Chapter 1
Appendix 1-A

SVBGSA Joint Exercise of Powers Agreement

JOINT EXERCISE OF POWERS AGREEMENT

establishing the

SALINAS VALLEY BASIN GROUNDWATER SUSTAINABILITY AGENCY

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THIS JOINT EXERCISE OF POWERS AGREEMENT ("Agreement') establishing the Salinas Valley Basin Groundwater Sustainability Agency ("Agency") is made and entered into as of 12/22/16 ("Effective Date"), by and among the public agencies listed on the attached Exhibit "A" (collectively "Members" and individually "Member") for the purpose of forming a Groundwater Sustainable Agency ("GSA") and achieving groundwater sustainability in the Salinas Valley Groundwater Basin.

RECITALS

WHEREAS, in the fall of 2014 the California legislature adopted, and the Governor signed into law, three bills (SB 1168, AB 1739, and SB 1319) collectively referred to as the "Sustainable Groundwater Management Act" ("SGMA"), that initially became effective on January 1, 2015, and that has been amended from time-to-time thereafter; and

WHEREAS, the stated purpose of SGMA, as set forth in California Water Code section 10720.1, is to provide for the sustainable management of groundwater basins at a local level by providing local groundwater agencies with the authority, and technical and financial assistance necessary, to sustainably manage groundwater; and

WHEREAS, SGMA requires the designation of Groundwater Sustainability Agencies ("GSAs") for the purpose of achieving groundwater sustainability through the adoption and implementation of Groundwater Sustainability Plans ("GSPs") or an alternative plan for all medium and high priority basins as designated by the California Department of Water Resources; and

WHEREAS, SGMA requires that the Basin have a designated GSA by no later than June 30, 2017, and an adopted GSP by no later than January 31, 2020, if a high or medium priority basin in critical overdraft, and no later than January 31, 2022, if a high or medium priority basin; and

WHEREAS, SGMA authorizes a combination of local agencies to form a GSA by entering into a joint powers agreement as authorized by the Joint Exercise of Powers Act (Chapter 5 of Division 7 of Title 1 of the California Government Code) ("Act"); and

WHEREAS, each Member is a local agency, as defined by SGMA, within that portion of the Salinas Valley Groundwater Basin ("Basin" and as more fully described below) within Monterey County, which is designated basin number 3-004 in Department of Water Resources Bulletin No. 118 (update 2016), and consisting of seven sub-basins plus that portion of the Paso Robles sub-basin within Monterey County (but not including the adjudicated portion of the

Seaside sub-basin), each of which is designated as either a high or medium priority basin, and one of which (the 180/400 ft. aquifer) is designated in critical overdraft; and

WHEREAS, the Members are therefore authorized to create the Agency for the purpose of jointly exercising those powers granted by the Act, SGMA, and any additional powers which are common among them; and

WHEREAS, the Members, individually and collectively, have the goal of cost effective sustainable groundwater management that considers the interests and concerns of all beneficial uses and users of groundwater within and adjacent to the Basin; and

WHEREAS, the Members hereby enter into this Agreement to establish the Agency to serve as a GSA for the Basin and undertake the management of groundwater resources pursuant to SGMA; and

WHEREAS, the Members intend to cooperate with adjacent GSAs such as any GSA formed over a portion of the Paso Robles sub-basin (3-04.06) within San Luis Obispo County, and the Pajaro Valley Water Management Agency; and

WHEREAS, the Members intend to study the potential for state legislation to, among other amendments, amend the WRA Act to modify the governance structure of the WRA in a form similar to the governance of the Agency established herein and to establish that agency as the statutorily designated GSA for the Basin, or establish a new entity to be so designated;

NOW THEREFORE,

In consideration of the matters recited and the mutual promises, covenants, and conditions set forth in this Agreement, the Members hereby agree as follows:

Article I: Definitions

Section 1.1 – Definitions.

As used in this Agreement, unless the context requires otherwise, the meaning of the terms hereinafter set forth shall be as follows:

(a) "Act" means the Joint Exercise of Powers Act, set forth in Chapter 5 of Division 7 of Title 1 of the California Government Code, sections 6500, *et seq*., as may be amended from time-to-time.

(b) "Agreement" means this Joint Exercise of Powers Agreement establishing the Salinas Valley Basin Groundwater Sustainability Agency.

(c) "Agency" means the Salinas Valley Basin Groundwater Sustainability Agency, which is a separate entity created by this Agreement pursuant to the provisions of the Act and SGMA.

(d) "Agricultural Directors" means the four Directors representing agricultural interests, as more fully set forth in rows (f) – (i) of Exhibit B of this Agreement.

(e) "Agricultural Association" means the Salinas Basin Agricultural Water Association.

(f) "Alternate Director" means an Alternate Director appointed pursuant to Section 6.6 of this Agreement.

(g) "Appointing Authority" means the entity authorized to appoint Primary and Alternate Directors pursuant to Sections 6.2, 6.3 and 6.6 of this Agreement and as identified in Exhibit B to this Agreement.

(h) "Basin" means that portion of the Salinas Valley Groundwater Basin, newly designated no. 3-004 in the Department of Water Resources' Bulletin No. 118 (update 2016), within the County of Monterey and that includes the following sub-basins: 1) 180/400 Foot Aquifer (No. 3-004.01); 2) East Side Aquifer (3-004.02); 3) Forebay Aquifer (3-004.04); 4) Upper Valley Aquifer (3-004.05); 5) Langley Area (3-004.09); 7) the newly designated Monterey sub-basin (3-004.10); and, 8) the portion of the Paso Robles Area (3-004.06) in Monterey County; but not including that portion of the Seaside Area that has been adjudicated, all as their boundaries may be modified from time to time through the procedures described in California Water Code section 10722.2 or by the Department of Water Resources under its separate authority, and not including any other area for which a GSA has been established pursuant to SGMA.

(i) "Board of Directors" or "Board" means the governing body of the Agency as established by Section 6.1 of this Agreement.

(j) "Brown Act" means the California Open Meeting Law, Government Code section 54950 *et seq.*

(k) "Bylaws" means the bylaws adopted by the Board of Directors pursuant to Section 6.8 of this Agreement to govern the day-to-day operations of the Agency.

(l) "Cause" means a conviction of a crime i) of moral turpitude, or ii) involving fraud, misrepresentation, or financial mismanagement, or iii) a finding by an administrative body or agency, or a court of law, that the person has violated any conflict of interest provision of federal, state or local law.

(m) "City Selection sub-Committee" means a subcommittee of the Monterey County City Selection Committee, established by Government Code section 50270 et seq, and consisting of the mayors of the following cities: Gonzales, Soledad, Greenfield, and King City.

(n) "County" means the County of Monterey.

(o) "CPUC" means the California Public Utilities Commission.

(p) "CPUC Regulated Water Company" means an investor owned water company operating in the Basin that has been granted a certificate of public convenience and necessity by the CPUC and is regulated by the CPUC.

(q) "Determination Date" means the date on which the Agency votes to notify the State of its intent to become a GSA as provided in Water Code sections 10723 (a) and (b).

(r) "Director" or "Directors" means Primary and Alternate Directors as set forth in Section 6.6 of this Agreement.

(s) "Director Position(s)" means those eleven Board positions, singularly or plural, established pursuant to Section 6.1 of this Agreement.

(t) "Disadvantaged Community" means a disadvantaged community or economically distressed area as those terms are defined in Water Code section 79702 (as may be amended from time-to-time) within the Basin.

(u) "Effective Date" means the date by which two Members have executed this Agreement which date shall be set forth in the introductory paragraph of this Agreement.

(v) "Fiscal Year" means that period of 12 months beginning July 1 and ending June 30 of each calendar year.

(w) "Groundwater Sustainability Agency" or "GSA" has the meaning set forth in California Water Code section 10721(j).

(x) "Groundwater Sustainability Plan" or "GSP" has the meaning set forth in California Water Code section 10721(k).

(y) "GSA Eligible Entity or Entities" means those entities eligible to become a GSA pursuant to SGMA.

(z) "Initial Board" means the initial Board of Directors established pursuant to Section 6.2, below.

(aa) "Initial Contribution" means the required contribution of Members as set forth in Section 10.4 of this Agreement.

(bb) "Local Agency" or "Local Agencies" has the meaning set forth in California Water Code Section 10721(n).

(cc) "Local small water system" means a system for the provision of piped water for human consumption that serves at least two, but not more than four, service connections, including any collection, treatment, storage, and distribution facilities under control of the operator of such system which are used primarily in connection with such system, and any collection or pretreatment storage facilities not under the control of the operator which are used primarily in connection with such system; it does not include two or more service connections,

which supply dwelling units occupied by members of the same family, on one parcel, all as set forth in Monterey County Code section 15.04.020 (g).

(dd) "Majority Vote" means the affirmative vote of six Directors then present and voting at a meeting of the Board.

(ee) "Member" or "Members" means the GSA Eligible Entities listed in the attached Exhibit "A" that have executed this Agreement, including any new Members that may subsequently join this Agency with the authorization of the Board, pursuant to Section 5.2 of this Agreement.

(ff) "Mutual Water Company" has the meaning set forth in Corporations Code section 14300.

(gg) "Permanent Board" means the permanent Board of Directors established pursuant to Section 6.3 of this Agreement.

(hh) "Permanent Director" means a Director appointed to the Permanent Board.

(ii) "Permanent Director Position" means a Director Position on the Permanent Board.

(jj) "Primary Director" means a Primary Director appointed pursuant to Sections 6.4 of this Agreement.

(kk) "Public Water System" means a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year. A public water system includes the following: (1) Any collection, treatment, storage, and distribution facilities under control of the operator of the system that are used primarily in connection with the system, (2) Any collection or pretreatment storage facilities not under the control of the operator that are used primarily in connection with the system, or (3) Any water system that treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption, all as set forth in Health and Safety Code section 116275 (h).

(ll) "South County Cities" means the cities of Gonzales, Soledad, Greenfield and King City.

(mm) "State" means the State of California.

(nn) "State Small Water System" means a system for the provision of piped water to the public for human consumption that serves at least five, but not more than 14, service connections and does not regularly serve drinking water to more than an average of 25 individuals daily for more than 60 days out of the year, as set forth in California Health and Safety Code section 116275 (n).

(oo) "Super Majority Vote" means the affirmative vote of eight Directors then present and voting at a meeting of the Board.

(pp) "Super Majority Plus Vote" means the affirmative vote of eight Directors then present and voting at a meeting of the Board but including the affirmative vote of three of the Agricultural Directors.

(qq) "Sustainable Groundwater Management Act" or "SGMA" means the comprehensive groundwater legislation collectively enacted and referred to as the "Sustainable Groundwater Management Act" as codified in California Water Code Sections 10720 *et seq.* and as may be amended from time-to-time.

(rr) "WRA" means the Water Resources Agency of the County of Monterey.

Unless otherwise indicated, all statutory references are to the statutory codes of the State.

Article II: The Agency

Section 2.1 – Agency Established.

There is hereby established a joint powers agency known as the Salinas Valley Basin Groundwater Sustainability Agency. The Agency shall be, to the extent provided by law, a public entity separate from the Members of this Agreement.

Section 2.2 – Purpose Of The Agency.

The purpose of Agency is to cooperatively carry out the requirements of SGMA including, but not limited to, serving as the GSA for the Basin and developing, adopting and implementing a GSP that achieves groundwater sustainability in the Basin, all through the exercise of powers granted to a GSA by SGMA and those powers common to the members as provided in the Act.

Article III: Term

Section 3.1 – Term.

This Agreement shall become operative on the Effective Date. Subject to the terms of Sections 11.6, 11.7 and 11.8, below, this Agreement shall remain in effect unless terminated pursuant to Section 11.10, below.

Article IV: Powers

Section 4.1 – Powers.

The Agency shall possess the ability to exercise those powers specifically granted by the Act, SGMA, and the common powers of its Members related to the purposes of the Agency, including, but not limited to, the following:

a) To designate itself the GSA for the Basin pursuant to SGMA.

b) To adopt rules, regulations, policies, bylaws and procedures governing the operation of the Agency and the adoption and implementation of the GSP.

c) To develop, adopt and implement a GSP for the Basin pursuant to SGMA.

d) To retain or employ consultants, advisors, independent contractors, agents and employees.

e) To obtain legal, financial, accounting, technical, engineering, and other services needed to carry out the purposes of this Agreement.

f) To conduct studies, collect and monitor all data related and beneficial to the development, adoption and implementation of the GSP for the Basin.

g) To perform periodic reviews of the GSP including submittal of annual reports.

h) To register and monitor wells.

i) To issue revenue bonds or other appropriate public or private debt and incur debts, liabilities or obligations.

j) To levy taxes, assessments, charges and fees as provided in SGMA or as otherwise provided by law.

k) To regulate and monitor groundwater extractions as permitted by SGMA, provided that this provision does not extend to a Member's operation of its system to distribute water once extracted or otherwise obtained, unless and to the extent required by other laws now in existence or as may otherwise be adopted.

l) To establish and administer projects and programs for the benefit of the Basin.

m) To cooperate, act in conjunction, and contract with the United States, the State, or any agency thereof, counties, municipalities, special districts, groundwater sustainability agencies, public and private corporations of any kind (including without limitation, investor-owned utilities), and individuals, or any of them, for any and all purposes necessary or convenient for the full exercise of the powers of the Agency.

n) To accumulate operating and reserve funds and invest the same as allowed by law for the purposes of the Agency.

o) To apply for and accept grants, contributions, donations and loans under any federal, state or local programs for assistance in developing or implementing any of its projects or programs in connection with any project untaken in the Agency's name for the purposes of the Agency.

p) To acquire by negotiation, lease, purchase, construct, hold, manage, maintain, operate and dispose of any buildings, property, water rights, works or improvements within and without the respective jurisdictional boundaries of the Members necessary to accomplish the purposes describe herein.

q) To sue or be sued in its own name.

r) To invest funds as allowed by law.

s) Any additional powers conferred under SGMA or the Act, or under applicable law, insofar as such powers are needed to accomplish the purposes of SGMA, including all powers granted to the Agency under Article 4 of the Act which are in addition to the common powers of the Members, including the power to issue bonds or otherwise incur debts, liabilities or obligations to the extent authorized by the Act or any other applicable provision of law and to pledge any property or revenues of the rights thereto as security for such bonds and other indebtedness.

t) Any power necessary or incidental to the foregoing powers in the manner and according to the procedures provided for under the law applicable to the Members to this Agreement and to perform all other acts necessary or proper to fully carry out the purposes of this Agreement.

Section 4.2 – Exercise Of Powers.

In accordance with Section 6509 of the Act, the foregoing powers shall be subject to the restrictions upon the manner of exercising such powers pertaining to the County.

Section 4.3 – Water Rights And Consideration Of All Beneficial Uses And Users Of Groundwater In The Basin.

As set forth in Water Code section 10723.2 the GSA shall consider the interests of all beneficial uses and users of groundwater in the Basin, as well as those responsible for implementing the GSP. Additionally, as set forth in Water Code section 10720.5(a) any GSP adopted pursuant to this Agreement shall be consistent with Section 2 of Article X of the California Constitution and nothing in this Agreement modifies the rights or priorities to use or store groundwater consistent with Section 2 of Article X of the California Constitution, with the exception that no extraction of groundwater between January 1, 2015 and the date the GSP is adopted may be used as evidence of, or to establish or defend against, any claim of prescription. Likewise, as set forth in Water Code section 10720.5(b) nothing in this Agreement or any GSP

adopted pursuant to this Agreement determines or alters surface water rights or groundwater rights under common law or any provision of law that determines or grants surface water rights.

Section 4.4 – Preservation Of Police Powers.

Nothing set forth in this Agreement shall be deemed to modify or otherwise limit a Member's police powers in any way, or any authority to regulate groundwater under existing law or any amendment thereto.

Article V: Membership

Section 5.1 – Members.

The Members of the Agency shall be the entities listed on the attached Exhibit A so long as their membership has not been withdrawn or terminated pursuant to the provisions of Article XI of this Agreement. GSA Eligible Entities shall have until the Determination Date to execute this Agreement and pay their Initial Contribution, and become Members. Any GSA Eligible Entity that has not executed this Agreement and paid their Initial Contribution by the Determination Date shall be subject to the process described in Section 5.2, below, to become a Member.

Section 5.2 – New Members.

New Members may be added to the Agency by the unanimous vote of all other Members so long as: 1) the new Member is a GSA Eligible Entity; and, 2) the new Member agrees to or has met any other conditions that the existing Members may establish from time-to-time.

Once an application is approved unanimously by the existing Members the attached Exhibit A shall be amended to reflect the new Member.

Article VI: Directors And Officers

Section 6.1 – Board Of Directors.

The Agency shall be governed and administered by an eleven (11) member Board of Directors which is hereby established. All voting power of the Agency shall reside in the Board.

Section 6.2 – Initial Board of Directors.

An Initial Board shall be composed of the Director Positions with the qualifications and Appointing Authority as described in Exhibit B. The nominating groups identified in Section 6.5, below, may, but are not required to, provide nominations to the relevant Appointing Authority for the Initial Board; however, any such nomination must be received by the respective Appointing Authority no later than January 31, 2017. If such nominations are received no later than the time specified the Appointing Authorities shall follow the respective procedures for

appointment to the Permanent Board set forth in Section 6.5, below. If such nominations are not received by the time specified, the Appointing Authority may make appointments to the Initial Board as it determines in its sole discretion.

The Initial Board shall serve only until September 30, 2017, at which time a Permanent Board shall be appointed as described below.

Section 6.3 – Permanent Board.

Subject to the Appointment and Nominating procedures set forth in Section 6.5, below, beginning on October 1, 2017, a Permanent Board shall be established consisting of the Director Positions with the qualifications and Appointing Authority as described in Exhibit B. With the exception of the CPUC Regulated Water Company Director Position, each Permanent Director Position shall have a term consisting of three (3) years and shall hold office until their successor is appointed by their Appointing Authority and the Agency has been notified of the succession. The terms of Permanent Director Positions shall be staggered, with Director Positions identified in rows (a), (c), (f), (h) and (j) of exhibit C serving three (3) year terms from initial appointment, and those identified in rows (b), (d), (g), (i), and (k) serving two (2) year terms from initial appointment, and thereafter serving three (3) year terms. The CPUC Regulated Water Company Director Position shall serve a term of two (2) years, and a Director shall hold office until their successor is appointed and the Agency has been notified of the succession. Notwithstanding the actual date of their initial appointment, for purposes of establishing the terms of Permanent Directors such initial appointment shall be deemed to have commenced on the July 1 preceding such initial appointment, and the terms of Directors shall thereafter commence on July 1 of the respective appointing year. Each Director Position shall require an affirmative appointment by the Appointing Authority for every term.

Section 6.4 – General Qualifications.

a) Each Director, whether on the Initial Board or Permanent Board, must have the following general qualifications:

i. General education and/or knowledge, interest in and experience relating to the control, storage, and beneficial use of groundwater.

ii. General understanding and knowledge of the Basin and all its beneficial users.

iii. Working knowledge and understanding of how to develop strategic plans, policies, programs, and financing/funding mechanisms.

iv. Genuine commitment to collaboratively work together to (i) achieve groundwater sustainability through the adoption and implementation of a GSP for the Basin, and all its beneficial uses; and (ii) provide for the ongoing sustainable management of the Basin.

v. General knowledge and understanding of one or more of the different facets

(administration, financial, legal, organizational, personnel, etc.) needed for a successful and productive organization.

vi. Ability to commit the time necessary, estimated at a minimum 15-20 hours per month, to responsibly fulfill their commitment to the organization. This includes, but is not limited to: (i) Board meetings, (ii) Board training, (iii) analyzing financial statements and technical reports, (iv) reviewing Board documents before Board meetings, (v) attending Board meetings, and (vi) serving on committees to which they are assigned.

vii. A permanent resident within the Basin, or a representative of an agency with jurisdiction, or a business or organization with a presence, within the Basin.

b) Nominating groups and Appointing Authorities, as described in Section 6.5, should endeavor to avoid nominating or appointing a person to a Director Position that, because of his or her employment or other financial interest, is likely to be disqualified from a substantial number of decisions to be made by the Board on the basis of conflict-of-interest requirements.

Section 6.5 – Appointments and Nominations for Director Positions on the Permanent Board.

The appointment and nominating process for each Primary and Alternate Director Positions on the Permanent Board shall be as follows:

a) City of Salinas Director Position.

The City of Salinas shall appoint the Director Position listed in Row (a) of Exhibit B, the specific qualifications of such Director Position to be at the discretion of the City of Salinas.

b) South County Cities Director Position.

The Director Position listed in Row (b) of Exhibit B shall be filled by a representative from one of the four cities listed therein. The City Selection sub-Committee shall determine which city shall be the Appointing Authority for each term of the Director Position. The specific qualifications of such Director Position shall be at the discretion of that city designated the Appointing Authority. If the City Selection sub-Committee cannot reach agreement on a city to be the Appointing Authority for this Director Position, the County Board of Supervisors shall decide which city shall be the Appointing Authority.

c) Other GSA Eligible Entity Director Position.

i. Representative of the entities listed on Exhibit C shall be eligible to participate in the nominating process for the Other GSA Eligible Entity Director Position listed in Row (c) of Exhibit B.

ii. The representatives collectively by agreement among themselves shall make nominations to the Appointing Authority for the persons to fill both the Primary and Alternate Director Positions when the term of such position are expiring or are vacant.

iii. The representatives shall nominate one or more persons to fill both the Primary and Alternate Director Positions. If more than one person is nominated the representatives shall indicate the preferred nominee.

iv The Appointing Authority shall appoint the nominee (if only one) or appoint from among the nominees; the Appointing Authority may reject a nominee only for Cause. If the representatives cannot or do not forward any nominations the Appointing Authority shall make the appointment based upon its own determination.

v. The representatives may also advise the Appointing Authority regarding the removal of their nominee from the Director Positions for Cause. If the Appointing Authority determines that Cause exists such Director shall be removed and a new Director appointed to fill out the remaining term of the removed Director. The representatives may also request that their nominee in the Director Position be removed for any reason or no reason. If such request is made the Appointing Authority shall remove the Director and a new Director appointed to fill out the remaining term of the removed Director.

vi. From time-to-time entities may ask to be removed from Exhibit C. If such request is made the Appointing Authority shall notify the other Members and the Board, and Exhibit C shall be modified accordingly.

vii. From time-to-time other entities may request to be included on Exhibit C. The then-existing representatives shall inform the Appointing Authority if such requests are acceptable. If accepted by the representatives the Appointing Authority shall notify the other Members and the Board, and Exhibit C shall be modified accordingly.

d) Disadvantaged Community, or Public Water System Systems, including Mutual Water Companies serving residential customers, Director Position.

i. Representative of the entities listed on Exhibit D shall be eligible to participate in the nominating process for the Disadvantaged Community, or Public Water System Systems, including Mutual Water Companies serving residential customers, Director Position listed in Row (d) of Exhibit B.

ii. The representatives by agreement among themselves shall collectively make nominations to the Appointing Authority for the persons to fill both the Primary and Alternate Director Positions when the term of such positions are expiring or are vacant.

iii. The representatives shall nominate one or more persons to fill both the Primary and Alternate Director Positions. If more than one person is nominated the representatives shall indicate the preferred nominee.

iv. The Appointing Authority shall appoint the nominee (if only one) or appoint from among the nominees; the Appointing Authority may reject a nominee only for Cause. If the representatives cannot or do not forward any nominations the Appointing Authority shall make the appointment based upon its own determination.

v. The representatives may also advise the Appointing Authority regarding the removal of their nominee from the Director Positions for Cause. If the Appointing Authority determines that Cause exists such Director shall be removed and a new Director appointed to fill out the remaining term of the removed Director. The representatives may also request that their nominee in the Director Position may be removed for any reason or no reason. If such request is made the Appointing Authority shall remove the Director and a new Director appointed to fill out the remaining term of the removed Director.

vi. From time-to-time entities may ask to be removed from Exhibit D. If such request is made the Appointing Authority shall notify the other Members and the Board, and Exhibit D shall be modified accordingly.

vii. From time-to-time other entities may request to be included on Exhibit D. The then-existing representatives shall inform the Appointing Authority if such requests are acceptable. If accepted by the representatives the Appointing Authority shall notify the other Members and the Board, and Exhibit D shall be modified accordingly.

e) CPUC Regulated Water Company Director Position.

i. Representative of the entities listed on Exhibit E must meet the requirements of Section 1.1 (o) and shall be eligible to participate in the nominating process for the CPUC Regulated Water Company Director Position listed in Row (e) of Exhibit B.

ii. The representatives by agreement among themselves shall collectively make nominations to the Appointing Authority for the persons to fill both the Primary and Alternate Director Positions when the term of such position are expiring or are vacant.

iii. The representatives shall nominate one or more persons to fill both the Primary and Alternate Director Positions. If more than one person is nominated the representatives shall indicate the preferred nominee.

iv The Appointing Authority shall appoint the nominee (if only one) or appoint from among the nominees; the Appointing Authority may reject a nominee only for Cause. If the representatives cannot or do not forward any nominations the Appointing Authority shall make the appointment of an employee or agent of a CPUC Regulated Water Company listed on Exhibit E based upon its own determination.

v. The representatives may also advise the Appointing Authority regarding the removal of their nominee from the Director Position for Cause, although such authority to remove shall rest solely with the Appointing Authority.

vi. From time-to-time entities may ask to be removed from Exhibit E. If such request is made the Appointing Authority shall notify the other Members and the Board, and Exhibit E shall be modified accordingly.

vii. From time-to-time other entities may request to be included on Exhibit E. The then-existing representatives shall inform the Appointing Authority if such requests are acceptable. If accepted by the representatives the Appointing Authority shall notify the other Members and the Board, and Exhibit E shall be modified accordingly.

f) Agriculture Director Positions.

i. The Agricultural Association shall be eligible to participate in the nominating process for the Agriculture Director Positions listed in Rows (f) – (i) of Exhibit B. The Agricultural Association shall be solely responsible for its membership.

ii. The Agricultural Association shall make nominations to the Appointing Authority for the persons to fill each Primary and Alternate Director Position when the terms of such positions are expiring or are vacant.

iii. The Agricultural Association shall nominate at least two persons to fill each Director Position; the Agricultural Association shall indicate the preferred nominee for each Director Position.

iv The Appointing Authority shall appoint from among the nominees for each Director Position; the Appointing Authority may reject a nominee only for Cause. If the Agricultural Association cannot or does not forward any nominations the Appointing Authority shall make the appointment based upon its own determination.

v. The Agricultural Association may also advise the Appointing Authority regarding the removal of a nominee from a Director Position for Cause. If the Appointing Authority determines that Cause exists such Director shall be removed and a new Director appointed to fill out the remaining term of the removed Director. The Agricultural Association may also request that

their nominee in a Director Position may be removed for any reason or no reason. If such request is made the Appointing Authority shall remove the Director and a new Director appointed to fill out the remaining term of the removed Director.

g) Environment Director Position.

i. Representative of the entities listed on Exhibit F shall be eligible to participate in the nominating process for the Environment Director Position listed in Row (j) of Exhibit B.

ii. The representatives by agreement among themselves shall collectively make nominations to the Appointing Authority for the persons to fill both the Primary and Alternate Director Positions when the term of such positions are expiring or are vacant.

iii. The representatives shall nominate at least two persons to fill both the Primary and Alternate Director Positions and the representatives shall indicate the preferred nominee.

iv The Appointing Authority shall appoint from among the nominees; the Appointing Authority may reject a nominee only for Cause. If the representatives cannot or do not forward any nominations the Board shall solicit applications from interested persons. At an open public meeting, the Board shall select qualified applicants whose names shall be forwarded to the Appointing Authority. The Board may indicate a preferred nominee. The Appointing Authority shall make the appointment from the list of candidates in its sole discretion. If the Board cannot, or does not, forward a list of candidates, the Appointing Authority shall make the appointment based upon its own determination.

v. The representatives may also advise the Appointing Authority regarding the removal of their nominee from the Director Position for Cause. If the Appointing Authority determines that Cause exists such Director shall be removed and a new Director appointed to fill out the remaining term of the removed Director. The representatives may also request that their nominee in the Director Position may be removed for any reason or no reason. If such request is made the Appointing Authority shall remove the Director and a new Director appointed to fill out the remaining term of the removed Director.

vi. From time-to-time entities may ask to be removed from Exhibit F. If such request is made the Appointing Authority shall notify the other Members and the Board, and Exhibit F shall be modified accordingly.

vii. From time-to-time other entities may request to be included on Exhibit F. The then-existing representatives shall inform the Appointing Authority if such requests are acceptable. If accepted by the representatives the

Appointing Authority shall notify the other Members and the Board, and Exhibit F shall be modified accordingly.

h) Public Member Director Position.

i. The Public Member Primary and Alternate Director Positions listed in Row (k) of Exhibit B shall be filled by application to the Board when the term of such position is expiring or is vacant.

ii. Board staff shall process the applications to an open and public meeting of the Board.

iii. At the public hearing, the Board shall select the qualified applicants whose names shall be forwarded to the Appointing Authority. The Board may indicate a preferred nominee.

iv The Appointing Authority shall appoint from among the nominees in its sole discretion. If the Board cannot or does not forward any nominations the Appointing Authority shall make the appointment based upon its own determination.

v. The Board may also advise the Appointing Authority regarding the removal of the Public Member Director for Cause, although such authority to remove shall rest solely with the Appointing Authority.

Section 6.6 – Primary Directors And Alternates.

Subject to the Appointing and Nominating procedures set forth in Section 6.5, above, each Appointing Authority shall appoint one Primary Director and one Alternate Director for each Director Position. With the exception of the Chairperson and Vice-Chairperson duties as more fully described in Section 6.7, below, the Alternate Director shall serve and assume the rights and duties of the Primary Director when the Primary Director is unable to attend or participate in a Board meeting. Unless appearing as a substitute for a Primary Director, Alternate Directors shall have no vote, and shall not participate in any discussions or deliberations of the Board, but may appear at Board meetings as members of the public. The Primary and Alternate Directors may be removed by their Appointing Authority only for Cause only upon the recommendation of or consultation with the nominating body for that Director Position, or upon the request of the nominating body for that Director Position. In the event that a Primary or Alternate Director is removed from their position, that Director Position shall become vacant and the Appointing Authority for that Director Position shall appoint a new Primary or Alternate Director pursuant to the provisions of Section 6.5 who shall fill the remaining term of that Director Position. In the event that a Director resigns from a Director Position, the Board shall notify the nominating body for that Director Position and the Appointing Authority for that Director Position shall appoint a new Primary or Alternate Director pursuant to the provisions of Section 6.5 who shall fill the remaining term of that Director Position.

Section 6.7 – Officers Of The Board.

a) Designation.

Officers of the Board shall consist of a Chairperson and Vice-Chairperson who shall be selected from the Primary Directors. The Chairperson shall preside at all meetings of the Board. Notwithstanding the appointment of an Alternate Director for the Chairperson, the Vice-Chairperson shall perform the duties of the Chairperson in the absence or disability of the Chairperson; however, the Alternate Director may otherwise attend and participate in the meeting as a substitute for the absent Primary Director. The Chairperson and Vice-Chairperson shall exercise and perform such other powers and duties as may be assigned by the Board. In the absence of both the Chairperson and Vice-Chairperson, and notwithstanding the appointment of an Alternate Director for the Director Position serving as Vice-Chairperson, the Board shall elect a Chairperson Pro-Tem from the Primary Directors to preside at a meeting; however, the Alternate Director for the Vice-Chairperson may otherwise attend and participate in the meeting as a substitute for the absent Primary Director.

b) Election.

The Board shall elect officers at the initial meeting of the Board, described in Section 7.1, below. The Primary Director appointed by the City of Salinas shall be designated as the Chairperson Pro Tem to convene and preside at the initial meeting of the Board, described in Section 7.1, until a Chairperson is elected by the Board. The Chairperson so elected shall serve in such capacity until June 30 of the succeeding calendar year. Thereafter, the Board shall annually elect the officers of the Board from the Primary Directors. Officers of the Board shall hold office for a term of one year commencing on July 1 of each calendar year and they may serve for multiple consecutive terms. Officers of the Board may be removed and replaced at any time, with or without cause, by a Majority Vote. In the event that an officer loses their position as a Primary Director, that officer position shall become vacant and the Board shall elect a new officer from existing Primary Directors to serve the remaining officer term.

Section 6.8 – Bylaws.

The Board shall adopt Bylaws governing the conduct of meetings and the day-to-day operations of the Agency on or before the first anniversary of the Effective Date.

Section 6.9 – Official Seal And Letterhead.

The Board may adopt, and/or amend, an official seal and letterhead for the Agency.

Section 6.10 – Conflict of Interest.

Directors shall be subject to the provisions of the California Political Reform Act, California Government Code section 81000 et seq, and all other laws governing conflicts of interests. Directors shall file the statements required by Government Code section 87200, et seq.

Article VII: Board Meetings And Actions

Section 7.1 – Initial Meeting.

The initial meeting of the Board shall be held at either the County Board of Supervisors chambers, located at 168 W. Alisal Street in Salinas, or at the Salinas City Council chambers, located at 200 Lincoln Avenue in Salinas within thirty days (30) days of the Effective Date of this Agreement. The date and time of the meeting shall be prominently publicized and noticed in addition to any requirements of the Brown Act in an effort to maximize public participation.

Section 7.2 – Regular Meeting Schedule.

At its initial meeting, and annually before July 1 of each calendar year thereafter, the Board shall establish a schedule of regular meetings, including time and place, at a location overlying the Basin. The Board may vote to change the regular meeting location, time and place, and may call special or emergency meetings, provided that the new, special or emergency meeting location remains at a place overlying the Basin, unless otherwise authorized by the Brown Act.

Section 7.3 – Principal Office.

At its initial meeting the Board shall establish a principal office for the Agency, which shall be located at a place overlying the Basin. The Board may change the principal office from time to time as the Board sees fit so long as that principal office remains at a location overlying the Basin.

Section 7.4 – Conduct Of Board Meetings.

Meetings of the Board of Directors shall be noticed, held, and conducted in accordance with the provisions of the Brown Act and such By-laws as the Board may adopt that are consistent with the Brown Act.

Section 7.5 – Quorum.

A quorum of the Board shall consist of a majority of the Director Positions.

Section 7.6 – Voting.

Each Director Position shall have one vote. In all cases, when a quorum is present, a Majority Vote shall be required to conduct business, unless a Super Majority Vote or a Super Majority Plus Vote is required.

Section 7.7 – Super Majority Vote Requirement.

Items that require a Super Majority Vote include the following unless otherwise required by law:

a) Approval of a GSP;

b) Amendment of budget and transfer of appropriations;

c) Withdrawal of Members pursuant to Section 11.6 (d); and,

d) Termination of Members pursuant to Section 11.7 (c).

Section 7.8 – Super Majority Plus Vote Requirement.

Items that require a Super Majority Plus Vote include the following unless otherwise required by law:

a) Decisions to impose fees not requiring a vote of the electorate or property owners;

b) Proposals to submit to the electorate or property owners (as required by law) decisions to impose fees or taxes; and

c) Limitations on well extractions (pumping limits).

Section 7.9 – Conflict Of Interest Code.

At the initial meeting of Board, the Board shall begin the process for adoption and filing of a Conflict of Interest Code pursuant to the provisions of the Political Reform Act of 1974 (Government Code section 81000 et seq.).

Article VIII: Board Committees

Section 8.1 – Committees Of The Board.

a) Board Committees.

The Board may from time-to-time establish one or more standing or ad hoc committees consisting of Directors to assist in carrying out the purposes and objects of the Agency, including but not limited to a Budget and Finance Committee, Planning Committee, and an Executive Committee. The Board shall determine the purpose and need for such committees. Meetings of standing committees shall be subject to the requirements of the Brown Act.

b) Advisory Committee.

The Board shall establish an advisory committee consisting of Directors and non-Directors. The advisory committee shall be designed to ensure participation by and input to the Board of those constituencies set forth in Water Code section 10723.2 whose interests are not directly represented on the Board. The Board shall determine the number and qualifications of committee members.

Article IX: Operations And Management

Section 9.1 – Initial Administrative And Legal Services.

One or more of the Members shall provide initial administrative, legal and other support services to the Agency at no charge until the appointment of the Permanent Board as provided in Section 6.3, above. The Members shall collectively determine which of the Members shall provide such services.

Section 9.2 – Contracting Administrative And Legal Services.

The Agency may engage one or more Members to provide administrative or legal services following the conclusion of the initial administrative and legal services described in Section 9.1 of this Agreement, on terms and conditions acceptable to the Board. Any Member so engaged shall have such responsibilities as are set forth in the contract for such Member's services.

Section 9.3 – Executive Director.

The Agency may appoint an Executive Director from time-to-time under terms and conditions to be determined by the Board. The Executive Director shall report to and serve at the pleasure of the Board. The Executive Director shall be responsible for the general administration of the Agency, the preparation and implementation of a GSP, and such other duties as may be determined by the Board. If the Board has contracted for administrative services as described in Section 9.2, above, and appoints an Executive Director, the Executive Director shall be responsible for the oversight and control of such contracted administrative services pursuant to the policies and directives established by the Board.

Section 9.4 – Legal Counsel And Other Officers.

a) General Counsel

The Agency may appoint a General Counsel from time-to-time under terms and conditions to be determined by the Board. The General Counsel shall report to and serve at the pleasure of the Board. The General Counsel shall be responsible for the general oversight of the Agency's legal affairs, including litigation. The Board may contract with other counsel for specialized legal services under the supervision of the General Counsel.

b) Treasurer and Auditor

The City of Salinas shall serve as the initial Treasurer and Auditor for the Agency upon its formation, and shall discharge the duties set forth in Sections 6505 and 6505.5 of the Act. Subsequent to formation of the Agency, the Board may appoint a separate Treasurer or separate Auditor pursuant to Section 6505.6 of the Act, and those officers shall discharge the duties set forth in Sections 6505 and 6505.5 of the Act, respectively. The Board may change such Auditor or Treasurer from time-to-time provided such chance is consistent with the Act.

c) Custodian of Property

The Public Works Director of the City of Salinas ("PW Director") shall serve as the initial Custodian of the Agency's Property as set forth in Section 6505.1 of the Act upon the Agency's formation. The PW Director shall file an official bond as described in Government Code section 1450 et seq. in the amount of $50,000, the premium of which shall be paid by the Agency. Subsequent to the formation of the Agency, the Board may designate a different Custodian provided such Custodian files an official bond in an amount required by the Board.

b) Other Officers

Subject to the limits of the Agency's approved budget, the Board may establish other officer positions and appoint and contract for the services of such other officers as it may deem necessary or convenient for the business of the Agency, all of whom shall serve at the pleasure of the Board.

Section 9.5 – Employees.

Subject to the limits of the Agency's approved budget, the Agency may hire employees to discharge the duties and responsibilities of the Agency, subject to the general oversight and control of the Executive Director.

Section 9.6 – Independent Contractors.

Subject to the limits of the Agency's approved budget, the Board may contract for the services of such consultants, advisers and independent contractors as it may deem necessary or convenient for the business of the Agency.

Article X: Financial Provisions

Section 10.1 – Fiscal Year.

The Fiscal Year of the Agency shall be July 1 – June 30.

Section 10.2 – Establishment Of Funds.

The Board shall establish and maintain such funds and accounts as may be required by generally accepted government accounting practices. The Agency shall maintain strict accountability of all funds and report all receipts and disbursements of the Agency on no less than a quarterly basis.

Section 10.3 – Budgets.

a) Initial Budgets

The initial budget of the Agency for the Fiscal Year ending June 30, 2017, shall not exceed $50,000. The budgets of the Agency for Fiscal Years 2017 – 2018 and 2018 – 2019 shall not exceed $1,100,000 each unless otherwise agreed to by the unanimous vote of the Members as

described in Section 10.4, below.

b) Regular Budgets

Beginning for Fiscal Year 2019 – 2020, no later than sixty (60) days prior to the end of each Fiscal Year, the Board shall adopt a budget for the Agency for the ensuing Fiscal Year. The Board may authorize mid-year budget adjustments, as needed by Super Majority Vote.

Section 10.4 – Initial Contributions.

a) Fiscal Years 2017 – 2018 and 2018 - 2019

In order to provide the necessary capital to initially fund the Agency during Fiscal Year 2017 - 2018, the Members identified below shall each provide the listed Initial Contribution to the Agency's Treasurer/Auditor no later than July 7, 2017:

1)	County:	$670,000
2)	WRA:	$ 20,000
3)	City of Salinas:	$330,000
4)	City of Gonzales:	$ 20,000
5)	City of Soledad:	$ 35,000
6)	City of Greenfield:	$ 35,000
7)	City of King:	$ 30,000
8)	Castroville CSD	$ 20,000

In order to provide the necessary capital to fund the Agency during Fiscal Year 2018 – 2019, the Members identified below shall each provide the listed Initial Contribution to the Agency's Treasurer/Auditor no later than July 6, 2018:

1)	County:	$670,000
2)	WRA:	$ 20,000
3)	City of Salinas:	$330,000
4)	City of Gonzales:	$ 20,000
5)	City of Soledad:	$ 35,000
6)	City of Greenfield:	$ 35,000
7)	City of King:	$ 30,000
8)	Castroville CSD	$ 20,000

b) Additional Initial Contributions

New Members not listed above executing this Agreement no later than the Determination Date shall pay a minimum Initial Contribution of twenty thousand dollars ($20,000) per year for the two fiscal years. New Members not listed above executing this Agreement after the

Determination Date shall pay a minimum Initial Contribution of fifty thousand dollars ($50,000) per year for the two fiscal years.

Should the Board determine that additional funding for each of Fiscal Years 2017 – 2018 and 2018 – 2019 is necessary for Agency operations the Board shall adopt a resolution requesting each of the Members to consider additional funding and demonstrating in detail 1) the need for the funding, and 2) the purposes for which the additional funding will be utilized. Such requested funding shall be in the same proportion as the Initial Contributions set forth in Section 10.4 (a) unless the Members unanimously agree otherwise.

Upon receipt of the resolution requesting additional funding representatives of the Members may meet and confer regarding the request; however, each Member shall consider and act upon the request no later than 30 (thirty) days following the adoption of the resolution by the Board.

c) Reimbursement of Initial Contributions

To the extent the Agency is able to secure other funding sources, and to the extent permitted by law, the Agency shall reimburse these Initial Contributions to the Members on a proportionate basis in relation to their cumulative Initial Contributions to the Agency.

Section 10.5 – Payments To The Agency.

All costs and expenses of the Agency may be funded from: (i) voluntary contributions from third parties; (ii) grants; (iii) contributions from Members from time to time to supplement financing of the activities of the Agency; (iv) advances or loans from the Members or other sources; (v) bond revenue; and, (vi) taxes, assessments, fees and/or charges levied by the Agency under the provisions of SGMA or as otherwise authorized by law.

Section 10.6 – Directors' Stipends and Expenses.

Directors shall be eligible to receive a stipend in the amount of $ 100 for each Board meeting actually attended plus mileage to and from Board meetings. In addition, Directors shall be reimbursed for the actual and necessary expenses incurred in the discharge of their duties pursuant to an adopted Board policy. Directors are not required to accept the stipend or mileage, or expenses, and may decline the same by written notice to the Board.

Article XI: Relationship Of Agency And Its Members

Section 11.1 – Separate Entity.

In accordance with Sections 6506 and 6507 of the Act, the Agency shall be a public entity separate and apart from the Members.

Section 11.2 – Liabilities.

In accordance with Section 6507 of the Act, the debt, liabilities and obligations of the Agency shall be the debts, liabilities and obligations of the Agency alone and not of its Members. The Members do not intend hereby to be obligated either jointly or severally for the debts, liabilities or obligations of the Agency, except as may be specifically provided for in California Government Code Section 895.2 as amended or supplemented.

Section 11.3 – Insurance.

The Agency shall procure appropriate policies of insurance providing coverage to the Agency and its Directors, officers and employees for general liability, errors and omissions, property, workers compensation, and any other coverage the Board deems appropriate. Such policies shall name the Members, their officers and employees as additional insureds.

Section 11.4 – Indemnity.

Funds of the Agency may be used to defend, indemnify, and hold harmless the Agency, each Member, each Director, and any officers, agents and employees of the Agency for their actions taken within the course and scope of their duties while acting on behalf of the Agency. To the fullest extent permitted by law, the Agency agrees to save, indemnify, defend and hold harmless each Member from any liability, claims, suits, actions, arbitration proceedings, administrative proceedings, regulatory proceedings, losses, expenses or costs of any kind, whether actual, alleged or threatened, including attorney's fees and costs, court costs, interest, defense costs, and expert witness fees, where the same arise out of, or are attributable in whole or in part, to negligent acts or omissions of the Agency or its employees, officers or agents or the employees, officers or agents of any Member, while acting within the course and scope of an Member relationship with the Agency. Notwithstanding the foregoing, the sole negligence, gross negligence, or intentional acts of any Member is exempted from this Section 11.3 - Indemnity.

Section 11.5 – Agreements With Members

The Agency intends to carry out activities in furtherance of its purposes consistent with the powers established by this Agreement and with the participation of all Members. Notwithstanding the foregoing, the Board shall have the authority to approve any agreements with one or more Members in order to further the purposes of the Agency, including, but not limited to, the commencement of a condemnation action within the jurisdictional boundary of the agreeing Member or Members.

Section 11.6 – Withdrawal Of Members.

a) Any Member shall the have the ability to withdraw by providing ninety (90) days written notice of its intention to withdraw. Said notice shall be given to the Board and to each of the other Members. If such Member is an Appointing Authority, the Member's withdrawal shall not be effective unless and until the non-withdrawing Members agree to an amendment to this

Agreement providing for the composition of and appointment to the Board.

b) A Member shall not be fiscally liable for any contribution to an adopted budget provided that the Member provides written notice ninety (90) days prior to the adoption of the budget of its intention to withdraw.

c) In the event of a withdrawal, this Agreement shall continue in full force and effect among the remaining members as set forth in Section 11.8, below.

d) Notwithstanding the foregoing, Members shall not have the ability to withdraw if there is outstanding bonded debt or other long term liability of the Agency unless and until it is determined by the Board by Super Majority Vote that the withdrawal of the Member shall not adversely affect the ability of the Agency to perform its financial obligations pursuant to the bonded debt or other liability. The Board shall communicate its finding to the non-withdrawing Members who may approve the withdrawal by unanimous vote.

Section 11.7 – Termination Of Members.

a) As an alternative to pursuing litigation against a Member for failure to meet its funding obligations set forth in this Agreement or as may be adopted by the Board from time to time, the Board may vote to terminate such Member. The Board shall transmit its determination to the Members who may approve the termination by unanimous vote of the Members not proposed to be terminated. If such Member is an Appointing Authority, the Member's termination shall not be effective unless and until the non-terminated Members agree to an amendment to this Agreement providing for the composition of and appointment to the Board.

b) In the event of a termination, this Agreement shall continue in full force and effect among the remaining members as set forth in Section 11.8, below.

c) Notwithstanding the foregoing, Members may not be terminated if there is outstanding bonded debt or other long term liability of the Agency unless and until it is determined by the Board by Super Majority Vote that the termination of the Member shall not adversely affect the ability of the Agency to perform its financial obligations pursuant to the bonded debt or other liability. The Board shall communicate its finding to the Members who may approve the termination by unanimous vote of the Members not proposed to be terminated.

Section 11.8 – Continuing Obligations; Withdrawal Or Termination.

a) Provided that at least two Members remain, the withdrawal or termination of one or more Members shall not terminate this Agreement or result in the dissolution of the Agency; this Agreement shall remain in full force and effect among the remaining Members; and the Agency shall remain in operation.

b) Except as provided in Section 11.6 (b), any withdrawal or termination of a Member shall not relieve the Member of its financial obligations under this Agreement in effect prior to the effective date of the withdrawal or termination.

Section 11.9 – Disposition Of Money Or Property Upon Board Determination Of Surplus.

Upon determination by the Board that any surplus money is on hand, such surplus money shall be returned to the then existing Members in proportion to their cumulative contributions to the Agency, or such surplus money may be deposited in a Board designated reserve account. Upon determination by the Board that any surplus properties, works, rights and interests of the Agency are on hand, the Board shall first offer any such surplus for sale to the Members and such sale shall be based on highest bid received. If no such sale is consummated, the Board shall offer the surplus properties, works, rights and interests of the Agency for sale in accordance with applicable law to any governmental agency, private entity or persons for good and adequate consideration.

Section 11.10 – Termination And Dissolution.

a) Mutual Consent

i) Except as otherwise provided in this Section 11.10 (a), this Agreement may be terminated and the Agency dissolved at any time upon the unanimous approval of the Members provided that provision has been made by the Members for the payment, refunding, retirement, or other disposition of any bonded debt or other long term liability in the name of the Agency.

ii) Upon Dissolution of the Agency, each then existing Member shall receive a proportionate share, based upon the cumulative contributions of all then remaining Members, of any remaining assets after all Agency liabilities and obligations have been paid in full. The distribution of remaining assets may be made "in kind" or assets may be sold and the proceeds thereof distributed to the Members. The Agency shall remain in existence for such time as is required to determine such distribution, and the Board, or other person or entity appointed by the Members, shall be responsible for its determination. Such distribution shall occur within a reasonable time after a decision to terminate this Agreement and dissolve the Agency has been approved by the Members. No former Member that previously withdrew or was terminated as of the effective date of the decision to terminate this Agreement and dissolve the Agency shall be entitled to a distribution upon dissolution.

b) Insufficient Members

Subject to the provisions of Sections 11.6 and 11.7, should Members either be terminated or withdraw such that only one Member remains, this Agreement shall terminate and the Agency dissolved. In such event the last remaining Member shall be entitled to all assets of the Agency.

c) Failure to be Financially Sustainable

In the event that the Agency does not take the necessary actions to create a sustainable revenue stream necessary to fully finance its operating budget by the end of Fiscal Year 2018 – 2019 this Agreement shall terminate and the Agency shall be dissolved, unless otherwise agreed to by amendment to this Agreement approved unanimously by all then-existing Members. In the event of such termination and dissolution, the process of dissolution shall begin on July 1, 2019, and proceed as set forth in Section 11.10 (a) (ii), above.

d) Legislative Determination

Should the State adopt legislation specifying that the Basin should be managed by a statutorily designated entity this Agreement shall terminate and the Agency shall be dissolved upon such terms and conditions as the legislation may designate. Upon such dissolution, the assets and liabilities of the Agency shall be disposed of in the manner specified by the legislation. If the legislation does not so specify, the assets and liabilities of the Agency shall be disposed of in the manner provided in Section 11.10 (a), above.

Article XII: Miscellaneous Provisions

Section 12.1 – Complete Agreement.

The foregoing constitutes the full and complete Agreement of the Members. This Agreement supersedes all prior agreements and understandings, whether in writing or oral, related to the subject matter of this Agreement that are not set forth in writing herein.

Section 12.2 – Amendment.

This Agreement may be amended from time-to-time by the unanimous consent of the Members, acting through their governing bodies. Such amendments shall be in the form of a writing signed by each Member.

Section 12.3 – Successors And Assigns.

The rights and duties of the Members may not be assigned or delegated without the written consent of all other Members. Any attempt to assign or delegate such rights or duties in contravention of this Agreement shall be null and void. Any assignment or delegation permitted under the terms of this Agreement shall be consistent with the terms of any contracts, resolutions or indentures of the Agency then in effect.

This Agreement shall inure to the benefit of and be binding upon the successors and assigns of the Members hereto. This section does not prohibit a Member from entering into an independent agreement with another person, entity, or agency regarding the financing of that Member's contributions to the Agency or the disposition of proceeds, which that Member receives under this Agreement so long as such independent agreement does not affect, or purport to affect, the rights and duties of the Agency or the Members under this Agreement.

Section 12.4 – Dispute Resolution.

In the event there are disputes and/or controversies relating to the interpretation, construction, performance, termination, breach of, or withdrawal from this Agreement, the Members involved shall in good faith meet and confer within twenty-one (21) calendar days after written notice has been sent to all the Members. In the event that the Members involved in the dispute ("Disputing Members") are not able to resolve the dispute through informal negotiation, the Disputing Members agree to submit such dispute to formal mediation before litigation. If Disputing Members cannot agree upon the identity of a mediator within ten (10) business days

after a Disputing Member requests mediation, then the non-Disputing Members shall select a mediator to mediate the dispute. The Disputing Members shall share equally in the cost of the mediator who ultimately mediates the dispute, but neither of the Disputing Members shall be entitled to collect or be reimbursed for other related costs, including but not limited to attorneys' fees. If mediation proves unsuccessful and litigation of any dispute occurs, the prevailing Member shall be entitled to reasonable attorneys' fees, costs and expenses in addition to any other relief to which the Member may be entitled. If a Disputing Members refuses to participate in mediation prior to commencing litigation, that Member shall have waived its right to attorneys' fees and costs as the prevailing party.

Section 12.5 – Execution In Parts Or Counterparts.

This Agreement may be executed in parts or counterparts, each part or counterpart being an exact duplicate of all other parts or counterparts, and all parts or counterparts shall be considered as constituting one complete original and may be attached together when executed by the Members hereto. Facsimile or electronic signatures shall be binding.

Section 12.6 – Member Authorization.

The governing bodies of the Members have each authorized execution of this Agreement, as evidenced by their respective signatures below.

Section 12.7 – No Predetermination Or Irrevocable Commitment of Resources.

Nothing herein shall constitute a determination by the Agency or any Members that any action shall be undertaken or that any unconditional or irrevocable commitment of resources shall be made, until such time as the required compliance with all local, state, or federal laws, including without limitation the California Environmental Quality Act, National Environmental Policy Act, or permit requirements, as applicable, have been completed.

Section 12.8 – Notices.

Notices authorized or required to be given pursuant to this Agreement shall be in writing and shall be deemed to have been given when mailed, postage prepaid, or delivered during working hours to the addresses set forth for each of the Members hereto on Exhibit "A" of this Agreement, or to such other changed addresses communicated to the Agency and the Members in writing.

Section 12.9 – Severability And Validity Of Agreement.

Should the participation of any Member, or any part, term or provision of this Agreement, be decided by the courts or the legislature to be illegal, in excess of that Member's authority, in conflict with any law of the State, or otherwise rendered unenforceable or ineffectual, the validity of the remaining portions, terms or provisions of this Agreement shall not be affected thereby and each Member hereby agrees it would have entered into this Agreement upon the same remaining terms as provided herein.

Section 12.10 – Singular Includes Plural.

Whenever used in this Agreement, the singular form of any term includes the plural form and the plural form includes the singular form.

IN WITNESS WHEREOF, the Members hereto, pursuant to resolutions duly and regularly adopted by their respective governing boards, have caused their names to be affixed by their proper and respective officers as of the day and year so indicated.

COUNTY OF MONTEREY

By _____
Chair of the Board of Supervisors

Dated: 12-22-16

APPROVED AS TO FORM

CHARLES J. MCKEE, County Counsel

By _____
LESLIE J. GIRARD

WATER RESOURCES AGENCY OF THE COUNTY OF MONTEREY

By _____
Chair of the Board of Supervisors of the Water Resources Agency

Dated: 1-31-2017

APPROVED AS TO FORM

CHARLES J. MCKEE, County Counsel

By _____

CITY OF SALINAS

By _____
Mayor

Dated: _____

Section 12.10 – Singular Includes Plural.

Whenever used in this Agreement, the singular form of any term includes the plural form and the plural form includes the singular form.

IN WITNESS WHEREOF, the Members hereto, pursuant to resolutions duly and regularly adopted by their respective governing boards, have caused their names to be affixed by their proper and respective officers as of the day and year so indicated.

COUNTY OF MONTEREY

By _____
Chair of the Board of Supervisors

Dated: _____

APPROVED AS TO FORM

CHARLES J. MCKEE, County Counsel

By _____

WATER RESOURCES AGENCY OF THE COUNTY OF MONTEREY

By _____
Chair of the Board of Supervisors of the Water Resources Agency

Dated: _____

APPROVED AS TO FORM

CHARLES J. MCKEE, County Counsel

By _____

CITY OF SALINAS

By _____
Mayor

Dated: 12-20-16

APPROVED AS TO FORM

CHRISTOPHER CALLIHAN, City Attorney

By _____

CITY OF SOLEDAD

By _____
Mayor

Dated: _____

APPROVED AS TO FORM

_____ City Attorney

By _____

CITY OF GONZALES

By _____
Mayor

Dated: _____

APPROVED AS TO FORM

_____ City Attorney

By _____

CITY OF GREENFIELD

By _____
Mayor

Dated: _____

APPROVED AS TO FORM

CHRISTOPHER CALLIHAN, City Attorney

By _____

CITY OF SOLEDAD

By _____
Mayor

Dated: 03/03/17

APPROVED AS TO FORM

Michael Rodriguez, City Attorney

By _____

CITY OF GONZALES

By _____
Mayor

Dated: _____

APPROVED AS TO FORM

_____ City Attorney

By _____

CITY OF GREENFIELD

By _____
Mayor

Dated: _____

CITY OF GONZALES

By Maria Orozco

Maria Orozco, Mayor

Dated: 2/21/17

APPROVED AS TO FORM

By

Michael F. Rodriquez, City Attorney

Dated: 2-21-2017

APPROVED AS TO FORM

_____, City Attorney

By_____

CITY OF KING

By_____

Mayor

Dated: 3-24-2017

APPROVED AS TO FORM

_____, City Attorney

By 3-24-2017

CASTROVILLE COMMUNITY SERVICES

By_____

Chair of the Board of Directors

APPROVED AS TO FORM

_____, District Counsel

MONTEREY REGIONAL WATER POLLUTION CONTROL AGENCY

By_____

Chair of the Board of Directors

APPROVED AS TO FORM

_____, Agency Counsel

APPROVED AS TO FORM

_____, City Attorney

By_____

CITY OF KING

By_____
Mayor

Dated: _____

APPROVED AS TO FORM

_____, City Attorney

By_____

CASTROVILLE COMMUNITY SERVICES

By_____
Chair of the Board of Directors

APPROVED AS TO FORM

_____ District Counsel

APPROVED AS TO FORM

_____, City Attorney

By_____

CITY OF KING

By_____
Mayor

Dated:_____

APPROVED AS TO FORM

_____, City Attorney

By_____

CASTROVILLE COMMUNITY SERVICES

By_____
Chair of the Board of Directors

APPROVED AS TO FORM

_____, District Counsel

MONTEREY REGIONAL WATER POLLUTION CONTROL AGENCY

By Gloria De La Rosa
Chair of the Board of Directors

APPROVED AS TO FORM

Robert R. Wellington, Agency Counsel

EXHIBIT A

MEMBERS

COUNTY OF MONTEREY
County Administrative Officer
168 W. Alisal St., Salinas, CA 93901

WATER RESOURCES AGENCY OF MONTEREY COUNTY
General Manager

CITY OF SALINAS
City Manager

CITY OF SOLEDAD
City Manager

CITY OF GONZALES
City Manager

CITY OF GREENFIELD
City Manager

CITY OF KING (KING CITY)
City Manager

CASTROVILLE COMMUNITY SERVICES DISTRICT
General Manager

EXHIBIT B

BOARD OF DIRECTORS

	Director	Representing	Specific Qualifications	Appointing Authority
a)	City of Salinas.	City of Salinas.	To be determined by the Appointing Authority.	Salinas City Council.
b)	South County Cities.	Cities of Gonzales, Soledad, Greenfield, and King City.	To be determined by the Appointing Authority.	Appropriate City Council as recommended by the City Selection sub-Committee.
c)	Other GSA Eligible Entity.	GSA Eligible Entities but not including the cities of Salinas, Gonzales, Soledad, Greenfield or King City.	Must be a representative of a GSA Eligible Entity but not including the cities of Salinas, Gonzales, Soledad, Greenfield or King City.	Monterey County Board of Supervisors.
d)	Disadvantaged Community, or Public Water System, including Mutual Water Companies serving residential customers.	Unincorporated Disadvantaged Communities, or Public Water Systems, including Mutual Water Companies serving residential customers only.	Must be a resident of a Disadvantaged Community in the unincorporated area, or a representative Public Water System, including Mutual Water Companies serving residential customers only.	Castroville Community Services District.
e)	CPUC Regulated Water Company.	CPUC Regulated Water Companies in the Basin.	Must be a representative of a CPUC Regulated Water	Salinas City Council.

			Company.	
f)	Agriculture.	Agricultural interests.	Must be an individual that is: 1) engaged in, and derives the majority of his or her gross income or revenue from, commercial agricultural production or operations; or 2) designated by an entity this is engaged in commercial agricultural production or operations, and the individual derives the majority of his or her gross income or revenue from agricultural production or operations, including as an owner, lessor, lessee, manager, officer, or substantial shareholder of a corporate entity.	Monterey County Board of Supervisors.
g)	Agriculture.	Agricultural interests.	Same as (f).	Monterey County Board of Supervisors.
h)	Agriculture.	Agricultural interests.	Same as (f).	Monterey County Board of Supervisors.
i)	Agriculture.	Agricultural interests.	Same as (f).	Monterey County Board of Supervisors.
j)	Environment.	Environmental users and interests.	Must be a representative of an	Monterey County

			established environmental organization that has a presence or is otherwise active in the Basin.	Board of Supervisors.
k)	Public Member.	Interests not otherwise represented on the Board.	A rural residential well owner; an industrial processor; a Local Small or State Small Water System; or other mutual water company.	Monterey County Board of Supervisors.

EXHIBIT C

OTHER GSA ELIGIBLE ENTITY DIRECTOR POSITION NOMINATING GROUP

COUNTY OF MONTEREY

WATER RESOURCES AGENCY OF MONTEREY COUNTY

MONTEREY REGIONAL WATER POLLUTION CONTROL AGENCY

EXHIBIT D

DISADVANTAGED COMMUNITY, OR PUBLIC WATER SYSTEM, INCLUDING MUTUAL WATER COMPANIES SERVING RESIDENTIAL CUSTOMERS DIRECTOR POSITION NOMINATING GROUP

CASTROVILLE COMMUNITY SERVICES DISTRICT (Group Contact)
Eric Tynan, General Manager
11499 Geil St.
Castroville, CA 95012
(831) 633-2560 phone
(831) 633-3102 fax
info@castrovillecsd.org

ENVIRONMENTAL JUSTICE COALITION FOR WATER

SAN JERARDO COOPERATIVE

SAN ARDO WATER DISTRICT

SAN VICENTE MUTUAL WATER COMPANY

EXHIBIT E

CPUC REGULATED WATER COMPANY DIRECTOR POSITION NOMINATING GROUP

ALISAL WATER CORPORATION DBA ALCO WATER SERVICE (Group Contact)
Thomas R. Adcock, President
249 Williams Road
Salinas, CA 93905
831-424-0441 phone
831-424-0611 fax
tom@alcowater.com

CALIFORNIA WATER SERVICE COMPANY

EXHIBIT F

ENVIRONMENT DIRECTOR POSITION NOMINATING GROUP

SUSTAINABLE MONTEREY COUNTY

LEAGUE OF WOMEN VOTERS OF MONTEREY COUNTY

LANDWATCH MONTEREY COUNTY

FRIENDS AND NEIGHBORS OF ELKHORN SLOUGH

CALIFORNIA NATIVE PLANT SOCIETY, MONTEREY CHAPTER

TROUT UNLIMITED

SURFRIDERS

THE NATURE CONSERVANCY

CARMEL RIVER STEELHEAD ASSOCIATION

Chapter 1
Appendix 1-B

ASGSA City Resolution

RESOLUTION #2019-17

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GREENFIELD AUTHORIZING THE CITY TO (1) AMEND AND RESTATE THE MEMORANDUM OF UNDERSTANDING WITH CLARK COLONY AND THE PETITIONED LANDOWNERS AND (2) FILE A REVISED NOTICE OF INTENT

WHEREAS, on September 16, 2014, the Governor signed into law, three bills (SB 1168, AB 1739, and SB 1319) collectively referred to as the "Sustainable Groundwater Management Act" ("SGMA"), that initially became effective on January 1, 2015, and that has been amended from time-to-time thereafter.

WHEREAS, the stated purpose of SGMA, as set forth in California Water Code section 10720.1, is to provide for sustainable management of groundwater basins at a local level by providing local groundwater agencies with the authority, and technical and financial assistance necessary, to sustainably manage groundwater.

WHEREAS, California Water Code sections 10723 and 10723.8 allow a local public agency to decide to become a Groundwater Sustainability Agency ("GSA") to undertake sustainable groundwater management.

WHEREAS, the City is a local agency qualified to become a GSA because the City manages water, has a water supply, and has land use responsibilities over a certain portion of the Forebay Subbasin [Subbasin Number 3-4.04, DWR Bulletin 118 (update 2016)] of the Salinas Valley Groundwater Basin. The Forebay Subbasin is a DWR-designated high priority basin.

WHEREAS, California Water Code section 10726.5 allows for GSAs to enter into written agreements with private parties to assist in the funding of groundwater sustainability plans ("GSPs"), their development, facilitation and implementation. (Water Code §10726.5.)

WHEREAS, SGMA was amended through SB 13, which was signed into law on September 3, 2015, to expressly allow mutual water companies to participate in a GSA through a memorandum of agreement or other legal agreement. (Water Code §10723.6(b).)

WHEREAS, CCWC is a mutual water company qualified to participate in a GSA because it is a mutual water company as defined in California Public Utilities Code section 2725. CCWC is organized for the purposes of delivering irrigation water to its shareholders at cost and is not a public utility. (Public Utilities Code §2705.)

WHEREAS, the City's municipal well is located within the CCWC service area and outside of the City's sphere of influence.

WHEREAS, the City and CCWC service area overlie the Arroyo Seco Cone Basin, which is located within the Forebay Subbasin. The Arroyo Seco Cone Basin was identified by the DWR in Bulletin 52 to be hydrologically distinct from the other subbasins of the Salinas Valley Groundwater Basin because the principal source of groundwater replenishment in the Arroyo Seco

Cone Basin is percolation from the channels of the Arroyo Seco River and its tributary, Reliz Creek.

WHEREAS, section 10723.8(a)(1) of SGMA allows a local agency which decides to become or form a GSA to notify the DWR of "the boundaries of the basin or portion of the basin the agency intends to manage." (Water Code §10723.8(a)(1).)

WHEREAS, on April 5, 2017 and April 12, 2017, the City posted notices of its intent to become a GSA over the Arroyo Seco Cone Basin (a portion of the Forebay Subbasin), comprising the area located within the City limits and the CCWC service area.

WHEREAS, on April 18, 2017, the City Council held a public hearing and adopted Resolution #2017-08, authorizing the City to become a GSA to manage the Arroyo Seco Cone Basin (a portion of the Forebay Subbasin), comprising the area located within the City limits and the CCWC service area; form the Arroyo Seco Groundwater Sustainability Agency ("ASGSA"); and enter into a MOU with CCWC.

WHEREAS, the Notice of Intent to become the GSA was filed with the Department of Water Resources ("DWR"), and the DWR subsequently accepted and posted the NOI on April 27, 2017.

WHEREAS, at a duly noticed public meeting on May 23, 2017, comments were made by a member of the public who requested the ASGSA Board consider landowner petitions to add lands overlying or benefiting from the Arroyo Seco Cone Basin (a portion of the Forebay Subbasin) to the area managed by the ASGSA.

WHEREAS, section 10723.2 of the SGMA requires that a GSA consider the interest of all beneficial uses and users of groundwater, as well as those responsible for implementing GSPs. (Water Code §10723.2.)

WHEREAS, on May 30, 2017, the ASGSA held a special meeting to discuss the petitions. At that meeting, the ASGSA Board considered becoming the GSA for those petitioned lands overlying or benefiting from the Arroyo Seco Cone Basin (a portion of the Forebay Subbasin) and contiguous to the area managed by the ASGSA to the north, east and west, with the southern boundary of the area to end at the boundary of the Forebay and Upper Valley subbasins.

WHEREAS, subsequent to the May 30, 2017 meeting, additional landowners submitted petitions to the ASGSA to request that their lands, which overlie or benefit from the Arroyo Seco Cone Basin, be added to the area managed by the ASGSA.

WHEREAS, the City-ASGSA published notices in local newspapers on June 14th and 21st, 2017, to notify the public of a public hearing on whether to become the GSA for these lands petitioned by landowners for inclusion to the area of the Arroyo Seco Cone Basin (portion of the Forebay Subbasin) managed by the ASGSA.

WHEREAS, on June 27, 2017, the ASGSA held a public hearing and decided to become the GSA for the certain petitioned lands which overlie or benefit from the Arroyo Seco Cone and located contiguous to the area managed by the ASGSA ("Petitioned Lands") by adopting Resolution 2017-08. On the same day, the City Council held a public hearing and decided to

become the GSA for the Petitioned Lands by adopting Resolution #2017-51. The MOU between the Parties was amended to reflect the same.

WHEREAS, the second Notice of Intent which included the petitioned landowners was filed with the Department of Water Resources ("DWR"), and the DWR subsequently accepted and posted the NOI on June 30, 2017.

WHEREAS, the City has been directed by the DWR to modify the City-filed notices of intent despite the DWR having previously accepted the filings as stated above.

WHEREAS, the MOU between the City and CCWC has been amended and restated accordingly.

NOW, THEREFORE, BE IT HEREBY RESOLVED that:

1. The Amended and Restated Memorandum of Understanding with Clark Colony Water Company (Exhibit A) is approved and the City Manager is hereby directed to execute the MOU;

2. The City hereby reinstates the Arroyo Seco Groundwater Sustainability Agency as formed and in its current composition without any interruption to that agency's process; and

3. The City will modify the City-filed NOIs as directed by the DWR. The NOIs are to be amended to include (a) the City; and (b) the management area comprising the CCWC service area (inclusive of the City's well) and the previously accepted petitioned landowners as referenced above.

PASSED AND ADOPTED by the Board of the Arroyo Seco Groundwater Sustainability Agency at a regular meeting held on the 12th day of February 2019 by the following vote:

AYES, and all in favor, thereof, Councilmembers: Mayor Walker, Mayor Pro-tem Martinez, Councilmembers Untalon, Tipton and White

NOES, Councilmembers: None

ABSENT, Councilmembers: None

ABSTAIN, Councilmembers: None

Lance Walker, Mayor

Attest:

Ann F. Rathbun, Clerk

Amended and Restated

Memorandum of Understanding By and Between City of Greenfield and Clark Colony Water Company

RECITALS

A. On September 16, 2014, the Governor signed into law, three bills (SB 1168, AB 1739, and SB 1319) collectively referred to as the "Sustainable Groundwater Management Act" ("SGMA"), that initially became effective on January 1, 2015, and that has been amended from time-to-time thereafter.

B. The stated purpose of SGMA, as set forth in California Water Code section 10720.1, is to provide for sustainable management of groundwater basins at a local level by providing local groundwater agencies with the authority, and technical and financial assistance necessary, to sustainably manage groundwater.

C. California Water Code sections 10723 and 10723.8 allow a local public agency to decide to become a Groundwater Sustainability Agency ("GSA") to undertake sustainable groundwater management.

D. The City of Greenfield ("City") is a local agency qualified to become a GSA because the City manages water, has a water supply, and has land use responsibilities over a certain portion of the Forebay Subbasin [Subbasin Number 3-4.04, DWR Bulletin 118 (update 2016)] of the Salinas Valley Groundwater Basin. The Forebay Subbasin is a DWR-designated high priority basin.

E. California Water Code section 10726.5 allows for GSAs to enter into written agreements with private parties to assist in the funding of groundwater sustainability plans ("GSPs"), their development, facilitation and implementation. (Water Code §10726.5.)

F. SGMA was amended through SB 13, which was signed into law on September 3, 2015, to expressly allow mutual water companies to participate in a GSA through a memorandum of agreement or other legal agreement. (Water Code §10723.6(b).)

G. Clark Colony Water Company ("CCWC") is a mutual water company qualified to participate in a GSA because it is a mutual water company as defined in California Public Utilities Code section 2725. CCWC is organized for the purposes of delivering irrigation water to its shareholders at cost and is not a public utility. (Public Utilities Code §2705.) CCWC's service area is also over a portion of the Forebay Subbasin of the Salinas Valley Groundwater Basin.

H. The City's municipal well is located within the CCWC service area and outside of the City's sphere of influence.

I. On April 5, 2017 and April 12, 2017, the City posted notices of its intent to become a GSA for the management area comprising the City and CCWC service area consistent with California Water Code section 10723(b).

J. On April 18, 2017, the City Council held a public hearing and adopted Resolution #2017-08, authorizing the City to become a GSA; form the Arroyo Seco Groundwater Sustainability Agency ("ASGSA"); and enter into a Memorandum of Understanding ("MOU") with CCWC.

K. The Notice of Intent to become the GSA was filed with the Department of Water Resources ("DWR"), and the DWR subsequently posted the NOI on April 27, 2017.

L. At a duly noticed public meeting on May 23, 2017, comments were made by a member of the public who requested the ASGSA Board consider landowner petitions to add lands to the management area of the ASGSA.

M. Section 10723.2 of the SGMA requires that a GSA consider the interest of all beneficial uses and users of groundwater, as well as those responsible for implementing GSPs. (Water Code §10723.2.)

N. On May 30, 2017, the ASGSA held a special meeting to discuss the petitions. At that meeting, the ASGSA Board considered becoming the GSA for those petitioned lands contiguous to the ASGSA management area to the north, east and west, with the southern boundary of the management area to be located at the boundary between the Forebay and Upper Valley subbasins.

O. Subsequent to the May 30, 2017 meeting, additional landowner petitions were received.

P. The City-ASGSA published notices in local newspapers on June 14th and 21st, 2017, to notify the public of a public hearing on whether to become the GSA for these lands petitioned by landowners for inclusion in the ASGSA's management area.

Q. On June 27, 2017, the ASGSA held a public hearing and decided to become the GSA for the certain petitioned lands located contiguous to the ASGSA's management area ("Petitioned Lands") by adopting Resolution 2017-08. On the same day, the City Council held a public hearing and decided to become the GSA for the Petitioned Lands by adopting Resolution #2017-51. The MOU between the parties was amended to reflect the same.

R. The parties wish to amend and restate the MOU to have the City reinstate the ASGSA and ensure compliance with SGMA.

NOW THEREFORE, incorporating the above recitals herein, it is mutually understood and agreed as follows:

1. Purpose. This MOU is entered into by and between the Parties to facilitate a cooperative and ongoing working relationship that will allow compliance with SGMA and State law, both as amended from time to time

2. Arroyo Seco Groundwater Sustainability Agency. The City is the local agency with the authority under SGMA to determine the management area it intends to manage. The City established the ASGSA, which includes participation by the CCWC, to manage the portion of the Forebay Subbasin that covers the City limits. The City also established the ASGSA to manage the CCWC service area (in which the City's municipal well is situated) and Petitioned Lands (collectively, "Management Area"). The City shall consider and if approved, adopt a resolution to (a) reinstate the ASGSA as originally formed, which includes the CCWC as participants on the Board of ASGSA in its current composition and without any disruption to the current ASGSA Board process and (b) amend the NOIs submitted to the DWR to further validate the City's decision to be the GSA for the sustainable management of groundwater for the City and the Management Area consistent with SGMA.

3. Funding of ASGSA. Consistent with Water Code section 10726.5, the CCWC is committed to paying the City fifty percent (50%) of the costs incurred by the ASGSA for the development, facilitation and implementation of the GSP. If an additional party elects to participate in this MOU, they shall pay their fair share of prior and future expenses of the ASGSA through an agreement with the ASGSA. Cost and expenses of ASGSA may also be funded from: (i) voluntary contributions from third parties or (ii) grants; taxes, assessments, fees and/or charges levied by the ASAGA under the provisions of SGMA or as otherwise authorized by law. Sharing of resources, including staff, is allowed to meet this obligation.

4. Ongoing Cooperation and Dispute Resolution. The Parties acknowledge activities under this MOU will require the frequent interaction between them in order to pursue opportunities and resolve issues that arise. The Parties agree that any dispute regarding the enforcement or interpretation of any term, covenant or condition of this MOU shall first, for a period of not less than thirty (30) days, be submitted to mediation before a mutually acceptable mediator. If they are unable to resolve such matter(s) through mediation, resolution shall be sought through binding arbitration before a third party arbiter mutually agreed to by both Parties.

5. Term. This MOU shall remain in effect unless terminated by the mutual consent of the Parties and as allowed by State law provided that provision has been made by the Parties for the payment, refunding, retirement, or other disposition of any bonded debt or other long term liability in the name of the ASGSA.

6. Entire Agreement and Amendments. This MOU incorporates the entire and exclusive agreement of the Parties with respect to the matters described herein and supersedes all prior negotiations and agreements (written, oral, or otherwise) related thereto. This MOU may be amended only in writing executed by the Parties.

7. Counterpart. This MOU may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same agreement.

IN WITNESS WHEREOF, the Parties hereto, pursuant to resolutions duly adopted by their respective boards, have caused their names to be affixed by their proper and respective officers as of the day and year so indicated.

CITY OF GREENFIELD

By _____
Mayor

Dated: 02-13-2019

APPROVED AS TO FORM

Mary Lerner, City Attorney

_____

CLARK COLONY WATER COMPANY,
A California Corporation

By _____
Michael Griva, President

Dated: Feb 20, 2019

APPROVED AS TO FORM

Pamela H. Silkwood, Attorney

Chapter 2
Appendix 2-A

Comments on the Draft GSP

1. Comment Table
2. Comment Letters
3. Comment Letters Responses

Number	Chapter	Table	Page	Figure	Comment Type	Date	Commenter	Comment	Response	Action
1					Meeting	7/1/2020	**Steve McIntyre**	Which workshop topic would explain the whole basin and subbasin and reservoirs connectivity? Even though there is an ISP workshop later, there is an opportunity for an educational opportunity where everyone can get on the same page about how the basin works. An overview of whole basin, hydrology, how the watershed works, and how the dams and existing projects are all tied together would be helpful.	DW: Good suggestion, and may be a workshop to have earlier than later. Let's discuss later.	Meeting comment - noted.
2					Meeting	7/1/2020	**Jason Smith**	Maybe move Water Law workshop later	**Comment received.**	Meeting comment - noted.
3					Meeting	7/1/2020	**Nancy Isakson**	Gratitude for materials ahead of time. Stress importance of getting as many people to workshops as possible; we're all responsible for spreading word to get diversity of people to workshops. Work with Ag groups and Advisory Committee to get the word out.	**Comment received.**	Meeting comment - noted.
4					Meeting	7/1/2020	**Tom Virsik**	It's a good direction. 1) Agree with Mr. Smith that water law can wait until there is an explanation of the structure of whole valley, of the projects that exist, and how they are interrelated. People need to understand what is occuring in the valley before water law theory. Possibility to include another topic for ASGSA, ES with management areas.	**Comment received.**	Meeting comment - noted.
5					Meeting	7/1/2020	**Curtis Weeks**	Need to talk about management areas. Concerned about process not including coordination. A lot of coordination going on, we need opportunity to share information. We'll need to modify our GSP. I'm asking planning committee to consider ASGSA as management area and activities.	Donna Meyers: We've been working through established coordination subcommittee, has 2 members from each board. As we initiate Forebay Planning Committee, also working with coordination team. Working towards MOU. Creating parallel process. Agree with Curtis, effort needs to track with our efforts also. We can figure out how to communicate and bring in those discussions, and include ASGSA planning committee.	Meeting comment - noted.
6					Meeting	7/1/2020	**Norm Groot**	I imagine there will be a lot of discussion on some topics planned for 2021. May need to call special meetings, encourage more flexibility. Suggest picking each date each month for workshops.	**Comment received.**	Meeting comment - noted.
7					Meeting	7/1/2020	**Curtis Weeks**	I appreciate the explanation and the process	**Comment received.**	Meeting comment - noted.
8					Meeting	7/1/2020	**Norm Groot**	Does it make sense to be congruent with 180/400 subbasin on this?	DW: Not required to have same approach as 180/400. However, the law says, one subbasin may not prevent another subbasin from reaching sustainability. If one subbasin says 4inches subsidence/year and you say 0inches/year, there will be issues of preventing reaching sustainability.	Meeting comment - noted.
9					Meeting	7/1/2020	**Jason Smith**	Each surface water body can have its own designation?	DW: Yes, you could say the Min Thresh for Salinas R. is to maintain current rate of depression, and could say increase depletion for Arroyo Seco	Meeting comment - noted.
10					Meeting	7/1/2020	**Steve McIntyre**	When do we need to make a decision?	DW: You need to come up with a quantitative description for each SMC. This is an iterative process.	Meeting comment - noted.
11					Meeting	7/1/2020	**Curtis Weeks**	Relative to interdependent GW issues, the riparian corridor has adapted, see pic on left of slide. Note no cottonwoods. We noted flashiness of water, sandiness of substrate. Water flows through. In other reaches, cottonwoods have died.	DW: Curtis touched on this, when we set levels of what is significant and unreasonable, we are only talking about where GW and SW levels are similar and connected. Not where GW is disconnected from SW. So think of those locations.	Meeting comment - noted.
12					Meeting	7/1/2020	**Jerry Lohr**	Glad you acknowledge difference in Arroyo Seco Cone. I think the idea of not harming neighboring GSAs is good. Looking at whole area as well as ASGSA is appreciated.	**Comment received.**	Meeting comment - noted.
13					Meeting	7/1/2020	**Steve McIntyre**	When we were working on 180/400, we were also working on ISP. Group came up with recommendations for whole basin. Are you going to share those? Or will this committee need to come up with new recommendations.	DW: I'm trying to allow for flexibility and have each committee come up with own ideas. I can share those recommendations as a starting point.	Meeting comment - noted.
14					Meeting	7/1/2020	**Steve McIntyre**	I think that's a great idea, and to emphasize this is an iterative process, and those are just a starting point.	DW: Yes, and while we've changed our whole process to be more inclusive, I don't want those ISP recommendations to be a hard pass. Will send those recommendations within a few days.	Meeting comment - noted.

15					Meeting	7/1/2020	**Jason Smith**	Important to emphasize the no-harm principle so we don't have to just go back to the drawing board.	DW: Good point, yes you have to set your own thresholds but not so in a way that will be unreasonable to their neighbors. Some other basins in Cali have submitted their GSPs, and are only *now* reaching out to their neighbors. Don't know how DWR will handle this.	Meeting comment - noted.
16					Meeting	7/1/2020	**Jason Smith**	So how will that work?	DW: It goes both ways. The 180/400 may not prevent Forebay or Eastside or Langley from reaching sustainability.	Meeting comment - noted.
17					Meeting	7/1/2020	**Jason Smith**	The 180/400 has already created their plan. I understand this will be adjusted.	Emily: M&A and the SVBGSA are involved in the creation of these plans and if we see people talking about SMCs that won't line up, or negatively impact, we're trying to get ahead of that.	Meeting comment - noted.
18					Meeting	7/1/2020	**Victoria Hermosilla**	Would like to remind everyone there is an online comment form.	DW: we have released some of the chapters, 1-4, is background information. Comments about style, grammar, etc… please use SVBGSA website. There is button.	Meeting comment - noted.
19					Meeting	7/1/2020	**Curtis Weeks**	Getting in to aspects of coordination, we need to make sure we're working together, pulling horse in same direction. Strategically, have to figure out how we're going to eliminate conflict and work together.	**Comment received.**	Meeting comment - noted.
20					Meeting	7/1/2020	**Tom Virsik**	In agenda packet, some language about encouraging voluntary pumping controls, sect. 3.8.5. I have no problem, but upper valley draft has water charges framework at that section. So, there is a distinction now. Not sure if this is iterative phrasing, or on purpose. Didn't see water charges framework in the Forebay.	DW: Yes, this is an iterative change. We're going to take that language out of the Upper Valley. Will say we're going to encourage voluntary pumping reductions.	Meeting comment - noted.
21					Meeting	7/1/2020	**Nancy Isakson**	Release public comments	**Emily:** We are working with M&A to collect comments. We have not decided on the timing of releasing those comments back to the public. **DW:** We are going to submit the comments to the advisory committee, and probably won't release comments to the public before then. **Emily:** Categorizing comments in admin, opinion, strategic. Still working through this.	Meeting comment - noted.
22					Meeting	7/1/2020	**Jerry Lohr**	Want to know what kinds of things Derrik thinks would be most beneficial for us to participate in.	DW: The July 28 SMC workshop will explain more about what we covered here. It will not deal with data specific to this subbasin, but be more conceptual. The July 9 BOD meeting will cover a GDE/ISW discussion also. If that's what you're interested in, there will be more technical information.	Meeting comment - noted.
23					Meeting	7/1/2020	**Steve McIntyre**	I think the GDEs will be a good workshop.	Emily: We do have a followup item to send ISP recommendations out at starting point. In addition, we will reach out with survey in August to make some decisions in September meeting.	Meeting comment - noted.
24	3	Table 3-2			JotForm	7/16/2020	**Heather Lukacs**	We request that this table include all Monterey County regulated drinking water systems and clearly distinguish between type of drinking water system. Local small water systems serve 2-4 connections, state small water systems serve 5-14 connections, private domestic wells serve 1 connection. In addition this table should list agricultural and industrial users as separate well types. This distinction is made in Figure 3-6 but not in this Table. It is important to distinguish between well type here in order to set the stage for good water budget estimates, for the monitoring network, and throughout the plan. This data is all readily available to the public and GSA.	**Comment received.**	Table 3-2 was made using DWR's OSWCR database, and it does not provide information on the amount of agricultural and industrial wells so these categories have to be combined into the production category. The parcel data used to make Figure 3-6 came from Monterey Country, not from DWR so it is unlikely that these two data sources match up exactly.
29					Meeting	9/2/2020	**Curtis Weeks**	Not having any subsidence, you're still going to have land surface changes.	**Comment received.**	Meeting comment - noted.

30					Meeting	9/2/2020		Subsidence SMC: Motion to accept Option 1: Any subsidence anywhere in the Subbasin is significant and unreasonable using the metric of InSAR data (+/-) 0.1 ft.	Motion was passed by Committee and will be incorporated into GSP.	**This will be incorporated into GSP development as a strategic comment. See memo for further discussion.**
31					Meeting	9/2/2020	**Norm Groot**	At the risk of getting into a tug of war with other organizations, I suggest we maintain current water quality impacts. Choosing to improve may have policy conflicts. With so much we have to do to maintain the groundwater, maintaining quality is probably the best way forward.	**Comment received.**	Meeting comment - noted.
32					Meeting	9/2/2020	**Curtis Weeks**	This is related to salt management. Salts are likely to increase over time. Maintaining the salt balance over time may be difficult to achieve.	**Comment received.**	Meeting comment - noted.
33					Meeting	9/2/2020	**Heather Lukacs**	We care a lot about water quality. We recognize what SGMA says, that you can't further degrade water quality. We support setting minimum thresholds and measurable objectives at specific wells. Ours is more of a question around *where* the monitoring occurs around the basin and how the baseline is developed. There's an opportunity for multi-benefit projects that take into account water quality. We are really hopeful that groundwater management can improve the water quality.	**Comment received.**	Meeting comment - noted.
34					Meeting	9/2/2020		Water Quality SMC: Motion to accept Option 1: Degraded groundwater quality resulting from direct GSA actions is significant and unreasonable as measured by the number of supply wells.	Motion was passed by Committee and will be incorporated into GSP.	**This will be incorporated into GSP development as a strategic comment. See memo for further discussion.**
35					Meeting	9/2/2020	**Nancy Isakson**	Are these flexible? We haven't done the water budget, so we don't know what the sustainable yield is, so we don't know how feasible it is to pump within the sustainable yield.	**Abby Ostovar:** We won't write this section until we have the water budget. This is to provide initial guidance. **DW:** Kind of by definition, we will already by pumping within sustainable yield. This sustainable yield is what you can pump without having undesirable results. We will put a number on it, but it's subject to revision as we get better information or implement projects.	Meeting comment - noted.
36					Meeting	9/2/2020	**Steve McIntyre**	I understand these are policies?	DW: Yes, here we're asking for policy directions today, and we'll have better numbers later.	Meeting comment - noted.
37					Meeting	9/2/2020	**Heather Lukacs**	I agree with others that it's important to see sustainable yield numbers. Other agencies start with that sustainable yield, how much can you pump to maintain water levels and prevent undesirable results. Encourage subbasin to to look at sustainable yield. It is what is truly sustainable, not just what you can pump.	Abby Ostovar: We plan on generating the sustainable yield when we get the model, which should be in a couple of weeks. This is really to get your initial reaction so we can start fleshing out the direction, and we will come back with the numbers when we have them.	Meeting comment - noted.
38					Meeting	9/2/2020	**Allan Panziera**	I don't want us to be pumping to our minimum numbers or water levels. I want to understand that process a little better and how we come up with that number.	DW: What we're going to be doing is, when we implement all of the projects that we have planned, how much pumping does that support and still meet our measurable objectives? And remember, this is in 20 years from now. If we say, 15 years out, and we have implemented projects but we see GW levels going down, we can change our sustainable yield based on what we're seeing on the ground. It can be adjusted along the way.	Meeting comment - noted.
39					Meeting	9/2/2020	**Nancy Isakson**	I appreciate Derrik's comment. That's the important part, what if projects are not implemented or voted on, you're looking at pumping reductions to meet that sustainable yield. This highlights the importance of being able to identify the sustainable yield.	**Comment received.**	Meeting comment - noted.
40					Meeting	9/2/2020	**Steve McIntyre**	Even if we don't implement any projects, we don't have to necessarily reduce pumping depending on what is determined to be our sustainable yield. Is that correct, Derrik?	DW: Yes.	Meeting comment - noted.

41					Meeting	9/2/2020		Groundwater Storage SMC: Motion to accept Option 1: Pumping in excess of the sustainable yield leads to significant and unreasonable impacts.	Motion was passed by Committee and will be incorporated into GSP.	**This will be incorporated into GSP development as a strategic comment. See memo for further discussion.**
42					Meeting	9/2/2020	**Steve McIntyre**	Arroyo Seco GSP chose 2015, thinking along these same lines.	**Comment received.**	Meeting comment - noted.
43					Meeting	9/2/2020	**Allan Panziera**	When the Arroyo Seco selected 2015, we saw different things. I'm not sure about the Forebay. Certain things did not recover. I need more information to make that decision.	**Comment received.**	Meeting comment - noted.
44					Meeting	9/2/2020	**Jason Smith**	We had some issues with how the dams were operating. I'm reluctant to use 2015 as that level because, I don't know how to address that.	**Comment received.**	Meeting comment - noted.
45					Meeting	9/2/2020	**Steve McIntyre**	We'll be discussing the numbers at a later time, like sustainable yield. We don't have to decide which year today because we are focusing on policy.	**Comment received.**	Meeting comment - noted.
46					Meeting	9/2/2020	**Heather Lukacs**	I think I see the water levels discussion here is a little different. Do we have an understanding of the wells in the area, specifically domestic wells or small water systems? We would like to see groundwater levels that protect drinking water users. We would like to see a drinking water analysis like we saw in the 180/400 so all users can be engaged. How are drinking water users considered in this recommendation?	**Comment received.**	Meeting comment - noted.
47					Meeting	9/2/2020	**Jerry Lohr**	It seems like we're getting ahead of ourselves. I would like more data and information.	**Abby Ostovar:** Is there specific data you're looking for? **DW:** We're asking for policy approaches now, so then we can come back with more data.	Meeting comment - noted.
48					Meeting	9/2/2020	**Allan Panziera**	We are going to have a cross-section of all groundwater data types including domestic, correct?	**DW:** Yes, for the data that we have**.** We don't have a lot of data on domestic wells. **Abby Ostovar:** We can develop groundwater elevaion contours, and show what it would look like in a couple different years.	Meeting comment - noted.
49					Meeting	9/2/2020	**Nancy Isakson**	I'm struggling with 2015, whatever year you choose, you don't want to make it worse. Potentially, what is the lowest you can live with? Once you get the data, and you look at what happens, you can relook at these with the data.	**Comment received.**	Meeting comment - noted.
50					Meeting	9/2/2020	**Heather Lukacs**	It would be helpful to see the impacts on the domestic wells first. I know some people have drilled deeper wells in this area mostly because of quality. It would be helpful to see that prior to making a decision.	**Comment received.**	Meeting comment - noted.
51					Meeting	9/2/2020	**Jerry Lohr**	I agree with that. I would like to see more information and analysis before making a decision. I would like to know more about Option 1 and 4. Domestic wells will have difficulty getting data. So more data and hydrographs for Option 1.	**Comment received.**	Meeting comment - noted.
52					Meeting	9/2/2020		Groundwater Elevation SMC: Motion to accept option 1, but need to review additional data.	Motion was passed by Committee.	**This will be incorporated into GSP development as a strategic comment. See memo for further discussion.**
53					Meeting	9/2/2020		Depletion of Interconnected Surface Water SMC: Motion to accept Option 3: The current rate of surface water depletion is not unreasonable (although it may be significant).	Motion was passed by Committee and will be incorporated into GSP.	**This will be incorporated into GSP development as a strategic comment. See memo for further discussion.**

54					Meeting	9/2/2020	**Steve McIntyre**	I think the reservoir reoperation would be minimal from a financial standpoint, and critical for the Forebay. Same with the invasive species removal. Nobody wants to have pumping restrictions, but we may have to in drought. I'm hopeful as a basin we can come up with financial incentives, to incentivize farmers to use less water based on the ET rate, compared to the amount of water they pump. Use satellite data and decrease the delta between the two. Possibly convert to drip irrigation. I think converting to drip irrigation would save us around 30,000 AFY	**Comment received.**	Meeting comment - noted.
55					Meeting	9/2/2020	**Jerry Lohr**	I agree with Steve on these first two things. What's new to me is the winter release idea. Winter release and recharge has good merit and are good ideas.	**Comment received.**	Meeting comment - noted.
56					Meeting	9/2/2020	**Jason Smith**	Since we had a strategic BOD meeting with the MCWRA on Friday, and the topic of working with this agency is a big priority. We are talking about assets and projects run by MCWRA. I think we're moving the right direction, working with the MCWRA. Obviously with the need for work in the 180/400 with SWI, and we are relatively sustainable in the Forebay, we need to continue to understand how that all works together with cost.	**Comment received.**	Meeting comment - noted.
57					Meeting	9/2/2020	**Nancy Isakson**	How are these projects going to be working together? Some slides show a Salinas Valley Program, and some are more specific to the 180/400, others may be beneficial to the whole valley. How will that all be implemented? When you talk about maximizing the SRDF, what does that mean for the Salinas Valley Water Project which has been voted on and is utilizing that water right? People have paid for that benefit for many years. Winter releases, wasn't clear to me there would be additional diversions, releases. If you inject it at the ASR wells, you would provide that water for the irrigation season at the SRDF?	DW: The idea is the winter releases we inject in the ASR wells, we pump that water instead of summer releases to the SRDF.	Meeting comment - noted.
58					Meeting	9/2/2020	**Nancy Isakson**	That would limit the releases and recharge from the reservoirs during the irrigation season.	DW: There is a question around how late do we have releases, into July? It's a trade-off. No summer releases? Winter releases and solving for future droughts? Your feedback is important for us to know which trade-off is better or not.	Meeting comment - noted.
59					Meeting	9/2/2020	**Nancy Isakson**	It's public knowledge that the SVWC entered into a settlement agreement with the MCWRA. One thing we are looking at is implementation of a winter release schedule and one concern is impacts to SRDF. Your alternative is avoiding impacts at the SRDF.	**Comment received.**	Meeting comment - noted.
60					Meeting	9/2/2020	**Heather Lukacs**	1) We really encourage the GSA to explore projects with multiple benefits, especially with regard to GW quality remediation. Funding from the state, SVBGSA wouldn't have to be the lead on it. 2) Design recharge projects that would protect drinking water. I think this could be fundable from many different sources. Exciting research from UC Davis/Santa Cruz. Consider this with recharge projects. 3) Include a drinking water well mitigation program. We work with people with wells in the area, and a mitigation program could help them deepen their well or connect to a nearby water system. We would like to see this included to achieve multi-benefits and bring in more outside funding.	**Comment received.**	Meeting comment - noted.
61					Meeting	9/2/2020	**Tom Virsik**	The issue of the MCWRA interlake tunnel project is more than a slight complication. This will have a large impact on the pocketbook of users. Sooner or later, the SVBGSA will need to take a position on the tunnel project. Could be more from the technical side, saying we understand the tunnel project would "assist" or "hinder" projects one way or the other and will have a fiscal impact. Even though it's not the GSA's project, I think it is something that the GSA will need to deal with directly.	Abby Ostovar: We fully intend on working with MCWRA.	Meeting comment - noted.

62					Meeting	9/2/2020	**Curtis Weeks**	This committee is really charged with looking at the Forebay and some projects aren't Forebay related. Thinking about the coordination with the MCWRA on the reservoir reoperation and HCP, I think the coordination is a key element. I think it's going to take a different way of looking at GW. In terms of reduction of pumping, in the last drought cycle, there were some individuals that did have to reduce their pumping. The exception is the CSIP area, which has different supplies and very deep wells, and they used the same or more water during the drought. The area where we have the largest problem, we didn't have a comensurate reduction in pumping.	**Comment received.**	Meeting comment - noted.
63					Meeting	9/2/2020	**James Bishop**	The CSIP permit is over 20 years old. If expansion occurs, the new permit may not be the same as the old permit and there may be additional requirements. The title 22 report, issued by DDW, will also need to be updated. We are supportive of the use of recycled water.	**Comment received.**	Meeting comment - noted.
64	5				Meeting	9/2/2020	**Curtis Weeks**	Chapter 5, I was concerned about the graphic depicting a predicted Deep Aquifer in the Forebay. The Forebay is an unconsolidated mass of sediments. I was surprised on the predicted area without any data. We shouldn't include those types of designations without proper hydrogeologic characterization.	**Comment received.**	Meeting comment - noted.
65					Meeting	9/2/2020	**Steve McIntyre**	I also had concerns about characterizing it as part of the deep aquifer without a presentation of data and evidence based science. I think we should revisit it at our next meeting.	**Comment received.**	Meeting comment - noted.
66					Meeting	9/2/2020	**Curtis Weeks**	It wasn't clear to me if you were calling the area a deep aquifer within the Forebay or if you were making the leap to connect it to the deep aquifer in the coastal areas. It's not clear what the recharge mechanism is for that in the coastal area deep aquifers. To make that kind of leap gives me pause and concern.	**Comment received.**	Meeting comment - noted.
67					Meeting	9/2/2020	**Steve McIntyre**	I agree with that and I worry it's conjecture and we need some data.	**Comment received.**	Meeting comment - noted.
68					Meeting	9/2/2020	**Nancy Isakson**	That addressed my question. I think it's premature without the data. I reached out to our hydrologist and geologist and they were both surprised that the deep aquifer was included. If you don't have the data, it needs to be removed. But if you believe it needs to be there, then the committee and public need to know what it would take to develop the data.	**Comment received.**	Meeting comment - noted.
69					Meeting	9/2/2020		Motion: Bring back item of chapter 5 & 7 for discussion next time. Specifically, in regard to the deep aquifer.	**Comment received.**	Meeting comment - noted.
70					Meeting	11/4/2020	**Jerry Lohr**	Re: ASGSA-SVBGSA Coordination Update: I want to compliment the energy going forward and the cooperation between Donna and Curtis. I hope to have this done by the end of the year. I commend you.	**Comment received.**	Meeting comment - noted.
71					Meeting	11/4/2020	**Norm Groot**	Wondering if determination is made, and an agreement is set on the management area, does SGMA require the parcels to approve that? Or can the GSAs approve it?	**Donna Meyer:** We do intend to do outreach with property owners once we have a boundary proposal. All the parcels will be within the one GSP (Forebay), but we will have those conversations with stakeholders and property owners. **Curtis Weeks:** We want to take this to the public once we have a technically sound determination behind it. **Les:** There is no SGMA requirement for a property owner vote on this, but outreach and consensus is encouraged.	Meeting comment - noted.
72					Meeting	11/4/2020	**Steve McIntyre**	Re: Deep Aquifer: Is it not a separate aquifer because there aren't any aquitards separating?	**DW:** Not necessarily. We just don't have the data right now to say the deeper portions are separate from the shallower portions. We are waiting for the Deep Aquifer Study.	Meeting comment - noted.
73					Meeting	11/4/2020	**Allan Panziera**	You don't have conclusive evidence it's interconnected with the 180/400, either way?	**DW:** yes, we're saying there is no conclusive evidence either way.	Meeting comment - noted.
74					Meeting	11/4/2020	**Amy Woodrow**	I'm with WRA, I want to let everyone know on November 16 WRA BOD meeting, there will be a deep aquifer presentation.	**Comment received.**	Meeting comment - noted.
75					Meeting	11/4/2020	**Tom Virsik**	Ms. Woodrow said what I was going to say. Talk to the agency people, they will be the authority.	**Comment received.**	Meeting comment - noted.

