

1-3-2019

2011 - Salinas Valley Hydrologic Subareas, 4th Quarter Water Conditions

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

MEETING DATE:	October 24, 2011	AGENDA ITEM:	
AGENDA TITLE:	RECEIVE REPORT ON SALINAS VALLEY WATER CONDITIONS FOR THE FOURTH QUARTER OF WATER YEAR 2010-2011		
Consent (X)		Action ()	
Information ()			
SUBMITTED BY:	Robert Johnson	PREPARED BY:	Jess Barreras
PHONE:	755-4860	PHONE:	755-4860
DEADLINE FOR BOARD ACTION:	October 24, 2011		

RECOMMENDED BOARD ACTION:

Receive report on Salinas Valley water conditions for the fourth quarter of Water Year 2010-2011.

PRIOR RELEVANT BOARD ACTION:

A report was last presented to the Board on July 25, 2011, covering the third quarter of Water Year 2010-2011.

DISCUSSION/ANALYSIS:

This report covers the fourth quarter of Water Year 2010-2011 (WY11), July through September 2011. It provides a brief overview of water conditions in the Salinas Valley with discussion of 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 fourth quarter of WY11 brought below normal rainfall to Salinas and King City. Cumulative totals for the quarter were 0.05 inches (17% of normal rainfall for the quarter) at the Salinas Airport and 0.04 inches (17% of normal rainfall for the quarter) in King City.

July was a dry month in Salinas; 0.01 inches of rain fell in Salinas, while no rain was recorded in King City. Both of these totals were below the respective 30-year July monthly average rainfall values of 0.04 and 0.01 inches.

August was a dry month in both Salinas and King City. Salinas recorded 0.01 inches of rain, compared to a 30-year August monthly average of 0.05 inches, while no rain fell in King City, compared to a 30-year monthly average of 0.05 inches.

September was drier than normal. Rainfall totals in Salinas and King City were 0.03 inches and 0.04 inches, respectively. Both of these totals were below the respective 30-year September monthly average rainfall values of 0.21 and 0.18 inches.

Cumulative rainfall totals for WY11 were 15.58 inches (121% of normal) at the Salinas Airport and 13.30 inches (111% of normal) in King City.

Attachments A and B are graphs showing cumulative monthly precipitation data for both stations. For comparison, data for the current year is plotted alongside last year's data, as well as 30-year monthly averages.

Rainfall data for Salinas and King City 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 126,300 acre-feet greater than September 2010 while storage in San Antonio Reservoir is 86,107 acre-feet greater.

Reservoir	September 30, 2011 (WY11) Storage in acre-feet	September 30, 2010 (WY10) Storage in acre-feet	Difference in acre-feet
Nacimiento	276,740	150,440	126,300
San Antonio	247,760	161,653	86,107

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, averaged, and graphed to compare current water levels with selected past conditions. Graphs for individual subareas, showing the current year's water level conditions, last year's conditions (WY10), dry conditions (WY91), and near-normal conditions (WY85), are found in Attachments E through I. Attachment J contains a summary of water level changes for all subareas.

Ground water level measurements indicate that water levels in three of five hydrologic subareas were declining at the end of the fourth quarter of WY11. The change in average water levels over the previous month was a one-foot decrease in the East Side and the Upper Valley Subareas, and a two-foot decrease in the Forebay Subarea. The Pressure 180-Foot Aquifer had a four-foot increase, and the Pressure 400-Foot Aquifer had a three-foot increase.

Compared to September 2010, average ground water levels were higher everywhere except for the East Side and Upper Valley Subareas, where they were down three feet and were unchanged, respectively. Water levels increased by two feet in the Pressure 180-Foot Aquifer, one foot in the Pressure 400-Foot Aquifer, and one foot in the Forebay Subarea.

When compared to WY85, which is considered to be a year of near normal ground water conditions,

