



Water and Resource Conservation

Paul Gosselin, Director

308 Nelson Avenue
Oroville, California 95965

T: 530.538.4343
F: 530.538.3807

buttecounty.net/waterresourceconservation
bcwater@buttecounty.net

Butte County Groundwater Pumpers Advisory Committee

Meeting Agenda

Meeting Date: May 15, 2017

Time: 8:30AM

Place: Chico State University Farm, Room A009 & 0010, Chico, CA

Agenda Items

1. Welcome – Chair Heringer
2. Roll Call – Chair Heringer
3. *Review and approval of the April 17, 2017 GPAC minutes
4. Presentation on DWR Land Use Survey (Tito Cervantes, Department of Water Resources, Northern Regional Office)
5. Update on GSA Formation Process and Status (Vickie Newlin, Water and Resource Conservation)
6. *Discussion and Consideration of a Letter of Support for Butte County Obtaining a Grant to Develop Groundwater Sustainability Plans (Vickie Newlin, Water and Resource Conservation)
7. *Discussion and possible appointment of a subcommittee to review guiding principles for SGMA governance framework (Staff & GPAC members)
8. *Update on Spring 2017 Groundwater Conditions (Christina Buck, Water and Resource Conservation)

9. Discussion of Non-Public Groundwater Users Participation Options (Paul Gosselin, Water and Resource Conservation)
10. Update of other SGMA issues – Staff & GPAC
11. GPAC members wishing to address items not listed on the agenda (The GPAC is prohibited by state law from taking action on any item presented if it is not listed on the agenda)
12. Public members wishing to address the Commission on items not listed on the agenda (The GPAC is prohibited by State law from taking action on any item presented if it is not listed on the agenda. Comments will be limited to five minutes per person)
13. Next meeting – June 19, 2017, 8:30AM, CSU Chico Farm
14. Adjournment

*Materials attached



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Butte County Groundwater Pumpers Advisory Committee

Meeting Minutes

April 17, 2017

Time: 8:30AM

Place: Chico State University Farm, Room A009 & 0010, Chico, CA

Agenda Items

1. Welcome – Chair Heringer
2. Roll Call

Members Present: Heringer, Strachan, Daly, Schooling, Rice, Sohnrey, Lavy (late), Edgar (late)

Members absent: Cole

3. Review and approval of the March 20, 2017 GPAC minutes

Motion by Daly and seconded Schooling to approve the March 20, 2017 minutes. Motion carried 6-0

4. Discussion and possible recommendation to the Board of Supervisors to adopt GPAC Bylaws

Motion by Strachan and seconded by Sohnrey to recommend that Board of Supervisors approve the by-laws as amended. Motion passed 6-0

5. Presentation on Groundwater Sustainability Plan requirements
Mary Randall, Department of Water Resources, Northern Regional Office made a presentation on the groundwater sustainability plan regulations. Her presentation is posted on the GPAC webpage. The GSP Guidebook produced by DWR is on the department's SGMA webpage.

6. Update on GSA Formation Process and Status

Staff gave an update on the GSA formation status. A letter of support for Butte County to obtain a grant to develop groundwater sustainability plans is being considered by other GSAs. Staff will provide the GPAC with a template letter.

7. Discussion of and possible recommendation to the Board of Supervisors on Draft Guiding Principles

The GPAC raised issues about the Guiding Principles and suggested that the guiding principle related to basin boundary modifications be changed to include the phrase, “where appropriate”. The department will provide the GPAC with a copy of the guiding principles being used in Glenn and Colusa counties.

8. Update of other SGMA issues

DWR may open the process for local agencies to request basin boundary modifications in July.

9. GPAC members wishing to address items not listed on the agenda. (The GPAC is prohibited by state law from taking action on any item presented if it is not listed on the agenda).

None

10. Public members wishing to address the Commission on items not listed on the agenda. (The GPAC is prohibited by State law from taking action on any item presented if it is not listed on the agenda. Comments will be limited to five minutes per person)

None

11. Next meeting – May 15, 2017, 8:30AM, CSU Chico Farm.

12. Adjournment

Below is a sample template for a letter of support for Sustainable Groundwater Management Agencies (GSAs) and other organizations or entities to consider in support of a grant application funding a basin-wide approach for the West Butte Subbasin (5-21.58). Project proponents are also free to draft their own letter of support but we encourage the inclusion of data-sharing and cooperation toward a basin-wide plan in the letter. Preliminary letters of support should be submitted to Butte County on the organization's letterhead for inclusion in the grant application

Mary Randall, Regional Coordinator Northern Region
California Department of Water Resources
2440 Main Street
Red Bluff, Ca 96080

RE: Support Letter for Cooperative Approach to Obtain Prop 1 Funding for Planning Efforts for the Sustainable Groundwater Management Plan in the West Butte Basin

Ms. Randall:

Please accept this letter of support on behalf of __ (organization name) __ for a collaborative grant application for funding under the Sustainable Groundwater Management Act (SGMA) planning portion of Proposition 1. This funding would be used to develop a basin-wide Groundwater Sustainability Plan (GSP) for the West Butte Subbasin (5-21.58) as defined by the Department of Water Resources (DWR) under Bulletin 118.

The Counties of Butte, Colusa and Glenn, along with other Groundwater Sustainability Agencies (GSA) and organizations within the subbasin, have come together to seek funding to develop a basin-wide GSP, as well as explore specific basin boundary modifications which will enhance the sustainable management of the subbasin into the future.

All entities are committed to a cooperative approach to SGMA planning, which will include a coordination of efforts in both the planning and implementation of SGMA requirements. This effort includes a commitment to data-sharing amongst the parties and a collaborative approach to the development of the grant application and the GSP.

Butte County will serve as the applicant and administer the grant funding. However, this application is a cooperative effort and all entities are in agreement with this approach. The development of the application will be a group effort and all agencies will have the opportunity to review the scope of work prior to submittal of the grant application. One of the first tasks included in the scope of work will be the development of an Agreement that will define how the parties will participate in the planning process for the development of the GSP.

We look forward to a coordinated and cooperative SGMA planning effort in the West Butte Subbasin and support the application for Prop 1 funding for a basin-wide approach which will result in one GSP for the subbasin.

Sincerely,

XXX organization

TEMPLATE

Butte County Sub-Basins:
 GSA Eligible Entities – Meeting #5 – January 26, 2017

Guiding Principles for SGMA Governance – Version 1

The following are potential principles to guide future SGMA governance by Eligible Local Agencies (ELAs) for sub-basins lying within Butte County. These proposed principles are derived from the 2016 Butte County SGMA stakeholder assessment report feedback (<https://www.buttecounty.net/wrcdocs/planning/SGWMA/GWAssess/SGMAAssessFinalRpt.pdf>). They are intended as a starting point for ELAs to discuss, add to, and modify as decisions are made about GSA formation and future SGMA governance. The goal is to define a set of working principles that are shared among ELAs and that consistently and constructively shape SGMA interactions and decision making.

- Maximize value of familiar structures and relationships
- Acknowledge all key interests of eligible local agencies
- Respect legally recognized rights
- Anticipate GSP requirements
- Make use of basin boundary adjustments
- Comply with SGMA and regulations
- Identify opportunities to address interest of non-GSA stakeholders
- Distribute costs equitably and avoid fees if possible
- Respect mutual interests in maintaining independent decision making

Spring Groundwater Level Conditions- 2017



Christina Buck, Ph.D.
Water Resources Scientist

Groundwater Pumpers Advisory
Committee
May 15, 2017

1

Understanding the Basin

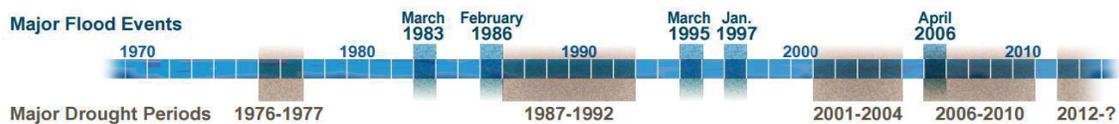
- Ongoing **monitoring of groundwater** levels tracks the effects of hydrologic variability and groundwater use
- **Research** and **modeling** helps understand and explore the drivers (hydrology, demands, geology, basin dynamics, management alternatives, etc.)
 - Inventory and Analysis Report, 2001
 - Watershed Modeling (WEHY model), 2010
 - Lower Tuscan Aquifer Investigation, 2010-2013
 - Butte Basin Groundwater Model
 - Water Inventory and Analysis Report, 2016
 - Stable Isotope Recharge Study (underway)
 - Stressed Basins grant Recharge Study (underway)

2

Why Monitor Groundwater Levels?

