01 of the existing area, and 0.5 of the difference between the existing area and the area value for the volume being calculated. The computed reservoir volume table is presented in Appendix B and the area table in Appendix C. An elevation-area-volume graph is presented in Appendix D.

Other presentations developed from the model include a shaded relief map and a shaded depth range map. To develop these maps, the TIN was converted to a lattice using the TINLATTICE command and then to a polygon coverage using the LATTICEPOLY command. Using the POLYSHADE command, colors were assigned to the range of elevations represented by the polygons that varied from navy to yellow. The lower elevation was assigned the color of navy, and the 230.0 lake elevation was assigned the color of yellow. Different color shades were assigned to the different depths in between. Figure 3 presents the resulting depth shaded representation of the lake. Figure 4 presents a similar version of the same map, using bands of color for selected depth intervals. The color increases in intensity from the shallow contour bands to the deep water bands.

Linear filtration algorithms were then applied to the DTM smooth cartographic contours

versus using the sharp engineered contours. The resulting contour map of the bottom surface at two-foot intervals is presented in Figure 5.

## **RESULTS**

Results from the 1996 TWDB survey indicate Wright Patman Lake encompasses 18,994 surface acres and contains a volume of 110,900 acre-feet at the conservation pool elevation of 220.0 feet. The shoreline at this elevation was calculated to be 63.0 miles. The deepest point of the lake, elevation 190.56, was located approximately 6,600 feet upstream from the southern most point of the dam. The dead storage volume, or the amount of water below the lowest outlet in the dam, was calculated to be 47 acre-feet based on the low flow outlet invert elevation of 200.00 feet. The conservation storage capacity, or the amount of water between the spillway and the lowest outlet, is unchanged after rounding, 110,900 acre-feet.

## **SUMMARY**

Wright Patman Lake was formed in 1956. Initial storage calculations estimated the volume at the conservation pool elevation of 220.0 feet to be 145,300 acre-feet with a surface area of 20,300 acres. At elevation 230.0 feet, the volume was estimated to be 437,250 acre-feet with a surface area of 38,600 acres.

During the period of December 16 - January 16, 1997, a hydrographic survey of Wright Patman Lake was performed by the Texas Water Development Board's Hydrographic Survey Program. The 1996 survey used technological advances such as differential global positioning system and geographical information system technology to build a model of the reservoir's bathymetry. These advances allowed a survey to be performed quickly and to collect significantly more data of the bathymetry of Wright Patman Lake than previous survey methods. Supplemental contour information from available USGS topographic maps was merged with the collected data to develop a model of the lake to the top of the flood pool. Results indicate that the lake's capacity at the conservation pool elevation of 220.0 feet was 110,900 acre-feet and the area was 18,994 acres. At elevation 230.0 feet,

the volume was determined to be 392,740 acre-feet with an area of 34,882 acres. At the top of the flood pool, elevation 259.5 feet, the volume was determined to be 2,507,800 acre-feet with an area of 110,440 acres.

The estimated reduction in storage capacity at elevation 220.0 feet since 1956 was 34,400 acre-ft or 1,147 acre-ft per year. The average annual deposition rate of sediment in the conservation pool of the reservoir can be estimated at 0.34 acre-ft per square mile of drainage area. At elevation 230.0 feet, the reduction in storage calculated was 44,510 acre-feet or 1,483.7 acre-feet per year. The average annual deposition rate of sediment at this elevation can be estimated at 0.436 acre-feet per square mile of drainage area. At elevation 259.5, the reduction in storage calculated was 112,600 acre-feet, or 3,753.3 acre-feet per year. The average annual deposition rate of sediment at this elevation can be estimated at 1.104 acre-feet per square mile of drainage area.

It is difficult to compare the original design information and the TWDB survey performed because little is known about the original design information, the amount of data collected, and the method used to process the collected data. The estimated sedimentation rate in the flood pool computed from the original design information, does not seem realistic. However, the TWDB considers the 1997 survey to be a significant improvement over previous survey procedures and recommends that the same methodology be used in five to ten years or after major flood events to monitor changes to the lake's storage capacity. It is recommended that the survey be scheduled when the lake is between elevations 230.0 and 235.0 feet to facilitate access throughout the lake and to minimize underwater hazards. Performing the survey when the lake is significantly higher into the flood pool does not seem very feasible or worth the added expense. The terrain above elevation 235.0 feet is heavily vegetated, and not conducive to an on-the-water survey.



## CALCULATION OF DEPTH SOUNDER ACCURACY

This methodology was extracted from the Innerspace Technology, Inc. Operation Manual for the Model 443 Velocity Profiler.

For the following examples,  $t = (D - d)/V$

where:  $t_D$  = travel time of the sound pulse, in seconds (at depth = D)

D = depth, in feet

d = draft = 1.2 feet

V = speed of sound, in feet per second

To calculate the error of a measurement based on differences in the actual versus average speed of sound, the same equation is used, in this format:

$$D = [t(V)]+d$$

For the water column from 2 to 30 feet:  $V = 4832$  fps

$$\begin{aligned} t_{30} &= (30-1.2)/4832 \\ &= 0.00596 \text{ sec.} \end{aligned}$$

For the water column from 2 to 45 feet:  $V = 4808$  fps

$$\begin{aligned} t_{45} &= (45-1.2)/4808 \\ &= 0.00911 \text{ sec.} \end{aligned}$$

For a measurement at 20 feet (within the 2 to 30 foot column with  $V = 4832$  fps):

$$\begin{aligned} D_{20} &= [((20-1.2)/4832)(4808)]+1.2 \\ &= 19.9' \quad (-0.1') \end{aligned}$$

For a measurement at 30 feet (within the 2 to 30 foot column with  $V = 4832$  fps):

$$\begin{aligned} D_{30} &= [((30-1.2)/4832)(4808)]+1.2 \\ &= 29.9' \quad (-0.1') \end{aligned}$$

For a measurement at 50 feet (within the 2 to 60 foot column with  $V = 4799$  fps):

$$\begin{aligned} D_{50} &= [((50-1.2)/4799)(4808)]+1.2 \\ &= 50.1' \quad (+0.1') \end{aligned}$$

For the water column from 2 to 60 feet:  $V = 4799$  fps      Assumed  $V_{80} = 4785$  fps

$$t_{60} = (60 - 1.2) / 4799 \\ = 0.01225 \text{ sec.}$$

For a measurement at 10 feet (within the 2 to 30 foot column with  $V = 4832$  fps):

$$D_{10} = [((10 - 1.2) / 4832)(4799)] + 1.2 \\ = 9.9' \quad (-0.1')$$

For a measurement at 30 feet (within the 2 to 30 foot column with  $V = 4832$  fps):

$$D_{30} = [((30 - 1.2) / 4832)(4799)] + 1.2 \\ = 29.8' \quad (-0.2')$$

For a measurement at 45 feet (within the 2 to 45 foot column with  $V = 4808$  fps):

$$D_{45} = [((45 - 1.2) / 4808)(4799)] + 1.2 \\ = 44.9' \quad (-0.1')$$

For a measurement at 80 feet (outside the 2 to 60 foot column, assumed  $V = 4785$  fps):

$$D_{80} = [((80 - 1.2) / 4785)(4799)] + 1.2 \\ = 80.2' \quad (+0.2')$$

TEXAS WATER DEVELOPMENT BOARD  
RESERVOIR VOLUME TABLE

Apr 28 1997

WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	VOLUME IN ACRE-FEET					ELEVATION INCREMENT INTERPOLATED TO ONE HUNDREDTH FOOT				
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
191.0	1	2	3	4	5	6	7	8	9	10
191.1	1	2	3	4	5	6	7	8	9	10
191.2	1	2	3	4	5	6	7	8	9	10
191.3	1	2	3	4	5	6	7	8	9	10
191.4	1	2	3	4	5	6	7	8	9	10
191.5	1	2	3	4	5	6	7	8	9	10
191.6	1	2	3	4	5	6	7	8	9	10
191.7	1	2	3	4	5	6	7	8	9	10
191.8	1	2	3	4	5	6	7	8	9	10
191.9	1	2	3	4	5	6	7	8	9	10
192.0	1	2	3	4	5	6	7	8	9	10
192.1	1	2	3	4	5	6	7	8	9	10
192.2	1	2	3	4	5	6	7	8	9	10
192.3	1	2	3	4	5	6	7	8	9	10
192.4	1	2	3	4	5	6	7	8	9	10
192.5	1	2	3	4	5	6	7	8	9	10
192.6	1	2	3	4	5	6	7	8	9	10
192.7	1	2	3	4	5	6	7	8	9	10
192.8	1	2	3	4	5	6	7	8	9	10
192.9	1	2	3	4	5	6	7	8	9	10
193.0	1	2	3	4	5	6	7	8	9	10
193.1	1	2	3	4	5	6	7	8	9	10
193.2	1	2	3	4	5	6	7	8	9	10
193.3	1	2	3	4	5	6	7	8	9	10
193.4	1	2	3	4	5	6	7	8	9	10
193.5	1	2	3	4	5	6	7	8	9	10
193.6	1	2	3	4	5	6	7	8	9	10
193.7	1	2	3	4	5	6	7	8	9	10
193.8	1	2	3	4	5	6	7	8	9	10
193.9	1	2	3	4	5	6	7	8	9	10
194.0	1	2	3	4	5	6	7	8	9	10
194.1	1	2	3	4	5	6	7	8	9	10
194.2	1	2	3	4	5	6	7	8	9	10
194.3	1	2	3	4	5	6	7	8	9	10
194.4	1	2	3	4	5	6	7	8	9	10
194.5	1	1	1	1	1	1	1	1	1	1
194.6	1	1	1	1	1	1	1	1	1	1
194.7	1	1	1	1	1	1	1	1	1	1
194.8	1	1	1	1	1	1	1	1	1	1
194.9	1	1	1	1	1	1	1	1	1	1
195.0	1	1	1	1	1	1	1	1	1	1
195.1	1	1	1	1	1	1	1	1	1	1
195.2	1	1	1	1	1	1	1	1	1	1
195.3	1	1	1	1	1	1	1	1	2	2
195.4	2	2	2	2	2	2	2	2	2	2
195.5	2	2	2	2	2	2	2	2	2	2
195.6	2	2	2	2	2	2	2	2	2	2
195.7	2	2	2	2	2	2	2	2	2	2
195.8	2	2	2	2	2	2	3	3	3	3

## RESERVOIR VOLUME TABLE

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WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	VOLUME IN ACRE-FEET					ELEVATION INCREMENT INTERPOLATED TO ONE HUNDREDTH FOOT				
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
195.9	3	3	3	3	3	3	3	3	3	3
196.0	3	3	3	3	3	3	3	3	3	3
196.1	3	3	3	3	3	3	3	3	3	3
196.2	3	3	4	4	4	4	4	4	4	4
196.3	4	4	4	4	4	4	4	4	4	4
196.4	4	4	4	4	4	4	4	4	4	4
196.5	4	4	5	5	5	5	5	5	5	5
196.6	5	5	5	5	5	5	5	5	5	5
196.7	5	5	5	5	5	5	5	6	6	6
196.8	6	6	6	6	6	6	6	6	6	6
196.9	6	6	6	6	6	6	6	6	7	7
197.0	7	7	7	7	7	7	7	7	7	7
197.1	7	7	7	7	7	7	7	7	8	8
197.2	8	8	8	8	8	8	8	8	8	8
197.3	8	8	8	8	8	9	9	9	9	9
197.4	9	9	9	9	9	9	9	9	9	9
197.5	9	10	10	10	10	10	10	10	10	10
197.6	10	10	10	10	10	11	11	11	11	11
197.7	11	11	11	11	11	11	11	11	12	12
197.8	12	12	12	12	12	12	12	12	12	12
197.9	13	13	13	13	13	13	13	13	13	13
198.0	13	13	14	14	14	14	14	14	14	14
198.1	14	14	15	15	15	15	15	15	15	15
198.2	15	15	16	16	16	16	16	16	16	16
198.3	16	16	17	17	17	17	17	17	17	17
198.4	17	18	18	18	18	18	18	18	18	19
198.5	19	19	19	19	19	19	19	20	20	20
198.6	20	20	20	20	20	21	21	21	21	21
198.7	21	21	22	22	22	22	22	22	22	22
198.8	23	23	23	23	23	23	24	24	24	24
198.9	24	24	24	25	25	25	25	25	25	26
199.0	26	26	26	26	26	26	27	27	27	27
199.1	27	27	28	28	28	28	28	29	29	29
199.2	29	29	29	30	30	30	30	30	31	31
199.3	31	31	31	31	32	32	32	32	32	33
199.4	33	33	33	33	34	34	34	34	34	35
199.5	35	35	35	35	36	36	36	36	37	37
199.6	37	37	37	38	38	38	38	39	39	39
199.7	39	39	40	40	40	40	41	41	41	41
199.8	42	42	42	42	43	43	43	43	44	44
199.9	44	44	45	45	45	45	46	46	46	46
200.0	47	47	47	47	48	48	48	48	49	49
200.1	49	50	50	50	50	51	51	51	52	52
200.2	52	52	53	53	53	54	54	54	55	55
200.3	55	55	56	56	56	57	57	57	58	58
200.4	58	59	59	59	60	60	60	61	61	61
200.5	62	62	62	63	63	63	64	64	64	65
200.6	65	65	66	66	66	67	67	67	68	68
200.7	69	69	69	70	70	70	71	71	72	72
200.8	72	73	73	74	74	74	75	75	75	76

## WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	VOLUME IN ACRE-FEET					ELEVATION INCREMENT INTERPOLATED TO ONE HUNDREDTH FOOT				
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
200.9	76	77	77	78	78	78	79	79	80	80
201.0	80	81	81	82	82	83	83	83	84	84
201.1	85	85	86	86	87	87	87	88	88	89
201.2	89	90	90	91	91	92	92	93	93	94
201.3	94	95	95	96	96	97	97	98	98	99
201.4	99	100	100	101	101	102	102	103	103	104
201.5	104	105	105	106	106	107	107	108	109	109
201.6	110	110	111	111	112	112	113	114	114	115
201.7	115	116	117	117	118	118	119	120	120	121
201.8	121	122	123	123	124	124	125	126	126	127
201.9	128	128	129	130	130	131	131	132	133	133
202.0	134	135	135	136	137	138	138	139	140	140
202.1	141	142	142	143	144	145	145	146	147	147
202.2	148	149	150	150	151	152	153	153	154	155
202.3	156	156	157	158	159	159	160	161	162	163
202.4	163	164	165	166	167	167	168	169	170	171
202.5	172	172	173	174	175	176	177	177	178	179
202.6	180	181	182	183	184	184	185	186	187	188
202.7	189	190	191	192	193	194	195	195	196	197
202.8	198	199	200	201	202	203	204	205	206	207
202.9	208	209	210	211	212	213	214	215	216	217
203.0	218	219	220	221	222	224	225	226	227	228
203.1	229	230	231	232	233	234	236	237	238	239
203.2	240	241	242	244	245	246	247	248	249	251
203.3	252	253	254	255	257	258	259	260	261	263
203.4	264	265	266	268	269	270	272	273	274	275
203.5	277	278	279	281	282	283	285	286	287	289
203.6	290	292	293	294	296	297	299	300	301	303
203.7	304	306	307	309	310	311	313	314	316	317
203.8	319	320	322	323	325	326	328	329	331	333
203.9	334	336	337	339	340	342	344	345	347	348
204.0	350	352	353	355	357	358	360	362	363	365
204.1	367	368	370	372	374	375	377	379	380	382
204.2	384	386	388	389	391	393	395	397	398	400
204.3	402	404	406	408	409	411	413	415	417	419
204.4	421	423	425	426	428	430	432	434	436	438
204.5	440	442	444	446	448	450	452	454	456	458
204.6	460	463	465	467	469	471	473	475	477	479
204.7	482	484	486	488	490	492	495	497	499	501
204.8	504	506	508	510	513	515	517	519	522	524
204.9	526	529	531	533	536	538	541	543	545	548
205.0	550	553	555	558	560	562	565	567	570	572
205.1	575	578	580	583	585	588	590	593	596	598
205.2	601	604	606	609	612	614	617	620	622	625
205.3	628	631	634	636	639	642	645	648	651	653
205.4	656	659	662	665	668	671	674	677	680	683
205.5	686	689	692	695	698	702	705	708	711	714
205.6	717	721	724	727	730	734	737	740	744	747
205.7	751	754	757	761	764	768	771	775	778	782
205.8	786	789	793	797	800	804	808	811	815	819