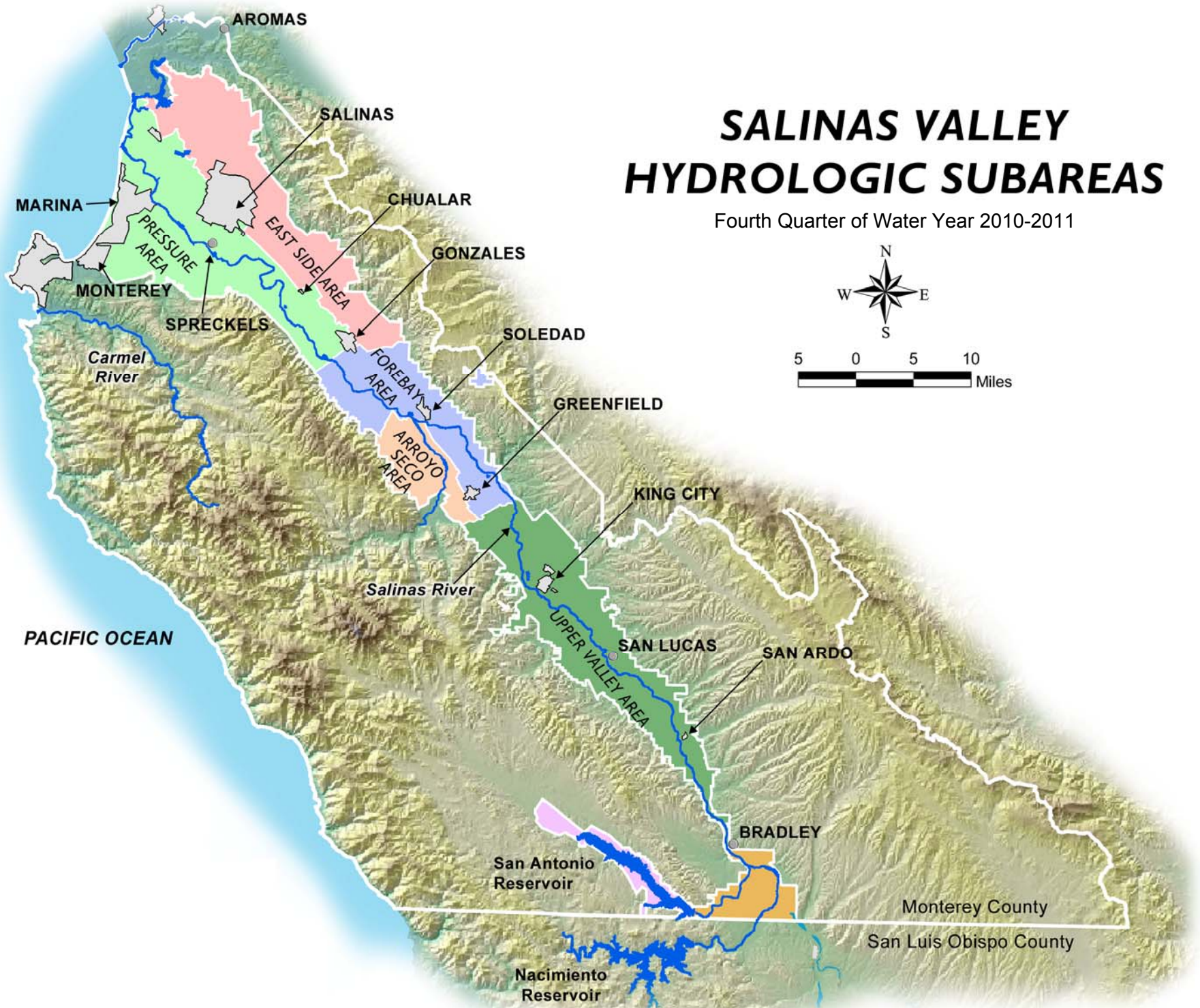
current water levels range from fifteen feet lower in the East Side Subarea to eleven feet higher in the Pressure 400-Foot Aquifer. Water levels in the Pressure 180-Foot Aquifer were one foot higher than in WY85, while water levels in Forebay Subarea were higher by seven feet. In the Upper Valley Subarea, water levels were up one foot from WY85.

Average fourth quarter of WY11 ground water levels remain above WY91 values in all 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