- Track changes over time
- Compare well infrastructure (depth) to groundwater levels
- Estimate groundwater flow direction
- Understand how water is moving in and through the system (i.e. aquifer dynamics)
- Understand the resource → manage and protect

Groundwater levels reflect the cumulative effects of hydrologic variability and groundwater use

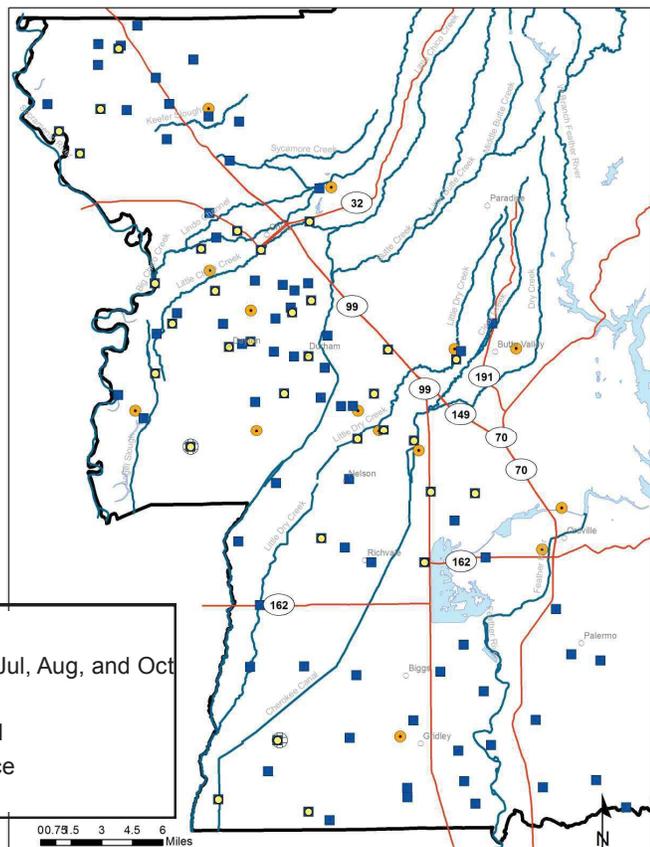


Groundwater Level Monitoring

- ~125 wells Manually
4x/year: Mar, Jul, Aug, Oct
- Hourly data (~60 wells)
- 69 additional wells since 2000
- Data available online:
Water Data Library

Legend

- Groundwater Level Well- Measured Mar, Jul, Aug, and Oct
- Groundwater Level Recorded Hourly
- BMO Water Quality Trend Monitoring Well
- ⊕ Extensometer, Measures Land Subsidence
- Primary Streams





Domestic well ↑



Irrigation well →



↑
Multi-completion well

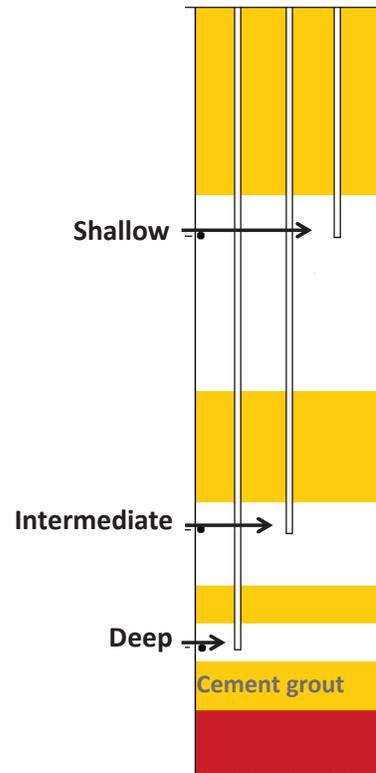
Dedicated Monitoring Well



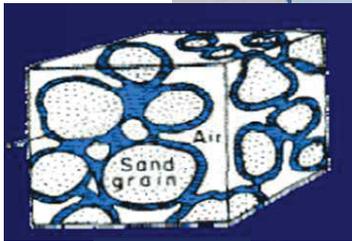
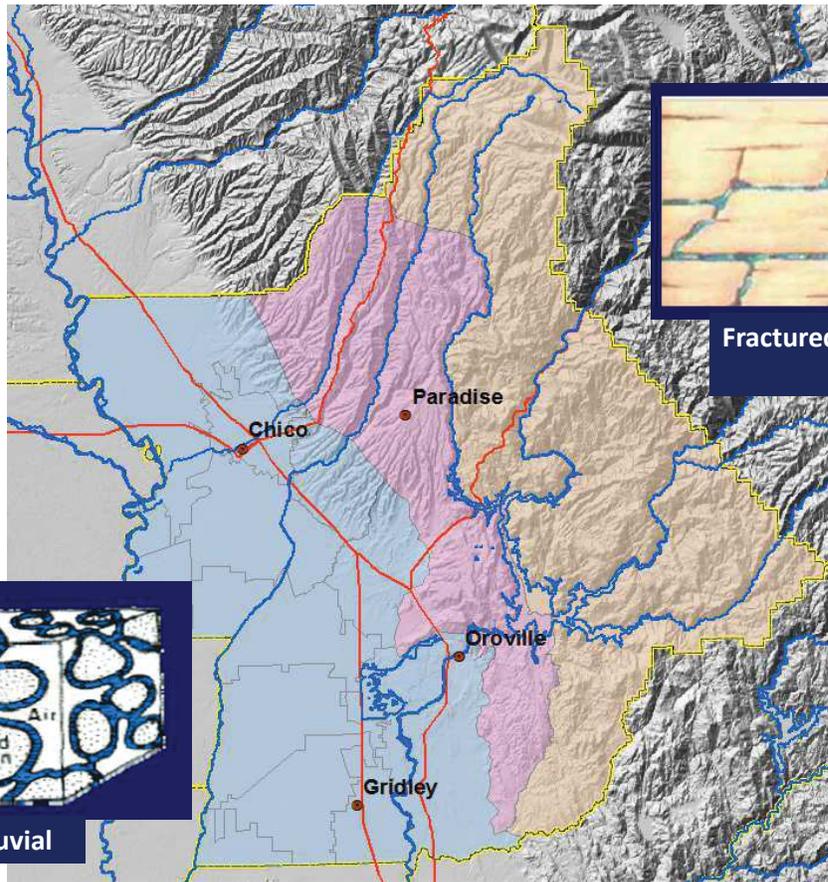
Multi-Completion Well

Example:

- 21N02E26E003M
- 21N02E26E004M
- 21N02E26E005M
- 21N02E26E006M



Butte County



Alluvial



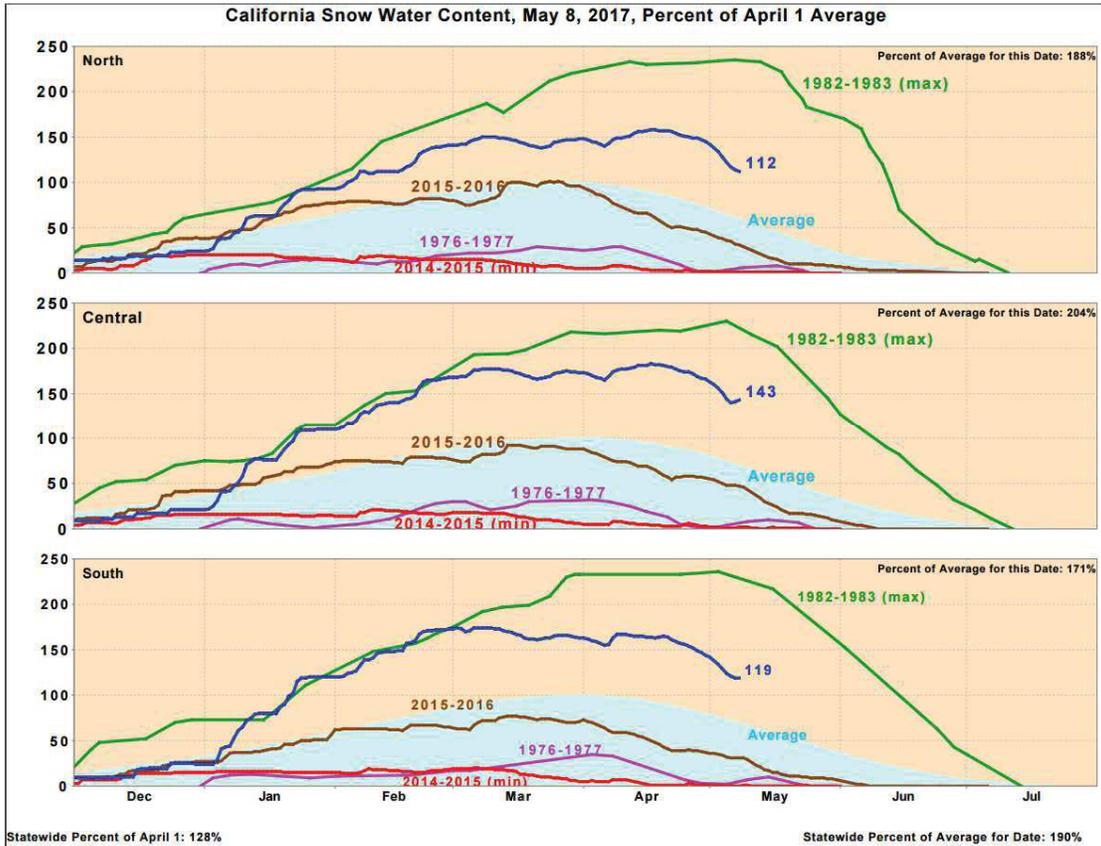
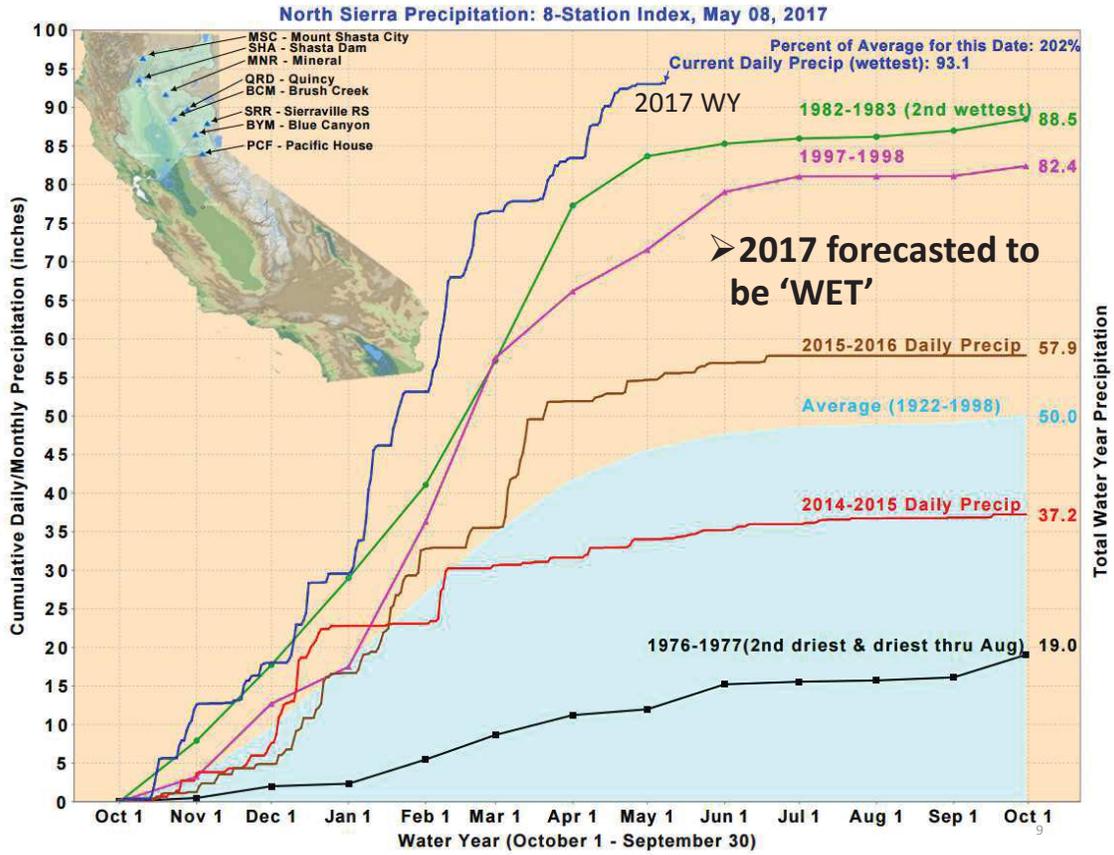
Fractured Rock

