

1-3-2019

2003 - Salinas Valley Hydrologic Subareas, 4th Quarter Water Conditions

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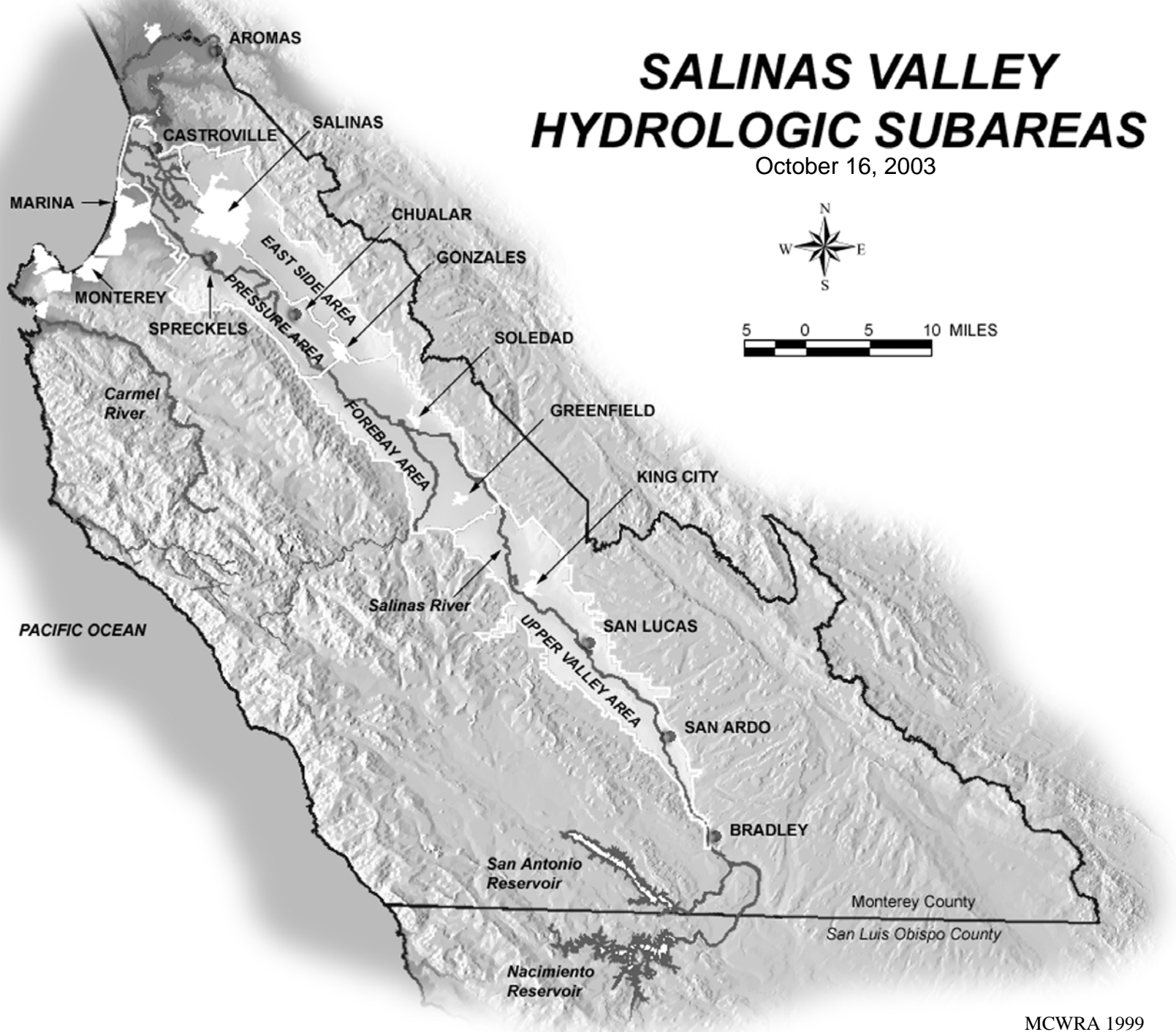
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SALINAS VALLEY HYDROLOGIC SUBAREAS

October 16, 2003



**MONTEREY COUNTY WATER RESOURCES AGENCY
BOARD OF DIRECTORS**

MEETING DATE:	October 27, 2003	AGENDA ITEM:	
AGENDA TITLE:	RECEIVE REPORT ON SALINAS VALLEY WATER CONDITIONS FOR THE FOURTH QUARTER OF WATER YEAR 2002-2003		
Consent (X)	Action ()	Information ()	
SUBMITTED BY:	ROBERT JOHNSON	PREPARED BY:	J. DEMERS
PHONE:	755-4860	PHONE:	755-4860
DEADLINE FOR BOARD ACTION:	October 27, 2003		

RECOMMENDED BOARD ACTION:

Receive report on Salinas Valley water conditions for the fourth quarter of Water Year 2002-2003.

PRIOR RELEVANT BOARD ACTION:

A report was last presented to the Board on July 28, 2003, covering the third quarter of Water Year 2002-2003.

DISCUSSION/ANALYSIS:

This report covers the fourth quarter of Water Year 2002-2003 (WY2003), July through September 2003. It provides a brief overview of water conditions in the Salinas Basin with discussion on precipitation, reservoir storage, and ground water trends. Data for each of these components are included as graphs and tables in Attachments A through J.

Precipitation – The fourth quarter of Water Year 2003 was dry. There was no reported rainfall at the Salinas Airport during the months of July, August, or September. The water year total at the Salinas Airport was 11.34 inches or 84 percent of normal.

The fourth quarter of Water Year 2003 was also dry at King City. The cumulative rainfall for the water year at King City was 9.77 inches or 90 percent of normal.

Rainfall data for King City and Salinas Airport should be considered preliminary until verified by National Weather Service data at a later date.

