


1-3-2019

2006 - Salinas Valley Hydrologic Subareas, 4th Quarter Water Conditions

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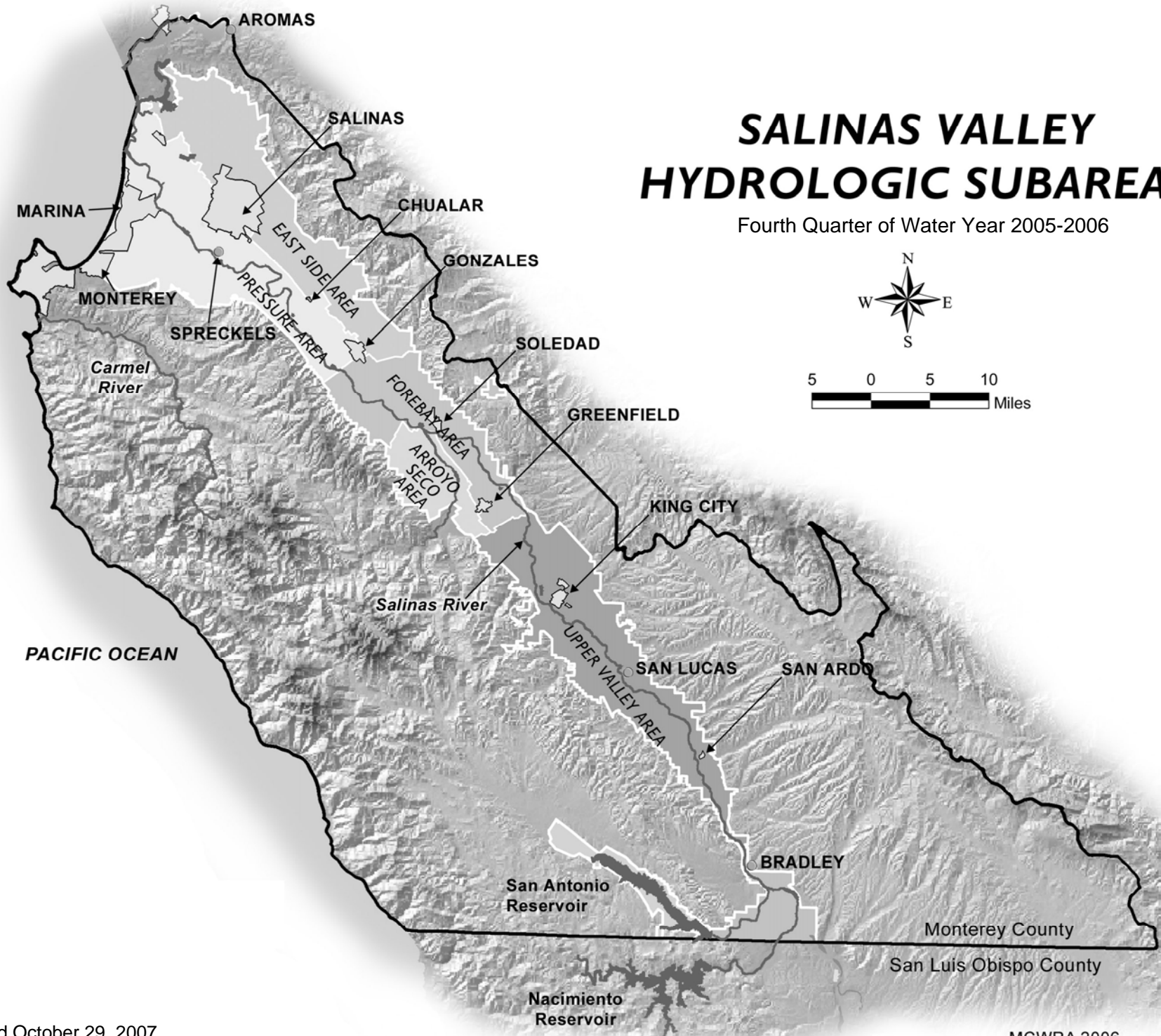
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SALINAS VALLEY HYDROLOGIC SUBAREAS

Fourth Quarter of Water Year 2005-2006



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

| | | | |
|-----------------------------------|--|---------------------|-------------------------|
| MEETING DATE: | October 23, 2006 | AGENDA ITEM: | |
| AGENDA TITLE: | RECEIVE REPORT ON SALINAS VALLEY WATER CONDITIONS FOR THE FOURTH QUARTER OF WATER YEAR 2005-2006 | | |
| Consent (X) | | Action () | |
| Information () | | | |
| SUBMITTED BY: | ROBERT JOHNSON | PREPARED BY: | PETER KWIEK, JOHN ROITZ |
| PHONE: | 755-4860 | PHONE: | 755-4860 |
| DEADLINE FOR BOARD ACTION: | October 23, 2006 | | |

RECOMMENDED BOARD ACTION:

Receive report on Salinas Valley water conditions for the fourth quarter of Water Year 2005-2006.

PRIOR RELEVANT BOARD ACTION:

A report was last presented to the Board on July 24, 2006, covering the third quarter of Water Year 2005-2006.

DISCUSSION/ANALYSIS:

This report covers the fourth quarter of Water Year 2005-2006 (WY06), July through September 2006. It provides a brief overview of water conditions in the Salinas Valley with discussion on precipitation, reservoir storage, and ground water level trends. Data for each of these components are included as graphs and tables in Attachments A through J.