7

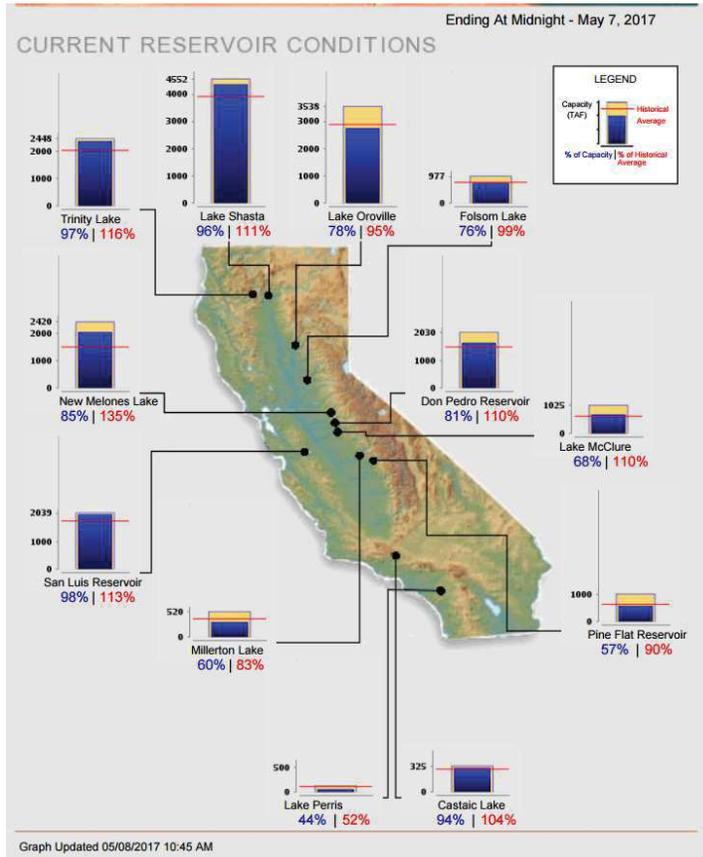
Water Year 2017 so far...

Oct. 1, 2016 – Sept. 30, 2017

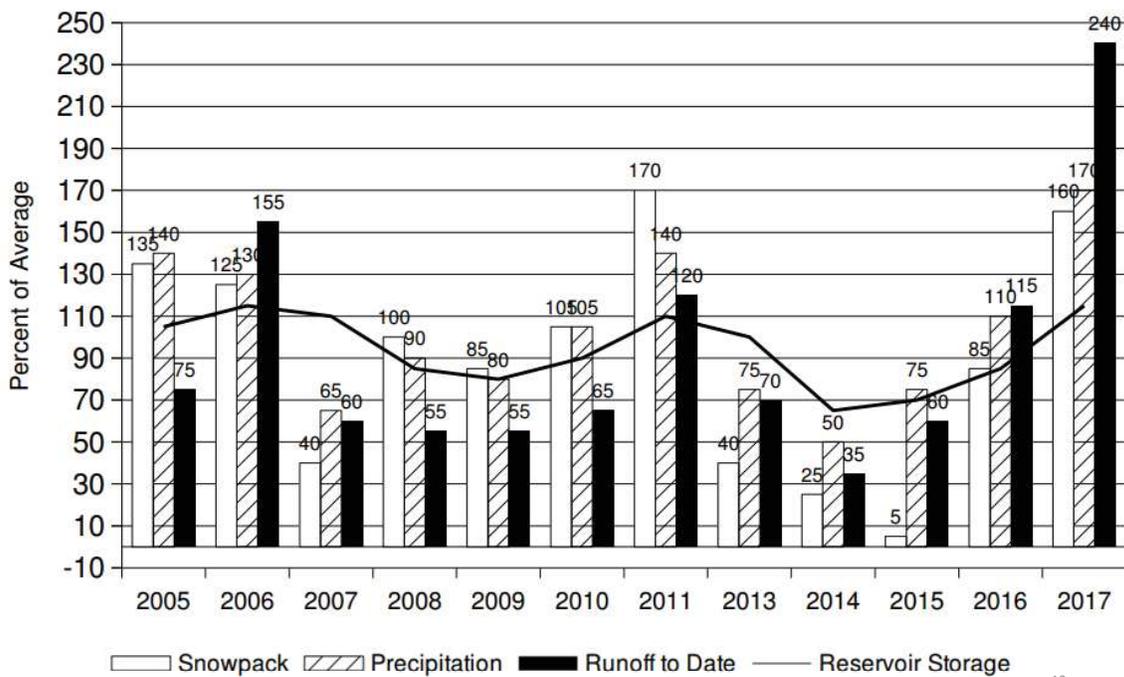
8



Reservoir Storage



April 1 Statewide Conditions



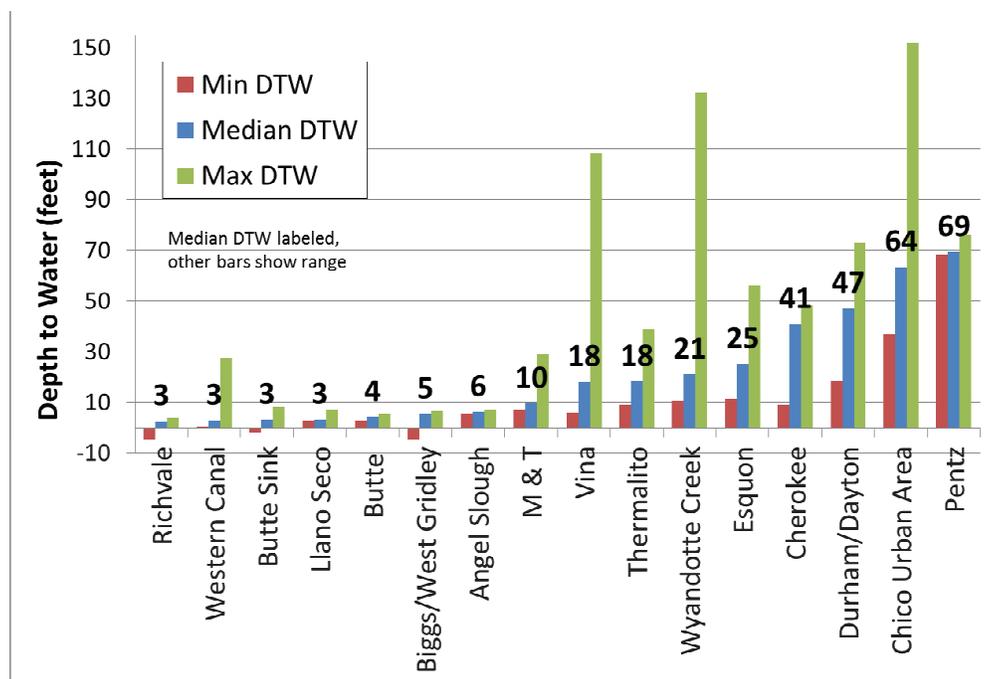
Butte County Groundwater Conditions Overview