Attachments A and B are graphs showing cumulative monthly precipitation data for both stations. Current data is plotted and compared with last year and with normal conditions.

Reservoirs - The following table compares fourth quarter storage at Nacimiento and San Antonio Reservoirs for the past two years. Storage in both reservoirs has increased compared to September 2002, largely due to a difference in release schedules. Conservation releases from Nacimiento began in February of WY02 but did not begin until early April of WY03.

Reservoir	September 30, 2003 (WY2003) Storage in acre feet	September 30, 2002 (WY2002) Storage in acre feet	Difference in acre feet
Nacimiento	144,035	108,000	36,035
San Antonio	217,950	211,210	6,740

Graphs for each Reservoir showing end-of-month storage for the last ten years are included as Attachments C and D.

Ground Water Levels – More than 80 wells are measured monthly throughout the Salinas Valley to monitor seasonal ground water fluctuations. Data from approximately 50 of these wells is used in the preparation of this report. The measurements are categorized by hydrologic subarea and then averaged and plotted on graphs to compare current water levels with selected past conditions. These conditions include the prior year (WY02), dry conditions (WY91), and near normal conditions (WY85). Each of these comparisons is shown in Attachments E through I, along with a summary of the comparisons shown in Attachment J.

Monthly ground water measurements indicate water levels in most of the hydrologic subareas began their seasonal recovery during the fourth quarter of WY03. The change in average water levels over the previous month ranged from no change in the Forebay subarea to an increase of six feet in the East Side subarea.

Compared to last year, average ground water levels in most of the hydrologic subareas are similar. Average September water levels in the Pressure 180 and East Side subareas have decreased by three feet and two feet respectively when compared to this time last year. The average water level in the Pressure 400 subarea increased by one foot compared to last year, while the average water level in the Forebay subarea experienced an increase of two feet. The average water level in the Upper Valley remained unchanged.

September 2003 water levels in most of the hydrologic subareas compared favorably to those reported in September 1985, which is considered to be a year of near normal groundwater conditions. Current water levels in these aquifers range from eight feet higher to 11 feet lower than WY85 levels. The Pressure 180 and the East Side subareas have water levels one foot lower and 11 feet lower respectively. The Pressure 400 and Forebay subareas have current levels that are six feet and eight feet higher than September 1985 respectively. The average water level in the Upper Valley subarea increased three feet over the WY85 level.

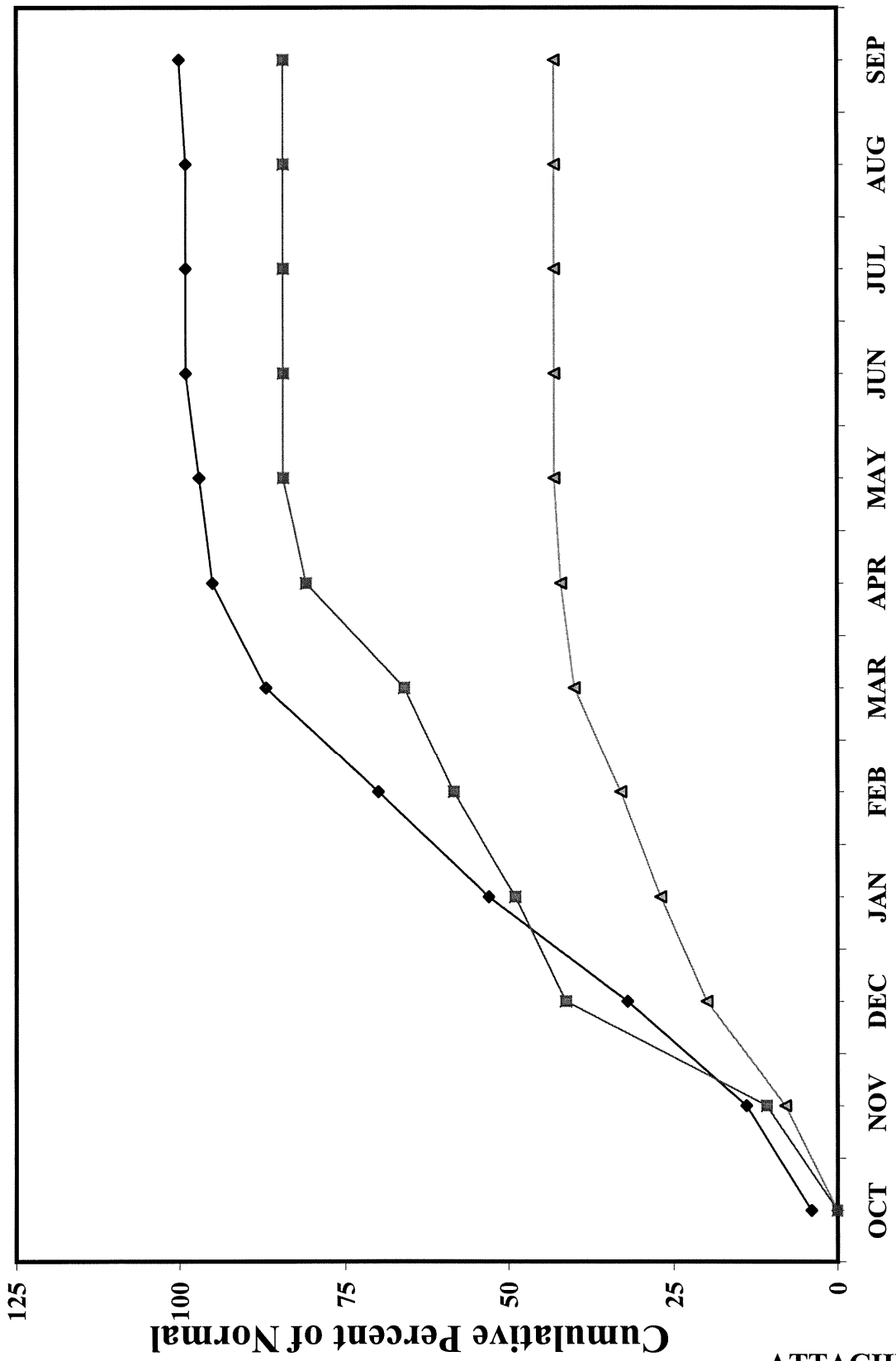
Average ground water levels for the fourth quarter of WY03 remain well above WY91 values in all of the hydrologic subareas.

