



JOINT MEETING OF CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY BOARD OF DIRECTORS AND STANDING ADVISORY COMMITTEE

Board of Directors

Derek Yurosek Chairperson, Cuyama Basin Water District
Lynn Compton Vice Chairperson, County of San Luis Obispo
Das Williams Santa Barbara County Water Agency
Cory Bantilan Santa Barbara County Water Agency
Glenn Shephard County of Ventura
Zack Scrivner County of Kern

Paul Chounet Cuyama Community Services District
George Cappello Cuyama Basin Water District
Byron Albano Cuyama Basin Water District
Jane Wooster Cuyama Basin Water District
Tom Bracken Cuyama Basin Water District

Standing Advisory Committee

Roberta Jaffe Chairperson
Brenton Kelly Vice Chairperson
Claudia Alvarado
Brad DeBranch
Louise Draucker

Jake Furstenfeld
Joe Haslett
Mike Post
Hilda Leticia Valenzuela

AGENDA

September 5, 2018

Agenda for a meeting of the Cuyama Basin Groundwater Sustainability Agency Board of Directors to be held on Wednesday, September 5, 2018 at 4:00 PM, at the Cuyama Valley Family Resource Center, 4689 CA-166, New Cuyama, CA 93254. To hear the session live call (888) 222-0475, code: 6375195#.

Teleconference Locations:

Cuyama Valley Family Resource Center
 4689 CA-166
 New Cuyama, CA 93254

County Government Center
 1055 Monterey Street, Room D361
 San Luis Obispo, CA 93408

The order in which agenda items are discussed may be changed to accommodate scheduling or other needs of the Board or Committee, the public, or meeting participants. Members of the public are encouraged to arrive at the commencement of the meeting to ensure that they are present for discussion of all items in which they are interested.

In compliance with the Americans with Disabilities Act, if you need disability-related modifications or accommodations, including auxiliary aids or services, to participate in this meeting, please contact Taylor Blakslee at (661) 477-3385 by 4:00 p.m. on the Friday prior to this meeting. Agenda backup information and any public records provided to the Board after the posting of the agenda for this meeting will be available for public review at 4689 CA-166, New Cuyama, CA 93254. The Cuyama Basin Groundwater Sustainability Agency reserves the right to limit each speaker to three (3) minutes per subject or topic.

1. Call to Order
2. Roll Call
3. Pledge of Allegiance
4. Approval of Minutes

- a. August 1, 2018
5. Report of the General Counsel
 - a. Conflict of Interest Code
6. Report of the Standing Advisory Committee
 - a. Discussion of Special Session for Public Review
7. Groundwater Sustainability Agency
 - a. Report of the Executive Director
 - i. Groundwater Sustainability Plan Section Development Strategy and Responsibility
 - b. Progress & Next Steps
8. Groundwater Sustainability Plan
 - a. Groundwater Sustainability Plan Update
 - b. Technical Forum Update
 - d. Hydrogeologic Conceptual Model Update
 - e. Groundwater Conditions
 - f. Monitoring Networks
 - g. Stakeholder Engagement Update
9. Financial Report
 - a. Financial Management Overview
 - b. Financial Report
 - c. Payment of Bills
10. Reports of the Ad Hoc Committees
11. Directors' Forum
12. Public comment for items not on the Agenda

At this time, the public may address the Board on any item not appearing on the agenda that is within the subject matter jurisdiction of the Board. Persons wishing to address the Board should fill out a comment card and submit it to the Board Chair prior to the meeting.
13. Public Workshop (6:30 pm) – Cuyama Valley Recreation District, 4885 Primero Street, New Cuyama, CA 93254
14. Adjourn

Cuyama Basin Groundwater Sustainability Agency

Acronyms List

BOD	Board of Directors
CA	California
CASGEM	California Sustainable Groundwater Elevation Monitoring
CB	Cuyama Basin
CBGSA	Cuyama Basin Groundwater Sustainability Agency
CBWD	Cuyama Basin Water District
CCSD	Cuyama Community Services District
CDEC	California Data Exchange Center
CVCA	Cuyama Valley Community Association
CVRD	Cuyama Valley Recreation District
DMS	Data Management System
DWR	California Department of Water Resources
EKI	EKI Environment & Water, Inc.
ET	Evapotranspiration
FRC	Cuyama Valley Family Resource Center
FY	Fiscal Year
GAMA	Groundwater Ambient Monitoring and Assessment Program
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
HG	Hallmark Group (Executive Director)
ITRC	Irrigation Training & Research Center
IWFM	Integrated Water Flow Model
JPA	Joint Exercise Powers Agreement
Kern	County of Kern
NOAA	National Oceanic and Atmospheric Administration
NWIS	National Water Information System
SAC	Standing Advisory Committee
Santa Barbara	County of Santa Barbara
SBCWA	Santa Barbara County Water Agency
SGMA	Sustainable Groundwater Management Act
SLO	San Luis Obispo County
SWCRB	State Water Resources Control Board
TO	Task Order
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
Ventura	County of Ventura
WC	Woodard & Curran (GSP Development Consultant)
WMA	Water Management Area

Cuyama Basin Groundwater Sustainability Agency Board of Directors Meeting

August 1, 2018

Draft Meeting Minutes

Cuyama Valley Family Resource Center, 4689 CA-166, New Cuyama, CA 93254

PRESENT:

Yurosek, Derek – Chair
Compton, Lynn – Vice Chair (*telephonically*)
Albano, Byron
Bantilan, Cory
Bracken, Tom
Cappello, George
Chounet, Paul
Scrivner, Zack
Shephard, Glenn
Elliott, Darcel – *Alternate for Das Williams*
Wooster, Jane

Hughes, Joe – Legal Counsel

ABSENT:

Beck, Jim – Executive Director

1. Call to order

Chair Derek Yurosek called the meeting to order at 4:00 p.m.

2. Roll call

Hallmark Group Project Coordinator Taylor Blakslee called roll (shown above) and informed Chair Yurosek that there was a quorum of the Board.

3. Pledge of Allegiance

The pledge of allegiance was led by Chair Yurosek.

4. Approval of Minutes

Chair Yurosek opened the floor for comments on the July 11, 2018 Meeting of the Cuyama Basin Groundwater Sustainability Agency Board of Directors. A minor edit was suggested and a motion was made by Director Glenn Shephard to adopt the minutes and seconded by Paul Chounet. Roll call was made, since Lynn Compton was participating telephonically, Directors Lynn Compton, Zack Scrivner, and Tom Bracken abstained from a vote since they were not at the July 11, 2018 Board meeting, and the motion passed with a majority vote.

5. Report of the General Counsel

At the July 11, 2018 Cuyama Basin Groundwater Sustainability Agency (CBGSA) Board meeting the Board requested clarification on how the term “stakeholder” is defined under the Sustainable Groundwater Management Act (SGMA). Legal Counsel Joe Hughes reported that the Board identifies who in the groundwater basin is a stakeholder for the purpose of a Groundwater Sustainability Plan development. He let the Board know that SGMA requires that all interests of beneficial uses and users of groundwater be defined under the term “stakeholders”. GSP consultant Woodard & Curran (W&C) Principal Lyndel Melton agreed with Mr. Hughes assessment.

Director Byron Albano said that he was interested in hearing the specific stakeholder definition list and Mr. Hughes read the definition of “stakeholder,” as defined in the California Water Code, where SGMA identifies the various interests of beneficial uses and users of groundwater as holders of overlying groundwater rights including: agriculture users, including farmers, rancher and dairy professionals, domestic well owners; municipal well operators; public water systems; local land use planning agencies; environmental users of groundwater; surface water users, if there is a hydrologic connection between surface and groundwater bodies; the federal government, including but not limited to, the military and managers of federal lands; California Native American tribes; disadvantaged communities, including but not limited to, those served by private domestic wells or small community water systems; and entities listed in Section 10927 that are monitoring and reporting groundwater elevations in all or a part of a groundwater basin managed by the groundwater sustainability agency. Mr. Hughes stated that he would email the Water Code Section 10723.2, along with California Department of Water Resources (DWR) guidance document for stakeholder communication and engagement to the Standing Advisory Committee (SAC) and the CBGSA Board.

6. Report of the Standing Advisory Committee

CBGSA SAC Chair Roberta Jaffe provided a report on the July 26, 2018 SAC meeting which is provided in the Board packet.

One of the items discussed was the concept of forming a study group to review GSP sections. Chair Jaffe let the Board know an ad hoc of the Committee was researching ways to make this a feasible option. Chair Yurosek asked which Committee members are on the Ad hoc committee, and Ms. Jaffe replied that she appointed Louise Draucker, Jake Furstenfeld, Claudia Alvarado, and Vice Chair Brenton Kelly.

Chair Yurosek thanked Chair Jaffe and Vice Chair Brenton Kelly for their well written report.

7. Groundwater Sustainability Agency

a. Report of the Executive Director

Mr. Blakslee let the CBGSA Board know that Hallmark Group Executive Director Jim Beck was not able to make the Board meeting due to family reunion in Pittsburgh, Pennsylvania.

b. Progress & Next Steps

Mr. Blakslee provided an update on the near-term GSP schedule and accomplishments and next steps, which are summarized in the Board packet.

8. Groundwater Sustainability Plan

a. Groundwater Sustainability Plan Update

Mr. Melton provided an update on GSP development.

Chair Yurosek asked when the data management system will be distributed to the stakeholders, and Mr. Melton said he expects it to be distributed in the next 30 to 60 days.

b. Technical Forum Update

Mr. Melton provided an overview of the July 13, 2018 technical forum meeting, which is summarized in the Board packet.

c. Overview of How a Groundwater Model Works

Mr. Melton provided an overview of how a groundwater model works, which is summarized in the Board packet.

Director Albano asked if model calibration was done using historical data. Mr. Melton confirmed this and said that will be the basis for modelling future conditions.

Director Chounet asked how often the model will be recalibrated and Mr. Melton suggested five years from now.

d. Current Basin Water Conditions

Mr. Melton provided an overview of the current basin water conditions, which is summarized in the Board packet.

Director Wooster asked what the numbers on the wells represent, and Mr. Melton said it is an internal numbering system used to protect well user data.

Cuyama Valley Family Resource Center Executive Director Lynn Carlisle asked how the groundwater level maps correlate to the USGS studies since they do not show the same drops. Mr. Melton stated that the graph represents a different time frames. Ms. Carlisle asked how well the USGS data compares and Mr. Melton said it compares very well and is represented in the model. Director George Cappello mentioned that USGS model had issues regarding poor calibration, however EKI resolved those issues. He mentioned that he feels comfortable using the data from the previous model rather than using the previous model entirely.

Local resident Sue Blackshear said it was her understanding that the USGS model did not mesh with the model we are using. Director Cappello stated that the USGS system was calibrated incorrectly, however the data was good. He stressed that the important thing to keep in mind is the data USGS developed will be utilized in the new model.

Mr. Melton said the current integrated water flow model (IWFm) we are using is very good and he has a lot of confidence in the model we are using.

Director Wooster stated that when the USGS did their model, there was not a lot of cooperation in the Cuyama Valley, and then the State Water Resources Control Board twisted our arms to do SGMA and that's where we are. Because of this, she relayed that a lot of data has been provided this time, it is better data, and our GSP will be based on this data. She commented that the USGS report was filled in with supposition; not facts, so we should not be too concerned with

the USGS report since W&C is only using facts in their model.

Mr. Kelly stated that the data collected by USGS was obtained in Cuyama over the course of five years and ground-truthed. He asked if W&C planned on ground-truthing their data. He mentioned that he was previously told that there was not the time or budget set aside to do this. Mr. Melton stated that there will be time to truth some of the data and all the data that was given by USGS will be utilized.

Chair Yurosek stated that the goal is to have a complete and accurate model, however the model will not be perfect. Once submitted, the goal is to continue to refine the model.

Chair Yurosek asked if the map being displayed are the only subsidence monitoring areas we have in the basin and Mr. Melton replied that these are the only ones he is aware of.

Mr. Gliessman mentioned the importance of not only measuring subsidence, but how this correlates to a potential loss of groundwater storage.

Director Wooster mentioned that at the SAC meeting it was discussed where the data was measured, and that the high school site may have provided very localized results due to heavy, historic watering of school fields.

e. Draft Undesirable Results Narrative

Mr. Melton provided the Draft Undesirable Results Narrative, which is summarized in the Board packet.

Ms. Carlisle said that she is unsure if the people at the June 6, 2018 workshop were aware of what their sustainability input would be utilized for and is unsure if that should be used to feed into the Undesirable Results Narrative. Additionally, she asked if the stakeholders will be informed of the Board and SACs definition of sustainability. Mr. Melton replied that the information is coming.

GSP outreach consultant the Catalyst Group Charles Gardiner said the sustainability goals and criteria will be developed and available in the September to November time period.

Mr. Melton mentioned that the Board has not been presented with the criteria for drafting their definition of sustainability, and this composition will be drafted in the fall.

f. Stakeholder Engagement Update

Mr. Gardiner provided an update on the second newsletter and the September 5th workshop.

9. Financial Report

a. Financial Management Overview

Mr. Blakslee provided an overview of the CBGSA's financial activities. He mentioned that the total outstanding invoices on the presentation was from when the packets were distributed, and as of August 1, 2018, the outstanding invoice amount is \$180,525.65 from W&C. Mr. Blakslee reminded the Board that we expect the DWR grant reimbursement funding to be received in the October to November 2018 timeframe.

Director Glenn Shephard mentioned that the grant agreement with DWR is not finalized yet, and it may be a little ambitious at this point to think that we will start getting reimbursements in October 2018. He mentioned that we need to complete the grant agreement, and have it approved by the Board.

Mr. Blakslee stated that he had been in contact DWR grant administration representative Anita Regmi regarding the estimated reimbursement timeframe. He also let the Board know it was his understanding that DWR was not allowing changes to be made to the grant agreement, and Mr. Hughes confirmed that was his understanding as well.

Chair Yurosek asked when the agreement is expected to the Board, and Mr. Blakslee said that he will confirm with Ms. Regmi on a more specific timeframe and let the Board know. Chair Yurosek mentioned that if the funding agreement with DWR becomes a complication, there may be a need for a Special Board meeting to resolve it.

b. Financial Report

Mr. Blakslee provided an overview of the newly expanded financial report. He mentioned that payment is pending from County of San Luis Obispo for their two assessments, along with the second assessment from Cuyama Community Services District (CCSD).

c. Payment of Bills

Mr. Blakslee reported on the payment of bills for the month of June 2018. A motion was made by Director Shephard and seconded by Director Tom Bracken to approve payment of the bills through the month of June 2018 in the amount of \$204,002.35 pending receipt of funds. Roll call was made and the motion passed unanimously.

10. Reports of the Ad Hoc Committees

Mr. Melton reported that the DWR Technical Services ad hoc met on August 8, 2018 to walk through the DWR technical support services process and to review well site information for potential monitoring wells. Director Albano reported that we anticipate DWR to drill two to three monitoring well cluster sites. He stated that the Board decided the priority for these potential cluster sites where data gaps exists, and include the CCSD, the Russel fault, and the Santa Barbara Canyon fault.

Mr. Melton reported that the next step is to submit the application and contact landowners.

Chair Yurosek asked if the monitoring well for the CCSD will be in the CCSD district or where they are pumping and Director Albano said that he believes the well will be in the district.

11. Directors' Forum

Nothing to report.

12. Public comment for items not on the Agenda

Nothing to report.

13. Adjourn

Chair Yurosek adjourned the CBGSA Board at 5:26 p.m.

I, Jim Beck, Executive Director to the Cuyama Basin Groundwater Sustainability Agency Board of Directors, do hereby certify that the foregoing is a fair statement of the proceedings of the meeting held on Wednesday, August 1, 2018, by the Cuyama Basin Groundwater Sustainability Agency Board of Directors.

Jim Beck
Dated: Sep 5, 2018

Draft



TO: Board of Directors
Agenda Item No. 5a

FROM: Joe Hughes, Legal Counsel

DATE: September 5, 2018

SUBJECT: Conflict of Interest Code

Issue

Consider adopting a conflict of interest code for the Cuyama Basin Groundwater Sustainability Agency.

Recommended Motion

Adopt the proposed Conflict of Interest Code, commence a 45-day notice and comment period to begin September 6, 2018, properly notice the Conflict of Interest Code.

Discussion

Provided as Attachment 1 is legal counsel Joe Hughes' memo on the Conflict of Interest Code, including the amended Code, for consideration of adoption by the Cuyama Basin Groundwater Sustainability Agency Board of Directors.

MEMORANDUM

TO: BOARD OF DIRECTORS, CUYAMA BASIN GSA

FROM: LEGAL COUNSEL

DATE: September 5, 2018

RE: ADOPTION OF AGENCY CONFLICT OF INTEREST CODE

Summary

Legal counsel, with input from the Fair Political Practices Commission, has prepared a Conflict of Interest Code for adoption by the Agency.

Staff seeks approval of the proposed Code and commencement of a 45-day comment period.

Background

All local public agencies are required to adopt a “Conflict of Interest Code” that identifies its decision-making officers and staff, and requires those persons to disclose any personal financial interests that may be affected by the Agency’s actions. (Gov. Code, § 87300.)

Agencies with jurisdiction in more than one county, like Cuyama Basin GSA, must have their Codes approved by the state Fair Political Practices Commission (**FPPC**). (Gov. Code, § 82011, subd. (a).)

In June 2017, the Cuyama GSA approved a draft Code for submittal to the FPPC.

After the draft Code was submitted to the FPPC, the FPPC requested several changes:

- The GSA’s draft Code did not require any disclosure of interests in real property, which is a common and generally necessary provision of any Conflict of Interest Code. FPPC requested revisions to the “Disclosure Categories” for each officer and staff position to include some disclosure of interests in real property.
- FPPC suggested new language for the Code’s “Disclosure Categories,” which identify the particular financial interests that persons subject to the Code must disclose.

- FPPC requested that the Code identify which GSA officer and staff positions are currently filled by consultants.
- In the process of working with the FPPC, the GSA's Groundwater Sustainability Plan Consultant was identified as a position that should also be required to submit financial disclosures.

A revised Code, with the FPPC's requested changes, is now being resubmitted for the Board's approval.

If approved, the Board should also approve a 45-day notice and comment period for the proposed Code, to begin September 6, 2018, and should instruct staff to post the included notice on the Agency's website. As required by FPPC regulations, persons whose titles are listed as "Designated Positions" will also receive notice of the proposed Code before the start of the comment period.

Recommended Action

- (1) Approve the proposed Conflict of Interest Code;
- (2) Commence a 45-day notice and comment period, to begin September 6, 2018;
- (3) Instruct staff to:
 - a. Post notice of the proposed Conflict of Interest Code on the Agency's website; and
 - b. Send the notice and proposed Conflict of Interest Code to all persons whose titles are listed as "Designated Positions" on or before September 6, 2018.

**CUYAMA GROUNDWATER SUSTAINABILITY AGENCY
CONFLICT OF INTEREST CODE**

The Political Reform Act (Government Code Section 81000, et seq.) requires state and local government agencies to adopt and promulgate conflict of interest codes. The Fair Political Practices Commission has adopted a regulation (2 Cal. Code of Regs. Sec. 18730) that contains the terms of a standard conflict of interest code, which can be incorporated by reference in an agency's code. After public notice and hearing, the standard code may be amended by the Fair Political Practices Commission to conform to amendments in the Political Reform Act. Therefore, the terms of 2 California Code of Regulations Section 18730 and any amendments to it duly adopted by the Fair Political Practices Commission are hereby incorporated by reference. This regulation and the attached Appendix, designating positions and establishing disclosure categories, shall constitute the conflict of interest code of the **Cuyama Basin Groundwater Sustainability Agency (Agency)**.

Individuals holding designated positions shall file their statements of economic interests with the **Agency**, which will make the statements available for public inspection and reproduction. (Gov. Code Sec. 81008). All statements will be retained by the **Agency**.

**APPENDIX
DESIGNATED POSITIONS AND
DISCLOSURE CATEGORIES**

I. <u>Designated Position</u>	<u>Assigned Disclosure Category</u>
Board of Directors and Alternates	1, 2, 3
Secretary	1
Executive Director ⁺	1, 2, 3
General Manager ⁺	1, 2, 3
Legal Counsel ⁺	1, 2, 3
<u>Groundwater Sustainability Plan Consultant⁺</u>	1, 2, 3
Consultants/New Positions	*

⁺Positions currently filled by outside consultants who serve in a staff capacity.

*Consultants/New positions shall be included in the list of designated positions and shall disclose pursuant to the broadest disclosure category in the code, subject to the following limitation:

The Executive Director may determine in writing that a particular consultant or new position, although a “designated position,” is hired to perform a range of duties that is limited in scope and thus is not required to fully comply with the disclosure requirements in this section. Such written determination shall include a description of the consultant’s or new position’s duties and, based upon that description, a statement of the extent of disclosure requirements. The Executive Director’s determination is a public record and shall be retained for public inspection in the same manner and location as this conflict of interest code (Gov. Code Section 81008).

~~**Note:** The positions of Auditor and General Counsel are filled by outside consultants who serve in a staff capacity.~~

II. Disclosure Categories:

Category 1

A designated employee in this category must report all investments and business positions in business entities and sources of income, including receipt of gifts, loans, and travel payments, from any source that provides leased facilities, services, supplies, materials or equipment of the type utilized by the Agency.

Category 2

A designated employee in this category must report all interests in real property located in whole or in part within the boundaries of the Agency or within two miles of the Agency, including any leasehold, beneficial or ownership interest or option to acquire such interest in real property.

Category 3

A designated employee in this category must report all investments and business positions in business entities, and sources of income, including receipt of gifts, loans, and travel payments, from entities and sources that are subject to the regulatory, permit, or licensing authority of the Agency, or that have filed a claim, or have a claim pending against the Agency.



TO: Board of Directors
Agenda Item No. 6

FROM: Roberta Jaffe, Standing Advisory Committee Chair

DATE: September 5, 2018

SUBJECT: Report of the Standing Advisory Committee

Issue

Report on the Standing Advisory Committee meeting.

Recommended Motion

None – information only.

Discussion

Provided as Attachment 1 is a report on the August 30, 2018 Standing Advisory Committee (SAC) from SAC Chair Roberta Jaffe and Vice Chair Brenton Kelly.

The purpose of this report is to provide the Cuyama Basin Groundwater Sustainability Agency Board of Directors with SAC input on the various Groundwater Sustainability Plan (GSP) components and issues that will better equip the Board when making decisions on GSP-related issues.

Standing Advisory Committee Report**Meeting: August 30, 2018**

Submitted to the GSA Board September 5, 2018

By Roberta Jaffe, SAC Chair

Brenton Kelly SAC Vice-Chair

8 of 9 members of the SAC were present; 1 telephonically

There were approximately 12 people in the audience including 4 Cuyama Basin Water District (CBWD) Directors who also serve as GSA Board Members.

Areas of discussion were as follows:2 items related to GSP Section Reviews:**1. Ad hoc Committee report on Special Meetings for Public Study Session of GSP Section Drafts:**

We had received community and SAC requests to set up a public study session for each GSP draft section during the comment period. The Ad Hoc Committee was charged with recommending how this could be done so it would not violate the Brown Act nor impact the GSA budget. The 4 member Ad Hoc committee came back with a unanimous recommendation of how public study sessions could be incorporated into the review process. This recommendation was discussed for 45 minutes during the SAC meeting mainly with 3 of the Directors of the CBWD expressing concerns that the SAC would not be able to control for Brown Act violations and there may not be expertise available to answer questions. The GSA Executive Director also expressed concerns. The SAC Chair decided to not call a vote and instead will bring it up at the joint GSA-SAC meeting on September 5th. Vice-Chair Kelly will present the Ad Hoc Committee findings to the GSA Board.

2. Groundwater Sustainability Plan Section Development Strategy and Responsibility:

Executive Director Beck presented a memo regarding roles for both the SAC and GSA in reviewing and approving draft sections of the GSP. Overall the SAC found this useful and voted unanimously to recommend approval to the GSA. A question was asked regarding whether a GSA section approval would require a super-majority vote of the GSA Board, since once approved they will be designated final sections of the GSP. The Executive Director said he would consult with Joe Hughes regarding this. Woodard & Curran Project Manager Brian Van Lienden commented that they are currently trying to streamline how to assimilate comments into a final draft.

2 Educational topics were discussed during the meeting.**3. Education Topic: How a Model Works- Current and Future Conditions.**

We reviewed the historic, current and future timeframes that will be used for the water budgets. The future conditions will be run based on continued use, one model without climate change and one will incorporate climate change projections.

4. Education Topic: Management Actions and Projects. We were introduced to how management projects will be proposed through a demand management approach which could include pumping monitoring, water market, fees and glide path. Projects to

consider included: storm and flood water capture and water supply imports/exchanges. We were asked to suggest other project ideas. Brian also stated that we do not have to have an action plan or selected projects for the GSP submittal. We can just include a list of potential projects.

5. GSP Update: Hydrogeologic Conceptual Model (HCM) Reviewed. The final review was postponed until the next meeting.

6. GSP Update: Draft Groundwater Conditions. We were given a brief overview of the narrative of the draft for Groundwater Conditions. Public comment is due September 21.

GSP Update: Monitoring Networks. These will be established for each sustainability indicator. Project Manager Van Lienden proposed that water quality thresholds would only be measured for TDS/Salinity and heavy metals such as arsenic and nitrates would not be measured. This is a change as to what we were previously told would be measured. Several SAC committee members asked for more clarification on this.

7. GSP Update: Outreach. Mary Currie presented the focus of the next workshop scheduled for September 5th which will introduce the models for the Basin.

9. Summary.

The beginning of the meeting focused on procedure regarding review of GSP drafts. There was contentious discussion around whether the SAC could hold public study sessions on draft GSP sections so the community could better understand these sections before comments are due. 3 CBWD/GSA Board members in the audience were opposed to this idea. The SAC did not take a vote deferring to it being discussed at the joint meeting of the GSA-SAC on September 5th. The SAC did unanimously recommend that the GSA Board approve GSP Section Development Strategy as presented by Executive Director Beck. Educational topics were How a Model Works- Current and Future Conditions and Management Actions and Projects. We were informed that only a potential project list needs to be submitted in the GSP. The GSP update included: the postponement of the final review of the HCM, an overview of the Groundwater Conditions draft section; an update on Monitoring Networks and an outreach update.



TO: Board of Directors
Agenda Item No. 6a

FROM: Brenton Kelly, Standing Advisory Committee Vice Chair

DATE: September 5, 2018

SUBJECT: Discussion of Special Session for Public Review

Issue

Recommendation by the Standing Advisory Committee in support of holding special sessions for public review of the Groundwater Sustainability Plan sections that are open for public comment.

Recommended Motion

Recommend the Cuyama Basin Groundwater Sustainability Agency Board of Directors allow the Standing Advisory Committee to hold special sessions for public review of Groundwater Sustainability Plan sections.

Discussion

At the July 26, 2018 Standing Advisory Committee (SAC), the Committee discussed the concept of forming a study group to review Groundwater Sustainability Plan (GSP) sections. SAC Chair Roberta Jaffe appointed an ad hoc consisting of SAC committee members Louise Draucker, Jake Furstenfeld, Claudia Alvarado, and Vice Chair Brenton Kelly to explore solutions to this request and a report from Vice Chair Brenton Kelly is provided below.

In recognition of numerous requests made by Cuyama Valley Stakeholders for greater opportunities to engage in the review of the presented documents to gain a deeper understanding of the issues to be decided in the development of the Groundwater Sustainability Plan, and

In recognition that Legal Council has made assurances as to how such a meeting could be held in compliance with the Brown Act for legitimate and legal open public meetings, and

In recognition of the financial restrictions on additional expenditures of staff time from either the Hallmark Group or the Woodard & Curran consultants who have not budgeted for any additional public meetings, and

In recognition that the Guidelines adopted by the GSA for the SAC allows that "Special meetings may be called as needed", and

In recognition of the need to preserve objective impartiality and respect for the open and inclusive process of hearing viewpoints from various stakeholders in the Cuyama Valley,

The Standing Advisory Committee recommends the Cuyama Basin Groundwater Sustainability Agency Board of Directors allow the Standing Advisory Committee to hold Special Sessions for public review of Groundwater Sustainability Plan sections as follows:

The Standing Advisory Committee willingly takes responsibility, with staffing assistance from the Family Resource Center, to fulfill any and all administrative tasks and obligations associated with the scheduling and facilitating of these meetings without incurring any additional unbudgeted expenses by the staff of either the Hallmark Group or Woodard & Curran, and

A legally posted agenda will clearly state that the Special Session is for review and discussion only, no voting will take place at a Special Session for Public Review, and

The agenda will clearly focus the discussion on the GSP Material currently open for public review or SAC approval, and

The sessions will be telephonically facilitated and archived to promote the inclusion of remote attendance by interested parties, and

Minutes will be taken and along with the audio recording, will be made available for posting to the Cuyama Basin website for archival review by any party interested in the GSP Development or the preservation of impartiality, and

The primary function of these Sessions will be to read, review and understand the GSP Materials that are currently open for a public comment period or SAC approval and to gain a greater understanding of the process of developing a GSP that will achieve groundwater sustainability in the Cuyama Valle



TO: Board of Directors
Agenda Item No. 7ai

FROM: Jim Beck, Executive Director

DATE: September 5, 2018

SUBJECT: Groundwater Sustainability Plan Section Development Strategy and Responsibility

Issue

Report on Groundwater Sustainability Plan section development strategy and responsibility.

Recommended Motion

Adopt the strategy and assignments of responsibilities for the Cuyama Basin Groundwater Sustainability Agency Standing Advisory Committee and Board of Directors in the review of the draft Groundwater Sustainability Plan component documents as described in the memo to the Board of Directors, Agenda Item No. 7ai, September 5, 2018.

Discussion

The Cuyama Basin Groundwater Sustainability Agency (CBGSA) Board of Directors (Board) and the Standing Advisory Committee (SAC) have begun the process of reviewing draft sections of the Groundwater Sustainability Plan (GSP) and its components. During the review of the initial sections of the GSP, members of the SAC and the Board have had questions about the review process and their respective roles. In order to address those questions, and to ensure that all the members of the SAC and the Board understand their roles, staff has drafted this memo that provides a recommended strategy and assignment of responsibilities for the SAC and the Board as they continue their review of the draft GSP component documents.

Initial Document Review

As the first draft of GSP sections are completed, they will be distributed simultaneously for initial review and comment by the Board, SAC and all interested stakeholders. Typically, this will occur with the distribution of the agenda and documents for the monthly SAC and Board meetings. However, it may be necessary to distribute those documents separate from the monthly SAC and Board packet distribution. In that case, the documents will be emailed to the Board, SAC and all interested stakeholders using existing email distribution lists.

It should be noted the members of the Board and SAC (like all other interested stakeholders) may elect to submit comments on the draft sections. Submission of their own comments is appropriate and allows them the same opportunity to provide input into the drafting of the GSP section as any other

stakeholder, and as such, their comments will be treated in the same fashion as those of all other interested stakeholders.

Once distributed, comments will typically be due back to staff in no less than four weeks. Staff will endeavor to maintain this lead time for review, however circumstances may arise that allow a shorter review time. When that occurs, staff will notify the Board, SAC and all interested stakeholders at the regular Board and SAC meetings and via email.

Compilation of Comments and Response to Comments

As comments are submitted, staff will compile a comprehensive list of all substantive comments received. The list will include all pertinent information such as: the name of the commenter, date received, and nature of the comment and a description of the changes resulting from the comment. If staff believes that no change in the document is required or warranted, staff will provide a reason for the decision. It should be noted that not all comments will be requesting a substantive change in the document but may be submitted for other purposes, such as editorial or grammatical changes, recommendations for changes in future GSP sections or request for additional information on the overall GSP preparation. In an effort to streamline the process, these comments will not be included in the comment compilation table.

Following compilation of comments and responses, staff will distribute the comment and response table to the Board, SAC and all interested stakeholders with the normal email distribution of the Board and SAC along with the revised version of the document as described below.

SAC Review of the Revised Document

In advance of the regular SAC meeting, staff will provide a revised version of the document along with the response to comments summary table. It is the responsibility of the SAC to review the revised document and provide a recommendation to the Board on the document. During the discussion, the SAC may elect to review all or some of the comments and the responses that were made to the document. If the discussion of a comment or change to the revised document leads to a unanimous recommendation to change or modify the document, the SAC will make note of it. If the discussion of a comment or change to the document leads to a non-unanimous recommendation to change or modify the document, the SAC will make note of it. It's important to note, that the SAC is charged with providing a summary of their recommendations. The SAC is not charged with resolving disputed document contents or responses to comments. It is appropriate to have sufficient discussion on a proposed change to ensure that all SAC members understand the proposed change and to seek clarification if necessary. However, the SAC is not responsible for resolving differences in opinions by SAC members when developing a recommendation for the Board. If a non-unanimous recommendation is reached, the SAC Chair or their designee will advise the Board of the majority and minority positions on the issue.

For example, the draft document may recommend three Water Management Areas be created in the GSP; however, there may be comments suggesting additional WMAs be formed. Suppose that there are generally two options being recommended by the commenters, five WMAs and nine WMAs. There would probably be no need to suggest seven WMAs, but that might be considered. If after some discussion, there is an inability to reach a consensus recommendation, and the voting split is five members for five WMAs and four members for nine WMAs, then the SAC Chair, or their designee, would report to the Board that staff recommended three WMAs, five SAC members recommend five WMAs and four SAC members recommend nine WMAs. At this point, the SAC's responsibility is complete.

Board Review of Comments

After the presentation of staff's revised version of the document with the SAC's recommendations, it is the responsibility of the Board to direct staff on how to proceed with potential future changes to the document. The Board has discretion on how to direct staff. In providing direction, the Board will consider all the input that they have received to reach their decision on how to proceed. As they do with all other Board items requiring action by the Board, the Board will first discuss the recommendations among themselves then they will receive input from interested stakeholders present at the Board meeting.

If there is a single recommendation from staff and the SAC, the Board may elect to follow those recommendations. However, a Board member can also elect to suggest an alternative approach for consideration by the rest of the Board on an individual comment.

If there are several recommendations to be considered from the staff and SAC, the Board will consider all the input provided. The Board may elect to reach a compromise that can be supported by all Board members or a majority of the Board. In either case, in documenting the GSP development, all recommended options will be described. The Board may also direct staff to describe additional activities to be included in the GSP that may help resolve the differences that exist, if it is appropriate.

These are only a few of the options available to the Board. The Board may also elect to direct staff or the SAC to gather additional information or hold additional discussions that may help reach a more informed decision by the Board.



TO: Board of Directors
Agenda Item No. 7b

FROM: Jim Beck, Executive Director

DATE: September 5, 2018

SUBJECT: Progress & Next Steps

Issue

Report on the progress and next steps for Cuyama Basin Groundwater Sustainability Agency activities.

Recommended Motion

None – information only.

Discussion

A presentation on the progress and next steps for Cuyama Basin Groundwater Sustainability Agency activities is provided as Attachment 1.

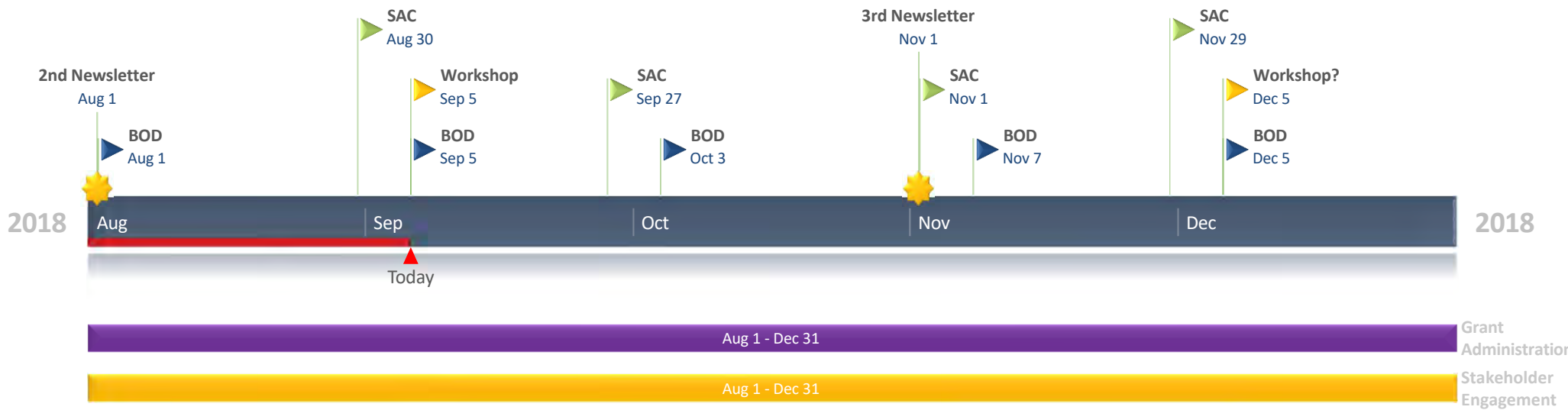


Cuyama Basin Groundwater Sustainability Agency

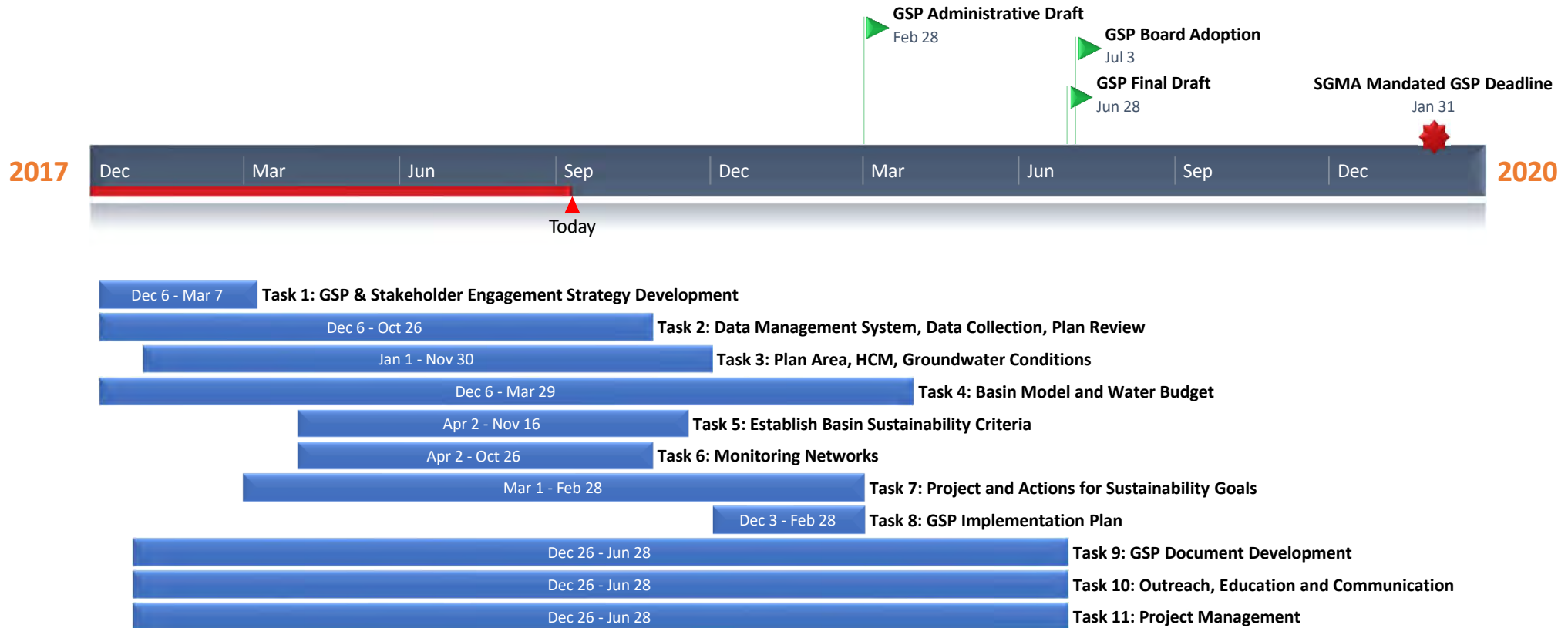
Progress & Next Steps

September 5, 2018

Cuyama Basin Groundwater Sustainability Agency Near-Term Schedule



Cuyama Basin Groundwater Sustainability Agency Program Schedule



Accomplishments & Next Steps

Accomplishments

- ✓ Continued facilitation of DWR Tech Assistance Program
- ✓ Revised grant admin documents for DWR reimbursement
- ✓ Developed expanded financial report
- ✓ Coordinated workshop mailer

Next Steps

- Continue facilitation of DWR Tech Assistance process
- Assist in facilitating September 5th workshop



Photo credit: Flickr.com



TO: Board of Directors
Agenda Item No. 8a

FROM: Lyndel Melton, Woodard & Curran

DATE: September 5, 2018

SUBJECT: Groundwater Sustainability Plan Update

Issue

Update on the Cuyama Basin Groundwater Sustainability Agency Groundwater Sustainability Plan.

Recommended Motion

None – information only.

Discussion

Cuyama Basin Groundwater Sustainability Agency Groundwater Sustainability Plan (GSP) consultant Woodard & Curran's GSP update is provided as Attachment 1.

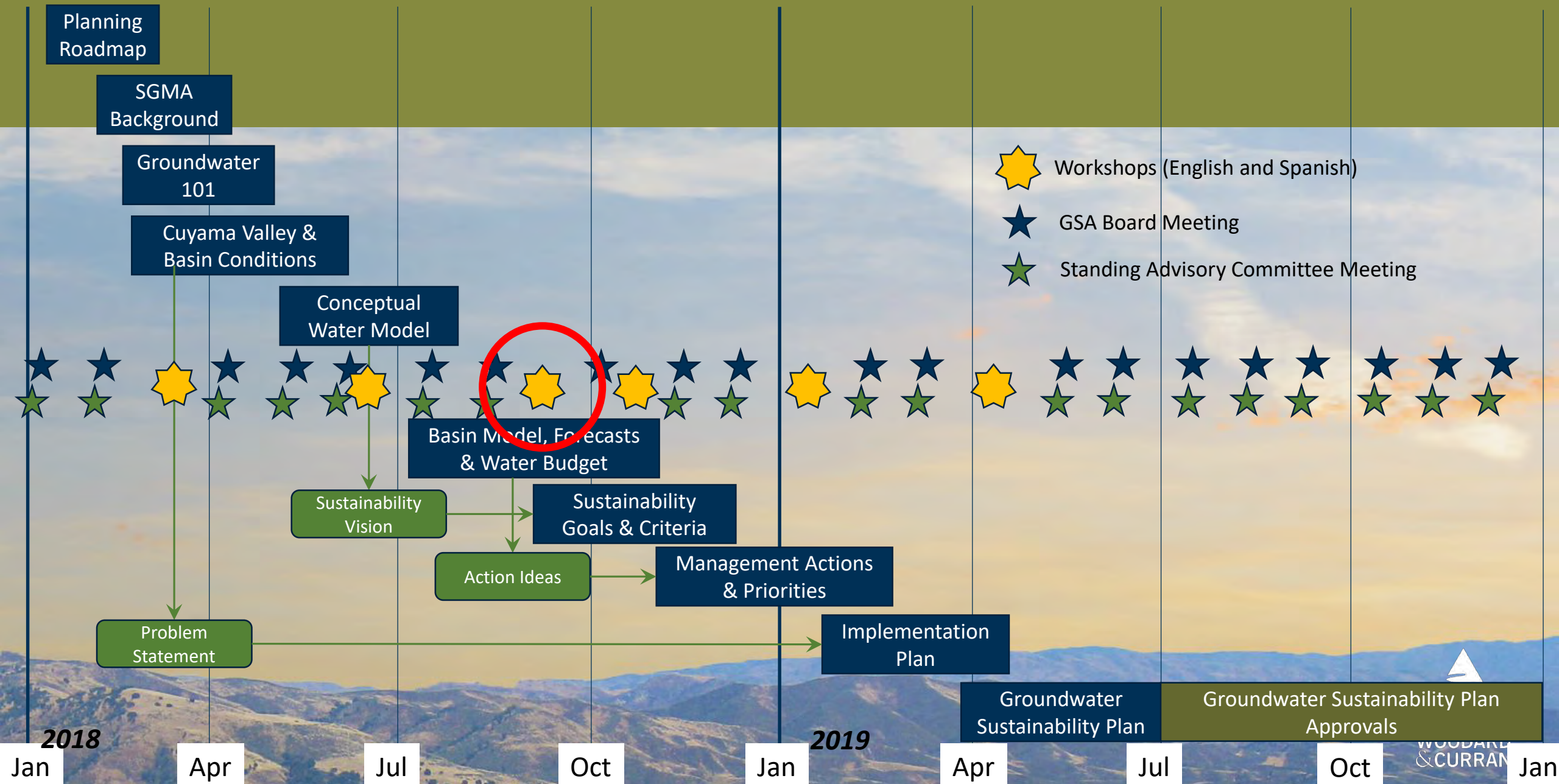
Cuyama Basin Groundwater Sustainability Agency

Groundwater Sustainability Plan Update

September 5, 2018



Cuyama Basin Groundwater Sustainability Plan – Planning Roadmap ³¹



August GSP Accomplishments

- ✓ Updated Hydrogeologic Conceptual Model section in response to comments
- ✓ Distributed draft Groundwater Conditions section
- ✓ Submitted Technical Support Services application to CA DWR
- ✓ Developed draft data management system application
- ✓ Performed initial historical calibration on GSP numerical model



TO: Board of Directors
Agenda Item No. 8b

FROM: Lyndel Melton, Woodard & Curran

DATE: September 5, 2018

SUBJECT: Technical Forum Update

Issue

Update on the Technical Forum.

Recommended Motion

None – information only.

Discussion

At the request of Cuyama Valley landowners, Cuyama Basin Groundwater Sustainability Agency Groundwater Sustainability Plan (GSP) consultant Woodard & Curran (W&C) has been meeting monthly with technical consultants representing landowners to discuss W&C's approach and to provide input where appropriate.

A summary of the topics discussed at the August 3, 2018 technical forum meeting is provided as Attachment 1, and the next forum is scheduled for September 7, 2018.

Cuyama Basin Groundwater Sustainability Agency

Technical Forum Update

September 5, 2018



August 3rd & 31st Technical Forum Discussion

- August 3rd:
 - Current Basin Water Conditions
 - Numerical Model Development Update
- August 31st:
 - Modeling Cuyama Basin Groundwater
- Next Meeting – Mid-September (date TBD)
- Monthly Meetings – to be rescheduled to be in advance of SAC meetings

Technical Forum Members

- Catherine Martin, San Luis Obispo County
- Matt Young, Santa Barbara County Water Agency
- Matt Scrudato, Santa Barbara County Water Agency
- Matt Klinchuch, Cuyama Basin Water District
- Jeff Shaw, EKI
- Anona Dutton, EKI
- John Fio, EKI
- Dennis Gibbs, Santa Barbara Pistachio Company
- Neil Currie, Cleath-Harris Geologists
- Matt Naftaly, Dudek



MEETING MEMORANDUM

PROJECT: Cuyama Basin Groundwater Sustainability Plan Development

MEETING DATE:
8/3/2018

MEETING: Technical Forum Conference Call

ATTENDEES: Matt Young (Santa Barbara County Water Agency)
Matt Scudato (Santa Barbara County Water Agency)
Matt Klinchuch (Cuyama Basin Water District)
Dennis Gibbs (Santa Barbara Pistachio Company)
Neil Currie (Cleath-Harris Geologists)
John Fio (EKI)
Matt Naftaly (Dudek)
Jeff Shaw (EKI)
John Ayres (Woodard & Curran)
Sercan Ceyhan (Woodard & Curran)
Micah Eggleton (Woodard & Curran)

1. AGENDA

- Current Basin Water Conditions
- Numerical Model Development Update
- Next steps

2. DISCUSSION ITEMS

The following table summarizes comments raised during the conference call and the response and plan for resolution (if appropriate) identified for each item.

Item No.	Comment	Commenter	Response/Plan for Resolution
1	The well at the intersection of the Cuyama River and Cottonwood Canyon Creek may be picking up water from the basin finger just North of the well	Neil Currie	This will be kept in mind when evaluating data from this well.
2	Data may be easier to interpret if wells from a common area are clustered and plotted on the same graph	Jeff Shaw	The W&C team will review the presentation of data and improve where appropriate.



3	Were discontinuities due to faults considered when creating groundwater elevation and depth-to-water maps?	Neil Currie	Due to limitations in the amount and spatial distribution of data and to large changes in elevation in many areas, it is difficult to identify and locate discontinuities that can be attributed to faults.
4	There is potentially more groundwater elevation data out in the west by the Spanish Ranch property.	Neil Currie	The W&C team will incorporate any additional data that is provided.
5	Why is the numerical model's agricultural pumping estimate different from its ETAW estimate?	Jeff Shaw	The agricultural pumping estimate reflects ETAW plus related inefficiencies and losses.
6	What is the time schedule for OPTI to be made available for review?	Jeff Shaw	An initial version of OPTI should be available for review prior to the September Workshop.
7	When will model simulation results be available for review?	Jeff Shaw	Preliminary model simulation results will be presented at the September Workshop and Technical Forum call.
8	Is the agricultural efficiency currently shown by the model reasonable?	John Fio	The model is still undergoing calibration and the data shown were preliminary estimates. It may be refined as the calibration is completed.