Groundwater Level Change Spring 2016 to 2017

Well Count		Change (ft)	SIU
116	Average GWL Change	4.8	
	Median GWL Change	4.0	
97	Average Increase	6.0	
	Median Increase	5.5	
	Max Increase	24	<i>Chico Urban Area</i>
19	Average Decrease	-1.3	
	Median Decrease	-1.2	
	Max Decrease	-3.6	<i>Biggs/West Gridley</i>

13

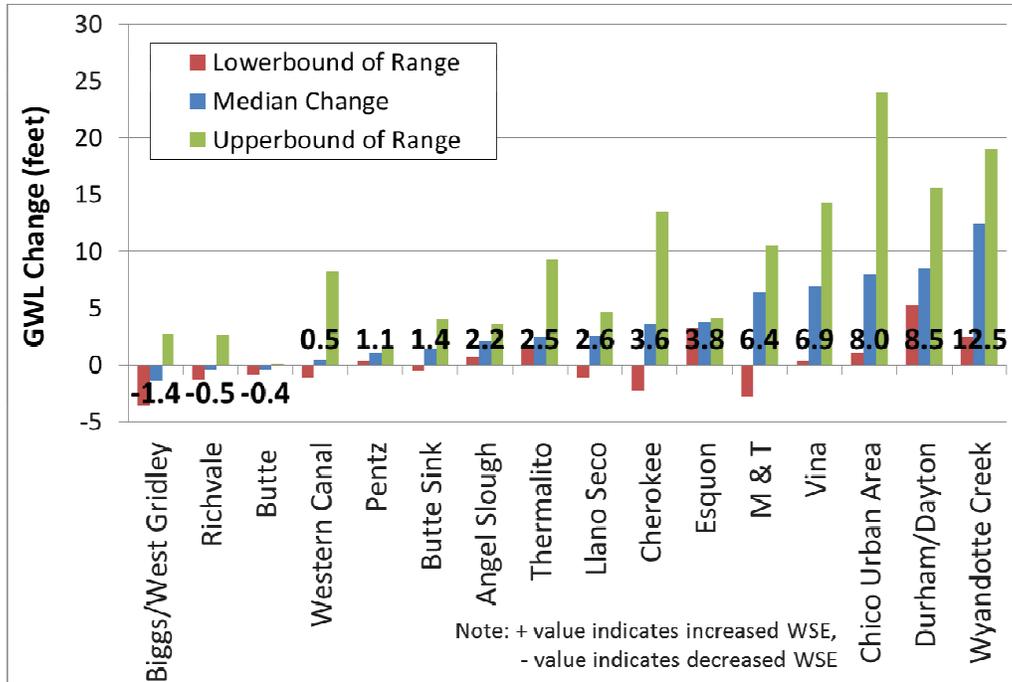
Spring 2017 Depth to Water



Spring 2017 minimum, median, and maximum Depth to Water (DTW, feet) in each sub-region with median DTW labeled

14

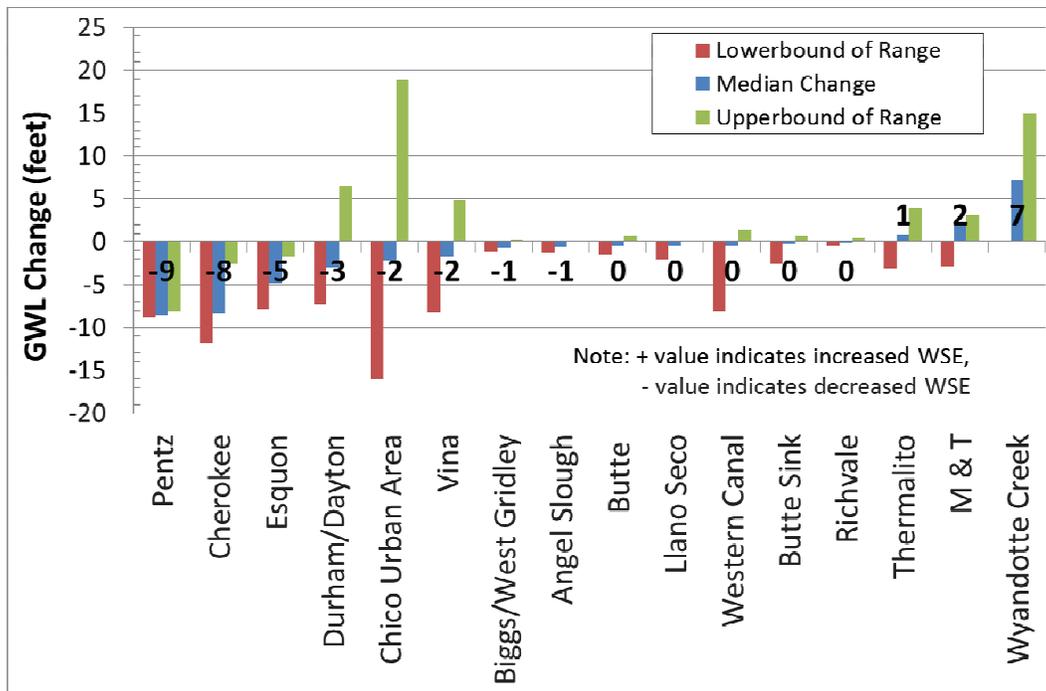
Groundwater Level Change, 2016-2017



Minimum, median, and maximum Spring 2016 to Spring 2017 change in Water Surface Elevation (WSE) in each sub-region with median change labeled.

15

Groundwater Level Change, 2011-2017

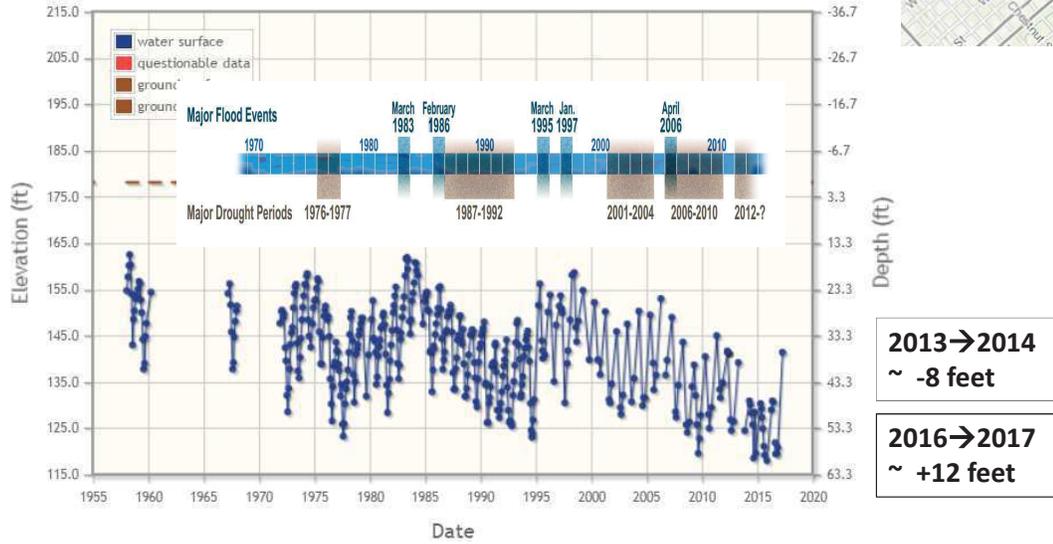


Minimum, median, and maximum Spring 2011 to Spring 2017 change in Water Surface Elevation (WSE) in each sub-region with median change labeled.

