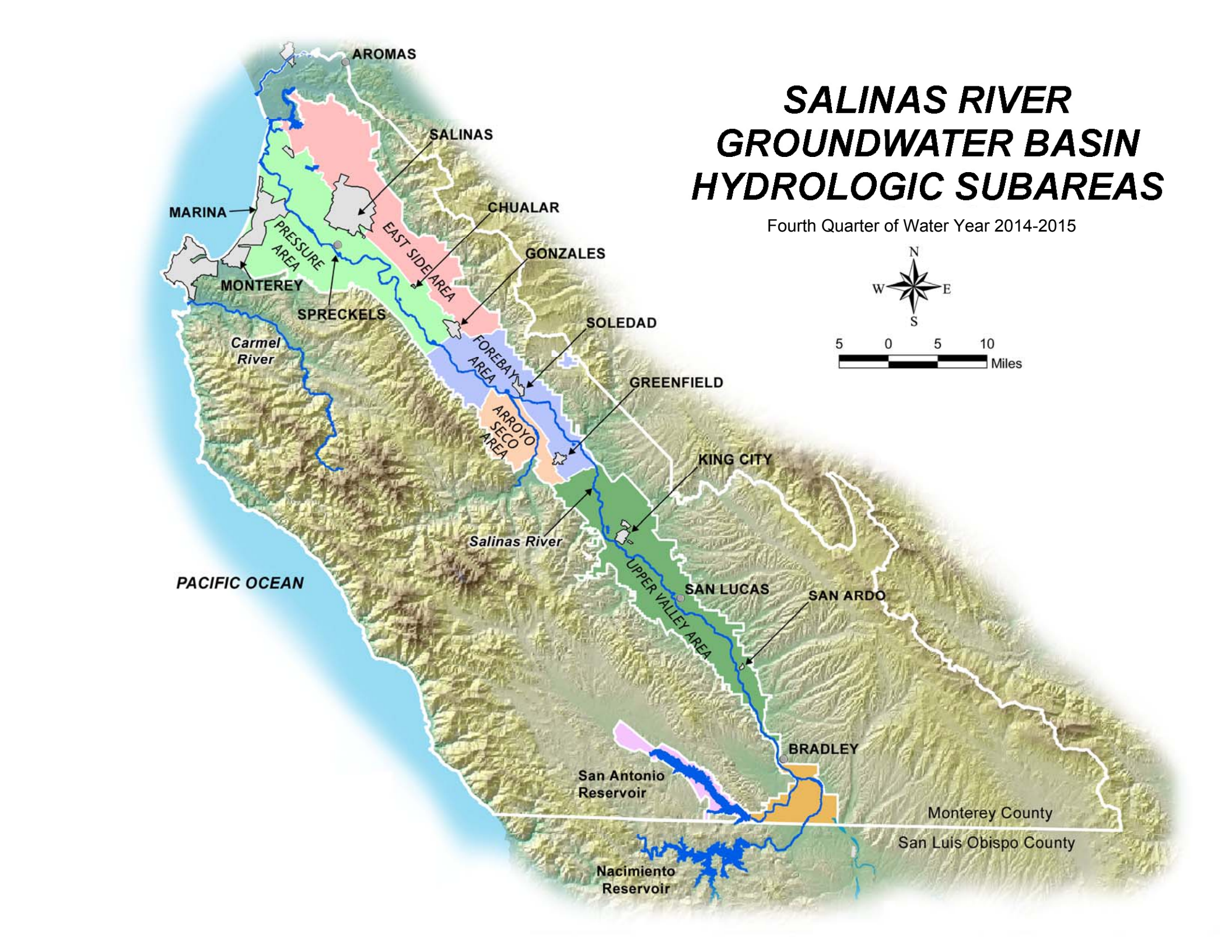
1-3-2019

2015 - Salinas Valley Hydrologic Subareas, 4th Quarter Water Conditions


SALINAS RIVER
GROUNDWATER BASIN
HYDROLOGIC SUBAREAS
Fourth Quarter of Water Year 2014-2015
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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 26, 2015	**AGENDA ITEM:**	
AGENDA TITLE:	Consider receiving a report on Salinas Valley Water Conditions for the Fourth Quarter of Water Year 2014-2015		
Consent ( ) **Action (X)** **Information ( )**			
SUBMITTED BY: **PHONE:**	Robert Johnson (831) 755-4860	**PREPARED BY:** **PHONE:**	Peter Kwiek (831) 755-4860
DEADLINE FOR BOARD ACTION:	October 26, 2015		

RECOMMENDED BOARD ACTION:

Receive report on Salinas Valley water conditions for the fourth quarter of Water Year 2014-2015.

PRIOR RELEVANT BOARD ACTION:

A report was last presented to the Board on July 27, 2015, covering the third quarter of Water Year 2014-2015.

DISCUSSION/ANALYSIS:

This report covers the fourth quarter of Water Year 2014-2015 (WY15), July through September, 2015. 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 I.

Precipitation – Normally a time of minimal precipitation, the fourth quarter of WY15 brought slightly higher than normal rainfall to Salinas and King City. Cumulative totals for the quarter were 0.29 inches (145% of normal rainfall for the quarter) at the Salinas Airport, and 0.37 inches (more than twice the normal rainfall) in King City.

Attachment A contains graphs for both stations showing monthly and cumulative precipitation data for the current and a normal water year. Tables with precipitation values shown on the graphs and percent of normal precipitation are also presented in Attachment A.

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 13,000 acre-feet higher than in September 2014, while storage in San Antonio Reservoir is 1,737 acre-feet lower.