TO: Board of Directors
Agenda Item No. 8c

FROM: Lyndel Melton, Woodard & Curran

DATE: September 5, 2018

SUBJECT: Hydrogeologic Conceptual Model Update

Issue

Update on the Hydrogeologic Conceptual Model.

Recommended Motion

None – information only.

Discussion

An update on the Hydrogeologic Conceptual Model is provided as Attachment 1.

Cuyama Basin Groundwater Sustainability Agency

Hydrogeologic Conceptual Model

September 5, 2018



Hydrogeologic Conceptual Model

- GSP Section provided to SAC and Board for review on August 24nd
- 14 sets of comments received from CBGSA Board, SAC, Technical Forum members and public
- Revised draft under development
- Hydrogeological Conceptual Model section describes:
 - Regional Geologic and Structural Setting
 - Geologic History
 - Geologic Formations/Stratigraphy
 - Faults and Structural Features
 - Principal Aquifers and Aquitards
 - Topography, Surface Water and Recharge



TO: Board of Directors
Agenda Item No. 8d

FROM: Lyndel Melton, Woodard & Curran

DATE: September 5, 2018

SUBJECT: Groundwater Conditions

Issue

Update on the Groundwater Conditions.

Recommended Motion

None – information only.

Discussion

An update on the groundwater conditions is provided as Attachment 1, and the draft groundwater conditions Groundwater Sustainability Plan section is provided as Attachment 2.

Cuyama Basin Groundwater Sustainability Agency

Groundwater Conditions

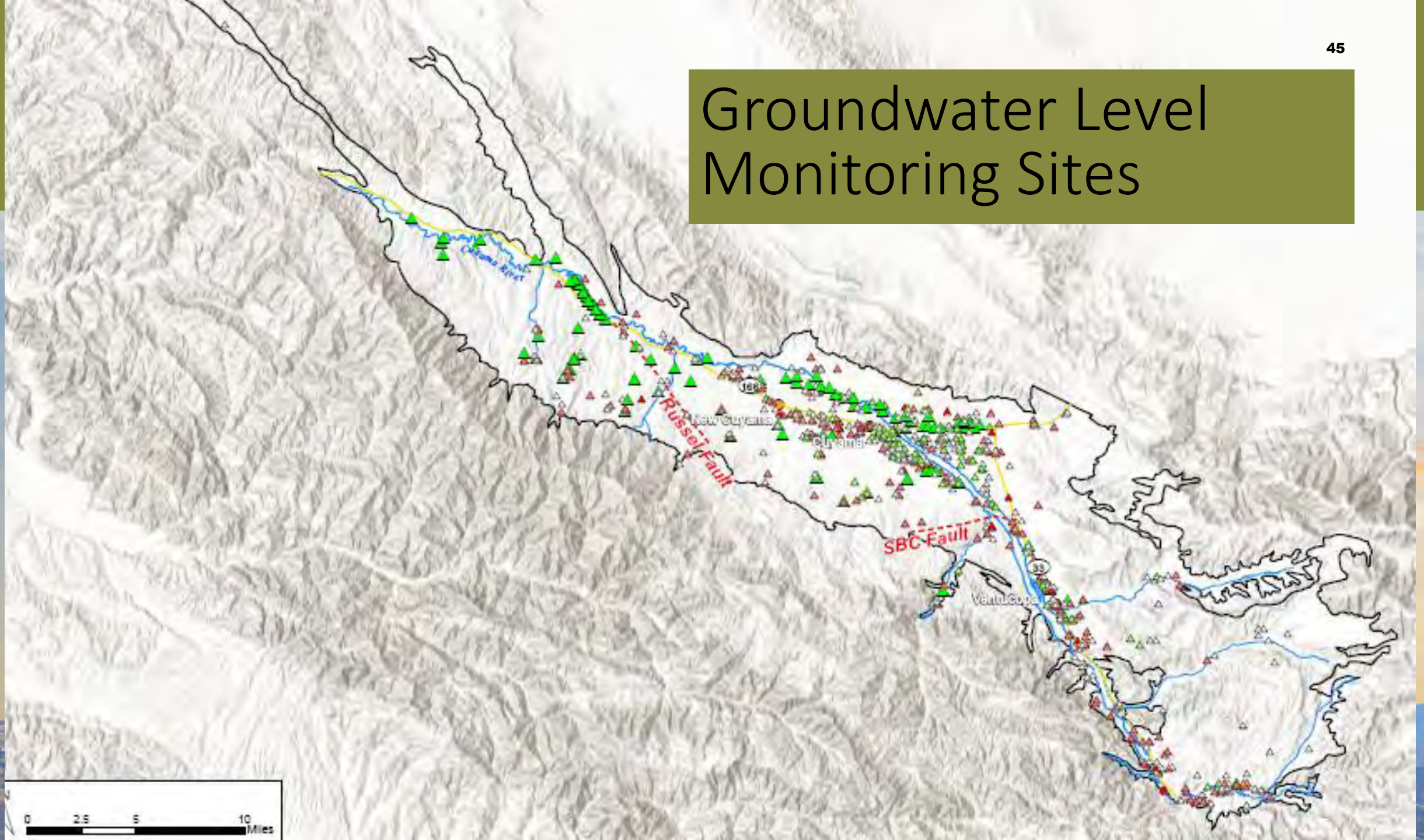
September 5, 2018



Groundwater Conditions

- Draft GSP Section provided to SAC and Board for review as part of Board Packet on August 24th
- Groundwater Conditions section describes:
 - Groundwater trends
 - Changes in groundwater storage (placeholder)
 - Land subsidence
 - Groundwater quality
 - Interconnected surface water systems (placeholder)
 - Groundwater dependent ecosystems (placeholder)
- Comments are due on September 21st

Groundwater Level Monitoring Sites



Groundwater Levels from Bolthouse/Grimmway Compared to DWR and USGS

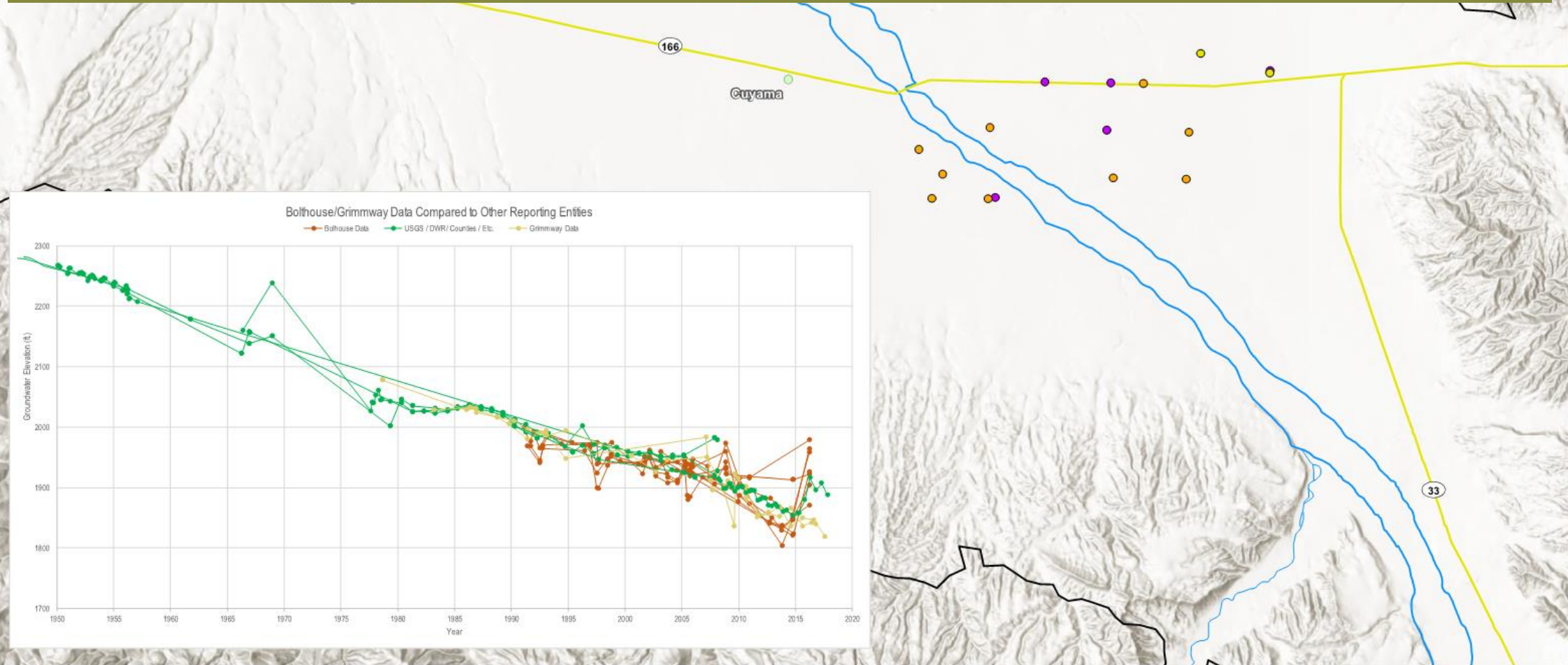


Figure 2.2-7: Cuyama Central GW Basin Wells and Hydrographs by Data Source

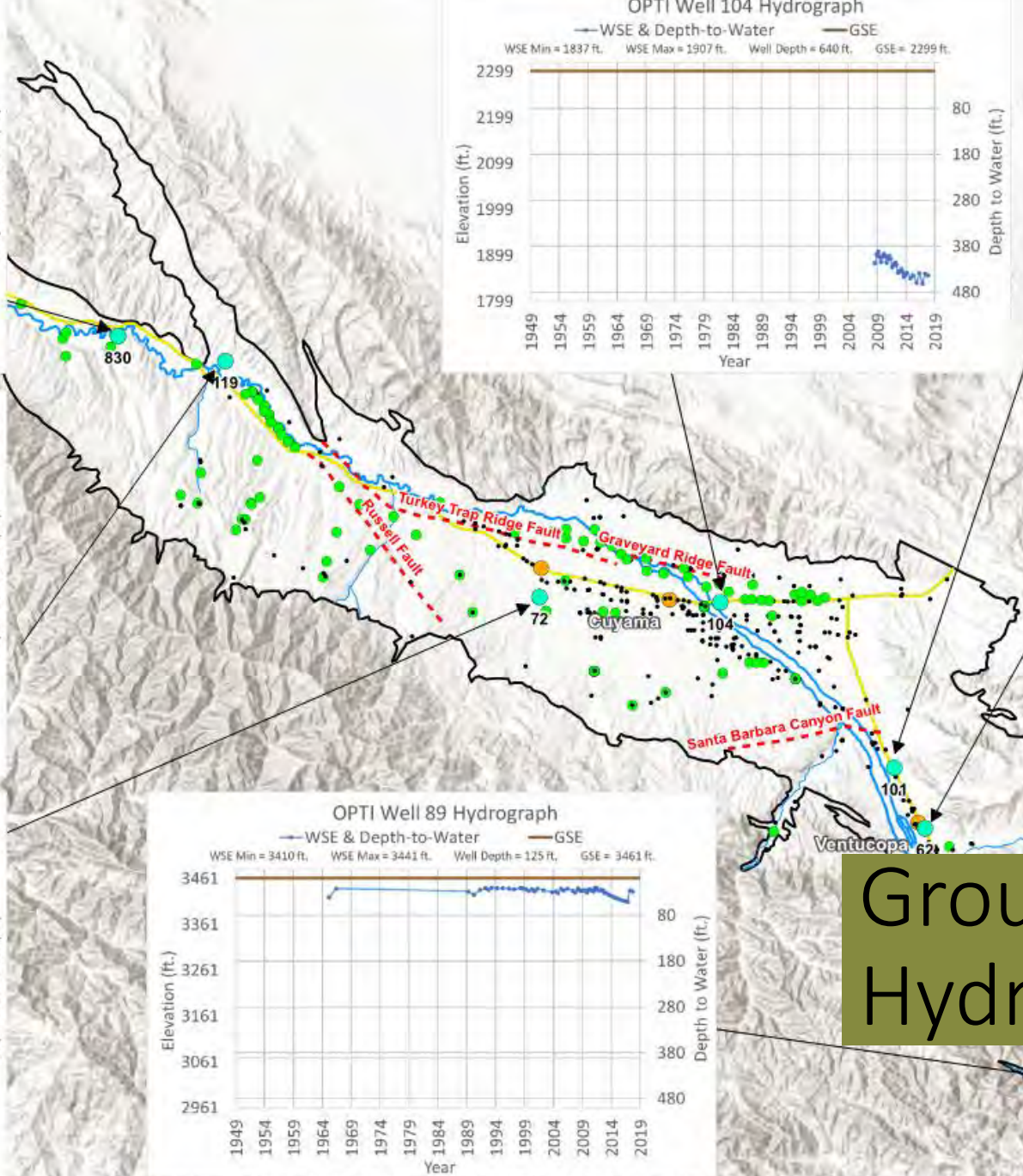
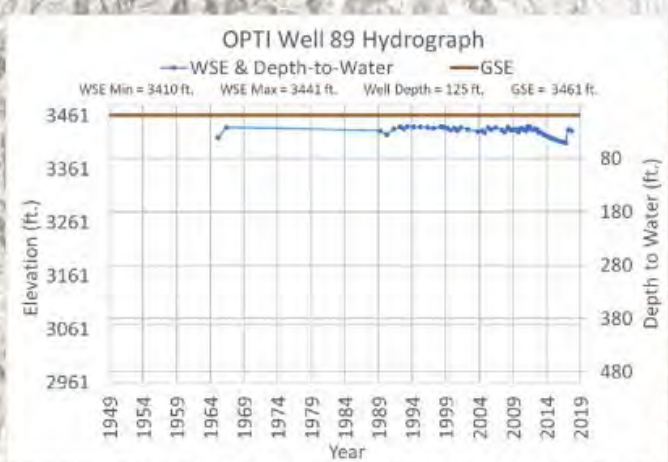
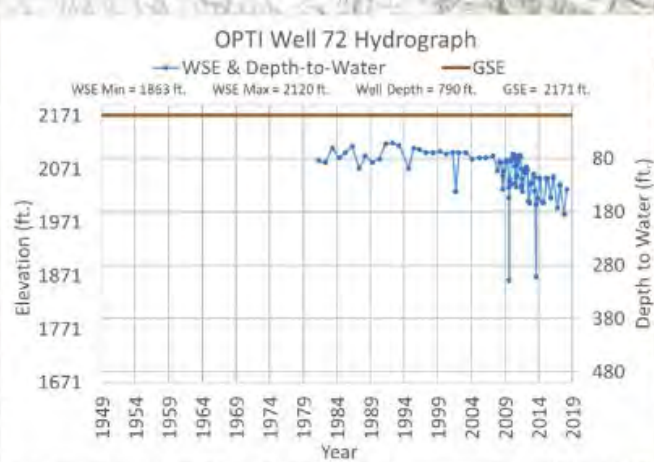
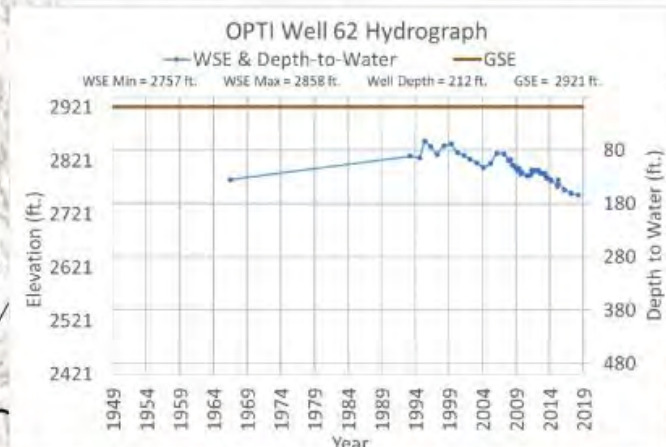
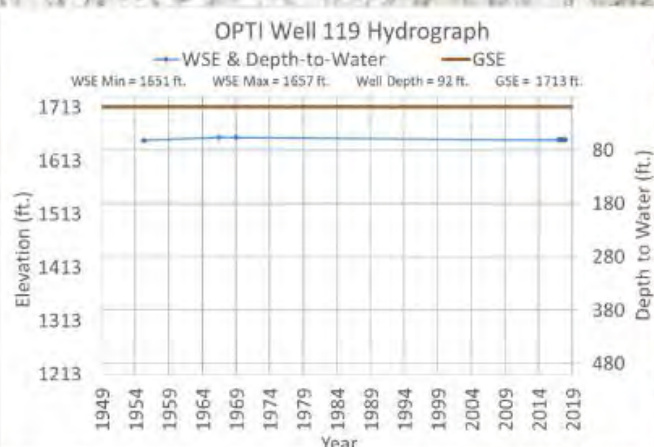
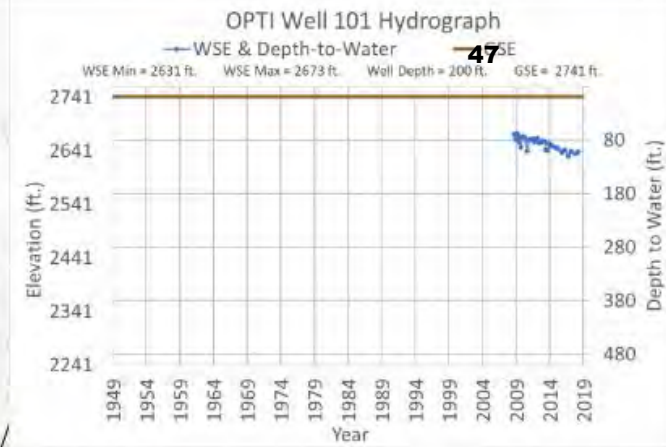
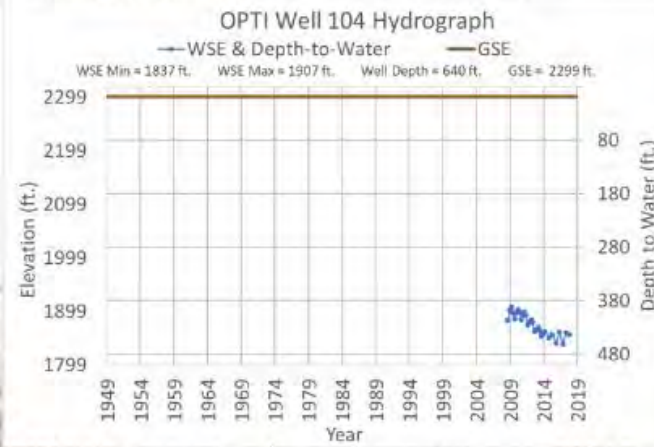
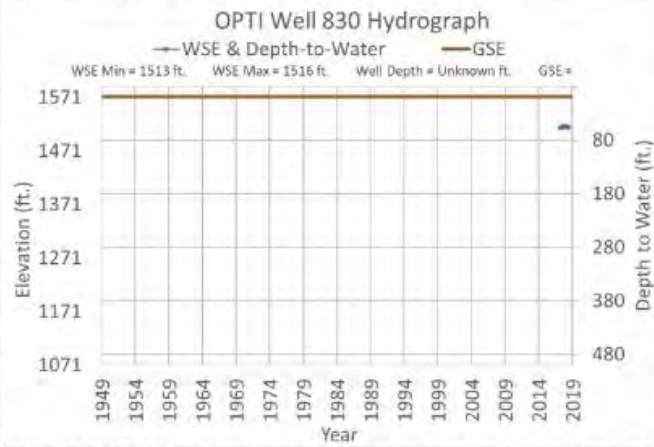
Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



- Legend**
- Cuyama Basin
 - USGS, DWR, County, Etc., Wells
 - Towns
 - Highways
 - Cuyama River
 - Streams

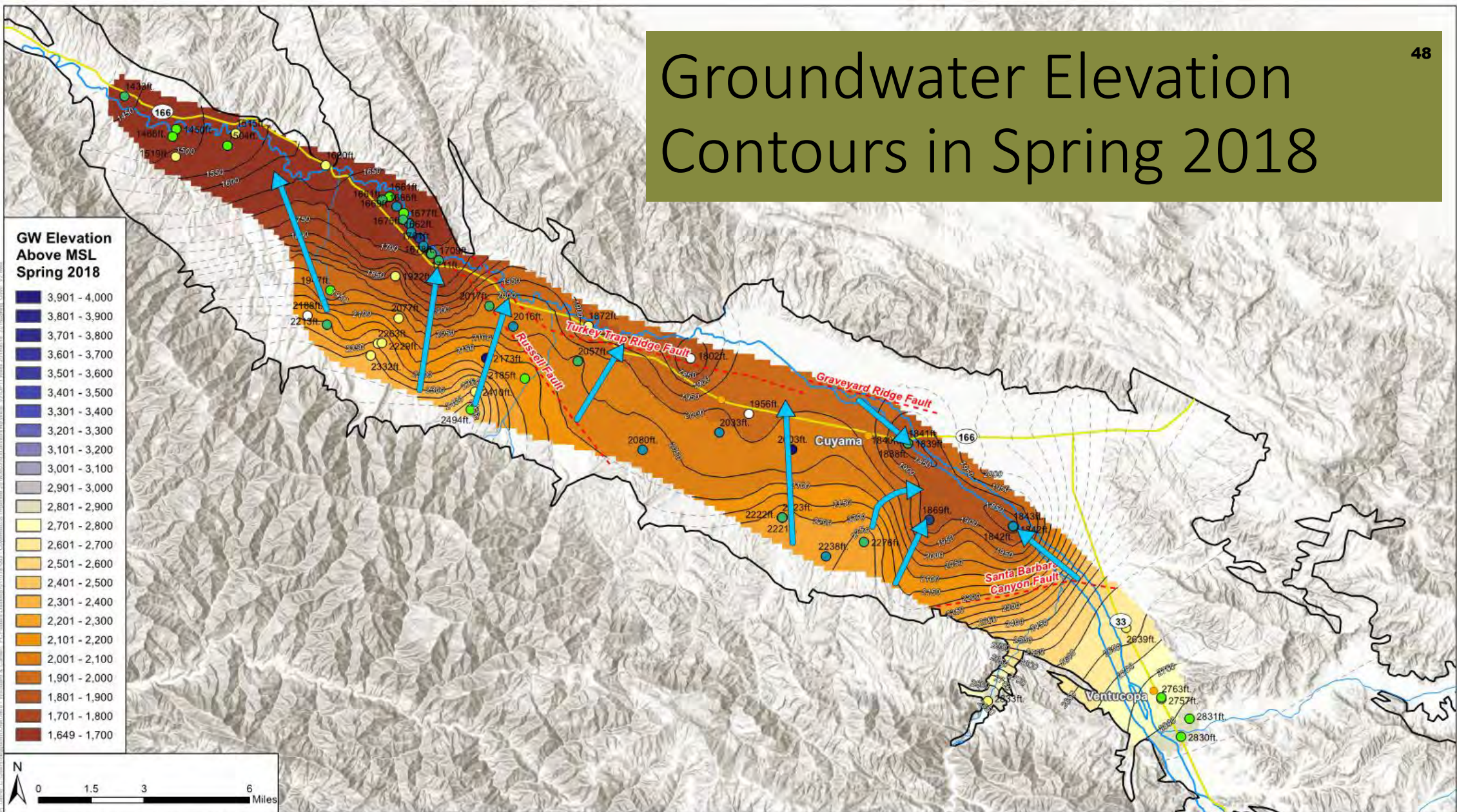


WOODARD
 & CURRAN



Groundwater Level Hydrographs

Groundwater Elevation Contours in Spring 2018



GW Elevation Above MSL Spring 2018

- 3,901 - 4,000
- 3,801 - 3,900
- 3,701 - 3,800
- 3,601 - 3,700
- 3,501 - 3,600
- 3,401 - 3,500
- 3,301 - 3,400
- 3,201 - 3,300
- 3,101 - 3,200
- 3,001 - 3,100
- 2,901 - 3,000
- 2,801 - 2,900
- 2,701 - 2,800
- 2,601 - 2,700
- 2,501 - 2,600
- 2,401 - 2,500
- 2,301 - 2,400
- 2,201 - 2,300
- 2,101 - 2,200
- 2,001 - 2,100
- 1,901 - 2,000
- 1,801 - 1,900
- 1,701 - 1,800
- 1,649 - 1,700

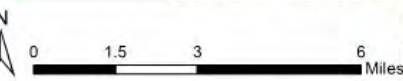


Figure 2.2-19: Cuyama GW Basin Wells by Groundwater Surface Elevation

Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018

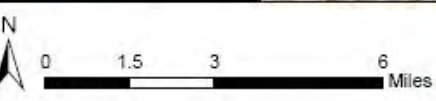
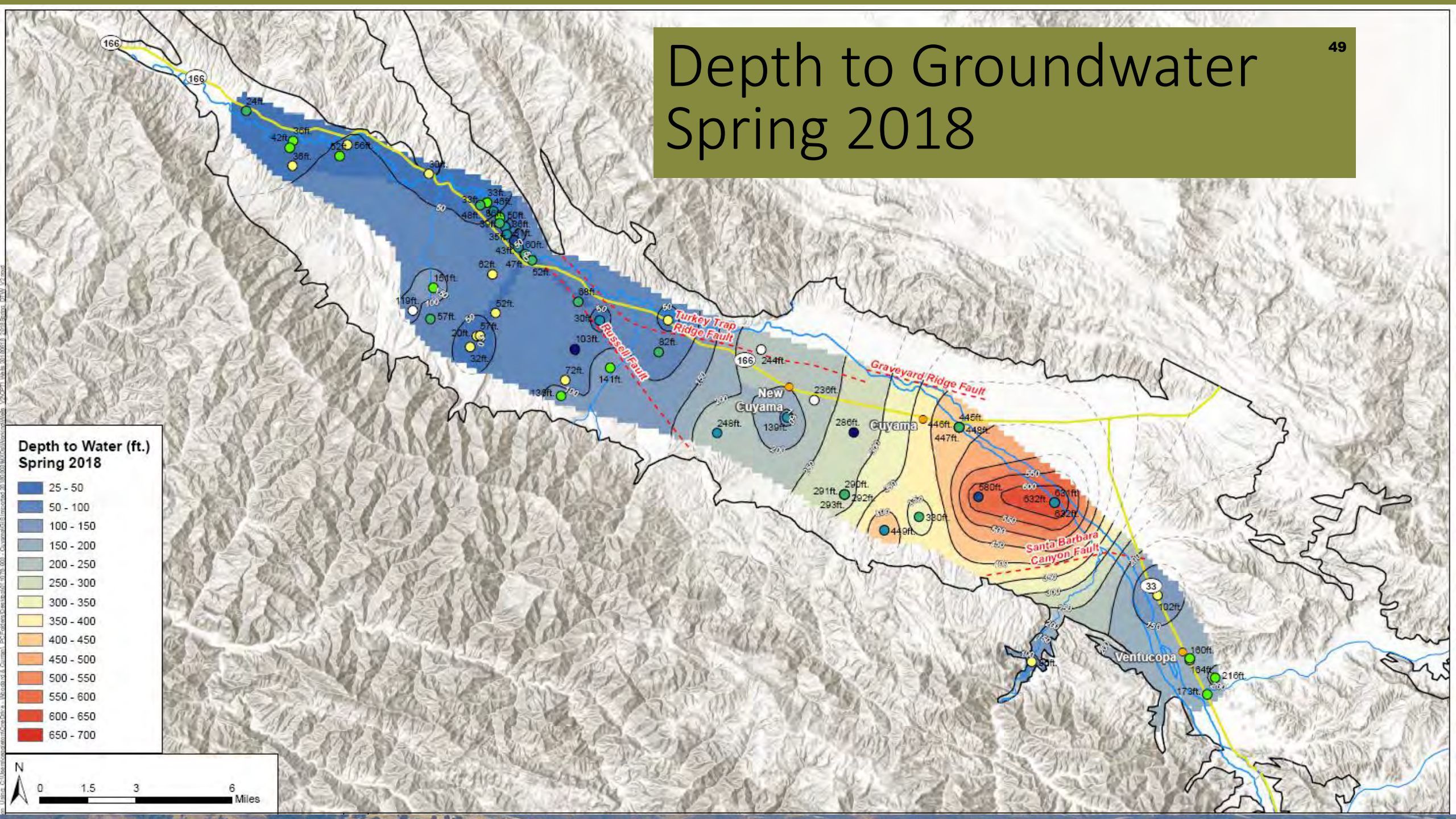


- Legend**
- Cuyama Basin
 - Cuyama River
 - - - Faults
 - Groundwater Elevation Above MSL
 - - - Inferred Groundwater Elevation Above MSL

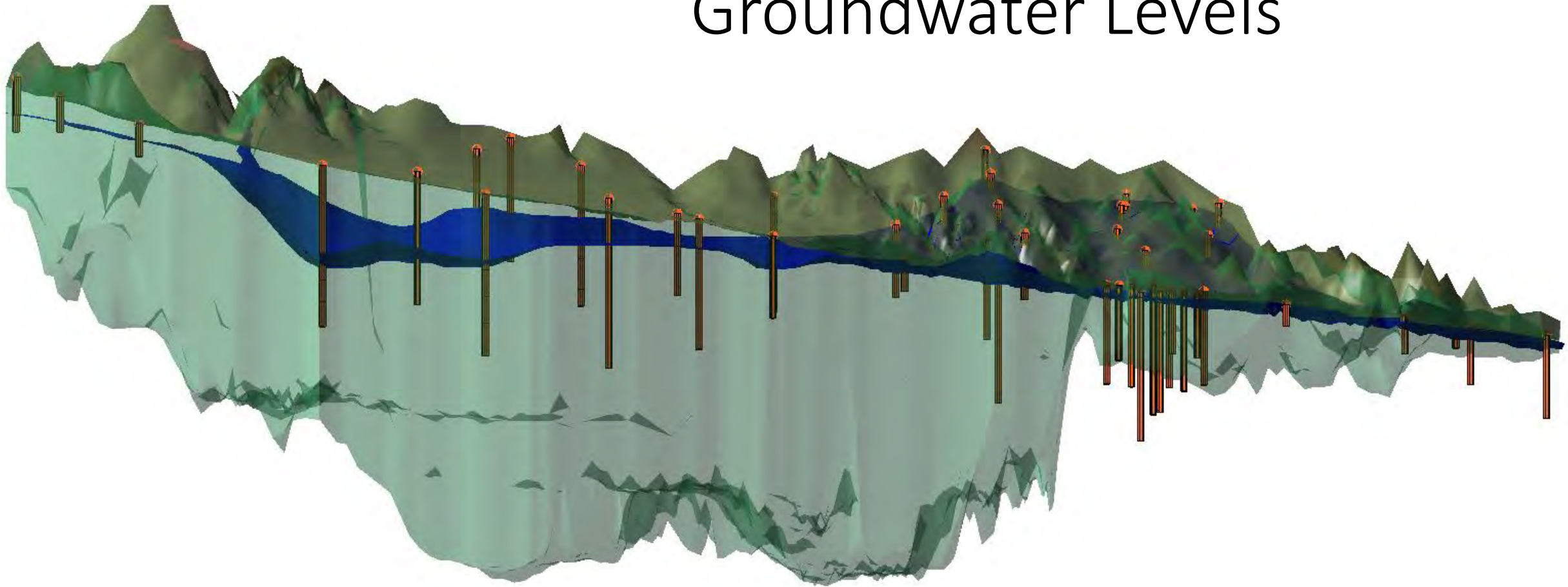
- Well Depth Below GSE**
- Unknown
 - 0 - 200 ft
 - 200 - 400 ft
 - 400 - 600 ft
 - 600 - 800 ft
 - 800 - 1,000 ft
 - 1,000 - 1,200 ft

Contours were interpolated using data measured from 2/1/2018 - 4/30/2018 due to limited data availability.
 Contours Interval: 50 ft.

Depth to Groundwater Spring 2018



Spring 2018 Groundwater Levels



Cuyama Valley Groundwater Basin Groundwater Sustainability Plan Groundwater Conditions Draft

Prepared by:



August 2018

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DRAFT

Chapter 2.2 Groundwater Conditions

This document includes the Groundwater Conditions Section will be included as part of a report section in the Cuyama Basin Groundwater Sustainability Plan that satisfies § 354.8 of the Sustainable Groundwater Management Act Regulations. Water budget components will be included in the upcoming Groundwater Sustainability Plan (GSP) Section titled “Water Budgets”. The amounts of water moving through the basin, consumptive uses, and inflows and outflows of the basin, comparisons of extractions to recharge, and other components, will be presented in the water budget section.

The majority of published information about groundwater in the Cuyama Valley Groundwater Basin has been focused on the central part of the basin, roughly from an area a few miles west of New Cuyama to roughly Ventucopa. The eastern uplands and western portion of the basin has been studied less, and consequentially, fewer publications have been written about those areas, and less historical information is available in those areas.

There are a small number of sub-sections that are not complete at this time, due to requiring either groundwater modeling results or field work to complete the sub-section. These subsection titles are highlighted yellow and a list of the subsections intended contents is listed.

Acronyms

Basin	Cuyama Valley Groundwater Basin
bgs	below ground surface
CUVHM	Cuyama Valley Hydrologic Model
DWR	Department of Water Resources
ft.	feet
ft/day	feet per day
GAMA	Groundwater Ambient Monitoring and Assessment
GPS	global positioning system
GSP	Groundwater Sustainability Plan
InSAR	Interferometric Synthetic-Aperture Radar
MCL	Maximum Contaminant Level
RWQCB	Regional Water Quality Control Board
SBCF	Santa Barbara Canyon Fault
SBCWA	Santa Barbara County Water Agency
SGMA	Sustainable Groundwater Management Act
TDS	Total Dissolved Solids
UNAVCO	University NAVSTAR Consortium
USGS	United States Geological Survey

2.2 Groundwater Conditions

This section describes the historical and current groundwater conditions in the Cuyama Valley Groundwater Basin (Basin). As defined by the GSP regulations promulgated by the Department of Resources (DWR), the groundwater conditions section is intended to:

- Define current groundwater conditions in the Basin
- Describe historical groundwater conditions in the Basin
- Describe the distribution, availability, and quality of groundwater
- Identify interactions between groundwater, surface water, dependent ecosystems, and subsidence
- Establish a baseline of quality and quantity conditions that will be used to monitor changes in the groundwater conditions relative to measurable objectives and minimum thresholds
- Define measurable objectives to maintain or improve specified groundwater conditions
- Support monitoring to demonstrate that the GSP is achieving sustainability goals of the Basin

The groundwater conditions described in this section are intended to convey the present and historical availability, quality, and distribution of groundwater and are used elsewhere in the GSP to define measurable objectives, identify sustainability indicators, and establish undesirable results. Groundwater conditions in the Basin vary by location. To assist in discussion of the location of specific groundwater conditions, Figure 2.2-1 shows selected landmarks in the Basin to assist discussion of the location of specific groundwater conditions. Figure 2.2-1 shows major faults in the basin in red, highways in yellow, towns as orange dots, and canyons and Bitter Creek in purple lines that show their location.

2.2.1 Useful Terminology

The groundwater conditions section includes descriptions of the amounts, quality, and movement of groundwater, among other related components. A list of technical terms and a description of the terms are listed below. The terms and their descriptions are identified here to guide readers through the section and are not a definitive definition of each term:

- **Historical high groundwater elevations** – This is the highest measurement of groundwater elevation (closest to the ground surface) in a monitoring well that was recorded. Measurements of groundwater elevation are used to indicate the elevation of groundwater levels in the area near the monitored well.
- **Historical low groundwater elevations** – This is the lowest measurement of groundwater elevation (furthest from the ground surface) in a monitoring well that was recorded. Measurements of groundwater elevation are used to indicate the elevation of groundwater levels in the area near the monitored well.
- **Depth to Groundwater** – This is the distance from the ground surface to groundwater, typically reported at a well.
- **Horizontal gradient** – The gradient is the slope of groundwater from one location to another when one location is higher, or lower than the other. The gradient is shown on maps with an arrow showing the direction of groundwater flow in a horizontal direction.
- **Vertical gradient** – A vertical gradient describes the movement of groundwater perpendicular to the ground surface. Vertical gradient is measured by comparing the elevations of groundwater in wells that are of different depths. A downward gradient is one where groundwater is moving down into the ground, and an upward gradient is one where groundwater is upwelling towards the surface.

- **Contour Map** – A contour map shows changes in groundwater elevations by interpolating groundwater elevations between monitoring sites. The elevations are shown on the map with the use of a contour line, which indicates that at all locations that line is drawn, it represents groundwater being at the elevation indicated. There are two versions of contour maps used in this section, one which shows the elevation of groundwater above mean sea level (msl), which is useful because it can be used to identify the horizontal gradients of groundwater, and one which shows contours of depth to water, the distance from the ground surface to groundwater, which is useful because it can identify areas of shallow or deep groundwater.
- **Hydrograph** – A hydrograph is a graph that shows the changes in groundwater elevation over time for each monitoring well. Hydrographs show how groundwater elevations change over the years and indicate whether groundwater is rising or descending over time.
- **MCL** – Maximum Contaminant Levels (MCLs) are standards that are set by the State of California for drinking water quality. An MCL is the legal threshold limit on the amount of a substance that is allowed in public water systems. The MCL is different for different constituents.
- **Elastic Land Subsidence** - is the reversible and temporary fluctuation in the earth's surface in response to seasonal periods of groundwater extraction and recharge.
- **Inelastic Land Subsidence** – is the irreversible and permanent decline in the earth's surface resulting from the collapse or compaction of the pore structure within the fine-grained portions of an aquifer system

2.2.2 Groundwater Elevation Data Processing

Groundwater well information and groundwater level monitoring data were collected from eight major sources, and a small number of additional data were collected from local stakeholders. Well and groundwater elevation data were collected from:

- United States Geologic Survey (USGS)
- Department of Water Resources (DWR)
- Santa Barbara County
- San Luis Obispo County
- Grimmway Farms
- Bolthouse Farms
- Grapevine Capital Partners
- Santa Barbara County Water Agency (SBCWA)

Data collected included well information such as location, well construction, owner, ground surface elevation and other related components. Data collected also included groundwater elevation data including information such as date measured, depth to water, groundwater surface elevation, questionable measurement code, and comments. Groundwater elevation data was available covering the time period from 1949 to 2018. Many monitoring wells were monitored in the past, but were not monitored recently, while a small number of monitoring wells have been monitored for over 50 years. Figure 2.2-2 through Figure 2.2-5 show the locations of monitoring well data collected by each entity. The figures also show in a larger, darker symbol if the monitoring well has been measured in 2017 or 2018.

Figure 2.2-2 shows the locations of well data received from the DWR database. Roughly half of the wells from DWR's database were monitored in 2017-18, and half were not measured in 2017-18. Wells in DWR's database are concentrated in the central portion of the basin, east of Bitter Creek and north of the Santa Barbara Canyon Fault (SBCF). Data collected from DWR has been typically measured bi-annually, with one measurement in the spring, and one measurement in the fall.

Figure 2.2-3 shows the locations of well data received from the USGS database. The majority of wells from the USGS database were not monitored in 2017-18. Wells that were monitored in 2017-18 are concentrated in the western portion of the basin, west of New Cuyama, with a small number of monitoring wells in the central portion of the basin and near Ventucopa. Data collected from USGS has been typically measured bi-annually, with one measurement in the spring, and one measurement in the fall.

Figure 2.2-4 shows the locations of well data received from the Santa Barbara and San Luis Obispo Counties. The wells from both counties were monitored in 2017-18. Santa Barbara wells are concentrated in the western portion of the basin west of Bitter Creek. The two San Luis Obispo wells are located in the central portion of the basin and also appeared in the USGS database. Data collected from the counties has been typically measured bi-annually, with one measurement in the spring, and one measurement in the fall.

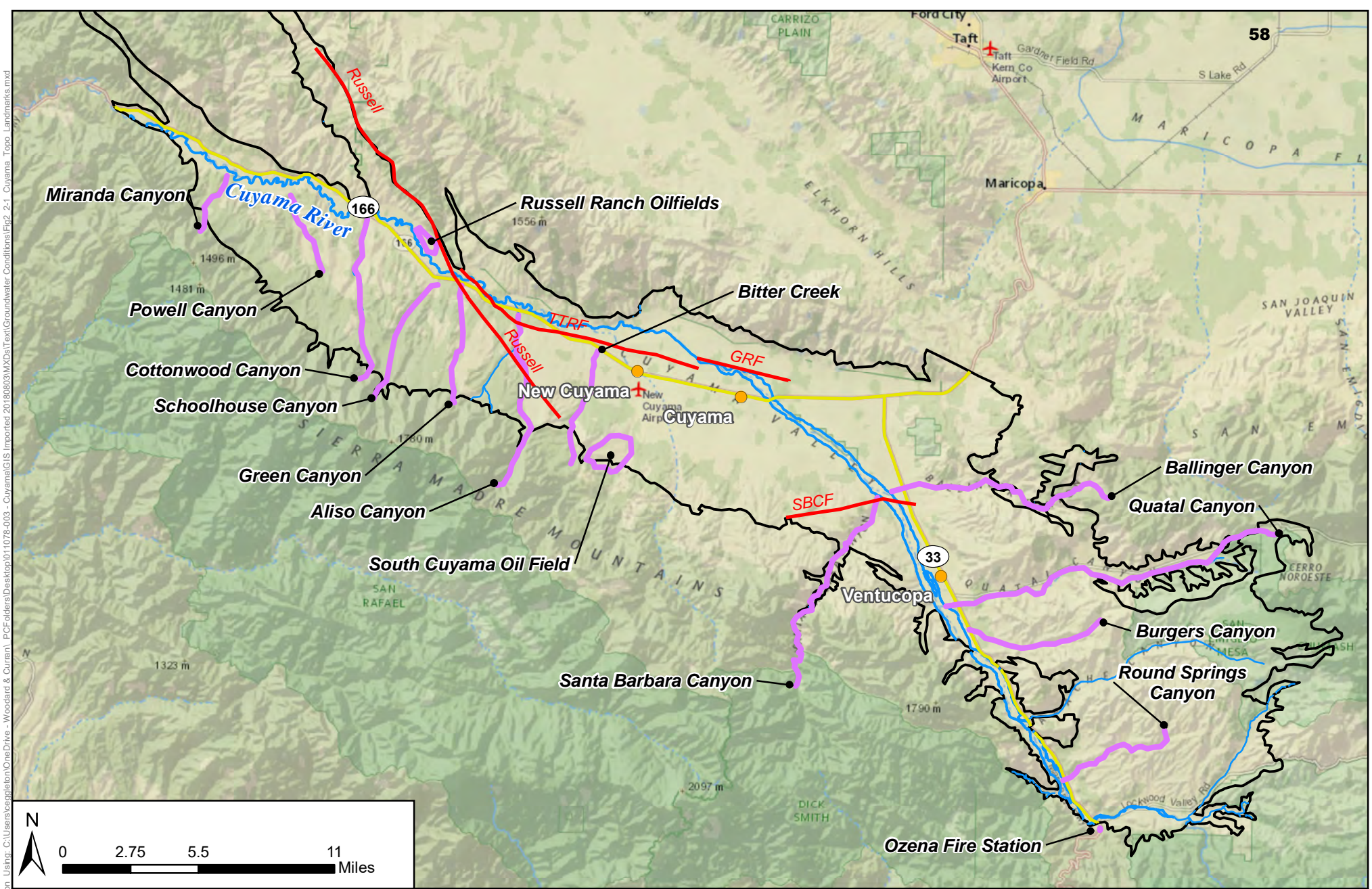


Figure 2.2-1 - Cuyama Basin Landmarks

Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018

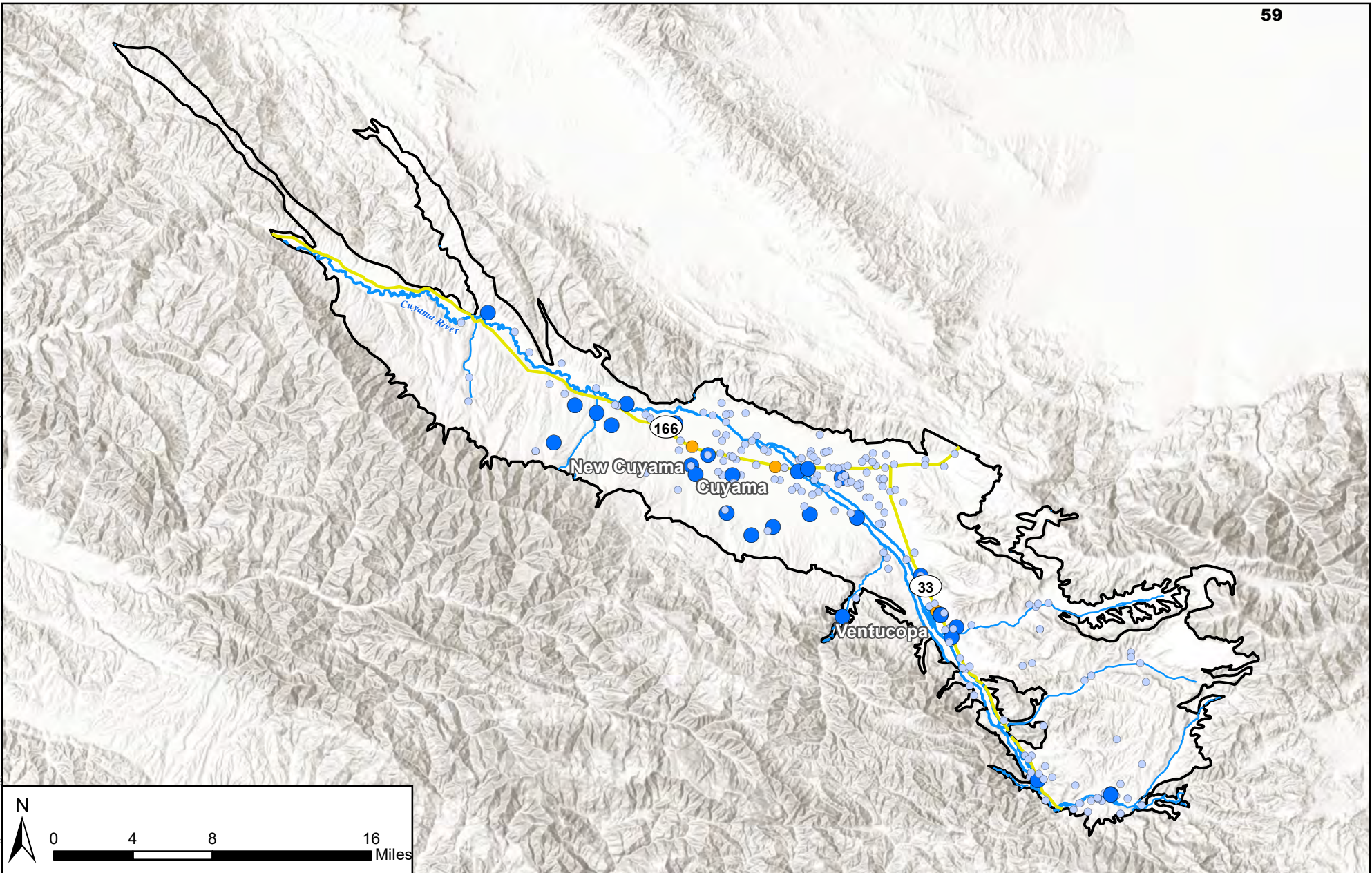


Legend

- Cuyama Basin
- Cuyama River
- Towns
- Streams
- Highways
- Landmarks
- Faults

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**Figure 2.2-2: Cuyama GW Basin
DWR Wells**

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

August 2018



Legend

- Cuyama Basin
- Towns
- Highways
- Cuyama River
- Streams
- DWR Database Wells Last Measured in 2017-2018
- DWR Database Wells Last Measured 2016 and Earlier