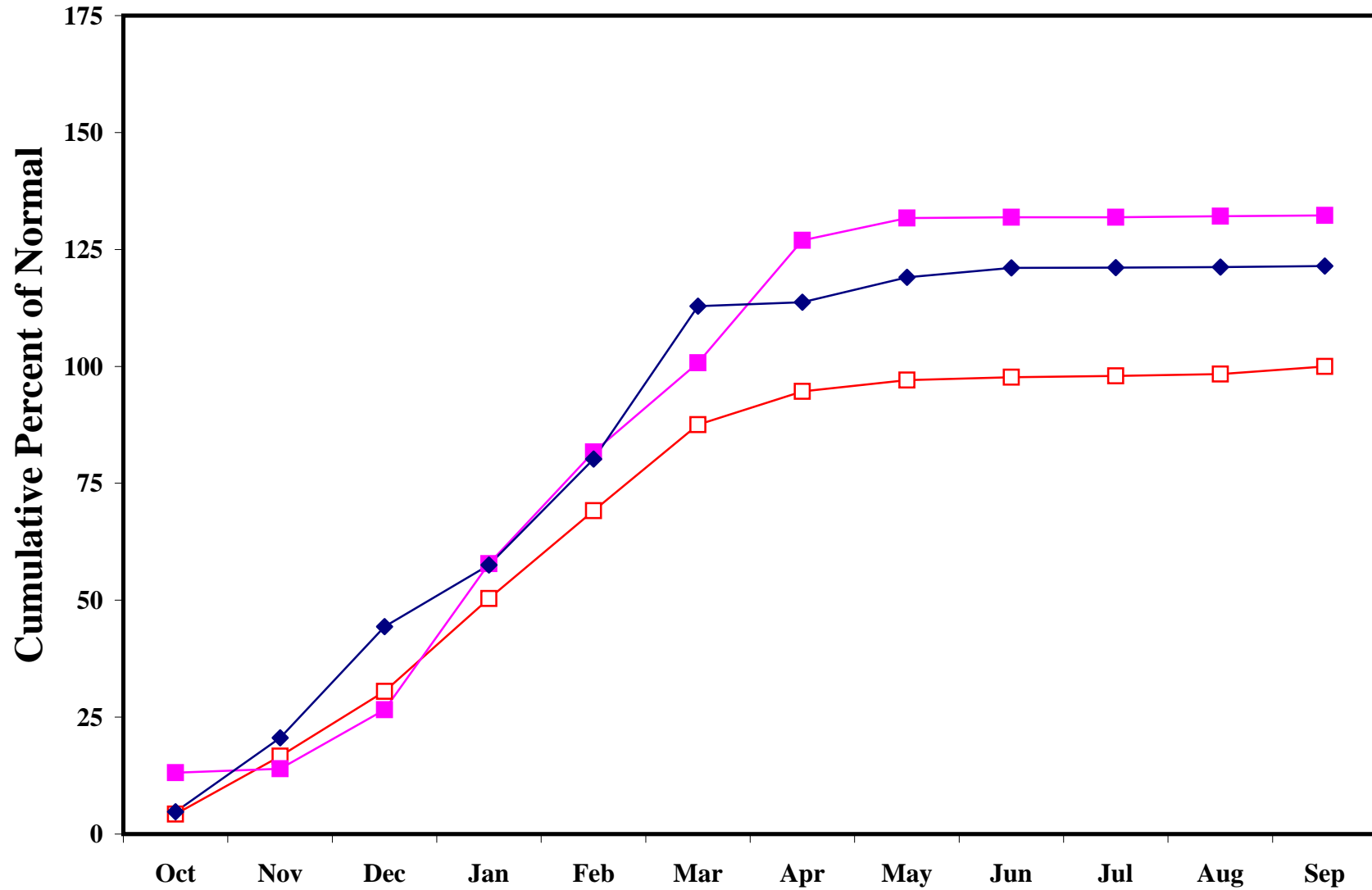
SALINAS VALLEY HYDROLOGIC SUBAREAS

Fourth Quarter of Water Year 2010-2011



SALINAS AIRPORT RAINFALL

Water Year 2010-11



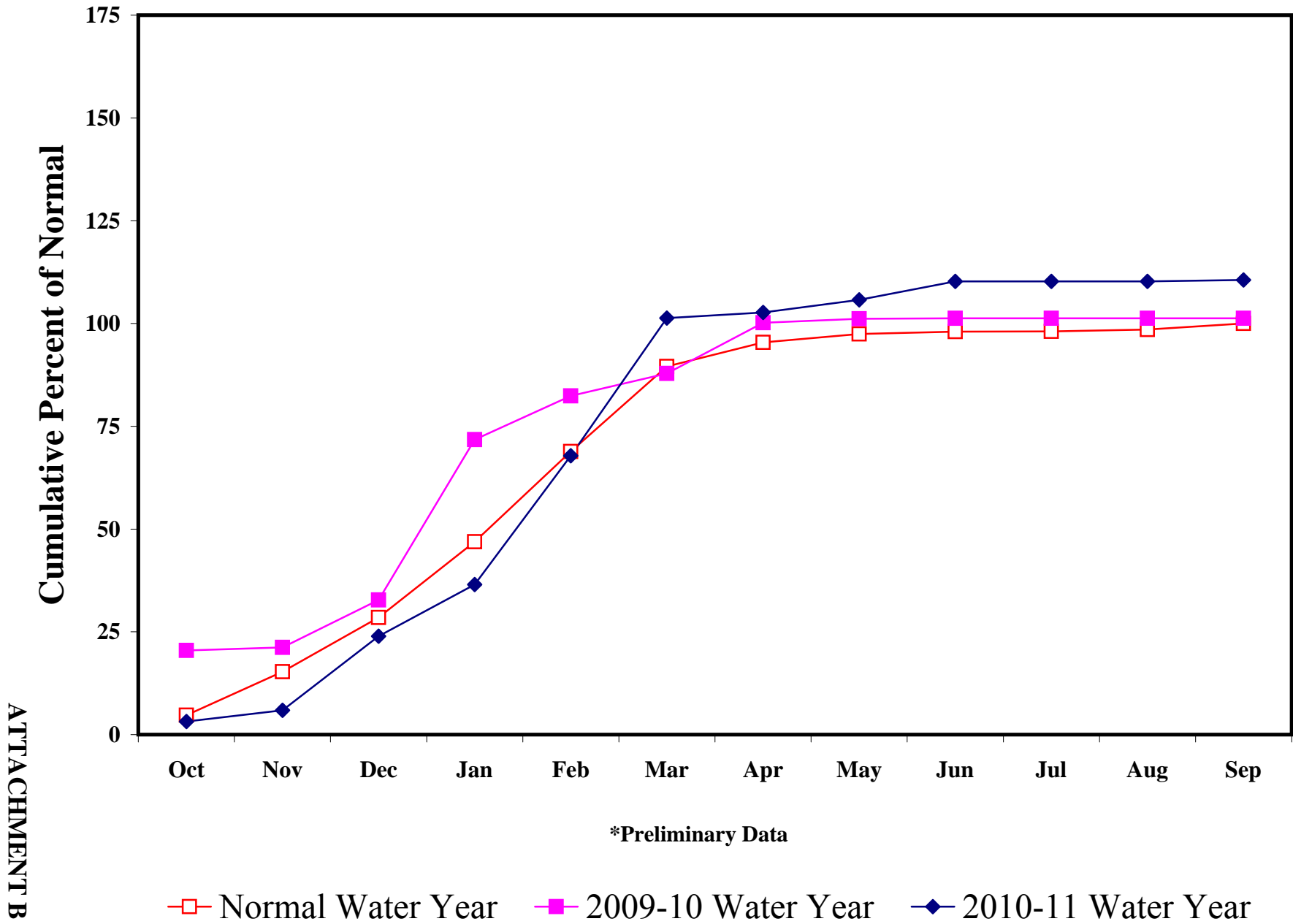