76					Meeting	11/4/2020	**James Sang**	You mentioned there were several wells in this area. At the time they were dug, did they go down to 800 ft? Into the deep aquifer?	**DW:** This information was from the well logs, and they were drilled at least 800 ft deep. They don't say on the well log, "deep aquifer."	Meeting comment - noted.
77					Meeting	11/4/2020	**James Sang**	I'm interested in recharging our aquifers so we can have a sustainable aquifer, anywhere in the valley really.	**DW:** In the Forebay, the single aquifer is largely recharged from precipitation and river flows. The question remains about how long or how it gets to the deepest parts of the basin, changes as you go south or north. This question will be answered by the Deep Aquifer Study.	Meeting comment - noted.
78					Meeting	11/4/2020	**James Sang**	Can I assume that if we were able to catch the precipitation in one year, that we could get it to percolate into the groundwater and then into the underground aquifers in the 180/400?	**DW:** If we could capture more precipitation, yes, we could, but it's very difficult to do. For the 180/400 subbasin, even if we could capture precipitation, it would be hard to get into the 180/400 due to the aquitards in the way. It's a different subbasin.	Meeting comment - noted.
79					Meeting	11/4/2020	**Justine Massey**	There is a summary of constituents of concern. What is the process for identifying the constituents of concern. Were Chromium 6 and arsenic tested for?	**DW:** We looked at publicly available data from Division of Drinking water wells, since they are sampled for title 22 suite, including Chromium. Some wells were from ILRP, so we could only assess what they analyze for, which is a smaller set of constituents.	Meeting comment - noted.
80					Meeting	11/4/2020	**Justine Massey**	I would identify that as a point to improve data collection in the future. It's important for this committee and the GSA to have all the information possible to manage the subbasin. Constituents of concern like that can have negative effects. We recommend more mapping of those constituents. I see mapping of Nitrate. Mapping for other constituents would help prevent undesirable results. We encourage even more trends and mapping with data from state small water systems, local water systems, public systems, and private wells.	**Comment received.**	Meeting comment - noted.
81					Meeting	11/4/2020	**Norm Groot**	As you may know, I'm participating on the Deep Aquifer working group. That groups has been discussing the study and the need to get it done. The problem is we have not identified a funding source. It will probably take a year or more. The county is not willing to fund it, so it will require grants or another funding source. There is a survey out which includes how to fund the study. I urge you all to complete the survey Gary Peterson created. We really need your input on this.	**Comment received.**	Meeting comment - noted.
82					Meeting	11/4/2020	**Justine Massey**	I want to reiterate what Community Water Center has said in the past. Monitoring networks must include shallow well monitoring to establish baseline conditions in quality and groundwater elevation that effects domestic users. We find this to be critical, and encourage a robust shallow well monitoring program. I would be happy to provide more information how that connects to our DW well mitigation framework.	**Comment received.**	Meeting comment - noted.
83					Meeting	11/4/2020	**James Sang**	On the monitoring of the water level, how is it done and where is it done?	**DW:** There is a map in Chapter 7, it's done quite a few wells in the Forebay, which will be reported regularly. There is a map. Monitoring is conducted by MCWRA and private well owners. We receive the data and report to DWR.	Meeting comment - noted.
84					Meeting	11/4/2020	**Jerry Lohr**	Re: Management are memo: I thought it was quite complete and the process is working well.	**Comment received.**	Meeting comment - noted.
85					Meeting	11/4/2020	**Steve McIntyre and Jerry Lohr**	Re: SMC Presentation/Discussion/Groundwater Storage/MT and MO: I think this approach is appropriate.	**Comment received.**	Meeting comment - noted.

86					Meeting	11/4/2020	**Justine Massey**	I want to follow up on the 21% of domestic wells potentially being impacted. If the impact is in that range, is there a plan in the works about how to mitigate those impacts? How does the committee respond if that is the case?	**Steve McIntyre:** We're going to get better data as we go along. I would expect the domestic wells to have been impacted by the 2015 drought more than the ag wells, since they are so much shallower. I think there is a way to monitor and find a standard that is more appropriate. **Abby Ostovar:** We're going to talk about projects and management actions a little later. I think the wells that went dry was very low, suspiciously low, close to zero, which is why we expanded our analysis. **Steve McIntyre:** I would add from 2015, I don't know of any domestic wells that went dry on our ranches or our neighboring ranches. 2015 was an extreme situation for all of us.	Meeting comment - noted.
87					Meeting	11/4/2020	**Gus Yates**	I want to clarify about ASGSA consultant not liking this. By using pumping as a storage surrogate, it's assuming that storage decline is a result of pumping. In this basin, the storage decline during the last drought was a result of an interuption of surface flow and a decrease in recharge, not from an increase in pumping. Both decreases in recharge and increases in pumping both effect storage.	**Steve McIntyre:** That's a really good point. As a management action, if we reoperate the reservoirs, we could have prevented that. **DW:** I want to disagree with Mr. Yates. I think that he overstates it to say that the lowered water levels were from lack of streamflow. Lack of streamflow was important, but you could also have cut back on pumping to maintain storage. You need both recharge and to control our pumping. In the thresholds we're writing, we agreed the storage threshold based on GW levels is reasonable. We also said that we need to pump within our sustainable yield. It's not one or the other, it's both. It's both recharge and controlled pumping.	Meeting comment - noted.
88					Meeting	11/4/2020	**Jerry Lohr**	It's important to point out the drought years as well as the operation of the reservoirs.	**Comment received.**	Meeting comment - noted.
89					Meeting	11/4/2020	**Justine Massey**	Two reports came out, one from the Water Foundation that found similar results that the GSP plans that came for 2020 will result in up to 12,000 wells going dry and thousands of CA residents losing access to their DW. I would be happy to forward that information along. It is a very real possibility that these SMC MT are being prepared in a way that will not protect domestic users. I understand process-wise, you've separated SMCs and projects. You don't want to set yourself up for a giant gap that will cause drastic problems.	**Steve McIntyre:** I really appreciate that. I appreciate the opportunity to speak with you, and maybe a group of us can chat with you about these studies and how they might relate to this subbasin.	Meeting comment - noted.
90					Meeting	11/4/2020	**Jerry Lohr**	In ISW data gaps (7.6.2), it says the level of interconnection basin fill aquifer and the Arroyo Seco aquifer is unclear. That is something we need to be cognizant of going forward.	**Comment received.**	Meeting comment - noted.
91					Meeting	11/4/2020	**Jerry Lohr**	Re: Subsidence SMC. I think it would be good to have 1ft cumulative.	**Comment received.**	Meeting comment - noted.
92					Meeting	11/4/2020	**Allan Panziera**	I would agree to 1 ft cumulative.	**Comment received.**	Meeting comment - noted.
93					Meeting	11/4/2020	**Steve McIntyre**	I would agree to that, too.	**DW:** If you have a rate for one metric, you need to have a rate for the other, too. You can't have a rate for one metric and cumulative for the other. Trying to make it easy on us for DWR to approve our plan.	Meeting comment - noted.
94					Meeting	11/4/2020	**Colby Pereira**	Based on what DW said, I would lean toward that recommendation, using a rate.	**Comment received.**	Meeting comment - noted.
95					Meeting	11/4/2020	**Steve McIntyre**	Re: Water Quality: At the last coordinating committee meeting, we talked a lot about this topic. There are other efforts outside of SGMA looking at water quality, like the irrigated lands program. Our primary goal is to work on salt water intrusion and the quantity of water to achieve sustainability. I think we need to spend more time on water quality and be more proactive. Farmers are concerned about salt build ups. City of Greenfield, we might need to look at water softeners and maybe change them out so we aren't adding to our salt load. I think we need to spend more time on this.	**Comment received.**	Meeting comment - noted.

96					Meeting	11/4/2020	**Justine Massey**	At Community Water Center, we feel that it's important that the MT and MO to be set at each well. If you just average across the subbasin, you can harm the users within the basin. If someone's well is no longer functioning and they can't rely on it, it doesn't matter to them that on average the subbasin is in compliance. It's detrimental to them. The standards should say each well will be protected.	**Comment received.**	Meeting comment - noted.
97					Meeting	11/4/2020	**Steve McIntyre**	If we're going to have shallow wells for ISW, maybe we could use those shallow wells for water quality monitoring as well.	**Abby Ostovar:** One question would be spatial representation. The shallow wells for ISW will be concentrated along the river. **DW:** Water quality is based on supply wells. So we need to analyze what supply wells we can use in our monitoring system, and the shallow ones would be the domestic ones.	Meeting comment - noted.
98					Meeting	11/4/2020	**Jerry Lohr**	Re: Projects Discussion: Other projects: 11043, are we not including those?	**Abby Ostovar:** Those are part of a valley-wide program. I tried to focus on what would benefit this subbasin specifically.	Meeting comment - noted.
99					Meeting	11/4/2020	**John Bramers**	Re: winter releases, can SRDF operate in winter months?	**Abby Ostovar:** Technically it can operate, we're working with WRA about permitting. **DW:** During the 180/400 GSP discussions, our engineer asked MCWRA about this. MCWRA said it could. Usually water levels are high enough to raise the rubber dam. You could also operate the diversion without the rubber dam. We went forward assuming we could operate it in the winter.	Meeting comment - noted.
100					Meeting	11/4/2020	**John Bramers**	We would have to expand the CSIP and do a lot of things to actually capture the water and use it.	**DW:** Yes, it is part of a bigger project. **Donna Meyer:** One qualifier is that they have a flow prescription they have to operate to for winter flows for fish passage. There is a prescription that is tied that physical possibility as well.	Meeting comment - noted.
101					Meeting	11/4/2020	**James Sang**	I don't like the idea of any kind of project that inhibits a grower. I look at this, in the long term, you have growth of ag product and growth of population. Both mean you have to have increased water. If a grower can't use his land, or you charge him for using the GW, I don't see this as a sustainable strategy for the long term. I think you need to rechage the wells themselves, and recharge the underground aquifers. I don't know if it's possible for each grower to develop ponds on his land, or what the	**Steve McIntyre:** I would encourage you to submit your comments in written form so we can include that later. **Abby Ostovar:** The swales are something that could fall under the ag BMPs. I was also building on a past presentation and a large part of the reservoir reoperation is for recharge, which will get water into the ground. Recharge is a main focus of that project.	Meeting comment - noted.
102					Meeting	11/4/2020	**Norm Groot**	I just want to mention that we have conflicting objectives between agencies controlling our GW at this point. The ILRP that is currently being proposed is going to discourage the percolation of irrigation water into GW. If we design projects to enhance groundwater recharge, we need to make sure we aren't getting crosswise of the ILRP program. As it stands now, the regional water board does not want irrigation water below the root zone and we should be aware of that as we move forward with projects.	**Comment received.**	Meeting comment - noted.
103					Meeting	11/4/2020	**Gus Yates**	Does the inclusion of various mechanisms for reducing pumping mean we assume pumping needs to be reduced? Or is it a back stop?	**Abby Ostovar:** It's a back stop. We want to think about the approach if we need it.	Meeting comment - noted.
104					Meeting	11/4/2020	**Tom Virsik**	I had comments on draft chapter 8. I assume it will be in a future meeting. Since there is so much red in it, I'm not sure if staff are ready to receive comments. There are some issues with water rights, I can submit my comments in writing. I'm not sure if staff are ready for substantive comments.	**Emily Gardner:** I would encourage you to submit comments. The draft chapter was included in the agenda packet, but it is a work in progress. We want to get as much feedback as possible. We have not been issuing multiple versions, but this is an exception for more feedback. Another draft chapter 8 will be coming in January or February. **DW:** If we have language concerns, especially with water rights. We want those comments now.	Meeting comment - noted.

105					Meeting	1/6/2021	**James Sang**	The November meeting, I don't understand the $35MIL for the Arundo projects. I think that money could be better spent on recharge [projects] in the subbasin. With Arundo, it seems like you're trying to save water in a bathtub that has a drain because it directly goes to the ocean eventually. I don't see the purpose. With $35MIL, you could put in infiltration basins, everywhere, to fulfill recharge needs for this whole basin area. The kind of recharge I'm thinking of is not just infiltration basins, but like swales or trenches that are 2-3ft deep, which help prevent evaporation by the sun and the wind. If there are any clay areas, it would be difficult. If we just give it time, rainwater can be absorbed. This idea of fallowing, I don't like the idea where we stop the use of any ag land use. The economics will continuously, in a period of economic growth, these are products people need. Other suggestions, bringing in water supply from the dams. Why do all this work when you can get this water from precipitation?	**Comment received.**	Meeting comment - noted.
106					Meeting	1/6/2021	**Brad Rice**	Re: Workshop: when you say approval for funding, what are you talking about?	**Emily Gardner:** Funding mechanisms, we'll have a workshop on all various types of funding mechanisms for projects: grant opportunities, fees for pumping, 218 votes. It's going to be an informational workshop on how we can fund projects in the future. How it looks at an individual subbasin level will be different based on which projects move forward.	Meeting comment - noted.
107					Meeting	1/6/2021	**Allan Panziera**	The north boundary, B Line, when ASGSA was starting, and we were petitioning folks to see if they wanted to join the ASGSA, from that line to the north up to Foothill Road, they all expressed they wanted to be included. I propose they should be included in the ASGSA.	**Comment received.**	Meeting comment - noted.
108					Meeting	1/6/2021	**Ron Panzeira**	I agree. That [B] line should be extended up to Arroyo Seco Road, continues up Paraiso Springs Road and that area. I think that's all heavily influenced by the Arroyo Seco and not the Salinas.	**Comment received.**	Meeting comment - noted.
109					Meeting	1/6/2021	**Jason Smith**	What are the scientific and technical reasons why that [northern area] wasn't included?	**DW:** When you look at all the data, you didn't see as strong of an influence from the Arroyo Seco. I want to point out, this isn't Arroyo Seco vs Salinas River. It is, is there an area that is more strongly influenced? I think we had some earlier maps that went to the north, but the data get a little less certain as you go further north. There wasn't anything that specifically said you should NOT go further north.	Meeting comment - noted.

110					Meeting	1/6/2021	**Jason Smith**	What's the difference of being in the management area versus not being in the management area, for any landowner?	**Donna Meyer:** SGMA does allow us to create a management area within the GSP, and can be based on a unique feature. It's not meant to divide landowners. I think the committee has done a great job at looking at the technical details. What the next step will be is within a management area, you can work towards objectives and SMCs that are unique to that feature, as long as they are not incongruent with the larger subbasin goals. This area would be managed with the ASGSA, we would be able to provide some funds that are collected by fees per parcel to the ASGSA for management purposes. Any projects or work that was done beyond the SMCs would have to be funded by the ASGSA. Management area implementation agreement will be develop between the two areas that will specify. The management area does not result in the SVBGSA giving up its own powers or authority. It recognizes a partnership and a unique feature within the subbasin. Without answering the boundary question first, we can't move forward with other efforts. **DW:** Other things we've worked on are agreeing to SMCs throughout the entire basin. We've gone pretty far down that line. Several SMCs are going to be the same in and out of the management area. There will be differences when it comes to allocations. I don't see a need for pumping controls in this basin. Should we come to that in the next 50yr, you have to divide up the pie. There is an option to say one of the pies is within the management area and another pie is outside of the management area. Should that come to pass, that is probably the biggest effect of having a management area. **Steve McIntyre:** The fees will be the same.	Meeting comment - noted.
111					Meeting	1/6/2021	**Gus Yates**	I want to add about what happens at the boundary at line B. The water quality effects of the Arroyo Seco continue to the north, but the hydrograph signatures that are characteristic of the Arroyo Seco start disappearing. It is a squishy dividing line.	**Comment received.**	Meeting comment - noted.
112					Meeting	1/6/2021	**Colby Pereira**	It is important to look at this holistically, and not pit stakeholders against eachother based on where a line might be drawn. I want to ask about outreach. You pointed out this map doesn't have holes. Stakeholders petitioned to be a part of this [Management Area] or not, can you update how outreach is going?	**Steve McIntyre:** Outreach really starts today. This was presented at the ASGSA committee. Talking to various property owners who petitioned to be in, or who said they didn't want to be in, especially where there were holes or islands. We've gotten really good feedback. Now we have to seek comments from a much larger group.	Meeting comment - noted.
113					Meeting	1/6/2021	**John Bramers**	There's a lot of data on here, but there seems like there is insufficient data from the northeast, from Salinas River to Soledad. Don't you need data there to fine-tune the map?	**Steve McIntyre:** We hope to develop more data over time. **DW**: Yes, there are places with missing data. The areas closer to the headwaters are more influenced by the Arroyo Seco. That northern area as you get close to the Salinas River, you get more influence from the Salinas River. Right now we have the best estimate, and we need to move forward. As we collect more data in the future, it may be something to consider. **Donna Meyers:** We had a similar conversation with the ASGSA this morning. I reminded folks that SGMA is an adaptive management approach. The planning work is that adaptive approach, and understanding more about your basin, and refining your plan as you move ahead.	Meeting comment - noted.
114					Meeting	1/6/2021	**John Bramers**	I guess as we get more data, would that area grow? What would it look like? Seems like you're looking at hydrograph map as where to put that line. You expanded the Clark Colony portion pretty far out, but the hydrographs don't show that.	**Steve McIntyre:** We wrestled with that.	Meeting comment - noted.
115					Meeting	1/6/2021	**Jason Smith**	The yellow dots, they are on the border of either way, strongly Salinas or strongly Arroyo Seco. That's why I ask, what does this mean? At the same time, we say this is a management area and it is relatively sustainable	**Comment received.**	Meeting comment - noted.

116					Meeting	1/6/2021	**Jerry Lohr**	It's a judgment call, a practical call. It's something where you put many different things, many different graphs, especially in the north area where this boundary could move. One that I thought was comfortable was where the bluff is to the south. There were some red wells at the base of the bluff, but on the bluff there are some yellow dots as well. Judgements on the area are good. Through several months people have been looking at it, we've gotten away from gaps. I think we're headed in the right direction. I think we're wanting to now go out and talk to people. Where are we with getting more data?	**DW:** I think we're trying to get feedback to the ASGSA and SVBGSA can come to a final agreement, or an agreement to move forward. If there are data that would make a significant difference, that's great but there's also a timing issue. **Donna Meyers:** We have been working on this pretty much every month, going through the information, technical. And evaluating how the relationship will work in the GSP. We have been told by DWR that this will need to get resolved fairly soon. When new maps are filed with the state, which we want to do in Feb, there is a curing period. What we risk if it's not resolved, that we will not be able to file this GSP and we will be out of compliance with SGMA. Our intent is that we finish this analysis and work through our boards and finalize the implementation agreement, and look to late Feb to submit the map so the GSP can be submitted. Right now, because of the overlap, neither GSA has the ability to submit.	Meeting comment - noted.
117					Meeting	1/6/2021	**Roger Moitoso**	When you look at those 3 yellow dots, plus the blue one just above, the majority of those land owners have asked to be in the ASGSA. Those 3 dots say it's pretty close, I would recommend you move the line. It's not a big deal to pick them up. It's one GSP, one GSA that spreads the funds, not a big difference.	**Comment received.**	Meeting comment - noted.
118					Meeting	1/6/2021	**Pamela Silkwood**	Seems like hydrograph and water quality data, especially around the perimeters, is uncertain. But the geomorphic data is certain. The Arroyo Seco cone is established, which means there is influence from the Arroyo Seco river. Is there a reason why you wouldn't use the Arroyo Seco cone, which then would capture NW area?	**DW:** You could use the cone, but it shows the historical maximum extent of where the Arroyo Seco was. It doesn't show where today it is hydrogeologically unique. There is a good argument to say the western edge of the arroyo seco cone acts more like the rest of the basin. That doesn't mean you couldn't use the extent of the mapped cone. We're just looking for best available data for the hydrologic influences.	Meeting comment - noted.
119					Meeting	1/6/2021	**Tom Virsik**	It would be useful to have the current boundary map as GIS or a list of APNs, so people can be very granular about their interests. The progress has been really good. What people have said, the difference between being inside or outside may be less important than what it first appeared, with the big caveat potentially being allocation issues which under SGMA is not water rights. I don't see the boundary as binary as what it once seemed to be. I don't see it making any substantive difference, in projects that come down the road like reservoir reoperations or the tunnel. If you happen to be 100% on arroyo seco water, or not, that matters. But if you're on one side or the other doesn't matter as much.	**Comment received.**	Meeting comment - noted.
120					Meeting	1/6/2021	**Nancy Isakson**	Wanted to share recommendation from ASGSA Advisory Committee. Recommend to move forward and look at issues in the NW corner and the most SW corner, above the green bridge. Look at those issues and the issues outlined today. Support the remaining boundaries as they have been identified. Include all the way to the lower most southern purple line. They also ask that it be brought back to their advisory board, and I think that's the intent before going to board of directors.	**Comment received.**	Meeting comment - noted.
121					Meeting	1/6/2021	**Allan Panziera**	Re: Pumping allocations: I'm not sure how you set up the structure without the science. One guy might be able to pump all he wants and not worry about the outliers. It might work for the 180/400, and the water runs there longer now with CSIP, but hasn't seemed to stop the problem.	**DW:** Those are two different ways at looking at the allocation systems: controlling pumping and funding projects. We can give everybody an allocation and there is also an option, legality still working through, if you are pumping or groups of pumpers that are causing an undesirable results, and it's clear, can the GSA say everybody's got an allocation but you're causing an undesirable results. When you talk about pumping, we think there's not exactly a 1:1 connection between this is your allocation and this is your right to pump. This isn't a water right, it's simply an allocation to get to sustainability.	Meeting comment - noted.
122					Meeting	1/6/2021	**Allan Panziera**	Are you going to charge somebody who doesn't have a problem or isn't causing a problem. I don't think that is fair.	**DW:** That's up to this group. We can find a different approach.	Meeting comment - noted.

123					Meeting	1/6/2021	**Steve McIntyre**	Given the relative water wealth the Forebay has, if we need to allocate, it ought to be during a drought. And maybe that allocation could be tied to a minimum threshold. If a group of wells fell below a threshold, then that group might have to cut back 10%, until they got back above the minimum threshold. My view is irrigated acres, and evaluating on a yearly basis in case somebody wants to fallow or new users come in to the basin.	**Comment received.**	Meeting comment - noted.
124					Meeting	1/6/2021	**Jerry Lohr**	There are sometimes permanent crops in the area, and their annual needs are based on rainfall. If we need about 20" of rainfall, but if we have 5" of rain, we need 15" of pumping. The idea of water allocations is going to be a real Pandora's box. It will color people where they won't be able to provide support for the salt water intrusion, or our well heights. I think there's an easier answer. There's a question for population expansion, where are we going to get water for that. Residential probably uses less water per acre than irrigated land does. So if you buy and you want to build, you can then have water used for irrigation for that. So you don't have to go into an allocation process. This is a very complicated process and I think we're just going to scare people.	**DW:** I agree, and that's why I'm trying to keep this high level. We're trying to avoid adjudications, which are essentially allocations but they're just water rights. We are looking for general concepts that we could agree on. You're right, the details of this will take some time to work through, more time than we have to write this GSP.	Meeting comment - noted.
125					Meeting	1/6/2021	**Allan Panziera**	It states that you'll only be allocating native water. Where does the SVWP fall?	**DW:** We are working with WRA to get their opinion on the legal status on their water. I'm not an attorney, so I'll try to be careful. In general, water that has been diverted, that water belongs to the diverter. The fact that WRA diverts it for the good of the people in the valley, complicates it. But it is not part of the natural recharge.	Meeting comment - noted.
126					Meeting	1/6/2021	**Brad Rice**	If the only thing we change is the date, 1956 instead of 2021, and we have the same discussion, the allocation is of the natural sustainability pre-reservoir, pre CSIP. You come up with what that number is, and it's not enough. So you build reservoir and you enhance. If they're not enough, you come up with a project. And if that's not enough, then, we've already done that. We've already created enhancement zones 2, 2A, 2C, 2B and you have Clark Colony on top of that, which spreads water and enhances its own. If you talk allocations, you've got to talk about native, natural.	**DW:** I would like people on this committee to think, is there any place where we're going to need allocations for pumping or for financing. We're looking for a fair way to split things up. What is fair? Net or irrigated acreage? We will send something out to get better feedback, maybe with examples. Or are some people saying they don't even want to see this in the GSP? **Steve McIntyre:** We should table this until we have more time. I do need to take it out to the public.	Meeting comment - noted.
127					Meeting	1/6/2021	**Nancy Isakson**	I want to add, you mentioned using allocations for funding. I think historically it's been tried and doesn't really work. If you think that in 50 years you might need an allocation system, what about 30 years down the road, we don't have that information. We don't have enough info today to decide what will need to be developed in 30 years if we exceed our min thresholds. We encourage you to consider that.	**Comment received.**	Meeting comment - noted.
128					Meeting	1/6/2021	**Tom Virsik**	An observation, that when chapter 6, which is the water budget, is out there, there will be numbers and numbers associated with irrigated acreage. By division, everyone will start with a default allocation, not labelled as such, but where everyone will start. Keep that in mind, that not putting numbers on what's happening may not be the best idea long-term.	**Comment received.**	Meeting comment - noted.
129					Meeting	1/6/2021	**Justine Massey**	For de minimis users, how are they defined? I've heard just one definition which is using 2AFY or less. Is there a source for that distinction between domestic and other de minimis users? The importance of having allocations for pumping, it's really one of the most critical tools for a GSA to have to ensure you say within sustainability. A lot of hope hinges on expectations for recharge water. Looking at this year, it's not something we can count on. It's up to the GSA to make the hard calls as shortages arise. Community Water Center finds this a really important point, there should be some allowance and expectation of growth of urban users. Population is expected to grow, but you can't fallow humans, so this is an increase in basic needs use.	**Comment received.**	Meeting comment - noted.

130					Email	1/28/2021	**James Sang**	https://sjvwater.org/delanos-big-dig/	**Comment received.**	Noted.
131					Meeting	3/3/2021	**John Bramers**	Were we going to do a template or 1-pager about what it would look like in or out of the management area?	**Donna Meyers:** We are still working through the documentation on the management area. There was a database created, it's not fully updated. Curtis and I will give an update and can answer your question then.	Meeting comment - noted.
132					Meeting	3/3/2021	**Gus Yates**	I'm curious about the calculation of 267,000 AF. Was that calculated from subtracting the differences between two contoured surfaces and applying a constant storativity value? What was that value?	**DW:** I think the storativity value was applied to the difference between the MT and MO, I don't know the storativity value off hand.	Meeting comment - noted.
133					Meeting	3/3/2021	**Justine Massey**	Does this committee have any data on how many wells will be impacted at that MT?	**Abby Ostovar:** The storage calculation is essentially the same as the water levels, and how we do that calculation. That was presented in November, and I sent it to Heather. The challenge with domestic wells, and the 150 DDW wells, many don't show accurate locations. We can really only use those with accurate locations.	Meeting comment - noted.
134					Meeting	3/3/2021	**Justine Massey**	There were only 8 wells with accurate location data, right? Is there a way to track down more accurate information on those wells?	**Abby Ostovar:** Yes. No, way with existing data.	Meeting comment - noted.
135					Meeting	3/3/2021	**John Bramers**	On the winter releases and ASR wells: Where will those go and what aquifer will store that water?	**DW:** The idea is that the winter release water goes to the 180/400. And we store water in those aquifers in the winter. It has additional benefits to the Upper Valley and Forebay subbasins. The idea of the project is to store the water in the 180/400. And then there are supplementary benefits that accrue to the Upper Valley and Forebay Subbasins.	Meeting comment - noted.
136					Meeting	3/3/2021	**John Bramers**	Is this a different project than pumping water from the Hwy 1?	**DW:** This [Winter release ASR project] is trying to get more fresh water in the ground, whereas the Hwy 1 project is trying to extract seawater from the ground. **Abby Ostovar:** That other project is not off the table, it just doesn't primarily benefit the Forebay.	Meeting comment - noted.
137					Meeting	3/3/2021	**Allan Panziera**	What are the benefits to the Forebay?	**DW:** This will take a reoperation of the reservoirs. I want to be clear, it isn't the GSA's purview, and will take a lot of coordination with MCWRA. The idea is to store more water in the reservoirs in the summer, and then release more water in the winter. This was the largest concern we heard from Upper Valley and Forebay, about droughts where you don't get regular releases to recharge the aquifer.	Meeting comment - noted.
138					Meeting	3/3/2021	**Gus Yates**	Can someone explain the difference between the D-TAC and what MCWRA does all along which is wait until a drought comes along to decide what to do?	**Curtis Weeks:** So the TAC is a group of technical folks and resource agency folks put into place to establish release schedule for the coming year and drought sequence. The principals are to guide a revised process for a release schedule and prevent multiple years of no releases. **Steve McIntyre:** It's a multi-stakeholder group, but each group must designate a qualified technical person to sit on the committee. It's a broader view and advice on how to run the reservoirs during a drought. Trying to be a little more proactive as we go. **Emily Gardner:** The guiding principles of the D-TAC are in place. It's a unique management action. Each year there is a drought, the D-TAC will come up with a narrative about how operations could look into the fall. That's where the management action happens because no one knows how that will look due to the variability each year. **Jason Smith:** A good example is that we would have implemented those principles already if we hadn't gotten the rain we got. It has come out of the lawsuit and this is part of the mitigation.	Meeting comment - noted.

139					Meeting	3/3/2021	**Nancy Isakson**	The Standards and Guidance Principles was adopted by the Board of Directors, this was a result of the litigation with SVWC and the MCWRA. I think this is really a good thing for everybody. NOAA, NMFS is a part of it.	**Steve McIntyre**: The analysis Nancy is speaking of is actual modeling. The WRA is doing modeling, and the SVWC is doing modeling, and we've spent a lot to get these models going. We're seeing the same kinds of benefits.	Meeting comment - noted.
								Also I want to mention, we've sent letters to this committee, one about the winter release schedule. Water released during winter would not only help recharge the aquifers, but also provide for additional fish passage. We see it as win-win. It is simply a reoperation of the reservoirs without the capital costs described here [with ASR]. We are moving forward with the WRA on that. We should have the final tech memo this month. Our prelim analysis shows that through this process, the average annual is 10,000 AFY available additiona water per year, with little to no impact on SRDF, and benefits the entire Salinas Valley Basin. The SVWC thinks what we are working on with WRA for the winter release program shows almost as much potential as what this presentation shows, but without the capital cost. It should be included as an alternative in the GSP.	**Abby Ostovar:** We did look into this. It isn't included here because the details haven't been released yet. The language drafted for the GSP has these 3 projects, as well as any other winter release projects will also be considered.	
140					Meeting	3/3/2021	**Tom Virsik**	On the river management program [Invasive Species Eradication], a cost of $160/AF. Is this for the 20,000 AF?	**Abby Ostovar:** Yes. These aren't finalized numbers and we are hoping to update the project yield numbers. We anticipate that the project yield will be less.	Meeting comment - noted.
141					Meeting	3/3/2021	**Tom Virsik**	My understanding is that the interlake tunnel releases water April-October, which is not winter. There are contrasting projects that are winter releases. It sounds incompatible for them all to exist at once. It appears when this process goes further, there may have to be some clarity from technical people and policy-making whether the interlake tunnel is preferred. It seems like it would not work well to do both the interlake tunnel project and winter releases.	**Abby Ostovar:** These aren't necessarily compatible projects. These are potential projects that deal with reservoir reoperations. What evaluations are needed to move forward. We are doing the winter release model runs. We thought it was better to acknowledge all of the potential projects and then lay out the approach and a process through which they will be evaluated.	Meeting comment - noted.
142					Meeting	3/3/2021	**Tom Virsik**	I'm suggesting that perhaps the next point to be explicit that there is a project that goes in this direction, and these other projects go another and that they are not compatible. There needs to be a technical reality before it goes to a policy decision.	**Comment received.**	Meeting comment - noted.
143					Meeting	3/3/2021	**Roger Moitoso**	This is the same discussion we had in the Upper Valley, we have a GSA looking for a job and we are crossing into jobs that aren't ours. This agency's attorney made the argument that the GSA is only to manage the native natural waters. Managing Arundo, and the river, okay, fine. But the reservoirs, that is someone else's job and stakeholders already paying for that. That would be like me calling Steve and telling him I'll manage his vineyard. It's not my job.	**Steve McIntyre:** We are looking at these projects, keeping in mind that they don't belong to us, but if they are implemented then we would need to have considered them.	Meeting comment - noted.
144					Meeting	3/3/2021	**Justine Massey**	Just to clarify, how pumping in the Forebay is close to sustainable yield. That's really encouraging. I want a better idea of what that means. Is that based on conditions this year? What is the baseline?	**Abby Ostovar:** That is the topic of DW's presentation later. But we will address that today, after the next sections, Allocations and Implementation.	Meeting comment - noted.
145					Meeting	3/3/2021	**Jerry Lohr**	I've spoken to this before. We all realize some crops take more than others. We also have to consider annual crops, too. Wine grapes take 20-24 inches of rain and irrigation water a year. We're all using our water as efficiently as possible. So, if we have 5 inches of rainfall, we need 15 inches of irrigation water. If we have 15 inches of rainfall, we need 5 inches of irrigation water. That is a large variable. We have to take into account the difference in needs between annual crops and perennial crops. As for water for dormant land, are you talking about fallow land, or land that hasn't been developed. There's a movement here to reduce pumping to then bring new lands into production that has never been irrigated before. Can you define what you mean by dormant land? Fallowing is a good thing, but if we are bringing new lands in, that goes against our water use.	**Abby Ostovar:** Dormant land that has previously never been irrigated now coming in to be irrigated.	Meeting comment - noted.
146					Meeting	3/3/2021	**Jerry Lohr**	Crops can change. Someone is putting in a lemon orchard. Someone could grow on hillsides, are we setting aside water for that future unknown use?	**Abby Ostovar:** You can adjust the allocations as dormant land comes into use, or you could set a dormant set aside. The GSA does not have land use authority. You could have distinct set of rules for non irrigated dormant land.	Meeting comment - noted.

147					Meeting	3/3/2021	**Jerry Lohr**	I came through here in Spring of 1959. There's a lot of land irrigated now that wasn't irrigated then. And it's very productive. The reservoirs were put in. How do we quantify? Will there be an additional 50,000 acres or 100,000 by 2040? Meanwhile we're all trying to conserve water.	**Abby Ostovar:** We don't need to decide the details now. We can include things like the distinction between perennial and annual crops, as important factor to this subbasin.	Meeting comment - noted.
148					Meeting	3/3/2021	**Jason Smith**	This gets into a lot of the conversation we had in the Upper Valley.1. We understand we're trying to create a plan to send to DWR, and what we're going to send isn't the rules we have to abide by, but that this is our best guess as to what we might be able to do. What we did in the Upper Valley, and it's similar to the Forebay, both being somewhat sustainable with water, is no one wants to pigeonhole themselves into anything. We're trying to address a what-if. Creating a problem we don't have. For us as a committee, we need to give you something. I don't think anyone is going to be comfortable saying "option 2, we'll put some dormant set-aside". We're not talking about a canal system where you can allocate water evenly. This all gets into the water budget conversations. We're still talking about it in the Upper Valley. It's really difficult to come up with something that is committing to something we may never have to do. Jerry brings up a good point about what land was before and what it might be, permanent crops and dormant land. We have our baselines that are in there. Once we get into one of those danger zones, then we're already meeting as a committee and deciding how we want to handle that. I also understand, we can't harm other basins. If we're in sustainable yield, and we're deemed as we're not hurting anyone else...then...?	**Abby Ostovar:** I would encourage you to think about the Forebay distinct than the Upper Valley. We're still trying to understand the numbers. We can have this as an alternative, as an "if needed". We're managing to sustainability for the next 50 years. We can also have this triggered only during a drought. Even as a backstop, this will still take several years to develop. Going into the GSP shows DWR we've thought about it.	Meeting comment - noted.
149					Meeting	3/3/2021	**Brad Rice**	Maybe what we ought to do what they're doing in the Upper Valley, and that is just monitor.	**Comment received.**	Meeting comment - noted.
150					Meeting	3/3/2021	**Steve McIntyre**	For drought conditions only seems to be a recurring theme in the Forebay and Upper Valley. When you were calculating the dormant land, did you use Zone 2C as your outer boundary? If you take the water out of 2C, you have to pay back taxes.	**Abby Ostovar:** We used the DWR boundary. We'd have to go through further analysis and refinement. There are questions that would need to be addressed.	Meeting comment - noted.
151					Meeting	3/3/2021	**Brad Rice**	I'm hearing allocations and allocations are not acceptable to us.	**Comment received.**	Meeting comment - noted.
152					Meeting	3/3/2021	**Jason Smith**	I think what we are most concerned about with agreeing to things along the way, even if they're just conceptual, there's not a lot of trust in the valley that once we put something on paper that it isn't something we'll be held to. What you're saying is that we're just putting it in as a possible option. We're reluctant to put anything down. How do we address this so you can successfully submit a plan, and we won't feel like we won't have our feet put to the fire for something we put in our plan.	**Abby Ostovar:** Would you be more comfortable with this as an alternative management action and the committee decided on a trigger?	Meeting comment - noted.
153					Meeting	3/3/2021	**Jason Smith**	Yeah, this goes to monitoring. For example, we've had 3 years of no rain. Now we get together as a committee once we reach those triggers and go through X, Y, Z steps. We're like everybody else, we can't live without water. We just don't want to put it out there that we have an allocation with a trigger. Perhaps something like what triggers the next talks would help.	**Abby Ostovar:** That's helpful, drought is a big concern for this subbasin. It's most important to have this during drought. There's going to need to be a few years to develop a structure.	Meeting comment - noted.
154					Meeting	3/3/2021	**Jason Smith**	Let's use the D-TAC as an example. If X happens, we're trying to prevent ourselves from getting into trouble. If we have 1 year of drought under our belt, what is that trigger to address year 2, year 3. I think that would be better to address this, because it's staged. As we have droughts, there will be wells that run out of water.	**Emily Gardner**: I just want to add, to clarify. Jason, you're talking about the concept of triggers. If a trigger was hit, maybe people would want to have a conversation. But it would take years to develop that with enough stakeholder input. I just want to point out the time that it would take.	Meeting comment - noted.
155					Meeting	3/3/2021	**Steve McIntyre**	I would add, it's really going to come down to language to state, in a drought condition, a committee will be convened and allocations will be considered based on the following triggers.	**Comment received.**	Meeting comment - noted.

156					Meeting	3/3/2021	**Allan Panziera**	It is going to be obvious. Some people already use more water than others and there is water law that goes along with it. It needs to look like an adjudication because everyone isn't going to get equal amounts. If it doesn't look like adjudication, then it will be open to litigation.	**Comment received.**	Meeting comment - noted.
157					Meeting	3/3/2021	**Brad Rice**	Let's look back at history. In the last 60 years, we've only hit trigger points 2 times. What are we trying to fix here?	**Comment received.**	Meeting comment - noted.
158					Meeting	3/3/2021	**Nancy Isakson**	I appreciate the discussion. I want to make a distinction on restrictions and allocations. SVWC survey responses say they do not support allocations. We wrote a letter and suggested pumping limitations as a tool in your toolbox when you get to that point where you've exceeded your MTs. You get together and say, what are you going to do? Reduce 5%/10%? How can you address the issue at hand? Seems simpler than needing years to develop pumping allocations. Specific standards and criteria should be developed similar to the D-TAC. Another tool in your toolbox when you get to that point.	**Comment received.**	Meeting comment - noted.
159					Meeting	3/3/2021	**Tom Virsik**	In response to these discussions, it might be best not to use the word "allocation" a lot, it rubs people the wrong way. I think of it like math. Call it what you want, but the calculation will be there about acres and water. You're going to start with what looks like an allocation. I agree with Ms. Isakson, that pumping limitations would be a useful tool. The GSP might pigeonhole stakeholders. The land use authorities look at GSPs during planning, and they'll look at your plan and permits to see a path forward. Dormant land simply means lands not currently being irrigated, but they overlie groundwater and have correlative rights to pump that water. If another 100 acres comes into use, everybody's right gets reduced. The default needs to be explicitly recognized in the GSP. It's less of an issue for my clients in the Forebay. I would almost say "option 1" is almost the default. You have water that is distributed, and with new land that comes into production, the distribution is recalculated.	**Comment received.**	Meeting comment - noted.
160					Meeting	3/3/2021	**Curtis Weeks**	This is a challenging issue. I think Jason hit on some key points. I'll summarize this from the ASGSA. We need to have some controls when we get into droughts. The Forebay is a unique subbasin because of the groundwater flow, recharged by two different river systems and is pretty	**Abby Ostovar:** The voluntary reduction in pumping, if not enough people volunteer, what do you do then? **Curtis Weeks**: We can create an allocation system after those voluntary systems would occur.	Meeting comment - noted.
161					Meeting	3/3/2021	**Marieke Desmond**	Under the 3rd allocation approach, can you tell us the formula for that and is it the same across the whole basin? And, what is the consequence if DWR feels that each subbasin has not sufficiently planned for drought conditions? What are the next steps?	**Abby Ostovar:** Drought conditions are not at the top of DWR's concerns. That is more of a local concern for this subbasin. The state can step in if they feel the plan is inadequate and doesn't provide enough options to reach sustainability. Every five years, we do an update, and every year we have an annual report. To your point, this is an example, if you used less historically, you would receive a smaller allocation. It is even across the subbasin. We used a land use map. The crop multipliers were from Monterey County. It's in the data packet.	Meeting comment - noted.
162					Meeting	3/3/2021	**Steve McIntyre**	I have a question to pose to the committee. We need to give Abby and Derrik some direction. I'm going to suggest, instead of calling it allocations, we call it pumping restrictions because it would be faster to implement based on Emily's comments. Whether it is active or passive restrictions, if we drop below the MT by 10% for two years, or 75% of the wells, then we restrict our pumping by 10% or some percentage. And this would give us time to develop allocations if it's a prolonged drought.	**Comment received.**	Meeting comment - noted.
163					Meeting	3/3/2021	**Brad Rice**	I'm sitting on over 9,000 acres, and this whole allocation thing makes me nervous. I make a motion that we continue to monitor and give that direction.	**Comment received.**	Meeting comment - noted.

164					Special Meeting	3/30/2021	**James Sang**	If there are 15 inches of rain on 1 acre of land, that's 400,000 gallons of water. The advantage of trenches or swales is that the majority of water in them can be protected from evaporation. If we can calculate how many swales or trenches would be needed to offset the water farmers are using, then we can pass those savings onto farms so that they wouldn't have to pay for the water they're using.	**Comment received.**	Meeting comment - noted.
165					Special Meeting	3/30/2021	**Jerry Lohr**	I'm very appreciative of how Abby worked with us. I think the huge issue that we hopefully clarify here is de-linking fundraising. After Derrik's presentation today, we might want to revisit this because we didn't hear the water budget last time. I'm willing to go forward now, but I would prefer to wait.	**Steve McIntyre:** Thank you, Jerry. Other committee member thoughts?	Meeting comment - noted.
166					Special Meeting	3/30/2021	**John Bramers**	We didn't go too much into how monitoring and enforcing was going to go. We might want to get this TAC together sooner rather than later just to see how that's going to look so you can't enforce something.	**Steve McIntyre:** Yes, you raise a good point. **Emily Gardner:** One of the first issues we hope the TAC can address is looking at what data we can collect.	Meeting comment - noted.
167					Special Meeting	3/30/2021	**Nancy Isakson**	Thank you for putting this together. The water resource agency has adopted a drought TAC process. I know you're a part of that. Emily is a participant. Reservoir operations will be an important part of how these triggers are met. You need to consider the reservoir operations. Therefore, I think you need to have a linkage with what the water resources agency is doing there. What they did with their TAC was to take the politics out of it and base it on science and the facts. I recommend something similar here. I noticed in the one-page handout there is still mention of "control" pumping. This is kind of a red flag for some of us. I think it would also be helpful if you had a monthly timeline. I would concur it would be important to add what the TAC will be defining. Thank you.	**Steve McIntyre:** Thank you, Nancy. The nomenclature is important. We struggled with that ourselves.	Meeting comment - noted.
168					Special Meeting	3/30/2021	**Tom Virsik**	It's unclear as presently phrased whether the TAC could create management actions for all of the Forebay - and only all of Forebay - or for the Arroyo Seco Management, or for subareas within Forebay where water levels may be dropping. The emphasis with TAC should be technical, so the experts should be leading the committee more than the stakeholders. If the TAC decided that pumping should be curtailed by X percent in geographic area B, would that require an update to the GSP or the annual updates or the 5-year updates? What would be the procedural result of the TAC reaching a conclusion?	**Abby Ostovar:** It doesn't actually change anything. We'll mention it in the annual report as a management action.	Meeting comment - noted.
169					Special Meeting	3/30/2021	**Justine Massey**	I really appreciate the adaptive management approach. I have a question about the timing. When are the measurements taken? When does the TAC meet? When is a decision reached? Water levels are seasonal. The way the timing is currently set up, we might consistently have dry wells in the summer, then the TAC would meet later, and any actions it takes would be too far delayed. Could we include criteria based on the number of dry wells or partially dry wells in the area?	**Steve McIntyre:** Those are details that we need to work out. We have some previous examples to guide us. We want to be careful not to act too quickly, because you're right, rainfall can change suddenly and unpredictably. We don't want to rush into action because that would be disruptive, and it might be unnecessary if it happens to rain a lot the next month.	Meeting comment - noted.
170					Special Meeting	3/30/2021	**Marieke Desmond**	What if we don't pass 218 and the dams don't get fixed? Will the GSP take that possibility into account?	**Steve McIntyre:** It's something all of us have thought about. This is a question for the broader board, something advisory committees should be considering. It's too early to say without modeling, but good to think about.	Meeting comment - noted.
171					Special Meeting	3/30/2021	**James Sang**	What if you withhold pumping controls until you start projects that raise the groundwater levels?	**Comment received.**	Meeting comment - noted.
172					Special Meeting	3/30/2021	**Jason Smith**	Re: Water budget: If we're using 20% more water than necessary then we're just bad farmers and PG&E is benefitting from our inefficiency. We're all better when we're using more information. Are we agreed on the Arroyo Seco Management Area?	**Steve McIntyre:** That's not an agenda item today, but I can say, with Donna's approval, that we are close to an agreement and we expect to be able to share good news soon.	Meeting comment - noted.

173					Special Meeting	3/30/2021	**Jason Smith**	Whether it's sustainable or not necessarily sustainable, it's not a swimming pool. Not all is equal. I have land on the east side of Forebay. I know what happens along the river when there's a drought. Reducing pumping far away in one corner of the subbasin doesn't necessarily help the opposite corner of the subbasin. The TAC makes sense.	**Comment received.**	Meeting comment - noted.
174					Special Meeting	3/30/2021	**Jerry Lohr**	I think it would be simpler if we could work in concert with other committees so that we can share data. Earlier, I had a draft of Chapter 9, but I saw inconsistencies when I got the actual draft of the 180/400 Chapter 9.	**DM:** After working through SWIG membership, the committee is recommending that using a water market framework is best put aside. Instead, we should focus on getting our GSPs finished. Subbasin plans are taking different tacks on how to reach sustainability criteria. We feel at this point the water charges framework is good to think about for the future, but not as important as finishing the GSPs.	Meeting comment - noted.
175					Special Meeting	3/30/2021	**Jerry Lohr**	It would be simpler to work in concert with the Water Resources Agency TAC. After hearing about the water budget and that we are mostly in balance except for drought, I think we should get the committees put together sooner rather than later so we can get the data coming in.	**Comment received.**	Meeting comment - noted.
176					Special Meeting	3/30/2021	**Jason Smith**	Building on Jerry's TAC comments and what Steve was saying when he said, "We'll meet in October…" and then we had rain and we didn't need to implement any restrictions. Rather than recreating the wheel, then maybe we could use the Water Resource Agency framework/TAC because it is really about how the dams are operated.	**Steve McIntyre:** I think we'll want to consider how they'll use the dams differently during a drought. Any Forebay TAC or smaller TAC will have to be coordinated. Especially for Forebay, we need more than just technical expertise, because a drought could have a big impact on everyone. **Emily Gardner:** I just wanted to point out that the TAC we're talking about for the Forebay Subbasin has a slightly broader scope than just responding to droughts. In the future, hopefully this concept could help us to monitor for land use, different crop types, and other factors that could affect the amount of water in storage.	Meeting comment - noted.
177					Special Meeting	3/30/2021	**Jerry Lohr**	I'm glad the model accounts for climate change. I've noticed climate change here in Paso Robles even more than in Salinas. When Derrik said climate is expected to be not just hotter, but also wetter, I was pleasantly surprised. I think going back to row crops could be another issue.	**Comment received.**	Meeting comment - noted.
178					Special Meeting	3/30/2021	**Nancy Isakson**	Starting with the TAC, while they are different, you might want to develop a process in the way the water resources agency did. First, identify the standards and guiding principles. Then develop an action plan. Do this sooner rather than later. Another question: on your Arroyo Seco slides, historical water budget you have a net flow from/to Forebay at 1,600 AF in the future it says net subsurface flow? Is that the same?	**DW:** Yes, sorry for the wording change. Descriptive wording is the modeler's dilemma.	Meeting comment - noted.
179					Special Meeting	3/30/2021	**Nancy Isakson**	Each subbasin must pump within their sustainable yield. When do they need to meet that? Today? Tomorrow? Next year?	**DW:** The sustainability goal must be reached in 20 years. Pumping within sustainable yield is a bit of a circular problem. Sustainable yield isn't just a number. It's the undesirable results that matter.	Meeting comment - noted.
180					Special Meeting	3/30/2021	**Justine Massey**	I have questions about the climate change modeling. From what I understand, most climate change models are split. There isn't agreement on whether it will be wetter or drier. How certain are these results? Also, thank you for acknowledging that there could be trouble spots within an otherwise sustainable basin that could require more localized management actions.	**DW:** The climate model we selected is what DWR considered the most likely climate. There were three models and this is the one DWR thought was most likely. If you're asking me if I have a lot of confidence in the climate change model, I do not. But the climate scientists say it is the most likely.	Meeting comment - noted.
181					Special Meeting	3/30/2021	**Justine Massey**	I wonder if maybe it would be useful for the committee members to see what the other possibilities were modeled to see the range of possibilities. That way we could prepare for a worse scenario. Hope for the best, prepare for the worst.	**Comment received.**	Meeting comment - noted.

182					Special Meeting	3/30/2021	**Tom Virsik**	One comment and one question. Comment: Underflow has a particular legal meaning. I know you're not using that word with the legal meaning, but some people might think that. We should add a footnote to clarify. Question: Do you know if we'll see winter release model results in the projects and management actions chapter? It might be useful to look at modeling results and then the modeling and what will happen with the	**Steve McIntyre:** Is that something we could do? **Abby Ostovar:** We are looking at that. It is a possibility. They probably won't be presented in parallel to the point you could make a decision based on them, but we hope to provide some information and a process for how they will be compared in the future.	Meeting comment - noted.
183					Special Meeting	3/30/2021	**Curtis Weeks**	Thanks, everyone. Steve is right, we're very very close to having an agreement with Arroyo Seco. I agree with how Mr. Williams looks at sustainable yield. One cautionary note: The period you chose includes a change in reservoir management. Since 2011, reservoir management has been different. Be careful. Make sure you have the right operational model that is consistent with where we are headed as a Valley.	**Comment received.**	Meeting comment - noted.
184					Special Meeting	3/30/2021	**James Sang**	I think we shouldn't have something in place to address climate change just for the sake of having something in place.	**Comment received.**	Meeting comment - noted.
185					Email	4/12/2021	**James Sang**	I wanted to present some potential agenda items.	**Comment received.**	Point #1 was considered throughout the Salinas Valley and it is incorporated in projects for other Subbasins.
								1. Can rainfall harvesting through swales refill wells and increase groundwater and water aquifers?		
								Reference a: You Tube video (Harvesting Water Naturally with Swales by Urban Farmer Curtis Stone)		Point #2 has been incorporated into the overland flow MAR project which was modeled on the Pajaro Valley project noted.
								Reference b: You Tube video (Recharging A Well Part II -John Kaisner The Natural Farmer)		
								Reference c: You Tube video (Swales on Contour can Drought -proof Gardens, Farms and Pastures with Water Harvested Passively by Edible Forest Gardens)		
								Reference d: You Tube Video (Deep Soil Ripping for Water Conservation by Megan Clayton)		
								Reference e: "Deep Soil Ripping as an Effective and Affordable Water Capture Tool written by Amanda C. Krause, Megan K. Clayton, ...et al" Please google search article.		
								2. Can you make a presentation on what UC Santa Cruz is doing to recharge their wells? This is what Robin Lee wanted.		
								Reference a. You Tube video (Enhancing Groundwater Recharge in the Pajaro Valley by California Department of Food and Agriculture)		
								I believe that swales and subsoil plowing can recharge a farmers well, groundwater and aquifers. This is a cheap and easy way to help every farmer and landowner have a plentiful supply of water. This idea will solve California's goals of recharging water aquifers and holding back salt water intrusion into our coastal lands.		
								Can you show this to all interested parties?		

186	6				Email	4/23/2021	**MCWRA**	Operations of the San Antonio and Nacimiento Reservoirs applies to the Salinas Valley Operational Model, unless the intent is to describe that historical hydrologic data in the SVIHM would reflect MCWRA reservoir operations.	**Comment received.**	The SVIHM uses historical hydrologic data which reflects how MCWRA operated the Reservoirs in the past.
								Water Year 2016 was preceded by multiple dry or dry normal years. Has the impact of that on the chosen "current WY" budget been explored? Or should that at least be mentioned here for context?		Noted. 2016 is preceded by multiple dry years, however, current water budgets are merely reported and are not used for managing the GSP.
								Are conservation releases defined somewhere in the GSP? This is terminology used by MCWRA for a categorization of releases that may not be widely understood, or could be left open for interpretation. If intended in the same manner as MCWRA uses it, the conservation release period is April through October.		Noted. The MCWRA period is from April to October, however, it seems that flows in April and May can be a combination of natural flows, conservation releases, and other releases such as for steelhead. Teasing out the different releases and flows from model results is very difficult, so we are using a simplified approach. The June to September period is assumed to be the approximate period when the majority of flows are from conservation releases.
187	7				Email	4/23/2021	**MCWRA**	Well owner information is typically redacted when sharing well data in order to comply with information privacy concerns. Suggest removing it unless explicit consent has been obtained from the well owner.	**Comment received.**	Comment was noted and text was revised to address it.
188	3				Email	4/23/2021	**MCWRA**	For Section 3.8.3 (Well Permitting), consider mentioning the 2020 POWER v Stanislaus County case will also affect well permitting.	**Comment received.**	Comment was noted and text was revised to
189	9				JotForm	5/3/2021	**Tom Virsik**	The cost of the tunnel project seem inconsistent in Chapter 9: 118M v 173 M and thus the basis of the $393 AF cost is not clear. Note that per MCWRA in March 2021, the cost is projected at $180 M and the water gained is 20K (but it may not all be apples to apples figures). Two MCWRA filings are attached that recite the cost and projected water gained:	**Comment received.**	The original number in the table only included the project developemnt and capital cost but the costs were revised to also include operations and maintence. The number in the text now matches what was in the table.
								1. Monterey County Water Resources Agency Petition for Extension of Time under Permit 21089 (Application 30532)		
								2. Monterey County Water Resources Agency Petition for Change under License 7543 (Application 16124)		
190	10				JotForm	6/8/2021	**Tom Virsik**	A bullet point suggests evaluation of recharge benefit to the UPPER VALLEY is required. The parallel section of the Upper Valley chapter also reflects the upper valley. Perhaps the Forebay was intended in this Forebay specific chapter?	**Comment received.**	Noted. Text for Forebay chapter has been fixed.
191					Meeting	5/5/2021	**John Bramers**	Estimates on crop type valley-wide, just want to clarify. Growing lettuce in Salinas will have the same estimate as in King City?	**DW:** They will have different climates, but the same demand. In King City, the climate may drive more irrigation.	Meeting comment - noted.

192					Meeting	5/5/2021	**Kay Mercer**	I wanted to follow up on John's question on estimating water use by crop. So, in the Irrigated Lands Regulatory Program, once growers have to submit an irrigation and nutrient plan summary report, they will estimate total water applied by ranch, evapotranspiration, and water applied by crop. That will happen for the part of the Forebay and Upper Valley, the first report will be made in early 2024. I know you're doing the model now. As you get that type of information, will the model be updated with new types of information?	**DW: This model has not yet been publicly released. Once it is publicly released, it is a model that can be updated regularly. There's always a question as to how often you update it and what the value those updates have. This group would have to ask, is it worth our while to update the model this year? Would it change our management decisions? We don't want to spend money if we don't have to.**	Meeting comment - noted.
193					Meeting	5/5/2021	**Kay Mercer**	The whole Valley will be reporting by 2028. For the first phase, not whole Forebay or Upper Valley will be reporting by 2024. Dates to keep in mind. Thank you.	**Comment received.**	Meeting comment - noted.
194					Meeting	5/5/2021	**Nancy Isakson**	Thank you for your presentation. It helps us understand how you develop your numbers, and how they can/cannot be reconciled with the annual extraction reports. You said the model doesn't exit. But it does, it's just not publicly available right now. You're working with it. There seems to be a disconnect. You all are writing this plan, and we're relying on you for it. Because we thought you had access to it, but it seems the finger keeps getting pointed to the USGS. When you say the SVIHM underestimates the pumping, to what extent? What is the margin of error within the model?	**DW: I want to thank you and your colleagues for pointing out the differences in extraction data. We had to go back and ask a lot of questions. As far as the statement about the model existing, it does not exist in a way where we can calibrate it or change the model. We only have access to input/output files. It just does not exist in a way where we can change it. My language was a bit too flippant on that. We're looking at the model underestimating pumping to a degree. We are not a part of the calibration process. We don't want to get ahead of ourselves. How closely does it have to estimate the pumping? These are all questions that are out there. I can't really address that until we get there. We're bringing you up to speed on where we are, as of today. This is the part we're in the midst of.**	Meeting comment - noted.
195					Meeting	5/5/2021	**Curtis Weeks**	I heard you acknowledge the boundary differences between the subareas. I'm curious as to why there hasn't been an acknowledgement or an effort to correct them.	**DW:** The subbasin boundaries are defined by DWR. The GSP has to be written for that boundary. There could be an effort to adjust the subbasin boundaries to match the subarea boundaries. We accepted the boundaries when we started this.	Meeting comment - noted.
196					Meeting	5/5/2021	**Curtis Weeks**	If you look at basin boundaries provided by DWR, MCWRA has worked to refine the understanding of the basin through various hydrogeologic studies, and I believe it is more accurate. It's an artifact of how we started, especially with respect to the Arroyo Seco area. It would help to get a better handle on the hydrogeology. It's something for consideration. Second question, Derrik you said you wanted to use the best available information. I don't know what that is. GEMS or model data? Which data will we use to develop and finalize the GSPs?	**DW: We are going to say, the water budget that comes from the model. If the numbers are not that far off from the GEMS data, we would probably say the amount of reported pumping in the subbasin is X. In the Forebay, the Forebay has historically pumped within its sustainable yield, and the model says it has pumped this much on average. Then we will also say, this much pumping is reported through the GEMS program, still within the sustainable yield. So the sustainable yield is at least within the GEMS pumping.**	Meeting comment - noted.
197					Meeting	5/5/2021	**Curtis Weeks**	When I look at the Arroyo Seco Cone, it just doesn't make sense. It's too low. I raise that issue to recognize that they Forebay as a whole is sustainable. The larger question is how is Agency is going to use this tool going forward to evaluate different projects or programs that provides reliable, calibrated information you can rely upon. For the Arroyo Seco Management Area, we have concerns. I understand the process you're undertaking, I ask you to consider this.	**DW:** The amount of pumping in the Arroyo Seco Cone triggered us looking more closely at that. I appreciate your view that how we use this model should have buy in from stakeholders, that we're using it in a way that provides good direction.	Meeting comment - noted.
198					Meeting	5/5/2021	**Curtis Weeks**	It's a tool like any other. We need to have confidence in it, we're not there yet.	**Donna Meyers: We are working at breakneck speed. We have received the model late, Derrik and his team have been working nonstop on it. We are working with a tool that we have received. I want to remind everybody as we bring things out, this is why we have created these committees. If something doesn't look right, you let us know. Derrik and his team take that seriously and work on it. As far as the boundaries, with the work ahead and meeting the State's timelines, revising the boundaries was not something that could be done efficiently. We moved forward with planning instead.**	Meeting comment - noted.
199					Meeting	5/5/2021	**Jerry Lohr**	Do you mind going back to the Winter Release with ASR? I realize it's premature to get into valley-wide costs. The $1,450 per acre-foot will probably elicit some comments. It's probably premature to estimate the costs.	**Abby Ostovar: This reflects the ASR cost. The unit cost is not yet taking into account any recharge, or frequency of recharge which would benefit the Foreaby. We're trying to figure out what those figures are, and how to relay what those benefits are. This is just the unit cost of the ASR component of the project.**	Meeting comment - noted.

200					Meeting	5/5/2021	**Curtis Weeks**	General manager Meyers, we talked about some of the projects and implementation issues that are a part of the Arroyo Seco's previous GSP. I'm concerned about recognition of no dams on the Arroyo Seco. I'm wondering if this is the proper place to bring this up.	**Donna Meyers:** Yes, I believe today is a good time to have that conversation. I believed we resolved the other three.	Meeting comment - noted.
201					Meeting	5/5/2021	**Curtis Weeks**	You do have a management action that speaks to developing a drought technical advisory committee. We wanted to develop a multi-agency group on reservoir reoperations, to prevent multi-year droughts with no releases. As long as we're able to capture that in the D-TAC, I'm okay there. The other management action, to prevent any dams from being constructed on the Arroyo Seco, that's a key piece. It's consistent with our need to allow flow to recharge into the ground, and the environmental benefit. It's a matter of commitment on the part of our organizations. I would like to see that added as a management action.	**Donna Meyers:** How would we fit this in, Derrik, Abby?	Meeting comment - noted.
202					Meeting	5/5/2021	**Kay Mercer**	On the arundo removal, you say you're not going to estimate the benefit of removing it? component #1, you won't quantify the benefit of the recharge projects benefits? Are you saying that you haven't done it or you don't plan to?	**Abby Ostovar: Arundo removal is component #2. There can be arundo removal under the Stream Maintenance Program. It's the Stream Maintenance Program we don't have the benefits quantified. We have qualititative benefits, but not the actual acre-feet per year, the benefits aren't exactly saving water except the arundo part. We have to think more about that. The two programs are complementary, and I need to make sure we're not double counting.**	Meeting comment - noted.
203					Meeting	5/5/2021	**Kay Mercer**	I still think it's important, it's a very important project, The Stream Maintenance Program. From the water quality perspective, what are the benefits? It would be great to understand the impacts of the Stream Maintenance Program to groundwater supply, in the future if you could do that. In terms of your cost, that might be a benefit, actual savings or benefit rolled into the cost, to show a cost-benefit to the program. It could be added tourism, fire control, there are a lot of different ways.	**Abby Ostovar:** We do want to reflect all the benefits in a consistent way.	Meeting comment - noted.
204					Meeting	5/5/2021	**Kay Mercer**	What you're going to do is balance out the costs eventually. You're going to have positive financial benefits and those could offset the cost of the program. It's Ecosystem services. I'm talking about costs now.	**Abby Ostovar:** It came from looking at unit cost, if a basin is in overdraft, the amount of groundwater recharge there.	Meeting comment - noted.
205					Meeting	5/5/2021	**Kay Mercer**	In terms of agricultural pumping. In the future I would expect to see people dialing in their water use, based on the Irrigated Lands Regulatory Program, that number may get adjusted downward. It might take 10 years. Particularly for vegetables. You could qualify your number (3.3 AF) with a footnote. In the ILRP, we criticized their CEQA analysis for fallowing because they didn't consider particulates for air quality. Are you considering other environmental impacts?	**Abby Ostovar:** That's an excellent comment. There's no analysis required. It doesn't mean that impacts like that shouldn't be taken into consideration.	Meeting comment - noted.
206					Meeting	5/5/2021	**Curtis Weeks**	I wanted to circle back, I didn't get an answer to my question about projects and management actions. We have one issue in the Arroyo Seco Cone area, to prevent dams on the Arroyo Seco. How will that be addressed?	**Donna Meyers:** That will be addressed in the next agenda item.	Meeting comment - noted.

207					Meeting	5/5/2021	**Nancy Isakson**	I want to go back to valley-wide benefits, and your draft Chapter 9, says "part of a larger set of projects and benefits for the valley." There are going to be differing benefits and not all projects are applicable to all subbasins. As I read Chapter 9, I think that's lost. It appears the projects are being developed in a way to be integrated in a valley-wide manner. On the winter release program, it does say in your Chapter 9, "eliminating most summer reservoir releases," further you say it will provide more water to SRDF. Most of the water that's released benefits the entire basin through recharge. Reading through your description, it does highlight that there have been some things eliminated or not considered. The reservoirs are managed in a way to provide the water envisioned for the Salinas Valley Water Project. You're project says its going to eliminate most of the releases during the summer. That could be an impact to growers in the Forebay and Upper Valley. When you're evaluating the benefits, you have to look at what you're taking away. It's going to be really important to reach out to those Forebay and Upper Valley growers to see how they feel about it. We have submitted an extensive letter, including comments about the winter release program that we are currently discussing with MCWRA. Our model with the United States Geological Survey is very close to our model. We are looking at "real time" for this last year, pilot program. How has it worked, what changes could be made? We will meet in a couple of weeks. We will share with you because we think it is important for all to be collaborating. Personally, I want to caution how you word and present these things. Everybody is looking to you, and we are looking to build confidence in what you're putting together.	**Comment received.**	Meeting comment - noted.
208					Meeting	5/5/2021	**Gus Yates**	The presentation documented the costs/benefits of fallowing reductions. Given the historic sustainability of the Forebay, are they included only as contingent in case things get worse? How can you describe the triggers that would cause implementation?	**Abby Ostovar:** The next presentation will get into that a little, but this describes the suite of projects and management actions. They don't all have to be implemented. The next presentation talks about how to prioritize.	Meeting comment - noted.

209					Meeting	5/5/2021	**Justine Massey**	Feedback on some of the projects and management actions. This is accompanying some written comments we submitted on Chapter 9. We are interested in the further development of the local GW elevation trigger management action. We think it's appropriate for more real time tracking. We support that project. We recommend it include monitoring for water quality, not as a separate problem, but a problem that goes hand in hand. For example, we know as water levels drop, nitrates often increase because it cannot be diluted. Other constituents can leach as well. As you develop this program, include this intrinsic component of water quality that could have an impact on wells and beneficial users, particularly drinking water users. We have recommendations for how to model that, for example setting a trigger at 75% of the MCL. It's easy to manage and monitor when you see those problems developing. The D-TAC proposal, we see this as very problematic because it creates an extra layer of delayed planning. Not including that initial planning in the GSP itself seems contrary to the Sustainable Groundwater Management Act. The point is to have a plan now. That's why the plan is made before the undesirable results happen. We would like to see clear guidelines for when pumping would need to be restricted if there was a drought. It doesn't seem that stakeholders can evaluate if it's an effective plan if there is no plan to evaluate in the GSP, and similarly the Department of Water Resources couldn't evaluate it. Final comment, the delayed timeline that has been proposed for when the D-TAC would be put into practice, assuming it could come up with a plan in a couple months is troubling. That means waiting until wells have gone dry, or potentially waiting to see wells going dry for multiple years before you show there's a problem. People can't afford to lose their drinking water before actions are done to protect it.	**Comment received.**	Meeting comment - noted.
210					Meeting	5/5/2021	**Jerry Lohr**	There's quite extensive work being done here in the Agency, I think it's pretty well called out. I commend whoever wrote this draft. It seems quite progressive compared to when it was first presented a couple of months ago. I was quite pleased to see the progress here.	**Comment received.**	Meeting comment - noted.
211					Meeting	5/5/2021	**Jason Smith**	I respect Justine's opinion. The idea of putting together a technical committee is to actually address things before they get somewhere. Putting together plans for when the nuclear bomb goes off, we're all sensitive to how we need to manage our water. Putting together a committee of technical people, not stakeholders, we can proactively address in real time, instead of submitting several what-ifs. I respect your thoughts, but I've been really pleased, and dealing with this in a way that is technical. The idea is to create a committee to address it and take it to the actual stakeholders and make a plan. We can't not have water for drinking or agriculture. I think it's been a good process with the input of everybody.	**Comment received.**	Meeting comment - noted.
212					Meeting	5/5/2021	**James Sang**	Everybody seems to like the Salinas River project. I've been confused by this project. The origin of this water starts in central California and goes to the Monterey Bay. It's not a unit where the water is held in any one place. We're losing 2,000 gallons per second. I don't understand winter or summer releases, where this water will go out the other side. The point is to try to refill the aquifers. Are there aquifers next to the river that aren't filling? I read reports where the aquifers are going into the river. I like that you presented the floodplains. I think that will be a very good source for infiltrating basins. Thank you.	**Comment received.**	Meeting comment - noted.

213					Meeting	5/5/2021	**Nancy Isakson**	When is the deadline for submitting comments on these chapters? I want to comment on the drought. I would ask Justine if she has looked at Appendix 10, that provides the details about the standards and principals that were developed from litigation from the Salinas Valley Water Commission, and included several people here. It was strictly experts. They put together these standards and principals, and looked at them. The Salinas Valley Water Commission has asked for the last 20 to 30 years for a drought contingency plan, and we're pleased it is being included in the GSP. It's a good collaboration of stakeholders and experts.	**Emily Gardner: Obviously there's a lot of opportunity to comments. For these chapters, mid-June is when we're requesting comments relative to Version 2 of the GSPs.** **Abby Ostovar: We want to get out Version 2 by early July. The sooner, the better.** **Emily Gardner: We'll send a reminder out. We're trying to get these chapters out quickly.**	Meeting comment - noted.
214					Meeting	5/5/2021	**Tom Virsik**	If someone if doing something useful, then we the GSP can take credit for it. The GSA doesn't necessarily have to run, manage, or create the project, it can be a part of the plan if it exists. My other comment I wrote simply points out the Interlake project, MCWRA has filed some things with the State Water Resources Control Board for how much could be saved. I forwarded that material to whomever gets it so you can get whatever information exists.	**Comment received.**	Meeting comment - noted.
215					Meeting	5/5/2021	**Justine Massey**	I'm not saying that a lot of work hasn't gone into this plan as a whole, but I'm saying specifically this Drought TAC is leaving some open holes. You are saying that people have the chance to look at plans, doing the plan now means stakeholders are a part of what goes into the GSP. Leaving it open and saying decisions will be made later leave holes in the process. I think there should be a list of optional choices based on different circumstances. Whether it's worth it to plan in the face of uncertainty, that's this whole process. That the benefit of planning.	**Comment received.**	Meeting comment - noted.
216					Meeting	5/5/2021	**Curtis Weeks**	Projects and management actions, our overall approach to reservoir reoperation project was a multi-agency project to eliminate multi-year no-release scenarios. I think it's important to the Forebay since the Forebay relies upon releases. We want to eliminate multi-year operations that don't provide releases. How do we integrate that? We want a recognition that the Arroyo Seco not have any impediments, and that the GSAs support that approach to continue to provide natural recharge. Those are the two key things we want to see get integrated into the plan.	**DW: Regarding the first one, we maybe haven't stated clearly enough, there are a series of projects and actions that are benefits of reservoir reoperations. The major benefit to the Forebay and Upper Valley is that reoperation should result in regular releases, shooting for every year. We can highlight that a little more, that is one of our objectives. We had a conversation with MCWRA's consultant this morning so we all understand what the benefits of each of the projects are. There are benefits of SRDF diversions and benefits of dry year releases. We want the modelers to understand the slew of benefits. We can state it more clearly in the GSP. Regarding the Arroyo Seco, my advice is that the series of projects and management actions are actions that we can take, should the Forebay appear to be not meeting its sustainability goal. They are proactive actions to meet the sustainability goal. All the projects and management actions are not to prevent something. I don't see taking a stand against a reservoir on the Arroyo Seco as on the same level as the projects and management actions. I don't want to say the GSA is in favor of a reservoir, we have never proposed it and it has never come up. All of our actions are focused on something that benefits GW. I am nervous to commit the GSAs to a position without understanding the impacts to GW.**	Meeting comment - noted.
217					Meeting	5/5/2021	**Curtis Weeks**	You've taken a narrow view of sustainability. Having a commitment to allow the Arroyo Seco River to flow unimpeded to support steelhead and other riparian life, makes sense to support those groundwater dependent ecosystems and surface water dependent ecosystems. Sustainability has a broader context.	**DW:** I appreciate that. That's just my view of why I was hesitant to include it.	Meeting comment - noted.
218					Meeting	5/5/2021	**Curtis Weeks**	We have very active stakeholders, one in particular that represents Trought Unlimited. This is one of his key elements. For folks looking for sustainability actions. A native run of a river that supports native steelhead. This is something I'll have to take up with the General Manager.	**Donna Meyers: I'm happy to talk more with you. Hearing Derrik's thought was helpful, let's get together and talk language to see what this would look like. I have implementation questions, I don't know how we would do that. Let's work on the language.** **Emily Gardner: I just want to suggest to get the subbasin committee input, too. Maybe this is a good time to have a broader conversation.**	Meeting comment - noted.

219					Meeting	5/5/2021	**Jerry Lohr**	If you start seriously talking about damming the Arroyo Seco, as a serious consideration, it is going to be a huge problem.	**Donna Meyers:** Our GSA is not proposing any kind of dam on the Arroyo Seco. We have never discussed this. I don't know where this has come from. Curtis, I want to make sure we understand your stance. Maybe there is a misunderstanding.	Meeting comment - noted.
220					Meeting	5/5/2021	**Curtis Weeks**	Relative to the position an agency can take, it can be committed to supporting/not supporting actions on the river. An affirmation of what you can support and what you could stand against.	**Comment received.**	Meeting comment - noted.
221					Meeting	5/5/2021	**Jason Smith**	It's not that anyone is proposing a dam. It's a can of worms. For the environmental piece, it is very helpful. It's advantageous for things we all need. You have put this together as protection for the Arroyo Seco, and for the rest of the basin. This is where staff and the agency have an issue. What can of worms does this open up for the rest of the basin, that they would suggest that would never happen. Put something in that no one is discussing. It was shot down 20 years ago.	**Comment received.**	Meeting comment - noted.
222					Meeting	5/5/2021	**Curtis Weeks**	This will be updated every five years. People's perspectives change. There may be a future scenario where people propose it again. It helps inform and frame the issue in a way we think is positive.	**Comment received.**	Meeting comment - noted.
223					Meeting	5/5/2021	**Tom Virsik**	I have no position on any dam on the Arroyo Seco. What Mr. Weeks said about everything being updated every five years, the metric is, what would sustainability look like in 20 or 30 years, AND do we have to change everything every five years? To have a project that says we don't need a project seems odd, maybe we could have language somewhere else. However it turns out, it would be unfortunate to have a list of projects that we would never look at because somebody says so today.	**Donna Meyers:** I propose Mr. Weeks and I talk tomorrow or Friday and bring something back at the next meeting.	Meeting comment - noted.
224					Meeting	6/9/2021	**Allan Panziera**	What is the model using to come up with a number that is so far apart from the GEMS data?	**DW: The model estimates pumping based on crop type and climate. It is calibrated to some data the U.S. Geological Survey (USGS) had. We alerted the USGS and the WRA that we think the data they are using is underestimating the pumping. I don't know the background. It was pointed out to us by groups such as this one, and that allowed us to go back and ask what we put in the GSP to determine the storage and sustainable yield. We aren't the ones to make changes to address why the model is underestimating.**	Meeting comment - noted.
225					Meeting	6/9/2021	**Allan Panziera**	Are they using satellite imagery?	**DW:** They are not using satellite imagery right now. They are estimating pumping based on crop type and then comparing it. They might be missing things like frost control. They're currently looking into that.	Meeting comment - noted.
226					Meeting	6/9/2021	**Steve McIntyre**	There could be other things like leaching requirements and winter irrigation during droughts. There are other things they might not consider.	**Comment received.**	Meeting comment - noted.
227					Meeting	6/9/2021	**John Bramers**	How many different crop types are in the model, do we know that?	**Abby:** I think it's in the 50s. There are two types per each crop.	Meeting comment - noted.
228					Meeting	6/9/2021	**John Bramers**	How are acres counted in the model for each crop type?	**DW: They have estimates for which acres based on historical maps and county reports. They stitched together a number of different data sources to determine the crop changes over time. The most recent might be from 2014. I know the 2018 data are out now, but they have not been stitched into the historical model.**	Meeting comment - noted.
229					Meeting	6/9/2021	**Steve McIntyre**	At other subbasin committee meetings you've reported on this underestimate. Is the difference consistent? Could you apply the same factor to all subbasins?	**DW:** They are different enough that we want the factor to be subbasin specific.	Meeting comment - noted.
230					Meeting	6/9/2021	**Steve McIntyre**	Do you think, given the wide discrepancy between GEMS data and what the model is predicting for sustainable yield, that we have a viable model or should we go back and rework the model so the results are more accurate?	**DW: The model works for certain things and you can use them for things you are confident in. Generally the model is balanced, is the basin in overdraft or not? We don't want to stake our management on all the model numbers now, or until it's updated. I think the model responds to changes of inflows and outflows relatively accurately. If we're looking at the impact of change or projects, I think it will a relatively accurate change. We don't want to hang our hat on the pumping numbers we're seeing right now.**	Meeting comment - noted.

231					Meeting	6/9/2021	**John Bramers**	Are you advocating that the best way to look at extractions is metering?	**DW:** The best way to look at pumping is to measure it, any way you can. Many people are trying to use satellite data and back out an estimate, but a direct measurement is the best way way to go.	Meeting comment - noted.
232					Meeting	6/9/2021	**Nancy Isakson**	I thought the numbers in your initial presentation about the historical sustainable yield, I thought you said those were all the Forebay. Then you broke it out and talked about the Arroyo Seco. Are the first numbers inclusive of the Arroyo Seco Management Area?	**DW:** The first number was *inclusive* and this will be how it's presented in the GSP. We will report the whole subbasin, then the management areas.	Meeting comment - noted.
233					Meeting	6/9/2021	**Nancy Isakson**	It looks like you're reporting a separate number for the Arroyo Seco management area. Wouldn't you want a number that reports for the rest of the subbasin excluding the Arroyo Seco?	**DW:** This goes to the requirements for reporting. You have to report the sustainable yield for the basin and then for the management area. If this group wants more detail, we can include that.	Meeting comment - noted.
234					Meeting	6/9/2021	**Nancy Isakson**	My suggestion is we do the total, then a number for the Arroyo Seco and for the rest of the subbasin so people can see how they fit together within the sustainable yield.	**Comment received.**	Meeting comment - noted.
235					Meeting	6/9/2021	**Amy Woodrow**	I want to give a little more information on the land use questions. At the Board of Supervisors, the USGS included a bit of information on their land use approach in the model and those slides are available on the MCWRA website.	**Comment received.**	Meeting comment - noted.
236					Meeting	6/9/2021	**Allan Panziera**	There's a $16.5 million number on the stream channel improvement, and when I look at the yield numbers, it's almost $800 per acre-foot. And I go to the lower amount to 2,790, then it's like $6,000 per acre-foot.	**Abby Ostovar: Part of the reason there's such a wide estimate of costs and benefits is that there is a really high range of ET estimates for the Arundo vegetation. When you look at that, according to the two projected benefits, that's how you get the unit cost of $60 or $740 per acre.**	Meeting comment - noted.
237					Meeting	6/9/2021	**Allan Panziera**	But if I divide the whole cost by that number, if the cost stays the same, then that's like $5,900 per acre-foot. It almost looks cost prohibitive.	**Abby Ostovar: We incorporate the costs over a 25-year lifespan and incorporate interest rate and annualize it. We incorporate capital costs and also consider retreatment costs which is operations and maintenance. That is the total, or capital, cost for treating the arundo once. I can double check that. It's not an average cost per acre-foot, not an annual cost, but the total treatment cost. We will have the cost spreadsheets as an appendix, and that's what these costs are based on.**	Meeting comment - noted.
238					Meeting	6/9/2021	**Allan Panziera**	So I see the need for having projects and something to turn in, but the one thing that's missing is the HCP because that's going to drive a lot of these other costs. It might eliminate projects until you see what you can do.	**Abby Ostovar:** The HCP will affect groundwater management, but is not a straight groundwater management project.	Meeting comment - noted.
239					Meeting	6/9/2021	**Steve McIntyre**	Depending on the outcome of the HCP, we may not be able to do some of these projects, or the cost could change.	**Comment received.**	Meeting comment - noted.
240					Meeting	6/9/2021	**Donna Meyers**	The HCP will be a permit that allows you to do certain activities. What you'll do is you'll apply. It's effectively a take permit for a 30-year period. You have to calculate whether you'll lose habitat or make a species go extinct. But it gives you a permit to operate. It's called a habitat conservation plan, but it's basically a permit. With the multi-benefit stream channel project, it's within the structure of protection of the highest quality habitat, with seasonal limitations. Based on my knowledge, I wouldn't see how that program would be negated at the end of an HCP process. We basically got what's called a consistency determination from NMFS. I don't see this project (A1) having an issue.	**Abby Ostovar: All of the projects are based on current conditions/current infrastructure, continuing to operate. If and when there's an HCP, it will, and it could potentially affect which projects we can do, or what the benefits and costs will be. We'll adjust accordingly, but we didn't want to project what might occur in the future, so I hope we added that language in there efficiently in Chapter 9. If it's not in there, please feel free to highlight it because we do want to make sure that's clear.**	Meeting comment - noted.
241					Meeting	6/9/2021	**Allan Panziera**	I have a question on why the Interlake tunnel project is in there. If the MCWRA is already talking about going to a 218.	**Abby Ostovar: It is a project that could potentially affect groundwater. It's not necessarily a GSA project, but it is a project that would affect groundwater conditions and our ability to meet the sustainable management criteria, whether the GSA implement them, a partner agency, or somebody else. These are all just potential projects and management actions that could help reach and maintain sustainability.**	Meeting comment - noted.

242					Meeting	6/9/2021	**Jerry Lohr**	On the various projects here, I'm very supportive of the arundo, but I'm really surprised that we're talking about the project and not clearly pointing out which projects will lead to salt water intrusion mitigation. I think I know which one it is. What is the project that is in here, and I think it should be explicit.	**Abby Ostovar: There is no seawater intrusion in the Forebay and it doesn't look like it will get there. The way we scoped the project are the projects that will directly affect the Forebay and help them reach sustainability goals. Maybe what we could do is we say "here are the benefits for the Forebay and here are the benefits to the other subbasins." I believe winter ASR tries to differentiate. We can go through and try to show where there may be benefits that might be outside the Forebay, would that be helpful?**	Meeting comment - noted.
243					Meeting	6/9/2021	**Allan Panziera**	I have a comment on the technical advisory committee for pumping restrictions. I think Upper Valley went a different way, I think they went to doing the analysis and identifying projects that might help. I think that would be better than going straight to pumping restrictions.	**Steve McIntyre: I think that was the intention of our technical advisory committee.** **Abby Ostovar: This technical advisory committee was focused on demand management side. The Upper Valley took the approach to include all the sustainable management criteria, which really isn't seawater intrusion or subsidence, but more so groundwater levels, storage and quality. There are a few other differences to note, it is meant to be a more scientific technical advisory committee, so it is meant to have a group of scientific experts who then provide advice to the subbasin committee. The Upper Valley is a longer timespan, so they wouldn't make decisions for this irrigation year. They have it set up to look at the AR after April, and essentially wait a year. The Forebay technical advisory committee is set up to look at Fall groundwater levels in January and decide whether we need to adjust pumping in the coming summer, but not enact them if they GW elevations rebound.**	Meeting comment - noted.
244					Meeting	6/9/2021	**Jerry Lohr**	When we set that up, I thought it was a good idea. But I would like to see if the Forebay can be more similar to the agency one and the Upper Valley one. It wouldn't be the same people, but the same professionals. Just make it simpler. If some farm managers have properties in the Forebay and Upper Valley, if they're similar in the data we received, and similar in the concepts that we used. It might be easier to adopt them. That's my hope.	**Comment received.**	Meeting comment - noted.
245					Meeting	6/9/2021	**Allan Panziera**	That's what I'd like to see, too.	**Abby Ostovar:** If that is the consensus of the group, maybe the small group that got together before should get back together to incorporate these changes. Steve McIntyre: Why don't we consider these changes and bring them back to the committee.	Meeting comment - noted.
246					Meeting	6/9/2021	**Jason Smith**	We tried to have the technical advisory committee be more scientific in the Upper Valley. Let's get real data and they're going to bring recommendations to landowners and then discuss how we would address that.	**Comment received.**	Meeting comment - noted.
247					Meeting	6/9/2021	**Allan Panziera**	It talks about the TAC considering the whole subbasin, including the management area. Does that mean that the AS Management Area doesn't have regulatory power?	**Abby: We established it so that they would be a part of the decision making process and part of the TAC. It will be based on what conditions are being seen.** **Donna Meyers: Certainly the Arroyo Seco, the intent of the implementation agreement is the focus on the management area. As Abby mentioned, you'd be envisioned as a member of the technical advisory committee. It envisions doing the work together. Curtis and I are looking to finalize some things, we're not quite done with that work yet. There is an understanding that the intention is co-management. All committees moving forward will have a seat for ASGSA on them.**	Meeting comment - noted.
248					Meeting	6/9/2021	**Steve McIntyre**	There are ongoing conversations to come up with the language to satisfy all the GSAs needs.	**Donna Meyers:** We'll get caught up to these chapters.	Meeting comment - noted.
249					Meeting	6/9/2021	**Jerry Lohr**	I hear you're making good progress, and we should acknowledge that.	**Emily Gardner:** We will meet with that smaller group and come up with a new version of the TAC concept in Version 2.	Meeting comment - noted.

250					Meeting	6/9/2021	**Nancy Isakson**	Looking at the costs table, you have a valley-wide cost and you say the benefit to the subbasin will be determined later. You should just call it a capital cost. I like what you've done with the technical advisory committee, and looking at what the Upper Valley has done there. We appreciate the work. I don't see a separation that all these projects will be folded into the management area as well. It is distinct from the rest of the subbasin, and our discussion highlights the need to have it separate. Wouldn't you also want to separate out that all these projects and	**Abby Ostovar: First, on your last point, this is a point we're taking with all the 2022 GSPs, we're planning on doing a two-year update with the 180/400 GSP. There has been a strategic planning effort. There's a plan to have an integrated planning committee and that's where these conversations will be taking place.** **Emily Gardner: Maybe we can figure out a different word to use instead of "valley-wide".**	Meeting comment - noted.
251					Meeting	6/9/2021	**Tom Virsik**	First, I agree with Ms. Isakson and Emily, that "valley wide" term is a bit fraught at this point. I am compiling a more detailed comment for Chapter 9 of the Upper Valley/Forebay GSPs. One, I do think there are more recent numbers for the tunnel project, and I noted that in some emails from the State Resource board. About the ASR and what the capital should reflect, some of the more granular language in Chapter 9 is reasonably clear about what the project is and the benefits are, but the table can be a bit misleading. The word "maintain" or the word "attain" and the text hasn't been consistent. For the Forebay, Arroyo Seco, and Upper Valley, my hope is that the GSP will "maintain" sustainability. And projects say they "must occur" to reach sustainability. This will be applicable to both the Upper Valley and Forebay.	**Abby Ostovar: Thank you for sending those previous numbers. I think part of the discrepancy in the cost section, they break out various costs, the table numbers may not properly summarize them. Just a note on "maintain" vs "attain": the plan is meant to cover both where we might fall out of sustainability, or may just need to maintain it.**	Meeting comment - noted.
252					Meeting	6/9/2021	**James Sang**	For the arundo, they use a kind of chemical that is poisonous for the whole valley. The cost seems kind of high. Seems like if they just got an excavator, they could dig it out by the roots. I don't see how this project could cost $35 million. For the floodplain, I don't see how you can just find the land that's just kind of permeable and the water will just kind of go into the water aquifers. The Salinas River runs directly in the center of the Forebay. If you could put floodplain in the areas where it shows that the level of the water goes up and down the most, it could replenish the aquifers. The floodplains are based on where it's most permeable, to get past this obstacle, in order for the water to get into the ground, if we could direct the Salinas River water to swales or subsoil areas, it would be very helpful.	**Comment received.**	Meeting comment - noted.
253					Meeting	6/9/2021	**Curtis Weeks**	I want to further some comments from GM Meyers, we are developing language on how the AS managent area will be managed in the GSP. It will address the comments raised today about maintaining sustainability. I would ask the committee to hold on and continue the good work we're doing for Version 2.	**Comment received.**	Meeting comment - noted.
254					Meeting	6/9/2021	**Allan Panziera**	I think we should include the dam repairs in the projects. I think it affects the Salinas Valley Water Project (SVWP) and I think that is important.	**Comment received.**	Meeting comment - noted.

255					Meeting	6/9/2021	**Nancy Isakson**	I wanted to look at 10.1.4, identified data gaps. You talk about the deep aquifers study, and how it's possible the deep aquifers might be in the Forebay Subbasin. Seems like the study is going to go forward. If there is a connection, then what is the impact from the wells and pumping in the Pressure to the Forebay? A lot of people in the Pressure area have said they think pumping in the Forebay is impacting the Pressure area. We need to look at it both ways. Under projects and management actions, you say the SVBGSA will begin these steps immediately following submittal of the GSP. Is that something the SVBGSA needs to undertake immediately before these projects are approved? As these projects are in the process of being approved, since you're not in charge or the lead agency on these projects, I just wonder the staff time and cost, and to what extent you would need to take those steps "immediately following submittal of the GSP." I want to give you kudos on the approval of the 180/400 GSP, however it seems they relied heavily on the water charges framework. We have had discussions at the subbasin level that the water charges framework isn't the applicable approach. It's important that the fees moving forward are acknowledged that it's just for the Forebay or the management area.	**Donna Meyers: The water charges framework has not surfaced as a priority. The 180/400 is a different plan. The plans that are adopted are the ones we'll implement.** **Abby Ostovar: DWR was just looking at the 180/400 plan, so they were reacting to what we had for that subbasin. We are looking at other reviews that come out to understand what DWR views on other approaches. We lay out various funding mechanisms, but it's different for each project and to be decided in the implementation period [for each subbasin].** **Donna Meyers: On the two-year update, we'd like to have all the plans on the same timeline. Each of the subbasin plans have taken their own shape, regardless of the 180/400. I would anticipate after we get through these chapters, we're going to bring an integration presentation to our board. We have to think about the partnership aspect, the funding aspects and some of these projects are just not our projects. Some of that will be addressed in the Strategic Planning work. That Plan will come to our board in July. Into September, you'll see how we get to the bigger picture. We have a foot in each world, and we're trying to forecast these regional and subbasin specific questions.** **Gary Peterson: What DWR specifically says, we're not required to make any updates. But they expect updates every five years or when appropriate. The time for the revision to water markets, this is learning as we go, and we will update when we make plan updates in two years which is appropriate. They accepted it as is, knowing it will change. And they will accept changes at the next update.**	Meeting comment - noted.
256					Meeting	6/9/2021	**Tom Virsik**	There is text "To evaluate the benefits to the Upper Valley" on page 10 (chapter 10). I wanted to flag that.	**Abby Ostovar:** It should be Forebay	Meeting comment - noted.
257					Meeting	6/9/2021	**Jerry Lohr**	One of the most difficult things to get are best management practices (BMPs). In Paso Robles it's entirely different. How do you see what you might be doing with best management practices?	**Abby Ostovar: We left it vague in the GSP. We did call out the evapotranspiration work, and there probably needs to be more systemic analysis than we've done regarding which ones are more useful, and that will be a conversation with all of you. It would be helpful to bring in experts from elsewhere.**	Meeting comment - noted.
258					Meeting	6/9/2021	**Jerry Lohr**	I think it's very important. We're trying to do it in the Paso Robles area. I don't know if another agricultural economy is trying to do that. If we have changes in climate or crop changes, best management practices adoption by growers, many in the Salinas Valley, that's an area that can make a lot of change.	**Abby Ostovar:** One has come up that is not in there currently. It's looking at the soil conservation program. Going forward, this is going to be an evolving conversation and what would help all the growers in the region.	Meeting comment - noted.
259					Meeting	6/9/2021	**James Sang**	When I look at the overall view of the projects, the ones that really bother me are the ones that limit pumping and fallow land. I don't understand where you get numbers to fallow land. Is the agency paying landowners a certain amount? Anything that affects the economy in this area in that way, I would not like that. I would like to focus on projects that really recharge the water.	**Comment received.**	Meeting comment - noted.
260					Meeting	7/7/2021	**James Sang**	I want to talk about an article I read, July 5, from Mercury News, about drought. It talks about the wells in this area and how in Pajaro they are charging per acre-foot. They're metering, and because of this, they're finding that they're reducing groundwater use by 8 percent. Some farmers are upset, and they're refusing access to the land.	**Comment received.**	Meeting comment - noted.
261					Meeting	7/7/2021	**James Sang**	I believe this is about the comments, my comments had missed some items. In my comment, where you clean out the arundo. They didn't mention the project used poison, RoundUp, which is cancer causing. I said I wanted the water to go to swales or subsoil area [not dry land].	**Comment received, and edits from James Sang are noted.**	Meeting comment - noted.

262					Meeting	7/7/2021	**Nancy Isakson**	I'm concerned this committee has done a lot of work, and you're being asked to make a lot of recommendations before it goes to the advisory committee. I think it's important for the committee to review and provide recommendations before going forward. Just recognizing the importance of the work, and this committee.	**Comment received.**	Meeting comment - noted.
263					Meeting	7/7/2021	**Steve McIntyre**	I would encourage my fellow committee members to look over this very carefully so we don't have a conditional approval before it goes to the board. Make sure you make comments and ask all your questions.	**Comment received.**	Meeting comment - noted.
264					Meeting	7/7/2021	**Tom Virsik**	Echoing what Chair McIntyre said. I'm assuming that when the present committee gets the materials for Chapter 9 and Chapter 10, that it will be available to members of the public as well.	**Comment received.**	Meeting comment - noted.
265					Meeting	7/7/2021	**Norm Groot**	I'm going to echo what Chair McIntyre said. I'm concerned we're going to the advisory committee next week. I think the timing here is really close, and I encourage the committee to look closely at those changes, and it's really important to make their comments and recommendations before it goes to the advisory committee.	**Comment received.**	Meeting comment - noted.
266					Meeting	7/7/2021	**Steve McIntyre**	I think your proposed changes make sense, and I don't have any objection, or anything that might hinder my view. My personal view is you made a good choice.	**Comment received.**	Meeting comment - noted.
267					Meeting	7/7/2021	**Curtis Weeks**	A couple of considerations. First, the two river systems of concern in the Forebay have vastly different responses to this last drought. If you look at the riparian corridors, the Salinas River had significant die-back because it had adapted to releases supporting vegetation. Because the Arroyo Seco River is adapted to droughts, there was less. You have to consider the evapotranspiration and leakage. In the Arroyo Seco River, there is a huge pocket of sand beneath the river. Having a hard number wrapped around a groundwater elevation may not adequately address these issues. One of our thoughts is to have more shallow groundwater wells to better inform our decision-making processes. I wanted to share with the committee these important considerations.	**Comment received.**	Meeting comment - noted.
268					Meeting	7/7/2021	**Steve McIntyre**	For us locals, I'm about a mile away from the Arroyo Seco sinkhole, there are some pools and then it disappears as it is feeding the aquifer. I hope over time, our team will be able to develop a more unique monitoring system for this unique hydrological feature.	**Comment received.**	Meeting comment - noted.
269					Meeting	7/7/2021	**Curtis Weeks**	Let's also recall from the last drought, there was water available for the Salinas River that wasn't released. When we look at the GW elevations during drought, you have to take this into context. It's important to recognize the conditions under which we are establishing these parameters.	**Comment received.**	Meeting comment - noted.
270					Meeting	7/7/2021	**Norm Groot**	I think it's important we have monitoring stations in both places [confluence and upstream in the Arroyo Seco].	**Comment received.**	Meeting comment - noted.
271					Meeting	7/7/2021	**Nancy Isakson**	Just to follow up on that 75%. It would be helpful to understand that it's 75% of "what" and if you're looking at an average, and what amount of time. It would be helpful to have a foundation/better understanding.	**Abby Ostovar:** For groundwater elevations at each well, we set the minimum threshold and measurable objective from certain years. For the minimum threshold, we set it at 2015, so we don't want to go below that. For the measurable objective, it was set at 75% of the difference between levels at 2015 and 1998.	Meeting comment - noted.
272					Meeting	7/7/2021	**Oscar Antillon**	I'm with the city of Soledad Utilities, and we have 3 wells just downstream of the confluence. I wasn't sure if you use any of those.	**Abby Ostovar:** I believe the reason we didn't use the Soledad wells is that they were too deep and not close enough to any United States Geological Survey gauges. We will take another look.	Meeting comment - noted.
273					Meeting	7/7/2021	**Curtis Weeks**	I'm pleased to see we have this captured, and we think it's an appropriate action to take to protect the River.	**Comment received.**	Meeting comment - noted.
274					Meeting	7/7/2021	**Steve McIntyre**	On the modeling of the ASR well, you're showing released during a drought. It seems incongruent with reservoir operating rules. I think we need to review that.	**Abby Ostovar:** That's part of the design of the project. It basically uses aquifer storage and recovery. It puts water down in the winter and extracts it in the summer.	Meeting comment - noted.

275					Meeting	7/7/2021	**Jerry Lohr**	To me, management actions come before projects. But somehow, we're getting projects ahead of management actions. From what was sent out here, there's a whole list of recharge projects and reservoir projects. I have a concern that we're interchanging these and we're spending a whole lot more time on projects instead of management actions and I don't think that makes sense.	**Comment received.**	Meeting comment - noted.
276					Meeting	7/7/2021	**Allan Panziera**	I'm sort of the opinion that most of these projects are not for the Forebay but beyond the Forebay. The Forebay is mostly in balance, and we're spending millions and millions on these projects that are for elsewhere and I don't know that they belong in the GSP.	**Abby Ostovar:** All of the projects and management actions are the tools in your toolkits. There is no prioritization of these projects. This is setting up for the next 50 years, what you have available. It's hard to put things down on paper; some people think if it's in the plan it will get done. But this is just a list of options you have available down the road.	Meeting comment - noted.
277					Meeting	7/7/2021	**Jerry Lohr**	But they're listed as A, B, C, and you get bogged down in the details. I want to come back to the Drought-Technical Advisory Committee, and I think we can do management actions with the Drought-Technical Advisory Committee and this is a big point.	**Abby Ostovar:** We can reorganize.	Meeting comment - noted.
278					Meeting	7/7/2021	**Steve McIntyre**	I think that makes a lot of sense. Would the committee support placing management actions as priority?	**Comment received.**	Meeting comment and multiple stakeholder agreement noted.
279					Meeting	7/7/2021	**Donna Meyers**	I think it would be important to understand what priority means in that context of the plan. We will want to understand how the management actions are prioritized to some extent. Management actions are assumed to be happening anyway, maybe not every year. We might want to look at some language explaining that approach.	**Abby Ostovar:** I guess it's two different things: one is just reorganizing what shows up in the chapter; the other is doing an exercise to prioritize them.	Meeting comment - noted.
280					Meeting	7/7/2021	**Steve McIntyre**	Management actions are what you would do first. I draw a parallel to medicine. For an ankle problem, you do physical therapy before you do surgery. That's what we're saying. Management actions are cheaper and more implementable.	**Comment received.**	Meeting comment - noted and text was changed to have management actions ahead of projects.
281					Meeting	7/7/2021	**Jerry Lohr**	Management actions can be instituted relatively quickly. You can get agreement among professionals and stakeholders. Projects, they take longer because we have Environmental Impact Reports (EIRs) and 218 votes. I think we want to exhaust management actions before we get into projects.	**Comment received.**	Meeting comment - noted.
282					Meeting	7/7/2021	**Steve McIntyre**	We're trying to prioritize management actions over projects. We don't have enough information to prioritize the management actions.	**Comment received.**	Meeting comment - noted.
283					Meeting	7/7/2021	**Jerry Lohr**	Management actions are ones we can do without construction. Those are the first things we should consider first.	**Comment received.**	Meeting comment - noted.
284					Meeting	7/7/2021	**Nancy Isakson**	I want to go back to Winter Release with ASR. I think I hear Derrik say that for this project, they move the complete operations of the Salinas Valley Water Project from summer to winter. That is a change of a project that has been voted on and paid for by the land owners. I'm struggling here why this would even be considered, unless you think there would be significant savings or benefits to the Upper Valley and Forebay, which don't even need it. To your point, Abby, I know you want to have all your tools. But I want to say you don't need ALL the tools at ALL times in the toolbox; it gets too heavy. And 50 years is a long time, you can add tools and take them away. New things will come up over time and we can add those later. For the Salinas Valley Water Coalition, we're concerned with the way these projects are being presented and how it will affect the farmers in the summer.	**Comment received.**	Meeting comment - noted.

285					Meeting	7/7/2021	**Justine Massey**	I wanted to touch on the Sustainable Management Criteria Technical Advisory Committee, which is being tasked with really important analysis. That all looks great. I'm concerned, I want more information about what public participation looks like. The analysis and decisions under that group, the public should be involved meaningfully. Is there more information about how often that group will have public meetings and how they can contribute to the process? I would encourage a public workshop style forum.	**Donna Meyers:** I know we've been thinking through how those kinds of activities are going to be managed. I assume with our Brown Act committees, we have a structure, one of our big tasks is to look at the mechanics of implementation. As far as the availability of meetings and public comment, I imagine we'll have something similar to the Seawater Intrusion Working Group (SWIG). **Emily Gardner:** To answer the question specifically, we have not gotten that far in our planning process yet. Implementation committees will be public. **Steve:** It's all new to us, but the intent is to be public.	Meeting comment - noted.
286					Meeting	7/7/2021	**Robin Lee**	On those slides that showed the residential water and how you're going to address the water needs of residences. It seems kind of inadequate. Also, having the information on a website seems inadequate. I think you need more outreach and public meetings. On ways to address water for residential wells, there's no mention of cleaning up the contamination of the aquifer. I did not see that addressed. And with the reoperation of the reservoirs, there's not a lot of water in them anyway. It does make sense to reoperate them in the winter because of increasing temperatures. You'll get more evaporation. I think this will be a better way to manage it, so you can get that water in the ground. I'm more for having more tools in the toolbox. The climate is changing rapidly now and we need all the tools available.	**Comment received.**	Meeting comment - noted.
287					Meeting	7/7/2021	**Norm Groot**	Thanks, Steve, for the comment about Ag Order 4.0. That's the lead agency that will be monitoring surface water and groundwater quality moving forward. I'm concerned we're getting so many committees and I'm not sure how they're going to interrelate. How will implementation work? How will it work forward through the committees? I'm concerned about the structure of all these committees and how the information will move forward. I will echo what Ms. Isakson said about the winter releases earlier; I think it fundamentally changes the scope of that project. Before we move forward, we need to understand if there is an advantageous aspect to this kind of modeling before we get into controversy.	**Comment received.**	Meeting comment - noted.
288					Meeting	7/7/2021	**Jerry Lohr**	I think the second or third to last slide, where we talk primarily about projects, that's what getting a lot of us concerned. We're not talking about management actions, projects are first. I'd like to see us emphasize management actions before we get into projects.	**Comment received.**	Meeting comment - noted.
289					Meeting	7/7/2021	**Allan Panziera**	We have to acknowledge that this model hasn't been vetted.	**Abby Ostovar:** We note that in the chapter. In an ideal world, it would be public. **DW:** We acknowledge in the GSP that this is a preliminary model and will be changed in the future. We are very aware of that, we include the GEMS data in the analysis. We are the most confident in that data, compared to the model or the Durbin model. This is our attempt to not only report what the model says, but what is really going on in the basin.	Meeting comment - noted.
290					Meeting	7/7/2021	**Norm Groot**	Thanks, Abby, for the great overview of all those changes. I'm going to refer to your slide on groundwater quality, constituents increase or decrease. One of the hot button issues in the Irrigated Lands Regulatory Program (ILRP) and discussion with the regional board is the concept of "pump and use" or "pump and irrigate" and whether that's been	**Abby Ostovar:** Thank you, it's good to have that flagged. **DW:** I will point out that in our GSP, increasing nitrates in an AG supply well is not undesirable. It's only undesirable in wells used for drinking water.	Meeting comment - noted.