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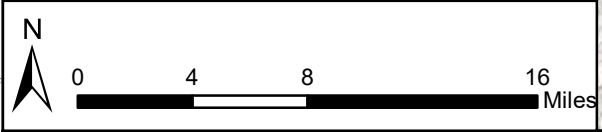
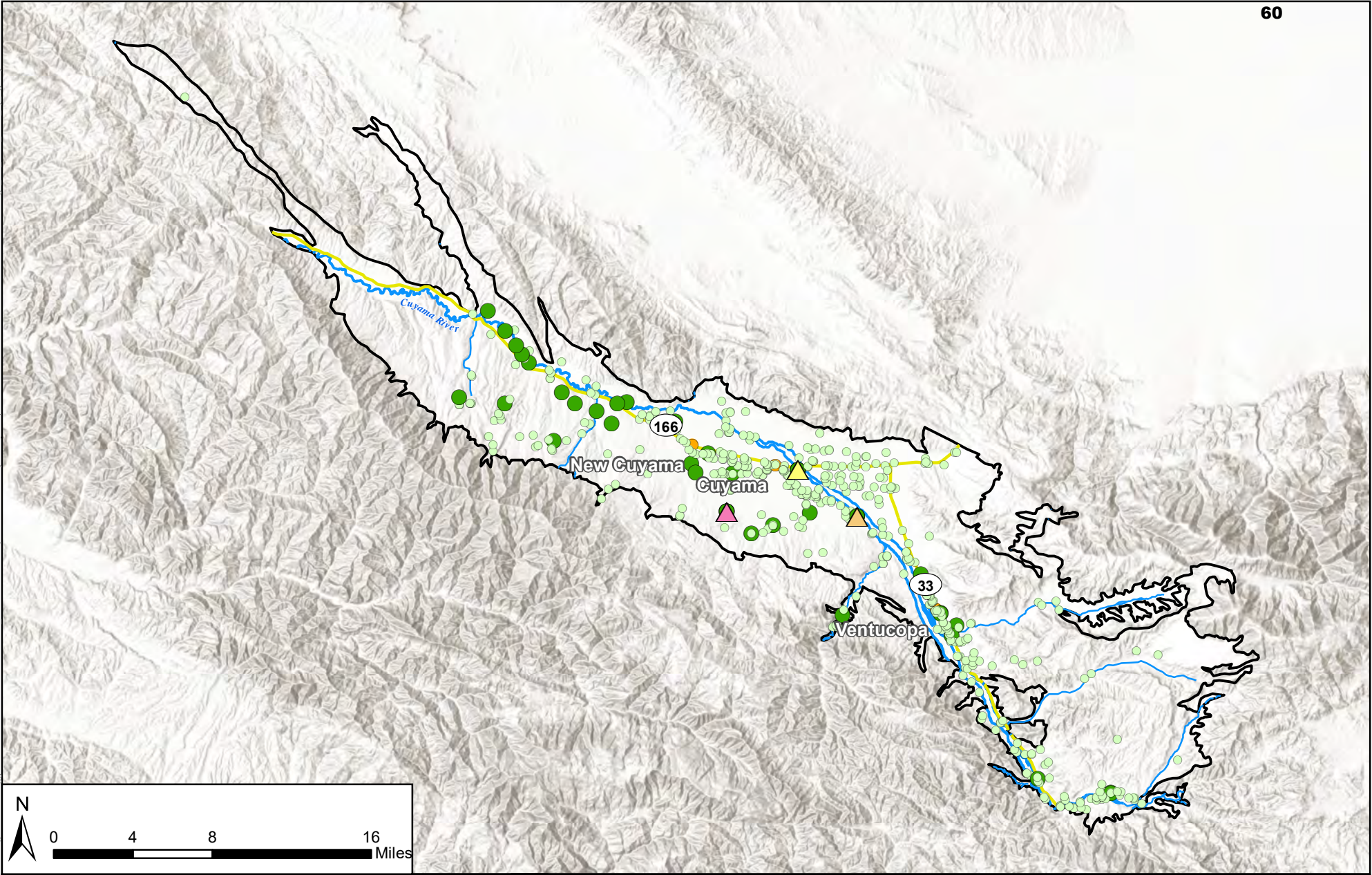


Figure 2.2-3: Cuyama GW Basin USGS Wells

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

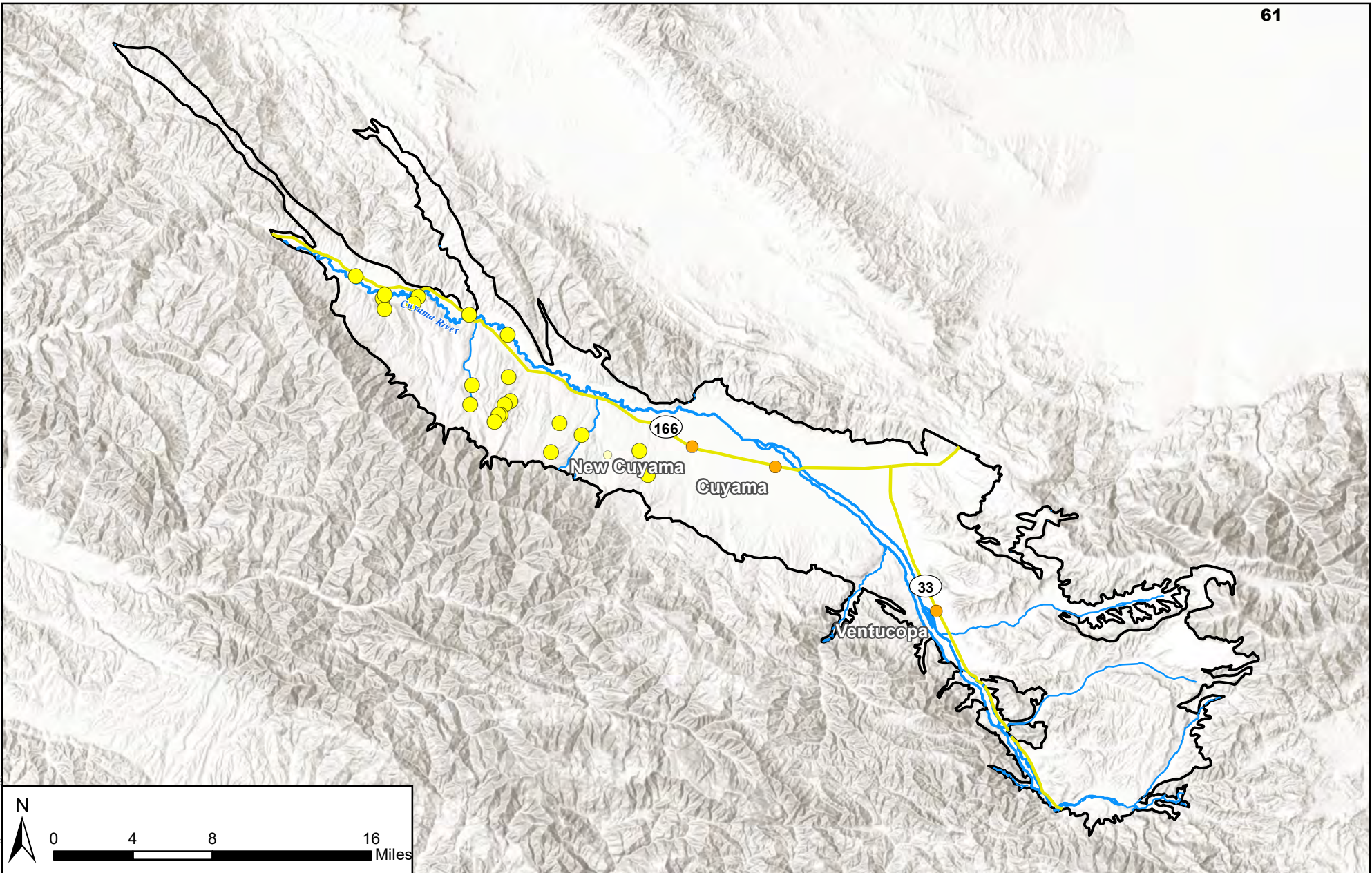
August 2018



Legend

- Cuyama Basin
- Towns
- Highways
- Cuyama River
- Streams
- USGS Database Wells Last Measured in 2017-2018
- USGS Database Wells Last Measured 2016 or Earlier
- CVBR Multi-Completion Well
- CVFR Multi-Completion Well
- CVKR Multi-Completion Well

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**Figure 2.2-4: Cuyama GW Basin
County Wells**

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater
Sustainability Plan

August 2018



Legend

- Cuyama Basin
- Towns
- County Database Wells Last Measured in 2017-2018
- County Database Wells Last Measured 2016 or Earlier
- Highways
- Cuyama River
- Streams

Figure 2.2-5 shows the locations of well data received from Grimmway Farms, Bolthouse Farms, Grapevine Capital Partners, and SBCWA. The locations of Grimmway and Bolthouse Farms well data are located in the central portion of the basin, between the Cuyama River and Highway 33, generally running along Highway 166. The locations of Grapevine Capital Partners well data are located along the Cuyama River and Highway 166, near the Russell Ranch Oilfields. The locations of SBCWA well data are located west of Cottonwood Canyon. Data collected from Grimmway and Bolthouse farms has been measured once per year, in conjunction with their well maintenance program. The date of measurement varies significantly by year. Data provided by Grapevine Capital Partners and SBCWA is bi-annual, with one measurement in the spring, and one measurement in the fall.

Figure 2.2-6 shows the locations of collected data by their last measured date. Wells monitored in 2017-2018 are shown in bright green triangles. Recent measurements are near the Cuyama river in the eastern uplands and near Ventucopa and are concentrated in the central portion of the basin, north of Highway 166. Recent monitoring also occurs throughout the central basin, is spread out in the western portion of the basin east of Aliso Canyon. An additional concentration of recent monitoring points is present along the Cuyama River near the Russell Ranch Oilfields.

Figure 2.2-7 shows a comparison of data collected from Bolthouse and Grimmway farms and data collected from DWR and the USGS. The figure shows the location of compared wells, and the measurements on those wells by source. The measurements of groundwater elevation among the measured wells indicate that the monitoring by the farms and agencies match in tracking historical trends and are accurate measurements.

Figure 2.2-8 shows a comparison of data collected from Grapevine Capital Partners, and data collected from Santa Barbara County. The figure shows the location of compared wells, and the measurements on those wells by source. A long-term comparison is not possible due to the shorter measurement period of the Santa Barbara County wells, but the measurements of groundwater elevation among the measured wells indicate that the monitoring by Grapevine Capital Partners and the county are similar in elevation, with the county's data showing slightly higher elevations.

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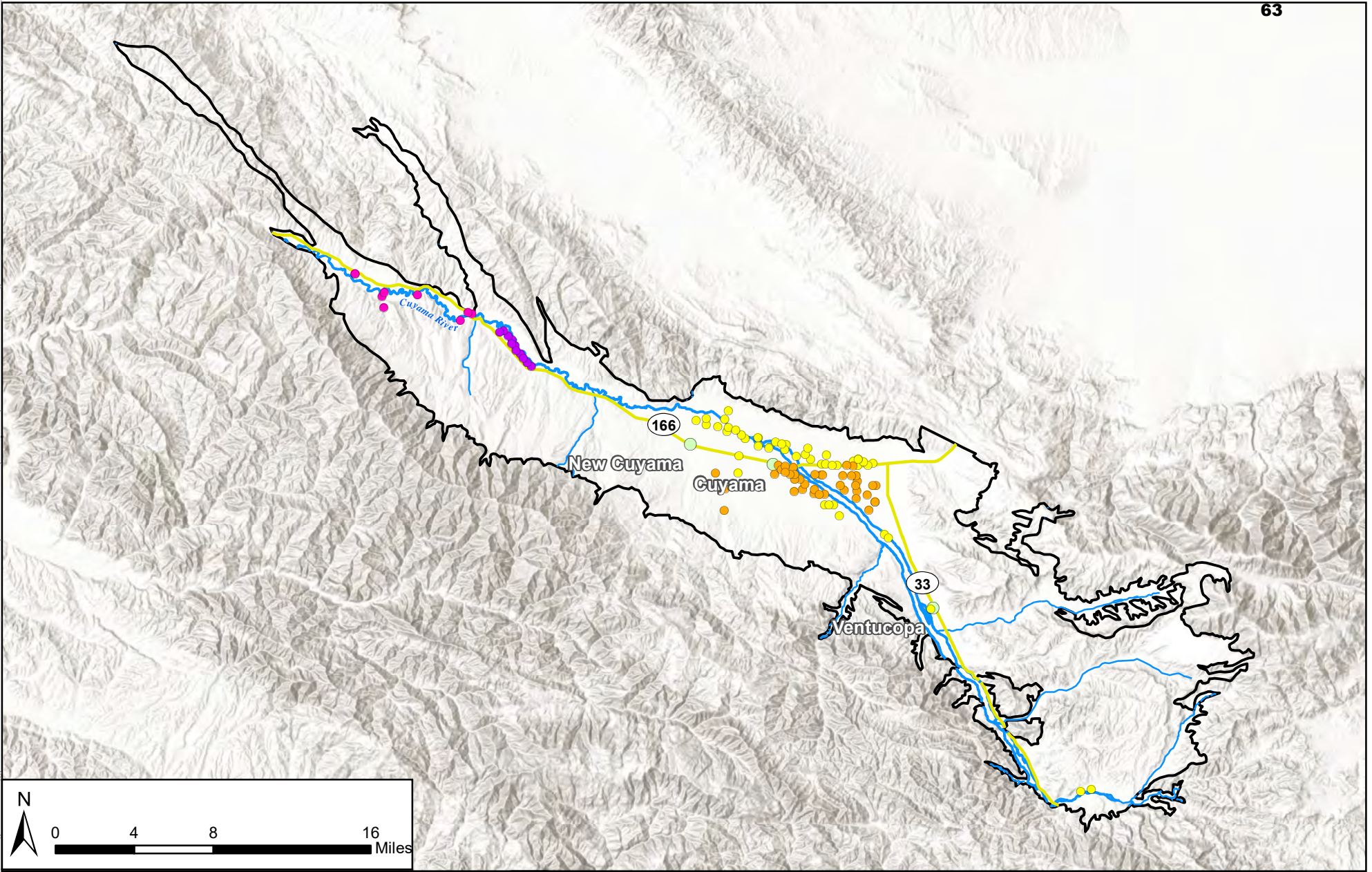


Figure 2.2-5: Cuyama Wells by Owners & Operating Entities

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

August 2018



Legend

- Cuyama Basin
- Towns
- Highways
- Cuyama River
- Streams
- Bolthouse Farms
- Grimmway Farms
- Grapevine Capital Partners
- Santa Barbara County Water Agency

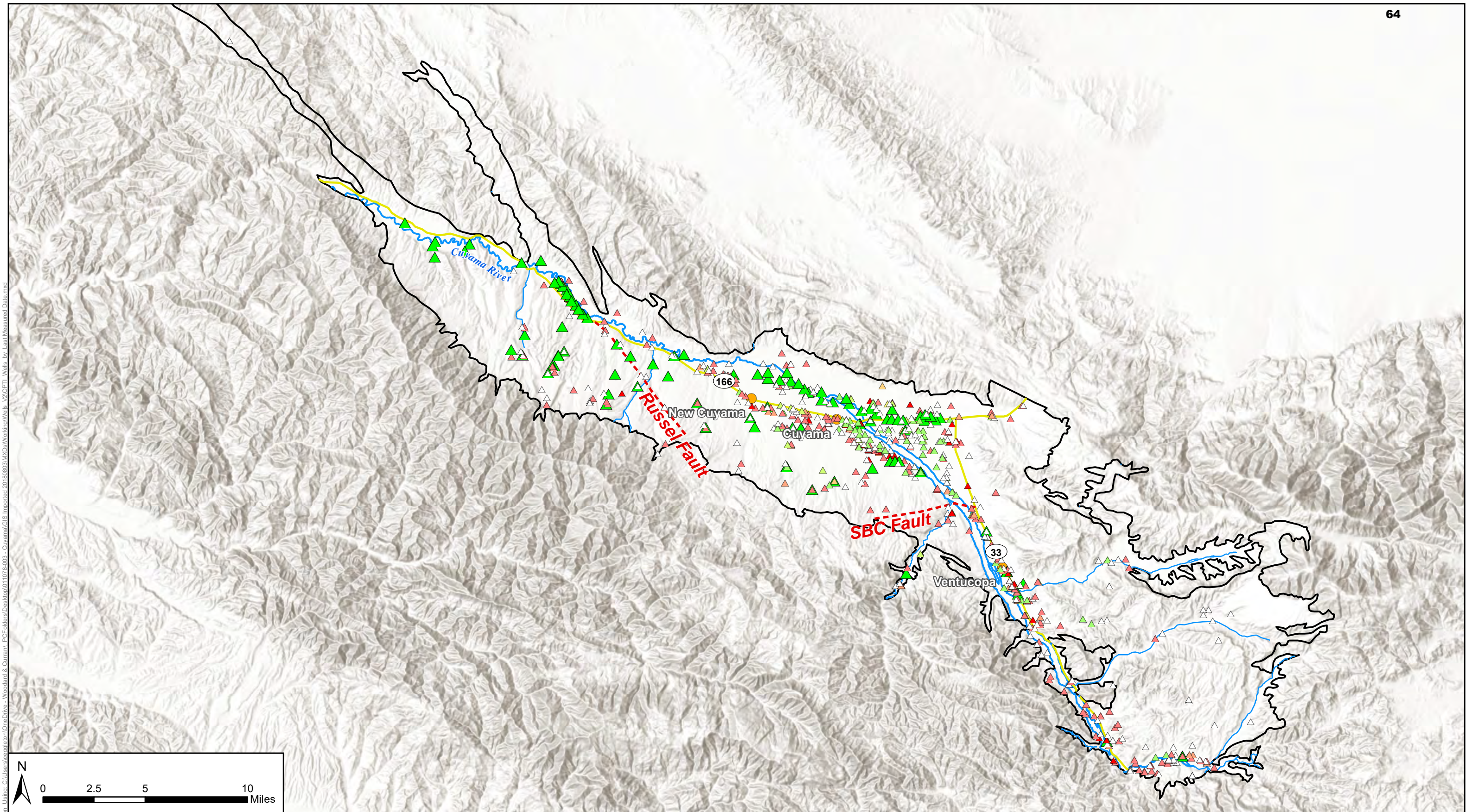


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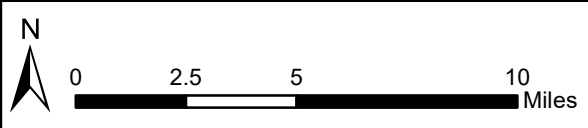



















Figure 2.2-6: Cuyama GW Basin Wells by Last Measurement Date
 Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018

 WOODARD & CURRAN	Legend	 Cuyama Basin	 Cuyama River	 2017 - 2018	 1980 - 1989	 Pre-1950
		 Towns	 Streams	 2010 - 2016	 1970 - 1979	 No Measurement Data
 Highways	 Fault	 2000 - 2009	 1960 - 1969	 1950 - 1959		
		 1990 - 1999				

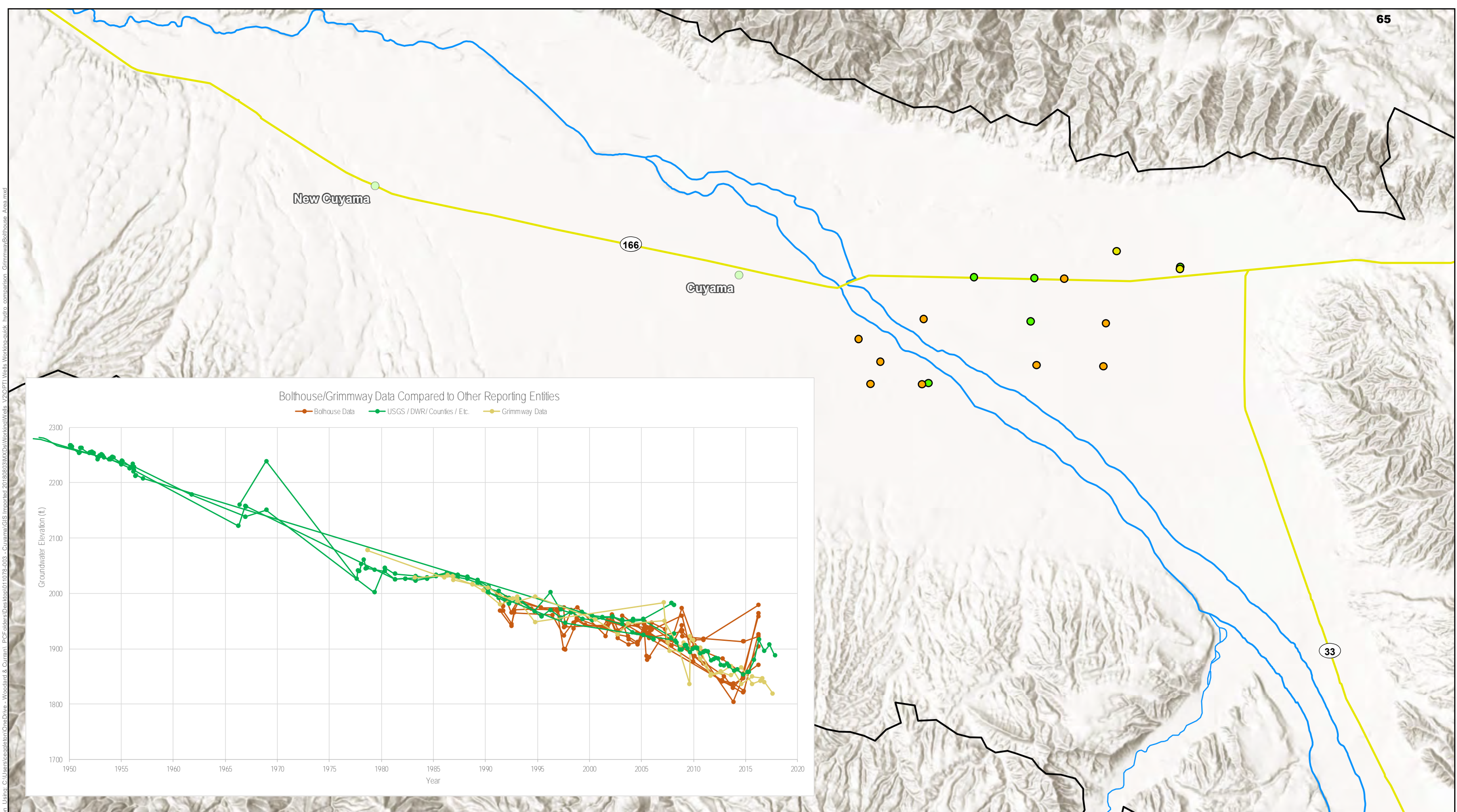


Figure 2.2-7: Cuyama Central GW Basin Wells and Hydrographs by Data Source

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

August 2018



Legend

- Cuyama Basin
- Towns
- Highways
- Cuyama River
- Streams
- USGS, DWR, County, Etc., Wells
- Grimmway Wells
- Bolthouse Wells

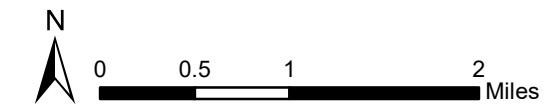


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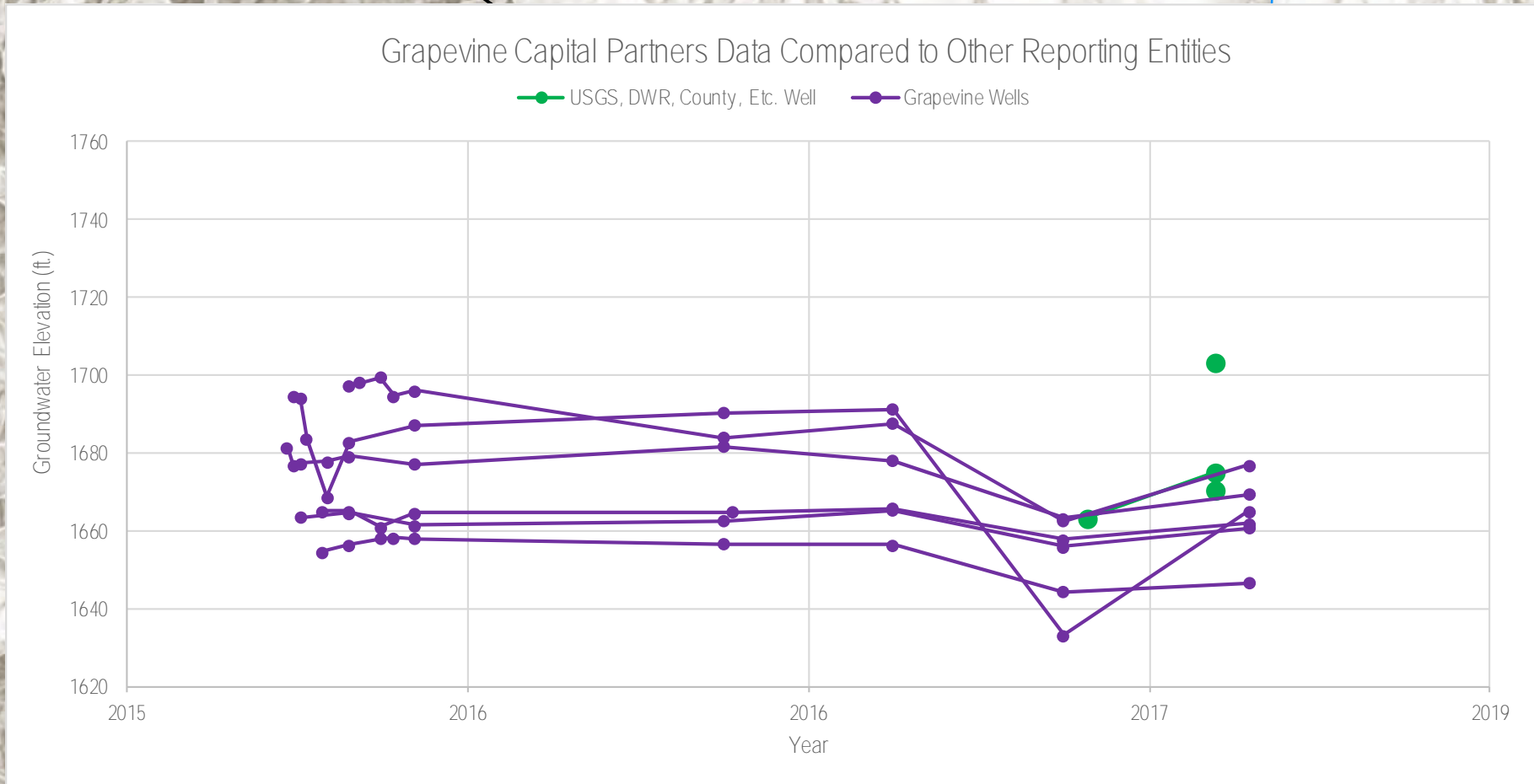


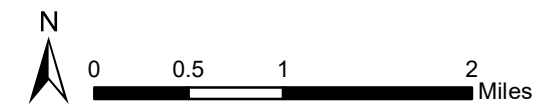
Figure 2.2-8: Cuyama GW Basin Wells by Groundwater Surface Elevation

Cuyama Basin Groundwater Sustainability Agency
Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
August 2018



Legend

- Cuyama Basin
- Highways
- Cuyama River
- Streams
- USGS, DWR, County, Etc. Wells
- Grapevine Wells



2.2.3 Groundwater Trends

This section describes groundwater trends in the basin generally from the oldest available studies and data to the most recent. Groundwater conditions vary widely across the Basin. Groundwater conditions were evaluated and summarized for this section based on historical reports and groundwater level monitoring.

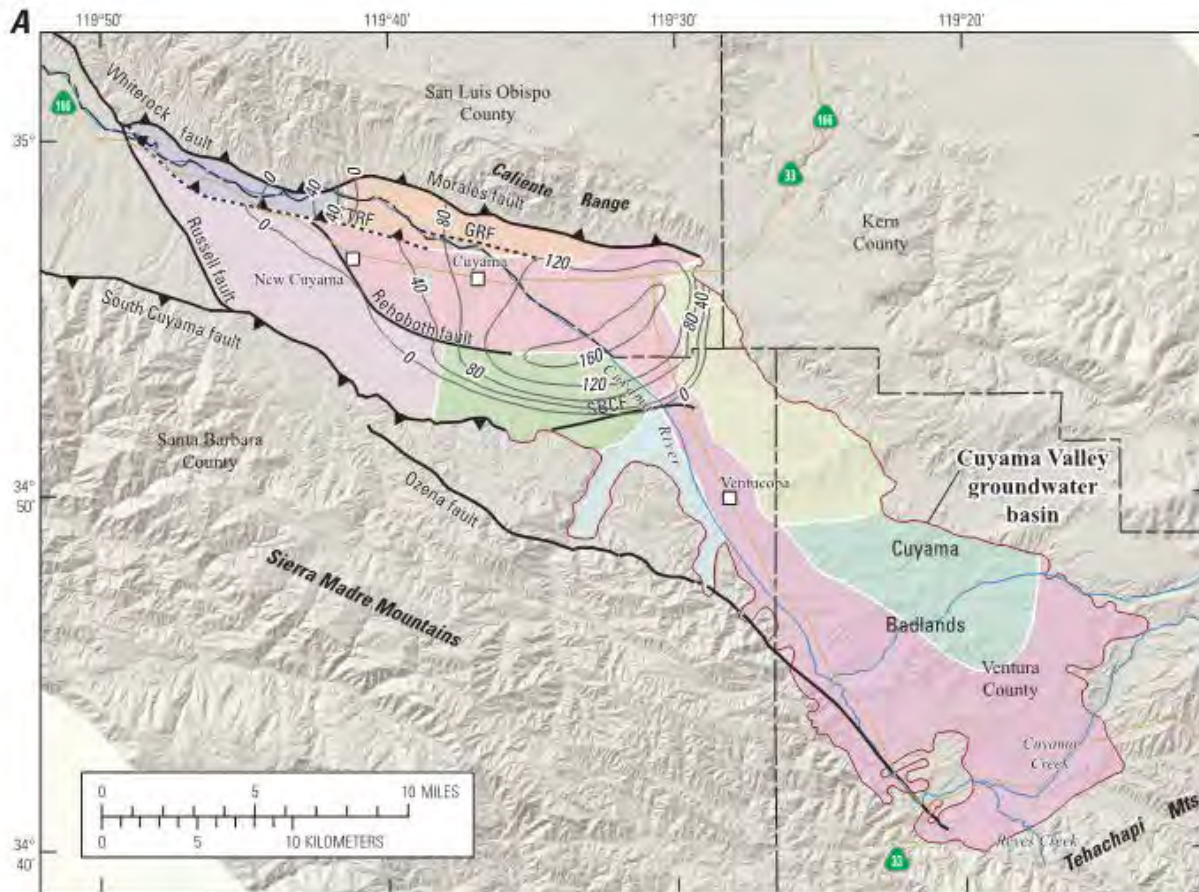
1947 to 1966 Groundwater Trends

Information about groundwater conditions in the basin are limited to reports that discuss the central portion of the basin and scattered groundwater elevation measurements in monitoring wells. This section discusses published reports about conditions from 1947 to 1966.

The report *Water Levels in Observation Wells in Santa Barbara County, California* (USGS 1956) discussed groundwater elevation monitoring in the Cuyama Valley Groundwater Basin. The report states that prior to 1946, there was no electric power in the valley, which restricted intensive irrigation, and that groundwater levels in the central portion of the basin remained fairly static until 1946. The report states that:

“Declines in groundwater began after 1946” (USGS 1956). Groundwater declined “as much as 8.8 feet from the spring of 1955 to 1956; the average decline was 5.2 feet. The decline of water levels at the lower and upper ends of the valley during this period was not so great as in the middle portion and averaged 1.7 and 2.2 feet respectively. Since 1946, water levels in observation wells have decline on the average about 27 feet.”

The report *Hydrologic Models and Analysis of Water Availability in the Cuyama Valley, California* (USGS 2015) presents two maps generated by the Cuyama Valley Hydrologic Model (CUVHM) simulated data. Figure 2.2-9 shows the estimated drawdown in the central portion of the basin from 1947 to 1966. Figure 2.2-9 shows that estimated drawdown ranged from zero at the edges of the central basin to over 160 feet in the southeastern portion of the central basin. Figure 2.2-10 shows the estimated contours of groundwater elevation for September 1966. These contours show a low area in the central portion of the central basin, and a steep groundwater gradient in the southeast near Ventucopa and in the highlands. A gentle groundwater gradient occurs in the southwestern portion of the central basin, generally matching topography.



Shaded relief base created from 30-m digital elevation model from USGS National Elevation Dataset (NED); North America Vertical Datum 1983 (NAVD83). Hydrology sourced from 1:24,000-scale National Hydrography Dataset, 1974-2009. Place names sourced from USGS Geographic Names Information System, 1974-2009. Albers Projection, NAD83. Modified from Singer and Swarzenski, 1970

EXPLANATION

<p>Cuyama groundwater basin subregion</p> <ul style="list-style-type: none"> Caliente Northern-Main Central Sierra Madre Foothills Northeast Ventucopa Uplands Northwestern Sierra Madre Foothills Northern Ventucopa Uplands Southern Sierra Madre Foothills Southern Ventucopa Uplands Southern-Main Western Basin 	<ul style="list-style-type: none"> — Normal fault ▲ Thrust fault -▲- Thrust fault, concealed <p>GRF, Graveyard fault; SBCF, Santa Barbara Canyon fault; TTRF, Turkey Trap Ridge fault</p>	<p>— Estimated drawdown contour (1966-1947). Interval is 40 feet</p>
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Figure 2.2-9: USGS 2015 – Water Level Drawdown Contours 1966 - 1947

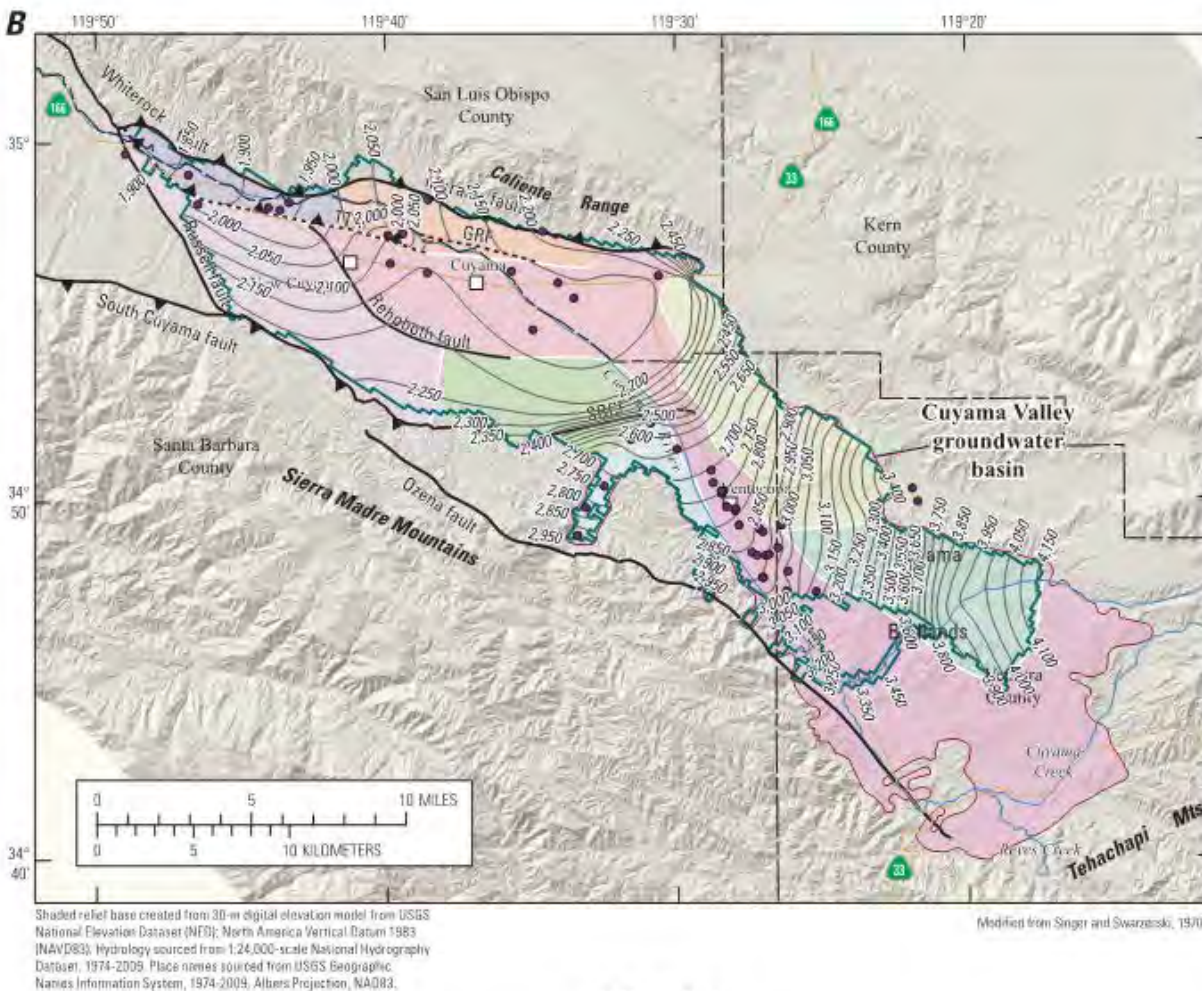


Figure 2.2-10: USGS 2015 – Water Level Contours 1966

Groundwater Hydrographs

Groundwater hydrographs were developed to provide indicators of groundwater trends throughout the Basin. Measurements from each monitoring well were compiled into one hydrograph for each well. Hydrographs for all monitoring wells with elevation data that were collected are presented in **Appendix X**.

Groundwater conditions in the Basin generally vary by general area in the basin. Figure 2.2-11 shows Hydrographs in different portions of the basin. Generally speaking:

- In the area southeast of Round Springs Canyon, near Ozena Fire Station - Groundwater levels have stayed relatively stable with a small decline in the 2012-2015 drought and quick recovery.
- In the vicinity of Ventucopa - Groundwater levels followed climactic patterns and have generally been declining since 1995.
- Just south of the SBCF – Groundwater levels have been fairly stable and are closer to the surface than levels in Ventucopa.
- North of the SBCF and east of Bitter Creek in the central portion of the basin - Groundwater levels have been declining consistently since 1947.
- In the western area west of Bitter Creek are near the surface near the Cuyama river, and deeper below ground to the south, uphill from the river, and have been generally stable since 1966.

Figure 2.2-12 shows selected hydrographs in the areas near Ventucopa. In the area southeast of Round Springs Canyon, near Ozena Fire Station, the hydrograph for Well 89 is representative of monitoring wells in this area, and groundwater levels have stayed relatively stable with a small decline in the 2012-2015 drought and quick recovery. Near Ventucopa, hydrographs for Wells 85 and 62 show the same patterns and conditions from 1995 to the present and show that groundwater levels in this area respond to climactic patterns, but also have been in decline since 1995 and are currently at historic low elevations. Prior to 1995, the hydrograph for Well 85 shows that groundwater levels responded to drought conditions but recovered during wetter years. The hydrograph for Well 40 is located just south of the SBCF and indicates that groundwater levels in this location have remained stable from 1951 to 2013, when monitoring ceased. Hydrographs for wells 91, 316, and 620 are north of the SBCF and show more recent conditions, where depth to water has declined consistently and is below 580 below ground surface (bgs).

Figure 2.2-13 shows hydrographs of discontinued monitoring wells in the central portion of the basin, north of the SBCF and east of Bitter Creek. The hydrographs in this area show consistent declines of groundwater levels and little to no responses to either droughts or wetter periods. The hydrograph for Well 35 shows a consistent decline from 1955 to 2008, from 30 feet bgs to approximately 150 feet bgs. Well 472 shows a decline from approximately 5 feet bgs in 1949 to approximately 85 feet bgs in 1978.

Figure 2.2-14 shows hydrographs of recently monitored wells in the central portion of the basin, north of the SBCF and east of Bitter Creek. In general, hydrographs in this area show that groundwater levels are decreasing, with the lowest levels in the southeast portion of the area just northwest of the SBCF, as shown in the Well 610 hydrograph, where groundwater levels were below 600 feet bgs. Levels remain lowered along the Cuyama River, as shown in the hydrographs for Wells 604 and 640, which are currently approximately 500 feet bgs. Groundwater levels are higher to the west (Well 72) and towards the southern end of the area (Well 96), however all monitoring wells in this area show consistent declines in elevation.

Figure 2.2-15 shows hydrographs of monitoring wells in the western portion of the basin, west of Bitter Creek. Hydrographs in this area show that generally, groundwater levels are near the surface near the Cuyama River, and further from the surface to the south, which is uphill from the river. The hydrograph for Well 119 shows a few measurements from 1953-1969, as well as three recent measurements, all measurements on this well show a depth to water of 60 feet bgs. The hydrograph for Well 846 shows that in 2015 depth to water was slightly above 40 feet and is slightly below 40 feet in 2018. The hydrograph for Well 840 shows a groundwater level near ground surface in 2015, and a decline to 40 feet bgs in 2018. Hydrographs for wells uphill from the river (Wells 573 and 121) show that groundwater is roughly 70 feet bgs in this area. Hydrographs for wells 571 and 108, at the edge of the basin only have recent measurements, show groundwater levels that range from 120 to 140 feet bgs.

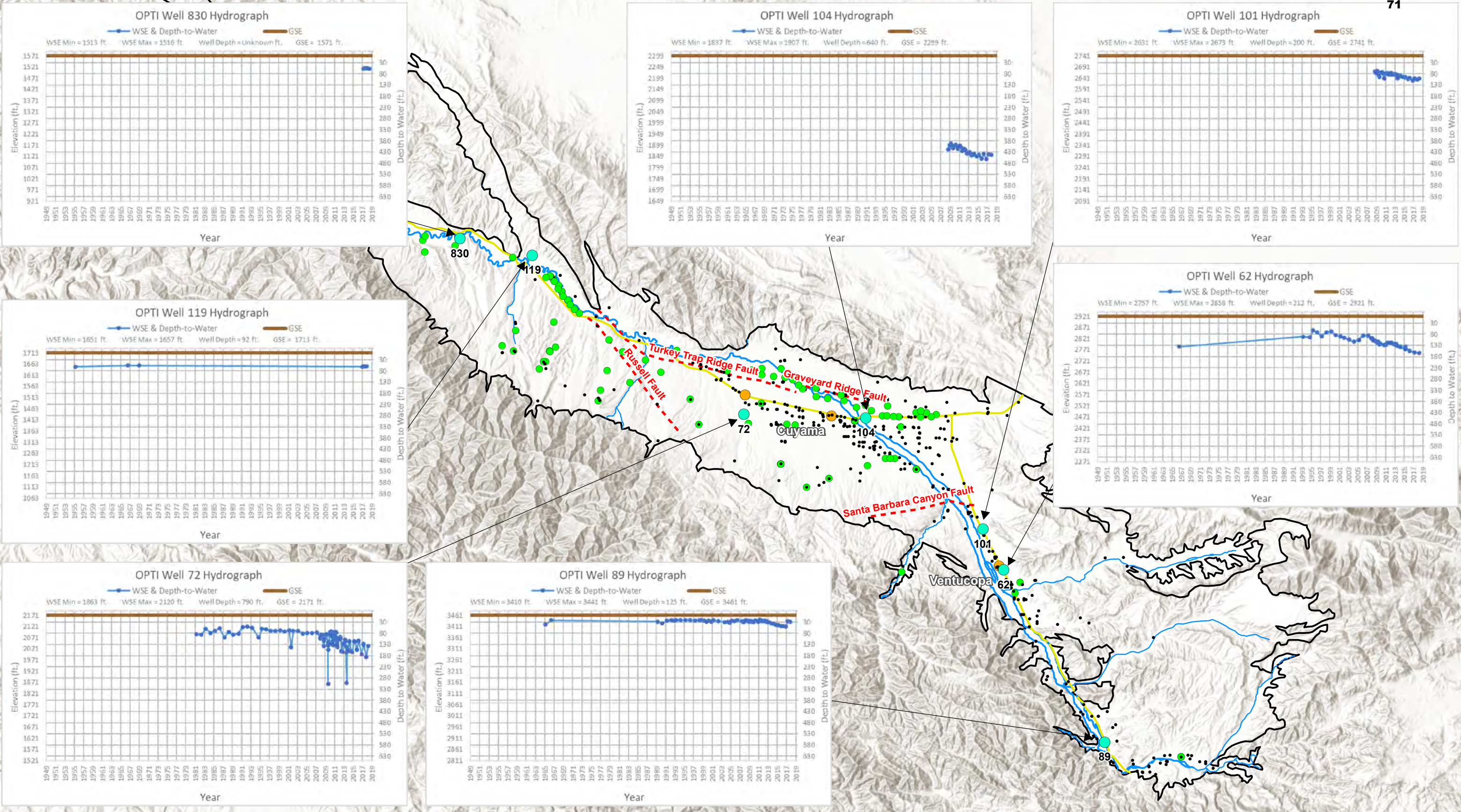


Figure 2.2-11: Cuyama GW Basin Hydrographs

Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



Legend

- Cuyama Basin
- Towns
- Highways
- Cuyama River
- Streams
- - - Faults
- Hydrographed Wells
- Currently Monitored Wells
- Not Currently Monitored



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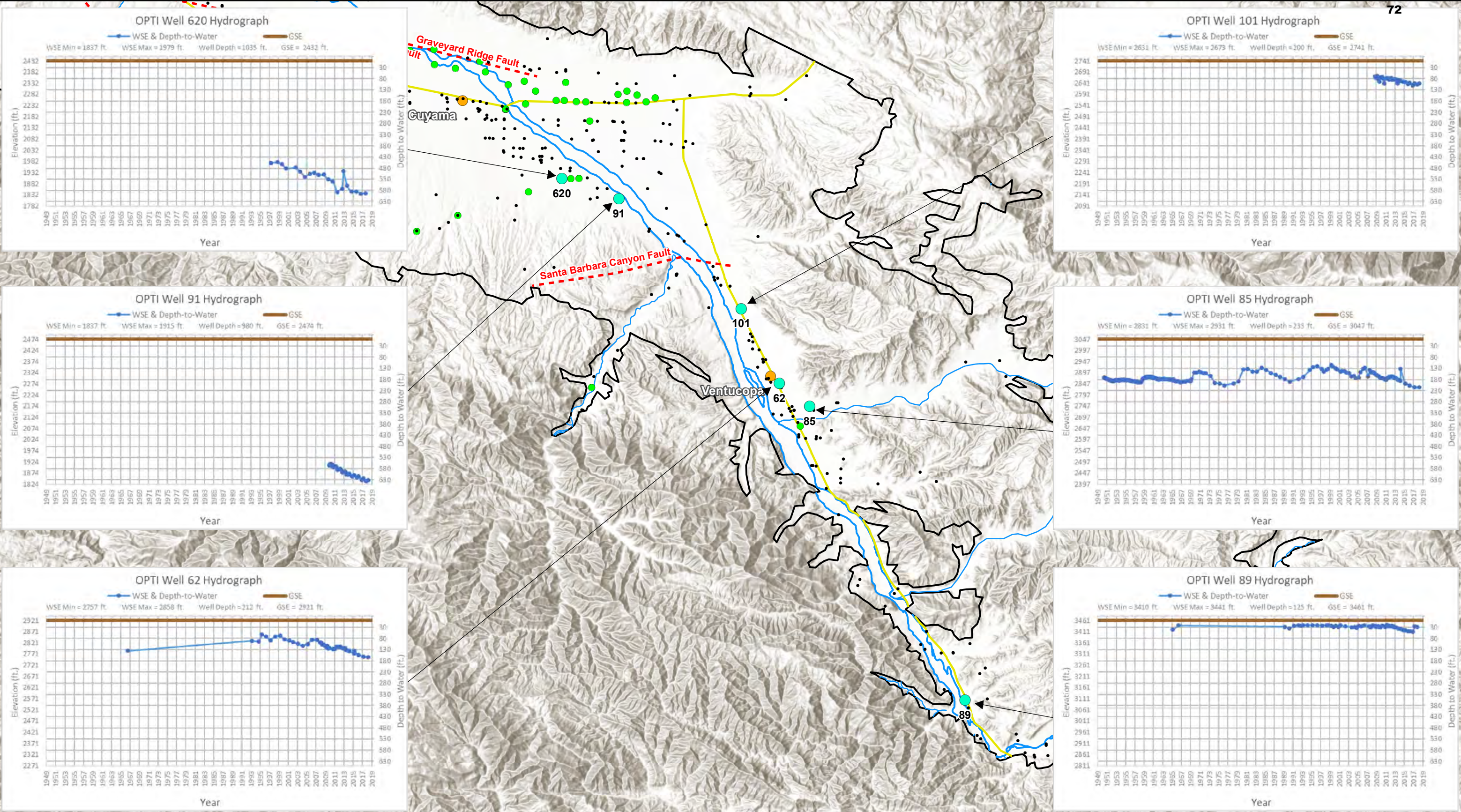


Figure 2.2-12: Cuyama GW Basin Hydrographs for the Ventucopa Area of the Basin
 Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



- Legend**
- Cuyama Basin
 - - - Faults
 - Towns
 - Hydrographed Wells
 - Highways
 - Currently Monitored Wells
 - Cuyama River
 - Not Currently Monitored
 - Streams