*Preliminary Data

—□— Normal Water Year —■— 2009-10 Water Year —◆— 2010-11 Water Year

ATTACHMENT A

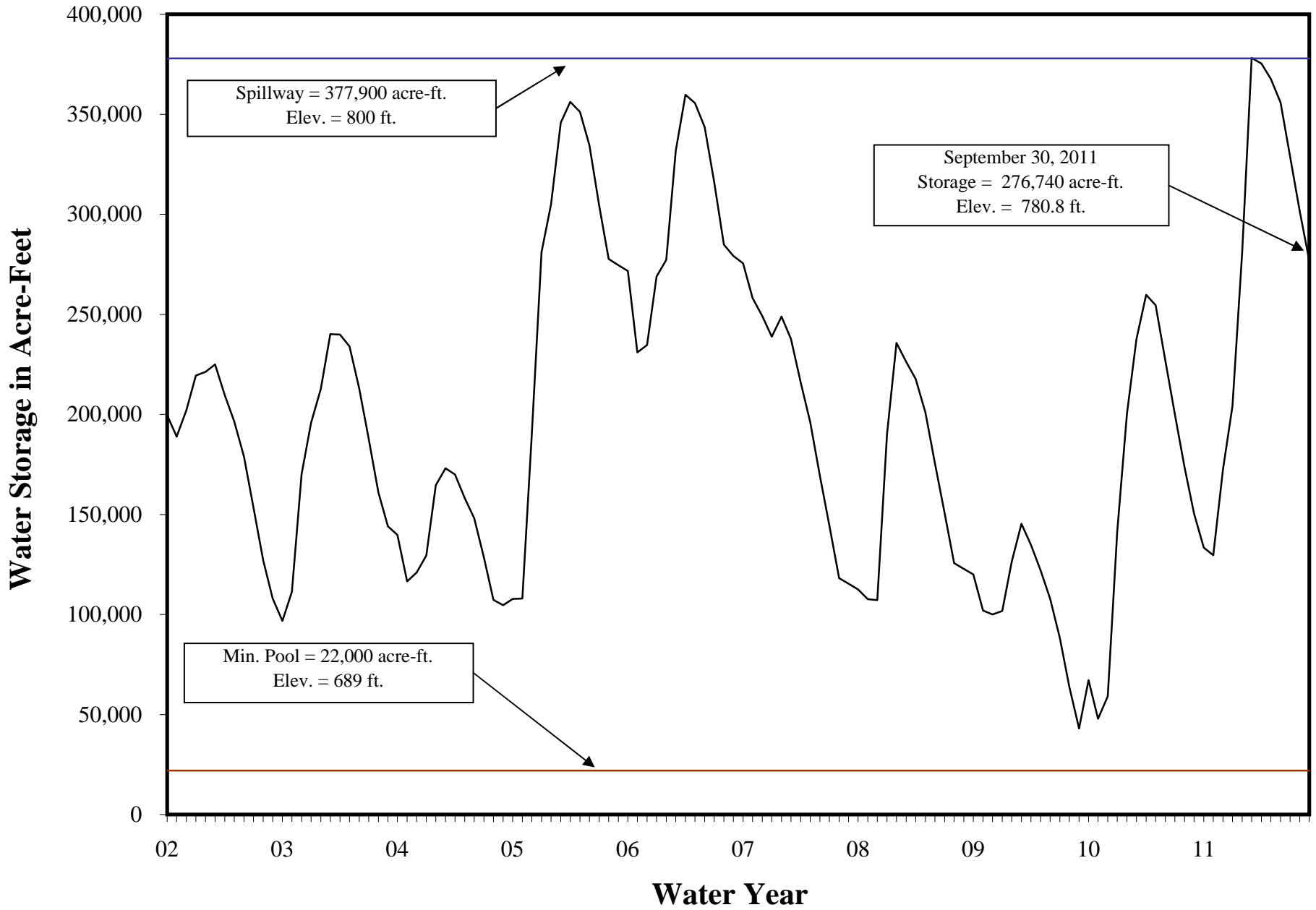
KING CITY RAINFALL

Water Year 2010-11