Reservoir	September 30, 2015 (WY15) Storage in acre-feet	September 30, 2014 (WY14) Storage in acre-feet	Difference in acre-feet
Nacimiento	76,850	63,850	13,000
San Antonio	10,529	12,266	-1,737

Graphs for both reservoirs showing daily storage for the last five water years and average daily storage are included as Attachments B and C.

Groundwater Levels – More than 80 wells are measured monthly throughout the Salinas Valley to monitor seasonal groundwater 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 (WY14), dry conditions (WY91), and near-normal conditions (WY85), are found in Attachments D through H. Attachment I is a summary of water level changes for all subareas.

Groundwater level measurements indicate that, by the end of the fourth quarter of WY15, water levels were recovering in the Pressure and East Side Subareas, but not in the Forebay or Upper Valley Subareas. Over the past month, average groundwater levels rose by two feet in the Pressure 400-Foot Aquifer, four feet in the East Side Subarea, and less than a half foot in the Pressure 180-Foot Aquifer. Groundwater levels declined slightly in the Forebay Subarea (0.2 feet) and Upper Valley Subarea (one foot) over the past month.

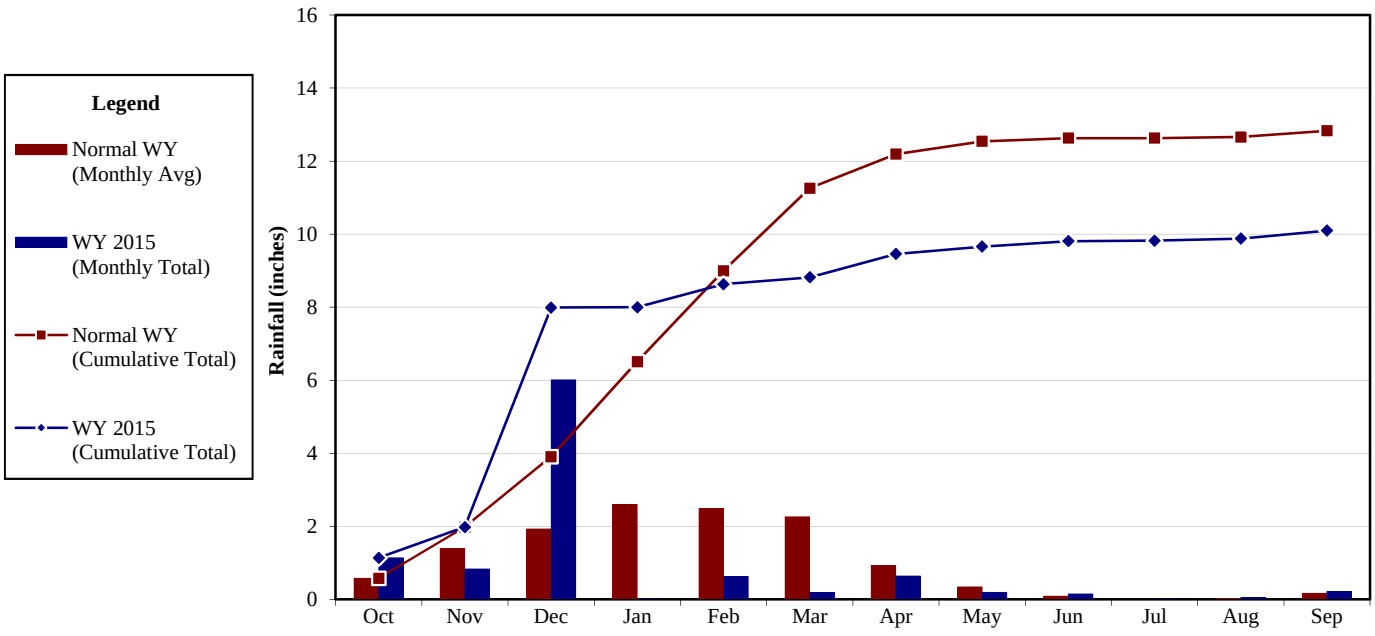
Compared to September 2014, average groundwater levels in September 2015 were three to seven feet lower in all subareas, as shown in Attachment I.

When compared to WY85, which is considered to be a year of near normal groundwater conditions, current water levels are 28 feet lower in the East Side Subarea, 18 feet lower in the Pressure 180-Foot Aquifer, two feet lower in the Pressure 400-Foot Aquifer, 15 feet lower in the Forebay Subarea and 13 feet lower in the Upper Valley Subarea.

Average groundwater levels for the fourth quarter of WY15 remained below WY91 levels in the Pressure 180-Foot Aquifer as well as the East Side, Forebay, and Upper Valley Subareas. By contrast, throughout the fourth quarter, water levels in the Pressure 400-Foot Aquifer remained five to seven feet higher than in WY91.