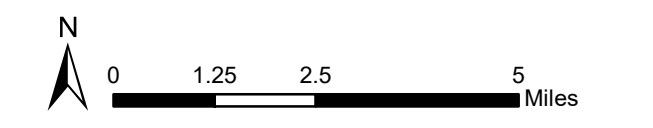


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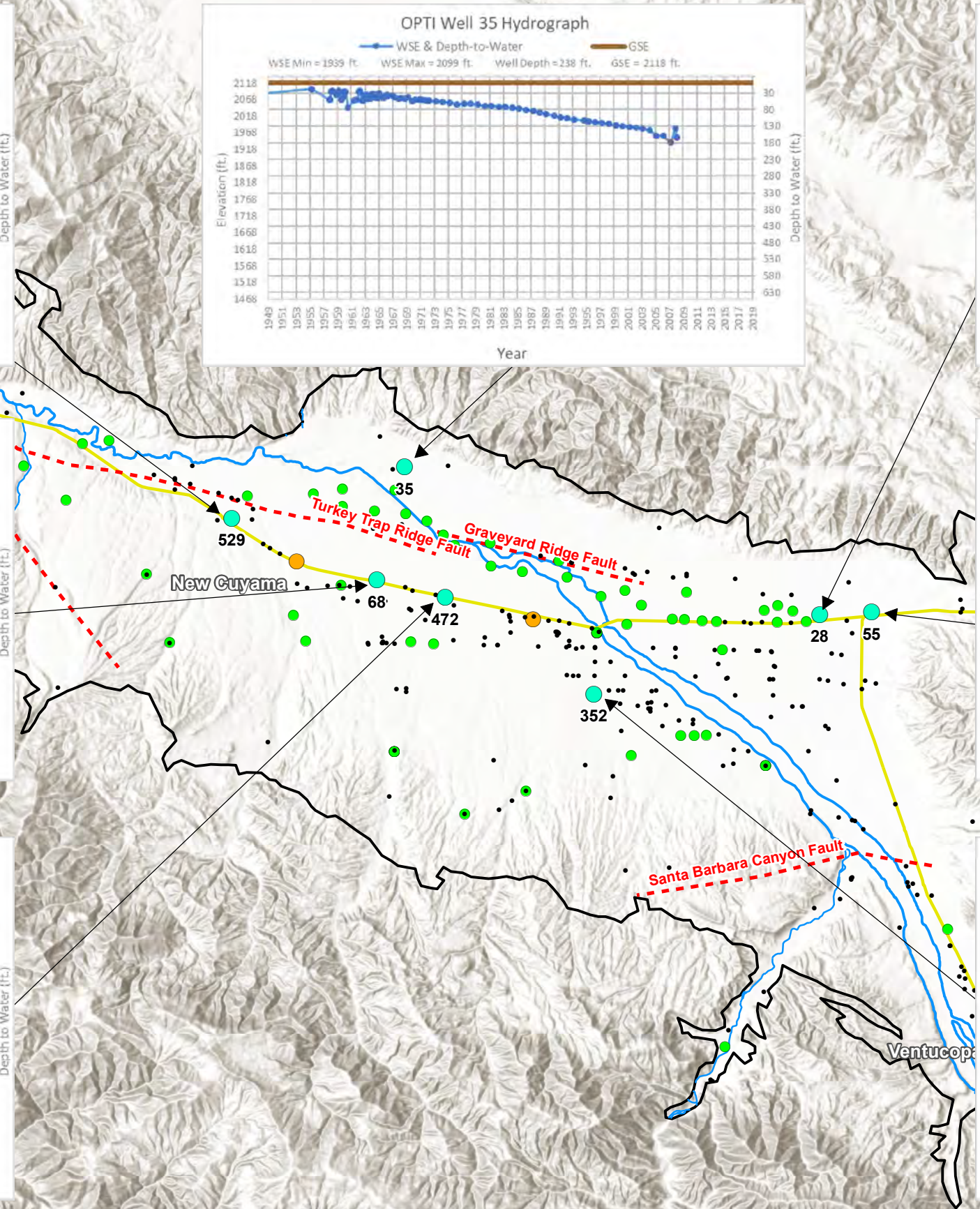
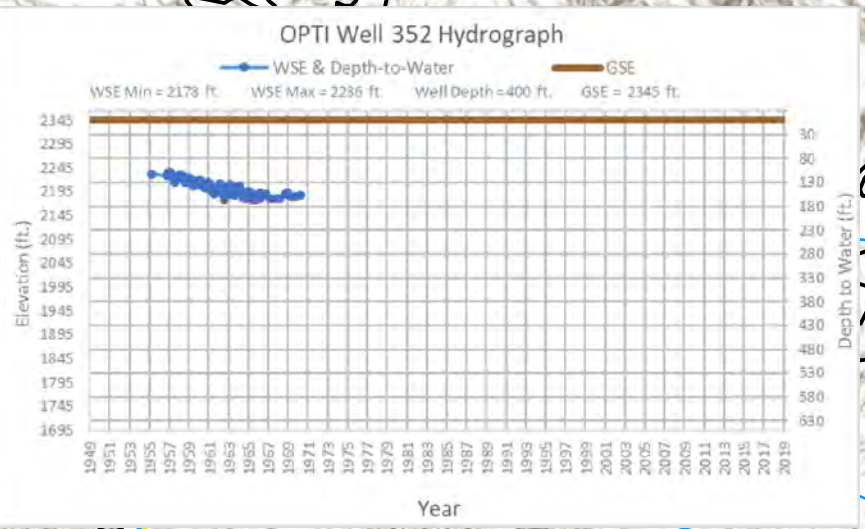
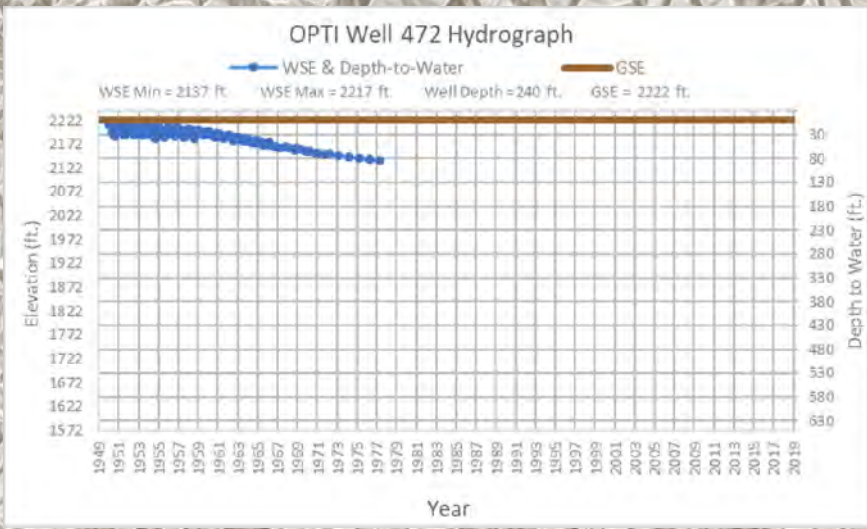
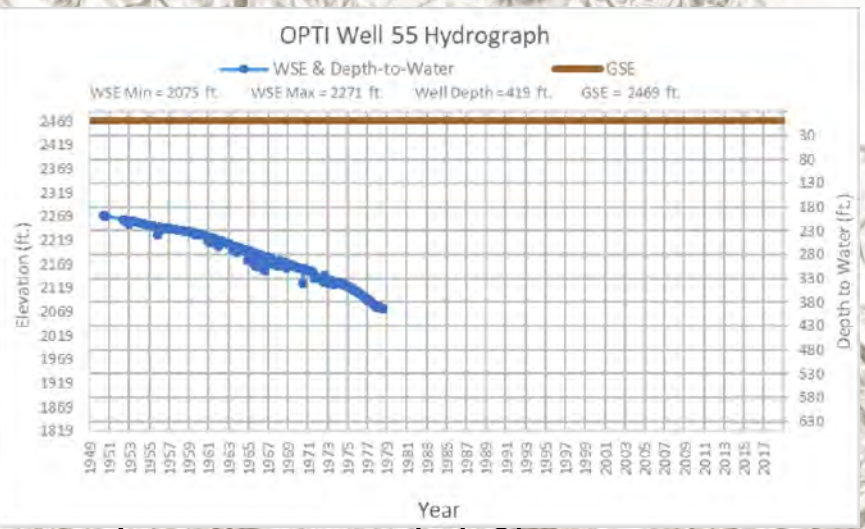
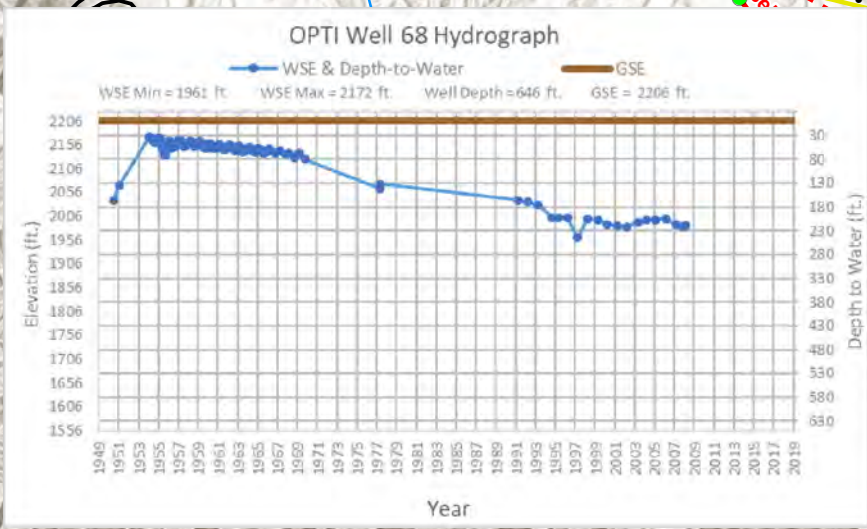
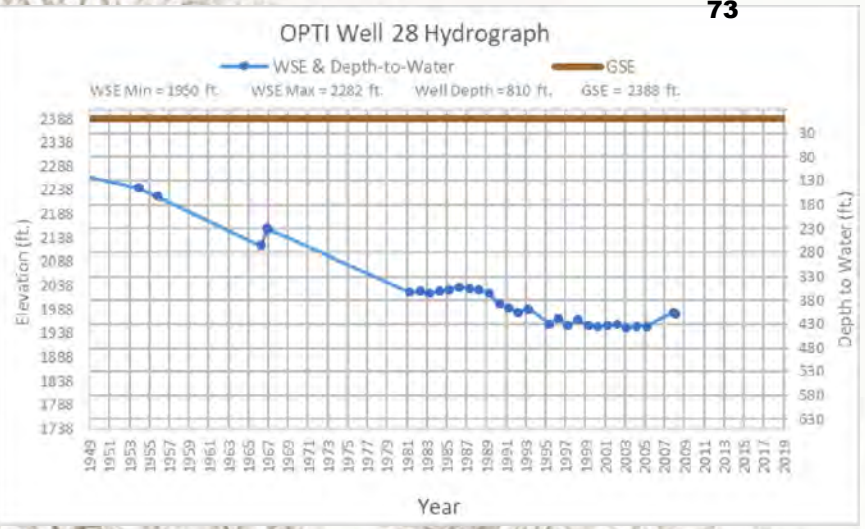
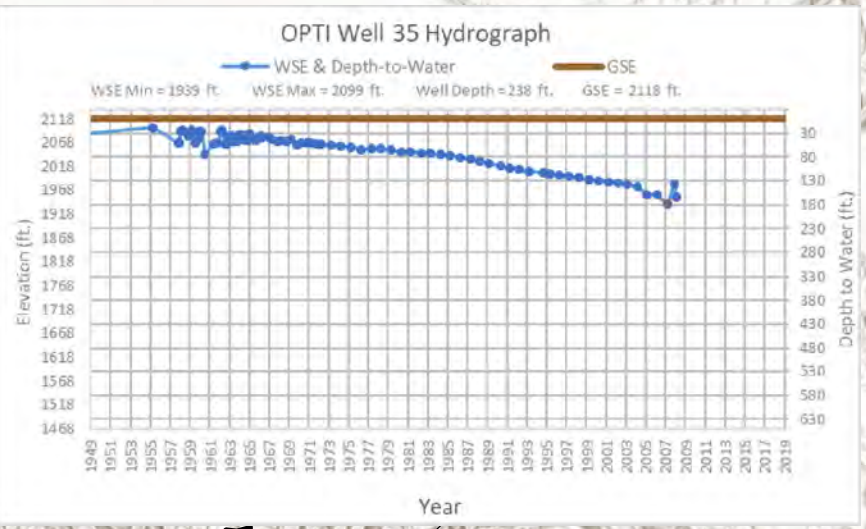
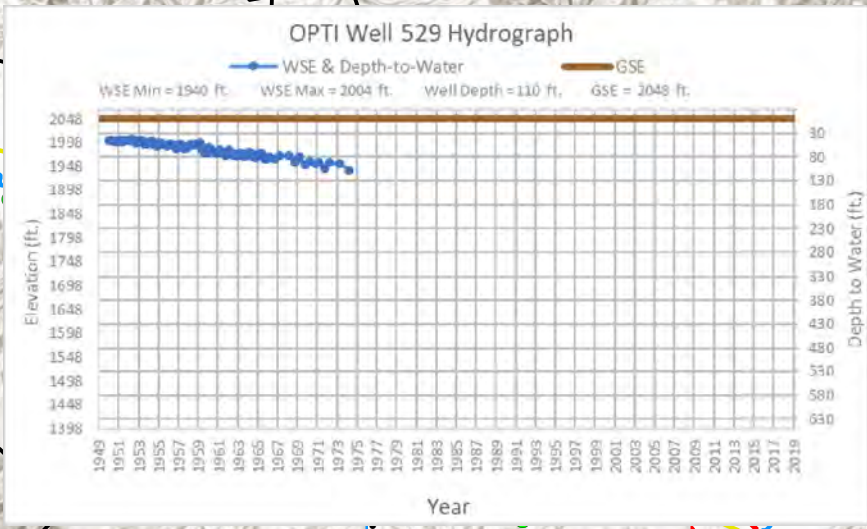
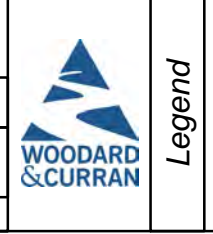


Figure 2.2-13: Cuyama GW Basin Historical Hydrographs in the Central Basin
 Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



- Legend**
- Cuyama Basin
 - Faults
 - Towns
 - Hydrographed Wells
 - Highways
 - Currently Monitored Wells
 - Cuyama River
 - Not Currently Monitored
 - Streams

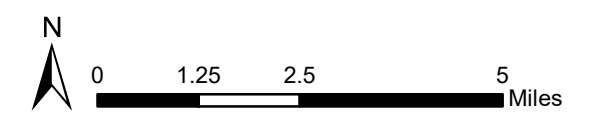


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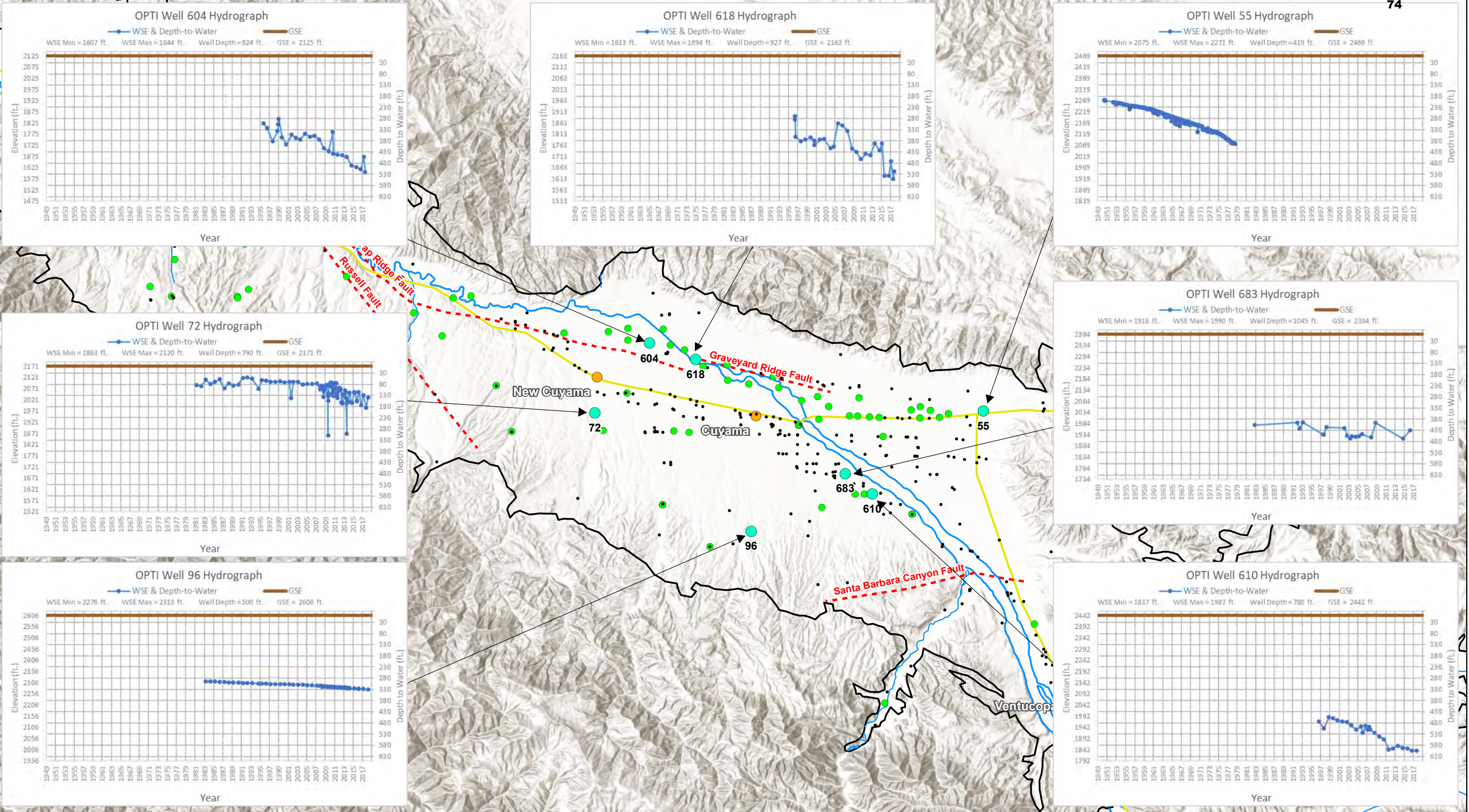


Figure 2.2-14: Cuyama GW Basin Hydrographs for the Central Portion of the Basin

Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



Legend

- Cuyama Basin
- - - Faults
- Towns
- Hydrographed Wells
- Highways
- Currently Monitored Wells
- Cuyama River
- Not Currently Monitored
- Streams



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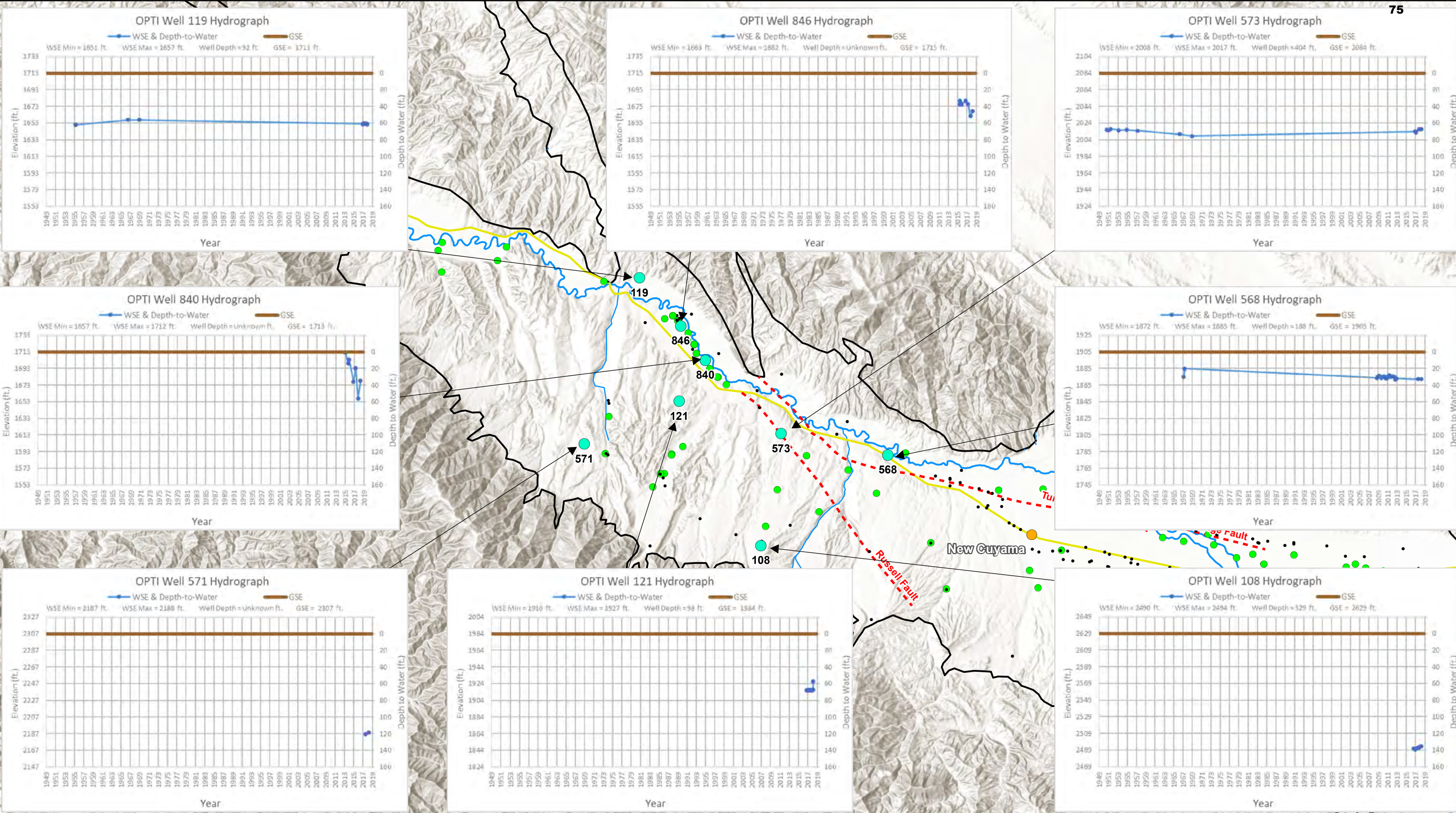


Figure 2.2-15: Cuyama GW Basin Hydrographs for the Westside Area of the Basin
 Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



- Legend**
- Cuyama Basin
 - - - Faults
 - Towns
 - Hydrographed Wells
 - Highways
 - Currently Monitored Wells
 - Cuyama River
 - Not Currently Monitored
 - Streams



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Vertical Gradients

A vertical gradient describes the movement of groundwater perpendicular to the ground surface. Vertical gradient is typically measured by comparing the elevations of groundwater in a well with multiple completions that are of different depths. If groundwater elevations in the shallower completions are higher than in the deeper completions, the gradient is identified as a downward gradient. A downward gradient is one where groundwater is moving down into the ground. If groundwater elevations in the shallower completions are lower than in the deeper completions, the gradient is identified as an upward gradient. An upward gradient is one where groundwater is upwelling towards the surface. If groundwater elevations are similar throughout the completions, there is no vertical gradient to identify. Knowledge about vertical gradients is required by regulation and is useful for understanding how groundwater moves in the Basin.

There are three multiple completion wells in the Basin. The locations of the multiple completion wells are shown in Figure 2.2-3 Monitoring Well Data Received From USGS. The three multiple completion wells are located in the central portion of the basin, north of the SBCF and east of Bitter Creek.

Figure 2.2-16 shows the combined hydrograph the multiple completion well CVFR, which was installed by the USGS. CVFR is comprised of four completions, each at different depths:

- CVFR-1 is the deepest completion with a screened interval from 960 to 980 feet bgs
- CVFR-2 is the second deepest completion with a screened interval from 810 to 830 feet bgs
- CVFR-3 is the third deepest completion with a screened interval from 680 to 700 feet bgs
- CVFR-4 is the shallowest completion with a screened interval from 590 to 610 feet bgs

The hydrograph of the four completions shows that they are at the same elevation at each completion, and therefore there is no vertical gradient at this location.

Figure 2.2-17 shows the combined hydrograph the multiple completion well CVBR, which was installed by the USGS. CVBR is comprised of four completions, each at different depths:

- CVBR-1 is the deepest completion with a screened interval from 830 to 850 feet bgs
- CVBR-2 is the second deepest completion with a screened interval from 730 to 750 feet bgs
- CVBR-3 is the third deepest completion with a screened interval from 540 to 560 feet bgs
- CVBR-4 is the shallowest completion with a screened interval from 360 to 380 feet bgs

The hydrograph of the four completions shows that at the deeper completions are slightly lower than the shallower completions in the spring at each completion, and deeper completions are generally lower in the summer and fall. This likely indicates that during the irrigation season, the deeper portions of the aquifer are where pumping occurs, which removes water from the deeper portion of the aquifer, creating a vertical gradient during the summer and fall. By the spring, enough water has moved down to replace removed water, and the vertical gradient is significantly smaller at this location in the spring measurements.

Figure 2.2-18 shows the combined hydrograph the multiple completion well CVKR, which was installed by the USGS. CVKR is comprised of four completions, each at different depths:

- CVKR-1 is the deepest completion with a screened interval from 960 to 980 feet bgs
- CVKR-2 is the second deepest completion with a screened interval from 760 to 780 feet bgs
- CVKR-3 is the third deepest completion with a screened interval from 600 to 620 feet bgs
- CVKR-4 is the shallowest completion with a screened interval from 440 to 460 feet bgs

The hydrograph of the four completions shows that at the deeper completions are slightly lower than the shallower completions in the spring at each completion, and deeper completions are generally lower in the

summer and fall. This likely indicates that during the irrigation season, the deeper portions of the aquifer are where pumping occurs, which removes water from the deeper portion of the aquifer, creating a vertical gradient during the summer and fall. By the spring, enough water has moved down to replace removed water, and the vertical gradient is significantly smaller at this location in the spring measurements.

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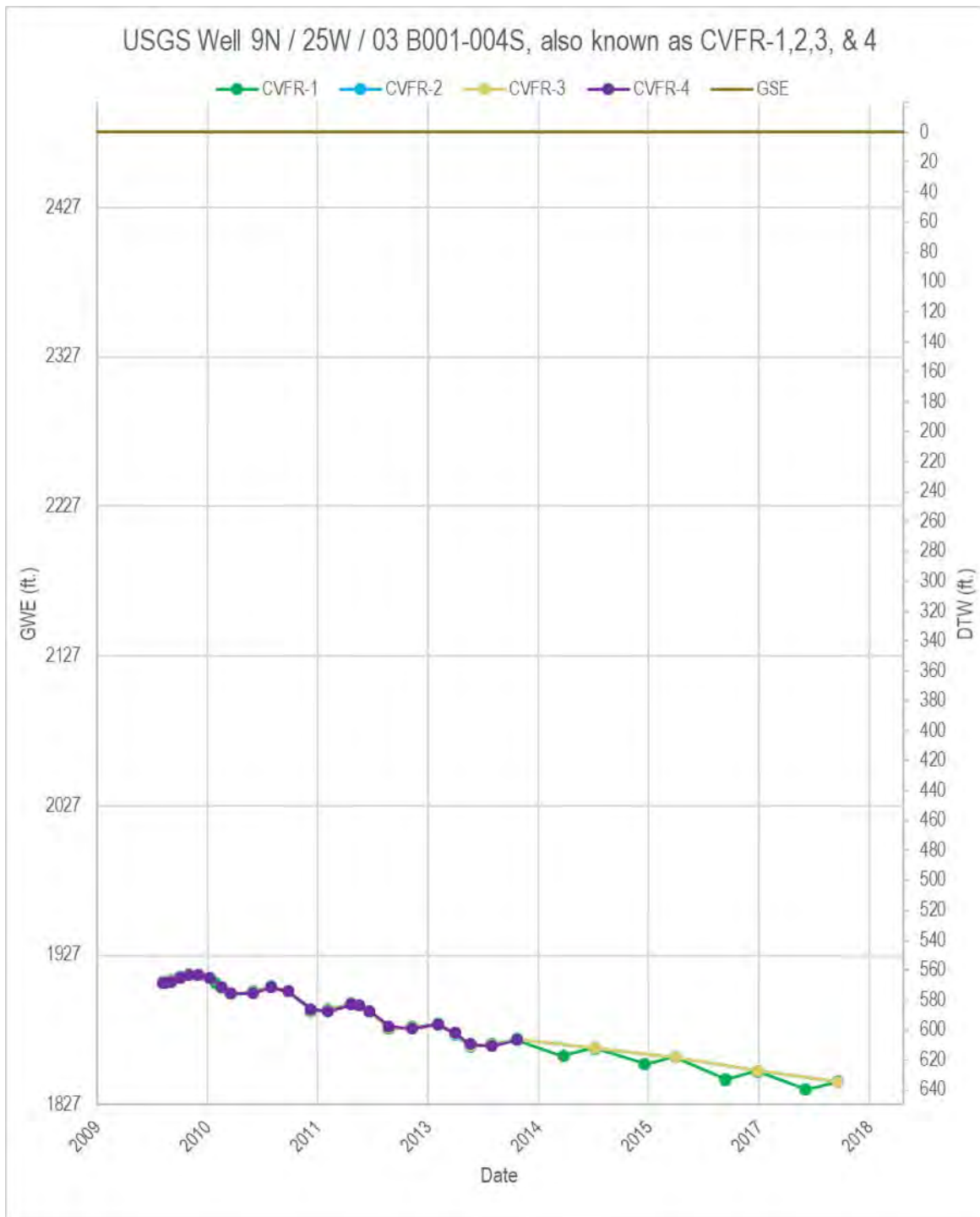


Figure 2.2-16: Hydrographs of CVFR1-4

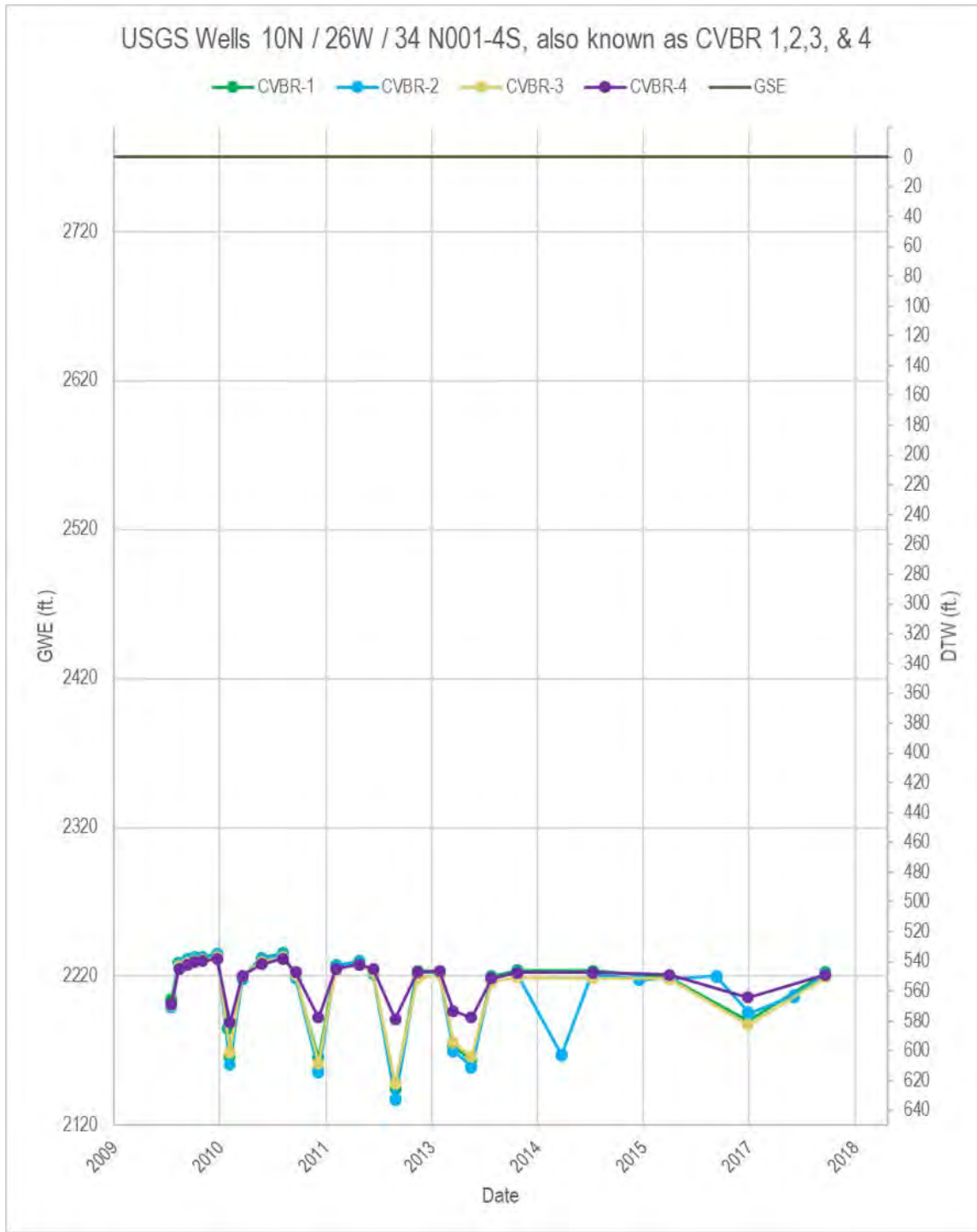


Figure 2.2-17: Hydrographs of CVBR1-4

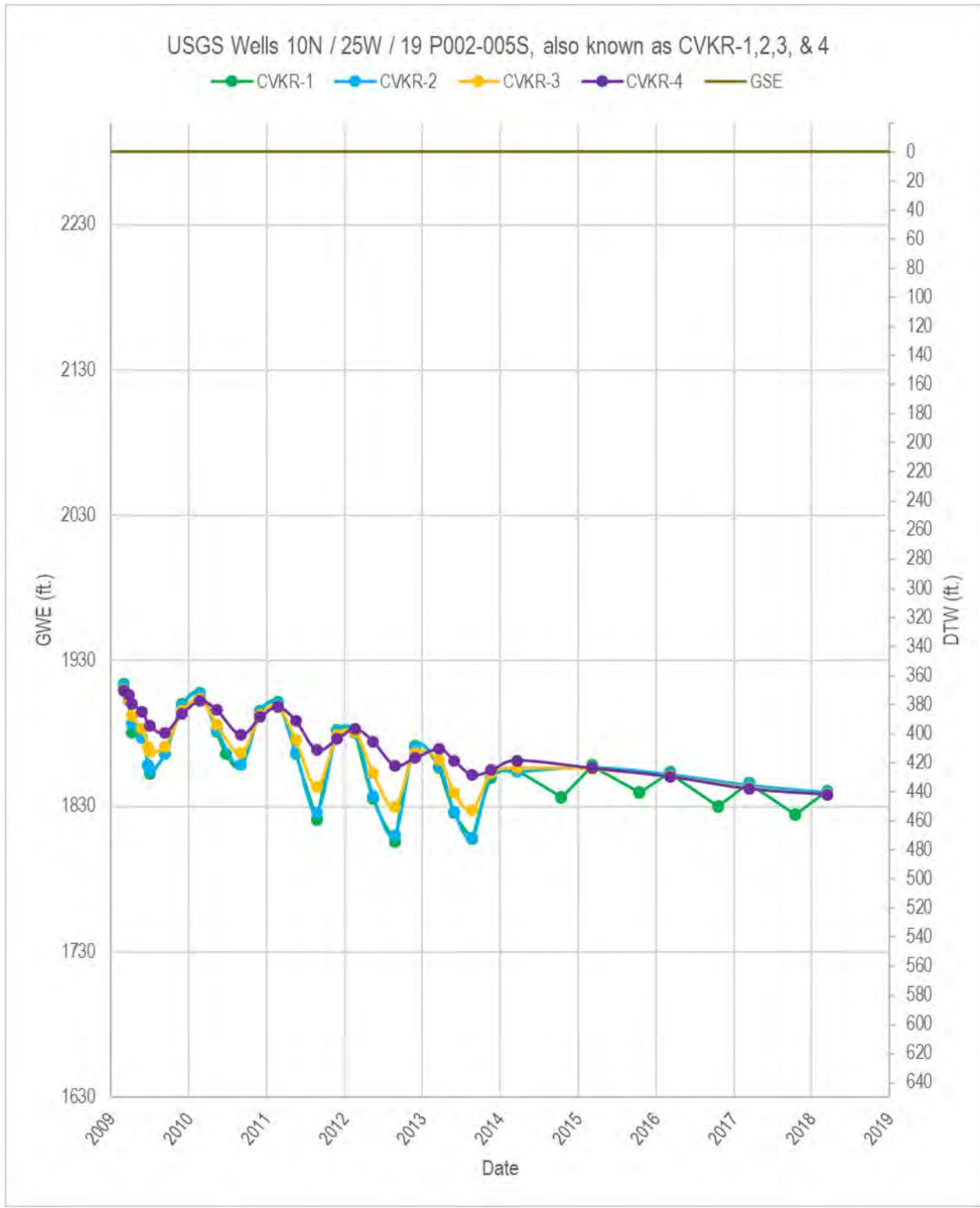


Figure 2.2-18: Hydrographs of CVKR1-4

Groundwater Contours

Groundwater contour maps were prepared to improve understanding of recent groundwater trends in the basin. Data collected in Section 2.2.2 was used to develop the contour maps. A contour map shows changes in groundwater elevations by interpolating groundwater elevations between monitoring sites. The elevations are shown on the map with the use of a contour line, which indicates that at all locations that line is drawn, it represents groundwater being at the elevation indicated. There are two versions of contour maps used in this section, one which shows the elevation of groundwater above msl, which is useful because it can be used to identify the horizontal gradients of groundwater, and one which shows contours of depth to water, the distance from the ground surface to groundwater, which is useful because it can identify areas of shallow or deep groundwater.

Groundwater contour maps were prepared for both groundwater elevation and depth to water for the following periods and are described below: Spring 2018, Fall 2017, Spring 2017, Spring 2015, and Fall 2014. These years were selected for contours to provide analysis of current conditions, and to identify conditions near January 1, 2015, which is a key date in Sustainable Groundwater Management Act (SGMA) legislation.

Each contour map follows the same general format. Each contour map is contoured at a 50 foot contour interval, with contour elevations indicated in white numeric labels, and measurements at individual monitoring points indicated in black numeric labels. Areas where the contours are dashed and not colored in are inferred contours that extend elevations beyond data availability and are included for reference only. The groundwater contours prepared for this section were based on several assumptions in order to accumulate enough data points to generate useful contour maps:

- Measurements from wells of different depths are representative of conditions at that location and there are no vertical gradients. Due to the limited spatial amount of monitoring points, data from wells of a wide variety of depths were used to generate the contours.
- Measurements from dates that may be as far apart temporally as three months are representative of conditions during the spring or fall season, and conditions have not changed substantially from the time of the earliest measurement used to the latest. Due to the limited temporal amount of measurements in the basin, data from a wide variety of measurement dates were used to generate the contours.

These assumptions make the contours useful at the planning level to understand groundwater levels across the basin, and to identify general horizontal gradients and regional groundwater level trends. The contour maps are not indicative of exact values across the basin because groundwater contour maps approximate conditions between measurement points, and do not account for topography. Therefore, a well on a ridge may be farther from groundwater than one in a canyon, and the contour map will not reflect that level of detail.

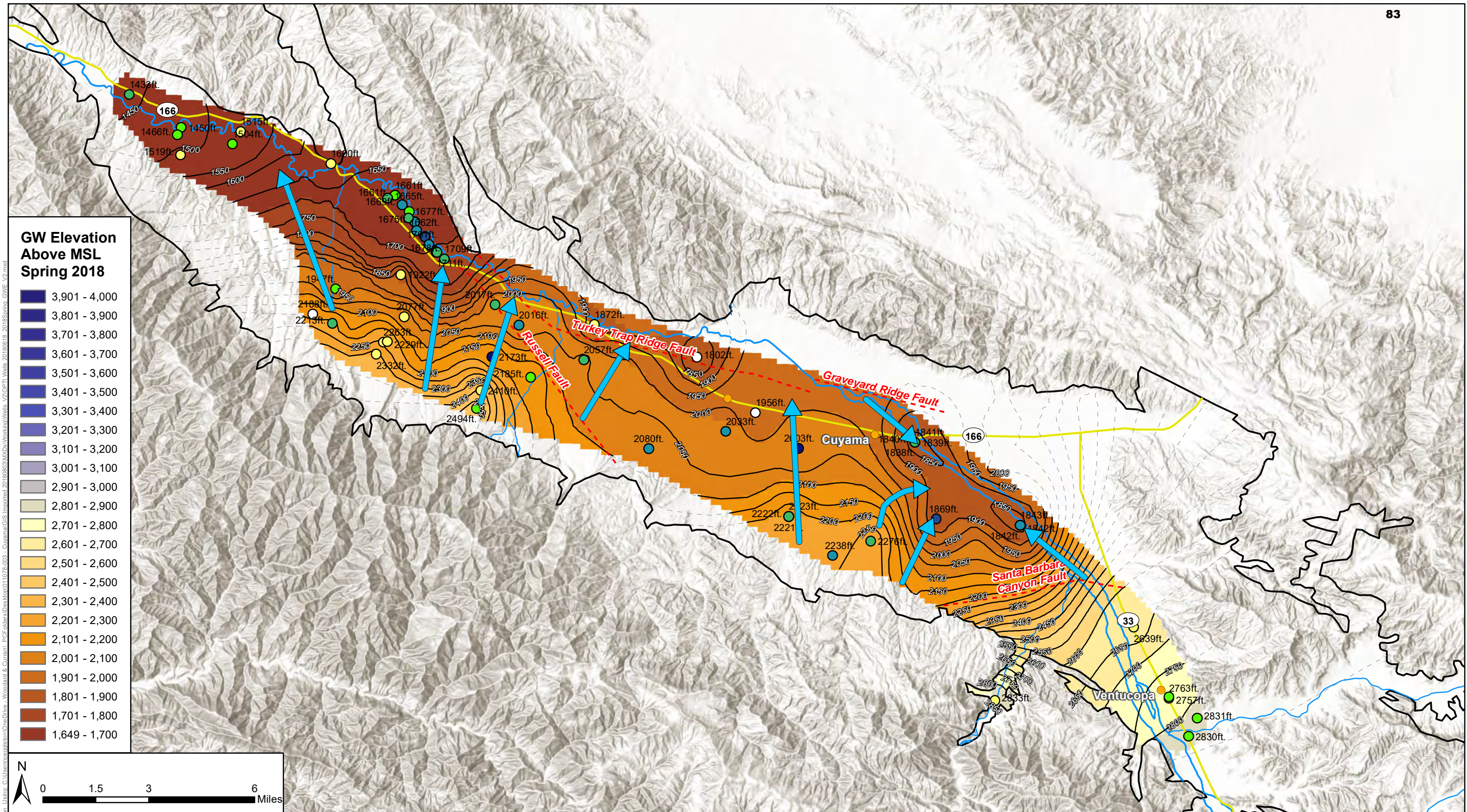
Expansion and improvement of the monitoring network in order to generate more accurate understandings of groundwater trends in the basin is discussed in [Section Z: Monitoring Networks](#)

Figure 2.2-19 shows groundwater elevation contours for spring of 2018. In the southeastern portion of the basin near Ventucopa, groundwater has a horizontal gradient to the northwest. The gradient increases in the vicinity of the SBCF and flows to an area of lowered groundwater elevation southeast of the town of Cuyama. From the town of New Cuyama to the west, groundwater has a horizontal gradient that generally flows to the northeast, from areas with higher elevation topography towards areas with lower elevation topography where the Cuyama River is located.

Figure 2.2-20 shows depth to groundwater contours for spring of 2018. In the southeastern portion of the basin near Ventucopa, groundwater is mostly between 100 and 150 feet bgs. Just south the SBCF,

groundwater is near 100 feet bgs. North of the SBCF, depth to groundwater declines rapidly and is over 600 feet bgs. Depth to groundwater reduces to the west towards New Cuyama, where groundwater is around 150 feet bgs. West of Bitter Creek, groundwater is shallower than 100 feet bgs in most locations, and is shallower than 50 feet bgs in the far west and along the Cuyama River.

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GW Elevation Above MSL Spring 2018

3,901 - 4,000
3,801 - 3,900
3,701 - 3,800
3,601 - 3,700
3,501 - 3,600
3,401 - 3,500
3,301 - 3,400
3,201 - 3,300
3,101 - 3,200
2,901 - 3,000
2,801 - 2,900
2,701 - 2,800
2,601 - 2,700
2,501 - 2,600
2,401 - 2,500
2,301 - 2,400
2,201 - 2,300
2,101 - 2,200
2,001 - 2,100
1,901 - 2,000
1,801 - 1,900
1,701 - 1,800
1,649 - 1,700

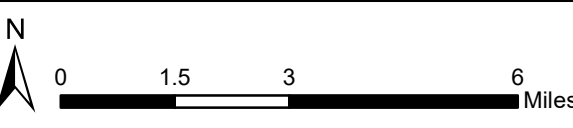


Figure 2.2-19: Cuyama GW Basin Wells by Groundwater Surface Elevation
 Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



Legend

	Cuyama Basin
	Cuyama River
	Faults
	Groundwater Flow Direction
	Groundwater Elevation Above MSL
	Inferred Groundwater Elevation Above MSL

Well Depth Below GSE

	Unknown
	0 - 200 ft
	200 - 400 ft
	400 - 600 ft
	600 - 800 ft
	800 - 1,000 ft
	1,000 - 1,200 ft

Contours were interpolated using data measured from 2/1/2018 - 4/30/2018 due to limited data availability.
 Contours Interval: 50 ft.

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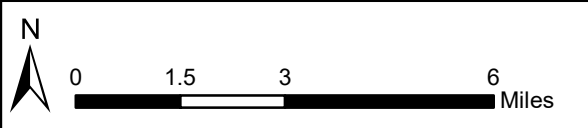
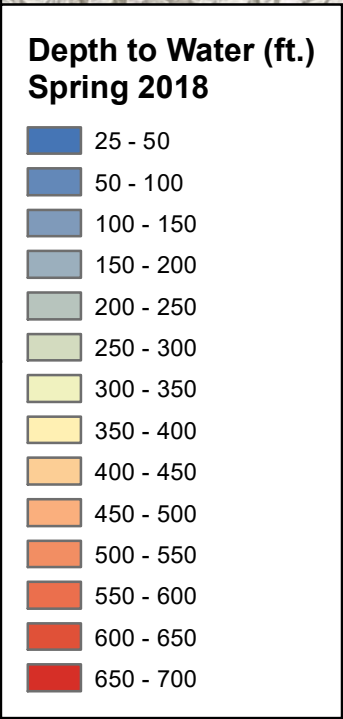
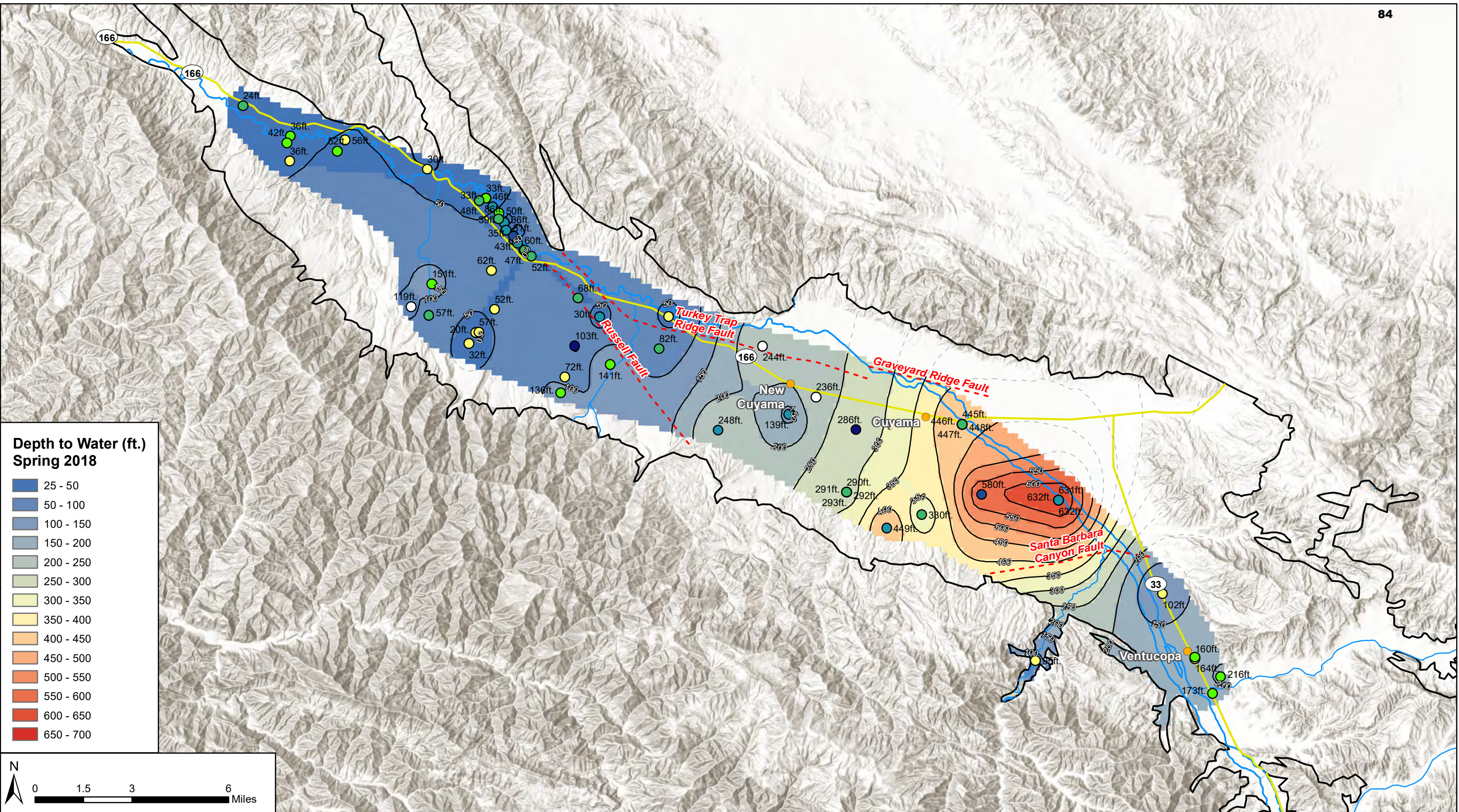


Figure 2.2-20: Cuyama GW Basin Wells by Groundwater Surface Elevation

Cuyama Basin Groundwater Sustainability Agency
Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
August 2018



- Legend**
- Cuyama Basin
 - Cuyama River
 - Faults
 - Groundwater Depth-to-Water Contours below Groundsurface
 - Inferred Groundwater Depth-to-Water Contours below Groundsurface

- Well Depth Below GSE**
- | | |
|--|--|
| Unknown | 600 - 800 ft |
| 0 - 200 ft | 800 - 1,000 ft |
| 200 - 400 ft | 1,000 - 1,200 ft |
| 400 - 600 ft | |

Contours were interpolated using data measured from 2/1/2018 - 4/30/2018 due to limited data availability.
Contours Interval: 50 ft.