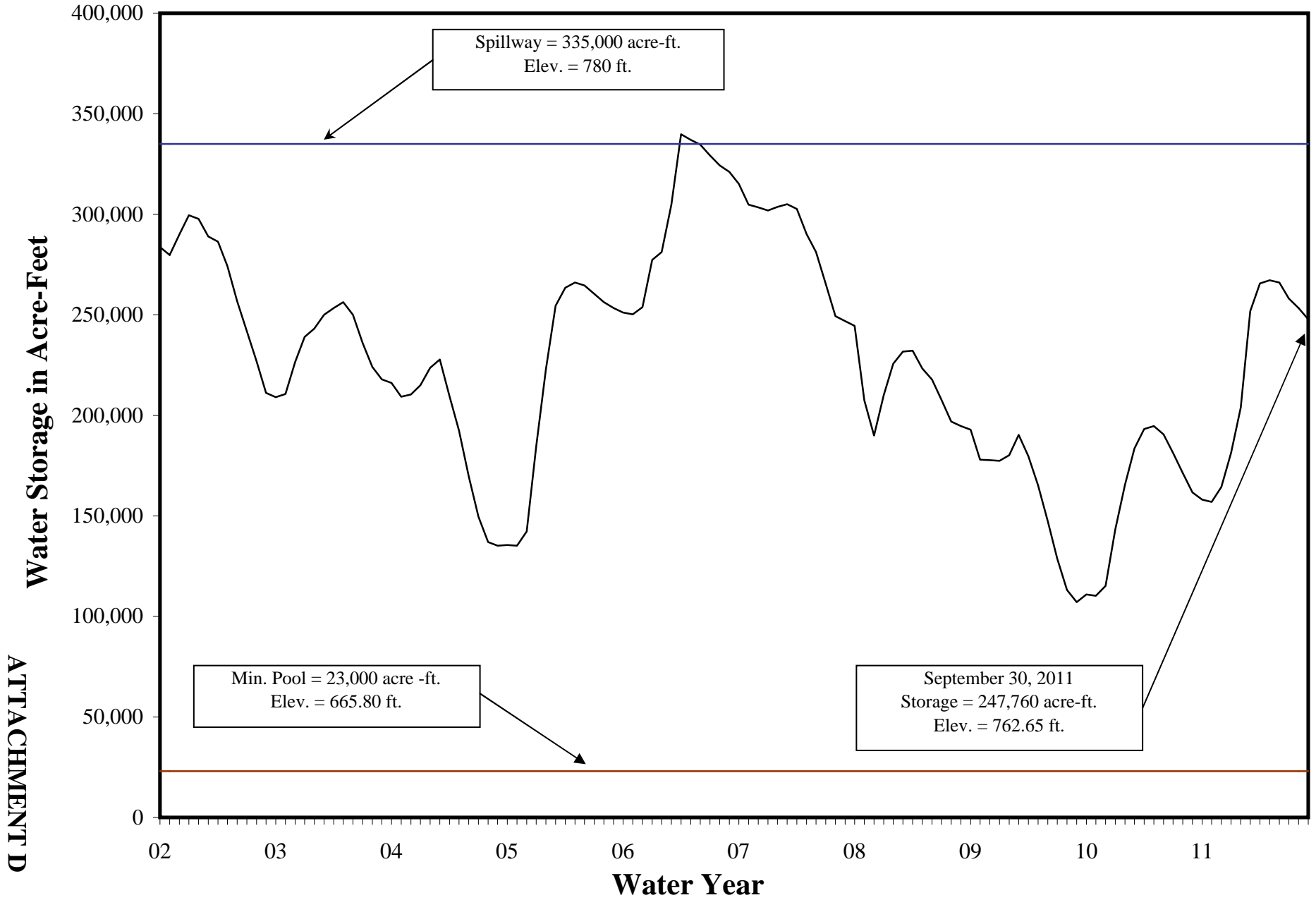


NACIMIENTO RESERVOIR

END OF MONTH STORAGE



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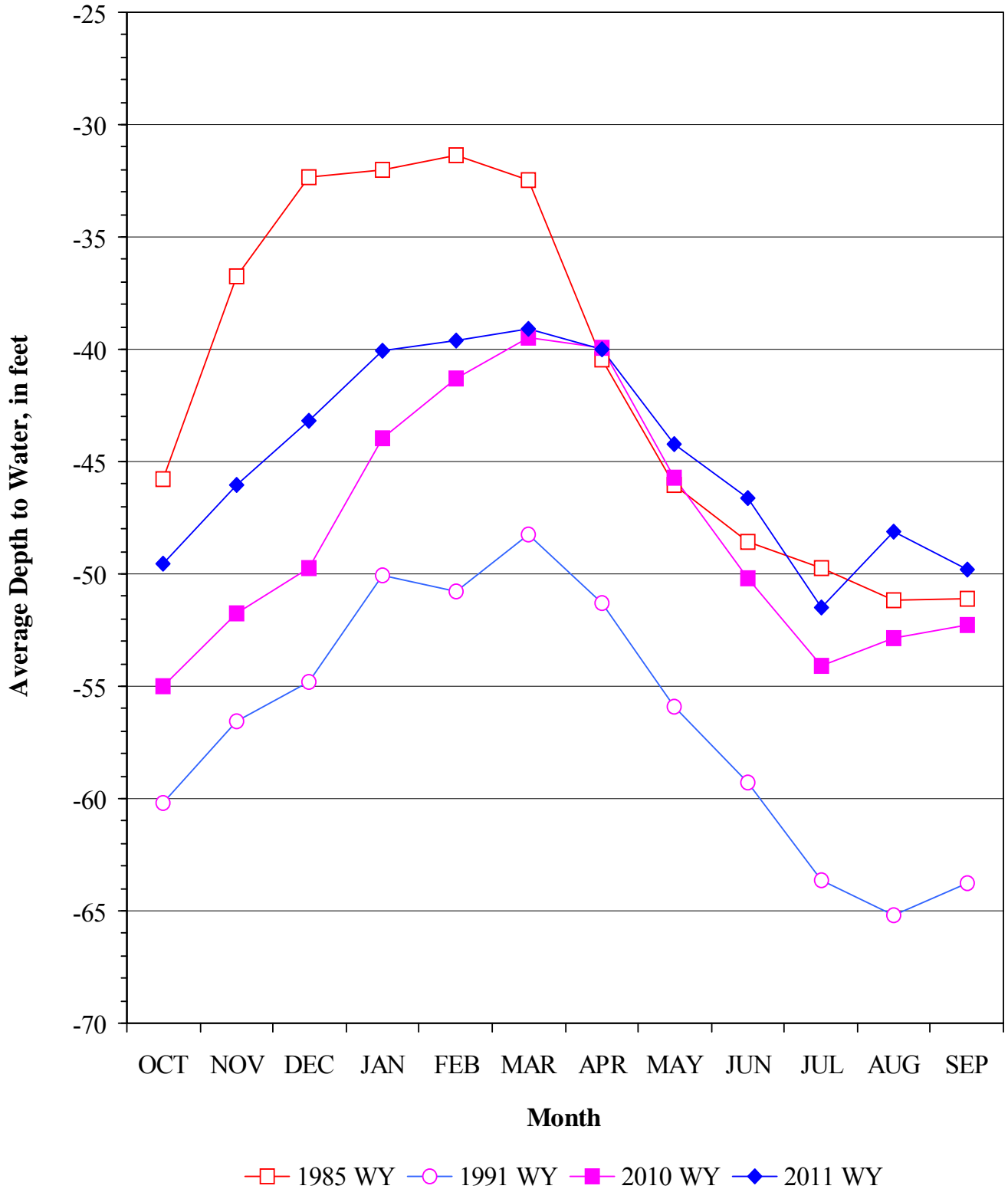


