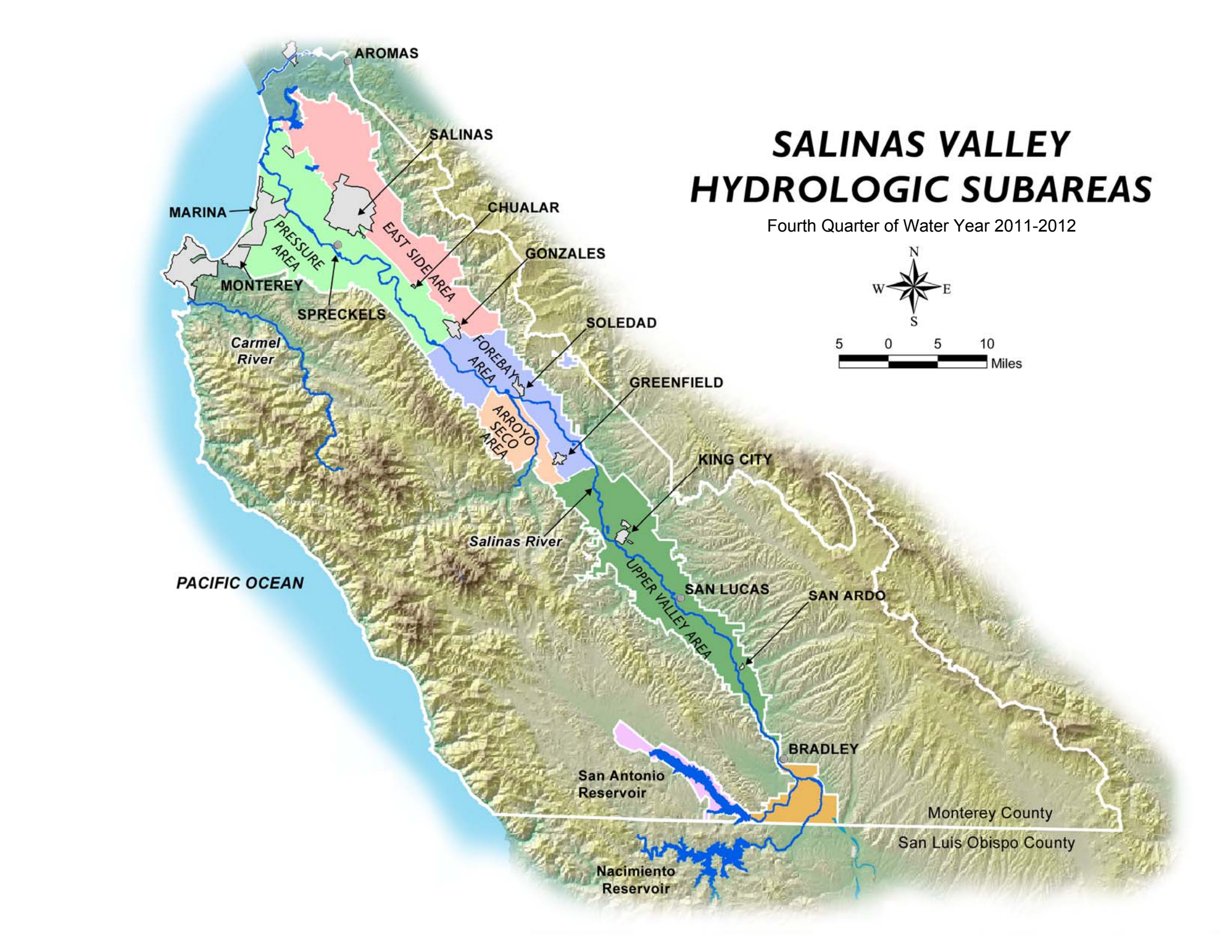
1-3-2019

2012 - Salinas Valley Hydrologic Subareas, 4th Quarter Water Conditions


SALINAS VALLEY
HYDROLOGIC SUBAREAS
Fourth Quarter of Water Year 2011-2012
N
W
E
S
5 0 5 10
Miles
AROMAS
SALINAS
MARINA
CHUALAR
GONZALES
PRESSURE AREA
EAST SIDE AREA
MONTEREY
SPRECKELS
SOLEDAD
Carmel River
FOREBAY AREA
GREENFIELD
ARROYO SECO AREA
KING CITY
Salinas River
PACIFIC OCEAN
UPPER VALLEY AREA
SAN LUCAS
SAN ARDO
BRADLEY
San Antonio Reservoir
Monterey County
San Luis Obispo County
Nacimiento Reservoir

MONTEREY COUNTY WATER RESOURCES AGENCY
BOARD OF DIRECTORS

MEETING DATE:	October 22, 2012	**AGENDA ITEM:**	
AGENDA TITLE:	RECEIVE REPORT ON SALINAS VALLEY WATER CONDITIONS FOR THE FOURTH QUARTER OF WATER YEAR 2011-2012		
Consent (X) **Action ( )** **Information ( )**			
SUBMITTED BY: **PHONE:**	Robert Johnson 755-4860	**PREPARED BY:** **PHONE:**	Peter Kwiek 755-4860
DEADLINE FOR BOARD ACTION:	October 22, 2012		

RECOMMENDED BOARD ACTION:

Receive report on Salinas Valley water conditions for the fourth quarter of Water Year 2011-2012.

PRIOR RELEVANT BOARD ACTION:

A report was last presented to the Board on July 23, 2012, covering the third quarter of Water Year 2011-2012.