291					Meeting	7/7/2021	**Robin Lee**	I was wondering where in the plan climate change is best addressed? As I read through, it seems like things are aimed at keeping status quo. Instead of putting bits and pieces here and there, it should have its own part. Not have it scattered all through the plan, so it's more cohesive.	**Abby Ostovar:** We thought it best in the Water Budgets chapter. But the other view is with projects and management actions, looking at them with climate change. I think we also talked about it, as tools in the toolkit, not deciding which go forward. Climate change is a deciding factor in what goes forward. I think there is a bit in Chapter 10, where we talk about adaptive management.	Meeting comment - noted.
292					Meeting	7/7/2021	**Tom Virsik**	One, there's a particular place where the GSP talks about future overdraft, it may be awkward phrasing. I'll highlight that. There are multiple sections in Chapter 4, 5, and 10 that speak to some degree about the Deep Aquifers. When I compare to previous versions, there were substantial changes with regard to the Deep Aquifers. Now they seem inconsistent, or at least confusion. That's a topic that's not fatal, but just awkward. Accuracy and consistency are important, and I'll get the granular comments into the JotForm.	**Comment received.**	Meeting comment - noted and text about Deep Aquifers was standardized across Chapter 4, 5, and 10.
293					Meeting	7/7/2021	**Justine Massey**	I want to recognize there are some really important changes that have been made. Thanks for all the hard work there. I just want to ask about a response to one of our comments that the nitrate trend analysis would be inappropriate, since it wouldn't affect management decisions. I want to know more why you think it wouldn't affect management actions and what evidence of increasing Nitrate levels would influence management decsisions. What is the threshold?	**Abby Ostovar:** Chapter 5 builds off existing studies of nitrate. Additional studies of what has already been done/studied would not necessarily add new information or be helpful for management decisions.	Meeting comment - noted.
294					Meeting	7/7/2021	**Curtis Weeks**	I have two constructive criticism comments. I want to piggyback on Tom Virsik's comments about Chapter 5 and the Deep Aquifer. I think it would be better to remove the graphic and the paragraph. The Deep Aquifer Study will sort this out. Take it out, make it clearer. Similarly, in Chapter 6, I understand the desire to use the USGS model. You can make general comments about the model and transition into the use of the GEMS data. You could take it out and just provide a comment up front, then clean up the document.	**Comment received.**	Meeting comment - noted. Chapter 5 Deep Aquifer graphic and pragraph were removed in V3.
295	4, 5, and 10		4-14; 5-7,8; 10-5		JotForm	7/7/2021	**Tom Virsik**	v2. The March 2021 FB Ch 5 reflected THREE principal aquifers, including the Deep. The present version reflets one, with the potential of the Deep's presence. Ch 10 states "it is possible" that the Deep exists in the Forebay and that future wells will confirm or rule it out, whereas Ch 4 seems to assume it exists and is hydraulically connected to the Fill Aquifer and Ch 5 speaks in terms of a "prediction." I concus with Mr. Week's suggestion to avoid the graphic at Figure 5-5 and references the upcoming Deep Aquifer study.	**Comment received.**	Chapter 4, 5, and 10 text was changed to reflect a single principal aquifer--the Basin Fill Aquifer--and Deep Aquifers references were changed to read deeper portions of the aquifer. Furthermore, Chapter 4 was revised and now states that deeper sediments in the Forebay Subbasin could be part of the Basin Fill Aquifer or the Deep Aquifers. Chapter 4 also states that the existence of the Deep Aquifers in the Forebay may be addressed by MCWRA's Deep Aquifers Study.

296	6		6-25;		JotForm	7/7/2021	**Tom Virsik**	V2 Chapter 6 Section 6.4.1. The second bullet point speaks in terms of "an underestimate of the Subbasin's future overdraft." The 2030/2070 projections reflect continued (increased?) sustainability. The phrasing may be in error or is at least confusing.	**Comment received.**	The assumptions listed in Section 6.4.1 are related to the general assumptions used in the SVOM for urban growth in the Salinas Valley as a whole, not just the Forebay Subbasin which is not in overdraft. The phrase "an underestimate of the Subbasin's future overdraft" could also be thought of in terms of an overestimate of the Subbasin's future sustainable yield.
297					Special Meeting	8/10/2021	**John Bramers**	Still sounds like some stuff is in the air with the plan. I just don't want to see it come down to the last minute and people just accept to get it in.	**Donna Meyers:** We are continuing to work at that level [through the coordination committee]. And the Forebay Subbasin Committee will be reconvened as needed. **Emily Gardner:** The coordination committee will discuss areas where there will need to be more alignment. It will come back to this [Forebay] committee before there are any substantive changes.	Meeting comment - noted.
298					Special Meeting	8/10/2021	**Steve McIntyre**	Even after we submit [the GSP], we can make changes, right?	**Emily Gardner:** Yes, however there's still a little bit of a gray area when it comes to updating the document we submit to DWR. We asked DWR if we could submit the update earlier than the five-year time frame to help coordination of all the subbasins. I don't think DWR wants people submitting every year. When it comes to developing our implementation strategies, it is a working document. **DW:** You're right, DWR does not want to review any more than they have to. They admit these will be documents that need to change. Certain aspects require public input and we want to make sure we go through the right steps. However, your list of projects and management actions, they want to make that very easy to change. As Emily points out, it does depend on what you want to change, but DWR knows these are living documents.	Meeting comment - noted.
299					Special Meeting	8/10/2021	**Jason Smith**	I also don't want to get to the end, and have this big X and we can't submit because there's something that the two [GSAs] can't agree on. I'm not too concerned about that, but as I listen to Curtis talk about substantial things that you're working through, I don't want to be there to be a last minute pull-out. In the history of our valley, that happens. So, just keep on keeping on.	**Comment received.**	Meeting comment - noted.
300					Special Meeting	8/10/2021	**James Sang**	I notice that on the management action you basically have 3 items listed following Fallow Banking and Agriculture Retirement. The way I look at this basin, there's nothing wrong with this. But if we have severe drought for the next 4 to 5 years, there's nothing in there that helps the growers plan with water, and nothing prioritizes, and a few of the pages in this report, that you can incentivize growers to have recharge basins. That is something I would like to see in these plans. I think the way to go is to try to get more water in the ground.	**Steve McIntyre:** We do have a Technical Advisory Committee that would convene when we have a long-term drought and they would provide recommendations to this committee. Thank you for your comments.	Meeting comment - noted.

301					Special Meeting	8/10/2021	**Jerry Lohr**	We receive so many of these things late and I have the July 28, July 30, and didn't get the August 12 version until Sunday. And so, I don't know if we've had a chance to review. These are some major changes. I commend you for putting management actions in front of projects. It seems to me that the clearing the channel, for instance, is a Habitat Conservation Plan project. I don't think we have much to do with that except to be supportive. Is my understanding correct?	**Emily Gardner:** The multi-benefit stream channel project, which is run through the RCDMC and involves maintenance and removing arundo. It's ongoing work that can be expanded The Habitat Conservation Plan is a separate line of work the MCWRA is working on with National Fisheries. **Donna Meyers:** The Habitat Conservation Plan is geared entirely towards the reservoir operations piece. The Flood Maintenance Program, which many members here asked us to put in the plan, is a separate part of the Habitat Conservation Plan, and the arundo removal is not a part of the Habitat Conservation Plan. We received a letter a while ago with 80 signatures, including some folks here, asked to put that into the GSPs. That's why the arundo removal and maintenance is in there. That's not a part of the Habitat Conservation Plan.	Meeting comment - noted.
302					Special Meeting	8/10/2021	**Allen Panziera**	Can you move forward with that program without the Habitat Conservation Plan?	**Donna Meyers:** They have already been working for the last 8 years without the Habitat Conservation Plan.	Meeting comment - noted.
303					Special Meeting	8/10/2021	**Jerry Lohr**	I'm interested in understanding all the data we have. One of the things I think is important is the repairs of the dam, and reservoir reoperations. The reoperations will require a fundraising to do that. I'm just picking that up and reading this. Can somebody speak to that?	**Emily Gardner:** Really it's meant to be a feasibility study and involve modeling, and explore all the legal implications. To do studies and analysis, it does cost money to do that. That's the general overview of the cost. It's an estimate.	Meeting comment - noted.
304					Special Meeting	8/10/2021	**Jerry Lohr**	It seems to me that we ought to do whatever we can to get the repairs of the dams, and that will help us understand our options. The Groundwater Extraction Management System project, we will learn more. As we get more of the models, as we all listened in on the presentation of the models, and found that quite confusing, we'll have to lean on Derrik and others so we lay people can understand, so we have in our Chapter 6, we talk about the water balance. I haven't looked at Chapter 6. Has anybody re-edited that?	**Abby Ostovar:** Not in this most recent version, except small edits. A version a little while ago included changes from the ASGSA.	Meeting comment - noted.
305					Special Meeting	8/10/2021	**Allen Panziera**	One thing I see in Chapter 6 is references to the Salinas Valley Integrated Hydrologic Model, but not the Arroyo Seco model. The Forebay Subbasin Committee is making all the decisions for us. The coordination agreement says we'll review, but the chapter does not reference the Arroyo Seco model. It mostly comes from the Salinas Valley side.	**DW:** You are correct on that, and the reason is when we develop a water budget we need to have "a" water budget and no water budget is exactly right. We are working with the one from the Salinas Valley Integrated Hydrologic Model. We got feedback from Gus Yates with information from the Arroyo Seco model, and so we softened language, changed language. We pointed out that the Arroyo Seco GSA model shows something different. We acknowledge there are differences. We don't want to say there are two competing water budgets. We want to say this "is" the water budget.	Meeting comment - noted.
306					Special Meeting	8/10/2021	**Steve McIntyre**	It's important the document clearly states there are differences in the models, and these will be resolved.	**Comment received.**	Meeting comment - noted.
307					Special Meeting	8/10/2021	**Allen Panziera**	It references us as partners, but it should say we're coordinating.	**Comment received.**	Meeting comment - noted. GSP language was changed to refer to SVBGSA and ASGSA as "coordinating" as opposed to "partners."
308					Special Meeting	8/10/2021	**Jerry Lohr**	I think many of us are pleased with how the coordination has been working. I want to commend you on that. At the same time, we haven't seen the text because it's going so rapidly. I think we ought to talk about, are we prepared to go forward with this? I think the Arroyo Seco GSA, we had a very productive, extensive meeting. I think we had 23 proposed edits, and comparing these 3 dates, I don't know which ones we got in. I want to review. I think we need to read those. I think the spirit of cooperation is here.	**Steve McIntyre:** You're completely correct. We called this meeting to keep the dialog going. I want to remind everyone that in the Upper Valley, they decided it was good enough to submit. I don't want you to get hung up. I'm hopeful we can have faith in this process, with how far we've come, and move this forward and put our GSP into public comment. And then resolve any issues that come from our board or the Arroyo Seco Groundwater Sustainability Agency committee.	Meeting comment - noted.

309					Special Meeting	8/10/2021	**Jason Smith**	The Upper Valley gave staff what we wanted to see changed, and they did specifically what we asked for. I think as Steve said, when we came down to it, yes, this is something that we're good turning in, and that we'll come back to. It will never be perfect. For all of us not involved in the coordination agreement is, how far off are we? Are we talking about major things? Or is it nitpicking smaller things? I just can't imagine the hydrologists are that far off, that it would make that much of a difference. It's difficult for us on the committee to understand what's holding things up. I'm towards Steve's side, that hopefully we can move this forward, and we have 3 to 4 months for this to continue. I don't think we're going to do anything that will blow this up. Can anyone give us light on the coordination and the issues that folks are talking about?	**Emily Gardner:** I see the content in 3 different categories. One is the input and edits we get from the Arroyo Seco Groundwater Sustainability Agency. Language from "partners" to "coordinating", sure we'll make those edits. Other edits that we've incorporated, and don't change the gist of what's going on. Second there are proposed edits about coordination [between the GSAs] and what's been outlined in the implementation agreement. The real work in the agreement, and hashing out how it's reflected in the GSP. Then the third category, the real meaty topics we bring back to the committee. We aren't bringing those to you today. They may come up in the next couple of months, but there aren't any that needed to be brought up today.	Meeting comment - noted.
310					Special Meeting	8/10/2021	**Curtis Weeks**	We're working through the details and there are some that are sticking points. I think there's a lot of concern about the Salinas Valley Integrated Hydrologic Model and its ability to create data with confidence. I think there's a lot of question in people's minds. That's something that we need to work through. For the GSPs, that's one thing. But a model is also for projects and actions. Everybody needs to have confidence in the model. I think you have that letter from our last board meeting. We acknowledge it's not where it needs to be. Derrik Williams and his team have said, it's provisional. Before we can really use it, I don't know if we can really fix it in time. I think using Groundwater Extraction Monitoring System data to determine sustainable yield is fine. There are a set of issues around projects and management actions. I think we're close, and I think we can get there. We have these offramps and the rest of the processes to get there. The model has been a difficult issue for all of us and we haven't been able to completely resolve. I think what we have is workable and the notion that it will be worked on and improved. The versions have been rolling out fast and that's just recognition. We're rushing to get a comment period and I think we can work through them.	**Donna Meyers:** These are draft documents, and we do need to submit them to a public comment period. That's really driving our time right now. It's hard for our consulting team to do these small comments as they come up. At some point, the GSPs are meant to be adaptive documents. We anticipate things like modeling and GEMs expansion, and launching into the management part. People are nervous about plans. But at the end of the day, what guides us are the projects and management actions to manage our water. The state will be looking at that data. That's where we want to spend our time and resources. They want to see management of the aquifers occurring. We may not have all the data, we may debate the models. But the plans are a guide, they are flexible. We're dependent on MCWRA. The success we need to keep our eye on is the implementation piece. A coordinated approach is important. We have to put out a document that we have to put out to the public, to the users of these aquifers. We do have the 90 day period, and then we'll come out with the final document. We're looking at an early January date as an option. We've built out a good timeline. We don't want to fail in submitting to the state.	Meeting comment - noted.
311					Special Meeting	8/10/2021	**Jason Smith**	I want to thank Curtis. I don't think there is anyone in the whole valley that isn't frustrated with models. For our group moving forward, I want to make a motion that we send in this draft that the caveat that we're having 3 more meetings to go through Chapters 9 and 10, and any other red-line language. Turn this in for Thursday's meeting, with the caveat that we'll address the issues that the coordination group is working on. So everyone is comfortable. It's a draft. But staff needs direction.	**Motion passes.**	Draft was submitted for Board of Directors to review
312					Special Meeting	8/10/2021	**Nancy Isakson**	Not a comment on the motion. I appreciate all the comments. I think it's important that this committee have time to consider the comments or suggestions from the Arroyo Seco Groundwater Sustainability Agency. You should have the chance to see those. I looked at the Board agenda. There's approval of 45-day release, and the 90 days is to approve to GSPs. Can you confirm or clarify that? That the public will only have 45 days to comment.	**Comment received.**	Meeting comment - noted.
313					Special Meeting	8/11/2021	**Michael Griva**	As a member of the coordination committee, I really appreciate some of the things Jerry said in trying to get this information out to look it over. I'm glad several of you mentioned you would like a red line version, to compare. It will be very helpful to us. Not only as a committee member, but also as a member of the public. Anything we can do to continue to have chances to talk about this and get it coordinated, and get these behind us, I appreciate it.	**Comment received.**	Meeting comment - noted.

314					Special Meeting	9/1/2021	**Tom Virsik**	Re: Land Use Jurisdiction Coordination: It would be good for me to study the language in more detail. There could be language that you have that is consistent or inconsistent with an existing SMGA statute. I think this approach is necessary. Here's an uncomfortable reality: It is often that the GSA and land use jurisdiction will come into conflict.	**Les Girard:** The GSA does not have land use authority so there won't be opportunity for conflict between land uses. There could be a situation where the GSA will need outside counsel but the GSA will not be able to force local government entity to enforce or set land use decisions.	Meeting comment - noted.
315					Special Meeting	9/1/2021	**Norm Groot**	How will this play a role in changing land use? I agree with Mr. Virsik that this opens up the court for many other questions.	**Comment received**	Meeting comment - noted.
316					Special Meeting	9/1/2021	**Jason Smith**	I would assume that this will be coming back for consideration with some of the other topics we are talking about.	**Emily Gardner:** We are working on the redline version of the GSP, we are trying to make it as easy as possible for you to vet any new language so that it is incorporated to the next version.	Meeting comment - noted.
317					Special Meeting	9/1/2021	**Jason Smith**	I would throw it back to our county's counsel, how comfortable is he with this language? What can of worms does this open?	**Les Girard:** That is difficult to answer because we don't know what updates or changes cities and counties will make to their zoning and general plans. That is a hard thing to predict but we can anticipate hard discussions. Ultimately the GSA will be able to control extraction for any given land use, the GSA will have the authority to limit water use no matter the land use.	Meeting comment - noted.
318					Special Meeting	9/1/2021	**Jason Smith**	Does this then help the GSA to be able to respond to changes in the future since we have added this language to our GSP?	**Les Girard:** I think the more you talk and the more you try to coordinate the better off you are.	Meeting comment - noted.
319					Special Meeting	9/1/2021	**Steve McIntyre**	I think we should get this to the City of Salinas to see how they feel about this.	**Gary Petersen:** I think you'll find that all of the cities have concerns and will want to understand the implications of this.	Meeting comment - noted.
320					Special Meeting	9/1/2021	**Steve McIntyre**	So you're saying we should send this to all cities?	**Gary Petersen:** Yes, I think this is something that all cities will be concerned with.	Meeting comment - noted.
321					Special Meeting	9/1/2021	**Steve McIntyre**	So maybe that should be stated in this language.	**Emily Gardner:** We can add that and send the language to the cities. The whole idea behind this concept is to have a venue to discuss some of the worms in the can. We can make sure we are considering the legal perspective of all the cities.	Meeting comment - noted.
322					Special Meeting	9/1/2021	**Brad Rice**	So if the cities come out with their plans to expand and they need more water, we have a say in whether they can get that water?	**Les Girard:** The GSA has the authority to limit groundwater extractions. The city might not be able to implement the desired land use if the GSA limits extractions for that given land use. **Emily Gardner:** The implementation action doesn't change any of this, it just adds a layer of coordination.	Meeting comment - noted.
323					Special Meeting	9/1/2021	**Steve McIntyre**	I think we should send this out to cities to get ahead of this.	**Comment received**	Meeting comment - noted.
324					Special Meeting	9/1/2021	**Jason Smith**	It seems like staff need to make sure we have the right language before we make a motion.	**Comment received**	Meeting comment - noted.
325					Special Meeting	9/1/2021	**Ron Panziera**	I think this should be reviewed by other people (cities) before we give our final review.	**Emily Gardner:** The decision does not have to be made right now, you can just suggest that we keep exploring this.	Meeting comment - noted.
326					Special Meeting	9/1/2021	**Steve McIntyre**	Good suggestion; you can keep exploring this.	**Comment received**	Meeting comment - noted.
327					Special Meeting	9/1/2021	**Jerry Lohr**	I think the second paragraph in Section 9.2.1 could be deleted since I didn't review the management actions and projects in the 180/400 Foot Subbasin. And I agree with Jason that we should wait until tomorrow's coordination meeting. Also, page 9-1 reappears after page 9-12.	**Comment received**	Meeting comment - noted. Suggested GSP changes were made subsequent to Jerry Lohr's comment letter (9/20/2021).
328					Special Meeting	9/1/2021	**Steve McIntyre**	Emily, I'm assuming that any new changes would be in red.	**Emily Gardner:** Yes.	Meeting comment - noted.
329					Special Meeting	9/1/2021	**Justine Massey**	I wanted to be transparent that we still have suggestions on how to improve the GSP. I have a new question about the water quality section in Chapter 4. I was wondering about Figure 4.18 and what the goal of this diagram is? If the purpose is to track the contaminants in domestic wells then I suggest it show maximum contaminant levels.	**DW:** This figure tells hydrogeologists if we have different water types.	Meeting comment - noted.
330					Special Meeting	9/1/2021	**Justine Massey**	I think it would be very useful to include County data in the GSP.	**Comment received**	Meeting comment - noted.

331					Meeting	10/6/2021	**Colby Pereira**	I would like to find a way to continue these style meetings. Everyone has a different comfort level. With in-person meetings, there are other rules like face coverings. I think that can deter participation. I would ask that we continue this format.	**Comment received**	Meeting comment - noted.
332					Meeting	10/6/2021	**Steve McIntyre**	I feel much the same way. It sure has gotten to be more efficient use of our time, not having to travel to meetings. I know we'll want to meet in person at some time. I couldn't hold a meeting in my truck?	**Les Girard: Sure, you could post the agenda on your truck for someone to sit in the passenger seat. I want to emphasize, and this was just an update, the ability to do these remote meetings as long as the governor's statewide emergency proclamation is in effect. I anticipate the proclamation will be in effect for some time, he's required to terminate it at the earliest possible date.**	Meeting comment - noted.
333					Meeting	10/6/2021	**Steve McIntyre**	The meeting on November 3 would just be to deal with AB361. Then we would have our planning committee meeting to discuss comments or action items as they pertain to the DWR draft. Does that give us enough time to evaluate the comments that are being presented? I'm concerned about the process. As we receive comments, how is staff going to deal with those comments? What is the criteria for a comment becoming an action item?	**Emily Gardner: If it's editorial, we just make those corrections. If it's a comment on a committee decision, we just say the committee has decided. From our perspective, if you've made the decisions, then we just move on ahead because we base the draft on the feedback we receive from the committee. We try to bring to you things like the water quality sustainable management criteria, which is not changing the sustainable management criteria, just broadening the scope. Some of the comments are more board level, or touching outside the scope of the GSA. So, that will be elevated to a board level discussion, or we base it on content we received from the board.**	Meeting comment - noted.
334					Meeting	10/6/2021	**Steve McIntyre**	So, prior to the November 3 meeting, are we asking the committee members at some point to raise any comments, and perhaps they should do so ahead of time. I'm trying to condense this down to what we should actually discuss.	**Comment received**	Meeting comment - noted.
335					Meeting	10/6/2021	**Steve McIntyre**	If we could ask committee members to flag comments in the postings that they would like to discuss, so we can know how much time.	**Comment received**	Meeting comment - noted.
336					Meeting	10/6/2021	**Jerry Lohr**	I think if they could put the deadlines all on one page, it would be helpful.	**Comment received**	Meeting comment - noted.
337					Meeting	10/6/2021	**Steve McIntyre**	I agree, but I think it's critical to have constructive comments, to make the document better. Where we have time, I think we have a responsibility to incorporate those.	**Comment received**	Meeting comment - noted.
338					Meeting	10/6/2021	**Nancy Isakson**	I think the only thing I'd add, it will be important then for committee members to review that document. If there is a comment there that they missed, how you will address or already addressed.	**Comment received**	Meeting comment - noted.
339					Meeting	10/6/2021	**Curtis Weeks**	It would seem to me that the slide you showed with version 3 and version 4, to help facilitate this process, to get a redline version to the committee members to compare this document. And what hasn't been incorporated. I think a redline version to the committee will be very helpful.	**Comment received**	Meeting comment - noted.
340					Meeting	10/6/2021	**Tom Virsik**	I don't know how that comment letter is influencing this meeting. When things come in at the last minute, what can you do? But it may influence how this is proceeding. I haven't seen it. I do agree with enforcing deadlines.	**Steve McIntyre:** That letter is just part and parcel of the comments and the need to be very disciplined and to not overload staff with changes, but places to improve the document, given the strict deadlines we're under.	Meeting comment - noted.
341					Meeting	10/6/2021	**John Bramers**	Conditionally approved GSP, will there be an issue with approving it? I haven't seen the changes you've asked for.	**Curtis Weeks:** The document is still being modified. It's not appropriate for me or anyone to approve it. There will be changes before the December timeframe. I don't anticipate that it won't be adopted. That process and adoption is easier.	Meeting comment - noted.
342					Meeting	10/6/2021	**Jerry Lohr**	I want to thank Les for his comments as well. I would appreciate if we could get management actions ahead of projects. Projects take many years, and management actions can work much more quickly. Could this be possible?	**Abby Ostovar:** Yes, we will certainly make this consistent. This language is sent to all the committees. We will change your GSP to have management actions in front of projects.	Meeting comment - noted.
343					Meeting	10/6/2021	**Tom Virsik**	This is a really good effort in a tricky situation. I think this is an excellent approach, and detailed language to try to thread the needle when we don't know what thread we're using.	**Comment received**	Meeting comment - noted.

344					Meeting	10/6/2021	**John Bramers**	When we use the words, "implementation of management actions…" are the impacts we're looking at the impacts to other subbasins? Or just impacts to the Forebay?	**Abby Ostovar: It would depend on the project, but my assumption is, it would be any of them. If a project is nowhere near the edge of the subbasin, it's unlikely, but we don't know until we get there. It will be a case by case basis. Generally, anything we do with the model will be run as the whole valley together.**	Meeting comment - noted.
345					Meeting	10/6/2021	**Tom Virsik**	I am supportive of the language and changes. This is language that I intend to advocate be in the Upper Valley GSP because the reality will be there with the same river, same caveats.	**Comment received**	Meeting comment - noted.
346					Meeting	11/3/2021	**Allen Panziera**	I understand that these projects will have zones of benefits, and even though the big board decides everything, I think it's important to get everything coordinated subbasin by subbasin. Otherwise we're looking at legal issues.	**Comment received.**	Meeting comment - noted.
347					Meeting	11/3/2021	**Jason Smith**	I agree with what Allen has said and I think that's what we've been doing in all the subbasins. I think the revise should address that piece. Any way we look at this, we are a full groundwater basin, and that is a piece we need to look at. Looking at comments from all sources, I think we do a good job breaking out our subbasin specific pieces. Ultimately, it does come to the board. I like the response that's here.	**Comment received.**	Meeting comment - noted.
348					Meeting	11/3/2021	**John Bramers**	I think the response is good. It is one large basin with subbasins. We need to remind ourselves of that, or we'll get caught in a vacuum. I'm okay with the response and revision.	**Comment received.**	Meeting comment - noted.
349					Meeting	11/3/2021	**Nancy Isakson**	I too appreciate the comments for discussion. I think the revision is better, but in looking at it, it seems like yes, we want to be mindful of implementing this GSP in a manner that does not adversely impact our neighboring subbasins. That's required. It's not clear to me that this does that. The revision is the goal for all subbasins, but this GSP may be implemented and the Forebay may be sustainable, and other subbasins may not. I throw that out there, it's better, but I think it could be revised further.	**Comment received.**	Meeting comment - noted.
350					Meeting	11/3/2021	**Jerry Lohr**	I thought this was an improvement. We've seen it for 2 minutes now, and I agree with the others that this could use further clarification. If we agree on this now, we'll be stuck with this. Yes, it's better, but I don't think it's one that doesn't need further improvement.	**Comment received.**	Meeting comment - noted.
351					Meeting	11/3/2021	**Allen Panziera**	I think it needs to be refined more.	**Comment received.**	Meeting comment - noted.
352					Meeting	11/3/2021	**John Bramers**	I understand the comments we heard from the public. There are a lot of comment letters, and none of us asked for them to be looked at today. The comments haven't been posted. Are we setting precedent that everyone gets to have their comment heard? Maybe it's off topic, but I'm okay with the response.	**Comment received.**	Meeting comment - noted.
353					Meeting	11/3/2021	**Steve McIntyre**	I know staff has been struggling with which comments to bring forward and discuss. We will have one more meeting. We have to remember this is a living document. There are improvements that can be made. I encourage Emily and Abby to relook at this, but we don't have forever until have to submit this plan.	**Comment received.**	Meeting comment - noted.
354					Meeting	11/3/2021	**Jason Smith**	For clarification, I understand what the comment was. As I understand SGMA, and what we're trying to protect as a subbasin, it's something that in our plan that "makes us liable to something." That doesn't supersede water rights, 218 votes. We're almost asking this document to be a "binding contract" when in reality, I guess from Abby or Emily, do you see any ways to be more specific to be more in line with SGMA?	**Les Girard: Let me answer part of that, Jason is exactly right. This is just a plan. It does not supersede other legal requirements to implement actions or projects such as propositions or water rights. The committee need not be concerned that what is written in the plan overrides what is in the state constitution or state law.**	Meeting comment - noted.

355					Meeting	11/3/2021	**Allen Panziera**	It infers that things may be different. It infers being part of a larger program. I think it should be more that this is its own subbasin and it coordinates with other subbasins.	**Emily Gardner: One, for context with where this sentence is, it's in the first chapter where we introduce who we are. It's not in projects. We wanted to simply address that we are the GSA, and the Board, and they are responsible for jurisdiction for 6 subbasins that need to achieve or maintain sustainability. It's not meant to dive into the benefits of projects. As Nancy pointed out, we are bound to comply with SGMA to not prevent neighbors from reaching sustainability. We just want to provide a statement that the SVBGSA is working on 6 GSPs in the Valley. Adding that context in.**	Meeting comment - noted.
356					Meeting	11/3/2021	**Colby Pereira**	I think this is a good revision. I would caution this group from getting into the minutiae of wordsmithing. We provided feedback, staff incorporated that feedback. Legal weighed in and we have protections in place. I think we should move forward with the language provided here. I think that, in the grand scheme of things, we could go down the wormhole of minor wordsmithing. I think this change is fine from my perspective.	**Comment received.**	Meeting comment - noted.
357					Meeting	11/3/2021	**Steve McIntyre**	I share the concern that we're splitting hairs here. It's an improvement, it's not a step back, we should probably leave it as such and move on to the next comment. Then we can vote on approving these. If someone has a better suggestion, we can look at it later. We don't want to get caught up in the minutiae.	**Comment received.**	Meeting comment - noted.
358					Meeting	11/3/2021	**Nancy Isakson**	From a public perspective, when you have something in the GSP, there is the expectation that it will be implemented in the manner in which it's stated. With LandWatch and others calling out certain things that were stated there that have not been implemented to date. Words seem like small edits, but they make a big difference. We'll all be gone in the future, and someone looking back will not understand. You want to make it clear and implemented in the manner you want it to be.	**Comment received.**	Meeting comment - noted.
359					Meeting	11/3/2021	**Allen Panziera**	[Re: Deep Aquifers] What is the DWR reference?	**Abby Ostovar:** Bulletin 118, we have them cited in the chapters.	Meeting comment - noted.
										Meeting comment - noted.
									DW: It is Bulletin 118.	Meeting comment - noted.
360					Meeting	11/3/2021	**Jerry Lohr**	This is still a problem. Why are we proposing a 2-year study on determining how extensive the Deep Aquifer is? I think there is still a question on that. I think this is a problem.	**Comment received.**	Meeting comment - noted.
361					Meeting	11/3/2021	**Steve McIntyre**	There is a question and we can't conclusively say either way, right?	**Abby Ostovar:** That's right, we're not making a conclusion. We're saying "here's what other studies have said."	Meeting comment - noted.
362					Meeting	11/3/2021	**Allen Panziera**	I don't see where you separated that out. At one point you had a map where you showed it. The inference here is that they're connected. What is connectivity? I think that's the point of the study. I'm not sure that separates it out.	**Comment received.**	Meeting comment - noted.
363					Meeting	11/3/2021	**Steve McIntyre**	It seems to me that you can't say conclusively one way or the other, and we've got studies looking at it. Once we have more data, and we can come to conclusions, then we can state that. Is that a process we can abide by?	**Abby Ostovar: It's something that can be included in the 5-year update. I want to point out there is scientific uncertainty, especially with groundwater. What we're trying to do is summarize the existing data and studies done. We're not making a conclusion about the Deep Aquifers presence. To say they're not here would be mischaracterizing the state of knowledge.**	Meeting comment - noted.
364					Meeting	11/3/2021	**Steve McIntyre**	Does it make sense to say we're not making a conclusion?	**Abby Ostovar:** Sure. I think it's softer with how we've written it.	Meeting comment - noted.
365					Meeting	11/3/2021	**Jerry Lohr**	I appreciate the direction Steve seems to be going. It's not inaccurate or misleading. It seems like you've used 4 words, "not," "nor," and "whatnot." I think a simpler statement would help the committee and the public.	**Emily Gardner:** So the comment letter itself suggested to cross out all references to other studies. What we're saying is that we're not concluding anything, we're just pointing to other research that has been done.	Meeting comment - noted.

366					Meeting	11/3/2021	**Steve McIntyre**	I think it's important to not leave history out to the narrative. I think we should state that no conclusion has been reached.	**DW:** I would feel comfortable saying that, it's factually correct. Other studies have stated the Deep Aquifer extends into the Forebay, others have not. I would be comfortable saying that.	Meeting comment - noted.
367					Meeting	11/3/2021	**Steve McIntyre**	How does the committee feel about adding 'no conclusions have been made'?	**Comment received.**	Meeting comment - noted.
368					Meeting	11/3/2021	**Steve McIntyre**	One thing on reservoir operations, one reason from the comment, in the previous drought had the reservoirs been operated, we would not have exceeded our SMCs. The operations have an impact on SMCs. Given the operations were changed in 2010.	**Abby Ostovar:** The historical water budget reports what occurred. We're not trying to change operations, it's just what occurred in the past.	Meeting comment - noted.
369					Meeting	11/3/2021	**Steve McIntyre**	What occurred in the past, the results were impacted by how the reservoirs were operated.	**Abby Ostovar:** I don't disagree with that. Every year is impacted by operations. It doesn't change the water budget results.	Meeting comment - noted.
370					Meeting	11/3/2021	**Jerry Lohr**	I don't understand enough about the water budget results. I'm inclined to agree with Steve's comments. It's still not clear to me. I don't fully understand it. The reservoir operations DO influence the water budgets.	**Comment received.**	Meeting comment - noted.
371					Meeting	11/3/2021	**Steve McIntyre**	I want to agree with Jerry. It's a lack of understanding. Maybe that can be clarified.	**Comment received.**	Meeting comment - noted.
372					Meeting	11/3/2021	**Allen Panziera**	When we are talking about water budgets, are we looking in the past or looking forward?	**Abby Ostovar:** We have historical and future water budgets.	Meeting comment - noted.
373					Meeting	11/3/2021	**Allen Panziera**	It definitely affects it then.	**Abby Ostovar:** The commenter was referencing the historical water budget. In future water budgets, it has the reservoir operations rules IN the model. It's very different from the past, which is what occurred.	Meeting comment - noted.
374					Meeting	11/3/2021	**Steve McIntyre**	So if we change the operations rules, will that change the water budgets?	**Abby Ostovar:** Yes, but this agency is not responsible for the reservoirs. If this model is used for reservoir reoperations in the future, part of that is adjusting the rules to see what the effect is.	Meeting comment - noted.
375					Meeting	11/3/2021	**John Bramers**	So, we're talking water budgets and reservoir operations. You change operations, it changes all subbasins. Then, that's not just a conversation for this subbasin.	**Abby Ostovar: That potential management action is not in the water budget chapter. The water budget chapter is not looking at what we 'could' do to reach sustainability. The water budget chapter is looking at where we've been, and what would our future look like based on where we are today, with climate change.**	Meeting comment - noted.
376					Meeting	11/3/2021	**Steve McIntyre**	So a "status quo" approach?	**Abby Ostovar:** Yes. It's "here's the status quo" and we have projects & management actions to show how we can maintain or achieve sustainability.	Meeting comment - noted.
377					Meeting	11/3/2021	**Jason Smith**	It seems like it wants to look at those drought years, but for your purposes, the numbers are the numbers historically, and it's really an MCWRA issue. However, moving forward, whatever the current operations is looking forward. For the past, this is not the place to respond to how the dams are operated.	**Comment received.**	Meeting comment - noted.
378					Meeting	11/3/2021	**Allen Panziera**	Part of this comment is saying, we don't like the model. It was unclear how they came up with input numbers. It's a black box for me. If you don't use GEMS or whatever, or satellite imagery, I don't remember the question. It was sort of an unknown number that went in. I don't know how they come out with the number for lettuce or whatever it was.	**Abby Ostovar: We have heard this from you and other folks. The USGS is putting together a progress report that summarizes the model, methods, sources. We've been caught in this in-between spot because it is not formally published. We're just trying to make sure it works.**	Meeting comment - noted.
379					Meeting	11/3/2021	**Allen Panziera**	We have an admission that there's something wrong with it, but it's the best there is. It doesn't make sense.	**Abby Ostovar:** It's not a perfect tool, we haven't seen anything better we can use.	Meeting comment - noted.

380					Meeting	11/3/2021	**Nancy Isakson**	In looking at this, maybe I have a misunderstanding. The GSP does discuss that the historical budgets we're developed using the provisional SVIHM, and the drought and reservoir operations were reduced below minimum requirements. I don't want to relitigate that, we did. It's just a point that, we believe the reservoir operations do affect the development of the MTs. Did you just look at the future water budget? So that's one clarification. Maybe we do need a better understanding of how the water budgets relate to the reservoir operations. We're having the discussion here, but it applies for everybody. It IS important to understand. The Water Coalition has asked for the inputs for the USGS model. I'm encourage they will prepare a memo. Our public records ask still stands. The next comments all center around the reservoir operations. It seems that what's missing is an understanding of the reservoir operations, it needs at least a paragraph in the GSP.	**Comment received.**	Meeting comment - noted.
381					Meeting	11/3/2021	**Tom Virsik**	I think Ms. Isakson hit the nail on the head. It's not a criticism. It's important to understand how reservoir operations impact past, current, and future water budgets.	**Comment received.**	Meeting comment - noted.
382					Meeting	11/3/2021	**Steve McIntyre**	Moving forward with the management action in the future, could change how we operate the reservoirs. From an historical standpoint, we can't change history. We can acknowledge that reservoir operations impact water budgets.	**Comment received.**	Meeting comment - noted.
383					Meeting	11/3/2021	**Colby Pereira**	Steve I agree with you. Nancy and Tom make great points. We place the language elsewhere in the GSP to what authorities exist. But, maybe again to reference and acknowledge here.	**Comment received.**	Meeting comment - noted.
384					Meeting	11/3/2021	**Jerry Lohr**	It helps, but we're not there yet.	**Comment received.**	Meeting comment - noted.
385					Meeting	11/3/2021	**Jerry Lohr**	These MTs being measured in December, if we had different releases or rainfall, I think, I just didn't understand this at all. I'm not satisfied with what I'm hearing.	**Abby Ostovar: to revisit the conversations we've had over the last year. When we started, we thought what local groundwater levels are considered significant & unreasonable. So the years we selected, the committee selected what we don't want to go below. Those are set in specific wells for those years. So, it started with what do you all consider significant & unreasonable. What you told us what put into the GSP.**	Meeting comment - noted.
386					Meeting	11/3/2021	**Steve McIntyre**	That's the worst case. One way to look at it is, reservoir operations can have the same impact as rainfall, and rainfall is more variable in terms of timing and amount. So, drawing MTs, it's a worst case. It doesn't really matter what rainfall or reservoir operations happened historically, we just don't want to go there again. We could take steps to not go there again.	**Comment received.**	Meeting comment - noted.
387					Meeting	11/3/2021	**Nancy Isakson**	I'm not sure the Coalition letter was part of the packet. I want to read to you what we're asking to be added to this section. Currently the GSP states the 15% and undesirable result allows for 5 exceedances in 39 representative monitoring sites. We're asking a clarifying statement that no MT is established at times it is determined the agency's operations aren't consistent with the operational rules. That doesn't seem unreasonable to me. If it's determined to be inconsistent with what you are claiming, that you are including here as your standards of operation, then it seems like that should be taken into consideration.	**Comment received.**	Meeting comment - noted.
388					Meeting	11/3/2021	**Steve McIntyre**	I would like to just state that we can't control the reservoir operations. We know we don't want to go to those MTs, but if we don't have control over something, then those have impacts like lack of rainfall. But we could still have a drought. We can say we want to avoid it, and we can take action to avoid it by negotiating in terms of plenty and drought. I would just add that comment.	**Comment received.**	Meeting comment - noted.

389					Meeting	11/3/2021	**Tom Virsik**	Ms. Isakson read the part I wanted to read. To add a comment, there are a lot of other entities that do not control the valves on the reservoirs but that the agency needs to respect. More specificity for the GSA on what it is, and what it will do, and the criteria. The better it will be for the agencies to work together down the road. I agree with Ms. Isakson, but this notion that the agency can actually open and close valves which can materially change how these metrics function, why not say that so when that occurs, you know what can/cannot be done.	**Comment received.**	Meeting comment - noted.
390					Meeting	11/3/2021	**Nancy Isakson**	I would like to thank you for making the changes in chapters 9 and 10. We think those are good changes.	**Comment received.**	Meeting comment - noted.
391					Meeting	11/3/2021	**Jason Smith**	As we look at the examples of the 180/400, we were also successful in defending what was in there. They said they were going to do a 2-year study. They also knew they were careful with their words. Anyone can pick it apart across the Valley. Secondly, we've had the County behind us, and legal pushing back on those things in the document. I love what we've gone through, staff has done an incredible job, adding in, and giving us feedback on what they can and cannot do. I just appreciate the process and all the comments. Even in the situation that was mentioned, we did a good job. On top of all that, we set it up at the board level, and we have some supermajorities.	**Comment received.**	Meeting comment - noted.
392					Meeting	11/3/2021	**Jerry Lohr**	I also appreciate the work staff has done. At the same time, as much as I appreciate the responses here, we went from a 75% to an 80%. I would just beg that before the November 15th meeting, that we get your final text including the red lines ahead of time so we can have a chance to look at that, and better understand that before we have discussion. There are several things in here that we're a little afraid to pass on with the accepted changes, or the responses to the accepted changes, and will be cast in concrete. I ask that we get the redlines out, else I would not be able to vote for them.	**Emily Gardner:** On the process and the drafts, our intention is to get this right now so that the DWR draft for a final approval before it gets submitted. We are bringing it to you for approval. We're trying to get any adjustments now.	Meeting comment - noted.
393					Meeting	11/3/2021	**Steve McIntyre**	Do we need to take a vote at this meeting? Or vote at the November 15th when we approve the whole, final document.	**Emily Gardner:** If there are any outstanding issues, we need to know that now.	Meeting comment - noted.
394					Meeting	11/3/2021	**Jerry Lohr**	The best way to do that is to give us text. You've heard our concerns and comments. If you can get the text out to us, we can be prepared to approve it. I'm not prepared to approve the text today because it's not our final text. You're going to take our final comments and we need to be comfortable with it. I can't make or vote for a motion to approve this at present.	**Abby Ostovar: Maybe I can propose something in between. We are under a time crunch, and this is that final set of issues, maybe on this set we can send around the language on these issues, and maybe chair, you could see if there's consensus?**	Meeting comment - noted.
										Meeting comment - noted.
									Les Girard: There's a Brown Act issue here. Staff can send revised language to committee members. You cannot reply all, but you can individually send responses to staff. Staff can come back at the next meeting based on your individual comments. Whatever staff sends to committee members can be posted on the website so the public can comment, too.	Meeting comment - noted.
395					Meeting	11/3/2021	**Allen Panziera**	The comments at that point will be added to the comment board at that time?	**Les Girard:** Yes, and staff can come back with revisions at that time.	Meeting comment - noted.
396					Meeting	11/3/2021	**Nancy Isakson**	I would like to thank you for making the changes in chapters 9 and 10. We think those are good changes.	**Comment received.**	Meeting comment - noted.
397					Meeting	11/3/2021	**Jason Smith**	As we look at the examples of the 180/400, we were also successful in defending what was in there. They said they were going to do a 2-year study. They also knew they were careful with their words. Anyone can pick it apart across the Valley. Secondly, we've had the County behind us, and legal pushing back on those things in the document. I love what we've gone through, staff has done an incredible job, adding in, and giving us feedback on what they can and cannot do. I just appreciate the process and all the comments. Even in the situation that was mentioned, we did a good job. On top of all that, we set it up at the board level, and we have some supermajorities.	**Comment received.**	Meeting comment - noted.

398					Meeting	11/3/2021	**Jerry Lohr**	I also appreciate the work staff has done. At the same time, as much as I appreciate the responses here, we went from a 75% to an 80%. I would just beg that before the November 15th meeting, that we get your final text including the red lines ahead of time so we can have a chance to look at that, and better understand that before we have discussion. There are several things in here that we're a little afraid to pass on with the accepted changes, or the responses to the accepted changes, and will be cast in concrete. I ask that we get the redlines out, else I would not be able to vote for them.	**Comment received.**	Meeting comment - noted.
399					Meeting	11/3/2021	**Allen Panziera**	I agree with that totally.	**Emily Gardner:** On the process and the drafts, our intention is to get this right now so that the DWR draft for a final approval before it gets submitted. We are bringing it to you for approval. We're trying to get any adjustments now.	Meeting comment - noted.
400					Meeting	11/3/2021	**Steve McIntyre**	Do we need to take a vote at this meeting? Or vote at the November 15th when we approve the whole, final document.	**Emily Gardner:** If there are any outstanding issues, we need to know that now.	Meeting comment - noted.
401					Meeting	11/3/2021	**Jerry Lohr**	The best way to do that is to give us text. You've heard our concerns and comments. If you can get the text out to us, we can be prepared to approve it. I'm not prepared to approve the text today because it's not our final text. You're going to take our final comments and we need to be comfortable with it. I can't make or vote for a motion to approve this at present.	**Abby Ostovar: Maybe I can propose something in between. We are under a time crunch, and this is that final set of issues, maybe on this set we can send around the language on these issues, and maybe chair, you could see if there's consensus?**	Meeting comment - noted.
										Meeting comment - noted.
									Les Girard: There's a Brown Act issue here. Staff can send revised language to committee members. You cannot reply all, but you can individually send responses to staff. Staff can come back at the next meeting based on your individual comments. Whatever staff sends to committee members can be posted on the website so the public can comment, too.	Meeting comment - noted.
402					Meeting	11/3/2021	**Allen Panziera**	The comments at that point will be added to the comment board at that time?	**Les Girard:** Yes, and staff can come back with revisions at that time.	Meeting comment - noted.
403					Meeting	11/3/2021	**Tom Virsik**	I think that's a good plan. That sounds like it could work.	**Comment received.**	Meeting comment - noted.
404					Meeting	11/3/2021	**Nancy Isakson**	I agree that's a good process. I ask that when you post it on your website, that you send it in your email list to notify them that it has been posted.	**Comment received.**	Meeting comment - noted.
405					Email	11/8/2021 Email	**Allan Panziera**	Hi Emily, I still have a problem with the SVIHM being the best tool. It is a tool that has not been thoroughly vetted. I have not heard the explanation why it was off 30%. To say that is the best tool is most likely an overstatement. It appears that using GEMS data and stream flow information has yielded more accurate results.So it may be the tool that has been chosen but it appears that there are other methods more accurate. Thank you.	**Comment received.**	Thank you for your input. Currently, there is so better tool to estimate water budgets, especially, for the whole Salinas Valley Basin. It is important to calculate water budgets in a holistic Basinwide manner. The SVIHM does that, thus, it is the best tool for calculating water budgets.
406					Meeting	11/15/2021	**Steve McIntyre**	For the committee members not at the meeting last week, we're not the first agency to have problems with the USGS model. I think we all realize there's commitment here to use the best science and make modifications as we go along. This is the last meeting before approval by Board of Directors to keep the timeline for submittal. I'm hopeful the discussion today will allow us to have the confidence to move forward to be on time.	**Comment received**	Meeting comment - noted.
407					Meeting	11/15/2021	**Allen Panziera**	We've called this the best available tool. I think it's the tool of choice, I don't see where it's the best available. I think there are better tools like GEMS.	**Steve McIntyre:** I think the staff agrees, but we've discussed it already. By improving the model and running things again, we can move forward with more confidence.	Meeting comment - noted.

408					Meeting	44515	**Jason Smith**	Agreed, the USGS is what we have. But the 'ground truthing' with actual data is what you're doing. So that's great, and that's what we use with farming to see what's really going on. So then you use real GEMS data, and the USGS is also adapting based on the information you're bringing back to make it a better tool.	**DW:** That's correct.	Meeting comment - noted.
409					Meeting	11/15/2021	**Allen Panziera**	Well, it's not clear to me. If I have a screwdriver that is missing 30% of the tip, every time I use it, it just buggers everything up.	**Comment received**	Meeting comment - noted.
410					Meeting	11/15/2021	**Jason Smith**	But perhaps that's the point, the USGS is not the only tool we're using. The agency should continue to use the model, along with other tools, so we can keep adjusting it and improving it. I don't disagree with what you're saying. Yeah, we have a USGS tool that's 3/4 of a screwdriver. I don't think this will ever be where we want it.	**Donna Meyers:** Moving ahead, the things we evaluate use real data. As we approach the 5-year update, we think it's valuable to get the model to a place of accuracy that it benefits us under SGMA. We are not walking away from the model but we're also committed to working with USGS. In order to manage this and other subbasins, the model becomes more accurate over time. What goes into the model is actual data for your basin. We are not managing based on the model, we're managing to actual data. **DW:** We do get to a point where there are subtleties about "best" or not. Moving towards implementation is the point.	Meeting comment - noted.
411					Meeting	11/15/2021	**John Bramers**	I appreciate that we will continue to use real data, fill data gaps, and use the model as it becomes more accurate. I like real data, and use the model, too.	**Comment received**	Meeting comment - noted.
412					Meeting	11/15/2021	**Amy Woodrow**	I just want to tack onto the conversation about model refinement. As we move forward with everyone as partners, we will work on model refinement, and that includes stakeholder input. We received a lot of stakeholder input in the beginning. I encourage you to continue to provide input as we go forward.	**Comment received**	Meeting comment - noted.
413					Meeting	11/15/2021	**James Sang**	I understand that the determination of whether the basin is in overdraft or not is not just one determination, or whether it has gone below a minimum threshold. How many times does it have to go beyond a year before some kind of action is taken? I have other issues, on the water budgets chart, where you show it's a positive water budget, and it's due to reductions of evaporation. It shows a net storage gain, and the main difference is groundwater evaporation. Did you show that from getting rid of the Arundo? How did you gain that?	**Abby Ostovar:** The historical average is over many different years. The current is just 2016, which is just a snapshot. The previous years were a drought. We note that just looking at one year is not representative of the basin. There a couple different numbers, remember the model brings together many different values. We did adjust the storage for the historical average, and we looked at groundwater levels over time, where we don't gain or lose much.	Meeting comment - noted.
414					Meeting	44515	**Jerry Lohr**	I read or scanned the entire number of pages, so I commend you. I was not able to see Abby's slides because of connection issues. Can you share those slides?	**Abby Ostovar:** Sure, I believe they were in the agenda packet. And they were the same as the ones sent previously summarizing what we've already seen.	Meeting comment - noted.
415					Meeting	11/15/2021	**Jason Smith**	I will move to approve the plan as presented today.	**Comment received**	GSP APPROVED UNANIMOUSLY

Forebay Aquifer Subbasin Groundwater Sustainability Plan Development Comment Letters Received

11.. Heather Lukacs, Community Water Center. 071020

22. Jerry Lohr. 101920

33.. Nancy Isakson, Salinas Valley Water Coalition. 110320

44.. Tom Virsik. 110420

55.. James Sang. 110820

66.. Nancy Isakson, Salinas Valley Water Coalition. 010521

77.. Nancy Isakson, Salinas Valley Water Coalition. 011221

88.. George Fontes, Salinas Basin Water Alliance. 031021

99.. Curtis Weeks, Arroyo Seco Groundwater Sustainability Agency. 032321

10.0 George Fontes, Salinas Basin Water Alliance. 042121

11.1 Gus Yates. 042221

12.1 Heather Lukacs, Community Water Center & Horacio Amezquita, San Jerardo Cooperative. 042321

13.. Community Water Center. 042821

14.1 Norm Groot, Salinas Basin Agricultural Water Association. 051221

15. Fred Nolan. 051321

16. Gus Yates. 053121

17. Tom Virsik. 061121

18. Nancy Isakson, Salinas Valley Water Coalition. 061621

19. Heather Lukacs, Community Water Center & Horacio Amezquita, San Jerardo Cooperative.061721

20. 125 letters received in support of comprehensive river maintenance

21. Steve McIntyre. 071021

22. Nancy Isakson, Salinas Valley Water Coalition. 071421

23. James Sang. 072021

24. Curtis Weeks, Arroyo Seco Groundwater Sustainability Agency. 072721

25. Jason Smith. 073121

26. Nancy Isakson, Salinas Valley Water Coalition. 081221

27. Stephanie Hastings. Salinas Basin Water Alliance. 081221

28. Jerry Lohr. 092021

29. Nancy Isakson, Salinas Valley Water Coalition. 1005218.

30. Norm Groot, Monterey County Farm Bureau. 100821
31. John Farrow, LandWatch. 101421
32. Thomas Virsik. 101421
33. Audubon California, Clean Water Action, et al. 101421
34. Michael Griva, Franscioni & Griva Corp. 101521
35. Douglas Deitch, Monterey Bay Conservation. 101421
36. Stephanie Hastings, Salinas Basin Water Alliance. 101521
37. Heather Lukacs, Community Water Center & Horacio Amezquita, San Jerardo Cooperative, Inc. 101521
38. Tyler Sullivan, California Coastkeeper Alliance & Sean Bothwell, Monterey Waterkeeper. 101521
39. Elizabeth Krafft, Monterey County Water Resources Agency. 101521

Gmail

Emily Gardner <gardnere@svbgsa.org>

Recommendations for Langley and other subbasin GSPs related to drinking water users

6 messages

Heather Lukacs Fri, Jul 10, 2020 at 2:06 PM
To: gardnere@svbgsa.org
Cc: Donna Meyers <meyersd@svbgsa.org>, Gary Petersen <peterseng@svbgsa.org>, Horacio Amezqutia
Thomas R Adcock Justine Massey

Hi Emily, Gary, and Donna,

I appreciate the process allowing for comment on the early drafts of the subbasin GSPs.

Tom, I have included you so that you can see Figure 3-5 that I referenced during my comments at today's meeting - in order to help make sure Alco and Pajaro Sunny Mesa CSD boundaries are accurately represented (see attached), and also because you indicated interest in helping support outreach to water systems.

We at CWC are happy to support in identifying, ground-truthing, and outreach to drinking water users in the Langley Subbasin and other subbasins in the Salinas Valley.

The first step we recommend is to generate a list of the following to support outreach and also to include in Chapter 3 of the draft subbasin GSPs:

- Public water systems - which serve over 15 connections
- State and local small water systems - which serve between 2-14 connections

We at CWC currently have lists for both types of systems from Monterey County Environmental Health (along with contact information for each water system). This information was also used by the GSP consultants in the 180/400 GSP so they should also have these lists with location and water quality information for all water systems in the subbasins.

Next, we recommend creating maps of the location, water quality, and other information of all drinking water supply wells - which came up during today's meeting. For the 180/400 Foot Aquifer GSP, Figure 7-9 Public Water Supply Wells was included together with Appendix 7E (see attached) which has water system names, well construction information, coordinates, and monitoring data range. (see more on this below).

Lastly, these maps and lists can then be shared with local drinking water users who can provide feedback and help groundtruth the information. This could be part of a drinking water workshop - is the information we have accurate? Given this information, is the monitoring network accurate? Are drinking water users collecting other information that could be added to this plan?

I look forward to discussing this and also more specific recommendations (see below) for Chapter 3 of the Subbasin GSPs.

Thank-you,
Heather

Recommendations for Chapter 3 of Subbasin GSPs

- **Revise the description of the plan area to include the type and location of all water systems and private domestic wells that serve drinking water users, their current groundwater quality conditions, and the number of people served.** All public water system service areas and state and local small service areas should be included in this chapter as well as a list of all these system names, water system ID numbers, and number of service connections (or population served). Private wells should also be identified as being groundwater-dependent drinking water supplies. All public water systems and state/local small water systems are important to identify and include in this chapter because all are reliant on groundwater, many are highly vulnerable to water level and water quality changes, and all will be impacted by the way groundwater is managed in the basin. Adequately

characterizing the public water systems, state and local small water systems, and domestic wells in the GSP is important to set the stage to: (1) better identify areas that are vulnerable to groundwater level, groundwater quality, or seawater intrusion challenges, (2) quantify drinking water demand in the subbasin for both the current and projected water budget, (3) provide a basis for the monitoring network of drinking water supplies, and (4) ensure inclusive and representative engagement of drinking water users in the planning process.

- **Revise Chapter 3 to include a map of the service areas of all of the state and local small water systems in the 180/400 foot aquifer subbasin.** The 180/400 Foot Aquifer GSP mentions 136 small water systems in Chapter 7, page 7-20 of the 180/400-Foot Aquifer GSP (January 3, 2020) which indicates that the consultants have this data. We recommend that this data for all Salinas Valley subbasins be included in a map in Chapter 3 of each GSP, be clearly labelled, and have an associated table with key information. The Monterey County Environmental Health Bureau (EHB) maintains publically available data which includes shape files of state and local small water system service areas (e.g. polygons of all parcels served by each state or local small water system) to water system IDs. Lists of state and local small service areas and out-of-compliance water systems are available online on their state and local small water system webpage. Monterey County EHB also maintains individual files for each SSWS and LSWS in the County, which often contain well completion reports for each system. All water quality data, location data, and well completion reports are publically available upon request from the Monterey County EHB.
- **Update water system boundaries in Figure 3-5** (Langley, 6/28/2020 GSP) to reflect that Alco no longer operates wells in this area, and update Pajaro Sunny Mesa CSD water system boundaries.
- **List domestic water use and/or rural residential water use under the Water Use Section (Section 3.2.2).** This section indicates that, “Domestic use outside of census-designated places is not considered urban use.” Even if the Monterey County Water Resource Agency (MCWRA) does not report rural residential use, it is an important beneficial use and should be listed as a “water use sector.” Water use estimates for state and local small water systems could be based on the number of connections served by each water system (which Monterey County has on file).
- **Revise Chapter 3 to include a specific discussion, supported by maps and charts, of the spatial or temporal water quality trends for all constituents that have exceeded drinking water standards and may affect drinking water beneficial users, as required under 23 CCR § 354.16(d).** In the 180/400 Foot Aquifer GSP, Tables 8-6 through 8-9 for all public drinking water wells (including those listed in Appendix 7E), state and local small water system wells, and private domestic wells were included which indicate that the consultant has this data available. It is important to include all water quality data (both in map and tabular form) for all constituents that will have minimum thresholds later. Water quality is an important part of the basin setting. See map viewer from Greater Monterey County RWMG of all available water quality data for state and local small water systems in Monterey County: http://www.greatermontereyirwmp.org/documents/disadvantaged-community-plan-for-drinking-water-and-wastewater/.

--
Heather Lukacs, PhD
Pronouns: She/Her/Hers
Director of Community Solutions
Community Water Center

[redacted]CA 95076

[redacted]CA 95814

All CWC staff are currently working remotely. Please reach all staff via email and cell phone.

2 attachments

DATE: 10-19-2020
TO: Emily Gardner & FOREBAY Subdivision Committee
FROM: Jerry Lohr

RE: Request for comments from 10-16-2020 7:19 PM

Thank you for your request. I have been a landowner in the Greenfield area since 1971. We now use Arroyo Seco water from the Clark Colony canal and reuse our treated water from our J. Lohr Winery on Cypress Avenue for direct irrigation. I am also a member of the SVWC.

I am very supportive of the winter release program using the Salinas River as a conduit to the SRDF. I suggest we get a realistic cost on the irrigation wells ASAP. We need to work closely with MCWRA. From data I have seen, in most years that should be a very good program.

Eradication of the Arundo Donax is also a very good move. It should alleviate the potential drop in well water heights along the Salinas River in summer. I have heard that the Arundo Donax could use as much as 50,000 AFY in the Salinas Valley.

We at J. Lohr employ several water use optimizations currently in our vineyards. We use pressure bomb data to suggest our next irrigation. We, thus, irrigate more in the spring and the fall and use longer irrigations. I supported research by Dr. Andrew McElrone at UC Davis which lead to his student Tom Shapland developing a process called surface renewal which is now known and available as Tule which works well for larger, more uniform areas. I also co-support Karen Block of UC Davis to hold extension meetings to demonstrate these and other new techniques to support efficient water use. It would be great to reach a wider audience and share this type of research with other Monterey County growers. I would support a virtual program sometime later this fall or early next year if the SVBGSA would get behind and promote it. The presentation would probably need to be available at least two time to catch more potential user during their slow period. This could demonstrate reduced pumping options. Forced reduced pumping, as you indicated, is going to be unpopular. My suggestion would be to find some technology suppliers and local users such as T&A, Taylor Farms or D'Arrigo to co-sponsor, so their growers would be encouraged to attend.

The drought reserve idea is very good because a lot of grower energy has been focused on the dam operation. The drought reserve is a good concept, and quite frankly what growers expect when a dam is involved.

Salinas Valley Water Coalition
33 El Camino Real • Greenfield, CA 93927
(831) 674-3783 • FAX (831) 674-3835

TRANSMITTED VIA EMAIL

Salinas Valley Groundwater Sustainability Agency
Atten: Ms. Emily Gardner, Deputy General Manager 3 November, 2020

Re: SVBGSA Forebay Subbasin GSP, Projects and Management Actions

Dear Ms. Gardner;

We appreciate this opportunity to comment on the proposed/discussed Projects and Management Actions set forth in the Salinas Valley Basin Groundwater Sustainability Agency's ("SVBGSA") Groundwater Sustainability Plan ("GSP") for the Forebay (FB) Subbasin. We ask that you share/distribute our comments to the FB Subbasin GSP Committee prior to its scheduled committee meeting on November 4th so that the Committee is afforded an opportunity to review and consider the comments ahead of the meeting.

We offer the following comments for your consideration:

1. Winter Reservoir Releases with ASR:

The Salinas Valley Water Coalition (SVWC) supports the consideration and pursuit of a Winter Reservoir Release Project (Winter Release). We believe it can provide significant and diverse benefits to the fishery and environmental resources as well as aquifer recharge to benefit lands within the entire Salinas Valley Groundwater Basin. The SVWC has advocated for a winter release project/program since 2014, albeit in a slightly different manner than that presented by the SVBGSA. We believe the development and consideration of a Winter Release Project/Program is a great opportunity to maximize the benefits of existing approved projects by utilizing (or enhancing) existing infrastructure.

We also believe that the Winter Release Project could be implemented prior to completion and adoption of a Habitat Conservation Plan (HCP), and that it can then be enrolled in the HCP as an 'existing project/program' as the HCP is being developed.

In 2015, the SVWC challenged the Monterey County Water Resources Agency (MCWRA) on its operations of the reservoirs during the most recent drought period. In order to settle our differences, the SVWC and MCWRA executed a settlement agreement

on November 15, 2019. This is a public document and we have attached the sections that are relevant to this discussion for your information.

We share this with you because one of the elements of the settlement agreement is for the SVWC and MCWRA to work together to consider and discuss: "1) the overall effects associated with implementation of the Winter Release Scenario; and 2) any anticipated benefits to environmental resources including but not limited to benefits to steelhead, of implementation of the Winter Release Scenario."

In order to evaluate whether the Winter Release Scenario warrants further consideration and implementation, the Settlement Agreement requires the MCWRA and the SVWC to separately model the Winter Release Scenario (using two different models) to jointly review the results of the separate modeling efforts in order to determine whether to move toward a pathway for its implementation if the modeling results support the perceived benefits.

The operation and implementation of the Winter Release Scenario detailed in the Settlement Agreement is different from the Winter Reservoir Release Project presented by the SVBGSA, in that we rely solely on existing infrastructure and projects; thereby limiting the capital costs for construction. To the contrary, the Winter Reservoir Release Project of the SVBGSA, requires substantial 'new and additional' infrastructure at significant costs. That said, the Coalition is not dismissing the SVBGSA's Winter Reservoir Release Project outright and believes that this more costly project may be warranted should further studies support its benefits.

The Coalition's proposal for reoperation, which incorporates the Winter Release Scenario, as set forth in the Settlement Agreement may occur immediately to provide benefits to the entire Salinas Valley Groundwater Basin well ahead of the SVBGSA's many procedural requirements prior implementing its project such as water rights permit amendment, preparation of engineer's report, vote under Proposition 218, preparation of environment impact report, etc. That is, there is no need to wait for the HCP or for the SVBGSA to satisfy its procedural requirements for the SVBGSA's project.to implement the reoperation to incorporate the Winter Release Scenario in order to receive its benefits.

Based on our model results, 'the Coalition's Winter Release Scenario provides for greater reservoir releases during the winter months to provide additional recharge and fishery migration opportunities, while continuing to operate the Salinas Valley Water Project as approved, including continuing to, and possibly increasing, the amount of water diverted at the Salinas River Diversion Facility (SRDF) during the irrigation season to provide deliveries to the CSIP growers.

While we are continuing to work with the MCWRA to refine and finalize the modeling, the Coalition's initial model results show that a Winter Release Scenario could be implemented in approximately 75%-85% of all years (and all year type), providing significant benefits for additional fish passage days, additional environmental releases and recharge to the aquifer during a period when riparian vegetation is dormant. It also allows for storage and more efficient use of captured and stored water and releases during the irrigation season for lands within the Salinas Valley Groundwater Basin; while respecting the water rights within the Basin.

It is important that we work together to manage our costs and resources and not duplicate efforts on 'similar' projects/programs, Hence, we should work together to

evaluate the results of a winter release project/program in order to develop components/elements/alternatives that maximize benefits and minimize costs.

Recommendation: We request that the SVBGSA collaborate and work with the MCWRA and SVWC in regard to the development of a Winter Reservoir Release Project. We request that you direct your technical consultant and a staff member to work with the MCWRA and SVWC on evaluating the modeling results and developing the end project that would maximize benefits and minimize costs.

2. **Invasive Species Eradication: The SVWC supports the pursuit of this project.**

3. **Conservation and Agricultural BMP's:**

The SVWC supports implementation of conservation and agricultural BMP's. The MCWRA adopted and implemented a strong conservation and agricultural BMP program over 20 years ago and we believe the agricultural community has done, and continues to do, an amazing job of implementing on-farm conservation measures.

Recommendation: The SVBGSA should collaborate and work with other agencies, including the MCWRA, to support and improve the existing conservation and agricultural BMP programs. The collaboration should also include working to support and improve, as applicable, domestic water use conservation measures.

4. **Pumping Limitations:**

The SVWC conditionally supports having pumping limitations as a 'tool' in the toolbox of 'projects' for the SVBGSA – however, this support is based on the following:

1. It should be recognized that the Salinas Valley Groundwater Basin is not a 'one size fits all' basin and hence, any consideration of and need for pumping limitations should be analyzed for each individual subbasin, or portions thereof, to determine whether such a drastic measure is needed to achieve sustainability for those particular areas. Because of the massive size our subbasins, pumping limitations may only be required for certain limited areas of a subbasin.
2. Because we do not recommend a basin-wide pumping limitations, specific criteria and standards must be developed to focus in on the specific areas of a subbasin that would be subject to the pumping limitations. These specific criteria and standards should clearly define the details of 'when' and 'how' any pumping limitations are to be implemented (i.e., need to develop time, place and manner of the pumping limitations).

Recommendation: The SVBGSA should include Pumping Limitations as a potential project, but additional data and information must be developed first in order to establish the applicable criteria and standards for triggering such a limitation for a particular area of a subbasin.

Thank you for your consideration of the foregoing comments.

Sincerely,

Nancy Isakson

Nancy Isakson, President
Salinas Valley Water Coalition

4 November 2020
To: SVBGSA Public Comments Form Salinas Valley Basin Groundwater Sustainability Agency (GSA) Forebay Subbasin
Re: November 4, 2020 meeting - Agenda Item 4.f. – Draft Chapter 8

These comments and queries are directed to the version of Chapter 8 presented at the 4 November Forebay committee meeting. I understand the chapter will be revised and these comments are directed only to certain content that appears unrelated to the "still in progress" portions, generally flagged with red text.

Query: What/who is the "appropriation" listed on the first horizontal line of Table 8-8? My assumption is that it reflects a permit from the SWRCB, but that it seemingly was not exercised in 2013 and forward is noteworthy and calls into question its identity. Pleas provide more information, e.g., a permit number. Page 8-38.

Comment/query: The second horizontal line of Table 8-8 is a cumulative category of water diversions that seemingly does NOT include appropriative water rights. "The one appropriative water right holder in the Forebay Subbasin is shown in Table 8-8." Please note that statements of water diversion can be based on appropriative rights that do not statutorily require a permit or license, i.e., pre-1914 rights. The implication of the Table description and the sentence below the Table suggest that the GSA has concluded that the statements of water diversion do not include reports of water diverted pursuant to appropriative (including pre-1914) rights. My clients in the Upper Valley and Forebay claim the right to divert water based on, inter alia, rights that fall into the pre-1914 category and have reported their diversions to the SWRCB on that basis for decades and report those extractions to the MCWRA pursuant to the local ordinance. The GSA recognizes that dynamic. "Some of the diversions shown in Table 8-8 are also reported to MCWRA as groundwater pumping." Page 8-38.

I suggest that the first line of Table 8-8 read (if accurate) as "Appropriation per Permit" or similarly. The sentence following could be adjusted to say: "the one permitted appropriative water right holder . . . ." By a more precise recitation, the GSA could avoid the implication that it is taking a position on the water rights involved vis a vis permitted appropriators (including the MCWRA), those diverting pursuant to pre-1914 rights, and those diverting pursuant to other rights (e.g., riparian).

Very truly yours,
Thomas S. Virsik

Gmail **Emily Gardner <gardnere@svbgsa.org>**

Fw: 11/4/20 Forebay Subbasin Committee Meeting

3 messages

Yahoo Mail <sangjames@yahoo.com> Sun, Nov 8, 2020 at 8:47 PM
Reply-To: Yahoo Mail <sangjjames@hotmail.com>
To: Donna Meyers <meyersd@svbgsa.org>, Emily Gardner <gardnere@svbgsa.org>
Cc: james sang <sangjames@yahoo.com>, Bruce Taylor <btaylor@taylorfarms.com>, Andrew Fisher <afisher@ucsc.edu>

Good Evening,

I, James Sang, attended the Forebay Subbasin meeting and I spoke about my idea about water aquifer recharge and Mr. McIntyre asked if I could send more details about my idea. The following are my thoughts:

My idea is to build rainwater collection areas around the well heads. The collection areas can be anywhere from 10,000 square feet area to a foot ball size area (57,000 sq ft) to even larger. In this area will be 2 feet wide by 3 feet deep swales. On level ground they can be built anywhere close to the well head. In a sloping area , the swales would be built across the slope of the ground. The purpose of these swales are to collect the rainfall. The amount of water that can be collected is tremendous. A football size collection area can collect over 500,000 gallons of water a year, based on Salinas California rainfall of 15 inches per year. This should be able to help recharge our dwindling water aquifers.

As an experiment we should start with a shallower well , maybe 100 or 200 feet deep. This would have a better chance of working.

The swales should be designed in a certain way. They should be large enough to catch all the rainwater and deep enough to protect it from the heat from the sun and the wind, which are the major causes of evaporation.

I remember that one of the attendees said that if this was built on farm land, the County may not approve of the project. I assume that the reason is because of the potential of soil nitrogen to go into the water aquifer. There is a solution for this . At UC Santa Cruz, they have experimented with using wood chips to eliminate this problem. They sprinkled wood chips at the bottom of their water collection ponds. This was successful in reducing the nitrate!

Can you pass this email to Mr. McIntyre and anyone else who you think might be interested?

Thank you.

James Sang sangjames@yahoo.com

Salinas Valley Water Coalition
33 El Camino Real • Greenfield, CA 93927
(831) 674-3783 • FAX (831) 674-3835

TRANSMITTED VIA EMAIL

Salinas Valley Groundwater Sustainability Agency
Atten: Ms. Emily Gardner, Deputy General Manager 5 January, 2021

Re: SVBGSA and Forebay Subbasin Committee Pumping Allocation Discussion

Dear Ms. Gardner;

The Salinas Valley Water Coalition (SVWC) attended and participated in the Pumping Allocation Workshop held by the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) on November 18, 2020. In anticipation of future deliberations by the SVBGSA on this matter, the SVWC conducted a survey of its members in an effort to gain a better understanding of the membership's opinions regarding a pumping allocation program for the Salinas Valley Basin.

The following is a summary of the key findings from the survey based on survey responses received from the SVWC members who own and/or operate lands located in majority portions of the subbasins of the Salinas Valley Basin. It needs to be stated upfront ***that in 100% of the responses received, the SVWC members DO NOT support the implementation of a pumping allocation program, either in their subbasin or within the entire Salinas Valley Basin.***

1. In 100% of the responses, the SVWC members believe implementing a pumping allocation program is similar to a water right determination, and that if it were to be implemented, it should be based on ***water rights***.
2. In 80% of the responses, the SVWC members ***did NOT*** support the development and implementation of a water market, while 20% said they would support such a market, but only if a separate market is created for each subbasin.
3. In 100% of the responses, the SVWC members recognize hydrological differences between the subbasins, and all agreed that each subbasin should be treated separately and distinctly.
4. If a pumping allocation program were to be developed and implemented, 25% of those who responded said the allocation should be divided by net acreage of the

entire subbasin, and 75% said it should be divided by irrigated acreage of the entire subbasin.

5. In 80% of the responses, the SVWC members said there should be NO pumping allocation for non-irrigated parcels, and 20% said there should be.

Our survey revealed concerns our members continue to have, and that is that contrary to has been stated by the SVBGSA – that is, the members believe the development and implementation of a pumping allocation program will essentially be an adjudication of water rights by policy implementation. This is NOT acceptable and will only serve to undermine the good work of the SVBGSA to-date. The SVWC believes that the majority of landowners/growers will not support a pumping allocation program and if one were to be developed and implemented, it will most likely trigger a basin-wide water rights adjudication, which will be very costly and lengthy for all.

Our members support the development of various programs and projects that will truly work to assist in attaining sustainability of each of the subbasins, as outlined in our November 3, 2020 letter (attached). Our members ***will not*** support the development and implementation of a pumping allocation program. We have previously stated we could conditionally support the development and implementation of pumping limitations as a 'tool' in the tool box of the GSA, but that these pumping limitations must be based on criteria to be developed by, and for, each subbasin.

We appreciate this opportunity to share our members' concerns and comments regarding the pumping allocation program currently under consideration by the SVBGSA. We ask that you share/distribute our comments to the Forebay Subbasin GSP Committee prior to its scheduled committee meeting on January 6, 2021, so that the Committee is afforded an opportunity to review and consider the comments herein prior to that meeting.

Thank you for your consideration of the foregoing comments.

Sincerely,

Salinas Valley Water Coalition Board
Keith Roberts, Chair
Roger Moitoso, Vice- Chair
Rodney Braga, Director
Lawrence Hinkle, Director
Bill Lipe, Director
David Gill, Director
Steve McIntyre, Director
Brad Rice, Director
Jerry Rava, Director
Michael Griva, Past-Chair
Nancy Isakson, President
Nancy Isakson

Salinas Valley Water Coalition
33 El Camino Real • Greenfield, CA 93927
(831) 674-3783 • FAX (831) 674-3835

TRANSMITTED VIA EMAIL

Salinas Valley Groundwater Sustainability Agency
Board of Directors

12 January, 2021

Re: Comprehensive River Maintenance

Dear Board of Directors;

It has been brought to our attention that there is great concern among landowners/growers regarding the lack of a comprehensive river maintenance program/plan. The Salinas Valley Water Coalition (SVWC) has supported, and continues to support Management Actions/Programs that could provide for greater and more sustainable water resources -- a comprehensive river management program could meet these goals.

A comprehensive river maintenance program for the entire length of the Salinas River that includes removals of Arundo, sediment (including sandbars), and potentially problematic native species should be part of the groundwater sustainability plans ("GSPs") for all of the subbasins within the Salinas Valley Basin. A piecemeal approach to river maintenance is ineffective and relatively costly for the benefit received due to cumbersome permitting requirements and ever-increasing vegetation and sedimentation loading in the river system.

Accordingly, we ask that your Board consider evaluating an integrated, comprehensive river maintenance program in the Subbasins' GSPs. We also ask that you work with other agencies currently working on river maintenance, including the Resource Conservation District of Monterey County and the Monterey County Water Resources Agency. Working together in a collaborative manner will serve to avoid duplicating efforts and costs and will be a great benefit to all.

Thank you for your consideration of the foregoing comments.

Sincerely,

Salinas Valley Water Coalition Board

Keith Roberts, Chair
Roger Moitoso, Vice- Chair
Rodney Braga, Director
Lawrence Hinkle, Director
Bill Lipe, Director
David Gill, Director
Steve McIntyre, Director
Brad Rice, Director
Jerry Rava, Director
Michael Griva, Past-Chair

Nancy Isakson, President Nancy Isakson

Mission Statement: The water resources of the Salinas River Basin should be managed properly in a manner that promotes fairness and equity to all landowners within the basin. The management of these resources should have a scientific basis, comply with all laws and regulations, and promote the accountability of the governing agencies.

SBWA

SALINAS BASIN WATER ALLIANCE

Salinas Basin Water Alliance

P.O. Box 247, Salinas, CA 93902

March 10, 2021

Chair Tom Adcock
SVBGSA Advisory Committee
P.O. Box 1350
Carmel Valley, CA 93924

Dear Chair Adcock and SVBGSA Board Members,

On behalf of our directors and members, we are writing to voice several concerns about the GSA's process for approving and promoting projects and management actions for subbasins throughout the Salinas Valley.

First, we are concerned about the agency's timelines for subbasin committees to approve water allocation policies *before* disclosing or approving water budgets. We are acutely aware that the agency's mission is to ensure the sustainability of groundwater throughout the valley. How can we accomplish this if staff-recommended policies to committees are disconnected from the actual amounts of water being used annually in each subbasin? We have seen this order of operations in every one of the subbasin meetings so far and are concerned it flies in the face of the agency's extraordinary efforts to be transparent and effective.

Secondly, we are concerned about how the agency is formulating water budgets. We represent more than 37,000 acres owned and farmed throughout the valley. From our experience, the data being used from 2013 and earlier is not accurate to water usage today, self-reporting data is not a sufficient safeguard for sustainability, and thirdly, any valley-wide formula based on crops is insufficient as temperatures, soil composition, and other conditions vary. If we are to accurately measure and equitably discuss water use throughout the Salinas Valley, we must draw on water metering data to create water budgets.

We appreciate the opportunity to bring our valley-wide experience to the table and look forward to working with all the subcommittees to find sustainable solutions for everyone in the Salinas Valley.

Sincerely,

DocuSigned by:
George Fontes
27BF0A8D13E2424...

George Fontes, President, Board of Directors
Salinas Basin Water Alliance

ARROYO SECO GROUNDWATER SUSTAINABILITY AGENCY

599 Camino Real Greenfield CA 93927 | 831-647-5591

March 23, 2021

Board of Directors
Salinas Valley Basin GSA
1441 Schilling Place
Salinas CA, 93902

Subject: March SVBGSA Forebay Planning Committee Presentations and GSP Chapter

Dear Members of the Board,

We provide the following comments with the intent to improve the planning effort between both organizations and acknowledge the SVBGSA efforts to conclude the negotiations of our Implementation Agreement. We acknowledge our technical teams' collaboration ahead of execution of the Implementation Agreement and offer these comments with similar partnership intent between our organizations.

March Forebay Planning Committee Comments

1. The ASGSA opposes the development of groundwater pumping allocations.
    a. The development of pumping allocations for a groundwater basin that appears to be sustainable will require a significant level of effort and may never be utilized.
    b. The ASGSA Management Actions already contemplate voluntary pumping reductions during droughts.
    c. The voluntary reductions could be expanded to include additional regulations with input from a technical advisory group.
    d. Five-year plans could reflect additional restrictive programs in lieu of allocations.
2. Several of the proposed projects are not applicable to the Forebay subbasin.
3. Winter Releases could be supported and benefit the Forebay, but as proposed the project has not been developed to the level where the ASGSA can support.
4. The Interlake Tunnel Project was not supported, primarily due to the lack of adequate documentation and unspecified benefits to the Forebay.
5. The ASGSA requests the SVBGSA include the ASMA Management Actions in the list of Management Actions for the Forebay
6. The implementation of Agricultural BMPs were supported, provided the BMPs were further developed.

Thank you for the opportunity to comment on these documents and presentations. We are available for additional discussion of these issues and others at your convenience.

Sincerely,

Curtis V. Weeks

General Manager
Arroyo Seco Groundwater Sustainability Agency

Salinas Basin Water Alliance

April 21, 2021

Dear Chair Adcock and Forebay Subbasin Committee Members,

As landowners, growers, and agricultural businesses throughout the Salinas Valley, we are writing to support the Forebay Groundwater Sustainability Plan's emphasis on closing water data gaps to achieve true sustainability throughout the Salinas Valley.

The Forebay Subbasin Groundwater Sustainability Plan states there is a data gap in monitoring groundwater storage. In Section 7.3.2., the GSP acknowledges:

> *A potential data gap is the accuracy and reliability of reported groundwater pumping. SVBGSA will work with MCWRA to evaluate methods currently in place to assure data reliability. Based on the results of that evaluation, the protocols for monitoring may be revised and a protocol for well meter calibration may be developed. In addition, crop data and crop duty multipliers for estimating unreported pumping must be developed in areas where agricultural groundwater pumping is not reported. These crop duty multipliers will be used to estimate groundwater pumping, based on crop type and acreage.*

We are writing to encourage this data gap be closed before the GSP is submitted and the agency consider a robust universal metering system, not mere water usage estimates, to do so transparently and equitably.

Our alliance represents more than 41,000 acres throughout the Salinas Valley. All of our producers carefully monitor and report their water usage. We understand that this reporting is an essential aspect of groundwater storage monitoring and sustainability efforts. As we confront the entire basin's overdraft concerns, it seems reckless for the Forebay GSP to proceed with water budgets and recommended projects (or *no* recommended projects) given the lack of groundwater storage data.

Our alliance is dedicated to protecting groundwater supply for the long-term. That requires honest and transparent data throughout the valley and closing this data gap is an important step in that direction.

Sincerely,

George Fontes, President, Salinas Basin Water Alliance

TODD GROUNDWATER

April 22, 2021

MEMORANDUM

To: Curtis Weeks, Arroyo Seco Groundwater Sustainability Agency

From: Gus Yates, Senior Hydrologist

Re: Forebay Subbasin Draft Groundwater Sustainability Plan: Comments on Chapter 6, Water Budget

I have reviewed the draft Forebay Subbasin GSP Chapter 6 "Water Budgets" to check the reasonableness of the water budget estimates. To the extent possible I also compared the Arroyo Seco Cone Management Area (ASCMA) water budget with the one I prepared last year for the Arroyo Seco draft GSP. An exact comparison was not possible because of the slightly different boundaries used for the Arroyo Seco area, different periods used for averaging, and different itemization of the inflows and outflows. My comments here address large differences, especially ones that affect the estimate of sustainable yield.

Water Budget Analysis Periods Were Poorly Chosen. The historical and current periods used for analysis in Chapter 6 have drawbacks. The years selected to represent the historical period were 1980-2016. While rainfall might have equaled the long-term average during that period, the period ended with the three years without reservoir releases. That means it ended with exceptionally low water levels, which would result in a net storage decline over the analysis period. I reviewed numerous historical hydrographs for wells in the Forebay Subbasin, and all of them had lower water levels in 2018 than in 1980. At best, the net decrease in storage associated with the decline in water levels would decrease the estimate of sustainable yield calculated as the sum of pumping and storage change. At worst, it could lead to an erroneous conclusion that the Forebay Subbasin or the ASCMA is experiencing groundwater overdraft.

For the "current" water budget analysis period, a single year was used, which is inherently not representative of an average. It is also unusual to have the historical and current analysis periods overlap, as these do. 2016 represents dry conditions with no reservoir releases. It may be useful for qualitative comparison with more normal climatic and reservoir operating conditions, but it is not representative of average current groundwater conditions.

SVIHM Model Produced Incorrect Storage Changes. In spite of the aforementioned net decline in water levels from 1980 to 2018, the SVIHM model calculated an average annual *increase* in groundwater storage in the Forebay Subbasin of 1,800 AFY (GSP Table 6-10). This error was noticed by the GSP preparers, as indicated in the Powerpoint slides they presented to the Forebay Subbasin Planning Committee on March 30, 2021. That presentation tentatively attributed the storage increase to very large (up to hundreds of feet) water level increases along the margins of the basin in some locations, including in the ASCMA. I suspect the model had erroneous initial heads in those areas. In any case, the error must be fixed before the water budget calculations can be considered reliable.

By comparison, the FFM18 model used to develop the Arroyo Seco draft GSP water budgets calculated an average annual change in ASCMA storage of -6,416 AFY for 1980-2015.

This error materially impacts the calculation of sustainable yield which equates yield with the sum of pumping and change in storage. If the FFM18 estimate of storage change is correct, then the calculated sustainable yield of the Forebay Subbasin would be 8,216 AFY less than the 110,427 AFY listed in Table 6-12.

Estimated ASCMA Agricultural Pumping is too Low. The SVIHM model indicates only 31,125 AFY of agricultural pumping in the ASCMA (Table 6-25). There are two indications that this estimate is too low. First, it corresponds to only about 1.5 ft of applied water on the roughly 21,300 acres of irrigated cropland (old footprint). That might be reasonable for vineyards, but not truck crops, which are common in the ASCMA. Second, deep percolation of rainfall and applied water is listed as 16,940 AFY (Table 6-23), which equals an unrealistic 54% of applied water. By comparison, The Arroyo Seco GSP estimated 49,147 AFY of agricultural pumping (for the old footprint). Deep percolation was 14,988 AFY (30 percent of applied water), which can be accounted for assuming 20% irrigation deep percolation plus 2.8 in/yr of rainfall recharge, which seems reasonable.

This error directly affects the estimate of sustainable yield in the ASCMA, by an amount equal to the difference in pumping estimates (18,022 AFY). If the Arroyo Seco GSP estimate of pumping is correct, then the estimated yield in Table 6-29 would be greater by that amount, or 51,600 AFY. This is a large difference.

As I understand it, SVIHM calculates applied irrigation water using the MODFLOW farm package. There clearly is an error in the calibration of that package. Until that can be fixed, the GSP should rely on other estimates of agricultural groundwater use. One method would be to use the Groundwater Extraction Monitoring System

(GEMS) data collected by Monterey County Water Resources Agency. Another would be to use locally-vetted water duties by crop, multiplied by crop acres.

A Different Method Should be Used to Estimate Sustainable Yield. The method used in draft Chapter 6 to estimate sustainable yield is a simple one that is being used in numerous GSPs: sustainable yield equals the sum of pumping and storage change over a selected period of years. This method is particularly problematic in this case because the SVIHM appears to have grossly inaccurate estimates of both pumping and storage change. There are additional limitations to this method because sustainable yield reflects the entire water budget, not just pumping and storage change. If the groundwater system has head-dependent boundaries—in this case, net percolation along rivers and net flow across boundaries shared with neighboring subbasins—then a change in pumping will affect those flows in addition to affecting storage change. Assuming a well-calibrated model is available, a better approach to estimating sustainable yield is to run a series of simulations with incrementally larger amounts of pumping, and then determine the amount of pumping at which long-term storage declines begin to occur.

Long-term storage trends are not the only factor to consider in determining sustainability. In the case of the Forebay Subbasin, undesirable results occur when there are more than two years in a row without large releases from Nacimiento and San Antonio Reservoirs. Three consecutive years without releases (which occurred during 2014-2016) cause water level declines that are temporary but large enough to decrease well yields and reduce available irrigation supplies, with significant economic impacts on local growers.

Arroyo Seco Percolation is too Small. Based on a comparison of daily measured flows at the upper and lower Arroyo Seco gages along with estimated daily inflows from Reliz Creek and diversions by Clark Colony Water Company during 1995-2018, I calculated that percolation from Arroyo Seco along the inter-gage reach averaged 36,120 AFY. The SVIHM average for 1980-2016 was 18,444 AFY. Correcting this error by increasing simulated Arroyo Seco percolation would most likely result in increased subsurface outflow from ASCMA more than an increase in groundwater storage. Thus, fixing this error would not necessarily lead to an increase in the estimate of sustainable yield by the method of adding average annual pumping to average annual storage change.

Riparian ET Appears to be too Large. SVIHM produced an average simulated riparian ET flow of 32,061 AFY during 1980-2016 for the Forebay Subbasin (Table 6-7). This seems too high. There are about 3,700 acres of NCCAG mapped riparian vegetation along the Forebay reach of the Salinas River. Even if canopy density were 100% and the water table were continuously at the land surface, riparian ET at a rate

of 5 ft/yr would amount to only 18,000 AFY. In reality, the vegetation canopy is sparse in many areas, and the depth to water is commonly somewhere between the land surface and the extinction depth. Together, these adjustments could easily decrease riparian ET to less than one-half of the maximum estimate. For comparison, the FFM18 estimate of riparian ET along the Forebay reach of the Salinas River is 9,200 AFY.

This error does not necessarily affect the estimate of sustainable yield. If simulated riparian ET were reduced, some other outflow would increase, such as groundwater seepage into rivers or subsurface outflow to the Eastside and 180/400 Foot Subbasins. Neither of those changes would affect the yield as calculated by the current method.

COMMUNITY WATER CENTER
EL CENTRO COMUNITARIO POR EL AGUA

San Jerardo Cooperative, Inc.

April 23, 2021

Salinas Valley Basin Groundwater Sustainability Agency

Submitted electronically to:

Emily Gardner, Deputy General Manager

Donna Meyers, General Manager

Subject Comments on the Draft Salinas Valley GSP Chapters 1-8 for the Langley, East Side, Forebay, Upper Valley and Monterey Subbasins

Dear Salinas Valley Basin Groundwater Sustainability Agency:

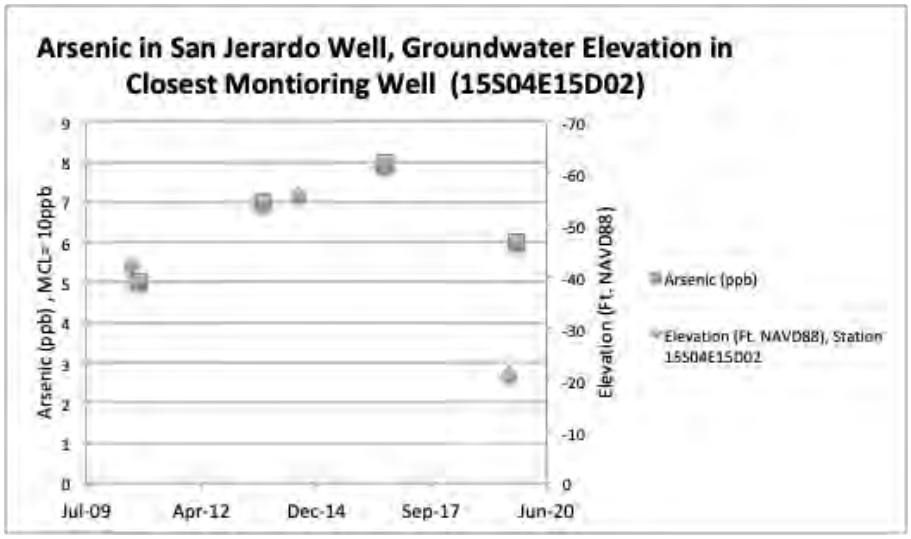
The Community Water Center (CWC) and the San Jerardo Cooperative would like to offer comments and recommendations in response to the draft Groundwater Sustainability Plans (GSPs) Chapter 1-8 for the Langley, East Side, Forebay, and Upper Valley Subbasins as well as Chapters 1-5 and 7 for the Monterey Subbasin that were released in 2020 and early 2021 by the Salinas Valley Basin Groundwater Sustainability Agency (SVB GSA). In addition, we offer preliminary comments on the draft Chapter 9 Implementation Actions that were shared with subbasin committees in April 2020. These comments are intended to add to the public record and are submitted in addition to previous written and spoken comments.

The challenges facing San Jerardo and similar communities throughout all the subbasins in the Salinas Valley are the foundation of our comments in this letter. The San Jerardo Cooperative's well is highly vulnerable to changes in groundwater levels and groundwater quality. Over decades of living and working at San Jerardo Cooperative, Horacio Amezquita has observed firsthand how the irrigation practices on properties surrounding the cooperative impact the water quality in their current and former wells. The San Jerardo Cooperative receives drinking water from a small public water system (CA2701904) and is very concerned that pumping, irrigation practices, and groundwater management in the East Side Subbasin will cause their drinking water well, which currently meets all drinking water standards, to exceed the maximum contaminant levels for arsenic and/or nitrate. Unfortunately, data from the State Water Board indicates increasing levels of nitrate and arsenic in their well with a high arsenic level of 8 ppb on 8/22/2016 that also corresponds to a low groundwater elevation of -61.5 in Station 15S04E15D02, the closest monitoring well to the San Jerardo Cooperative's well (See CWC Figures 1 and 2).[1] While there are too few monitoring data points to draw significant conclusions, CWC Figure 1 does suggest that arsenic levels are higher when groundwater levels are lower. Scientifics studies confirm that contaminants like arsenic, uranium, and chromium (including hexavalent chromium)

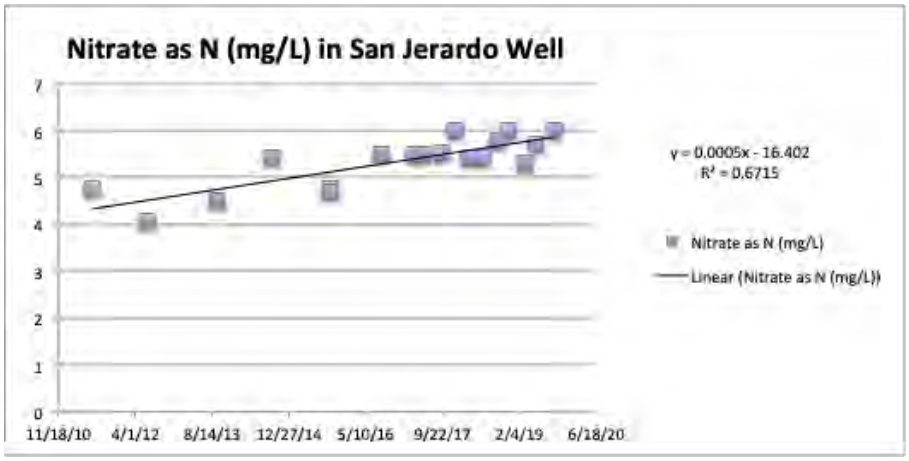
[1] CWC Figure 1 contains all available arsenic data from the State Water Board's Drinking Water Watch online database (https://sdwis.waterboards.ca.gov/PDWW/) which was collected in October 2010, 9/11/13, 8/22/16, and 9/23/19. We then added the monitoring data for Station 15S04E15D02 for the dates most close to the arsenic sampling dates (August 2010, August 2014, August 2016, and August 2019). CWC Figure 2 data was also downloaded from the same online database.

are more likely to be released under certain geochemical conditions influenced by pumping rates, geological materials, and water level fluctuations.[2]

CWC Figure 1: Arsenic in San Jerardo Well, Groundwater Elevation in Closest Monitoring Well
(Note: The groundwater elevation y-axis is reversed to illustrate that lower groundwater elevations are associated with higher arsenic levels.)



CWC Figure 2: Nitrate in San Jerardo Well.



We provide more specific chapter-by-chapter comments in this comment letter. We recommend the GSP should be revised throughout to acknowledge the science showing that groundwater pumping and groundwater level changes can influence water quality.

We strongly recommend that the GSPs incorporate a more robust and representative monitoring network and minimum thresholds to protect vulnerable communities like San Jerardo and those

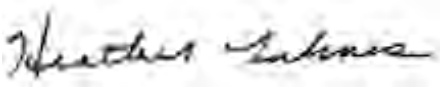
[2] Community Water Center and Stanford University, 2019. Factsheet "Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium" for more information.https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896.

dependent on shallow domestic drinking water wells. This network should include state and local small water systems.

We also firmly agree with the State Water Board's December 8, 2020 comments to the Department of Water Resources on the 180/400 Foot Aquifer GSP, have included them as a reference throughout this comment letter, and recommend that the SVB GSA implement their recommendations in all the other Subbasins GSPs currently in development.[3]

Thank you for reviewing this letter and for the consideration of our comments on the draft GSP chapters. We look forward to working with the SVB GSA to ensure that the GSPs are protective of the drinking water sources of vulnerable, and often underrepresented, groundwater stakeholders. Please do not hesitate to contact us with any questions or concerns. We also look forward to meeting with you in the future to further discuss issues raised in this and past comments.

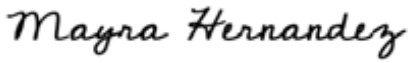
Sincerely,



Heather Lukacs
Community Water Center

Horacio Amezquita
General Manager, San Jerardo Cooperative, Inc.

Justine Massey
Community Water Center



Mayra Hernandez
Community Water Center

GSP Chapter 3: Description of Plan Area

The description of the plan area can be improved by clarifying the descriptions of the drinking water users in the area. In order to develop a GSP that addresses the needs of all beneficial users, it is critical that the location and groundwater needs of Disadvantaged Communities (DACs) and all drinking water users including domestic well communities are explicitly addressed early on in the GSP. In addition to comments previously submitted to the GSA on July 10, 2020, we recommend the following updates to this chapter:

- **Include a map of all disadvantaged communities (DACs) and their drinking water sources in the subbasin including private wells** as determined both by census data (block groups, census designated places, and census tracts) and median household income surveys conducted in accordance with state and federal agency guidelines. We appreciate that the SVB GSA added "Appendix 11E Disadvantaged Communities" to the 180/400 foot aquifer GSP (Pages 928-941, January 3, 2020) with important information about the location and drinking water challenges, both water quality and seawater intrusion, facing DACs. This information is critical to inform the

[3] DWR SGMA GSP Portal: https://sgma.water.ca.gov/portal/gsp/comments/29.

rest of the GSP. We recommend that it be moved into Chapters 3 and 5 and augmented in the ways described in this section.

- **Correct small error in text in Section 3.2.1 Water Source Types** that incorrectly states that "small state water systems" are included in the Tracking California database. The Tracking California database only includes public water systems serving 15 or more connections.
- **Clarify the number and type of public water systems in the subbasins throughout the entire plan.** In each subbasin plan, there are discrepancies between types and numbers of public water systems in different chapters. For example, the East Side GSP lists the following:
    - Table 3-2 Well Count Summary shows "Public Supply= **24 wells**"
    - Table 5-3 GAMA Water Quality Summary shows "Number of Existing Wells in Monitoring Network Sampled in Water Year 2019" to be **41** for 123-TCP, **46** for Nitrate, and 9 for TDS.
    - Section 7.5 "All the municipal supply wells in the Subbasin are part of the RMS network." A total of **51 public supply** wells were sampled in WY 2019.
    - Table 8-4 Groundwater Quality Minimum Thresholds - **No well count shown**.

  We recognize that different data sources have different limitations and recommend using the best available data consistently throughout the plan.
- **Add a table of all public water systems, their names, locations, number of connections, and number of active wells** in the text or in an appendix that is consistent with the numbers of wells in Table 3-2, Table 5-3, Section 7.5, and other locations where mentioned in the GSPs.
- **Add state and local small water systems to Figure 3-5.** While these systems are currently not in Figure 3-5, their services areas do appear on the SVB GSA GIS portal (svbgsa.maps.arcgis.com) and are labeled as "Parcels served by small water systems (fewer than 15 connections).
- Consider using the same terminology as the Monterey County Department of Health for the state and local small water systems serving 2-14 connections and not using "small public water systems" in Section 3.4.4.2 and throughout the plan. Some definitions of small public water systems include water systems serving up to 199 or even 3300 connections.[4]
- **Revise Section 3.6.3 on the Agricultural Order to indicate that Agricultural Order 4.0 was adopted in April 2021 and include monitoring requirements including on-farm domestic well monitoring of nitrate and 123-trichloropropane, as well as irrigation well monitoring of nitrate.**

GSP Chapter 4: Hydrogeologic Conceptual Model

The hydrogeologic conceptual model is a key component of the basin setting. The basin setting represents the baseline assumptions that the GSA relies on throughout the GSP when choosing minimum thresholds, measurable objectives, and undesirable results, as well as when planning projects and management actions. We recommend that the GSA:

- **Revise Section 4.6 on Water Quality to acknowledge that "natural groundwater quality in the Subbasin" can be influenced by pumping and the way groundwater is managed.**[5] As indicated

[4] California Code, Health and Safety Code - HSC § 116275

[5] Community Water Center and Stanford University, 2019. Factsheet "Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium" for more information.https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896.

in our cover letter, this is of particular importance for the San Jerardo Cooperative who has experienced increases in nitrate and arsenic in their well.

GSP Chapter 5: Groundwater Conditions

In Chapter 5, we recommend that the GSA make the following changes to all subbasin GSPs (East Side, Langley, Monterey, Upper Valley, and Forebay). The goal is to clearly represent current and past water quality conditions in the subbasin in order to inform the monitoring network sustainable management criteria, planning, management actions, and projects.