Contour maps for spring 2017, fall 2017, spring 2015, and fall 2014 are included in [Appendix Y](#). Each contour map is described in this section.

Figure Y-1 shows groundwater elevation contours for fall of 2017. Because more data was available in this time frame, the contour map has increased detail in some areas. In the southeastern portion of the basin near the Ozena fire station, groundwater gradients appear to indicate flows that follow the Cuyama River. The contour map shows a steep gradient north of the SBCF and flows to an area of lowered groundwater elevation northeast of the town of Cuyama. From the town of New Cuyama to the west, groundwater has a horizontal gradient that generally flows to the northeast, from areas with higher elevation topography towards areas with lower elevation topography where the Cuyama River is located.

Figure Y-2 shows depth to water contours for fall of 2017. Because more data was available in this time frame, the contour map has increased detail in some areas. In the southeastern portion of the basin near the Ozena fire station, depth to water is under 50 feet bgs. There is a steep gradient near the SBCF, and groundwater is below 600 feet bgs immediately northwest of the SBCF. The central portion of the basin generally has a depth to water between 400 and 500 feet bgs, with groundwater levels rising to the west of New Cuyama. West of Bitter Creek, groundwater is generally shallower than 100 feet below bgs, and is shallower than 50 feet bgs along the Cuyama River in most cases.

Figure Y-3 shows groundwater elevation contours for spring of 2017. Because more data was available in this time frame, the contour map has increased detail in some areas. In the southeastern portion of the basin near the Ozena fire station, groundwater gradients appear to indicate flows that follow the Cuyama River. The contour map shows a steep gradient north of the SBCF and flows to an area of lowered groundwater elevation northeast of the town of Cuyama. From the town of New Cuyama to the west, groundwater has a horizontal gradient that generally flows to the northeast, from areas with higher elevation topography towards areas with lower elevation topography where the Cuyama River is located.

Figure Y-4 shows depth to water contours for spring of 2017. In the southeastern portion of the basin near the Ozena fire station, depth to water is under 50 feet bgs. Depth to groundwater near Ventucopa is between 150 and 200 feet bgs. There is a steep gradient near the SBCF, and groundwater is below 600 feet bgs immediately northwest of the SBCF. The central portion of the basin generally has a depth to water between 350 and 500 feet bgs, with groundwater levels rising to the west of New Cuyama. West of Bitter Creek, groundwater is generally shallower than 100 feet below bgs, and is shallower than 50 feet bgs along the Cuyama River in most cases.

Figure Y-5 shows groundwater elevation contours for spring of 2015. In the southeastern portion of the basin near the Ozena fire station, groundwater gradients appear to indicate flows that follow the Cuyama River. The contour map shows a steep gradient north of the SBCF and flows to an area of lowered groundwater elevation northeast of the town of Cuyama. From the town of New Cuyama to the west, the limited number of data points restrict strong interpretation of the gradient, which is to the northwest.

Figure Y-6 shows depth to water contours for spring of 2015. In the southeastern portion of the basin near the Ozena fire station, depth to water is under 50 feet bgs. Depth to groundwater near Ventucopa is between 150 and 200 feet bgs. There is a steep gradient near the SBCF, and groundwater is below 600 feet bgs immediately northwest of the SBCF. The central portion of the basin generally has a depth to water between 350 and 450 feet bgs, with groundwater levels rising to the west of New Cuyama. Interpretation from New Cuyama to monitoring points in the northwest is hampered by a limited set of data points.

Figure Y-7 shows groundwater elevation contours for fall of 2014. In the southeastern portion of the basin near the Ozena fire station, groundwater gradients appear to indicate flows that follow the Cuyama River.

The contour map shows a steep gradient north of the SBCF and flows to an area of lowered groundwater elevation northeast of the town of Cuyama.

Figure Y-8 shows depth to water contours for fall of 2014. In the southeastern portion of the basin near the Ozena fire station, depth to water is under 50 feet bgs. There is a steep gradient near the SBCF, and groundwater is below 600 feet bgs immediately northwest of the SBCF. The central portion of the basin generally has a depth to water between 350 and 500 feet bgs, with groundwater levels rising to the west of New Cuyama. Interpretation from New Cuyama to monitoring points in the northwest is hampered by a limited set of data points.

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2.2.4 Change in Groundwater Storage

This section is under development and will feature outputs from model development. This section will include the following:

- *Change in groundwater storage for the last 10 years*
- *How change in storage was calculated*
- *Estimates of annual use*
- *Water year types and their relationship to changes in storage*
- *Cover conditions at Jan 1 2015, or as close as possible*

2.2.5 Seawater Intrusion

Seawater intrusion is not an applicable sustainability indicator, because seawater intrusion is not present in the Basin and is not likely to occur due to the distance between the Basin and the Pacific Ocean, bays, deltas, or inlets.

2.2.6 Land subsidence

The USGS measured land subsidence as part of its technical analysis of the Cuyama Valley in 2015. The USGS used two continuous global positioning systems (GPS) sites and five reference point interferometric synthetic-aperture radar (InSAR) sites, shown in Figure 2.2-21 (USGS, 2015). There are 308 monthly observations from 2000 to 2010, and total subsidence over the 2000 to 2010 period ranged from 0.0 to 0.2 feet. The CUVHM's simulated subsidence estimates inelastic subsidence was initiated in the late 1970s (USGS, 2015).

Subsidence data was collected from the University NAVSTAR Consortium (UNAVCO) database. UNAVCO maintains data on five GPS monitoring stations in the area in and around the basin. Figure 2.2-22: Subsidence Monitoring Locations shows the monitoring stations and their measurements since 1999. Three stations (P521, OZST, and BCWR) are located just outside the basin. The three stations' measurements show ground surface level as either staying constant or slightly increasing. The increase is potentially due to tectonic activity in the region. Two stations (VCST and CUHS) are located within the basin. Station VCST is located near Ventucopa and indicates that subsidence is not occurring in that area. Station CUHS indicates that 300 millimeters (approximately 12 inches) of subsidence have occurred in the vicinity of New Cuyama over the 19 years that were monitored. The subsidence at this station increases in magnitude following 2010, and generally follows a seasonal pattern. The seasonal pattern is possibly related to water level drawdowns during the summer, and elastic rebound occurring during winter periods.

A white paper that provides information about subsidence and subsidence monitoring techniques is included in Appendix Z.

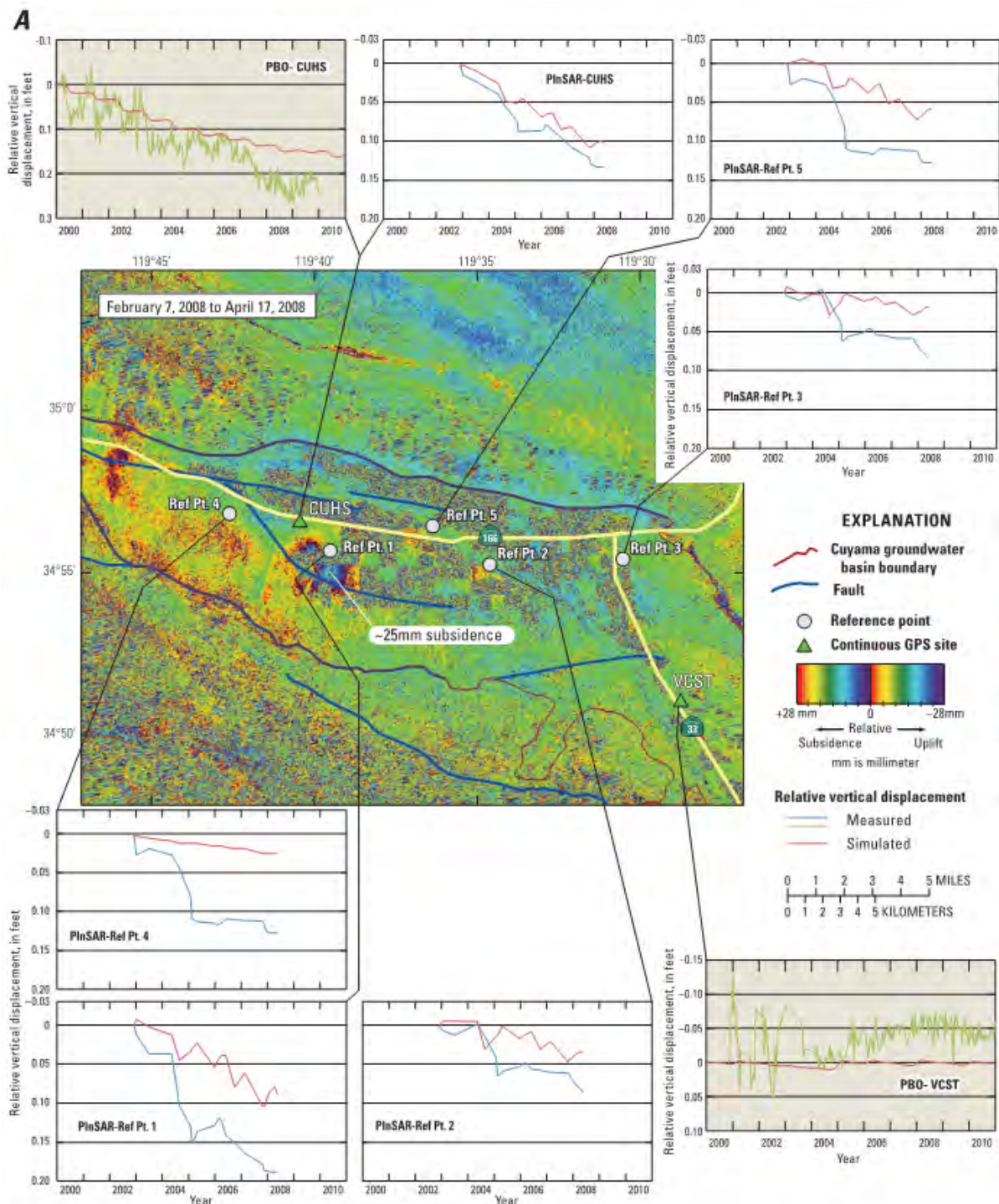


Figure 29. Historical subsidence as *A*, map of seasonal InSAR with graphs of simulated and measured time series for selected locations of relative land-surface deformation from Plate-Boundary Observation (PBO) sites and Point InSAR targets, and *B*, simulated total subsidence 1950–2010 for the calibrated hydrologic flow model, Cuyama Valley, California.

Source: USGS, 2015

Figure 2.2-21: Locations of Continuous GPS and Reference InSAR Sites in the Cuyama Valley

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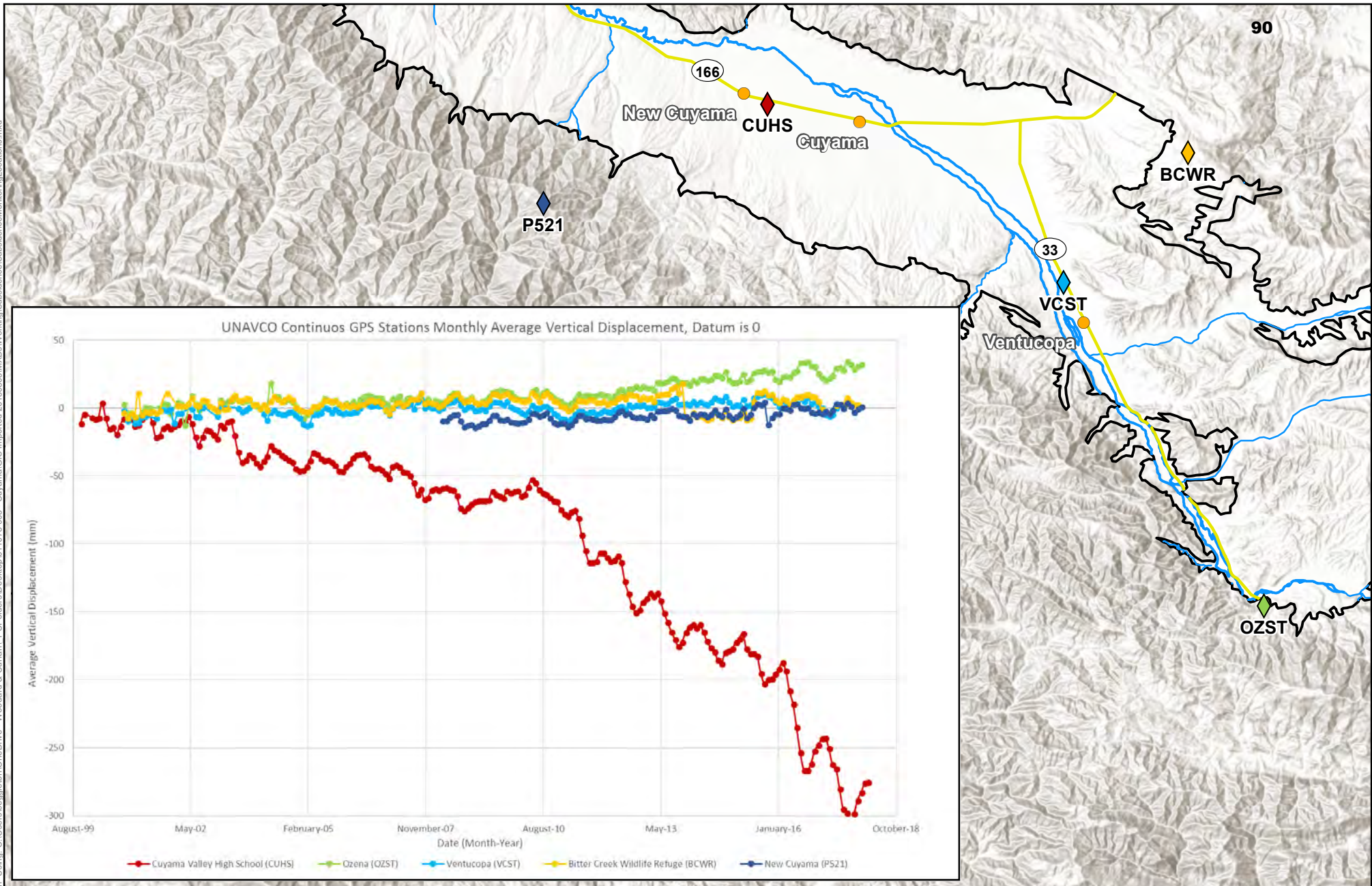


Figure 2.2-22: Subsidence Monitoring Locations

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

August 2018



Legend

- Cuyama Basin
- Cuyama River
- Towns
- Streams
- Highways



2.2.7 Groundwater Quality

This section presents groundwater quality information in the basin.

Reference and Data Collection

References and data related to groundwater quality were collected from a variety of sources. Data was collected from:

- National Water Quality Monitoring Council (USGS)- Downloaded 6/1/2018 from <https://www.waterqualitydata.us/portal/>
- GeoTracker GAMA (DWR)- Downloaded 6/5/2018, for each county, from <http://geotracker.waterboards.ca.gov/gama/datadownload>
- California Natural Resources Agency (DWR) downloaded 6/14/2018 from <http://geotracker.waterboards.ca.gov/gama/datadownload>
- County of Ventura
- Grapevine Capitol Partners

Data was compiled into a database for analysis.

References containing groundwater quality information were also collected. Data used in reference studies was not generally available for incorporation into the database. Therefore, references cite conditions that are not represented in collected data but are used to enhance understanding of groundwater quality conditions beyond available data. References used in this section include:

- Singer and Swarzensky, 1970 – *Pumpage and Ground-Water Storage Depletion in Cuyama Valley, 1947-1966*. This report focused on groundwater depletion, but also included information about groundwater quality.
- USGS, 2008 - *Groundwater-Quality Data in the South Coast Interior Basins Study Unit, 2008: Results from the California Groundwater Ambient Monitoring and Assessment (GAMA) Program*. This study performed water quality testing on 12 wells in the Cuyama Valley and tested for a variety of constituents.
- SBCWA 2011 – *Santa Barbara County 2011 Groundwater Report*. This report provided groundwater conditions throughout the County, and provided water quality information for the Cuyama Valley.
- USGS 2013c – *Geology, Water-Quality, Hydrology, and Geomechanics of the Cuyama Valley Groundwater Basin, California, 2008-12*. This report investigated a wide variety of groundwater components including water quality.

Data Analysis

Collected data was analyzed for Total Dissolved Solids (TDS), nitrate, and arsenic.

Figure 2.2-23 shows TDS of groundwater measured in wells in 1966. Figure 2.2-23 In 1966, TDS was above the MCL of 1,500 micrograms per liter (mg/L) in over 50% of measurements. TDS was over 2,000 mg/L near the Cuyama River in the southeast portion of the basin near the Ozena Fire Station, Santa Barbara Canyon, and upper Quatal Canyon, indicating that high TDS water was entering the basin from the watershed above these measurement points. TDS measurements were over the Maximum Contaminant Level (MCL) throughout the central portion of the basin where irrigated agriculture was operating, and near the towns of Cuyama and New Cuyama, and along the Cuyama River to the northwest of New Cuyama. TDS was less than 500 mg/L in a number of measurements between Bitter Creek and Cottonwood Canyon, indicating that lower TDS water was entering the basin from the watersheds in this area.

Figure 2.2-24 shows TDS of groundwater measured in wells between 2011 and 2018. Multiple years of collected data were used to generate enough mapped data density for comparison to 1966 data. In the 2011-2018 period, TDS was above the MCL in over 50% of measurements. TDS was over 1,500 mg/L near the Cuyama River in the southeast portion of the basin near the Ozena Fire Station, and in Santa Barbara Canyon, indicating that high TDS water was entering the basin from the watershed above these measurement points. TDS measurements were over the MCL throughout the central portion of the basin where irrigated agriculture was operating. A number of 500-1,000 mg/L TDS measurements were measured near New Cuyama and in upper Quatal Canyon, and along the Cuyama River between Cottonwood Canyon and Schoolhouse Canyon.

Figure 2.2-25 shows measurements of TDS for selected monitoring points over time. Monitoring points were selected by the number of measurements, with higher counts of measurements selected to be plotted. The charts indicate that TDS in the vicinity of New Cuyama has been over 800 mg/L TDS throughout the period of record, and that TDS has either slightly increased or stayed stable over the period of record. TDS in the central portion of the basin. The chart for Well 85 at the intersection of Quatal Canyon and the Cuyama River I generally below 800 mg/L TDS with spikes of TDS increases. The spikes of TDS increases correspond with Cuyama River flow events, indicating a connection between rainfall and stream flow and an increase in TDS. This is the only location where this trend was detected.

Figure 2.2-26 shows measurements of nitrate in 1966. Figure 2.2-26 shows that data collected in 1966 was below the MCL of 5 mg/L throughout the basin, with some measurements above the MCL in the central portion of the basin where irrigated agriculture was operating.

Figure 2.2-27 shows measurements of nitrate of groundwater measured in wells between 2011 and 2018. Multiple years of collected data were used to generate enough mapped data density for comparison to 1966 data. Figure 2.2-27 shows that data collected over this period was generally below the MCL, with two measurements that were over 20 mg/L.

Figure 2.2-28 shows arsenic measurements from 2008-2018. Data was not available prior to this time period in significant amounts. Figure 2.2-28 shows arsenic measurements were below the MCL of 10 ug/L where data was available.

Figure 2.2-29: Known Contamination Sites shows the results of a query with the Regional Water Quality Control Board (RWQCB)'s Geotracker website. Geotracker documents contaminant concerns that the RWQCB is or has been working with site owners to clean up. Figure 2.2-29 shows that most of these sites are for fuels.

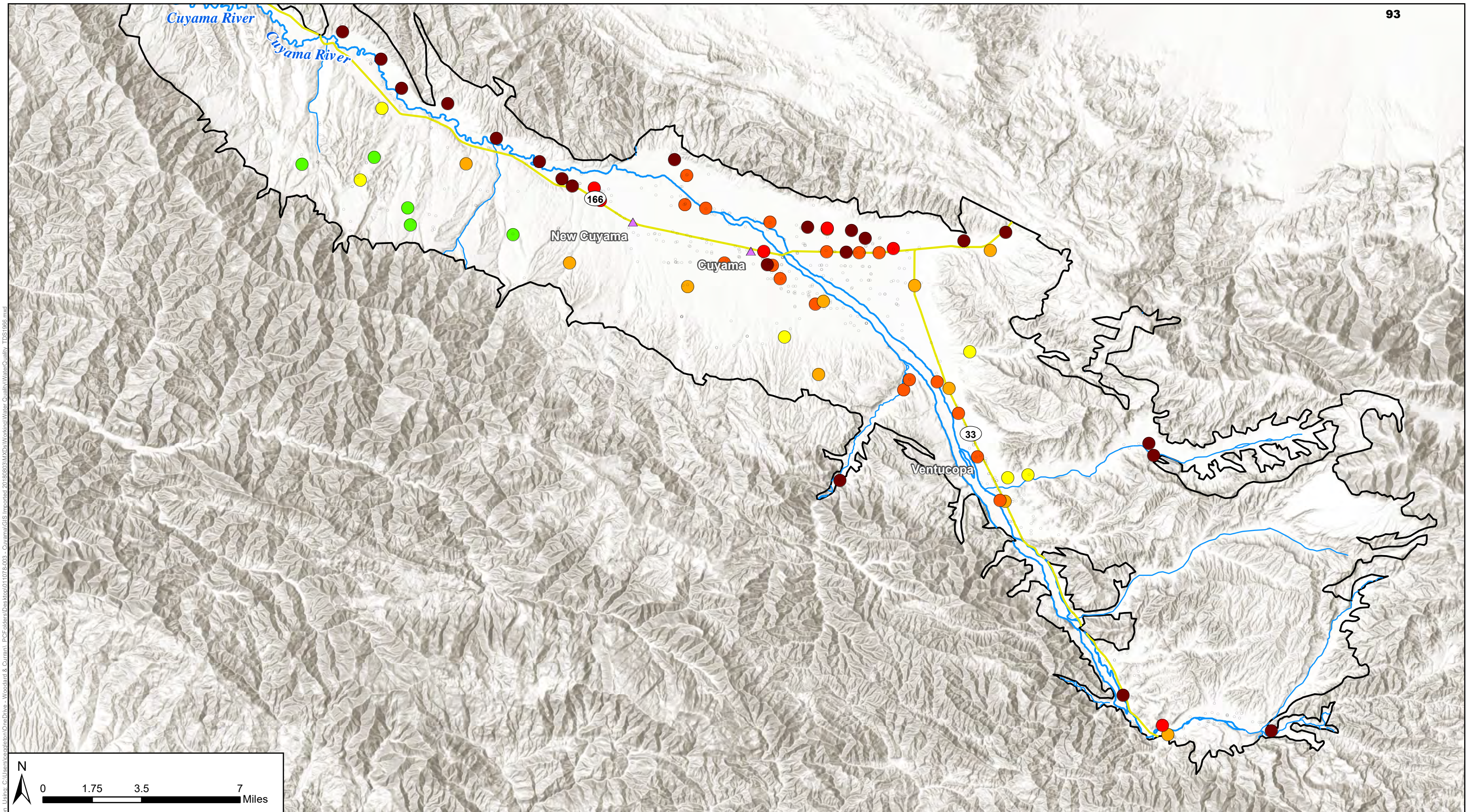


Figure 2.2-23: 1966 Average Well Measurements of Total Dissolved Solids, mg/L
 Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



Legend

TDS, mg/L	
○ No Measurements	● 1,500 - 1,750 mg/L
● < 500 mg/L	● 1,750 - 2,000 mg/L
● 500 - 1,000 mg/L	● >2,000 mg/L
● 1,000 - 1,500 mg/L	

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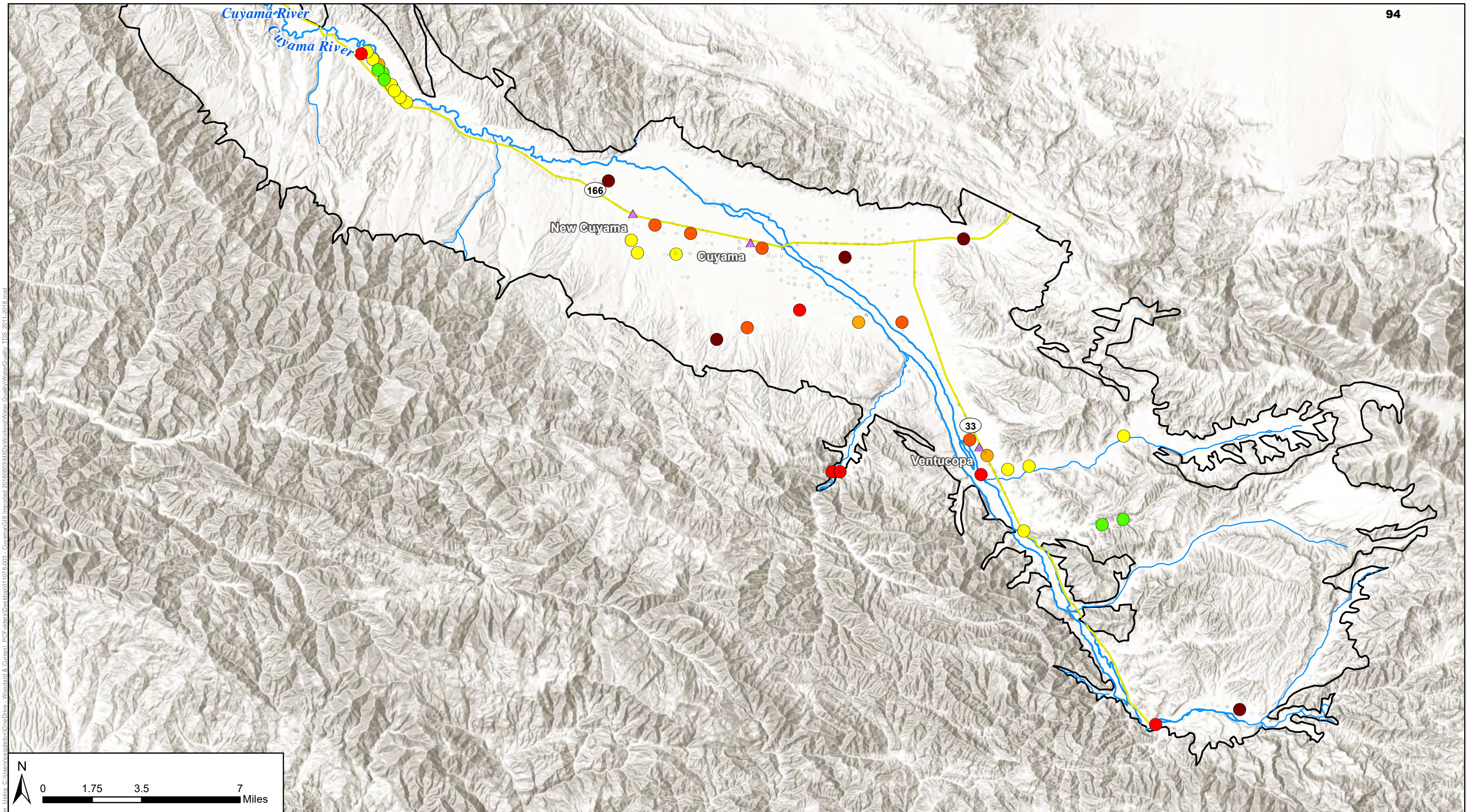


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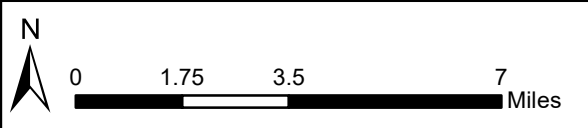


Figure 2.2-24:2011-2018 Average Well Measurements of Total Dissolved Solids, mg/L
 Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



Legend

TDS, mg/L	
● No Measurements	● 1,500 - 1,750 mg/L
● < 500 mg/L	● 1,750 - 2,000 mg/L
● 500 - 1,000 mg/L	● >2,000 mg/L
● 1,000 - 1,500 mg/L	

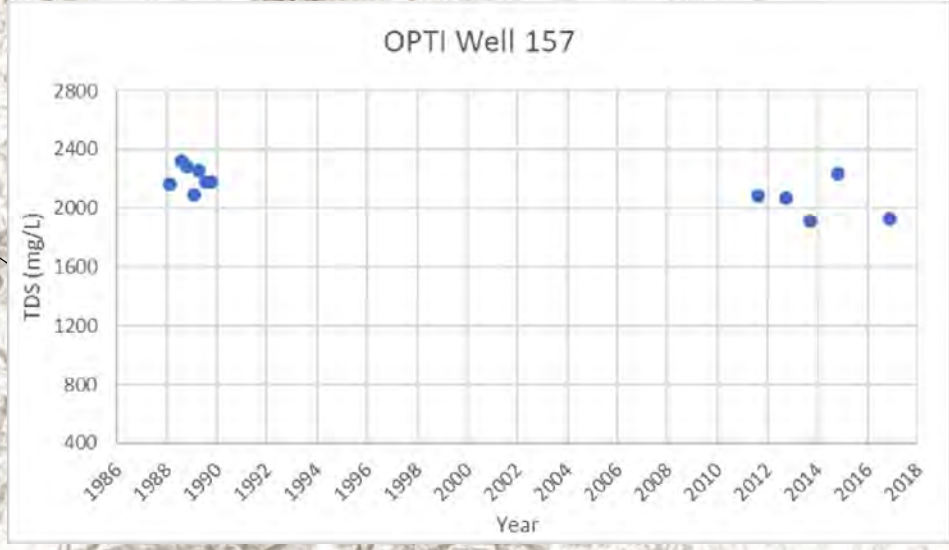
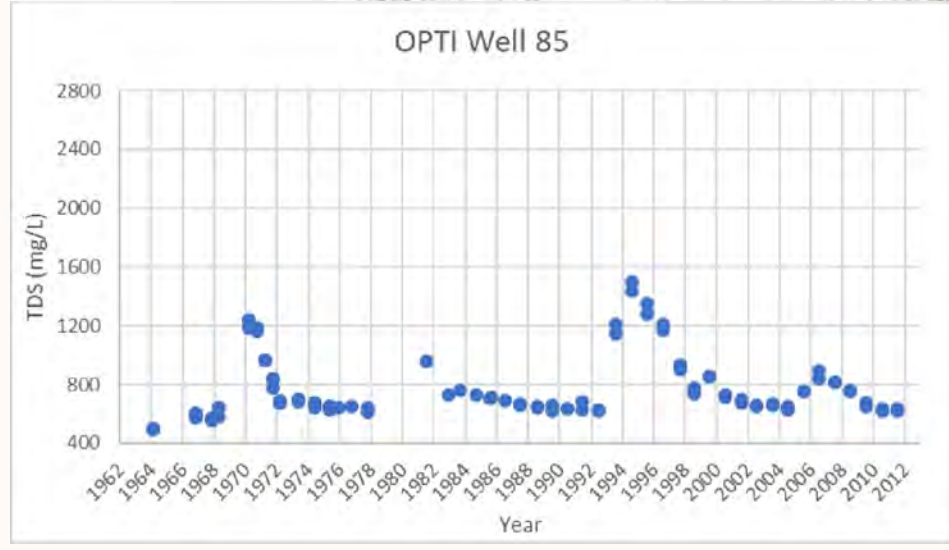
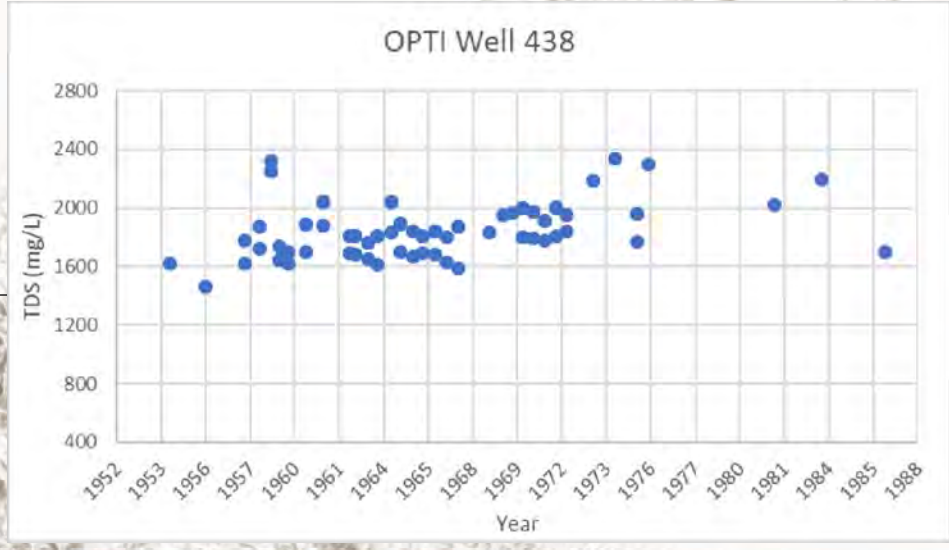
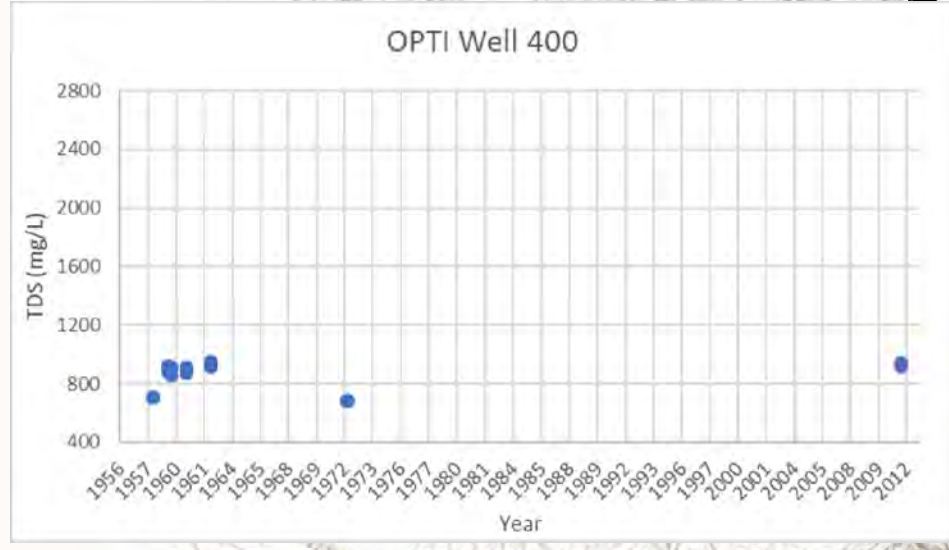
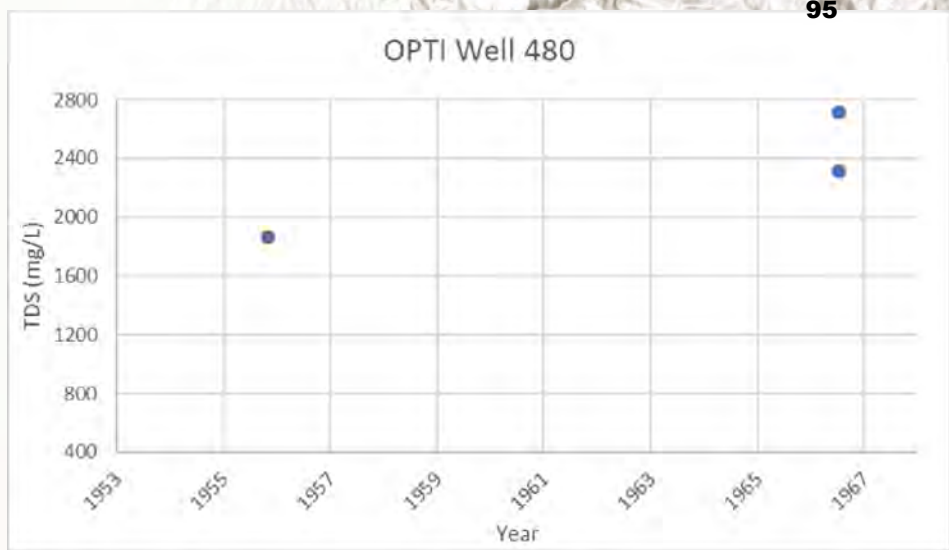
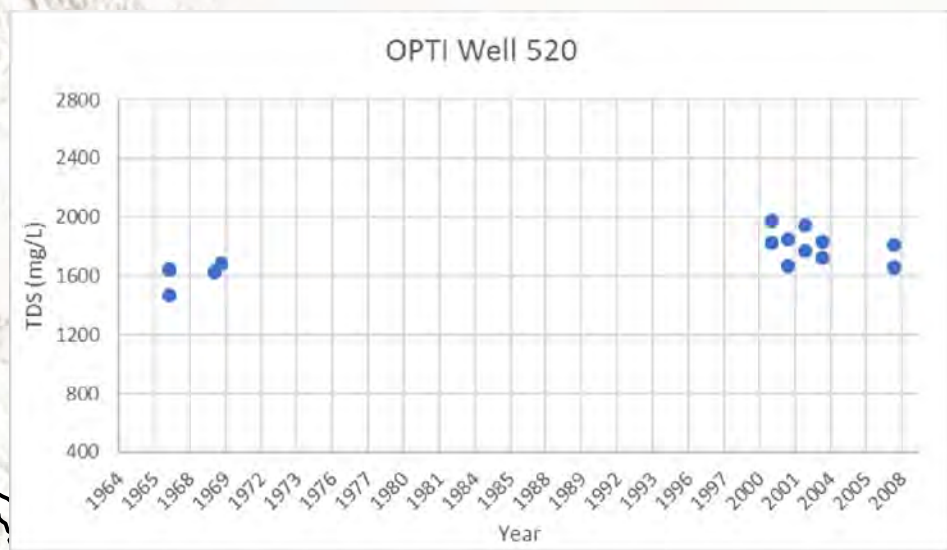
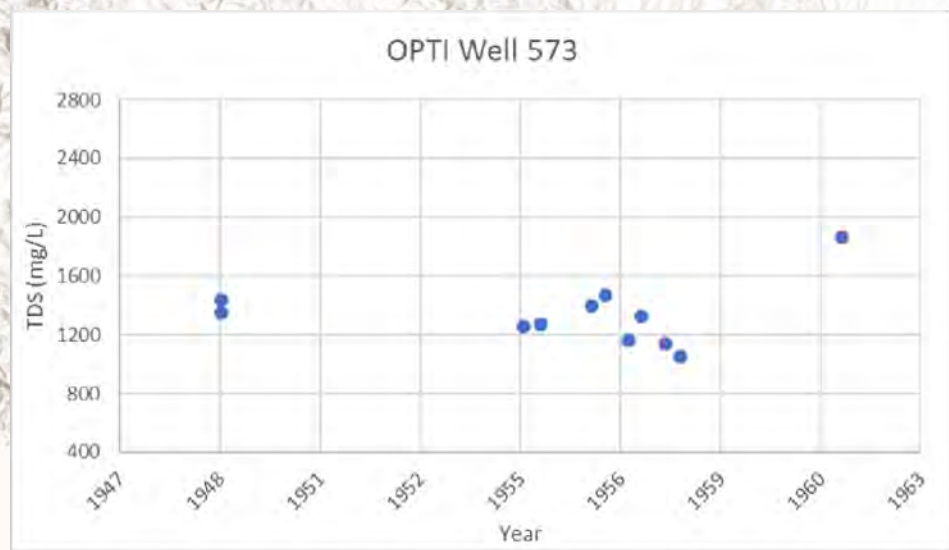
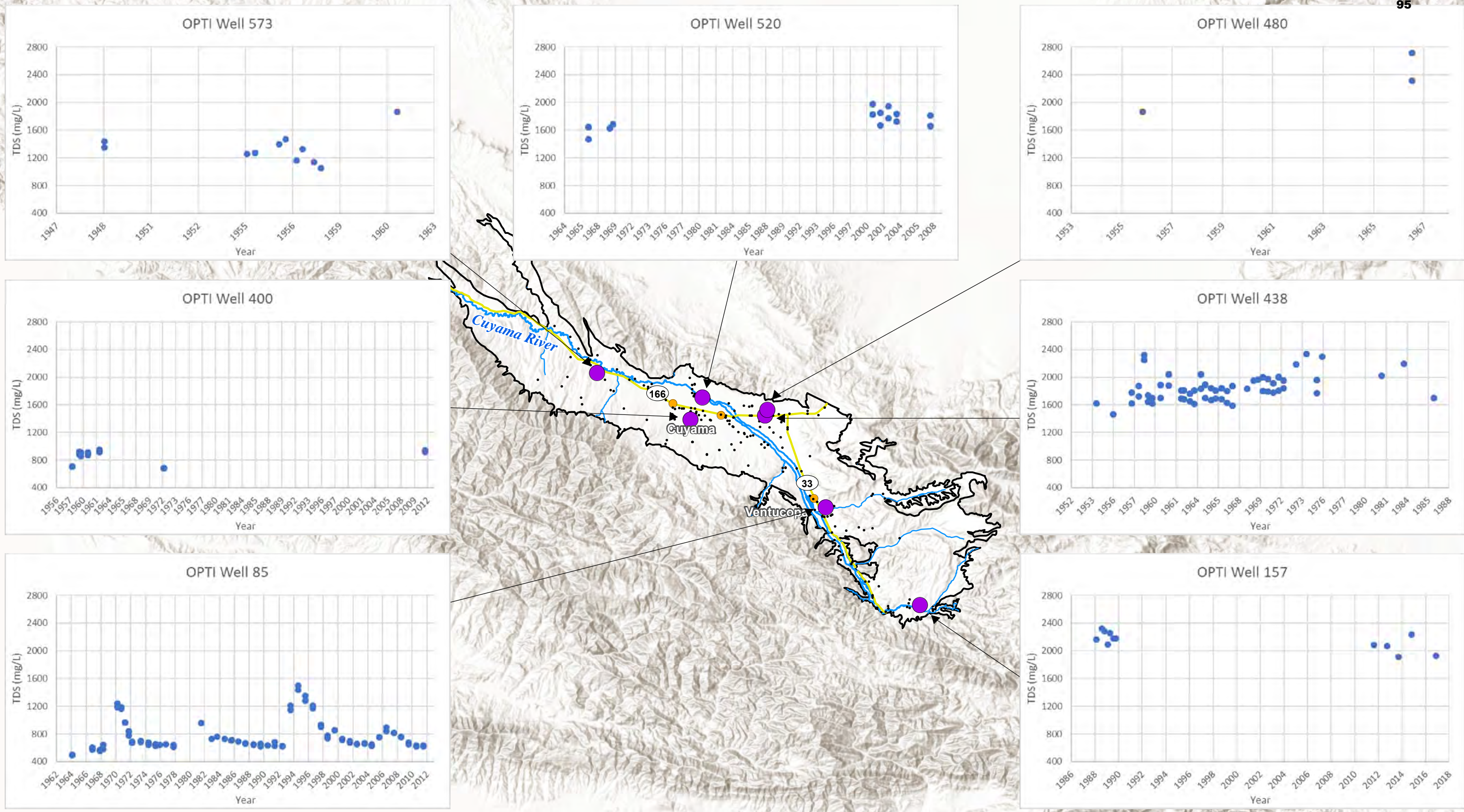


Figure 2.2-25: Cuyama Groundwater Basin Historic TDS Levels in Certain Wells
 Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



Legend

- Cuyama Basin
- Cuyama River
- Wells with Graphed Data
- Towns
- Streams
- Location of TDS WQ Measurements
- Highways

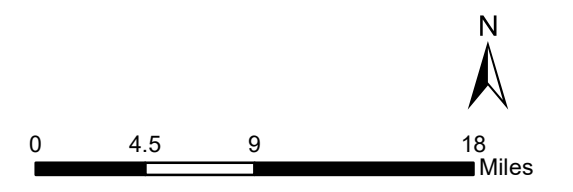


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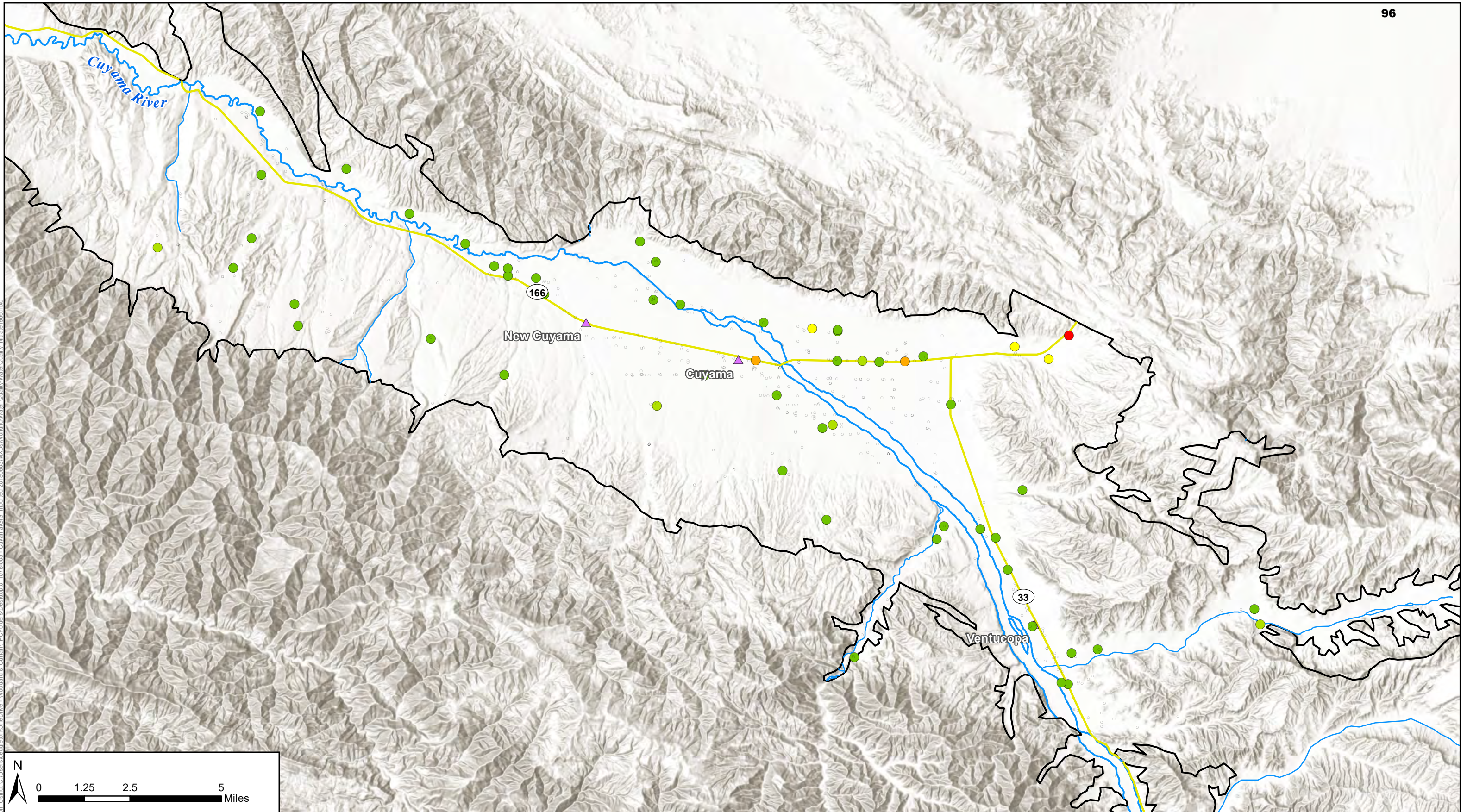