DISCUSSION/ANALYSIS:

This report covers the fourth quarter of Water Year 2011-2012 (WY12), July through September 2012. 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 WY12 saw no rainfall in either Salinas or King City. Normal cumulative total rainfall for the quarter for both Salinas and King City is 0.2 inches.

In Salinas, the lack of fourth quarter rainfall compares to 30-year monthly averages for July, August and September of 0.0, 0.03, and 0.17 inches, respectively.

In King City, the lack of fourth quarter rainfall compares to 30-year monthly averages for July, August and September of 0.01, 0.01, and 0.18, respectively.

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 132,750 acre-feet lower than in September 2011, while storage in San Antonio Reservoir is 68,267 acre-feet lower.

Reservoir	September 30, 2012 (WY12) Storage in acre-feet	September 30, 2011 (WY11) Storage in acre-feet	Difference in acre-feet
Nacimiento	142,550	275,300	-132,750
San Antonio	179,493	247,760	-68,267

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 (WY11), 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 the Pressure 180-Foot and Pressure 400-Foot Aquifers as well as the East Side Subarea began their seasonal recovery at the end of the fourth quarter of WY12. Compared to the previous month, average ground water levels increased by two feet in both the Pressure 180-Foot Aquifer and the East Side Subarea, while in the Pressure 400-Foot Aquifer water levels rose three feet over the prior month. In the Forebay Subarea, water levels declined by two feet over the previous month while water levels in the Upper Valley Subarea were unchanged.

Compared to September 2011, average ground water levels declined in the Pressure 180-Foot and Pressure 400-Foot Aquifers by two feet and one foot, respectively. Water levels also declined by four feet in the Forebay Subarea. In the East Side Subarea, water levels increased by two feet, compared to September 2011, while Upper Valley ground water levels saw no change.

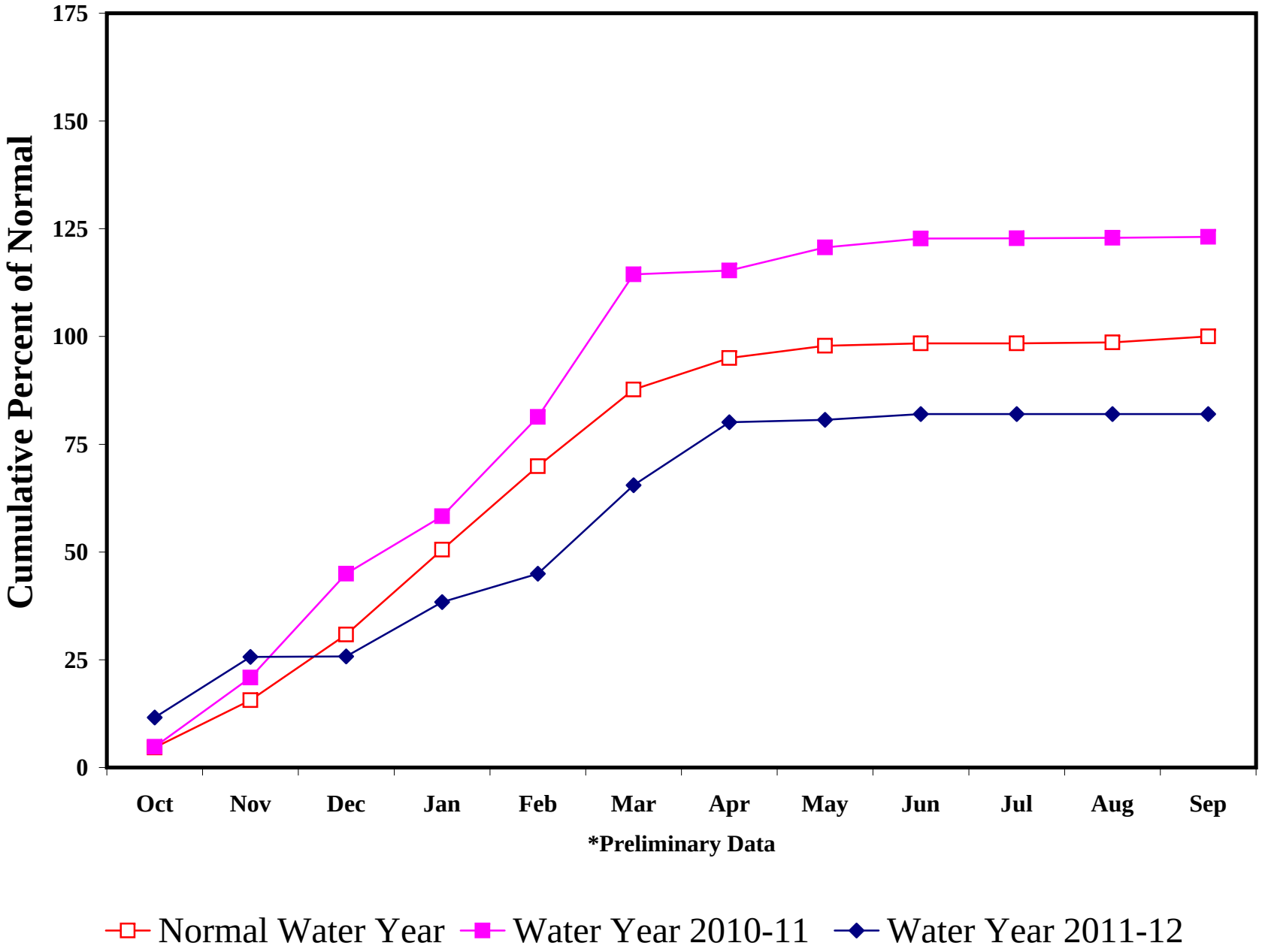
When compared to WY85, which is considered to be a year of near normal ground water conditions, current water levels range from thirteen feet lower in the East Side Subarea to ten feet higher in the Pressure 400-Foot Aquifer. Water levels in the Pressure 180-Foot Aquifer were one foot lower than in WY85, while water levels in the Forebay and Upper Valley Subareas were higher by two feet and one foot, respectively.