Measurements indicate that water levels in the Pressure 180, Pressure 400, East Side, and Upper Valley subareas closely followed WY 2002 trends, reaching their lowest water levels of the year during the months of July or August and showing significant recovery during the month of September. The average water level in the Forebay subarea continued to decline slightly during the month of September.

FINANCIAL IMPACT:	YES ()	NO (X)
FUNDING SOURCE:		
COMMITTEE REVIEW AND RECOMMENDATION:	None	
ATTACHMENTS:	<ol style="list-style-type: none"> 1. Salinas Valley Hydrologic Subareas Map 2. Salinas and King City Precipitation Graphs 3. Nacimiento and San Antonio Reservoir Graphs 4. Salinas Valley Monthly Water Level Tables and Graphs for Each Subarea, Attachments E through I 5. Generalized Ground Water Trends, Attachment J. 	
APPROVED:	<hr/> General Manager Date	

SALINAS AIRPORT RAINFALL

Water Year 2002-03

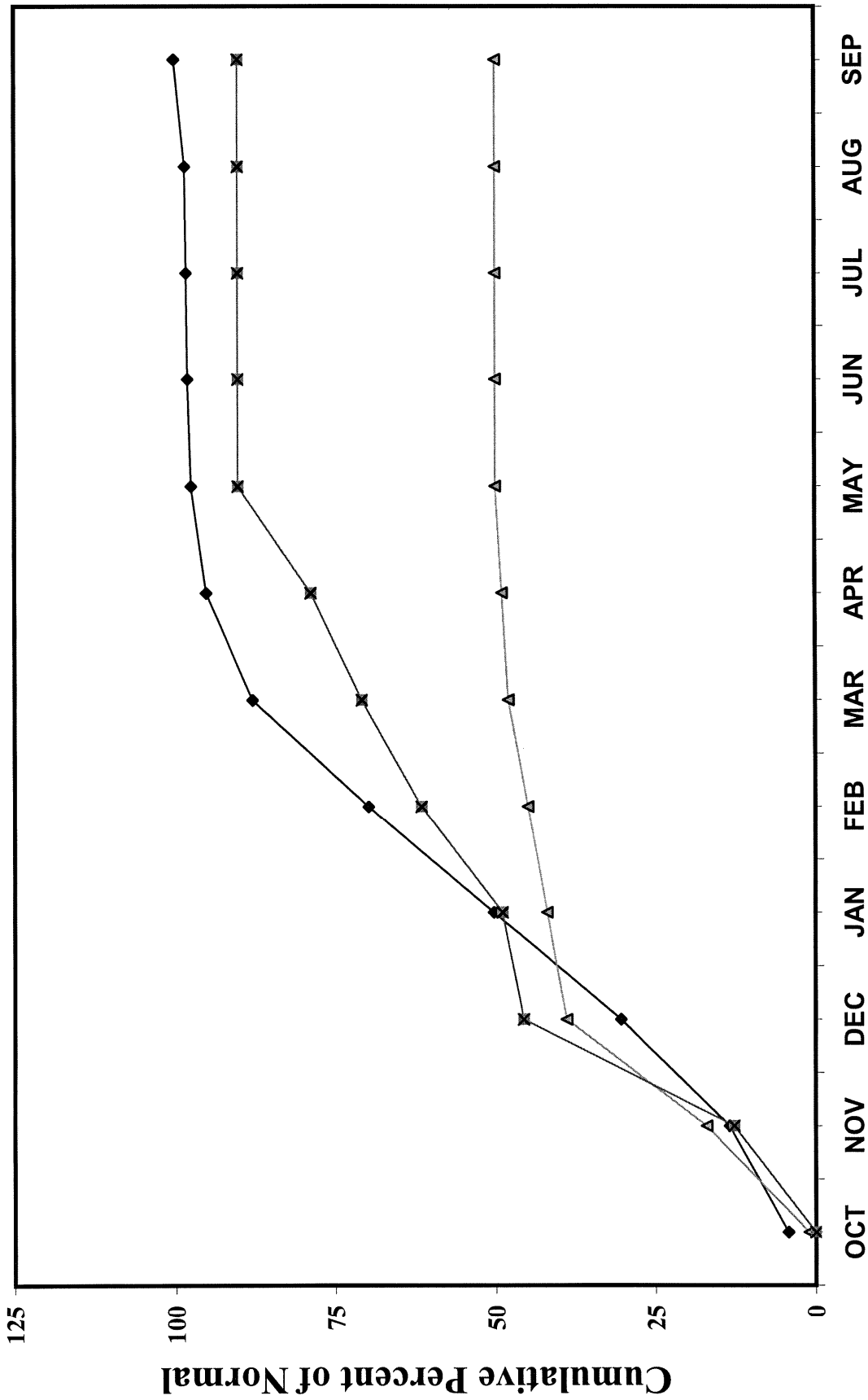


*Preliminary Data

◆ Normal Water Year ▲ 2001-02 Water Year ■ 2002-03 Water Year

KING CITY RAINFALL

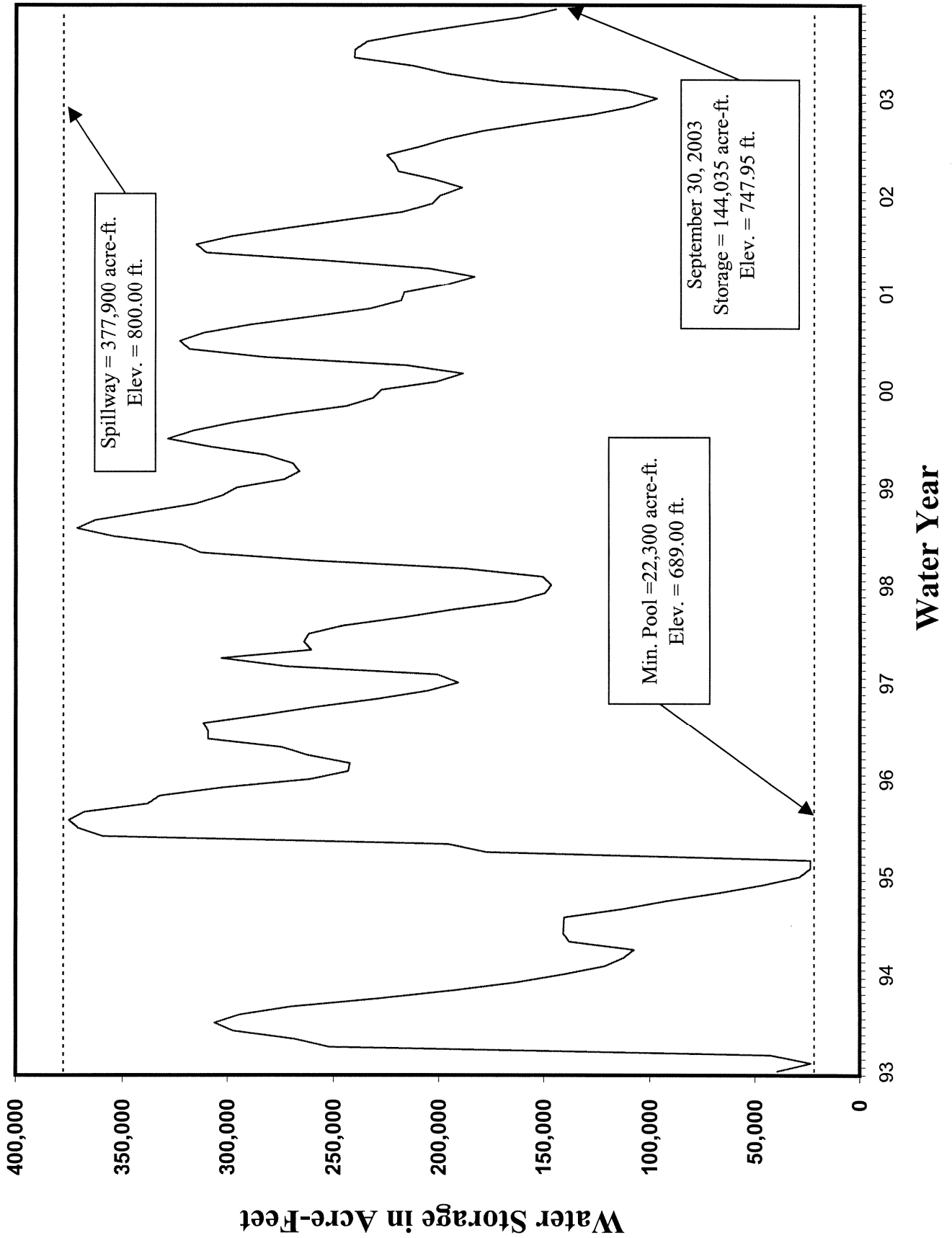
Water Year 2002-03



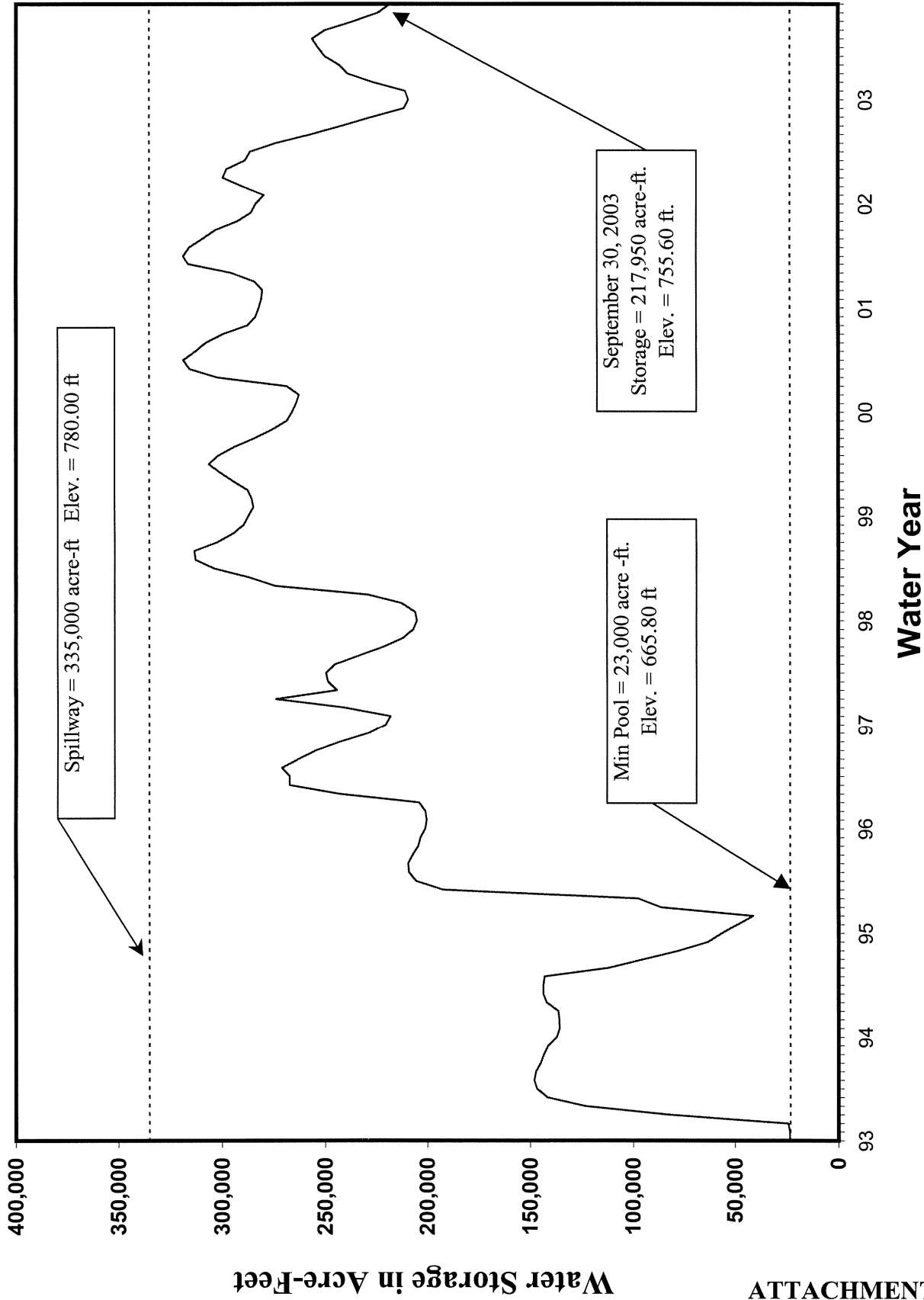
*Preliminary Data

—◆— Normal Water Year —▲— 2001-02 Water Year —×— 2002-03 Water Year

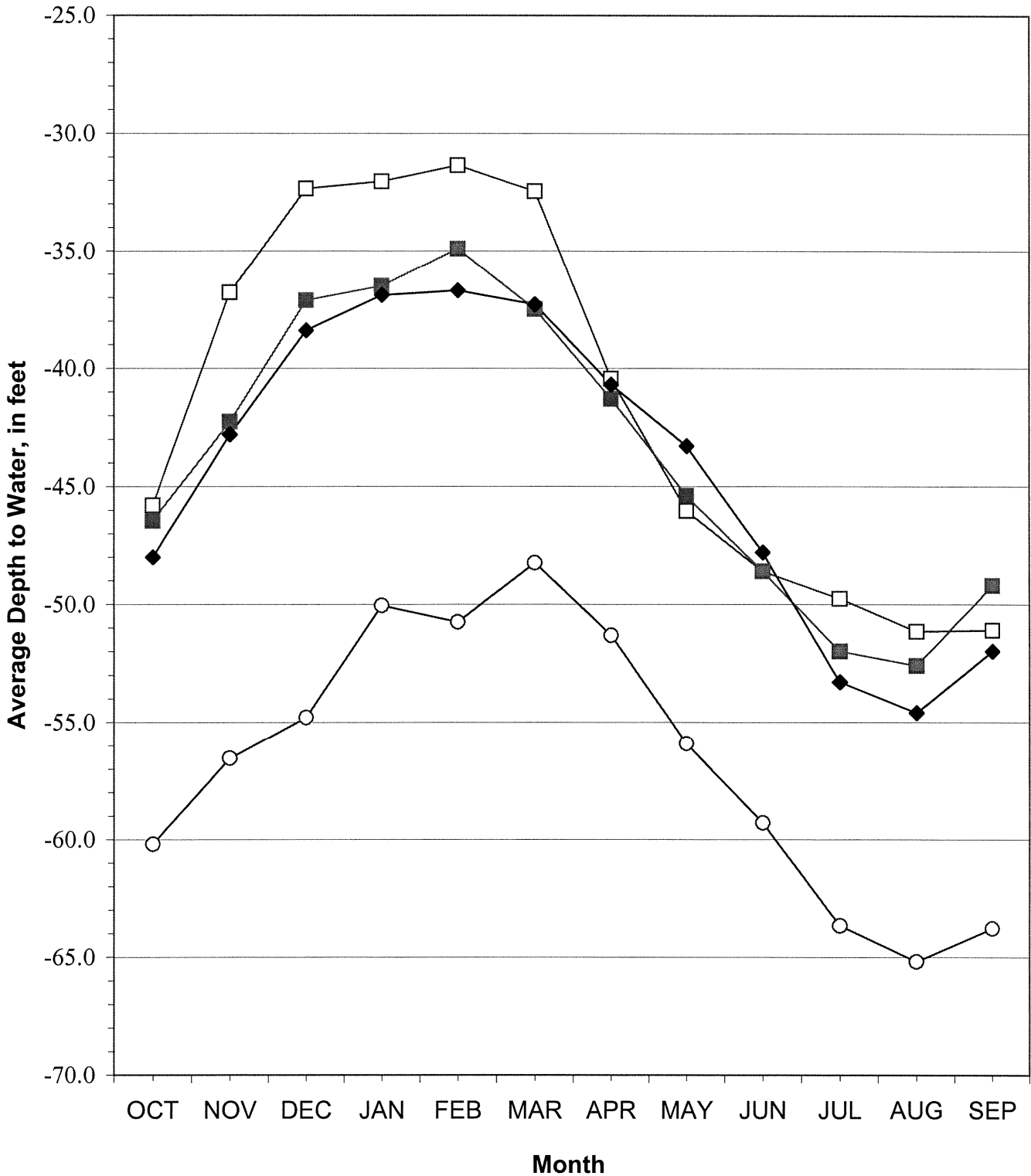