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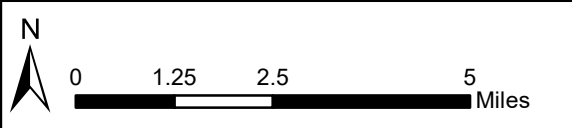


Figure 2.2-26: 1966 Average Well Measurements of Nitrate (NO3) as Nitrogen
 Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



Legend

Nitrate (NO3) as N, mg/L	
○ No Measurements	● 10 - 15 mg/L
● < 5 mg/L	● 15 - 20 mg/L
● 5 - 8 mg/L	● > 20 mg/L
● 8 - 10 mg/L	

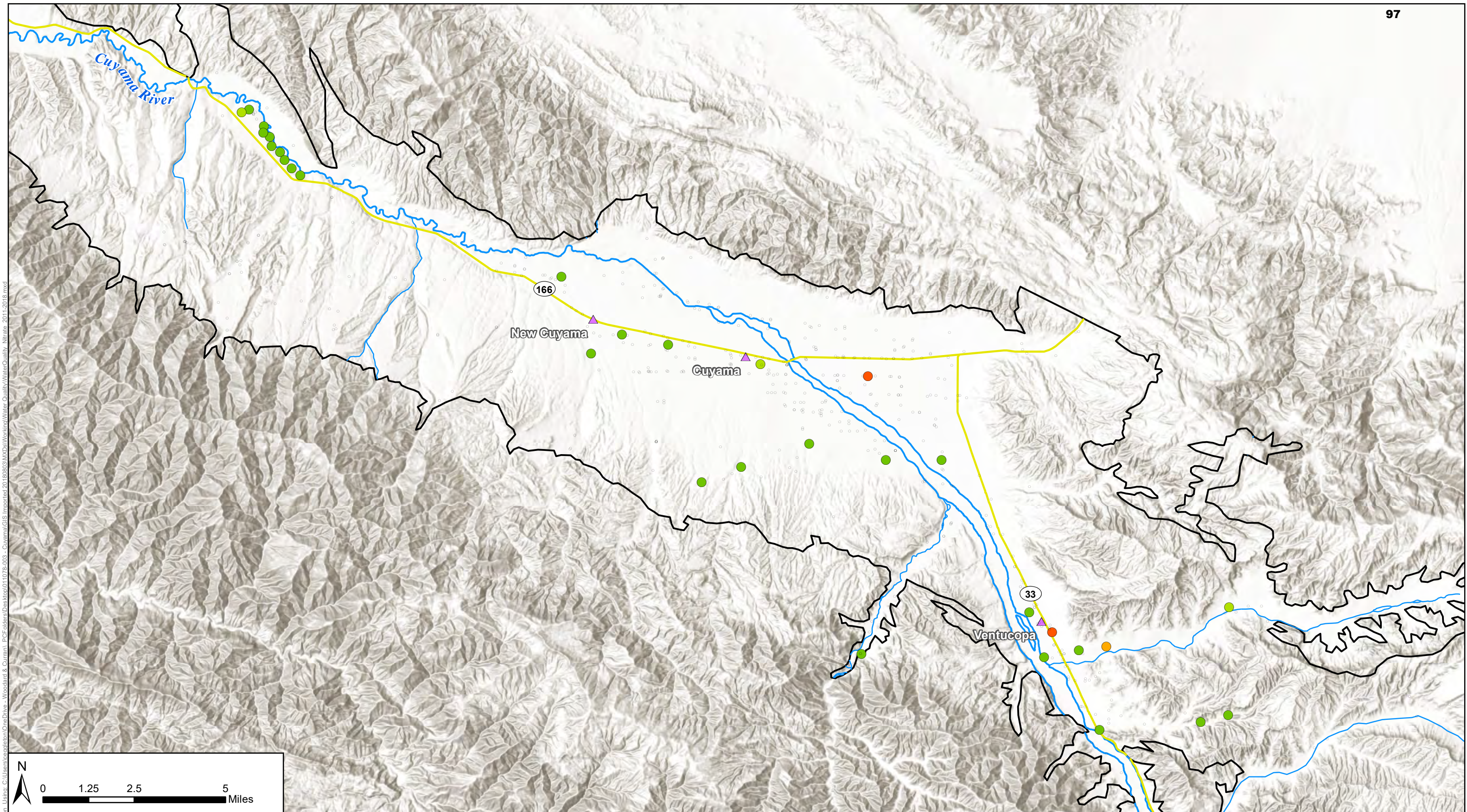


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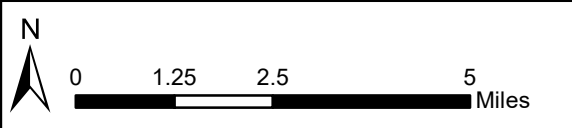


Figure 2.2-27: 2011-2018 Average Well Measurements of Nitrate (NO3) as Nitrogen
 Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



Legend

Nitrate (NO3) as N, mg/L	
○ No Measurements	● 10 - 15 mg/L
● < 5 mg/L	● 15 - 20 mg/L
● 5 - 8 mg/L	● > 20 mg/L
● 8 - 10 mg/L	

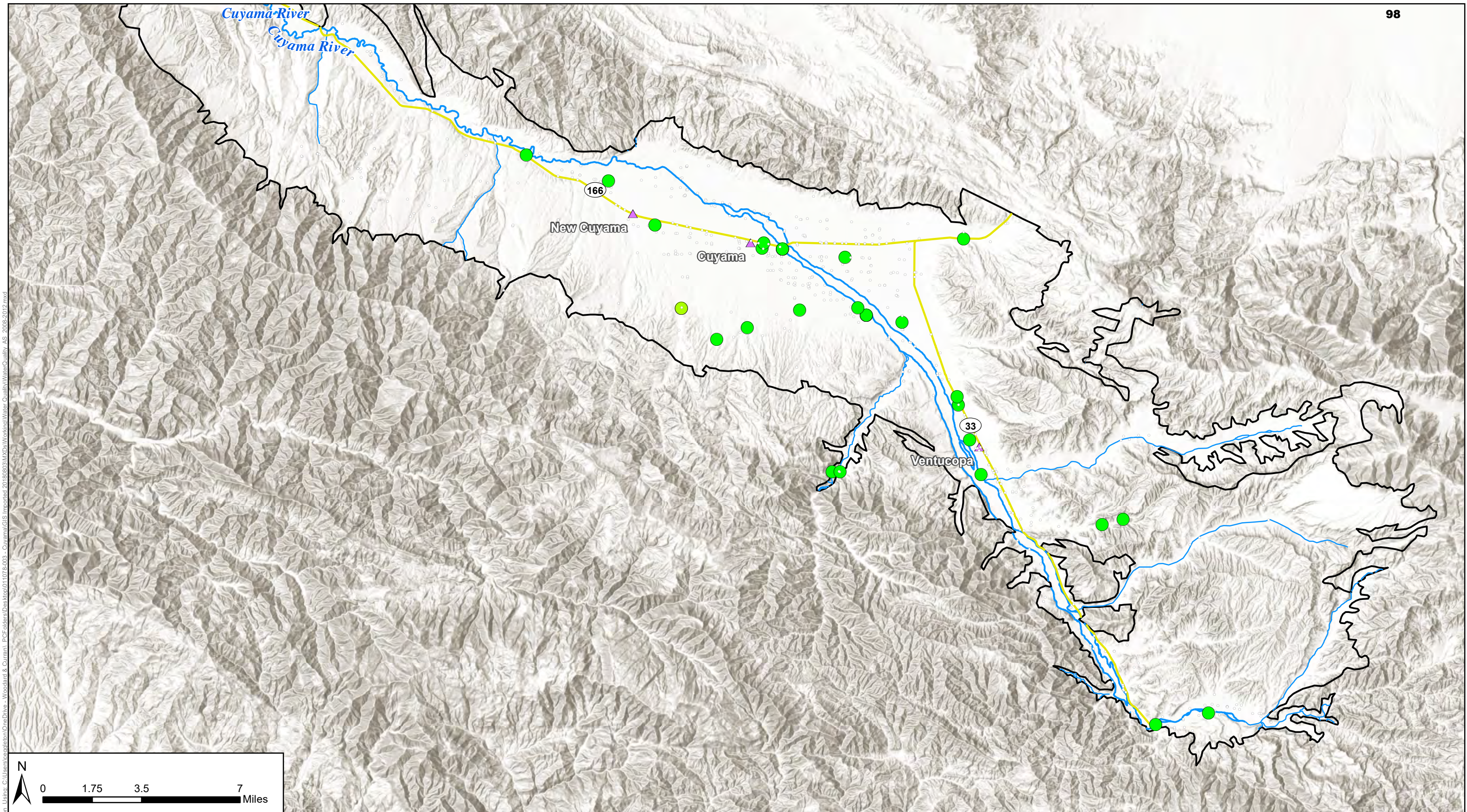


Figure 2.2-28: 2008-2018 Average Well Measurements of Arsenic, ug/L

Cuyama Basin Groundwater Sustainability Agency

Cuyama Valley Groundwater Basin Groundwater Sustainability Plan

August 2018



Legend

Arsenic (As), ug/L	
○ No Measurements	● 10 - 20 ug/L
● < 5 ug/L	● > 20 ug/L
● 5 - 10 ug/L	

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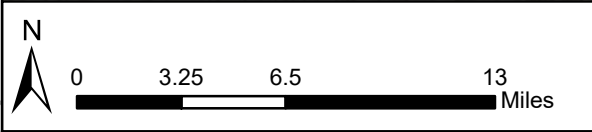
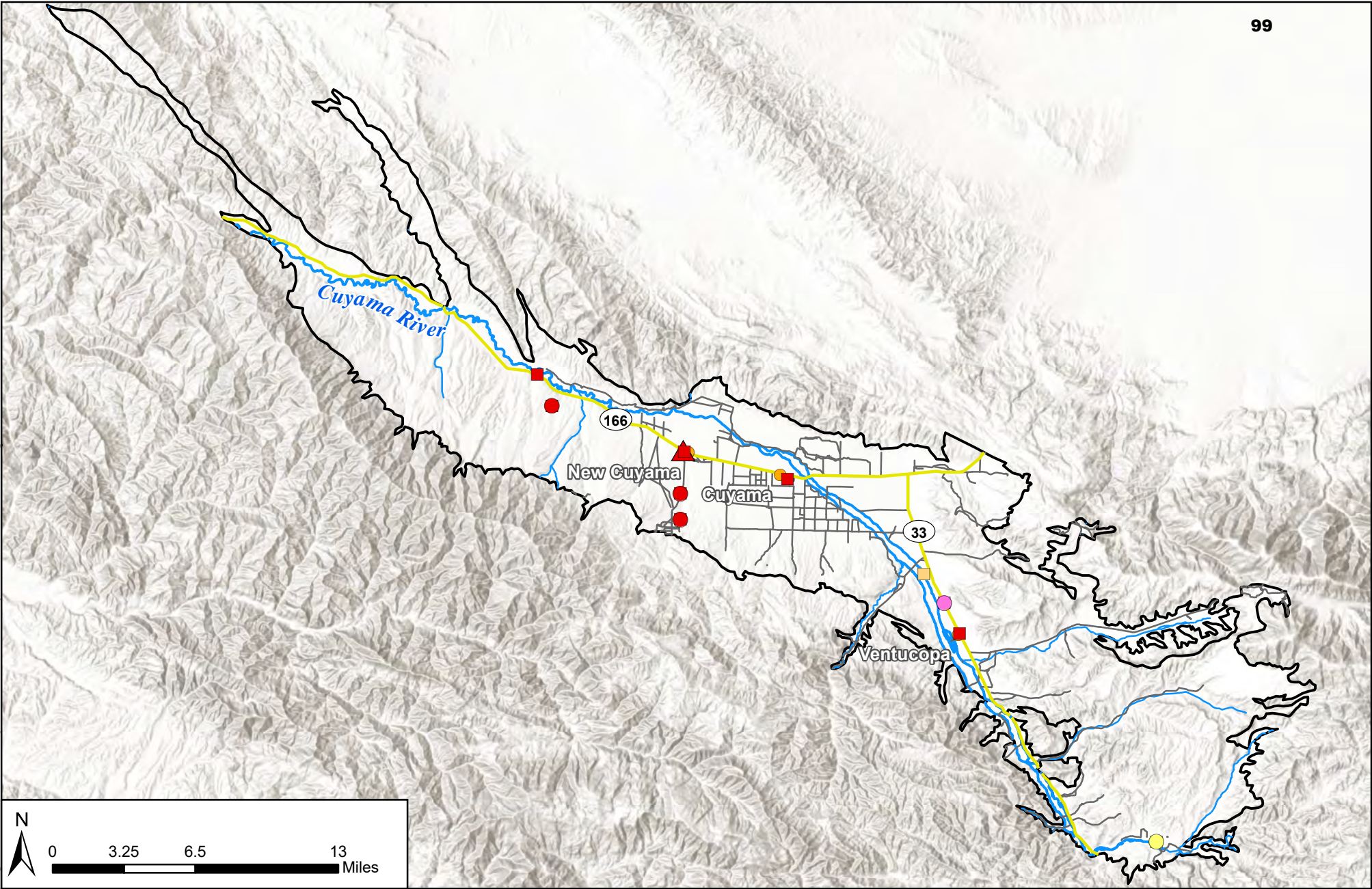


Figure 2.2-29 - Sites with Water Quality Concerns
 Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



Legend		Site Status	Contaminant of Concern
Cuyama Basin	Cuyama River	Open Sites	Gas, Oil &/or Diesel
Towns	Streams	Closed Sites	TPH & Lead
Highways		Permitted UST	VOCs
Local Roads			Alcohols

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Literature Review

In 1970, Singer and Swarzenski reported that TDS was as high as 1,500 to 1,800 mg/L TDS, and that the cations that contributed to the TDS and the amount of TDS varied by location in the basin. They reported that TDS was lower (400 to 700 mg/L) in areas downstream from the Sierra Madre Mountains where TDS was made up of sodium or calcium bicarbonate, and higher (3,000-6,000 mg/L) in wells close to the Caliente Range and in the northeastern part of the valley. They state that the high TDS is generated by mixing of water from marine rocks with more recent water from alluvium. They determined that groundwater movement favors movement of brackish water from the north of the Cuyama River towards areas of groundwater depletion, and that return of some water applied during irrigation and needed for leaching the soil carries dissolved salts with it to the water table (Singer and Swarzensky, 1970).

In 2008, the USGS reported the results of the GAMA study, which sampled 12 wells for a wide variety of constituents. The locations of the wells provided in the GAMA study are shown in Figure 2.2-30. The study identified that specific conductance ranged from 637 to 2,380 uS/cm across the study's 12 wells. The GAMA study reported that the following constituents were not detected at levels above the MCL for each constituent in any samples for the following constituents:

- Pesticides or pesticide degradates
- Gasoline and refrigerants
- Aluminum, antimony, barium, beryllium, boron, cadmium, copper, iron, and lead
- Ammonia and phosphate
- Lithium, Molybdenum, Nickel, Selenium, Strontium, Thallium, Tungsten, Uranium, Vanadium, and Zinc
- Bromide, Calcium, Chloride, Fluoride, Iodide, Magnesium, Potassium, Silica, and Sodium

The GAMA study reported that there were detections at levels above the MCL for the following constituents:

- Manganese exceeded its SMCL in two wells.
- Arsenic exceeded the MCL in one well.
- Nitrate exceeded the MCL in two wells
- Sulfate exceeded its MCL in eight wells
- TDS exceeded its MCL in 7wells
- VOCs detected in one well.

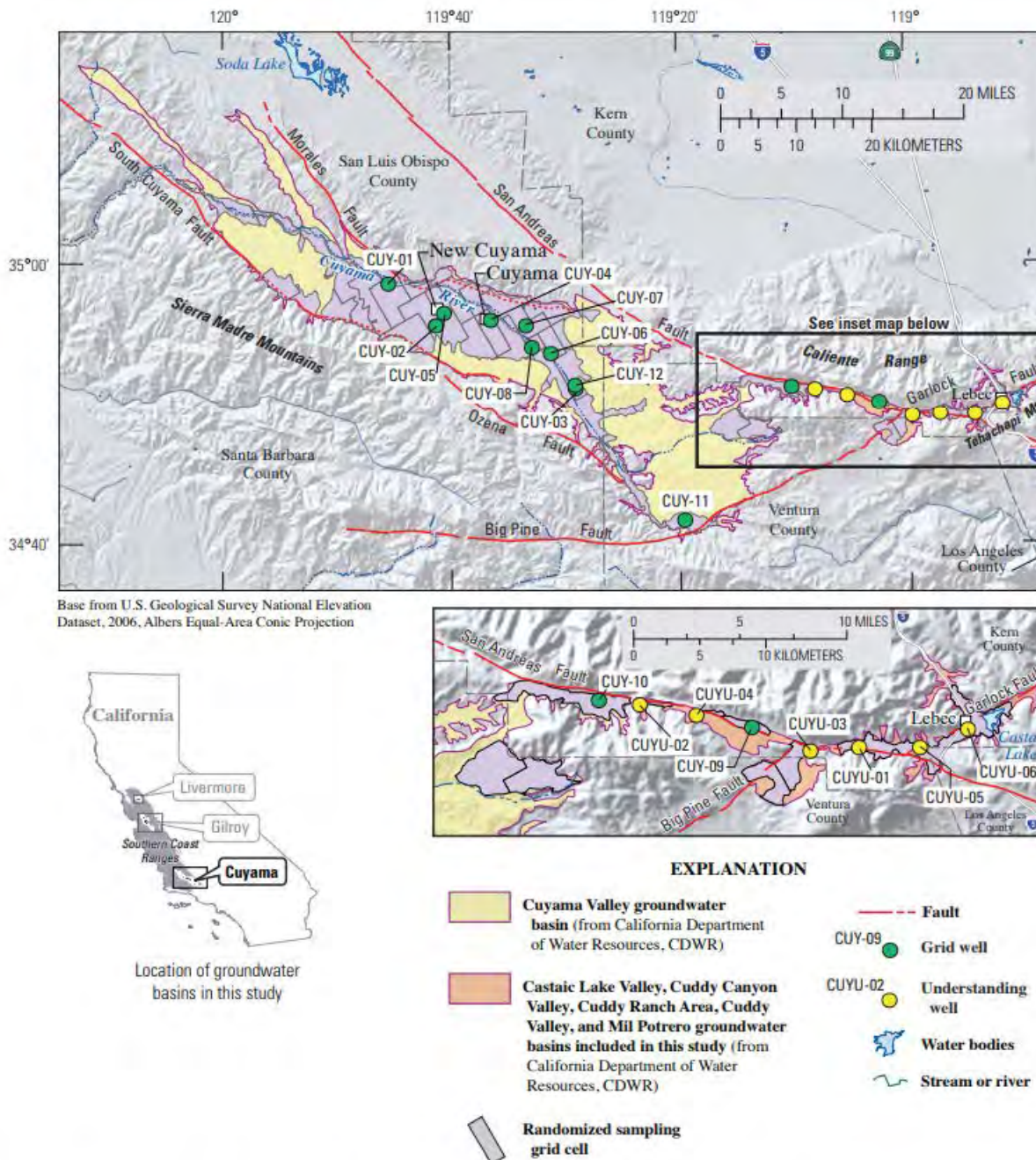


Figure 5. The South Coast Interior Basins Groundwater Ambient Monitoring and Assessment (GAMA) study unit showing the distribution of the Cuyama study-area grid cells, the location of sampled grid wells and understanding wells, the Cuyama Valley, Castaic Lake Valley, Cuddy Canyon Valley, Cuddy Ranch Area, Cuddy Valley, and Mil Potrero groundwater-basin boundaries (as defined by the California Department of Water Resources, CDWR), major cities, major roads, topographic features, and hydrologic features. Alphanumeric identification numbers for grid wells

Source: USGS, 2008

Figure 2.2-30: Locations of GAMA Sample Locations

In 2011, SBCWA reported that TDS in the basin typically ranges from 1,500 to 1,800 mg/L in the main part of the basin, while the Cuyama Badlands in the eastern part where Ballinger, Quatal, and Apache Canyons are has better water quality with TDS typically ranging rom 400 to 700mg/L. SBCWA noted spikes in TDS on the Badlands Well which followed wet rainfall years of 1969 and 1994 and state that the spikes are attributable to overland flow from rainfall which is flushing the upper part of the basin after dry periods.

SBCWA reported that boron is generally higher in the upper part of the basin and is of higher concentration in the uplands than in the deeper wells in the central part of the basin. Toward the northeast end of the basin at extreme depth there exists poor quality water, perhaps connate (trapped in rocks during deposition) from rocks of marine origin.

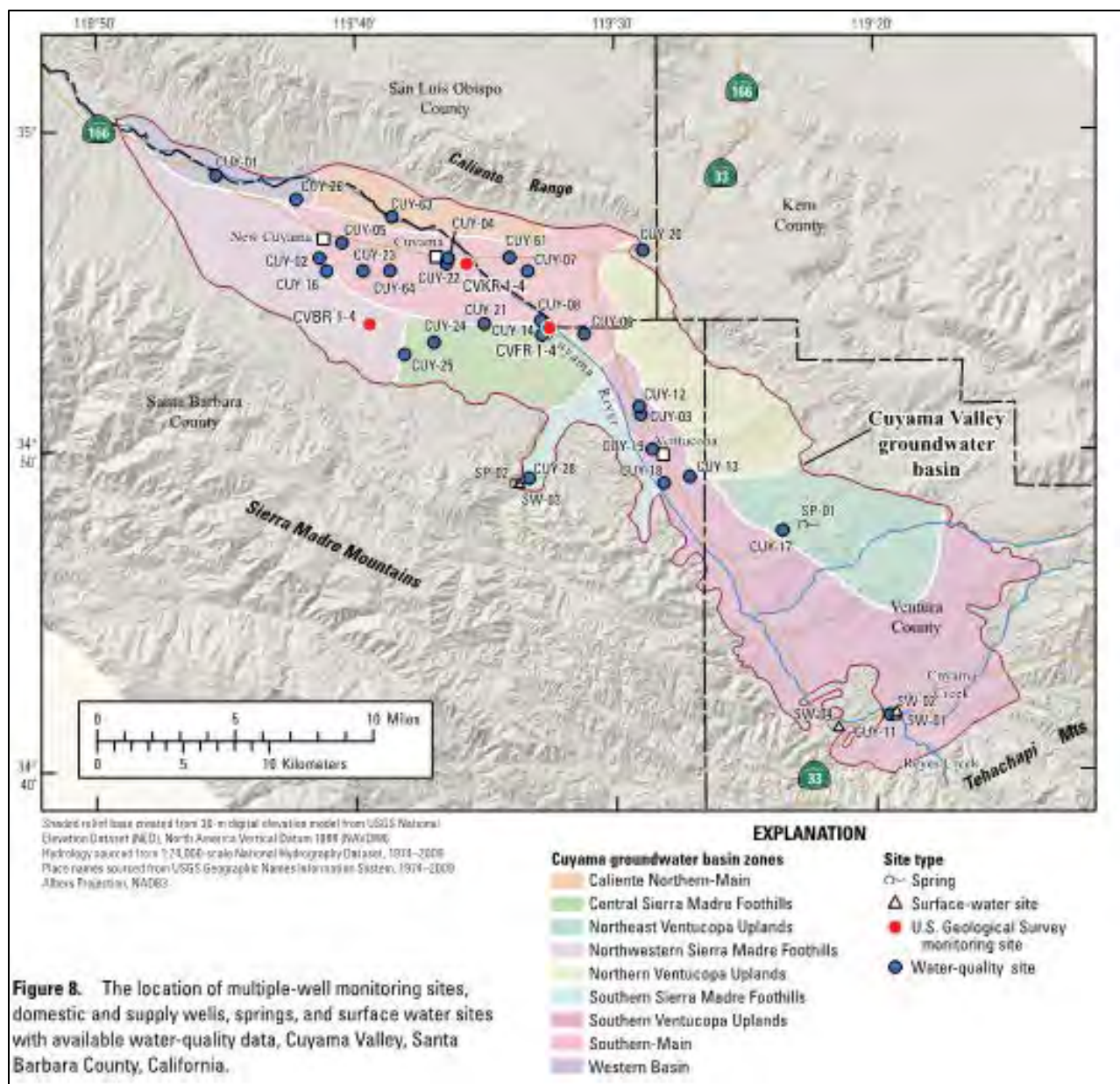
SBCWA also reported: “There was little change in TDS, calcium, magnesium, nitrates and sulfates during the 2009- 2011 period. In some cases, concentrations of these nutrients actually fell during the period, most likely due to a lack of rainfall, recharge and flushing of the watershed. As the Cuyama watershed is mostly dry, water quality data must be examined with caution as sometimes overland flow from rainfall events “flushes” the watershed and inorganic mineral concentrations actually peak during storm flows. Typically, in other areas of Santa Barbara County mineral concentrations are diluted during widespread storm runoff out of natural watersheds.”

In 2013, USGS reported that they collected groundwater quality samples at 12 monitoring wells, 27 domestic wells, and 2 springs for 53 constituents including: field parameters (water temperature, specific conductance, pH, DO, alkalinity), major & minor ions, nitrate, trace elements, stable isotopes of hydrogen and oxygen, tritium and carbon-14 activities, arsenic, iron, and chromium. The USGS sampling locations are presented in a figure from the report in Figure 2.2-31. The USGS reported the results of the sampling as:

- Groundwater in the alluvial aquifer system has high concentrations of TDS and sulfate
- 97% of samples had concentrations greater than 500 mg/L for TDS
- 95% of samples had concentrations greater than 250 mg./L for sulfate
- 13% of samples had concentrations greater than 10 mg/L for nitrate
- 12% of samples had concentrations greater than 10 ug/L for arsenic
- 1 sample had concentrations greater than the MCL for fluoride
- 5 samples had concentrations greater than 50 mg/L for manganese
- 1 sample had concentration of iron greater than 300 mg/L for iron
- 1 sample had concentration of aluminum greater than 50 mg/L

The USGS reported the following about nitrate as nitrogen in the basin. Nitrate was detected in five locations above the MCL of 10 mg/L. Four wells where nitrate levels were greater than the MCL were in the vicinity of the center of agricultural land-use area. Irrigation return flows are possible source of high nitrate concentrations. There was a decrease in concentrations with depth in the agricultural land use area which indicated the source of higher nitrate concentrations likely to be near the surface. The lowest nitrate levels were outside the agricultural use area, and low concentrations of nitrate (less than 0.02 mg/L) in surface water samples indicated surface water recharge was not a source of high nitrate

The USGS reported that arsenic was found in greater concentration than the MCL of 10 ug/L in 4 of the 33 wells sampled, and samples of total chromium ranged from no detections to 2.2 ug/L, which is less than the MCL of 50 ug/L. Hexavalent chromium ranged from 0.1 to 1.7 ug/L which is less than the MCL of 50 ug/L.



USGS 2013c

Figure 2.2-31: USGS 2013c Water Quality Monitoring Sites

2.2.8 Interconnected Surface Water Systems

This section is under development and will feature outputs from model development. This section will include the following:

- *Identification of interconnected surface water systems*
- *Estimates of timing and quantity of depletions*
- *Map of interconnected surface water systems*
- *Consideration of ephemeral and intermittent streams, and where they may cease to flow if applicable*

DRAFT

2.2.9 Groundwater Dependent Ecosystems

This section is under development and study is being performed by a biologist. This section will include the following:

- *Summary of Groundwater Dependent Ecosystem (GDE) analysis*
- *Describe locations and types of GDEs*
- *Map of GDEs*

DRAFT

2.2.10 Data Gaps

This subsection will be used to document identified data gaps in the groundwater conditions section of the GSP. Feedback from stakeholders is essential in identifying data gaps.

2.2.11 References

Cleath-Harris. 2016. Groundwater Investigations and Development, North Fork Ranch, Cuyama, California. Santa Barbara, California.

Dudek. 2016. Hydrogeologic Conceptual Model to Fulfill Requirements in Section I of the Basin Boundary Modification Application for the Cuyama Valley Groundwater Basin.

DWR 2004 <https://water.ca.gov/LegacyFiles/groundwater/bulletin118/basindescriptions/3-13.pdf>

DWR, 2018. <https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Statewide-Reports/Natural-Communities-Dataset-Summary-Document.pdf>

EKI. 2017. Preliminary Findings from Review of the USGS Study of the Cuyama Valley Groundwater Basin. Burlingame, California.

Singer, J.A., and Swarzenski, W.V. 1970. *Pumpage and ground-water storage depletion in Cuyama Valley California*. <https://pubs.usgs.gov/of/1970/0304/report.pdf>. Accessed June 4, 2018.

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USGS. 2013b. *Geology, Water-Quality, Hydrology, and Geomechanics of the Cuyama Valley Groundwater Basin, California, 2008-12*. <https://pubs.usgs.gov/sir/2013/5108/pdf/sir2013-5108.pdf>. Accessed April 12, 2018.

USGS. 2015. *Hydrologic Models and Analysis of Water Availability in Cuyama Valley, California*. <https://pubs.usgs.gov/sir/2014/5150/pdf/sir2014-5150.pdf>. Accessed June 4, 2018.

Upson and Worts. 1951. *Groundwater in the Cuyama Valley California*. <https://pubs.usgs.gov/wsp/1110b/report.pdf>. Accessed April 18, 2018.

Santa Barbara County Water Agency (1977) Adequacy of the Groundwater Basins of Santa Barbara County.

http://www.countyofsb.org/uploadedFiles/pwd/Content/Water/WaterAgency/Adequacy%20of%20the%20GW%20Basins%20of%20SBC%201977_sm.pdf

Appendix X - Hydrographs

This appendix presents hydrographs of every monitoring well with groundwater elevation data that was collected during development of the GSP. Each hydrograph has been assigned a database number, and the maps at the front of this section should be used to find the location of hydrographs of interest to the reader. The beginning of this appendix presents a map showing the locations of four detailed maps with the well identification numbers. The four location maps are intended to facilitate identifying the location of a specific hydrograph.

DRAFT

Appendix Y - Groundwater Contours

This appendix includes groundwater elevation and depth to water contour maps for the following periods:

- Figure Y-1: Fall 2017 Groundwater Elevation
- Figure Y-2: Fall 2017 Depth to Water
- Figure Y-3: Spring 2017 Groundwater Elevation
- Figure Y-4: Spring 2017 Depth to Water
- Figure Y-5: Spring 2015 Groundwater Elevation
- Figure Y-6: Spring 2015 Depth to Water
- Figure Y-7: Fall 2014 Groundwater Elevation
- Figure Y-8: Fall 2014 Depth to Water

Descriptions of each contour map are included in 2.2.3 Groundwater Trends.

DRAFT

Appendix Z - Subsidence Information White Paper

DRAFT



TO: Board of Directors
Agenda Item No. 8e

FROM: Brian Van Lienden, Woodard & Curran

DATE: September 5, 2018

SUBJECT: Monitoring Networks

Issue

Update on the monitoring networks.

Recommended Motion

None – information only.

Discussion

An update on the monitoring networks is provided as Attachment 1.

Cuyama Basin Groundwater Sustainability Agency

Monitoring Networks

September 5, 2018



What is a Monitoring Network?

- Established for each sustainability indicator:
 - Groundwater levels and quality
 - Subsidence
 - Surface water-groundwater interaction
- Includes monitoring wells, stream gauges, subsidence measurements
- Will have spatial and temporal components:
 - How many wells and how spread out are they?
 - How frequently are they measured?
- Able to provide data relative to undesirable results

What Makes a Good Monitoring Network?

- Need to Consider Total Cost
 - Cost for installation of equipment
 - Annual cost of data collection, analysis, and management
- Representative Monitoring
 - Use monitoring sites to be representative of basin conditions.

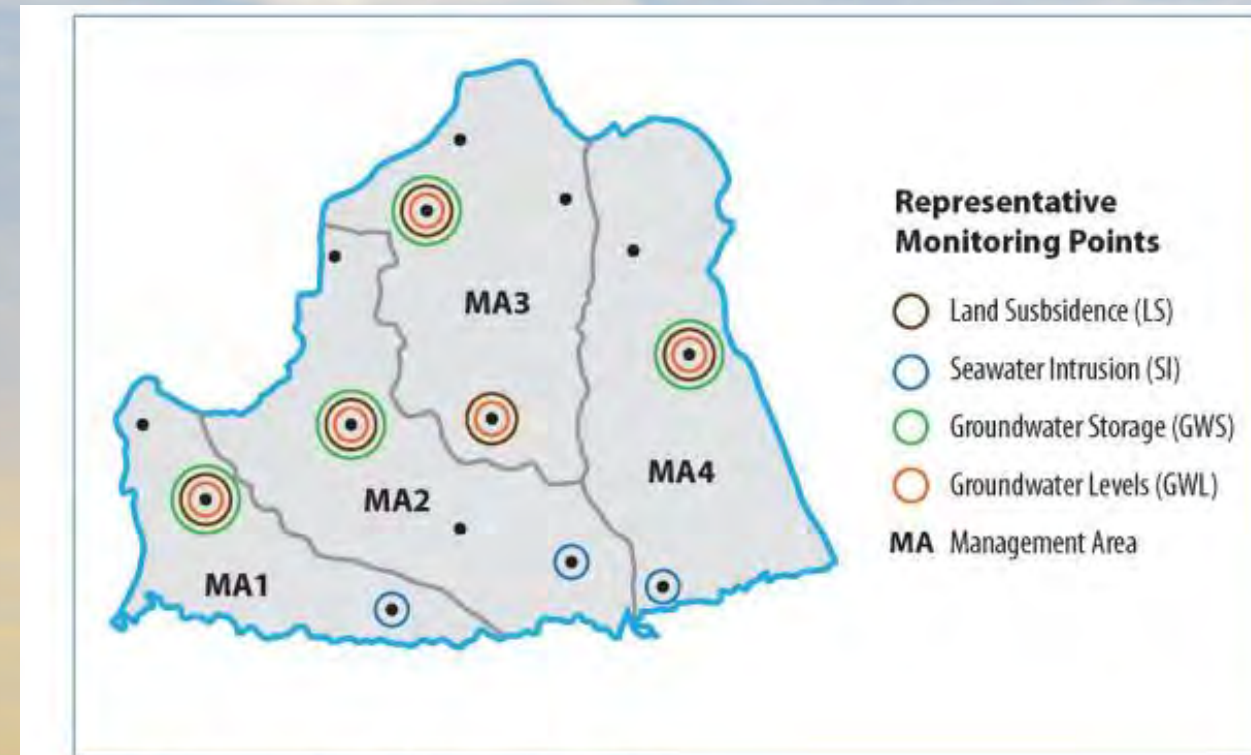
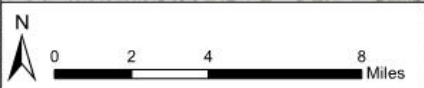
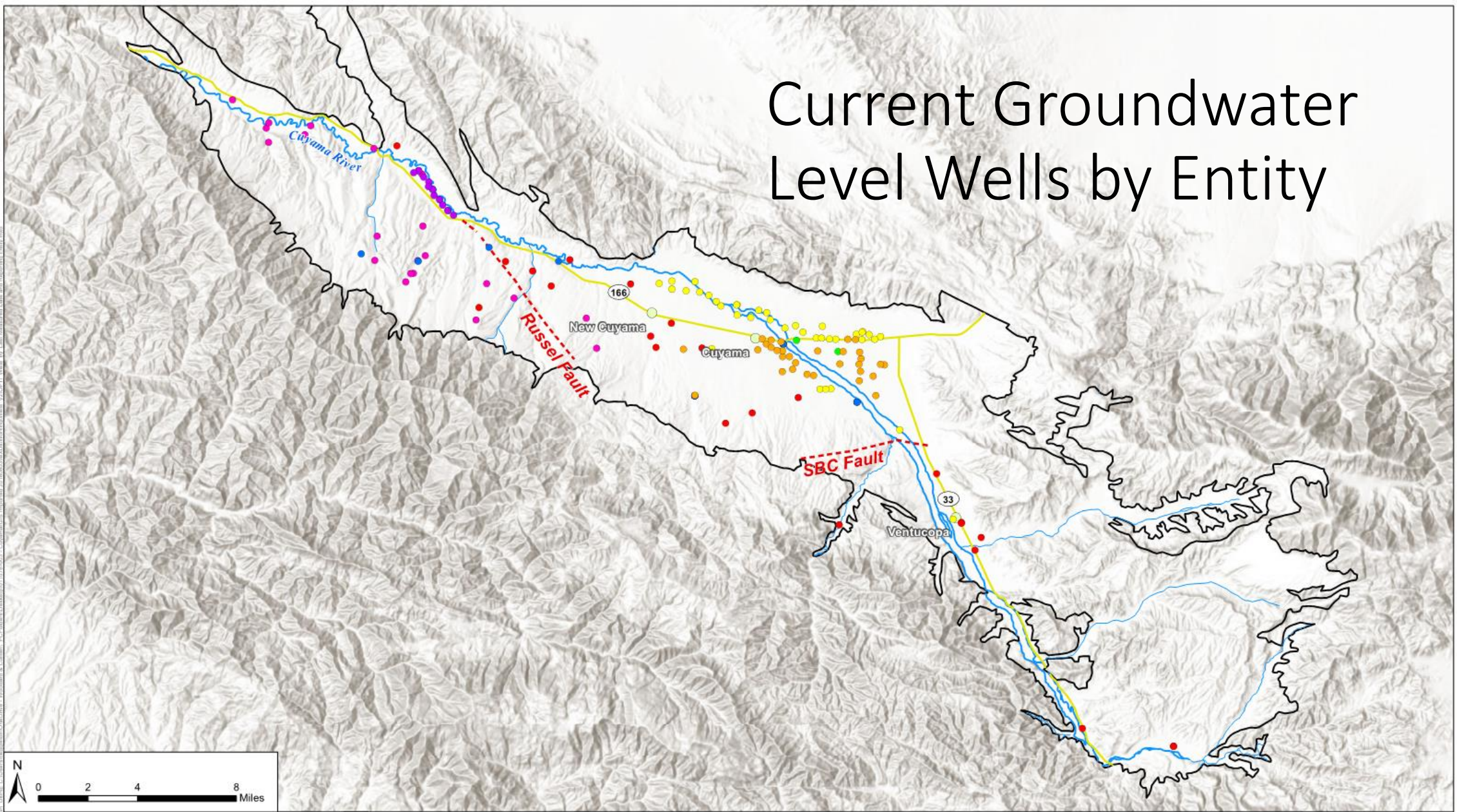


Figure 3: Representative Monitoring Points

Current Groundwater Level Wells by Entity



Cuyama GW Basin Currently Monitored Wells by Entity

Cuyama Basin Groundwater Sustainability Agency
 Cuyama Valley Groundwater Basin Groundwater Sustainability Plan
 August 2018



Legend

- Cuyama Basin
- Cuyama River
- Towns
- Streams
- Highways
- Fault

Currently Monitored Wells by Entity

- DWR
- USGS
- DWR and USGS
- Santa Barbara County

Groundwater Quality Thresholds Conceptual Discussion

Draft Undesirable Result

“The Undesirable Result for degraded water quality is a result stemming from a causal nexus between SGMA-related groundwater quantity management activities and groundwater quality that causes significant and unreasonable reduction in the long-term viability of domestic, agricultural, municipal, or environmental uses over the planning and implementation horizon of this GSP.”

Water Quality Thresholds Conceptual Discussion

- Set only for constituents with a causal nexus between SGMA-related management and groundwater quality
- Coordinate with existing regulatory programs (IRLP, RWQCB) to cover other constituents
- Proposed thresholds for salinity only
- Other major water quality parameters to be summarized in the GSP and annual reports, but will not have thresholds



TO: Board of Directors
Agenda Item No. 8f

FROM: Charles Gardiner, Catalyst Group

DATE: September 5, 2018

SUBJECT: Stakeholder Engagement Update

Issue

Update on the Cuyama Basin Groundwater Sustainability Agency Groundwater Sustainability Plan stakeholder engagement.

Recommended Motion

None – information only.

Discussion

Cuyama Basin Groundwater Sustainability Agency Groundwater Sustainability Plan (GSP) outreach consultant the Catalyst Group's stakeholder engagement update is provided as Attachment 1 and an updated matrix that matches GSP sections with corresponding educational topics is provided as Attachment 2.

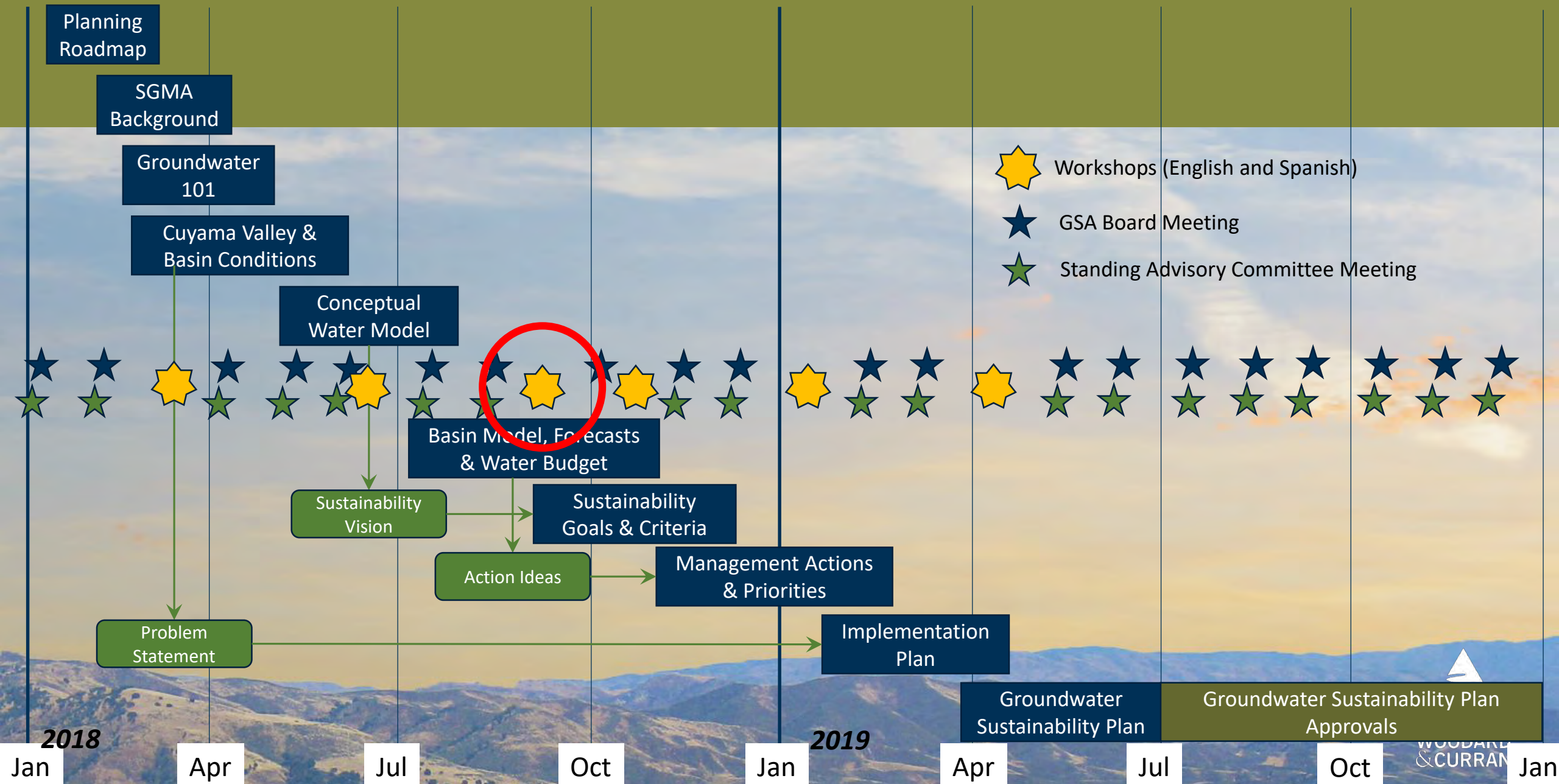
Cuyama Basin Groundwater Sustainability Agency

Groundwater Sustainability Plan Stakeholder Engagement Update

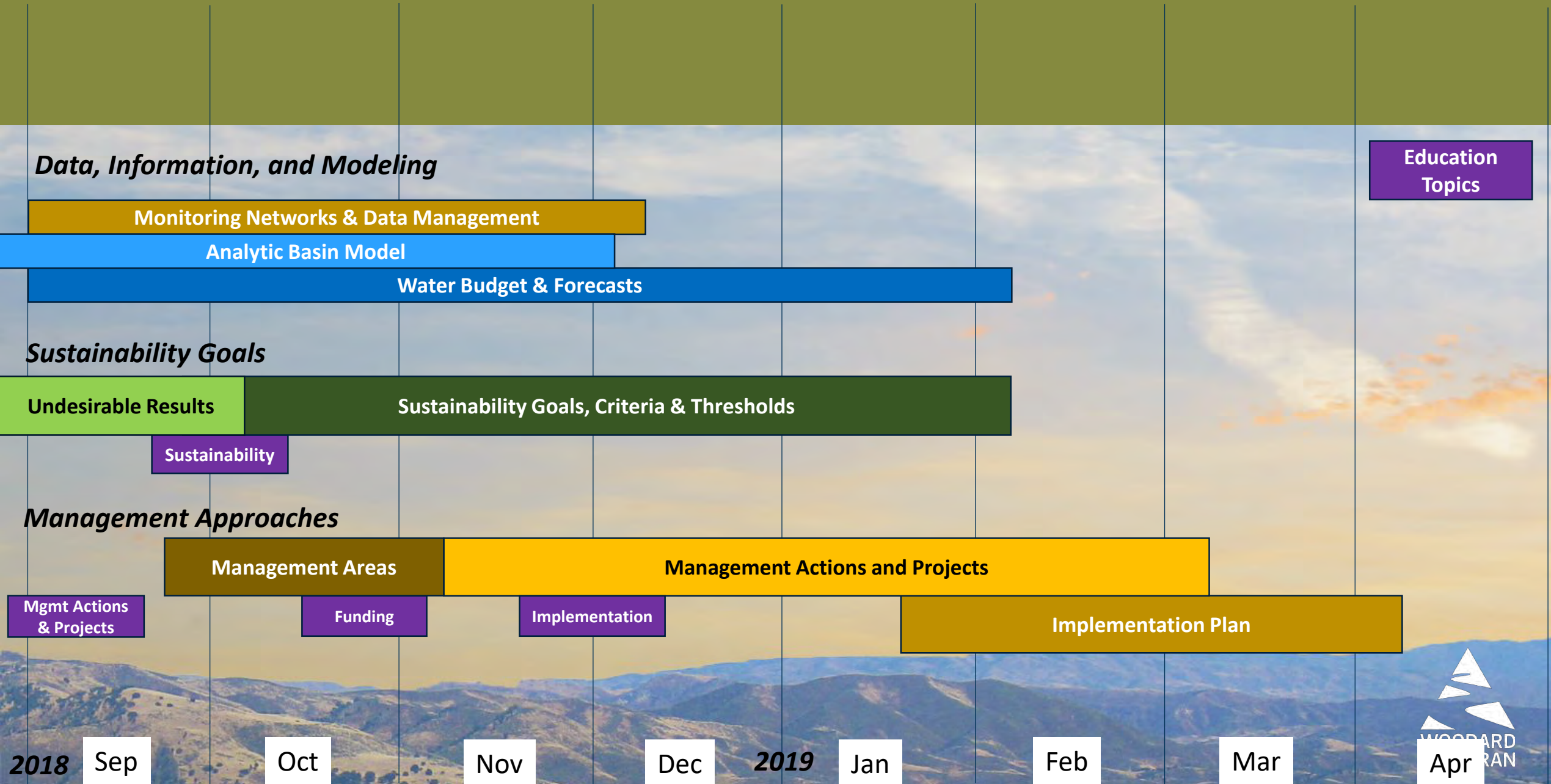
September 5, 2018



Cuyama Basin Groundwater Sustainability Plan – Planning Roadmap 119



Cuyama Basin Groundwater Sustainability Plan – Discussion Topics ¹²⁰



Education Topics

Outreach Activities

- **Community Workshops, Cuyama Valley Recreation District**
 - Email to GSP contact list
 - Postcard to property owners
 - Cuyama Valley Recreation District Newsletter
- **Community Workshops Topics**
 - Initial Modeling of Historical Use and Assumptions for Current and Future Conditions
 - Conceptual Management Areas and Introduction to Management Actions and Projects
- **Coming Up**
 - Newsletter #3 – November 1, 2018
 - Workshop #4 – November 7, 2018

Plan for Meeting Topics and GSP Section Submittals
 Posted to cuyamabasin.org August 24, 2018

(NOTE: Information Subject to Change)

Key: GSA Board adoptions and approvals Community Workshops

SAC/Board Mtg Dates	SAC Educational Topics	GSP Board/SAC Topics	Workshop Topics	GSP Section Submittals
June 28 July 11	<ul style="list-style-type: none"> Monitoring of GW levels & quality, SW flows What does SGMA require for water quality? Management Areas 	<ul style="list-style-type: none"> Land and Water Use Sustainability (workshop results) 		<ul style="list-style-type: none"> Plan Area (approval) HCM (review)
July 26 August 1	<ul style="list-style-type: none"> Calculating a Water Budget How a Model Works – Historical Calibration 	<ul style="list-style-type: none"> Current Basin Water Conditions (GW levels & quality, SW flows) Sustainability (draft Undesirable Results narrative) 		<ul style="list-style-type: none"> Undesirable Results Narrative (review)
August 30 September 5 Workshop	<ul style="list-style-type: none"> How a Model Works – Current and Future Conditions Management Actions & Projects 	<ul style="list-style-type: none"> Additional Info on Current Basin Water Conditions (GW levels & quality) Monitoring Networks 	<ul style="list-style-type: none"> Initial Model Results – Historical Assumptions for Current and Future Conditions Conceptual Management Areas Management Actions & Projects 	<ul style="list-style-type: none"> GW Conditions (review)
September 27 October 3	<ul style="list-style-type: none"> Sustainability Refresher 	<ul style="list-style-type: none"> Management Areas (discussion) Sustainability Thresholds (discussion) 		<ul style="list-style-type: none"> HCM (approval) Monitoring Networks (review) Data Management (review)

SAC/Board Mtg Dates	SAC Educational Topics	GSP Board/SAC Topics	Workshop Topics	GSP Section Submittals
November 1 November 7 Workshop	<ul style="list-style-type: none"> Funding Sources and Mechanisms 	<ul style="list-style-type: none"> Management Areas (approval) 	<ul style="list-style-type: none"> Initial Model Results – Current and Future Conditions Sustainability Goals and Criteria 	<ul style="list-style-type: none"> GW Conditions (approval)
November 29 December 5	<ul style="list-style-type: none"> Implementation Plan 	<ul style="list-style-type: none"> Sustainability Thresholds (proposed) Management Actions and Projects (discussion) 		<ul style="list-style-type: none"> Undesirable Results Narrative (approval) Monitoring Networks (approval) Data Management (approval) Sustainability Thresholds (review)
December 27? January 2		<ul style="list-style-type: none"> Sustainability Thresholds (approval) Implementation Plan (discussion) 		<ul style="list-style-type: none"> Water Budget (review) Projects & Management Actions (draft)
January 31 February 6 Workshop		<ul style="list-style-type: none"> Management Actions and Alternatives Evaluations 	<ul style="list-style-type: none"> Management Actions and Alternatives Evaluations 	<ul style="list-style-type: none"> Sustainability Thresholds (approval) Implementation Plan (draft)
February 28 March 6		<ul style="list-style-type: none"> Management Actions & Projects (approval) Implementation Plan (proposed) 		<ul style="list-style-type: none"> Water Budget (approval) Management Actions & Projects (approval)
March 28 April 3 Workshop		<ul style="list-style-type: none"> Implementation Plan (approval) GSP Public Draft 	<ul style="list-style-type: none"> GSP Public Draft 	<ul style="list-style-type: none"> Implementation Plan (approval) GSP Public Draft (review)
April 25 May 1		<ul style="list-style-type: none"> GSP Public Draft response to comments 		
May 30 June 5		<ul style="list-style-type: none"> GSP Final Draft 		<ul style="list-style-type: none"> GSP Final Draft (approval)



TO: Board of Directors
Agenda Item No. 9a

FROM: Jim Beck, Executive Director

DATE: September 5, 2018

SUBJECT: Financial Management Overview

Issue

Overview of the financial management for Cuyama Basin Groundwater Sustainability Agency activities.