ATTACHMENT D

HISTORIC GROUND WATER TRENDS

PRESSURE 180-FOOT AQUIFER

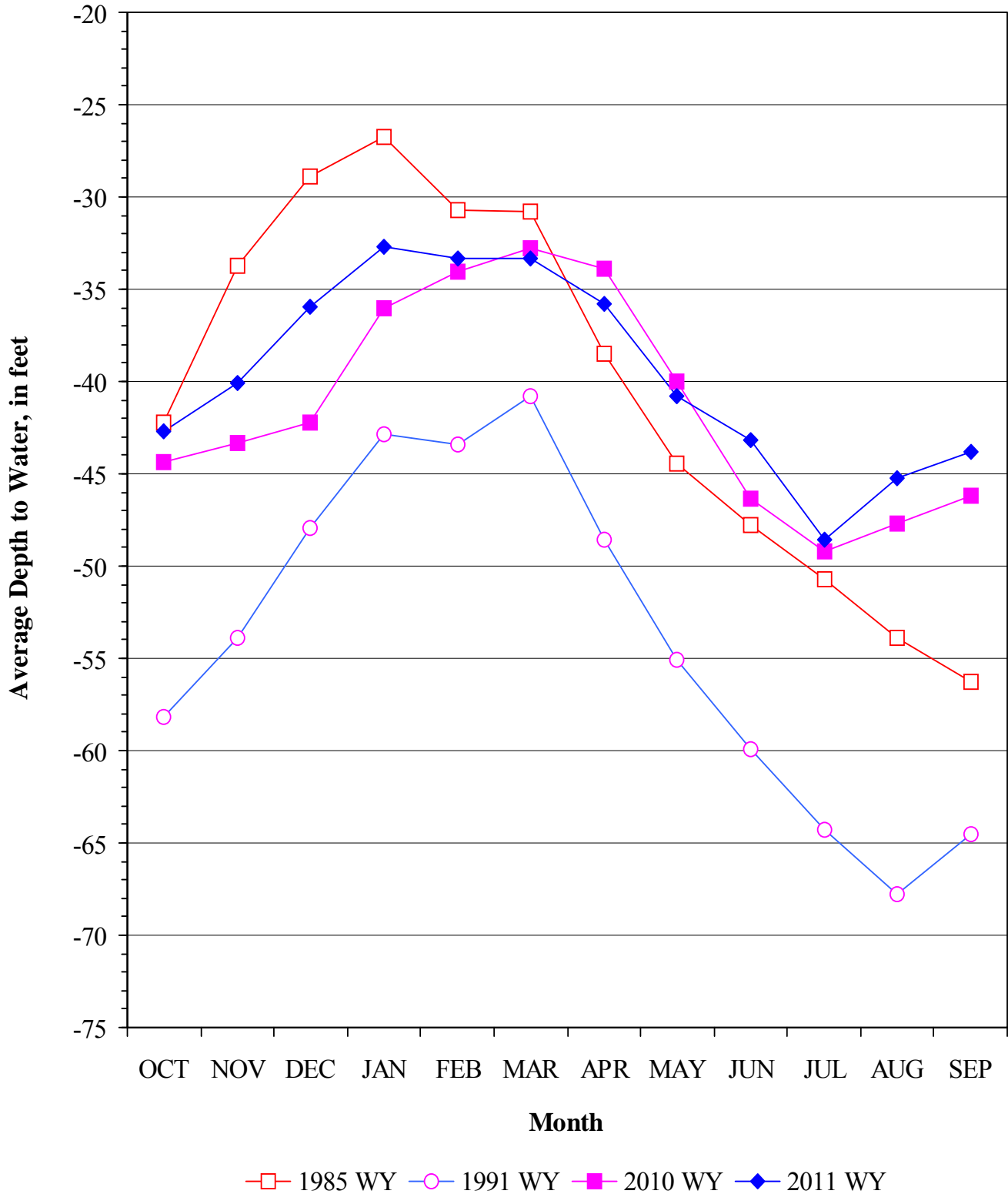
5 Wells



HISTORIC GROUND WATER TRENDS

PRESSURE 400-FOOT AQUIFER

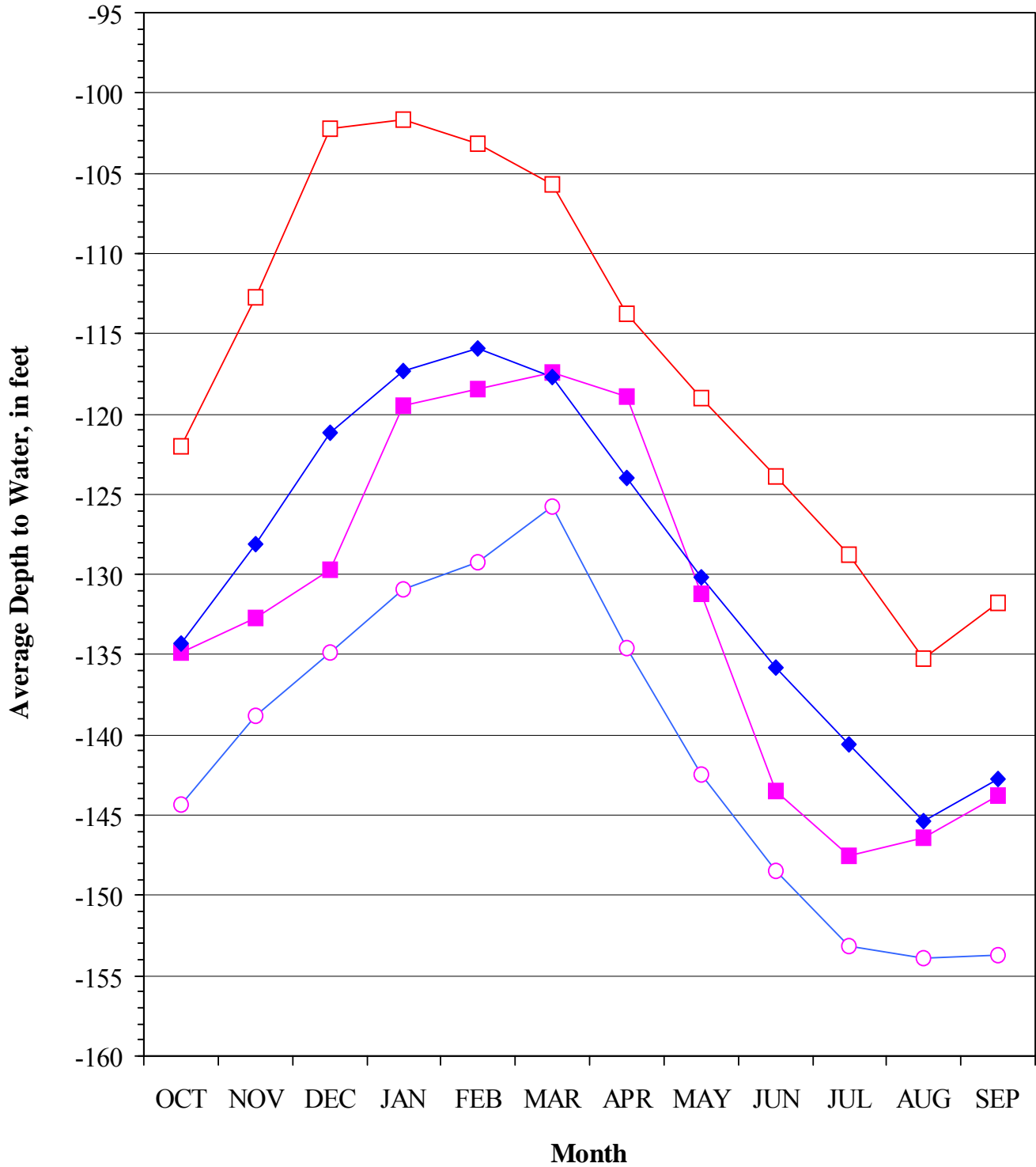
11 Wells



HISTORIC GROUND WATER TRENDS

EAST SIDE SUBAREA

11 Wells

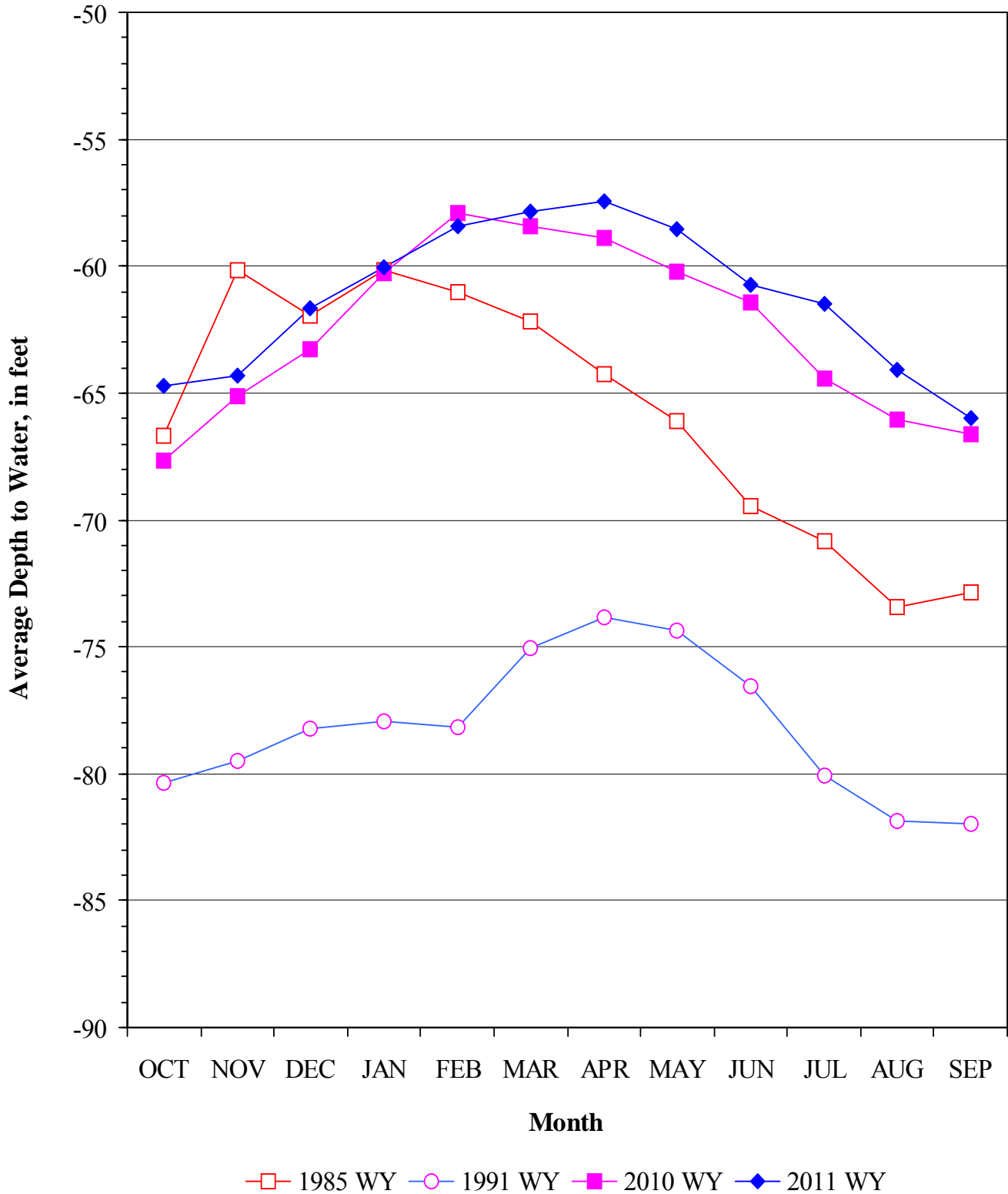


—□— 1985 WY —○— 1991 WY —■— 2010 WY —◆— 2011 WY