## RESERVOIR VOLUME TABLE

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WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	VOLUME IN ACRE-FEET					ELEVATION INCREMENT INTERPOLATED TO ONE HUNDREDTH FOOT				
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
205.9	823	827	831	835	838	842	846	850	855	859
206.0	863	867	871	875	880	884	888	893	897	901
206.1	906	910	915	919	924	929	933	938	943	947
206.2	952	957	962	967	972	977	982	987	992	997
206.3	1003	1008	1013	1019	1024	1029	1035	1040	1046	1052
206.4	1057	1063	1069	1074	1080	1086	1092	1098	1104	1110
206.5	1116	1123	1129	1135	1142	1148	1155	1161	1168	1175
206.6	1181	1188	1195	1202	1209	1216	1223	1230	1237	1245
206.7	1252	1260	1267	1275	1282	1290	1298	1305	1313	1321
206.8	1329	1337	1345	1353	1361	1370	1378	1386	1395	1403
206.9	1412	1420	1429	1438	1446	1455	1464	1473	1482	1491
207.0	1500	1509	1518	1528	1537	1546	1556	1565	1575	1585
207.1	1594	1604	1614	1624	1634	1644	1654	1664	1674	1684
207.2	1694	1705	1715	1726	1736	1747	1757	1768	1779	1790
207.3	1801	1811	1822	1834	1845	1856	1867	1878	1890	1901
207.4	1913	1924	1936	1948	1959	1971	1983	1995	2007	2019
207.5	2031	2044	2056	2068	2081	2093	2106	2118	2131	2144
207.6	2157	2169	2182	2195	2208	2221	2235	2248	2261	2275
207.7	2288	2302	2315	2329	2343	2356	2370	2384	2398	2412
207.8	2426	2440	2455	2469	2483	2498	2512	2527	2542	2556
207.9	2571	2586	2601	2616	2631	2646	2661	2677	2692	2707
208.0	2723	2738	2754	2769	2785	2801	2817	2833	2848	2864
208.1	2881	2897	2913	2929	2945	2962	2978	2995	3011	3028
208.2	3045	3061	3078	3095	3112	3129	3146	3163	3180	3197
208.3	3215	3232	3249	3267	3284	3302	3319	3337	3355	3372
208.4	3390	3408	3426	3444	3462	3480	3499	3517	3535	3554
208.5	3572	3591	3609	3628	3646	3665	3684	3703	3722	3741
208.6	3760	3779	3798	3818	3837	3856	3876	3895	3915	3935
208.7	3954	3974	3994	4014	4034	4054	4074	4094	4114	4135
208.8	4155	4176	4196	4217	4237	4258	4279	4300	4321	4342
208.9	4363	4384	4405	4426	4448	4469	4491	4512	4534	4556
209.0	4577	4599	4621	4643	4665	4687	4710	4732	4754	4777
209.1	4799	4822	4845	4867	4890	4913	4936	4959	4982	5005
209.2	5029	5052	5076	5099	5123	5146	5170	5194	5218	5242
209.3	5266	5290	5315	5339	5364	5388	5413	5437	5462	5487
209.4	5512	5537	5562	5588	5613	5639	5664	5690	5715	5741
209.5	5767	5793	5819	5846	5872	5898	5925	5952	5978	6005
209.6	6032	6059	6086	6114	6141	6169	6196	6224	6252	6280
209.7	6308	6336	6365	6393	6422	6450	6479	6508	6537	6566
209.8	6595	6625	6654	6684	6713	6743	6773	6803	6833	6864
209.9	6894	6925	6955	6986	7017	7048	7079	7110	7141	7173
210.0	7204	7236	7268	7299	7331	7363	7396	7428	7460	7493
210.1	7525	7558	7591	7624	7657	7690	7723	7757	7790	7824
210.2	7858	7892	7926	7960	7994	8028	8063	8097	8132	8167
210.3	8202	8237	8272	8307	8342	8378	8413	8449	8485	8520
210.4	8556	8593	8629	8665	8702	8738	8775	8812	8849	8886
210.5	8923	8960	8997	9035	9072	9110	9148	9186	9224	9262
210.6	9300	9339	9377	9416	9454	9493	9532	9571	9610	9650
210.7	9689	9729	9768	9808	9848	9888	9928	9968	10009	10049
210.8	10090	10130	10171	10212	10253	10294	10335	10377	10418	10460

## WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	VOLUME IN ACRE-FEET					ELEVATION INCREMENT INTERPOLATED TO ONE HUNDREDTH FOOT				
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
210.9	10501	10543	10585	10627	10669	10711	10754	10796	10839	10882
211.0	10924	10967	11010	11053	11097	11140	11184	11227	11271	11315
211.1	11359	11403	11447	11491	11536	11580	11625	11670	11715	11760
211.2	11805	11850	11895	11941	11986	12032	12078	12124	12169	12216
211.3	12262	12308	12355	12401	12448	12495	12541	12588	12636	12683
211.4	12730	12778	12825	12873	12921	12969	13017	13065	13113	13162
211.5	13210	13259	13308	13356	13405	13454	13504	13553	13603	13652
211.6	13702	13752	13802	13852	13902	13953	14003	14054	14105	14156
211.7	14206	14258	14309	14360	14412	14463	14515	14567	14619	14671
211.8	14723	14776	14828	14880	14933	14986	15039	15092	15145	15198
211.9	15251	15305	15358	15412	15466	15520	15574	15628	15682	15736
212.0	15791	15845	15900	15955	16009	16065	16120	16175	16230	16286
212.1	16341	16397	16453	16509	16565	16621	16677	16733	16790	16847
212.2	16903	16960	17017	17074	17131	17189	17246	17304	17361	17419
212.3	17477	17535	17593	17651	17710	17768	17827	17886	17945	18004
212.4	18063	18122	18182	18241	18301	18361	18421	18481	18541	18601
212.5	18661	18722	18783	18843	18904	18965	19026	19088	19149	19210
212.6	19272	19334	19396	19458	19520	19582	19644	19707	19769	19832
212.7	19895	19958	20021	20084	20148	20211	20275	20339	20402	20466
212.8	20531	20595	20659	20724	20788	20853	20918	20983	21048	21113
212.9	21178	21244	21309	21375	21441	21507	21573	21639	21706	21772
213.0	21839	21906	21973	22040	22107	22174	22241	22309	22377	22444
213.1	22512	22581	22649	22717	22786	22854	22923	22992	23061	23130
213.2	23200	23269	23339	23408	23479	23549	23619	23689	23760	23830
213.3	23901	23972	24043	24115	24186	24258	24329	24401	24473	24545
213.4	24617	24690	24762	24835	24908	24981	25054	25127	25200	25274
213.5	25347	25421	25495	25569	25643	25717	25792	25866	25941	26016
213.6	26091	26166	26241	26316	26392	26467	26543	26619	26695	26771
213.7	26847	26924	27000	27077	27154	27230	27307	27385	27462	27539
213.8	27617	27694	27772	27850	27928	28006	28085	28163	28242	28320
213.9	28399	28478	28557	28636	28716	28795	28875	28955	29035	29115
214.0	29195	29275	29356	29436	29517	29598	29679	29760	29841	29923
214.1	30004	30086	30168	30250	30332	30415	30498	30580	30663	30746
214.2	30829	30913	30996	31080	31164	31248	31332	31417	31502	31586
214.3	31671	31757	31842	31927	32013	32099	32185	32272	32358	32445
214.4	32532	32619	32706	32793	32881	32969	33057	33145	33234	33323
214.5	33411	33500	33590	33679	33769	33858	33948	34039	34129	34219
214.6	34310	34401	34492	34584	34675	34767	34859	34951	35043	35136
214.7	35228	35321	35414	35507	35601	35694	35788	35882	35976	36070
214.8	36165	36260	36355	36450	36545	36641	36736	36832	36928	37024
214.9	37121	37217	37314	37411	37508	37606	37703	37801	37899	37997
215.0	38095	38193	38292	38391	38490	38589	38688	38788	38888	38987
215.1	39088	39188	39288	39389	39489	39590	39692	39793	39894	39996
215.2	40098	40200	40302	40405	40507	40610	40713	40816	40920	41023
215.3	41127	41231	41335	41439	41544	41648	41753	41858	41964	42069
215.4	42174	42280	42386	42492	42599	42705	42812	42919	43026	43133
215.5	43240	43348	43456	43564	43672	43780	43889	43998	44107	44216
215.6	44325	44435	44545	44655	44765	44875	44986	45097	45208	45319
215.7	45430	45542	45654	45766	45878	45990	46103	46216	46329	46442
215.8	46555	46668	46782	46896	47010	47124	47239	47353	47468	47583

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WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	VOLUME IN ACRE-FEET					ELEVATION INCREMENT INTERPOLATED TO ONE HUNDREDTH FOOT				
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
215.9	47698	47814	47929	48045	48161	48277	48393	48510	48627	48744
216.0	48861	48978	49095	49213	49331	49449	49567	49686	49804	49923
216.1	50042	50161	50281	50400	50520	50640	50760	50881	51001	51122
216.2	51243	51364	51485	51607	51729	51851	51973	52095	52218	52340
216.3	52463	52586	52710	52833	52957	53081	53205	53330	53455	53579
216.4	53704	53830	53955	54081	54207	54333	54459	54586	54713	54840
216.5	54967	55095	55223	55351	55479	55608	55736	55866	55995	56124
216.6	56254	56384	56514	56644	56775	56906	57037	57168	57299	57431
216.7	57563	57695	57827	57960	58093	58225	58358	58492	58625	58759
216.8	58893	59027	59162	59296	59431	59566	59701	59836	59972	60108
216.9	60244	60380	60516	60653	60790	60927	61064	61201	61339	61477
217.0	61615	61753	61892	62030	62169	62308	62448	62587	62727	62866
217.1	63007	63147	63287	63428	63569	63710	63851	63992	64134	64276
217.2	64417	64560	64702	64844	64987	65130	65273	65416	65559	65703
217.3	65847	65990	66135	66279	66423	66568	66713	66858	67003	67148
217.4	67294	67440	67585	67731	67878	68024	68171	68318	68465	68612
217.5	68759	68907	69055	69203	69350	69499	69647	69796	69945	70094
217.6	70243	70392	70542	70691	70841	70991	71141	71292	71442	71593
217.7	71744	71895	72046	72197	72349	72501	72652	72804	72957	73109
217.8	73261	73414	73567	73720	73873	74027	74180	74334	74488	74642
217.9	74796	74951	75105	75260	75415	75570	75725	75881	76036	76192
218.0	76348	76504	76661	76817	76974	77131	77288	77446	77603	77760
218.1	77918	78076	78234	78393	78551	78710	78869	79027	79186	79346
218.2	79505	79665	79825	79985	80145	80305	80466	80627	80787	80948
218.3	81110	81271	81433	81594	81756	81918	82080	82242	82405	82567
218.4	82730	82893	83056	83219	83383	83546	83710	83874	84038	84202
218.5	84366	84530	84695	84860	85024	85190	85355	85520	85686	85851
218.6	86017	86183	86349	86515	86681	86848	87014	87181	87348	87515
218.7	87682	87850	88017	88185	88353	88520	88688	88857	89025	89194
218.8	89363	89532	89701	89870	90039	90209	90379	90549	90719	90889
218.9	91060	91231	91401	91572	91744	91915	92087	92258	92430	92603
219.0	92775	92947	93120	93293	93466	93639	93812	93986	94160	94333
219.1	94508	94682	94856	95031	95206	95381	95556	95731	95907	96083
219.2	96259	96435	96611	96788	96964	97141	97318	97495	97673	97850
219.3	98028	98206	98384	98563	98741	98920	99099	99278	99457	99636
219.4	99816	99996	100180	100360	100540	100720	100900	101080	101260	101440
219.5	101620	101800	101980	102170	102350	102530	102710	102890	103080	103260
219.6	103440	103630	103810	103990	104180	104360	104540	104730	104910	105100
219.7	105280	105470	105650	105840	106020	106210	106390	106580	106760	106950
219.8	107140	107320	107510	107700	107880	108070	108260	108440	108630	108820
219.9	109010	109200	109380	109570	109760	109950	110140	110330	110520	110710
220.0	110900	111090	111280	111470	111660	111850	112040	112230	112420	112620
220.1	112810	113000	113190	113380	113580	113770	113960	114160	114350	114540
220.2	114740	114930	115120	115320	115510	115710	115900	116100	116290	116490
220.3	116680	116880	117080	117270	117470	117660	117860	118060	118260	118450
220.4	118650	118850	119040	119240	119440	119640	119840	120040	120240	120440
220.5	120640	120830	121030	121230	121430	121640	121840	122040	122240	122440
220.6	122640	122840	123040	123240	123450	123650	123850	124050	124260	124460
220.7	124660	124870	125070	125280	125480	125680	125890	126090	126300	126500
220.8	126710	126920	127120	127330	127530	127740	127950	128160	128360	128570



## RESERVOIR VOLUME TABLE

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WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	VOLUME IN ACRE-FEET									
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
220.9	128780	128990	129190	129400	129610	129820	130030	130240	130450	130660
221.0	130870	131080	131290	131500	131710	131920	132130	132340	132560	132770
221.1	132980	133190	133400	133620	133830	134040	134260	134470	134690	134900
221.2	135120	135330	135540	135760	135980	136190	136410	136620	136840	137060
221.3	137270	137490	137710	137930	138140	138360	138580	138800	139020	139240
221.4	139450	139670	139890	140110	140330	140550	140770	140990	141220	141440
221.5	141660	141880	142100	142320	142540	142770	142990	143210	143440	143660
221.6	143880	144100	144330	144550	144780	145000	145230	145450	145680	145900
221.7	146130	146350	146580	146810	147030	147260	147490	147710	147940	148170
221.8	148400	148620	148850	149080	149310	149540	149770	150000	150230	150460
221.9	150690	150920	151150	151380	151610	151840	152070	152300	152540	152770
222.0	153000	153230	153460	153700	153930	154160	154400	154630	154860	155100
222.1	155330	155570	155800	156040	156270	156510	156740	156980	157210	157450
222.2	157680	157920	158160	158400	158630	158870	159110	159340	159580	159820
222.3	160060	160300	160540	160770	161010	161250	161490	161730	161970	162210
222.4	162450	162690	162930	163170	163410	163660	163900	164140	164380	164620
222.5	164860	165110	165350	165590	165830	166080	166320	166560	166810	167050
222.6	167300	167540	167790	168030	168280	168520	168770	169010	169260	169510
222.7	169750	170000	170250	170490	170740	170990	171240	171480	171730	171980
222.8	172230	172480	172720	172970	173220	173470	173720	173970	174220	174470
222.9	174720	174970	175220	175470	175720	175970	176220	176470	176720	176970
223.0	177220	177470	177720	177980	178230	178480	178730	178980	179240	179490
223.1	179740	180000	180250	180500	180760	181010	181260	181520	181770	182030
223.2	182280	182540	182790	183050	183300	183560	183810	184070	184330	184580
223.3	184840	185100	185350	185610	185870	186120	186380	186640	186900	187160
223.4	187420	187670	187930	188190	188450	188710	188970	189230	189490	189750
223.5	190010	190270	190530	190790	191050	191310	191570	191840	192100	192360
223.6	192620	192880	193140	193410	193670	193930	194200	194460	194720	194990
223.7	195250	195510	195780	196040	196310	196570	196840	197100	197370	197630
223.8	197900	198160	198430	198700	198960	199230	199500	199760	200030	200300
223.9	200560	200830	201100	201370	201640	201900	202170	202440	202710	202980
224.0	203250	203520	203800	204080	204350	204630	204910	205180	205460	205740
224.1	206020	206290	206570	206850	207130	207410	207680	207960	208240	208520
224.2	208800	209080	209360	209640	209920	210200	210480	210760	211040	211320
224.3	211600	211880	212160	212440	212720	213000	213280	213560	213840	214120
224.4	214400	214690	214970	215250	215530	215820	216100	216380	216660	216940
224.5	217230	217510	217790	218080	218360	218640	218930	219210	219500	219780
224.6	220060	220350	220630	220920	221200	221490	221770	222060	222340	222630
224.7	222910	223200	223480	223770	224060	224340	224630	224910	225200	225490
224.8	225770	226060	226350	226640	226920	227210	227500	227780	228070	228360
224.9	228650	228940	229230	229510	229800	230090	230380	230670	230960	231250
225.0	231540	231830	232120	232410	232700	232990	233280	233570	233860	234150
225.1	234440	234730	235020	235310	235600	235900	236190	236480	236770	237060
225.2	237350	237650	237940	238230	238520	238820	239110	239400	239700	239990
225.3	240280	240580	240870	241160	241460	241750	242040	242340	242630	242930
225.4	243220	243520	243810	244110	244400	244700	244990	245290	245580	245880
225.5	246180	246470	246770	247060	247360	247660	247960	248250	248550	248850
225.6	249140	249440	249740	250040	250330	250630	250930	251230	251530	251830
225.7	252120	252420	252720	253020	253320	253620	253920	254220	254520	254820
225.8	255120	255420	255720	256020	256320	256620	256920	257220	257520	257820



