Recommended Motion

None – information only.

Discussion

A presentation on the financial management for Cuyama Basin Groundwater Sustainability Agency activities is provided as Attachment 1.



Cuyama Basin Groundwater Sustainability Agency

Financial Report

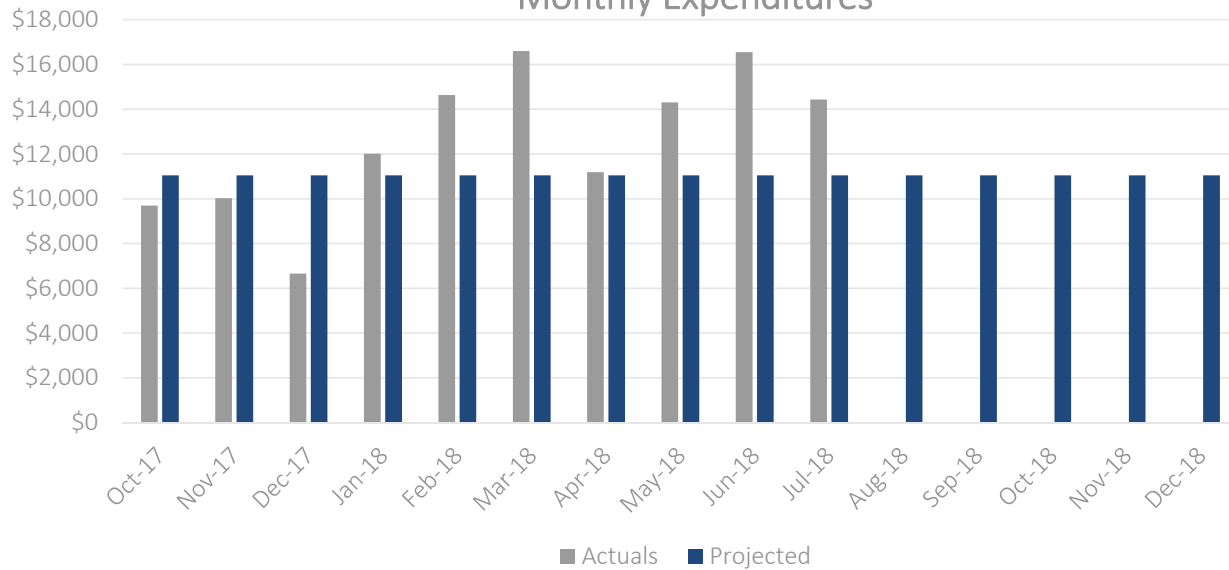
September 5, 2018

CBGSA OUTSTANDING INVOICES

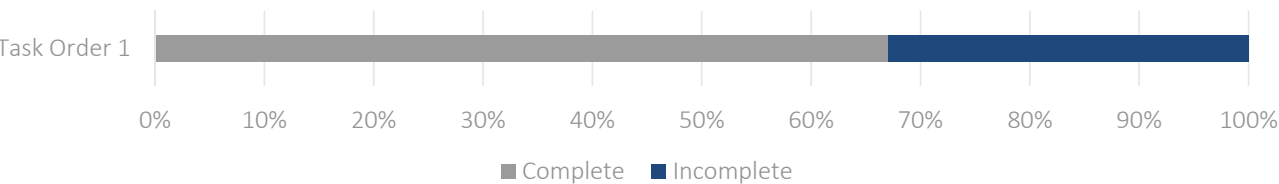
Task	Invoiced Through	Cumulative Total
Legal Counsel	7/19/2018	\$2,417.00
Executive Director	7/31/2018	\$16,902.31
GSP Development	7/27/2018	\$315,825.65
TOTAL		\$335,144.96

Executive Director Task Order 1

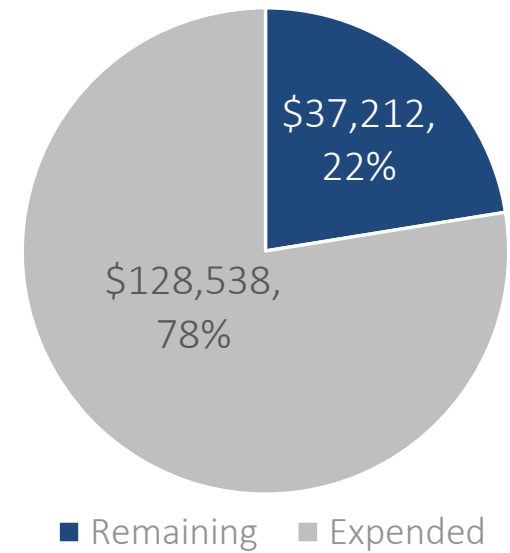
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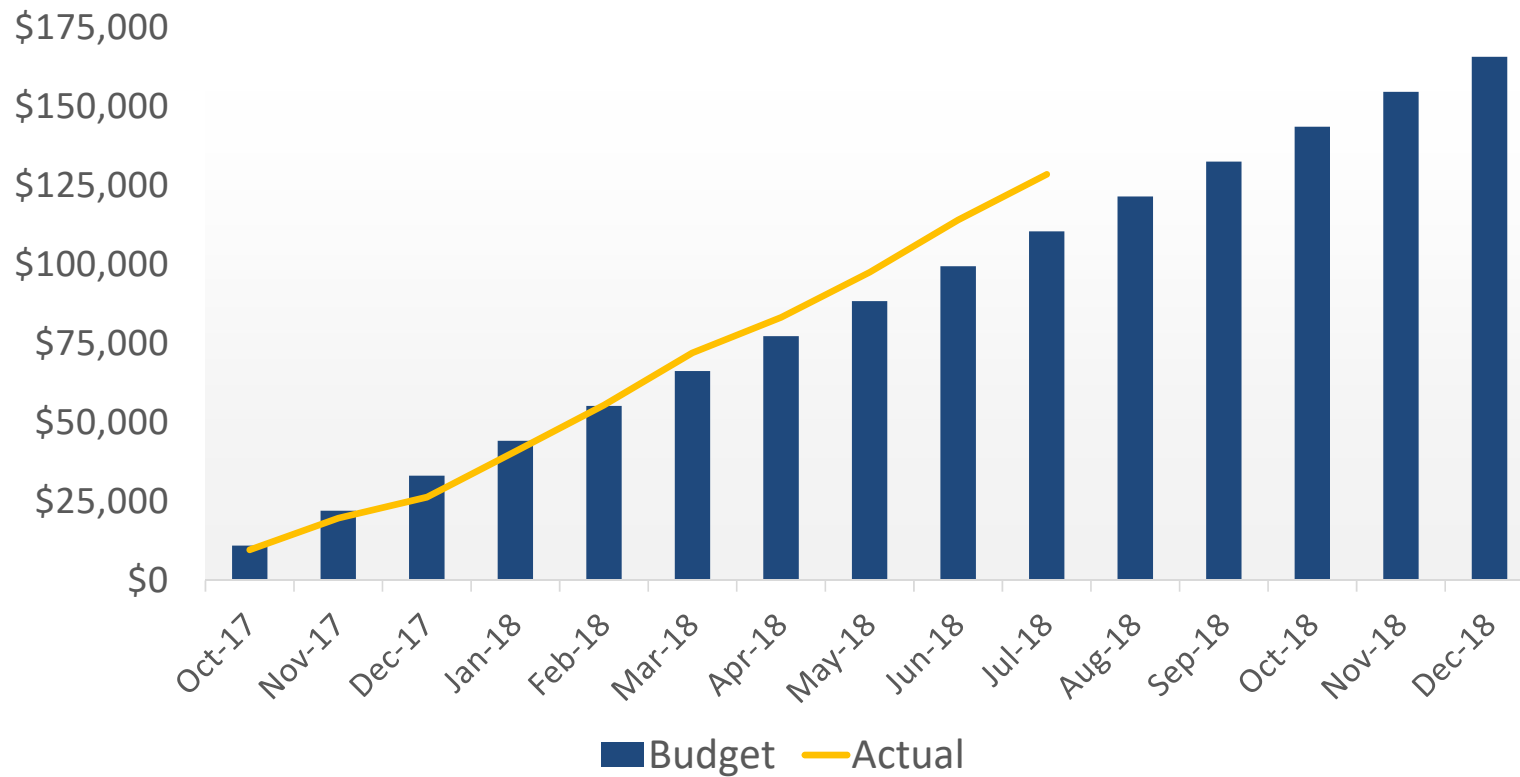
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Through 12/31/2018

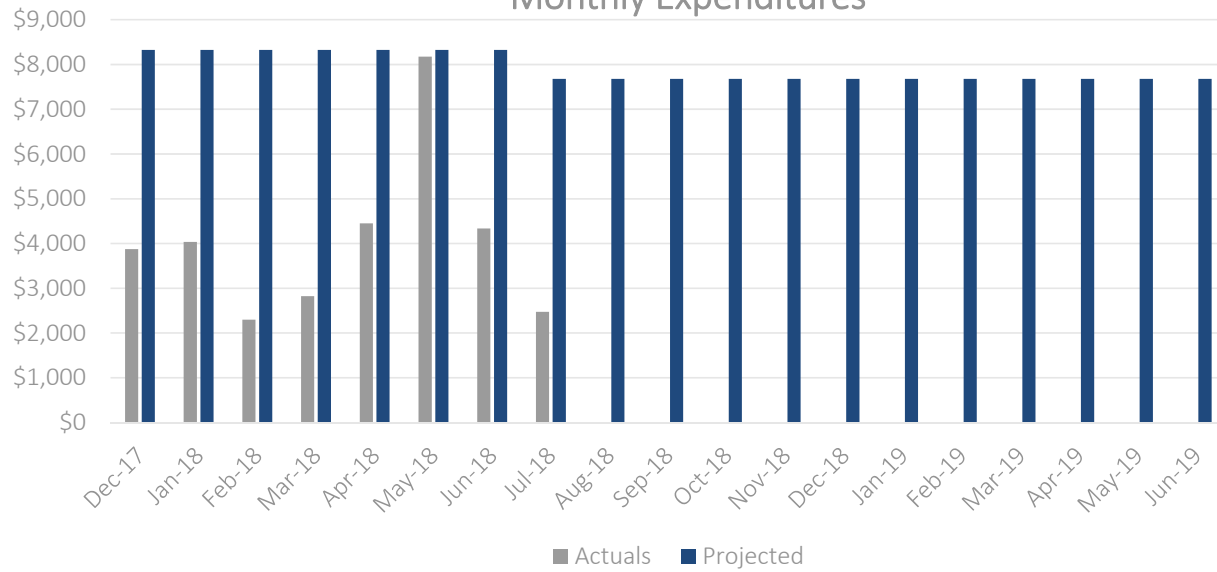


Task Order No. 1: Budget to Actual

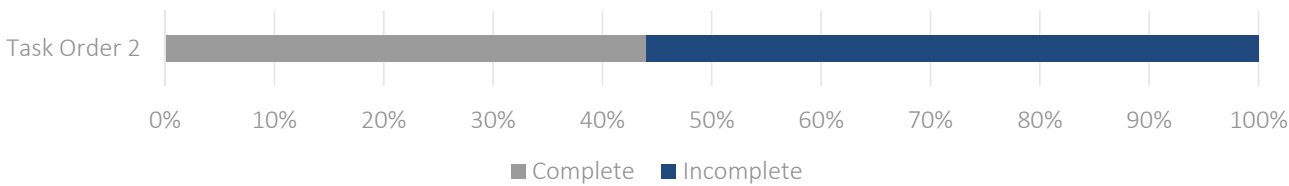


Executive Director Task Order 2, Amd1

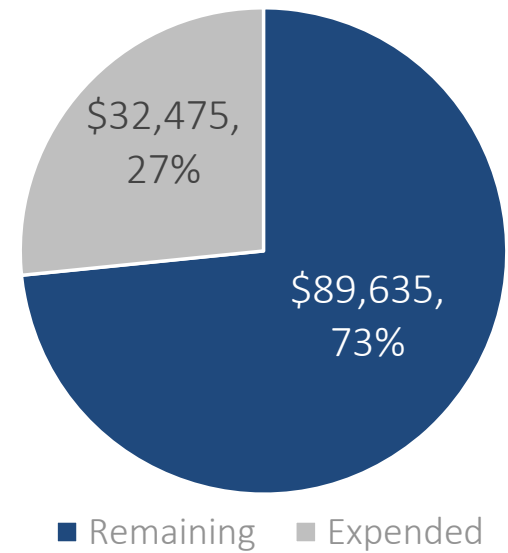
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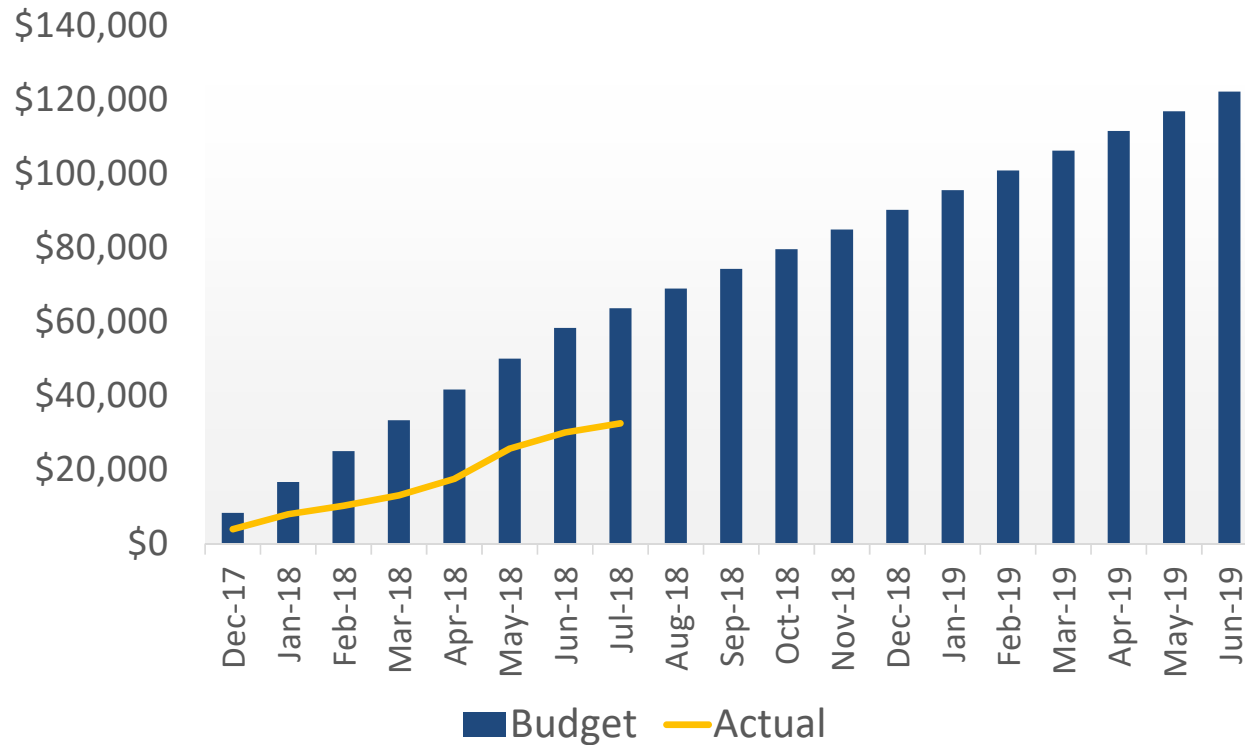
Progress Complete



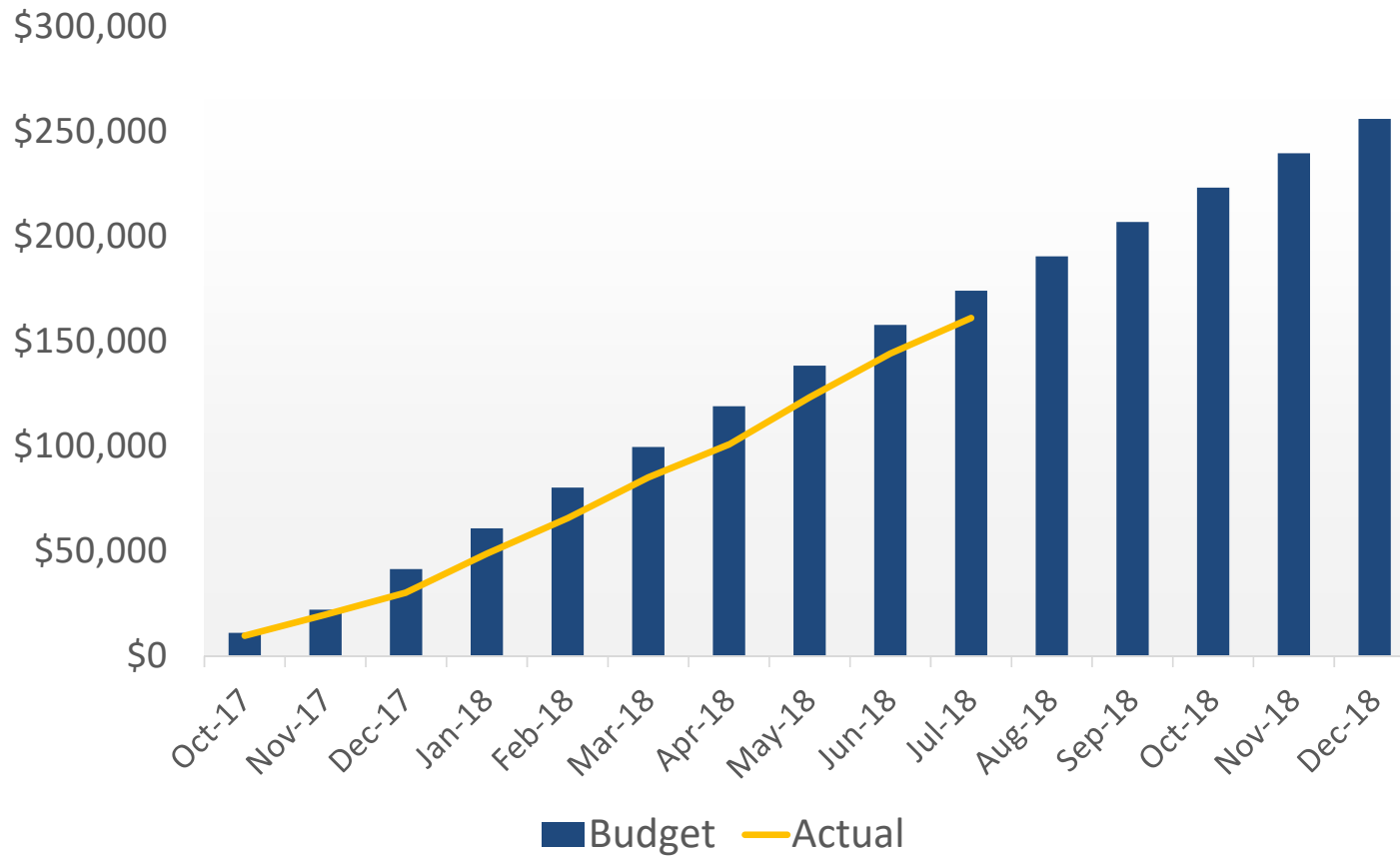
Total Authorized \$122,110
Through 6/30/2019



Task Order No. 2: Budget to Actual

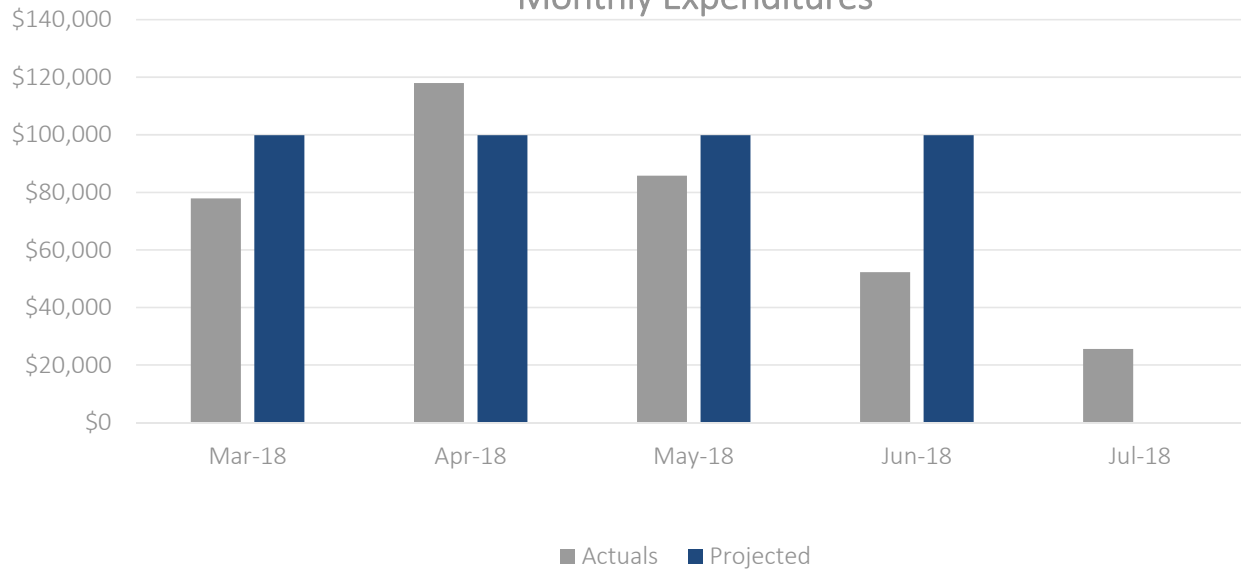


Task Order Nos. 1 & 2: Budget to Actual

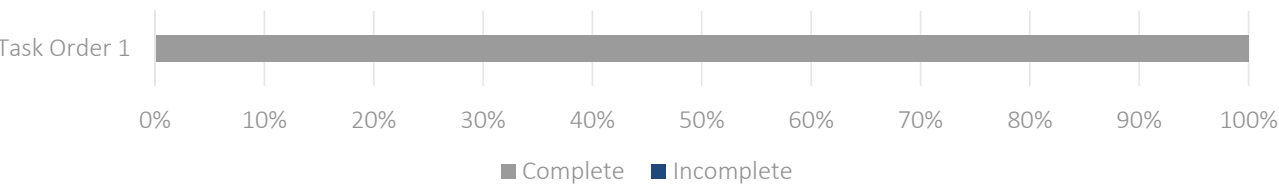


GSP Development Task Order 2

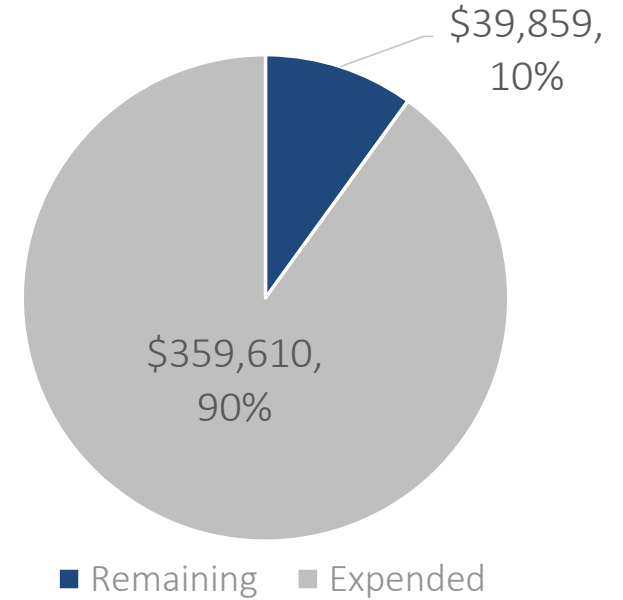
Monthly Expenditures



Progress Complete

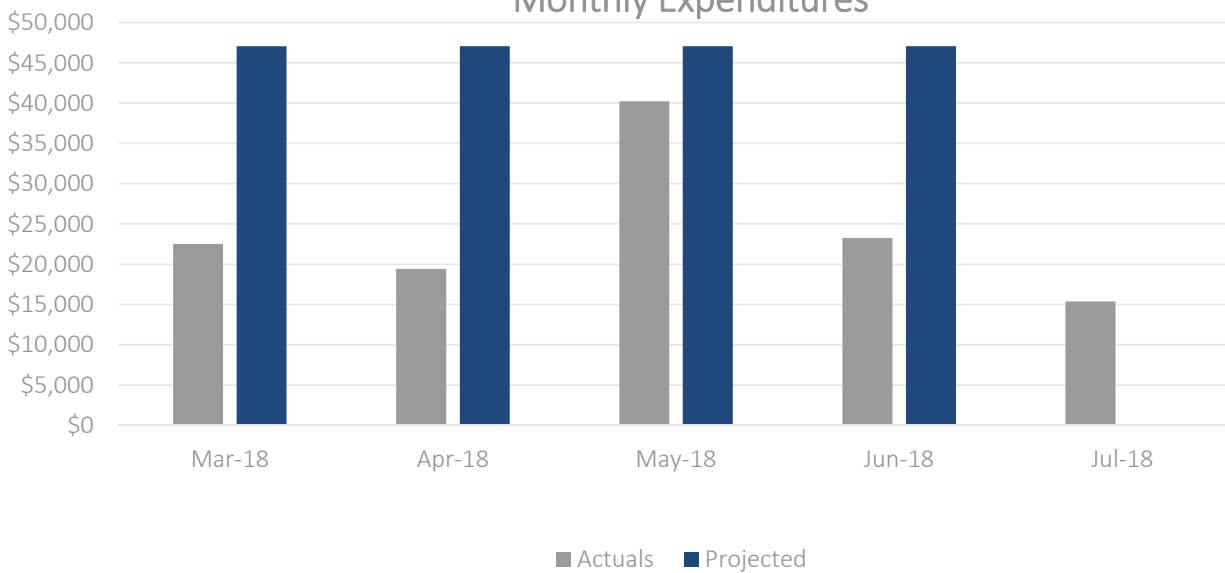


Total Authorized \$399,469 Through 6/30/2018

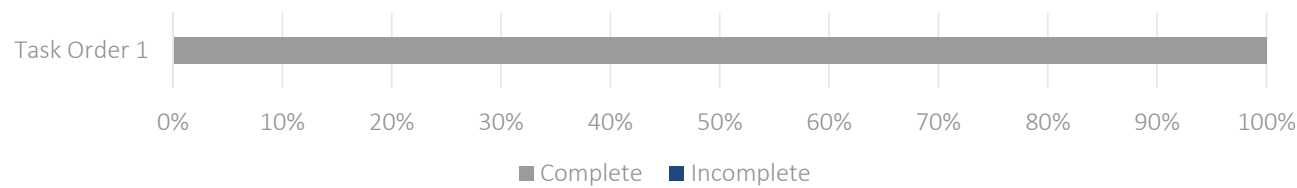


GSP Development Task Order 3

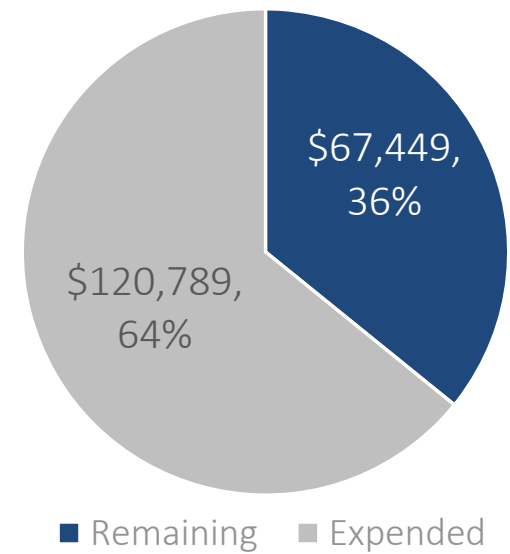
Monthly Expenditures



Progress Complete

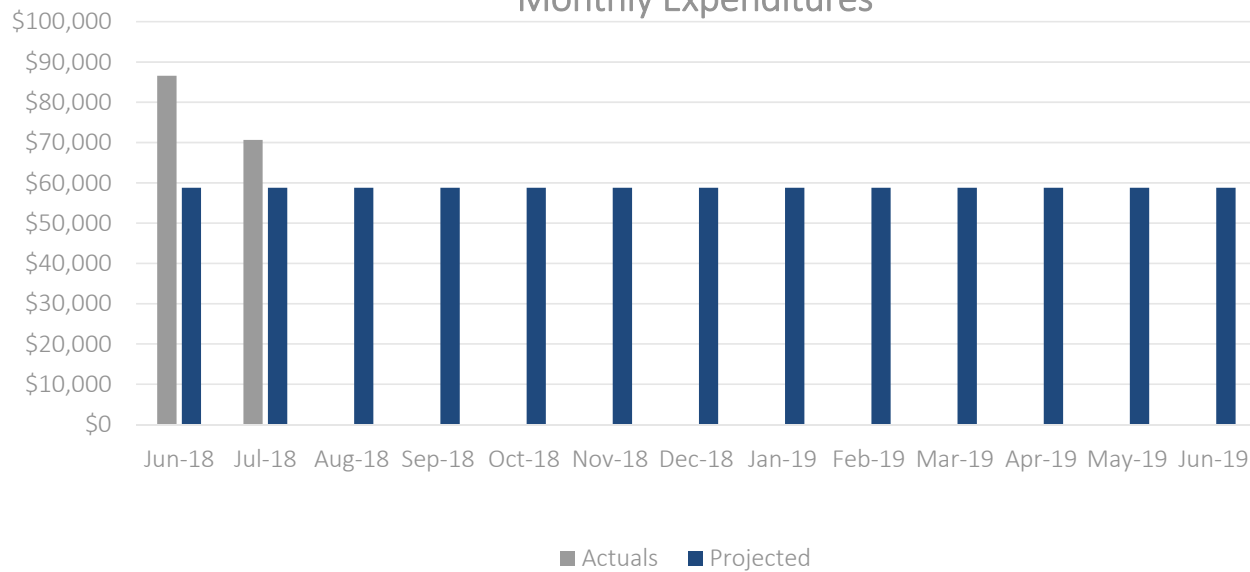


Total Authorized \$188,238
Through 6/30/2018

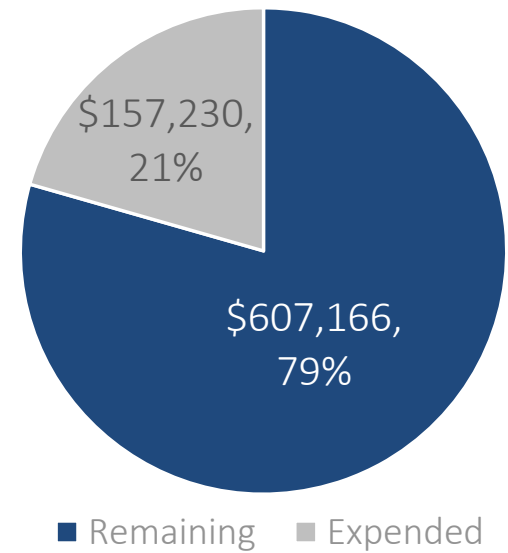


GSP Development Task Order 4

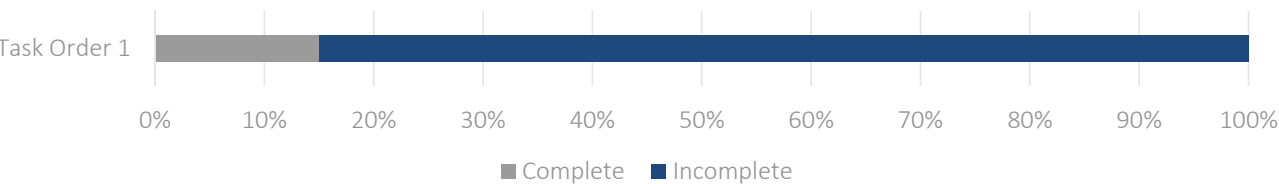
Monthly Expenditures



Total Authorized \$764,396
Through 6/30/2019

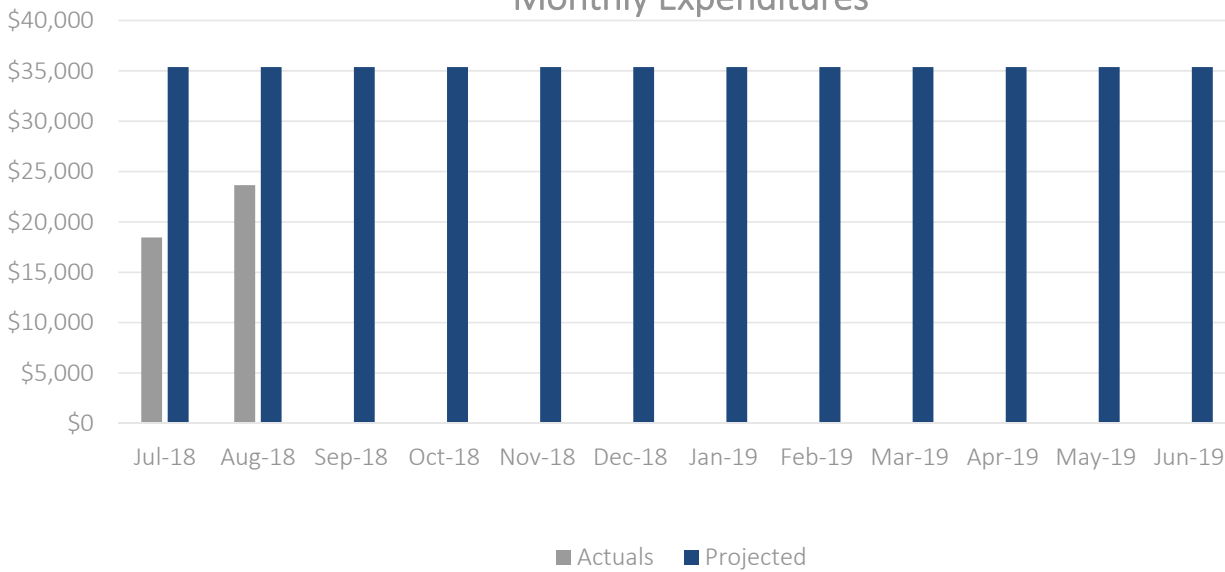


Progress Complete

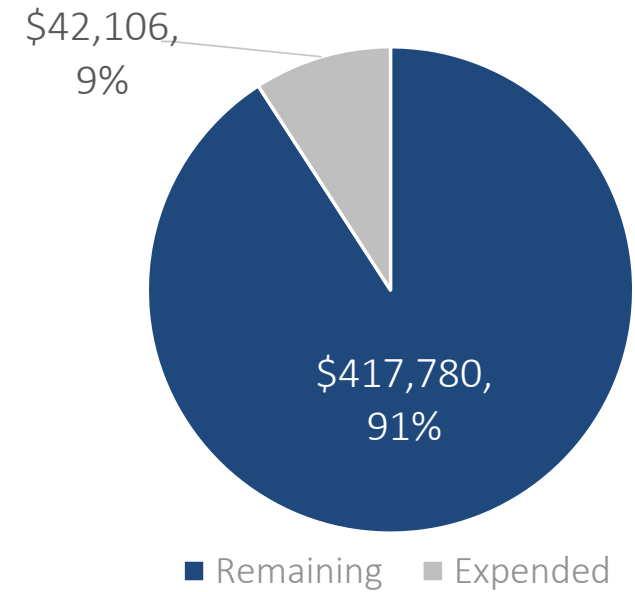


GSP Development Task Order 5

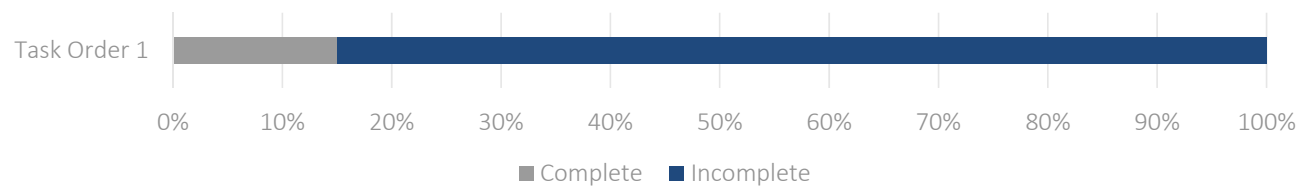
Monthly Expenditures



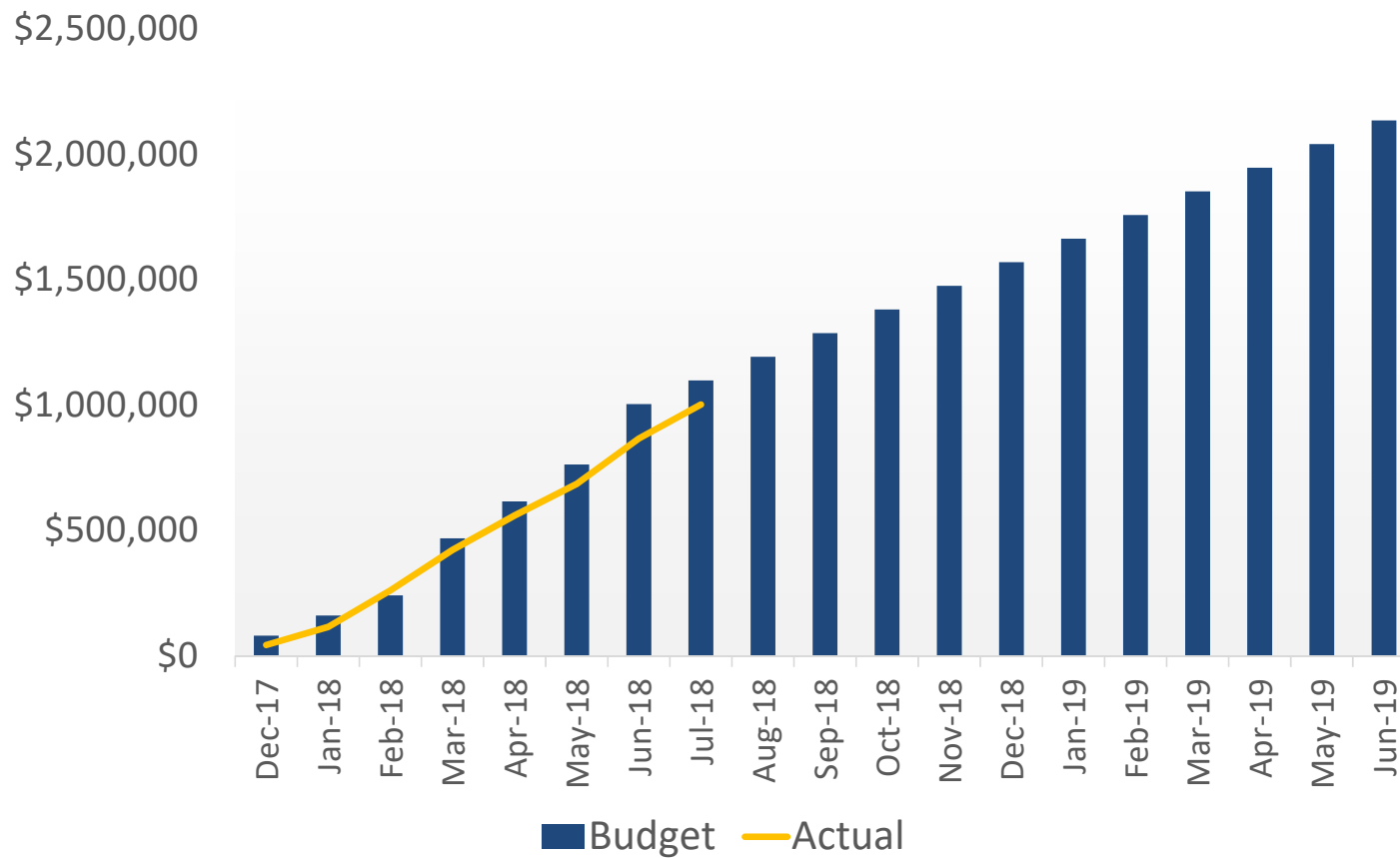
Total Authorized \$459,886 Through 6/30/2019



Progress Complete



All Authorized W&C Task Orders: Budget to Actual





TO: Board of Directors
Agenda Item No. 9b

FROM: Jim Beck, Executive Director

DATE: September 5, 2018

SUBJECT: Financial Report

Issue

Financial Report

Recommended Motion

None – information only.

Discussion

The Cuyama Basin Groundwater Sustainability Agency's fiscal year end financial report is provided as Attachment 1.

The report includes:

- Statement of Financial Position, *as of July 31, 2018*
- Receipts and Disbursements, *as of July 31, 2018*
- A/R Aging Summary, *as of July 31, 2018*
- A/P Aging Summary, *as of July 31, 2018*
- Statement of Operations with Budget Variance, *July 2018*
- 2018/2019 Operational Budget, *July 2018 through June 2019*

CUYAMA BASIN GSA
Statement of Financial Position
As of July 31, 2018

	Jul 31, 18
ASSETS	
Current Assets	
Checking/Savings	
Chase - General Checking	32,564
Total Checking/Savings	32,564
Accounts Receivable	
Accounts Receivable	41,550
Total Accounts Receivable	41,550
Total Current Assets	74,114
TOTAL ASSETS	74,114
LIABILITIES & EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	
Accounts Payable	335,145
Total Accounts Payable	335,145
Total Current Liabilities	335,145
Total Liabilities	335,145
Equity	
Unrestricted Net Assets	-106,412
Net Income	-154,619
Total Equity	-261,031
TOTAL LIABILITIES & EQUITY	74,114

CUYAMA BASIN GSA
Receipts and Disbursements
As of July 31, 2018

Type	Date	Num	Name	Debit	Credit
Chase - General Checking					
Payment	07/02/2018	11366440	County of Kern	38,567.66	
Payment	07/05/2018	1001819148	County of Ventura	18,451.08	
Payment	07/05/2018	1039	Cuyama Basin Water District	387,307.44	
Payment	07/09/2018	9706702	Santa Barbara County Water Agency	56,306.25	
Payment	07/16/2018	10575	Cuyama Community Services District	3,251.50	
Bill Pmt -Check	07/18/2018	1006	HGCPM, Inc.		80,730.24
Bill Pmt -Check	07/18/2018	1007	Klein, DeNatale, Goldner		18,598.06
Bill Pmt -Check	07/18/2018	1008	Woodard & Curran		394,461.11
Total Chase - General Checking				503,883.93	493,789.41
TOTAL				503,883.93	493,789.41

CUYAMA BASIN GSA
A/R Aging Summary
As of July 31, 2018

	<u>Current</u>	<u>1 - 30</u>	<u>31 - 60</u>	<u>61 - 90</u>	<u>> 90</u>	<u>TOTAL</u>
County of San Luis Obispo	0	18,451	0	0	20,117	38,568
Cuyama Community Services District	0	2,982	0	0	0	2,982
TOTAL	0	21,433	0	0	20,117	41,550

CUYAMA BASIN GSA
A/P Aging Summary
As of July 31, 2018

	<u>Current</u>	<u>1 - 30</u>	<u>31 - 60</u>	<u>61 - 90</u>	<u>> 90</u>	<u>TOTAL</u>
HGCPM, Inc.	16,902	0	0	0	0	16,902
Klein, DeNatale, Goldner	2,417	0	0	0	0	2,417
Woodard & Curran	135,300	180,526	0	0	0	315,826
TOTAL	154,619	180,526	0	0	0	335,145

CUYAMA BASIN GSA
Statement of Operations with Budget Variance
July 2018

	Jul 18	Budget	\$ Over Budget	% of Budget
Ordinary Income/Expense				
Cost of Goods Sold				
Program Expenses				
Category/Component 1				
Monitoring/AMP Implementation	39,035.90	40,508.00	-1,472.10	96.4%
Total Category/Component 1	39,035.90	40,508.00	-1,472.10	96.4%
Category/Component 2				
GSP Development	96,264.10	76,205.00	20,059.10	126.3%
Total Category/Component 2	96,264.10	76,205.00	20,059.10	126.3%
Total Program Expenses	135,300.00	116,713.00	18,587.00	115.9%
Total COGS	135,300.00	116,713.00	18,587.00	115.9%
Gross Profit	-135,300.00	-116,713.00	-18,587.00	115.9%
Expense				
Administration and Operation				
Administrative Overhead				
Legal	2,417.00	3,500.00	-1,083.00	69.1%
Other Admin Expense	0.00	165.00	-165.00	0.0%
Postage and Mailing Services	0.00	1,500.00	-1,500.00	0.0%
Travel, Conferences, Trainings	0.00	415.00	-415.00	0.0%
Total Administrative Overhead	2,417.00	5,580.00	-3,163.00	43.3%
Staff and Administration of GSA				
Executive Director - TO1				
CBGSA Outreach	562.50	2,200.00	-1,637.50	25.6%
Consult Mgmt and GSP Devel	1,750.00	3,650.00	-1,900.00	47.9%
Financial Information Coord	1,200.00	850.00	350.00	141.2%
GSA BOD Meetings	10,375.00	4,350.00	6,025.00	238.5%
Total Executive Director - TO1	13,887.50	11,050.00	2,837.50	125.7%
Executive Director - TO2				
Budget Devel and Admin	25.00	0.00	25.00	100.0%
Financial Management	800.00	1,720.00	-920.00	46.5%
Outreach Facilitation	1,650.00	1,350.00	300.00	122.2%
Travel and Direct Costs	539.81	235.00	304.81	229.7%
Total Executive Director - TO2	3,014.81	3,305.00	-290.19	91.2%
Total Staff and Administration of GSA	16,902.31	14,355.00	2,547.31	117.7%
Total Administration and Operation	19,319.31	19,935.00	-615.69	96.9%
Total Expense	19,319.31	19,935.00	-615.69	96.9%
Net Ordinary Income	-154,619.31	-136,648.00	-17,971.31	113.2%
Net Income	-154,619.31	-136,648.00	-17,971.31	113.2%

CUYAMA BASIN GSA
2018/2019 Operational Budget
 July 2018 through June 2019

	Jul '18 - Jun 19
Ordinary Income/Expense	
Income	
Direct Public Funds	
Grants	1,966,858
Total Direct Public Funds	1,966,858
Total Income	1,966,858
Cost of Goods Sold	
Program Expenses	
Category/Component 1	
Grant Administration	13,104
Monitoring/AMP Implementation	472,989
Total Category/Component 1	486,093
Category/Component 2	
Grant Administration	25,434
GSP Development	889,032
Total Category/Component 2	914,466
Total Program Expenses	1,400,559
Total COGS	1,400,559
Gross Profit	566,299
Expense	
Administration and Operation	
Administrative Overhead	
General Liability Insurance	12,108
Legal	42,000
Other Admin Expense	2,000
Postage and Mailing Services	20,000
Travel, Conferences, Trainings	5,000
Total Administrative Overhead	81,108
Staff and Administration of GSA	
Executive Director - TO1	
CBGSA Outreach	26,400
Consult Mgmt and GSP Devel	43,800
Financial Information Coor	10,200
GSA BOD Meetings	52,200
Total Executive Director - TO1	132,600
Executive Director - TO2	
Budget Devel and Admin	6,700
Financial Management	38,120
Outreach Facilitation	16,200
Travel and Direct Costs	2,820
Total Executive Director - TO2	63,840
Total Staff and Administration of GSA	196,440
Total Administration and Operation	277,548
Total Expense	277,548
Net Ordinary Income	288,751
Net Income	288,751



TO: Board of Directors
Agenda Item No. 9c

FROM: Jim Beck, Executive Director

DATE: September 5, 2018

SUBJECT: Payment of Bills

Issue

Consider approving the payment of bills for July 2018.