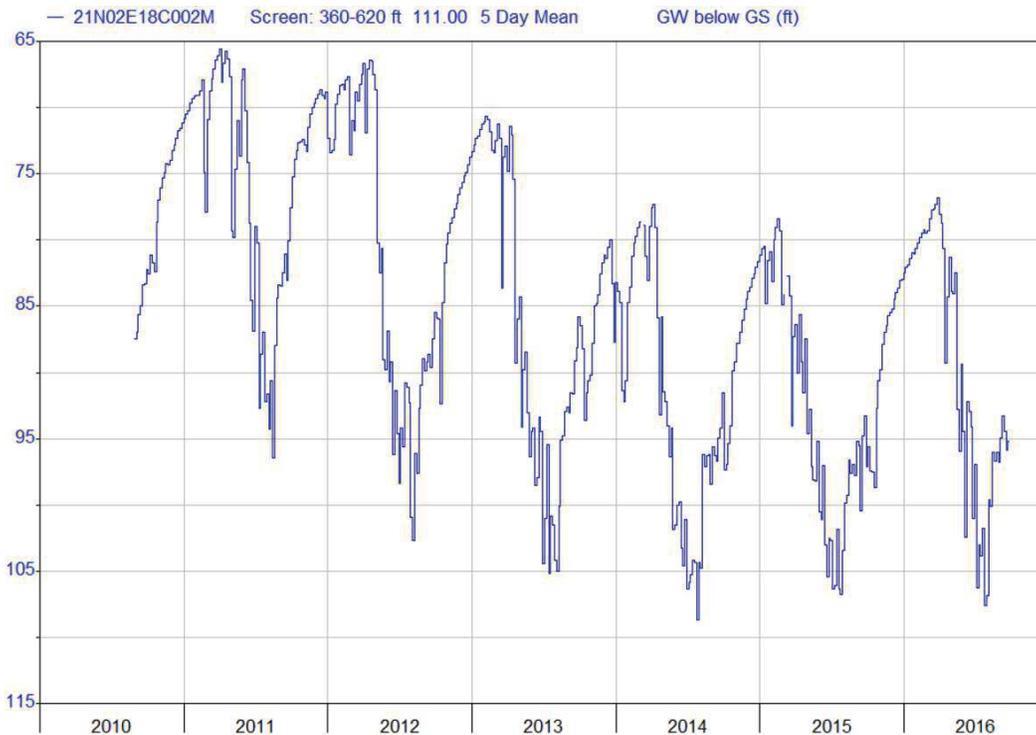
16

Groundwater Level Trends

Chico Urban Area
 Intermediate depth: screened 200-279 ft
 Record begins in 1958



Daily Data- Well in Durham area along the Midway



California Department of Water Resources

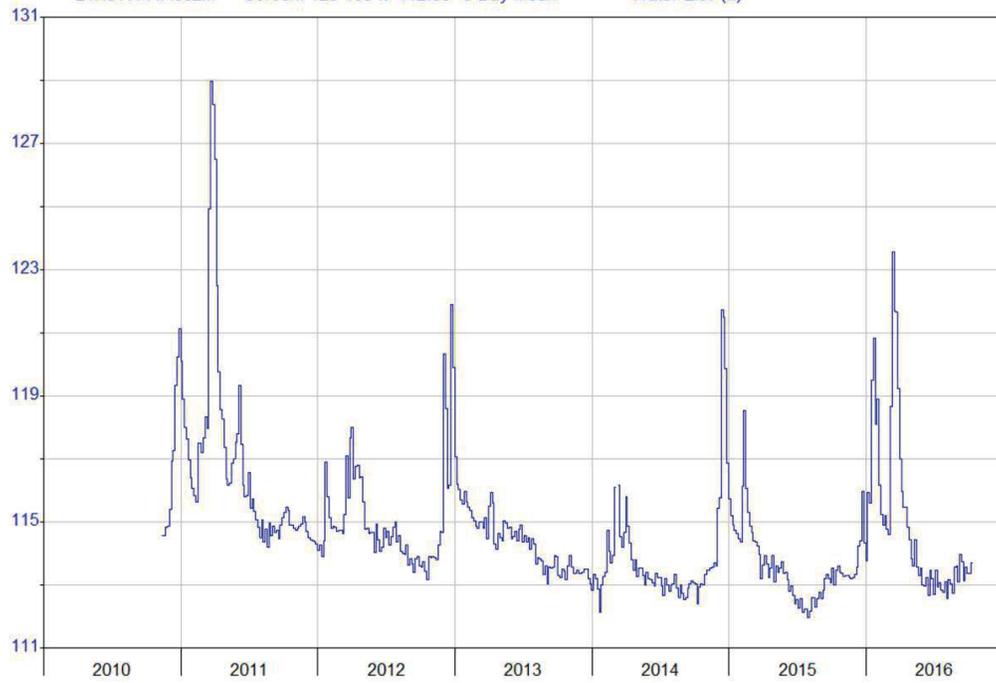
HYPLOT V133 Output 04/08/2017

Period 7 Year 01/01/2010 to 01/01/2017

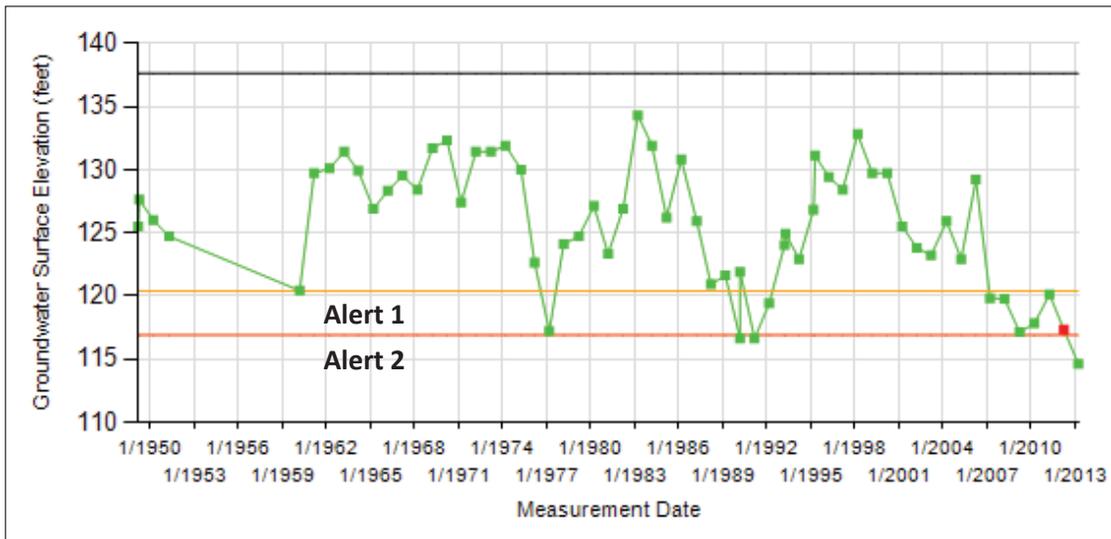
2010-16

— 21N01W11A002M Screen: 125-185 ft 112.00 5 Day Mean

Water Elev (ft)



Alert Stage Frequency



BMO Alert Stage Frequency

Spring: March

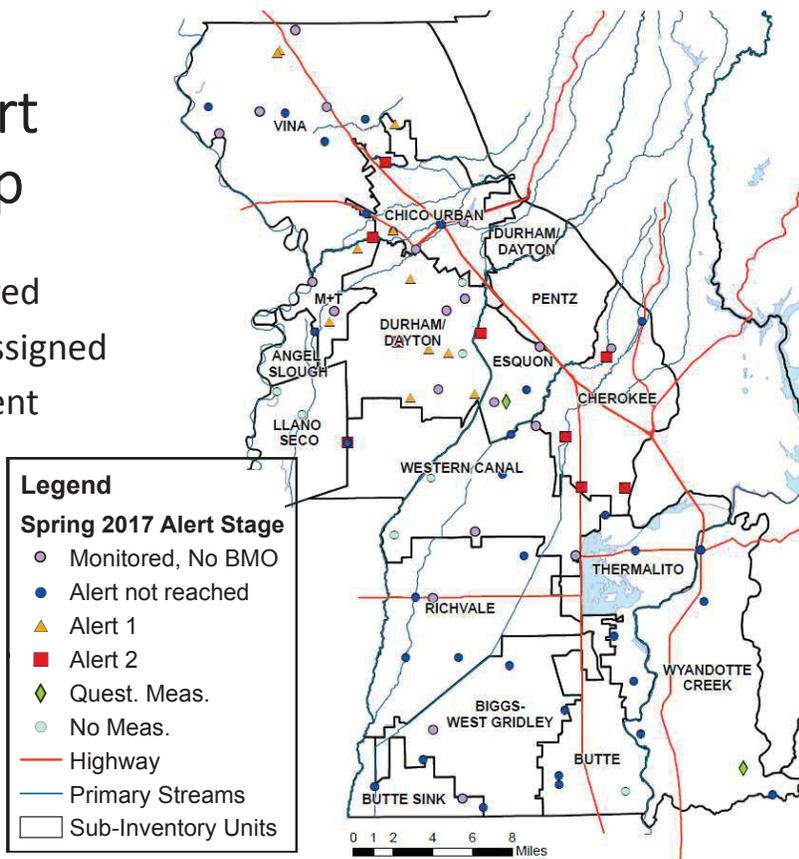
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Alert 1	26	31	25	24	25	20	24	22	17	13
Alert 2	0	6	3	0	4	15	21	25	25	11
Total	26	37	28	24	29	35	45	47	42	24

Fall: October

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Alert 1	27	29	24	7	26	23	21	16	21
Alert 2	2	1	2	2	6	16	19	25	18
Total	29	30	26	9	32	39	40	41	39

Spring Alert Stage Map

- 123 total measured
- 80 alert stages assigned
- 7 No Measurement
- 2 Questionable Measurement
- 13 Alert 1
- 11 Alert 2



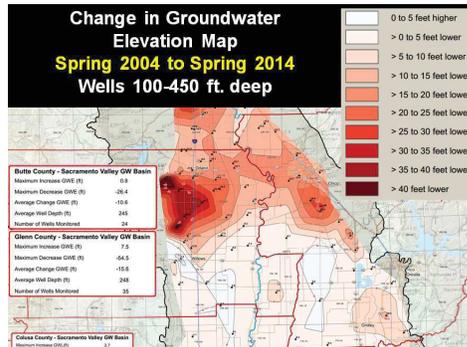
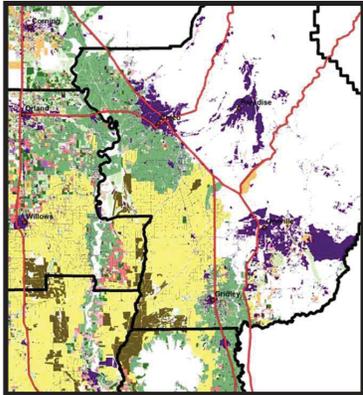
DWR Northern Region Office

- Located in Red Bluff
- Provide technical support and tools for the Northern Sacramento Valley