Groundwater Quality Distribution and Trends

- **Clearly state in the introduction to Section 5.4 that the amount and location of pumping can impact groundwater quality distribution and trends.** We recommend including this language in the letter submitted by the State Water Board to DWR regarding the 180/400 foot aquifer GSP (Dec. 2020): "Not all water quality impacts to groundwater must be addressed in the GSP, but significant and unreasonable water quality degradation due to groundwater conditions occurring throughout the subbasin, and that were not present prior to January 1, 2015, must be addressed in the GSP's minimum thresholds."[6] High rates of groundwater pumping can pull in contaminant plumes towards drinking water wells, cause the release of arsenic from the strata in the ground, and when shallow wells go dry or are too contaminated to use, new wells must be drilled into deeper portions of the aquifer where they are more likely to encounter high arsenic levels.[7] As previously mentioned, this is of direct concern to the San Jerardo Cooperative who has observed increasing arsenic levels in their relatively new drinking water well, which was drilled to replace a more shallow well contaminated with nitrate and 123-trichloropropane.
- **Include trend data for drinking water wells in the subbasins.** In some places, nitrate and other contaminants are increasing in drinking water wells. It is important to understand current contamination values and also whether well water quality is improving, staying the same or declining as well as the relationship of water quality to other sustainability indicators. As indicated by the data provided in this section, Monterey County maintains an exceptional dataset of water quality data for over 900 state and local small water systems serving 2-14 connections that should be utilized throughout the GSPs. Monterey County has sampled many small water systems for decades. CWC Figures 3 and 4 show nitrate concentrations increasing over time in two state small water systems in the East Side sub basin with high levels in one of the systems (Middlefield Rd. Water System #4) in 2015. Figure 5 illustrates arsenic concentrations in the Metz Road Water System #4 in the Forebay Subbasin. In some cases, data shows fluctuations and peaks in concentrations during the 2015-2016 timeframe. This is similar to the San Jerardo example shared previously. Further, the Central Coast Regional Water Board has analyzed data from their Irrigated Lands Regulatory Program to show that many wells across the region are showing increasing levels of nitrate concentrations.[8]

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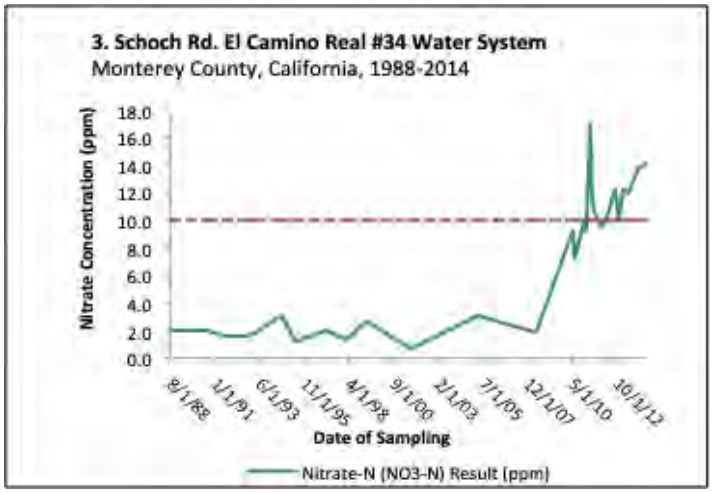
[6] DWR SGMA GSP Portal: https://sgma.water.ca.gov/portal/gsp/comments/29

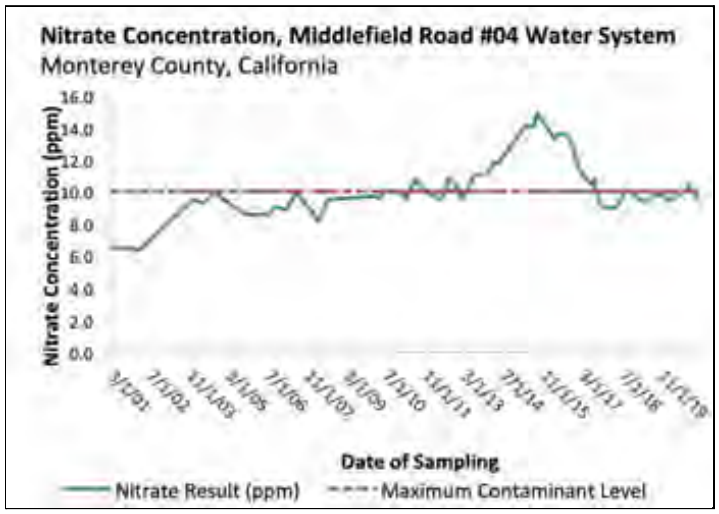
[7] Community Water Center and Stanford University, 2019. Factsheet "Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium" for more information. Available at: https://www.communitywatercenter.org/sgmaresources

[8] Draft Ag Order, Attachment A, 141-143, https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/docs/ag_order4_renewal/2021april/pao4_att_a_clean.pdf.

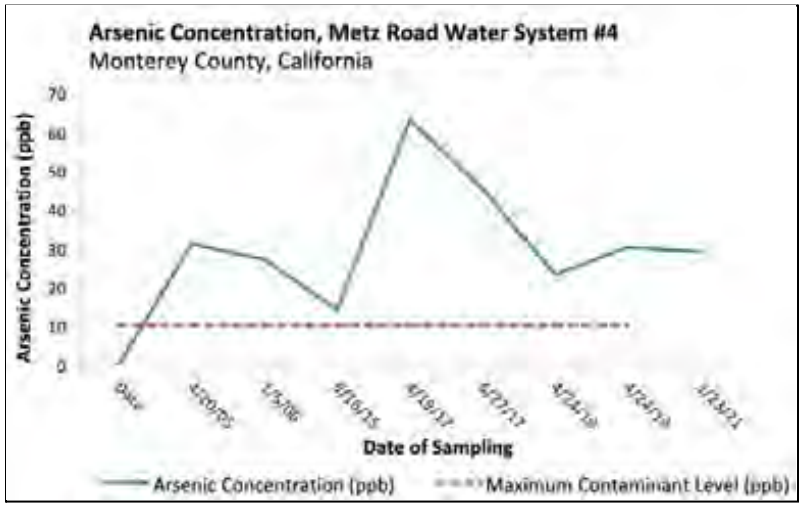
CWC Figure 3: El Camino Real WS #34 - Nitrate as N, East Side Subbasin



CWC Figure 4: Middlefield Road WS #4 - Nitrate as N, East Side Subbasin



CWC Figure 5: Metz Road Water System #4, Arsenic, Forebay Subbasin



- **Revise Section 5.4 to include a specific discussion, supported by maps and charts, of the spatial or temporal water quality trends for all constituents that have been detected in the subbasin and may affect drinking water beneficial users, as required under 23 CCR § 354.16(d).** This section should include water quality data (both in map and tabular form) for all constituents (where available) with primary drinking water standards that have been detected in the subbasin including, but not limited to, **nitrate, 123-trichloropropane, hexavalent chromium,[9] arsenic, uranium, and perchlorate for all public drinking water wells, state and local small water system wells, and private domestic wells.** It is especially important for all groundwater stakeholders to be able to understand and visualize the location of contaminant hotspots throughout each subbasin.
    - **Present maps and supporting data for all constituents of concern.** The review of water quality data in the groundwater conditions section of the draft Section 5.4 in the subbasin GSPs is focused primarily on nitrate. The GSPs identify numerous constituents that have been detected in groundwater above drinking water standards, but, with the exception of nitrate, do not present this data spatially. Even though the subbasin GSPs set water quality minimum thresholds for additional constituents (See Tables 8-4 and 8-5), the supporting data is not all presented, and no analyses of spatial or temporal water quality trends are presented. This does not present a clear and transparent assessment of current water quality conditions in the subbasin with respect to drinking water beneficial use (23 CCR § 354.16(d)).
    - **Augment and clarify data presented in Table 5-3 GAMA Water Quality Data Summary and Section 5.4.1 in the following ways:**
        - **Add all state and local small water systems data.** Table 5-3 should include all state and local small water system data for nitrate, arsenic, hexavalent chromium, and any other contaminants that Monterey County monitors in the subbasin.
        - **Include additional contaminants that have been detected in the subbasin(s) to be consistent with Tables 8-5 and 8-6.** Our review of publicly available data on drinking water wells of all types (private domestic wells, state/local small water systems, and public water systems) indicate that there are additional constituents of concern beyond those currently listed. We included CWC Figure 6 (page 9) to highlight the spatial distribution of arsenic in public water system wells in the **East Side, Langley and Monterey Subbasins**, and CWC Figure 7 (page 10) to highlight the spatial distribution of hexavalent chromium in in public water system wells in the **Langley Subbasin**. We recommend a more comprehensive analysis of all other constituents in the subbasins, including, but not limited to the following[10]:

[9] The maximum contaminant level for hexavalent chromium should be reinstated in 2021. Data is available from the State Water Resources Control Board and Monterey County Environmental Health Bureau (public water system data, state/local small water system data) as well as on GAMA from the Central Coast Regional Water Quality Control Board's private well testing program.

[10] All Monterey County data shared in this section was collected by the small water system program.
https://www.co.monterey.ca.us/government/departments-a-h/health/environmental-health/drinking-water-protection/state-and-local
It was downloaded from the Greater Monterey County Community Water Tool on April 22, 2021:
http://www.greatermontereyirwmp.org/documents/disadvantaged-community-plan-for-drinking-water-and-wastewater/

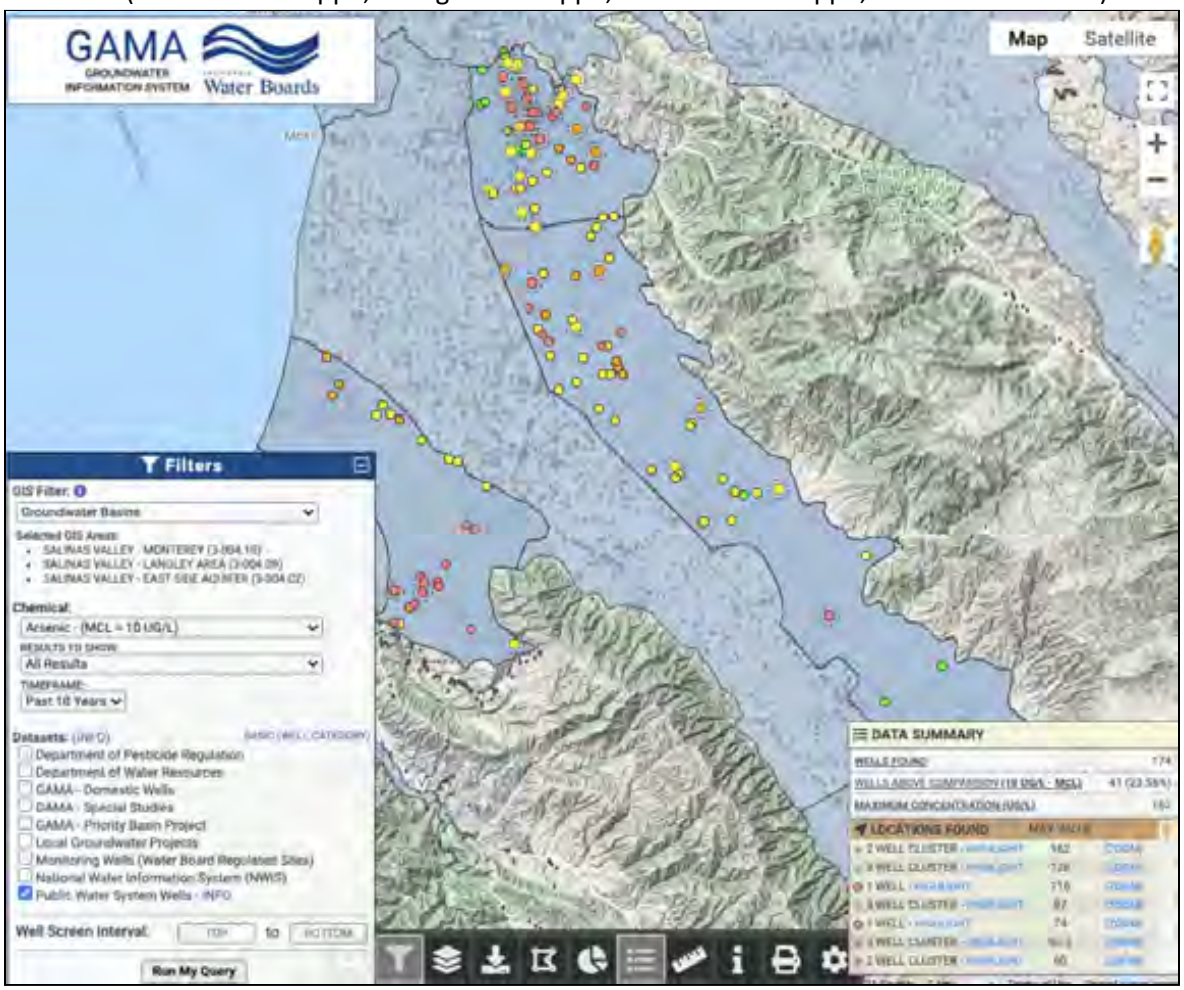
- **East Side Subbasin:** Table 5-3 presents data on two primary contaminants in drinking water: nitrate and 123-trichloropropane, but arsenic is also of particular concern to San Jerardo Cooperative and others in the subbasin. GAMA shows that four public water system wells have exceedances of the arsenic MCL in the past three years (CWC Figure 8), and state/local small water system out of compliance lists from the Monterey County Health Department (2021) show that both Old Stage Rd WS #6 and Old Stage Rd WS #7 are out of compliance for arsenic and that at least five other state or local small water systems have between 6-8 ppb of arsenic, which means they are similar to San Jerardo Cooperative in terms of their vulnerability to water level fluctuations or other changes.
- **Forebay Subbasin:** While arsenic is less common in the Forebay than in the Langley, Monterey, and East Side Subbasins, our review of the Monterey County Health Department data indicates that 17 state or local smalls had arsenic at levels above 1 ppb in the 2015-2017 time period, and at least two of these had levels above the MCL. See CWC Figure 5 (page 8) which illustrates trends in one of the out-of-compliance small water systems, Metz Road Water System #4. In addition, three systems monitored by Monterey County as part of their Local Primacy Program for public water systems serving 15-199 connections had hexavalent chromium detections of 2.8 ppb, 3.4 ppb, and 2.1 ppb in the 2014-2017 timeframe.
- **Upper Valley Subbasin:** Although arsenic is not as common in the Upper Valley as other subbasins, it has been detected in levels between 3.2 and 5 ppb in six small water systems monitored by Monterey County.

- Clarify what is meant by “DDW wells” in Table 5-3. If these are “public supply wells” in GAMA, please clearly state this.
- **Include the following in Table 5-3: (1) total number of wells of each type, (2) the total number of wells sampled for each constituent, and (3) Of the total number sampled, the number of systems that are out-of-compliance with drinking water standards.** Since public water systems and ILRP wells are monitored on different schedules, there are significant data gaps and inconsistencies when comparing one year to the next in the way that drinking water contaminants are currently represented in GSPs Chapters 5, 7, and 8. For example, we were surprised to see only 15 ILRP Domestic Wells included in Table 5-3 the East Side Subbasin GSP. GAMA shows that there were 139 ILRP wells in the East Side Subbasin sampled for nitrate in the past 3 years, 331 sampled in the last 10 years, and only 8 sampled in the last year. Moreover, CWC Figure 8 illustrates 43 Public Water System Wells in the East Side Subbasin with arsenic data in the past 3 years. On CWC Figure 8, San Jerardo Cooperative’s well is shown in orange to indicate that it is at-risk but has not yet exceeded the MCL. However, only 18 Public Water System Wells have sampling data for arsenic from the past year, and during this timeframe, San Jerardo Cooperative’s well is not represented (See CWC Figure 9).
- **Use the compliance status or most recent sample result instead of using the "Number of Wells Exceeding Regulatory Standard in Regulatory Year 2019"**

This is especially important for Table 8-4 and Table 8-5 but also applies to Table 5-3. We recommend the following for different types of drinking water systems:

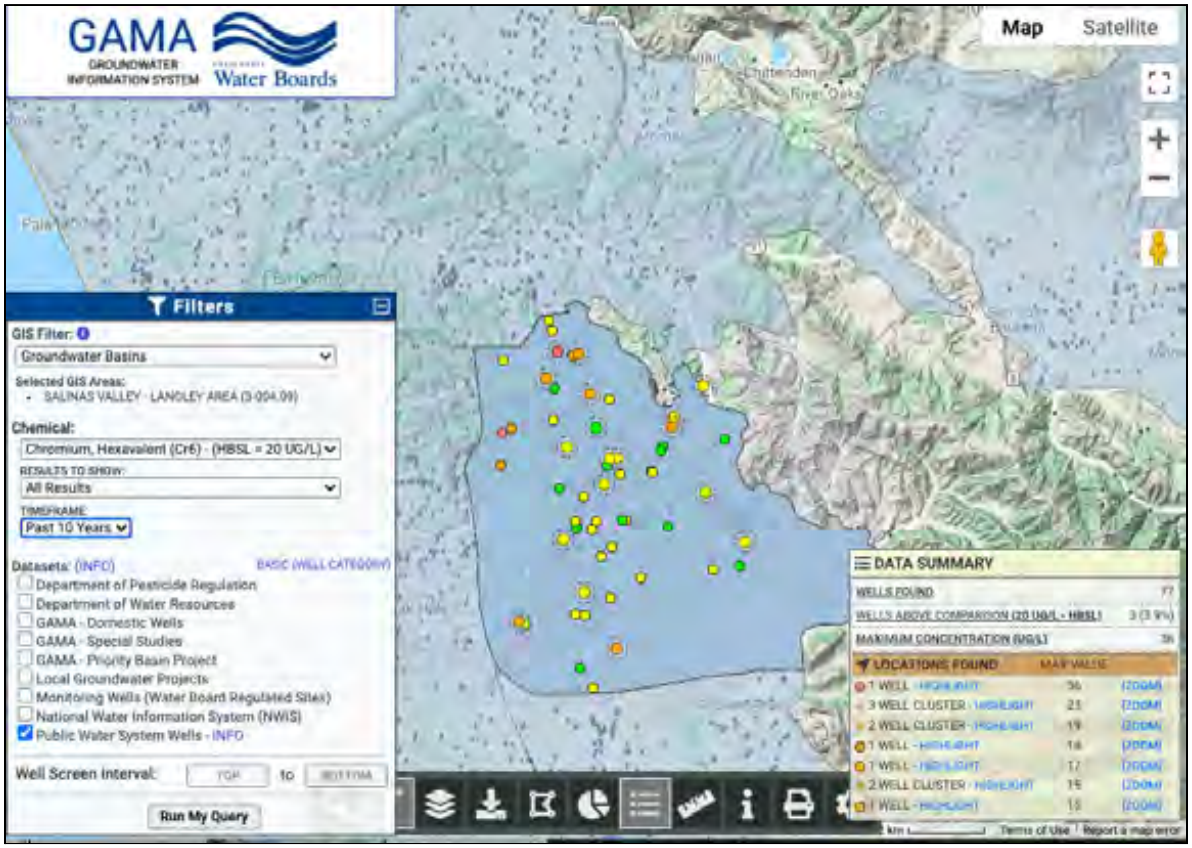
- For public water systems, we recommend using the State Water Board's determination regarding compliance status.
- For state and local small water systems, we recommend using the Monterey County Health Department list of out-of-compliance systems, which is published on their website and available by request on an annual basis based on the most recent sample collected.[11]
- For ILRP wells, we recommend the GSA consider an approach similar to Monterey County and show the most recent sample result for each monitoring well (and not only those sampled in the past year).

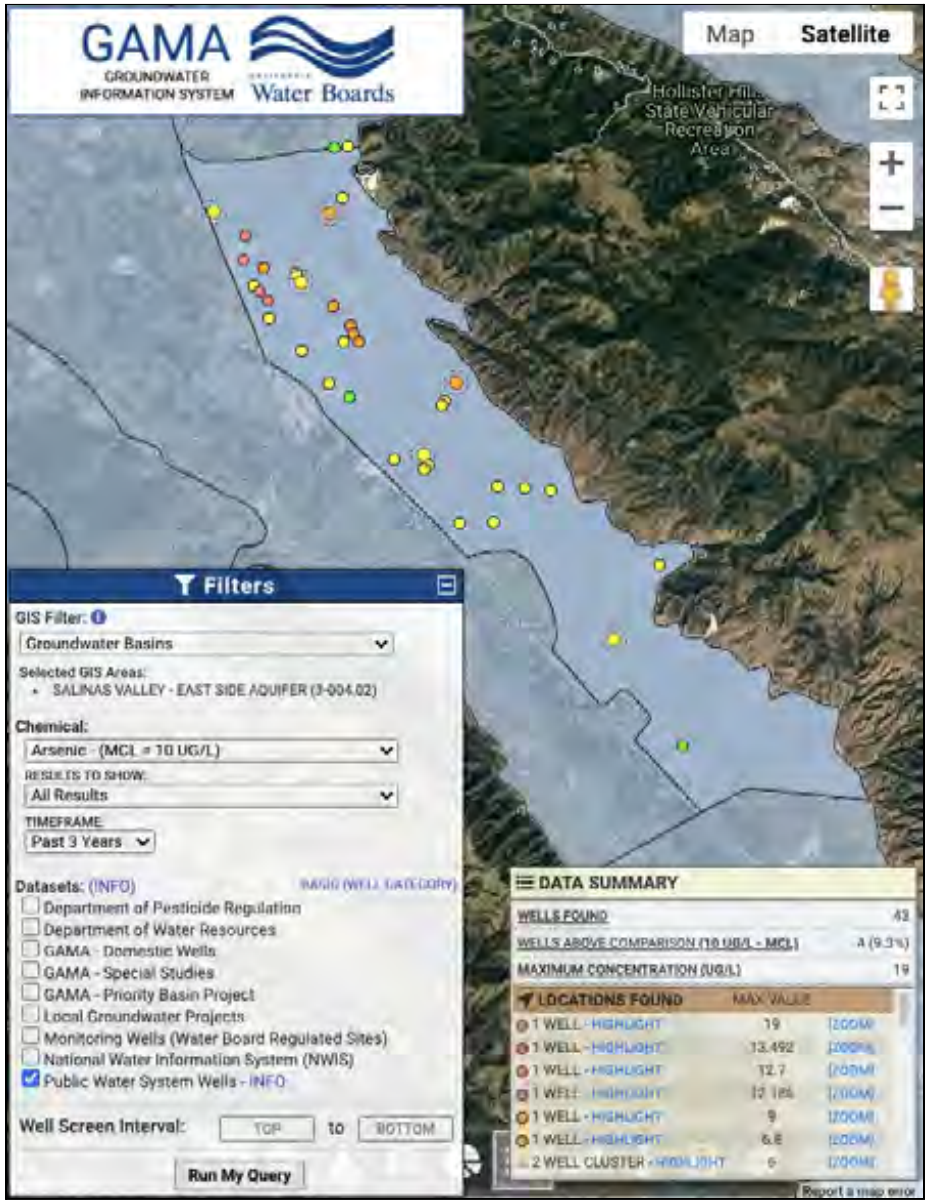
CWC Figure 6: Arsenic Concentrations in Public Water System Wells, Monterey, Langley East Side Subbasins (Red dots = >10 ppb, Orange = 5-9.9 ppb, Yellow = 0.6-5.9 ppb, Green= non-detect)



[11] https://www.co.monterey.ca.us/government/departments-a-h/health/environmental-health/drinking-water-protection/state-and-local.

CWC FIgure 7: Hexavalent Chromium Concentrations in Public Water System Wells, Langley Subbasin





CWC Figure 8: 43 Public Water System Wells have arsenic data in the past 3 years. One well at San Jerardo Cooperative appears orange on this map.

CWC Figure 9: Only 18 Public Water Systems Wells have arsenic data in the past year. San Jerardo Cooperative's wells are not shown on this map.

GSP Chapter 6: Water Budgets

SGMA requires a GSP to quantify the water budget in sufficient detail in order to build local understanding of how historic changes have affected the six sustainability indicators in the basin.[12] Ultimately, this information is intended to be used to predict how these same variables may affect or guide future management actions.[13] GSAs must provide adequate water budget information to demonstrate that the GSP adheres to all SGMA and GSP regulation requirements, that the GSA will be able to achieve the sustainability goal within 20 years, and be able to maintain sustainability over the 50 year planning and implementation horizon.[14]

We are concerned that the calculations of sustainable yield and the water budget in this chapter may *overestimate the actual sustainable yield and water availability of the subbasins*. We highlight points of concern below and recommended changes.

6.4 Projected Water Budgets

The SVB GSA Subbasin GSPs explain that "[p]rojected water budgets are extracted from the SVOM, which simulates future hydrologic conditions with assumed climate change. Two projected water budgets are presented, one incorporating estimated 2030 climate change projections and one incorporating estimated 2070 climate change projections. … The climate change projections are based on data provided by DWR (2018)."[15] Including climate change scenarios in water planning is an important step for California's increased resiliency, however, which scenarios to include is a critical question.

Climate change is changing when, where, and how the state receives precipitation.[16] Impacts to water supply, particularly drinking water supply, could be devastating if planning is inadequate or too optimistic. GSAs must adequately incorporate climate change scenarios in water budgets. As such, the DWR Climate Change Guidance[17] makes recommendations to GSAs for how to conduct their climate change analysis while preparing water budgets. DWR also provides climate data for a 2030 Central Tendency scenario and 2070 Central Tendency, 2070 Dry-Extreme Warming (DEW), and 2070 Wet-Moderate Warming (WMW) scenarios. While DWR's Guidance should be improved with more specific guidelines and requirements, the current Guidance specifically encourages GSAs to analyze the more extreme DEW and WMW projections for 2070 to plan for likely events that may have costly outcomes. Therefore, we recommend that the SVB GSA subbasin GSPs:

- **Include water budget analyses based on DWR's 2070 DEW and WMW scenarios in order to analyze the full range of likely scenarios[18] that the region faces.**

[12] 23 CCR § 354.18.
[13] California Department of Water Resources (DWR), 2016. Best Management Practices for the Sustainable Management of Groundwater, Modeling (BMP #5), December 2016.
[14] 23 CCR § 354.24.
[15] California Department of Water Resources (DWR), 2018. Guidance for Climate Change Data Use During Groundwater Sustainability Plan Development. https://data.cnra.ca.gov/dataset/sgma-climate-change-resources/resource/f824eb68-1751-4f37-9a15-d9edbc854e1f?inner_span=True.
[16] Union of Concerned Scientists. Troubled Waters: Preparing for Climate Threats to California's Water System, 2020. https://www.ucsusa.org/resources/troubled-waters#top.
[17] See DWR (2018) reference above.
[18] Terminology used in the California Climate Change Assessment, 2019. (Table 3). https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf.

- Currently, the SVB GSA's exclusive use of the "central tendency" climate scenario predicts an increase in surface water availability, as represented in the tables in Section 6.4.3 of the subbasin GSPs. The Projected Groundwater Budgets show increases in deep percolation of stream flow, deep percolation of precipitation, and irrigation. The subbasin GSPs are relying on this presumed increase for their water budgets. However, the 2070 DEW scenario provided by DWR could likely result in a significant decrease in precipitation and increase in evapotranspiration, which would have substantial effects on the subbasin water budgets. By analyzing only the central tendency scenario and not other likely scenarios such as the extremely dry and wet scenarios provided by DWR, the SVB GSA is ignoring the specific 2070 DEW and WMW scenarios provided by DWR as well as an increasing trend in drought frequency. In doing so, the GSP could be overestimating groundwater recharge or underestimating water demands, inadequately planning, and jeopardizing groundwater sustainability. This will waste precious time to prepare and reduce the vulnerability of the basin's agriculture and already vulnerable communities.
- DWR's guidance (2018) states that the central tendency scenarios *might* be considered most likely future conditions -- that is not a clear endorsement of a higher statistical probability. It appears that they are calling it the central tendency merely because it falls in the middle of the other two projections, not because it's significantly more probable.
- DWR (2018) explicitly encourages GSAs to plan for more stressful future conditions:
  - "GSAs should understand the uncertainty involved in projecting future conditions. The recommended 2030 and 2070 central tendency scenarios describe what might be considered most likely future conditions; there is an approximately equal likelihood that actual future conditions will be more stressful or less stressful than those described by the recommended scenarios. Therefore, GSAs are encouraged to plan for future conditions that are more stressful than those evaluated in the recommended scenarios by analyzing the 2070 DEW and 2070 WMW scenarios."[19]
- Including the DEW and WMW climate scenarios as part of the 2070 water budget analysis is necessary to meet the statutory requirement to use the "best available information and best available science."[20] Sustainable planning must include planning for foreseeable negative and challenging scenarios. The extreme scenarios provided by DWR are certainly foreseeable, as they have been modeled and made available to the GSA for analysis.
- It is important for the SVB GSA to include the 2070 DEW and WMW scenarios, because shallow drinking water wells in the area are particularly vulnerable to various extreme conditions, especially drought.

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[19] California Department of Water Resources (DWR), 2018. Guidance for Climate Change Data Use During Groundwater Sustainability Plan Development. Section 4.7.1. https://data.cnra.ca.gov/dataset/sgma-climate-change-resources/resource/f824eb68-1751-4f37-9a15-d9edbc854e1f?inner_span=True. (In red is a statement about the central tendency scenarios referenced in SVB GSA public meetings and email communications by the GSA's engineering consultant, and in blue is the important text accompanying it, urging GSAs to analyze the more extreme scenarios. CWC staff cited this complete paragraph in email communications with the consultant and GSA staff on April 8, 2021. CWC also raised this point at Forebay and Upper Valley Subbasin Committee meetings in March and at the April SVB GSA Board Meeting.)

[20] See 23 CCR § 355.4(b)(1).

- **Share water budget results based on the 2070 central tendency, DEW and WMW scenarios that DWR has provided with the Subbasin committees, the Advisory Committee, and the GSA board**. This should be done at a *minimum* to see what the difference in outcomes could be, and to provide a transparent process for selecting the preferred scenario. This analysis is particularly important because of the drastic differences between the dry and wet scenarios for this region. Drought and/or intensified rainfall (more water falling over a shorter period of time) would pose severe challenges[21] to the Subbasins' plans for recharge, which is a critical component of their plans to reach sustainability.
- **Plan for potential adverse climate conditions when determining Projects and Management Actions.** The results of limited-scope planning will be detrimental to beneficial users throughout the SVB GSA. "If water planning continues to fail to account for the full range of likely climate impacts, California risks wasted water investments, unmet sustainability goals, and increased water supply shortfalls."[22] This is true not just generally across California, but also specifically on the Central Coast. "Without effective adaptations, projected future extreme droughts will challenge the management of the Central Coast region's already stressed water supplies, including existing local surface storage and groundwater recharge as well as imported surface water supplies from the State Water Project which will become less reliable, and more expensive."[23]

GSP Chapter 7: Monitoring Network

Robust monitoring networks are critical to ensuring that the GSP is on track to meet sustainability goals. GSAs undertaking recharge, significant changes in pumping volume or location, conjunctive management or other forms of active management as part of GSP implementation must consider the interests of all beneficial users, including domestic well owners and S/DACs. We have the following overarching recommendations for this chapter and provide more details for sub-sections below:

- **Require well registration and metering for all wells in the Salinas Valley, and begin implementation of a well registration and metering program in early 2022 with a dedicated budget.** We voice our strong support, with modifications indicated in our comments below, for proposed "Implementation Action 12: Well Registration" in Section 9.1 of Chapter 9 released in April 2021 and recommend that this action be updated and moved to Chapter 7. We agree with the SVB GSA's statement in Section 7.3.2 Groundwater Storage Monitoring Data Gaps that: "Accurate assessment of the amount of pumping requires an accurate count of the number of municipal, agricultural, and domestic wells in the GSP area. During implementation, the SVB GSA will finalize a database of existing and active groundwater wells in the Eastside Aquifer Subbasin." This is essential for the plan to achieve sustainability for all beneficial users and influences many different chapters including:

[21] Union of Concerned Scientists. Inter-model agreement on projected shifts in California hydroclimate characteristics critical to water management. 2020, p. 13. https://link.springer.com/content/pdf/10.1007/s10584-020-02882-4.pdf.

[22] See Union of Concerned Scientists. Troubled Waters (2020) cited above.

[23] Regional Climate Change Assessment for the Central Coast, 2019. (Discussing drought pp. 21-23. Internal citations omitted). https://www.energy.ca.gov/sites/default/files/2019-11/Reg_Report-SUM-CCCA4-2018-006_CentralCoast_ADA.pdf.

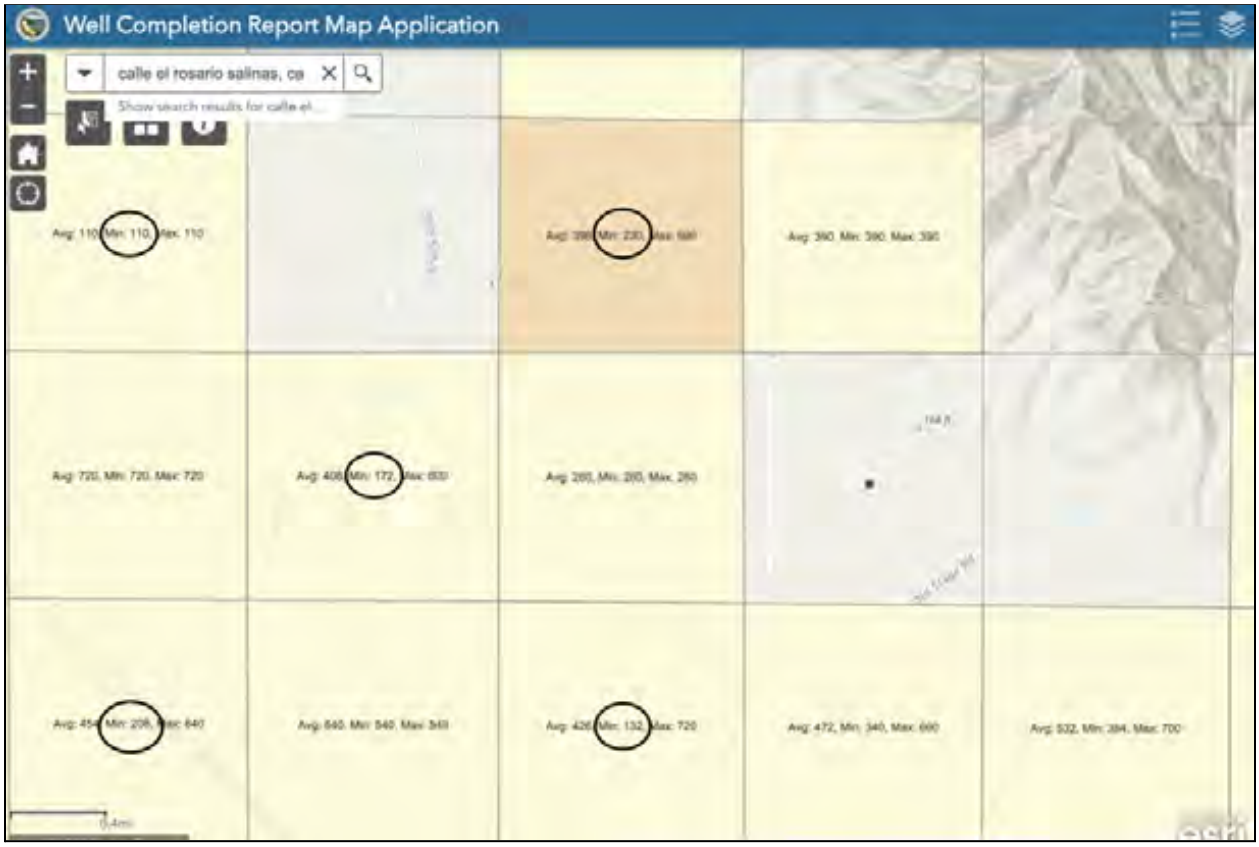
- Monitoring networks: In order to develop a monitoring network that is representative, it will be essential to understand the number, location, well construction, and type (domestic, irrigation, other) of all wells located in the subbasins.
- Water budget and minimum thresholds: Understanding the amount and location of pumping of all water users will be essential for creating an accurate water budget and minimum thresholds consistent with achieving sustainability.
- Projects and management actions: Section 9.2.1 Well Registration and Metering is a key management action and component of the Water Charges Framework (in the 180/400 foot aquifer) and forthcoming subbasin GSPs. This will underpin the funding structure for many future projects.

- **Require flowmeter calibration to ensure consistent and fair monitoring among all agricultural groundwater users (Section 7.3.1).** Rather than "consider the value of developing protocols for flowmeter calibration," the GSPs should require flowmeter calibration. The water budget and sustainable yield calculation depend on reliable and fair monitoring and reporting of pumping.
- **Provide a plan and schedule for data gap resolution in forthcoming Chapter 10 of the subbasin GSPs.** In the 180/400 foot aquifer GSP, there was not a clear plan or schedule for the resolution of data gaps in Chapter 7 even though it indicated that this would be included in Chapter 10.
- **Revise GSP monitoring chapters such that monitoring networks for groundwater storage (pumping), groundwater elevation, and groundwater quality adequately monitor how groundwater management actions could impact vulnerable communities including those reliant on domestic wells and shallow portions of the aquifers** (see more detail below).

7.2 Groundwater Elevation Monitoring Network

- **Include groundwater elevation monitoring sites in the network that are representative in terms of the depth and geographic distribution of private domestic wells, and that takes into account areas of high agricultural pumping and wells vulnerable to groundwater decline.**
    - The draft East Side Subbasin GSP Table 7-1 of "Eastside Aquifer Groundwater Elevation Representative Monitoring Site Network" shows all irrigation and observation wells (and no domestic wells) which range in depth from 299 to 1122 feet.[24] Yet, the DWR Well Completion Report Map Application[25] shows that 1 mile by 1 mile square sections near San Jerardo Cooperative include private domestic wells with the following minimum depths: 110 ft, 210 ft, 172 ft, 208 ft, and 132 ft which are more shallow than all the wells in the current monitoring network (See CWC Figure 10).
- **Overlay the private well density map (Figure 3-7), the DWR Well Completion Report Map Application (with minimum, average, and maximum depths), the water level monitoring network (with well depths), and available pumping data to better illustrate if and how representative the proposed groundwater elevation monitoring network is of private domestic wells and which areas are vulnerable to water elevation changes.** The GSPs state: "The BMP notes that professional judgment should be used to design the monitoring network to account for high-pumping areas, proposed projects, and other subbasin-specific factors. " This will also help to better visualize where there are gaps in the monitoring network which the GSAs can address.

[24] One well shows "0" depth but that must be an error or missing value.
[25] https://water.ca.gov/Programs/Groundwater-Management/Wells/Well-Completion-Reports



CWC Figure 10: Screenshot of DWR Well Completion Report Map application in the area near San Jerardo Cooperative highlighting that several 1 mi. by 1 mi. square sections include private domestic wells less than 250 feet deep.

7.5 Water Quality Monitoring Network

- **Clarify the number of public water system wells that will be included in the water quality monitoring network.** We strongly support the GSPs inclusion stated in Section 7.5 that "All the municipal supply wells in the Subasin are part of the RMS network." As indicated in Chapter 3 and Chapter 5 comments, the GSPs should also clearly identify the number of public supply wells as well as the number of public supply wells that are out of compliance and at risk in each subbasin. Section 7.5 currently states that "A total of 51 public supply wells were sampled in WY 2019" and indicates that all wells are listed in Appendix 7E (which is not publicly available at this time). This section and appendix should be consistent with the total number of wells represented in Table 8-4 which includes groundwater quality minimum thresholds.
- **Representative Water Quality Monitoring Wells for the shallow aquifer should be established in the GSPs based on all currently available data sources with direct agreements with landowners or public entities established.**
    - **Develop long-term access agreements for Representative Monitoring Wells (RMWs) that use private wells.** Collecting data from private wells is not a reliable approach due to access challenges, lack of well construction information, and unreliable accounting of

pumping or non-pumping measurements. The GSPs should specifically identify the RMW owners and operators, include signed long-term access agreements, and identify a plan to obtain adequate monitoring data, if for any reason the well owners decide to not grant access to the wells or provide associated data to the SVB GSA. In order to maintain consistency for future sustainability analyses, the SVB GSA should also consider conducting its own water quality analysis of wells where access agreements have already been established to water quality RMWs.

- **Clarify that state and local small water systems will be added to the water quality monitoring network and that well construction information is no longer needed in order to fill this data gap.** Monterey County Environmental Health Bureau permits and monitors over 900 state and local small water systems in the County and have managed the data collected for decades. This dataset has advantages over the ILRP domestic well dataset in that it includes data on contaminants like arsenic and hexavalent chromium in addition to nitrate. Local small water systems serve 2-4 households and are much more similar to private domestic wells than public water systems in terms of depth, well construction, age, size, and maintenance - thus this data would provide a broader representation of shallow drinking water wells. State and local small water systems are located in areas of irrigated agricultural lands as well as rural residential and other land uses. This dataset should complement and not replace ILRP domestic well data.
    - **Clearly add state and local small water system data as a data gap in Section 7.5.2.** In Section 7.5 Water Quality Monitoring Network, the draft GSPs state: “These [state and local small] wells are not in the current monitoring system because well location coordinates and construction information are currently missing. SVB GSA will work with the County to fill this data gap. When location and well construction data become available, these wells will be added to the monitoring network and included in Appendix 7E and Figure 7-4." However Section 7.5.2 Groundwater Quality Monitoring Data Gaps states: "There is adequate spatial coverage to assess impacts to beneficial uses and users."
- **Do not rely solely on ILRP well data to represent private domestic wells (which are often more shallow than public water system wells).** Similar to CASGEM, the current groundwater quality monitoring network includes monitoring points on private property including ILRP domestic and irrigation wells, but it should not be restricted to ILRP sites only. While on-farm domestic and irrigation wells monitored through the ILRP provide a potentially useful, though limited, source of water quality information, additional representative monitoring wells in the shallow aquifer are important to include for several reasons: (1) The ILRP network only includes wells located on agricultural irrigated lands, and not all ILRP properties include domestic wells. Agricultural land use is not the primary land use in the Langley and Monterey Subbasins so this monitoring network offers very limited coverage. While agricultural land use is the primary land use in the East Side, Upper Valley, and Forebay Subbasins, there are private domestic wells in areas with different primary land uses (e.g. rural), and SGMA requires that monitoring networks are geographically representative. Monitoring network wells must also be sufficiently representative to cover all uses and users in the basin, (2) There are other, more robust networks established by USGS, GAMA, and Monterey County that could be drawn on and included to make the groundwater quality monitoring network more comprehensive and representative of conditions in the shallow aquifer, (3) Ag Order 4.0 was adopted on April 15, 2021, which means the first year of monitoring data will not be

available until late 2022, (4) The GSA has no authority to determine the robustness or enforcement of monitoring in the irrigated lands network, and (5) while Ag Order 4.0 proposes to require testing for 1,2,3-TCP as well as nitrate, the current ILRP domestic well data only samples for nitrate, and neither Order tests for other contaminants found in the region. In our experience, not all growers are consistent with their water quality and other reporting, despite the regulatory requirements in place.

- **Update Domestic ILRP and Irrigation ILRP wells in a different color on Figure 7-5 Locations of ILRP Wells Monitored under Ag Order 3.0.** Since these wells are monitored for different constituents and serve different beneficial users, it is important to illustrate them separately.

GSP Chapter 8: Sustainable Management Criteria

We have grouped our comments in this section into general recommendations related to all sustainable management criteria (SMCs) followed by a section specific to the water quality SMCs. We recommend that the Salinas Valley GSA implement the following recommendations in the subbasin GSPs:

- **Undertake a drinking water well impact analysis that adequately quantifies and captures well impacts at the minimum thresholds, proposed undesirable results, and potential interim conditions.** Include this analysis during the annual reporting process. We disagree with the assumption included in all draft GSPs that the exact location of wells needs to be known in order to include them in a drinking water well impact analysis. In the 180/400 Foot Aquifer Subbasin GSP, the SVB GSA included a domestic well impact analysis. Although the SVB GSA did not describe the methods used in this analysis,[26] it is CWC's understanding that the analysis was based on Public Land Survey System (PLSS) section location data, demonstrating that such an analysis is feasible. Similar analyses in the Water Foundation Whitepaper (June 2020)[27] and in the Kings River East GSP[28] were completed using the same PLSS section location data for private domestic wells that is available to the SVB GSA. The current analysis is incomplete as it includes very few wells in all subbasins. The current analysis is also substantially inaccurate as it relies on the "average computed depth of domestic wells in the Subbasin," and groundwater elevations vary significantly across the subbasin and also on an annual basis. For example, only 8 of the 154 domestic wells in the Forebay GSP with an average depth of 292.45 feet, and only 20 of 2016 domestic wells in the East Side GSP with an average depth of 365.5 feet were included. CWC Figure 10 illustrates that the average computive depth is not representative of conditions in shallow domestic wells. Therefore, we recommend revising Section 8.5.2.2 Minimum Threshold Impact on Domestic wells following the process explained below:
    - **Include a map of potentially impacted wells so the public can better assess well impacts specific to DACs, small water systems, or other beneficial users of water.**

[26] Community Water Center and San Jerardo Cooperative, Inc. Comments on the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan. May 15, 2020. https://sgma.water.ca.gov/portal/service/gspdocument/download/4012

[27] The Water Foundation Whitepaper, April 2020: "Estimated Numbers of Californians Reliant on Domestic Wells Impacted as a Result of the Sustainability Criteria Defined in Selected San Joaquin Valley Groundwater Sustainability Plans and Associated Costs to Mitigate Those Impacts." April 9, 2020. http://waterfdn.org/wp-content/uploads/2020/05/Domestic-Well-Impacts_White-Paper_2020-04-09.pdf

[28] Kings River East Groundwater Sustainability Agency. Groundwater Sustainability Plan. Adopted December 13, 2019.

- **Quantify impacts for all drinking water wells in the subbasin for which approximate location (PLSS section) and well depth are available.** Similar analyses based on the PLSS section location of private domestic wells have been completed by Water Foundation (June 2020)[29] and in the Kings River East GSP[30].
- **Account for well screen and pump depth when available.** When not available, well screen and pump depth should be estimated conservatively to capture potential impacts to well operability under water scarcity conditions.
- **Quantify impacts for potential unfavorable interim conditions, such as droughts and short-term lowering of groundwater levels while implementation measures are put in effect.**
- **Quantify the elevation difference (in feet) between current groundwater levels and well bottoms, screens, and pumps.** If current groundwater levels are nearing well bottoms, screens or pumps, that indicates that the wells are vulnerable to interim lowering of groundwater levels.
- **Quantify the elevation difference (in feet) between the minimum threshold groundwater levels and well bottoms, screens, and pumps.** If the minimum threshold is near the well bottom, screen or pump, that well will be impacted if groundwater levels in the vicinity drop below the minimum threshold (even if minimum thresholds are met at 90 percent of monitoring wells and an undesirable result has not technically occurred).
- **Quantify the number of potentially impacted wells of each well type (irrigation, domestic, state/local small water system, public water system) for water quality, water levels, and sea water intrusion MTs.**
- **Quantify the costs associated with impacted wells including desalinization/treatment, lowering pumps, well replacement and increased pumping costs associated with the increased lift at the projected water levels.**

Groundwater Quality

We are pleased that the Salinas Valley Subbasin GSPs establish minimum thresholds based on maximum contaminant levels (MCLs) for contaminants of concern for drinking water supply systems. There are however other areas in regards to groundwater quality sustainable management criteria that are not clear and could cause significant impacts to drinking water users if not adequately addressed. Therefore, we recommend the following revisions:

- **Revise Section 8.3 General Process for Establishing Sustainable Management Criteria to include a sensitivity analysis around "average hydrogeologic conditions" following our recommendations outlined in Chapter 6.**
- **Add state and local small water systems to the monitoring network with the same water quality minimum thresholds and measurable objectives for reasons stated in Chapter 7 comments.** A table for state and local small water system minimum thresholds was included in the 180/400 foot aquifer GSP, but in the draft subbasin GSPs, there is no such table and Table 8-1 only mentions public supply and on-farm domestic wells.

[29] See previous reference.
[30] See previous reference.

- **If a contaminant was already above the MCL as of January 1, 2015, subbasin GSPs should set a MT to prevent further degradation or aim to improve groundwater quality conditions where possible.** Increased contamination levels can require water systems to utilize more expensive treatment methods and/or to purchase additional alternative supplies as blending may become more difficult or impossible. Communities reliant on domestic wells who are aware of contamination in their water and use point of use/point of entry (POU/POE) treatment systems may no longer be able to use their devices if contaminate levels rise too high. Higher contaminant levels can also result in higher costs of waste disposal from certain types of treatment systems. Further, residents who rely upon domestic wells, state small water systems, or local small water systems may not even know what contaminants are in their water and at what levels. Users of these drinking water sources are not required to conduct testing, and many times do not have the resources necessary to conduct regular testing. Rising contaminant levels put these users and their health at serious risk. Increased contamination levels result in unreasonable impacts to access to safe and affordable water and are, thus, inconsistent with SGMA and the Human Right to Water. This recommendation is consistent with the State Water Board's recommendations regarding this topic in their letter to DWR regarding the 180/400 foot aquifer GSP in which they state: "Increasing concentrations of nitrate, arsenic, and other constituents at monitoring wells with existing exceedances may represent worsening of existing conditions due to groundwater pumping. Staff recommend setting concentration threshold levels for these wells in order to determine if impacts due to pumping are occurring."[31]
    - **Develop management areas to protect areas where drinking water wells have water quality that are vulnerable, including the San Jerardo area.**
- **For monitoring network wells with contamination less than 75% of the MCL for all contaminants, the GSPs should set MOs at 75% of the MCLs.** Subbasin GSPs should include MOs as action triggers at 75% of MCL for each constituent of concern so that groundwater can be managed in that area to prevent a minimum threshold exceedance at a representative monitoring well. This buffer is particularly critical with contaminants like nitrate that can cause acute health effects. If the GSA waits until the minimum threshold is exceeded, it may be too late or difficult for actions to be effective. Actions to prevent minimum threshold exceedances should also be clearly explained in this Chapter including a description of what action will be taken, what type of evaluation will be used, under what time period action will take place, and how this action will be funded. *We also recommend that groundwater quality and trigger levels at 75% are added to Section 9.1.3 Implementation Action 11: Local Groundwater Elevation Trigger (April 2021 draft) which currently only includes groundwater elevations.*
- **Clearly identify and describe past and present levels of contamination and salinity at each representative monitoring well (RMW) and attribute specific numeric values for MTs/MOs at each RMW for each contaminant of concern.** Quantitative values need to be established for MTs/MOs for each applicable sustainability indicator at each RMW as required by 23 CCR § 354.28 and 23 CCR § 354.30. The GSPs should include a map and tables that include each individual RMW along with water quality data for each RMW (this data is currently summarized in Table 8-4 and Table 8-5). This information should be presented clearly so that both the public can determine how the proposed monitoring network and sustainable management criteria (SMCs) relate to their own drinking water well or water supply system.

[31] State Water Board comments to DWR on 180/400 Foot Aquifer GSP (Dec. 2020). Downloaded from SGMA GSP Portal: https://sgma.water.ca.gov/portal/gsp/comments/29

- **Include hexavalent chromium as a contaminant of concern and plan to add contaminants of emerging concern to the monitoring network.** While there is currently not a Maximum Contaminant Level for hexavalent chromium, there is still a Public Health Goal and public health threat posed by this contaminant in drinking water. The State is required to adopt an MCL for chromium-6 again and is in the process of updating the MCL. In addition to including hexavalent chromium, the GSPs must explain how the Plans will be updated to align groundwater monitoring efforts and the sustainable management criteria with any contaminants of emerging concern in the basin and any future new MCLs.
- **Include an analysis of the relationship between changes in groundwater levels and groundwater quality concentrations.** Section 8.5.2.3 of the draft GSPs discusses the relationship between individual minimum thresholds and other sustainability indicators, and states: "Decreasing groundwater elevations can cause wells to draw poor-quality groundwater from deeper zone. No additional poor groundwater quality issues were identified due to low groundwater elevations when groundwater elevations were previously at minimum threshold levels." We ask that justification is provided to backup the second statement or that it is removed until an analysis is conducted. It is our understanding that groundwater quality issues did, in fact, worsen during low groundwater elevations years. Arsenic in the San Jerardo well was at its highest during the lowest groundwater elevation measurement (See CWC Figure 1). The text should acknowledge that groundwater pumping can not only cause the movement of contaminant plumes, but can also cause the release of naturally occurring contaminants such as arsenic and chromium. In order to clearly evaluate the relationship between changes in groundwater levels and groundwater quality, SVB GSA should undertake an analysis of the change in water quality constituent concentrations relative to change in water levels,[32] particularly over drought periods, to evaluate the potential relationship between water quality and groundwater management activities.[33]
- **Add the total number of wells in each category that will be included in the water quality monitoring network and have SMCs evaluated to Table 8-4. For each constituent of concern, add the number of wells included in the chart and the number exceeding the MT/MO based on the latest sample.** This comment has the same goal as the comment we provided in Chapter 7. SMCs should be set at every public drinking water well and a representative network of drinking water wells that rely on more shallow aquifers. It is essential to track the same wells each year in the monitoring network. If a well is no longer active, it should be removed from the network. In the current representation, it is not clear which wells are included in the monitoring

[32] See P.A.M. Bachand et. al. Technical Report: Modeling Nitrate Leaching Risk from Specialty Crop Fields During On-Farm Managed Floodwater Recharge in the Kings Groundwater Basin and the Potential for its Management https://suscon.org/wp-content/uploads/2018/10/Nitrate_Report_FInal.pdf. See also, Groundwater Recharge Assessment Tool, created by Sustainable Conservation to help groundwater managers make smart decisions in recharging overdrafted basins, including modeling whether a particular recharge project would result in short or long term benefits or harms to water quality, http://www.groundwaterrecharge.org/.

[33] More information about groundwater quality and the relationship between changes in groundwater levels can be found in the following resources:

Stanford, 2019. A Guide to Water Quality Requirements Under the Sustainable Groundwater Management Act. Community Water Center, 2019. Guide to Protecting Drinking Water Quality Under the Sustainable Groundwater Management Act. https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1559328858/Guide_to_Protecting_Drinking_Water_Quality_Under_the_Sustainable_Groundwater_Management_Act.pdf?1559328858

Community Water Center and Stanford University, 2019. Factsheet "Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium" for more information.https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896.

network, which wells have data for each constituent, and which wells are exceeding the regulatory standard.

- **Engage stakeholders and scientists in a transparent discussion regarding "the process the GSAs would use to decide whether or not an exceedance of an MT for water quality degradation was caused by GSP implementation."**[34] The State Water Board recommended that the 180/400 foot aquifer GSP outline this process "otherwise, it is difficult to judge how adequately the GSP addresses undesirable results related to water quality degradation." This relates to the undesirable result for water quality which currently reads: "There shall be no additional minimum threshold exceedances beyond existing groundwater quality conditions during any one year as a direct result of projects or management actions taken as part of GSP implementation."

[34] State Water Board comments to DWR on 180/400 Foot Aquifer GSP (Dec. 2020). Downloaded from SGMA GSP Portal: https://sgma.water.ca.gov/portal/gsp/comments/29 .

April 28, 2021

Salinas Valley Basin Groundwater Sustainability Agency

Submitted electronically to:

Emily Gardner, Deputy General Manager

Donna Meyers, General Manager

Re: Comments on Draft Chapter 9 Project and Management Actions for the Langley, East Side, Forebay, Upper Valley and Monterey Subbasins

Dear Salinas Valley Basin Groundwater Sustainability Agency:

The Community Water Center (CWC) offers the following comments and recommendations regarding key components of the draft Chapter 9 Projects and Management Actions (Implementation Actions) that were shared with SVB GSA subbasin committees in April 2020. These comments are intended to add to the public record and are submitted in addition to previous written and spoken comments.

Chapter 9 Projects and Management Actions

During the April 7, 2021 East Side and Upper Valley subbasin committee meetings, feedback was requested on a draft list of project and management actions. As outlined in the April 7 meeting materials, "[p]rojects implement the GSP and enable the subbasin to reach sustainability by 2042, then maintain sustainability for another 30 years." Both groundwater levels and water quality degradation can have adverse impacts on drinking water users and disadvantaged communities (DACs), who are protected as beneficial users under SGMA[1]. Therefore, projects and management actions (also referred to as implementation actions) should address sustainability issues facing drinking water and other domestic water uses, in order to ensure their continued availability.

As this chapter is further revised for the East Side and Upper Valley subbasins and as potential projects and management actions are considered for the Forebay, Langley, and Monterey, the GSPs should (1) clearly identify potential impacts to water quality from all projects and management actions, (2) include management actions that respond to immediate needs and (3) develop a more robust implementation schedule and funding plan for projects and management actions. We acknowledge that the implementation actions are currently in the beginning stages of design but encourage incorporating these elements early on.

9.1.3 Implementation Action: Local Groundwater Elevation Trigger

The Local Groundwater Elevation Trigger is a significant start to tracking and addressing impacts to domestic wells. We support the inclusion of a "notification system whereby well owners can notify the GSA or relevant partner agency if their well goes dry." Because SVB GSA defines its sustainability criteria in a way that potentially allows for drinking water well impacts and because there is so much uncertainty regarding potential domestic well impacts, we recommend that this implementation action be updated to incorporate a **Robust Drinking Water Well Mitigation Program.** This program should include the Local Groundwater Elevation Trigger as well as (1) a plan to prevent impacts to drinking water users from

[1] WAT § **10723.2.**

dewatering, increases in contaminant levels and increases in salinity, and (2) a plan to mitigate the drinking water impacts that occur even when precautions are taken.

CWC together with other organizations published a Framework for a Drinking Water Well Mitigation Program (2020) that we recommend the SVB GSA uses as a guide when further developing this implementation action. We are also interested in sharing more with staff and are willing to provide a presentation to SVB GSA staff, board members, and/or the advisory committee on this Framework. The framework describes the importance of adaptive management and affirms the intent of the draft Local Groundwater Elevation Trigger management action and states, "Developing a protective warning system... can alert groundwater managers when groundwater levels and groundwater quality are dropping to a level that could potentially negatively affect drinking water users. These "triggers" are essential for groundwater management and can be adjusted to fit the needs of different management actions as well as the basin as a whole."[2] We also support the provision in the draft "Local Groundwater Elevation Trigger" Implementation Action that offers "referral to assistance with short-term supply solutions, technical assistance to assess why it went dry, and/or long-term supply solutions." This type of adaptive management implementation action is crucial to ensuring that all beneficial users within the basin are protected under the GSP. As we have highlighted in previous comments[3]:

> A GSP that lacks a mitigation program to curtail the effects of projects and management actions as to the safety, quality, affordability, or availability of domestic water, violates both SGMA itself and the Human Right to Water (HR2W).[4] The California legislature has recognized that water used for domestic purposes has priority over all other uses since 1913[5] in Water Code § 106, which declares it, "established policy of this State that the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation."[6] The passage of the Safe and Affordable Drinking Water Fund by Governor Newsom indicates a clear State-level commitment to provide safe and affordable drinking water to California's most vulnerable residents.[7] To ensure compliance with the Legislature's long established position, the HR2W requires that agencies, including the Department of Water Resources and the State Water Board, must consider the effects on domestic water users when reviewing and approving GSPs.[8] Therefore, GSPs that cause disparate impacts to domestic water use are in violation of the HR2W, SGMA, and Water Code § 106.6.

In order to effectively protect drinking water users during GSP implementation, we recommend that the GSA's **Drinking Water Well Impact Mitigation Program Implementation Action,** in line with and expanding upon the currently proposed Local Groundwater Elevation Trigger, should include the following components:

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[2] *See* Self-Help Enterprises, Leadership Counsel for Justice and Accountability, Community Water Center (2020) *Framework for a Drinking Water Well Impact Mitigation Program*.
https://static1.squarespace.com/static/5e83c5f78f0db40cb837cfb5/t/5f3ca9389712b732279e5296/1597811008129/Well_Mitigation_English.pdf.

[3] Community Water Center and San Jerardo Cooperative, Inc. Comments on the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan. May 15, 2020.
https://sgma.water.ca.gov/portal/service/gspdocument/download/4012.

[4] WAT § 106.3 (a).

[5] Senate Floor Analysis, AB 685, 08/23/2012.

[6] This policy is also noted in the Legislative Counsel's Digest for AB 685.

[7] SB 200 (Monning, 2019).

[8] WAT § 106.3 (b).

- **Include a vulnerability analysis of Disadvantaged Communities (DACs) and drinking water supplies in order to protect drinking water for these vulnerable beneficial uses and users.** Although rural domestic and small water system demand does not contribute substantially to the overdraft conditions, drinking water users could face significant impacts, particularly if the region faces another drought. Without a clear commitment and timeline for actions regarding establishing groundwater allocations or reductions in groundwater pumping, the SVB GSA may create disparate impacts on already vulnerable communities. See comments submitted by CWC and San Jerardo Cooperative on April 23, 2021 regarding Chapter 8 of SVB GSA Subbasin GSPs for further recommendations for conducting well impact analyses.
- **Develop the trigger system in collaboration with stakeholders, in particular groups that are more susceptible to groundwater elevation and quality changes, and then connect stakeholder recommendations back to quantifiable measures such as the GSP measurable objectives, MCLs, and numbers of partially or fully dry drinking water wells.**[9]
- **Ensure that the monitoring network is representative of conditions in all aquifers in general, including the shallow aquifer upon which domestic wells rely.** This comment aligns with comments submitted April 23, 2021 regarding Chapter 7 of the SVB GSA Subbasin GSPs, and is particularly crucial as part of a "Trigger" Management Action (or Well Impact Mitigation Program).
- **Routinely monitor for all contaminants that could impact public health (not only nitrate, but also chromium-6, arsenic, 123-TCP, uranium, and DBCP) through the representative water quality monitoring network.** Contaminated drinking water can cause both acute and long-term health impacts and can affect the long-term viability of impacted regions.[10] Among other causes, groundwater contamination can result through the use of man-made chemicals, fertilizers, or naturally-occurring elements in soils and sediments.[11] Routinely monitoring for contaminants will allow the GSA to accurately monitor for impacts on the most vulnerable beneficial users, and protect DACs' and domestic well owners' access to safe and affordable drinking water.[12]
    - **For monitoring network wells with contamination less than 75% of the MCL for all contaminants, the GSP should set MOs at 75% of the MCLs.** The GSP should include MOs as action triggers at 75% of MCL for each constituent of concern so that groundwater can be managed in that area to prevent a minimum threshold exceedance at a representative monitoring well.[13] This buffer is particularly critical with contaminants like nitrate that can cause acute health effects. As discussed in previous

[9] See previous reference for *Framework for a Drinking Water Well Impact Mitigation Program.*

[10] Community Water Center. Guide to Protecting Drinking Water Quality Under the Sustainable Groundwater Management Act. (2019). https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1559328858/Guide_to_Protecting_Drinking_Water_Quality_Under_the_Sustainable_Groundwater_Management_Act.pdf?1559328858.

[11] See previous Community Water Center (2019) reference.

[12] See previous reference for *Framework for a Drinking Water Well Impact Mitigation Program.*

[13] This recommendation was also made previously in a comment letter to SVB GSA from CWC and San Jerardo Cooperative regarding Chapter 8 of the 180/400 ft Aquifer GSP on November 25, 2020, as well as in our comments to the SVB GSA on April 23, 2021 regarding Chapter 8 of drafts for the SVB GSA Subbasin GSPs.

submitted comments, water quality impacts can intensify as water levels decrease.[14] If the GSA waits until the minimum threshold is exceeded, it may be too late or difficult for actions to be effective. Actions to prevent minimum threshold exceedances should also be clearly explained in this Chapter including a description of what action will be taken, what type of evaluation will be used, under what time period action will take place, and how this action will be funded.

- **Include a combination of different strategies for mitigation including: replacing impacted wells with new, deeper wells, connecting domestic well users to a nearby public water system, or providing interim bottled water.**
- **Include an implementation timeframe, budget, and funding source**.[15] As currently written, the Local Groundwater Elevation Trigger suggests convening "a working group to assess the groundwater situation if the number of wells that go dry in a specific area cross a specified threshold." We support emergency response if one or more wells are impacted, and also request that this section be updated to include strategies to prevent impacts from occuring in the first place. Additionally, plans to address and mitigate those impacts should be solidified beforehand so resources can be mobilized in a timely manner. Drinking water users cannot afford to wait for interim plans to be developed once their primary sources of water for drinking, cooking and hygiene are compromised.

9.1.3 Implementation Action: Domestic Water Partnership

CWC would like to voice preliminary support for the Domestic Water Partnership Implementation Action, as a step towards coordinating local and regional responses to water quality issues. However, we reiterate that the GSA remains directly responsible for recognizing and resolving water quality degradation that results from its policies and projects. We also would like to affirm our previous comments encouraging the SVB GSA to include - without delay - Monterey County water quality data for state and local small water systems. This data is readily available and would add significantly to the proposed water quality monitoring network in draft subbasin Chapters 7. We do not want this potential partnership implementation action to delay the incorporation of this important data source. This action can and should, however, integrate this County data into current draft subbasin plans in order to identify potentially vulnerable populations and create management actions to protect them. We will offer further comments and recommendations on this subject as future drafts are released. To echo recommendations made previously regarding Suggested Partnerships for Multi-Benefit Remediation Projects:

- **The GSA should work with local and regional water agencies or the county to implement groundwater quality remediation projects that could improve both quality as well as levels and to ensure groundwater management does not cause further degradation of groundwater**

[14] Community Water Center and Stanford University. Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium. (2019). https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896.

[15] See previous reference for *Framework for a Drinking Water Well Impact Mitigation Program.*

quality.[16] The strategic governance structure of GSAs can uniquely leverage resources, provide local empowerment, centralize information, and help define a regional approach to groundwater quality management unlike any other regional organization. When implemented effectively, GSPs have the potential to be instrumental in reducing levels of contaminants in their regions, thus reducing the cost of providing safe drinking water to residents. GSAs are the regional agency that can best comprehensively monitor and minimize negative impacts of declining groundwater levels and degraded groundwater quality that would directly impact rural domestic well users and S/DACs within their jurisdictions. When potential projects are proposed, SVB GSA should consider how projects could potentially both positively and negatively impact groundwater quality conditions and should take leadership in coordinating regional solutions.

[16] Community Water Center and San Jerardo Cooperative, Inc. Comments on the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan. May 15, 2020.
https://sgma.water.ca.gov/portal/service/gspdocument/download/4012.

SALINAS BASIN
AGRICULTURAL
WATER
ASSOCIATION, INC.

1140 Abbott St., Ste. C
Salinas, CA 93901
831/751-3100

May 12, 2021

Salinas Valley Basin Groundwater Sustainability Agency
Board of Directors
P.O. Box 1385
Carmel Valley, CA 93924

VIA: Email to SVBGSA General Manager

RE: Groundwater Sustainability Plans – Water Quality Objectives

Dear SVBGSA Chair Adcock and Directors:

Salinas Basin Agricultural Water Association is a coalition of agricultural organizations tasked with overseeing the implementation of the Sustainable Groundwater Management Act (SGMA) and the development of the groundwater sustainability plans for the Salians Valley groundwater aquifer. Our organization has been integrally involved in groundwater management since this passage of SGMA and the formation of the SVBGSA.

Watching the development of the groundwater sustainability plans for the five sub-basins, due in January 2022, there appears to be attention drawn by various stakeholders to specific groundwater quality references that are under the jurisdiction of the Central Coast Regional Water Board (RWB).

On April 15, 2021, a new Irrigation Lands Regulatory Program was adopted by the RWB, also knows as Ag Order 4.0. This program manages farming activities to specific water quality objectives, including the amounts of nitrogen that can be either applied or discharged from production fields, to either surface or groundwaters. Farming operations will be required to calculate their "Applied-Removed ratio" for each crop produced, meeting specific compliance standards that are ratcheted down each successive year. Additionally, each domestic-use

well located on a farming operation must be tested annually for a broad set of water quality constituents.

Water quality objectives are heavily managed by Ag Order 4.0 and will be costly for farming operations and their landowners to implement. Record keeping, annual compliance reporting, and cooperative monitoring fees will add heavily to the burden of farm management and financial sustainability.

As the groundwater sustainability plans are developed, discussed by the Sub-basin Committees, and ultimately brought to the Advisory Committee and SVBGSA Board for approval, it should be clearly stated within those forums that water quality objectives for farming operations are managed under Ag Order 4.0 by the RWB, and that SVBGSA should not set any additional water quality parameters within the groundwater sustainability plans.

Conflicting and duplicative water quality objectives, if included in the groundwater sustainability plans, would lead to unnecessary costs for farming operations and landowners. Due consideration should be given to the Ag Order 4.0 program and how water quality objectives will be managed on-farm going forward, limiting groundwater sustainability plans to manage the balance of extractions and recharge for each respective sub-basin.

Thanks for your consideration.

Sincerely,

Norman C. Groot
President

T0: Salinas Valley Groundwater Sustainability Agency

From: Fred Nolan as public commentary

(montereyfred@gmail.com)

Subject: Suggested Solution to the groundwater sustainability in Monterey County

As I no longer use pen and pencil nor do I type due to Parkinson's disease I am dictating this with Dragon NaturallySpeaking.

The solution to all groundwater sustainability is not desalinisation. It is the reuse of the water we already have. The largest water reuse facility in the world is right here in California. Orange County produces in their ground water replenishment system enough drinkable water for 2 1/2 million people. On a vastly smaller scale we can do the same thing.

Recycling water is one third the cost desalinated ocean water. Building a desalinisation length costs approximately $200 million dollars. The probability of raising that kind of money in central California is ZERO.

I suggest we study Orange County's impressive recycling system. They have a number of very illuminating websites. The time has come to get over unscientific reservations about recycled water. The time for recycled water is here. Plant in Marina produces a small amount of high quality recycled water right now. By dramatically increasing the output of this desirable commodity we can meet our water needs indefinitely. If we are scientifically capable of putting robots on Mars we are capable of producing exquisite water over and over again.

Fred Nolan

May 31, 2021

MEMORANDUM

To: Curtis Weeks, Arroyo Seco Groundwater Sustainability Agency

From: Gus Yates, Senior Hydrologist

Re: Forebay Subbasin GSP: Comments on Draft Chapter 10 "GSP Implementation"

I have reviewed Chapter 10 "Groundwater Sustainability Plan Implementation" of the draft Forebay Subbasin GSP and have the following comments:

p. 1, Section 10.1.1.1. MCWRA's current network of wells for monitoring water levels is not adequate. In its May 2020 draft GSP for the Arroyo Seco Cone area, ASGSA identified several shortcomings that need to be overcome to achieve a program adequate for this GSP. First, water level data collected by MCWRA are confidential pursuant to ordinances adopted by MCWRA. Chapter 10 does not mention the confidentiality issue and how that would be overcome to achieve data that are publicly available, as required by SGMA. Second, ASGSA identified geographic data gaps in network coverage, particularly in the upper Arroyo Seco Cone area where storage fluctuations are relatively large. Refer to Section 5.2.2 and Figure 5.2-1 of the ASGSA draft GSP for details. Additional wells need to be added to the network in the ASCMA to achieve adequate coverage. Chapter 10 (and Chapter 7) need to state that.

p. 1, Section 10.1.1. In addition, this section does not discuss temporal issues with MCWRA's monitoring of water levels. The annual water-level measurements collected in November-December are sufficient to detect multi-year water-level declines that cause undesirable results. However, SGMA regulations explicitly require at least semi-annual measurements that coincide with the seasonal low and high water levels (§354.34(c)(1)(B)). The draft monitoring program for the 180/400 Foot Aquifer Subbasin GSP identified August as the month when the annual minimum water level typically occurs and December or January or February as the most common month for the annual high water level (Montgomery and Associates, 2020). A sample of seven Forebay wells with monthly data over an 11-year period revealed that in the ASGSA area the seasonal high water level most commonly occurred in March and the seasonal low in September. Chapter 10 of the Forebay GSP needs to address how MCWRA's existing monitoring program will meet this SGMA requirement.

p. 4, Section 10.1.3.2. Chapter 10 must show the locations and construction of the three existing monitoring wells that the text asserts are adequate for monitoring groundwater-surface water connection along the Salinas River. I am not aware of any existing wells that

indicate water table elevation in the 0-30 foot range relevant to riparian vegetation. Shallow monitoring wells are inexpensive to construct and important to the sustainability evaluation. The Forebay GSP should not shirk this monitoring requirement.

p.4, Section 10.1.4, 1st bullet. To pay for the shallow monitoring wells, the proposed pump tests should be scrapped. An 8-hour pumping test will provide a transmissivity estimate for a limited fraction of basin thickness over a limited radial extent, and an estimate of storativity that is useless for calculating storage changes over months and years, which is the relevant issue for GSPs. Calibration of groundwater models provides estimates of transmissivity for the full thickness of each model layer and estimates of storativity corresponding to time scales of interest for management. If model calibration indicates unusual conditions in some location—such as a rapid change in apparent transmissivity—testing one or more wells in that location might be worthwhile.

p. 5, 1st top-level bullet. It is unclear whether the text is committing SVBGSA to drilling exploratory boreholes or installing monitoring wells down to the depth of the Deep Aquifer, which is an expensive proposition (especially compared to the root zone monitoring wells!). This needs to be clear.

p. 10, bullet list. The bullets provide welcome acknowledgement of the need to evaluate various modes of reservoir reoperation individually and in combination with other projects such as CSIP injection wells and the interlake tunnel. This is an improvement over the discussion in Chapter 9.

Thomas S.
Virsik
ATTORNEY AT LAW

11 June 2021

To: Salinas Valley Basin Groundwater Sustainability Agency (GSA)
Public Comments - Chapter 9 (draft) of Upper Valley GSP

I represent interests predominantly in the Upper Valley and Forebay basins of the Salinas Valley. These comments are directed to the May 12, 2021 draft Chapter 9 ("Chapter") of the Upper Valley ("UV") GSP crafted by the Salinas Valley Groundwater Sustainability Agency ("GSA"). It is apparent and unremarkable that portions of all basin chapters are used either verbatim or with very slight modifications for other basins, e.g., the Upper Valley and the Forebay draft GSP chapters share much content. The below points are therefore also applicable to those Forebay Chapter sections that are identical to those of the UV.

I. SUSTAINABILITY IS EITHER TO BE MAINTAINED OR WILL BE ATTAINED IN THE FUTURE

According to the chapter drafts released to date, the two southern basins (Forebay and Upper Valley) have had no long-term chronic overdraft and are expected to so remain. The language used to describe the state of the UV and its sustainability goals is inconsistent within this Chapter, however. Chapter 9 starts with a statement that strongly suggest that the UV will become sustainable only if and when various actions/projects are implemented. "This chapter describes the projects and management actions that will allow the Subbasin to attain sustainability in accordance with §354.42 and §354.44 of the SGMA regulations." § 9.1 (emphasis supplied). The statement about a path towards future sustainability is followed within the same section on the same page with language about "maintaining" sustainability. "The projects and management actions included in this chapter outline a framework for maintaining sustainability . . .". Id. Language reflecting the goal of "maintaining" sustainability can be found throughout the Chapter. Frankly, the Chapter is far from consistent in its characterization of the goals of the basin as maintaining -- rather than reaching or attaining -- sustainability. All language suggesting that the goal of the UV GSP is to offer a path to attain, achieve, or reach presently lacking sustainability must be revised.

If the intent of the draft language is to offer a path to maintain sustainability and a means to return to sustainability should sustainability lapse, then "attain" remains incorrect and potentially misleading. Among others, the goals could be described as returning to, reestablishing, or reinstating sustainability.

II. ADAPTATION CANNOT BE LIMITED TO DEFERENCE TO OTHERS' ACTIONS

The GSP process has emphasized the iterative process and adaptive management from the outset. That is all well and good, but the statement in Chapter 9 about that process suggests that adaption is a one-way process. "If current infrastructure is operated

2363 Mariner Square Drive, Suite 240, Alameda, California 94501 | 510.521.3565 TEL | 510.748.8997 FAX | thomasvirsiklaw@gmail.com

differently or other projects are implemented within the Valley that affect groundwater conditions, SVBGSA will adapt its consideration of projects and management actions accordingly." § 9.1 (emphasis supplied). As phrased, the GSA is committing to modifying its GSP to the choices (whims?) of other entities or agents. As a matter of policy, to date the GSA has not abdicated its statutory authorities[1], which include a broad array of powers and abilities to protect the integrity of the groundwater -- even from others' actions. For example, the GSA has a role to play in general plan amendment. Water Code § 65352.5(d) (hereafter all statutory references are to the Water Code unless specified otherwise); §§ 10725 et seq, (including the ability to participate in or commence an action or proceeding). It may go without saying, but the GSA is required to implement the plan to meet its goals, not simply hope that the goals comes to pass by others' actions. § 10727.

By way of example and not prediction, if a GSP called for the diversion of water at point X and another entity (private or public) applied to divert water such that it could not reach X, the GSA would have the ability and duty to consider whether to contest or compromise the dueling approaches, not just unilaterally "adapt" its implementation away from its stated goal.

The language of "adaption," perhaps inadvertently, omits the array of other powers and duties a GSA possesses. Language that recognizes the GSA's statutory power and authority may include: ". . . the GSA will consider the effect of any such changes in meeting sustainability goals and will act in furtherance of reaching such goals." No pride of authorship of phrasing is asserted, so long as the GSA is not signaling that its only response to others' action is to unequivocally defer.

III. DISTINGUISHING BETWEEN BASIN AND "VALLEY" MUST BE CLEAR AND SPECIFIC

The final sentence of the final paragraph of the introductory section is unremarkable in general, but could benefit by more specificity. The inference is that the stakeholders, actions, and projects being addressed are those of this specific GSP, i.e., the Upper Valley. Clarity would be improved if the words "Upper Valley"[2] were added in two places along with a small edit to prevent any inadvertent or misplaced interpretation: "Upper Valley stakeholders will work collaboratively to determine which projects and management actions to implement in order to maintain sustainability of the Upper Valley and will pursue adaptive management[3] when conditions change."

IV. PRICE OF LAND IS NOT UNIFORM

My informal inquiries of knowledgeable ag interests suggest that using a $45,000 per acre figure for land acquisition across multiple GSP's is unrealistic. § 9.2.2. The land

[1] It's an open question whether an entity has the ability to abdicate statutory authority.
[2] The parallel language could be narrowed in every GSP, e.g., Eastside, Langley, etc.
[3] Unlike the concern expressed at II. above, when conditions change -- not new or modified actions by others -- adaptive management is an appropriate default.

cost among the several basins does not necessarily differ by orders of magnitude, but the cost of land is not generally consistent among the basins.

V. BENEFITS AND COSTS OF PROJECTS ARE INACCURATE AND/OR MUDDLED

Table 9-1 contains inaccuracies and suffers from a lack of specificity. First of all, the projected cost of the Interlake Tunnel project is $180,500,000 according to the most recent filings by the MCWRA at the SWRCB. Project B2. "Relative to the Interlake Tunnel Project, the Agency has spent approximately $8,000,000 to date, and anticipates the project will cost approximately $180,500,000 through completion." MCWRA Petition for Extension of Time under Permit 21089, March 2021 (page 6 of 6), attached hereto. At face value, the General Manager of the MCWRA declares under penalty of perjury that completing the tunnel project -- not operating or maintaining it -- requires $180M. See, signature block on SWRCB petition.

Table B-1 claims the capital cost of the Tunnel project is $118,503,000. The narrative appears to support that figure by relying on an August 2020 presentation. Page 9-35. In its August 2020 presentation, the MCWRA projected a total cost of $173M for construction and operation but in its March 2021 petition to the SWRCB the cost of completing the project had risen to $180M. The GSA is patently ignoring the most current and best available data -- a sworn declaration post-dating earlier unsworn data -- reflecting an updated cost projection that has (unsurprisingly) risen over time.

The ASR project (B1) recites that it is a combination of reservoir reoperation and ASR wells, at a cost of $172,000,000 for apparently designing/building the wells. The other reservoir reoperation project (B3) reflects modest cost. The technical advisory committee that would analyze reservoir operations as part of its scope (C3) is projected to cost $10,000 in staff time. Considering those three projects (B1, B3, and C3) together, it seems odd that that the "Valley" is projected as paying for/being benefited by the ASR wells. The ASR wells would benefit the CSIP and perhaps other 180/400 (maybe the Eastside) locations via additional water delivery and/or SWI benefit, but how injecting water far north of the UV would benefit any area far south of the ASR wells is entirely unclear. Adopting the language used by Gus Yates in a May 31, 2021 memo on behalf of the ASGSA commenting on substantially identical Forebay Chapter 9 language, the wells and reoperation are not "inherently linked." That the reservoir reoperation portion of the ASR project may benefit the southern reaches is possible but the cost/efforts for such southern areas appears to be rather modest based upon projects B3 and C3.[4]

Table B-1 should be modified to distinguish that the ASR component of project B1 is not a benefit/to be paid by the UV but that the reservoir reoperation portion could potentially benefit it. The danger of using the "Valley" label in connection with projects, costs, or goals is that interests that may have no connection whatsoever to the

[4] Section 9.4.3.7 confuses matters further by seemingly reassuring the Upper Valley that it is not a recipient of any benefits from the ASR project itself. If that language is correct, Table 9-1 needs to so reflect.

projects, cost, or goal may mistakenly assume they are being unfairly targeted and oppose or undermine the proposal. For example, the Water Charges Framework, proposed and adopted for the 180/400 GSP, created substantial pushback by certain non-180/400 interests. Clarity (to the extent available at the time) about which specific basins are involved for which components of an identified project can reduce later controversy.

Please note that the identified errors, inconsistencies and anomalies of Table 9-1 can be found to varying degrees in the more detailed narratives in the Chapter, but are not here listed seriatim.

VI. WATER METERING SHOULD FOLLOW -- OR AT LEAST NOT CONTRADICT -- STATE REGULATIONS

I have made oral comments about the GEMS system and in particular how client extractions are reported. My clients -- surely not uniquely -- report their water extractions to both the MCWRA via the GEMS tool and to the SWRCB on statements of water diversion. §§ 5100 et seq. Within the last decade, the standards for SWRCB reporting have evolved and become more rigorous. Different standards are required based on the scale of diversions. https://www.waterboards.ca.gov/waterrights/water_issues/programs/diversion_use/water_measurement.html (SB 88). For example, minimal extractions in remote locations, such as watering a few head of livestock, need nowhere near the accuracy or verifiability of extractions measuring many acre-feet, which may be required to report in real time. The state system for surface water diversion is a rational approach to requiring more accuracy and reliability for the larger extractors. Should a basin be subject to SWRCB management, groundwater reporting substantially follows the surface water reporting model. §§ 5200 et seq. Management Actions D1 and D2 are broadly reasonable, but not if a "one size fits even when it does not fit" rule is imposed.

Thank you for your continued attention to the details of this (among others) GSP.

Very truly yours,

Thomas S. Virsik
Thomas Virsik

Encl.
MCWRA Petition for Extension of Time under Permit 21089, March 2021

MONTEREY COUNTY

WATER RESOURCES AGENCY

PO BOX 930
SALINAS, CA 93902
P: (831) 755-4860
F: (831) 424-7935

BRENT BUCHE
GENERAL MANAGER

STREET ADDRESS
1441 SCHILLING PLACE, NORTH BUILDING
SALINAS, CA 93901

March 29, 2021

Mr. Erik Ekdahl, Deputy Director
Division of Water Rights
State Water Resources Control Board
P.O. Box 2000
Sacramento, CA 95812-2000

Subject: Monterey County Water Resources Agency Petition for Extension of Time under Permit 21089 (Application 30532)

Dear Mr. Ekdahl:

On behalf of Monterey County Water Resources Agency (Agency), enclosed are the following documents relative to a Petition for Extension of Time (Petition) under the Agency's Permit 21089 (Application 30532):

1. Petition for Change Form with an Attachment (one original and one copy).
2. Environmental Information Form (one original and one copy).
3. Check in the amount of $6,078 to cover the Petition fees which is based on the total quantity of storage authorized under Permit 21089 per annum, up to 27,900 acre-feet (AF), along with the reduction for filing in conjunction with another type of change petition for the same right (see Petitions for Change under Permit 21089 also submitted by the Agency).

The Agency is petitioning for additional time to complete use of water under its Permit 21089. As you might be aware, the Agency is filing Petitions for Change concurrently with this Petition pursuant to direction from Division of Water Rights staff; and we appreciate your attention to these Petitions.

Please call if you have any questions or require additional information.

Sincerely,

E-signed 3/29/2021
Brent Buche
General Manager

cc: Kevin O'Brien, Downey Brand (via e-mail)
Samuel Boland-Brien, Division of Water Rights (via e-mail)
Julie Vance, Department of Fish and Wildlife (via-email)
Jon Rohrbough, Central Coast Regional Water Quality Control Board (via-email)
Kelly Donlon, County of Monterey (via-email)

Please indicate County where your project is located here:

Monterey, San Luis Obispo

MAIL FORM AND ATTACHMENTS TO:
State Water Resources Control Board
DIVISION OF WATER RIGHTS
P.O. Box 2000, Sacramento, CA 95812-2000
Tel: (916) 341-5300 Fax: (916) 341-5400
http://www.waterboards.ca.gov/waterrights

PETITION FOR EXTENSION OF TIME

Cal. Code Regs., tit. 23, § 842

Application 30532 Permit 21089

Separate petitions are required for each water right. Incomplete forms may not be accepted. Complete this form if the time previously allowed in your permit within which to complete construction work and/or use of water has either expired or will expire and you require additional time. Provide attachments if necessary.

Water Code section 1396 requires an applicant to exercise due diligence in developing a water supply for beneficial use. The State Water Resources Control Board (State Water Board) will review the facts presented to determine whether: (a) due diligence has been exercised, (b) failure to comply with previous time requirements has been occasioned by obstacles which could not reasonably be avoided, and (c) that satisfactory progress will be made if an extension of time is granted. (Cal. Code Regs., tit. 23, § 844.) If an extension of time is not granted, the State Water Board may initiate formal action to either: (a) issue a license for the amount of water heretofore placed to beneficial use under the terms of the permit, or (b) revoke the permit.

If this is your first extension of time, answer the questions below for the permitted construction and water use development period. If previous extensions have been approved, answer these questions for the most recently approved extension period (for example, if a ten-year extension was previously granted, list the activities completed during the ten-year period).

I (we) request a 10 year extension of time to complete construction work and/or beneficial use of water.

Construction
Estimate the date construction work will begin, list the actions taken toward commencing or completing construction, and list the reasons why construction of the project was not completed.

See attachment.

Insert the attachment number here, if applicable:

Complete Use of Water
List reasons why use of water was not completed within time previously allowed.

See attachment.

Insert the attachment number here, if applicable:

Quantities Diverted
For direct diversion projects, list the cubic feet per second (cfs) or gallons per day (gpd) diverted during the maximum month of use, and the acre-feet per annum (afa) and identify the year this occurred. For storage projects, identify the maximum amount collected to storage and withdrawn for beneficial use in afa and identify the year this occurred.

	Year	Maximum Diversion Rate (cfs or gpd)	Maximum Annual Amount (afa)
Direct Diversion	N/A		
Storage	2019		313,789.00
Beneficial Use			218,792.00

Insert the attachment number here, if applicable:

Information on Beneficial Uses

Number of Acres Irrigated	200,000.00
Number of Houses or People Served	250,000
Per Capita Residential Water Use During the Maximum 30-day Period (gpd)	
Extent of Past Use of Water for Any Other Purpose (identify gpd, cfs or afa)	

Insert the attachment number here, if applicable:

Approximate Amount Spent on Project $ 8,000,000.00

Water Conservation – If water conservation is required by your permit, provide the information below.

Water Conservation Measures In Effect
List the water conservation measures that are in effect within the place of use.

See attachment.

Insert the attachment number here, if applicable:

Water Conservation Measures Planned
List the water conservation measures that are feasible within the place of use and the date the measures will be implemented. Identify the quantities estimated to be conserved when the measures are implemented.

See attachment.

Insert the attachment number here, if applicable:

All Right Holders Must Sign This Form: I (we) declare under penalty of perjury that the above is true and correct to the best of my (our) knowledge and belief. Dated 03/30/2021 at Salinas, CA .

E- signed 3/30/2021

Right Holder or Authorized Agent Signature

Right Holder or Authorized Agent Signature

NOTE: All petitions must be accompanied by:
(1) the form Environmental Information for Petitions, available at:
http://www.waterboards.ca.gov/waterrights/publications_forms/forms/docs/pet_info.pdf
(2) Division of Water Rights fee, per the Water Rights Fee Schedule, available at:
http://www.waterboards.ca.gov/waterrights/water_issues/programs/fees/
(3) Department of Fish and Wildlife fee of $850 (Pub. Resources Code, § 10005)

Attachment to Petition for Extension of Time
Permit 21089 (Application 30532)
Held by Monterey County Water Resources Agency

The purpose of this Petition for Extension of Time (Petition) is to request additional time from the time previously allowed under Monterey County Water Resources Agency's (Agency) Permit 21089 (Application 30532) for Nacimiento Reservoir to complete beneficial use of water. Currently, Permit 21089 provides that complete application of the water to the authorized use shall be prosecuted with reasonable diligence and completed by December 31, 2021.

The operations of Nacimiento and San Antonio Reservoirs are closely coordinated to meet common downstream demands, primarily groundwater recharge in the Salinas Valley Groundwater Basin (Basin), fishery flow requirements, and the rediversion of surface water for irrigation. Submitted concurrently with this Petition, the Agency has requested water right changes for Nacimiento Reservoir by Petitions for Change for License 7543 and Permit 21089 which would facilitate the Agency's Interlake Tunnel Project. The Interlake Tunnel Project will connect Nacimiento Reservoir to San Antonio Reservoir. Operationally, the Interlake Tunnel would divert water from Nacimiento to San Antonio Reservoir to optimize the use of existing storage capacity. The Nacimiento River basin produces nearly three times the average annual flow of the San Antonio River basin. Capturing high Nacimiento River flows and rediverting those flows to be stored in San Antonio Reservoir improves the overall storage capability of the system; providing greater incidental flood protection, greater certainty in meeting instream flow requirements while optimizing the use of existing surface water rights and facilitating the long-term conjunctive management of the groundwater basin. The total volume of stored water from the Nacimiento River (including through the Interlake Tunnel Project) in any given year will not exceed the maximum amounts authorized under the Agency's existing water rights for storage of Nacimiento River water, License 7543 (Application 16124) and Permit 21089 (Application 30532) for up to 377,900 acre-feet. Preliminary modeling shows that with the Interlake Tunnel Project, water could be stored under Permit 21089 up to the full volume of 27,900 acre-feet in approximately 8-10% of years. Approval of this Petition will allow additional time for the Agency to further develop its beneficial uses of Permit 21089, including the storage and withdrawal of water in Nacimiento Reservoir through the Interlake Tunnel Project. This Petition is submitted in conjunction with a Petition for Change under Permit 21089 to facilitate the Interlake Tunnel Project.

BACKGROUND

By 1924 there was broad scale cultivation of vegetables in the Salinas Valley, primarily irrigated by wells. By the 1940s, water use for irrigation continued to increase, with additional acreage and more double cropping. As a result of the decline of groundwater levels in the Basin and seawater intrusion near Monterey Bay, in the mid-1940s the Monterey County Board of Supervisors and State Department of Public Works conducted a joint investigation (results published in DWR Bulletin 52) and recommended surface water storage on the Salinas River system. The predecessor to the Agency elected to construct Nacimiento Reservoir and San Antonio Reservoir to meet the then-existing and future water demands of the Salinas Valley, and filed water right Applications 16124 and 16761 for each (in 1954 and 1955, respectively). Surface water stored in the reservoirs is released at a rate that allows it to be absorbed into the

ground to replenish and supplement the naturally available Basin supply. Absorption occurs through the channels of the Nacimiento, San Antonio, and Salinas Rivers.

Shortly after the Agency's filings, San Luis Obispo County Flood Control and Water Conservation District (SLO District) filed its own water right application for San Antonio Reservoir (Application 16778) for San Antonio River water to be pumped through a pipeline to the SLO District service area. In addition, SLO District filed an application to divert water from the Nacimiento River (at the Agency's Nacimiento Dam) through a tunnel to San Antonio Reservoir, from which it would be pumped through the same pipeline to the SLO District service area (Application 16779). This initial "Interlake Tunnel" project was first applied for with Application 16779 in December of 1955.

Protests by both the Agency and SLO District were filed on the various applications and were eventually dismissed through negotiations led by SWRCB staff. The resulting agreement dated October 19, 1959, between the Agency and SLO District (1959 Agreement) generally provides SLO District with up to 17,500 acre-feet in each water year from the Agency's Nacimiento Dam and Reservoir (conveyance of water from Nacimiento Dam and Reservoir to the SLO District service area required a shorter pipeline than from San Antonio Reservoir). The 1959 Agreement allowed the protests to be resolved and Applications 16778 and 16779 to be withdrawn. The 1959 Agreement is currently still in effect, and does not have an expiration date. The SWRCB issued License 7543 in 1965 subject to the 1959 Agreement, for storage up to 350,000 acre-feet per annum with an identified maximum historic withdrawal of 180,000 acre-feet.

Application 30532 was filed on April 23, 1996 to cover the full capacity of the existing Nacimiento Reservoir, 377,900 acre-feet (the authorized collection to storage amount under the existing senior water right, License 7543 was/is 350,000 acre-feet). Permit 21089 was issued on Application 30532 on March 23, 2001, for storage of the additional 27,900 acre-feet. In 2008, License 7543 and Permit 21089 were amended to facilitate the Agency's Salinas River Diversion Facility project which was added as a downstream point of rediversion under the rights. In order to dismiss protests, flow prescriptions from the National Marine Fisheries Service were added as terms of the Agency's water rights.

In summary, today the Agency holds various water rights for both Nacimiento and San Antonio Reservoirs. Each reservoir has year-round downstream flow requirements for habitat just below the dam. In addition, there are downstream flow requirements on the Salinas River below the confluences of the Nacimiento and San Antonio Rivers with the Salinas River. The operations of Nacimiento and San Antonio Reservoirs are closely coordinated to meet these requirements and other water demand in the Salinas Valley, including the operation of a downstream point of rediversion, located approximately 100 miles downstream from the confluence of Salinas River and San Antonio River, and approximately 5 miles upstream from the ocean. The Agency's service area encompasses significant productive farmland downstream of both reservoirs.

CONSTRUCTION

Construction of Nacimiento Dam was completed in 1957, prior to the filing of Application 30532. The Interlake Tunnel Project concept was included in a 1955 water right filing but was

held in abeyance. The Interlake Tunnel Project has been under consideration by the Agency since the late 1970s, and was included in the Agency's Water Facilities Capital Plan in the 1990's. The Agency began more actively pursuing the Interlake Tunnel Project beginning in 2014 due to ongoing multi-year drought conditions. Since that time, the cost effectiveness of the project has changed as the need for water supply has increased and the Agency has obtained funding agreements and contracts to proceed with the project. Specific activities conducted to date relative to the Interlake Tunnel Project are described below.

The estimated date that construction will begin is:
June 2023

Actions taken toward commencing construction:
The Interlake Tunnel Project was included in the 2013 Greater Monterey County Integrated Regional Water Management Plan.

On June 3, 2014, the Board of Supervisors of the Agency authorized negotiation and execution of a funding agreement between Monterey County and the Agency for an amount not to exceed $500,000 for program management, engineering and environmental review of the Interlake Tunnel, said funds to be reimbursed to Monterey County if the Interlake Tunnel is approved and financed; and directed staff to return to the Board of Supervisors in July 2014 with a project status report and information on financial impact to the County in regards to funding the agreement. The Board of Supervisors of the Agency also authorized the Agency General Manager to enter into the necessary agreements to prepare for and commence environmental review of the Interlake Tunnel Project in an initial amount not to exceed $500,000 provided funding is approved by Monterey County.

On July 1, 2014, the Monterey County Board of Supervisors approved a funding Agreement and approved the use of County funds for the Agreement. The Agency has contracted with EPC Consultants as the Program Manager and Construction Manager, a legal firm to perform the water rights analysis, and will solicit a qualified environmental firm.

On August 25, 2014, the Board of the Agency held a public workshop to provide background information about the Interlake Tunnel Project and to provide an update of current project activities and accomplishments.

On November 19, 2014, the Board of the Agency held a public workshop to provide current feasibility status on the Interlake Tunnel Project.

On January 15, 2015, the Agency published an Informational Notice of pending RFP's for engineering design.

On February 26, 2015, the Agency held a public meeting on the proposed Interlake Tunnel and San Antonio Spillway Modification project. The meeting was held in the Heritage Ranch Conference Room, Paso Robles, CA.

On March 13, 2015, the Agency published an UPDATED Informational Notice of pending RFP's for engineering design.

On April 16, 2015, a RFP pre-proposal meeting was held.

In April 2015, the Agency contacted the U.S. Army Corps of Engineers regarding a 404 permit.

On April 28, 2016, a Notice of Preparation/Initial Study (NOP/IS) was circulated, initiating a 45-day scoping period for the Environmental Impact Report for the Interlake Tunnel Project. The scoping period concluded on June 13, 2016.

On May 16 and 17, 2016, scoping meetings were held.

In May 2016, the Agency contacted the California Department of Fish and Wildlife, the California Department of Water Resources Division of Safety of Dams, and the Central Coast Regional Water Quality Control Board regarding the various approvals and permits required from additional agencies.

On July 14, 2016, a meeting with property owners was held.

On September 15, 2017, a stakeholder workshop was held.

On May 10, 2018, a project status report was provided.

On July 6, 2018, a project status report was provided.

On August 24, 2020 the Agency met with Division of Water Rights staff to discuss the Interlake Tunnel Project and its proposed approach relative to water rights.

On September 29, 2020 the Agency met with Division of Water Rights staff to discuss the Interlake Tunnel Project and its proposed approach relative to water rights, including a review of draft Petitions for Change.

On October 21, 2020 the Agency conducted a follow-up discussion with Division of Water Rights staff to discuss the Interlake Tunnel Project and its proposed approach relative to water rights, including a review of draft Petitions for Change. Correspondence and other communications continued with Division of Water Rights staff for direction through December 2020.

In January 2021, the Agency revised the draft Petitions for Change to incorporate feedback and direction from Division of Water Rights staff.

Environmental work and permitting efforts are expected to occur through January 2023, with a draft EIR prepared by June 2021 and a final EIR by March 2022. Certification of the Final EIR is anticipated by January 2023. The Agency hopes to issue a design-build

request for qualifications in December of 2022, with final design and construction starting in June 2023.

Reasons why construction of the project was not completed:
As previously described, construction of Nacimiento Dam was completed prior to the filing of Application 30532 and construction of the Interlake Tunnel Project was held in abeyance. The Interlake Tunnel Project more recently has become a cost-effective project as the need for water supply in the Salinas Valley has increased. Construction of the Interlake Tunnel Project requires various approvals and permits, including water rights changes requested under other Petitions for Change submitted by the Agency to the SWRCB, many of which are yet to be obtained and take multiple years to obtain. Information on the status of various other agency approvals and permits are included within the attached Environmental Information form. Construction of the Interlake Tunnel Project will not begin until all necessary approvals and funding are obtained. Specific activities conducted to date relative to the Interlake Tunnel Project are described below.

COMPLETE USE OF WATER

The use of water (storage or withdraw) was not completed within the time previously specified because there was no physical expansion of the reservoir and the reservoir already had a history of filling completely when Permit 21089 was issued. Any water stored is credited in order of water right priority: first under License 7543 up to 350,000 acre-feet, and then under Permit 21089 up to 27,900 acre-feet. Due to the minimum pool requirements in Nacimiento Reservoir, after the initial filling when the dam was constructed, the reservoir could not physically store the total amount authorized under the permit and license of a combined 377,900 acre-feet, or even the total amount authorized under License 7543 of 350,000 acre-feet. Therefore, following water right priorities and under current circumstances it would only be possible to credit storage of water under Permit 21089 if Nacimiento Reservoir were to empty almost completely (to something less than 27,900 acre-feet) and refill almost completely in one year (to something greater than 350,000 acre-feet). Furthermore, annual withdrawal limits under License 7543 (180,000 acre-feet) reduce the likelihood that the reservoir would be drawn to and below the current minimum pool requirement. The additional volume of withdrawal under the permit would allow for greater and more efficient use of Nacimiento River water on an annual basis.

QUANTITIES DIVERTED

For the reasons identified in the "Complete Use of Water" section, at this time no quantities of water have been stored or used under Permit 21089. For reference, since 1996 (the year that Application 30532 was filed), the largest annual volume of water stored in Nacimiento Reservoir occurred in water year 2019, when 313,789 acre-feet was stored. Storage is reported and accounted for in order of priority under the Nacimiento storage rights and therefore was fully credited under the senior License 7543. The largest annual withdrawal (or beneficial use) at Nacimiento since 1996 occurred during water year 2018, when 192,155 acre-feet was withdrawn from storage. Approximately 17,000 acre-feet of which was released for fisheries requirements, resulting in a net withdrawal of approximately 175,000 acre-feet. As noted in the "Complete Use of Water" section, in the past current minimum pool requirements, withdrawal limits, and physical capacities essentially prevented the ability to store water under Permit 21089. It is

expected that development of the Interlake Tunnel Project will create opportunities for water to be stored and withdrawn for beneficial use under this permit.

INFORMATION ON BENEFICIAL USES

Per Capita Residential Water Use During the Maximum 30-day Period (gpd):
The Agency does not provide water directly to residential users and therefore does not have this information.

Extent of Past Use of Water for Any Other Purpose (identify gpd, cfs or afa):
The Agency reports all past purposes of water use from Nacimiento Reservoir in its annual Reports of Licensee submitted to the SWRCB. Additional details regarding the Agency's purposes of water use are included in prior sections of this Attachment.

APPROXIMATE AMOUNT SPENT ON PROJECT

Relative to the Interlake Tunnel Project, the Agency has spent approximately $8,000,000 to date, and anticipates the project will cost approximately $180,500,000 through completion.

WATER CONSERVATION

Measures in effect within the place of use:
The Agency has various water conservation ordinances in effect, including the following ordinances. Ordinance No. 3851 requires that all growers farming property within the Agency file plans annually showing the water conservation measures to be implemented for agricultural operations during that calendar year and the water conservation measures implemented during the previous year. Similarly, Ordinance No. 3886 requires annual water conservation plans from all cities and urban water purveyors.

In addition, the Monterey County Water Recycling Projects, a combination of the Castroville Seawater Intrusion Project and the Salinas Valley Reclamation Project, began construction in 1995 and started delivering recycled water to fields near Castroville in 1998. By using recycled water pumped from the Monterey Regional Water Pollution Control Agency, farmers can irrigate crops and reduce pumping of groundwater.

Measures planned:
At this time, there are no additional specific planned water conservation measures that are feasible within the place of use. The Agency's current water conservation efforts will continue, and additional projects and measures will continue to be evaluated in the future.

State of California
State Water Resources Control Board
DIVISION OF WATER RIGHTS
P.O. Box 2000, Sacramento, CA 95812-2000
Tel: (916) 341-5300 Fax: (916) 341-5400
http://www.waterboards.ca.gov/waterrights

ENVIRONMENTAL INFORMATION FOR PETITIONS

This form is required for all petitions.

Before the State Water Resources Control Board (State Water Board) can approve a petition, the State Water Board must consider the information contained in an environmental document prepared in compliance with the California Environmental Quality Act (CEQA). This form is not a CEQA document. If a CEQA document has not yet been prepared, a determination must be made of who is responsible for its preparation. As the petitioner, you are responsible for all costs associated with the environmental evaluation and preparation of the required CEQA documents. Please answer the following questions to the best of your ability and submit any studies that have been conducted regarding the environmental evaluation of your project. If you need more space to completely answer the questions, please number and attach additional sheets.