Precipitation – The Salinas Airport received no rainfall for the months of July, August or September. For reference, long term rainfall averages for these months are 0.02, 0.03, and 0.23 inches, respectively. The total rainfall for water year 2005-2006 at the Salinas Airport was 15.27 inches or approximately 114 percent of the total rainfall for a normal water year.

Dry conditions also prevailed at King City throughout the fourth quarter, in accordance with long-term average rainfall data. No rain fell there in the July to September period. King City’s total rainfall for water year 2005-2006 was 12.63 inches or approximately 117 percent of the total rainfall for a normal water year.

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.

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

Reservoirs - The following table compares fourth quarter storage at Nacimiento and San Antonio

Reservoirs for the past two years. Storage in Nacimiento Reservoir is 4,590 acre feet higher than September 2005 while storage in San Antonio Reservoir is 67,725 acre feet higher than last year.

| Reservoir | September 30, 2006 (WY06) Storage in acre feet | September 30, 2005 (WY05) Storage in acre feet | Difference in acre feet |
|------------------|---|---|------------------------------------|
| Nacimiento | 279,170 | 274,580 | 4,590 |
| San Antonio | 321,075 | 253,350 | 67,725 |

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 level 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 (WY05), 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.

Fourth quarter monthly ground water level measurements indicate that water levels in all hydrologic subareas continued to decline in July. In August water levels also decreased in all subareas with the exception of the East Side where water levels began to recover. By September, water levels were recovering in all but the Forebay subarea where water levels continued to decline through the end of the 4th quarter.

The change in average water levels over the previous month ranged from a one-foot decrease in the Forebay subarea to an seven-foot increase in the East Side subarea.

Compared to September 2005, average ground water levels were unchanged in the Pressure 400, Forebay and Upper Valley aquifers while increasing by three feet and eight feet, respectively, within the Pressure 180 and East Side subareas.

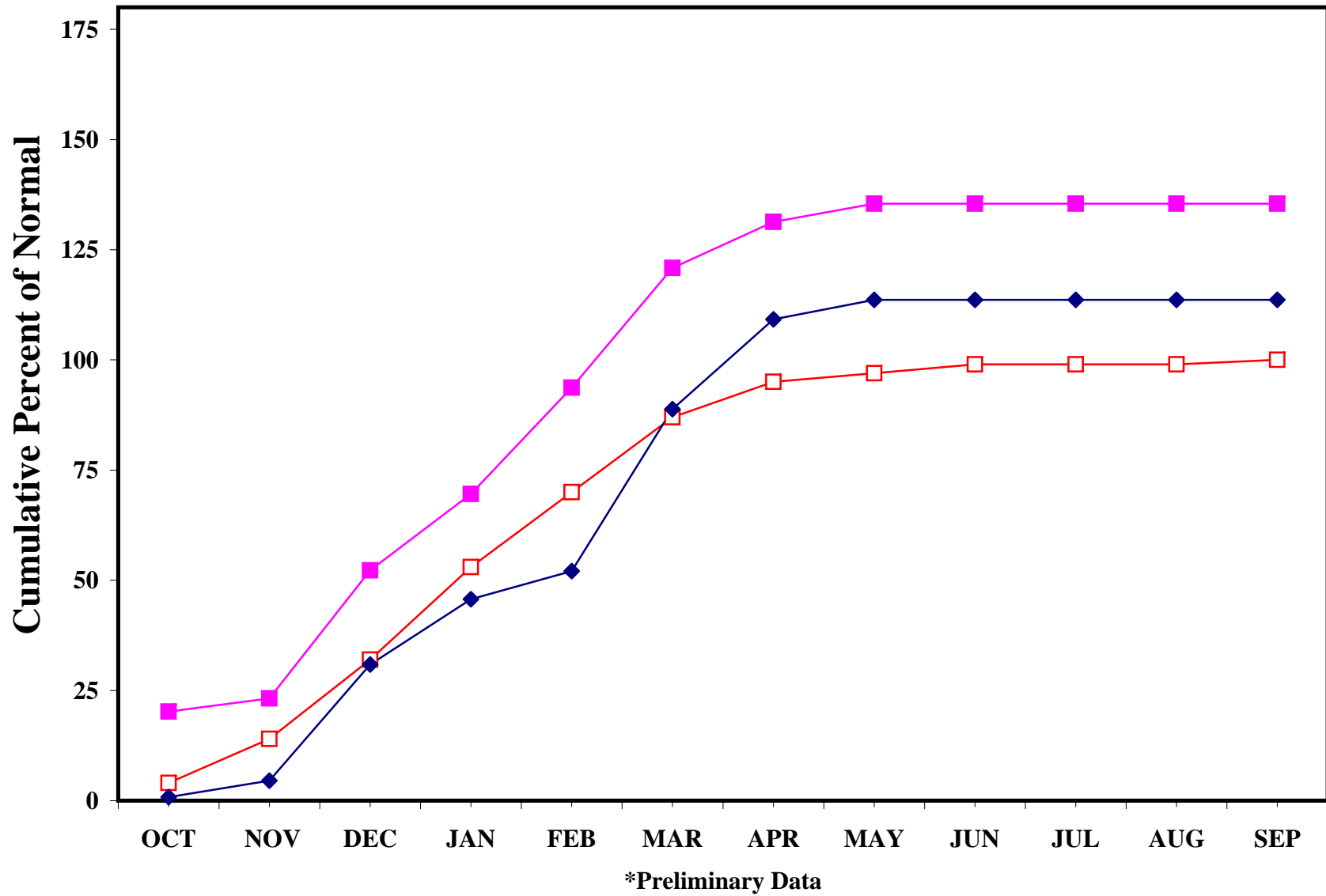
When compared to Water Year 1985, which is considered to be a year of near normal ground water conditions, current water level changes range from an increase of nine feet to a decrease of six feet. Pressure 180-Foot Aquifer ground water levels are unchanged while in the Pressure 400-Foot Aquifer they are nine feet higher than in WY85. East Side water levels are six feet lower than in WY85. Average water levels in the Forebay and Upper Valley have risen by eight feet and two feet, respectively, relative to WY85 values.