## RESERVOIR AREA TABLE

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WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	AREA IN ACRES									
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
195.9	3	3	3	3	3	3	3	3	3	3
196.0	3	3	3	3	3	3	3	3	3	3
196.1	3	3	3	3	3	3	3	3	3	3
196.2	3	3	3	3	3	3	3	3	3	3
196.3	3	3	3	3	3	3	3	3	3	3
196.4	3	3	4	4	4	4	4	4	4	4
196.5	4	4	4	4	4	4	4	4	4	4
196.6	4	4	4	4	4	4	4	4	4	4
196.7	4	4	4	4	4	4	4	4	4	4
196.8	4	4	4	4	5	5	5	5	5	5
196.9	5	5	5	5	5	5	5	5	5	5
197.0	5	5	5	5	5	5	5	5	5	5
197.1	5	5	5	5	5	5	5	5	6	6
197.2	6	6	6	6	6	6	6	6	6	6
197.3	6	6	6	6	6	6	6	6	6	6
197.4	6	6	6	6	6	6	7	7	7	7
197.5	7	7	7	7	7	7	7	7	7	7
197.6	7	7	7	7	7	7	7	7	7	8
197.7	8	8	8	8	8	8	8	8	8	8
197.8	8	8	8	8	8	8	8	8	8	8
197.9	9	9	9	9	9	9	9	9	9	9
198.0	9	9	9	9	9	9	9	9	9	10
198.1	10	10	10	10	10	10	10	10	10	10
198.2	10	10	10	10	10	10	11	11	11	11
198.3	11	11	11	11	11	11	11	11	11	11
198.4	11	12	12	12	12	12	12	12	12	12
198.5	12	12	12	12	12	13	13	13	13	13
198.6	13	13	13	13	13	13	13	13	13	14
198.7	14	14	14	14	14	14	14	14	14	14
198.8	14	14	15	15	15	15	15	15	15	15
198.9	15	15	15	15	16	16	16	16	16	16
199.0	16	16	16	16	16	16	17	17	17	17
199.1	17	17	17	17	17	17	17	17	18	18
199.2	18	18	18	18	18	18	18	18	19	19
199.3	19	19	19	19	19	19	19	19	20	20
199.4	20	20	20	20	20	20	20	20	21	21
199.5	21	21	21	21	21	21	21	21	22	22
199.6	22	22	22	22	22	22	22	23	23	23
199.7	23	23	23	23	23	24	24	24	24	24
199.8	24	24	24	24	25	25	25	25	25	25
199.9	25	25	26	26	26	26	26	26	26	26
200.0	27	27	27	27	27	27	27	27	28	28
200.1	28	28	28	28	28	28	29	29	29	29
200.2	29	29	29	30	30	30	30	30	30	30
200.3	31	31	31	31	31	31	31	32	32	32
200.4	32	32	32	32	33	33	33	33	33	33
200.5	34	34	34	34	34	34	34	35	35	35
200.6	35	35	35	36	36	36	36	36	36	37
200.7	37	37	37	37	37	38	38	38	38	38
200.8	39	39	39	39	39	39	40	40	40	40

## RESERVOIR AREA TABLE

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WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	AREA IN ACRES									
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
200.9	40	41	41	41	41	41	42	42	42	42
201.0	42	43	43	43	43	43	44	44	44	44
201.1	44	45	45	45	45	45	46	46	46	46
201.2	46	47	47	47	47	47	48	48	48	48
201.3	49	49	49	49	49	50	50	50	50	51
201.4	51	51	51	52	52	52	52	53	53	53
201.5	53	54	54	54	54	55	55	55	55	56
201.6	56	56	56	57	57	57	57	58	58	58
201.7	58	59	59	59	59	60	60	60	61	61
201.8	61	61	62	62	62	63	63	63	63	64
201.9	64	64	65	65	65	65	66	66	66	67
202.0	67	67	67	68	68	68	69	69	69	70
202.1	70	70	70	71	71	71	72	72	72	73
202.2	73	73	74	74	74	75	75	75	76	76
202.3	76	77	77	77	78	78	78	79	79	79
202.4	80	80	80	81	81	82	82	82	83	83
202.5	83	84	84	85	85	85	86	86	86	87
202.6	87	88	88	88	89	89	90	90	90	91
202.7	91	92	92	92	93	93	94	94	94	95
202.8	95	96	96	97	97	97	98	98	99	99
202.9	100	100	101	101	101	102	102	103	103	104
203.0	104	105	105	106	106	107	107	108	108	109
203.1	109	110	110	111	111	112	112	113	113	114
203.2	114	115	115	116	116	117	117	118	118	119
203.3	119	120	121	121	122	122	123	123	124	125
203.4	125	126	126	127	127	128	129	129	130	130
203.5	131	132	132	133	133	134	135	135	136	136
203.6	137	138	138	139	139	140	141	141	142	143
203.7	143	144	144	145	146	146	147	148	148	149
203.8	150	150	151	152	152	153	154	154	155	156
203.9	156	157	158	158	159	160	160	161	162	162
204.0	163	164	164	165	166	166	167	168	168	169
204.1	170	170	171	172	172	173	174	174	175	176
204.2	176	177	178	179	179	180	181	181	182	183
204.3	184	184	185	186	186	187	188	189	189	190
204.4	191	192	193	193	194	195	196	196	197	198
204.5	199	200	200	201	202	203	204	204	205	206
204.6	207	208	208	209	210	211	212	213	214	214
204.7	215	216	217	218	219	220	220	221	222	223
204.8	224	225	226	227	228	229	229	230	231	232
204.9	233	234	235	236	237	238	239	240	241	242
205.0	243	244	245	246	247	248	249	250	251	252
205.1	253	254	256	257	258	259	260	261	262	264
205.2	265	266	267	268	270	271	272	273	274	276
205.3	277	278	279	281	282	283	285	286	287	289
205.4	290	291	293	294	296	297	299	300	302	304
205.5	305	307	309	310	312	314	315	317	319	321
205.6	322	324	326	328	330	331	333	335	337	339
205.7	340	342	344	346	348	350	352	354	356	359
205.8	361	363	365	368	370	372	375	377	380	382

## RESERVOIR AREA TABLE

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WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	AREA IN ACRES									
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
205.9	385	388	390	393	396	399	402	406	409	412
206.0	415	418	421	424	427	430	433	437	440	443
206.1	447	450	454	457	461	464	468	472	475	479
206.2	483	487	491	495	499	503	507	511	516	520
206.3	524	528	533	537	541	546	550	555	559	564
206.4	568	573	578	583	587	592	597	603	608	614
206.5	620	625	631	636	642	647	653	659	665	671
206.6	677	683	690	696	703	709	715	722	728	734
206.7	740	746	752	757	763	769	774	780	786	791
206.8	797	803	809	815	820	826	832	838	844	850
206.9	856	862	867	873	879	885	890	896	902	907
207.0	913	918	924	930	936	941	947	953	959	964
207.1	970	977	983	989	995	1001	1007	1013	1019	1025
207.2	1031	1038	1044	1050	1056	1062	1068	1074	1080	1086
207.3	1092	1098	1104	1110	1117	1123	1129	1135	1142	1148
207.4	1154	1160	1167	1173	1180	1186	1193	1200	1206	1212
207.5	1219	1225	1232	1238	1244	1251	1257	1264	1270	1276
207.6	1283	1289	1296	1303	1309	1316	1322	1328	1335	1341
207.7	1348	1355	1362	1369	1376	1382	1389	1396	1403	1409
207.8	1416	1422	1429	1435	1442	1448	1455	1461	1468	1475
207.9	1482	1489	1496	1503	1509	1515	1522	1528	1534	1541
208.0	1547	1554	1560	1566	1572	1579	1585	1591	1598	1604
208.1	1610	1616	1622	1628	1634	1640	1646	1652	1658	1664
208.2	1670	1676	1682	1688	1694	1700	1706	1712	1718	1723
208.3	1729	1735	1741	1747	1752	1758	1764	1770	1776	1781
208.4	1787	1793	1799	1805	1811	1817	1823	1829	1835	1841
208.5	1847	1853	1860	1866	1872	1879	1885	1891	1898	1904
208.6	1911	1917	1924	1930	1937	1943	1950	1956	1963	1970
208.7	1976	1983	1989	1996	2003	2009	2016	2022	2029	2035
208.8	2042	2049	2055	2062	2069	2076	2082	2089	2096	2103
208.9	2110	2117	2124	2132	2139	2146	2153	2161	2168	2175
209.0	2182	2190	2197	2204	2212	2219	2227	2235	2242	2250
209.1	2257	2264	2272	2279	2287	2295	2302	2310	2318	2326
209.2	2334	2342	2350	2358	2366	2374	2382	2391	2399	2408
209.3	2416	2425	2433	2442	2451	2460	2468	2477	2486	2495
209.4	2504	2513	2523	2532	2541	2550	2559	2568	2578	2588
209.5	2598	2608	2618	2628	2639	2649	2660	2671	2681	2692
209.6	2703	2714	2725	2736	2748	2759	2770	2781	2793	2805
209.7	2816	2828	2839	2850	2862	2873	2885	2896	2907	2918
209.8	2930	2941	2952	2964	2975	2987	2998	3009	3021	3032
209.9	3044	3055	3067	3078	3090	3101	3112	3124	3135	3146
210.0	3157	3168	3180	3191	3202	3213	3224	3235	3246	3257
210.1	3268	3279	3290	3301	3312	3323	3335	3346	3358	3369
210.2	3381	3392	3404	3415	3427	3438	3449	3461	3472	3483
210.3	3494	3505	3516	3527	3538	3549	3560	3572	3583	3594
210.4	3605	3617	3628	3639	3651	3662	3674	3685	3697	3708
210.5	3720	3731	3742	3754	3765	3776	3787	3798	3809	3821
210.6	3832	3843	3855	3866	3877	3889	3900	3912	3923	3935
210.7	3946	3958	3969	3981	3992	4003	4015	4026	4038	4049
210.8	4060	4072	4083	4095	4106	4118	4129	4140	4152	4163

## WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	AREA IN ACRES									
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
210.9	4174	4185	4196	4207	4219	4230	4242	4253	4265	4276
211.0	4288	4299	4311	4322	4334	4345	4357	4368	4380	4391
211.1	4402	4414	4425	4436	4447	4458	4469	4481	4492	4503
211.2	4515	4526	4537	4549	4560	4571	4583	4594	4605	4616
211.3	4627	4639	4650	4661	4672	4684	4695	4707	4718	4730
211.4	4741	4753	4764	4776	4787	4799	4810	4822	4833	4845
211.5	4857	4869	4882	4894	4906	4918	4931	4943	4956	4969
211.6	4982	4995	5008	5021	5033	5046	5058	5070	5083	5095
211.7	5107	5119	5131	5143	5155	5167	5179	5191	5203	5214
211.8	5226	5237	5248	5260	5271	5282	5293	5304	5315	5326
211.9	5337	5348	5360	5371	5382	5393	5404	5415	5426	5437
212.0	5448	5460	5471	5482	5494	5505	5517	5529	5540	5552
212.1	5563	5575	5586	5597	5609	5620	5632	5643	5655	5666
212.2	5678	5689	5701	5713	5724	5736	5748	5760	5773	5785
212.3	5797	5809	5822	5835	5847	5860	5872	5885	5898	5911
212.4	5923	5936	5948	5961	5973	5985	5998	6010	6022	6034
212.5	6046	6058	6071	6083	6095	6107	6119	6131	6143	6155
212.6	6168	6180	6192	6205	6217	6230	6242	6255	6267	6279
212.7	6292	6304	6317	6329	6341	6354	6366	6379	6391	6404
212.8	6417	6429	6442	6454	6467	6479	6492	6504	6517	6530
212.9	6542	6555	6567	6580	6592	6605	6618	6630	6643	6656
213.0	6668	6681	6694	6707	6721	6734	6748	6762	6775	6789
213.1	6803	6817	6830	6844	6857	6871	6885	6899	6914	6928
213.2	6943	6958	6972	6987	7002	7016	7031	7046	7060	7075
213.3	7089	7104	7118	7133	7147	7162	7176	7190	7204	7218
213.4	7231	7245	7259	7272	7286	7300	7313	7327	7341	7354
213.5	7367	7381	7394	7407	7421	7434	7447	7461	7474	7487
213.6	7501	7514	7527	7540	7553	7566	7579	7592	7605	7618
213.7	7631	7644	7656	7669	7682	7695	7708	7720	7733	7746
213.8	7759	7772	7785	7798	7811	7824	7837	7850	7863	7877
213.9	7890	7903	7916	7930	7943	7957	7970	7983	7997	8010
214.0	8024	8038	8052	8066	8080	8095	8110	8125	8140	8156
214.1	8171	8187	8202	8218	8234	8250	8266	8282	8299	8315
214.2	8332	8349	8366	8383	8400	8418	8436	8455	8473	8491
214.3	8509	8528	8547	8565	8584	8603	8622	8641	8660	8679
214.4	8699	8718	8737	8757	8776	8796	8816	8836	8855	8875
214.5	8894	8914	8933	8952	8971	8990	9008	9027	9046	9065
214.6	9084	9103	9122	9141	9160	9179	9198	9216	9235	9254
214.7	9273	9291	9310	9329	9349	9368	9387	9406	9425	9445
214.8	9464	9483	9502	9521	9540	9559	9578	9597	9615	9634
214.9	9652	9671	9689	9707	9725	9743	9761	9779	9797	9815
215.0	9834	9852	9870	9888	9906	9924	9942	9960	9978	9996
215.1	10014	10032	10050	10069	10087	10105	10123	10141	10160	10178
215.2	10197	10216	10234	10253	10271	10289	10308	10327	10345	10364
215.3	10383	10401	10420	10438	10457	10475	10494	10512	10530	10548
215.4	10566	10584	10603	10621	10640	10658	10677	10696	10715	10734
215.5	10753	10772	10792	10811	10830	10850	10871	10891	10911	10931
215.6	10951	10971	10991	11011	11032	11052	11071	11091	11111	11131
215.7	11150	11169	11188	11207	11226	11245	11264	11283	11302	11321
215.8	11340	11358	11377	11396	11415	11433	11452	11471	11489	11508