DESCRIPTION OF PROPOSED CHANGES OR WORK REMAINING TO BE COMPLETED

For a petition for change, provide a description of the proposed changes to your project including, but not limited to, type of construction activity, structures existing or to be built, area to be graded or excavated, increase in water diversion and use (up to the amount authorized by the permit), changes in land use, and project operational changes, including changes in how the water will be used. For a petition for extension of time, provide a description of what work has been completed and what remains to be done. Include in your description any of the above elements that will occur during the requested extension period.

The water right changes requested by this Petition would facilitate the Agency's Interlake Tunnel Project, which will connect Nacimiento Reservoir to San Antonio Reservoir by constructing an underground gravity flow tunnel Operationally, the Interlake Tunnel would divert water from Nacimiento to San Antonio Reservoir to optimize the use of existing storage capacity. The total volume of stored water from the Nacimiento River (including through the Interlake Tunnel Project) in any given year will not exceed the maximum amounts authorized under the Agency's existing water rights for storage of Nacimiento River water, License 7543 (Application 16124) and Permit 21089 (Application 30532) for up to 377,900 acre-feet. This Petition will not result in any exceedances of the Agency's existing water right terms and conditions, including the downstream fishery flow requirements.

The Project involves construction and grading activities for the tunnel intake facility at Nacimiento Reservoir, tunnel outlet facility at San Antonio Reservoir, an 11,000 ft underground tunnel and San Antonio dam spillway modification, which are described under "Construction Activity" on page 3 of this form.

Insert the attachment number here, if applicable: [ ]

Coordination with Regional Water Quality Control Board

For change petitions only, you must request consultation with the Regional Water Quality Control Board regarding the potential effects of your proposed change on water quality and other instream beneficial uses. (Cal. Code Regs., tit. 23, § 794.) In order to determine the appropriate office for consultation, see: http://www.waterboards.ca.gov/waterboards_map.shtml. Provide the date you submitted your request for consultation here, then provide the following information.

Date of Request: May 2016

Will your project, during construction or operation, (1) generate waste or wastewater containing such things as sewage, industrial chemicals, metals, or agricultural chemicals, or (2) cause erosion, turbidity or sedimentation? ○ Yes ◉ No

Will a waste discharge permit be required for the project? ○ Yes ◉ No

If necessary, provide additional information below:

Insert the attachment number here, if applicable:

Local Permits

For temporary transfers only, you must contact the board of supervisors for the county(ies) both for where you currently store or use water and where you propose to transfer the water. (Wat. Code § 1726.) Provide the date you submitted your request for consultation here.

Date of Contact:

For change petitions only, you should contact your local planning or public works department and provide the information below.

Person Contacted: Carl Holm | Date of Contact: June 2014

Department: Resource Management Agency | Phone Number: 831-755-5183

County Zoning Designation: Public / Quasi Public

Are any county permits required for your project? If yes, indicate type below. ◉ Yes ○ No

☒ Grading Permit ☒ Use Permit ☐ Watercourse ☐ Obstruction Permit

☐ Change of Zoning ☐ General Plan Change ☐ Other (explain below)

If applicable, have you obtained any of the permits listed above? If yes, provide copies. ○ Yes ◉ No

If necessary, provide additional information below:

Insert the attachment number here, if applicable:

Federal and State Permits

Check any additional agencies that may require permits or other approvals for your project:

- [x] Regional Water Quality Control Board
- [x] Department of Fish and Game
- [x] Dept of Water Resources, Division of Safety of Dams
- [ ] California Coastal Commission
- [ ] State Reclamation Board
- [x] U.S. Army Corps of Engineers
- [ ] U.S. Forest Service
- [ ] Bureau of Land Management
- [ ] Federal Energy Regulatory Commission
- [ ] Natural Resources Conservation Service

Have you obtained any of the permits listed above? If yes, provide copies. ○ Yes ◉ No

For each agency from which a permit is required, provide the following information:

Agency	Permit Type	Person(s) Contacted	Contact Date	Phone Number
CDFW	Streambed Alter	Julie Vance	May 2016	559-243-4005
CA DSOD	Enlargement	Andrew Mangeny	May 2016	916-227-4631
US Army Corps of Eng.	404	Greg Brown	April 2015	415-503-6791

If necessary, provide additional information below:

Central Coast Regional Water Quality Control Board 401 Certification Jon Rohrbough May 2016 805-549-3458

Insert the attachment number here, if applicable:

Construction or Grading Activity

Does the project involve any construction or grading-related activity that has significantly altered or would significantly alter the bed, bank or riparian habitat of any stream or lake? ◉ Yes ○ No

If necessary, provide additional information below:

The Project involves construction and grading activities for the tunnel intake facility at Nacimiento Reservoir, tunnel outlet facility at San Antonio Reservoir, and San Antonio dam spillway modification. The intake will be a reinforced concrete structure that covers an area 72 feet by 288 feet and comprised of foundation slab, walls, elevated slabs and associated fish exclusion screens. The outlet will be a concrete hydraulic-jump stilling basin that covers an area 25 feet by 53 feet and comprised of concrete transition chute, baffle blocks, and end sill. The underground tunnel will be 10,890 ft. long and 10 ft diameter. It will be conventionally mined with a roadheader excavator

The spillway modification will demolish the existing ogee spillway and construct a labyrinth weir and spillway extension. The labyrinth weir will be 17 feet tall, 40 feet wide, and 142 feet long. The existing spillway will be extended by 650 feet, with a width varying between 100 feet and 142 feet.

Insert the attachment number here, if applicable:

Archeology

Has an archeological report been prepared for this project? If yes, provide a copy. Will another public agency be preparing an archeological report? Do you know of any archeological or historic sites in the area? If yes, explain below. If necessary, provide additional information below:

(●) Yes ( ) No

( ) Yes (●) No

( ) Yes (●) No

The cultural report may contain confidential cultural resources location information and report distribution is be restricted to those with a need to know. Cultural resources are non-renewable, and their scientific,cultural and aesthetic values can be significantly impaired by disturbance. To deter vandalism,artifact hunting, and other activities that can damage cultural resources, the locations of culturresources should be kept confidential. The legal authority to restrict this information is CA Government Code 6254.1 and the National Historic Preservation Act of 1966, as amended, Section 304. If the Water Board must have a copy of this report, please provide the contact information of the authorized individual for direct submittal.

Insert the attachment number here, if applicable: [ ]

Photographs

For all petitions other than time extensions, attach complete sets of color photographs, clearly dated and labeled, showing the vegetation that exists at the following three locations:

- [X] Along the stream channel immediately downstream from each point of diversion
- [X] Along the stream channel immediately upstream from each point of diversion
- [X] At the place where water subject to this water right will be used

Maps

For all petitions other than time extensions, attach maps labeled in accordance with the regulations showing all applicable features, both present and proposed, including but not limited to: point of diversion, point of rediversion, distribution of storage reservoirs, point of discharge of treated wastewater, place of use, and location of instream flow dedication reach. (Cal. Code Regs., tit. 23, §§ 715 et seq., 794.)

Pursuant to California Code of Regulations, title 23, section 794, petitions for change submitted without maps may not be accepted.

This Petition is being made to coordinate between existing water rights held by the Agency and to facilitate the Interlake Tunnel Project. Thus, all maps are currently on file with the Division of Water Rights (see description in the Attachment to the Petition). Pending review by Division staff, any required changes will be made as directed.

All Water Right Holders Must Sign This Form:

I (we) hereby certify that the statements I (we) have furnished above and in the attachments are complete to the best of my (our) ability and that the facts, statements, and information presented are true and correct to the best of my (our) knowledge. Dated 3/30/2021 at Salinas, CA .

E-signed 3/30/2021

Water Right Holder or Authorized Agent Signature

Water Right Holder or Authorized Agent Signature

NOTE:

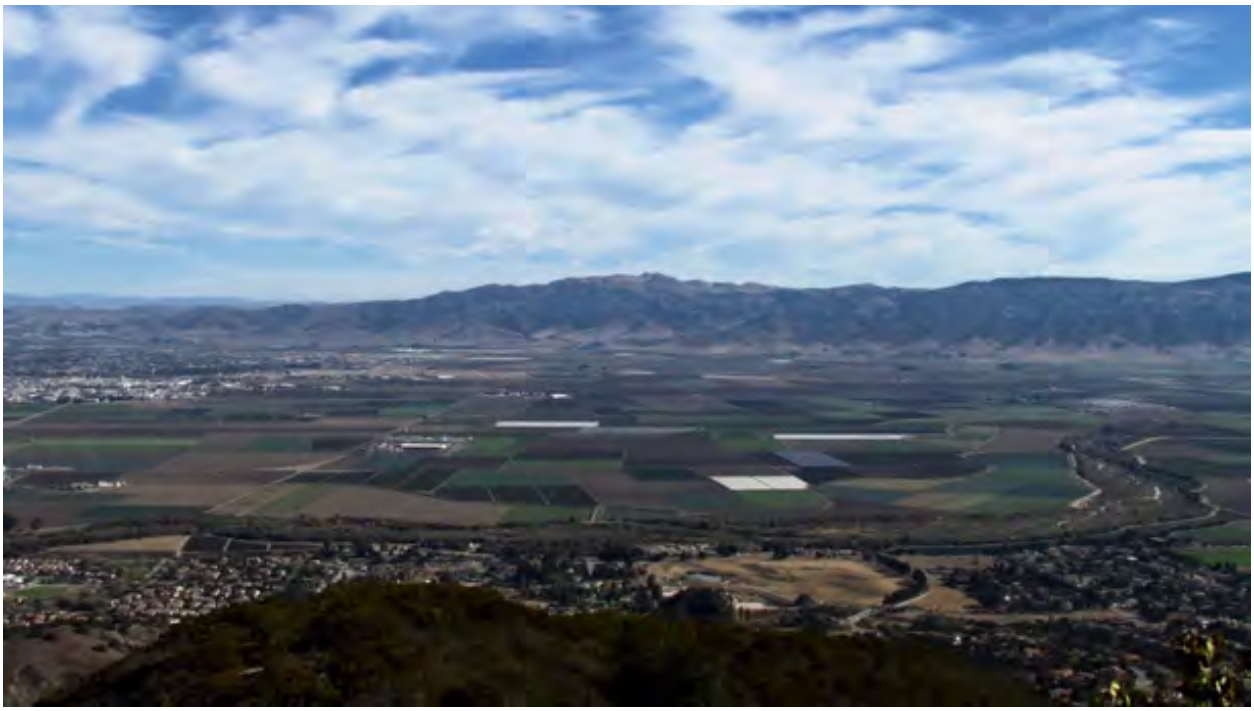
- **Petitions for Change may not be accepted unless you include proof that a copy of the petition was served on the Department of Fish and Game. (Cal. Code Regs., tit. 23, § 794.)**
- **Petitions for Temporary Transfer may not be accepted unless you include proof that a copy of the petition was served on the Department of Fish and Game and the board of supervisors for the county(ies) where you currently store or use water and the county(ies) where you propose to transfer the water. (Wat. Code § 1726.)**

Nacimiento River below the dam

Nacimiento Dam and Reservoir

San Antonio Reservoir

San Antonio Reservoir, dam and river below dam



Salinas Valley Place of Use

Salinas Valley Water Coalition
33 El Camino Real • Greenfield, CA 93927
(831) 674-3783 • FAX (831) 674-3835

TRANSMITTED VIA EMAIL

Salinas Valley Groundwater Sustainability Agency
Atten: Ms. Emily Gardner, Deputy General Manager 16 June, 2021

Re: SVBGSA Forebay GSP, Chapters 9 Projects and Management Actions, including the June 9, 2021 Update and Chapter 10 Implementation

Dear Ms. Gardner;

The Salinas Valley Water Coalition (Coalition) appreciates this opportunity to comment on the draft Chapters 10 and the June 9, 2021 Chapter 9 Projects and Management Actions Update of the Forebay Groundwater Sustainability Plan (GSP). This letter augments our November 3, 2020 and other comments previously submitted on Chapter 9 and those comments are incorporated herein and included as part of the administrative record. We ask that you share/distribute our comments to the Forebay Subbasin Committee so that the Committee members are afforded an opportunity to review and consider the comments herein prior to any decision making. We would like to state upfront that many of the comments are based upon our understanding that the Forebay Subbasin, including the Arroyo Seco Management Area, is sustainable.

Chapter 9 Projects and Management Actions

We would like to note upfront that draft Chapters 9 & 10 that have been publicly released to-date, do not distinguish, and/or differentiate, between the Arroyo Seco Management Area and the remainder of the Forebay Subbasin. There absolutely needs to be additional language included in these chapters to explain that Arroyo Seco Management Area will be managed differently from the remainder of the Forebay Subbasin and those management actions applicable to the Arroyo Seco Management Area must be clearly delineated. Not only does the Arroyo Seco Management Area benefit from the sustainability of the entire Forebay Subbasin, the management area greatly benefits from the unmanaged Arroyo Seco River. With this added benefit to an already sustainable subbasin, the projects and management actions for the Arroyo Seco Management Area, to be implemented by the Arroyo Seco Groundwater Sustainability Agency, must be limited to monitoring to ensure that the management area continues to maintain sustainability.

We are also surprised at the number of projects and management actions that are being proposed for the Forebay Subbasin when it has been stated that the Forebay Aquifer Subbasin is sustainable.

Section 9.1 Introduction

This section provides an overview of the basis and goals for projects and management actions that will allow the Subbasin to ***attain*** sustainability. [emphasis added]

Comment: The SVBGSA staff and the GSP itself, states that the Forebay Subbasin is currently sustainable. It would be more appropriate to state that **the projects and management actions will allow the Subbasin to 'maintain' sustainability;** isn't that the true goal of the GSP and SGMA?

The GSP states that the following action is needed to achieve a number of outcomes the projects and management actions are designed to achieve: "providing incentives to ***constrain*** groundwater pumping with limits". [emphasis added]

Comment: Groundwater pumping limits are not needed in the Forebay Subbasin. The Forebay Subbasin is sustainable and does not show any undesirable results "constrain" groundwater pumping with limits. This sentence should be deleted or modified to reflect the sustainability of the Forebay Subbasin.

Section 9.2.1 Process for Developing Projects and Management Actions

This section states that the projects and management actions for this GSP, involve building on, revising, and adding to the projects and management actions developed for the entire Valley as part of the 180/400-Foot Aquifer Subbasin GSP. The section goes on to state that the projects that could benefit the Forebay Aquifer Subbasin were considered and refined for this GSP.

Comment: Bulletin 118 clearly distinguished the 180/400-Foot Aquifer Subbasin from the Forebay Subbasin. That is, the two subbasins are not only physically distanced, but their respective hydrogeology is clearly distinct from one another. Accordingly, the projects and management actions for the 180/400-Foot Aquifer Subbasin would not necessarily apply to the Forebay Subbasin, particularly since the Forebay Subbasin is sustainable, i.e., does not show undesirable results. Applying projects and management actions of the 180/400-Foot Subbasin to the Forebay Subbasin is inappropriate.

Section 9.2.2 Cost Assumptions Used in Developing Projects

The fourth paragraph discusses the annual operations and maintenance fees to operate and maintain new project infrastructure. It then goes on to state that O&M costs do not include the O&M or pumping costs associated with existing infrastructure because these are assumed to be part of the ***water purchase costs.*****[emphasis added]** The discussion continues on to say that water purchase costs are assumed to include repayment of loans for existing infrastructure.

Question: What is considered a 'water purchase cost'? Is this referring to project capital costs for projects that provide a new supply of water or?

Comment: The Coalition is opposed to any water purchase costs. The Forebay Subbasin is sustainable and does not likely need any new project to maintain its sustainability. The Forebay Subbasin is wholly dependent on how the Monterey County Water Resources Agency (Agency) operates the reservoirs. Specifically, the Forebay Subbasin will maintain its sustainability if the Agency captures the additional 29,000 acre-feet and reoperates the reservoirs consistent with the Salinas Valley Water Project. During any prolonged drought

period, the Agency will engage its Technical Advisory Committee to implement reservoir operations that would hopefully maintain the sustainability of the Forebay Subbasin such as by providing winter releases.

Section 9.3 Overview of Projects and Management Actions

This section states the GSP is part of an integrated plan for managing groundwater in all 6 subbasins of the Salinas Valley that are managed by the SVBGSA. It goes on to state that the Forebay Subbasin GSP focuses on the projects that directly help the Forebay Aquifer Subbasin ***reach*** its sustainability goals and also includes Valley-wide projects outside the Subbasin that supposedly benefits the subbasin and reduces the need for additional projects and management actions.

Comment: Since it has been stated by the SVBGSA staff, supported by the Forebay Subbasin GSP, that the Forebay Subbasin is sustainable, no additional project is needed as stated above. Additionally, it would be more appropriate to state the GSP focuses on the projects and management that directly help the Forebay Aquifer Subbasin ***'maintain'*** its sustainability.

We appreciate that the focus of the GSP is on projects and management actions that directly benefits the Forebay. We note two projects/management actions that are missing from the project list in the GSP; specifically, (1) the deferred maintenance of the two reservoirs and (2) habitat conservation plan (HCP). Although the SVBGSA is not the lead agency for these two projects, they both are essential for projects and management actions to proceed. The Coalition believes these two important projects should be, at the very least, mentioned in the GSP and should be supported by the SVBGSA.

Table 9-1 Projects and Management Actions

Comment: Under the cost section of B1 and B2, it is stated that the capital costs are valley-wide, while it does not show the distribution of special benefits throughout the valley. Unless and until the special benefits for each project are determined in an engineer's report, it is not appropriate to state the capital cost is to be applied valley-wide. We suggest that the table be revised to simply state 'Capital Cost'.

Section 10.3 Road Map for Refining and Implementing Projects and Management Actions

Section 10.1.4, Lithologic and hydrostratigraphic data collection for Principal and Deep Aquifer:

This section discusses the possibility that the Deep Aquifer exist in the Forebay Subbasin, but that little is known about the Deep Aquifer. The GSP goes on to state that these data gaps can be filled using the drilling and installation of new monitoring wells, and that filling the data gaps can also provide a greater understanding of groundwater flow. Further, it states, that many stakeholders have discussed the importance of having this data.

Comment: The unsubstantiated statement that the Deep Aquifer extends from the Pressure Subbasin to the Forebay Subbasin have been debunked by hydrogeologists with extensive knowledge of the area. Additionally, this statement is a ruse or a red herring to avoid the hard discussion of stopping all pumping from the limited Deep Aquifer. If the SVBGSA seeks to undertake filling this data gap, then it must also consider the impact of the pumping in the Pressure Area Deep Aquifer to the Forebay Subbasin. The Coalition supports stopping all pumping from the Deep Aquifer.

Section 10.3.2: Forebay Pumping Restrictions TAC

This section seems to center on pumping restrictions and how, and if, they could be implemented. The Coalition recommends you consider adding the language the Upper Valley Subbasin Committee developed for implementing a TAC in their GSP. It centers on reviewing and evaluating the Sustainable Management Criteria (SMC) rather than pumping restrictions. It also requires the TAC to meet on an annual basis to review the annual report and how they are or aren't meeting the SMCs, and then deciding what, and if, any management actions may be needed to be implemented. Such management actions could include pumping restrictions if needed.

Comment: The Coalition recommends that you consider adding the following language found in the Upper Valley Subbasin GSP Chapter 10:

Chapter 10 -- Upper Valley, Section 10.3

3. SMC TAC Subbasin stakeholders plan to establish the SMC TAC within the first 2 years of GSP implementation. SVBGSA will work with the Subbasin Committee to determine the criteria for professional and scientific experts that will serve on the SMC TAC. After it is established, the SMC TAC will establish guiding principles, triggers, and the decision making process. The SMC TAC will convene annually in April, and subsequently as needed, to review the Annual Report and whether conditions trigger the need for projects and management actions, recommend implementation of specific projects and management actions, and review data.

Section 10.3 Road Map for Refining and Implementing Projects and Management Actions

Section 10.3.4 makes the following statement:

"The Drought TAC will likely be compatible with either the Interlake Tunnel or Winter Release project; however, the compatibility of the Interlake Tunnel, Winter Release project, and any other reservoir reoperation projects that arise needs to be evaluated. ***SVBGSA will begin these steps before or immediately following the submittal of the GSP." [emphasis added]***

Comment: To our knowledge neither the Interlake Tunnel, nor the Winter Release project, has a final/complete project description. Moreover, the SVBGSA is not the lead agency on the Interlake Tunnel project. Further, the Winter Release project involves Agency's infrastructure and actions, i.e., Agency has control over its assets – the reservoirs. The Drought TAC is a committee separate from the SVBGSA and should not be influenced by the SVBGSA. The SVBGSA is overstepping by taking any step on evaluating compatibility of either project, when both projects involve the Agency's infrastructure and authority. Should the Agency proceed with these projects, SVBGSA's role is limited to submitting comments during the application process.

Section 10.5.3 Funding for Projects and Management Actions

Comment on Fees: There has been much discussion throughout the development of this GSP and of other subbasin GSPs of the water charges framework and water marketing. It is our understanding that the Forebay Subbasin Committee has rejected the idea of a water charges framework and/or water marketing. The Coalition believes there should be a statement in the GSP that reflects the discussion and direction the Forebay Subbasin Committee gave on

this matter – in other words, no development of a water charges framework or water market at this time.

Thank you for your consideration of the foregoing comments.

Sincerely,

Nancy Isakson

Nancy Isakson, President
Salinas Valley Water Coalition

COMMUNITY WATER CENTER
EL CENTRO COMUNITARIO POR EL AGUA

San Jerardo Cooperative, Inc.

June 17, 2021

Salinas Valley Basin Groundwater Sustainability Agency

Submitted electronically to:

Emily Gardner, Deputy General Manager

Donna Meyers, General Manager

Re: Comments on the Draft Salinas Valley GSP Chapters 2, 9, and 10 for the Langley, East Side, Forebay, and Upper Valley Subbasins

Dear Salinas Valley Basin Groundwater Sustainability Agency:

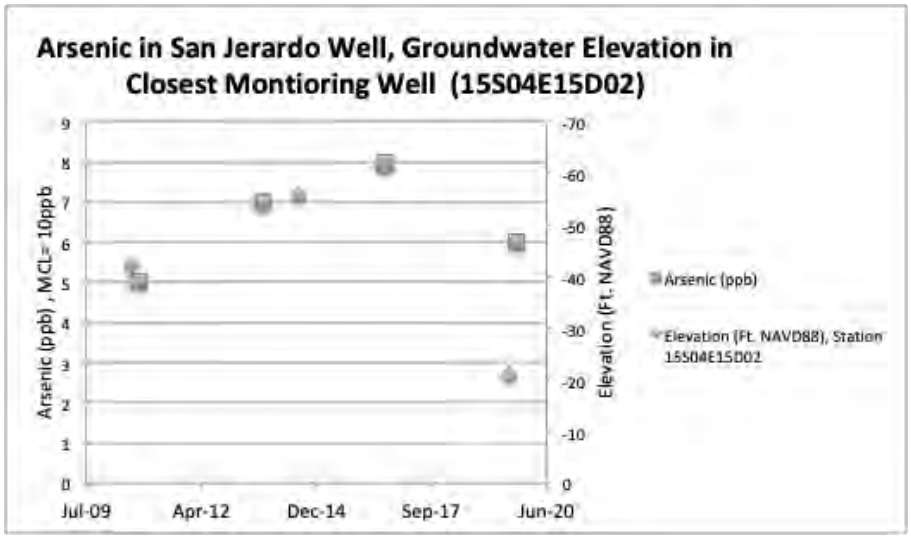
The Community Water Center (CWC) and the San Jerardo Cooperative would like to offer comments and recommendations in response to the draft Groundwater Sustainability Plans (GSPs) Chapters 2, 9, and 10 for the Langley, East Side, Forebay, and Upper Valley Subbasins that were released mid-2021 by the Salinas Valley Basin Groundwater Sustainability Agency (SVB GSA). These comments are intended to add to the public record and are submitted in addition to previous written and spoken comments.

We reiterate the following context for this comment letter and the San Jerardo Cooperative's participation in particular. The challenges facing San Jerardo and similar communities throughout all the subbasins in the Salinas Valley are the foundation of our comments in this letter. The San Jerardo Cooperative's well is highly vulnerable to changes in groundwater levels and groundwater quality. Over decades of living and working at San Jerardo Cooperative, Advisory Committee Member Horacio Amezquita has observed firsthand how the irrigation practices on properties surrounding the cooperative impact the water quality in their current and former wells. The San Jerardo Cooperative receives drinking water from a small public water system (CA2701904) and is very concerned that pumping, irrigation practices, and groundwater management in the East Side Subbasin will cause their drinking water well, which currently meets all drinking water standards, to exceed the maximum contaminant levels for arsenic and/or nitrate. Unfortunately, data from the State Water Board indicates increasing levels of nitrate and arsenic in their well with a high arsenic level of 8 ppb on 8/22/2016 that also corresponds to a low groundwater elevation of -61.5 in Station 15S04E15D02, the closest monitoring well to the San Jerardo Cooperative's well (See CWC Figures 1 and 2).[1] While there are too few monitoring data points to draw significant conclusions, CWC Figure 1 does suggest that arsenic levels are higher when groundwater levels are lower. Scientific studies confirm that contaminants like arsenic,

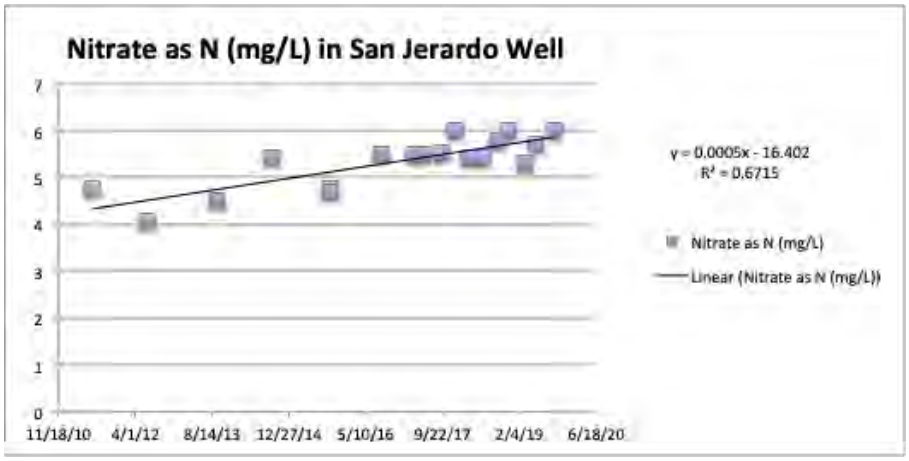
[1] CWC Figure 1 contains all available arsenic data from the State Water Board's Drinking Water Watch online database (https://sdwis.waterboards.ca.gov/PDWW/) which was collected in October 2010, 9/11/13, 8/22/16, and 9/23/19. We then added the monitoring data for Station 15S04E15D02 for the dates most close to the arsenic sampling dates (August 2010, August 2014, August 2016, and August 2019). CWC Figure 2 data was also downloaded from the same online database.

uranium, and chromium (including hexavalent chromium) are more likely to be released under certain geochemical conditions influenced by pumping rates, geological materials, and water level fluctuations.[2]

CWC Figure 1: Arsenic in San Jerardo Well, Groundwater Elevation in Closest Monitoring Well
(Note: The groundwater elevation y-axis is reversed to illustrate that lower groundwater elevations are associated with higher arsenic levels.)



CWC Figure 2: Nitrate in San Jerardo Well.



We provide more specific chapter-by-chapter comments below. We also reiterate our recommendation that the GSP should be revised throughout to acknowledge the science showing that groundwater pumping and groundwater level changes can influence water quality. This recommendation is supported by DWR's 180/400 ft Aquifer GSP Determination on June 3, 2021:

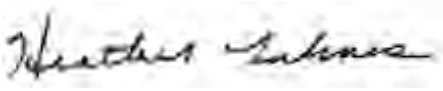
[2] Community Water Center and Stanford University (2019). *Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium*. Available at: https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896.

> "**[S]taff find that the approach to focus only on water quality impacts associated with GSP implementation, i.e., GSP-related projects, is inappropriately narrow.** Department staff recognize that GSAs are not responsible for improving existing degraded water quality conditions. **GSAs are required; however, to manage future groundwater extraction to ensure that groundwater use subject to its jurisdiction does not significantly and unreasonably exacerbate existing degraded water quality conditions.** Where natural and other human factors are contributing to water quality degradation, the GSAs may have to confront complex technical and scientific issues regarding the causal role of groundwater extraction and other groundwater management activities, as opposed to other factors, in any continued degradation; but **the analysis should be on whether groundwater extraction is causing the degradation in contrast to only looking at whether a specific project or management activity results in water quality degradation**. Department staff recommend that the SVBGSA coordinate with the appropriate water quality regulatory programs and agencies in the Subbasin to understand and develop a process for determining when groundwater management and extraction is resulting in degraded water quality in the Subbasin (see Recommended Corrective Action 5)."[3]

We reiterate our strong recommendation that the GSPs incorporate a more robust and representative monitoring network and minimum thresholds to protect vulnerable communities like San Jerardo and those dependent on shallow domestic drinking water wells. This network should include state and local small water systems.

Thank you for reviewing this letter and for the consideration of our comments on the draft GSP chapters. We look forward to working with the SVB GSA to ensure that the GSPs are protective of the drinking water sources of vulnerable, and often underrepresented, groundwater stakeholders. Please do not hesitate to contact us with any questions or concerns. We also look forward to meeting with you in the future to further discuss issues raised in this and past comments.

Sincerely,



Heather Lukacs
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Horacio Amezquita
General Manager, San Jerardo Cooperative, Inc.

Justine Massey
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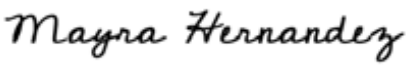

Mayra Hernandez
Community Water Center

[3] Department of Water Resources. (2021). *Statement of Findings Regarding the Approval of the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan.* Pp. 26-27. (Internal citations omitted; emphasis added). Available for download at: https://sgma.water.ca.gov/portal/gsp/status.

GSP Chapter 2: Communications and Public Engagement

Community Water Center appreciates the statement found in Chapter 2 of the Langley, Eastside, Forebay, and Upper Valley subbasins: "[T]he success of the... Subbasin GSP will be determined by the collective action of every groundwater user."[4] Public engagement invites citizens to get involved in deliberation and to take action on public issues that are important to them. More importantly, it helps leaders and decision-makers have a better understanding of the perspectives, opinions, and concerns of citizens and stakeholders, especially those who are traditionally underrepresented. DWR's Guidance for Stakeholder Communication and Engagement acknowledges that public engagement, when done well, goes far beyond the usual participants to include those members of the community whose voices have traditionally been left out of political and policy debates.[5] Additionally, as part of a Strategic Planning Review, SVB GSA has recently recognized an overrepresentation of agricultural interests in its GSP formation process and voiced interest in balancing its representation. In this light, we offer the following recommendations:

- **Specify which outreach strategies will be used to reach underrepresented communities and disadvantaged communities.** The proposed goals for communication and engagement actions and strategies in this chapter are in some senses robust, but lack important details to ensure that all beneficial users, especially underrepresented communities and disadvantaged communities, will have access to all of the resources that are being proposed. It must be noted that underrepresented communities and disadvantaged communities may not have access to the internet, therefore they may not have access to the online resources on either the SVB GSA website or through social media. Additionally, in the case that they do have access to the internet, they may lack knowledge or familiarity regarding how to access the online resources.
- **Fast-track stakeholder outreach efforts in order to meaningfully engage beneficial users throughout the basin in the GSP development process currently underway.** SGMA specifically requires GSAs to "encourage the active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin *prior to and during the development and implementation of the groundwater sustainability plan."*[6]
    - Based on our review of the language in Chapter 2 of the Subbasin GSPs, it seems like the outreach and engagement strategies outlined in Section 2.7, which are specific to the underrepresented communities and disadvantaged communities in the Basin, are to be put in place after the GSP is submitted in 2022.
    - This delay would result in little to no participation or input from these communities during the GSP development process currently underway. The regulations similarly require that a GSP summarize and identify, "opportunities for public engagement and a discussion of how public input and response will be used."[7] The GSA thus must engage,

[4] SVB GSA (2021). *Subbasin GSPs Draft - Chapter 2: Goals for Communication and Public Engagement.* P. 10 (in all drafts). Available at: https://svbgsa.org/subbasins/.

[5] DWR (2018). *Guidance Document for Groundwater Sustainability Plan: Stakeholder Communication and Engagement.* Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Assistance-and-Engagement/Files/Guidance-Doc-for-GSP---Stakeholder-Communication-and-Engagement.pdf.

[6] Water Code §10727.8. (Emphasis added).

[7] 23 CCR §354.10(d)(2).

"diverse social, cultural, and economic elements of the population within the basin."[8] SGMA Regulations recognize that failure to engage adequately with a diverse cross-section of the public undermines the likelihood that a GSP will avoid undesirable results and meet its sustainability goal.[9]

- **Provide a strategy for how to reach stakeholders with limited or no SGMA knowledge.** In Subbasin GSPs' Section 2.6.3, SVB GSA acknowledges that there is a "variety of audiences targeted within the Basin whose SGMA knowledge varies from high to little or none." However, no strategy is provided for how those with no knowledge will be reached. This chapter should be modified to include more details on how and what additional strategies will be implemented to ensure that SVB GSA is reaching all beneficial users. We recommend the following approaches:
    - **Include more grassroots-based approaches, which are critical to actually reaching stakeholders and fulfilling the GSA's goal.** One of the goals of the CPE Actions which we strongly support is to "invite input from the public at every step in the decision-making process and provide transparency in outcomes and recommendations." However, based on the communication/ outreach strategies mentioned in the chapter, efforts fall short of inclusivity. The general public does not always have access to certain resources like the internet, and even if they do have access they may not know how to use social media, use email, or browse the web.
    - **Document and continue the policy of providing translation services at public meetings and of providing bilingual (English and Spanish) information and materials on the website, via email, and paper mail.** The Dymally-Alatorre Bilingual Services Act requires that public agencies serving over 10% of non-English speaking constituents provide appropriate translation services.[10] At a minimum, translated information should be provided during Plan updates and prior to critical decisions. In particular, the submitted GSP released during the formal comment period should include bilingual materials highlighting key summaries of the GSP. Critical decision points also include the adoption of groundwater fees, the approval of new groundwater projects or management actions, and decisions around pumping restrictions.
    - **Consider inserting short notices in water bills and/or community newsletters on a monthly basis (notices should include key messages, visuals and information that is relevant to the average water user).** These notices must be translated as described above.
    - **Specify how and when the accessible and culturally responsive GSA materials mentioned in Section 2.7 will be developed to communicate impacts of groundwater management on local water conditions and how they will be delivered or made available to URCs and DACs that don't have internet access.** Accessibility includes appropriate visual content and translation.
    - **Consider using USPS every door direct mail (EDDM) to send out educational materials and updates to all stakeholders.** This tool can be used to map ZIP Code(s) and neighborhoods, it also has a filter feature that lets you filter by age, income, or

[8] DWR (2018). *Guidance Document for Groundwater Sustainability Plan: Stakeholder Communication and Engagement.* P. 1. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Assistance-and-Engagement/Files/Guidance-Doc-for-GSP---Stakeholder-Communication-and-Engagement.pdf.

[9] 23 CCR §355.4(b)(4).

[10] California Government Code §7290.

household size using U.S. Census data. This tool can be helpful to reach stakeholders that don't have internet access.

- **Clearly identify and utilize existing community venues (on a monthly basis if possible) for community meetings, workshops, and events to provide information**. For example, the GSA could hold educational workshops during water board and school district board meetings, or after church services. Venues should be carefully selected in order to meet the needs of the targeted audience.
- **Clearly identify radio channels, social media avenues, websites, and other media outlets readily accessible to the community**. The submitted GSP should be revised with a policy requiring a broader outreach effort in the near future, with bilingual outlets.
- **Specify a timeline to work with key community leaders or trusted messengers on at least a monthly basis to distribute information and encourage community participation.** Venues for such leaders to share information could include churches, civic groups, clubs, non-profit organizations, and schools.
- **Consider hosting Spanish-only outreach meetings, as they can be more effective in transferring knowledge and receiving feedback.** It can be a challenge to provide real-time translation of technical groundwater terms and concepts in a way that is understandable and promotes participation, so it may be appropriate to conduct a meeting entirely in Spanish so that participants can be fully immersed in the discussion.
- **Consider hiring a bilingual Stakeholder and Outreach Communication specialist as part of the SVB GSA staff.** As expanding the GSAs audience reach and maintaining a robust stakeholder list of interested individuals, groups and/or organizations is a good step to ensure that the general public is informed about the GSA's activities, it may take a lot of time and effort to develop a clear methodology to conduct focused outreach to obtain a representative list of all stakeholders (more inclusive of just those who engage online) and make sure they stay informed and engaged.

GSP Chapter 9: Projects and Management Actions

Projects and Management Actions should benefit the basin and all beneficial users. While determining how those benefits will be distributed based on the nature of different projects and actions, and who should bear the associated costs, the SVB GSA should keep in mind the **"polluters pay" principle,** in combination with the **"users pay for benefits" principle**. While it makes sense to associate local benefits with local cost-share, drinking water users should not be put into the position of shouldering additional costs to protect their basic Human Right to Water. Domestic water use has not led to overdraft conditions, as evidenced by the statutory designation of "de minimis" use. Nor should benefits be distributed based on which interested parties can most easily fund a project, but rather towards the overall sustainability of the basin and equity of benefits among beneficial users.

Recharge Projects (Direct or Indirect)

We offer the following overarching comments regarding Recharge Projects in the Subbasin GSPs:

- **Assess constituents in the ground before using land for recharge, to avoid further contamination.** Reference the Groundwater Recharge Assessment Tool (GRAT) developed by Sustainable Conservation.[11]
    - On-farm recharge has the potential to further spread contaminants. Soil contaminants should be measured before dedicating the land to recharge purposes. "Short-term" impacts on domestic wells due to recharge efforts, which can include increased leaching of certain contaminants such as uranium, or displacement of contaminant plumes, should be mitigated in order to minimize the harm to beneficial drinking water users, and to replace water sources if compromised.[12]
- **Implement recommendations from our previous comment letter regarding Section 5.4, as they are also pertinent to successful recharge management**:
    - "**[I]nclude a specific discussion, supported by maps and charts, of the spatial or temporal water quality trends for all constituents that have been detected in the subbasin and may affect drinking water beneficial users, as required under 23 CCR § 354.16(d).** This section should include water quality data (both in map and tabular form) for all constituents (where available) with primary drinking water standards that have been detected in the subbasin including, but not limited to, nitrate, 123-trichloropropane, hexavalent chromium, arsenic, uranium, and perchlorate for all public drinking water wells, state and local small water system wells, and private domestic wells. It is especially important for all groundwater stakeholders to be able to understand and visualize the location of contaminant hotspots throughout each subbasin.
    - **Present maps and supporting data for all constituents of concern.** The review of water quality data in the groundwater conditions section of the draft Section 5.4 in the subbasin GSPs is focused primarily on nitrate. The GSPs identify numerous constituents that have been detected in groundwater above drinking water standards, but, with the exception of nitrate, do not present this data spatially. Even though the subbasin GSPs set water quality minimum thresholds for additional constituents (See Tables 8-4 and 8-5), the supporting data is not all presented, and no analyses of spatial or temporal water quality trends are presented. This does not present a clear and transparent assessment of current water quality conditions in the subbasin with respect to drinking water beneficial use (23 CCR § 354.16(d)).[13]
- We appreciate the identification of multi-benefit improvements to streams, and agree that slowing the speed of groundwater in its course of movement is a useful way to increase recharge. Such improvements to multi-benefit streams are a cost-effective and low-harm recharge method.

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[11] Sustainable Conservation. *Groundwater Recharge Assessment Tool.* https://suscon.org/wp-content/uploads/2016/08/GRAT-Summary-8-2017.pdf.

[12] Community Water Center and Stanford University (2019). *Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium*. Available at: https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896.

[13] Community Water Center and San Jerardo Cooperative, Inc. *Comments on the Draft Salinas Valley GSP Chapters 1-8 for the Langley, East Side, Forebay, Upper Valley and Monterey Subbasins.* (April 2021). P. 7. On file with SVB GSA and available at: https://drive.google.com/file/d/1wH7wvCMmQd4bu_PIri5o66_y5caW9ti7/view.

Reoperation of Reservoirs

We offer the following overarching comments regarding Reoperation of Reservoirs projects:

- **Conduct holistic cost-benefit analyses for large-scale infrastructure projects such as the MCWRA Interlake Tunnel and Spillway Modification, taking into account the specific benefits that projects will or will not confer on underrepresented communities and DACs, including the San Jerardo Cooperative in the Eastside Subbasin.**
    - Benefits should be equitable and take into account how different climate projections would impact the potential benefits from such a project in the case of little to no rainfall.
    - Cost-benefit analyses should also consider alternatives that could provide affordable long-term benefits.
- **The MCWRA Drought TAC should ensure that all beneficial water users are considered, and that drinking water needs are particularly protected from harm during current and future droughts, in line with the Human Right to Water.**

Management Actions

Conservation and Agricultural BMPs

- **Best Management Practices (BMPs) should utilize the latest technologies and take advantage of opportunities to modify agricultural pumping needs in order to provide overall groundwater basin benefits for all beneficial users.**
- **BMPs should also be used as a mechanism to improve or stabilize groundwater quality by using evapotranspiration (ET) data with soil moisture sensors and soil nutrient data to promote efficient irrigation practices and limit the application of synthetic fertilizers.**
- **BMPs should include best available science, including climate-smart approaches and nature-based solutions which have been recognized on state, national, and international levels.** For example, while written with the Central Valley in mind, FoodFirst's *Healthy Soils, Healthy Communities* outlines the following strategies and benefits which can also be applied to the Central Coast:
    - **Soil organic matter can reduce soil fumigant emissions** – Pesticides applied directly to soils form short-lived climate pollutants, and contribute to air and water pollution. Increased soil organic matter can reduce fumigant emissions and reduce the need for fumigants in the first place.
    - **Soil organic matter slows water contamination** – Synthetic fertilizer and pesticides have contaminated drinking water in the Central Valley over the last 70 years. Soils higher in organic matter leach fewer pollutants, including nitrates and pesticides. Soils high in organic matter also require less synthetic fertilizer to produce a crop. Using compost instead of synthetic fertilizer can reduce nitrogen loads in the Valley. Over time, increased soil organic matter and riparian restoration could help reduce groundwater contamination.

- **Composted manure from dairies could be a source of soil organic matter** – Concentrated manure from industrial dairies is a major local air quality and water quality issue. If that manure were composted, it could become a source of valuable nutrients and soil organic matter instead of a pollutant, and help displace the use and manufacture of synthetic fertilizers.
- **Composting farm waste could prevent black carbon emissions** – Instead of burning orchard waste, another local air pollutant, mulches and composted farm waste could be a source of soil organic matter for farms and rangelands.
- **Rural workforce development and wildfire management** – From the Conservation Corps, to ecological restoration, nursery stock production, wetland management and fire prevention, there is a lot of work to do to conserve and increase terrestrial carbon on public and private lands. This is an opportunity to both train and employ young people with low-to-moderate incomes and in communities of color in natural resource and agricultural management.
- **Carbon-friendly practices can support small scale and immigrant farmers** – Public support for carbon-friendly practices could help make small to mid-scale and immigrant farmers more resilient and boost their bottom line through a combination of financial support for carbon-friendly practices and more stable land access. These programs will have to be accessible to small scale farmers and take into account chronic issues around access to land, credit and technical assistance.
- **Healthy food systems in the San Joaquin Valley** – Soil carbon is part of a much larger project to re-design food systems that better support people and the environment in the San Joaquin Valley.[14]

Fallowing, Fallow Bank, and Agricultural Land Retirement

- **Dewatered drinking water wells or migration of contamination plumes should be considered as factors when deciding where to incentivize targeted agricultural fallowing or land retirement, and should trigger pumping restrictions in affected areas as necessary.** This approach is further elaborated in the Drinking Water Well Impact Mitigation Framework[15], which has been shared with the GSA and is in the process of being partially integrated into another section of the Subbasin GSPs.

Forebay Pumping Technical Advisory Committee (TAC)

- **Quantify the necessary demand reductions (pumping restrictions) in order to meet all minimum thresholds in the short and long-term, including in dry conditions. Parameters for pumping restrictions in times of widespread water shortages should be decided ahead of time**

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[14] Food First- Shattuck, et al. (April 2017). *Healthy Soils, Healthy Communities: Opportunities to Bridge Environmental Justice and Soil Carbon Sequestration*. P. 3. Available for download at: https://foodfirst.org/publication/healthy-soils-healthy-communities-opportunities-to-bridge-environmental-justice-and-soil-carbon-sequestration/.

[15] Self-Help Enterprises, Leadership Counsel for Justice and Accountability, Community Water Center (2020) *Framework for a Drinking Water Well Impact Mitigation Program*. Available at: https://static1.squarespace.com/static/5e83c5f78f0db40cb837cfb5/t/5f3ca9389712b732279e5296/1597811008129/Well_Mitigation_English.pdf.

as part of a publicly-informed, adaptive management approach. Decisions around pumping regulation should be made as part of GSP development and not relegated to a later decision-making body which will be inherently less accountable to the public than SVB GSA's current Committees and Board. It will not be sufficient to solely bring pumping decisions to the public after actions have already been designed and are at the point of being approved. Lack of public input for such a critical component of the GSA's management is especially troubling in the negative—if action is not being taken.

- **As part of an adaptive management approach, pumping restrictions should be implemented by the GSA in a timely way so as to prevent harm to beneficial users, particularly vulnerable drinking water users and DACs.** As currently proposed, there is no set criteria for when or to what extent pumping restrictions would be implemented, except for the general outline that they may go into effect in the summer months. The timeline for the Ad Hoc group to be summoned, create a plan, and put that plan into action is simultaneously compressed (planning should occur ahead of time, as the comment above stresses), and delayed—pumping should be curtailed in response to on-the-ground conditions, which may show stress much earlier than the summer months when domestic wells are potentially already going dry due to insufficient groundwater levels.

SMC Technical Advisory Committee (TAC)

- **Create management zones with pumping restrictions in areas with vulnerable drinking water wells.**
- **The SMC TAC should consider and recommend projects and management actions that mitigate groundwater quality degradation for drinking water users due to GSA actions, including impacts resulting from over-extraction under GSA management, as was clarified in DWR's 180/400ft Aquifer Determination Letter on pages 26 and 27.**

Pumping Allocations and Control

- **Quantify demand reductions necessary in order to meet all minimum thresholds in the short and long-term, including considering water quality impacts.** Designing a feasible and effective allocation structure requires thorough groundwater elevation data as well as a comprehensive, ongoing assessment of the interrelated effects of SMCs on one another. Pumping allocations must be responsive to groundwater conditions throughout the basin and avoid undesirable results.
- **Consider hybrid allocation systems which account for de-minimis users, regardless of homeownership status, to ensure sustainable yields for all beneficial users.** Langley GSP proposes such a hybrid allocation system in which de-minimis users are included within the estimated sustainable yield. This approach will provide a more complete picture of groundwater use within the basin, to inform groundwater management decisions.

Floodplain Enhancement and Recharge

- **Floodplain restoration should consider contaminants in any area selected for recharge to avoid transport of any contamination plumes into the aquifer.**

Implementation Projects

Groundwater Elevation Management System (GEMS) Expansion

- **Include data from more drinking water wells, including small water system wells and domestic wells, in order to have a sufficiently representative monitoring program.**

Water Quality Partnership (formerly Domestic water partnership)

- **Integrate key components of a Drinking Water Well Mitigation Program Framework in order to protect drinking water users from losing access to their drinking water during GSP implementation.** We appreciate that SVB GSA has begun this process of incorporating concepts from the Mitigation Framework, and we plan to offer further information including a presentation to the Committees and Board.
- **Integrate water quality considerations across planning and implementation.** Groundwater quality in the Subbasins can be influenced by pumping and the way groundwater is managed. This is of particular importance for the San Jerardo Cooperative who has experienced increases in nitrate and arsenic in their well, as highlighted in our cover letter and previous comments.[16]
    - Support for this recommendation is evidenced by Recommendation #5 of DWR's 180/400 GSP Determination.
- **Fill previously identified water quality data gaps in baseline information and the monitoring network.**
    - DWR assesses water quality monitoring in the 180/400ft Aquifer as follows: "The monitoring network to evaluate degradation of groundwater water quality is based on three existing water quality regulatory programs operating in the Subbasin: Monterey County's small community water system wells program, the State Water Resources Control Board's public supply well program, and the Central Coast Water Board's Irrigated Lands Regulatory Program. The Plan proposes to use four sets of wells that are routinely sampled under these programs. Within each set of wells, a specific set of constituents of concern will be monitored. In total, the monitoring network consists of 136 small community water system wells, 51 public supply wells, and a currently unknown number of domestic and agricultural wells from the Irrigated Lands Regulatory Program. The specific number of Irrigated Lands Regulatory Program wells will be finalized when the Central Coast Water Board adopts Agricultural Order 4.0 (anticipated in 2020). The Plan identifies the lack of well construction information (e.g., the depth of well screens or the total depth of the well) for many groundwater quality monitoring wells as a data gap. The implementation chapter of the Plan simply states that "[d]uring implementation, the SVBGSA will obtain any missing well information, select wells to include in monitoring network, and finalize the water quality network." Department staff recommend the SVBGSA provide updates on the

[16] Community Water Center and San Jerardo Cooperative, Inc. *Comments on the Draft Salinas Valley GSP Chapters 1-8 for the Langley, East Side, Forebay, Upper Valley and Monterey Subbasins.* (April 2020). Pp. 4-5. On file with SVB GSA and available at: https://drive.google.com/file/d/1wH7wvCMmQd4bu_PIri5o66_y5caW9ti7/view.

progress toward filling this data gap in its annual reports and that more details be provided in the first five-year assessment of the Plan."[17]

Localized Groundwater Elevation Triggers

This implementation project is an important component of the Subbasin GSPs, for tracking and responding to impacts due to droughts and overdraft. We recommend:

- **Integrate technical assistance into this program, facilitate access to resources through a collaboration with state agencies and/or directly administer impact mitigation funding.**
    - Tracking instances of dry or depleted wells and linking impacted beneficial users to information about potential available resources is a positive step, however services such as directing DACs and other impacted drinking water users to apply for funding would only be minimally helpful while those households are experiencing a water shortage crisis. The GSA's efforts to respond to impacts due to low groundwater elevations should go further in order to be effective. Such services should include reducing pumping in areas where groundwater supply shortages are being exacerbated by over extraction, actively facilitating coordination between residents and assistance programs, and potentially providing a conduit to state funds directed towards water resiliency—a multi-billion dollar drought & water resiliency package is currently being finalized in the State Legislature.

Well Registration

- **We reiterate our recommendation that SVB GSA require all wells to be metered and charge fees based on the amount of water pumped, to pay for future projects and incentivize voluntary reductions.**

Support Protection of Areas of High Recharge

- **Develop criteria for recharge projects that prevent unintended impacts to drinking water.**
- **For all recharge projects, evaluate whether recharge could have any unintended consequences such as moving contaminant plumes to wells that are currently not contaminated, and closely monitor water quality in areas affected by recharge.**
- **Encourage use of low-impact cover crops where water is captured at the site of precipitation.** Roots in the soil help to capture more water, clean the water source, and maintain healthy soils so that less fertilizer/pesticide is used, as evidenced in organic and regenerative agricultural practices. Cover crops and compost cycles, as well as chicken manures or natural organic-matter fertilizers can also keep nitrogen in the soil longer, providing benefits to crops and keeping nitrate out of groundwater).

New Water Supply Projects

- **Quantify which combinations of projects could address projected overdraft and what the costs of those combinations would be.** With high costs, permitting and other challenges, there is a

[17] Department of Water Resources. (2021). *Statement of Findings Regarding the Approval of the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan.* Pp. 30-31. (Internal citations omitted). Available for download at: https://sgma.water.ca.gov/portal/gsp/status.

high degree of uncertainty whether each project can be implemented. As written, it is difficult to evaluate how feasible it is to address overdraft via the options provided.

  - For example, in the Eastside GSP draft, Table 6-15 in Chapter 6 projects 20,400 AF/yr overdraft in 2030 and 20,500 AF/yr overdraft in 2070. Table 9-8 in Chapter 9 lists projects that could mitigate overdraft. However, Table 9-8 only quantifies benefits for some of the projects, and often for the Salinas Valley basin as a whole as opposed to the Eastside Subbasin. The table also omits costs. This information will be critical for planning and implementing projects to address overdraft.

- **Factor in known uncertainties when determining which projects to prioritize in implementation.** At the top of pg 9-24 for 11043 Diversion at Chualar, and also for 11043 Diversion of Soledad, the GSP states that the groundwater model used to estimate Salinas River flows "does not account for the uncertainty surrounding greater variations in precipitation, timing, intensities and subsequent flows." The model should provide a sensitivity analysis for potential conditions, particularly in light of large variations between climate change predictions in the region.
  - This recommendation is also in line with DWR's 180/400 Determination which instructs SVB GSA to determine how they will define "average hydrogeological conditions,"in Section 4.3.3.2 and the overarching statutory requirement to continually update the GSP to meet the statutory requirement to use the "best available information and best available science."[18]
- **Where projects overlap between subbasins, clarify what effects the project will have across subbasins.** For example, provide clarity around what effects the Eastside Irrigation Water Supply Project (or Somavia Road Project) will have on the 180/400 Foot Aquifer Subbasin where water will be pumped from. Account for any effects in the 180/400-Foot GSP in ongoing updates, including pertinent sections of Annual Reports.

GSP Chapter 10: Groundwater Sustainability Plan Implementation

Our overarching recommendations for GSP Implementation and Updates are as follows:

- **Take interim actions while working toward long-term sustainability.**
- **Address missing data for domestic wells as recommended by DWR:**
  - "[T]he GSA should inventory and better define the location of active wells in the Basin and document known impacts to drinking water users caused by groundwater management … in subsequent annual reports and periodic updates."[19]
- **Continue to include the small water system data from the County as a data gap in the subbasin GSPs, as it was in the 180/400 foot Aquifer GSP.** As Tom Berg, a DWR representative, indicated at the SVB GSA Advisory Committee meeting on June 17, 2021, the specific decisions made during the formation of the 180/400 foot Aquifer GSP allowed for it to receive DWR's approval. Mr. Berg recommended that the SVB GSA review the three other letters that DWR released on

[18] 23 CCR § 355.4(b)(1).

[19] Department of Water Resources. (2021). *Statement of Findings Regarding the Approval of the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan.* P. 24. Available for download at: https://sgma.water.ca.gov/portal/gsp/status.

June 3, 2021, to better understand the parameters of what is required for a GSP to receive approval.

- **Engage underrepresented communities immediately.** As this section acknowledges, underrepresented communities have little or no representation in water management and have often been disproportionately less represented in public policy decision making. It's important to note that their engagement and input around their main concerns must be noted and considered during routine GSA proceedings. Their input should be solicited and received while the GSP formation process is still active.
- **Continually update the GSP and Implementation strategy as best available science evolves.** Meaningful updates to data sources and interpretation should occur at a minimum on a yearly basis, time with the Annual Reports.

Comprehensive River Management

125 Letters of Support

Braga. 121720
Antle. 121820
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Bramers. 121820
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Garcia Santos. 121820
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Pereira. 121820
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Wiley. 121820
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Almond. 122120
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De Lorimier. 122120
Harmon. 122120
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Salas. 122120
Smith. 122120
Dave. 122220
Jefferson. 122220
Lewis. 122220
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Trebino. 122220
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Armstrong. 122320
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Bobian. 122320
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Jeff. 122320
Lara. 122320
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Nunes. 122620
Knapp. 122820
Arnaudo. 122920
Romans. 122920
Borel. 123020
Classen. 123020
McIntyre. 123020
Anecsto. 123120
Latasa. 123120
Rianda. 123120
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Transue. 123120
Odello. 010421
Rava. 010421
Soares. 010421
Wayland. 010421
Rava. 010521
Carter. 010621
Rice. 010621
Rice. 010621
Rice. 010621
Scattini. 011021
Secondo. 011121
Alameda. 011221
Gularte. 011221
Orradre. 011221
Tarp. 011221
Marihart. 011321
Marihart. 011421
Giannini. 011521
Gularte. 011521
Bunn. 011721
Hitchcock. 011821
Duflock. 011921
Giudici. 012121
Gularte. 012121
Gularte. 012121
Wiley. 012121
Pomo. 012221
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STAN BRAGA

printed name

12/17/20

date

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Carson Braga

printed name

12-18-2020

date

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Marshall Brazil
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12-18-20
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Rod Bregue
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CHRIS BRAGA

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12/18/2020
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Mercedes Bravo.
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David Bunn

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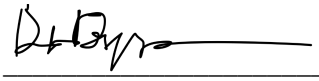

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Allan Clark
printed name

12/18/20
date


signature

Fontes Farms
PO Box 3008
Salinas, California 93912-3008
Telephone (831) 424-6151
gfontes@fontesfarms.com

December 18, 2020

Salinas Valley Groundwater Sustainability Agency
P.O. Box 1350
Carmel Valley, CA. 93924

RE: Salinas River Maintenance

Board of Directors

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8. Preventative flood control and property damage mitigation.

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Thank you

George Fontes

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Ivonne Garcia Santos — printed name

12/18/20 — date

signature

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Deidra Gonzales

printed name

12/18/20

date

Deidra Gonzales

signature

AMERICAN TAKII

American Takii, Inc. 301 Natividad Road Salinas, CA 93906 Phone: 831-443-4901 / FAX 831-443-3976 www.takii.com

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printed name Kelly Gularte - Production Manager

date 12-18-20

signature Kelly Gularte

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KENT HIBBARD
printed name

12/18/2020
date

signature

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12/18/2020
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Ross Mowell

printed name

12-18-2022

date

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printed name

12-18-20
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Colby Pereira — printed name

12/18/2020 — date

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Gary Thompson
printed name

12/19/20
date

Gary Thompson
signature

AMERICAN TAKII

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printed name Steve Wiley - GM/COO

date December 18, 2020

signature St R Wily

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Mark Mason — 12/19/20

printed name — date

signature — Per Huntington Farms

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Ann R Mymre

printed name

Dec 19 2023

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Burt [illegible] 12/31/[illegible]

[illegible] Date

[signature]

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John Bailey Jack T — Dec 22, 2020

printed name — Bailey Co Inc — date

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printed name

date

signature

BOUTONNET FARMS
SINCE 1935

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TROY BOUTONNET
printed name

12/21/20
date

signature

10855 Cara Mia Parkway, Suite B Castroville, CA 95012
Phone 831/633-4977 Fax 831/633-4577

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D'Arrigo Bros — 12-21-20

printed name — date

Stephen de Lorimier

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Kyle Harmon

printed name

12/21/2020

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Tony Tezzini
printed name

1/25/21
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Trace L. Hart
printed name

12/21/2020
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Sea Mist Farms

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10855 Ocean Mist Parkway, Suite C ☐ Castroville, California 95012 ☐ Office (831) 633-2144 ☐ Shop (831) 633-3211

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Dale D. Huss

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Jessica Velasquez
printed name

12/22/2020
date

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Kimberly Armstrong
printed name

Dec. 23, 2020
date

Kimberly Armstrong
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printed name

12-23-20
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BRIAN BABIAN
printed name

12-28-20
date

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[redacted] 12/25/22

printed name date

[redacted]

signature

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printed name

12-23-2020
date

Brett Davis
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Albert I. DANI
printed name

10/25/20
date

Albert I. Dani
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printed name

6-23-21

date

Jane E. Dean

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10/23/2020
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23-12-2020
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Lark D Harvin II — printed name

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Lark D Harvin — signature

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Wiley Wearne

printed name

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SHARON HORNLEIN

printed name

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Sharon M. Hornlein

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SAF

printed name

12-23-2020

date

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Robert Long

printed name

December 23, 2020

date

Robert Long

signature

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Jason Maraviova
printed name

12-22-2020
date

signature

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Eugene Pleskett
printed name

December 23, 2023
date

Eugene Pleskett
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Gwen Pharaett — printed name

12/23/02 — date

Gwen Pharaett — signature

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TRACY PLASKETT
printed name

12-23-20
date

signature

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Kristine Plaskett — printed name

12-23-20 — date

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printed name

12/23/20
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Emily Tave
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TOM WILLOUGHBY

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Chase Barbree

printed name

12-29-20

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[signature]

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Brent Comatser
printed name

12/24/2020
date

Brent Comatser
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printed name

12-21-20
date

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[illegible]
printed name

12-20-20
date

[illegible]
signature

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AARON MCCULLOUGH
printed name

12-29-2020
date

signature

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Floyd Child

printed name

Floyd Child

signature

12-2-1-2016

date

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Matthew Owens
printed name

12-24-20
date

Matthew Owens
signature

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Haylie Corvi
printed name

12/24/2020
date

Haylie Corvi
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LINDA YAP
printed name

12-25-00
date

Linda Yap
signature

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printed name

12-25-20

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Ryan Yap

signature

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DANNY YOP
printed name

12/25/20
date

Danny Yop
signature

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Kristina Nunes
printed name

12/26/20
date

signature

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Nicole Knapp

printed name

12/28/2020

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Paul Arnaudo
printed name

2/22/20
date

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John Rowan

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Tim Bell

printed name

12/30/20

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[redacted] 12/30/20

printed name date

[redacted]

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PETE ARRIETTO
printed name

12/31/20
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Stephen Latasa
printed name

12/31/2020
date

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printed name

12/31/2020

date

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Neal Riorda

printed name

12/31/2020

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Neal Riorda

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Mike Treanor

printed name

12/31/2020

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Peter Odell

printed name

1-4-21

date

signature

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Tony Rowe II
printed name

01-04-2021
date

Tony Rowe II
signature

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Adam Scagel
printed name

1/4/2021
date

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F. Warren Hayford
printed name

1/24/21
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printed name

1-5-2021
date

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Lee Carter
printed name

1/6/21
date

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Brad Rice - Salinas Land Company
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1/6/21
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Brad Rice - California Orchard Co. 1/6/21

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Brad Rice - Smith - Monterey, LLC — 1/6/21

printed name — date

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Gregory M. Scattini
printed name

1/10/21
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ADAM SECOMBO
printed name

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ANTONE ALMEIDA
printed name

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Wayne Gulacte — 1/12/2021

printed name — date

Wayne Gulacte

signature

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Martin Orradre

printed name

1-12-21

date

[signature]

signature

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William T. Tarp

printed name

1/12/2021

date

signature

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John R Marchant
printed name

1/13/24
date

John R Marchant
signature

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DAVID MARIHART
printed name

1/14/2021
date

David Marihart
signature

MARIHART FAMILY LLC

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Dirk Giannini
printed name

1-15-21
date

Dirk Giannini
signature

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Jynel Gularte
printed name

1/15/2021
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Christopher Bunn
printed name

1/17/2021
date

signature

General Farm Investment
Bunn / Yuki ranches

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JEFF HITCHCOCK
printed name

1/18/21
date

J Hitchcock
signature

HITCHCOCK FARMS, INC.
P.O. BOX 2266
SALINAS, CA 93902

January 19, 2019

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Melissa Duflock (property owner along the Salinas river)

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Francis Giudici
printed name Giudici Family Properties

Francis Giudici
signature

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Forrest Gabbert

printed name

1/31/2021

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Doris Gularte — printed name

1/21/2021 — date

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Joel Wiley
printed name

1/21/21
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Joel S. Wiley
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Jeff Rodas
printed name

1-22-21
date

signature

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Sean Pazzini
printed name

1/25/21
date

signature

Gmail

Emily Gardner <gardnere@svbgsa.org>

New versions of Forebay draft GSP Chapter 9 & 10 for your review

Steve McIntyre Sat, Jul 10, 2021 at 9:24 AM
To: Emily Gardner <gardnere@svbgsa.org>
Cc: Abby Ostovar <aostovar@elmontgomery.com>, Derrik Williams <dwilliams@elmontgomery.com>, Donna Meyers <meyersd@svbgsa.org>

Hi Emily et al,

Thanks again for all of your hard work preparing this document! Please find my comments below.

In table 9-1 B1 where it talks about the MCWRA D-TAC it states “Establish a….” Whereas in sections 9.4.6.5 and 9.4.6 it states that the D-RC already exist. It’s a small item but perhaps all three references should refer to the fact that it is already established and met?

In Table 9-3 regarding the benefits of the Interlake Tunnel it’s not clear whether those benefits are averaged over the entire timeframe the benefits were modeled or whether those benefits are only derived in the year(s) that the Tunnel actually operates. Given the fact a preceding paragraph states the tunnel only operates 68% of the time over the term of the model I think it’s important to footnote whether those benefits are averaged or specific to tunnel operation.

Thanks again!

Steve

Sent from my iPhone

On Jul 9, 2021, at 5:06 PM, Emily Gardner <gardnere@svbgsa.org> wrote:

[Quoted text hidden]
[Quoted text hidden]

Salinas Valley Water Coalition
33 El Camino Real • Greenfield, CA 93927
(831) 674-3783 • FAX (831) 674-3835

TRANSMITTED VIA EMAIL

Arroyo Seco Groundwater Sustainability Agency
Advisory Committee
Atten: Mr. Curtis Weeks, General Manager 14 July, 2021

Re: SVBGSA Forebay Subbasin GSP Version 3 Chapters 9 and 10

Dear Mr. Weeks;

We appreciate this opportunity to comment on the Forebay Subbasin GSP Version 3 draft Chapters 9 and 10, and in particular any specific comments pertaining to the Arroyo Seco Cone Management Area (ASCMA). We ask that you share/distribute our comments to your Advisory Committee, so they are afforded an opportunity to review and consider the comments prior to any final recommendation.

We offer the following comments for your consideration:

1. **General Comments on GSP:**

   a. Water Budget Development: The Forebay Subbasin GSP, including the section that deals with the ASCMA water budget, states that the historical and current water budgets were developed using a provisional version of the Salinas Valley Integrated Hydrologic Model (SVIHM) developed by the USGS. It also states that the future water budgets are being developed using an evaluation version of the Salinas Valley Operational Model (SVOM), developed by USGS and MCWRA. This section includes a footnote stating that the model and/or model results are preliminary or provisional and are subject to revision. The model has not received final approval, no warranty, expressed or implied, is made by the USGS as to the functionality of the model and related material.

   The SVBGSA continues to state it is using this model as it is the best science available. This is just not correct. This is not the best available science for establishing water balances of the Forebay and Upper Valley Subbasins and the Arroyo Seco Cine Management Area. There are other models and water balance calculation methods that have been shown to be more accurate and are available for use by the SVBGSA.

   The SVBGSA states that the USGS model has a recognized error of 30%+ for the model output for estimated groundwater pumping. This is unacceptable and until and unless the model calibration shows more accurate model runs, the outputs from such runs should not be published in any quasi-regulatory document, such as the GSPs, irrespective of the disclaimers included therein. The bottomline is that a provisional model which is not

properly calibrated, nor publicly released, should not be used as the basis for any subsequent management action or project, and/or used to develop the basin yield for the Forebay Subbasin and/or the ASCMA.

b. We appreciate the changes made in the GSP to acknowledge and recognize the distinction between the ASCMA and the remainder of the Forebay Subbasin. This is an important distinction as it is the basis for the foundation for the development and hence management, of the ASCMA. Any projects and/or management actions that may be need to assist the larger Forebay area in maintaining its sustainability, may not be needed by the ASCMA; and vice versa.

Chapter 9

1. The GSP recognizes that the Forebay, including the ASCMA, Subbasin is in balance and therefore any management actions or projects are only needed that will assist the Forebay and ASCMA in maintaining sustainability. To this end, shouldn't the focus of the GSP be on implementing management actions that will maintain the sustainability?

2. **Section 9.3, page 9-5,** states: "Projects and management actions currently being pursued by other agencies are considered sufficiently established and will be pursued independently of this GSP." This statement recognizes that other agencies are pursuing several projects and/or management actions and that the SVBGSA is not, and will not be, the lead agency. Therefore, rather than including a lengthy discussion of each project, their costs and potential benefits, it seems the SVBGSA should focus on their role of evaluating and analyzing the different projects/management actions as they are developed to identify any adverse impacts to their ability to maintain sustainability in the subbasin(s), and/or the need to assist in maintaining this sustainability. The bottomline costs and benefits associated with any project will be discussed and identified in the associated Engineer's Report.

   It is premature to include a detail of costs and benefits for any projects or management actions to which the SVBGSA will not be the lead agency. It is appropriate for the SVBGSA to acknowledge these projects/management actions are in process and that they will be evaluated as to their effect/impact on the Forebay Subbasin's GSP. The stakeholders will rely on the SVBGSA to complete such an evaluation in an effort to maintain the sustainability of the basin.

3. **Section 9.4.1: Management Action A1: Forebay Sustainable Management Criteria Technical Advisory Committee**

   The formation of the SMC TAC is a good way to proceed in obtaining expert opinions and recommendations should the SMC thresholds be met. It is important that projects and management actions are developed with a foundation that uses hydrology and science. The utilization of technical experts in the manner discussed is important. However, it is also just as important that there is adequate and substantial stakeholder input. We recommend that this section be modified to include a stronger statement regarding the role of stakeholders in the development process of any projects or management actions that may be needed in the future.

4. **Section 9.4.1.6 Implementation Schedule:** This section states the SMC TAC will meet at least annually "unless the development of pumping restrictions is triggered." This section should be expanded to provide a greater understanding of 'what' the trigger is for pumping restrictions and 'how' and 'when' that trigger would be initiated so that the

stakeholders and decision-makers are fully informed. If these things are discussed and identified in another chapter of this GSP, it should be referenced.

5. **Section 9.4.6 Management Action B1: MCWRA Drought Reoperation:** This section, third paragraph, last sentence states: "These are in place ***until*** a Habitat Conservation Plan is completed." [emphasis added] This statement is not correct. The Standards and Guiding Principles adopted for the D-TAC specifically states the following:

   > **"**Documents and procedures developed by the D-TAC will be considered during development of the HCP. MCWRA will convene with stakeholders to determine if modifications to these drought procedures are warranted in light of the terms of the final HCP."

It is understood that the reservoir operations and recommendations of the D-TAC 'may' change with the development and adoption of the HCP, but ***the D-TAC standards, guiding principles and implementation procedures will remain in place unless modified by the HCP***. The GSP language should be modified accordingly.

6. **Section 9.4.8.3 Circumstances for Implementation:** This section states that this project "***will not proceed*** until the water rights and flow prescriptions from the HCP have been determined." [emphasis added] Chapter 10, section 10.6 states that the focus of implementation during the first 2-3 years will be in projects that reoperate the reservoirs. The water rights for the reservoirs are held by MCWRA and therefore any project associated with reoperation of the reservoirs will require the MCWRA to identify that project as a priority and the SVBGSA must rely on the MCWRA to move forward accordingly.

   The same is true for the HCP. The MCWRA is the lead agency for the HCP, but we are not sure the status of the HCP and if or how it is being currently being processed. The HCP is a heavily involved stakeholder process and to our knowledge that process has not begun and we anticipate it taking several years. It seems premature to begin some of the various work tasks identified until the HCP and water rights for the project(s) have been identified/resolved/secured and finalized.

7. **Section 9.4.9.2 Expected Benefits and Evaluation of Benefits:** As stated above, it is premature to present/discuss the potential benefits for a project, particularly the Interlake Tunnel project for the reasons stated above. To include Table 9-3 in the GSP only serves to provide false hope to some, and to further the concern of others that this project is moving forward without sufficient data and information.

Chapter 10

1. **Section 10.2, 'Underrepresented Communities':** how and where are 'underrepresented communities defined?

2. **Section 10.3, #4 Projects and Management Actions that Result in Reservoir Reoperation:** This section states that the "Drought TAC will likely be compatible with either the Interlake Tunnel or Winter Release project.." It is not clear what is meant by 'compatible' since to our knowledge neither project has yet to be evaluated. The Drought TAC will remain in place unless and until it is changed by the MCWRA as established with the TAC's standards and guiding principles.

   This section goes on to state that the SVBGSA will work with the MCWRA on the evaluation of any reservoir reoperation projects within the first 2 years of GSP implementation, and then lists a host of items that will need to be completed, including

water rights and permits. However, we don't understand why the SVBGSA would need to work with the MCWRA on these things since the SVBGSA will not be the lead agency, and rather they should be participating in the process in order to represent stakeholders and evaluating the projects as needed to protect and ensure that there are no impacts to the subbasin(s) ability to maintain sustainability.

3. **Section 10.3, #5 Other Projects:** The last sentence of the second paragraph states: "Projects and management actions will be approved by the Board of Directors and ***will be*** implemented in a coordinated manner across the entire Salinas Valley." [emphasis added]

   Not all projects need to, or should be, implemented across the entire Salinas Valley, as some may only need to be implemented in a specific subbasin. However, it is important that the projects and management actions are evaluated in a manner so ensure there are no adverse impacts to other subbasins. We recommend clarifying the statement to reflect this type of evaluation and action.

4. **Section 10.6 Implementation Schedule:** the first sentence of the last paragraph states: "The general implementation schedule for projects and management actions focuses on implementation actions and projects that result in reservoir reoperation for the first 2 to 3 years." This seems to assume that reservoir reoperations are needed as presented in the GSP, which are primarily the Interlake Tunnel and Winter Release with ASR. These are not projects the SVBGSA will be lead agency on, and therefore wouldn't their role be one to participate in the process and evaluate the projects as necessary to avoid impacts to the various subbasin(s) ability to maintain sustainability.

We thank the SVBGSA staff and consultants along with the committee members of the various subbasin committees, for their willingness to work with stakeholders to develop a GSP that can be supported by science and the facts, and there have been many positive changes because of this. However, there remains much concern regarding the model and the manner in which it will be use as the foundation to develop and implement the various projects and management actions. The Forebay Subbasin, including the ASCMA, is in balance and is sustainable. Let's work together to ensure that we maintain its sustainability.

Thank you for your consideration of the foregoing comments.

Sincerely,

Nancy Isakson

Nancy Isakson, President
Salinas Valley Water Coalition

Cc: Emily Gardner, Deputy General Manager
SVBGSA

Gmail

Emily Gardner <gardnere@svbgsa.org>

Problems with SVBGSA projects

Yahoo Mail <sangjames@yahoo.com> Tue, Jul 20, 2021 at 10:24 AM
Reply-To: Yahoo Mail <sangjames@yahoo.com>
To: [redacted]

Hello All,

Can you forward this email to all sub-basin commitee members and anyone interested in the groundwater sustainability problem? Can you also forward this letter to Landwatch and George Fontes of Salinas Valley Water Coalition?

The problem with the SVBGSA plans is that they are a solution for the sustainability of the entire basin and not for the individual wells. Sustainability means that the goal is make sure that the amount of water being pumped out of the ground is equal or less than the amount of water entering the groundwater in each individual sub basin. But the focus of the plans should be to increase the levels of each farmers well water level, because the minimum threshold and the measurable objective of each well is what will determine whether the SVBGSA or the County of Monterey will determine if they need to take action to close the wells that may be running dry. Even if the SVBGSA meets it's goals of sustainability for the sub-basin, individual wells may be running dry. So the goal should be to raise the well water levels for each well, not to just reach sustainability for each sub-basin.

For example in the Eastside sub-basin, a plan for managed aquifer recharge on individual land owners and a plan for flood plain soaking from the creeks are being planned, but even if this happens, this plan may not have an effect on wells that are a distance away. That means that the well water may not be replenished because the source of infiltrating water will not reach the well water source. Two other plans for groundwater recharge are a diversion at Chualar at a cost of $56,000,000.00 and a diversion at Soledad at a cost of $105,000,000.00. These will divert excess stream water . The problem with these two plans are that they do not have a way to connect this water with the individual wells. They will probably direct the water to a basin, which will connect to an aquifer and not to any particular well. This diversion of water will fill a large area of groundwater but not all wells. You have to realize that each well is at a different area and connected to different water sources. You can determine this because each well has a different minimum threshold and measurable objective. For example monitoring well (14S/03E-06R01) has a MT of -29.7 and a MO of -24.9, while monitoring well {14S/03E-25C02} has a MT of -65.4 and a MO of -42.2. This means that each well has a different water source and cannot probably be replenish by delivering water from a far away infiltrating water basin. The other problem with these diversion plans are that they are dependent on excess stream water before there is allowed any diversion. If there is no excess water, there is no water being redirected! There are two other plans Eastside irrigation Water Supply Project at a cost of ($140,000,000.00) and a Surface Water Diversion from Gabilan Creek at a cost of ($10,000,000.00). Both have the same problem of delivering to the individual well. In the foreseeable drought that we have, I do not see these as reliable sources of water!

The Eastside Sub-basin is the most overdrawn of all the sub-basins. I presented a plan which I believe will solve the delivery of water and the supply of water to the wells at a greatly reduced cost. My plan involves the harvesting of rainwater during the rainy season of Monterey County during the wettest months of December, January and February. The rainy season of Monterey County involves the 5 months of November to March. Our rainfall varies between 5 inches to 30 inches per year. On an average we should be able to get 12 inches per year. In the Eastside Sub-basin their are 34,000 irrigated acres. The sub-basin is short about 10,000 to 20,000 acre feet of water per year. During wet season, when the farmers are not planting crops, they can subsoil plow their land to a depth of 24 to 36 inches. This will have the effect of capturing all the rainfall and prevent the precipitation from evaporating. The deeper the depth of plowing, the less evaporation. It is also important to subsoil plow close to their well, so that there is a better chance of this plowing to refill their well water. So if the farmer will subsoil plow at least 60 percent of their land during the wet season of December to February. They will capture enough rainfall to fill that 20,000 acre feet deficit for the basin. After the wet season is over, the farmer can plow his land normally and use it as he wishes. This strategy should work for any farmland whether you are in the Salinas Valley or the Central Valley. You may want to incentivize this in order to encourage the grower to do this strategy. In the Pajaro Valley, the growers are paid for the collection of rainwater by infiltrating basins. This plan will prevent fallowing of farm land, prevent the buying of farmland, prevent the reduction of economic activity and the lay off of farm workers! I hope this plan is accepted! [ref. You Tube video "Deep Soil Ripping for Water Conservation" by Megan Clayton]

The advantages of subsoil plowing to a depth of at least 24 inches in order to capture rainwater will achieve these goals: It will deliver water close to the individual wells in order to raise well water levels. It will be a yearly constant supply of water. It is cheaper than spending over $500,000,000.00 for all the plans presented to all of the sub-basins. It will incentivize the farmer to subsoil, if Monterey County or SVBGSA will reimburse him for the subsoiling. It may substantially raise the water aquifer levels and groundwater levels. Even all unirrigated lands may also be subsoiled in order to raise aquifer levels.

I want to address another issue. Land Watch presented a plan to stop the drilling of new wells in the deep aquifers. The Advisory Committee voted no and decided to do some more studies. George Fontes who represents the Salinas Valley Water Coalition, a group of growers of 80,000 acres in the Salinas Valley does not want this. I want to present a compromise . I think that we can allow them to drill new wells, but they have to agree to harvesting the rainwater at the method , that I suggested for The Eastside sub-basin. This will help replenish any water that will be pumped out of the deep aquifers.

Thanks to all for reading this!

James Sang sangjames@yahoo.com

ARROYO SECO GROUNDWATER SUSTAINABILITY AGENCY

599 Camino Real Greenfield CA 93927 | 831-647-5591

July 27, 2021

Board of Directors
Salinas Valley Basin GSA
1441 Schilling Place
Salinas CA, 93902

Subject: SVBGSA Forebay Subbasin GSP

Dear Members of the Board,

We provide the following comments with the intent to improve the continuing planning effort between both organizations in preparation of the Forebay Subbasin GSP. We also acknowledge the SVBGSA efforts to integrate our Implementation Agreement into the GSP. We offer these comments with similar partnership intent between our organizations.

Chapter 4 Comments

Section 4.4.1.1, 3rd paragraph. The fact that the Basin Fill Aquifer is thick in part of the Forebay Subbasin does not mean that its lower part is a separate hydrogeologic unit. The term "Deep Aquifer" originated in the 180/400 Foot Aquifer Subbasin to refer to aquifers below the depths of most production wells, which were commonly less than 700 feet deep at that time. In that subbasin, deep aquifers may also be in a different geologic formation (Purisima) underlying the Paso Robles Formation. Furthermore, the term "Deep Aquifers" has led to public misconception that there is additional yield associated with deep aquifers, which is not the case. In the Forebay Subbasin, the GSP text states that aquifer characteristics vary gradually with depth (Section 4.3.2, 2nd paragraph), with no mention of a discontinuity at depth.

As presented in the ASCMA, the characteristics of the deeper parts of the Basin Fill Aquifer is not viewed as a data gap. In the Greenfield area alone there are several wells 800-1,000 feet deep. Notably, those wells do not have poor water quality, which would be expected if they penetrated the marine Pancho Rico Formation.

The text should be changed to state that the Basin Fill Aquifer is a single hydrogeologic unit that increases in thickness from 200 feet near the eastern edge of the valley to slightly over 2,000 feet along the western edge from Greenfield northward. There is no need or basis to apply different terms for different depth intervals within the Subbasin.

Chapter 5 Comments

Section 5.2.2, 3rd paragraph. The text states that Figure 5-11 (actually 5-10) shows cumulative storage through 2019. The data in the figure only go through 2014. The truncation is material, because

interpretation of long-term storage change depends on whether the basin had fully recovered from the drought by 2019.

Page 5-16, 2nd paragraph. Using 1995 and 2019 as endpoints for a storage change calculation is highly misleading. This paragraph and figure should be omitted. Water levels were unusually high in 1995 and may have still been recovering from the drought in 2019. Consequently, storage was lower in 2019 than in 1995. The text implies that the basin is in overdraft with a long-term water-level and storage decline. This conflicts with Section 9.1, 1st paragraph, which states: "Groundwater conditions in the Subbasin, including the Arroyo Seco Cone Management Area (ASCMA), are currently sustainable." This is reiterated in Section 9.3, 2nd paragraph, which states: "The appropriate actions for Subbasin and the ASCMA, given its sustainable status and lack of groundwater elevation or storage declines, are management actions generally focused on mitigating drought conditions and consisting of policies or feasibility/planning studies."

Finally, the insertion of the Deep Aquifer paragraph and graphic at the end of the chapter are inappropriate (see comment section for Chapter 4).

Chapter 6 Comments

The water budget being presented in Chapter 6 of the Forebay Subarea GSP (July 2021 draft) uses a provisional version of the US Geological Survey (USGS) Salinas Valley Integrated Hydrologic Model (SVIHM). The GSP acknowledges provisional version of the SVIHM model has underestimated the historical pumping compared with the actual pumping data for the Forebay Subbasin as reported in the Monterey County Water Resources Agency's Groundwater Extraction Management System (GEMS) by over 30%.

The Hydrologic Model, FFM18, used by the ASGSA and refined by Todd Engineering, also underestimated pumping compared to the GEMS data but, by a much smaller margin of 10%. The ASGSA found the Arroyo Seco Cone Management Area was not over drafted and balanced sustainably under current and future demand projections. The Forebay Subbasin GSP also found the ASCMA and the Forebay Subbasin sustainable under existing conditions and projected future demands. Due to the model's margin of error, the SVBGSA has determined to use the GEMS pumping data as a provisional basin yield for the Forebay Subbasin and will use Sustainability Management Criteria (SMCs) to determine basin performance going forward.

Basin yield is not the only parameter that water budgets develop to quantify basin dynamics. For example, water budgets require a balance between inflows and outflows through the basin when the change in aquifer storage is near zero, which is the case over the long-term in the Forebay Subbasin. Therefore, there is an equal magnitude unidentified error in the GSP water budget reporting on water inflows into the Forebay Subbasin. Based on our technical review of the SVIHM there exists an underestimation of streambed recharge from the Arroyo Seco River in addition to the underestimated well extractions. As such the GSP continued reporting is ambiguous, misleading and, by its own acknowledgement, is not the best available science. The current draft acknowledges the pumping error (Section 6.3.2, page 6-19) but continues to assert that the SVIHM will be used to calculating water budgets. There is little basis for confidence in model results at this point. Until the model has achieved broad acceptance among peer reviewers and the public, the GSP should calculate water budgets by multiple methods and models and compare results for consistency.

Chapter 9 Comments

With multiple versions under development, it has been difficult to provide a comprehensive set of comments on the Management Action and Projects. The ASGSA does acknowledge the SVBGSA's effort to provide greater focus on the proposed suite of Management Actions to maintain the ASCMA and Forebay's sustainability. We are currently reviewing the most recent version which includes new changes similar to the Upper Valley Subbasin's GSP. The ASGSA will provide additional comments following our stakeholder review of that new version.

Thank you for the opportunity to comment on these documents and presentations. We are available for additional discussion of these issues and others at your convenience.

Sincerely,

Curtis V. Weeks
General Manager
Arroyo Seco Groundwater Sustainability Agency

Gmail

Emily Gardner <gardnere@svbgsa.org>

Version 4 of Chapters 9 & 10

Jason Smith Sat, Jul 31, 2021 at 11:16 AM
To: Emily Gardner <gardnere@svbgsa.org>

Emily,

I think the changed reflect what the sub basin has discussed being in a relatively sustainable state. Removing certain projects that may not be necessary for our sub basin but important for the overall basin or other sub basins is important for clarity. All sub basins would have a benefit but some of them need it more than others. The reoperation of the reservoirs could also benefit the whole basin and while being a management action that we would like to pursue. Of course all of these have many moving parts and other agencies and bodies that oversee them. That will all be vetted when and if these projects come to the table…but for purposes of the plans being completed in turned in, I feel these changes are good.

Thank you,

Jason

VALLEY FARM MANAGEMENT

Jason Smith
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TRANSMITTED VIA EMAIL

Salinas Valley Groundwater Sustainability Agency
Board of Directors

12 August, 2021

Dear Board Members;

This letter is submitted on behalf of the Salinas Valley Water Coalition ("Coalition") and is in response to preliminary comments to the Groundwater Sustainability Plans ("GSPs") for the Eastside, Forebay, Langley, Monterey and Upper Valley Subbasins made by members of the public. Said public comments suggest an immediate implementation of the 180/400 Foot Aquifer GSP specific to the proposed Integrated Plan. Should the Salinas Valley Basin Groundwater Sustainability Agency ("SVBGSA") elect to begin implementation of the 180/400 Foot Aquifer GSP, shouldn't the SVBGSA implement *all* of the management actions proposed therein? This recommendation is particularly in light of the existing legal question on whether continuing to pump from sea-water intruded, overdrafted areas is considered reasonable and beneficial use of water.

As to the proposed Integrated Plan, the Coalition has previously stated, and is now again stating, that the SVBGSA does not have the proper tools to develop that plan. The Salinas Valley Integrated Hydrologic Model ("SVIHM") is not only provisional and not available for public vetting, but it has significant calibration issues causing it to be unreliable. Thus, the modeling performed using the SVIHM is not "sufficient to calibrate and reduce [its] uncertainty" (23 CCR §354.18) and is not likely to be properly calibrated for public vetting before these GSPs are due to the Department of Water Resources and thus, cannot be relied upon to make any decision, including taking any regulatory action or for developing the Integrated Plan.

That is, because the results from the SVIHM are provisional and uncertain and are subject to change in future GSP updates after the SVIHM is released by the USGS and unless and until (1) the SVIHM has been made publicly available and publicly vetted; (2) its inputs reflect the current operations of the reservoirs, including the operations of the Salinas Valley Water Project as reflected in its Engineer's Report and the MCWRA water right permits and other water rights; and (3) its calibration results meet industry standard of five percent (5%) to ten percent (10%), the model results cannot be used as basis to develop the Integrated Plan or to determine the flows between subbasins within the Salinas Valley Groundwater Basin because the results are only orders of magnitude approximates and not best available science.

Mission Statement: The water resources of the Salinas River Basin should be managed properly in a manner that promotes fairness and equity to all landowners within the basin. The management of these resources should have a scientific basis, comply with all laws and regulations, and promote the accountability of the governing agencies.

That said, these subbasins have been the subject of many decades of studies and these studies are considered the best available science for reliance by the SVBGSA for inclusion in the GSPs. These studies include the 1988 USGS Water-Resources Investigation Report 87-4066, Simulated Effects of Ground-Water Management Alternatives for the Salinas Valley, California; and the Brown-Caldwell's State of the Salinas River Groundwater Basin Report, dated January 16, 2015. The executive summary of the Brown Caldwell Report and a USGS abstract summary are included as Exhibits A, Exhibit B respectively and the entire reports are included herein by reference and can be found at the following links: **https://www.co.monterey.ca.us/home/showpublisheddocument/61920/636547362391570000** and **https://doi.org/10.3133/wri874066** . Both studies placed "a specific focus on the effect of pumping changes on seawater intrusion" and found that "seawater intrusion could be cut by more than half (from about 18,000 to 8,000 afy) over a 20 year period by decreasing pumping in the Pressure and East Side Subareas by 30%; whereas reducing pumping the Forebay and Upper Valley Subareas had *minimal to no effect on seawater intrusion."* (Emphasis added.) The best available science concludes minimal impacts by Forebay and Upper Valley subbasins on seawater intrusion in the northern subbasin, which must be relied upon by the SVBGSA.

Finally, the Coalition has supported, and continues to support, projects to address the sea water intrusion and overdraft facing the northern subbasins. The Coalition has offered several solutions including using the Monterey County Water Resources Agency ("MCWRA") 11043 permit to develop excess surface water for the Pressure and East Side Subareas. The Coalition also supports the consideration of an extraction barrier in the Pressure Area that could provide an alternate water supply not only to agriculture but also to the urban areas in that subarea. Developing and implementing management actions and a project or projects should be the primary focus rather than more modeling using a known erroneous model that does not fall within SGMA standards.

Thank you for your consideration of the foregoing comments.

Sincerely,

Nancy Isakson, President
Keith Roberts, Chair
Roger Moitoso, Vice- Chair
Rodney Braga, Director
Lawrence Hinkle, Director
Bill Lipe, Director
David Gill, Director
Steve McIntyre, Director
Brad Rice, Director
Jerry Rava, Director
Grant Cremers, Director
Allan Panziera, Director
Michael Griva, Past-Chair

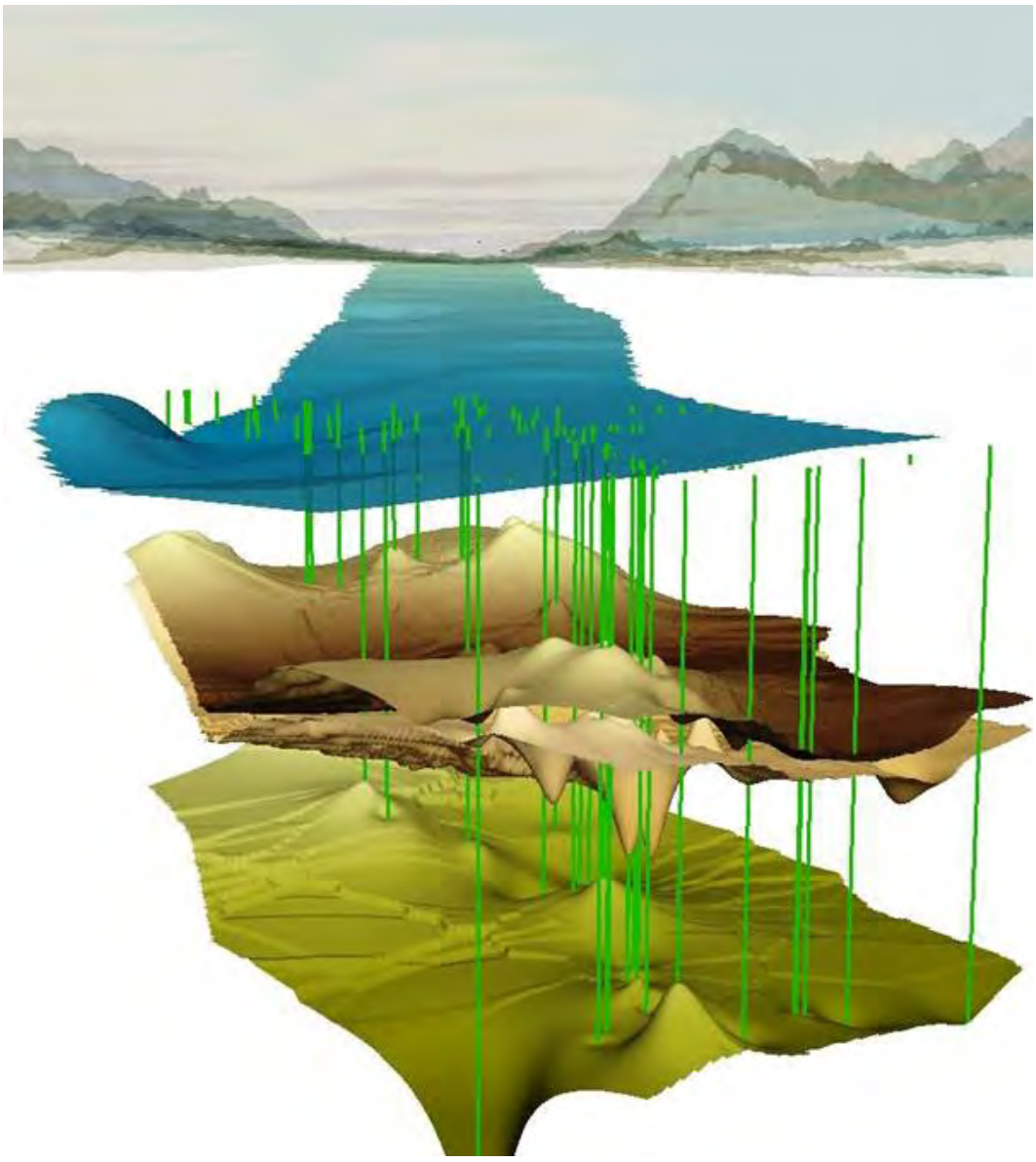
EXHIBIT 'A'

Brown AND Caldwell

Prepared for Monterey County Resource Management Agency
Salinias, CA

State of the Salinas River Groundwater Basin

January 16, 2015



FINAL

State of the Salinas River Groundwater Basin

Prepared for

Monterey County Resource Management Agency

Salinas, CA

January 26, 2015

FINAL

State of the Salinas River Groundwater Basin

Prepared for

Monterey County Resource Management Agency
Carl P. Holm, AICP
Interim Director
168 W. Alisal, 2nd Floor
Salinas, CA 93901

January 26, 2015

Prepared by:

Matthew Baillie, Brown and Caldwell
Principal Hydrogeologist, California P.G.# 8811, C.H.G.#977

Les Chau, Brown and Caldwell
Project Manager, Geologist

Geologist of Record

Joseph Turner, Brown and Caldwell
Chief Hydrogeologist, California P.G.# 5125, C.H.G.#964

PROFESSIONAL GEOLOGIST • JOSEPH TURNER • NO. 5125 • EXPIRES 09/15 • STATE OF CALIFORNIA

Brown AND Caldwell

201 North Civic Drive, Suite 115
Walnut Creek, CA 94596

Acknowledgements

Brown and Caldwell acknowledges the valuable contributions made by the Monterey County Water Resources Agency (MCWRA) in conducting this near-term assessment of the health and status of Zone 2C of the Salinas River Groundwater Basin.

Specifically, the project team recognizes the following MCWRA technical staff for their efforts:

Howard Franklin	Senior Hydrologist
Peter Kwiek	Hydrologist
German Criollo	Associate Hydrologist
Tamara Voss	Hydrologist
Amy Woodrow	Hydrologist

The Brown and Caldwell project team members include:

Les Chau	Project Manager, Geologist
Joe Turner	Chief Hydrogeologist
Tim Godwin	Principal Hydrogeologist
Matt Baillie	Principal Hydrogeologist
Alex Johnson	Environmental Engineer
Kelsi Oshiro	Engineer-In-Training
Tina Crawford	Geographer
Kim Stubblefield	Project Analyst

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List of Abbreviations

af	acre-feet
afy	acre-feet per year
BC	Brown and Caldwell
Cl	chloride
CSIP	Castroville Seawater Intrusion Project
DWR	California Department of Water Resources
ft/yr	feet per year
gpm	gallons per minute
MCWRA	Monterey County Water Resources Agency
mg/L	milligrams per liter
MSL	mean sea level
MTBE	Methyl Tertiary Butyl Ether
Na	sodium
P-180	Pressure 180-Foot
P-400	Pressure 400-Foot
PERC	perchlorate
SRDF	Salinas River Diversion Facility
SVA	Salinas Valley Aquitard
SVIGSM	Salinas Valley Integrated Groundwater Surface Water Model
SVWP	Salinas Valley Water Project
SWI	seawater intrusion
TCE	trichloroethylene
TDS	total dissolved solids
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VOC	volatile organic compound

Executive Summary

An examination of the state of the Salinas River Groundwater Basin (Basin) was conducted by Brown and Caldwell in the last half of 2014 as part of the larger Basin Investigation requested by the County of Monterey. This State of the Basin Report addresses the ramifications of prolonged drought by considering likely changes in groundwater head elevations, groundwater storage, and seawater intrusion in the event that the current drought continues. In addition, some steps are presented that could be taken to help alleviate the consequences of further depleting groundwater storage.

This study was conducted for Monterey County under County Professional Agreement 14-714, dated 1 July 2014, in response to the Monterey County Board of Supervisors Referral No. 2014.01. The work was carried out with oversight provided by the Monterey County Water Resources Agency (MCWRA).

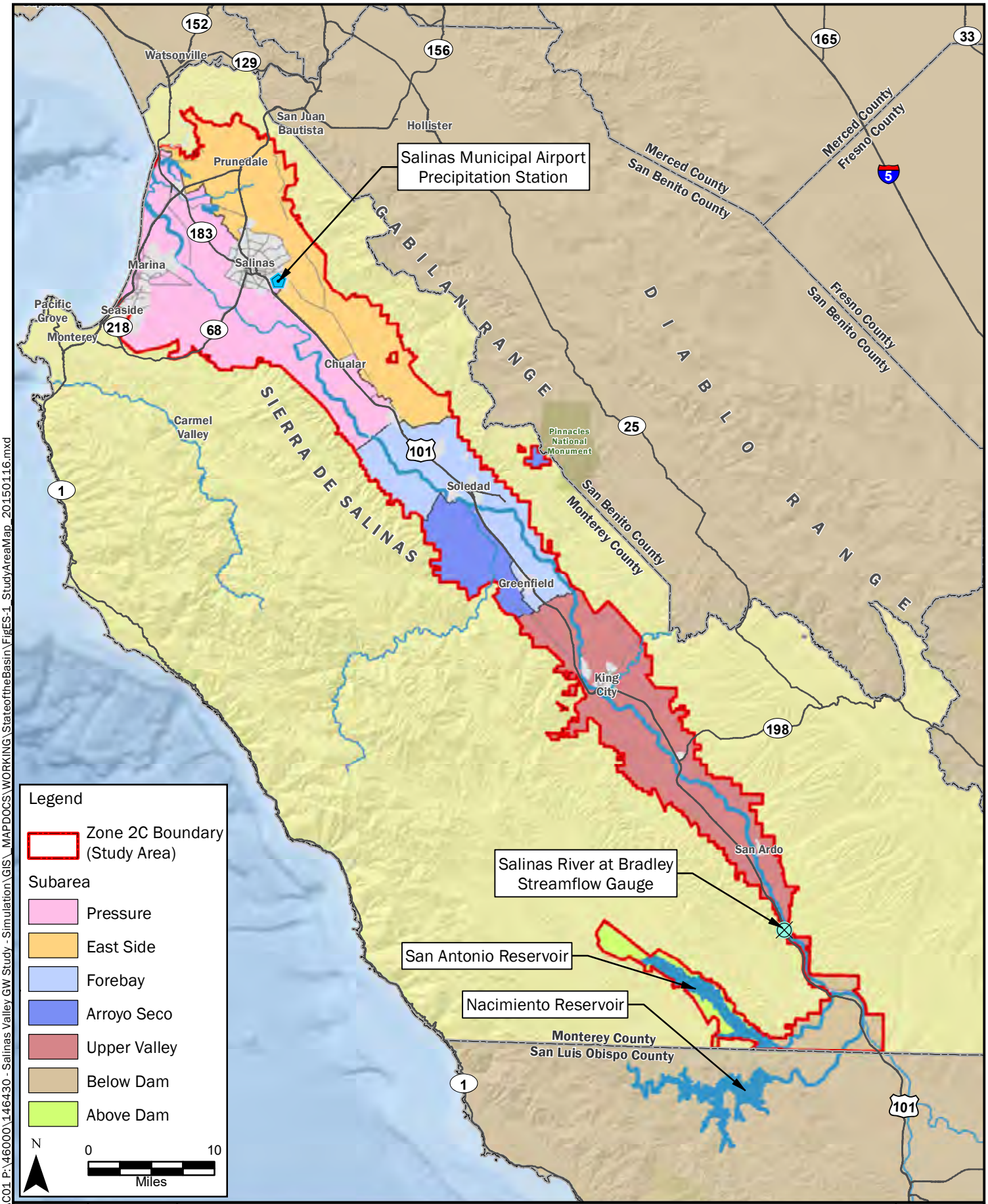
Study Area

The study area for this report is MCWRA Benefit Zone 2C (Zone 2C), which largely straddles the Salinas River within Monterey County (Figure ES-1). Zone 2C consists of 7 subareas named as follows: Above Dam, Below Dam, Upper Valley, Arroyo Seco, Forebay, East Side, and Pressure. The analyses detailed in this report cover the four primary water-producing subareas, the Pressure, East Side, Forebay (including the Arroyo Seco), and Upper Valley Subareas. These four subareas include most of the land area and account for nearly all of the reported groundwater usage within Zone 2C.

The Salinas River Groundwater Basin is the largest coastal groundwater basin in Central California. It lies within the southern Coast Ranges between the San Joaquin Valley and the Pacific Ocean, and is drained by the Salinas River. The valley extends approximately 150 miles from the La Panza Range north-northwest to its mouth at Monterey Bay, draining approximately 5,000 square miles in Monterey and San Luis Obispo Counties. The valley is bounded on the west by the Santa Lucia Range and Sierra de Salinas and on the east by the Gabilan and Diablo Ranges. The Monterey Bay acts as the northwestern boundary of the Basin.