HISTORIC GROUND WATER TRENDS

FOREBAY SUBAREA

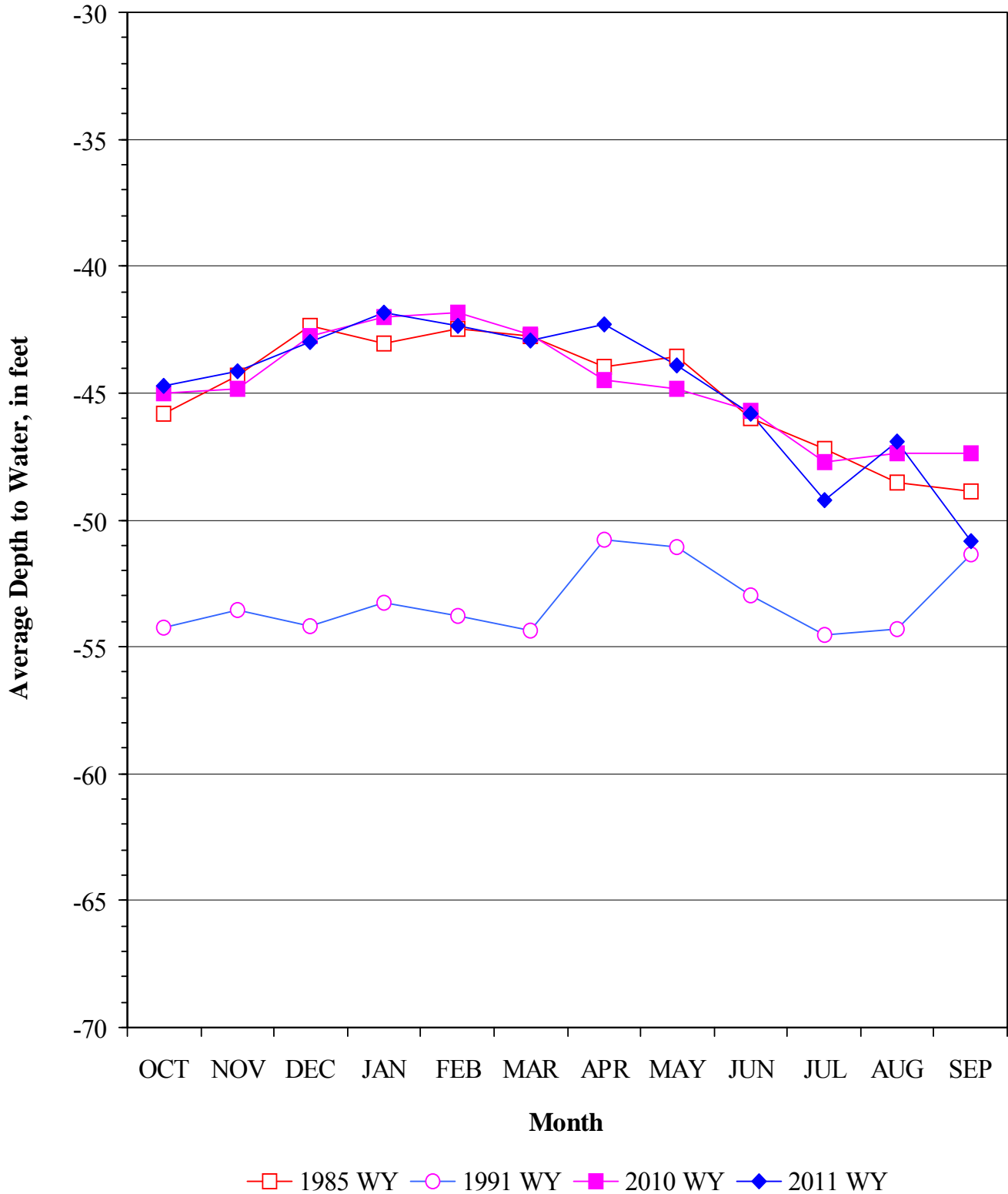
10 Wells



HISTORIC GROUND WATER TRENDS

UPPER VALLEY SUBAREA

9 Wells



Generalized Ground Water Trends

September 2011

Area	September 2011 Depth to Water	1 Year Change	Change From WY 1985	1 Month Change
Pressure 180-Foot Aquifer	50'	up 2'	up 1'	down 2'
Pressure 400-Foot Aquifer	44'	up 2'	up 12'	up 1'
East Side Subarea	143'	up 1'	down 11'	up 3'
Forebay Subarea	66'	up 1'	up 7'	down 2'
Upper Valley Subarea	51'	down 3'	down 2'	down 4'

September water levels, compared to last year, range from 3' lower to 2' higher.

September water levels, compared to WY 1985, range from 11' lower to 12' higher.

September changes in water levels over the last month range from 4' lower to 3' higher.