Average ground water levels for the fourth quarter of WY06 remain well above WY91 values in all of the hydrologic subareas.

| | |
|---|---|
| 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 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 2005-06

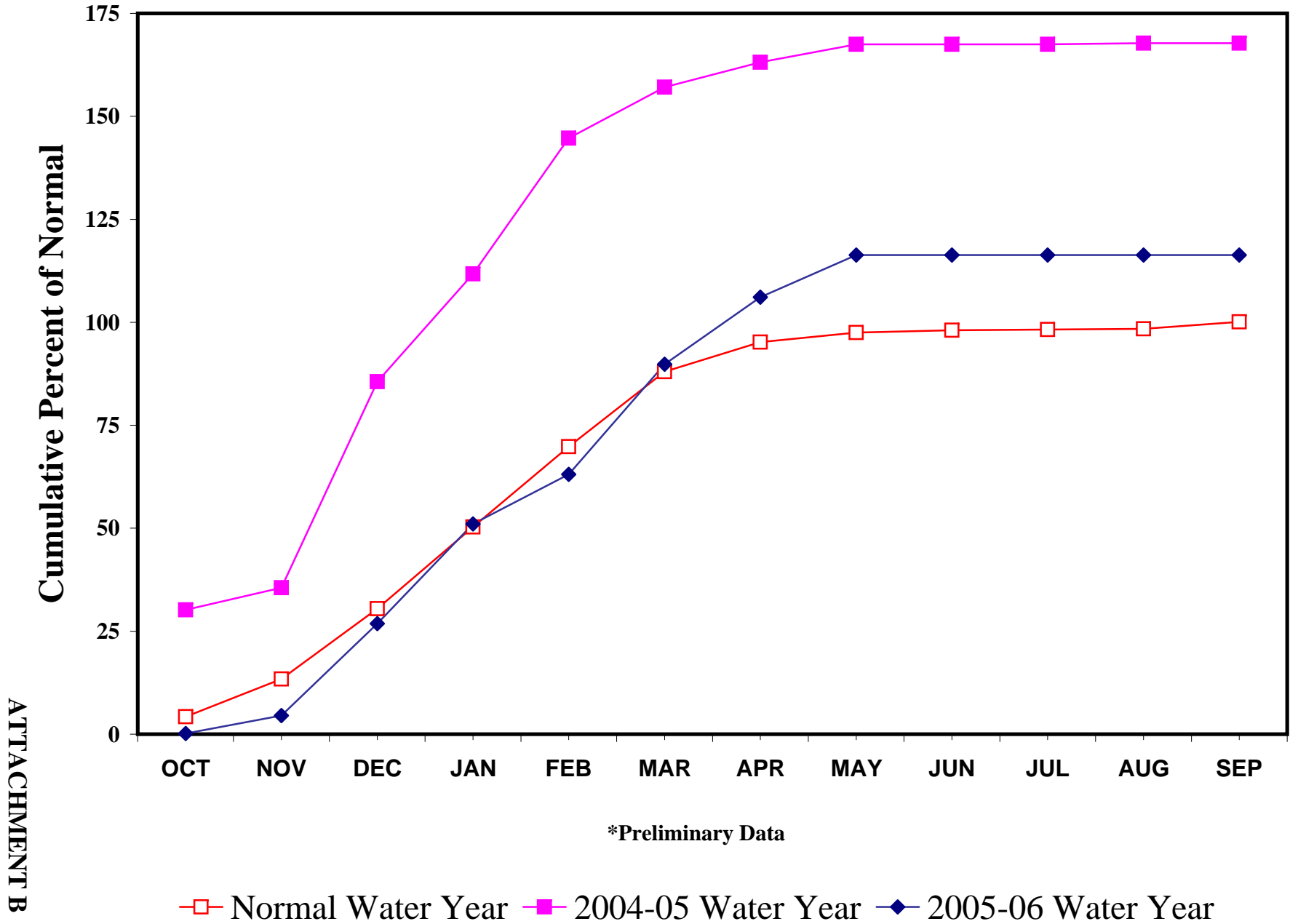


ATTACHMENT A

—□— Normal Water Year —■— 2004-05 Water Year —◆— 2005-06 Water Year