The Salinas Valley has a Mediterranean climate. Summers are generally mild, and winters are cool. Precipitation is almost entirely rain, with approximately 90 percent falling during the six-month period from November to April. Rainfall is highest on the Santa Lucia Range (ranging from 30 to 60 inches per year) and lowest on the valley floor (about 14 inches per year). Very dry years are common and droughts can extend over several years, such as the eight-year drought of Water Years (WY) 1984 to 1991.

Major land uses in the Salinas Valley include agriculture, rangeland, forest, and urban development. Mixed forest and chaparral shrub cover the mountain upland areas surrounding the valley, while the rolling hills are covered with coastal scrub and rangeland. Agricultural and urban land uses are predominant on the valley floor.



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01/16/15	146430	Salinas River Groundwater Basin Investigation

Brown AND Caldwell

TITLE

Study Area Map

Figure ES-1

Historically, irrigated agriculture began with surface water diversions in 1773 on Mission Creek, and diversions from the Salinas River were first recorded in 1797. Groundwater pumping began as early as 1890, and expanded greatly through about 1920 as enabled by several developments such as widespread electrical lines, the development of better well pumps, and the replacement of grain crops with vegetable crops. Groundwater is currently the source of nearly all agricultural and municipal water demands in the Salinas Valley, and agricultural use represents approximately 90 percent of all water used in the Basin. In addition to groundwater, other sources of water for agricultural production include surface water diverted from the Arroyo Seco, recycled municipal waste water supplied by the Monterey County Water Recycling Projects, and surface water diverted from the Salinas River north of Marina as part of the Salinas Valley Water Project.

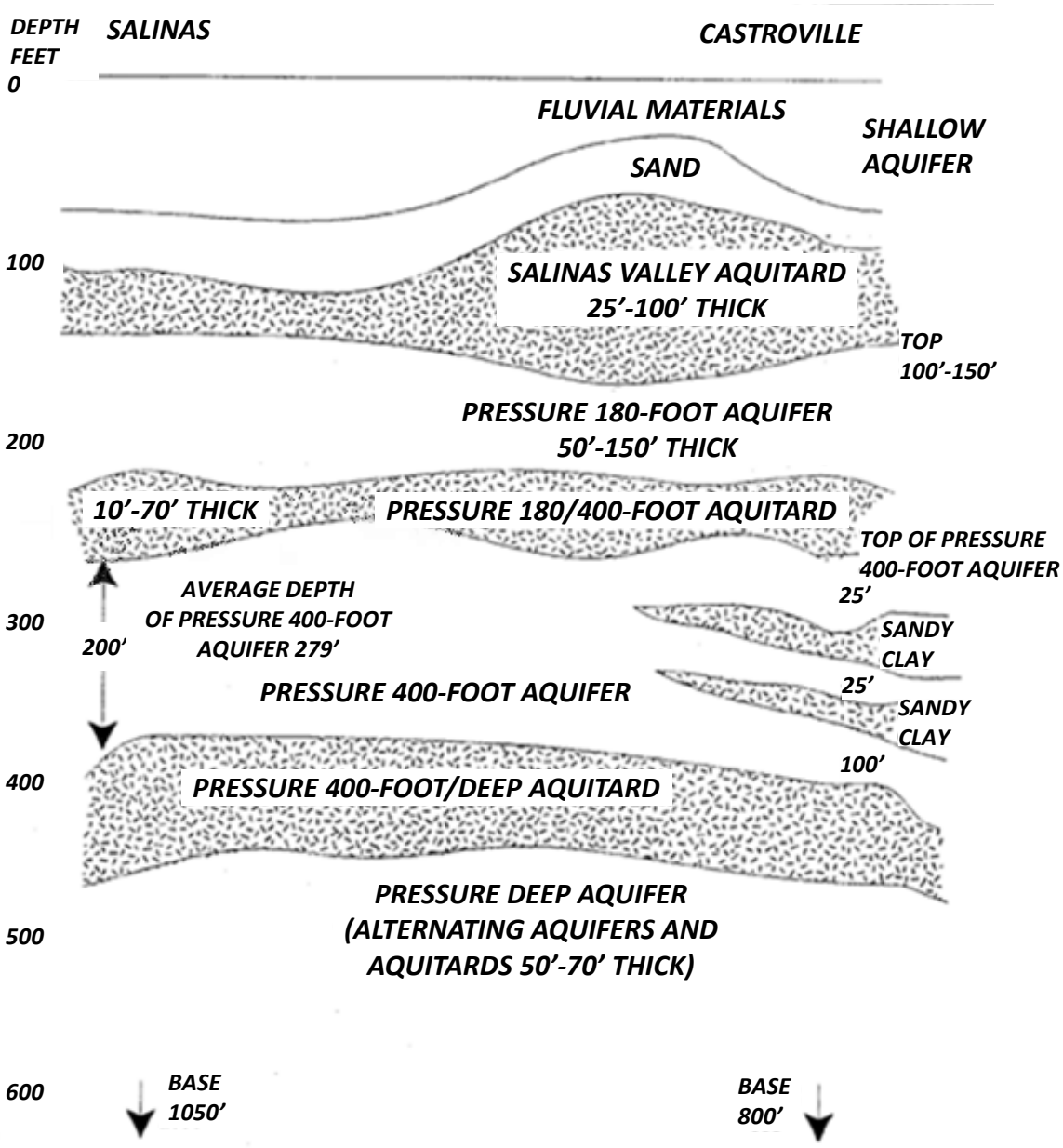
By 1944, groundwater pumping in the entire valley was estimated at about 350,000 acre-feet per year (afy), with about 30 percent of the pumping occurring within the Pressure Subarea, 10 percent in the East Side Subarea, 35 percent in the Forebay Subarea, and 25 percent in the Upper Valley Subarea. Groundwater use in the Salinas Valley peaked in the early 1970's and then started declining, due primarily to changes in crop patterns, continued improvements in irrigation efficiency, and some conversion of agricultural lands to urban land uses.

Seawater intrusion was detected in coastal wells as early as the 1930's, resulting from declining groundwater head elevations in the Pressure and East Side Subareas. Seawater intrusion has continued so that it now reaches as far as 8 miles inland within the Pressure Subarea. The declining head and intruding seawater helped lead to the construction of the Nacimiento and San Antonio Dams (releases beginning in 1957 and 1965, respectively), which are used for flood control, maintenance of groundwater head elevations, multi-year storage, and recreation. Today, as urbanization increases in the valley, alternative sources of urban water supplies and relocation of groundwater pumping are being evaluated and implemented by the Marina Coast Water District and various communities in the northern Salinas Valley.

Hydrogeology

The Salinas Valley Groundwater Basin is a structural basin (i.e., formed by tectonic processes) consisting of up to 10,000 to 15,000 feet of terrigenous and marine sediments overlying a basement of crystalline bedrock. The sediments are a combination of gravels, sands, silts, and clays that are organized into sequences of relatively coarse-grained and fine-grained materials. When layers within these sequences are spatially extensive and continuous, they form aquifers, which are relatively coarse-grained and are able to transmit significant quantities of groundwater to wells, and aquitards, which are relatively fine-grained and act to slow the movement of groundwater. Figure ES-2 is a generalized schematic cross-section across the Pressure Subarea illustrating its general hydrostratigraphy.

Groundwater flow in the Basin is generally down the valley, from the southern end of the Upper Valley Subarea toward Monterey Bay, up to about Chualar (Figure ES-3). North of Chualar, groundwater flows in a north to east direction toward a trough of depressed groundwater head on the northeastern side of Salinas. This trough is especially pronounced in August, the approximate time of the seasonal peak groundwater pumping.



Modified from Hall and Earthware of California, 1992.

Brown AND Caldwell	DATE 01/16/15	SITE Salinas River Groundwater Basin Investigation	Figure ES-2
	PROJECT 146430	TITLE Conceptual Hydrostratigraphic Section in the Pressure Subarea	

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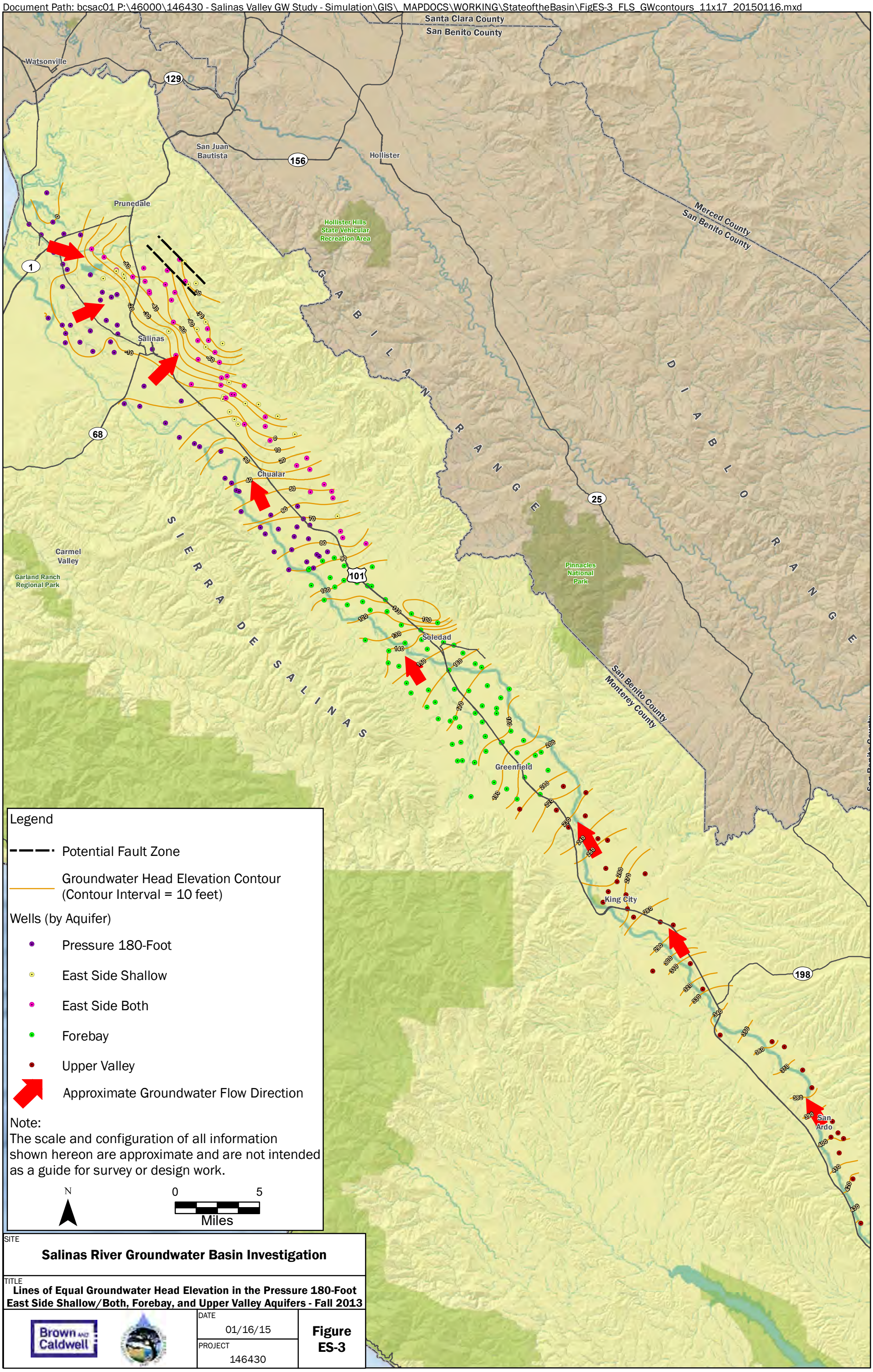

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Salinas River Groundwater Basin Investigation

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Lines of Equal Groundwater Head Elevation in the Pressure 180-Foot East Side Shallow/Both, Forebay, and Upper Valley Aquifers - Fall 2013

Brown AND Caldwell

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Figure ES-3

Water Balance

A water balance is a quantitative accounting of the various components of flow entering and leaving a groundwater system. Typical outflows include evapotranspiration, surface runoff that leaves the system, groundwater pumping, and groundwater outflow to a neighboring groundwater system. Typical inflows include recharge from infiltration of precipitation, releases from reservoirs (which receive runoff from precipitation), recharge from leaky aquitards, and groundwater inflow. The difference between inflows and outflows represents the change in groundwater storage. Because precipitation constitutes the major input of water to the Basin, rainfall records from the Salinas Municipal Airport gauge from 1873 to the present were analyzed. Based on the mean precipitation of 13.4 inches and standard deviation of 4.8 inches, each year's precipitation total was assigned to one of seven, "wetness levels," as follows: Extremely Dry, Very Dry, Dry, Normal, Wet, Very Wet, or Extremely Wet. In general, dry years are more common than wet years, but Extremely Dry years are less common than Extremely Wet years. The drought period from WY 1984 to 1991 included three Very Dry years, four Dry years, and one Normal year; this period was used in this study as a comparative period for predicting future changes in groundwater head and storage. Based on provisional data, the WY 2014 precipitation of about 5.9 inches represents a Very Dry year and the third-driest water year on record. The current drought of WY 2012 to 2014 includes two Dry years and one Very Dry year; over this three-year period, the total rainfall was about 15 inches below the period of record average.

This study emphasizes the importance of cumulative precipitation surplus, which quantifies precipitation on timescales longer than a year to examine the impacts of multi-year dry and wet periods. The cumulative precipitation surplus reached a high of about 41 inches at the end of WY 1958, and declined to zero by the end of WY 2013. During the extended drought from WY 1984 to 1991, the cumulative precipitation surplus declined by about 36 inches, an average of about 4.5 inches per year. The major declines in cumulative precipitation surplus had and continue to have negative effects on groundwater storage in Basin aquifers (see Storage Change discussion below). Figure ES-4 shows a time series of annual and cumulative precipitation surplus.

Inflows

Out of an estimated total of about 504,000 afy of inflow to the Basin, about 50 percent occurs as stream recharge, 44 percent occurs as deep percolation from agricultural return flows and precipitation, and 6 percent occurs as subsurface inflow from adjacent groundwater basins (MW, 1998). Table ES-1 summarizes the inflow components of the water budget, as reported by MW (1998).

Table ES-1. Water Budget Components by Subarea

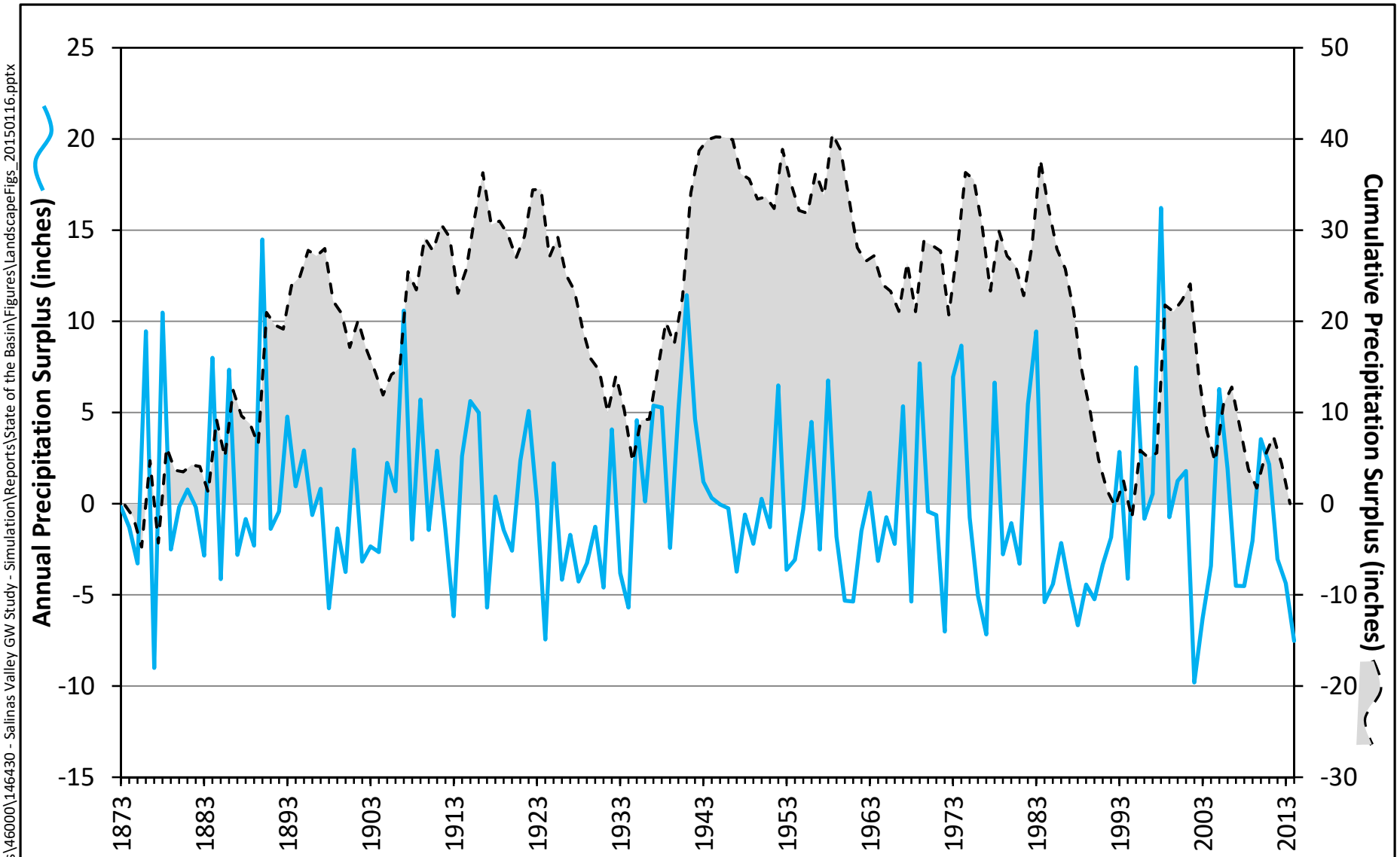
Subarea	Average of WY 1958-1994 (from MW, 1998)				2013 Groundwater Pumping (reported by MCWRA)[c]
	Inflow		Outflow		
	Natural Recharge[a]	Subsurface Inflow	Groundwater Pumping[b]	Subsurface Outflow	
Pressure	117,000	17,000	130,000	8,000	118,000
East Side	41,000	17,000	86,000	0	98,000
Forebay	154,000	31,000	160,000	20,000	148,000
Upper Valley	165,000	7,000	153,000	17,000	145,000

Note: All estimates in acre-feet per year (afy).

[a] *Includes agricultural return flow, stream recharge, and precipitation.*

[b] *Groundwater pumping as reported by MW (1998) is presented to provide a complete water budget.*

[c] *The 2013 groundwater pumping totals are provided for comparison.*



Note: The annual precipitation surplus represents the difference between the annual precipitation and the long-term mean.

Brown AND Caldwell	DATE 01/16/15	SITE Salinas River Groundwater Basin Investigation	Figure ES-4
	PROJECT 146430	TITLE Annual and Cumulative Precipitation Surplus at Salinas Municipal Airport	

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Within the Pressure Subarea, inflow is largely made up of subsurface inflow from the Forebay Subarea; prior to development, additional subsurface inflow occurred from the East Side Subarea, but this flow had been reversed by declining groundwater head elevations in the East Side Subarea. An additional inflow to the Pressure Subarea is seawater intrusion, which could account for between about 11,000 and 18,000 afy.

Inflow to the East Side Subarea is made up of a combination of infiltration along the small streams on the west side of the Gabilan Range, direct recharge of precipitation on the valley floor, and subsurface inflow from the Pressure and Forebay Subareas.

Inflow to the Forebay Subarea is made up of infiltration along Arroyo Seco, Reliz Creek, and the Salinas River as well as agricultural return flow, direct recharge of precipitation on the valley floor, subsurface inflow from the Upper Valley Subarea, and mountain front recharge along the eastern and western Subarea boundaries.

Inflow to the Upper Valley Subarea is made up of infiltration along the Salinas River and its tributaries, with lesser amounts entering the subarea via direct recharge of precipitation on the valley floor and agricultural return flow, plus minor quantities entering via subsurface inflow from the Panch Rico Formation to the east and along drainages tributary to the Salinas River.

Outflows

Groundwater pumping is, by far, the largest component of outflow from the Basin. Of an estimated total of 555,000 afy of outflow, about 90 percent is groundwater pumping, with the remainder occurring as evapotranspiration along riparian corridors (Ferriz, 2001). Table ES-1 summarizes the outflow components of the water budget, as reported by MW (1998).

In general, groundwater pumping in the study area increased over the first 14 years of the available period of record (1949 to 2013), from about 380,000 afy in 1949 to about 620,000 afy in 1962, the highest pumping year on record. Pumping began to decline after about 1972, when pumping was about 530,000 afy, and fell to about 430,000 afy by 1982 before averaging about 500,000 afy over the rest of the period of record. Reported pumping for 2013 totaled about 509,000, acre-feet (af).

While annual pumping totals were relatively steady in the Pressure and East Side Subareas after about 1962, pumping in the Forebay and Upper Valley Subareas continued to increase until the early 1970's, then decreased slightly through the mid-1980's. On average, from 1949 to 2013, about 25 percent of basinwide pumping occurred in the Pressure Subarea, 17 percent in the East Side Subarea, 30 percent in the Forebay Subarea, and 28 percent in the Upper Valley Subarea.

Within the Pressure Subarea, outflow occurs as a combination of groundwater pumping and subsurface outflow to the East Side Subarea. In the East Side Subarea, outflow is made up entirely of groundwater pumping, since the reversal of the groundwater head gradient curtailed the natural subsurface outflow to the Pressure Subarea. In the Forebay Subarea, outflow is dominated by groundwater pumping, with a small amount of subsurface outflow to the Pressure and East Side Subareas. Outflow from the Upper Valley Subarea is largely made up of groundwater pumping, with a small amount of subsurface outflow to the Forebay Subarea.

Groundwater Storage

Estimated Basin groundwater storage is summarized in Table ES-2. The reported total stored volume of groundwater in the Basin is about 16.4 million af, and the reported aquifer storage capacity is approximately 19.8 million af (DWR, 2003). These values suggest that there is an unfilled storage capacity of about 3.3 million af.

Storage Change

The estimation of groundwater storage changes in the Basin calculated for this project is a measure of aquifer response to the natural hydrologic cycle (e.g. precipitation) and human-induced effects (e.g. pumping). The analysis of storage change was accomplished by considering subarea-averaged annual groundwater head elevation changes reported by MCWRA from 1944 to 2013. The accuracy of this analysis relies directly on the accuracy of the estimates of head change and of the values of storage coefficient and land area used. For this analysis, the storage coefficients reported by DWR (2003) were used[1]. Figure ES-5 shows a time series of calculated storage change for the Basin, color-coded by subarea. When compared with Figure ES-4, it is clear that there is a strong correlation between the pattern of the cumulative precipitation surplus and that of storage change. The storage change analysis included a statistical comparison between subarea storage change and annual precipitation surplus, reservoir releases, streamflow (at the Salinas River gauge near Bradley), and groundwater pumping. In all four subareas, annual storage change was correlated most strongly to annual precipitation surplus. The results of the storage change analysis are summarized in Table ES-3.

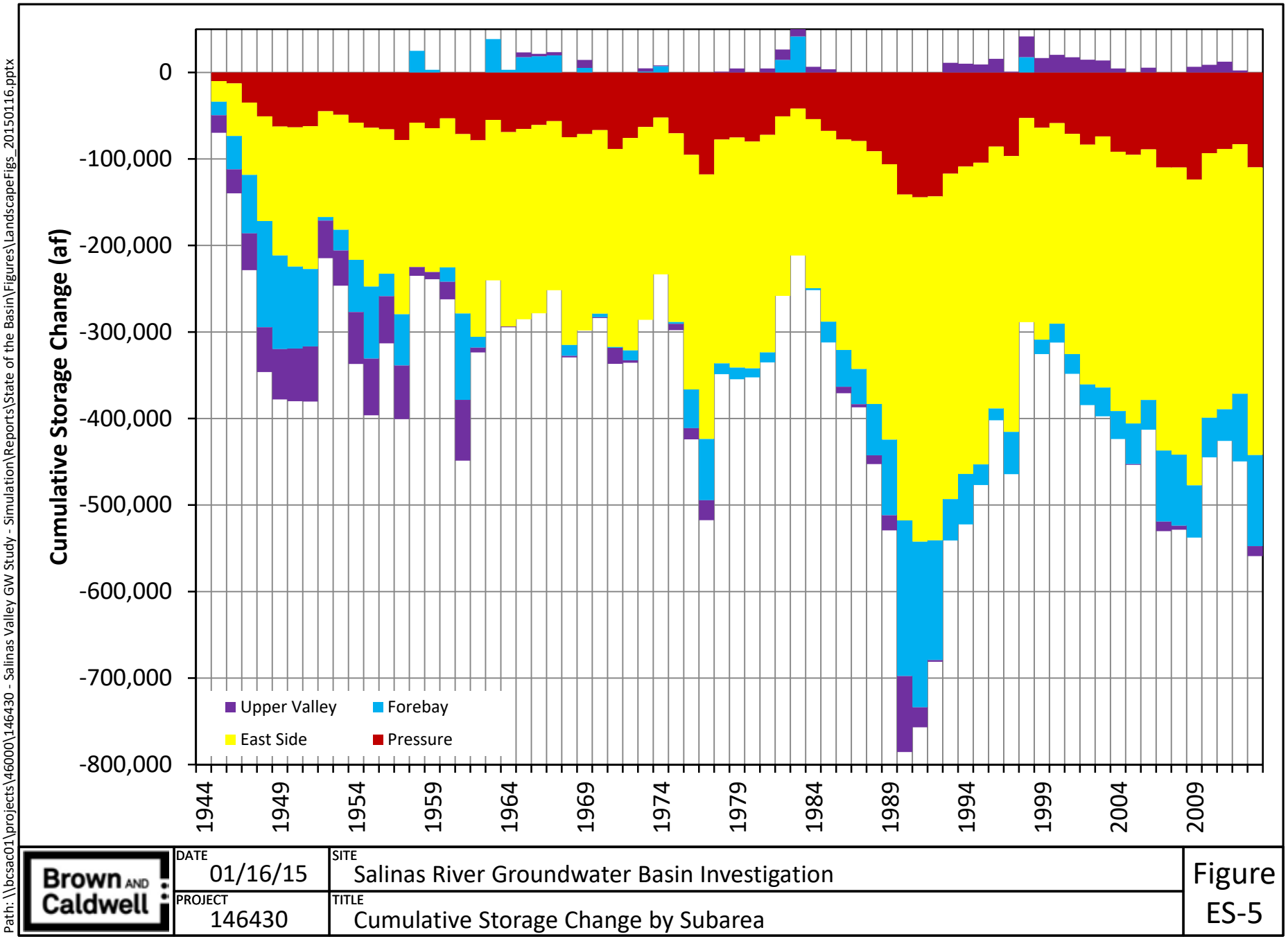
Table ES-2. Groundwater Storage

Subarea	Storage Coefficient (ft^3/ft^3)[a]	Land Area (acres)[b]	Storage Capacity (acre-feet)[a]	Groundwater in Storage (acre-feet)[a]	Available Storage (acre-feet)
Pressure	0.036	126,000	7,240,000	6,860,000	380,000
East Side	0.08	75,000	3,690,000	2,560,000	1,130,000
Forebay	0.12	87,000	5,720,000	4,530,000	1,190,000
Upper Valley	0.10	92,000	3,100,000	2,460,000	640,000
Total	--	380,000	19,750,000	16,410,000	3,340,000

[a] *From DWR (2003).*

[b] *From the Salinas Valley Integrated Ground and Surface Water Model (SVIGSM).*

1 The storage calculation presented in this Executive Summary is based on the storage coefficients published in DWR (2003). In the main body of the Report, the storage calculation is based on the DWR (2003) data and an additional and smaller storage coefficient that could be representative of the confined portions of the Pressure Subarea aquifer system.



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Brown AND Caldwell

DATE 01/16/15	SITE Salinas River Groundwater Basin Investigation	Figure ES-5
PROJECT 146430	TITLE Cumulative Storage Change by Subarea	

Table ES-3. Calculated Storage1 Change by Subarea, 1944 to 2013						
Subarea	Minimum Annual (af)	Maximum Annual (af)	Annual Average (afy)	Minimum Cumulative (af)	2013 Cumulative (af)	Predicted Change If Drought Continues (afy)
Pressure	-35,000	+44,000	-2,000	-144,000 (1991)	-110,000	-10,000 to -20,000
East Side	-58,000	+83,000	-5,000	-398,000 (1991)	-333,000	-25,000 to -35,000
Forebay[a]	-93,000	+98,000	-2,000	-192,000 (1991)	-105,000	-10,000 to -15,000
Forebay[a]	-93,000	+98,000	-2,000	-192,000 (1991)	-105,000	-80,000 to -90,000
Upper Valley[a]	-70,000	+65,000	-200	-88,000 (1990)	-12,000	-5,000 to -15,000
Upper Valley[b]	-70,000	+65,000	-200	-88,000 (1990)	-12,000	-50,000 to -70,000
Zone 2C[a]	-256,000	+217,000	-8,000	-786,000 (1990)	-559,000	-50,000 to -85,000
Zone 2C[b]	-256,000	+217,000	-8,000	-786,000 (1990)	-559,000	-165,000 to -215,000

Note: af = acre-feet; afy = acre-feet per year

[a] Based on calculated storage changes over the extended drought of WY 1984 to 1991

[b] Based on calculated storage changes for years with very low reservoir release (WYs 1961 and 1990)

Pressure Subarea

Using the storage coefficient value of 0.036, as reported by DWR (2003), calculated storage change in the Pressure Subarea from 1944 to 2013 was about -110,000 af, averaging about -2,000 afy. Based on storage changes during the extended drought of WY 1984 to 1991, storage in the Pressure Subarea could be expected to decline by about 10,000 to 20,000 afy under continued dry conditions.

East Side Subarea

Calculated storage change in the East Side Subarea from 1944 to 2013 was about -333,000 af, averaging about -5,000 afy. Based on storage changes during the extended drought of WY 1984 to 1991, storage in the East Side Subarea could be expected to decline by about 25,000 to 35,000 afy under continued dry conditions.

Forebay Subarea

Calculated storage change in the Forebay Subarea from 1944 to 2013 was about -105,000 af, averaging about -2,000 afy. The pattern of storage change in the Forebay Subarea is quite dissimilar to that in the Pressure and East Side Subareas, being much closer to zero storage change over much of the period of record and appearing to be strongly affected by years of very low reservoir releases, which lead to very large storage declines in this Subarea. Based on storage changes during the extended drought of WY 1984 to 1991, storage in the Forebay Subarea could be expected to decline by about 10,000 to 15,000 afy under continued drought conditions. However, if reservoir releases are severely curtailed (as occurred in WYs 1961 and 1990), storage changes may be much greater in magnitude, on the order of 80,000 to 90,000 afy, or about 50 to 60 percent of annual pumping in the Forebay Subarea.

Upper Valley Subarea

Calculated storage change in the Upper Valley Subarea from 1944 to 2013 was about -12,000 af, averaging about -200 afy. The pattern of storage change is similar to that of the Forebay Subarea, with a similar apparent reliance on reservoir releases. Based on storage changes during the extended drought of WY 1984 to 1991, storage in the Upper Valley Subarea could be expected to decline by about 5,000 to 15,000 afy under continued drought conditions. However, if reservoir

releases are severely curtailed, storage losses may be much larger, on the order of about 50,000 to 70,000 afy, or about 30 to 50 percent of annual pumping in the Upper Valley Subarea.

Zone 2C

Based on the numbers presented above, calculated storage change from 1944 to 2013 in all of Zone 2C was about -559,000 af, averaging about -8,000 afy. The pattern of storage change follows the pattern of the precipitation surplus, but is also affected by reservoir releases, which typically replenish approximately 35 percent of annual pumping as aquifer recharge. During years of exceptionally low reservoir releases, such as 1991, drought-related aquifer storage depletion is amplified.

Storage under continued dry conditions can be expected to decline by about 50,000 to 85,000 afy, comparable to past dry years. However, if reservoir releases are severely curtailed, as occurred in WYs 1961 and 1990, storage losses could be expected to be much larger, on the order of about 165,000 to 215,000 afy.

Over the period from 1959 to 2013 (the period for which groundwater pumping data are available and the reservoirs have been operating), the average reported annual pumping in Zone 2C was about 523,000 afy. During this same time period, the average annual storage change (calculated using groundwater head changes) was about -6,000 afy. An additional loss of storage due to seawater intrusion has occurred, and has been estimated at between 11,000 and 18,000 afy. This suggests that, overall, Zone 2C is out of groundwater balance by about 17,000 to 24,000 afy. The total calculated storage change over this period (not including seawater intrusion) was about -349,000 af, about 50 percent more than the storage change experienced prior to the beginning of operations of the reservoirs (about -210,000 af from 1944 to 1958), indicating that the reservoirs have greatly slowed storage losses in the Basin. However, the existing storage deficit has continued to grow over the period of record, and must be remedied before the deleterious effects of storage declines, such as seawater intrusion and the drying of wells, can be reversed. In addition, the volume of storage lost due to seawater intrusion must be better quantified.

State of the Basin – Water Supply in Zone 2C

Based on the calculations conducted for this project as discussed above, the Basin is currently out of hydrologic balance by approximately 17,000 to 24,000 afy. However, the estimated volume of groundwater in reserve (i.e. storage) is about 6.8 million acre-feet in the aquifers of the Pressure Subarea (Table ES-2), and the total volume of groundwater stored in Zone 2C is about 16.4 million acre-feet.

The goal of the water supply analyses presented in this report was to provide a postulation of how groundwater supply may change in the future should the current drought conditions continue. This was accomplished by assessing how and why groundwater head elevations and groundwater storage have changed in the past. Independent hydrologic variables (precipitation, groundwater pumping, reservoir releases, and streamflow) were compared with the groundwater head and storage changes to provide insight (or correlations) into which of these factors is driving these changes. Lastly, this study then provides professional opinions on the consequences of using more groundwater than the estimated yield on both the short-term Basin conditions and long-term sustainability.

An analysis of historical groundwater head elevation at a selected set of 25 locations indicated that, overall, groundwater head changes are correlated most strongly to the annual precipitation surplus in the Pressure, East Side, and Forebay Subareas. Head changes in the Upper Valley Subarea are not well-correlated to any independent variable, whereas the storage changes discussed above are statistically correlated to annual precipitation surplus.

Based on statistical correlations and comparison with the extended drought from WY 1984 to WY 1991, representative head changes at the Subarea scale could range from:

- -5.3 to -1.1 feet per year in the Pressure Subarea (for all three aquifers),
- -9.6 to -3.0 feet per year in the East Side Subarea,
- -5.6 to -1.8 feet per year in the Forebay Subarea, and
- -2.0 to +0.2 feet per year[2] in the Upper Valley Subarea.

Storage changes are also strongly affected by the occurrence of very low reservoir releases, which have historically resulted in storage declines. The cumulative storage loss over the period from 1944 to 2013, not including storage volume lost to seawater intrusion, was about 559,000 af for all of Zone 2C. About 40 percent of the storage loss occurred in the 14 years before Nacimiento Reservoir began releasing water, while about 60 percent occurred over the 55 years from 1959 to 2013. Estimates of storage decline in future dry years range from about 50,000 to 215,000 afy (Table ES-3), depending on the level of reservoir releases that occur. This storage loss, added to the existing storage deficit built up over the history of groundwater development in the study area, will exacerbate the problem of seawater intrusion in the Pressure Subarea.

State of the Basin – Seawater Intrusion

The water quality analysis in this study was undertaken to determine the extent of seawater intrusion into the coastal aquifers in 2013 and to analyze how it is likely to evolve in the future, should the current dry conditions continue into the coming years. The extent of seawater intrusion into the Pressure 180-Foot and Pressure 400-Foot Aquifers (Figures ES-6 and ES-7, respectively) in 2013 was not different from the extents mapped in 2011, indicating that the first two years of current drought did not have an apparent effect on the movement of the seawater intrusion front.

In assessing other markers of seawater intrusion, the sodium to chloride (Na/Cl) ratios[3] indicate that numerous wells on the landward side of the seawater intrusion front have likely been affected by seawater intrusion, even though the chloride concentration has not increased to the 500 mg/L level used by MCWRA to delineate seawater intrusion. Wells screened in the Pressure 400-Foot Aquifer that are several miles landward of the mapped seawater intrusion extent may have been impacted by seawater intrusion in the past. The landward seawater mixing with deeper groundwater can possibly be attributed to the vertical movement of groundwater from the Pressure 180-Foot Aquifer into the lower Pressure 400-Foot zone. Possible mechanisms include: a) natural leakage through areas of thin or absent aquitard between the two aquifers, b) via wells screened across both aquifers, and c) along faulty or compromised well casings acting as conduits.

The accelerated rate of seawater intrusion in 1984 can be attributed to the seven-year drought that started in 1984, the extent of which is depicted in Figures ES-6 and ES-7. The apparent rate of seawater intrusion in the period peaked from 1997 to 1999, despite the fact that the groundwater head elevations began to recover before this time from the declines experienced during the WY 1984 to 1991 drought. If this latent response to an extended drought is repeated in the Basin, water quality impacts stemming from the current drought may not manifest for several years. Chloride concentrations in affected wells increased by up to 100 mg/L from the beginning of the extended drought to 1999, and similar concentration changes may be expected in wells near the seawater intrusion front over the coming years.

---

2 Positive head changes in individual wells are reflective of increases in head that occurred in select wells during the WY 1984 to 1991 drought, and are not reflective of the average head change in the Upper Valley Subarea during the same period. It is considered unlikely that continued drought conditions will result in an overall increase in head in the Upper Valley Subarea, although individual wells may see head increases, depending on local conditions.

3 Calculated from historical water quality data at selected monitoring wells

Document Path: BCSAC01P:\46000\146430 - Salinas Valley GW Study - Simulation\GIS_MAPDOCS\WORKING\StateoftheBasin\FigES-6_ShallowCl_20150116.mxd

Legend

2013 Seawater Intruded Area Extent (500 mg/L Chloride Concentration Contour)

Seawater Intruded Areas by Year

- 1944
- 1965
- 1975
- 1985
- 1993
- 1997
- 1999
- 2001
- 2003
- 2005
- 2007
- 2009
- 2011 - 2013

Marina

Blanco Rd

Nashua Rd

Reservation Rd

Davis Rd

Espinosa Rd

156

1

183

101

68

Note: The location and water quality data associated with groundwater wells monitored by the Monterey County Water Resources Agency are confidential per agreement between well owners and the Agency, and as such are not shown on map.

SITE

Salinas River Groundwater Basin Investigation

TITLE

Pressure 180-Foot and East Side Shallow/Both Aquifer 500 mg/L Chloride Contours - 2013

Brown AND Caldwell

DATE 01/16/15

PROJECT 146430

Figure ES-6

N

0 1

Miles

Document Path: BCSAC01P:\46000\146430 - Salinas Valley GW Study - Simulation\GIS_MAPDOCS\WORKING\StateoftheBasin\FigES-7_DeepCl_20150116.mxd

Legend

2013 Seawater Intruded Area Extent
(500 mg/L Chloride Concentration Contour)

Seawater Intruded Areas by Year

- 1959
- 1975
- 1985
- 1990
- 1993
- 1995
- 1997
- 1999
- 2001
- 2003
- 2005
- 2007
- 2009
- 2011 - 2013

1959
1975
1985
1990
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011

156
1
183
101
68

Nashua Rd
Espinosa Rd
Blanco Rd
Reservation Rd
Davis Rd
Marina
Salinas

Note: The location and water quality data associated with groundwater wells monitored by the Monterey County Water Resources Agency are confidential per agreement between well owners and the Agency, and as such are not shown on map.

SITE
Salinas River Groundwater Basin Investigation

TITLE
Pressure 400-Foot and East Side Deep Aquifer 500 mg/L Chloride Contours - 2013

Brown AND Caldwell

DATE 01/16/15

PROJECT 146430

Figure ES-7

N

0 1

Miles

Options to Address Water Supply under Continued Drought Conditions

Based on the analyses discussed above, the Basin appears to be out of hydrologic balance. The average annual groundwater extraction for the four primary water-producing subareas that compose Zone 2C was about 523,000 afy from 1959 to 2013. The average annual change in storage was about -17,000 to -24,000 afy, including seawater intrusion. This implies that the yield for Zone 2C is on the order of about 501,000 to 508,000 afy; the deficit is essentially the storage change (loss) stated above. It is important to note that the Basin does have an estimated volume of groundwater in storage of about 16 million af (Table ES-2), which could represent a significant groundwater reserve – as compared to the current estimated storage loss of 17,000 to 24,000 afy – and could be used to offset temporary overdraft conditions in the future.

Based on the continued large storage declines in the East Side and Pressure Subareas (and resulting groundwater head declines and seawater intrusion), the current distribution of groundwater extractions is not sustainable. Seawater intrusion can account for up to 18,000 afy of the total storage loss of 24,000 afy. Sustainable use of groundwater can only be achieved by aggressive and cooperative water resources planning to mitigate seawater intrusion and groundwater head declines.

The consequences of no-action under continued drought conditions will be the imminent advancement of seawater intrusion within the next few years and the continued decline of groundwater head. Both of these conditions would necessitate the drilling of deeper groundwater wells to produce the quantity and quality of water needed for consumptive use and irrigation. The installation of deeper wells may not be feasible in some areas because of lower groundwater yield and water quality in the Pressure Deep Aquifer. A more sustainable and long term management practice would encourage a Basin-wide redistribution and reduction of groundwater pumping, which would require cooperative and aggressive resource management. The unsustainability of the current distribution of groundwater extractions has long been recognized by various investigators, and Basin-wide redistribution and reduction of pumping have been recommended previously (e.g. DWR, 1946).

Technical Option 1

The large storage declines that have occurred in the Basin in the past, especially in the East Side Subarea, have created a significant landward groundwater head gradient that must be reversed before seawater intrusion can be halted. Reduction of pumping in the Pressure and East Side Subareas could help mitigate some of the anticipated effects of extended drought on groundwater storage and water quality in the study area. Shifting of pumping to areas farther away from the coast would also be helpful, as long as it is shifted south of the current head trough (Figure ES-3) that exists in the East Side Subarea. While not currently consistent with County Policy, shifting pumping to areas that are both south of the seawater intrusion zone and hydraulically connected to the Salinas River does represent a physical option for addressing seawater intrusion.

DWR (1946) recommended that pumping be curtailed in the Pressure and East Side Subareas and substituted with extraction in the Forebay and Upper Valley Subareas, which are strongly connected to (and interact with) the Salinas River. Yates (1988) performed a numerical modeling analysis of the Basin, with a specific focus on the effect of pumping changes on seawater intrusion, and calculated that seawater intrusion could be cut by more than half (from about 18,000 to 8,000 afy) over a 20-year period by decreasing pumping in the Pressure and East Side Subareas by 30 percent[4]; whereas, reducing pumping in the Forebay and Upper Valley Subareas had minimal to no effect on seawater intrusion.

4 Note that Yates (1988) assumed an agricultural pumping rate of 512,200 afy, based on the results of a land use survey performed in the Salinas Valley in 1976. Recent pumping rates are slightly lower (around 500,000 afy), in part due to the operation of the Monterey County Water Recycling Projects.

Technical Option 2

The shifting of some pumping from the Pressure 180-Foot and Pressure 400-Foot Aquifers to the Pressure Deep Aquifer would reduce the storage deficit in the shallower aquifers; however, this would necessarily lead to head declines in the Pressure Deep Aquifer. Unlike the Pressure 180-Foot and Pressure 400-Foot Aquifers, it is uncertain if the Pressure Deep Aquifer is hydraulically connected to the ocean in Monterey Bay, so it is not known whether this pumping shift would lead to the onset of seawater intrusion into the Pressure Deep Aquifer. Also unknown is the likelihood of localized interaquifer seawater mixing between the Pressure 400-Foot Aquifer and the Pressure Deep Aquifer. Hence, this Management Option requires more investigation to determine its feasibility.

Evaluation of Potential Solutions

The numerical modeling analysis to be performed as the second part of this Basin Investigation will consider the effects of various management decisions on the water supply and water quality in the study area. The primary questions to be assessed for each scenario are: 1) what will be the rate of groundwater head decline; and, 2) what will be the rate of increase in acreage with impaired water quality due to the advancement of the seawater intrusion front. Based on this analysis, an assessment of the economic effects of 1) and 2) due to water supply wells becoming inoperable (i.e. dry), and the further loss of aquifer storage capacity due to the advancement of seawater intrusion can be conducted.

The numerical model should be used to predict groundwater head declines under different management scenarios, including implementing targeted pumping rates and optimizing the distribution of pumping. Future declines in groundwater head must be evaluated by simulated groundwater conditions so that “trigger (groundwater) head levels” can be used as a measure of safe yield and an early alert system as part of Basin Management Objectives. That analysis will extend the discussions and conclusions presented in this report.

EXHIBIT 'B'

Simulated effects of ground-water management alternatives for the Salinas Valley, California

Water-Resources Investigations Report 87-4066

By: E.B. Yates

https://doi.org/10.3133/wri874066

Links

- Document: **Document** (pdf)
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Abstract

A two-dimensional digital groundwater flow model was developed to analyze the geohydrology of the groundwater basin in the Salinas Valley. The model was calibrated for steady-state and transient simulations by comparing simulated with measured or estimated inflows, outflows, and water levels for 1970-81. Preliminary estimates of hydraulic properties and some inflows and outflows were adjusted during model calibration. The simulated mean annual water budget for the basin was 559,500 acre-ft/yr each of outflow and inflow. Inflow components consisted of Salinas River recharge (38.3%), percolation of irrigation water (34.0%), small stream and Arroyo Seco recharge (20.9%), seawater intrusion (3.4%), and other sources (3.4%). Outflow components consisted of agricultural pumpage (91.5%), municipal pumpage (4.0%), and riparian phreatophyte evapotranspiration (4.5%). For the steady-state calibration, 70% of the simulated water levels were within 9 ft of measured water levels for 1970-81. A sensitivity analysis determined the overall stability of the model results. The model input variable that probably contributes most to the uncertainty of the results is the quantity of groundwater recharge contributed by irrigation-return flow to the unconfined aquifer. A 15% change in the estimate of this variable causes an 11% change in the simulated river-seepage rate and a 6% change in the simulated seawater intrusion rate. The calibrated model was used to investigate several water resources management alternatives. Projected pumpage increase

at a rate of 1%/yr for 20 yr caused declines in mean annual water levels of 10 to 20 ft in some areas and an increase in seawater intrusion from 18,900 to 23 ,600 acre-ft/yr. Pumpage decreases in the coastal area decreased seawater intrusion more effectively than pumpage decreases farther inland. When pumpage was decreased uniformly throughout the valley, the decrease in seawater intrusion was only one-fourteenth the decrease in pumpage. Simulations indicated that replacement of groundwater pumpage with imported surface water in a 9,000 acre service area near the coast would result in a decrease in seawater intrusion equaling nearly one-half the quantity of imported water. (Author 's abstract)

Additional publication details

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August 12, 2021

VIA E-MAIL – BOARD@SVBGSA.ORG

Board of Directors
Salinas Valley Basin Groundwater Sustainability Agency
P.O. Box 1350
Carmel Valley, CA 93924

RE: Preliminary Comment on Draft GSPs for the Eastside, Forebay, Langley, Monterey and Upper Valley Subbasins of the Salinas Valley Basin

Dear Chair Pereira and Members of the Board of Directors:

This office represents the Salinas Basin Water Alliance ("Alliance"), a California nonprofit mutual benefit corporation formed to preserve the viability of agriculture and the agricultural community in the greater Salinas Valley. Alliance members include agricultural businesses and families that own and farm more than 80,000 acres within the Salinas Valley. Many Alliance members have been farming in the Salinas Valley for generations. As such, the Alliance has a significant interest in the long-term sustainability of the Salinas Valley Basin.

The Alliance greatly appreciates the difficult work this Board, together with the Salinas Valley Basin Groundwater Sustainability Agency (GSA) staff and consultant team, has undertaken to implement the Sustainable Groundwater Management Act (SGMA) in Monterey County, including the time-consuming but extremely beneficial engagement with all stakeholders. The Alliance applauds the Salinas Valley Basin GSA's recent success in obtaining approval of the Department of Water Resources (DWR) for the first groundwater sustainability plan (GSP) required to be prepared for the six Salinas Valley Subbasins within the jurisdiction of the Salinas Valley Basin GSA. Further, the Alliance acknowledges and wholeheartedly supports the Board's commitment to coordinate and implement all of the GSPs for the Salinas Valley Basin within its jurisdiction in an integrated manner pursuant to the proposed Integrated Sustainability Plan, or as it may otherwise be titled.[1] It is with this objective—integrated groundwater management—in mind that the

[1] See Joint Exercise of Powers Agreement Establishing the Salinas Valley Basin GSA § 2.2 ("The purpose of Agency is to . . . develop[], adopt[], and implement[] a GSP that achieves groundwater sustainability in the Basin."); § 4.1(c) (The JPA has the power to "develop, adopt and implement a GSP for the Basin."); § 4.1(l) (The JPA has the power to "establish and administer projects and programs for the benefit of the Basin."); Salinas Valley Groundwater Basin 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan [180/400 GSP] at 9-10 ("This GSP is part of an integrated plan for managing groundwater in all six subbasins of the Salinas Valley Groundwater Basin that are managed by the SVBGSA. The projects and management actions described in this GSP constitute an integrated management program for the entire Valley."); 180/400 GSP at 10-14 ("The SVBGSA oversees all or part of six subbasins in the Salinas Valley Groundwater Basin. Implementing the 180/400-Foot Aquifer Subbasin GSP must be integrated with the implementation of the five other GSPs in the Salinas Valley Groundwater Basin . . . The implementation

Alliance offers these preliminary comments on the draft GSPs for the Eastside, Forebay, Langley, Monterey and Upper Valley Subbasins.[2]

As this Board well knows, SGMA not only requires the Salinas Valley Basin GSA to develop a GSP for each priority subbasin within its jurisdiction to ensure the long-term sustainability of those subbasins, but it also mandates that the GSA consider the impacts each GSP may have on the ability of adjacent subbasins to achieve their sustainability goal.[3] In enacting SGMA, the legislature intended to provide for the sustainable management of all groundwater basins and expressly provided for the coordination of management between and among basins.[4] Any GSP that interferes with an adjacent basin's sustainability goal cannot satisfy SGMA.[5] Moreover, in the event the GSPs for the subbasins disproportionately allocate the burden of sustainability across the Salinas Valley Basin, they could impair groundwater users' rights in and to the Salinas Valley Basin in violation of SGMA and common law water rights.[6]

The Alliance's preliminary review of the draft GSPs suggests that there are significant data gaps and uncertainty with respect to the quantification of flows between subbasins within the Salinas Valley Basin that should be addressed.[7] Specifically, the Alliance is concerned that the existing water budget analyses in the draft GSPs may not provide a complete picture of the downgradient impacts caused by groundwater pumping. Accordingly, the Alliance requests that the Salinas Valley Basin GSA conduct additional simulations with the Salinas Valley Integrated Hydrologic Model (SVIHM) that are specifically focused on the issue of inter-subbasin groundwater flows, as more specifically described in aquilogic's August 11, 2021 memorandum attached to this letter. In light of the fact that the Integrated Sustainability Plan appears to have been delayed until after completion of the subbasin GSPs, the requested additional simulations should be conducted prior to the Salinas Valley Basin GSA's adoption of the subbasin GSPs.

The requested additional model simulations are consistent with and support SGMA's and DWR's requirements that all GSPs be based on the best available science.[8] They will enable an understanding of

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schedule reflects the significant integration and coordination needed to implement all six GSPs in a unified manner."); see also Salinas Valley Groundwater Basin Draft Upper Valley Aquifer Subbasin Groundwater Sustainability Plan at 10-16; Salinas Valley Groundwater Basin Draft Eastside Aquifer Subbasin Groundwater Sustainability Plan at 9-1, 10-7, 10-8, 10-16; Salinas Valley Groundwater Basin Draft Forebay Aquifer Subbasin Groundwater Sustainability Plan at 2-4, 9-2, 9-4, 10-7, 10-9, 10-17; Salinas Valley Groundwater Basin Draft Langley Aquifer Subbasin Groundwater Sustainability Plan at 2-4, 9-1, 9-4, 10-8, 10-9, 10-16.

[2] Following publication of the final draft GSPs for these subbasins, the Alliance may have additional comments.

[3] Wat. Code § 10733(c).

[4] Wat. Code §§ 10720.1(a); 10727; 10727.6

[5] See Wat. Code § 10733(c); 23 Cal. Code Regs. §§ 350.4, 351(h), 354.8(d), 354.18(b)(3), (c)(2)(B), (e), 354.28(b)(3), 354.44(a)(6), (c), 355.4(b)(7), 356.4(j), 357.2(b)(3); DWR, Monitoring Networks and Identification of Data Gaps BMP at pp. 6, 8, 27; DWR, Water Budget BMP at pp. 7, 12, 16, 17, 36; DWR, Modeling BMP at pp. 21-22; DWR, Sustainable Management Criteria BMP at pp. 9, 31.

[6] Wat. Code 10720.1(b) (declaring legislature's intention to preserve the security of water rights in the state to the greatest extent possible consistent with the sustainable management of groundwater); see also Water Code §§ 10720.5(b).

[7] 23 Cal. Code Regs. § 351.

[8] See 23 CCR § 354.18 ("A quantitative assessment of the historical water budget, starting with the most recently available information and extending back a minimum of 10 years, ***or as is sufficient to calibrate and reduce the uncertainty of the tools and methods used*** to estimate and project future water budget information and future aquifer response to proposed sustainable groundwater management practices over the planning and implementation horizon." (emphasis added).)

the amount of Basin-wide groundwater discharge that is and has been captured by pumping, which, depending on the results, may require modification of each subbasin's proposed water budget. In the absence of this analysis, there is a significant level of uncertainty in the water budgets that has the potential to undermine the adequacy of the GSPs and also to impair the Salinas Valley Basin GSA's ability to achieve its sustainability goal in each subbasin and throughout the Salinas Valley Basin within its jurisdiction.[9]

The Alliance has endeavored to make this comment and request at the earliest opportunity to allow the Salinas Valley Basin GSA sufficient time to conduct the additional SVIHM simulations. The Alliance does not wish to delay the successful completion and adoption of the subbasin GSPs. Rather, the Alliance anticipates that the additional simulations can feasibly be accomplished and incorporated into the draft GSPs consistent with the Salinas Valley Basin GSA's goal of adopting the subbasin GSPs in accordance with SGMA's deadlines.

The Alliance appreciates the Board's careful consideration of this issue and urges the Board to direct the Salinas Valley Basin GSA staff and consultant team to undertake the requested further analyses and incorporate the results into the draft GSP for each of the subbasins. The Alliance strongly believes that removing existing uncertainties with respect to inter-subbasin flows is a critical component to ensuring both transparency in the GSP development process and equity in the resulting plans, both of which are essential to promoting healthy Basin-wide dialogue and collaboration in obtaining sustainable groundwater management of the Salinas Valley Basin within the Salinas Valley Basin GSA's jurisdiction.

As the Board may direct, the Alliance would welcome the opportunity to discuss the requested additional consideration of inter-subbasin flows in more detail with the Salinas Valley Basin GSA's staff and consultant team.

Respectfully submitted,

Stephanie Osler Hastings

Attachment: August 11, 2021 aquilogic, inc. memorandum

cc: Donna Meyers, Senior Consultant / General Manager (meyersd@svbgsa.org)
Emily Gardner, Senior Advisor / Deputy General Manager (gardnere@svbgsa.org)
Derrik Williams, Montgomery & Assoc. (dwilliams@elmontgomery.com)
Leslie Girard, Monterey County Counsel (GirardLJ@co.monterey.ca.us)

[9] DWR's June 3, 2021 determination that it does not appear that the GSP for the 180-400 Aquifer Subbasin will adversely affect the ability of an adjacent basin to implement its GSP or impede achievement of sustainability goals in an adjacent basin does not mean that the Salinas Valley GSA should assume that DWR will reach the same conclusion with respect to the remaining subbasin GSPs.

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August 11, 2021

MEMORANDUM

To: Stephanie Hastings, Brownstein Hyatt Farber Schreck (BHFS)
Sent via email: SHastings@bhfs.com
From: Robert H. Abrams, PhD, PG, CHg, Principal Hydrogeologist, aquilogic, Inc.
Anthony Brown, CEO & Principal Hydrologist, aquilogic, Inc.

Subject: Assessment of Groundwater Flows between Subbasins of the Salinas Valley Groundwater Basin (SVGB)
Project No.: 018-09

Aquilogic, Inc. (**aquilogic**) is pleased to provide this memorandum on behalf of our mutual client, the Salinas Basin Water Alliance (SBWA), outlining the justification and necessity for conducting additional simulations with the Salinas Valley Integrated Hydrologic Model (SVIHM),[1] which is being used by the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) for groundwater sustainability plan (GSP) development.

Aquilogic hypothesizes that pumping has captured significant portions of groundwater discharge that would otherwise migrate as underflow from the Upper Valley Subbasin to the Forebay Subbasin, from the Forebay Subbasin to the 180/400-Ft Aquifer Subbasin and East Side Subbasin, and potentially from the 180/400-Ft Aquifer Subbasin to the Monterey Subbasin and the Salinas River. Our primary concern is that the existing water budget analyses in at least three of the SVBGSA's draft GSPs may not provide a complete picture of the downgradient impacts caused by groundwater pumping.[2]

It should be noted that groundwater sustainability was a pertinent issue for water managers long before the advent of California's Sustainable Groundwater Management Act. There is

[1] The SVIHM is a provisional, unpublished model not currently available to the general public.

[2] Bredehoeft, J.D., Papadopulos, S.S., and Cooper, H.H. Jr. (1982). The water budget myth. *In* Scientific Basis of Water Resource Management, Studies in Geophysics, 51-57. Washington, D.C. National Academy Press;
Bredehoeft, J.D. (1997). Safe yield and the water budget myth. Ground Water, Vol. 35, No. 6, p. 929;
Bredehoeft, J.D. (2002). The water budget myth revisited: why hydrogeologists model. Ground Water, Vol. 40, No. 4, p. 340-345;
Bredehoeft, J.D. and Durbin, T. (2009). Groundwater development: the time to full capture problem. Ground Water, Vol. 47, No. 4, p. 506-514;
Bredehoeft, J.D. (2011). Monitoring regional groundwater extraction: the problem. Ground Water, Vol. 49, No. 6, p. 808-814.

ample support in the groundwater literature for considering multiple aspects of sustainability and undesirable results, including economic and social impacts and the contravention of water rights.[3]

ADDITIONAL SIMULATIONS

As stated in "SVIHM Frequently Asked Questions,"[4] one of the many questions that can be addressed by a model is: How much groundwater flows between subareas? Clearly, the SVIHM developers recognized the importance of this question and anticipated that it would be asked. On behalf of the SBWA, **aquilogic** requests that the SVBGSA utilize the SVIHM to conduct additional simulations that are specifically focused on the issue of inter-subbasin groundwater flows. The requested simulations will enable an improved understanding of the amount of Valley-wide groundwater discharge that is and has been captured by pumping, which may be needed to ensure the adequacy of the GSPs for each of the subbasins and important to their implementation.

Aquilogic recommends a type of "superposition" analysis, in which the results of two simulations are compared. In such an analysis, the two simulations are identical except for the process under examination, in this case groundwater pumping. Pumping would be selectively turned off in one simulation and left as currently configured in the SVIHM in the other simulation. A similar superposition analysis was done to assess pumping-induced streamflow depletion, as described in Chapter 5 of the GSPs for the Forebay Subbasin and the East Side Subbasin.

The inter-subbasin flows would then be compared, which would semi-quantitatively estimate the impact of pumping, within the limiting assumptions and uncertainties associated with the SVIHM. Ideally, the analysis should be conducted with the initial conditions of the no-pumping scenario representing a "full" SVGB. The analysis would provide an estimate of the impact of pumping on inter-subbasin groundwater flows.

Specifically, using the calibrated SVIHM historical model, **aquilogic** recommends the following outline for conducting simulations, the details of which would be worked out in consultation with the SVBGSA:

1. Develop reasonable initial conditions for the hydraulic head distribution for the no-pumping simulation. This entails turning off all pumping in the model domain while

[3] Todd, D.K. (1959). Groundwater Hydrology. Wiley, New York, 336 p.;
Domenico, P. (1972). Concepts and Models in Groundwater Hydrology. McGraw-Hill, New York, 405 p.;
Freeze, R.A. and Cherry, J.A. (1979). Groundwater. Prentice-Hall, 604 p.;
Alley, W.M., Reilly, T.E., and Franke, O.L. (1999). Sustainability of ground-water resources. U.S. Geological Survey Circular 1186, 79 p.

[4] https://www.co.monterey.ca.us/home/showdocument?id=31292

leaving all other inflows and outflows unchanged. Because the time for simulated water levels to recover may be longer than the SVIHM simulation period of 51 years (1967-2018), the simulation may have to be run multiple times before an average steady-state condition can be achieved. In this case, the hydraulic head distribution at the last time step of the previous simulation would be used as the initial condition of the subsequent simulation. This process would be repeated until the hydraulic head distribution at the last time step of a subsequent simulation is substantially identical to the last time step of the previous simulation. This would indicate that an average steady-state condition is being simulated. We assume here that the surface water inflows and reservoir releases for the 1967-2018 period would be sufficient to eventually "refill" the SVGB after several model runs.

2. When the average, no-pumping steady-state condition has been achieved with the modified SVIHM, simulated groundwater flow should occur from the East Side Subbasin to the 180/400-Ft Subbasin, and from the 180/400-Ft Subbasin to Monterey Bay, conditions that are now reversed.

3. From the final results of the no-pumping simulation, in which average steady-state conditions have been achieved, compute the inter-subbasin groundwater flows between each adjoining subbasin. Compare these flows with the inter-subbasin flows from the historical, unmodified SVIHM. The differences in inter-subbasin flows and induced recharge from the surface water system represent a semi-quantitative estimate of the impact of Valley-wide pumping.

4. Additional superposition analyses can be conducted to assess the impact of one subbasin's pumping on basin-wide groundwater levels and inter-subbasin groundwater flows, by turning on pumping in one subbasin at a time in the modified SVIHM (and leaving pumping turned off in all other subbasins) and comparing the results to the scenario with no pumping throughout the SVGB. The differences in inter-subbasin flows and groundwater levels represent a semi-quantitative estimate of the impact of one subbasin's pumping on the other subbasins.

DATE: 9-20-2021

FROM: Jerry Lohr

RE: Comments on ***Salinas Valley: Forebay Aquifer Subbasin Groundwater Sustainability Plan***
VOLUME 2: Chapters 5,6,7 and 8, dated August 12, 2021
VOLUME 3: Chapters 9 & 10, dated August 12, 2021

Chapter 5

- Page 5-1: Line 6 Change "achieve" to "maintain" sustainability.

Chapter 6

- Page 6-1: Line 3 Change "achieve" to "maintain" sustainability.
- Page 6-2: Line 11 Change to "management actions and projects".
- Page 6-2: Line 22 How do we know that "Groundwater in the Forebay Subbasin is pumped from one singe principal aquifer." Source of this statement?
- Page 6-7: In the second bullet point, is a word missing after "hydrologic"?
- Page 6-9: Clarify the 3rd sentence in 6.1.2.3.
- Page 6-10: The sentence "Therefore, the model is the best available tool for estimating water budgets for the GSP." Is inconsistent with the general conclusions of this chapter.
- Page 6-25: In the second paragraph of section 6.4, might we change "will be achieved" to "will be maintained"?
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Chapter 7

- Page 7-30: In item 7.7.2.2 is there any possibility that the data lag by one year can be accelerated?

Chapter 8

- Page 8-2: Section 8.2 Sustainability Goal – The sentence starting "This GSP will ensure long-term viable water supplies…" seems to be a pretty strong statement. Might it read "The goal of this GSP is to …"?
- Page 8-3: Section 8.3 "Achieving Long-term Sustainability"-These chapters seem to better lay out the goal.

Chapter 9

- Page 9-2: The third bullet point from the top of the page "Providing incentives to keep groundwater pumping within the sustainable yield" could open a "Pandora's box" of questions and concerns. Might this thought be deleted?
- Page 9-3: Under 9.2.1, Projects for Developing Management Actions and Projects – I've asked several times that the second paragraph needs to be deleted or at least corrected. "Projects developed for the entire Valley" which were part of the 2019 and 2020 180/400 foot Aquifer Subbasin GSP", were not approved or "refined" by the Forebay Subbasin committee. *Simply the 180/400 could not develop projects for the entire Valley. They were not refined for this GSP.*
- Page 9-5: Section 9.3 Overview of Management Actions and Projects – The first sentence is correct. The following sentences are essentially correct.
- Page 9-7: Item A7 Reservoir Reoperation – How in the world can a "collaboration with MCWRA to evaluate potential reoperation scenarios" ***cost the Forebay $400,000 to $500,00?***

- Page 9-11: In 9.4.1.2 Expected benefits and Evaluations of Benefits – I am very glad the second paragraph is still included. When this concept was first suggested at the Forebay meeting, I understood it was to receive data from the MCWRA Drought TAC and would then lead to a Forebay Committee rather quickly reviewing and implementing mitigation procedures. I hope this still is the goal!
- Note that page numbering appears to be out of order and page 9-12 is still followed by 9-1, 9-2, etc. This should be easy to correct! BMP's might go a long way to mitigate the needs.
- Page 9-6: In 9.4.4 Management Action A4 – In the second paragraph, third sentence "The Arroyo Seco River supplied more groundwater recharge to the ASCMA during the 2012-2016 drought than did the regulated Salinas River." How was this ascertained? It is a very important addition to this text.
- Page 9-15: In 9.4.7 Management Action A7 – ***Please explain why this management action requires $400,00 to $500,000 of added funding from the Forebay!!!***
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Chapter 10

- Page 10-4: In 10.1.1.5 Groundwater Extraction – Can't something be done to get more current data or else change the report times?!
- Page 10-11: second line from the top "The SVBGSA needs to establish a funding mechanism for the feasibility study to occur". Same statement as previous.
- Page 10-15: The $553,000 should be $563,000 and the $603,000 should be $613,000.

Despite all the above suggestions, I commend the authors for making very substantial changes to the draft! It is very much better than the first draft of several months ago.

Salinas Valley Water Coalition
33 El Camino Real • Greenfield, CA 93927
(831) 674-3783 • FAX (831) 674-3835

TRANSMITTED VIA EMAIL

Salinas Valley Groundwater Sustainability Agency

Atten: Ms. Emily Gardner, Deputy General Manager 5 October, 2021

Re: Forebay GSP

Dear Ms. Gardner;

The Salinas Valley Water Coalition has collaborated with its members, including Jerry Lohr and his previously submitted comments, and we offer the following comments for your consideration and ask that you distribute to the Forebay Subbasin Committee prior to their meeting October 6th:

Chapter 1

Section 1.3, Page 1-7: The following sentence should be stricken as shown below:

~~*The projects and programs presented in this GSP are a part of a cohesive set of projects and programs designed to achieve sustainability throughout the entire Salinas Valley Groundwater Basin.*~~

Each subbasin of the Salinas Valley Groundwater Basin is identified as a "Basin" subject to the Sustainable Groundwater Management Act (SGMA), and the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) is required to prepare a separate groundwater sustainability plan (GSP) for each Basin subject to SGMA in order to achieve the sustainability goal of that particular Basin. Because the Forebay Subbasin is sustainable, the GSP should focus on maintaining its sustainability rather than focusing on the entire Salinas Valley Groundwater Basin. Other than coordination, the Forebay GSP must not be burdened with projects and programs to achieve the sustainability of the entire Salinas Valley Groundwater Basin, and in fact, any such attempt may result in undesirable results of the Forebay Subbasin.

Chapter 2

Section 2.2, Page 2-4: The following sentences must be clarified by adding the language shown as underlined:

Subsequent to that SVBGSA will complete a Salinas Valley Basin-wide Integrated Sustainability Plan (ISP) that will be consistent with the groundwater sustainability plans of the subbasins within the Salinas Valley Groundwater Basin and will detail project portfolios and groundwater sustainability programs to meet SGMA compliance for subbasins by 2040 and maintain sustainability through 2050. Under SGMA, groundwater sustainability plans are the primary legislative authority, akin to local agencies' general plans, and all other subsequent actions, including the ISP must be consistent with the SVBGSA's adopted groundwater sustainability plan.

Chapter 3

- **Section 3, Page 3-21:** The following sentence in the GSP must be further clarified by the Salinas Valley Basin Groundwater Sustainability Agency:

  The Forebay Subbasin covers approximately the same area as MCWRA's Forebay Subarea.

  Further clarification needed in this section includes the following: (1) the difference in the size of the MCWRA's Forebay Subarea as compared to the Forebay Subbasin - Figure 5-8 (Page 5-22) shows that the difference is not minor; and (2) how this difference impacts any analysis (including the modeling results) in the GSP.

- **Section 3.10.4, Page 3-47:** The section needs to either include the specific language of the relevant policy of the Monterey County General Plan or mention that the policy includes a rebuttable presumption that there is sufficient water supply in the Salinas Valley Groundwater Basin to Year 2030.

Chapter 4

Section 4.4.1.1, Page 4-14: The discussion herein and in other sections of the GSP appears to prematurely conclude that the Forebay Subbasin is connected to the Deep Aquifers and fails to present other opinions and studies to the contrary, which may lead to a prejudicial outcome should the Deep Aquifer Study proceed. For example, the following language shown as stricken should be removed to avoid such prejudicial outcome:

~~Some previous investigators have hypothesized that the Deep Aquifers present within the 180/400-Foot Aquifer Subbasin extends into the Forebay Subbasin (Greene, 1970; Hanson et al, 2002; Brown & Caldwell, 2015; DWR, 2004a); however, t~~This deeper portion of the Basin Fill Aquifer has not been investigated or developed in a substantial way….

Chapter 5

- Page 5-1: Line 6 Change "achieve" to "maintain" sustainability.

Chapter 6

- **Overall Comment No. 1:** The Forebay Subbasin GSP, including this section and other sections, states that historical and current water budgets were developed using a provisional version of the Salinas Valley Integrated Hydrologic Model (SVIHM) developed by the USGS. It also states that future water budgets are being developed using an evaluation version of the Salinas Valley

Operational Model (SVOM), developed by USGS and MCWRA. The GSP admits the model has not received final approval, and no warranty, expressed or implied, has been made by the USGS as to the functionality of the model and related material.

Nevertheless, the GSP states the model is the best science available. This is simply not correct. There are other models and water balance calculation methods that have been shown to be more accurate and are available for use by the SVBGSA.

The SVBGSA has stated in public forums that the USGS model has a recognized error of 30%+ for the model output for estimated groundwater pumping. This is unacceptable and until and unless the model calibration shows more accurate model runs, the outputs from such runs should not be published in any quasi-regulatory document, such as the GSPs, irrespective of the disclaimers included therein.

- **Overall Comment No. 2:** The discussions on groundwater inflows into the subbasin must be further clarified. For example, page 6-22 includes the following sentence:

  > *The main groundwater inflows into the subbasin are: (1) the percolation of precipitation and applied agricultural irrigation water and (2) streambed recharge.*

  Yet, the discussions on inflows fail to mention the primary factor that impacts the inflow numbers for the areas of the Forebay Subbasin outside of the Arroyo Seco Cone, which is the control of water releases from the Nacimiento and San Antonio reservoirs by the Monterey County Water Resources Agency that significantly impacts streambed recharge. There must be a recognition that the inflow numbers are "artificial" or "human controlled" particularly for areas outside of the Arroyo Seco Cone. Adding these recommended clarifying discussions and analysis to the GSP are essential for establishing proper reservoir operation management actions to ensure that the Forebay Subbasin remains sustainable.

- Page 6-1: Line 3 Change "achieve" to "maintain" sustainability.
- Page 6-2: Line 11 Change to "management actions and projects".
- Page 6-2: Line 22 How do we know that "Groundwater in the Forebay Subbasin is pumped from one singe principal aquifer." Source of this statement?
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Chapter 7

- **Section 7.6, Page 7-26:** As discussed above, because interconnected surface water takes place in three basic ways -- surface-water bodies gain water from inflow of groundwater through their bed, they lose water to groundwater by outflow through the bed, or they do both, gaining in some reaches and losing in other reaches – and thus is highly dependent on the MCWRA's water releases from the Nacimiento and San Antonio reservoirs for those areas outside of the Arroyo

Seco Cone, simply monitoring shallow wells next to Salinas River without accounting for how the MCWRA manages the reservoirs lacks scientific credibility. Adding these recommended clarifying discussions and analysis to the GSP are essential for establishing proper reservoir operation management actions to ensure that the Forebay Subbasin remains sustainable.

- Page 7-30: In item 7.7.2.2 is there any possibility that the data lag by one year can be accelerated?

Chapter 8

- Page 8-2: Section 8.2 Sustainability Goal – The sentence starting "This GSP will ensure long-term viable water supplies…" seems to be a pretty strong statement. Might it read "The goal of this GSP is to …"?
- Page 8-3: Section 8.3 "Achieving Long-term Sustainability"-These chapters seem to better lay out the goal.
- **Section 8.6.2.3, Page 8-16**: As discussed above, establishing groundwater level minimum thresholds by using shallow monitoring wells next to Salinas River to assess the undesirable results of significant or unreasonable depletion of interconnected surface waters without accounting for how the MCWRA manages the releases from the Nacimiento and San Antonio dams lacks scientific support. Accordingly, the following sentences (and other similar sentences in the GSP) should be changed to add that clarity. For example, please see the clarification as shown in the redline:

> ***Depletion of interconnected surface waters.*** *The chronic lowering of groundwater levels' minimum thresholds is identical to the interconnected surface water minimum thresholds and both are highly dependent on the management (i.e., water releases) of the Nacimiento and San Antonio reservoirs by the MCWRA for the areas of the Forebay Subbasin outside of the Arroyo Seco Cone. Therefore, the groundwater level minimum thresholds using shallow wells next to the Salinas River must be evaluated in the context of the MCWRA's reservoir operations to determine if the Forebay Subbasin will not result in a significant or unreasonable depletion of interconnected surface waters, including groundwater-dependent ecosystems*.

- **Section 8.6.4.1, Page 8-22:** Groundwater levels of areas outside of the Arroyo Seco Cone are also highly dependent on the management of the Nacimiento and San Antonio reservoirs by the MCWRA. Accordingly, the reservoir management impacts on groundwater level minimum threshold must be taken into account when establishing the minimum threshold. The following sentence should be added for clarity to the undesirable results standard:

> *The 15% limit on minimum threshold exceedances in the undesirable result allows for 5 exceedances in the 39 existing representative monitoring wells. No minimum threshold is established for times when the lowering of groundwater levels is determined to be the result of MCWRA operation of the reservoirs*

inconsistent with its standard operations and projects of 2015, which include the Salinas Valley Water Project.

- **Section 8.7.2, Page 8-24:** Similar to prior discussions, groundwater storage of the Forebay Subbasin is also dependent on the management of the Nacimiento and San Antonio reservoirs by the MCWRA. Accordingly, the reservoir management impacts on groundwater storage minimum threshold must be taken into account when establishing the minimum threshold. The following sentence should also be revised to add clarity to the undesirable results standard:

  The minimum threshold for reduction in groundwater storage is 267,000 acre-feet below the measurable objective. This reduction is based on the groundwater level minimum thresholds. This number will be refined as additional data are collected and other projects are implemented. No minimum threshold is established for times when the lowering of groundwater levels is determined to be the result of MCWRA operation of the reservoirs inconsistent with its standard operations and projects of 2015, which include the Salinas Valley Water Project.

Chapter 9

Introduction, first paragraph, next to last sentence: should read, "publicly available groundwater model that has technical ~~broad~~ acceptance."

1. Page 9-2: The third bullet point from the top of the page "Providing incentives to keep groundwater pumping within the sustainable yield" could open a "Pandora's box" of questions and concerns. Might this thought be deleted?
2. Page 9-3: Under 9.2.1, Projects for Developing Management Actions and Projects – I've asked several times that the second paragraph needs to be deleted or at least corrected. "Projects developed for the entire Valley" which were part of the 2019 and 2020 180/400 foot Aquifer Subbasin GSP", were not approved or "refined" by the Forebay Subbasin committee. *Simply the 180/400 could not develop projects for the entire Valley. They were not refined for this GSP.*

   These projects were developed for the 180/400 GSP with the goal of stopping seawater intrusion. Such projects are not needed in the Upper Valley and/or Forebay and these projects should be considered within the 180/400 GSP.

3. **Section 9.3, page 9-5,** first paragraph, second sentence states: "This GSP included focuses on the **management actions and** projects that directly help the Forebay Subbasin, inclusive of the ASCMA, maintain sustainability, but also includes projects that could be implemented if needed and multi-subbasin projects outside the Subbasin that could benefit Subbasin."

- Page 9-5: Section 9.3 Overview of Management Actions and Projects – The first sentence is correct. The following sentences are essentially correct.
- Page 9-7: Item A7 Reservoir Reoperation – How in the world can a "collaboration with MCWRA to evaluate potential reoperation scenarios" ***cost the Forebay $400,000 to $500,00?***
  - ***This really seems more of a project rather than a management action?***

- Page 9-11: In 9.4.1.2 Expected benefits and Evaluations of Benefits – I am very glad the second paragraph is still included. When this concept was first suggested at the Forebay meeting, I understood it was to receive data from the MCWRA Drought TAC and would then lead to a Forebay Committee rather quickly reviewing and implementing mitigation procedures. I hope this still is the goal!
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- Page 10-15: The $553,000 should be $563,000 and the $603,000 should be $613,000.

Chapter 10

1. **Page 10-1, third paragraph, next to last sentence: should read…"..available ground model that has technical ~~broad~~ acceptance." – as agreed to in the co-ordination committee.**
2. **Section 10.3, #3 Management Actions, first paragraph, last sentence:** "Conservation and agricultural BMP's and fallowing, fallow bank, and agricultural land retirement will move forward if conditions warrant it ~~or if other subbasins initiate implementation of them."~~

Thank you for your consideration,

Nancy Isakson

Nancy Isakson, President

Salinas Valley Water Coalition

Farm Bureau Monterey

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831-751-3100 www.montereycfb.com

October 8, 2021

Salinas Valley Basin Groundwater Sustainability Agency
Att: Emily Gardner, Deputy General Manager
P.O. Box 1385
Carmel Valley, CA 93924

VIA: E-Mail

RE: Groundwater Sustainability Plans

Dear Ms. Gardner:

On behalf of the Board of Directors of Monterey County Farm Bureau, we express our appreciation for the dedication and diligence of both the SVBGSA's staff and the consultants of Montgomery & Associates for the progress made on the draft groundwater sustainability plans for all sub-basins, due in January 2022. This has been a tremendous lift of a workload, and the transparency provided at all the sub-basin committee meetings has greatly aided in the drafting of these plan documents.

We are encouraged that the draft sustainability plans, in their present form with minor revisions for clarification to be considered as the comments submitted are processed and reviewed, represent a pathway forward for sustainability. While we are not expressing specific language or policy suggestions in this letter, our Board and Committee members have participated in numerous meetings and expressed their comments during those specific chapter reviews.

As the drafts move forward to the SVBGSA Board of final approval, and then submission the Department of Water Resources in January 2022, it is important to keep in mind that the integration of all the collective plan provisions, practices, and projects does not propel harm on neighboring or adjacent sub-basins of the Salinas Valley during long-term implementation. The plans should all work as a cohesive whole, working towards sustainability for the entire groundwater basin regardless of the individual characteristics or status of any individual sub-basin.

In other words, the entire Salinas Valley basin needs to work together through congruent integration of all sub-basin plans to achieve the full groundwater sustainability objectives. Only through this integrated approach can all water users of the basin achieve the success that the individual plans detail.

Indeed, the collective management practices and proposed projects of all the sub-basin plans are a comprehensive and cohesive program that serves to achieve the sustainability of the entire Salinas Valley Groundwater Basin.

Sincerely,

Norman C. Groot
Executive Director

m|r|wolfe
a professional corporation
attorneys-at-law

October 14, 2021

Colby Pereira, Chairperson
Members of the Board of Directors
Salinas Valley Basin Groundwater Sustainability Agency
P.O. Box 1350
Carmel Valley, CA 93924
Via email board@svbgsa.org

Subject: Draft Groundwater Sustainability Plans for the Upper Valley Aquifer Subbasin, Forebay Aquifer Subbasin, Eastside Aquifer Subbasin, Langley Aquifer Subbasin, and Monterey Subbasin

Dear Chair Pereira and Members of the Board of Directors:

LandWatch Monterey County offers the following comments on the draft Groundwater Sustainability Plans (GSPs) for the above referenced subbasins.

A. Selection and funding of proposed projects are not coordinated among subbasins, which is contrary to the 180/400 GSP and DWR's findings approving it. And the five new GSP's fail to provide the evidence SGMA requires that their proposed projects are financially feasible.

1. The GSA represented to DWR in the 180/400 GSP that it will identify a suite of Basin-wide projects needed to attain sustainability, which will be funded through the Basin-wide water charges framework based on pumping allowances, and that this system will be set up by June 30, 2023.

The 180/400-Foot Aquifer Subbasin GSP (180/400 GSP) that was approved by DWR identifies 13 projects that purport to "constitute an integrated management program for the entire Valley," 9 of which are identified as "priority projects." (180/400 GSP, p. 9-25.) The 180/400 GSP states that "[s]ome subset of these priority projects will be implemented as part of the six Salinas Valley Groundwater Subbasin GSPs," although some additional projects may be needed in some basins. (*Id.*) The 180/400 GSP found that the "projects and management actions identified in Chapter 9 are sufficient for attaining sustainability in the 180/400-Foot Aquifer Subbasin as well as the other five subbasins in the Salinas Valley Groundwater Basin." (*Id.* at 10-9.)

The 180/400-Foot Aquifer Subbasin GSP (180/400 GSP) provides that a "water charges framework" (WCF) will be implemented basin-wide in order to fund these projects and to deter pumping in excess of groundwater allowances. (180/400 GSP pp. 9-2 to 9-4.) The WCF is to be based on tiered charges for different levels of groundwater pumping. Tier one charges would be based on a "Sustainable Pumping Allowance," and its revenues

would cover just the GSA administration. Tier 2 and 3 charges would be assessed for amounts in excess of a "Transitional Pumping Allowance" and, after the Transitional Pumping Allowances are phased out, for amounts in excess of the Sustainable Pumping Allowance. Tier two and three revenues would be used to fund the new water supply projects. The pumping allowances and fee structures were to be separately determined for each subbasin, so they would not be uniform for each subbasin; but each subbasins tiered charges would be included "in the final water charges framework agreement." (*Id.* at 9-4.)

In approving the 180/400 GSP, DWR relied on the feasibility and likelihood of the integrated set of Basin-wide projects funded by a Basin-wide WCF:

> The projects and management actions designed to eliminate overdraft and prevent seawater intrusion are reasonable and commensurate with the level of understanding of the basin setting, as described in the Plan. The water charges framework, at this time, appears feasible and reasonably likely to mitigate overdraft, which is an important management action to help prevent undesirable results and ensure that the 180/400 Foot Aquifer Subbasin is operated within its sustainable yield.

(DWR, Statement of Findings Regarding The Approval Of The 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan, June 3, 2021, p. 2.) DWR found:

> To achieve sustainability, the Plan proposes to assess fees for groundwater extraction and use these funds to implement other projects or management actions, as needed. The proposal to charge fees for extraction is called the water charges framework and involves a three-tiered system where groundwater users will be charged a series of fees based on the volume of annual groundwater extraction. The proposal includes exemptions for some groundwater pumpers, including de minimis users that will not be included in the fee program. The foundation of the water charges framework is a sustainable pumping allowance that each parcel will be allocated based on the calculated sustainable yield. Groundwater users will be allowed to pump more than their sustainable allocation; however, this additional pumping (supplemental pumping) will be subject to higher extraction fees. The proposed water charges framework is also proposed to be instituted in the other five groundwater subbasins overseen by the SVBGSA, representing a Salinas Valley Basin-wide management action.

(*Id.*, p. 5.) DWR concluded that the "fundamental structure of groundwater management in the Subbasin is a management action called the water charges framework." (*Id.* at 31, emphasis added; see also *id.* at 33.) DWR found that "implementation of projects will depend, fully or partially, on revenue generated by the proposed water charges framework." (*Id.* at 13; see also *id.* at 33, 6.)

The 180/400 GSP requires development of the WCF by January 31, 2023 for all six subbasins:

> Details of the water charges framework for all six subbasins will be developed during the first three years of this GSP's implementation through a facilitated, Valley-wide process. This process will be similar to the successful facilitated process that resulted in the SVBGSA serving as the GSA for some or all parts of all six subbasins. The result of this facilitated process will be an agreement on the financing method approved by the SVBGSA. The facilitation will be complete by January 31, 2023, and the financing method will be implemented in all six subbasins immediately following.

(180/400 GSP at 10-4.) The 180/400 GSP also requires refining the list of projects intended to support the integrated management of the entire Basin on the same schedule:

> An additional benefit of refining the projects during the first three years of implementation is that this approach complements the approach for refining the water charges framework, as outlined in Section 10.2. Refinement of the projects and actions will occur simultaneously with refinement of the funding mechanism that supports the projects and actions. By refining all of these plans simultaneously, the funding mechanism and the projects will all be in place by June 30, 2023. Projects and management actions will then be immediately implemented in a coordinated fashion
> across the entire Salinas Valley Groundwater Basin.

(*Id.* at 10-10.)

Since the WCF is based on pumping allowances, these allowances must be determined on the same schedule:

> This GSP proposes a water charges framework that provides incentives to constrain groundwater pumping to the sustainable yield while generating funds for project implementation. The framework creates sustainable pumping allowances, charging a Tier 1 Sustainable Pumping Charge for pro-rata shares of sustainable yield, Tier 2 Transitional Pumping Charge to help users transition to pumping allowances, and higher Tier 3 Supplementary Pumping Charge for using more water. Pumping allowances are not water rights, but would be established to incentivize pumping reductions.

(*Id.* at ES-14.) The Sustainable Pumping Allowance is the "base amount of groundwater pumping assigned to each non-exempt groundwater pumper. The sum of all sustainable pumping allowances and exempt groundwater pumping is the sustainable yield of the Subbasin." (*Id.* at 9-3.) Pumping allowances "are not water rights. Instead, they are pumping amounts that form the basis of a financial fee structure to both implement the regulatory functions of the SVBGSA and fund new water supply projects." (*Id.*)

In short, determining pumping allowances, setting the tiered rates for the WCF, and selecting the basin-wide projects to be financed is supposed to accomplished simultaneously by January 2023 for all six subbasins.

2. **The five draft GSPs are inconsistent with the 180/400 GSP because they do not rely on, assume, or identify a common set of Basin-wide projects and do not include participation in a Basin-wide Water Charges Framework.**

Each of the five GSPs identify a different set of projects than each other and different than the projects identified in the 180/400 GSP. (See Tables 9-1 in each GSP.) There is little overlap among the projects, and there are no projects that are common to all of the GSPs.

Furthermore, both the UVA and Forebay GSPs expressly reject the Water Charges Framework. (Forebay GSP at 10-15 to 10-16; UVA GSP at 10-15 to 10-16.) The Eastside, Monterey, and Langley GSP's do not mention the water charges framework in their discussions of funding options. (Eastside GSP at 10-15; Monterey GSP at 10-23; Langley GSP at 10-15.)

At this point, the "fundamental structure" on which DWR relied to approve the 180/400 GSP has been set aside because the five new draft GSP no longer propose a Basin-wide Water Charges Framework or a common set of Basin-wide projects to attain sustainability.

If the GSA approves the five new GSPs as written, it must fundamentally revise the 180/400 GSP, which no longer appears viable if other subbasins will not fund a common set of projects. The problem that the GSA must address squarely is that pumping reductions, not just capital projects, are needed to attain sustainability in the 180/400-Foot Aquifer Subbasin. For example, instead of investing in a permanent $100 million+ pumping barrier to hold back seawater intrusion, the GSA should consider investing in a finite period of pumping reductions that would be sufficient to restore groundwater levels to protective elevations. A finite period of pumping reductions that restores protective elevations would obviate and may be less expensive than financing and operating a permanent pumping barrier. Once the protective elevations are restored, the 180/400 could resume pumping the full sustainable yield of the subbasin, which is all that SGMA allows. (The pumping barrier would not allow any more pumping than the sustainable yield.) In any event, pumping reductions are at least feasible, and as discussed below, there is no evidence that a pumping barrier is financially feasible.

3. **The UVA and Forebay GSPs do not require, and presumably will not fund, common Basin-wide projects.**

The only project listed by the UVA GSP and Forebay GSP that is common to some of the other GSPs is the Multi-benefit Stream Channel Improvements, which is included in the

Eastside and Monterey GSPs and which contains as one component the Invasive Species Eradication project described by the 180/400 GSP. But the Multi-benefit Stream Channel Improvements projects are expected to benefit primarily the GSP's along the Salinas River, rather than the Langley or Eastside subbasins, and it is not even included in the Langley GSP. Indeed, the GSPs do not estimate any benefits to the Monterey, Eastside, and Langley Subbasins from this project.

Furthermore, neither the UVA GSP nor the Forebay GSP actually purport to require any projects to attain sustainability. (UVA GSP at 9-1 [projects not necessary to maintain sustainability]; Forebay GSP at 9-1 to 9-2 [subbasin sustainable; only management actions to be pursued].) Both GSPs anticipate ongoing maintenance of sustainability through management actions, not projects. They list projects only in case they might be needed in the future.

At this point, no GSP should assume that the Forebay and UVA water users would agree to provide funding for any large Basin-wide capital projects, either through a water charges framework or a Proposition 218 vote. To the extent that the Eastside, Langley, and Monterey GSPs assume funding contributions or project-participation from the Forebay and UVA subbasins, the five draft GSPs are inconsistent on their faces and cannot be approved. The project discussions in the Eastside, Langley, and Monterey GSPs should be revised to make clear that the proposed projects do not rely on funding contributions or project-participation from the Forebay and UVA subbasins.

4. **The Eastside, Langley, and Monterey GSPs do not propose a commons set of Basin-wide projects and do not provide the evidence required by SGMA that any large capital projects that benefit multiple subbasins are financially feasible.**

Contrary to the expectation set up by the 180/400 GSP, there is no common set of Basin-wide projects proposed by the GSPs. Although there are several large capital projects that are listed by more than one of the GSPs, the GSPs fail to provide evidence that these projects are financially feasible. This failure is because the GSPs do not address the critical question of the willingness to pay for the water these projects might deliver.

For agricultural uses, irrigation water is an input to production, so the maximum value of water is constrained by expected returns. There must be some price beyond which agricultural users will not pay for water projects. Is it $500 AF? $750 AF? $1,000 AF? $1,500 AF? And how much water would be demanded at each of these prices? What does the demand curve for agricultural water supply look line in the Valley? The GSP's simply fail to address these critical questions.

Water markets provide some evidence of willingness to pay. Although some farmers have reportedly paid as much as $2,200 per AF for some amounts of water for high value crops (e.g., on a short term basis to protect investments in permanent crops), the average NASDAQ Veles California Water Index water futures price is now only $686 AF, an

extraordinarily high price attained only as a result of a long drought period[1] Agricultural water has reached market prices in the $500 to $1000 range only in times of water stress.[2] Salinas Valley farmers may be willing to pay more for water due to their higher productivity than the average California farmer, but obviously there is a limit.

The analysis of fallowing options in the Eastside GSP provides some indirect evidence of willingness to pay; and since it is based on local land prices, it should reflect the range of agricultural productivities in the Salinas Valley. The Eastside GSP concludes that land could be fallowed to make its water available to other users by paying farmers rent and cover crop expenses. (Eastside GSP, p. 9-67.) Based on these land rents and cover crop expenses, farmers would be willing to forego farming for payments that represent water values of from $590 to $1,730 per AF. If agricultural users would find it more profitable not to use water at all when it is worth more than these values to others, it is not reasonable to suppose that they would vote to assess themselves for a capital project that produces water at higher costs per acre foot.

Despite this, the GSPs propose large capital water projects with unit costs well in excess of $1,000 per AF.[3] For example, the Eastside GSP identifies the Chualar and Soledad diversion projects using the 11043 water rights as costing $55 million and $104 million respectively. The 6,000 AFY provided by these diversion projects would cost $1,280 and $2,110 per AF respectively. The projects would benefit Eastside and 180/400 water users, but there is no analysis in either the Eastside GSP or the 180/400 GSP that would support the assumption that agricultural users would be willing to pay that much for water.

Similarly, both the Monterey and Eastside GSP's identify winter reservoir releases with ASR as a potential project, costing $172 million to provide 12,900 AFY at a unit cost of $1,450 per AF. Both the Monterey and Eastside GSPs say that the distribution of benefits would be determined through a benefits assessment. But there is simply no analysis that supports the assumption that there is a willingness to pay $1,450 per AF for agricultural water, much less to do so through a long term commitment in a Proposition 218 vote or through adoption of a Water Charges Framework.

The Eastside and Monterey GSPs both identify a Regional Municipal Supply project that is based on desalinating brackish water pumped from a seawater intrusion barrier. The unit cost for desalinating this water would come to $2,900 per AF, to which must be

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[1] Aquaoso, California Agricultural Water Prices by Water District, June 17, 2021, available at https://aquaoso.com/blog/california-agricultural-water-prices/.

[2] *Id.*

[3] By contrast, many of the projects that are proposed to benefit only one subbasin are more modest in scale and in price per AF.

added the $1,200 per AF to pump the source water from the seawater intrusion barrier. While municipal users are willing to pay more than agricultural users for water, there is no analysis in the Eastside and Monterey GSPs of how the costs would be allocated between agricultural and urban beneficiaries or whether either group would be willing to pay as much as $4,100 per AF for this water, which they now enjoy for the cost to pump it..

Some proposed large capital projects may make sense financially. The 3,500 acre CSIP expansion, identified in the Langley and Eastside GSPs, and already proposed in the 180/400 GSP, could proceed based on the existing CSIP model if the expanded benefit assessment district is willing to assess itself $630 per AF for this water. Similarly, the direct delivery (as opposed to the aquifer storage and recovery or ASR) of winter release water for MCWD's winter urban demand at $1,100 per AF may make sense given the likely willingness of new urban customers to pay higher rates.

Each of the GSPs should be revised to include a discussion of likely willingness to pay for the proposed capital projects and the likely financial feasibility of proposed projects. The discussion should reflect whether the large capital projects are scalable and whether sufficient numbers of water users would be willing to pay the average cost per AF to actually cover the minimum scale project's entire cost. The willingness of one water user to pay the average cost per AF is not evidence that the entire project can be funded.

Without an analysis of the willingness to pay for large capital projects, especially those projects for which the cost per AF is in excess of $500, the GSP's cannot be approved by DWR. SGMA requires that a GSP include both the estimated cost for each project and "a description of how the Agency plans to meet those costs." (23 CCR § 354.44(b)(8).) DWR must have substantial evidence to support a finding that the projects are "feasible" and that the GSA "has the financial resources necessary to implement the Plan." (23 CCR § 355.4(b)(5),(9).) The GSP's do not provide evidence that funding is actually feasible. Their discussions of project funding merely list the kinds of funding arrangements that are commonly used for large capital projects. (Eastside GSP at 10-15; Monterey GSP at 10-23; Langley GSP at 10-15; UVA GSP at 10-15; Forebay GSP at 10-15.) As noted, the UVA and Forebay GSPs do not propose to provide <u>any</u> project funding because they determine that no projects are actually needed, and they specifically reject participation in the Water Charges Framework. (Forebay GSP at 10-15 to 10-16; UVA GSP at 10-15 to 10-16.) Merely listing the kinds of arrangements that can <u>conceptually</u> be used to fund projects does not explain how the GSA could <u>actually</u> meet their costs, especially where there is substantial uncertainty about willingness to participate in these funding arrangements.

The findings that projects are financially feasible are particularly critical for the Eastside and Monterey Subbasins because they depend on the success of high capital, multi-subbasin projects to address overdraft conditions. (Eastside GSP at 9-103 to 9-104; Monterey GSP at 9-105.)

B. For the Monterey Subbasin GSP, the groundwater level sustainable management criteria and interim milestones fail to support the seawater intrusion criteria.

1. SGMA requires coordination of sustainable management criteria: groundwater level minimum thresholds must support the seawater intrusion minimum threshold.

SGMA requires that each minimum threshold must avoid *each* undesirable result because SGMA requires that "basin conditions at each minimum threshold will avoid undesirable results for *each of* the sustainability indicators." (23 CCR § 354.28(b)(2), emphasis added.) For example, the groundwater level minimum threshold must be "supported by" the "[p]otential effects on *other* sustainability indicators." (23 CCR 354.28(c)(1)(B), emphasis added.) This means that each minimum threshold, especially the groundwater level minimum threshold, must be coordinated to ensure that *all* undesirable results are avoided. Furthermore, a GSP must not "adversely affect the ability of an adjacent basin to implement its Plan or impede achievement of its sustainability goal." (23 CCR § 355.4(b)(7).)

2. The Monterey Subbasin GSP's proposed seawater intrusion SMCs do not permit any additional intrusion.

The Monterey Subbasin GSP sets the MT and MO for seawater intrusion for the lower 180-Foot Aquifer and the 400-Foot Aquifer at the line of advancement as of 2015. (Monterey GSP, p. 8-51.) The Monterey GSP sets the MT and MO for seawater intrusion to the Deep Aquifers at Highway 1, based on the observation that there is limited intrusion in these aquifers. (*Id.*, pp. 8-51 to 8-52.) In effect, the Monterey GSP commits the GSA not to permit any additional seawater intrusion in these aquifers. This is a proper goal in light of the clear impacts to beneficial users.

3. The Monterey Subbasin GSP's groundwater level SMCs and groundwater level interim milestones are set based on their effects on seawater intrusion.

The Monterey GSP acknowledges that the MT and MO for groundwater levels must support attainment of the seawater intrusion MT and MO because it identifies the primary consideration in setting the groundwater level MT and MO as the effect on seawater intrusion:

> As discussed in Section 3.1.6, groundwater use within the Marina-Ord Area is almost exclusively limited to generation of municipal supplies by MCWD. Groundwater elevations are significantly higher than municipal production well screen elevations in all aquifers in the Marina-Ord Area, and there is limited concern regarding the potential dewatering of groundwater production wells. Therefore, *groundwater levels that could cause undesirable results associated with other locally relevant sustainability indicators, such as the lateral or vertical*

> *expansion of the existing seawater intrusion extent and/or eventual migration of saline water into Deep Aquifer wells, have been used to define groundwater level minimum thresholds in the Marina-Ord Area*.

(Monterey GSP, p. 8-16, emphasis added.) The Monterey GSP also provides that

> . . . undesirable results caused by chronic lowering of groundwater levels in the Marina-Ord Area are primarily associated with the expansion of seawater intrusion and other locally relevant sustainability indicators. *These sustainability indicators have been considered when defining groundwater level minimum thresholds in the Marina-Ord Area*.

(Monterey GSP, p. 8-19, emphasis added.)

4. Setting the Monterey Subbasin GSP's groundwater level SMCs at historic 1995-2015 conditions is purportedly justified by the stability of the lateral extent of seawater intrusion in the Monterey Subbasin during that historic period.

The Monterey GSP contends that setting the groundwater level MT and MO for the 180- and 400-Foot Aquifers on the basis of the 1995 to 2015 groundwater levels is justified because the lateral extent of seawater intrusion in the Monterey Subbasin has been "generally stable" in that period:

> As discussed in the preceding sections, the potential effects of undesirable results caused by chronic lowering of groundwater levels in the Marina-Ord Area are primarily associated with the expansion of seawater intrusion. *The observed lateral extent of seawater intrusion within the Subbasin appears to have been generally stable within the 180- and 400-Foot Aquifers between 1995 and 2015. As such, minimum thresholds have been set based upon minimum groundwater elevations observed between 1995 and 2015 in the 180- and 400 Foot aquifers*. Seawater intrusion is additionally monitored and managed pursuant to seawater intrusion SMCs (Section 8.9 below) to verify seawater intrusion does expand within the Subbasin due to sea-level rise and/or changes in the groundwater gradient.

(Monterey GSP, p. 8-30.) There are several problems with this contention, discussed below.

5. The "stability" rationale for setting the Monterey Subbasin GSP's groundwater level SMC's based on historic conditions is undercut by the Monterey GSP's projections that historic conditions will not continue: groundwater levels will actually continue to decline and remain below historic conditions and the interim milestones permit such declines.

First, the contention that groundwater level SMCs are justified by historic conditions ignores the GSP's own projection that groundwater levels will continue to decline until at least 2033 and will not attain the MO until 2042. The Monterey GSP documents and projects in its "Example Trajectory for Groundwater Elevation Interim Milestones" that groundwater levels for a Marina-Ord well fell below the MT in 2019, will continue to fall until 2033, will not rise above the MT until 2039, and will not attain the MO until 2042. (Monterey GSP, pp. 8-42, Figure 8-12.) The interim milestones for wells in the 400-Foot Aquifer and the Deep Aquifers assume and permit that groundwater levels will remain below historic levels and the MT for most of the next 20 years:

> Within the Monterey Subbasin, for wells in the 400-Foot Aquifer, Deep, and El Toro Primary Aquifer System Aquifers where groundwater levels have been declining, groundwater elevation interim milestones are defined based on a trajectory informed by current (fourth quarter of 2020) groundwater levels, historical groundwater elevation trends [footnote], and measurable objectives. This trajectory allows for and assumes a continuation of historical groundwater elevation trends during the first 5-year period of GSP implementation, a deviation from that trend over the second 5-year period, and a recovery towards the measurable objectives in the third and fourth (last) 5- year period.

(Monterey GSP, p. 8-41.) The proposed interim milestones for wells in the 180-Foot and Deep Aquifers permit substantial declines in groundwater levels from 2020 conditions in the years 2027 and 2032. (*Id.*, p. 8-43 to 8-44, Table 8-3.) For some wells, the interim milestones would not require that the minimum threshold be met until 2037 or later. In short, the Monterey GSP does not expect that groundwater levels will actually remain within historic levels.