Average ground water levels for the fourth quarter of WY12 remain above WY91 levels in all subareas.

FINANCIAL IMPACT:	**YES ( ) NO (X)**
FUNDING SOURCE:	
COMMITTEE REVIEW AND RECOMMENDATION:	None
ATTACHMENTS:	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:	_____ **Interim General Manager Date**

SALINAS AIRPORT RAINFALL

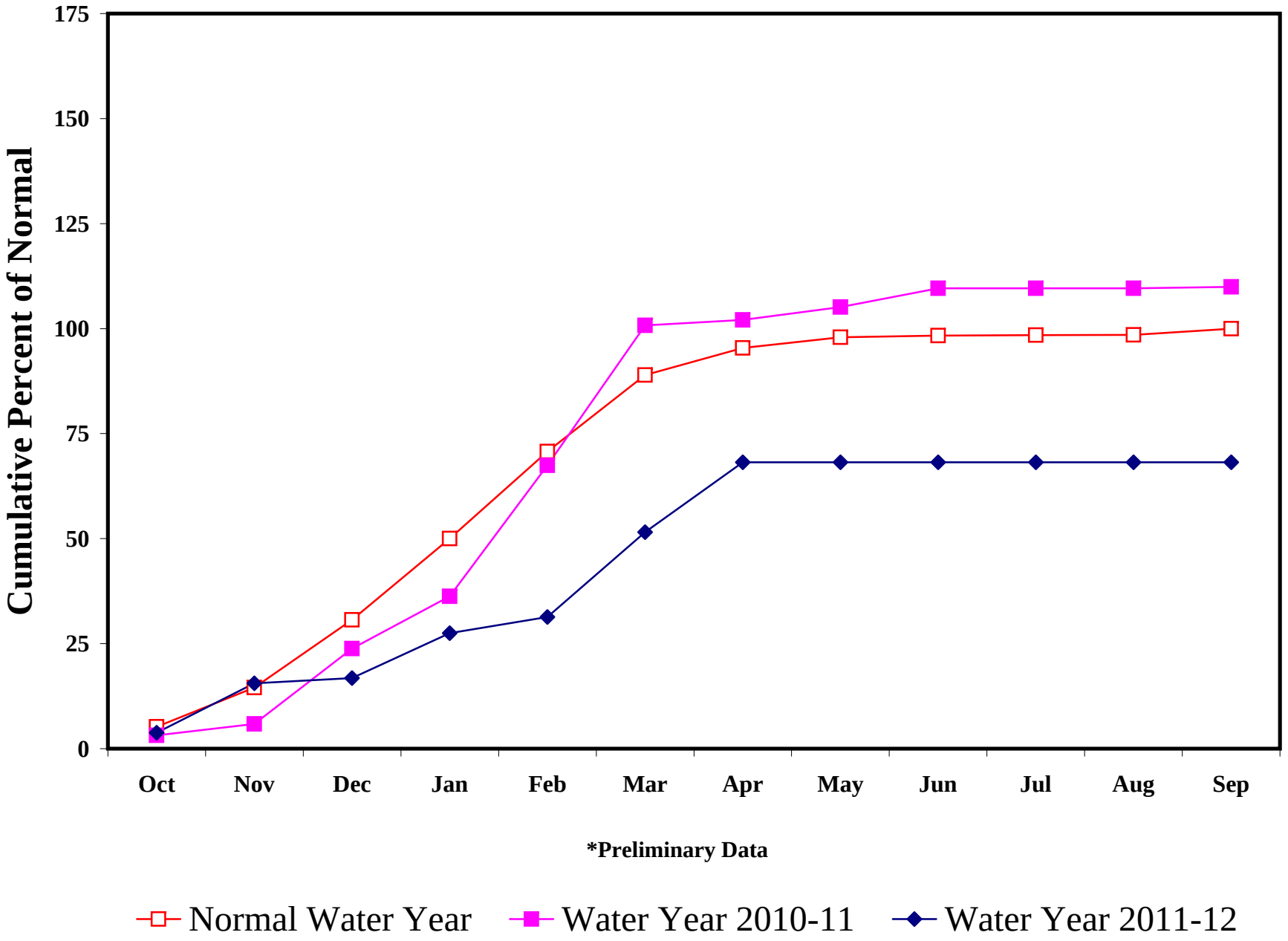
Water Year 2011-12



ATTACHMENT A

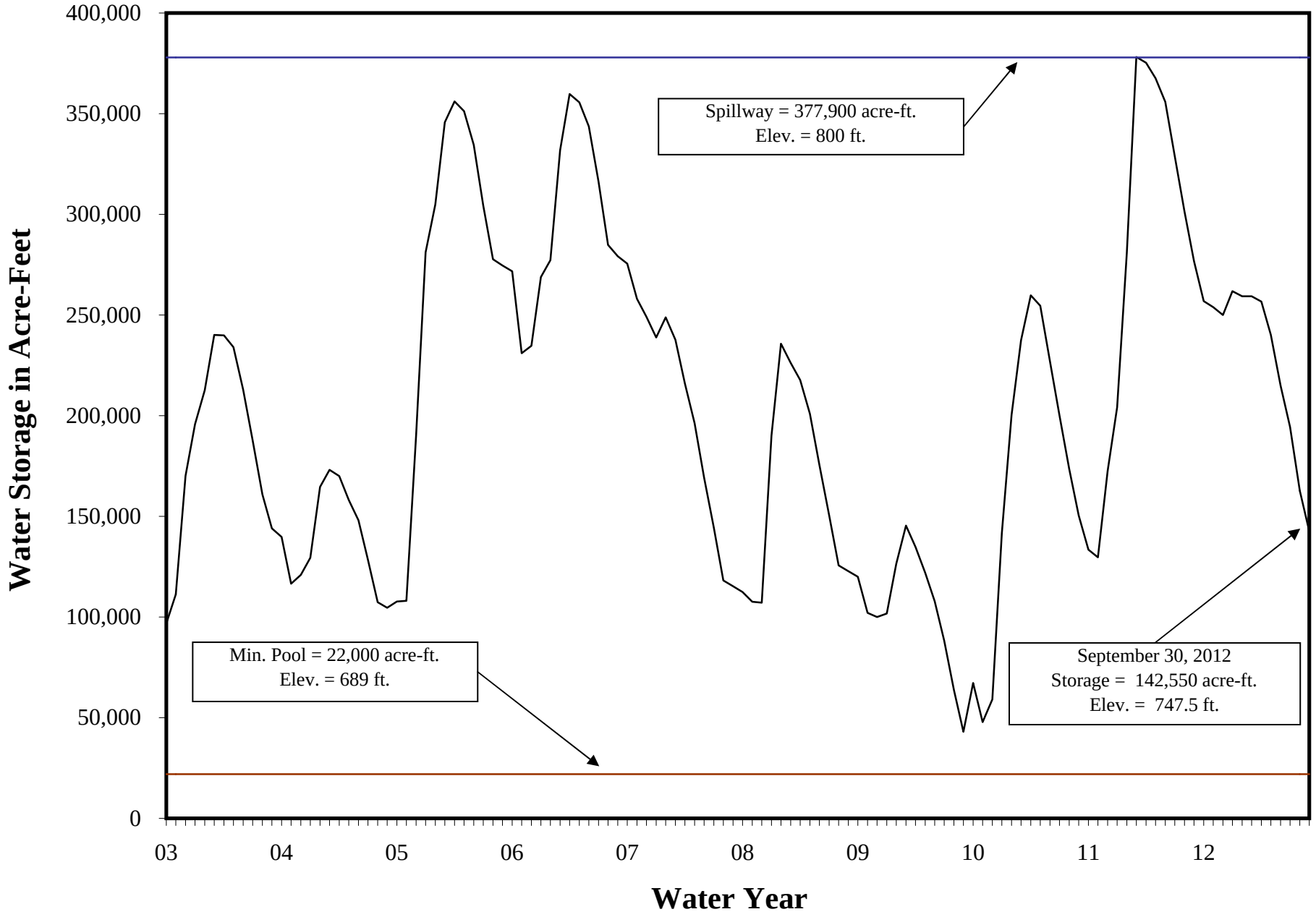
KING CITY RAINFALL

Water Year 2011-12



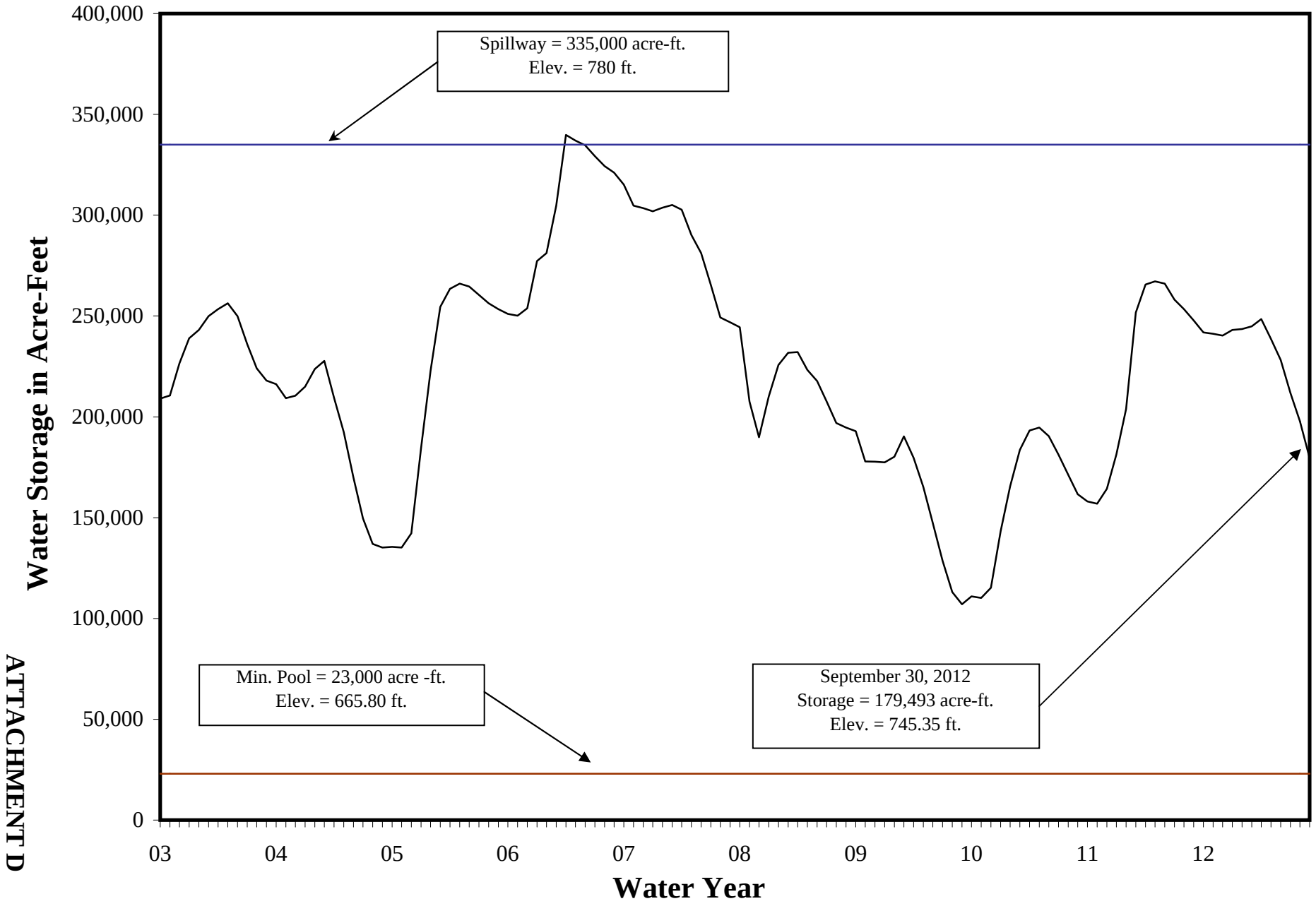
ATTACHMENT B

NACIMIENTO RESERVOIR
END OF MONTH STORAGE



ATTACHMENT C

SAN ANTONIO RESERVOIR