RESERVOIR AREA TABLE

WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	AREA IN ACRES					ELEVATION INCREMENT IS INTERPOLATED TO ONE HUNDREDTH FOOT				
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
215.9	11527	11546	11565	11584	11603	11622	11641	11660	11679	11698
216.0	11718	11738	11758	11778	11797	11817	11836	11855	11874	11893
216.1	11912	11931	11950	11969	11988	12007	12026	12046	12065	12085
216.2	12105	12125	12145	12165	12185	12205	12224	12244	12264	12284
216.3	12304	12325	12346	12367	12388	12410	12431	12452	12474	12495
216.4	12517	12539	12561	12583	12606	12630	12653	12677	12700	12724
216.5	12747	12770	12795	12819	12842	12866	12889	12913	12936	12958
216.6	12981	13003	13024	13046	13068	13090	13112	13134	13155	13177
216.7	13198	13219	13240	13261	13281	13302	13323	13344	13364	13385
216.8	13405	13426	13446	13466	13487	13507	13527	13548	13568	13588
216.9	13609	13629	13649	13670	13691	13712	13733	13754	13774	13795
217.0	13815	13835	13855	13876	13896	13917	13937	13957	13976	13996
217.1	14015	14034	14053	14072	14091	14110	14128	14147	14165	14183
217.2	14201	14219	14236	14254	14272	14290	14308	14326	14344	14362
217.3	14380	14398	14416	14435	14454	14472	14491	14510	14529	14548
217.4	14566	14584	14602	14621	14638	14656	14674	14691	14709	14727
217.5	14745	14763	14781	14799	14817	14835	14853	14871	14889	14906
217.6	14924	14941	14959	14976	14993	15010	15026	15043	15060	15077
217.7	15093	15110	15126	15143	15160	15177	15193	15210	15227	15244
217.8	15261	15278	15295	15312	15329	15347	15364	15382	15399	15416
217.9	15434	15451	15469	15487	15504	15522	15539	15557	15575	15593
218.0	15611	15628	15646	15664	15681	15699	15716	15734	15752	15769
218.1	15786	15803	15821	15838	15855	15872	15890	15907	15924	15941
218.2	15958	15975	15993	16009	16026	16043	16059	16075	16091	16107
218.3	16123	16139	16156	16172	16188	16204	16220	16236	16252	16268
218.4	16283	16299	16315	16330	16346	16361	16376	16391	16406	16421
218.5	16435	16450	16465	16480	16494	16509	16524	16538	16553	16567
218.6	16581	16596	16610	16624	16638	16652	16667	16681	16696	16711
218.7	16726	16741	16757	16772	16788	16804	16820	16836	16852	16869
218.8	16886	16903	16920	16937	16955	16973	16990	17007	17025	17042
218.9	17060	17078	17095	17113	17131	17149	17166	17184	17202	17219
219.0	17237	17255	17273	17292	17310	17328	17346	17364	17382	17400
219.1	17419	17438	17457	17475	17494	17512	17531	17549	17568	17586
219.2	17604	17622	17640	17658	17676	17694	17712	17731	17749	17768
219.3	17786	17805	17823	17842	17860	17878	17896	17913	17931	17948
219.4	17965	17982	17999	18016	18033	18050	18066	18083	18100	18117
219.5	18133	18150	18167	18184	18201	18218	18235	18252	18269	18286
219.6	18303	18319	18336	18352	18369	18385	18402	18418	18434	18451
219.7	18467	18483	18500	18516	18533	18550	18567	18583	18600	18617
219.8	18635	18652	18670	18688	18705	18723	18741	18759	18777	18795
219.9	18813	18831	18849	18866	18884	18902	18920	18939	18957	18976
220.0	18994	19014	19033	19052	19071	19090	19109	19128	19147	19166
220.1	19186	19205	19224	19244	19263	19282	19301	19320	19339	19359
220.2	19378	19397	19416	19435	19454	19473	19493	19512	19532	19551
220.3	19570	19589	19608	19627	19646	19665	19684	19703	19721	19740
220.4	19759	19778	19796	19815	19833	19852	19871	19890	19909	19928
220.5	19947	19966	19985	20004	20024	20043	20063	20083	20103	20123
220.6	20143	20163	20183	20203	20224	20244	20264	20285	20305	20326
220.7	20347	20369	20391	20412	20435	20457	20479	20501	20524	20546
220.8	20568	20590	20613	20635	20658	20680	20702	20724	20746	20768



## WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	AREA IN ACRES									
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
225.9	29482	29495	29509	29522	29535	29548	29561	29574	29588	29601
226.0	29614	29627	29640	29654	29667	29680	29693	29706	29719	29733
226.1	29746	29759	29772	29785	29798	29812	29825	29838	29851	29864
226.2	29877	29891	29904	29917	29930	29943	29956	29970	29983	29996
226.3	30009	30022	30035	30049	30062	30075	30088	30101	30114	30128
226.4	30141	30154	30167	30180	30193	30207	30220	30233	30246	30259
226.5	30272	30286	30299	30312	30325	30338	30352	30365	30378	30391
226.6	30404	30417	30431	30444	30457	30470	30483	30496	30510	30523
226.7	30536	30549	30562	30575	30589	30602	30615	30628	30641	30654
226.8	30668	30681	30694	30707	30720	30733	30747	30760	30773	30786
226.9	30799	30812	30826	30839	30852	30865	30878	30891	30905	30918
227.0	30931	30944	30957	30971	30984	30997	31010	31023	31036	31050
227.1	31063	31076	31089	31102	31115	31129	31142	31155	31168	31181
227.2	31194	31208	31221	31234	31247	31260	31273	31287	31300	31313
227.3	31326	31339	31352	31366	31379	31392	31405	31418	31431	31445
227.4	31458	31471	31484	31497	31510	31524	31537	31550	31563	31576
227.5	31589	31603	31616	31629	31642	31655	31669	31682	31695	31708
227.6	31721	31734	31748	31761	31774	31787	31800	31813	31827	31840
227.7	31853	31866	31879	31892	31906	31919	31932	31945	31958	31971
227.8	31985	31998	32011	32024	32037	32050	32064	32077	32090	32103
227.9	32116	32129	32143	32156	32169	32182	32195	32208	32222	32235
228.0	32248	32261	32274	32288	32301	32314	32327	32340	32353	32367
228.1	32380	32393	32406	32419	32432	32446	32459	32472	32485	32498
228.2	32511	32525	32538	32551	32564	32577	32590	32604	32617	32630
228.3	32643	32656	32669	32683	32696	32709	32722	32735	32748	32762
228.4	32775	32788	32801	32814	32827	32841	32854	32867	32880	32893
228.5	32906	32920	32933	32946	32959	32972	32986	32999	33012	33025
228.6	33038	33051	33065	33078	33091	33104	33117	33130	33144	33157
228.7	33170	33183	33196	33209	33223	33236	33249	33262	33275	33288
228.8	33302	33315	33328	33341	33354	33367	33381	33394	33407	33420
228.9	33433	33446	33460	33473	33486	33499	33512	33525	33539	33552
229.0	33565	33578	33591	33605	33618	33631	33644	33657	33670	33684
229.1	33697	33710	33723	33736	33749	33763	33776	33789	33802	33815
229.2	33828	33842	33855	33868	33881	33894	33907	33921	33934	33947
229.3	33960	33973	33986	34000	34013	34026	34039	34052	34065	34079
229.4	34092	34105	34118	34131	34144	34158	34171	34184	34197	34210
229.5	34223	34237	34250	34263	34276	34289	34303	34316	34329	34342
229.6	34355	34368	34382	34395	34408	34421	34434	34447	34461	34474
229.7	34487	34500	34513	34526	34540	34553	34566	34579	34592	34605
229.8	34619	34632	34645	34658	34671	34684	34698	34711	34724	34737
229.9	34750	34763	34777	34790	34803	34816	34829	34842	34856	34869
230.0	34882	34904	34926	34948	34970	34992	35015	35037	35059	35081
230.1	35103	35125	35147	35169	35191	35213	35235	35257	35280	35302
230.2	35324	35346	35368	35390	35412	35434	35456	35478	35500	35522
230.3	35545	35567	35589	35611	35633	35655	35677	35699	35721	35743
230.4	35765	35787	35810	35832	35854	35876	35898	35920	35942	35964
230.5	35986	36008	36030	36052	36075	36097	36119	36141	36163	36185
230.6	36207	36229	36251	36273	36295	36317	36340	36362	36384	36406
230.7	36428	36450	36472	36494	36516	36538	36560	36582	36605	36627
230.8	36649	36671	36693	36715	36737	36759	36781	36803	36825	36847



## WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	AREA IN ACRES				ELEVATION INCREMENT IS INTERPOLATED TO ONE HUNDREDTH FOOT					
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
230.9	36870	36892	36914	36936	36958	36980	37002	37024	37046	37068
231.0	37090	37112	37135	37157	37179	37201	37223	37245	37267	37289
231.1	37311	37333	37355	37377	37400	37422	37444	37466	37488	37510
231.2	37532	37554	37576	37598	37620	37642	37665	37687	37709	37731
231.3	37753	37775	37797	37819	37841	37863	37885	37908	37930	37952
231.4	37974	37996	38018	38040	38062	38084	38106	38128	38150	38173
231.5	38195	38217	38239	38261	38283	38305	38327	38349	38371	38393
231.6	38415	38438	38460	38482	38504	38526	38548	38570	38592	38614
231.7	38636	38658	38680	38703	38725	38747	38769	38791	38813	38835
231.8	38857	38879	38901	38923	38945	38968	38990	39012	39034	39056
231.9	39078	39100	39122	39144	39166	39188	39210	39233	39255	39277
232.0	39299	39321	39343	39365	39387	39409	39431	39453	39475	39498
232.1	39520	39542	39564	39586	39608	39630	39652	39674	39696	39718
232.2	39740	39763	39785	39807	39829	39851	39873	39895	39917	39939
232.3	39961	39983	40005	40028	40050	40072	40094	40116	40138	40160
232.4	40182	40204	40226	40248	40270	40293	40315	40337	40359	40381
232.5	40403	40425	40447	40469	40491	40513	40536	40558	40580	40602
232.6	40624	40646	40668	40690	40712	40734	40756	40778	40801	40823
232.7	40845	40867	40889	40911	40933	40955	40977	40999	41021	41043
232.8	41066	41088	41110	41132	41154	41176	41198	41220	41242	41264
232.9	41286	41308	41331	41353	41375	41397	41419	41441	41463	41485
233.0	41507	41529	41551	41573	41596	41618	41640	41662	41684	41706
233.1	41728	41750	41772	41794	41816	41838	41861	41883	41905	41927
233.2	41949	41971	41993	42015	42037	42059	42081	42103	42126	42148
233.3	42170	42192	42214	42236	42258	42280	42302	42324	42346	42368
233.4	42391	42413	42435	42457	42479	42501	42523	42545	42567	42589
233.5	42611	42633	42656	42678	42700	42722	42744	42766	42788	42810
233.6	42832	42854	42876	42898	42921	42943	42965	42987	43009	43031
233.7	43053	43075	43097	43119	43141	43164	43186	43208	43230	43252
233.8	43274	43296	43318	43340	43362	43384	43406	43429	43451	43473
233.9	43495	43517	43539	43561	43583	43605	43627	43649	43671	43694
234.0	43716	43738	43760	43782	43804	43826	43848	43870	43892	43914
234.1	43936	43959	43981	44003	44025	44047	44069	44091	44113	44135
234.2	44157	44179	44201	44224	44246	44268	44290	44312	44334	44356
234.3	44378	44400	44422	44444	44466	44489	44511	44533	44555	44577
234.4	44599	44621	44643	44665	44687	44709	44731	44754	44776	44798
234.5	44820	44842	44864	44886	44908	44930	44952	44974	44996	45019
234.6	45041	45063	45085	45107	45129	45151	45173	45195	45217	45239
234.7	45261	45284	45306	45328	45350	45372	45394	45416	45438	45460
234.8	45482	45504	45526	45549	45571	45593	45615	45637	45659	45681
234.9	45703	45725	45747	45769	45791	45814	45836	45858	45880	45902
235.0	45924	45946	45968	45990	46012	46034	46057	46079	46101	46123
235.1	46145	46167	46189	46211	46233	46255	46277	46299	46322	46344
235.2	46366	46388	46410	46432	46454	46476	46498	46520	46542	46564
235.3	46587	46609	46631	46653	46675	46697	46719	46741	46763	46785
235.4	46807	46829	46852	46874	46896	46918	46940	46962	46984	47006
235.5	47028	47050	47072	47094	47117	47139	47161	47183	47205	47227
235.6	47249	47271	47293	47315	47337	47359	47382	47404	47426	47448
235.7	47470	47492	47514	47536	47558	47580	47602	47624	47647	47669
235.8	47691	47713	47735	47757	47779	47801	47823	47845	47867	47889

## WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	AREA IN ACRES				ELEVATION INCREMENT IS INTERPOLATED TO ONE HUNDREDTH FOOT						
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09	
235.9	47912	47934	47956	47978	48000	48022	48044	48066	48088	48110	
236.0	48132	48154	48177	48199	48221	48243	48265	48287	48309	48331	
236.1	48353	48375	48397	48419	48442	48464	48486	48508	48530	48552	
236.2	48574	48596	48618	48640	48662	48685	48707	48729	48751	48773	
236.3	48795	48817	48839	48861	48883	48905	48927	48950	48972	48994	
236.4	49016	49038	49060	49082	49104	49126	49148	49170	49192	49215	
236.5	49237	49259	49281	49303	49325	49347	49369	49391	49413	49435	
236.6	49457	49480	49502	49524	49546	49568	49590	49612	49634	49656	
236.7	49678	49700	49722	49745	49767	49789	49811	49833	49855	49877	
236.8	49899	49921	49943	49965	49987	50010	50032	50054	50076	50098	
236.9	50120	50142	50164	50186	50208	50230	50252	50275	50297	50319	
237.0	50341	50363	50385	50407	50429	50451	50473	50495	50517	50540	
237.1	50562	50584	50606	50628	50650	50672	50694	50716	50738	50760	
237.2	50782	50805	50827	50849	50871	50893	50915	50937	50959	50981	
237.3	51003	51025	51047	51070	51092	51114	51136	51158	51180	51202	
237.4	51224	51246	51268	51290	51312	51335	51357	51379	51401	51423	
237.5	51445	51467	51489	51511	51533	51555	51578	51600	51622	51644	
237.6	51666	51688	51710	51732	51754	51776	51798	51820	51843	51865	
237.7	51887	51909	51931	51953	51975	51997	52019	52041	52063	52085	
237.8	52108	52130	52152	52174	52196	52218	52240	52262	52284	52306	
237.9	52328	52350	52373	52395	52417	52439	52461	52483	52505	52527	
238.0	52549	52571	52593	52615	52638	52660	52682	52704	52726	52748	
238.1	52770	52792	52814	52836	52858	52880	52903	52925	52947	52969	
238.2	52991	53013	53035	53057	53079	53101	53123	53145	53168	53190	
238.3	53212	53234	53256	53278	53300	53322	53344	53366	53388	53410	
238.4	53433	53455	53477	53499	53521	53543	53565	53587	53609	53631	
238.5	53653	53675	53698	53720	53742	53764	53786	53808	53830	53852	
238.6	53874	53896	53918	53940	53963	53985	54007	54029	54051	54073	
238.7	54095	54117	54139	54161	54183	54206	54228	54250	54272	54294	
238.8	54316	54338	54360	54382	54404	54426	54448	54471	54493	54515	
238.9	54537	54559	54581	54603	54625	54647	54669	54691	54713	54736	
239.0	54758	54780	54802	54824	54846	54868	54890	54912	54934	54956	
239.1	54978	55001	55023	55045	55067	55089	55111	55133	55155	55177	
239.2	55199	55221	55243	55266	55288	55310	55332	55354	55376	55398	
239.3	55420	55442	55464	55486	55508	55531	55553	55575	55597	55619	
239.4	55641	55663	55685	55707	55729	55751	55773	55796	55818	55840	
239.5	55862	55884	55906	55928	55950	55972	55994	56016	56038	56061	
239.6	56083	56105	56127	56149	56171	56193	56215	56237	56259	56281	
239.7	56303	56326	56348	56370	56392	56414	56436	56458	56480	56502	
239.8	56524	56546	56568	56591	56613	56635	56657	56679	56701	56723	
239.9	56745	56767	56789	56811	56833	56856	56878	56900	56922	56944	
240.0	56966	56992	57018	57044	57070	57096	57122	57148	57174	57200	
240.1	57226	57252	57278	57304	57330	57356	57382	57408	57434	57460	
240.2	57486	57512	57538	57564	57590	57616	57642	57668	57694	57720	
240.3	57746	57772	57798	57824	57850	57876	57903	57929	57955	57981	
240.4	58007	58033	58059	58085	58111	58137	58163	58189	58215	58241	
240.5	58267	58293	58319	58345	58371	58397	58423	58449	58475	58501	
240.6	58527	58553	58579	58605	58631	58657	58683	58709	58735	58761	
240.7	58787	58813	58839	58865	58891	58917	58943	58969	58995	59021	
240.8	59047	59073	59099	59125	59151	59177	59203	59229	59255	59281	

## WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	AREA IN ACRES									
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
240.9	59307	59333	59359	59385	59411	59437	59463	59489	59515	59541
241.0	59567	59593	59619	59645	59671	59697	59723	59749	59776	59802
241.1	59828	59854	59880	59906	59932	59958	59984	60010	60036	60062
241.2	60088	60114	60140	60166	60192	60218	60244	60270	60296	60322
241.3	60348	60374	60400	60426	60452	60478	60504	60530	60556	60582
241.4	60608	60634	60660	60686	60712	60738	60764	60790	60816	60842
241.5	60868	60894	60920	60946	60972	60998	61024	61050	61076	61102
241.6	61128	61154	61180	61206	61232	61258	61284	61310	61336	61362
241.7	61388	61414	61440	61466	61492	61518	61544	61570	61596	61623
241.8	61649	61675	61701	61727	61753	61779	61805	61831	61857	61883
241.9	61909	61935	61961	61987	62013	62039	62065	62091	62117	62143
242.0	62169	62195	62221	62247	62273	62299	62325	62351	62377	62403
242.1	62429	62455	62481	62507	62533	62559	62585	62611	62637	62663
242.2	62689	62715	62741	62767	62793	62819	62845	62871	62897	62923
242.3	62949	62975	63001	63027	63053	63079	63105	63131	63157	63183
242.4	63209	63235	63261	63287	63313	63339	63365	63391	63417	63443
242.5	63470	63496	63522	63548	63574	63600	63626	63652	63678	63704
242.6	63730	63756	63782	63808	63834	63860	63886	63912	63938	63964
242.7	63990	64016	64042	64068	64094	64120	64146	64172	64198	64224
242.8	64250	64276	64302	64328	64354	64380	64406	64432	64458	64484
242.9	64510	64536	64562	64588	64614	64640	64666	64692	64718	64744
243.0	64770	64796	64822	64848	64874	64900	64926	64952	64978	65004
243.1	65030	65056	65082	65108	65134	65160	65186	65212	65238	65264
243.2	65290	65316	65343	65369	65395	65421	65447	65473	65499	65525
243.3	65551	65577	65603	65629	65655	65681	65707	65733	65759	65785
243.4	65811	65837	65863	65889	65915	65941	65967	65993	66019	66045
243.5	66071	66097	66123	66149	66175	66201	66227	66253	66279	66305
243.6	66331	66357	66383	66409	66435	66461	66487	66513	66539	66565
243.7	66591	66617	66643	66669	66695	66721	66747	66773	66799	66825
243.8	66851	66877	66903	66929	66955	66981	67007	67033	67059	67085
243.9	67111	67137	67163	67190	67216	67242	67268	67294	67320	67346
244.0	67372	67398	67424	67450	67476	67502	67528	67554	67580	67606
244.1	67632	67658	67684	67710	67736	67762	67788	67814	67840	67866
244.2	67892	67918	67944	67970	67996	68022	68048	68074	68100	68126
244.3	68152	68178	68204	68230	68256	68282	68308	68334	68360	68386
244.4	68412	68438	68464	68490	68516	68542	68568	68594	68620	68646
244.5	68672	68698	68724	68750	68776	68802	68828	68854	68880	68906
244.6	68932	68958	68984	69010	69036	69063	69089	69115	69141	69167
244.7	69193	69219	69245	69271	69297	69323	69349	69375	69401	69427
244.8	69453	69479	69505	69531	69557	69583	69609	69635	69661	69687
244.9	69713	69739	69765	69791	69817	69843	69869	69895	69921	69947
245.0	69973	69999	70025	70051	70077	70103	70129	70155	70181	70207
245.1	70233	70259	70285	70311	70337	70363	70389	70415	70441	70467
245.2	70493	70519	70545	70571	70597	70623	70649	70675	70701	70727
245.3	70753	70779	70805	70831	70857	70883	70910	70936	70962	70988
245.4	71014	71040	71066	71092	71118	71144	71170	71196	71222	71248
245.5	71274	71300	71326	71352	71378	71404	71430	71456	71482	71508
245.6	71534	71560	71586	71612	71638	71664	71690	71716	71742	71768
245.7	71794	71820	71846	71872	71898	71924	71950	71976	72002	72028
245.8	72054	72080	72106	72132	72158	72184	72210	72236	72262	72288

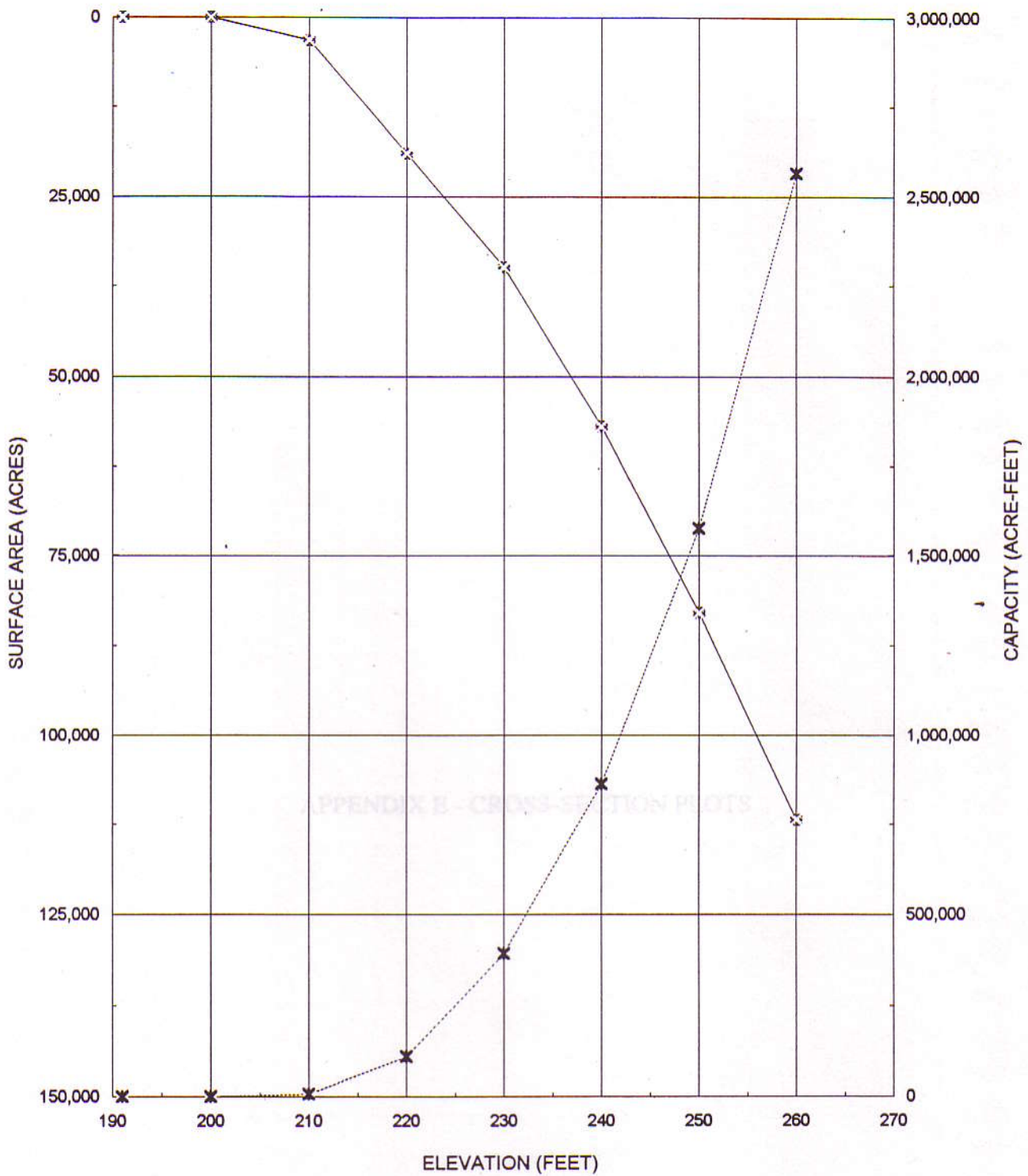
## WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	AREA IN ACRES									
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
245.9	72314	72340	72366	72392	72418	72444	72470	72496	72522	72548
246.0	72574	72600	72626	72652	72678	72704	72730	72756	72783	72809
246.1	72835	72861	72887	72913	72939	72965	72991	73017	73043	73069
246.2	73095	73121	73147	73173	73199	73225	73251	73277	73303	73329
246.3	73355	73381	73407	73433	73459	73485	73511	73537	73563	73589
246.4	73615	73641	73667	73693	73719	73745	73771	73797	73823	73849
246.5	73875	73901	73927	73953	73979	74005	74031	74057	74083	74109
246.6	74135	74161	74187	74213	74239	74265	74291	74317	74343	74369
246.7	74395	74421	74447	74473	74499	74525	74551	74577	74603	74630
246.8	74656	74682	74708	74734	74760	74786	74812	74838	74864	74890
246.9	74916	74942	74968	74994	75020	75046	75072	75098	75124	75150
247.0	75176	75202	75228	75254	75280	75306	75332	75358	75384	75410
247.1	75436	75462	75488	75514	75540	75566	75592	75618	75644	75670
247.2	75696	75722	75748	75774	75800	75826	75852	75878	75904	75930
247.3	75956	75982	76008	76034	76060	76086	76112	76138	76164	76190
247.4	76216	76242	76268	76294	76320	76346	76372	76398	76424	76450
247.5	76477	76503	76529	76555	76581	76607	76633	76659	76685	76711
247.6	76737	76763	76789	76815	76841	76867	76893	76919	76945	76971
247.7	76997	77023	77049	77075	77101	77127	77153	77179	77205	77231
247.8	77257	77283	77309	77335	77361	77387	77413	77439	77465	77491
247.9	77517	77543	77569	77595	77621	77647	77673	77699	77725	77751
248.0	77777	77803	77829	77855	77881	77907	77933	77959	77985	78011
248.1	78037	78063	78089	78115	78141	78167	78193	78219	78245	78271
248.2	78297	78323	78350	78376	78402	78428	78454	78480	78506	78532
248.3	78558	78584	78610	78636	78662	78688	78714	78740	78766	78792
248.4	78818	78844	78870	78896	78922	78948	78974	79000	79026	79052
248.5	79078	79104	79130	79156	79182	79208	79234	79260	79286	79312
248.6	79338	79364	79390	79416	79442	79468	79494	79520	79546	79572
248.7	79598	79624	79650	79676	79702	79728	79754	79780	79806	79832
248.8	79858	79884	79910	79936	79962	79988	80014	80040	80066	80092
248.9	80118	80144	80170	80197	80223	80249	80275	80301	80327	80353
249.0	80379	80405	80431	80457	80483	80509	80535	80561	80587	80613
249.1	80639	80665	80691	80717	80743	80769	80795	80821	80847	80873
249.2	80899	80925	80951	80977	81003	81029	81055	81081	81107	81133
249.3	81159	81185	81211	81237	81263	81289	81315	81341	81367	81393
249.4	81419	81445	81471	81497	81523	81549	81575	81601	81627	81653
249.5	81679	81705	81731	81757	81783	81809	81835	81861	81887	81913
249.6	81939	81965	81991	82017	82043	82070	82096	82122	82148	82174
249.7	82200	82226	82252	82278	82304	82330	82356	82382	82408	82434
249.8	82460	82486	82512	82538	82564	82590	82616	82642	82668	82694
249.9	82720	82746	82772	82798	82824	82850	82876	82902	82928	82954
250.0	82980	83009	83038	83067	83096	83124	83153	83182	83211	83240
250.1	83269	83298	83327	83356	83385	83413	83442	83471	83500	83529
250.2	83558	83587	83616	83645	83674	83702	83731	83760	83789	83818
250.3	83847	83876	83905	83934	83963	83991	84020	84049	84078	84107
250.4	84136	84165	84194	84223	84252	84280	84309	84338	84367	84396
250.5	84425	84454	84483	84512	84541	84569	84598	84627	84656	84685
250.6	84714	84743	84772	84801	84830	84858	84887	84916	84945	84974
250.7	85003	85032	85061	85090	85119	85147	85176	85205	85234	85263
250.8	85292	85321	85350	85379	85408	85436	85465	85494	85523	85552

## WRIGHT PATMAN LAKE JANUARY 1997 SURVEY

ELEV. FEET	AREA IN ACRES				ELEVATION INCREMENT IS INTERPOLATED TO ONE HUNDREDTH FOOT					
	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
250.9	85581	85610	85639	85668	85697	85725	85754	85783	85812	85841
251.0	85870	85899	85928	85957	85986	86014	86043	86072	86101	86130
251.1	86159	86188	86217	86246	86275	86303	86332	86361	86390	86419
251.2	86448	86477	86506	86535	86564	86592	86621	86650	86679	86708
251.3	86737	86766	86795	86824	86853	86881	86910	86939	86968	86997
251.4	87026	87055	87084	87113	87142	87170	87199	87228	87257	87286
251.5	87315	87344	87373	87402	87431	87459	87488	87517	87546	87575
251.6	87604	87633	87662	87691	87720	87748	87777	87806	87835	87864
251.7	87893	87922	87951	87980	88009	88037	88066	88095	88124	88153
251.8	88182	88211	88240	88269	88298	88326	88355	88384	88413	88442
251.9	88471	88500	88529	88558	88587	88615	88644	88673	88702	88731
252.0	88760	88789	88818	88847	88876	88904	88933	88962	88991	89020
252.1	89049	89078	89107	89136	89165	89193	89222	89251	89280	89309
252.2	89338	89367	89396	89425	89454	89482	89511	89540	89569	89598
252.3	89627	89656	89685	89714	89743	89771	89800	89829	89858	89887
252.4	89916	89945	89974	90003	90032	90060	90089	90118	90147	90176
252.5	90205	90234	90263	90292	90321	90349	90378	90407	90436	90465
252.6	90494	90523	90552	90581	90610	90638	90667	90696	90725	90754
252.7	90783	90812	90841	90870	90899	90927	90956	90985	91014	91043
252.8	91072	91101	91130	91159	91188	91216	91245	91274	91303	91332
252.9	91361	91390	91419	91448	91477	91505	91534	91563	91592	91621
253.0	91650	91679	91708	91737	91766	91794	91823	91852	91881	91910
253.1	91939	91968	91997	92026	92055	92083	92112	92141	92170	92199
253.2	92228	92257	92286	92315	92344	92372	92401	92430	92459	92488
253.3	92517	92546	92575	92604	92633	92661	92690	92719	92748	92777
253.4	92806	92835	92864	92893	92922	92950	92979	93008	93037	93066
253.5	93095	93124	93153	93182	93211	93239	93268	93297	93326	93355
253.6	93384	93413	93442	93471	93500	93528	93557	93586	93615	93644
253.7	93673	93702	93731	93760	93789	93817	93846	93875	93904	93933
253.8	93962	93991	94020	94049	94078	94106	94135	94164	94193	94222
253.9	94251	94280	94309	94338	94367	94395	94424	94453	94482	94511
254.0	94540	94569	94598	94627	94656	94684	94713	94742	94771	94800
254.1	94829	94858	94887	94916	94945	94973	95002	95031	95060	95089
254.2	95118	95147	95176	95205	95234	95262	95291	95320	95349	95378
254.3	95407	95436	95465	95494	95523	95551	95580	95609	95638	95667
254.4	95696	95725	95754	95783	95812	95840	95869	95898	95927	95956
254.5	95985	96014	96043	96072	96101	96129	96158	96187	96216	96245
254.6	96274	96303	96332	96361	96390	96418	96447	96476	96505	96534
254.7	96563	96592	96621	96650	96679	96707	96736	96765	96794	96823
254.8	96852	96881	96910	96939	96968	96996	97025	97054	97083	97112
254.9	97141	97170	97199	97228	97257	97285	97314	97343	97372	97401
255.0	97430	97459	97488	97517	97546	97574	97603	97632	97661	97690
255.1	97719	97748	97777	97806	97835	97863	97892	97921	97950	97979
255.2	98008	98037	98066	98095	98124	98152	98181	98210	98239	98268
255.3	98297	98326	98355	98384	98413	98441	98470	98499	98528	98557
255.4	98586	98615	98644	98673	98702	98730	98759	98788	98817	98846
255.5	98875	98904	98933	98962	98991	99019	99048	99077	99106	99135
255.6	99164	99193	99222	99251	99280	99308	99337	99366	99395	99424
255.7	99453	99482	99511	99540	99569	99597	99626	99655	99684	99713
255.8	99742	99771	99800	99829	99858	99886	99915	99944	99973	100000