KING CITY RAINFALL

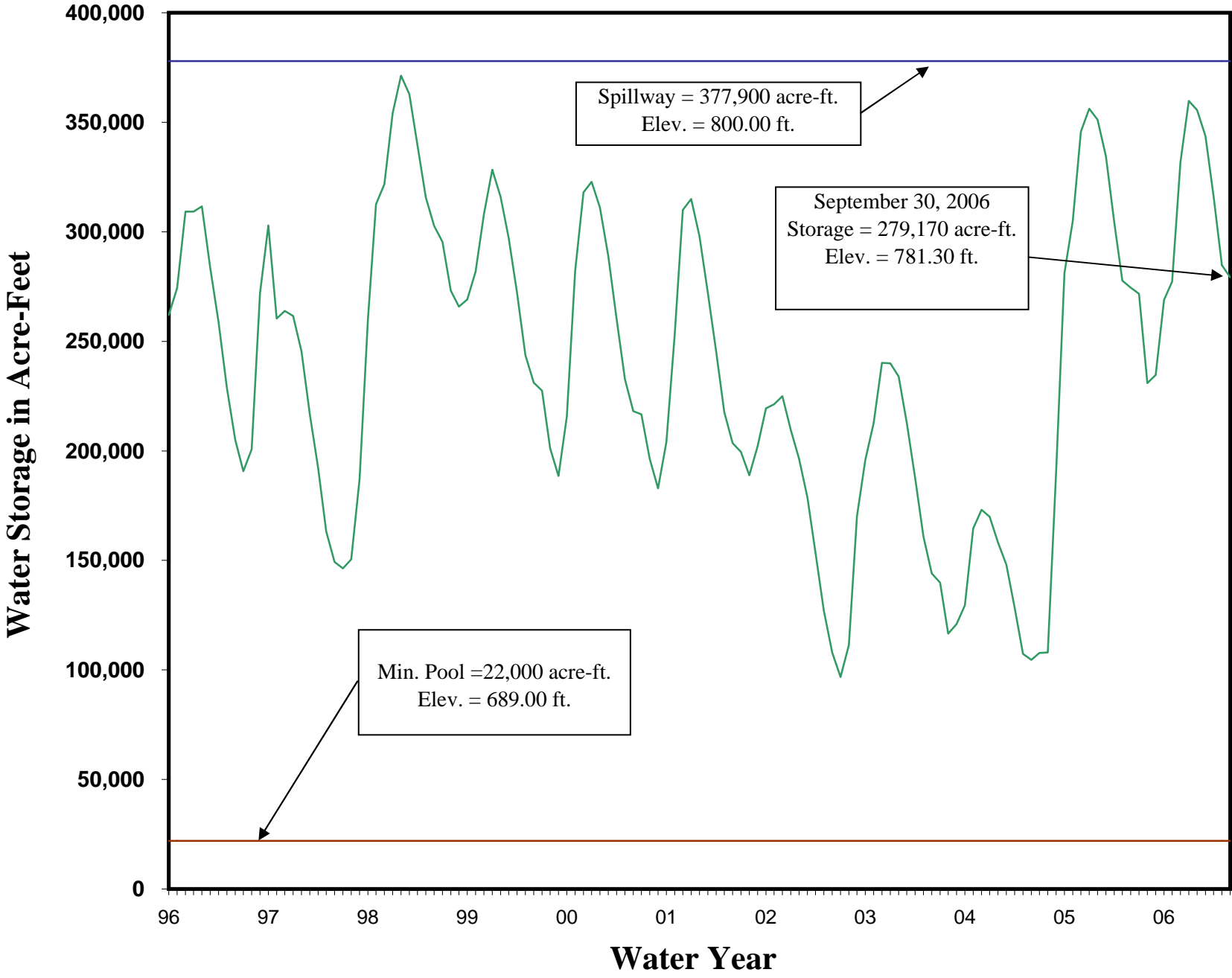
Water Year 2005-06



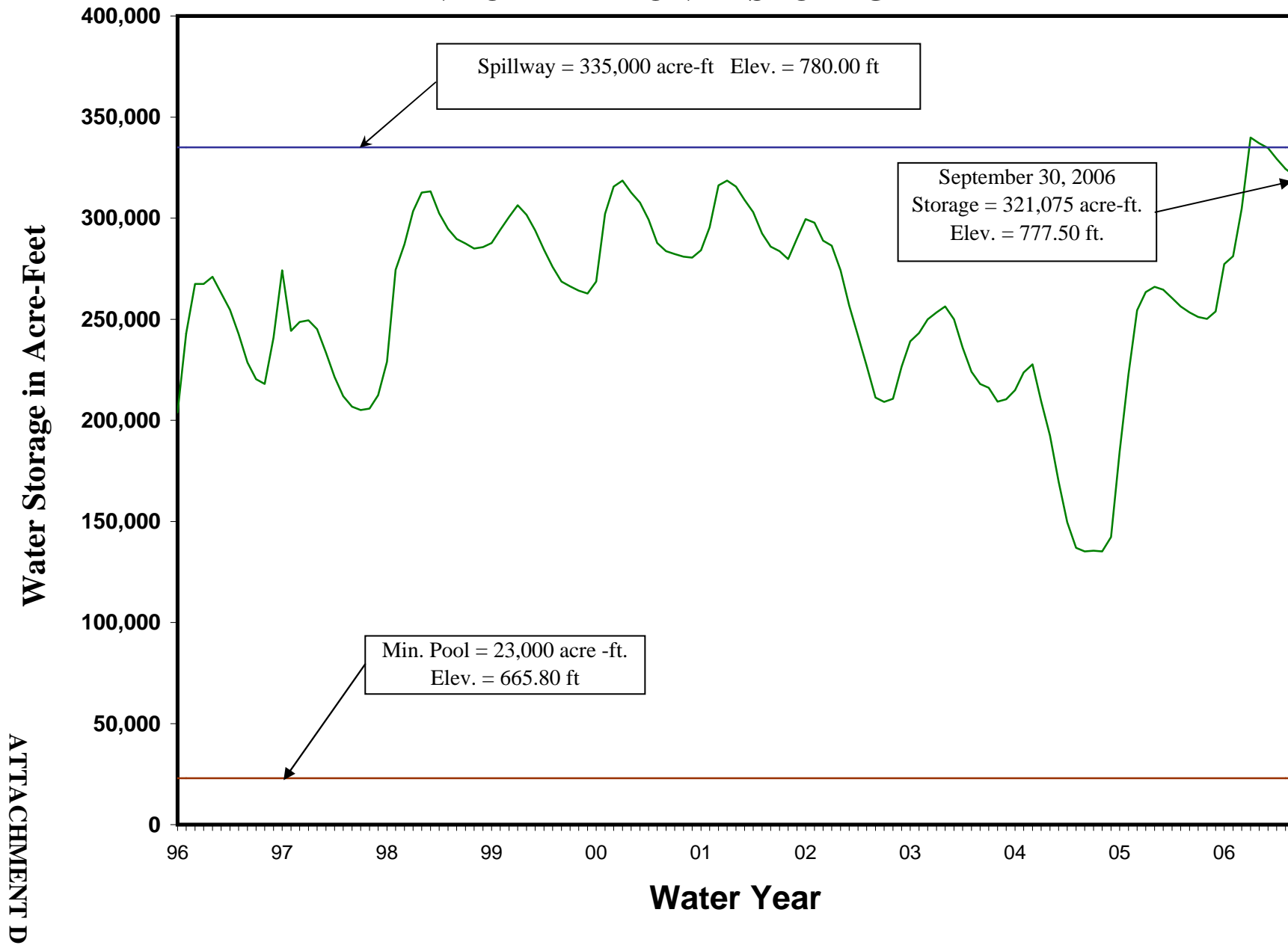
ATTACHMENT B

NACIMIENTO RESERVOIR

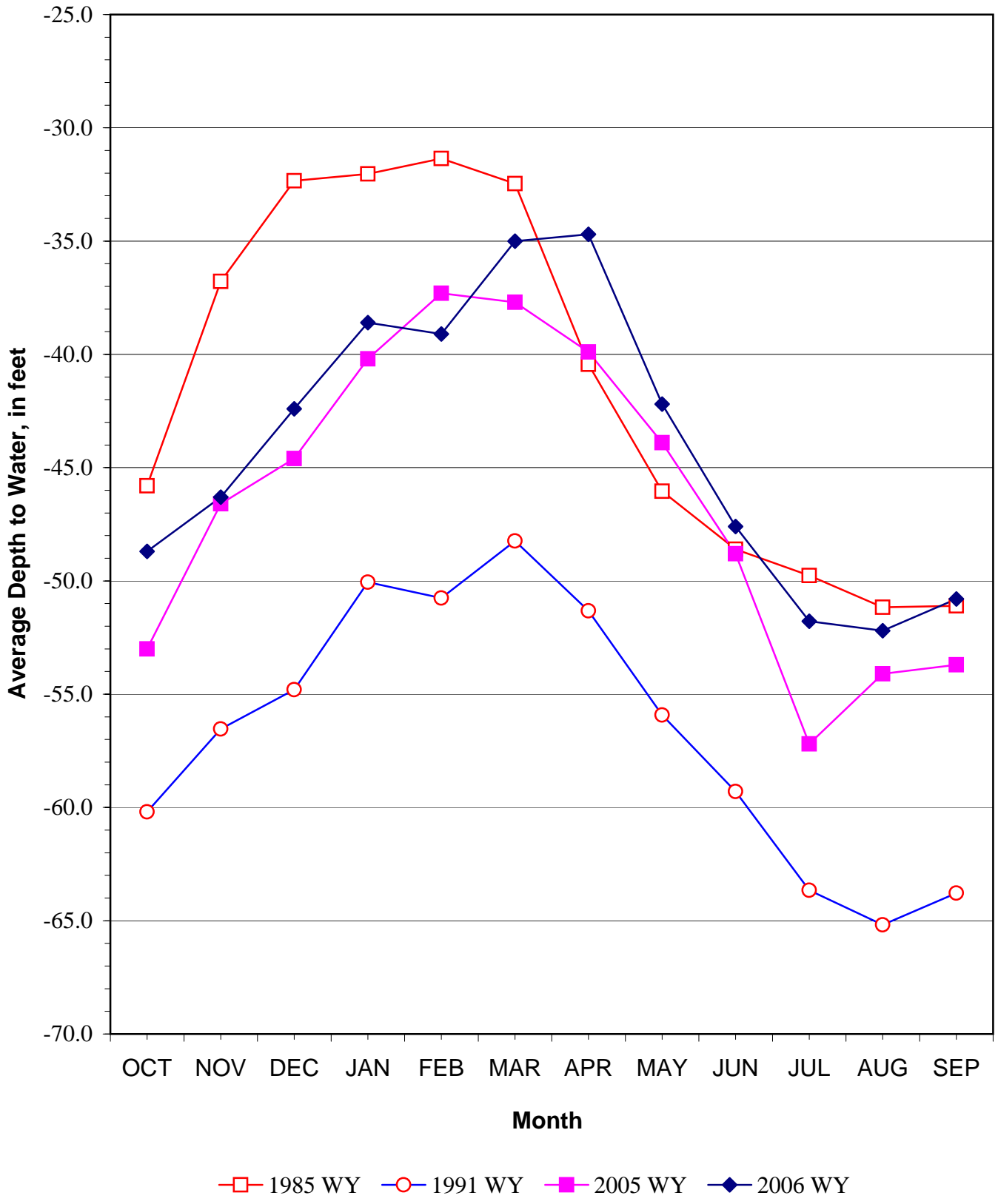