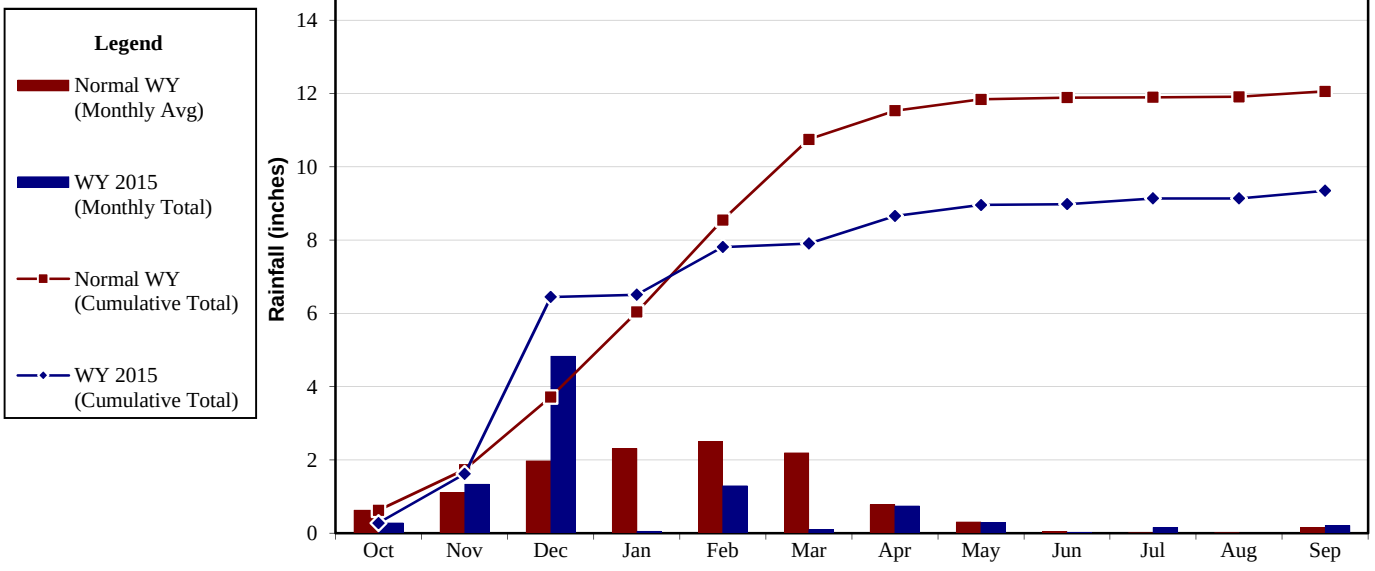
FINANCIAL IMPACT:	**YES ( ) NO (X)**
FUNDING SOURCE:	
COMMITTEE REVIEW AND RECOMMENDATION:	None
ATTACHMENTS:	1. Salinas Valley Hydrologic Subareas Map 2. Salinas and King City Precipitation Graphs, Attachment A 3. Nacimiento and San Antonio Reservoir Graphs, Attachments B and C 4. Salinas Valley Monthly Water Level Graphs for Each Subarea, Attachments D through H 5. Generalized Ground Water Trends, Attachment I.
APPROVED:	_____ **General Manager Date**

SALINAS AIRPORT RAINFALL
WATER YEAR 2015



Monthly Rainfall (WY 2015)	1.14	0.84	6.01	0.01	0.63	0.19	0.64	0.20	0.15	0.01	0.06	0.22
Monthly Rainfall (Normal WY*)	0.58	1.40	1.93	2.60	2.49	2.26	0.93	0.35	0.09	0.00	0.03	0.17
Percent of Normal for Month	197%	60%	311%	0%	25%	8%	69%	57%	167%	N/A	200%	129%
Cumulative Rainfall (WY 2015)	1.14	1.98	7.99	8.00	8.63	8.82	9.46	9.66	9.81	9.82	9.88	10.10
Cumulative Rainfall (Normal WY*)	0.58	1.98	3.91	6.51	9.00	11.26	12.19	12.54	12.63	12.63	12.66	12.83
Percent of Cumulative Normal	197%	100%	204%	123%	96%	78%	78%	77%	78%	78%	78%	79%