Allowing groundwater levels to fall below historic levels is purportedly justified because "there are large volumes of freshwater in the Subbasin that provide additional time and flexibility to reach identified SMCs while projects and management actions are implemented." (*Id.,* p. 8-41.) However, the draft GSP provides no evidence to suggest that groundwater levels that fall and remain below the historic conditions for at least the next ten years in the Marina-Ord area will not induce further seawater intrusion, resulting in a failure to meet the seawater intrusion SMCs. The evidence is to the contrary: lower groundwater levels increase seawater intrusion.[4] Thus, declining groundwater levels

[4] Geoscience, Protective Elevations to Control Seawater Intrusion in the Salinas Valley, 2013, available at https://www.co.monterey.ca.us/home/showdocument?id=19642.

will make it impossible to meet the seawater intrusion minimum threshold and measurable objective, which require a halt to the advancement of seawater intrusion.

In summary, the historic "stability" rationale cannot be extrapolated to claim that groundwater levels well below the historic record will continue to result in a stable areal extent of seawater intrusion. It makes no sense to contend that setting the MT and MO on the basis of historic conditions will halt seawater intrusion when the GSP would effectively fail to maintain those historic conditions.

The historic stability rationale also ignores the fact that Deep Aquifer groundwater levels began dropping in 2014, have continued to drop, and are projected to continue to drop due to increased levels of extractions. MCWRA reported in 2020 that Deep Aquifer groundwater levels have been falling since 2014, are well below sea-level, and that induced vertical migration of contaminated water to the Deep Aquifers themselves is in fact occurring:

> As is the case with the 180-Foot and 400-Foot Aquifers, groundwater levels in the Deep Aquifers are predominantly below sea level. Beginning around 2014, groundwater levels in the Deep Aquifers began declining and are presently at a deeper elevation than groundwater levels in the overlying 400-Foot Aquifer based on comparisons of multiple well sets at selected locations, meaning that there is a downward hydraulic gradient between the impaired 400-Foot Aquifer and the Deep Aquifers (Figure 16 and Figure 17). This decrease in groundwater levels coincides with a noticeable increase in groundwater extractions from the Deep Aquifers (Figure 16 and Figure 17). The potential for inducing additional leakage from overlying impaired aquifers is a legitimate concern documented by previous studies and is something that would be facilitated by the downward hydraulic gradient that has been observed between the 400-Foot Aquifer and Deep Aquifers.
>
> Seawater intrusion has not been observed in the Deep Aquifers. However, the Agency has documented the case of one well, screened in the Deep Aquifers, that is enabling vertical migration of impaired groundwater into the Deep Aquifers. The Agency is working with the well owner on destruction of this well.[5]

In addition to the threat to contaminate the Deep Aquifers, the induced vertical migration of upper aquifer groundwater to the Deep Aquifers aggravates seawater intrusion in those upper aquifers. A 2003 study for MCWD concluded that increasing pumping of the Deep Aquifers from the 2002 baseline level of 2,400 AFY to just 4,000 AFY would (1) induce

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[5] Monterey County Water Resources Agency (MCWRA), Recommendations to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin: 2020 Update, May 2020, p. 31, https://www.co.monterey.ca.us/home/showdocument?id=90578

further seawater intrusion into the upper aquifers (the 180-Foot and 400-Foot Aquifers), which were vertically connected, and (2) risk contamination of the Deep Aquifers themselves.[6] Deep Aquifer pumping is now in excess of 10,000 AFY.[7]

And, in fact, the Monterey GSP admits that falling groundwater levels in the Deep Aquifer threatens to contaminate the Deep Aquifers and to induce seawater intrusion in the upper aquifers:

> Seawater intrusion has not been observed in the Deep Aquifer to date. However, groundwater elevations have been declining and are significantly below sea level. The declining groundwater elevations in the Deep Aquifer may be causing groundwater elevations to fall within the 400-Foot Aquifer in the southwestern portion of the Marina-Ord Area (i.e., near wells MPMWD#FO-10S and MPMWD#FO-11S). Although there is some uncertainty whether the Deep Aquifer is subject to seawater intrusion from the ocean, continued decline of groundwater elevations in the Deep Aquifers could increase the risk of seawater intrusion and may eventually cause vertical migration of saline water from overlying aquifers into the Deep Aquifers. As such, minimum thresholds for the Deep Aquifers are set to historically observed minimum groundwater elevations between 1995 and 2015, which is equivalent to the groundwater elevations observed in 2015 for most Deep Aquifer wells.

(Monterey GSP, p. 8-30.) Again, setting the groundwater level MT and MO to historic levels but then allowing another ten to twenty years to pass before the interim milestones actually require attainment of these historic levels cannot demonstrably ensure that there is no further advancement of seawater intrusion. However, no further advancement is precisely what is required by the seawater intrusion MT and MO.

In sum, interim milestones cannot be set at a level that permits continued declines in groundwater levels if the Monterey GSP is to find that the groundwater levels are consistent with the seawater intrusion SMCs.

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[6] WRIME, Deep Aquifer Investigative Study, May 2003, pp. 4-7, 4-11 to 4-12, pdf available upon request.

[7] Monterey County Water Resources Agency (MCWRA), Well Permit Application Activities Update, prepared for May 17, 2021 MCWRA Board of Directors meeting, https://monterey.legistar.com/View.ashx?M=F&ID=9381226&GUID=34ED34CD-3A39-4851-87A3-298BE70D383C

6. The Monterey Subbasin GSP fails to assess the effects on other subbasins of setting groundwater level SMCs based on historic conditions or allowing groundwater levels to decline further through relaxed interim milestones.

As the Monterey GSP acknowledges, the interconnectivity between the 180/400-Foot Aquifer Subbasin and the Monterey Subbasin requires coordination of the sustainable management criteria for both subbasins. (Monterey GSP, p. 8-35.) Coordination is required in order to meet SGMA's requirement that the SMC's for one subbasin do not prevent another subbasin from meeting its sustainability goal. (23 CCR § 355.4(b)(7).)

Setting the groundwater level MT and MO at historic levels and then effectively ignoring these criteria through use of relaxed interim guidelines for ten to twenty years may very well impair attainment of the seawater intrusion criteria for the 180/400-Foot Aquifer GSP, which are also set at a level that permits no further advancement of the seawater intrusion front.

However the Monterey GSP provides no analysis of that possibility. Instead, the Monterey GSP proposes to defer the assessment of the impact of the Monterey Subbasin's groundwater level MTs on the Deep Aquifers in the neighboring 180/400-foot Aquifer Subbasin until after completion of the long-delayed Deep Aquifers Study and the eventual establishment of Deep Aquifer SMCs for the 180/400-foot Aquifer Subbasin.

The Deep Aquifer Study, recommended four years ago, has not commenced.

Furthermore, there is no reason that an assessment of the effects of the Monterey Subbasin's groundwater level MTs should be limited to its effects on the Deep Aquifers in the 180/400-Foot Subbasin. The assessment should also include an assessment of the effects of the Monterey Subbasin's groundwater level MTs on seawater intrusion of each of the principal aquifers in that neighboring subbasin. The Monterey Subbasin GSP argues that pumping in the 180/400-Foot Aquifer Subbasin has caused seawater intrusion in the Monterey Subbasin. In turn, the Monterey Subbasin GSP must assess the reciprocal effects of its own pumping, SMCs, and interim milestones on the 180/400-Foot Aquifer Subbasin.

SGMA's mandate to use the best available science is not an invitation to let the perfect be an enemy of the good pending completion of the Deep Aquifer study. The Monterey GSP must use the whatever science is now available to provide some discussion and assessment of the effect on the neighboring subbasins of allowing continued reductions in Monterey Subbasin groundwater levels below historic conditions through relaxed interim thresholds.

Again, it is not reasonable to extrapolate beyond the historic data to assume that lower-than-historic groundwater levels in the Monterey Subbasin will not impair adjacent basins. The purported stability of the lateral extent of seawater intrusion in the Monterey Subbasin from 1995 to 2015 was certainly not matched in the 180/400-Foot Aquifer

Subbasin, where seawater intrusion rapidly advanced during that period. The Monterey GSP provides no evidence to justify the assumption that allowing lower-than-historic groundwater levels in the Monterey Subbasin will not contribute to the continuing seawater intrusion in the neighboring subbasin.

Finally, the Monterey Subbasin GSP must also evaluate and address the effects of reduced groundwater levels in the Corral de Tierra Subarea on the Seaside Subasin. Again, there is no evidence in the record that merely maintaining historic groundwater levels is sufficient to support groundwater levels in the Seaside Subbasin. To the contrary, comments by the Seaside Basin Watermaster indicate that chronic lowering of groundwater levels in the Laguna Seca Subarea of the Seaside Subbasin can only be corrected by reducing existing pumping in the Corral de Tierra, i.e., increasing groundwater levels above historic levels. (Robert Jacques, PE, email to Sarah Hardgrave, et al., March 22, 2021.) Setting Monterey Subbasin groundwater level SMC's at historic levels violates SGMA because it will prevent attainment of groundwater level objectives in the adjacent Seaside Subbasin.

C. For the Eastside Subbasin GSP, the groundwater level sustainable management criteria and interim milestones also fail to support the seawater intrusion criteria.

As discussed above, SGMA requires that each minimum threshold must avoid *each* undesirable result because SGMA requires that "basin conditions at each minimum threshold will avoid undesirable results for *each of* the sustainability indicators." (23 CCR § 354.28(b)(2), emphasis added.) For example, the groundwater level minimum threshold must be "supported by" the "[p]otential effects on *other* sustainability indicators." (23 CCR 354.28(c)(1)(B), emphasis added.) This means that each minimum threshold, especially the groundwater level minimum threshold, must be coordinated to ensure that *all* undesirable results are avoided.

However, the groundwater level SMCs for the Eastside Subbasin fail to support the seawater intrusion SMC. Although the Eastside Subbasins is not seawater intruded itself, its GSP sets its seawater intrusion minimum threshold to prevent any seawater intrusion over the 500 mg/l threshold in any subbasin, in effect acknowledging that conditions in the Eastside Subbasin can cause seawater intrusion in adjacent subbasins. (Eastside GSP, p. 8-29.) In its discussion of its sustainability indicators for groundwater levels, the Eastside GSP acknowledges that "interference with other sustainability indicators," e.g., the sustainability indicators for seawater intrusion, would be a significant an unreasonable condition. (*Id.*, p. 8-7.) The Eastside GSP states that that the groundwater level minimum threshold is "intended not to exacerbate the rate of seawater intrusion." (*Id.*, p. 8-15.)

Overdraft conditions in the Eastside Subbasin that lower groundwater levels create a gradient causing subsurface flows from the 180/400 Subbasin to the Eastside Subbasin. These subsurface outflows from the 180/400 Subbasin contribute to seawater intrusion by

negatively affecting the water budget in the 180/400 Subbbasin. The Eastside GSP acknowledges that the historic groundwater levels in the Eastside Subbasin, including the pumping trough around Salinas, have resulted in net subsurface outflows from the 180/400 Subbasin to the Eastside Subbasin. (*Id.*, p. 6-19.) Figure 6-9 demonstrates that there have been increasing net subsurface outflows from the 180/400 Subbasin to the Eastside Subbain since 1980. (*Id.*) For example, there are substantial net subsurface outflows from the 180/400 Subbasin to the Eastside Subbasin in both 2011 and 2015, and all of the other years after 1980. (*Id.*) Despite this, the Eastside GSP sets the minimum threshold for groundwater levels at the historic 2015 levels and sets the measurable objective at the 2011 level.[8] (*Id.*, pp. 8-7, 8-18.) In short, the Eastside SMC's are set at levels that will continue to induce subsurface outflows from the seawater intruded 180/400 Subbasin.

The Eastside Subbasin GSP fails to analyze the possibility that its minimum thresholds for groundwater levels and storage depletion will contribute to seawater intrusion in the 180/400 Subbasin. Instead, the Eastside GSP simply punts this issue to the future:

> Minimum thresholds for the Eastside Subbasin will be reviewed relative to information developed for the neighboring subbasins' GSPs to ensure that these minimum thresholds will not prevent the neighboring subbasins from achieving sustainability.

(Eastside GSP, p. 8-16.) It is unclear when this review will occur, especially for the 180/400 Subbasin, for which a GSP has already been adopted. Regardless, deferral of the analysis is not sufficient. SGMA requires that the Eastside GSP squarely address whether it "will adversely affect the ability of an adjacent basin to implement its Plan or impede achievement of its sustainability goal." (23 CCR § 355.4(b)(7).) The GSP must support its conclusions with substantial evidence after applying the best science that is available now. (23 CCR § 354.44(c).) It is clear that the groundwater level and storage depletion sustainability indicators for the Eastside Subbasin will continue to contribute to seawater intrusion in the 180/400 GSP by inducing subsurface flows out of the 180/400 Subbasin. Since the 180/400 Subbasin minimum threshold for seawater intrusion requires halting any further seawater intrusion, any further inducement of seawater intrusion will prevent the attainment of sustainability by the 180/400 Subbasin.

The Eastside GSP must be revised to provide minimum thresholds and measureable objectives for groundwater levels that will not prevent attainment of sustainability by the 180/400 Subbasin, and it must provide an analysis based on the best available science to explain why.

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[8] The Eastside GSP also sets the minimum threshold for storage reduction using the groundwater level minimum threshold as a proxy indicator. (Eastside GSP, p. 8-23.)

D. Water quality sustainable management criteria should not be limited to effects caused by "direct GSA action." The GSPs must also regulate extractions that cause undesirable results, and do so through a specific and enforceable management action.

The five new GSPs purport to limit significant and unreasonable conditions related to groundwater quality degradation to just those "[l]ocally defined significant and unreasonable changes in groundwater quality resulting from *direct GSA action*." (Monterey GSP, p. 8-56, italics added; see also, e.g., Eastside GSP, p. 8-34.) Thus, the GSPs claim that the GSA need only address water quality degradation that is a "direct result of projects or management actions conducted pursuant to GSP implementation:"

> For the Subbasin, any groundwater quality degradation that leads to an exceedance of MCLs or SMCLs in potable water supply wells or a reduction in crop production in agricultural wells that is a direct result of GSP implementation is unacceptable. Some groundwater quality changes are expected to occur independent of SGMA activities; because these changes are not related to SGMA activities they do not constitute an undesirable result. Therefore, the degradation of groundwater quality undesirable result is:
>
> > *Any exceedances of minimum thresholds during any one year as a direct result of projects or management actions conducted pursuant to GSP implementation is considered as an undesirable result.*

(Monterey GSP, p. 8-56, underlining added.)

This language does not define what constitutes a "direct result" of GSP implementation or "direct GSA action." However, elsewhere, the GSP's give three examples of conditions that may lead to an undesirable result and that the GSA is presumably prepared to address:

> • Required Changes to Subbasin Pumping. If the location and rates of groundwater pumping change *as a result of projects implemented under the GSP*, these changes could alter hydraulic gradients and associated flow directions, and cause movement of constituents of concern towards a supply well at concentrations that exceed relevant standards.
>
> • Groundwater Recharge. *Active recharge of imported water or captured runoff* could modify groundwater gradients and move constituents of concern towards a supply well in concentrations that exceed relevant limits.
>
> • Recharge of Poor-Quality Water. *Recharging the Subbasin* with water that exceeds an MCL, SMCL, or level that reduces crop production could lead to an undesirable result.

(Monterey GSP, p. 8-58; see also Eastside GSP, p. 8-42 [same].) Significantly, none of these three conditions that might trigger GSA action include excessive pumping or changes in pumping by other parties that may cause water quality degradation; each condition includes only the secondary effects of the GSA's own projects. But the GSA's failure to take management action to regulate other parties, e.g., its failure to restrict excessive extractions or changes in pumping by other parties, may also cause water quality degradation. For example, the Community Water Center (CWC) has documented that for the San Jerardo Cooperative, Inc., increasing levels of nitrate and arsenic correspond to lower groundwater levels.[9] CWC has documented that "contaminants like arsenic, uranium, and chromium (including hexavalent chromium) are more likely to be released under certain geochemical conditions influenced by pumping rates, geological materials, and water level fluctuations."[10] It is clear that pumping levels and pumping changes can mobilize, concentrate, or move existing contaminants so as to cause water quality degradation. The GSA has a duty under SGMA to prevent this.

The Monterey GSP contends that because other agencies have authority over groundwater quality, the GSA's role is somehow limited:

> The powers granted to GSAs to effect sustainable groundwater management under SGMA generally revolve around managing the quantity, location, and timing of groundwater pumping. SGMA does not empower GSAs to develop or enforce water quality standards; that authority rests with the SWRCB Division of Drinking Water and Monterey County. Because of the limited purview of GSAs with respect to water quality, and the rightful emphasis on those constituents that may be related to groundwater quantity management activities.
>
> Therefore, this GSP is designed to avoid taking any action that may inadvertently move groundwater constituents already in the Subbasin in such a way that the constituents have a significant and unreasonable impact that would not otherwise occur.

(Monterey GSP, pp. 8-60 to 8-61; see also Eastside GSP, p. 8-35.) The fact that the County *and* the RWQCB also have authority and responsibility to address water quality degradation demonstrates that the statutory scheme does not rely on the regulatory

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[9] Community Water Center, letter to SVGBGSA, April 23, 2021, re Comments on the Draft Salinas Valley GSP Chapters 1-8 for the Langley, East Side, Forebay, Upper Valley and Monterey Subbasins, p. 1.

[10] *Id.*, pp. 1-2, citing Community Water Center and Stanford University, 2019. Factsheet "Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium" for more information.https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/156 0371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896.

actions of any single agency. Nothing in SGMA's mandate that the GSP address water quality degradation permits the GSA to ignore water quality degradation that results from third party pumping or to ignore such third party degradation unless the GSA has affirmatively regulated pumping. The GSP must address the effects of its regulatory acts or omissions, including omissions that move, mobilize, or concentrate pollutants by permitting excessive extractions or changes in extractions by groundwater pumpers.

Indeed, DWR has made it clear in its imposition of corrective actions on the 180/400-Foot Aquifer Subbasin GSP that "groundwater management *and extraction*" mustg be addressed because it may result in degraded water quality:

> RECOMMENDED CORRECTIVE ACTION 5 Coordinate with the appropriate groundwater users, including drinking water, environmental, and irrigation users as identified in the Plan, and water quality regulatory agencies and programs in the Subbasin to understand and develop a process for determining if groundwater management *and extraction* is resulting in degraded water quality in the Subbasin.[11]

Accordingly, the GSP cannot limit its concern to the effects of its own projects without taking responsibility for the effects of unregulated, excessive, or changed extractions on water quality degradation.

For example, if there is evidence that arsenic contaminations are mobilized or concentrations increased by new or excessive extractions, then the GSP must manage extractions to avoid undesirable results from mobilized, moved, or concentrated arsenic. The GSP cannot simply state that there "is no clear correlation that can be established between groundwater levels and groundwater quality at this time" as if that disposes of the matter for the GSP planning horizon. (Monterey GSP, p. 8-58.) The GSA must adopt an effective program to investigate, apply the best available science, and manage the resource to prevent undesirable contaminant concentrations caused by excessive or changed extractions, whether those are due to changes the GSA requires in subbaasin pumping or due to the failure of the GSA to regulate existing pumping in the first instance.

In sum, the GSPs fail to propose a coordinated system of meaningful sustainable management criteria and a management action to address water quality degradation. The minimum threshold and measureable objectives should be based on zero exceedances of water quality standards, as in the Eastside GSP so that each and every instance of water quality degradation can be determined and action can be prompted. (Eastside GSP, pp. 8-34, 8-41.) The GSP's should provide for a more robust monitoring program and a self-reporting program so that any exceedance will actually be determined. It is not sufficient to monitor only a small sampling of domestic wells.

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[11] Department of Water Resources, GSP Assessment Staff Report Salinas Valley – 180/400 Foot Aquifer (Basin No. 3-004.01), June 3, 2021, p. 37, emphasis added available at https://sgma.water.ca.gov/portal/gsp/assessments/29.

Most importantly, the proposed "Water Quality Partnership" implementation action needs to be revised so that it is an effective, enforceable commitment to action by the agency with the most direct oversight of the cause of any exceedance. (See, e.g., Eastside GSP, pp. 9-100 to 9-101.) The proposed Water Quality Partnership contains only the flowing proposals for action:

> SVBGSA will coordinate with the appropriate water quality regulatory programs and agencies in the Subbasin to understand and develop a process for determining when groundwater management and extraction are resulting in degraded water quality in the Subbasin. . . . Under this implementation action, SVBGSA will play a convening role by developing and coordinating a water quality partnership (Partnership). . . . The Partnership will review water quality data, identify data gaps, and coordinate agency communication. The Partnership will include the Regional Water Quality Control Board, local agencies and organizations, water providers, domestic well owners, technical experts, and other stakeholders. The Partnership will convene at least annually. The goal of the Partnership will include documenting agency actions to address water quality concerns. An annual update to the SVBGSA Board of Directors will be provided regarding Partnership efforts and convenings.

(Eastside GSP, p. 9-101.) In effect, the Water Quality Partnership calls for holding an annual meeting and writing a report. This is not a sufficient basis to find that the GSA has met its statutory obligation to adopt a plan that will actually address water quality degradation.

At minimum, a management action that addresses water quality degradation should include the following specific steps, which should be negotiated and memorialized in an MOU with the CCRWQCB and the Monterey County Department of Environmental Health:

- The agencies should arrange to monitor a sufficiently representative sampling of domestic wells to reliably determine any instance of a domestic well's failure to meet water quality standards.
- The agencies should accept and verify self-reporting of instances of failures to meet water quality standards.
- For each instance of failure to meet water quality standards, the agencies should ascertain whether the cause includes (1) discharge of pollutants, as determined by the CCRWQCB or the County DEH, and/or (2) pumping activity that has concentrated, mobilized, or moved pollutants, as determined by SVBGSA or the County DEH.
- Where the cause includes pumping activity, the SVBGSA should take action to abate the pumping that is causing the failure to meet water quality standards.

Absent such a program, the GSPs do not meet the statutory obligation to adopt a plan that will actually address water quality degradation.

Yours sincerely,

M. R. WOLFE & ASSOCIATES, P.C.

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Thomas S. Virsik
ATTORNEY AT LAW

Erratum
14 October 2021

To: Salinas Valley Basin Groundwater Sustainability Agency (GSA)

Re: Public Comments – Forebay GSP

Please consider the within comments to the Forebay Groundwater Sustainability Plan (the "GSP") proffered on behalf of the Orradre family and Scheid Family Wines, which own lands in the Forebay and Upper Valley sub-basins. Part of their emphasis in prior comments is that the GSP's of the two sub-basins should parallel and complement each other. While the two sub-basins are by no means identical, e.g., there is a discreet management area in the Forebay and substantial new acreage was added to the "traditional" Upper Valley region, the sub-basins have much in common. A partial list includes:

- Physical proximity to the MCWRA managed reservoirs
- Long-term overall pumping within the range of sustainable yield
- No seawater intrusion (SWI) or subsidence issues

Accordingly, the comments submitted for the Upper Valley and the Forebay GSP's are substantially similar. For the sake of brevity, comments by others will be referenced but not repeated verbatim and prior written/oral comments will not be repeated[1]. Common SGMA abbreviations will be used.

GSP's To Work With and Not Against Each Other

Each sub-basin will have its own GSP with its separate criteria, triggers, and planned actions or projects. Originally, the GSA considered a "one size fits all/none" approach of one GSP for all sub-basins as a cohesive unit. See March 7, 2018 letter to SVBGSA re Hydrometrics contract, enclosed. The passage of time, advocacy, and some clarity from State entities changed the original approach to the current SGMA-compliant one of separate GSP's for the Bulletin 118 sub-basins.

How then are the several GSP's to work with each other? Each GSP must refrain from "adversely affecting the ability of an adjacent basin to implement its Plan or achieve or maintain its sustainability." CCR 23 §§ ~~350.4(A~~) 350.4(f) and 355.5(b)(7). For example, the Forebay GSP cannot be based on groundwater levels in the Upper Valley that deviate from the Upper Valley GSP. The current drafts of the Upper Valley and Forebay GSP's do not appear to "adversely affect"

[1] The multiple prior formal and oral comments are reflected in the "table" of comments and in the database of letters received. Prior comments ranged from the purely editorial, e.g., an error in labeling a table or an errant punctuation mark, to the substantive, e.g., present sustainability to be *maintained* rather than a future *achievement* of sustainability.

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each other in any way. The present draft of the Eastside GSP also appears not to adversely affect the Forebay GSP, so long as its potential projects do not contemplate any change to the Forebay's or Upper Valley's SMC, e.g., no project to modify Forebay or Upper Valley GW levels or transfer water from those sub-basins.

Joinder in Other Comments

The comments by the Salinas Valley Water Coalition ("SVWC") dated 5 October 2021 are hereby incorporated. In support of those comments, please note the following additional authority:

- SGMA explicitly contemplates GSP's may conclude and analyze a basin's present sustainability, i.e., how to *maintain* sustainability. CCR §§ 350.4(e).

- A GSA must consider any current general plan. Water Code § 10726.9

- Any integration of the individual GSP's is voluntary, i.e., not required by SGMA. CCR §§ 357 et seq (re Interagency Agreements and Coordination Agreements).

- Cities or counties that amend their general plan must consider any GSP's and the information provided by a GSA in response thereto. Government Code §§ 65350.5, 65352, 65352.5.

- GSA's have the authority to limit water extractions inconsistently with any general plan. Water Code § 10726.4

In addition, the "caveat" language advocated by the ASGSA must also be honored – once it is finalized – including language addressing the limits to the present models' use and reliance thereon. While commentors are aware that coordination on the several formulations of "caveat" language continues between the SVBGSA and the ASGSA, the below represent examples of the language drawn from a recent Forebay GSP draft with respect to (1) the model(s) and (2) implementation of actions and projects for the sub-basin:

> The USGS has not yet submitted modeling files or documentation to Salinas Valley stakeholders for review. During the GSP development process, stakeholders who reviewed model output discovered apparent errors or inaccuracies relating to pumping amounts, groundwater storage changes, and simulated Arroyo Seco percolation. Some of the apparent errors are discussed in this chapter, and they are of a magnitude that could potentially affect conclusions or proposed management actions. Although the model was used to estimate some water budget items for this chapter, it needs more review and broader [sic] acceptance by

stakeholders before it will be suitable for designing and evaluating projects or management actions.

§ 6.1.

The implementation plan in this chapter is based on the best available data used to understand groundwater conditions in the Subbasin and the current assessment of management actions and projects described in Chapter 9. As described in Chapter 9, there is currently no need to implement management actions or projects in the Forebay Subbasin or ASCMA. Monitoring and expansion of the data network will be a focus for the Subbasin. Implementation of management actions and projects will only be initiated in the Forebay Subbasin after the benefits and impacts of the actions have been analyzed with a publicly available groundwater model that has broad [sic] acceptance. As stated in Chapter 6, the model used for developing this GSPs groundwater budgets should be improved before it can be used for analyzing management actions in the Subbasin.

Chapter 10

The GSA is urged to conform the Forebay GSP to the changes/edits set out in the SVWC and the ASGSA comments.

Very truly yours,

Thomas S. Virsik
Thomas S. Virsik

c. Donna Meyers, SVBGSA General Manager, meyersd@svbgsa.org
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Encl. March 7, 2018, Virsik letter to GSA re GSP planning and preparation

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March 7, 2018

To: Salinas Valley Basin Groundwater Sustainability Agency (GSA)

Re: Comments and input on proposed contract with Hydrometrics WRI for Groundwater Sustainability Plan planning and preparation

The proposed contract with Hydrometrics WRI (Hydrometrics) is the first opportunity the public has been given to provide input on the Groundwater Sustainability Plan (GSP), which is the focus of the GSA. The public has been neither able to review the proposals submitted by Hydrometrics and others in response to an RFQ nor the supplemental questions and answers used to narrow the recommendation of consultants to Hydrometrics.

The foci of these comments are several. First, as the initial opportunity for the public to discern the contours of the potential GSP, the comments will focus on policy-level and strategic issues about the nature of the GSP for the region. Second, the comments will preview certain concerns taken from the face of the contract about the GSP path. Third, the comments will identify both internal and regulatory inconsistencies, omissions, or confusing approaches to the various components of the contemplated GSP.[1] The proposed contract states that much of its content is taken from the proposal submitted by Hydrometrics, so any inconsistencies omissions, or misstatements may also reflect upon Hydrometrics' ability to deliver a fully acceptable GSP.

THE REQUIRED GSP FOR THE SALINAS VALLEY

The SGMA process is new and untested. No GSP has yet been approved.[2] It is expected that there may be differences in approach and interpretation of the statutes and regulations that comprise SGMA. Corrections may have to be made mid-stream.

[1] It is evident that the contract language -- especially its attachment -- was not thoroughly proofread, e.g., headings for Tasks 8, 9, and 10 contain evident typos. Some or all the inconsistencies noted may be a function of "cutting and pasting" content from multiple sources, yet the inconsistencies and/or omissions are patent and cannot be ignored.

[2] Under SGMA, there is a quasi-GSP known as an "Alternative" which certain entities submitted per an earlier deadline. Once DWR has completed its review of the various Alternatives and publically posts its conclusions, GSA's may have much to learn from what was deemed acceptable and what was not.

Nevertheless, a GSP must be based on reality and a vision for the future or it is simply an exercise in regulatory compliance. The SGMA regulations require that the best available science and the best available information be used.[3] A GSP's goal is to be a reliable road map of water sustainability for the relevant geographic area on which planning authorities can rely. Government Code § 65352.5(d) (GSA to make the GSP available to local land planning entities).

Sustainability must be reached in twenty years in the most extreme instance. There is no penalty for reaching sustainability earlier, of course. While a GSA and the consultants involved may (rightfully) think of a GSP as a series of tasks or boxes to check, that approach is anathema to stakeholders. For a GSP to have value to stakeholders, it needs to be sufficiently reliable, granular, and reflect a vision for the future.

Imagine in five years' time and after a GSP has been approved by the DWR that an agricultural landowner wishes to invest in a new crop on her land. Any bank or insurance company would want to verify in the GSP that the acres at issue lie in a specific geographic area with sufficient ability to use sufficient quantities of water. A well-crafted GSP would answer any reviewing body's queries about water use in the region, in the specific area, and how it may change in times of drought[4]. Will the GSP contemplated meet the standard?

Or, consider a local city that has planning authority over the proposed new crop area. Will the City be able to do the same as a bank and reliably apply its zoning and other internal standards to the detailed metrics in the GSP? What about the local resident, concerned with the specific proposed development, who may wish to look up in the GSP the risks the new development may pose to other water uses, such as a drinking water supply? Again, a GSP that is useful for such purposes is the goal. A GSP that may meet minimal statutory and regulatory thresholds but cannot be relied upon by third parties (private, government, fiscal, regulatory, etc.) is of scant value and stakeholders would be justified in withholding any fiscal support for such a "make work" GSP enriching consultants but not useful to the broad array of stakeholders.

GSP ASSUMPTIONS AND DECISIONS, GLEANED FROM THE PROPOSED CONTRACT
As explained in detail in the third section, the proposed contract -- notably its Attachment A -- can be viewed as insufficient to produce a genuinely useful GSP for the Salinas Valley[5]. Taken at face value per the contract language, the GSP proposed could:

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[3] Specific regulatory references are omitted in this first section of these comments. The later portions references detailed regulatory content as relevant, however, and an excerpt of relevant regulations is enclosed with these comments.

[4] Whether such water assurances are termed allocations, optimization, water duties or any other term is a political detail -- the entire point of a GSP is predictability about how much water may be used where under what circumstances, stated with sufficient granularity to be genuinely useful for decision-making.

[5] As noted at the head of these comments, the public is relying on only what it has before it. If the language used to craft the contract is not an accurate reflection of Hydrometrics' knowledge and approach, the public must be fully informed and given another full opportunity to provide feedback based on any new explanations or information. There are, of course, many laudable aspects to Attachment A, such as the realistic target date.

- Disown or downplay any distinctions among the various sub basins, unless DWR vetoes the "one size fits all" approach
- Treat a single threshold occurring in one sub basin as a trigger to effect one or more uniform management actions across all sub basins
- Accept the results of the MCWRA version of the SVIHM model, sight unseen and bereft of public input or review
- Accept MCWRA information and data, including all limitations on the data and restrictions on public disclosure
- Ignore any input or peer review from a Technical Advisory Committee
- Ignore 250 years of data, reports, and information (including Bulletin 52 and its massive data appendixes)
- Omit any analysis of how targeted pumping reductions may bring the Valley to sustainability
- Treat the creation of management areas as a purely political choice

The Valley has 250 years of experience, which in hindsight includes many good and poor choices. The records and data of the 250 years is readily available, and was pointed out during the RFQ process but appears absent from the GSP contract.[6] Early settlers congregated where there was water available. Later ones chose to reclaim land that may have acted as an effective seawater intrusion barrier. Populations voted to construct reservoirs and other projects. Populations did not insist on constructing conduits to carry the water from the reservoirs. A genuinely useful GSP for the Salinas Valley would consider the 250 years of choices and lessons, apply the best science and information available, and project a path for 250 further years of sustainability.

INCONSISTENCIES, OMISSION, AND/OR CONFUSING APPROACHES TO THE GSP AND THE REGULATIONS, GLEANED FROM THE PROPOSED CONTRACT

For the sake of clarity, this section will advance roughly from the start of Exhibit A (being pages 10 through 20) to the contract. All regulatory references are to the Emergency GSP Regulations unless otherwise noted. An excerpted set of the relevant Regulations is enclosed.

Scope of work (page 10)

The sixth bullet point at Assumptions relates to the groundwater model to be used for the GSP, the SVIHM. The "assumption" is that the SVIHM is fully sufficient for all GSP purposes. As far as the public knows, the SVIHM is limited to only decades of data and land use and may not fully take into account historical realities such as the pre-reclamation land and water use near the Coast, the massive and public arrays of water well data from Bulletin 52[7], and land and water use prior to the reservoirs. The model may not take into account current reality, e.g., the water added

[6] My December 13, 2017 comment letter included a list of additions and clarifications to the RFQ, which suggestions received favorably by the GSA. See minutes of December 14, 2017 meeting, approved in January meeting. The December 13, 2017 letter is enclosed.

[7] The complete Bulletin 52 includes comprehensive appendixes (which include an update a decade later) of all water well data then known, reflecting approximately 1,000 wells, including their construction, location, ownership, and water quality metrics. https://digitalcommons.csumb.edu/hornbeck_cgb_1/7/.

to recharge through the reverse osmosis plant near San Ardo. For purposes of the GSP, which requires the best available science and information, Hydrometrics may risk a failed GSP by limiting its data and analysis to what the USGS and/or the MCWRA has at its fingertips, i.e., in the model already. Nor can Hydrometrics keep model information in any "black box," even if the USGS and the MCWRA can. The standards for Hydrometrics are those of SGMA. See §§ 352.4(f) (model transparency); 354.16 (historical groundwater conditions from best available information); 354.18(c)(2)(C), (c)(3) and (e) (best available information to be used for historical, current and projected water budgets). That Hydrometrics "assumes" that the SVIHM will be sufficient for all GSP purposes is at a minimum questionable given the elevated SGMA regulatory standards and/or implies that Hydrometrics is genuinely ignorant of the robust historical information available for the Salinas Valley. At what point will the public -- directly or at least through a Technical Advisory Committee - be able to provide input on the SVIHM to be used by Hydrometrics? The GSP approach appears to assume the public has no need or right to audit the SVIHM to be used by Hydrometrics.

The seventh bullet point is less troubling. There is little controversy that the MCWRA has in its possession substantial useful information and resources. The GSA is negotiating an MOU with MCWRA. The information the MCWRA possesses is broad, which Hydrometrics may not appreciate. In addition to water data, the MCWRA is the de facto repository of: validation judgments that control certain relationships among the sub-basins, the prior Cost Allocation Committee (CAC) process that analyzed benefits of past projects and the most recent projects, the engineer's report that reflected the proportion of benefits among the various discrete parts of the Valley, SWRCB proceedings on the MCWRA's reservoir license/permits, and so on. The potential MCWRA and GSA MOU may reveal more on this point.

Omitted from the seventh bullet point is whether Hydrometrics will apply SGMA standards to the information that flows through the MCWRA or will it "honor" any alleged confidentiality or lack of transparency of the information. The concern is not academic -- the Contract contains a confidentiality provision which may control in the absence of clarity in Attachment A. See Contract Part 10 (pages 5 and 6) and § 15.7.

The tenth bullet point is somewhat conspicuous in not mentioning the Technical Advisory Committee (TAC). (Various later "Tasks" also omit any mention of the TAC.) If Hydrometrics may be expected to defend its recommendations and conclusions to the peer review process of the TAC, the contract should so state. Otherwise, there is no role for a TAC in GSP creation.

<u>Primary deliverables (page 11)</u>

The six bullet points are inconsistent among each other and with various regulations, certain of which are more fully explained below under specific "Tasks." The third bullet point calls for a water budget for the Valley, while the regulations require budgets for basins, which are defined as "basins" or "sub basins." § 351(f); 354.18 (budget for "basin" -- thus also for a sub basin -- rather than a region). The fourth point is inconsistent with the third in that separate chapters with separate sustainability criteria (a proper regulatory approach) may result in separate budgets for each chapter/sub-basin. See also Task 9 (inconsistent approach). The fifth bullet point switches back to the non-SGMA use of "valley" for management actions. Setting the regulatory offenses aside, the on-the-ground facts thwart a "valley wide" or "one size fits all" approach to

management actions. While valley-wide administrative requirements (which one may term management actions) such as water use reporting are feasible, genuine management action must be tied to hydrology and reality. For example, a moratorium on extractions from the "deep" aquifer is an absurdity in the Arroyo Seco cone, the Upper Valley, and in the Paso Robles because the deep aquifer does not exist in those areas. Moreover, Task 16 appears to recognize that management actions relate to discrete areas (e.g., management areas). If the intended meaning of the bullet point is simply that "management actions for the various basins (and/or management areas) in the valley will be set" then the language should so reflect.

Task 5 (page 12)
As reflected above for the seventh bullet point in the scope of work section, much of the analyses and data for fiscal issues can be found with the MCWRA. It is unclear what "engineering support" is contemplated for funding analyses, e.g., drafting a Proposition 218 Engineer's Report?

Task 6 (page 12)
As noted above at the sixth bullet point under "scope of work," Hydrometrics' assumption that the SVIHM in its USGS/MCWRA form (including access or denial to all of the data used) is fully compliant with all SGMA standards is not assured. SGMA requires the "best available information" and in the Salinas Valley, there is 250 years of it. Historic maps and reports before the seawater intruded area was reclaimed are available at no cost. https://digitalcommons.csumb.edu/hornbeck_cgb_4/. Prior State reports and their massive data appendixes are available at no cost. https://digitalcommons.csumb.edu/hornbeck_cgb_1/. Agricultural water users throughout the Valley have reported their (surface) water use into the State database, which is also available for query. https://www.waterboards.ca.gov/waterrights/water_issues/programs/ewrims/.

Task 8 (pages 13 and 14)
The description of the Hydrological Conceptual Model of Task 8 appears somewhat inconsistent with the description of Task 6 and the sixth bullet point on page 10. In this Task, the modeling work and conclusion of the MCWRA will be accepted "to the degree possible." While one regulation is referenced, the regulation about transparency to the public is not. § 352.4(f). Without transparency, even the best model fails SGMA. The "best available information" referenced above may bear on the "degree" to which MCWRA's work and conclusions align with SGMA standards and goals.

The Water Budgets portion of Task 8 repeats the troubling assumption about a single Valley wide water budget challenged above at the third bullet point of the deliverables comments. Again, there appears to be a lack of understanding that in the SGMA regulations, "basin" refers to what Bulletin 118 terms a basin or a sub basin. Hydrometrics again assumes that the historical water budget can be based solely on the SVIHM, ignoring the SVIHM's limitations and 250 years of data and reports. Most troubling, Hydrometrics will only look at the various sub basins if DWR forces it to! DWR Bulletin 118 makes an important distinction among the basins, providing differing levels of concern, e.g., the 180/400 basin is a "cortical" basin due to seawater intrusion caused by overdraft while the Forebay and Upper Valley are not so characterized. Even that facial official DWR distinction appears ignored. On-the-ground reality reflects that the

sub-basins do not act the same, their hydrology varies, and they differ in the relevant potential undesirable results. Just by way of a single example from public (and not MCWRA) records, Howard Franklin has publically opined that pumping in the south has little -- if any -- effect on seawater intrusion near the Coast. See Page 47, Reed, Jason Ray, "Grower Attitudes Towards Water Management Strategies While Mitigating Seawater Intrusion: A Case Study Of The Castroville Seawater Intrusion Project" (2017). *Master's Theses*. 4856. Both a projected (meaning "future" in SGMA terms) (1) water budget for the coastal region that fails to quantify water use contingent on its effect on seawater intrusion or (2) an Upper Valley water budget balances that quantifies water use based on seawater intrusion would offend the "best available" science and information and thus fail under SGMA. Water budgets are basin-based, which translates to sub basins for a physical area like the Salinas Valley (if not with greater granularity via management areas). Task 8 contemplates limiting the GSP to the least useful water budget -- Valley wide -- and speaks poorly of Hydrometrics understanding of the basics of the Valley's hydrology since at least the Bulletin 52 era, if not contemporary reports and analyses.

Task 9 (page 14)

Unfortunately, much like part of Task 8 above, the description of developing the sustainability criteria expresses a reluctance to consider the criteria for each sub basin, i.e., Hydrometrics will include specifics for each sub-basin only "if necessary." See, discussions above at Task 8 and the primary deliverables comments. SGMA, although not always a model of clarity, is plenty clear that if a "basin" (thus, also a sub basin) does not face one or more undesirable results, the GSP is not to create sustainability criteria for it. § 354.26(d) ("shall not"). In the Salinas Valley, multiple "basins" are terribly unlikely to ever face seawater intrusion, and thus those basins "shall not" bother with criteria for its avoidance. Factual realities among the "basins" in the Valley make specific criteria in each "basin" (sub basin) necessary under the regulations, not optional.

This regulatory distinction about how to treat undesirable results undercuts the six bullet points that follow in Task 9. The sustainability indicators will need to be tied to each basin, rather than a "one size fits all" basins approach. A water level drop of one meter in one basin may reflect crisis whereas it is but a seasonal fluctuation in another. That Hydrometrics does not understand that the basins behave differently is disappointing. The proposed consideration that management areas may be appropriate for applying undesirable results locally is rational, but it is phrased as a mere politically driven possibility rather than a core reality that the undesirable results and thus the relevant criteria and thresholds could ever be uniform throughout the Valley. Using the above example of a one meter drop in static water levels in a well, sustainability would be undermined if every basin had to reduce water use whenever any basin saw such a drop. At a bare minimum, the modeling work should reflect that the several basins are not uninform in their hydrology and behavior.

Task 11 (page 16)

The overall approach to potential projects and management actions is broadly rational. But one mandatory approach may be missing. If overdraft is an issue (i.e., overdraft that causes seawater intrusion near the coast), then SGMA requires projecting a reduction of water use that mitigates overdraft. § 354.44(b)(2). For the Salinas Valley, the projection would entail a reduction of localized pumping (the 180/400 sub basin), as reduction of pumping in the other areas have little

or no effect. See Page 47, Reed, Jason Ray, "Grower Attitudes Towards Water Management Strategies While Mitigating Seawater Intrusion: A Case Study Of The Castroville Seawater Intrusion Project" (2017). *Master's Theses*. 4856. That option must be explored for the GSP to meet SGMA standards. Whether that simple and tailored approach is preferable to other potential ones (given political, fiscal, economic, environmental, etc. factors) is unknown, but SGMA mandates such an approach be included in the GSP. The language of Task 11 is less than explicit that Hydrometrics understands that the facts require it to develop a tailored pumping reduction approach to mitigate overdraft.

Task 16 (page 18)
Management areas are treated as primarily a political choice in the description of this Task. The regulations, however, not only recognize the GSA may create management areas, but also sets a purpose for them: to facilitate implementation of the GSP. § 354.20. That critical regulatory purpose is lacking in the language of Task 16. Due to the substantial differences among the basins and within each basin, management areas may be quite useful, but they cannot be approached as a purely political or administrative option, but as a tool that honors and takes advantage of the differences among the various parts of the Valley.

CONCLUSION
A reliable GSP for the Salinas Valley is paramount. A GSP that (possibly) meets regulatory and "check the box" requirements is of no value to stakeholders. With 250 years of robust information and lessons learned, the Salinas Valley has an opportunity and the GSA has a duty to steer a path for another 250 years of progress. The contract language provided to the public, however, does not reflect a proper approach to SGMA, the current and historical reality of the Salinas Valley, or assure a genuinely useful (to stakeholders) GSP. The Valley and its stakeholders deserve much better, and the GSA has the ability and duty to adjust course.

Very truly yours,

Thomas S. Virsik
Thomas S. Virsik

Encl. Excerpts of Emergency GSP Regulations
December 13, 2017 letter to GSA (re RFQ for GSP preparation)

EXCERPTS OF
CALIFORNIA CODE OF REGULATIONS
TITLE 23. WATERS
DIVISION 2. DEPARTMENT OF WATER RESOURCES
CHAPTER 1.5. GROUNDWATER MANAGEMENT
SUBCHAPTER 2. GROUNDWATER SUSTAINABILITY PLANS
highlighting added -- not in original

ARTICLE 2. Definitions

§ 351. Definitions

The definitions in the Sustainable Groundwater Management Act, Bulletin 118, and Subchapter 1 of this Chapter, shall apply to these regulations. In the event of conflicting definitions, the definitions in the Act govern the meanings in this Subchapter. In addition, the following terms used in this Subchapter have the following meanings:

(a) "Agency" refers to a groundwater sustainability agency as defined in the Act.

(b) "Agricultural water management plan" refers to a plan adopted pursuant to the Agricultural Water Management Planning Act as described in Part 2.8 of Division 6 of the Water Code, commencing with Section 10800 et seq.

(c) "Alternative" refers to an alternative to a Plan described in Water Code Section 10733.6.

(d) "Annual report" refers to the report required by Water Code Section 10728.

(e) "Baseline" or "baseline conditions" refer to historic information used to project future conditions for hydrology, water demand, and availability of surface water and to evaluate potential sustainable management practices of a basin.

(f) "Basin" means a groundwater basin or subbasin identified and defined in Bulletin 118 or as modified pursuant to Water Code 10722 et seq.

(g) "Basin setting" refers to the information about the physical setting, characteristics, and current conditions of the basin as described by the Agency in the hydrogeologic conceptual model, the groundwater conditions, and the water budget, pursuant to Subarticle 2 of Article 5.

(h) "Best available science" refers to the use of sufficient and credible information and data, specific to the decision being made and the time frame available for making that decision, that is consistent with scientific and engineering professional standards of practice.

(i) “Best management practice” refers to a practice, or combination of practices, that are designed to achieve sustainable groundwater management and have been determined to be technologically and economically effective, practicable, and based on best available science.
(j) “Board” refers to the State Water Resources Control Board.
(k) “CASGEM” refers to the California Statewide Groundwater Elevation Monitoring Program developed by the Department pursuant to Water Code Section 10920 et seq., or as amended.
(l) “Data gap” refers to a lack of information that significantly affects the understanding of the basin setting or evaluation of the efficacy of Plan implementation, and could limit the ability to assess whether a basin is being sustainably managed.
(m) “Groundwater dependent ecosystem” refers to ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface.
(n) “Groundwater flow” refers to the volume and direction of groundwater movement into, out of, or throughout a basin.
(o) “Interconnected surface water” refers to surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted.
(p) “Interested parties” refers to persons and entities on the list of interested persons established by the Agency pursuant to Water Code Section 10723.4.
(q) “Interim milestone” refers to a target value representing measurable groundwater conditions, in increments of five years, set by an Agency as part of a Plan.
(r) “Management area” refers to an area within a basin for which the Plan may identify different minimum thresholds, measurable objectives, monitoring, or projects and management actions based on differences in water use sector, water source type, geology, aquifer characteristics, or other factors.
(s) “Measurable objectives” refer to specific, quantifiable goals for the maintenance or improvement of specified groundwater conditions that have been included in an adopted Plan to achieve the sustainability goal for the basin.
(t) “Minimum threshold” refers to a numeric value for each sustainability indicator used to define undesirable results.

(u) “NAD83” refers to the North American Datum of 1983 computed by the National Geodetic Survey, or as modified.
(v) “NAVD88” refers to the North American Vertical Datum of 1988 computed by the National Geodetic Survey, or as modified.
(w) “Plain language” means language that the intended audience can readily understand and use because that language is concise, well-organized, uses simple vocabulary, avoids excessive acronyms and technical language, and follows other best practices of plain language writing.
(x) “Plan” refers to a groundwater sustainability plan as defined in the Act.
(y) “Plan implementation” refers to an Agency’s exercise of the powers and authorities described in the Act, which commences after an Agency adopts and submits a Plan or Alternative to the Department and begins exercising such powers and authorities.
(z) “Plan manager” is an employee or authorized representative of an Agency, or Agencies, appointed through a coordination agreement or other agreement, who has been delegated management authority for submitting the Plan and serving as the point of contact between the Agency and the Department.
(aa) “Principal aquifers” refer to aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems.
(ab) “Reference point” refers to a permanent, stationary and readily identifiable mark or point on a well, such as the top of casing, from which groundwater level measurements are taken, or other monitoring site.
(ac) “Representative monitoring” refers to a monitoring site within a broader network of sites that typifies one or more conditions within the basin or an area of the basin.
(ad) “Seasonal high” refers to the highest annual static groundwater elevation that is typically measured in the Spring and associated with stable aquifer conditions following a period of lowest annual groundwater demand.
(ae) “Seasonal low” refers to the lowest annual static groundwater elevation that is typically measured in the Summer or Fall, and associated with a period of stable aquifer conditions following a period of highest annual groundwater demand.
(af) “Seawater intrusion” refers to the advancement of seawater into a groundwater supply

that results in degradation of water quality in the basin, and includes seawater from any source.

(ag) “Statutory deadline” refers to the date by which an Agency must be managing a basin pursuant to an adopted Plan, as described in Water Code Sections 10720.7 or 10722.4.

(ah) “Sustainability indicator” refers to any of the effects caused by groundwater conditions occurring throughout the basin that, when significant and unreasonable, cause undesirable results, as described in Water Code Section 10721(x).

(ai) “Uncertainty” refers to a lack of understanding of the basin setting that significantly affects an Agency’s ability to develop sustainable management criteria and appropriate projects and management actions in a Plan, or to evaluate the efficacy of Plan implementation, and therefore may limit the ability to assess whether a basin is being sustainably managed.

(aj) “Urban water management plan” refers to a plan adopted pursuant to the Urban Water Management Planning Act as described in Part 2.6 of Division 6 of the Water Code, commencing with Section 10610 et seq.

(ak) “Water source type” represents the source from which water is derived to meet the applied beneficial uses, including groundwater, recycled water, reused water, and surface water sources identified as Central Valley Project, the State Water Project, the Colorado River Project, local supplies, and local imported supplies.

(al) “Water use sector” refers to categories of water demand based on the general land uses to which the water is applied, including urban, industrial, agricultural, managed wetlands, managed recharge, and native vegetation.

(am) “Water year” refers to the period from October 1 through the following September 30, inclusive, as defined in the Act.

(an) “Water year type” refers to the classification provided by the Department to assess the amount of annual precipitation in a basin.

Note: Authority cited: Section 10733.2, Water Code.

Reference: Sections 25, 10720.7, 10721, 10722, 10722.4, 10723, 10727.2, 10728, 10729, 10733.2, 10733.6, and 10924, Water Code.

ARTICLE 3. Technical and Reporting Standards

§ 352.4. Data and Reporting Standards

(a) The following reporting standards apply to all categories of information required of a Plan, unless otherwise indicated:

(1) Water volumes shall be reported in acre-feet.

(2) Surface water flow shall be reported in cubic feet per second and groundwater flow shall be reported in acre-feet per year.

(3) Field measurements of elevations of groundwater, surface water, and land surface shall be measured and reported in feet to an accuracy of at least 0.1 feet relative to NAVD88, or another national standard that is convertible to NAVD88, and the method of measurement described.

(4) Reference point elevations shall be measured and reported in feet to an accuracy of at least 0.5 feet, or the best available information, relative to NAVD88, or another national standard that is convertible to NAVD88, and the method of measurement described.

(5) Geographic locations shall be reported in GPS coordinates by latitude and longitude in decimal degree to five decimal places, to a minimum accuracy of 30 feet, relative to NAD83, or another national standard that is convertible to NAD83.

(b) Monitoring sites shall include the following information:

(1) A unique site identification number and narrative description of the site location.

(2) A description of the type of monitoring, type of measurement taken, and monitoring frequency.

(3) Location, elevation of the ground surface, and identification and description of the reference point.

(4) A description of the standards used to install the monitoring site. Sites that do not conform to best management practices shall be identified and the nature of the divergence from best management practices described.

(c) The following standards apply to wells:

(1) Wells used to monitor groundwater conditions shall be constructed according to applicable construction standards, and shall provide the following information in both tabular and geodatabase-compatible shapefile form:

(A) CASGEM well identification number. If a CASGEM well identification number

has not been issued, appropriate well information shall be entered on forms made available by the Department, as described in Section 353.2.

(B) Well location, elevation of the ground surface and reference point, including a description of the reference point.

(C) A description of the well use, such as public supply, irrigation, domestic, monitoring, or other type of well, whether the well is active or inactive, and whether the well is a single, clustered, nested, or other type of well.

(D) Casing perforations, borehole depth, and total well depth.

(E) Well completion reports, if available, from which the names of private owners have been redacted.

(F) Geophysical logs, well construction diagrams, or other relevant information, if available.

(G) Identification of principal aquifers monitored.

(H) Other relevant well construction information, such as well capacity, casing diameter, or casing modifications, as available.

(2) If an Agency relies on wells that lack casing perforations, borehole depth, or total well depth information to monitor groundwater conditions as part of a Plan, the Agency shall describe a schedule for acquiring monitoring wells with the necessary information, or demonstrate to the Department that such information is not necessary to understand and manage groundwater in the basin.

(3) Well information used to develop the basin setting shall be maintained in the Agency's data management system.

(d) Maps submitted to the Department shall meet the following requirements:

(1) Data layers, shapefiles, geodatabases, and other information provided with each map, shall be submitted electronically to the Department in accordance with the procedures described in Article 4.

(2) Maps shall be clearly labeled and contain a level of detail to ensure that the map is informative and useful.

(3) The datum shall be clearly identified on the maps or in an associated legend.

(e) Hydrographs submitted to the Department shall meet the following requirements:

(1) Hydrographs shall be submitted electronically to the Department in accordance with

the procedures described in Article 4.

(2) Hydrographs shall include a unique site identification number and the ground surface elevation for each site.

(3) Hydrographs shall use the same datum and scaling to the greatest extent practical.

(f) Groundwater and surface water models used for a Plan shall meet the following standards:

(1) The model shall include publicly available supporting documentation.

(2) The model shall be based on field or laboratory measurements, or equivalent methods that justify the selected values, and calibrated against site-specific field data.

(3) Groundwater and surface water models developed in support of a Plan after the effective date of these regulations shall consist of public domain open-source software.

(g) The Department may request data input and output files used by the Agency, as necessary. The Department may independently evaluate the appropriateness of model results relied upon by the Agency, and use that evaluation in the Department's assessment of the Plan.

Note: Authority cited: Section 10733.2, Water Code.

Reference: Sections 10727.2, 10727.6, and 10733.2, Water Code.

ARTICLE 5. Plan Contents

SUBARTICLE 2. Basin Setting

§ 354.16. Groundwater Conditions

Each Plan shall provide a description of current and historical groundwater conditions in the basin, including data from January 1, 2015, to current conditions, based on the best available information that includes the following:

(a) Groundwater elevation data demonstrating flow directions, lateral and vertical gradients, and regional pumping patterns, including:

(1) Groundwater elevation contour maps depicting the groundwater table or potentiometric surface associated with the current seasonal high and seasonal low for each principal aquifer within the basin.

(2) Hydrographs depicting long-term groundwater elevations, historical highs and lows, and hydraulic gradients between principal aquifers.

(b) A graph depicting estimates of the change in groundwater in storage, based on data, demonstrating the annual and cumulative change in the volume of groundwater in storage between seasonal high groundwater conditions, including the annual groundwater use and water year type.
(c) Seawater intrusion conditions in the basin, including maps and cross-sections of the seawater intrusion front for each principal aquifer.
(d) Groundwater quality issues that may affect the supply and beneficial uses of groundwater, including a description and map of the location of known groundwater contamination sites and plumes.
(e) The extent, cumulative total, and annual rate of land subsidence, including maps depicting total subsidence, utilizing data available from the Department, as specified in Section 353.2, or the best available information.
(f) Identification of interconnected surface water systems within the basin and an estimate of the quantity and timing of depletions of those systems, utilizing data available from the Department, as specified in Section 353.2, or the best available information.
(g) Identification of groundwater dependent ecosystems within the basin, utilizing data available from the Department, as specified in Section 353.2, or the best available information.
Note: Authority cited: Section 10733.2, Water Code.
Reference: Sections 10723.2, 10727.2, 10727.4, and 10733.2, Water Code.

§ 354.18. Water Budget

(a) Each Plan shall include a water budget for the basin that provides an accounting and assessment of the total annual volume of groundwater and surface water entering and leaving the basin, including historical, current and projected water budget conditions, and the change in the volume of water stored. Water budget information shall be reported in tabular and graphical form.
(b) The water budget shall quantify the following, either through direct measurements or estimates based on data:
(1) Total surface water entering and leaving a basin by water source type.
(2) Inflow to the groundwater system by water source type, including subsurface groundwater inflow and infiltration of precipitation, applied water, and surface water

systems, such as lakes, streams, rivers, canals, springs and conveyance systems.
(3) Outflows from the groundwater system by water use sector, including evapotranspiration, groundwater extraction, groundwater discharge to surface water sources, and subsurface groundwater outflow.
(4) The change in the annual volume of groundwater in storage between seasonal high conditions.
(5) If overdraft conditions occur, as defined in Bulletin 118, the water budget shall include a quantification of overdraft over a period of years during which water year and water supply conditions approximate average conditions.
(6) The water year type associated with the annual supply, demand, and change in groundwater stored.
(7) An estimate of sustainable yield for the basin.
(c) Each Plan shall quantify the current, historical, and projected water budget for the basin as follows:
(1) Current water budget information shall quantify current inflows and outflows for the basin using the most recent hydrology, water supply, water demand, and land use information.
(2) Historical water budget information shall be used to evaluate availability or reliability of past surface water supply deliveries and aquifer response to water supply and demand trends relative to water year type. The historical water budget shall include the following:
(A) A quantitative evaluation of the availability or reliability of historical surface water supply deliveries as a function of the historical planned versus actual annual surface water deliveries, by surface water source and water year type, and based on the most recent ten years of surface water supply information.
(B) A quantitative assessment of the historical water budget, starting with the most recently available information and extending back a minimum of 10 years, or as is sufficient to calibrate and reduce the uncertainty of the tools and methods used to estimate and project future water budget information and future aquifer response to proposed sustainable groundwater management practices over the planning and implementation horizon.

(C) A description of how historical conditions concerning hydrology, water demand, and surface water supply availability or reliability have impacted the ability of the Agency to operate the basin within sustainable yield. Basin hydrology may be characterized and evaluated using water year type.

(3) Projected water budgets shall be used to estimate future baseline conditions of supply, demand, and aquifer response to Plan implementation, and to identify the uncertainties of these projected water budget components. The projected water budget shall utilize the following methodologies and assumptions to estimate future baseline conditions concerning hydrology, water demand and surface water supply availability or reliability over the planning and implementation horizon:

(A) Projected hydrology shall utilize 50 years of historical precipitation, evapotranspiration, and streamflow information as the baseline condition for estimating future hydrology. The projected hydrology information shall also be applied as the baseline condition used to evaluate future scenarios of hydrologic uncertainty associated with projections of climate change and sea level rise.

(B) Projected water demand shall utilize the most recent land use, evapotranspiration, and crop coefficient information as the baseline condition for estimating future water demand. The projected water demand information shall also be applied as the baseline condition used to evaluate future scenarios of water demand uncertainty associated with projected changes in local land use planning, population growth, and climate.

(C) Projected surface water supply shall utilize the most recent water supply information as the baseline condition for estimating future surface water supply. The projected surface water supply shall also be applied as the baseline condition used to evaluate future scenarios of surface water supply availability and reliability as a function of the historical surface water supply identified in Section 354.18(c)(2)(A), and the projected changes in local land use planning, population growth, and climate.

(d) The Agency shall utilize the following information provided, as available, by the Department pursuant to Section 353.2, or other data of comparable quality, to develop the water budget:

(1) Historical water budget information for mean annual temperature, mean annual precipitation, water year type, and land use.
(2) Current water budget information for temperature, water year type, evapotranspiration, and land use.
(3) Projected water budget information for population, population growth, climate change, and sea level rise.
(e) Each Plan shall rely on the best available information and best available science to quantify the water budget for the basin in order to provide an understanding of historical and projected hydrology, water demand, water supply, land use, population, climate change, sea level rise, groundwater and surface water interaction, and subsurface groundwater flow. If a numerical groundwater and surface water model is not used to quantify and evaluate the projected water budget conditions and the potential impacts to beneficial uses and users of groundwater, the Plan shall identify and describe an equally effective method, tool, or analytical model to evaluate projected water budget conditions.
(f) The Department shall provide the California Central Valley Groundwater-Surface Water Simulation Model (C2VSIM) and the Integrated Water Flow Model (IWFM) for use by Agencies in developing the water budget. Each Agency may choose to use a different groundwater and surface water model, pursuant to Section 352.4.
Note: Authority cited: Section 10733.2, Water Code.
Reference: Sections 10721, 10723.2, 10727.2, 10727.6, 10729, and 10733.2, Water Code.

§ 354.20. Management Areas

(a) Each Agency may define one or more management areas within a basin if the Agency has determined that creation of management areas will facilitate implementation of the Plan. Management areas may define different minimum thresholds and be operated to different measurable objectives than the basin at large, provided that undesirable results are defined consistently throughout the basin.
(b) A basin that includes one or more management areas shall describe the following in the Plan:
(1) The reason for the creation of each management area.
(2) The minimum thresholds and measurable objectives established for each management area, and an explanation of the rationale for selecting those values, if

different from the basin at large.

(3) The level of monitoring and analysis appropriate for each management area.

(4) An explanation of how the management area can operate under different minimum thresholds and measurable objectives without causing undesirable results outside the management area, if applicable.

(c) If a Plan includes one or more management areas, the Plan shall include descriptions, maps, and other information required by this Subarticle sufficient to describe conditions in those areas.

Note: Authority cited: Section 10733.2, Water Code.

Reference: Sections 10733.2 and 10733.4, Water Code.

SUBARTICLE 3. Sustainable Management Criteria

§ 354.26. Undesirable Results

(a) Each Agency shall describe in its Plan the processes and criteria relied upon to define undesirable results applicable to the basin. Undesirable results occur when significant and unreasonable effects for any of the sustainability indicators are caused by groundwater conditions occurring throughout the basin.

(b) The description of undesirable results shall include the following:

(1) The cause of groundwater conditions occurring throughout the basin that would lead to or has led to undesirable results based on information described in the basin setting, and other data or models as appropriate.

(2) The criteria used to define when and where the effects of the groundwater conditions cause undesirable results for each applicable sustainability indicator. The criteria shall be based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin.

(3) Potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results.

(c) The Agency may need to evaluate multiple minimum thresholds to determine whether an undesirable result is occurring in the basin. The determination that undesirable results are occurring may depend upon measurements from multiple monitoring sites, rather than a single monitoring site.

(d) An Agency that is able to demonstrate that undesirable results related to one or more sustainability indicators are not present and are not likely to occur in a basin shall not be required to establish criteria for undesirable results related to those sustainability indicators.

Note: Authority cited: Section 10733.2, Water Code.

Reference: Sections 10721, 10723.2, 10727.2, 10733.2, and 10733.8, Water Code.

SUBARTICLE 5. Projects and Management Actions

§ 354.44. Projects and Management Actions

(a) Each Plan shall include a description of the projects and management actions the Agency has determined will achieve the sustainability goal for the basin, including projects and management actions to respond to changing conditions in the basin.

(b) Each Plan shall include a description of the projects and management actions that include the following:

(1) A list of projects and management actions proposed in the Plan with a description of the measurable objective that is expected to benefit from the project or management action. The list shall include projects and management actions that may be utilized to meet interim milestones, the exceedance of minimum thresholds, or where undesirable results have occurred or are imminent. The Plan shall include the following:

(A) A description of the circumstances under which projects or management actions shall be implemented, the criteria that would trigger implementation and termination of projects or management actions, and the process by which the Agency shall determine that conditions requiring the implementation of particular projects or management actions have occurred.

(B) The process by which the Agency shall provide notice to the public and other agencies that the implementation of projects or management actions is being considered or has been implemented, including a description of the actions to be taken.

(2) If overdraft conditions are identified through the analysis required by Section 354.18, the Plan shall describe projects or management actions, including a quantification of demand reduction or other methods, for the mitigation of overdraft.

(3) A summary of the permitting and regulatory process required for each project and

management action.

(4) The status of each project and management action, including a time-table for expected initiation and completion, and the accrual of expected benefits.

(5) An explanation of the benefits that are expected to be realized from the project or management action, and how those benefits will be evaluated.

(6) An explanation of how the project or management action will be accomplished. If the projects or management actions rely on water from outside the jurisdiction of the Agency, an explanation of the source and reliability of that water shall be included.

(7) A description of the legal authority required for each project and management action, and the basis for that authority within the Agency.

(8) A description of the estimated cost for each project and management action and a description of how the Agency plans to meet those costs.

(9) A description of the management of groundwater extractions and recharge to ensure that chronic lowering of groundwater levels or depletion of supply during periods of drought is offset by increases in groundwater levels or storage during other periods.

(c) Projects and management actions shall be supported by best available information and best available science.

(d) An Agency shall take into account the level of uncertainty associated with the basin setting when developing projects or management actions.

Note: Authority cited: Section 10733.2, Water Code.

Reference: Sections 10727.2, 10727.4, and 10733.2, Water Code.

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13 December 2017

To: Salinas Valley Basin Groundwater Sustainability Agency
Re: Comments and input on Items 7(c) and (d) (SWI 90-day plan and RFQ)

Item 7(c) and seawater intrusion work plan

I am incorporating my comments and materials provided earlier to the GSA, being copies of comments and materials to the Board of Supervisors of Monterey County and/or the Monterey County Water Resources Agency (MCWRA), i.e., letters dated 13 November and 11 December 2017 with enclosures, links and references.

I have not, and do not, represent any clients in the basins labeled the Pressure or Eastside and/or affected by the SWI dynamic at issue. During my representation of clients in the (southern) Salinas Valley years ago and my current representation, however, I became aware of various Pressure area interests' perspectives on more particular causes for and contributions to SWI that I may share orally.

With respect to SWI in the Pressure area that will need to be addressed in the Groundwater Sustainability Plan (Plan) due by 2020, the GSA should strongly consider making formal comments on the draft Sustainable Groundwater Management Criteria BMP released in November 2017. http://www.water.ca.gov/groundwater/sgm/pdfs/BMP_Sustainable_Management_Criteria_2017-11-06.pdf. Specifically, among other content, the following will impact the State's consideration of a Pressure area Plan with respect to SWI:

- The third bullet point at "*Required Minimum Threshold Metrics for Each Sustainability Indicator*" at page 10.
- Figure 5 and its discussion, reflecting contour lines of 250 mg/l at page 14 [rather than 500, as previously used in MCWRA reports].
- The DWR staff interpretation of the 2015 trigger date in SGMA at "*Measurable Objectives when an Undesirable Result Occurred before January 1, 2015*" at page 30. Briefly, two schools of thought have emerged about the significance of the 2015 SGMA touchstone: (1) sustainability going forward need only meet and maintain 2015 conditions, even if those conditions were poor (e.g., fish kills, intruded aquifers, water levels below pump bowls, etc.) and (2) all undesirable results as of 2015 need to be brought to "desirable" levels going forward.

While the potential 90-day work plan appears most focused on interim action(s), the direction and metrics chosen as part of the work plan must correlate with the Pressure area Plan due by 2020. Thus, the metrics addressed in the latest draft BMP are also germane to the interim or temporary work plan. Stated bluntly, may or shall the Plan and near-term work plan for the Pressure area include or reject "remedial" or "pre-2015 level" options to protect local municipal and agriculture water use?

Comments on the draft BMP are due on January 8, 2018.
http://www.water.ca.gov/groundwater/sgm/bmps_comments.cfm.

Item 7(c) and Request for Qualifications re Plan
The RFQ can be improved with the addition of certain references, requirements, and information. A threshold question is whether the MCWRA -- or any applicant other than a private entity -- may submit an RFQ response? The parallel is the prior RFQ for legal counsel, to which County Counsel responded and ultimately was awarded the contract.

The below are suggested additions or clarification to the RFQ at Section 3:

- Knowledge of Bulletins 52 and 19, the fundamental reference works for Salinas Valley hydrology.
- Knowledge of the history of the Salinas Valley, being more than the immediate (one century) and political, including land-use and resource history.
- Familiarity with water rights and the current SGMA adjudication process, ideally with respect to the Salinas Valley, e.g., the late 1990's SWRCB adjudication threats.
- The relevant modeling used and to be used, e.g., SVIGSM, MODFLOW.
- The public databases of water use and rights, e.g., eWRIMS.
- The local water use database (not yet made public under SGMA) administered by the MCWRA.
- Local resources for water and land use history and projects, e.g., work by/at CSUMB.

I may provide additional oral comments to clarify the above comments, suggestions, and reminders.

Very truly yours,

Thomas S. Virsik
Thomas S. Virsik

October 15, 2021

Salinas Valley Basin GSA
P.O. Box 1350
Carmel Valley, CA 93924

Submitted via web: https://form.jotform.com/201537036733047

Re: Public Comment Letter for Forebay Aquifer Subbasin Draft GSP

Dear Donna Meyers,

On behalf of the above-listed organizations, we appreciate the opportunity to comment on the Draft Groundwater Sustainability Plan (GSP) for the Forebay Aquifer Subbasin being prepared under the Sustainable Groundwater Management Act (SGMA). Our organizations are deeply engaged in and committed to the successful implementation of SGMA because we understand that groundwater is critical for the resilience of California's water portfolio, particularly in light of changing climate. Under the requirements of SGMA, Groundwater Sustainability Agencies (GSAs) must consider the interests of all beneficial uses and users of groundwater, such as domestic well owners, environmental users, surface water users, federal government, California Native American tribes and disadvantaged communities (Water Code 10723.2).

As stakeholder representatives for beneficial users of groundwater, our GSP review focuses on how well disadvantaged communities, drinking water users, tribes, climate change, and the environment were addressed in the GSP. While we appreciate that some basins have consulted us directly via focus groups, workshops, and working groups, we are providing public comment letters to all GSAs as a means to engage in the development of 2022 GSPs across the state. Recognizing that GSPs are complicated and resource intensive to develop, the intention of this letter is to provide constructive stakeholder feedback that can improve the GSP prior to submission to the State.

Based on our review, we have significant concerns regarding the treatment of key beneficial users in the Draft GSP and consider the GSP to be **insufficient** under SGMA. We highlight the following findings:

1. Beneficial uses and users **are not sufficiently** considered in GSP development.
    a. Human Right to Water considerations **are not sufficiently** incorporated.
    b. Public trust resources **are not sufficiently** considered.
    c. Impacts of Minimum Thresholds, Measurable Objectives and Undesirable Results on beneficial uses and users **are not sufficiently** analyzed.
2. Climate change **is not sufficiently** considered.
3. Data gaps **are not sufficiently** identified and the GSP **needs additional plans** to eliminate them.

4. Projects and Management Actions **do not sufficiently consider** potential impacts or benefits to beneficial uses and users.

Our specific comments related to the deficiencies of the Draft Forebay Aquifer Subbasin Draft GSP along with recommendations on how to reconcile them, are provided in detail in **Attachment A.**

Please refer to the enclosed list of attachments for additional technical recommendations:

Attachment A	GSP Specific Comments
Attachment B	SGMA Tools to address DAC, drinking water, and environmental beneficial uses and users
Attachment C	Freshwater species located in the basin
Attachment D	The Nature Conservancy's "Identifying GDEs under SGMA: Best Practices for using the NC Dataset"
Attachment E	Maps of representative monitoring sites in relation to key beneficial users

Thank you for fully considering our comments as you finalize your GSP.

Best Regards,

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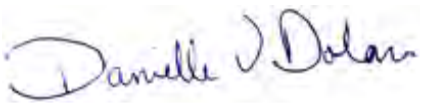

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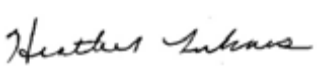

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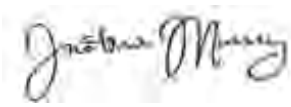

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Attachment A

Specific Comments on the Forebay Aquifer Subbasin Groundwater Sustainability Plan

1. Consideration of Beneficial Uses and Users in GSP development

Consideration of beneficial uses and users in GSP development is contingent upon adequate identification and engagement of the appropriate stakeholders. The (A) identification, (B) engagement, and (C) consideration of disadvantaged communities, drinking water users, tribes, groundwater dependent ecosystems, streams, wetlands, and freshwater species are essential for ensuring the GSP integrates existing state policies on the Human Right to Water and the Public Trust Doctrine.

A. Identification of Key Beneficial Uses and Users

Disadvantaged Communities and Drinking Water Users

The identification of Disadvantaged Communities (DACs) and drinking water users is **incomplete**. The GSP provides information on DACs, including identification by name and location on a map (Figure 2-3), and identifying the water source for DAC members. However, the GSP fails to identify the population of each identified DAC.

The GSP provides a density map of domestic wells in the subbasin. However, the GSP fails to provide depth of these wells (such as minimum well depth, average well depth, or depth range) within the subbasin.

These missing elements are required for the GSA to fully understand the specific interests and water demands of these beneficial users, and to support the development of sustainable management criteria and projects and management actions that are protective of these users.

RECOMMENDATIONS
• Include a map showing domestic well locations and average well depth across the subbasin. • Provide the population of each identified DAC.

Interconnected Surface Waters

The identification of Interconnected Surface Waters (ISW) is **insufficient**, due to lack of supporting information provided for the ISW analysis. To assess ISWs, the GSP used the Salinas Valley Integrated Hydrologic Model (SVIHM). The GSP states (p. 4-29): "*Although seepage along the ISW reaches is based on assumed channel and aquifer parameters as model inputs, the preliminary SVIHM is the best available tool to estimate ISW locations. The model construction and uncertainty are described in Chapter 6 of this GSP.*" However, Chapter 6 of the GSP, the water budget chapter, presents very little information on the model. No further information in the GSP was presented providing description of the location of groundwater wells or stream gauges

used in the analysis, or description of temporal (seasonal and interannual) variability of the data used to calibrate the model.

The GSP states (p. 4-29): *"The blue cells [in Figure 4-14] indicate areas where surface water is connected to groundwater for more than 50 percent of the number of months in the model period and are designated as areas of ISW. The clear cells represent areas that have interconnection less than 50 percent of the model period and require further evaluation to determine whether the SMC, discussed in Chapter 8, apply.*" Note the regulations [23 CCR §351(o)] define ISW as "surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted". "At any point" has both a spatial and temporal component. Even short durations of interconnections of groundwater and surface water can be crucial for surface water flow and supporting environmental users of groundwater and surface water.

RECOMMENDATIONS

- Describe available groundwater elevation data and stream flow data in the subbasin. ISWs are best analyzed using depth-to-groundwater data from multiple seasons and water year types (e.g., wet, dry, average, drought), to determine the range of depth and capture the variability in environmental conditions inherent in California's climate.
- Overlay the stream reaches shown on Figure 4-14 with depth-to-groundwater contour maps to illustrate groundwater depths and the groundwater gradient near the stream reaches. Show the location of groundwater wells in the subbasin used to create the contour maps.
- For the depth-to-groundwater contour maps, use the best practices presented in Attachment D. Specifically, ensure that the first step is contouring groundwater elevations, and then subtracting this layer from land surface elevations from a Digital Elevation Model (DEM) to estimate depth-to-groundwater contours across the landscape. This will provide accurate contours of depth to groundwater along streams and other land surface depressions where GDEs are commonly found.
- On Figure 4-14 (Locations of Interconnected Surface Water), consider any modelled stream grid cells with >0% connection to groundwater as potential ISWs until more data is available. In other words, consider any stream cell with connection to groundwater for any length of time as a potential ISW.
- Describe data gaps for the ISW analysis. Reconcile these data gaps with specific measures (shallow monitoring wells, stream gauges, and nested/clustered wells) along surface water features in the Monitoring Network section of the GSP.

Groundwater Dependent Ecosystems

The identification of Groundwater Dependent Ecosystems (GDEs) is **insufficient**, due to a lack of comprehensive, systematic analysis of the subbasin's GDEs.

The GSP took initial steps to identify and map GDEs using the Natural Communities Commonly Associated with Groundwater dataset (NC dataset) and other sources. The GSP does not discuss how the NC dataset was verified with the use of groundwater data, however. The GSP states (p.

4-33): *"The SVBGSA reviewed the NCCAG dataset and assessed each GDE's potential connection to groundwater by determining if the GDE was underlain by shallow groundwater that has been delineated as being part of a Bulletin 118 principal aquifer, and if depth to groundwater is less than 30 feet."* However, no further details are provided in the GSP. Based on the description provided in the GSP, it is unclear if Figure 4-15 (Potential Groundwater Dependent Ecosystems using NCCAG dataset) presents the entire NC dataset, or further analysis based on the 30 feet threshold as described in the text. Without an analysis of groundwater data to verify the NC dataset polygons, it will be difficult or impossible to adequately monitor and manage the subbasin's GDEs throughout GSP implementation.

We commend the GSA for listing the threatened and endangered species likely to depend on groundwater, as determined from several sources including the US Fish and Wildlife Service (USFWS) website, California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB), and TNC Critical Species LookBook (Table 4-1). Vegetation species present in the subbasin's potential GDEs were not included in the GSP, however.

RECOMMENDATIONS

- Develop and describe a systematic approach for analyzing the subbasin's GDEs. For example, provide a map of the NC Dataset. On the map, label polygons retained, removed, or added to/from the NC dataset (include the removal reason if polygons are not considered potential GDEs, or include the data source if polygons are added). Discuss how local groundwater data was used to verify whether polygons in the NC Dataset are supported by groundwater in an aquifer. Refer to Attachment D of this letter for best practices for using local groundwater data to verify whether polygons in the NC Dataset are supported by groundwater in an aquifer.

- Use depth-to-groundwater data from multiple seasons and water year types (e.g., wet, dry, average, drought) to determine the range of depth to groundwater around NC dataset polygons. We recommend that a baseline period (10 years from 2005 to 2015) be established to characterize groundwater conditions over multiple water year types. Refer to Attachment D of this letter for best practices for using local groundwater data to verify whether polygons in the NC Dataset are supported by groundwater in an aquifer.

- Refer to Attachment B for more information on TNC's plant rooting depth database. Deeper thresholds are necessary for plants that have reported maximum root depths that exceed the averaged 30-ft threshold, such as valley oak (*Quercus lobata*). We recommend that the reported max rooting depth for these deeper-rooted plants be used. For example, a depth-to-groundwater threshold of 80 feet should be used instead of the 30-ft threshold, when verifying whether valley oak polygons from the NC Dataset are connected to groundwater. It is important to re-emphasize that actual rooting depth data are limited and will depend on the plant species and site-specific conditions such as soil and aquifer types, and availability to other water sources.

- Provide depth-to-groundwater contour maps, noting the best practices presented in Attachment D. Specifically, ensure that the first step is contouring groundwater elevations, and then subtracting this layer from land surface elevations from a digital elevation model (DEM) to estimate depth-to-groundwater contours across the landscape.

- If insufficient data are available to describe groundwater conditions within or near polygons from the NC dataset, include those polygons as "Potential GDEs" in the GSP until data gaps are reconciled in the monitoring network.

- Please provide a complete inventory, map, or description of fauna (e.g., birds, fish, amphibian) and flora (e.g., plants) species in the subbasin (see Attachment C of this letter for a list of freshwater species located in the Forebay Subbasin).

Native Vegetation and Managed Wetlands

Native vegetation and managed wetlands are water use sectors that are required[1,2] to be included in the water budget. The integration of native vegetation into the water budget is **insufficient**. The water budget includes a separate item for evapotranspiration, but based on the text it is unclear whether the values shown in the budget tables apply to riparian evapotranspiration only or contain crop evapotranspiration as well. The omission of explicit water demands for native vegetation is problematic because key environmental uses of groundwater are not being accounted for as water supply decisions are made using this budget, nor will they likely be considered in project and management actions. The GSP states that managed wetlands are not present in the subbasin.

RECOMMENDATION

- Quantify and present all water use sector demands in the historical, current, and projected water budgets with individual line items for each water use sector, including native vegetation.

B. Engaging Stakeholders

Stakeholder Engagement during GSP development

Stakeholder engagement during GSP development is **incomplete**. SGMA's requirement for public notice and engagement of stakeholders[3] is not fully met by the description in the Communications and Public Engagement Plan (Chapter 2).

The GSA's outreach activities include conducting interviews with DAC community leaders to identify strategies to work together during GSP planning and implementation; conducting workshops with partners on water and groundwater sustainability; identifying concerns from DACs and underrepresented communities; planning listening sessions around GSA milestones; developing a resource hub with partner organizations; identifying community allies to partner with in reducing barriers to participation from DACs; and planning to convene a working group on

[1] "'Water use sector' refers to categories of water demand based on the general land uses to which the water is applied, including urban, industrial, agricultural, managed wetlands, managed recharge, and native vegetation." [23 CCR §351(al)]

[2] "The water budget shall quantify the following, either through direct measurements or estimates based on data: (3) Outflows from the groundwater system by water use sector, including evapotranspiration, groundwater extraction, groundwater discharge to surface water sources, and subsurface groundwater outflow." [23 CCR §354.18]

[3] "A communication section of the Plan shall include a requirement that the GSP identify how it encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin." [23 CCR §354.10(d)(3)]

domestic water that includes DACs and underrepresented communities. However, there is no specific pathway for feedback from DAC residents and representatives to be considered and included in the GSP and its implementation.

We note additional deficiencies with the overall stakeholder engagement process. While environmental organizations have a representative serving on the board of directors and are listed as stakeholders and as members of the GSP Advisory Committee, there is no specific outreach described that is directly targeted to environmental stakeholders during the GSP development and implementation processes.

RECOMMENDATIONS

- In the Communication and Public Engagement Plan, describe active and targeted outreach to engage environmental stakeholders during the remainder of the GSP development process and throughout the GSP implementation phase. Refer to Attachment B for specific recommendations on how to actively engage stakeholders during all phases of the GSP process.

- DAC and environmental stakeholder engagement should be improved by incorporating feedback and recommendations from DAC and environmental stakeholders engaged in the GSP process.

C. Considering Beneficial Uses and Users When Establishing Sustainable Management Criteria and Analyzing Impacts on Beneficial Uses and Users

The consideration of beneficial uses and users when establishing sustainable management criteria (SMC) is **insufficient**. The consideration of potential impacts on all beneficial users of groundwater in the basin are required when defining undesirable results[4] and establishing minimum thresholds.[5,6]

Disadvantaged Communities and Drinking Water Users

For chronic lowering of groundwater levels, the GSP discusses minimum thresholds impact on domestic wells (Section 8.6.2.2). The GSP states (p. 8-15): *"In the Forebay Subbasin, 100% of all domestic wells will have at least 25 feet of water in them as long as groundwater elevations remain above minimum thresholds; and 100% of all domestic wells will have at least 25 feet of water in them when measurable objectives are achieved."* However, the analysis was only based on 8 wells out of the total 154 domestic wells in the OSWCR database. Furthemore, the GSP states (p. 8-15): *"Some domestic wells may draw water from shallow, perched groundwater that is not managed in this GSP."* The GSP states (p. 5-13): *"The Forebay Subbasin has a single principal aquifer—the Basin Fill Aquifer."* The shallow perched zones are part of the single aquifer system and are still governed by the requirements of SGMA.

[4] "The description of undesirable results shall include [...] potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results." [23 CCR §354.26(b)(3)]
[5] "The description of minimum thresholds shall include [...] how minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests." [23 CCR §354.28(b)(4)]
[6] "The description of minimum thresholds shall include [...] how state, federal, or local standards relate to the relevant sustainability indicator. If the minimum threshold differs from other regulatory standards, the agency shall explain the nature of and the basis for the difference." [23 CCR §354.28(b)(5)]

Section 8.6.4 defines undesirable results for the chronic lowering of groundwater level SMC. The GSP states (p. 8-22): *"The chronic lowering of groundwater levels undesirable result is: more than 15% of the groundwater elevation minimum thresholds are exceeded.*" However, undesirable results should inform the development of minimum thresholds, not the other way around. The GSP should establish minimum thresholds at the representative monitoring wells that account for the specific undesirable results the GSA has determined for the subbasin. The current analysis, which only considers 8 out of 154 wells, is insufficient and does not use best available information, for example including Public Land Survey System (PLSS) section location data, as was used in the 180/400 Foot Aquifer GSP.

For degraded water quality, the GSP identifies constituents of concern (COCs) within the subbasin. The GSP states (p. 5-19): *"The SVBGSA does not have regulatory authority over groundwater quality and is not charged with improving groundwater quality in the Salinas Valley Groundwater Basin."* Table 8-5 provides a list of constituents and number of wells that must exceed regulatory standards in order to trigger minimum thresholds but fails to provide justification for how those numbers were selected. The GSP also sets measurable objectives identical to minimum thresholds; the exceedance of minimum thresholds is supposed to trigger additional actions but since minimum thresholds in this plan are identified as measurable objectives, it is unclear what action is triggered. Furthermore, the regulatory standards are not explicitly provided in the GSP.

RECOMMENDATIONS

Chronic Lowering of Groundwater Levels

- Describe direct and indirect impacts on DACs and drinking water users when defining undesirable results for chronic lowering of groundwater levels. For the analysis of minimum threshold impact on domestic wells, use best available information such as Public Land Survey System (PLSS) section location data.
- Establish minimum thresholds at the representative monitoring wells that account for the specific undesirable results the GSA would like to avoid.

Degraded Water Quality

- Describe direct and indirect impacts on DACs and drinking water users when defining undesirable results for degraded water quality. For specific guidance on how to consider these users, refer to "Guide to Protecting Water Quality Under the Sustainable Groundwater Management Act."[7]
- Set measurable objectives at lower levels than minimum thresholds (i.e., indicative of better water quality).
- Set concentration-based minimum thresholds and measurable objectives for COCs in the subbasin that are impacted by groundwater use and/or management. Ensure they align with drinking water standards[8].

[7] Guide to Protecting Water Quality under the Sustainable Groundwater Management Act https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1559328858/Guide_to_Protecting_Drinking_Water_Quality_Under_the_Sustainable_Groundwater_Management_Act.pdf?1559328858.

[8] "Degraded Water Quality [...] collect sufficient spatial and temporal data from each applicable principal aquifer to determine groundwater quality trends for water quality indicators, as determined by the Agency, to address known water quality issues." [23 CCR §354.34(c)(4)]

- Evaluate the cumulative or indirect impacts of proposed minimum thresholds for degraded water quality on DACs and drinking water users.

Groundwater Dependent Ecosystems and Interconnected Surface Waters

Sustainable management criteria for chronic lowering of groundwater levels provided in the GSP do not consider potential impacts to environmental beneficial users. The GSP neither describes nor analyzes direct or indirect impacts on environmental users of groundwater when defining undesirable results. This is problematic because without identifying potential impacts to GDEs, minimum thresholds may compromise, or even destroy, these environmental beneficial users. Since GDEs are present in the subbasin, they must be considered when developing SMC.

Sustainable management criteria for depletion of interconnected surface water are established by proxy using shallow groundwater elevations observed in December 2015 near locations of interconnected surface water. To describe impacts to ecological surface water users, the GSP states (p. 8-45): "*Review of MCWRA's Nacimiento Dam Operation Policy and MCWRA's water rights indicates MCWRA operates the Dam in a manner that meets downstream demands and considers ecological surface water users. Since the reservoir operations consider ecological surface water users and reflect reasonable existing surface water depletion rates, this GSP infers that stream depletion from existing groundwater pumping is not unreasonable*." The GSP makes no attempt to evaluate the impacts of the proposed minimum threshold on environmental beneficial users of surface water. The GSP does not explain how the chosen minimum thresholds and measurable objectives avoid significant and unreasonable effects on surface water beneficial users in the subbasin, such as increased mortality and inability to perform key life processes (e.g., reproduction, migration).

RECOMMENDATIONS

- When defining undesirable results for chronic lowering of groundwater levels, provide specifics on what biological responses (e.g., extent of habitat, growth, recruitment rates) would best characterize a significant and unreasonable impact to GDEs. Undesirable results to environmental users occur when 'significant and unreasonable' effects on beneficial users are caused by one of the sustainability indicators (i.e., chronic lowering of groundwater levels, degraded water quality, or depletion of interconnected surface water). Thus, potential impacts on environmental beneficial uses and users need to be considered when defining undesirable results[9] in the subbasin. Defining undesirable results is the crucial first step before the minimum thresholds[10] can be determined.

- When defining undesirable results for depletion of interconnected surface water, include a description of potential impacts on instream habitats within ISWs when minimum thresholds in the subbasin are reached[11]. The GSP should confirm that minimum thresholds for ISWs avoid adverse impacts to environmental beneficial users

[9] "The description of undesirable results shall include [...] potential effects on the beneficial uses and users of groundwater, on land uses and property interests, and other potential effects that may occur or are occurring from undesirable results". [23 CCR §354.26(b)(3)]

[10] The description of minimum thresholds shall include [...] how minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests." [23 CCR §354.28(b)(4)]

[11] "The minimum threshold for depletions of interconnected surface water shall be the rate or volume of surface water depletions caused by groundwater use that has adverse impacts on beneficial uses of the surface water and may lead to undesirable results." [23 CCR §354.28(c)(6)]

of interconnected surface waters as these environmental users could be left unprotected by the GSP. These recommendations apply especially to environmental beneficial users that are already protected under pre-existing state or federal law[6,12].

2. Climate Change

The SGMA statute identifies climate change as a significant threat to groundwater resources and one that must be examined and incorporated in the GSPs. The GSP Regulations[13] require integration of climate change into the projected water budget to ensure that projects and management actions sufficiently account for the range of potential climate futures.

The integration of climate change into the projected water budget is **insufficient**. The GSP does incorporate climate change into the projected water budget using DWR change factors for 2030 and 2070. However, the GSP does not consider multiple climate scenarios (e.g., the 2070 extremely wet and extremely dry climate scenarios) in the projected water budget. The GSP should clearly and transparently incorporate the extremely wet and dry scenarios provided by DWR into projected water budgets or select more appropriate extreme scenarios for their basins. While these extreme scenarios may have a lower likelihood of occurring, their consequences could be significant, therefore they should be included in groundwater planning.

We acknowledge and commend the inclusion of climate change into key inputs (e.g., precipitation, evapotranspiration, surface water flow, and sea level) of the projected water budget. However, the GSP does not calculate a sustainable yield based on the projected water budget with climate change incorporated. If the water budgets are incomplete, including the omission of extremely wet and dry scenarios, and sustainable yield is not calculated based on climate change projections, then there is increased uncertainty in virtually every subsequent calculation used to plan for projects, derive measurable objectives, and set minimum thresholds. Plans that do not adequately include climate change projections may underestimate future impacts on vulnerable beneficial users of groundwater such as ecosystems, DACs, and domestic well owners.

RECOMMENDATIONS

- Integrate climate change, including extremely wet and dry scenarios, into all elements of the projected water budget to form the basis for development of sustainable management criteria and projects and management actions.
- Calculate sustainable yield based on the projected water budget with climate change incorporated.
- Incorporate climate change scenarios into projects and management actions.

[12] Rohde MM, Seapy B, Rogers R, Castañeda X, editors. 2019. Critical Species LookBook: A compendium of California's threatened and endangered species for sustainable groundwater management. The Nature Conservancy, San Francisco, California. Available at: https://groundwaterresourcehub.org/public/uploads/pdfs/Critical_Species_LookBook_91819.pdf

[13] "Each Plan shall rely on the best available information and best available science to quantify the water budget for the basin in order to provide an understanding of historical and projected hydrology, water demand, water supply, land use, population, climate change, sea level rise, groundwater and surface water interaction, and subsurface groundwater flow." [23 CCR §354.18(e)]

3. Data Gaps

The consideration of beneficial users when establishing monitoring networks is **insufficient**, due to lack of specific plans to increase the Representative Monitoring Sites (RMSs) in the monitoring network that represent shallow groundwater elevations and water quality conditions around DACs and domestic wells in the subbasin.

Figure 7-1 (Forebay Aquifer Monitoring Network for Groundwater Levels) and Figure 7-4 (Locations of DDW Public Water System Supply Wells in the Groundwater Quality Monitoring Network) show that no monitoring wells are located across portions of the subbasin near DACs and domestic wells. Beneficial users of groundwater may remain unprotected by the GSP without adequate monitoring and identification of data gaps in the shallow aquifer. The Plan therefore fails to meet SGMA's requirements for the monitoring network[14].

The GSP provides discussion of data gaps for GDEs and ISWs in Section 7.6 (Interconnected Surface Water Monitoring Network) of the GSP. The GSP could be improved by describing biological monitoring that could be used to assess the potential for significant and unreasonable impacts to GDEs or ISWs due to groundwater conditions in the subbasin.

RECOMMENDATIONS

- Provide maps that overlay monitoring well locations with the locations of DACs and domestic wells to clearly identify potentially impacted areas. Increase the number of representative monitoring sites (RMSs) in the shallow aquifer across the subbasin for the groundwater elevation and groundwater quality condition indicators. Prioritize proximity to DACs and drinking water users when identifying new RMSs.
- Describe biological monitoring that can be used to assess the potential for significant and unreasonable impacts to GDEs or ISWs due to groundwater conditions in the subbasin.
- Ensure groundwater elevation and water quality RMSs are tracking groundwater conditions spatially and at the correct depth for *all* beneficial users - especially DACs, domestic wells, GDEs, and ISWs. Groundwater elevation and quality RMS data gaps (spatial and depth) in relation to key beneficial users in the subbasin are provided in Attachment E.

4. Addressing Beneficial Users in Projects and Management Actions

The consideration of beneficial users when developing projects and management actions is **insufficient**, due to the failure to completely identify benefits or impacts of identified projects and management actions to key beneficial users of groundwater such as GDEs, aquatic habitats, surface water users, DACs, and drinking water users. Therefore, potential project and management actions may not protect these beneficial users. Groundwater sustainability under SGMA is defined not just by sustainable yield, but by the avoidance of undesirable results for *all* beneficial users.

[14] "The monitoring network objectives shall be implemented to accomplish the following: [...] (2) Monitor impacts to the beneficial uses or users of groundwater." [23 CCR §354.34(b)(2)]

In Section 9.6.3 (Implementation Action C3: Dry Well Notification System), the GSP states (p. 9-37): "*The GSA could develop or support the development of a program to assist well owners (domestic or state small and local small water systems) whose wells go dry due to declining groundwater elevations."* The GSP states that the program could involve a notification system, monitoring triggered by lowered groundwater elevations, public outreach, *"...referral to assistance with short-term supply solutions, technical assistance to assess why it went dry, and/or long-term supply solutions.*" No further specifics on a drinking water well impact mitigation program are provided, however.

RECOMMENDATIONS

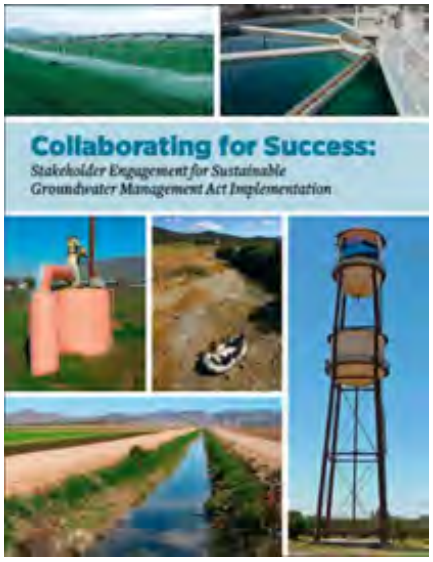
- For DACs and domestic well owners, provide specific plans for implementation of a drinking water well impact mitigation program to proactively monitor and protect drinking water wells through GSP implementation. Refer to Attachment B for specific recommendations on how to implement a drinking water well mitigation program.
- For DACs and domestic well owners, include a discussion of whether potential impacts to water quality from projects and management actions could occur and how the GSA plans to mitigate such impacts.
- Recharge ponds, reservoirs, and facilities for managed stormwater recharge can be designed as multiple-benefit projects to include elements that act functionally as wetlands and provide a benefit for wildlife and aquatic species. For guidance on how to integrate multi-benefit recharge projects into your GSP, refer to the "Multi-Benefit Recharge Project Methodology Guidance Document"[15].
- Develop management actions that incorporate climate and water delivery uncertainties to address future water demand and prevent future undesirable results.

[15] The Nature Conservancy. 2021. Multi-Benefit Recharge Project Methodology for Inclusion in Groundwater Sustainability Plans. Sacramento. Available at: https://groundwaterresourcehub.org/sgma-tools/multi-benefit-recharge-project-methodology-guidance/

Attachment B

SGMA Tools to address DAC, drinking water, and environmental beneficial uses and users

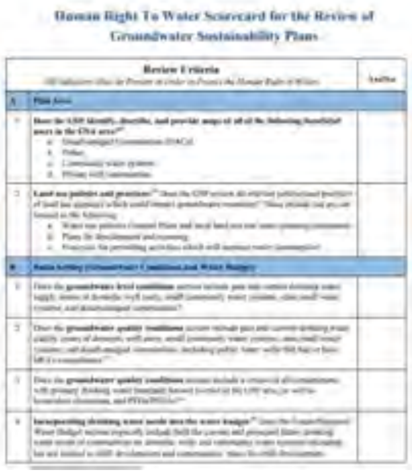
Stakeholder Engagement and Outreach



Clean Water Action, Community Water Center and Union of Concerned Scientists developed a guidance document called Collaborating for success: Stakeholder engagement for Sustainable Groundwater Management Act Implementation. It provides details on how to conduct targeted and broad outreach and engagement during Groundwater Sustainability Plan (GSP) development and implementation. Conducting a targeted outreach involves:

- Developing a robust Stakeholder Communication and Engagement plan that includes outreach at frequented locations (schools, farmers markets, religious settings, events) across the plan area to increase the involvement and participation of disadvantaged communities, drinking water users and the environmental stakeholders.
- Providing translation services during meetings and technical assistance to enable easy participation for non-English speaking stakeholders.
- GSP should adequately describe the process for requesting input from beneficial users and provide details on how input is incorporated into the GSP.

The Human Right to Water


Human Right To Water Scorecard for the Review of Groundwater Sustainability Plans

Review Criteria

The [Human Right to Water Scorecard](#) was developed by Community Water Center, Leadership Counsel for Justice and Accountability and Self Help Enterprises to aid Groundwater Sustainability Agencies (GSAs) in prioritizing drinking water needs in SGMA. The scorecard identifies elements that must exist in GSPs to adequately protect the Human Right to Drinking water.

Drinking Water Well Impact Mitigation Framework

The [Drinking Water Well Impact Mitigation Framework](#) was developed by Community Water Center, Leadership Counsel for Justice and Accountability and Self Help Enterprises to aid GSAs in the development and implementation of their GSPs. The framework provides a clear roadmap for how a GSA can best structure its data gathering, monitoring network and management actions to proactively monitor and protect drinking water wells and mitigate impacts should they occur.

Groundwater Resource Hub

The Nature Conservancy has developed a suite of tools based on best available science to help GSAs, consultants, and stakeholders efficiently incorporate nature into GSPs. These tools and resources are available online at GroundwaterResourceHub.org. The Nature Conservancy's tools and resources are intended to reduce costs, shorten timelines, and increase benefits for both people and nature.

Rooting Depth Database

The Plant Rooting Depth Database provides information that can help assess whether groundwater-dependent vegetation are accessing groundwater. Actual rooting depths will depend on the plant species and site-specific conditions, such as soil type and

availability of other water sources. Site-specific knowledge of depth to groundwater combined with rooting depths will help provide an understanding of the potential groundwater levels are needed to sustain GDEs.

How to use the database

The maximum rooting depth information in the Plant Rooting Depth Database is useful when verifying whether vegetation in the Natural Communities Commonly Associated with Groundwater (NC Dataset) are connected to groundwater. A 30 ft depth-to-groundwater threshold, which is based on averaged global rooting depth data for phreatophytes[1], is relevant for most plants identified in the NC Dataset since most plants have a max rooting depth of less than 30 feet. However, it is important to note that deeper thresholds are necessary for other plants that have reported maximum root depths that exceed the averaged 30 feet threshold, such as valley oak (*Quercus lobata*), Euphrates poplar (*Populus euphratica*), salt cedar (*Tamarix spp.*), and shadescale (*Atriplex confertifolia*). The Nature Conservancy advises that the reported max rooting depth for these deeper-rooted plants be used. For example, a depth-to groundwater threshold of 80 feet should be used instead of the 30 ft threshold, when verifying whether valley oak polygons from the NC Dataset are connected to groundwater. It is important to re-emphasize that actual rooting depth data are limited and will depend on the plant species and site-specific conditions such as soil and aquifer types, and availability to other water sources.

The Plant Rooting Depth Database is an Excel workbook composed of four worksheets:

1. California phreatophyte rooting depth data (included in the NC Dataset)
2. Global phreatophyte rooting depth data
3. Metadata
4. References

How the database was compiled

The Plant Rooting Depth Database is a compilation of rooting depth information for the groundwater-dependent plant species identified in the NC Dataset. Rooting depth data were compiled from published scientific literature and expert opinion through a crowdsourcing campaign. As more information becomes available, the database of rooting depths will be updated. Please Contact Us if you have additional rooting depth data for California phreatophytes.