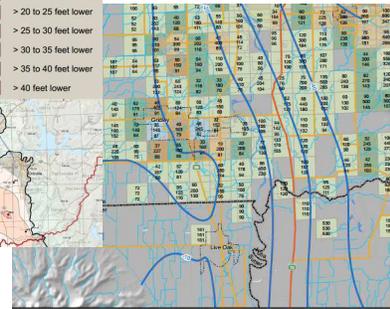


Monitoring

Land Use Surveys



Groundwater Contour, Change, and Well Distribution Maps



BUTTE COUNTY DOMESTIC WELL DEPTH SUMMARY
with Depth to Groundwater Contours for Wells Screened at Depths Less Than 150 Feet

Questions/Discussion

Spring 2008-2017 Groundwater Elevations - CASGEM

Sub Basin	Sub-InVENTORY Unit	Monitoring Wells	Well Type	Well Depth	First Record	Groundwater Elevations											Analysis				
						Spring 2008 Water Surface Elevation (WSE) (Elev. ft)	Spring 2009 Water Surface Elevation (WSE) (Elev. ft)	Spring 2010 Water Surface Elevation (WSE) (Elev. ft)	Spring 2011 Water Surface Elevation (WSE) (Elev. ft)	Spring 2012 Water Surface Elevation (WSE) (Elev. ft)	Spring 2013 Water Surface Elevation (WSE) (Elev. ft)	Spring 2014 Water Surface Elevation (WSE) (Elev. ft)	Spring 2015 Water Surface Elevation (WSE) (Elev. ft)	Spring 2016 Water Surface Elevation (WSE) (Elev. ft)	Spring 2017 Water Surface Elevation (WSE) (Elev. ft)	Spring BMO Stage 1 Alert Level (Elev. ft)	Spring BMO Stage 2 Alert Level (Elev. ft)	Elevation Above (+) or Below (-) Alert Stage 1 (ft)	Change Spring 2016 to Spring 2017 (ft)	Spring 2017 Depth to Water (ft)	
EAST BUTTE	Biggs/West Gridley*	17N01E10A001M	D	S	1953	59.6	59.2	59.7	60.5	63.7	57.7	59.8	58.9	61.0	59.6	52.9	51.2	6.7	-1.4	5.7	
		18N01E35L001M	M	D	2005	74.7	74.6	74.7	75.1	74.1	74.1	NM	72.2	72.3	75.0	a			2.7	-5.0	
		18N02E16F001M	I	S	1947	76.7	76.4	76.6	77.2	76.5	75.8	76.9	76.0	78.8	77.4	75.3	74.6	2.1	-1.4	4.9	
		18N02E25M001M	I	S	1959	83.4	83.4	82.9	84.6	82.4	67.1	NM	81.5	85.7	83.9	82.7	81.9	1.2	-1.8	5.4	
		18N02E32H001M	D	S	2001	71.9	71.7	NM	72.9	71.4	70.9	72.0	72.7	75.4	71.8	70.8	68.2	1.0	-3.6	6.5	
	Butte*	17N02E14A001M	I	S	1947	81.5	81.5	81.3	81.2	80.4	79.6	80.8	78.9	82.8	81.9	78.5	77.0	3.4	-0.9	2.9	
		17N02E14H001M	D	S	2000	79.8	80.0	79.8	82.2	79.5	78.5	79.0	79.4	80.6	80.7	79.0	76.2	1.7	0.1	5.6	
		17N03E16N001M	D	S	1953	77.3	77.4	77.6	79.6	75.9	76.1	75.7	NM	NM	NM	74.3	72.2			NM	
	Butte Sink	17N01E17F001M	M	S	1992	54.8	54.7	54.8	56.0	54.8	54.3	54.8	53.8	56.3	56.7	54.1	51.3	2.6	0.4	2.3	
		17N01E17F002M	M	I	1992	57.2	57.1	57.0	58.0	56.7	56.5	56.7	55.5	57.1	57.8	56.9	54.9	0.9	0.6	1.6	
		17N01E17F003M	M	I	1992	58.4	57.9	58.1	58.7	57.6	57.5	57.4	56.3	57.2	59.0	57.5	55.0	1.5	1.8	0.4	
		17N01E24A003M	M	D	2007	75.2	74.7	74.4	74.8	74.4	74.3	73.1	71.7	71.0	74.9	b			4.0	-2.1	
		17N01E24A004M	M	I	2007	65.8	65.4	66.0	67.2	65.2	64.0	63.7	61.9	62.5	64.5				2.0	8.3	
		17N01E24A005M	M	I	2007	65.8	65.4	65.9	67.1	65.2	64.0	63.0	61.7	62.1	64.5				2.4	8.3	
		17N01E24A006M	M	S	2007	68.1	68.1	68.2	69.2	68.3	68.7	69.5	67.8	69.3	68.7				-0.5	4.1	
	Cherokee	17N02E19J001M	I	S/I	2000	64.1	66.2	66.9	67.2	66.7	66.6	66.1	66.6	66.2	67.1		66.0	62.8	1.1	0.9	5.2
		20N02E24C001M	M	S	1999	121.0	119.5	118.9	121.2	119.3	115.4	109.7	107.0	105.8	109.5	122.8	117.6	-13.4	3.6	48.3	
		20N02E24C002M	M	I	1999	120.9	119.5	118.9	121.2	119.5	115.4	109.1	107.1	105.8	109.4	122.8	117.7	-13.5	3.6	48.4	
		20N02E24C003M	M	I	1999	121.0	119.6	118.9	121.2	119.4	115.4	109.4	107.1	105.8	109.9	122.5	117.0	-12.6	4.1	47.8	
		20N03E31M001M	M	S	2001	118.6	118.2	117.6	118.3	115.0	113.5	110.8	110.6	110.0	115.5	120.1	117.1	-4.7	5.5	17.6	
		20N03E33L001M	I	S	1999	124.0	122.3	120.9	123.6	119.1	118.8	116.5	115.1	NM	116.5	124.5	120.6	-8.0		34.8	
		21N03E22C001M	D	S	2001	380.9	381.7	382.7	381.8	381.2	380.2	373.9	367.0	360.0	373.5	372.1	360.7	1.4	13.5	8.9	
		21N03E29J003M	D	S/I	2007	224.3	230.3	230.4	NM	NM	230.7	226.9	226.9	229.6	227.3	c			-2.3	47.1	
	Esquon	21N03E32B001M	I	S	1999	225.2	224.7	223.9	225.1	226.0	224.2	221.9	221.9	221.6	222.6	225.8	224.5	-3.2	1.0	15.8	
		20N02E08H003M	D	S	2008	123.3	121.5	122.6	122.8	120.7	116.5	116.1	114.5	117.3	121.1	d			3.8	11.2	
		20N02E09G001M	M	S	2001	124.4	121.7	121.9	124.7	120.4	116.7	114.4	110.7	113.6	116.8	114.5	99.8	2.3	3.2	32.0	
		20N02E09L001M	I	I	1953	123.8	123.5	122.9	125.3	122.4	118.6	116.9	114.0	117.7	121.0	125.5	122.7	-4.5		18.3	
		21N02E20P001M	I	S/I	1995	122.8	118.5	121.0	112.3	118.8	111.6	107.3	98.9	107.8	111.9	129.4	115.1	-17.5	4.1	56.2	
	Pentz	21N02E26E003M	M	D	2007	124.3	121.4	121.0	122.9	123.3	118.4	115.1	113.6	112.5	114.1	e			1.6	68.2	
		21N02E26E004M	M	I	2007	123.5	120.4	120.3	122.0	122.8	117.8	114.7	113.1	112.3	113.4				1.1	68.8	
		21N02E26E005M	M	I	2007	122.6	119.4	119.2	120.8	121.6	116.6	113.9	112.1	111.1	112.2				1.1	70.0	
	Richvale*	21N02E26E006M	M	S	2007	116.3	113.1	112.1	113.9	116.4	110.9	108.8	107.9	105.4	105.8				0.4	76.5	
		18N01E13A002M	I	S/I	2001	75.7	75.3	75.6	75.6	75.1	75.0	75.6	74.8	77.3	76.0	70.7	65.7	5.3	-1.3	3.3	
		18N01E15D002M	D	S	1976	70.8	70.4	70.6	70.8	68.2	70.5	70.8	70.3	72.4	71.3	65.3	60.3	6.0	-1.1	1.1	
		19N01E27Q001M	M	I	1978	84.7	84.0	84.4	85.2	84.1	83.6	84.2	83.6	85.0	84.7	79.7	74.7	5.0	-0.3	2.7	
		19N01E35B001M	M	S	2002	82.7	82.4	82.7	83.5	82.7	82.1	82.9	82.2	84.3	83.5	77.5	72.5	5.9	-0.8	3.0	
19N01E35B002M		M	D	2005	91.6	90.9	91.1	91.4	90.7	90.5	89.8	89.5	88.6	91.2	f			2.7	-4.7		
19N01E35B003M		M	I	2005	86.0	85.2	85.7	86.4	85.3	84.9	85.2	84.5	85.2	86.2				1.0	0.3		
19N02E15N002M	I	U	2000	102.9	102.5	102.8	103.3	102.4	101.4	102.8	101.9	103.9	103.4	98.2	93.2	5.2	-0.5	3.9			

Well Type
D-Domestic, I-Irrigation
M-Monitoring, MI-Municipal and Industrial
Well Depth
S-Shallow, I-Intermediate
D-Deep