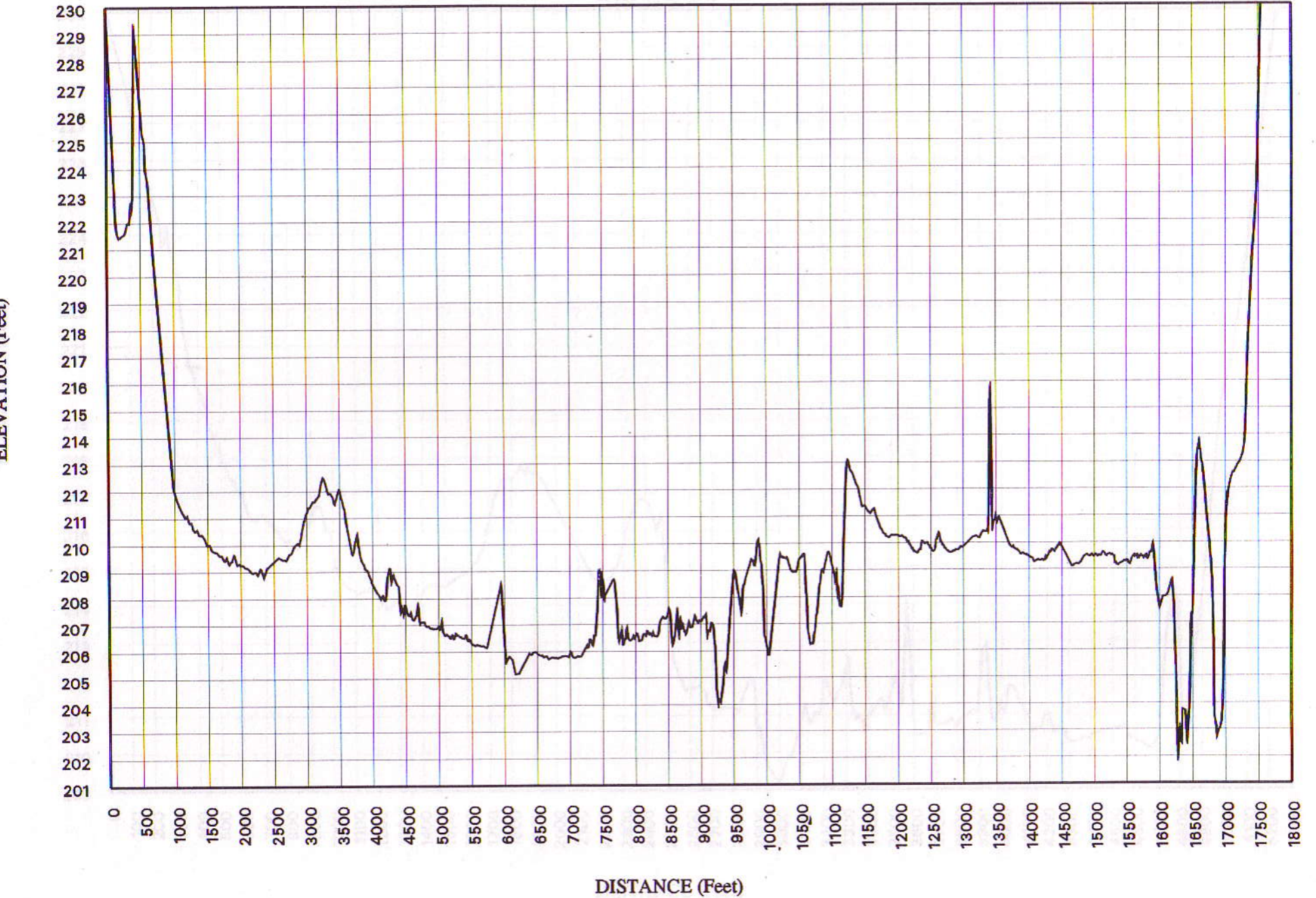


—x— SURFACE AREA      ····x···· CAPACITY

**WRIGHT PATMAN LAKE**  
 January 1997 Survey  
 Prepared by: TWDB May 1997

# WRIGHT PATMAN LAKE

Cross Section A-A'

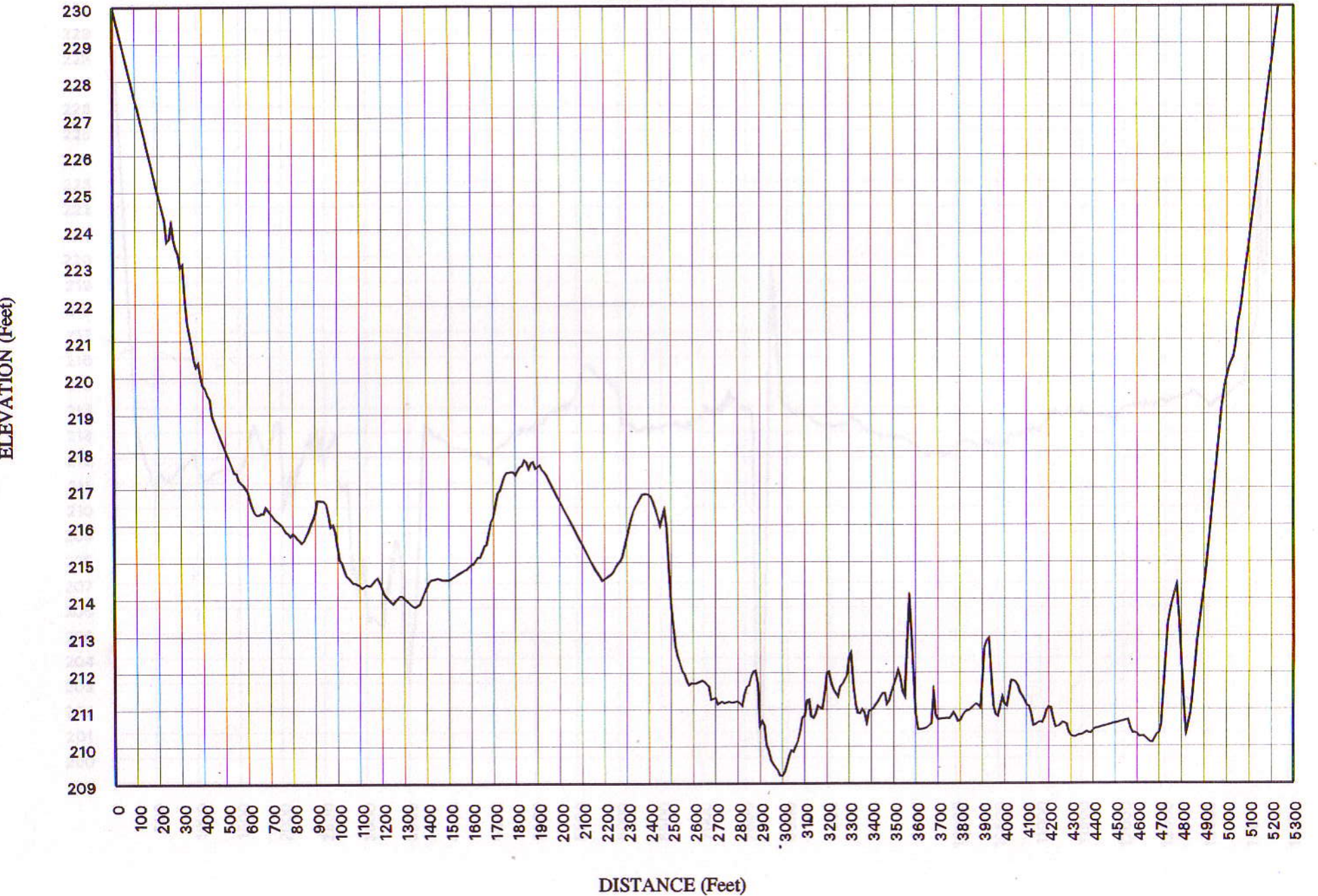


— Range line generated using Arc/Info's TIN Module



# WRIGHT PATMAN LAKE

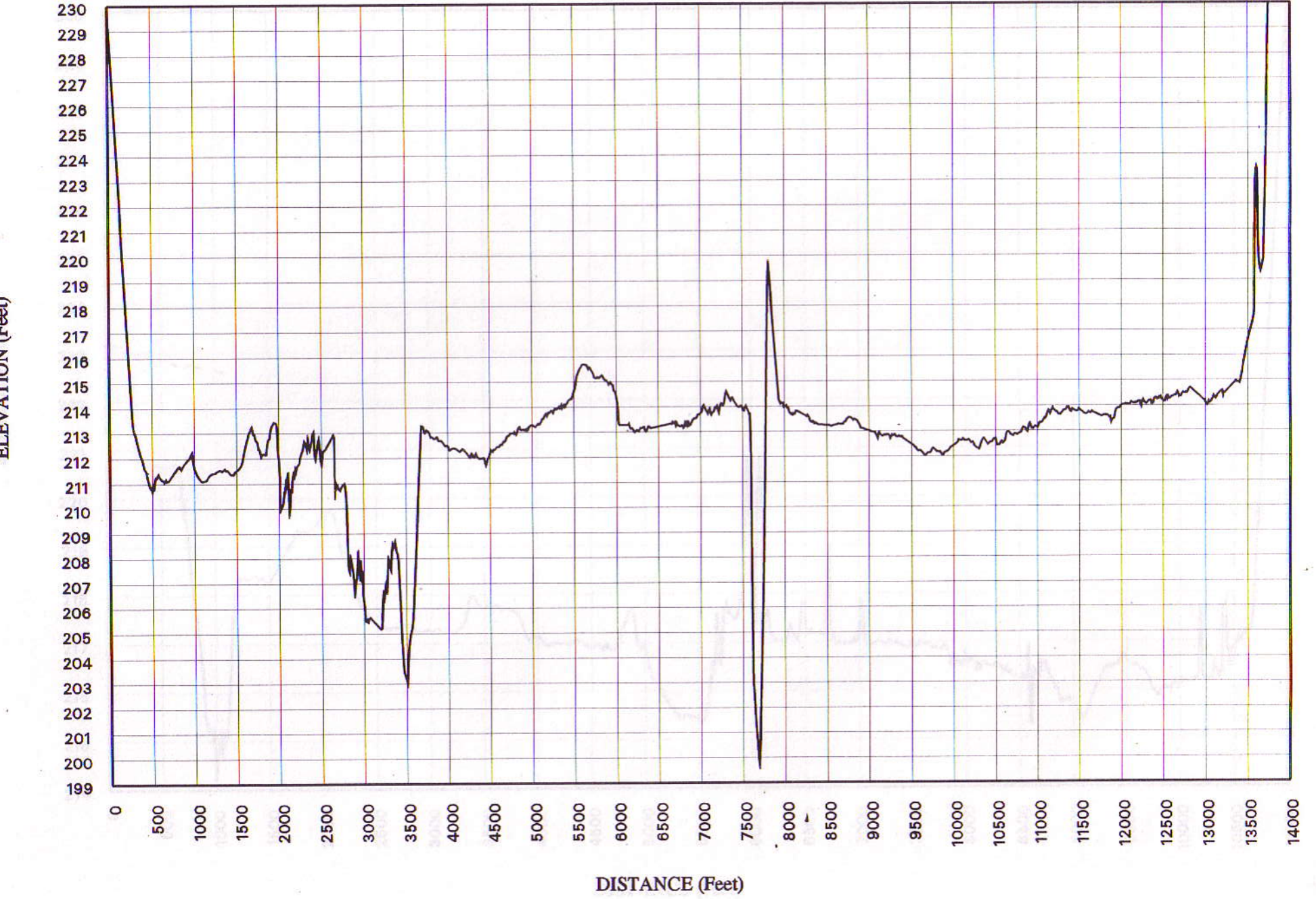
Cross Section B-B'



— Range line generated using Arc/Info's TIN Module

# WRIGHT PATMAN LAKE

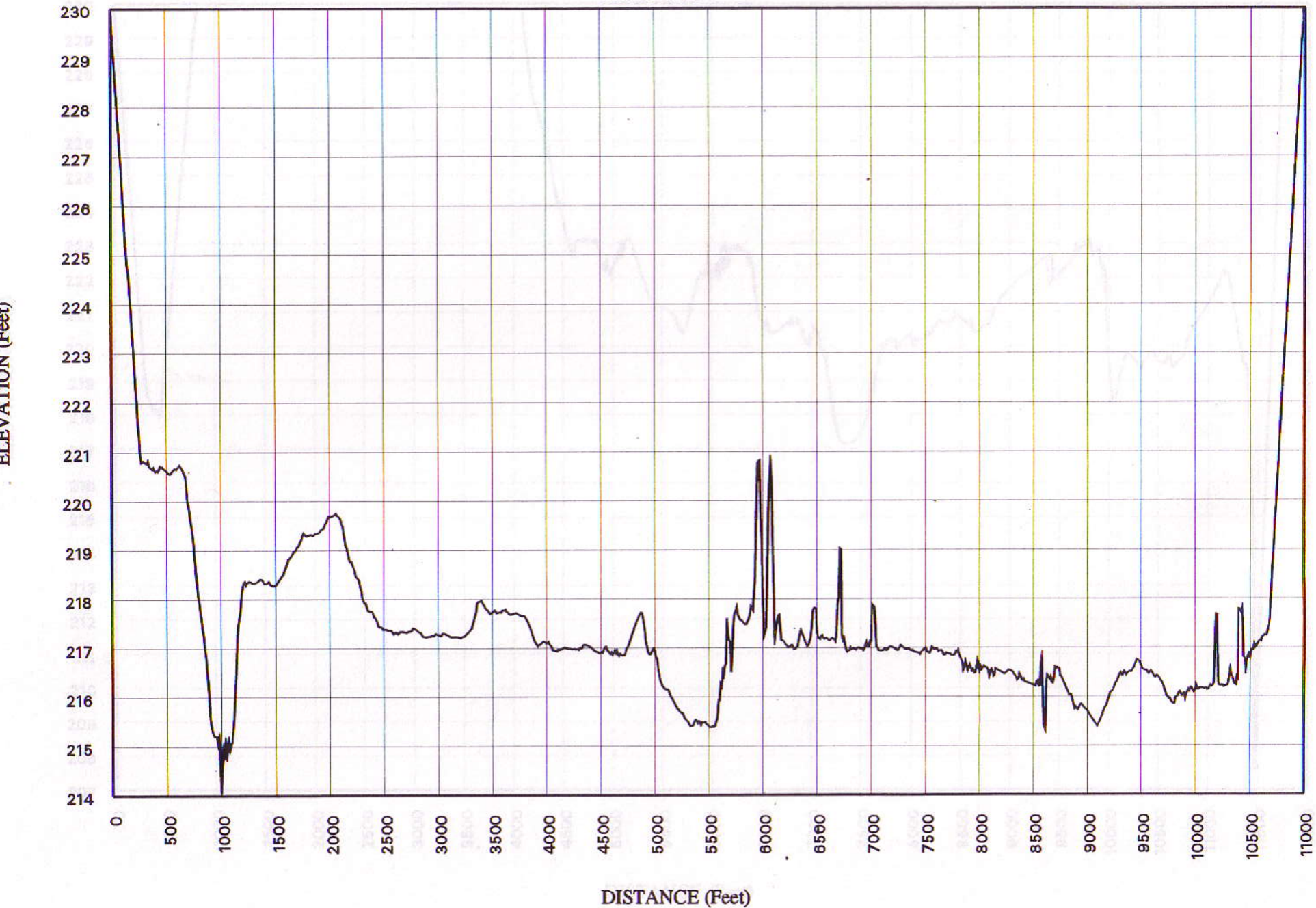
Cross Section C-C'