END OF MONTH STORAGE



SAN ANTONIO RESERVOIR END OF THE MONTH STORAGE



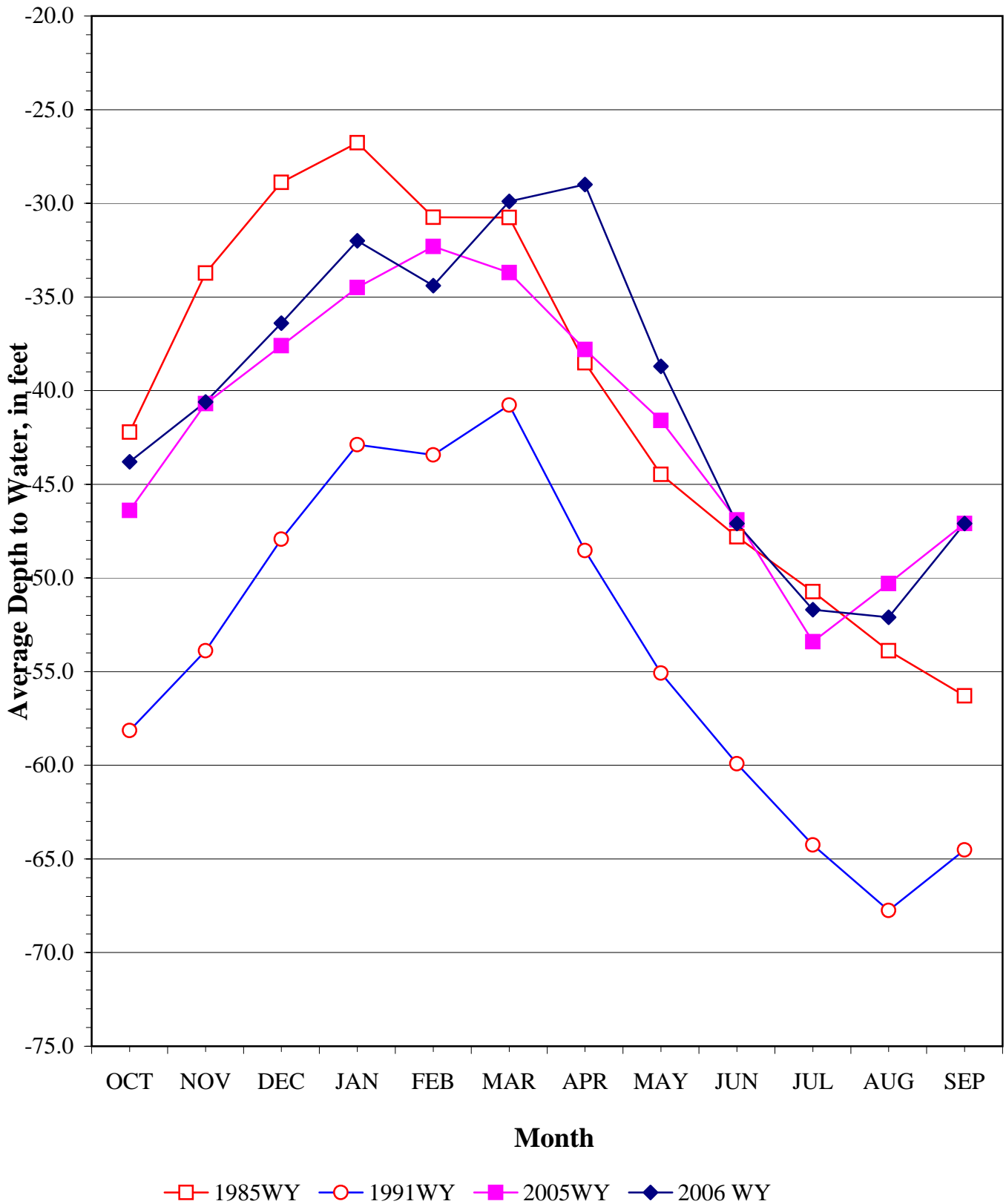
HISTORIC GROUND WATER TRENDS PRESSURE AREA-180 FOOT AQUIFER 5 Wells