KING CITY RAINFALL
WATER YEAR 2015

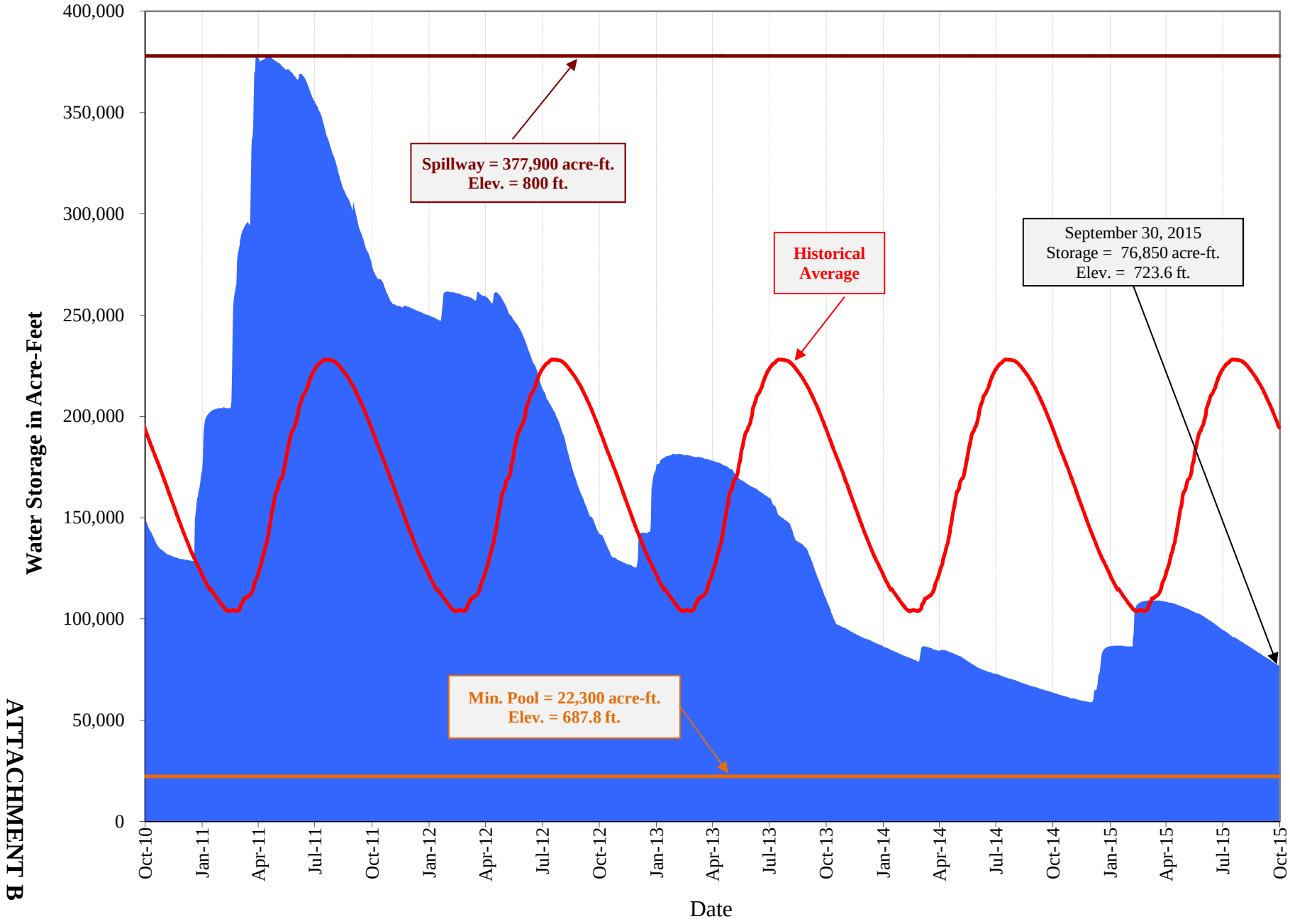


Monthly Rainfall (WY 2015)	0.28	1.34	4.83	0.06	1.30	0.10	0.75	0.30	0.02	0.16	0.00	0.21
Monthly Rainfall (Normal WY*)	0.63	1.11	1.98	2.32	2.51	2.20	0.78	0.31	0.05	0.01	0.01	0.15
Percent of Normal for Month	44%	121%	244%	3%	52%	5%	96%	97%	40%	1600%	0%	140%
Cumulative Rainfall (WY 2015)	0.28	1.62	6.45	6.51	7.81	7.91	8.66	8.96	8.98	9.14	9.14	9.35
Cumulative Rainfall (Normal WY*)	0.63	1.74	3.72	6.04	8.55	10.75	11.53	11.84	11.89	11.90	11.91	12.06
Percent of Cumulative Normal	44%	93%	173%	108%	91%	74%	75%	76%	76%	77%	77%	78%

*Average precipitation over the most recent 30-year period ending in a decade (1981-2010)