— Range line generated using Arc/Info's TIN Module

# WRIGHT PATMAN LAKE

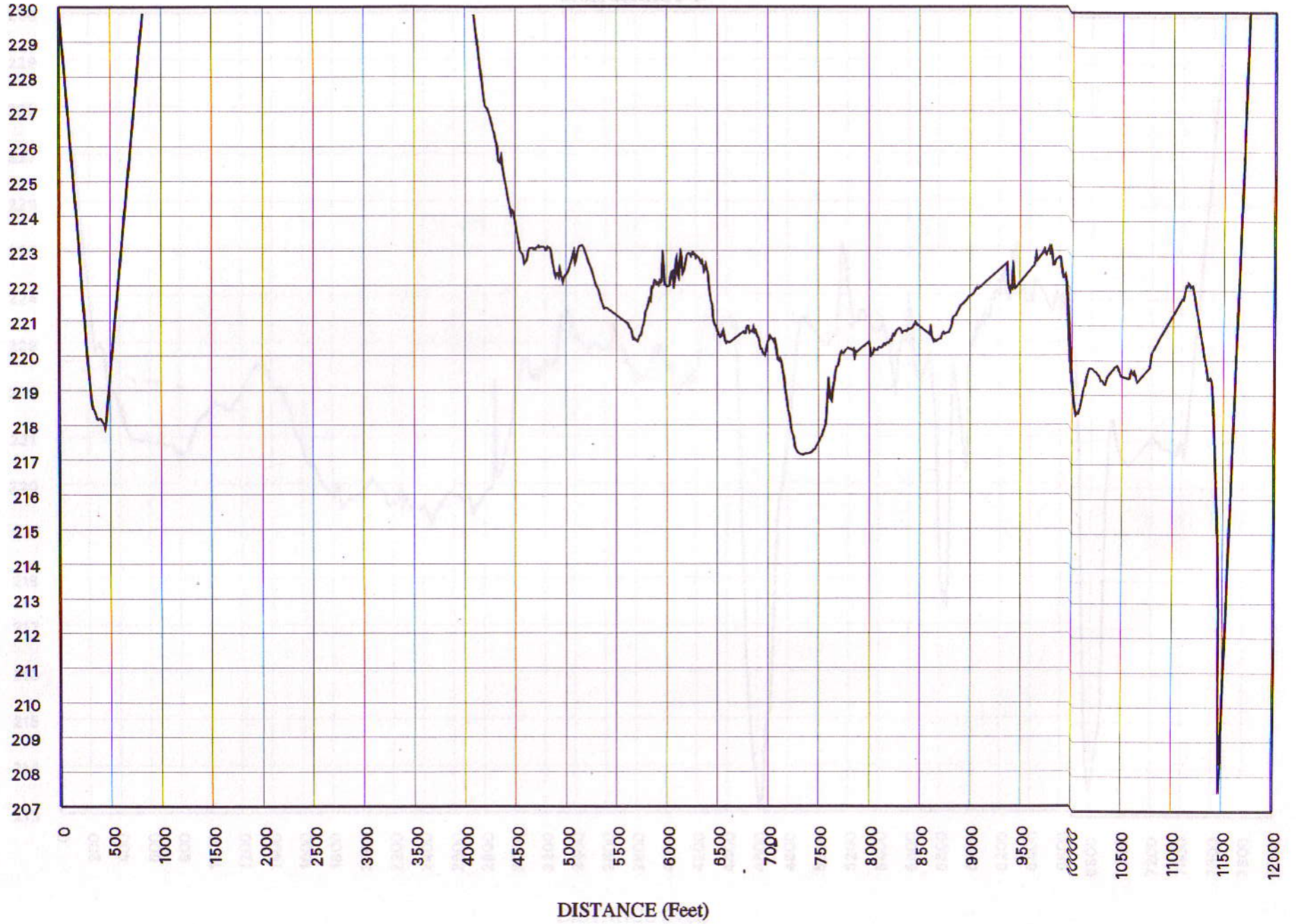
Cross Section D-D'



— Range line generated using Arc/Info's TIN Module

# WRIGHT PATMAN LAKE

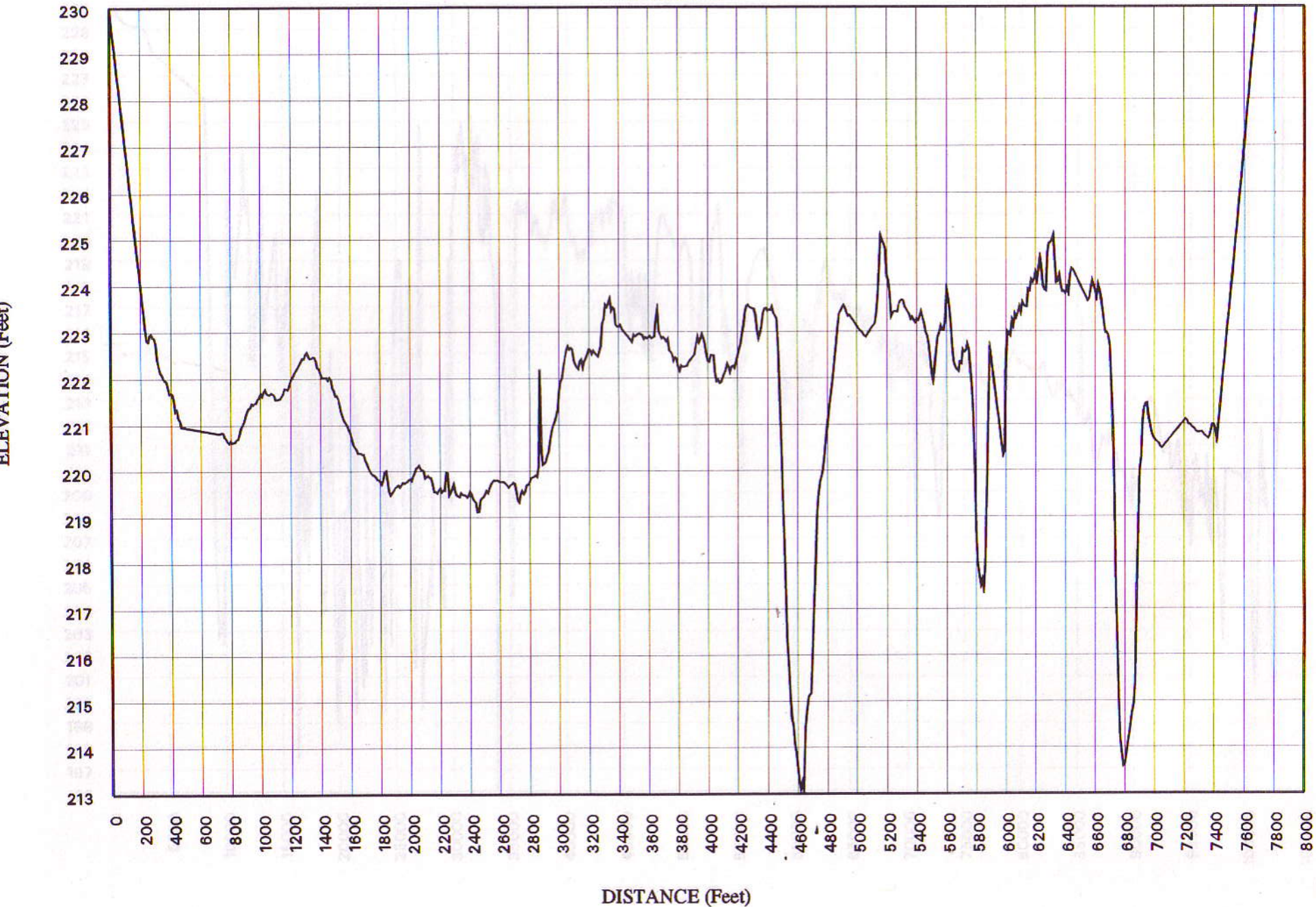
Cross Section E-E'



Range line generated using Arc/Info's TIN Module

# WRIGHT PATMAN LAKE

Cross Section F-F'



— Range line generated using Arc/Info's TIN Module

# WRIGHT PATMAN LAKE

Cross Section G-G'

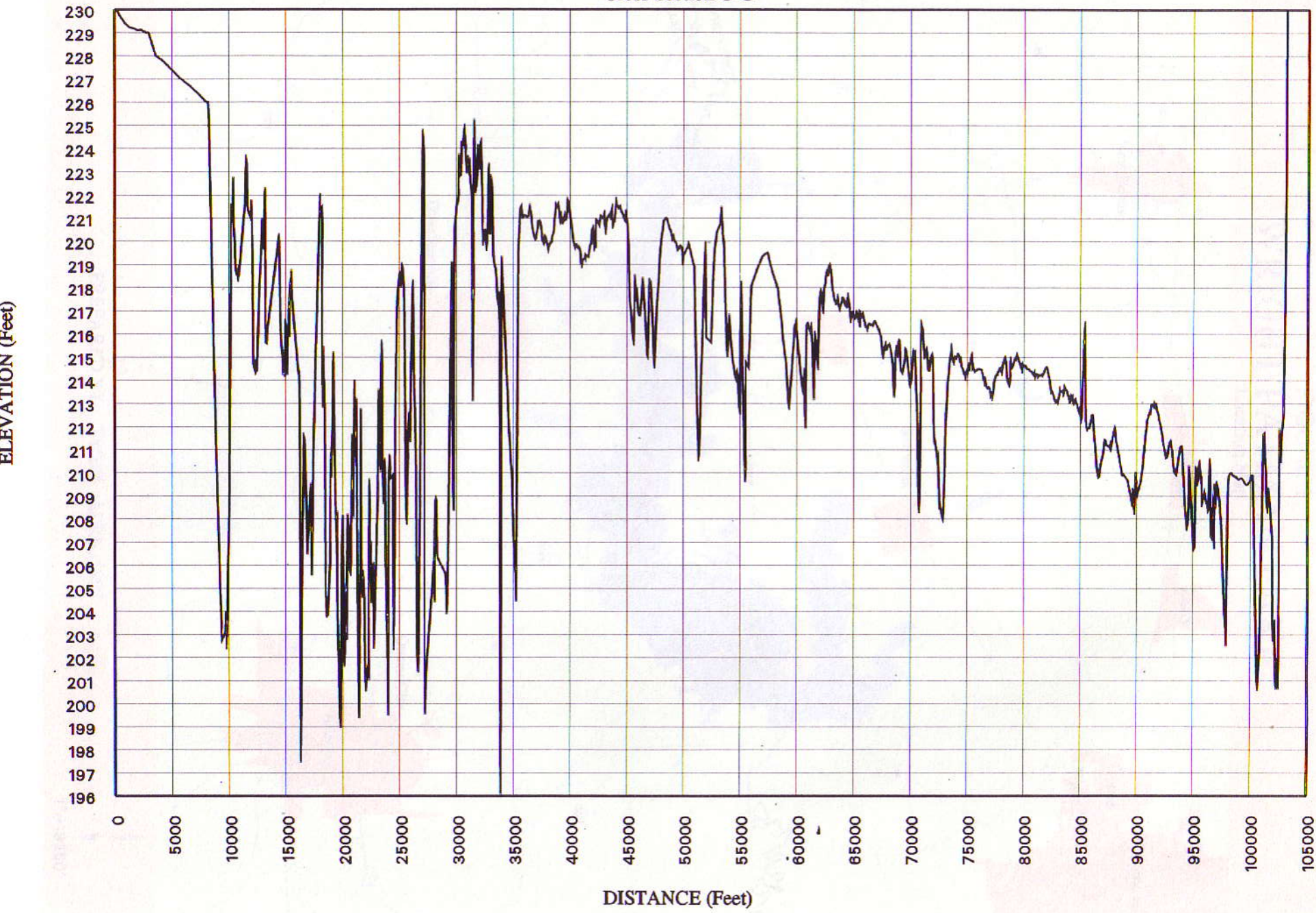
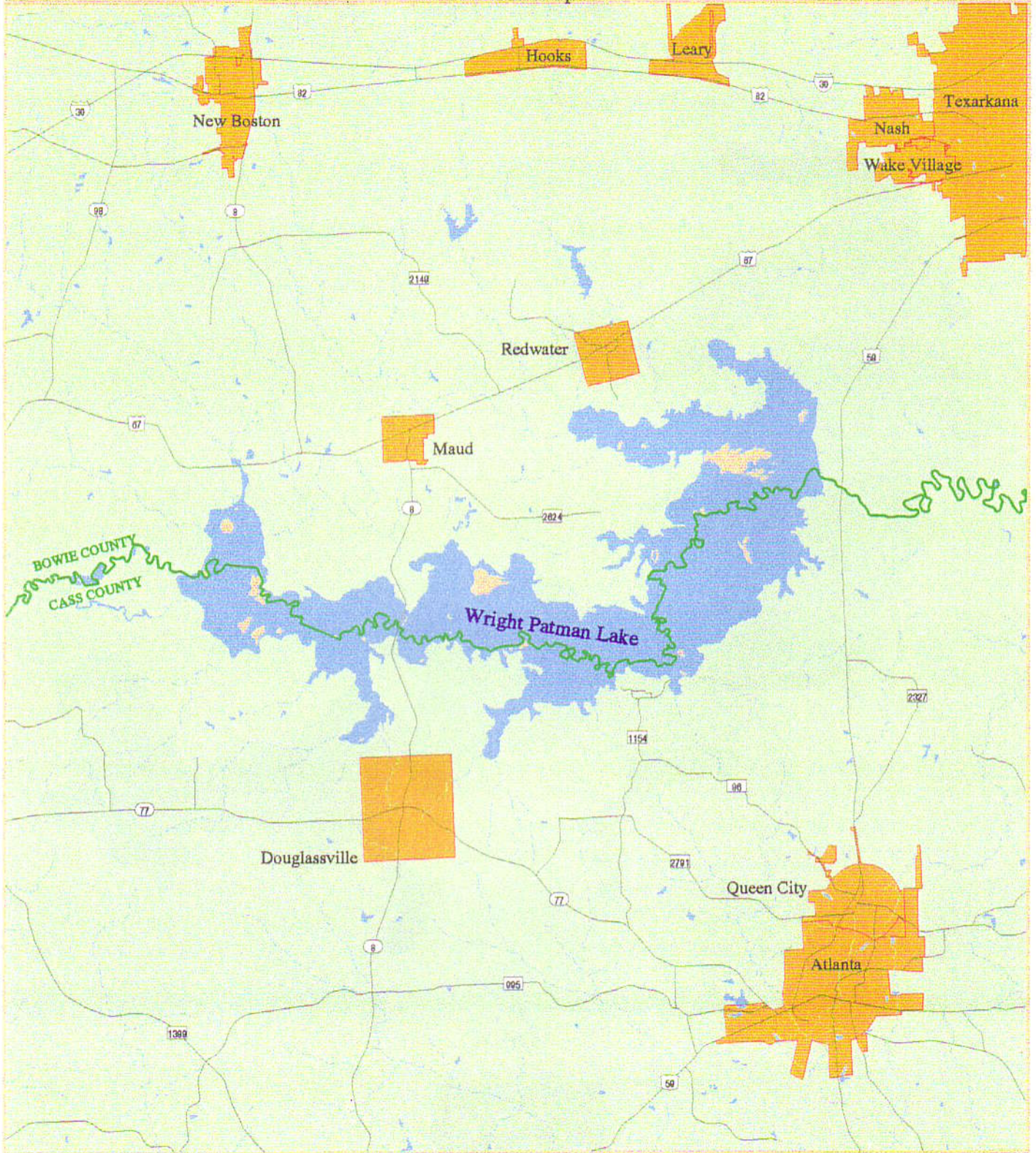