NACIMIENTO RESERVOIR END OF MONTH STORAGE



SAN ANTONIO RESERVOIR END OF THE MONTH STORAGE



HISTORIC GROUND WATER TRENDS PRESSURE AREA-180 FOOT AQUIFER 5 Wells

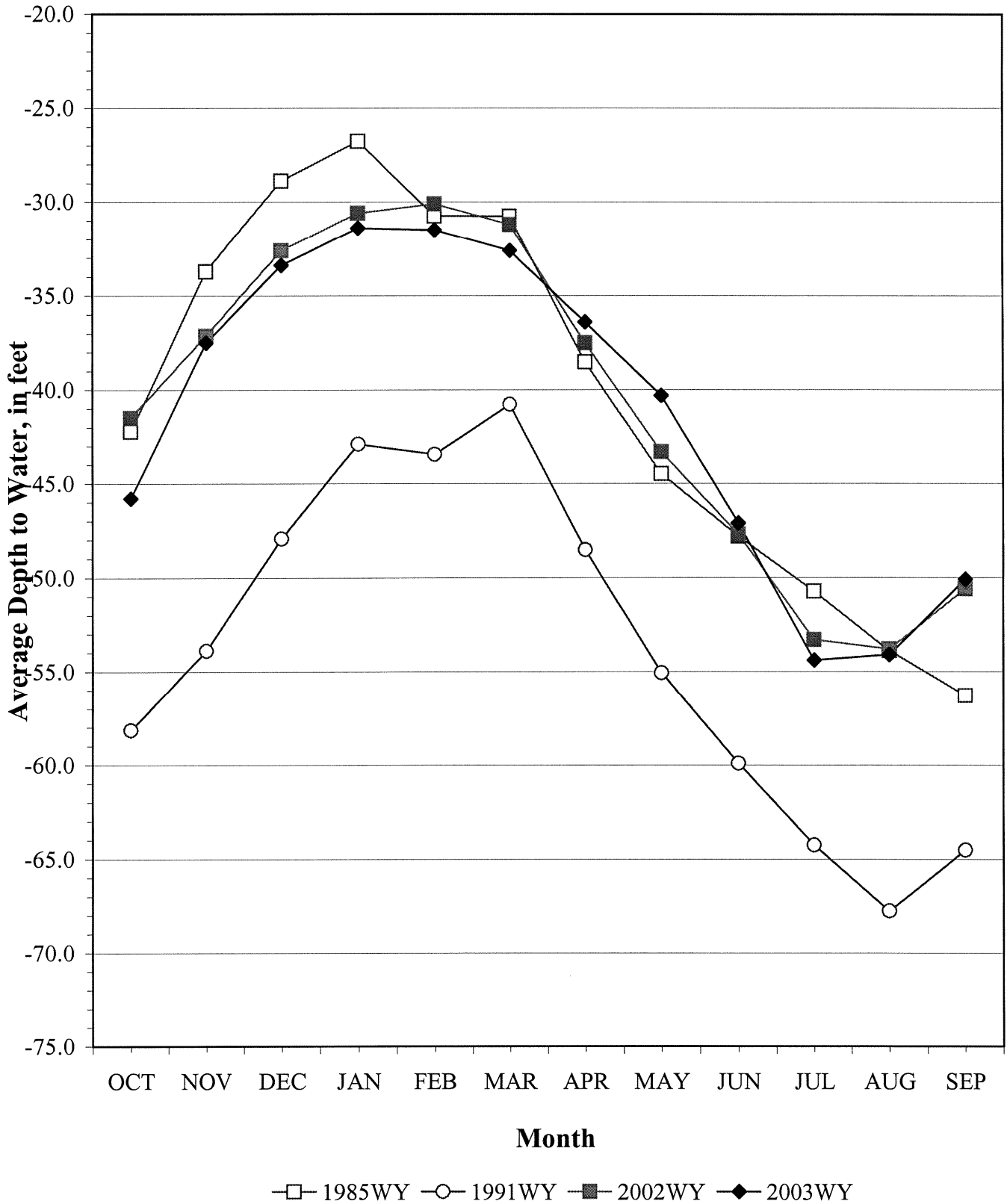


—□— 1985 WY
—○— 1991 WY
—■— 2002 WY
—◆— 2003 WY

HISTORIC GROUND WATER TRENDS

PRESSURE AREA-400 FOOT AQUIFER

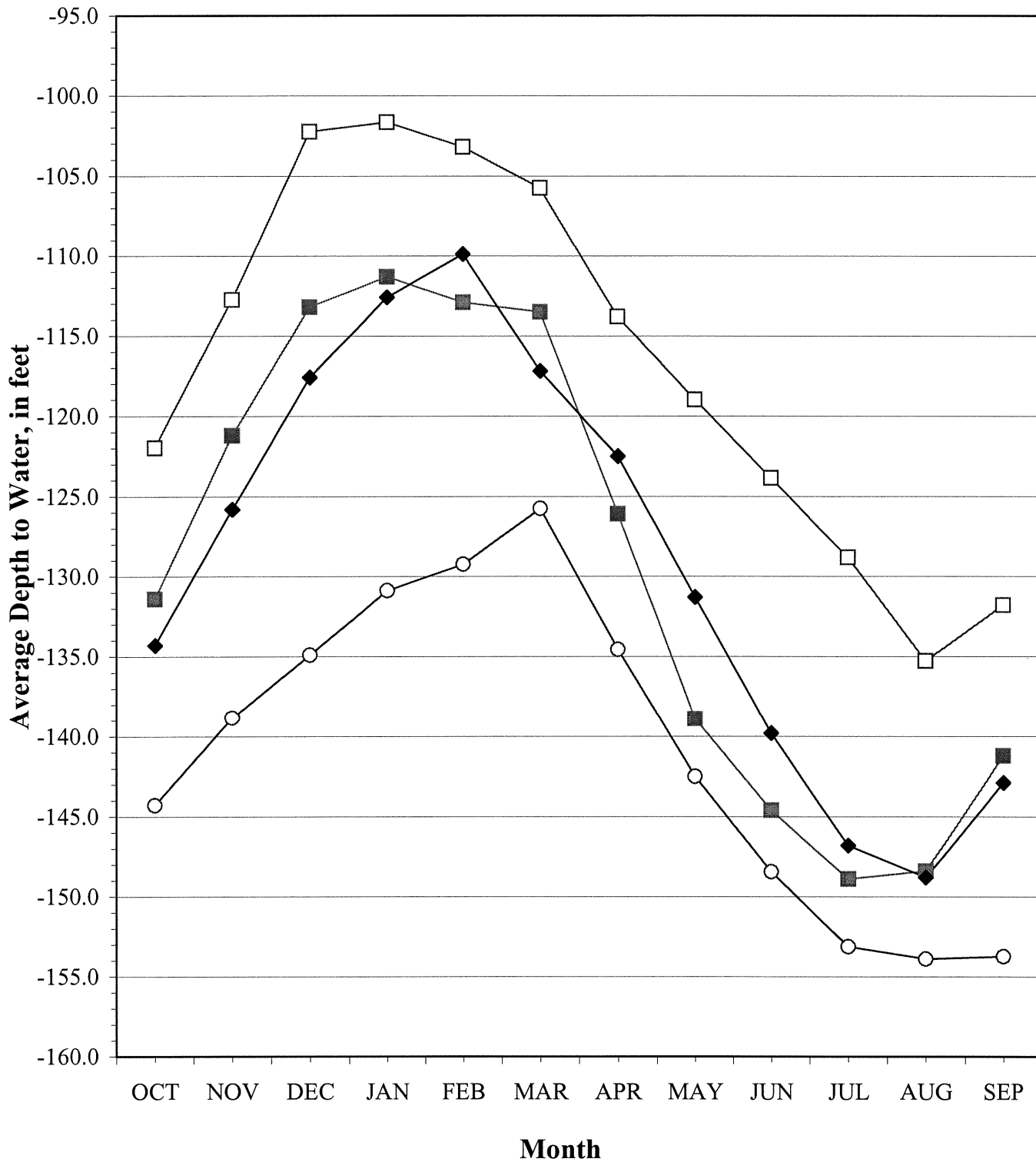
11 Wells



HISTORIC GROUND WATER TRENDS

EAST SIDE AREA

11 Wells