Sub Basin	Sub-Inventory Unit	Monitoring Wells	Well Type	Well Depth	First Record	Groundwater Elevations													Analysis		
						Spring 2008 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2009 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2010 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2011 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2012 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2013 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2014 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2015 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2016 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2017 Water Surface Elevation (WSE) (Elev. Ft)	Spring BMO Stage 1 Alert Level (Elev. Ft)	Spring BMO Stage 2 Alert Level (Elev. Ft)	Elevation Above (+) or Below (-) Alert Stage 1 (ft)	Change Spring 2016 to Spring 2017 (ft)	Spring 2017 Depth to Water (ft)	
EAST BUTTE	Thermalito	18N03E08B003M	I	S/I	2001	101.0	95.8	100.7	102.3	99.9	97.9	99.6	99.7	NM	103.2	100.3	96.4	2.9		9.1	
		18N03E21G001M	I	S	1953	86.7	84.7	87.0	89.2	87.6	87.2	85.1	85.2	83.8	93.1	86.7	84.1	6.4	9.3	13.2	
		19N03E05N002M	D	S	1967	121.6	120.6	121.9	122.1	119.6	116.3	116.7	117.9	116.5	119.0	114.4	96.5	4.6	2.5	23.3	
		19N03E16Q001M	D	S	2000	138.7	136.7	138.7	139.8	139.0	138.1	NM	140.3	138.9	140.7	137.8	135.4	2.9	1.8	38.6	
	Western Canal*	19N01E09Q001M	I	S	1991	89.5	88.8	88.3	89.4	88.8	NM	NM	87.8	NM	NM	84.5	79.5			NM	
		19N02E07K002M	M	I	2006	NM	102.6	102.9	103.4	102.3	101.7	101.4	100.9	100.9	102.4	g				1.6	0.3
		19N02E07K003M	M	I	2006	NM	99.4	99.5	100.0	99.8	99.0	99.5	98.8	100.7	99.9					-0.8	2.8
		19N02E07K004M	M	S	2006	NM	99.6	99.7	100.2	99.9	99.2	99.7	98.9	100.7	100.1					-0.6	2.6
		19N02E13Q001M	M	S	2002	115.8	114.1	114.7	115.5	114.8	114.3	115.4	116.2	116.9	117.0					0.0	2.9
		19N02E13Q002M	M	I	2006	116.6	115.3	115.7	116.5	115.7	114.8	116.0	116.4	117.1	117.4					0.4	2.5
		19N02E13Q003M	M	D	2006	117.0	115.7	116.1	117.0	116.0	115.2	116.3	116.6	117.2	117.7					0.5	2.2
		20N01E18L001M	M	D	2000	106.3	104.3	105.2	106.6	104.1	103.4	99.4	100.7	99.9	104.5	103.3	98.3		1.2	4.7	2.8
		20N01E18L002M	M	I	2001	103.0	102.4	102.6	104.3	102.1	101.8	101.0	101.1	102.3	103.9	99.1	94.1		4.8	1.6	3.5
		20N01E18L003M	M	S	2001	104.2	103.6	104.0	104.7	103.4	103.2	103.1	102.8	105.5	104.3	99.4	94.4		4.9	-1.2	3.1
		20N01E35C001M	D	S	1947	99.4	98.5	98.4	99.9	NM	98.8	NM	NM	NM	NM	94.3	89.3				NM
		20N02E15H001M	M	S	1995	124.0	122.9	122.2	124.5	122.1	118.8	NM	112.1	113.3	116.3					3.0	27.7
		20N02E15H002M	M	S	1995	134.5	133.7	134.2	135.7	132.7	129.9	NM	122.7	122.3	130.6					8.3	13.5
		20N02E16P001M	I	U	1990	123.0	122.2	NM	123.3	121.8	118.9	116.1	113.3	118.0	119.9	119.3	114.3		0.6	1.9	11.9
		20N02E28N001M	D	S/I	1947	118.5	118.6	118.6	119.1	122.3	117.7	118.5	117.7	120.0	118.9	113.8	108.8		5.1	-1.1	4.5
		WYANDOTTE CREEK	Wyandotte Creek	CWS-01	M&I	U	1978	103.0	124.0	129.0	128.0	122.0	124.0	123.0	124.0	128.0	139.0	119.0	99.0	20.0	11.0
CWS-02	M&I			U	1978	152.0	144.0	144.0	148.0	142.0	147.0	145.0	148.0	142.0	153.0	135.0	111.0	18.0		25.0	
CWS-03	M&I			U	1978	163.0	151.0	165.0	159.0	163.0	159.0	154.0	149.0	155.0	174.0	154.0	135.0	20.0		19.0	21.0
17N03E03D001M	I			S	1947	72.6	71.5	72.4	76.0	70.2	67.8	71.1	71.1	71.3	85.3	75.0	72.0		12.5	14.0	12.0
17N04E09N002M	I			S/I	2001	82.0	77.9	76.2	78.5	78.6	78.1	74.9	73.5	74.7	75.9	79.2	71.1		-3.3		26.4
17N04E22B001M	D			S	1976	104.8	103.3	101.3	106.1	103.6	104.2	101.8	103.4	104.3	106.8	98.6	96.1		8.2	2.5	10.5
WEST BUTTE	Angel Slough	21N01W23J001M	I	S	1941	112.7	113.0	112.4	117.1	112.0	109.1	110.2	109.3	115.1	115.8	110.7	108.2	5.1	0.7	5.6	
		21N01W35K002M	I	S/I	1994	102.4	102.2	103.0	107.5	100.9	100.5	99.7	101.0	103.9	107.5	94.9	80.9	12.6	3.6	6.9	
	Chico Urban Area	CWSCH01	M&I	U	1988	134.0	122.0	131.0	134.0	132.0	127.0	123.0	122.0	NM	NM	125.0	100.0			NM	
		CWSCH01b	M&I	U	1988	127.0	132.0	130.0	131.0	131.0	126.0	123.0	120.0	123.0	131.0					8.0	69.0
		CWSCH02	M&I	U	1988	130.0	136.0	138.0	141.0	136.0	128.0	110.0	121.0	121.0	125.0	123.0	91.0	2.0	4.0	58.0	
		CWSCH03	M&I	U	1988	123.0	128.0	129.0	123.0	126.0	122.0	120.0	118.0	122.0	123.0	128.0	81.0	-5.0	1.0	135.0	
		CWSCH04	M&I	U	1988	118.0	117.0	QM	123.0	119.0	122.0	105.0	NM	118.0	142.0	126.0	106.0	16.0	24.0	70.0	
		CWSCH05	M&I	U	1988	122.0	118.0	124.0	125.0	122.0	120.0	113.0	111.0	116.0	122.0	119.0	95.0	3.0	6.0	93.0	
		CWSCH06	M&I	U	1988	118.0	115.0	126.0	115.0	117.0	117.0	96.0	105.0	121.0	131.0	116.0	93.0	15.0	10.0	50.0	
		CWSCH07	M&I	U	1991	115.0	115.0	118.0	117.0	123.0	117.0	113.0	112.0	113.0	118.0	115.0	95.0	3.0	5.0	152.0	
		22N01E28J001M	M	I	1958	139.3	131.9	136.5	140.5	137.7	134.9	126.9	126.6	126.0	137.7	140.4	135.6	-2.7	11.7	41.2	
		22N01E28J003M	M	I	1958	143.8	138.9	140.7	145.2	141.7	139.4	131.1	130.5	129.2	141.6	136.2	130.2	5.4	12.4	36.7	
		22N01E28J005M	M	D	1958	136.6	131.3	133.0	135.9	133.7	134.2	123.3	125.0	123.6	132.8	135.1	130.8	-2.3	9.2	46.1	
		22N01E35E001M	I	S/I	2005	131.1	127.1	129.3	131.8	129.6	125.4	119.7	119.0	121.8	129.6	h			7.8	52.8	
22N02E30C002M	M	S	2002	131.1	127.5	127.3	128.7	127.6	123.6	120.5	117.9	NM	126.5						117.2		
Durham/Dayton	20N01E02H003M	M	S	2001	108.8	104.8	106.5	109.5	106.8	103.7	96.0	95.0	96.2	105.9					9.8	26.4	
	20N01E10C002M	I	S	1947	110.9	104.0	108.5	110.7	108.6	NM	NM	102.3	98.1	108.8	110.3	106.1	-1.5	10.7	18.6		
	20N02E06Q001M	I	S/I	1947	119.8	117.1	117.8	120.1	117.3	114.6	109.5	109.6	109.6	117.1	120.4	116.9	-3.3	7.5	20.5		
	21N01E10B003M	I	I	1995	126.6	121.8	123.3	126.0	124.9	NM	113.7	111.6	114.6	123.2	128.2	110.6	-5.0	8.6	47.1		
	21N01E13L002M	M	D	2012						113.4	114.4	108.2	104.9	110.2	117.1	i			6.9	62.8	
	21N01E13L003M	M	I	2012						109.5	114.5	108.1	105.0	102.0	117.1				15.1	62.8	
	21N01E13L004M	M	I	2012						106.0	114.8	108.0	105.2	109.7	116.9				7.2	62.9	
	21N01E25K001M	D	S	1993	113.7	108.3	110.6	113.6	112.2	106.5	95.9	99.2	97.7	106.2	118.5	100.4	-12.3	8.5	48.1		
	21N01E26K001M	I	I	1993	111.2	104.3	101.1	106.7	103.4	102.9	93.9	95.7	94.9	107.1	115.9	97.4	-8.8	12.2	45.7		
	21N01E27D001M	D	S	1946	109.7	103.9	106.6	110.4	108.1	104.4	95.2	94.7	95.9	103.3	111.0	105.7	-7.7	7.4	40.0		
	21N02E07C001M	I	I	1967	128.8	121.6	134.7	124.1	134.7	127.8	NM	NM	NM	NM	128.8	122.9				NM	
	21N02E18C001M	M	D	2010							109.1	104.8	111.0	116.2	j				5.2	72.9	
21N02E18C002M	M	I	2010							117.7	121.8	115.2	109.0	104.1	111.2	116.5			5.4	72.6	
21N02E18C003M	M	S	2010							160.8	149.0	150.7	142.4	149.7	151.7	167.4			15.6	21.7	
21N02E30L001M	D	S/I	1995	120.8	115.8	118.0	120.0	118.7	113.8	105.7	105.0	105.7	NM	126.3	109.8				NM		