END OF MONTH STORAGE

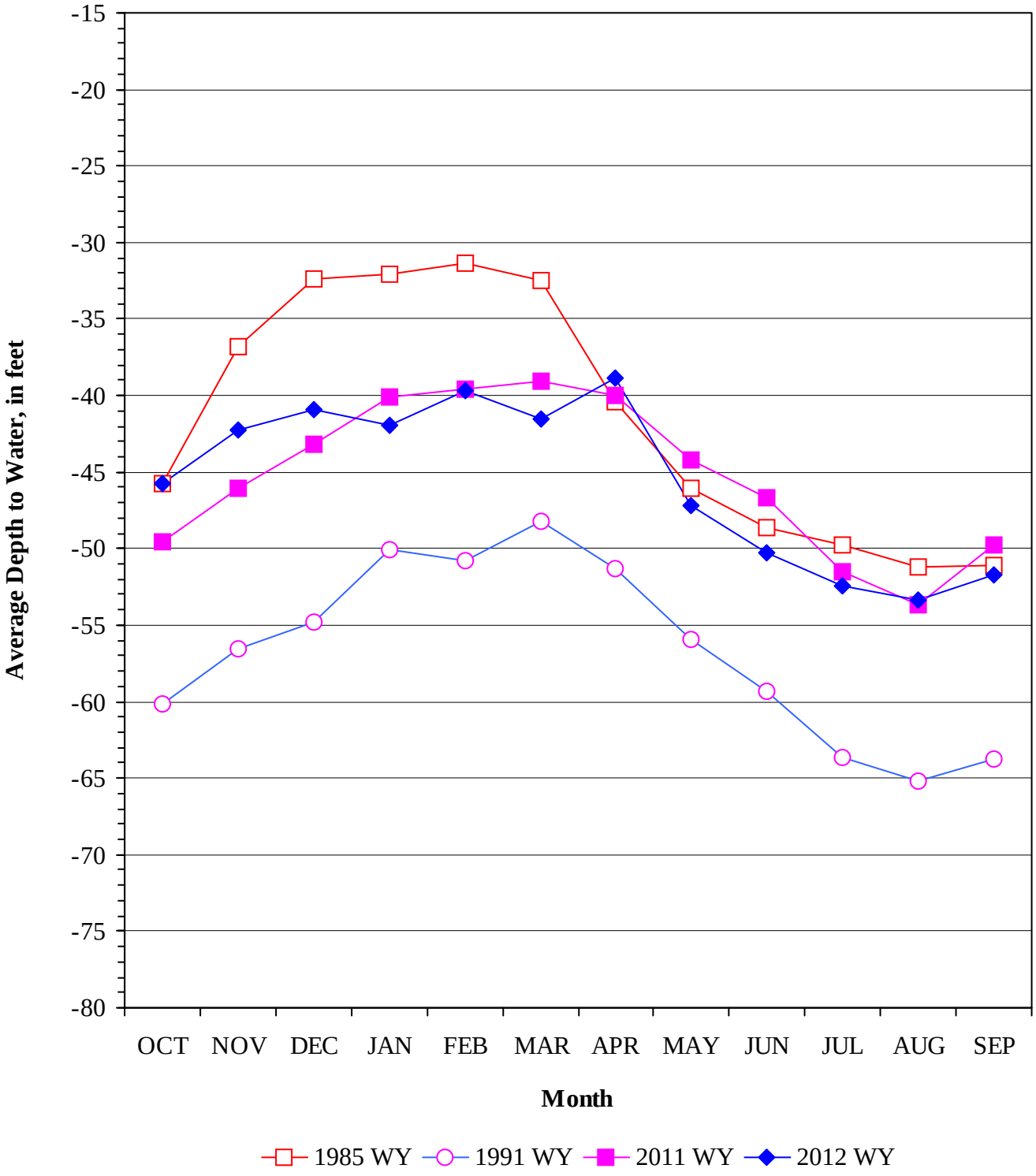


ATTACHMENT D

HISTORIC GROUND WATER TRENDS

PRESSURE 180-FOOT AQUIFER

5 Wells

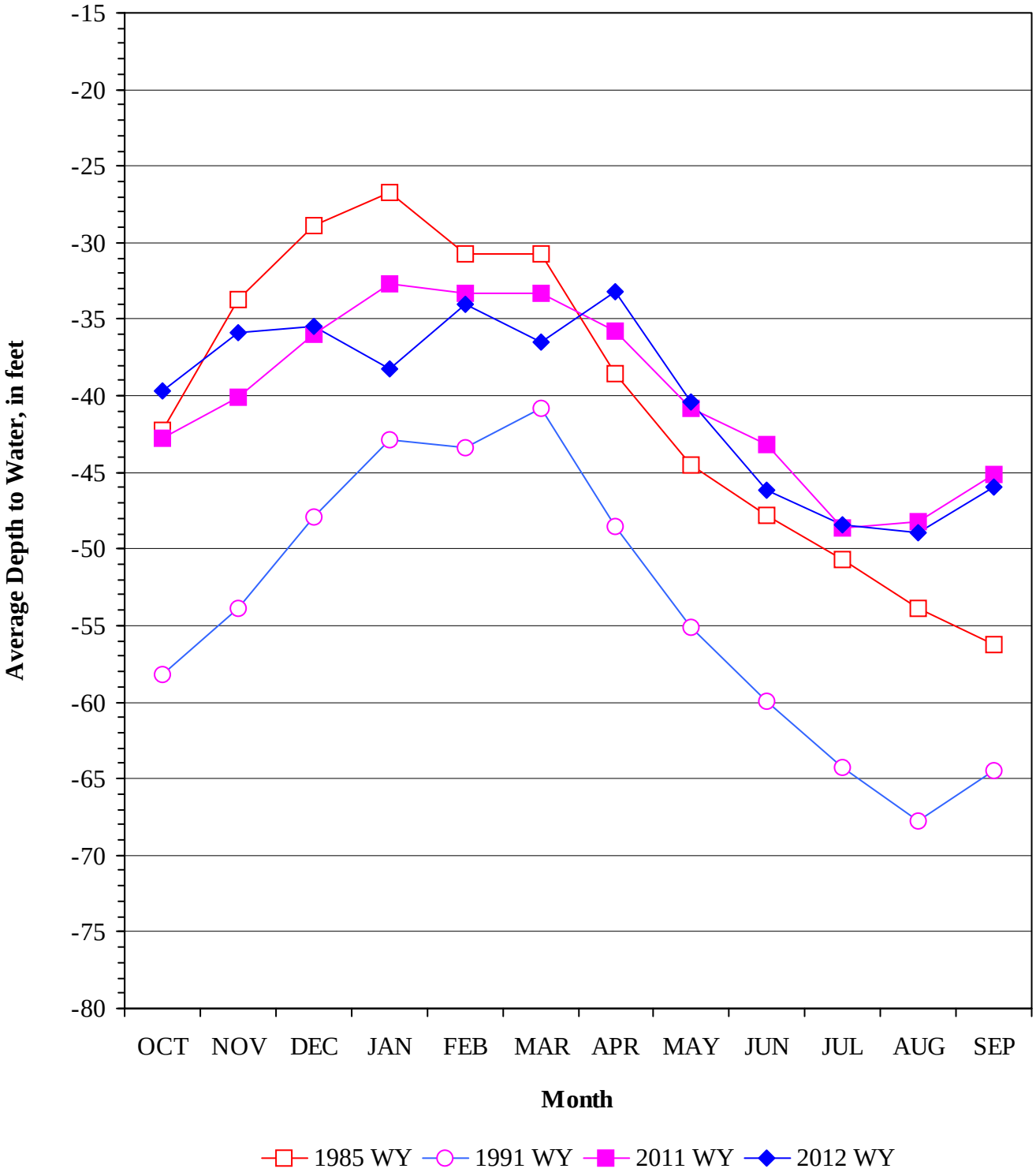


ATTACHMENT E

HISTORIC GROUND WATER TRENDS

PRESSURE 400-FOOT AQUIFER

11 Wells

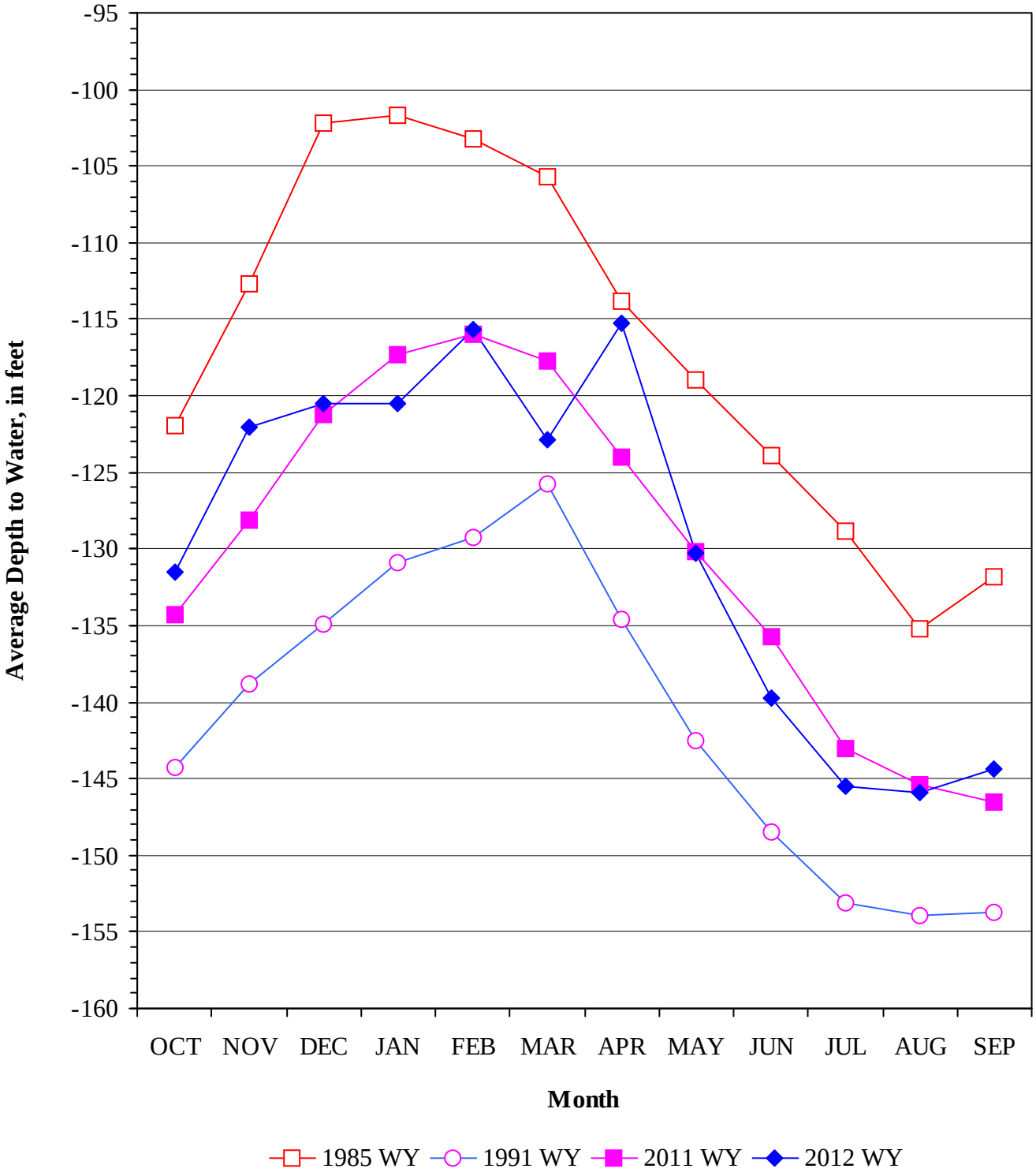


ATTACHMENT F