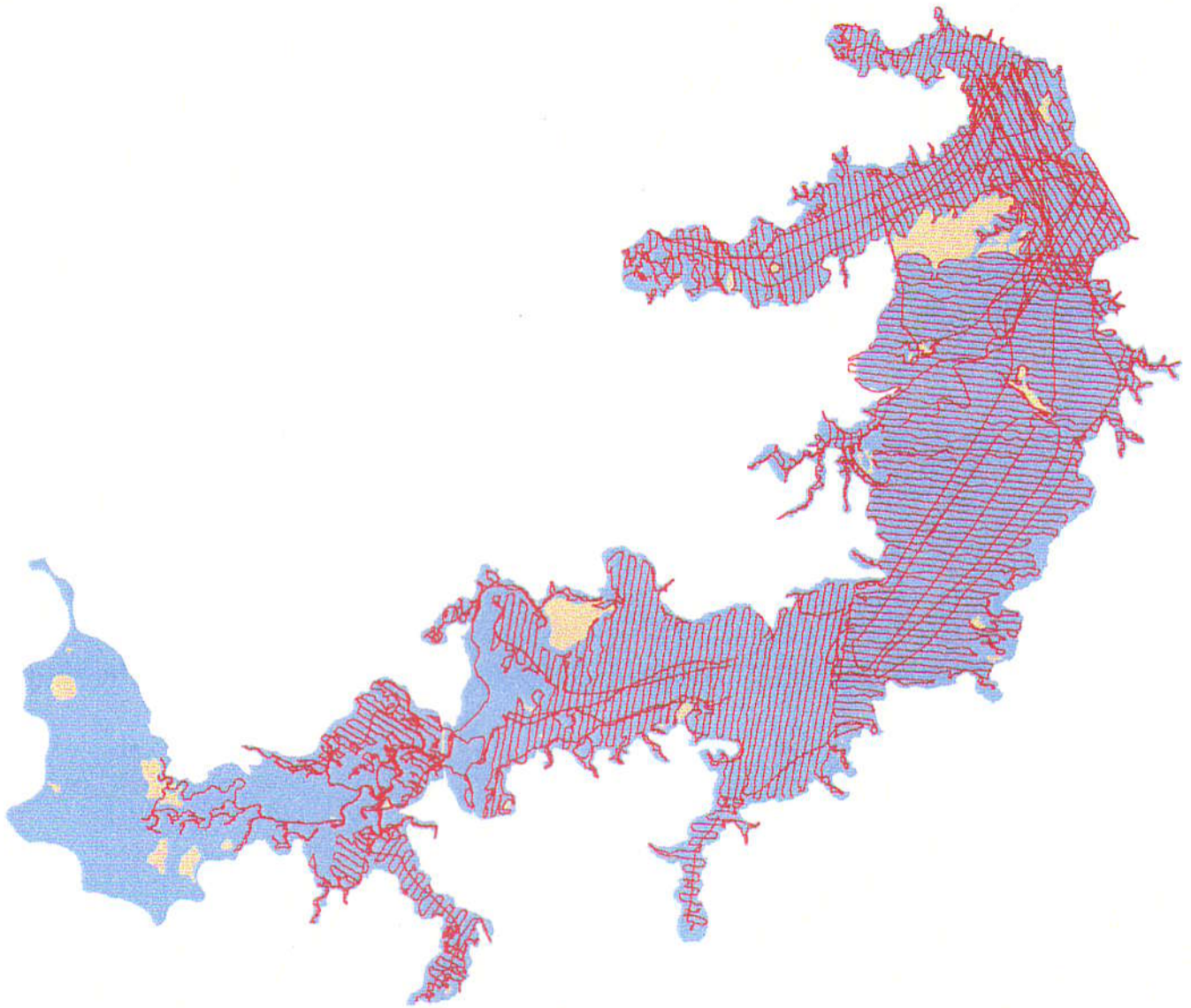
FIGURE 1  
**WRIGHT PATMAN LAKE**  
Location Map





PREPARED BY: TWDB APRIL 1997

1" = 19250'

FIGURE 2  
**WRIGHT PATMAN LAKE**  
Location of Survey Data



1"=12000'

EXPLANATION	
	Islands
	Data Points

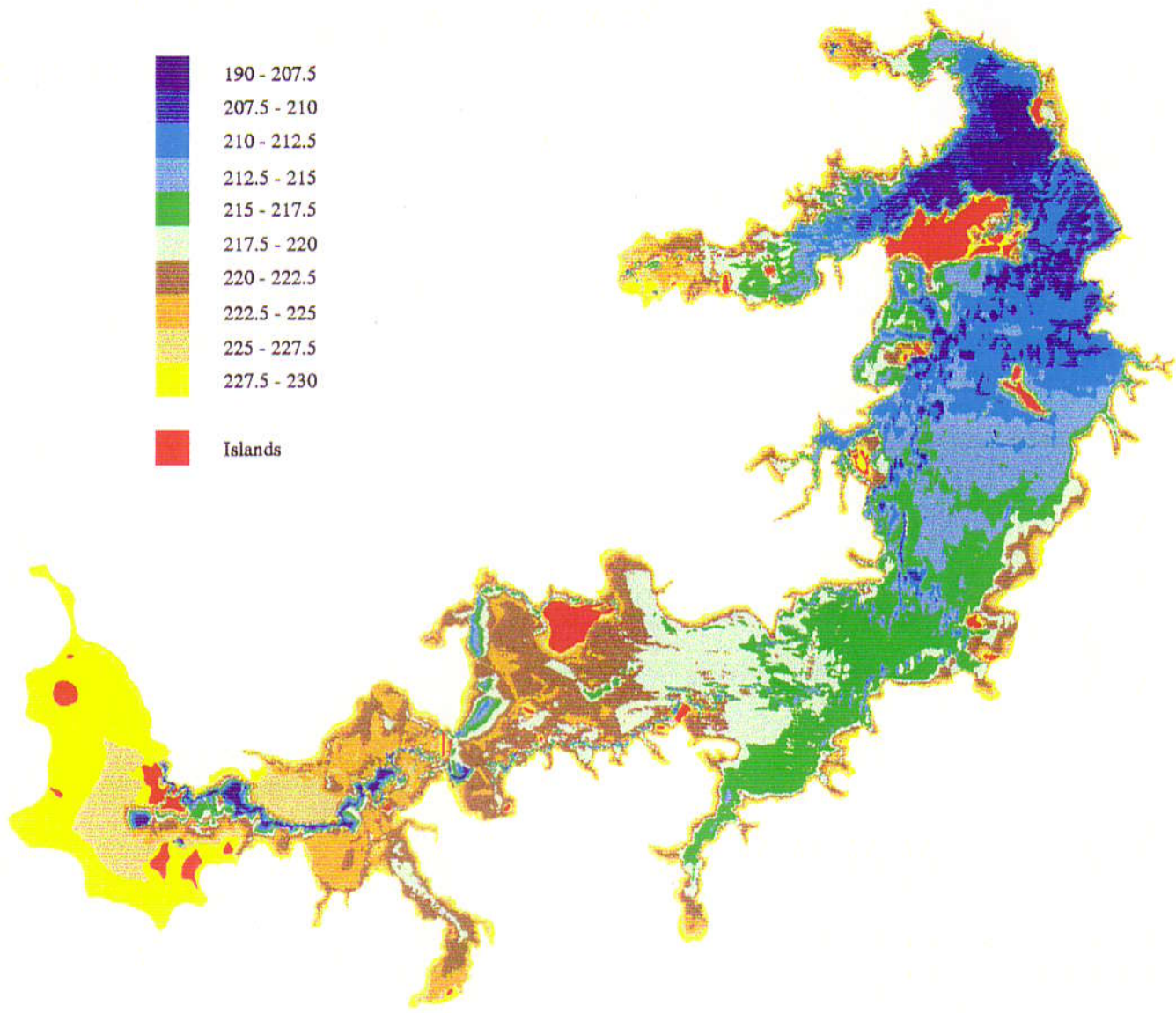
PREPARED BY: TWDB APRIL 1997



FIGURE 3

# WRIGHT PATMAN LAKE

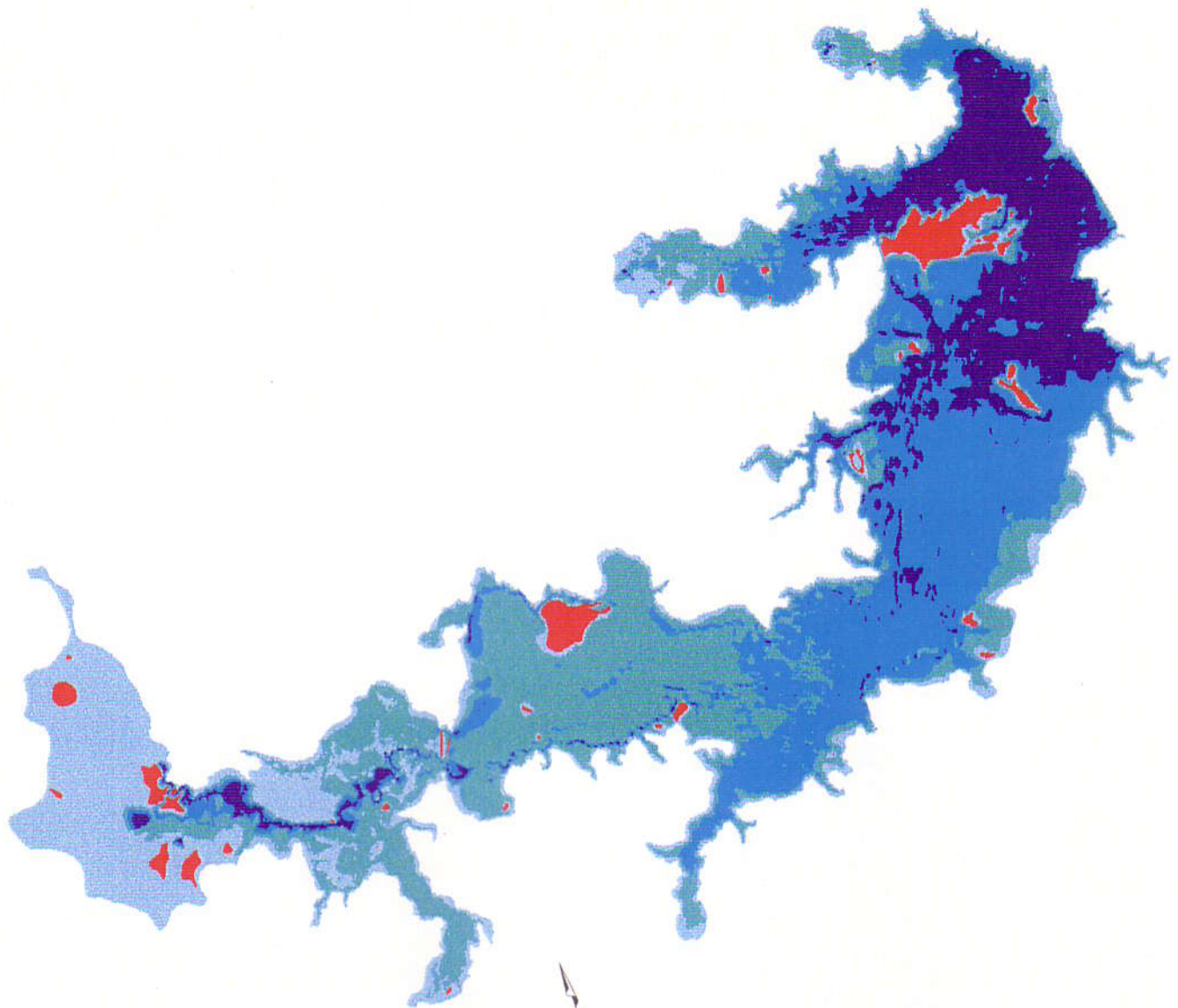
Shaded Relief



1"=12000'

PREPARED BY: TWDB APRIL 1997

FIGURE 4  
WRIGHT PATMAN LAKE  
Depth Ranges



1"=12000'

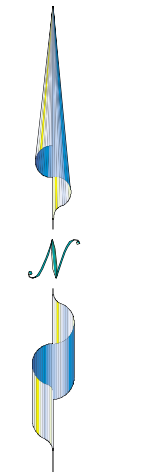
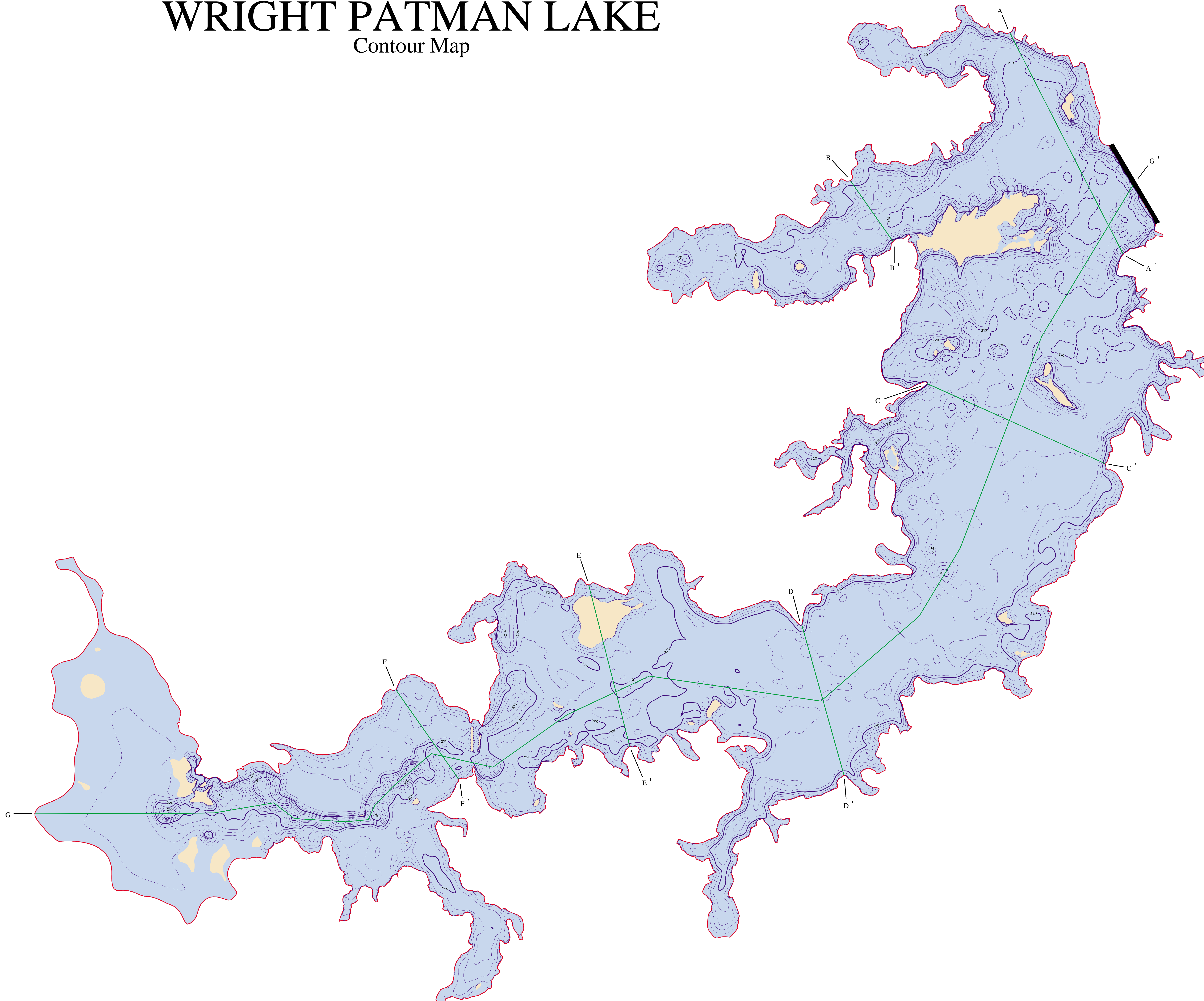
EXPLANATION	
Light Blue	0 - 8'
Green	6 - 12'
Dark Blue	12 - 18'
Purple	18 - 40'
Red	ISLANDS

PREPARED BY: TWDB APRIL 1997

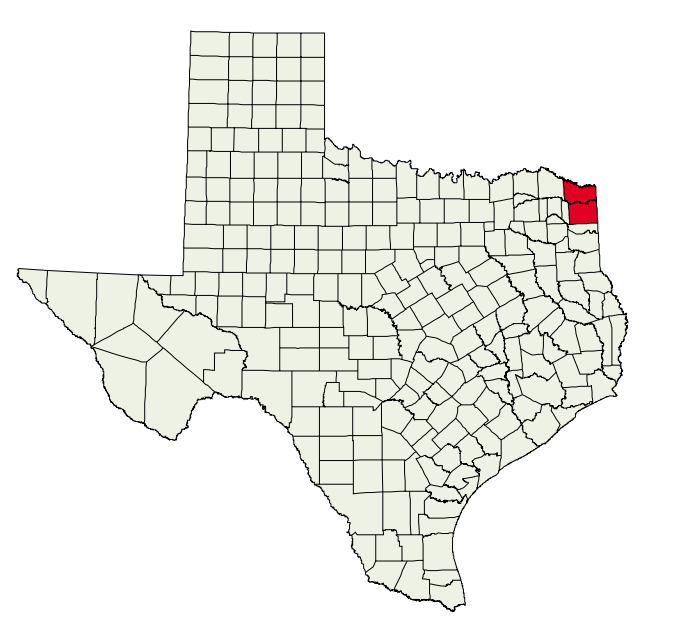
# FIGURE 5

## WRIGHT PATMAN LAKE

### Contour Map



1"=2580'



**ROWIE AND CASS COUNTIES**



EXPLANATION	
	Islands
	10 Foot Contour Lines
	2 Foot Contour Lines
	2 Foot Contour Lines
	Conservation Pool Elev. 220 Feet
	Normal Operating Level 230 Feet
	Cross Section Lines

This map is the product of a survey conducted by the Texas Water Development Board's Hydrographic Survey Program to determine the capacity of Wright Patman Lake. The Texas Water Development Board makes no representations or assumes any liability if this information is used for other purposes such as boating maps.