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Sub Basin	Sub-InVENTORY Unit	Monitoring Wells	Well Type	Well Depth	First Record	Groundwater Elevations													Analysis		
						Spring 2008 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2009 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2010 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2011 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2012 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2013 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2014 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2015 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2016 Water Surface Elevation (WSE) (Elev. Ft)	Spring 2017 Water Surface Elevation (WSE) (Elev. Ft)	Spring BMO Stage 1 Alert Level (Elev. Ft)	Spring BMO Stage 2 Alert Level (Elev. Ft)	Elevation Above (+) or Below (-) Alert Stage 1 (ft)	Change Spring 2016 to Spring 2017 (ft)	Spring 2017 Depth to Water (ft)	
WEST BUTTE	Llano Seco	20N01E18L001M	M	D	2000	106.3	104.3	105.2	106.6	104.1	103.4	99.4	100.7	99.9	104.5	107.7	105.2	-3.2	4.7	2.8	
		20N01E18L002M	M	I	2001	103.0	102.4	102.6	104.3	102.1	101.8	101.0	101.1	102.3	103.9	102.9	100.2	1.0	1.6	3.5	
		20N01E18L003M	M	S	2001	104.2	103.6	104.0	104.7	103.4	103.2	103.1	102.8	105.5	104.3	103.6	101.5	0.7	-1.2	3.1	
		20N01W04J001M	I	S	2008	82.9	82.8	82.8	91.1	82.9	82.1	81.8	81.5	86.1	NM	k				NM	
		20N01W11N002M	I	S	2008	96.9	96.6	97.4	101.7	95.8	94.4	95.9	96.3	97.5	NM					NM	
	M & T	21N01W35K002M	I	S/I	1994	102.4	102.2	103.0	107.5	100.9	100.5	99.7	101.0	103.9	107.5	94.9	80.9	12.6	3.6	6.9	
		21N01W11A001M	M	D	2010				121.2	119.8	118.8	113.1	114.0	115.6	122.5	I			6.9	6.8	
		21N01W11A002M	M	S	2010				117.0	119.2	115.1	114.5	113.9	122.0	120.2				-1.8	9.1	
		21N01W11A003M	M	S	2010				116.7	119.8	114.9	114.4	113.9	122.6	119.8				-2.8	9.5	
		21N01W13J001M	M	D	2012					115.7	114.2	108.6	109.1	110.9	117.5				6.7	10.1	
		21N01W13J002M	M	I	2012					115.8	114.5	109.1	109.7	111.7	118.1				6.4	9.6	
		21N01W13J003M	M	I	2012					116.0	114.7	109.5	110.2	112.3	118.6				6.3	9.1	
		21N01W24B001M	M	D	1995	115.7	113.0	114.4	114.9	113.0	111.9	106.7	107.4	108.9	115.2	117.8	108.5	-2.6	6.3	11.9	
		22N01E29R001M	I	I	1947	138.2	138.3	132.4	137.5	133.7	131.3	122.5	120.6	124.2	134.7	140.6	136.6	-6.0	10.5	29.1	
22N01E32E004M	D	S	1992	127.1	125.5	124.6	126.6	126.7	125.4	117.4	117.5	119.8	129.4	130.9	117.8	-1.5	9.6	21.5			
VINA	Vina	22N01E09B001M	D	S	2001	144.9	140.7	141.0	145.0	142.6	138.0	131.5	131.6	130.6	137.9	146.0	138.2	-8.1	7.3	40.4	
		22N01E20K001M	D	S	1961	132.9	129.0	134.1	138.2	134.6	130.5	NM	121.7	125.6	136.5	132.3	127.2	4.2	10.9	31.3	
		23N01E29P002M	D	S/I	1990	156.1	152.3	152.5	155.9	152.6	150.2	NM	141.5	143.4	152.4	148.4	131.9	4.0	9.0	52.9	
		23N01E33A001M	I	S/I	2001	154.6	151.4	150.5	152.6	151.5	149.5	144.6	142.2	141.7	144.3	155.3	144.1	-11.0	2.6	108.0	
		23N01W10E001M	I	I	2001	165.7	163.2	164.7	166.6	163.6	159.0	153.4	153.5	155.9	162.7	166.8	160.9	-4.1	6.8	26.7	
		23N01W10M001M	M	S	2001	165.5	164.5	165.2	167.8	163.3	166.0	156.0	155.6	158.4	166.1	168.4	162.6	-2.3	7.7	21.3	
		23N01W27L001M	D	S	1976	145.2	142.4	145.3	NM	142.7	142.7	136.3	139.9	140.8	149.2	137.1	114.8	12.1	8.4	13.2	
		23N01W36P001M	D	S	1959	142.1	138.5	139.6	143.5	137.3	137.3	134.5	132.4	130.5	144.7	134.8	128.3	9.9	14.2	18.1	
		23N02W25C001M	I	S/I	1967	139.1	139.3	140.5	144.2	136.1	137.7	133.9	136.3	136.4	149.0	136.3	133.0	12.7	12.6	8.4	
		23N01W25G001M	I	I	2007	148.4	150.0	150.7	134.5	149.8	149.0	141.2	141.0	142.3	150.4	m			8.1	30.0	
		23N01W03H002M	M	I	2012					179.0	178.0	171.1	173.3	173.0	176.1				3.1	40.7	
		23N01W03H003M	M	I	2012					179.4	178.9	173.0	174.0	173.5	177.2				3.7	39.7	
		23N01W03H004M	M	S	2012					182.9	181.8	175.9	177.3	174.9	180.5				5.6	36.4	
		23N01W28M002M	M	D	2009		145.2	148.9	148.0	147.8	148.0	140.1	143.0	142.6	148.8				6.2	10.2	
		23N01W28M003M	M	D	2009		145.6	148.6	147.1	146.7	147.2	140.1	143.1	143.6	151.0				7.4	8.1	
		23N01W28M004M	M	S	2009		147.9	146.5	152.2	143.6	143.6	137.8	141.3	144.3	150.1				5.8	8.9	
		23N01W28M005M	M	S	2009		148.2	146.5	152.6	142.9	143.6	130.2	141.6	143.4	150.3				6.9	8.8	
		23N01W31M001M	M	D	2008		138.1	141.2	143.6	139.6	140.9	130.8	135.1	135.1	141.0				5.9	13.8	
		23N01W31M002M	M	I	2008		144.2	144.9	148.1	141.9	142.7	136.9	139.9	141.4	148.8				7.4	6.0	
		23N01W31M003M	M	S	2008		141.2	142.2	146.6	140.5	138.8	137.2	137.0	142.5	147.8				5.2	7.0	
23N01W31M004M	M	S	2008		138.8	139.2	142.3	138.5	137.8	136.0	137.6	141.3	141.7				0.4	13.1			

* Indicates sub-inventory unit corresponding to an Irrigation District primarily served by surface water
Note: Red font indicates Questionable Measurement (QM), Orange highlight is Alert Stage 1, Red highlight is Alert Stage 2
a 18N01E35L001M monitoring well installed in 2005. Not yet enough data to establish alert levels
b 17N01E24A03-6 multi-completion well installed in 2007. Not yet enough data to establish alert levels
c 21N03E29J03 added to DWR monitoring network in 2007
d 20N02E08H03 added to DWR monitoring network in 2008
e 21N02E26E03-6 multi-completion monitoring well installed 2007
f 19N01E35B02-03 record begins in 2005. Not yet enough data to establish alert levels
g 19N02E07K02-4 and 19N02E13Q01-3 multi-completion wells with first measurement in 2006. 20N02E15H001 and 20N02E15H002 with start of record in 1995.
h 22N01E35E001, 22N02E30C002 and 20N01E02H003M added to the network in 2005, 2002, and 2001, respectively.
i 21N01E13L02-04 installed in 2012 and 21N02E18C01-03 in 2010
j 21N02E18C01-03 installed in 2010
k 20N01W04J001 and 20N01W11N002 first measured in 2008
l 21N01W11A01-03 and 21N01W13J01-03 installed in 2010 and 2012, respectively.
m 23N01W25G01 added to DWR monitoring network in 2007, 23N01W28M02-5 and 23N01W31M01-4 multi-completion monitoring wells installed 2008, and 23N01W03H02-4 installed 2012
****** 23N01E18A001M discontinued
Depth Category
S- Shallow: indicates total well depth or screening interval is less than 200 feet below ground surface
I- Intermediate: total well depth or screening interval is 200-600 feet
S/I- Shallow/Intermediate: screened interval spans portions of the shallow and intermediate depth intervals
D- Deep: total well depth or screening interval is greater than 600 feet

Alert Stage Count

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Alert 1	26	31	25	24	25	20	24	22	17	13
Alert 2	0	6	3	0	4	15	21	25	25	11
Total Measured	105	116	113	120	129	128	120	127	123	123

Well Type
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