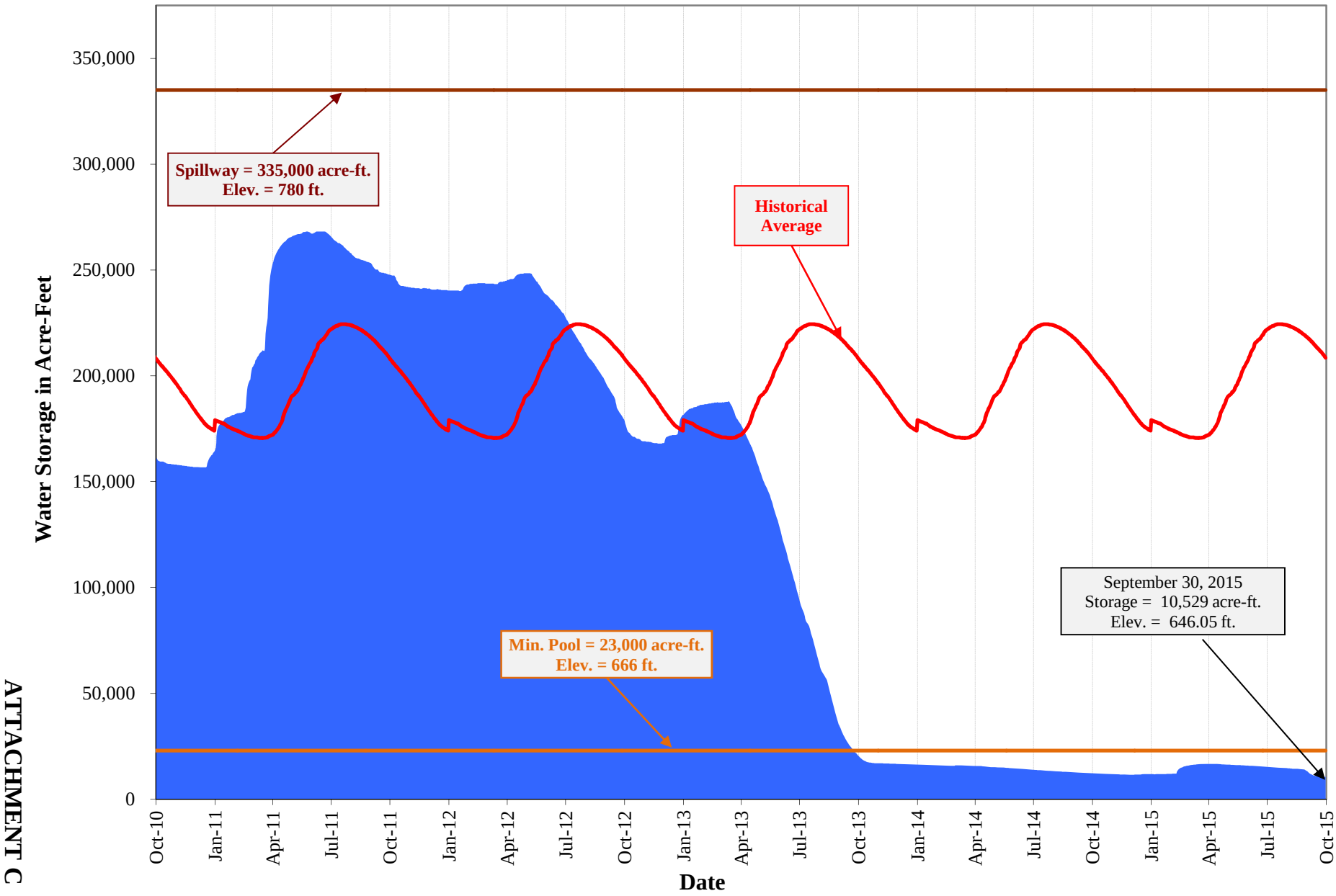
ATTACHMENT A

NACIMIENTO RESERVOIR
DAILY STORAGE



ATTACHMENT B

SAN ANTONIO RESERVOIR
DAILY STORAGE

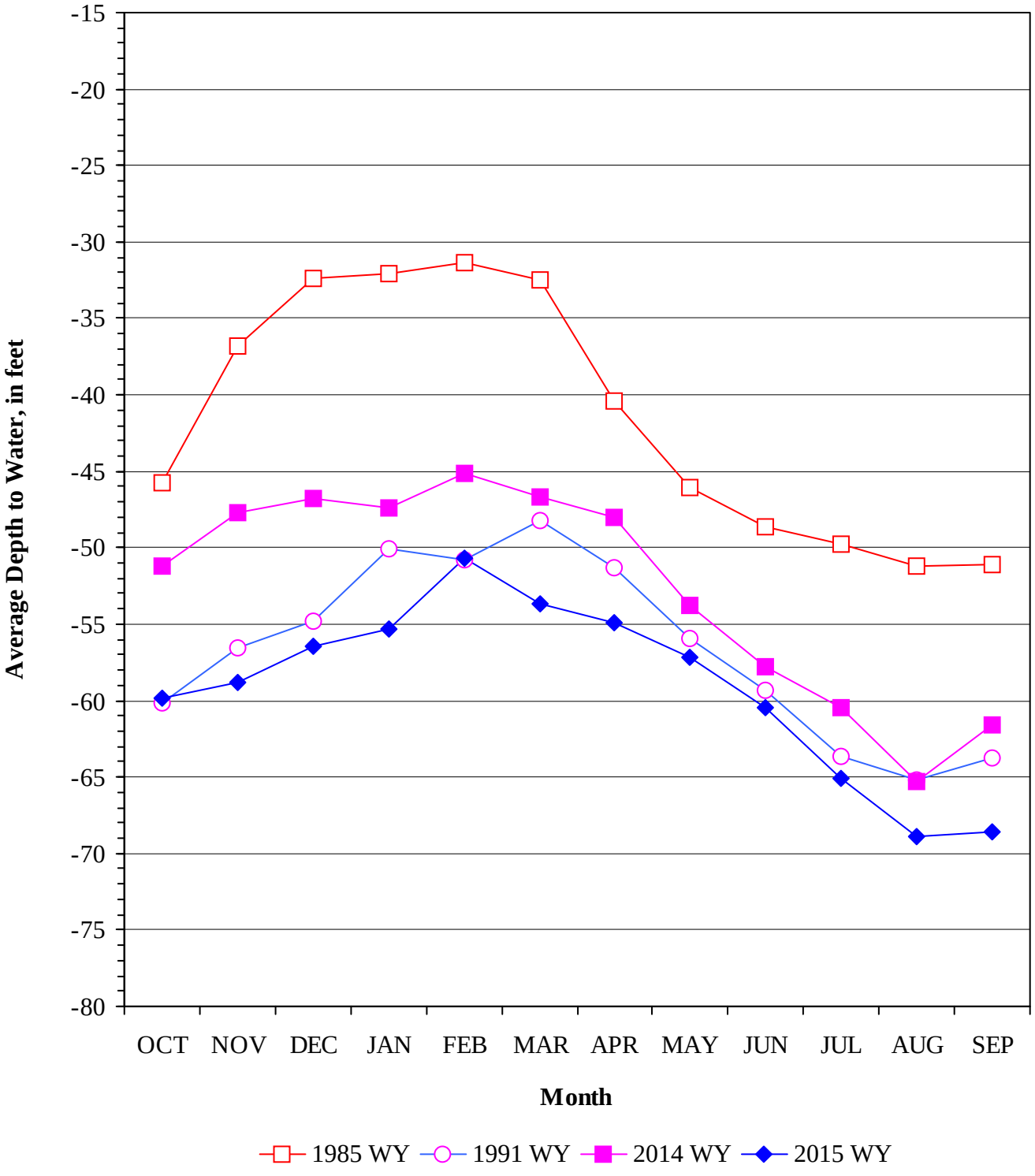


ATTACHMENT C

HISTORIC GROUNDWATER TRENDS

PRESSURE 180-FOOT AQUIFER

5 Wells

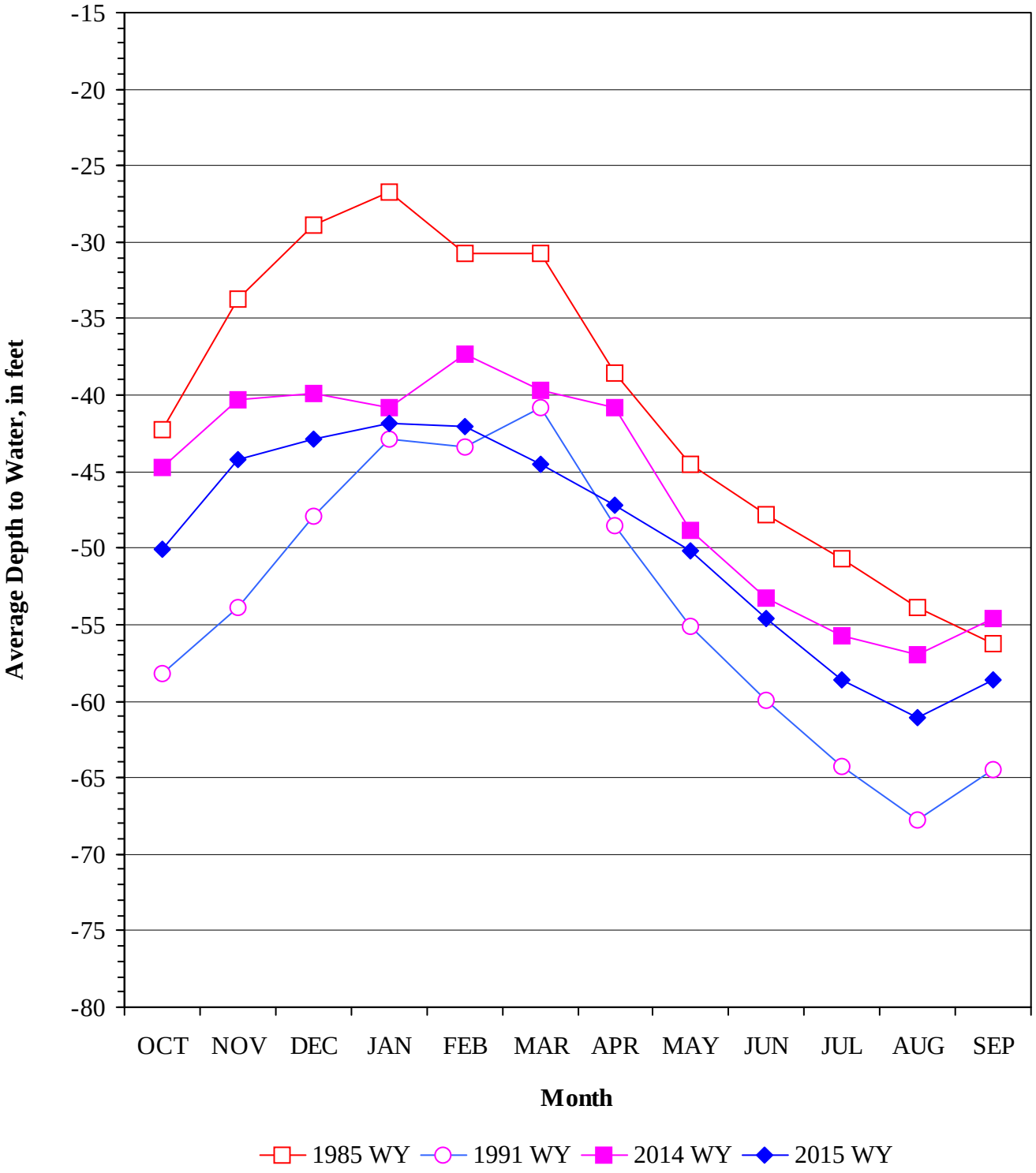


ATTACHMENT D

HISTORIC GROUNDWATER TRENDS