HISTORIC GROUND WATER TRENDS

PRESSURE AREA-400 FOOT AQUIFER

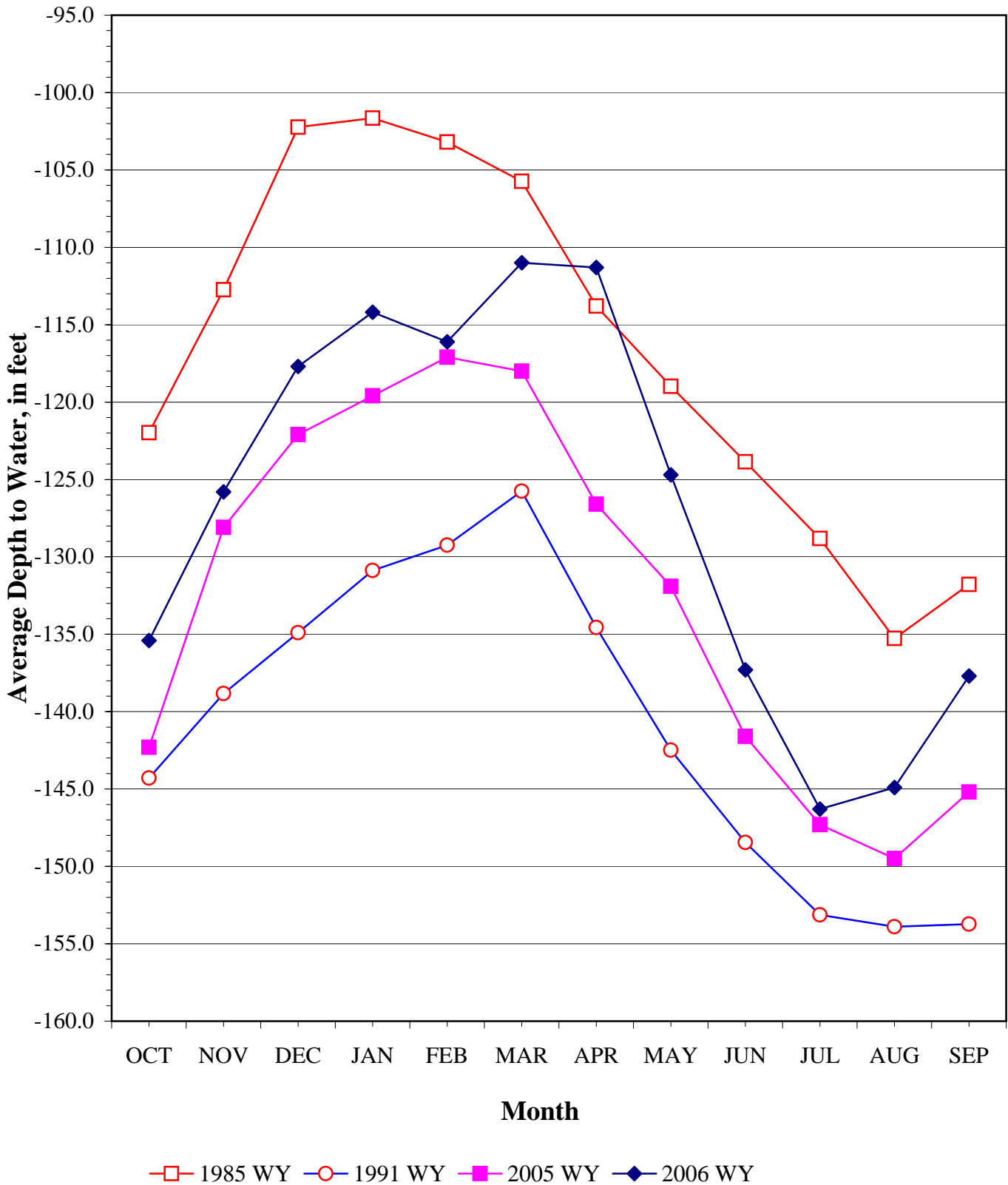
11 Wells



HISTORIC GROUND WATER TRENDS

EAST SIDE AREA

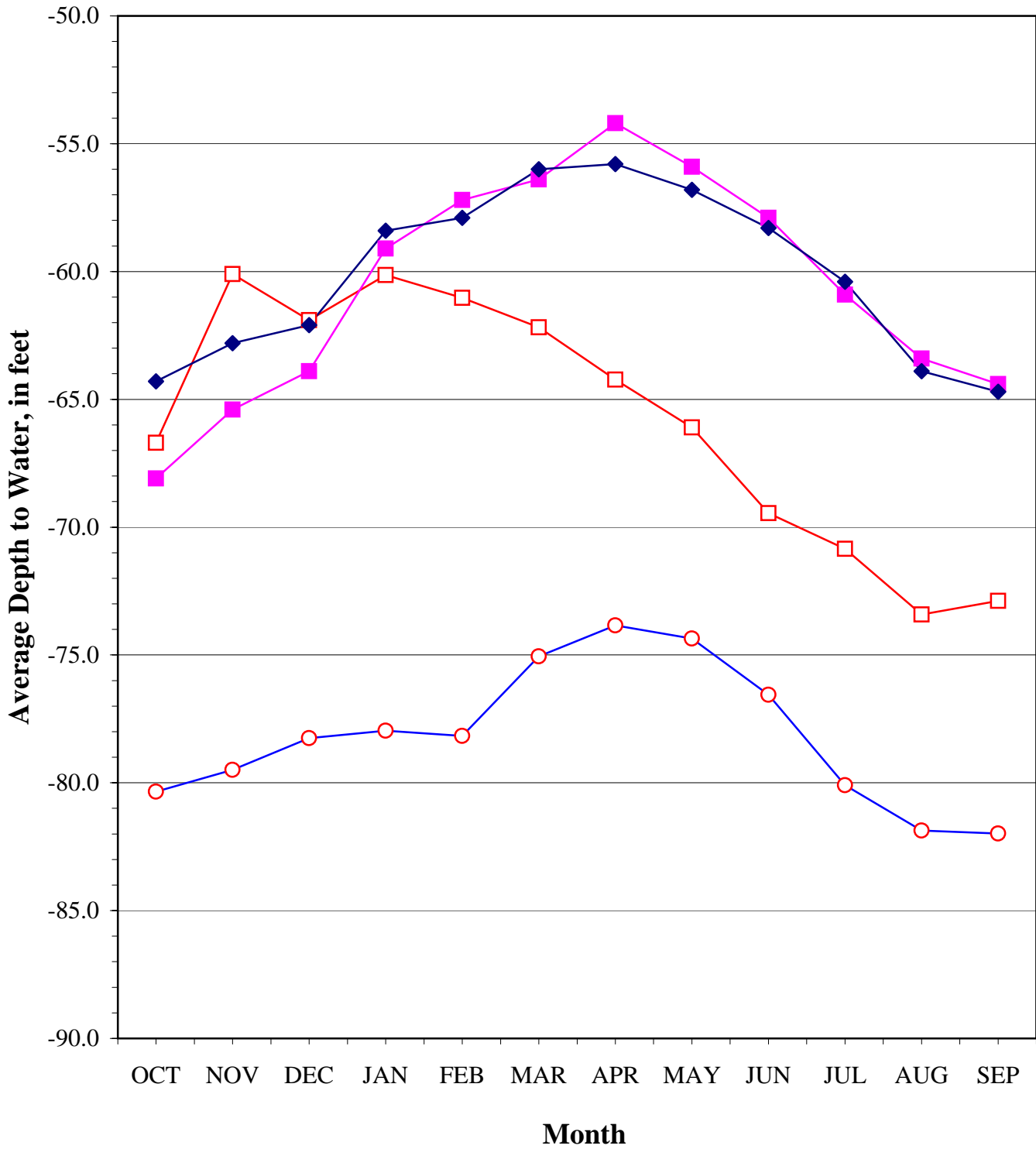
11 Wells



HISTORIC GROUND WATER TRENDS

FOREBAY AREA

10 Wells

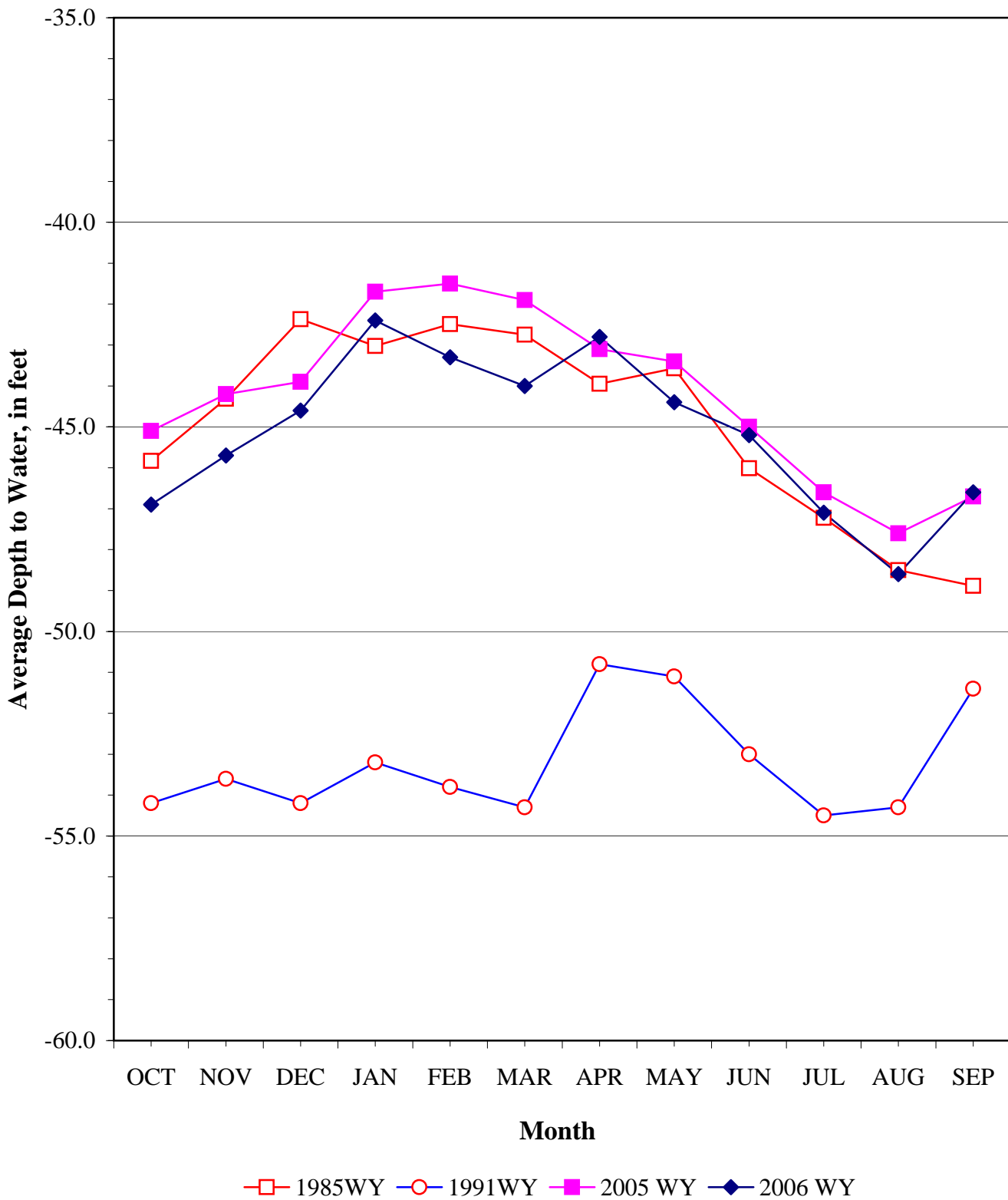


—□— 1985 WY
 —○— 1991 WY
 —■— 2005 WY
 —◆— 2006 WY

HISTORIC GROUND WATER TRENDS

UPPER VALLEY AREA

9 Wells



Generalized Ground Water Trends

September 2006

| AREA | September 2006 Depth to Water | 1 Year Change | Change From WY 1985 | 1 Month Change |
|--|--|--------------------------|--------------------------------|---------------------------|
| 180' Aquifer in Pressure Area | 51' | up 3' | no change | up 1' |
| 400' Aquifer in Pressure Area | 47' | no change | up 9' | up 5' |
| East Side Area | 138' | up 8' | down 6' | up 7' |
| Forebay Area | 65' | no change | up 8' | down 1' |
| Upper Valley Area | 47' | no change | up 2' | up 2' |

September water levels, compared to last year, range from no change to 8' higher.

September water levels, compared to WY 1985, range from 6' lower to 9' higher.

September changes in water levels over the last month range from 1' lower to 7' higher.