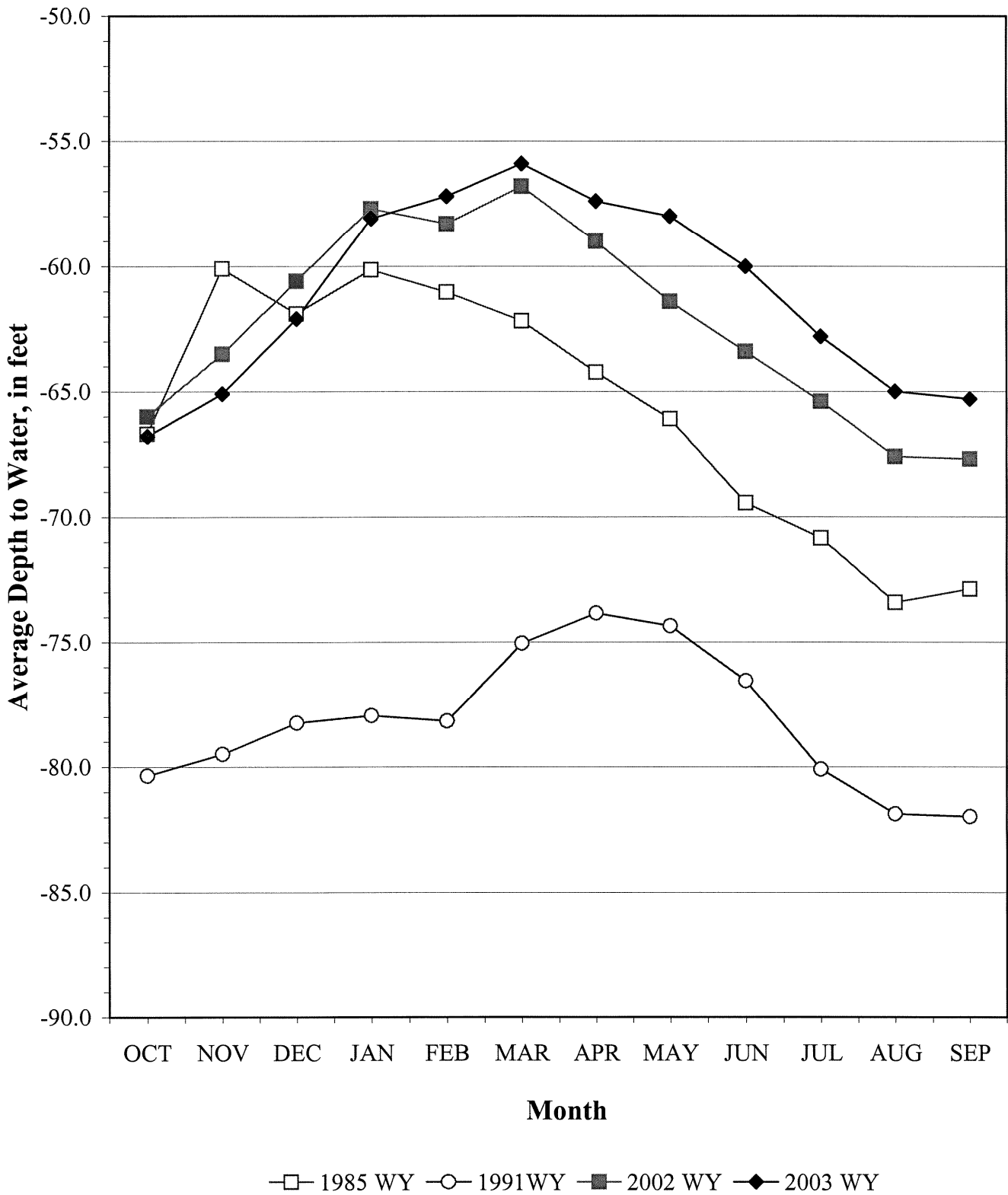


—□— 1985 WY
—○— 1991 WY
—■— 2002 WY
—◆— 2003 WY

HISTORIC GROUND WATER TRENDS

FOREBAY AREA

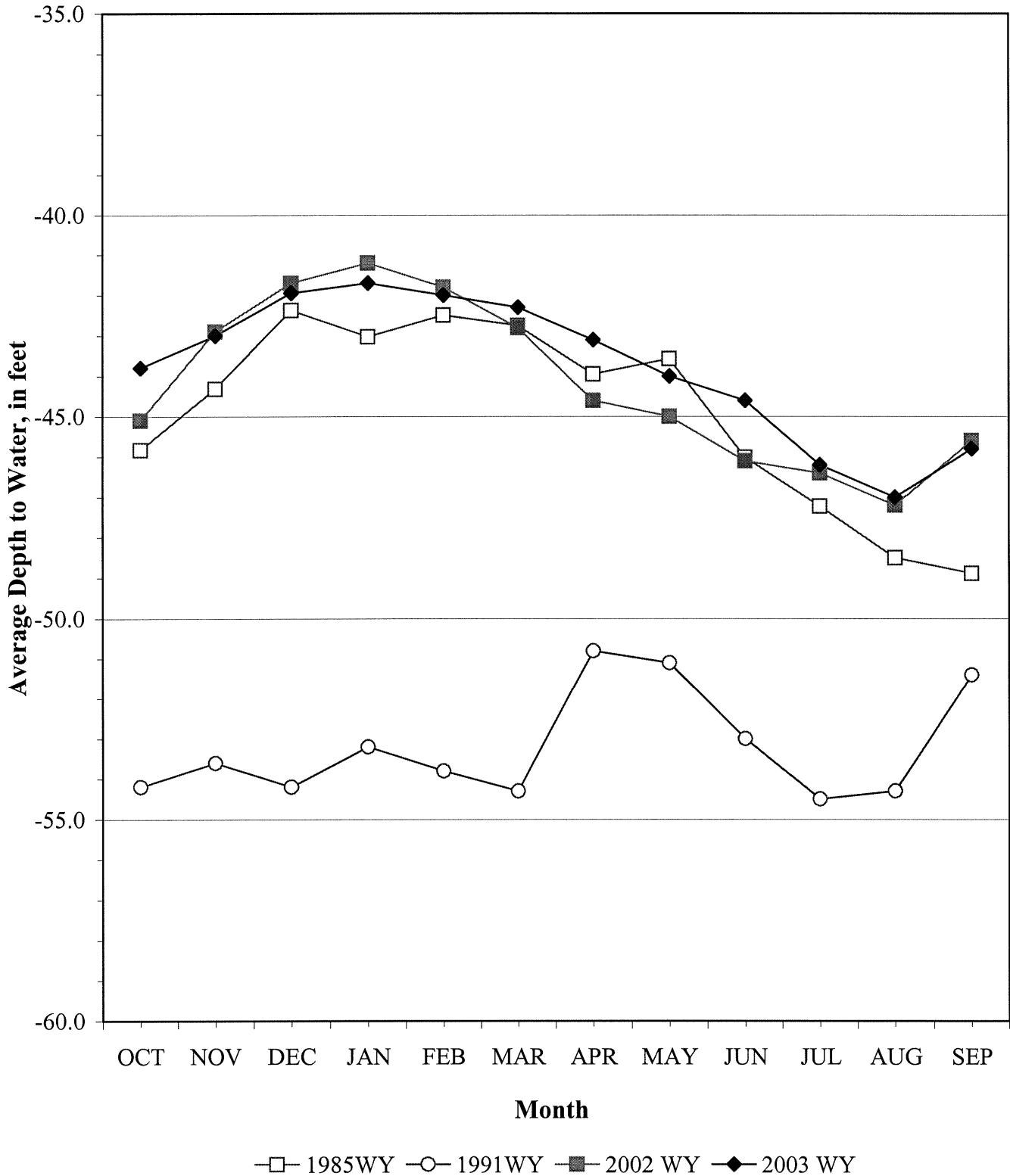
10 Wells



HISTORIC GROUND WATER TRENDS

UPPER VALLEY AREA

9 Wells



Generalized Ground Water Trends

September 2003

AREA	September 2003 Depth to Water	1 Year Change	Change From WY 1985	1 Month Change
180' Aquifer in Pressure Area	52'	down 3'	down 1'	up 3'
400' Aquifer in Pressure Area	50'	up 1'	up 6'	up 4'
East Side Area	143'	down 2'	down 11'	up 6'
Forebay Area	65'	up 2'	up 8'	no change
Upper Valley Area	46'	no change	up 3'	up 1'

September water levels, compared to last year, range from 3' lower to 8' higher.

September water levels, compared to WY 1985, range from 11' lower to 8' higher.

September changes in water levels over the last month range from no change to 6' higher.