HISTORIC GROUND WATER TRENDS

EAST SIDE SUBAREA

11 Wells

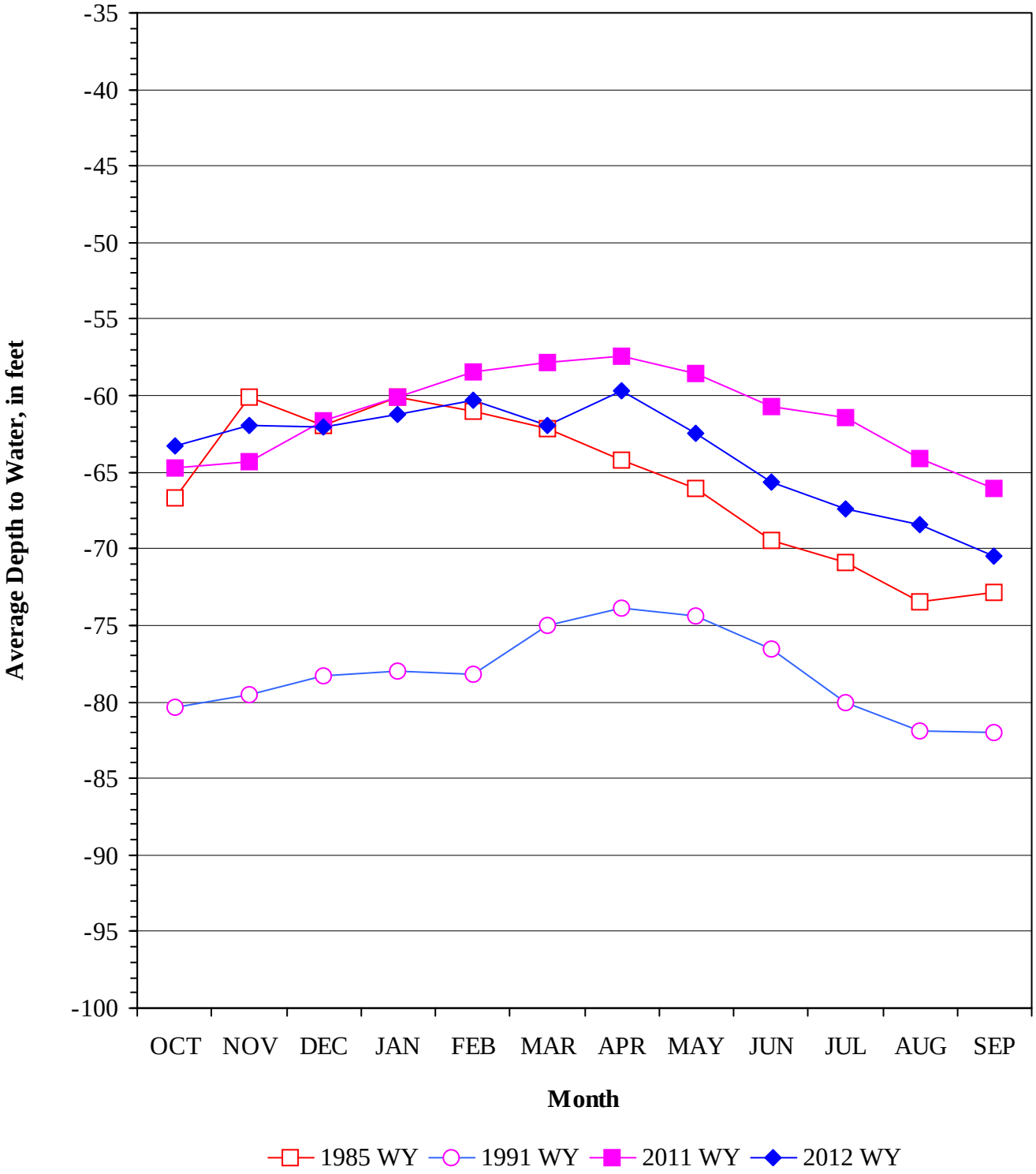


ATTACHMENT G

HISTORIC GROUND WATER TRENDS

FOREBAY SUBAREA

10 Wells

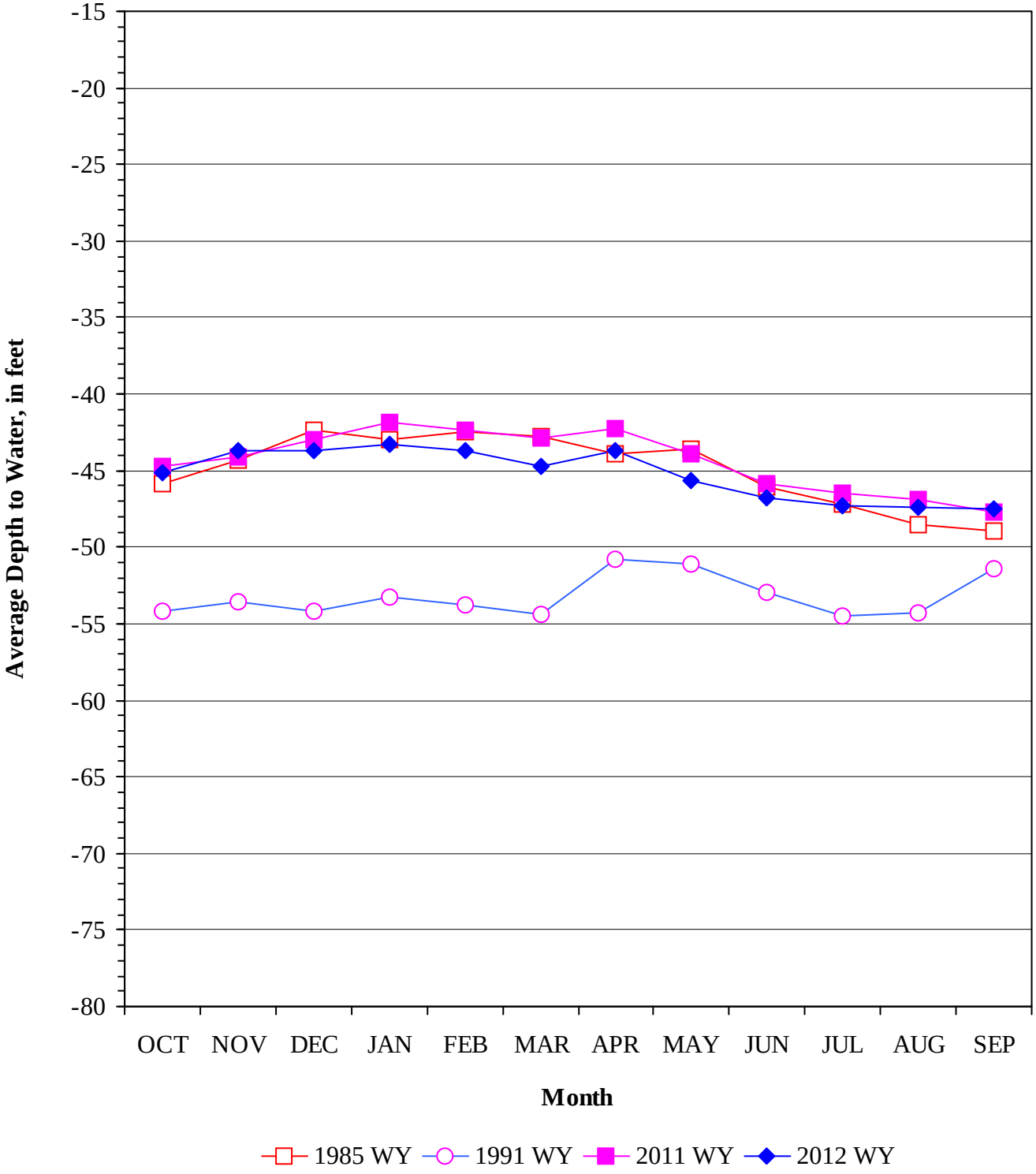


ATTACHMENT H

HISTORIC GROUND WATER TRENDS

UPPER VALLEY SUBAREA

9 Wells



ATTACHMENT I

Generalized Ground Water Trends
September 2012

Area	September 2012 Depth to Water	1 Year Change	Change From WY 1985	1 Month Change
Pressure 180-Foot Aquifer	52'	down 2'	down 1'	up 2'
Pressure 400-Foot Aquifer	46'	down 1'	up 10'	up 3'
East Side Subarea	144'	up 2'	down 13'	up 2'
Forebay Subarea	70'	down 4'	up 2'	down 2'
Upper Valley Subarea	47'	no change	up 1'	no change

September water levels, compared to last year, range from 4' lower to 2' higher.

September water levels, compared to WY 1985, range from 13' lower to 10' higher.

September changes in water levels over the last month range from 2' lower to 3' higher.

ATTACHMENT J