PRESSURE 400-FOOT AQUIFER

11 Wells

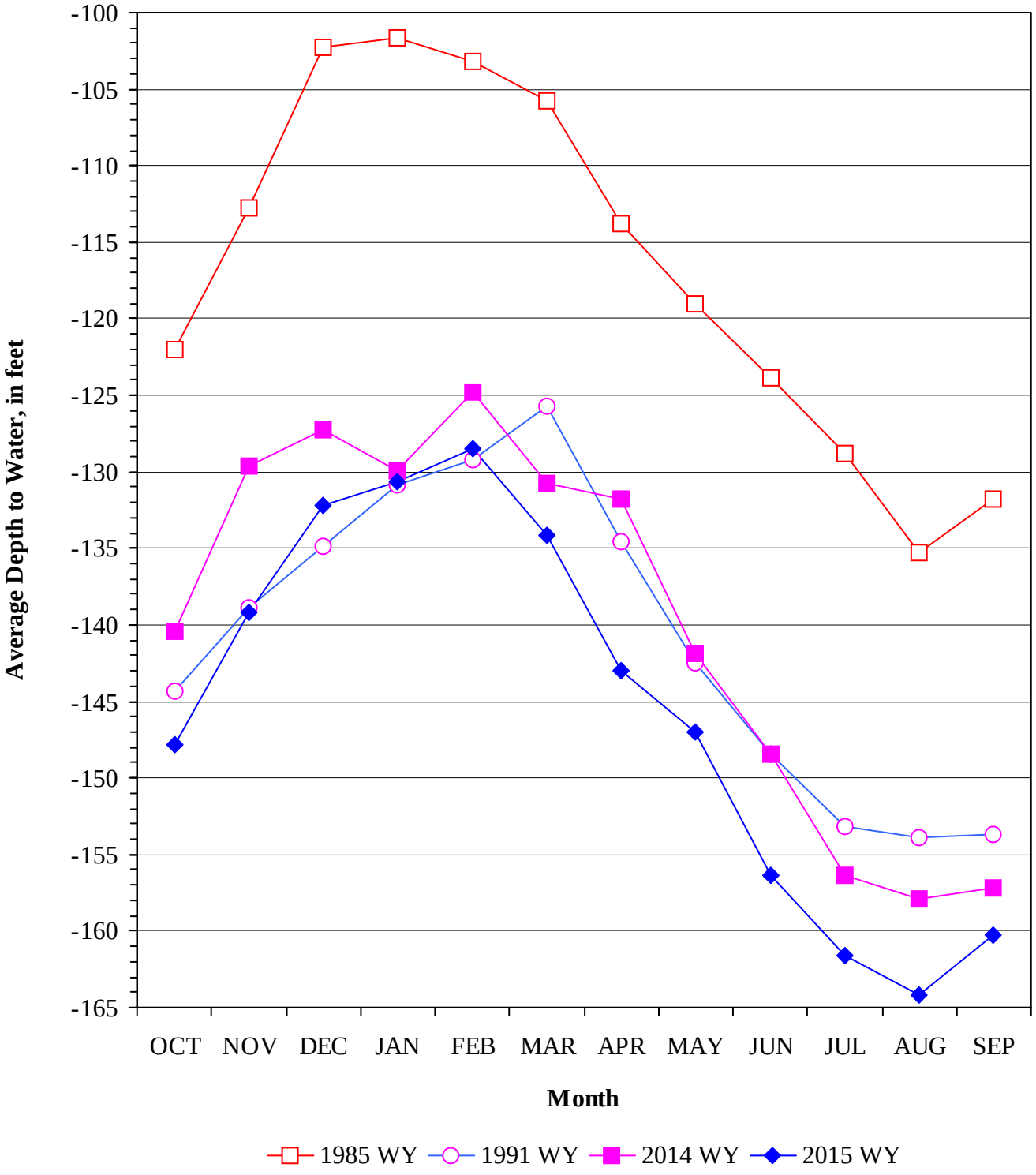


ATTACHMENT E

HISTORIC GROUNDWATER TRENDS

EAST SIDE SUBAREA

11 Wells

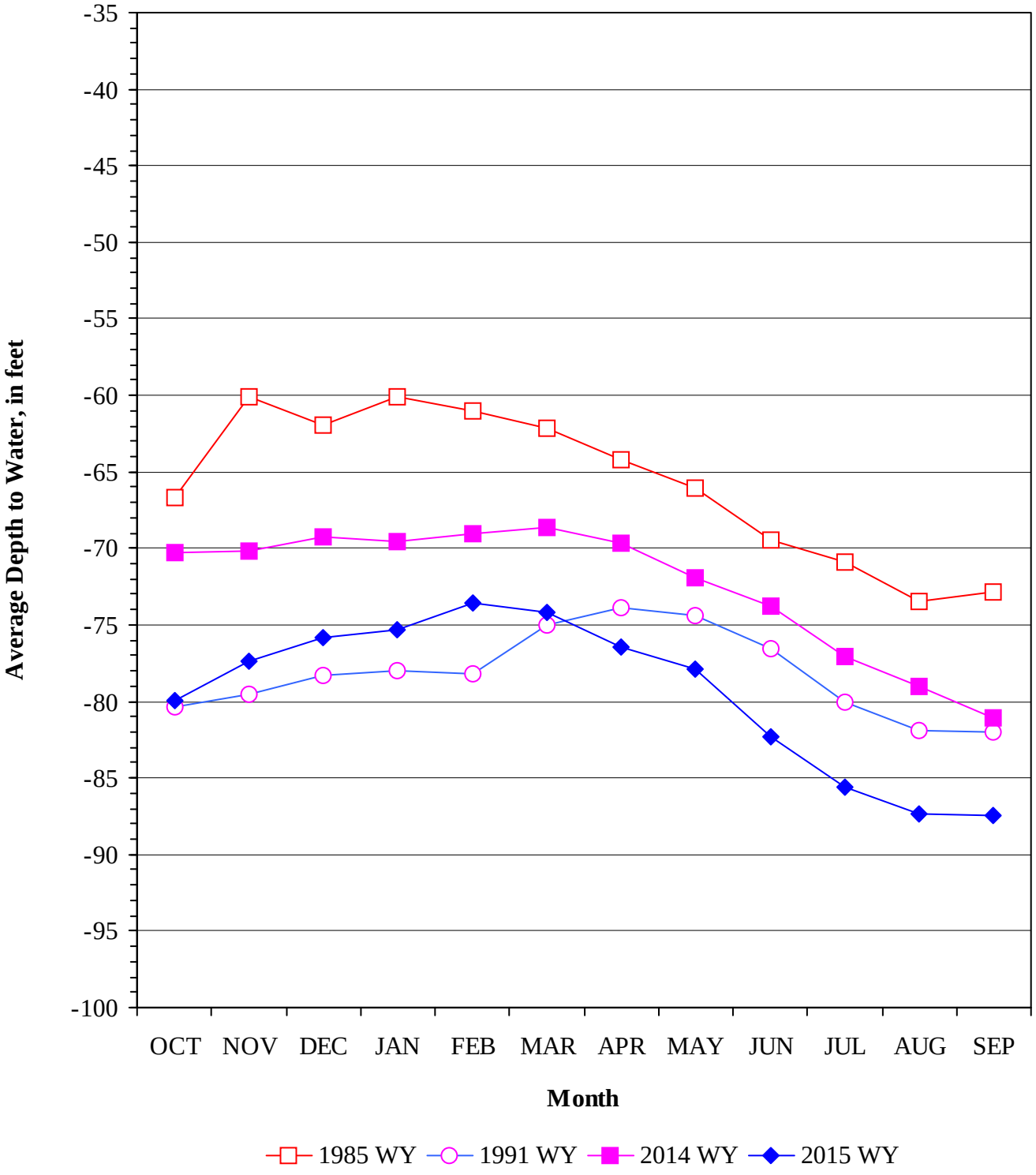


ATTACHMENT F

HISTORIC GROUNDWATER TRENDS

FOREBAY SUBAREA

10 Wells

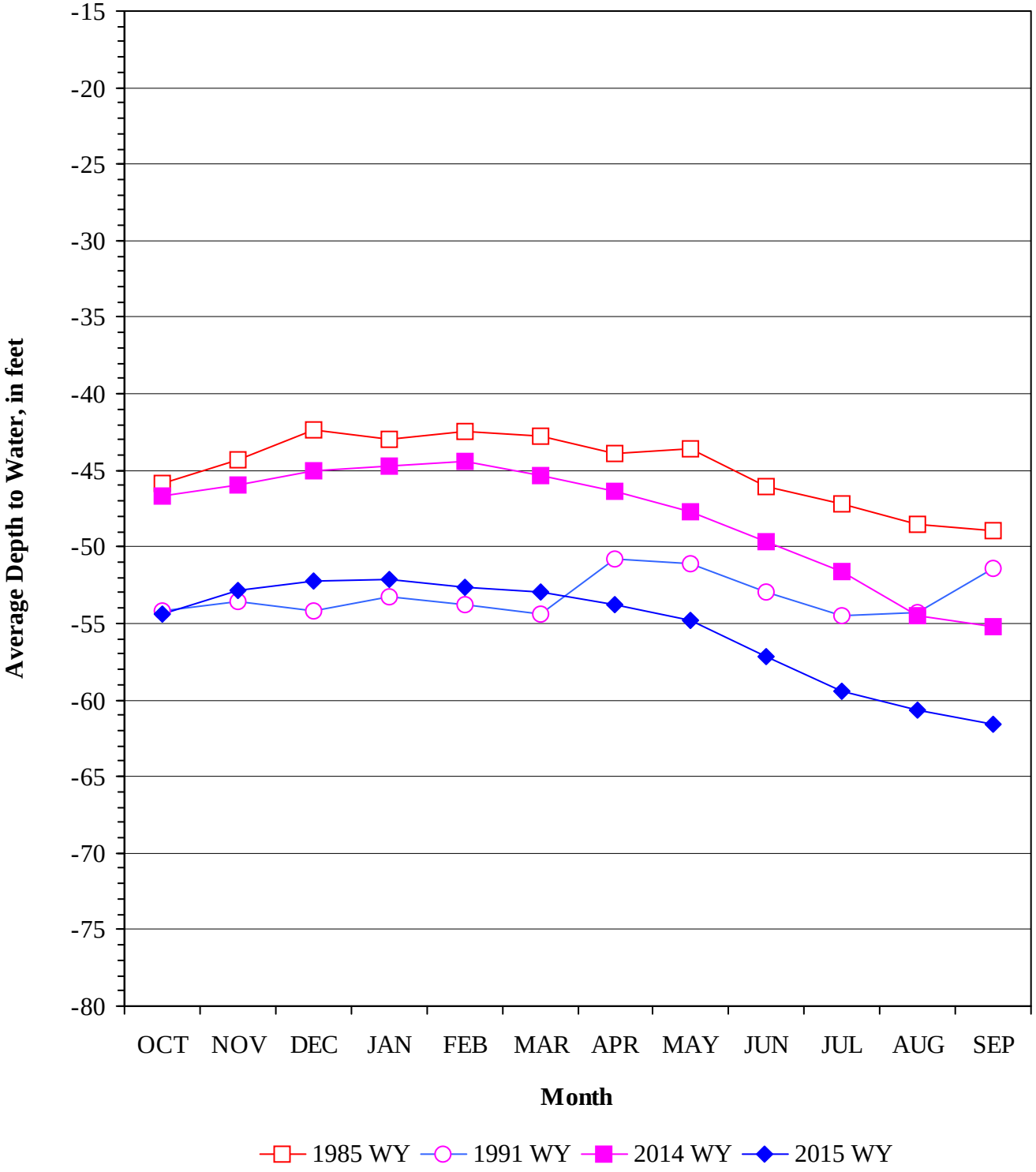


ATTACHMENT G

HISTORIC GROUNDWATER TRENDS

UPPER VALLEY SUBAREA

9 Wells



ATTACHMENT H

Generalized Groundwater Trends
September 2015

Area	September 2015 Depth to Water	1 Year Change	Change From WY 1985	1 Month Change
Pressure 180-Foot Aquifer	69'	down 7'	down 18'	up <1'
Pressure 400-Foot Aquifer	59'	down 4'	down 2'	up 2'
East Side Subarea	160'	down 3'	down 28'	up 4'
Forebay Subarea	87'	down 6'	down 15'	down <1'
Upper Valley Subarea	62'	down 6'	down 13'	down 1'

September water levels, compared to last year, range from 7' lower to 3' lower.

September water levels, compared to WY 1985, range from 28' lower to 2' lower.

September changes in water levels over the last month range from 1' lower to 4' higher.

ATTACHMENT I