Recommended Motion

Approve payment of the bills through the month of July 2018 in the amount of \$154,619.31.

Discussion

Consultant invoices for the month of July 2018 are provided as Attachment 1.



INVOICE

1901 Royal Oaks Drive
Suite 200
Sacramento, CA 95815

916 923.1500
hgcpm.com

To: Cuyama Basin GSA
c/o Jim Beck
4900 California Avenue, Ste B
Bakersfield, CA 93309

Please Remit To: **Hallmark Group**
1901 Royal Oaks Drive, Suite 200
Sacramento, CA 95815
P: (916) 923-1500

Invoice No.: 2018-CBWD-TO1-07A
Task Order: HG-001
Date: August 17, 2018

For professional services rendered for the month of July 2018

Task Order	Sub task	Task Description	Billing Category	Month Ending	Hours	Rate	Amount	
HG-001	1	GSA Board of Directors and Advisory Committee Meetings	Executive Director	7/31/2018	16.50	\$ 250.00	\$ 4,125.00	
			Project Coordinator/Admin	7/31/2018	62.50	\$ 100.00	\$ 6,250.00	
Total Task 1 Labor							\$ 10,375.00	
HG-001	2	Consultant Management and GSP Development	Executive Director	7/31/2018	1.00	\$ 250.00	\$ 250.00	
			Project Coordinator/Admin	7/31/2018	15.00	\$ 100.00	\$ 1,500.00	
Total Task 2 Labor							\$ 1,750.00	
HG-001	3	Financial Information Coordination	Executive Director	7/31/2018	1.50	\$ 250.00	\$ 375.00	
			Project Controls	7/31/2018	0.00	\$ 200.00	\$ -	
			Project Coordinator/Admin	7/31/2018	8.25	\$ 100.00	\$ 825.00	
Total Task 3 Labor							\$ 1,200.00	
HG-001	4	CBGSA Outreach	Executive Director	7/31/2018	2.25	\$ 250.00	\$ 562.50	
			Project Coordinator/Admin	7/31/2018	0.00	\$ 100.00	\$ -	
Total Task 4 Labor							\$ 562.50	
Total Labor							\$ 13,887.50	
							ODC - Travel	\$ 135.16
							ODC - Conference Calls	\$ 222.24
							ODC - Printing	\$ 156.70
SubTotal Other Direct Costs							\$ 514.10	
							ODC Mark Up	5% \$ 25.71
Total Travel & Other Direct Costs							\$ 539.81	
TOTAL AMOUNT DUE FOR THIS INVOICE							\$ 14,427.31	

HG-001	Original Totals	Amendment(s)	Total Committed	Previously Billed	Current Billing	Remaining Balance
Task 1	\$ 63,000.00	\$ -	\$ 63,000.00	\$ 76,215.29	\$ 10,375.00	\$ (23,590.29)
Task 2	\$ 54,750.00	\$ -	\$ 54,750.00	\$ 22,306.06	\$ 1,750.00	\$ 30,693.94
Task 3	\$ 12,750.00	\$ -	\$ 12,750.00	\$ 7,237.50	\$ 1,200.00	\$ 4,312.50
Task 4	\$ 31,500.00	\$ -	\$ 31,500.00	\$ 3,029.36	\$ 562.50	\$ 27,908.14
Travel & ODCs	\$ 3,750.00	\$ -	\$ 3,750.00	\$ 2,871.20	\$ 539.81	\$ 338.99
Insurance	\$ -	\$ 2,451.00	\$ 2,451.00	\$ 2,451.00	\$ -	\$ -
Total	\$ 165,750.00	\$ 2,451.00	\$ 168,201.00	\$ 114,110.43	\$ 14,427.31	\$ 39,663.27

CUYAMA BASIN MONTHLY REPORT

Task Order #1

Activities for the Month of July 2018:

J. Beck

Task 1: GSA Board of Directors and Advisory Committee Meetings

- Prepared for and attended monthly Cuyama Basin Groundwater Sustainability Agency (CBGSA) Standing Advisory Committee (SAC) and Board of Directors (BOD) meeting.
- Assisted in the development and review of the SAC and Board agendas.
- Reviewed CBGSA BOD meeting Agenda with D. Yurosek, R. Jaffe, B. Kelly
- Participated in and provided guidance on a SAC request to form study groups for GSP chapter review.

Task 2: Consultant Management and GSP Development

- Met with CBGSA Management Team on a weekly basis.
- Reviewed Hydrogeologic Conceptual Model.
- Reviewed Ventura agreement for parcel information and data release form.
- Drafted email regarding Technical Forum Meeting items.

Task 3: Financial Information Coordination

- Reviewed documents for the DWR grant requirement.
- Reviewed expanded financial report.
- Reviewed invoices.

Task 4: CBGSA Outreach

- Reviewed and discussed outreach activity with CBGSA Management Team.
- Reviewed the second edition newsletter.
- Participated in a monthly call with DWR's Anita Regmi and Woodard & Curran's Lyndel Melton regarding the grant administration.

CUYAMA BASIN MONTHLY REPORT

Task Order #1

Activities for the Month of July 2018:

T. Blakslee

Task 1: GSA Board of Directors and Advisory Committee Meetings

- Assisted in preparing Board documents for the Cuyama Basin Groundwater Sustainability Agency (CBGSA) Standing Advisory Committee (SAC) and Board of Directors meeting.
- Assisted in preparing SAC and Board minutes, agendas, and packets.
- Attended and took minutes at the SAC and Board meetings.
- Drafted a grantee resolution for the grant administration.
- Assisted in coordinating a new nameplate for Director Scrivner.

Task 2: Consultant Management and GSP Development

- Coordinated and facilitated weekly CBGSA Management Team meetings.
- Assisted in developing agendas and action logs for weekly CBGSA management team meetings.
- Coordinated review of DWR grant funds agreement and exhibits.
- Facilitated comments received on the Hydrogeologic Conceptual Model.
- Set up and participated in a DWR Tech Assistance ad hoc.
- Reviewed the Undesirable Results Narrative and distributed to stakeholders for review.
- Streamlined the way the GSP components are listed on the website.

Task 3: Financial Information Coordination

- Assisted in the editing of the grant administration documents with Anita Regmi and Brian Van Lienden.
- Submitted vendor package to the California Department of Water Resources as part of the grant administration requirements.
- Finalized the revised funding agreement among the CBGSA, San Luis County and the Cuyama Community Services District.

Task 4: CBGSA Outreach

- Nothing to report.

CUYAMA BASIN MONTHLY REPORT

Task Order #1

Activities for the Month of July 2018:

M. Ballard

Task 1: GSA Board of Directors and Advisory Committee Meetings

- Prepared Board documents for the Cuyama Basin Groundwater Sustainability Agency (CBGSA) Standing Advisory Committee (SAC) and Board of Directors meetings.
- Prepared SAC and Board packets.
- Drafted CBGSA SAC and Board minutes.
- Distributed Description of Plan Area revisions.
- Reviewed CBGSA SAC and Board meeting agendas with D. Yurosek, R. Jaffe, B. Kelly, T. Blakslee, and J. Beck.

Task 2: Consultant Management and GSP Development

- Facilitated CBGSA Management Team meeting on July 13, 2018.
- Updated action log and drafted agenda for CBGSA Management Team meeting on July 13, 2018.
- Coordinated signature of Cuyama Grant Administrative package from Derek Y.

Task 3: Financial Information Coordination

- Nothing to report.

Task 4: CBGSA Outreach

- Nothing to report.


Invoice Date: 8/1/2018
Total: \$392.67

Statement# 35995 Customer# 3122729

HGCPM, Inc. - Formerly Advance Education
1901 Royal oaks DR
Sacramento, CA 95815 -0000

Remit to:
Great America Networks Conferencing
15700 W. 103rd St
Suite 110
Lemont, IL 60439 6608

CALL US
 1-877-438-4261

Summary

Balance Information	
Previous Balance	278.78
Payments Received - Thank you!	(278.78)
Balance Forward	
New Charges	
New Usage Charges	333.05
Recurring Charges	0.00
Taxes and Surcharges	59.62
Total New Charges	392.67
Total Amount Due	392.67

Payments

Description	Date	Amount
Payment Received, Thank you!	7/16/18	(278.78)
Subtotal		(\$278.78)

Taxes and Surcharges

Federal Universal Service Fund	59.62
Subtotal	\$59.62

Management Reports

Usage by Category

Description	Calls	Minutes	Charge
Usage - Conference Calling	124	6,661.00	333.05
	124.00	6,661.00	333.05

Long Distance By Line

TN	Calls	Mins	Charge
	124	6,661.00	333.05
	124	6,661.00	333.05

Cuyama BDSAC Conference ID: 4473060

#	Date	Time	Other	Location	Mins	Amt
1	7/10/18	06:00P	6613196477	Host	18.00	.90
2	7/10/18	06:00P	6613337091	Host	18.00	.90
3	7/10/18	06:05P	6614773385	Host	12.00	.60
Subtotal			48.00			2.40

Cuyama BDSAC Conference ID: 4474849

#	Date	Time	Other	Location	Mins	Amt
1	7/11/18	05:47P	8057811963	Participant	148.00	7.40
2	7/11/18	05:54P	6613951000	Participant	140.00	7.00
3	7/11/18	05:57P	9162789418	Participant	130.00	6.50
4	7/11/18	05:59P	6502929100	Participant	135.00	6.75
5	7/11/18	06:00P	6614773385	Host	156.00	7.80
6	7/11/18	06:00P	6615498123	Participant	110.00	5.50
7	7/11/18	06:01P	8056443144	Participant	67.00	3.35
Subtotal			886.00			44.30

Cuyama BDSAC Conference ID: 4486365

#	Date	Time	Other	Location	Mins	Amt
1	7/20/18	12:00P	6613337091	Host	17.00	.85
2	7/20/18	12:01P	8318182451	Host	16.00	.80
3	7/20/18	12:02P	8058867239	Host	16.00	.80
Subtotal			49.00			2.45

Cuyama BDSAC Conference ID: 4494027

#	Date	Time	Other	Location	Mins	Amt
1	7/26/18	06:03P	6617662369	Participant	2.00	.10
Subtotal			2.00			.10

Cuyama BDSAC Conference ID: 4494038

#	Date	Time	Other	Location	Mins	Amt
1	7/26/18	05:58P	8188826514	Participant	182.00	9.10
2	7/26/18	06:00P	4155242290	Participant	162.00	8.10
3	7/26/18	06:00P	5596361166	Participant	136.00	6.80
4	7/26/18	06:00P	6613951000	Participant	180.00	9.00
5	7/26/18	06:04P	9169998760	Participant	106.00	5.30
6	7/26/18	06:06P	6617662369	Host	174.00	8.70
Subtotal			940.00			47.00

Cuyama GSA Conference ID: 4477509

#	Date	Time	Other	Location	Mins	Amt
1	7/13/18	11:48A	6613340233	Host	83.00	4.15
2	7/13/18	11:57A	6613337091	Host	73.00	3.65
3	7/13/18	11:59A	6613196477	Host	62.00	3.10
4	7/13/18	11:59A	9258581340	Host	72.00	3.60
5	7/13/18	12:00P	4157938420	Host	70.00	3.50
6	7/13/18	12:00P	9169998777	Host	71.00	3.55
Subtotal						21.55

Cuyama GSA Conference ID: 4483723

#	Date	Time	Other	Location	Mins	Amt
1	7/18/18	05:55P	9169998780	Host	61.00	3.05
2	7/18/18	05:56P	6614773385	Host	61.00	3.05
3	7/18/18	05:58P	6613337091	Host	58.00	2.90
4	7/18/18	05:58P	8056160470	Host	58.00	2.90
5	7/18/18	05:58P	9256274112	Host	58.00	2.90
6	7/18/18	06:00P	8058867239	Host	56.00	2.80
7	7/18/18	06:01P	6615564542	Host	55.00	2.75
8	7/18/18	06:02P	2133092347	Host	54.00	2.70
Subtotal						23.05

Cuyama GSA Conference ID: 4486265

#	Date	Time	Other	Location	Mins	Amt
1	7/20/18	11:27A	6614773385	Host	33.00	1.65
2	7/20/18	11:30A	6613337091	Host	1.00	.05
3	7/20/18	11:30A	8318182451	Host	30.00	1.50
4	7/20/18	11:31A	6613196477	Host	29.00	1.45
5	7/20/18	11:34A	8058867239	Host	26.00	1.30
6	7/20/18	11:57A	6613321043	Host	46.00	2.30
7	7/20/18	12:00P	9256274112	Host	43.00	2.15
8	7/20/18	12:01P	4155242290	Host	42.00	2.10
9	7/20/18	12:01P	4157938420	Host	42.00	2.10
10	7/20/18	12:02P	9169998777	Host	41.00	2.05
Subtotal						16.65

Cuyama GSA Conference ID: 4486422

#	Date	Time	Other	Location	Mins	Amt
1	7/20/18	12:57P	6613337091	Host	39.00	1.95
2	7/20/18	12:58P	8185492351	Host	38.00	1.90
3	7/20/18	01:04P	9256274112	Host	32.00	1.60
Subtotal						5.45

Cuyama GSA Conference ID: 4487986

#	Date	Time	Other	Location	Mins	Amt
1	7/23/18	12:29P	6613340233	Host	31.00	1.55
2	7/23/18	12:32P	6613302610	Host	28.00	1.40
3	7/23/18	12:32P	6613337091	Host	28.00	1.40
Subtotal						4.35

Cuyama GSA Conference ID: 4494941

#	Date	Time	Other	Location	Mins	Amt
1	7/27/18	11:55A	4157938420	Host	18.00	.90
2	7/27/18	12:00P	4155242290	Host	70.00	3.50
3	7/27/18	12:00P	6614773385	Host	71.00	3.55
4	7/27/18	12:00P	9256274112	Host	70.00	3.50
5	7/27/18	12:01P	6613196477	Host	69.00	3.45
6	7/27/18	12:01P	9169998777	Host	69.00	3.45
7	7/27/18	12:13P	4157938420	Host	57.00	2.85
Subtotal						21.20

Conference Line Bill

Total Bill Charge	\$	333.05
Taxes and Fees	\$	59.62
Tax Rate		17.90%

Cuyama Charges

10-Jul	\$	2.40
11-Jul	\$	44.30
20-Jul	\$	2.45
26-Jul	\$	0.10
26-Jul	\$	47.00
13-Jul	\$	21.55
18-Jul	\$	23.05
20-Jul	\$	16.65
20-Jul	\$	5.45
23-Jul	\$	4.35
27-Jul	\$	<u>21.20</u>
Subtotal	\$	188.50
Tax		17.90%
Total	\$	<u>222.24</u>

CUYAMA PRINTING COSTS

SAC - 7/26/2018

Document	B&W, or Color	Pages	Rate	Cost
HCM Comments	B&W	450	\$ 0.10	\$ 45.00
Agenda (SAC Committee)	Color	30	\$ 0.50	\$ 15.00
Agenda (Public)	B&W	40	\$ 0.10	\$ 4.00
Spanish Presentations	B&W	172	\$ 0.10	\$ 17.20
Sign-in Sheet	Color	1	\$ 0.50	\$ 0.50
SAC Packets	Color	150	\$ 0.50	\$ 75.00
Total Cost				\$ 156.70

Expense Project and Person Summary

Date Range: 7/1/2018 - 7/31/2018

<i>Client</i>	<i>Project</i>	<i>Person</i>	<i>Expense Type</i>	<i>Amount</i>
Cuyama Basin Water District				
	1708-CBWD	Cuyama Basin		
		<i>Taylor Blakslee</i>		<i>\$514.10</i>
			<i>Mileage</i>	<i>\$135.16</i>
			<i>Miscellaneous</i>	<i>\$156.70</i>
			<i>Telephone</i>	<i>\$222.24</i>
			<i>Cuyama Basin Subtotal</i>	<i>\$514.10</i>
			Cuyama Basin Water District Subtotal	\$514.10
			<i>Grand Total</i>	<i>\$514.10</i>



INVOICE

1901 Royal Oaks Drive
Suite 200
Sacramento, CA 95815

916 923.1500
hgcpm.com

To: Cuyama Basin GSA
c/o Jim Beck
4900 California Avenue, Ste B
Bakersfield, CA 93309

Please Remit To: Hallmark Group
1901 Royal Oaks Drive, Suite 200
Sacramento, CA 95815
P: (916) 923-1500

Invoice No.: 2018-CBWD-TO2-07A
Task Order: CB-HG-002
Date: August 17, 2018

For professional services rendered for the month of July 2018

Task Order	Sub task	Task Description	Billing Category	Month Ending	Hours	Rate	Amount
CB-HG-002	1	Budget Development & Admin	Executive Director	7/31/2018	0.00	\$ 250.00	\$ -
			Project Controls Manager	7/31/2018	0.00	\$ 200.00	\$ -
			Project Admin	7/31/2018	0.25	\$ 100.00	\$ 25.00
Total Task 1 Labor							\$ 25.00
CB-HG-002	2	Financial Management	Executive Director	7/31/2018	1.50	\$ 250.00	\$ 375.00
			Project Controls Manager	7/31/2018	0.50	\$ 200.00	\$ 100.00
			Project Admin	7/31/2018	3.25	\$ 100.00	\$ 325.00
Total Task 2 Labor							\$ 800.00
CB-HG-002	3	Outreach Facilitation	Executive Director	7/31/2018	0.00	\$ 250.00	\$ -
			Project Admin	7/31/2018	16.50	\$ 100.00	\$ 1,650.00
Total Task 3 Labor							\$ 1,650.00
Total Labor							\$ 2,475.00
ODC - Travel							\$ -
SubTotal Other Direct Costs							\$ -
ODC Mark Up							5% \$ -
Total Other Direct Costs							\$ -
TOTAL AMOUNT DUE FOR THIS INVOICE							\$ 2,475.00

CB-HG-002	Original Totals	Amendment(s)	Total Committed	Previously Billed	Current Billing	Remaining Balance
Task 1	\$ 13,400.00	\$ -	\$ 13,400.00	\$ 8,450.00	\$ 25.00	\$ 4,925.00
Task 2	\$ 28,400.00	\$ -	\$ 28,400.00	\$ 15,362.50	\$ 800.00	\$ 12,237.50
Task 3	\$ 32,100.00	\$ (18,450.00)	\$ 13,650.00	\$ 6,187.50	\$ 1,650.00	\$ 5,812.50
Travel & ODCs	\$ 2,820.00	\$ -	\$ 2,820.00	\$ -	\$ -	\$ 2,820.00
Total	\$ 76,720.00	\$ (18,450.00)	\$ 58,270.00	\$ 30,000.00	\$ 2,475.00	\$ 25,795.00

CUYAMA BASIN MONTHLY REPORT

Task Order #2

Activities for the Month of July 2018:

▪ **J. Beck**

Task 1: Budget Development & Administration

- Nothing to report.

Task 2: Financial Management

- Participated on a call with DWR's Anita Regmi to discuss the vendor package required by the grant administration.
- Met with the DWR Tech Assistance ad hoc committee to discuss the technical services grant application.

Task 3: Outreach Facilitation

- Nothing to report.

CUYAMA BASIN MONTHLY REPORT

Task Order #2

Activities for the Month of July 2018:

T. Blakslee

Task 1: Budget Development & Administration

- Nothing to report.

Task 2: Financial Management

- Review financials.

Task 3: Outreach Facilitation

- Obtained parcel information from the Kern County Assessor office to assist in mailing out a notice of an upcoming workshop.
- Participated in meetings to strategize the concept of a study group for Groundwater Sustainability Plan chapter reviews.

CUYAMA BASIN MONTHLY REPORT

Task Order #2

Activities for the Month of July 2018:

M. Ballard

Task 1: Budget Development & Administration

- Coordinated Ad hoc meeting for July 18, 2018.

Task 2: Financial Management

- Drafted progress report and invoice for Hallmark services.

Task 3: Outreach Facilitation

- Updated Cuyama Basin Groundwater Sustainably Agency (CBGSA) website with minutes, agendas, and presentations.
- Updated CBGSA public stakeholder contact list.
- Drafted mailing list with Ventura County, San Luis Obispo County, Kern County, and Santa Barbara County contacts for postcard.

CUYAMA BASIN MONTHLY REPORT

Task Order #2

Activities for the Month of July 2018:

- **J. Harris**

- Task 2: Financial Management

- Processed accounts receivable and accounts payable.
 - Reconciled bank statement.

CUYAMA BASIN MONTHLY REPORT

Task Order #2

Activities for the Month of July 2018:

- **T. Ladeck**

- Task 2: Financial Management

- Processed bank deposit.
 - Processed checks for outstanding invoices.

**KLEIN, DENATALE, GOLDNER
COOPER, ROSENLIB & KIMBALL, LLP**

4550 CALIFORNIA AVENUE
SECOND FLOOR
BAKERSFIELD, CA 93309

MAILING ADDRESS:
P.O. BOX 11172
BAKERSFIELD, CA 93389-1172
(661) 395-1000
FAX (661) 326-0418
E-MAIL accounting@kleinlaw.com

CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY
C/O HALLMARK GROUP
1901 ROYAL OAKS DRIVE, SUITE 200
SACRAMENTO, CA 95815

July 31, 2018
Bill No. 22930-001-134446
JDH

Statement for Period through July 19, 2018

Re: 22930 - CUYAMA BASIN GROUNDWATER SUSTAINABILITY AGENCY
001 GENERAL BUSINESS

Date		Services	Hours	Amount
06/20/18	JLE	REVIEWED GRANT FORMS; LEGAL RESEARCH REGARDING DRUG-FREE WORKPLACE CERTIFICATION; TELEPHONE CONFERENCE WITH AND EXCHANGED E-MAIL WITH T. BLAKSLEE REGARDING FORMS.	1.20	252.00
06/20/18	JLE	ANALYZED DWR GRANT AGREEMENT; REVIEWED CORRESPONDENCE FROM E. CONANT REGARDING AGREEMENT; TELEPHONE CONFERENCE WITH T. BLAKSLEE REGARDING AGREEMENT; PREPARED REPORT CONCERNING AGREEMENT.	3.50	735.00
06/22/18	JLE	RESEARCHED RESOLUTION FOR GRANT ACCEPTANCE BY CLIENT.	0.20	42.00
06/27/18	RSP	REVIEWED FINAL PROPOSED CONFLICT OF INTEREST CODE FROM FPPC; E-MAIL CORRESPONDENCE REGARDING SAME.	0.20	38.00
07/02/18	JDH	REVIEWED AND REPLIED TO E-MAIL FROM T. BLAKSLEE REGARDING BOARD PACKETS AND COPYING; TELEPHONE CONFERENCE WITH T. BLAKSLEE REGARDING SAME AND CONFLICT OF INTEREST CODE.	1.00	270.00
07/05/18	JDH	TELEPHONE CONFERENCE WITH T. BLAKSEE REGARDING GRANT RESOLUTION, SAC ISSUE AND STATUS OF OTHER PENDING MATTERS.	0.50	135.00
07/10/18	JDH	TELEPHONE CONFERENCE WITH J. BECK REGARDING SAC STUDY GROUPS.	0.30	81.00
07/11/18	JDH	ATTENDED JULY BOARD MEETING TELEPHONICALLY.	2.20	594.00
07/13/18	JDH	WEEKLY PMT CONFERENCE CALL.	1.00	270.00

PAYMENT DUE UPON RECEIPT
PLEASE REFER TO BILL NUMBER LOCATED BENEATH STATEMENT DATE WHEN SUBMITTING PAYMENT TO ENSURE PROPER CREDIT.
A FINANCE CHARGE OF 1 1/2% PER MONTH (18% ANNUALLY) WILL BE CHARGED ON ALL BALANCES OVER 30 DAYS.
FEDERAL I.D. NO. 95-2298220

161

**KLEIN, DENATALE, GOLDNER,
COOPER, ROSENLIEB & KIMBALL, LLP**

Bill No. 22930-001-134446
Client Ref: 22930 - 001

July 31, 2018

Page 2

		Rate	Hours	Amount
JLE	EATON, JACOB L.	210.00	4.90	1,029.00
JDH	HUGHES, JOSEPH	270.00	5.00	1,350.00
RSP	PATEL, RAVI	190.00	0.20	38.00
				<u>\$2,417.00</u>

Total Fees

Current Charges

\$2,417.00

Prior Statement Balance

18,598.06

Payments/Adjustments Since Last Bill

-18,598.06

Pay This Amount

\$2,417.00

Any Payments Received After July 31, 2018 Will Appear on Your Next Statement

PAYMENT DUE UPON RECEIPT
PLEASE REFER TO BILL NUMBER LOCATED BENEATH STATEMENT DATE WHEN SUBMITTING PAYMENT
TO ENSURE PROPER CREDIT.
A FINANCE CHARGE OF 1 1/2% PER MONTH (18% ANNUALLY) WILL BE CHARGED ON ALL BALANCES OVER 30 DAYS.
FEDERAL I.D. NO. 95-2298220



COMMITMENT & INTEGRITY
DRIVE RESULTS

Remit to:
PO Box 55008
Boston, MA 02205-5008

T 800.426.4262
T 207.774.2112
F 207.774.6635

162
INVOICE

TD BANK
Electronic Transfer:
⑆211274450 ⑆ 2427662596⑆

Jim Beck
Executive Director
Cuyama Basin Groundwater Sustainability
Agency
c/o Hallmark Group
1901 Royal Oaks Drive, Suite 200
Sacramento, CA 95815

August 23, 2018
Project No: 0011078.01
Invoice No: 153619

Project 0011078.01 CUYAMA GSP

Professional Services for the period ending July 27, 2018

Phase 002 Data Management System, Data Collection and Analysis, and Plan Review

Professional Personnel

	Hours	Rate	Amount	
National Practice Lead				
Melton, Lyndel	1.50	315.00	472.50	
Project Manager 2				
Ayres, John	10.00	258.00	2,580.00	
Van Lienden, Brian	5.00	258.00	1,290.00	
Senior Project Manager				
Long, Jeanna	2.00	274.00	548.00	
Totals	18.50		4,890.50	
Labor Total				4,890.50
				Total this Phase \$4,890.50

Phase 003 Description of the Plan Area, Hydraulic Conceptual Model, and Groundwater Conditions

Professional Personnel

	Hours	Rate	Amount	
Geologist 2				
Salberg, Lauren	12.50	182.00	2,275.00	
National Practice Lead				
Melton, Lyndel	2.50	315.00	787.50	
Planner 2				
Eggleton, Charles	.75	182.00	136.50	
Project Manager 2				
Ayres, John	18.00	258.00	4,644.00	
Totals	33.75		7,843.00	
Labor Total				7,843.00

Please include our invoice number in your remittance. Thank you.

Total this Phase \$7,843.00

Phase 004 Basin Model and Water Budget

Professional Personnel

	Hours	Rate	Amount	
Engineer 1				
Zhou, Jingnan	3.50	157.00	549.50	
Engineer 2				
Ceyhan, Mahmut	74.50	182.00	13,559.00	
Wicks, Matthew	6.50	182.00	1,183.00	
National Practice Lead				
Melton, Lyndel	2.00	315.00	630.00	
Project Manager 2				
Ayres, John	5.00	258.00	1,290.00	
Cayar, Mesut	1.50	258.00	387.00	
Van Lienden, Brian	2.00	258.00	516.00	
Senior Technical Manager				
Taghavi, Ali	23.00	274.00	6,302.00	
Totals	118.00		24,416.50	
Labor Total				24,416.50

Consultant

Subcontractor Expense				
7/27/2018	Davids Engineering, Inc.	Inv#1174.02-3111	15,667.25	
	Consultant Total		15,667.25	17,233.98
		1.1 times		
			Total this Phase	\$41,650.48

Phase 005 Establish Basin Sustainability Criteria

Professional Personnel

	Hours	Rate	Amount	
Engineer 1				
DaBramo, Lisbeth	10.25	157.00	1,609.25	
National Practice Lead				
Melton, Lyndel	8.00	315.00	2,520.00	
Project Manager 2				
Ayres, John	12.00	258.00	3,096.00	
Van Lienden, Brian	7.00	258.00	1,806.00	
Totals	37.25		9,031.25	
Labor Total				9,031.25

Reimbursable

Vehicle Expenses				
7/11/2018	Melton, Lyndel	Board Meeting/Presentation	318.28	
	Reimbursable Total		318.28	350.11
		1.1 times		

Consultant

Subcontractor Expense				
7/27/2018	Groundwater Solutions, Inc.	Inv#0747.001-1	4,515.00	
	Consultant Total		4,515.00	4,966.50
		1.1 times		
			Total this Phase	\$14,347.86

Project	0011078.01	CUYAMA GSP	Invoice	153619
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Phase	007	Projects and Actions for Sustainability Goals
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Professional Personnel

	Hours	Rate	Amount	
Geologist 2				
Salberg, Lauren	37.75	182.00	6,870.50	
National Practice Lead				
Melton, Lyndel	8.50	315.00	2,677.50	
Project Manager 2				
Ayes, John	15.00	258.00	3,870.00	
Totals	61.25		13,418.00	
Labor Total				13,418.00
				Total this Phase
				\$13,418.00

Phase	010	Outreach, Education and Communication
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Professional Personnel

	Hours	Rate	Amount	
Graphic Artist				
Fox, Adam	4.00	115.00	460.00	
Planner 1				
De Anda, Vanessa	4.00	157.00	628.00	
Totals	8.00		1,088.00	
Labor Total				1,088.00

Consultant

Subcontractor Expense				
7/27/2018	The Catalyst Group, Inc.	Inv#327	9,715.69	
Consultant Total			9,715.69	10,687.26
		1.1 times		
				Total this Phase
				\$11,775.26

Phase	011	Project Management
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Professional Personnel

	Hours	Rate	Amount	
National Practice Lead				
Melton, Lyndel	5.00	315.00	1,575.00	
Project Assistant				
Hughart, Desiree	1.50	108.00	162.00	
Senior Technical Practice Lead				
Lopezcalva, Enrique	2.00	301.00	602.00	
Totals	8.50		2,339.00	
Labor Total				2,339.00
				Total this Phase
				\$2,339.00

Project	0011078.01	CUYAMA GSP	Invoice	153619
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Phase 012 GW Monitoring Well Network Expansion (Cat 1 – Task 1)

Professional Personnel

	Hours	Rate	Amount	
National Practice Lead				
Melton, Lyndel	2.00	315.00	630.00	
Planner 2				
Eggleton, Charles	75.75	182.00	13,786.50	
Software Engineer 1				
Rutaganira, Thierry	8.00	140.00	1,120.00	
Project Manager 2				
Van Lienden, Brian	4.00	258.00	1,032.00	
Senior Project Manager				
Long, Jeanna	3.00	274.00	822.00	
Totals	92.75		17,390.50	
Labor Total				17,390.50

Reimbursable

Vehicle Expenses				
6/28/2018 Van Lienden, Brian	Cuyama GSP SAC meeting		45.16	
6/28/2018 Van Lienden, Brian	Cuyama GSP SAC meeting		10.38	
7/12/2018 Van Lienden, Brian	Cuyama GSP Board meeting		115.65	
7/12/2018 Van Lienden, Brian	Cuyama GSP Board meeting		47.79	
7/26/2018 Van Lienden, Brian	SAC meeting		56.68	
Travel & Lodging				
6/29/2018 Van Lienden, Brian	Cuyama GSP SAC meeting		89.33	
7/11/2018 Van Lienden, Brian	Cuyama GSP Board meeting		.63	
7/11/2018 Van Lienden, Brian	Cuyama GSP Board meeting		125.99	
Meals				
7/12/2018 Van Lienden, Brian	Cuyama GSP Board meeting		11.63	
7/26/2018 Van Lienden, Brian	SAC meeting		11.87	
Office Supplies				
7/19/2018 Van Lienden, Brian	Conf phone and cable for GSA meetings		251.71	
Reimbursable Total		1.1 times	766.82	843.50

Consultant

Subcontractor Expense				
7/27/2018 Groundwater Solutions, Inc.	Inv#0747.001-1		3,164.00	
Consultant Total		1.1 times	3,164.00	3,480.40
		Total this Phase		\$21,714.40

Project	0011078.01	CUYAMA GSP	Invoice	153619
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Phase 013 Evapotranspiration Evaluation for Cuyama (Cat 1 – Task 2)

Professional Personnel

	Hours	Rate	Amount	
National Practice Lead				
Melton, Lyndel	1.00	315.00	315.00	
Planner 2				
Eggleton, Charles	14.50	182.00	2,639.00	
Project Manager 2				
Van Lienden, Brian	32.00	258.00	8,256.00	
Totals	47.50		11,210.00	
Labor Total				11,210.00
				Total this Phase
				\$11,210.00

Phase 014 Surface Water Monitoring Program (Cat 1 – Task 3)

Professional Personnel

	Hours	Rate	Amount	
Project Manager 2				
Van Lienden, Brian	7.00	258.00	1,806.00	
Totals	7.00		1,806.00	
Labor Total				1,806.00

Consultant

Subcontractor Expense				
7/27/2018 Groundwater Solutions, Inc. Inv#0747.001-1			2,150.00	
Consultant Total		1.1 times	2,150.00	2,365.00
				Total this Phase
				\$4,171.00

Phase 015 Project Management (Cat 1 – Task 4)

Professional Personnel

	Hours	Rate	Amount	
Engineer 1				
Bradley, Kelsey	2.50	157.00	392.50	
Project Manager 2				
Van Lienden, Brian	6.00	258.00	1,548.00	
Totals	8.50		1,940.50	
Labor Total				1,940.50
				Total this Phase
				\$1,940.50
				Total this Invoice
				\$135,300.00

Project	0011078.01	CUYAMA GSP	Invoice	153619
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Outstanding Invoices

Number	Date	Balance
152397	7/19/2018	180,525.65
Total		180,525.65

Project Summary	Current Fee	Previous Fee	Total
	135,300.00	865,569.96	1,000,869.96

Approved by:



Brian Van Lienden
Project Manager
Woodard & Curran



Progress Report

Cuyama Basin Groundwater Sustainability Plan Development

Subject: July 2018 Progress Report

Jim Beck, Executive Director,

Prepared for: Cuyama Basin Groundwater Sustainability Agency (CBGSA)

Prepared by: Brian Van Lienden, Woodard & Curran

Reviewed by: Lyndel Melton, Woodard & Curran

Date: August 23, 2018

Project No.: 0011078.01

This progress report summarizes the work performed and project status for the period of June 30, 2018 through July 27, 2018 on the Cuyama Basin Groundwater Sustainability Plan Development project. The work associated with this invoice was performed in accordance with our Consulting Services Agreement dated December 6, 2017, and with Task Orders 2 and 3, issued by CBGSA on March 7, 2018 and Task Orders 4 and 5, issued by the CBGSA on June 6, 2018. Note that Task Order 1, issued by CBGSA on December 6, 2017, was 100% spent as of the March 2018 invoice.

The progress report contains the following sections:

1. Work Performed
2. Budget Status
3. Schedule Status
4. Outstanding Issues to be Coordinated

1 Work Performed

A summary of work performed on the project during the current reporting period is provided in Tables 1 and 2 below. Table 1 shows work performed under Task Orders 2 and 4, which include tasks identified in the forthcoming Category 2 grant from the California Department of Water Resources (DWR). Table 2 shows work performed under Task Orders 3 and 5, which includes tasks identified in the forthcoming Category 1 grant from DWR.

Table 1: Summary of Task/Deliverables Status for Category 2 Tasks (Task Orders 2 and 4)

Task	Work Completed During the Reporting Period	Work Scheduled for Next Period
Task 1: Initiate Work Plan for GSP and Stakeholder Engagement Strategy Development	<ul style="list-style-type: none"> Task 1 is completed; no work was undertaken on this task during this reporting period 	<ul style="list-style-type: none"> Task 1 is completed; no further work is anticipated
Task 2: Data Management System, Data Collection and Analysis, and Plan Review	<ul style="list-style-type: none"> Continued development of data management system (DMS) 	<ul style="list-style-type: none"> Finalize development of the DMS Develop user manuals and training materials for DMS
Task 3: Description of the Plan Area, Hydrogeologic Conceptual Model, and Groundwater Conditions	<ul style="list-style-type: none"> Updated Plan Area section in response to Stakeholder Advisory Committee (SAC) comments Developed proposed responses to comments for Hydrologic Conceptual Model (HCM) GSP section Began development of draft Groundwater Conditions GSP section 	<ul style="list-style-type: none"> Update HCM GSP section in response to comments Begin development of draft Groundwater Conditions GSP section
Task 4: Basin Model and Water Budget	<ul style="list-style-type: none"> Continued development of Integrated Water Flow Model (IWFM) of the Cuyama Basin, including initiating work on IWFM Demand Calculator (IDC) 	<ul style="list-style-type: none"> Continued development of IWFM model
Task 5: Establish Basin Sustainability Criteria	<ul style="list-style-type: none"> Developed draft Undesirable Results narrative and sustainability indicators matrix 	<ul style="list-style-type: none"> Update Undesirable Results narrative and sustainability indicators matrix in response to comments
Task 6. Monitoring Networks	<ul style="list-style-type: none"> No work was completed on this task during this reporting period 	<ul style="list-style-type: none"> Discuss monitoring well locations and areas for potential additions with SAC and CBGSA Board

Task	Work Completed During the Reporting Period	Work Scheduled for Next Period
Task 7: Projects and Actions for Sustainability Goals	<ul style="list-style-type: none"> Identification and refinement of potential projects and actions 	<ul style="list-style-type: none"> Continued identification and refinement of potential projects and actions
Task 8. GSP Implementation	<ul style="list-style-type: none"> No work was completed on this task during this reporting period 	<ul style="list-style-type: none"> No work is anticipated during the next reporting period
Task 9. GSP Development	<ul style="list-style-type: none"> No work was completed on this task during this reporting period 	<ul style="list-style-type: none"> No work is anticipated during the next reporting period
Task 10: Education, Outreach and Communication	<ul style="list-style-type: none"> Participated in meetings with CBGSA Board, Advisory Committee and local stakeholders 	<ul style="list-style-type: none"> Continued participation in meetings with CBGSA Board and advisory committee and local stakeholders
Task 11: Project Management	<ul style="list-style-type: none"> Ongoing project management activities 	<ul style="list-style-type: none"> Ongoing project management activities

Table 2: Summary of Task/Deliverables Status for Category 1 Tasks (Task Orders 3 and 5)

Task	Work Completed During the Reporting Period	Work Scheduled for Next Period
Task 12: Groundwater Monitoring Well Network Expansion	<ul style="list-style-type: none"> Continued compilation and review of existing groundwater monitoring data within the Cuyama Basin 	<ul style="list-style-type: none"> Discuss with SAC and CBGSA Board existing monitoring well locations and areas where added monitoring may provide value Develop summary of existing monitoring wells and data
Task 13: Evapotranspiration Evaluation for Cuyama Basin Region	<ul style="list-style-type: none"> Continued development of METRIC ET estimates for Cuyama Basin 	<ul style="list-style-type: none"> Completion and review of METRIC ET estimates for Cuyama Basin Integration of land use and METRIC ET estimates into Cuyama Basin model
Task 14: Surface Water Monitoring Program	<ul style="list-style-type: none"> Compilation and review of existing and potential surface water monitoring locations within the Cuyama Basin 	<ul style="list-style-type: none"> Identification of surface water monitoring locations and gaps

Task	Work Completed During the Reporting Period	Work Scheduled for Next Period
Task 15: Category 1 Project Management	<ul style="list-style-type: none"> Ongoing project management activities 	<ul style="list-style-type: none"> Ongoing project management activities

2 Budget Status

Table 3 shows the percent spent for each task under Task Order 1. 100% of the available Task Order 1 budget has been expended (\$321,135.00 out of \$321,135).

Table 3: Budget Status for Task Order 1

Task	Total Budget	Spent Previously	Spent this Period	Total Spent to Date	Budget Remaining	% Spent to Date
1	\$ 35,768.00	\$ 35,755.53	\$ -	\$ 35,755.53	\$ 12.47	100%
2	\$ 61,413.00	\$ 61,413.00	\$ -	\$ 61,413.00	\$ -	100%
3	\$ 45,766.00	\$ 45,766.00	\$ -	\$ 45,766.00	\$ -	100%
4	\$ 110,724.00	\$ 110,724.00	\$ -	\$ 110,724.00	\$ -	100%
5	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
6	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
7	\$ 12,120.00	\$ 12,120.00	\$ -	\$ 12,120.00	\$ -	100%
8	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
9	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
10	\$ 45,420.00	\$ 45,432.47	\$ -	\$ 45,432.47	\$ (12.47)	100%
11	\$ 9,924.00	\$ 9,924.00	\$ -	\$ 9,924.00	\$ -	100%
Total	\$ 321,135.00	\$ 321,135.00	\$ -	\$ 321,135.00	\$ -	100%

Table 4 shows the percent spent for each task under Task Order 2 as of July 27, 2018. 90% of the available Task Order 2 budget has been expended (\$359,610.00 out of \$399,469).

Table 4: Budget Status for Task Order 2

Task	Total Budget	Spent Previously	Spent this Period	Total Spent to Date	Budget Remaining	% Spent to Date
1	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
2	\$ 48,457.00	\$ 26,223.50	\$ 4,890.50	\$ 31,114.00	\$ 17,343.00	64%
3	\$ 24,182.00	\$ 24,182.00	\$ -	\$ 24,182.00	\$ -	100%
4	\$ 103,880.00	\$ 103,880.00	\$ -	\$ 103,880.00	\$ -	100%
5	\$ 60,676.00	\$ 53,391.71	\$ 7,284.29	\$ 60,676.00	\$ -	100%
6	\$ 65,256.00	\$ 44,410.50	\$ -	\$ 44,410.50	\$ 20,845.50	68%
7	\$ 36,402.00	\$ 21,313.50	\$ 13,418.00	\$ 34,731.50	\$ 1,670.50	95%
8	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
9	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
10	\$ 45,420.00	\$ 45,420.00	\$ -	\$ 45,420.00	\$ -	100%
11	\$ 15,196.00	\$ 15,196.00	\$ -	\$ 15,196.00	\$ -	100%
Total	\$ 399,469.00	\$ 334,017.21	\$ 25,592.79	\$ 359,610.00	\$ 39,859.00	90%

Table 5 shows the percent spent for each task under Task Order 3 as of July 27, 2018. 64% of the available Task Order 3 budget has been expended (\$120,789.01 out of \$188,238).

Table 5: Budget Status for Task Order 3

Task	Total Budget	Spent Previously	Spent this Period	Total Spent to Date	Budget Remaining	% Spent to Date
12	\$ 53,244.00	\$ 53,244.00	\$ -	\$ 53,244.00	\$ -	100%
13	\$ 69,706.00	\$ 39,960.01	\$ 11,210.00	\$ 51,170.01	\$ 18,536.00	73%
14	\$ 53,342.00	\$ 258.00	\$ 4,171.00	\$ 4,429.00	\$ 48,913.00	8%
15	\$ 11,946.00	\$ 11,946.00	\$ -	\$ 11,946.00	\$ -	100%
Total	\$ 188,238.00	\$ 105,408.01	\$ 15,381.00	\$ 120,789.01	\$ 67,449.00	64%

Table 6 shows the percent spent for each task under Task Order 4 as of July 27, 2018. 21% of the available Task Order 4 budget has been expended (\$157,229.71 out of \$764,396).

Table 6: Budget Status for Task Order 4

Task	Total Budget	Spent Previously	Spent this Period	Total Spent to Date	Budget Remaining	% Spent to Date
1	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
2	\$ 24,780.00	\$ -	\$ -	\$ -	\$ 24,780.00	n/a
3	\$ 26,912.00	\$ 13,889.00	\$ 7,843.00	\$ 21,732.00	\$ 5,180.00	81%
4	\$ 280,196.00	\$ 51,027.31	\$ 41,650.48	\$ 92,677.79	\$ 187,518.22	33%
5	\$ 47,698.00	\$ -	\$ 7,063.57	\$ 7,063.57	\$ 40,634.43	15%
6	\$ -	\$ -	\$ -	\$ -	\$ -	n/a
7	\$ 117,010.00	\$ -	\$ -	\$ -	\$ 117,010.00	n/a
8	\$ 69,780.00	\$ -	\$ -	\$ -	\$ 69,780.00	n/a
9	\$ 91,132.00	\$ -	\$ -	\$ -	\$ 91,132.00	n/a
10	\$ 70,236.00	\$ 18,081.09	\$ 11,775.26	\$ 29,856.35	\$ 40,379.65	43%
11	\$ 36,652.00	\$ 3,561.00	\$ 2,339.00	\$ 5,900.00	\$ 30,752.00	16%
Total	\$ 764,396.00	\$ 86,558.40	\$ 70,671.31	\$ 157,229.71	\$ 607,166.29	21%

Table 7 shows the percent spent for each task under Task Order 5 as of July 27, 2018. 9% of the available Task Order 5 budget has been expended (\$42,106.25 out of \$459,886).

Table 7: Budget Status for Task Order 5

Task	Total Budget	Spent Previously	Spent this Period	Total Spent to Date	Budget Remaining	% Spent to Date
12	\$ 196,208.00	\$ 13,834.35	\$ 21,714.40	\$ 35,548.75	\$ 160,659.25	18%
13	\$ 24,950.00	\$ -	\$ -	\$ -	\$ 24,950.00	n/a
14	\$ 204,906.00	\$ -	\$ -	\$ -	\$ 204,906.00	n/a
15	\$ 33,822.00	\$ 4,617.00	\$ 1,940.50	\$ 6,557.50	\$ 27,264.50	19%
Total	\$ 459,886.00	\$ 18,451.35	\$ 23,654.90	\$ 42,106.25	\$ 417,779.75	9%

3 Schedule Status

The project is on schedule. Work authorized under Task Order 1 is complete.

4 Outstanding Issues to be Coordinated

There are no outstanding issues at this time.