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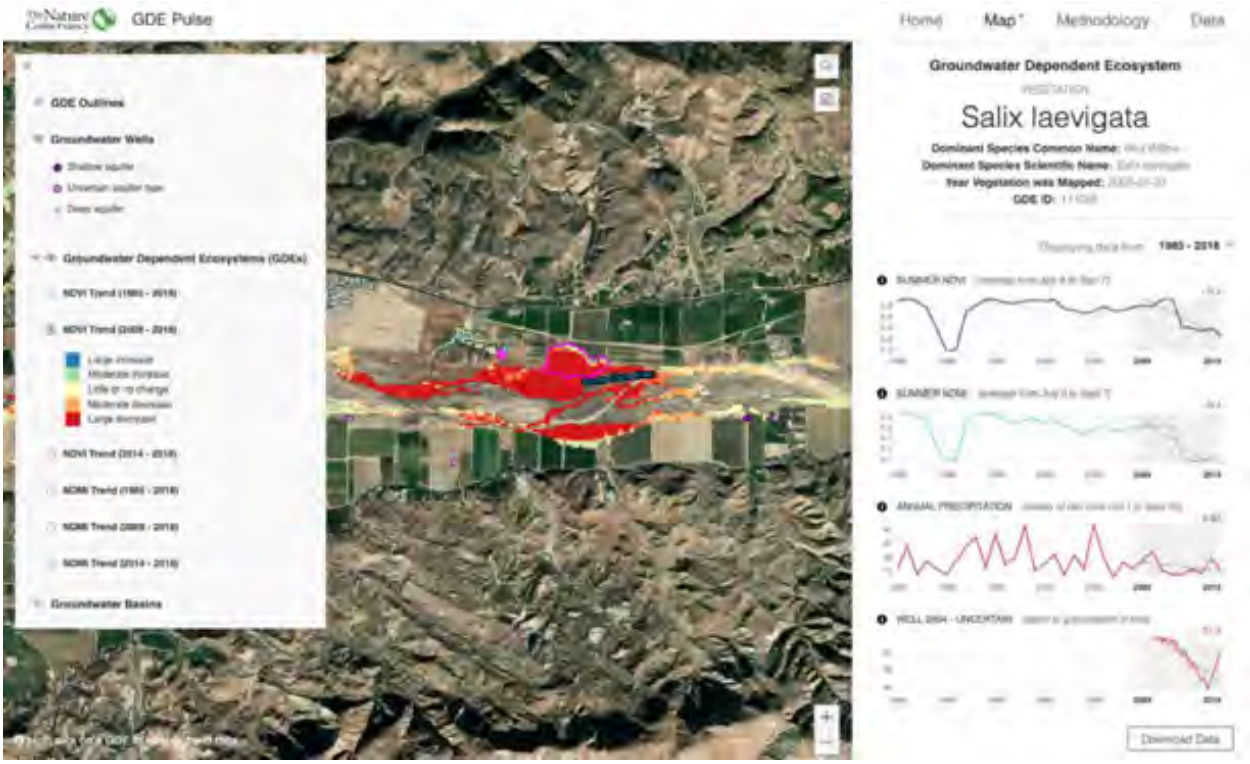
[1] Canadell, J., Jackson, R.B., Ehleringer, J.B. et al. 1996. Maximum rooting depth of vegetation types at the global scale. Oecologia 108, 583–595. https://doi.org/10.1007/BF00329030

GDE Pulse



GDE Pulse is a free online tool that allows Groundwater Sustainability Agencies to assess changes in groundwater dependent ecosystem (GDE) health using satellite, rainfall, and groundwater data. Remote sensing data from satellites has been used to monitor the health of vegetation all over the planet. GDE pulse has compiled 35 years of satellite imagery from NASA's Landsat mission for every polygon in the Natural Communities Commonly Associated with Groundwater Dataset. The following datasets are available for downloading:

Normalized Difference Vegetation Index (NDVI) is a satellite-derived index that represents the greenness of vegetation. Healthy green vegetation tends to have a higher NDVI, while dead leaves have a lower NDVI. We calculated the average NDVI during the driest part of the year (July - Sept) to estimate vegetation health when the plants are most likely dependent on groundwater.

Normalized Difference Moisture Index (NDMI) is a satellite-derived index that represents water content in vegetation. NDMI is derived from the Near-Infrared (NIR) and Short-Wave Infrared (SWIR) channels. Vegetation with adequate access to water tends to have higher NDMI, while vegetation that is water stressed tends to have lower NDMI. We calculated the average NDVI during the driest part of the year (July–September) to estimate vegetation health when the plants are most likely dependent on groundwater.

Annual Precipitation is the total precipitation for the water year (October 1st – September 30th) from the PRISM dataset. The amount of local precipitation can affect vegetation with more precipitation generally leading to higher NDVI and NDMI.

Depth to Groundwater measurements provide an indication of the groundwater levels and changes over time for the surrounding area. We used groundwater well measurements from nearby (<1km) wells to estimate the depth to groundwater below the GDE based on the average elevation of the GDE (using a digital elevation model) minus the measured groundwater surface elevation.

ICONOS Mapper

Interconnected Surface Water in the Central Valley

ICONS maps the likely presence of interconnected surface water (ISW) in the Central Valley using depth to groundwater data. Using data from 2011-2018, the ISW dataset represents the likely connection between surface water and groundwater for rivers and streams in California's Central Valley. It includes information on the mean, maximum, and minimum depth to groundwater for each stream segment over the years with available data, as well as the likely presence of ISW based on the minimum depth to groundwater. The Nature Conservancy developed this database, with guidance and input from expert academics, consultants, and state agencies.

We developed this dataset using groundwater elevation data available online from the California Department of Water Resources (DWR). DWR only provides this data for the Central Valley. For GSAs outside of the valley, who have groundwater well measurements, we recommend following our methods to determine likely ISW in your region. The Nature Conservancy's ISW dataset should be used as a first step in reviewing ISW and should be supplemented with local or more recent groundwater depth data.

Attachment C

Freshwater Species Located in the Forebay Aquifer Basin

To assist in identifying the beneficial users of surface water necessary to assess the undesirable result "depletion of interconnected surface waters", Attachment C provides a list of freshwater species located in the Forebay Aquifer Basin. To produce the freshwater species list, we used ArcGIS to select features within the California Freshwater Species Database version 2.0.9 within the basin boundary. This database contains information on ~4,000 vertebrates, macroinvertebrates and vascular plants that depend on fresh water for at least one stage of their life cycle. The methods used to compile the California Freshwater Species Database can be found in Howard et al. 2015[1]. The spatial database contains locality observations and/or distribution information from ~400 data sources. The database is housed in the California Department of Fish and Wildlife's BIOS[2] as well as on The Nature Conservancy's science website[3].

Scientific Name	Common Name	Legal Protected Status		
		Federal	State	Other
BIRDS				
Aix sponsa	Wood Duck			
Anas cyanoptera	Cinnamon Teal			
Anas discors	Blue-winged Teal			
Ardea herodias	Great Blue Heron			
Haliaeetus leucocephalus	Bald Eagle	Bird of Conservation Concern	Endangered	
Himantopus mexicanus	Black-necked Stilt			
Riparia riparia	Bank Swallow		Threatened	
Tringa melanoleuca	Greater Yellowlegs			
CRUSTACEANS				
Branchinecta lynchi	Vernal Pool Fairy Shrimp	Threatened	Special	IUCN - Vulnerable
Cyprididae fam.	Cyprididae fam.			
Hyalella spp.	Hyalella spp.			
Pacifastacus leniusculus leniusculus	Signal Crayfish			
FISH				
Oncorhynchus mykiss irideus	Coastal rainbow trout			Least Concern - Moyle 2013
Oncorhynchus mykiss - SCCC	South Central California coast steelhead	Threatened	Special Concern	Vulnerable - Moyle 2013

[1] Howard, J.K. et al. 2015. Patterns of Freshwater Species Richness, Endemism, and Vulnerability in California. PLoSONE, 11(7). Available at: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0130710

[2] California Department of Fish and Wildlife BIOS: https://www.wildlife.ca.gov/data/BIOS

[3] Science for Conservation: https://www.scienceforconservation.org/products/california-freshwater-species-database

HERPS				
Actinemys marmorata marmorata	Western Pond Turtle		Special Concern	ARSSC
Ambystoma californiense californiense	California Tiger Salamander	Threatened	Threatened	ARSSC
Anaxyrus boreas boreas	Boreal Toad			
Anaxyrus boreas halophilus	California Toad			ARSSC
Rana boylii	Foothill Yellow-legged Frog	Under Review in the Candidate or Petition Process	Special Concern	ARSSC
Rana draytonii	California Red-legged Frog	Threatened	Special Concern	ARSSC
Spea hammondii	Western Spadefoot	Under Review in the Candidate or Petition Process	Special Concern	ARSSC
Taricha torosa	Coast Range Newt		Special Concern	ARSSC
Thamnophis hammondii hammondii	Two-striped Gartersnake		Special Concern	ARSSC
Thamnophis sirtalis infernalis	California Red-sided Gartersnake			Not on any status lists
Thamnophis sirtalis sirtalis	Common Gartersnake			
INSECTS & OTHER INVERTS				
Optioservus canus	Pinnacles Optioservus Riffle Beetle		Special	
Acentrella insignificans	A Mayfly			
Acentrella spp.	Acentrella spp.			
Acentrella turbida	A Mayfly			
Agabus spp.	Agabus spp.			
Agapetus spp.	Agapetus spp.			
Ambrysus mormon				Not on any status lists
Anax walsinghami	Giant Green Darner			
Antocha spp.	Antocha spp.			
Argia spp.	Argia spp.			
Baetidae fam.	Baetidae fam.			
Baetis adonis	A Mayfly			
Baetis spp.	Baetis spp.			
Berosus spp.	Berosus spp.			
Callibaetis spp.	Callibaetis spp.			
Centroptilum spp.	Centroptilum spp.			
Cheumatopsyche spp.	Cheumatopsyche spp.			
Chironomidae fam.	Chironomidae fam.			
Chironomus spp.	Chironomus spp.			

Chloroperlidae fam.	Chloroperlidae fam.			
Cladotanytarsus spp.	Cladotanytarsus spp.			
Corixidae fam.	Corixidae fam.			
Cricotopus spp.	Cricotopus spp.			
Cricotopus trifascia				Not on any status lists
Cryptochironomus spp.	Cryptochironomus spp.			
Dicrotendipes spp.	Dicrotendipes spp.			
Drunella spp.	Drunella spp.			
Epeorus spp.	Epeorus spp.			
Ephemerella spp.	Ephemerella spp.			
Ephemerellidae fam.	Ephemerellidae fam.			
Ephydridae fam.	Ephydridae fam.			
Fallceon quilleri	A Mayfly			
Gumaga spp.	Gumaga spp.			
Gyrinus spp.	Gyrinus spp.			
Helichus spp.	Helichus spp.			
Helicopsyche spp.	Helicopsyche spp.			
Heptageniidae fam.	Heptageniidae fam.			
Hydrophilidae fam.	Hydrophilidae fam.			
Hydropsyche spp.	Hydropsyche spp.			
Hydropsychidae fam.	Hydropsychidae fam.			
Hydroptila spp.	Hydroptila spp.			
Hydryphantidae fam.	Hydryphantidae fam.			
Ischnura spp.	Ischnura spp.			
Isoperla spp.	Isoperla spp.			
Leptoceridae fam.	Leptoceridae fam.			
Leucotrichia spp.	Leucotrichia spp.			
Liodessus spp.	Liodessus spp.			
Malenka spp.	Malenka spp.			
Micrasema spp.	Micrasema spp.			
Microcylloepus spp.	Microcylloepus spp.			
Micropsectra spp.	Micropsectra spp.			
Microtendipes spp.	Microtendipes spp.			
Mystacides alafimbriatus	A Caddisfly			
Nectopsyche spp.	Nectopsyche spp.			
Ochrotrichia spp.	Ochrotrichia spp.			
Optioservus spp.	Optioservus spp.			
Ordobrevia nubifera				Not on any status lists
Oxyethira spp.	Oxyethira spp.			
Paracladopelma spp.	Paracladopelma spp.			
Paracymus spp.	Paracymus spp.			
Parakiefferiella spp.	Parakiefferiella spp.			

Paratanytarsus spp.	Paratanytarsus spp.			
Peltodytes spp.	Peltodytes spp.			
Phaenopsectra spp.	Phaenopsectra spp.			
Polypedilum spp.	Polypedilum spp.			
Procladius spp.	Procladius spp.			
Progomphus borealis	Gray Sanddragon			
Psectrocladius spp.	Psectrocladius spp.			
Psephenus falli				Not on any status lists
Rheotanytarsus spp.	Rheotanytarsus spp.			
Serratella spp.	Serratella spp.			
Sigara mckinstryi	A Water Boatman			Not on any status lists
Sigara spp.	Sigara spp.			
Simuliidae fam.	Simuliidae fam.			
Simulium spp.	Simulium spp.			
Sperchon spp.	Sperchon spp.			
Sperchontidae fam.	Sperchontidae fam.			
Stictotarsus striatellus				Not on any status lists
Tanytarsus spp.	Tanytarsus spp.			
Telebasis salva	Desert Firetail			
Tinodes spp.	Tinodes spp.			
Tipulidae fam.	Tipulidae fam.			
Tricorythodes spp.	Tricorythodes spp.			
Tropisternus spp.	Tropisternus spp.			
MAMMALS				
Castor canadensis	American Beaver			Not on any status lists
MOLLUSKS				
Menetus opercularis	Button Sprite			CS
Physa spp.	Physa spp.			
PLANTS				
Arundo donax	NA			
Eleocharis acicularis acicularis	Least Spikerush			
Euthamia occidentalis	Western Fragrant Goldenrod			
Juncus luciensis	Santa Lucia Dwarf Rush		Special	CRPR - 1B.2
Persicaria maculosa	NA			Not on any status lists
Rorippa palustris palustris	Bog Yellowcress			
Veronica americana	American Speedwell			

Attachment D

The Nature Conservancy

July 2019

IDENTIFYING GDEs UNDER SGMA

Best Practices for using the NC Dataset

The Sustainable Groundwater Management Act (SGMA) requires that groundwater dependent ecosystems (GDEs) be identified in Groundwater Sustainability Plans (GSPs). As a starting point, the Department of Water Resources (DWR) is providing the Natural Communities Commonly Associated with Groundwater Dataset (NC Dataset) online[1] to help Groundwater Sustainability Agencies (GSAs), consultants, and stakeholders identify GDEs within individual groundwater basins. To apply information from the NC Dataset to local areas, GSAs should combine it with the best available science on local hydrology, geology, and groundwater levels to verify whether polygons in the NC dataset are likely supported by groundwater in an aquifer (Figure 1)[2]. This document highlights six best practices for using local groundwater data to confirm whether mapped features in the NC dataset are supported by groundwater.

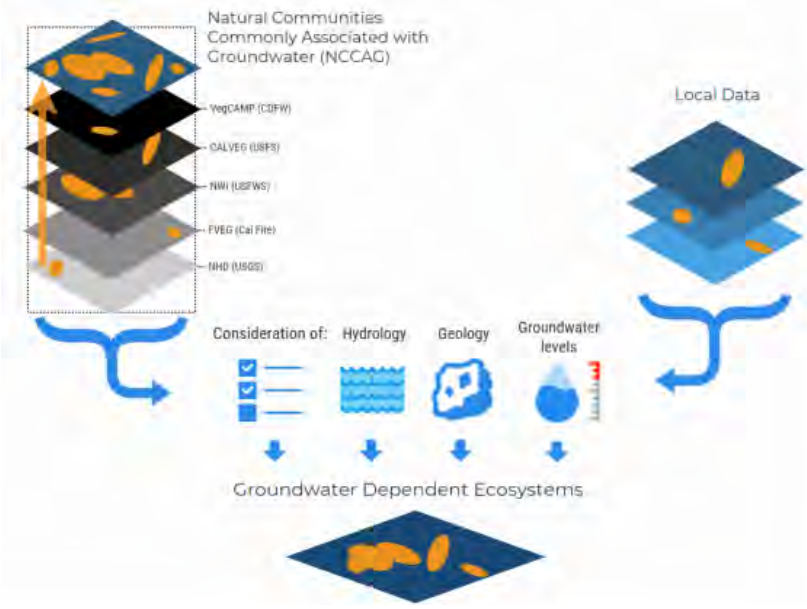


Figure 1. Considerations for GDE identification.
Source: DWR[2]

[1] NC Dataset Online Viewer: https://gis.water.ca.gov/app/NCDatasetViewer/
[2] California Department of Water Resources (DWR). 2018. Summary of the "Natural Communities Commonly Associated with Groundwater" Dataset and Online Web Viewer. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Data-and-Tools/Files/Statewide-Reports/Natural-Communities-Dataset-Summary-Document.pdf

The NC Dataset identifies vegetation and wetland features that are good indicators of a GDE. The dataset is comprised of 48 publicly available state and federal datasets that map vegetation, wetlands, springs, and seeps commonly associated with groundwater in California[3]. It was developed through a collaboration between DWR, the Department of Fish and Wildlife, and The Nature Conservancy (TNC). TNC has also provided detailed guidance on identifying GDEs from the NC dataset[4] on the Groundwater Resource Hub[5], a website dedicated to GDEs.

BEST PRACTICE #1. Establishing a Connection to Groundwater

Groundwater basins can be comprised of one continuous aquifer (Figure 2a) or multiple aquifers stacked on top of each other (Figure 2b). In unconfined aquifers (Figure 2a), using the depth-to-groundwater and the rooting depth of the vegetation is a reasonable method to infer groundwater dependence for GDEs. If groundwater is well below the rooting (and capillary) zone of the plants and any wetland features, the ecosystem is considered disconnected and groundwater management is not likely to affect the ecosystem (Figure 2d). However, it is important to consider local conditions (e.g., soil type, groundwater flow gradients, and aquifer parameters) and to review groundwater depth data from multiple seasons and water year types (wet and dry) because intermittent periods of high groundwater levels can replenish perched clay lenses that serve as the water source for GDEs (Figure 2c). Maintaining these natural groundwater fluctuations are important to sustaining GDE health.

Basins with a stacked series of aquifers (Figure 2b) may have varying levels of pumping across aquifers in the basin, depending on the production capacity or water quality associated with each aquifer. If pumping is concentrated in deeper aquifers, SGMA still requires GSAs to sustainably manage groundwater resources in shallow aquifers, such as perched aquifers, that support springs, surface water, domestic wells, and GDEs (Figure 2). This is because vertical groundwater gradients across aquifers may result in pumping from deeper aquifers to cause adverse impacts onto beneficial users reliant on shallow aquifers or interconnected surface water. The goal of SGMA is to sustainably manage groundwater resources for current and future social, economic, and environmental benefits. While groundwater pumping may not be currently occurring in a shallower aquifer, use of this water may become more appealing and economically viable in future years as pumping restrictions are placed on the deeper production aquifers in the basin to meet the sustainable yield and criteria. Thus, identifying GDEs in the basin should done irrespective to the amount of current pumping occurring in a particular aquifer, so that future impacts on GDEs due to new production can be avoided. A good rule of thumb to follow is: *if groundwater can be pumped from a well - it's an aquifer*.

[3] For more details on the mapping methods, refer to: Klausmeyer, K., J. Howard, T. Keeler-Wolf, K. Davis-Fadtke, R. Hull, A. Lyons. 2018. Mapping Indicators of Groundwater Dependent Ecosystems in California: Methods Report. San Francisco, California. Available at: https://groundwaterresourcehub.org/public/uploads/pdfs/iGDE_data_paper_20180423.pdf
[4] "Groundwater Dependent Ecosystems under the Sustainable Groundwater Management Act: Guidance for Preparing Groundwater Sustainability Plans" is available at: https://groundwaterresourcehub.org/gde-tools/gsp-guidance-document/
[5] The Groundwater Resource Hub: www.GroundwaterResourceHub.org

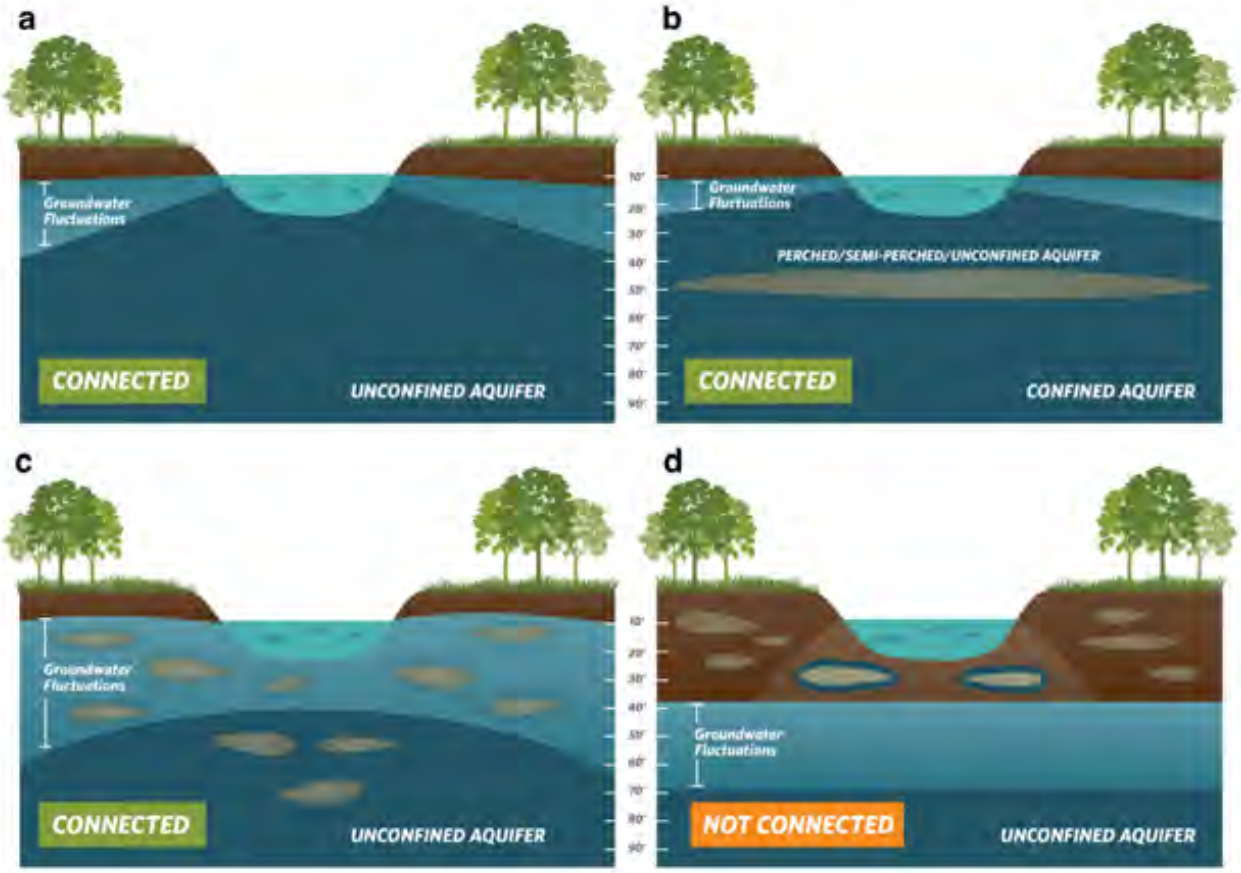


Figure 2. Confirming whether an ecosystem is connected to groundwater. Top: (a) Under the ecosystem is an unconfined aquifer with depth-to-groundwater fluctuating seasonally and interannually within 30 feet from land surface. **(b)** Depth-to-groundwater in the shallow aquifer is connected to overlying ecosystem. Pumping predominately occurs in the confined aquifer, but pumping is possible in the shallow aquifer. **Bottom: (c)** Depth-to-groundwater fluctuations are seasonally and interannually large, however, clay layers in the near surface prolong the ecosystem's connection to groundwater. **(d)** Groundwater is disconnected from surface water, and any water in the vadose (unsaturated) zone is due to direct recharge from precipitation and indirect recharge under the surface water feature. These areas are not connected to groundwater and typically support species that do not require access to groundwater to survive.

BEST PRACTICE #2. Characterize Seasonal and Interannual Groundwater Conditions

SGMA requires GSAs to describe current and historical groundwater conditions when identifying GDEs [23 CCR §354.16(g)]. Relying solely on the SGMA benchmark date (January 1, 2015) or any other single point in time to characterize groundwater conditions (e.g., depth-to-groundwater) is inadequate because managing groundwater conditions with data from one time point fails to capture the seasonal and interannual variability typical of California's climate. DWR's Best Management Practices document on water budgets[6] recommends using 10 years of water supply and water budget information to describe how historical conditions have impacted the operation of the basin within sustainable yield, implying that a baseline[7] could be determined based on data between 2005 and 2015. Using this or a similar time period, depending on data availability, is recommended for determining the depth-to-groundwater.

GDEs depend on groundwater levels being close enough to the land surface to interconnect with surface water systems or plant rooting networks. The most practical approach[8] for a GSA to assess whether polygons in the NC dataset are connected to groundwater is to rely on groundwater elevation data. As detailed in TNC's GDE guidance document[4], one of the key factors to consider when mapping GDEs is to contour depth-to-groundwater in the aquifer that is supporting the ecosystem (see Best Practice #5).

Groundwater levels fluctuate over time and space due to California's Mediterranean climate (dry summers and wet winters), climate change (flood and drought years), and subsurface heterogeneity in the subsurface (Figure 3). Many of California's GDEs have adapted to dealing with intermittent periods of water stress, however if these groundwater conditions are prolonged, adverse impacts to GDEs can result. While depth-to-groundwater levels within 30 feet[4] of the land surface are generally accepted as being a proxy for confirming that polygons in the NC dataset are supported by groundwater, it is highly advised that fluctuations in the groundwater regime be characterized to understand the seasonal and interannual groundwater variability in GDEs. Utilizing groundwater data from one point in time can misrepresent groundwater levels required by GDEs, and inadvertently result in adverse impacts to the GDEs. Time series data on groundwater elevations and depths are available on the SGMA Data Viewer[9]. However, if insufficient data are available to describe groundwater conditions within or near polygons from the NC dataset, include those polygons in the GSP until data gaps are reconciled in the monitoring network (see Best Practice #6).

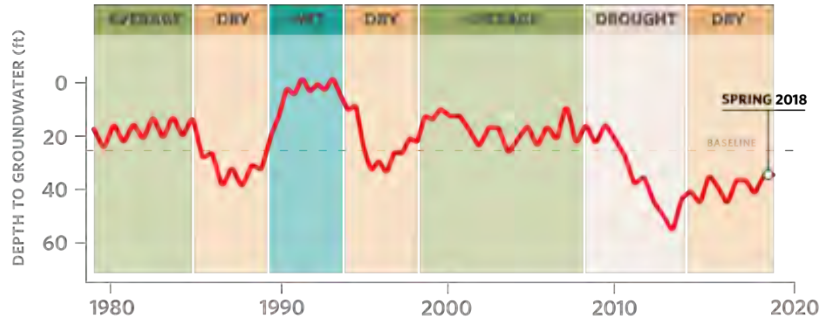


Figure 3. Example seasonality and interannual variability in depth-to-groundwater over time. Selecting one point in time, such as Spring 2018, to characterize groundwater conditions in GDEs fails to capture what groundwater conditions are necessary to maintain the ecosystem status into the future so adverse impacts are avoided.

[6] DWR. 2016. Water Budget Best Management Practice. Available at: https://water.ca.gov/LegacyFiles/groundwater/sgm/pdfs/BMP_Water_Budget_Final_2016-12-23.pdf

[7] Baseline is defined under the GSP regulations as "historic information used to project future conditions for hydrology, water demand, and availability of surface water and to evaluate potential sustainable management practices of a basin." [23 CCR §351(e)]

[8] Groundwater reliance can also be confirmed via stable isotope analysis and geophysical surveys. For more information see The GDE Assessment Toolbox (Appendix IV, GDE Guidance Document for GSPs[4]).

[9] SGMA Data Viewer: https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer

BEST PRACTICE #3. Ecosystems Often Rely on Both Groundwater and Surface Water

GDEs are plants and animals that rely on groundwater for all or some of its water needs, and thus can be supported by multiple water sources. The presence of non-groundwater sources (e.g., surface water, soil moisture in the vadose zone, applied water, treated wastewater effluent, urban stormwater, irrigated return flow) within and around a GDE does not preclude the possibility that it is supported by groundwater, too. SGMA defines GDEs as "ecological communities and species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface" [23 CCR §351(m)]. Hence, depth-to-groundwater data should be used to identify whether NC polygons are supported by groundwater and should be considered GDEs. In addition, SGMA requires that significant and undesirable adverse impacts to beneficial users of surface water be avoided. Beneficial users of surface water include environmental users such as plants or animals[10], which therefore must be considered when developing minimum thresholds for depletions of interconnected surface water.

GSAs are only responsible for impacts to GDEs resulting from groundwater conditions in the basin, so if adverse impacts to GDEs result from the diversion of applied water, treated wastewater, or irrigation return flow away from the GDE, then those impacts will be evaluated by other permitting requirements (e.g., CEQA) and may not be the responsibility of the GSA. However, if adverse impacts occur to the GDE due to changing groundwater conditions resulting from pumping or groundwater management activities, then the GSA would be responsible (Figure 4).

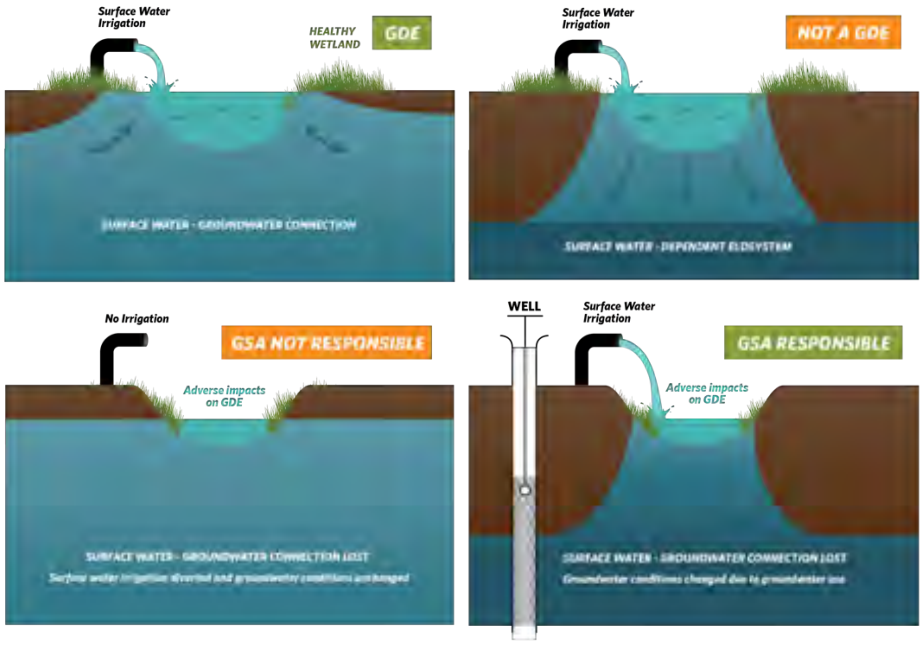


Figure 4. Ecosystems often depend on multiple sources of water. Top: (Left) Surface water and groundwater are interconnected, meaning that the GDE is supported by both groundwater and surface water. **(Right)** Ecosystems that are only reliant on non-groundwater sources are not groundwater-dependent. **Bottom: (Left)** An ecosystem that was once dependent on an interconnected surface water, but loses access to groundwater solely due to surface water diversions may not be the GSA's responsibility. **(Right)** Groundwater dependent ecosystems once dependent on an interconnected surface water system, but loses that access due to groundwater pumping is the GSA's responsibility.

[10] For a list of environmental beneficial users of surface water by basin, visit: https://groundwaterresourcehub.org/gde-tools/environmental-surface-water-beneficiaries/

BEST PRACTICE #4. Select Representative Groundwater Wells

Identifying GDEs in a basin requires that groundwater conditions are characterized to confirm whether polygons in the NC dataset are supported by the underlying aquifer. To do this, proximate groundwater wells should be identified to characterize groundwater conditions (Figure 5). When selecting representative wells, it is particularly important to consider the subsurface heterogeneity around NC polygons, especially near surface water features where groundwater and surface water interactions occur around heterogeneous stratigraphic units or aquitards formed by fluvial deposits. The following selection criteria can help ensure groundwater levels are representative of conditions within the GDE area:

- Choose wells that are within 5 kilometers (3.1 miles) of each NC Dataset polygons because they are more likely to reflect the local conditions relevant to the ecosystem. If there are no wells within 5km of the center of a NC dataset polygon, then there is insufficient information to remove the polygon based on groundwater depth. Instead, it should be retained as a potential GDE until there are sufficient data to determine whether or not the NC Dataset polygon is supported by groundwater.

- Choose wells that are screened within the surficial unconfined aquifer and capable of measuring the true water table.

- Avoid relying on wells that have insufficient information on the screened well depth interval for excluding GDEs because they could be providing data on the wrong aquifer. This type of well data should not be used to remove any NC polygons.

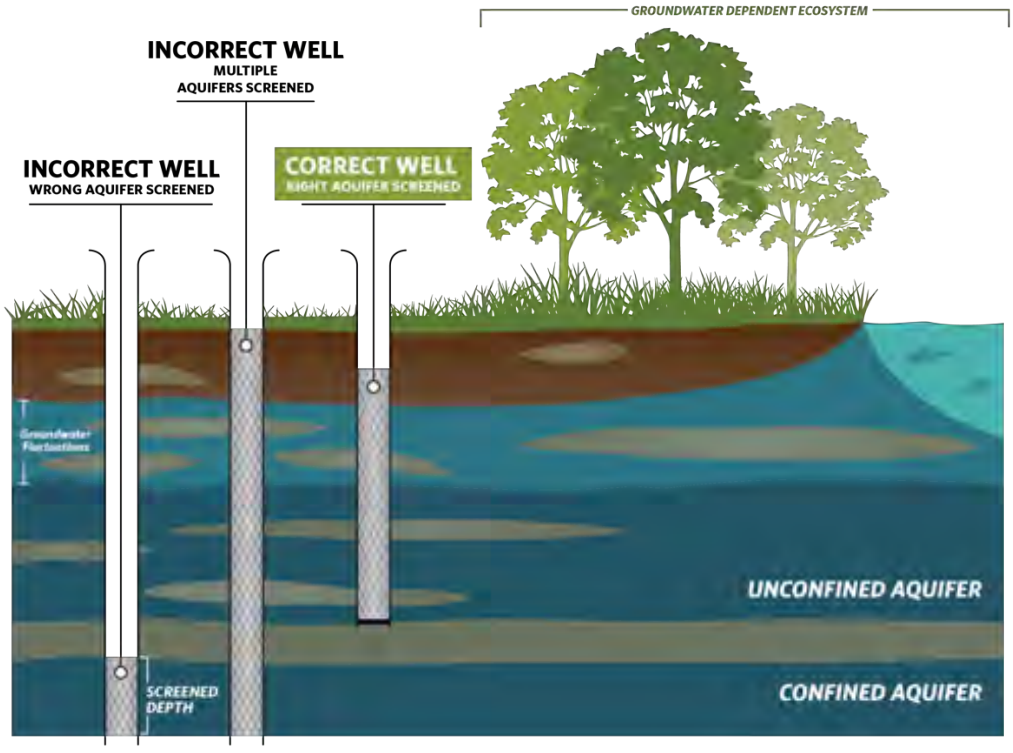


Figure 5. Selecting representative wells to characterize groundwater conditions near GDEs.

BEST PRACTICE #5. Contouring Groundwater Elevations

The common practice to contour depth-to-groundwater over a large area by interpolating measurements at monitoring wells is unsuitable for assessing whether an ecosystem is supported by groundwater. This practice causes errors when the land surface contains features like stream and wetland depressions because it assumes the land surface is constant across the landscape and depth-to-groundwater is constant below these low-lying areas (Figure 6a). A more accurate approach is to interpolate **groundwater elevations** at monitoring wells to get groundwater elevation contours across the landscape. This layer can then be subtracted from land surface elevations from a Digital Elevation Model (DEM)[11] to estimate depth-to-groundwater contours across the landscape (Figure b; Figure 7). This will provide a much more accurate contours of depth-to-groundwater along streams and other land surface depressions where GDEs are commonly found.

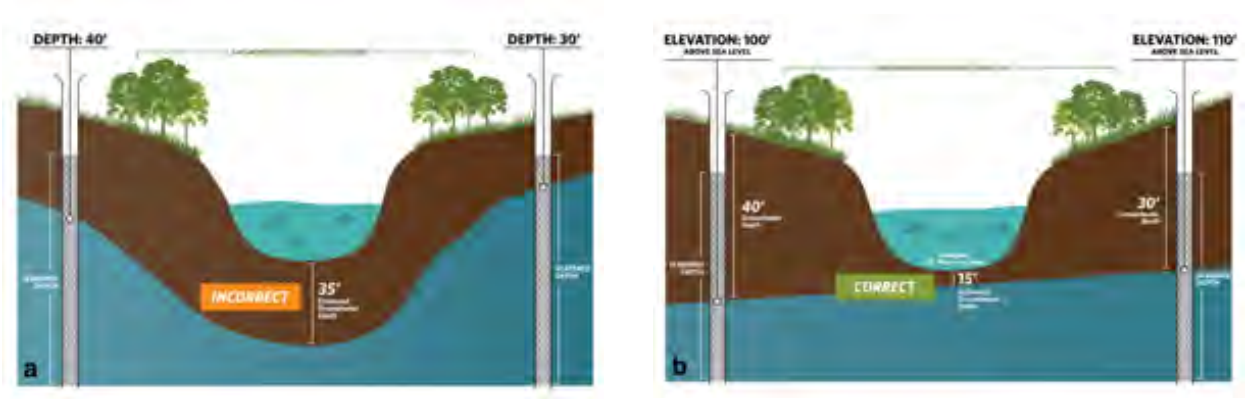


Figure 6. Contouring depth-to-groundwater around surface water features and GDEs. (a) Groundwater level interpolation using depth-to-groundwater data from monitoring wells. **(b)** Groundwater level interpolation using groundwater elevation data from monitoring wells and DEM data.

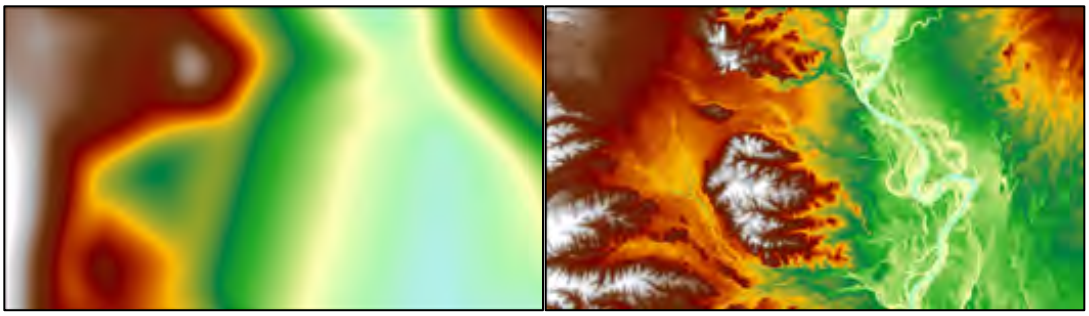


Figure 7. Depth-to-groundwater contours in Northern California. (Left) Contours were interpolated using depth-to-groundwater measurements determined at each well. **(Right)** Contours were determined by interpolating groundwater elevation measurements at each well and superimposing ground surface elevation from DEM spatial data to generate depth-to-groundwater contours. The image on the right shows a more accurate depth-to-groundwater estimate because it takes the local topography and elevation changes into account.

[11] USGS Digital Elevation Model data products are described at: https://www.usgs.gov/core-science-systems/ngp/3dep/about-3dep-products-services and can be downloaded at: https://iewer.nationalmap.gov/basic/

BEST PRACTICE #6. Best Available Science

Adaptive management is embedded within SGMA and provides a process to work toward sustainability over time by beginning with the best available information to make initial decisions, monitoring the results of those decisions, and using the data collected through monitoring programs to revise decisions in the future. In many situations, the hydrologic connection of NC dataset polygons will not initially be clearly understood if site-specific groundwater monitoring data are not available. If sufficient data are not available in time for the 2020/2022 plan, **The Nature Conservancy strongly advises that questionable polygons from the NC dataset be included in the GSP until data gaps are reconciled in the monitoring network.** Erring on the side of caution will help minimize inadvertent impacts to GDEs as a result of groundwater use and management actions during SGMA implementation.

KEY DEFINITIONS

Groundwater basin is an aquifer or stacked series of aquifers with reasonably well-defined boundaries in a lateral direction, based on features that significantly impede groundwater flow, and a definable bottom. *23 CCR §341(g)(1)*

Groundwater dependent ecosystem (GDE) are ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface. *23 CCR §351(m)*

Interconnected surface water (ISW) surface water that is hydraulically connected at any point by a continuous saturated zone to the underlying aquifer and the overlying surface water is not completely depleted. *23 CCR §351(o)*

Principal aquifers are aquifers or aquifer systems that store, transmit, and yield significant or economic quantities of groundwater to wells, springs, or surface water systems. *23 CCR §351(aa)*

ABOUT US

The Nature Conservancy is a science-based nonprofit organization whose mission is *to conserve the lands and waters on which all life depends*. To support successful SGMA implementation that meets the future needs of people, the economy, and the environment, TNC has developed tools and resources (www.groundwaterresourcehub.org) intended to reduce costs, shorten timelines, and increase benefits for both people and nature.

Attachment E

Maps of representative monitoring sites in relation to key beneficial users

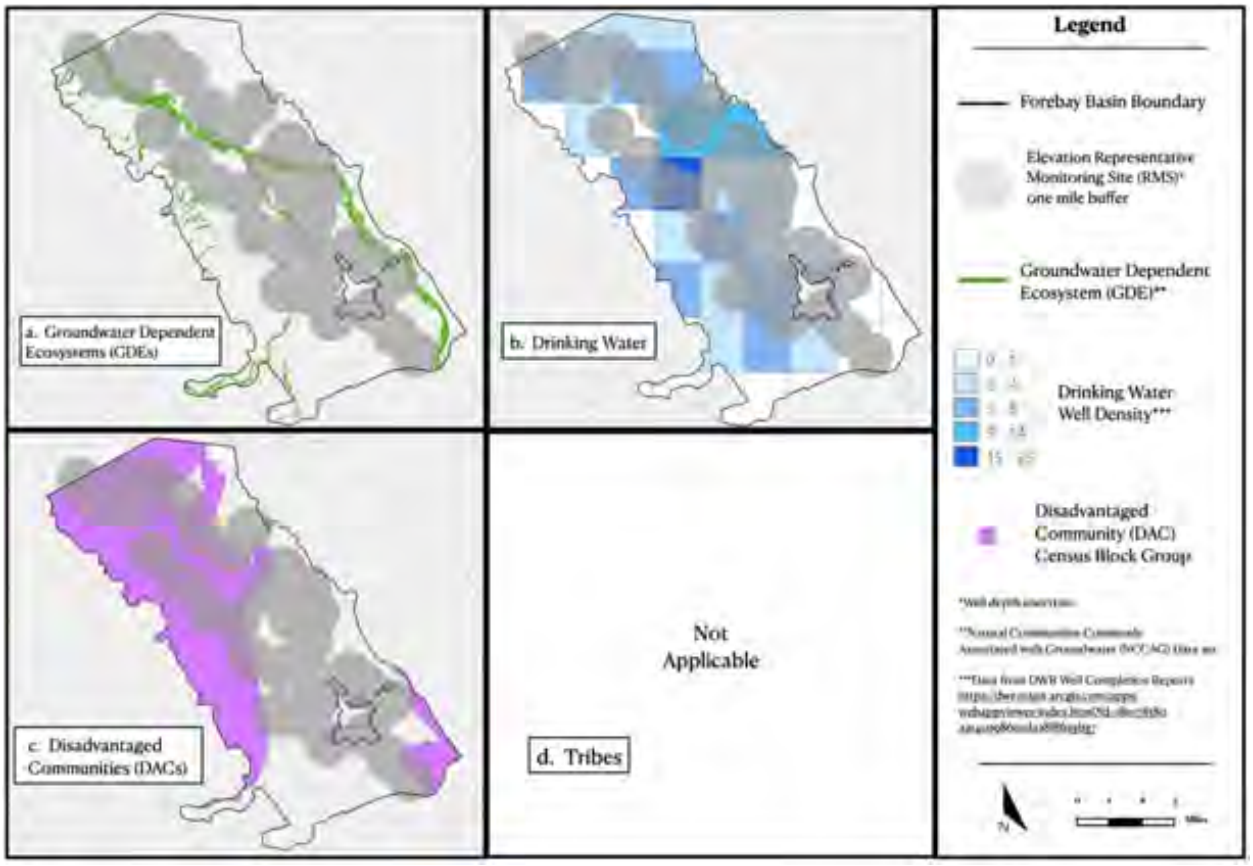


Figure 1. Groundwater elevation representative monitoring sites in relation to key beneficial users: a) Groundwater Dependent Ecosystems (GDEs), b) Drinking Water users, c) Disadvantaged Communities (DACs), and d) Tribes.

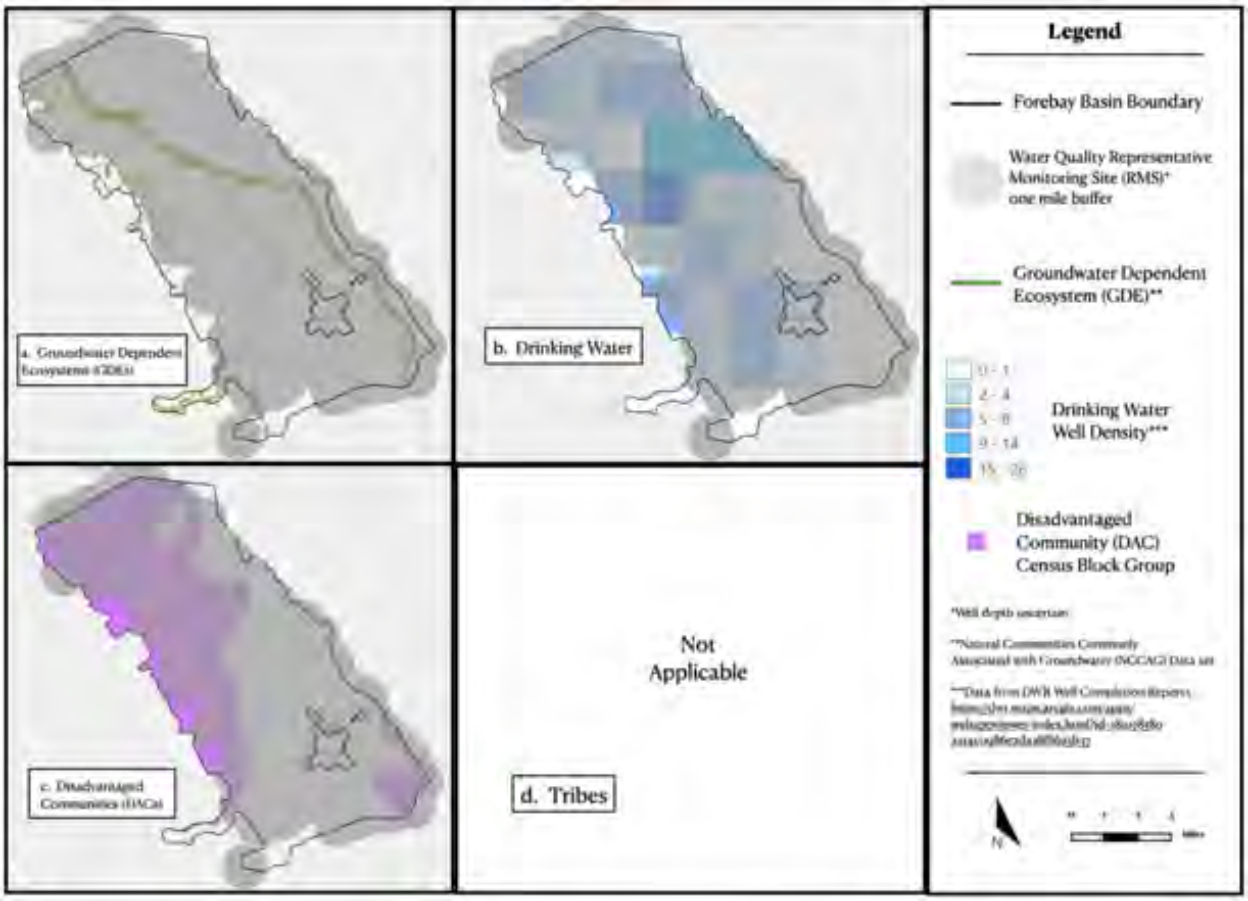


Figure 2. Groundwater quality representative monitoring sites in relation to key beneficial users: a) Groundwater Dependent Ecosystems (GDEs), b) Drinking Water users, c) Disadvantaged Communities (DACs), and d) Tribes.

TRANSMITTED VIA EMAIL

Franscioni & Griva Corp.
41628 Peach Rd
Greenfield, Ca 93927

15 October, 2021

Salinas Valley Groundwater Sustainability Agency
Atten: Ms. Emily Gardner, Deputy General Manager

Re: Forebay GSP V. 4

Dear Ms. Gardner;

Franscioni & Griva have farmed in the Forebay Subbasin. specifically within the Arroyo Seco Management Area for over 150 years. We have actively participated in the development and formation of the Arroyo Seco GSA as well as the development of the Forebay Subbasin GSP. We support many of the comments that have already been submitted to you, including the most recent comments of the Salinas Valley Water Coalition, October 5, 2021. We ask that you consider the following comments and that they are publicly discussed among the Forebay Subbasin Committee.

Chapter 1

Section 1.3, Page 1-7: The following sentence should be stricken as shown below:

> ~~*The projects and programs presented in this GSP are a part of a cohesive set of projects and programs designed to achieve sustainability throughout the entire Salinas Valley Groundwater Basin.*~~

Each subbasin of the Salinas Valley Groundwater Basin is identified as a "Basin" subject to the Sustainable Groundwater Management Act (SGMA), and the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) is required to prepare a separate groundwater sustainability plan (GSP) for each Basin subject to SGMA in order to achieve the sustainability goal of that particular Basin. Because the Forebay Subbasin is sustainable, the GSP should focus on maintaining its sustainability rather than focusing on the entire Salinas Valley Groundwater Basin. Other than coordination, the Forebay GSP must not be burdened with projects and programs to achieve the sustainability of the entire Salinas Valley Groundwater Basin, and in fact, any such attempt may result in undesirable results of the Forebay Subbasin.

Chapter 2

Section 2.2, Page 2-4: The following sentences must be clarified by adding the language shown as underlined:

Subsequent to that SVBGSA will complete a Salinas Valley Basin-wide Integrated Sustainability Plan (ISP) that will be consistent with the groundwater sustainability plans of the subbasins within the Salinas Valley Groundwater Basin and will detail project portfolios and groundwater sustainability programs to meet SGMA compliance for subbasins by 2040 and maintain sustainability through 2050. Under SGMA, groundwater sustainability plans are the primary legislative authority, akin to local agencies' general plans, and all other subsequent actions, including the ISP must be consistent with the SVBGSA's adopted groundwater sustainability plan.

Chapter 3

- **Section 3, Page 3-21:** The following sentence in the GSP must be further clarified by the Salinas Valley Basin Groundwater Sustainability Agency:

  The Forebay Subbasin covers approximately the same area as MCWRA's Forebay Subarea.

  Further clarification needed in this section includes the following: (1) the difference in the size of the MCWRA's Forebay Subarea as compared to the Forebay Subbasin - Figure 5-8 (Page 5-22) shows that the difference is not minor; and (2) how this difference impacts any analysis (including the modeling results) in the GSP.

- **Section 3.10.4, Page 3-47:** The section needs to either include the specific language of the relevant policy of the Monterey County General Plan or mention that the policy includes a rebuttable presumption that there is sufficient water supply in the Salinas Valley Groundwater Basin to Year 2030.

Chapter 4

Section 4.4.1.1, Page 4-14: The discussion herein and in other sections of the GSP appears to prematurely conclude that the Forebay Subbasin is connected to the Deep Aquifers and fails to present other opinions and studies to the contrary, which may lead to a prejudicial outcome should the Deep Aquifer Study proceed. For example, the following language shown as stricken should be removed to avoid such prejudicial outcome:

~~Some previous investigators have hypothesized that the Deep Aquifers present within the 180/400 Foot Aquifer Subbasin extends into the Forebay Subbasin (Greene, 1970; Hanson et al, 2002; Brown & Caldwell, 2015; DWR, 2004a); however, t~~This deeper portion of the Basin Fill Aquifer has not been investigated or developed in a substantial way….

Chapter 6

- **Overall Comment No. 2:** The discussions on groundwater inflows into the subbasin must be further clarified. For example, page 6-22 includes the following sentence:

  The main groundwater inflows into the subbasin are: (1) the percolation of precipitation and applied agricultural irrigation water and (2) streambed recharge.

  Yet, the discussions on inflows fail to mention the primary factor that impacts the inflow numbers for the areas of the Forebay Subbasin outside of the Arroyo Seco Cone, which is the

control of water releases from the Nacimiento and San Antonio reservoirs by the Monterey County Water Resources Agency that significantly impacts streambed recharge. There must be a recognition that the inflow numbers are "artificial" or "human controlled" particularly for areas outside of the Arroyo Seco Cone. Adding these recommended clarifying discussions and analysis to the GSP are essential for establishing proper reservoir operation management actions to ensure that the Forebay Subbasin remains sustainable.

Chapter 7

- **Section 7.6, Page 7-26:** As discussed above, because interconnected surface water takes place in three basic ways -- surface-water bodies gain water from inflow of groundwater through their bed, they lose water to groundwater by outflow through the bed, or they do both, gaining in some reaches and losing in other reaches – and thus is highly dependent on the MCWRA's water releases from the Nacimiento and San Antonio reservoirs for those areas outside of the Arroyo Seco Cone, simply monitoring shallow wells next to Salinas River without accounting for how the MCWRA manages the reservoirs lacks scientific credibility. Adding these recommended clarifying discussions and analysis to the GSP are essential for establishing proper reservoir operation management actions to ensure that the Forebay Subbasin remains sustainable.

Chapter 8

- **Section 8.6.2.3, Page 8-16**: As discussed above, establishing groundwater level minimum thresholds by using shallow monitoring wells next to Salinas River to assess the undesirable results of significant or unreasonable depletion of interconnected surface waters without accounting for how the MCWRA manages the releases from the Nacimiento and San Antonio dams lacks scientific support. Accordingly, the following sentences (and other similar sentences in the GSP) should be changed to add that clarity. For example, please see the clarification as shown in the redline:

  > ***Depletion of interconnected surface waters.*** *The chronic lowering of groundwater levels' minimum thresholds is identical to the interconnected surface water minimum thresholds and both are highly dependent on the management (i.e., water releases) of the Nacimiento and San Antonio reservoirs by the MCWRA for the areas of the Forebay Subbasin outside of the Arroyo Seco Cone. Therefore, the groundwater level minimum thresholds using shallow wells next to the Salinas River must be evaluated in the context of the MCWRA's reservoir operations to determine if the Forebay Subbasin will not result in a significant or unreasonable depletion of interconnected surface waters, including groundwater-dependent ecosystems*.

- **Section 8.6.4.1, Page 8-22:** Groundwater levels of areas outside of the Arroyo Seco Cone are also highly dependent on the management of the Nacimiento and San Antonio reservoirs by the MCWRA. Accordingly, the reservoir management impacts on groundwater level minimum

threshold must be taken into account when establishing the minimum threshold. The following sentence should be added for clarity to the undesirable results standard:

> *The 15% limit on minimum threshold exceedances in the undesirable result allows for 5 exceedances in the 39 existing representative monitoring wells. No minimum threshold is established for times when the lowering of groundwater levels is determined to be the result of MCWRA operation of the reservoirs inconsistent with its standard operations and projects of 2015, which include the Salinas Valley Water Project.*

- **Section 8.7.2, Page 8-24:** Similar to prior discussions, groundwater storage of the Forebay Subbasin is also dependent on the management of the Nacimiento and San Antonio reservoirs by the MCWRA. Accordingly, the reservoir management impacts on groundwater storage minimum threshold must be taken into account when establishing the minimum threshold. The following sentence should also be revised to add clarity to the undesirable results standard:

> *The minimum threshold for reduction in groundwater storage is 267,000 acre-feet below the measurable objective. This reduction is based on the groundwater level minimum thresholds. This number will be refined as additional data are collected and other projects are implemented. No minimum threshold is established for times when the lowering of groundwater levels is determined to be the result of MCWRA operation of the reservoirs inconsistent with its standard operations and projects of 2015, which include the Salinas Valley Water Project.*

Chapter 9

1. Page 9-3: Under 9.2.1, Projects for Developing Management Actions and Projects – I've asked several times that the second paragraph needs to be deleted or at least corrected. "Projects developed for the entire Valley" which were part of the 2019 and 2020 180/400 foot Aquifer Subbasin GSP", were not approved or "refined" by the Forebay Subbasin committee. *Simply the 180/400 could not develop projects for the entire Valley. They were not refined for this GSP.*

   These projects were developed for the 180/400 GSP with the goal of stopping seawater intrusion. Such projects are not needed in the Upper Valley and/or Forebay and these projects should be considered within the 180/400 GSP.

Chapter 10

~~1.~~ **Section 10.3, #3 Management Actions, first paragraph, last sentence:** "Conservation and agricultural BMP's and fallowing, fallow bank, and agricultural land retirement will move forward if conditions warrant it ~~or if other subbasins initiate implementation of them."~~

We believe the above referenced issues need to be discussed publicly at the Forebay Subbasin Committee and the Committee should make a recommendation as to revising the draft Forebay GSP accordingly. To our knowledge, the Committee has not had the opportunity to discuss the influence

and impact of the operation of the two reservoirs, or their mis-operation, and the potential adverse impact to groundwater levels. This should be openly discussed and considered.

Thank you for your consideration,

Michael Griva

Michael Griva, President

Franscioni & Griva Corp.

Friday, October 15, 2021

Salinas Valley Basin Groundwater Sustainability Agency SVBGSA Public Comments Form

Name	Douglas Deitch
Organization	Monterey Bay Conservancy (MBC)
Email Address	siddhartha1002@gmail.com
Subbasin	Langley, Eastside, Forebay, Upper Valley, Monterey, Whole Basin, 180/400
Chapter	Salinas Valley Basin GSA (entire)
Comments	https://twitter.com/DouglasDeitch/status/1375814806364594178/photo/1 Part I-General comments on balkanized/"sub basined" and too many Monterey Bay GSAs, our ground water commons, our Water Berry (and other similar) Ponzi Schemes (MBC @ CCC 2009 @ http://www.begentlewiththeearth.org , http://ourinconvenienttruth.net http://ourinconvenienttruth.org http://ourinconvenienttruth.com & 2011 @ http://douglasdeitch.com http://douglasdeitch.net & MBC @ http://dougforassembly.com @ SWRCB requesting SWRCB Monterey Bay Regional "Intervention" for the first time in 2016 @ 11:21 @ http://thebestthatmoneycantbuy.org), and their ongoing and worsening (terminal?) tragedy ... and our Alternatives 1. "Those who cannot remember the past are condemned to repeat it." : "Toolittle/toolatefortheCentralValley (and Monterey Bay's $5 billion+ annual production) &it'sAG? Those who cannot remember the past are condemned to repeat it, like we have forgotten in the Monterey Bay w/ berries&Driscolls/Reiter (et al) instead of cotton&Boswells@ http://youtube.com/watch?v=I5uloOJ5m1o&feature=youtu.be http://santacruzfoods.com

https://twitter.com/DouglasDeitch/status/1448627629557354500

Alternative#1 @ Living within our means @ http://dougdeitch.info , 1995 Zmudowsky Beach 43 acre Pilot Project @ http://dougdeitch.com & @ MBC @ CCC in 2011 @ https://www.youtube.com/watch?v=ija6HUdP-eY

2. "VAST majority of the water/food/RE resources of World's 5th biggest economy/Community are inextricably tied to SFBay/Delta/Sierra-Snowpak&CentralValleyag. CCC predicts 3.5ftSLR in 30 years@ http://documents.coastal.ca.gov/assets/slr/CCCendorsement_SLRPrinciples.pdf .
5:42@ http://pebblebeachrealestate.com Dr.Mount sez what 1 foot will do!"
https://twitter.com/DouglasDeitch/status/1374672809163550720

Question #1: If one foot of SLR will "salt up" the Delta, as Dr. Mount tells us in 2015, how, for example will this same one foot SLR affect our already overuse/critically overstressed local ground water commons? How is this above referenced projected CCC 3.5 feet SLR in next 30 years accounted for, if at all, in any current Monterey Bay GSA, particularly the only and first two and already approved ones in this or your, my, and GM/Santa Cruz Mayor Meyer's neighbor's and partner's "Mid County Ground Water Agency" and the sustainability of each's respective ground water basins and "sub basins"? Here's my recent comment to the CCC on this exact issue:

"Good Afternoon Dear Chair and Commissioners,

Please find my four (4) comments (in reverse order) I tendered last Friday, as described in the "Subject" of this email, and various attached images/articles/etc. w/ some repetition? (please excuse)

I hope you will have the opportunity to review them and watch the 12 minute VICE video @ I suggested you please review @ www.sandiegorealestate.com (and elsewhere) at the last real public in person meeting you had in March 12 of 2020, so long ago,

... @ minute/second 12:12 @ https://cal-span.org/unipage/?site=cal-span&owner=CCC&date=2020-03-12&mode=large&fbclid=IwAR1Fh5WDXG7kaFHIj0NvpnIe58Ry8zsMXnsOAd3cgJZ9poK5LjQjXQPqW-E

Best/health/tikkun olam,

Respectfully,

Douglas Deitch

MBC

831.476.7662

http://sipodemos.democrat

http://lomejorqueeldineronopuedecomprar.com

www.dougdeitch.info

-------- Forwarded Message --------
Subject: Fwd: Please add Additional Comment 4. + attached image (Fwd: Comments on "public review draft of Critical Infrastructure at Risk: Sea Level Rise Planning Guidance for California's Coastal Zone")
Date: Fri, 24 Sep 2021 15:17:27 -0700
From: ddeitch@pogonip.org
To: StatewidePlanning@coastal.ca.gov, Ddeitch

4. continued: Here is the MC Weekly 2018 article mentioned below @ https://www.montereycountyweekly.com/news/local_news/as-seawater-intrusion-advances-new-farmland-puts-marina-s-water-supply-in-peril/article_b35ca7e0-f66e-11e7-b541-57771b472126.html

"As seawater intrusion advances, new farmland puts Marina's water
supply in peril.

* David Schmalz

* Jan 11, 2018
* Along Highway 1 just north of Marina, what has been grassland for
decades is turning into row crops. A look at satellite images on
Google, stretching back to 1984, shows that farming on the property,
known as Armstrong Ranch, started in 2014 just south of the Marina
landfill.

Expect that trend to continue: On Nov. 21, 2017, Valle Del Sol Properties LLC bought 1,784 acres of Armstrong Ranch for $81.5 million. (Monterey County Assessor Steve Vagnini says the price per-acre, just over $45,000, is in keeping with local agricultural land values.)

Three new ag wells have been drilled on the property since 2015, and an application for another is currently being processed by the county. But here's the rub: The wells are pumping from an ancient, finite water source. It's the same water source that residents of Marina and the former Fort

aquifers, named for their respective depths – is impaired by seawater intrusion, a process that occurs when excessive pumping creates a pressure differential that draws seawater into the aquifers, fouling their water with salt.

The only groundwater available to irrigate the property is in the so-called deep aquifer, an ancient groundwater supply 900-plus-feet underground that is not recharging through natural mechanisms. Scientists believe the water is probably more than 20,000 years old.

The only recharge to the deep aquifer, hydrologists say, comes from leakage from overlying aquifers. In the coastal area around Marina, those aquifers are already compromised by seawater intrusion, making them unusable as municipal or irrigation water supplies.

Pumping from the deep aquifer is considered “water mining,” and has long been viewed as a last-ditch water supply that is both expensive to tap – it costs upwards of $1 million to drill a well into it – and risky to rely on because its quantity is unknown. Yet Marina Coast Water District, which supplies the city of Marina and the former Fort Ord, pumps roughly 50 percent of its water from the deep aquifer. (In 2017, that came out to 1,587 acre-feet of 3,239-acre feet.)

In October, Howard Franklin, senior hydrologist with the Monterey County Water Resources Agency, presented six recommendations to the County Board of Supervisors to help combat worsening seawater intrusion.

Among those recommendations was a moratorium on new wells in the deep aquifer until a study determines its viability as a water supply..."

“All wells in the deep aquifer are of concern with respect to the recommendations,” Franklin says. “This is an urgent situation. This is imminent.”

According to Michael Cahn, an irrigation water resources adviser with UC Cooperative Extension in Salinas, an acre of strawberries requires about 2.5 to 3 acre-feet of water annually.

That means if the entire 1,784 acres were converted to strawberries, it would require in excess of 4,000 acre-feet of water annually – more than Marina Coast’s current annual production.

Franklin, when articulating the urgency of the situation for Marina Coast, and others that rely on the deep aquifer, says the human-caused mechanism of recharge for the deep aquifer – leakage from overlying aquifers – does not happen easily, or quickly, but that it will happen in a matter of years.

“The damage is being done now, and the impact of that damage could be 10 years from now, but if you [pump the deep aquifer] today, the damage will occur,” Franklin says.

Marina Coast does not have jurisdiction over new agricultural wells on Armstrong Ranch.

“It’s on our radar, and we’re concerned about it, but we’re not necessarily in the loop,” Marina Coast General Manager Keith Van Der Maaten says. “Unfortunately, I don’t think we’re as involved as we should be. We should have a more active role.”

The county’s Environmental Health Bureau processes applications for new wells, but while projects for residential water supplies face a gauntlet of bureaucratic hurdles, wells for agriculture are typically approved without any pushback.

That may change in the coming years with the formation of the Salinas Valley Groundwater Sustainability Agency, but ag wells in the region have so far have faced minimal regulation.

Marina Coast is currently exploring new potential water supplies, other than desalination. The agency is vying for up to $1 million in state grant funds – the grants will be awarded in February – to study water storage options in the aquifers around Armstrong Ranch.

The project would potentially seek to store excess winter flows in the Salinas River, which would make it similar to the Monterey Peninsula’s aquifer storage and recovery project in the Seaside Basin, where winter flows are pumped from Carmel River and injected underground.

Theoretically, Van Der Maaten says, Marina Coast could produce between 2,000-8,000 acre-feet of water annually with the project, and even send some of the water north to Castroville.

But he says there are still many unknowns, including whether it is technically feasible, whether Marina Coast could secure the water rights to those flows, and whether it would be economically feasible for Marina Coast to supply Armstrong Ranch farmland with water so that they stop pumping from the deep.

Van Der Maaten knows it won’t be easy, but the mission is clear: “We absolutely need to get into this deeper, and get people off the deep aquifer.”

---------- Forwarded Message --------

Subject: Please add Additional Comment 4. + attached images (Fwd: Comments on "public review draft of Critical Infrastructure at Risk: Sea Level Rise Planning Guidance for California's Coastal Zone")
Date: Fri, 24 Sep 2021 14:48:18 -0700
From: ddeitch@pogonip.org
To: Ddeitch , StatewidePlanning@coastal.ca.gov

4. The recent September 20, 2021 presentation by USGS and CCC staff (see attached images) on ground water and Sea Level Rise underlines and emphasizes the unadvisability and inherent risks and unknowns involved with our too many recent non DPR recycled water supply projects like Pure Water Monterey, Soquel, San Diego caused by sea level rise invading our ground waters despite our best efforts and intentions to prevent this.

At minute/second 5:41 @ the 12 minute VICE video at http://www.sanfranciscorealesatate.com , Dr. Jeff Mount in 2015 explains what just one foot of SLR will do to the Delta and the CCC plans for 3.5 feet SLR by 2050 (@ https://documents.coastal.ca.gov/assets/slr/CCCendorsement_SLRPrinciples.pdf) . So, just imagine what that same 1 foot of SLR will do to our coastal ground water, particularly in our already critically overdrafted coastal ground water basins and related new water supply infrastructure.

Now add to this uncontrolled and unplanned for increased ag coastal well pumping for new ag, such as is presEnt in the Pure Water Monterey area described in this Monterey Weekly article from a couple of years ago which will, at 5400 acre feet per year, completely offset the cleaned injected recycled water in the Monterey Pure Water expanded project.

-------- Forwarded Message --------
Subject: Comments on "public review draft of Critical Infrastructure at Risk: Sea Level Rise Planning Guidance for California's Coastal Zone"
Date: Fri, 24 Sep 2021 06:33:31 -0700
From: Douglas Deitch
To: StatewidePlanning@coastal.ca.gov, Ddeitch

"Thosewhocannotrememberthepast https://youtu.be/I5uloOJ5m1o can't adapt to 3.5' in30yrSLR? @ https://twitter.com/DouglasDeitch/status/1374672809163550720 toprotectvastmajoritywater/food/re assets w/o 1. http://sipodemos.democrat 2. http://dougdeitch.info : https://t.co/2L1RYOqKrl http://dougforassembly.com ?" (https://twitter.com/DouglasDeitch/status/1426946751336914944)

Comments on "public review draft of Critical Infrastructure at Risk: Sea Level Rise Planning Guidance for California's Coastal Zone : "This Guidance focuses on adaptation of transportation infrastructure (Chapter 5) and water infrastructure (Chapter 6), including highways, roads, railroads, wastewater, stormwater, and water supply infrastructure."

1. "VAST majority of the water/food/RE resources of World's 5th biggest economy/Community are inextricably tied to

nt_SLRPrinciples.pdf . 5:42@ http://sandiegorealestate.com Dr.Mount sez what 1 foot will do!" @ https://twitter.com/DouglasDeitch/status/1374672809163550720 :

Analysis & Conclusions: Due to this 2020 3.5 ft. SLR by 2050 "planning guideline/projection" (and other reasons like possible COVID19 and other possible contamination of our waste waters which cannot be cleaned (@ https://twitter.com/DouglasDeitch/status/1426593026571313152)

Additionally, this is why we must immediately begin investigation of feasibility and advisability of damming the Golden Gate run down @ http://sipodemos.democrat @ Linkedin:

CA - DWR

You Retweeted

Fair&Balanced! @ MakeCaliforniaGreatAgain.DEMOCRAT @DouglasDeitch

Replying to
@CA_DWR
#CaWaterBoards
https://twitter.com/DouglasDeitch/status/1401916742541013000

DPRisbest! like @ my "NAUTURAL SOLUTION" @ http://dougdeitch.info and 21000 acre Monterey Bay Estuarine Nat'l Monument in the Monterey Bay, which will include up to 31k/a/f/yr from Castroville Reclamation Plant repurposed to urban, recharge, and conservation uses from ag use in perpetuity, to wit:

https://twitter.com/DouglasDeitch/status/1411648137878380551

*"Douglas Deitch, Balanced Law and Order Liberal Democrat for State
Senator*

September 14, 2019 ·
WELCOME TO www.DOUGDEITCH.info !!! ... Best SUSTAINABLE Monterey Bay region "SLR" (Sea Level Rise) water solution?
lomejorqueeldineroNOpuedecomprar.com / lawandorderliberal.org
My 21,000 acre "Monterey Bay Estuarine National Monument" , etc. 'Water Fix" ..., of course.
The Castroville reclamation plant/project, run down @

1998 for around $75 million in Castroville.
This 31,000 acre feet/yr of water will be repurposed to urban use, further cleaned, processed, and distributed regionally and will easily supply and service all current and future Montrey Bay regionally urban water needs.
This will be accomplished by using the 12000 acres of land associated with this 31000 a/f/yr of water to it's highest and best use.
At present, this water is dedicated to exclusively ag use on 12,000 coastal ag acres at the mouth of the Salinas Valley to use instead of well water pumped at this location to protect the Salinas Valley from further salt water intrusion.
As farmland, this land is FMV worth around $50,000 per acre as farmland (https://www.santacruzsentinel.com/.../retired-federal.../). However, this 12,000 acres highest and best use is not as farmland but instead as a ground water conservation/aquifer recharge/ and estuarine habitat conservation/rehabilitation project, which actually doubles the FMV of this land to $100,000 per acre or $1.2 billion.
This land comprises roughly something under 5% (?) of irrigated farmland in the "Salinas Valley"
If this 12000 acres was publicly acquired and fallowed/or all well pumping ceased, along with another tract of 9000 acres of irrigated farmland at the mouth of the Pajaro Valley running from approximately Elkhorn Slough to Manresa Beach on the ocean side of Highway One in Santa Cruz County for 21000 acres in total to protect the Pajaro Valley from salt water intrusion in the same way, ag well pumping would stop on this 21000 acres and, @ 3 a/f/yr per acre for ag water, 63,000 a/f/yr of ground water, would be CONSERVED annually per year in perpetuity. Additionally, wouldn't this 63,000 a/f/yr be also de facto RECHARGED at these two most hydrologically critically important locations with the highest quality recharge water possibly available with the lowest cost and best "GREEN tech" water available possible anywhere, in perpetuity as well, ... the recharge water produced and recharged naturally by our best water purveyor named Ms. Mother Nature?
Correct.
This is what I call the "Monterey Bay Estuarine National Monument", and it is truly a national monument with the highest concentration of critically threatened critical estuarine resources and habitat of ANY LOCATION ANYWHERE IN THIS COUNTRY !!! Here's my already successful 25 year old "Pilot Project" @ "Willoughby Ranch" @ Zmudowski Beach @ to check out @ www.dougdeitch.com & www.dougdeitch.info (this page)... "Farmlands back to wetlands"
Query: Where's the $2.1 billion?
Response: Reallocated rail bond money billions to "water/habitat/environmental projects" aka "OPM" (...other people's money) and INFRASTRUCTURE FUNDING.

2. "I wonder what the latest SCIENCE is today re:"Removing the novel coronavirus from the water cycle"& our ground water injection of "cleaned"? recycled/injection water projects like "Pure Water Soquel"? Monterey San Diego etc? @ https://twitter.com/DouglasDeitch/status/142659302657131

3152/photo/1 ?

3. SWRCB must intervene in Monterey Bay immediately to achieve sustainability and proper, legal, and responsible water management in the entire Monterey Bay @ https://twitter.com/DouglasDeitch/status/1375814806364594178/photo/1

Respectfully submitted,
Douglas Deitch

ED/Monterey Bay Conservancy

540 Hudson Lane, Aptos, Ca., 95003

831.476.7662"

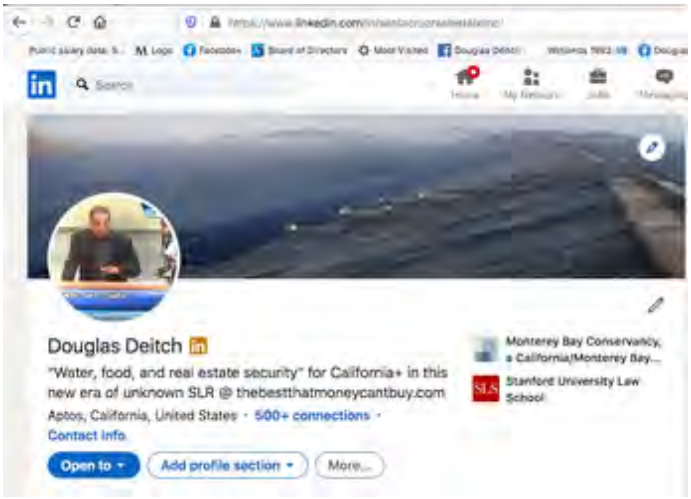
Question #2:This 2018 Monterey County Weekly article @ https://www.montereycountyweekly.com/news/local_news/as-seawater-intrusion-advances-new-farmland-puts-marina-s-water-supply-in-peril/article_b35ca7e0-f66e-11e7-b541-57771b472126.html#comments cites around 1800+/- new acres of ag & new well pumping @ 5400 a/f/yr which seems to approximately cancel/use up all the new Monterey One ASR water? ... Any unanticipated problems, present or future conflicts/miscalculations, etc in this regard here or not?

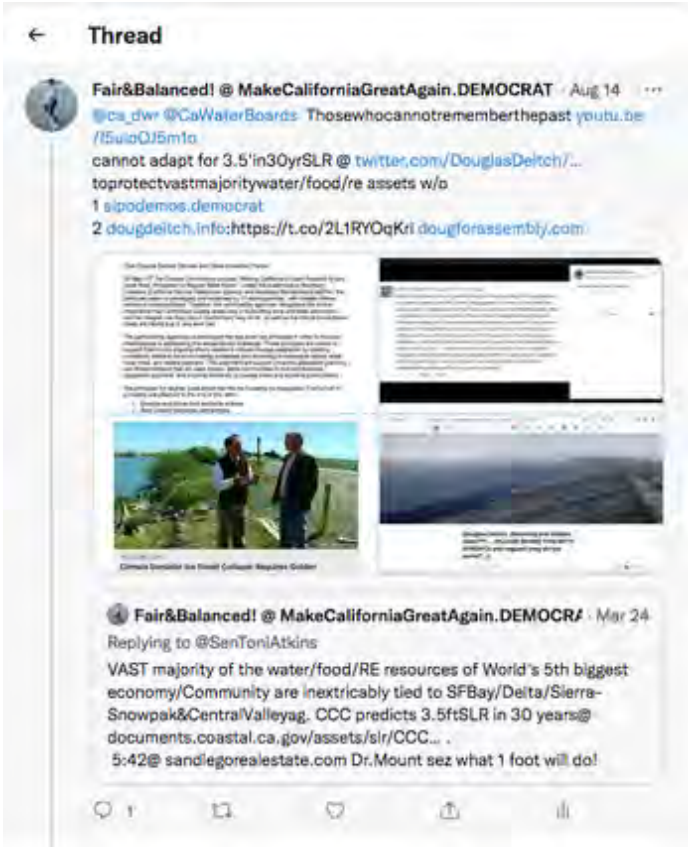
Please watch my most recent and 5th request for SWRCB INTERVENTION IN THE ENTIRE MONTEREY BAY water management and "control" just on August 3, 2021 @ 9:48 @ https://www.youtube.com/watch?v=A9KTIa0RDu8&t=919s and @ https://twitter.com/DouglasDeitch/status/1422889479061196803, my first request @ 11:21 @ www.thebestthatmoneycantbuy.org pictured below from April/2015, over SIX years ago, and please REVIEW the documents I am holding in my hand I presented and went through w/ SWRCB 4/16/15 during my presentation and first request for SWRCB INTERVENTION then @ http://www.dougforassembly.com , which only ONE current SWRCB board MEMBER then, Ms. Doreen D'Adamo, was present for?

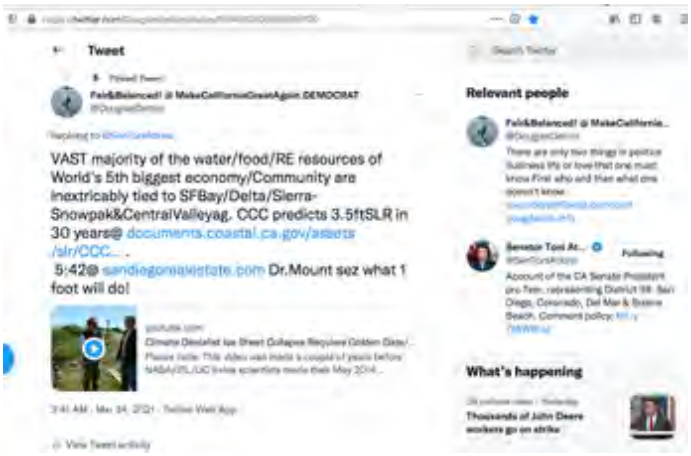
... to be continued.
Respectfully,
Douglas Deitch/MBC
siddhartha1002@gmail.com

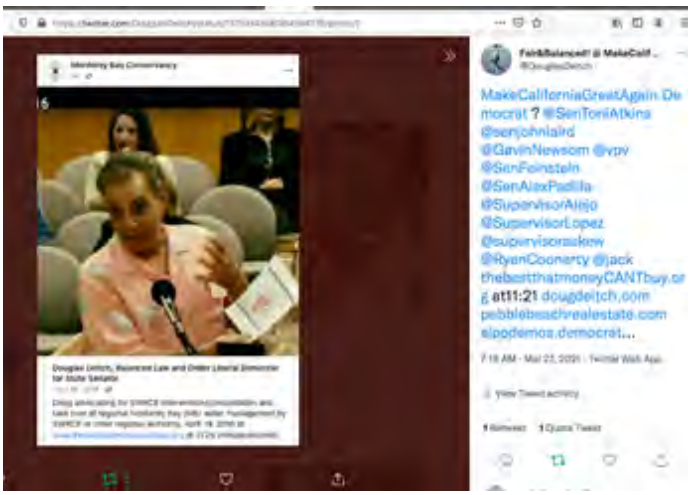
File Upload

Douglas Deitch: Damming the Golden Gate??? ... (PLEASE SHARE THIS WITH 5 PEOPLE and request they do the same?...)









PINNED POST

Monterey Bay Conservancy
August 6

Please watch my most recent and 5th request for SWRCB INTERVENTION IN THE ENTIRE MONTEREY BAY water management and "control" just on August 3, 2021 @ 9:48 @ https://www.youtube.com/watch?v=A9KTia0RDu8&t=919s and @ https://twitter.com/DouglasDeitch/status/1422889479061196803, my first request @ 11:21 @ www.thebestthatmoneycantbuy.org pictured below from April/2015, over SIX years ago, and please REVIEW the documents I am holding in my hand I presented and went through w/ SWRCB 4/16/15 during my presentation and first request for SWRCB INTERVENTION then @ www.dougforassemoly.com , which only ONE current SWRCB board MEMBER then, Ms. Doreen D'Adamo, was present for?

Monterey Bay Conservancy
August 27, 2018 ·

"It's past time for the State Water Resources Control Board to take control of our now predominantly below sea level Monterey Bay ground water commons..." https://www.linkedin.com/.../its-

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STATE OF CALIFORNIA - NATURAL RESOURCES AGENCY GAVIN NEWSOM, Governor

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE (415) 904-5200
FAX (415) 904-5400

May 22, 2020

Dear Coastal Elected Officials and Other Interested Parties,

On May 13th the Coastal Commission adopted "Making California's Coast Resilient to Sea Level Rise: Principles for Aligned State Action." Under the leadership of Secretary Crowfoot (California Natural Resources Agency) and Secretary Blumenfeld (CalEPA), the principles were co-developed and endorsed by 17 state agencies[1] with coastal climate resilience responsibilities. Together, the participating agencies recognized the critical importance that California's coastal areas play in supporting local and state economies and the integral role they play in Californians' way of life, as well as the critical threat these areas are facing due to sea level rise.

The participating agencies co-developed the sea level rise principles in order to improve effectiveness in addressing this extraordinary challenge. These principles are meant to support California's ongoing efforts related to climate change adaptation by creating consistent, efficient decision-making processes and improving collaboration across state, local, tribal, and federal partners. This alignment will support proactive adaptation planning and implementation that will save money, allow communities to test and leverage adaptation solutions, and improve resiliency of coastal areas and frontline communities.

The principles for aligned state action fall into the following six categories. The full set of principles are attached to the end of this letter.

1. Develop and utilize best available science
2. Build coastal resilience partnerships
3. Improve coastal resilience communications
4. Support local leadership and address local conditions
5. Strengthen alignment around coastal resilience
6. Implement and learn from coastal resilience projects

Among other important goals, the Principles include an ambitious target for the year 2050 of preparing for 3.5 feet of sea level rise. Although this is not a new sea level rise projection, this planning target will help encourage state agencies and others to begin now to proactively prepare for the sea level rise that is anticipated to occur over short-, medium-, and long-term time horizons.

Friday, October 15, 2021

Salinas Valley Basin Groundwater Sustainability Agency SVBGSA Public Comments Form

Name	Stephanie Hastings
Organization	Brownstein Hyatt Farber Schreck, LLP
Email Address	SHastings@bhfs.com
Subbasin	Langley, Eastside, Forebay, Upper Valley, Monterey, Whole Basin
Comments	Please see the attached correspondence submitted on behalf of the Salinas Basin Water Alliance. The exhibits are available on our sharefile at: https://bhfs.sharefile.com/d-scb50238ba04e4b4294bdf73ac89d25ee
File Upload	pdf 2021.10.15 Comment Letter to SVBGSA re Dr...

Brownstein Hyatt Farber Schreck

Stephanie O. Hastings
Attorney at Law
805.882.1415 tel
shastings@bhfs.com

October 15, 2021

VIA E-MAIL – MEYERSD@SVBGSA.ORG; BOARD@SVBGSA.ORG; PRISO@MCWD.ORG; CITYCLERK@CI.GREENFIELD.CA.US

Donna Meyers
General Manager
Salinas Valley Basin Groundwater Sustainability Agency
P.O. Box 1350
Carmel Valley, CA 93924

Remleh Scherzinger
General Manager
c/o Paula Riso
Executive Assistant/Clerk to the Board
Marina Coast Water District Groundwater Sustainability Agency
11 Reservation Road
Marina, CA 93933-2099

Curtis Weeks
General Manager
c/o City Clerk
Arroyo Seco Groundwater Sustainability Agency
599 El Camino Real
Greenfield, CA 93927

RE: Draft Groundwater Sustainability Plans for the Upper Valley, Forebay, Eastside, Langley, and Monterey Subbasins of the Salinas Valley Groundwater Basin

Dear Ms. Meyers, Mr. Scherzinger, and Mr. Weeks:

This office represents the Salinas Basin Water Alliance (*Alliance*), a California nonprofit mutual benefit corporation formed to preserve the viability of agriculture and the agricultural community in the greater Salinas Valley. *Alliance* members include agricultural businesses and families that own and farm more than 80,000 acres within the Salinas Valley. Many *Alliance* members have been farming in the Salinas Valley for generations. As such, the *Alliance* has a significant interest in the long-term sustainability of the water supplies in the Salinas Valley. As mentioned in our preliminary comment letter on the draft Groundwater Sustainability Plans (GSP) for the Upper Valley, Forebay, Eastside, Langley, and Monterey Subbasins dated August 12, 2021, the *Alliance* greatly appreciates the Salinas Valley Basin Groundwater Sustainability

Agency (SVBGSA) staff and consultant team's efforts to implement the Sustainable Groundwater Management Act (SGMA) in the Salinas Valley Groundwater Basin (Basin) and in each of the six subbasins within the jurisdiction of the SVBGSA. The *Alliance* likewise appreciates the efforts undertaken by the Marina Coast Water District Groundwater Sustainability Agency (MCWDGSA) and the Arroyo Seco Groundwater Sustainability Agency (ASGSA) to implement SGMA in the Monterey and Forebay Subbasins, respectively.

The *Alliance* offers these comments, as well as the comments of aquilogic, Inc. attached hereto as **Exhibit A**, on the draft GSPs for the Upper Valley, Forebay, Eastside, Langley, and Monterey Subbasins.[1] These comments are submitted to the SVBGSA as the exclusive groundwater sustainability agency for the Upper, Eastside, and Langley Subbasins, and one of the groundwater sustainability agencies that will adopt the GSPs for the Forebay and Monterey Subbasins. These comments are also submitted to the MCWDGSA and the ASGSA as groundwater sustainability agencies that will adopt the GSPs for the Monterey Subbasin and Forebay Subbasin, respectively. Please include this letter, the aquilogic, Inc. memorandum ("aquilogic Memo"), and the other attachments hereto in the record of proceedings for the GSP of each of these subbasins.

I. THE DRAFT GSPS MUST BE INTEGRATED TO SATISFY SGMA

SGMA's goal is to provide for the sustainable management of priority groundwater basins throughout the State.[2] "Sustainable management" is defined as the "management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results"—e.g., chronic lowering of groundwater levels, significant and unreasonable reduction of groundwater storage, significant and unreasonable seawater intrusion, and depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.[3] In order to achieve this goal, groundwater sustainability agencies must coordinate groundwater management within each basin[4] and with each adjacent basin.[5]

Coordination requires GSPs to maintain consistency or analyze inconsistencies in the data and modeling used to develop the GSPs, the minimum thresholds and measurable objectives set in the GSPs, and the

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[1] The *Alliance* notes that several of the draft GSPs are being revised by the GSA during the public review process. An additional public comment period must be provided once the draft GSPs have been finalized for adoption. Informed public input cannot be provided on documents that are still subject to change.
[2] Wat. Code, § 10720.1.
[3] Wat. Code, § 10721(v), (x).
[4] SGMA defines "basin" as "a groundwater basin or subbasin identified and defined in Bulletin 118." (Wat. Code, § 10721(b); see also 23 Code Regs. ("GSP Regs."), § 341(g) ["The term 'basin' shall refer to an area specifically defined as a basin or 'groundwater basin' in Bulletin 118, and shall refer generally to an aquifer or stacked series of aquifers with reasonably well-defined boundaries in a lateral direction, based on features that significantly impede groundwater flow, and a definable bottom, as further defined or characterized in Bulletin 118"; "The term 'subbasin' shall refer to an area specifically defined as a subbasin or 'groundwater subbasin' in Bulletin 118, and shall refer generally to any subdivision of a basin based on geologic and hydrologic barriers or institutional boundaries, as further described or defined in Bulletin 118."].)
[5] Wat. Code, §§ 10727, 10727.6.

projects and management actions proposed in the GSPs.[6] DWR will review each GSP to ensure it satisfies this requirement—i.e., that the GSP does not adversely affect the "ability of an adjacent basin to implement their groundwater sustainability plan or impedes achievement of sustainability goals in an adjacent basin."[7] Any GSP that cannot meet this standard will not satisfy SGMA.[8]

The consultant that prepared the draft GSPs for the Upper, Forebay, Eastside, and Langley Subbasins has acknowledged the importance of integrated management of surface water and groundwater throughout the Basin:

> It has long been acknowledged that the water resources of the Salinas Valley consist of an integrated surface water and groundwater system . . . This acknowledged surface water/groundwater integration underpins the approach the SVBGSA is taking to achieving groundwater sustainability throughout the Valley; the Salinas River is an integral part of groundwater management and managing groundwater cannot be divorced from the Salinas River's operations. Similarly, groundwater management plays an important role in maintaining Salinas River flows. Larger areas of low groundwater levels in the Salinas Valley will induce more leakage from the Salinas River – reducing Salinas River flows. Maintaining adequately high groundwater levels will help maintain Salinas River flows. These higher groundwater levels that help maintain Salinas River flows is one of the desired outcomes of our groundwater management and is a benefit to surface water users. Groundwater sustainability can lead to long-term reliability in surface water supplies . . .
>
> The Salinas River operations, Salinas River flows, and ability to use water from the River will be clearly influenced by the decisions made during GSP development and implementation. Balanced groundwater management that

[6] See e.g., Wat. Code, § 10727.6; GSP Regs., § 354.28(b) ("The description of minimum thresholds shall include the following: . . . (3) How minimum thresholds have been selected to avoid causing undesirable results in adjacent basins or affecting the ability of adjacent basins to achieve sustainability goals."); see also *id.* at §§ 350.4(b), 354.28(b), 354.34(i), 354.38(e), 354.44(b)(6)-(7), 357.2; Department of Water Resources (DWR) Sustainable Management Criteria BMP, pp. 12-17 (Considerations when establishing minimum thresholds for each sustainability indicator includes the adjacent basin's minimum thresholds); DWR Modeling BMP, pp. 21-22; DWR Water Budget BMP, pp. 12, 16, 17, 36.

[7] Wat. Code, § 10733(c).

[8] *Ibid*.; GSP Regs., §§ 350.4, 354.8(d), 354.14, 354.18, 354.28(b)(3), 354.44(b)(6), 354.44(c), 355.4(b), 356.4(j), 357.2(b)(3); DWR Monitoring Networks and Identification of Data Gaps BMP, pp. 6, 8, 27; DWR Water Budget BMP, pp. 7, 12, 16, 17, 36; DWR Modeling BMP, pp. 21-22; DWR Sustainable Management Criteria BMP, pp. 9, 31.

> maintains consistent groundwater levels will provide surface water reliability for the Valley's surface water users.[9]

A Senior Hydrologist with the Monterey County Water Resources Agency (MCWRA) similarly commented:

> Additionally, as was experienced and monitored throughout the Basin during the most recent drought period, lowering of the groundwater table has a significant impact on the Agency's ability to operate the reservoirs to a controlled range of flows at the Salinas River Diversion Facility. As such, overdraft of the groundwater basin, resulting in a reduction in groundwater levels significantly impacted surface water flows, depleting the availability of surface water to riparian water uses.[10]

Close coordination of the draft GSPs for the subbasins is critical as each of the GSPs acknowledge a significant hydrologic and hydraulic connection with adjacent subbasins.[11] In other words, groundwater management in the Upper Valley impacts groundwater management in the Forebay Subbasin, which impacts groundwater management in the 180/400-Foot Aquifer, Eastside, Langley, and Monterey Subbasins, and there is a direct link between groundwater in the Basin and surface water in the Salinas River.

Given the integration of the Basin's surface and groundwater supplies (e.g., that pumping in one subbasin impacts surface and subsurface flows to an adjacent subbasin), SGMA mandates the coordination and integration of the GSPs for the subbasins within SVBGSA's jurisdiction—the GSPs must be integrated in their planning, development, and implementation to ensure the objectives of SGMA are satisfied, the interests of all beneficial users throughout the Basin are considered, and the burden of sustainability is equitably allocated across the Basin.[12] Indeed, the SVBGSA has acknowledged this obligation in its Joint Exercise of Powers Agreement[13] and, as the groundwater sustainability agency for the 180/400-Foot Aquifer, Monterey,

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[9] Feb. 26, 2019 Letter from Derrik Williams to Leslie Girard, attached hereto as **Exhibit B**.
[10] March 4, 2019 Memorandum from Howard Franklin to Leslie Girard and Gary Petersen, attached hereto as **Exhibit C**.
[11] Draft Upper Valley Subbasin GSP, § 4.3.1.1; Draft Forebay Subbasin GSP, § 4.3.1.1; Draft Eastside Subbasin GSP, § 4.3.1.1; Draft Langley Subbasin GSP, § 4.3.1.1; Draft Monterey Subbasin GSP, § 4.2.3; aquilogic Memo, pp. 2-3, attached hereto as **Exhibit A**.
[12] Wat. Code, § 10723.2; see also DWR Water Budget BMP, pp. 16-17 ("For many basins within the . . . Salinas Valley . . . not all lateral boundaries for contiguous basins serve as a barrier to groundwater or surface water flow . . . In situations where a basin is adjacent or contiguous to one or more additional basins, or when a stream or river serves as the lateral boundary between two basins, it is necessary to coordinate and share water budget data and assumptions. This is to ensure compatible sustainability goals and accounting of groundwater flows across basins, as described in § 357.2 (Interbasin Agreements) of the GSP Regulations."
[13] See Joint Exercise of Powers Agreement Establishing the Salinas Valley Basin GSA, § 2.2 ("The purpose of Agency is to . . . develop[], adopt[], and implement[] a GSP that achieves groundwater sustainability in the Basin."); § 4.1(c) (The JPA has the power to "develop, adopt and implement a GSP for the Basin."); *id.* at § 4.1(l) (The JPA has the power to "establish and administer projects and programs for the benefit of the Basin."); *id.* at § 4.3 ("As set forth in Water Code section 10723.3, the GSA shall consider the interests of all beneficial uses and users of groundwater in the Basin, as well as those responsible for implementing the

Eastside, Langley, Forebay, and Upper Subbasins, the SVBGSA is uniquely qualified to ensure coordination and integration among these subbasins. The SVBGSA previously proposed an integrated GSP that would incorporate the GSPs for each of the six subbasins, but appears to have abandoned or significantly delayed that commitment. As a result, the draft GSPs do not adequately coordinate and integrate their data, minimum thresholds and measurable objectives, and projects and management actions and do not analyze potential impacts on the adjacent subbasins. The draft GSPs must analyze and address these issues before they can be adopted, or delineate a plan for adding this information to the GSPs as soon as possible.

II. THE DRAFT GSPs DO NOT SUFFICIENTLY ANALYZE AND ADDRESS SUSTAINABLE GROUNDWATER MANAGEMENT THROUGHOUT THE BASIN

The *Alliance* supports integrated groundwater management throughout the Basin—such management is critical to the sustainable and equitable management of the integrated water resources throughout the Basin. In accordance with SGMA, this management should utilize consistent data and modeling, analyze impacts of groundwater production on adjacent subbasins, estimate sustainable yields and set minimum thresholds in consideration of impacts to adjacent subbasins, and coordinate projects and management actions throughout the Basin. As described further below, the draft GSPs as currently presented do not meet these thresholds dictated by SGMA.

A. Each Draft GSP Fails to Analyze Inconsistencies in the Data and Modeling Utilized By the Draft GSPs for Adjacent Subbasins

As an initial matter, the draft GSPs for the subbasins utilize differing modeling/estimation techniques that produce inconsistent data throughout the Basin and prevent integration of groundwater management absent additional analysis.

For example, the 180/400-Foot Aquifer Subbasin GSP's historical and current water budgets were created "by aggregating data and analyses from previous reports and publicly available sources" while the future

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GSP. Additionally, as set forth in Water Code section 10720.5(a) any GSP adopted pursuant to this Agreement shall be consistent with Section 2 of Article X of the California Constitution and nothing in this Agreement modifies the rights or priorities to use or store groundwater consistent with Section 2 of Article X of the California Constitution . . . Likewise, as set forth in Water Code section 10720.5(b) nothing in this Agreement or any GSP adopted pursuant to this Agreement determines or alters surface water rights or groundwater rights under common law or ay provision of law that determines or grants surface water rights."); 180/400-Foot Aquifer Subbasin GSP, p. 9-10 ("This GSP is part of an integrated plan for managing groundwater in all six subbasins of the Salinas Valley Groundwater Basin that are managed by the SVBGSA. The projects and management actions described in this GSP constitute an integrated management program for the entire Valley."); *id.* at 10-14 ("The SVBGSA oversees all or part of six subbasins in the Salinas Valley Groundwater Basin. Implementing the 180/400-Foot Aquifer Subbasin GSP must be integrated with the implementation of the five other GSPs in the Salinas Valley Groundwater Basin . . . The implementation schedule reflects the significant integration and coordination needed to implement all six GSPs in a unified manner."); see also Draft Upper Valley GSP, p. 10-16; Draft Eastside Subbasin GSP, pp. 9-1, 10-7, 10-8, 10-16; Draft Forebay Subbasin GSP, pp. 2-4, 9-2, 9-4, 10-7, 10-9, 10-17; Draft Langley Subbasin GSP, pp. 2-4, 9-1, 9-4, 10-8, 10-9, 10-16.

water budget was created using the Salinas Valley Integrated Hydrologic Model (SVIHM).[14] The draft GSPs for the Eastside, Langley, Forebay, and Upper Valley Subbasins take a different approach—the historical and current water budgets were developed using a "provisional version" of the SVIHM, while future water budgets were developed using "an evaluation version" of the Salinas Valley Operational Model (SVOM).[15] And the draft Monterey Subbasin GSP utilizes a third approach—employing the Monterey Subbasin Groundwater Flow Model for the historic, current, and projected water budgets.[16]

What is more, each of these approaches uses different time periods: (1) the 180/400-Foot Aquifer Subbasin GSP analyzes a historical period of 1995 to 2014 and a current period of 2015 to 2017[17]; (2) the draft GSPs for the Langley, Eastside, Forebay, and Upper Valley Subbasins analyze a historical period of 1980 through 2016 and a current period of 2016[18]; and, (3) the draft Monterey Subbasin GSP analyzes a historical period of 2004 to 2018 and a current period of 2015 to 2018.[19]

The inconsistency in the water-budget approaches for each subbasin must be addressed in the draft GSPs. Absent such an analysis, the draft GSPs cannot adequately analyze a subbasin's potential to impact an adjacent subbasin or foster integrated groundwater management throughout the Basin.[20] Further, this absence of analysis prevents informed input on the draft GSPs by interested parties.[21]

This issue is best exemplified in the inconsistencies between the 180/400-Foot Aquifer Subbasin GSP and the draft Forebay Subbasin GSP. The 180/400-Foot Aquifer Subbasin GSP estimates that the 180/400-Foot Aquifer Subbasin receives (historically and currently) 17,000 acre-feet per year (AFY) of subsurface flow from the Forebay Subbasin.[22] However, the draft Forebay Subbasin GSP estimates that this amount was 3,100 AFY historically and 2,900 AFY currently. These numbers in the draft Forebay GSP are likely

[14] 180/400-Foot Aquifer Subbasin GSP, p. 6-1.
[15] See each referenced draft GSP, pp. 6-1-2. The GSA's use of the SVIHM and SVOM models for the draft GSPs does not satisfy the modeling requirements in the GSP Regulations. Section 352.4(f) of the GSP Regulations state that the models used to develop GSPs must "include publicly available supporting documentation" and "consist of public domain open-source software." The GSPs acknowledge that these requirements are not satisfied, and the draft GSPs state that "[d]etails regarding source data, model construction and calibration, and results for future budgets will be summarized in more detail once the model and associated documentation are available." (See, e.g., Draft Upper Valley Aquifer Subbasin GSP, pp. 6-1-2.) Interested parties cannot provide informed comments and input on the draft GSPs until the GSAs incorporate use of models that satisfy the GSP Regulations.
[16] Draft Monterey Subbasin GSP, p. 6-7.
[17] 180/400-Foot Aquifer Subbasin GSP, p. 6-1.
[18] See each referenced draft GSP, pp. 6-7-8.
[19] Draft Monterey Subbasin GSP, p. 6-5.
[20] See DWR, Water Budget BMP, p. 9 ("Building a coordinated understanding of the interrelationship between changing water budget components and aquifer response will allow local water resource managers to effectively identify future management actions and projects most likely to achieve and maintain the sustainability goal for the basin.").
[21] The draft GSPs also do not explain why different years are used to set minimum thresholds and measurable objectives in each subbasin, or how those inconsistencies impact sustainable groundwater management. (See aguilogic, Inc. Memo, p. 3, attached hereto as **Exhibit A**.)
[22] 180/400-Foot Aquifer Subbasin GSP, p. 6-16.

overestimates (i.e., the 180/400-Foot Aquifer is estimated to receive less subsurface flow from the Forebay Subbasin than the stated numbers) as the SVIHM utilized to provide the estimates in the draft Forebay Subbasin GSP only accounted for approximately 65% of the groundwater pumping in the Forebay Subbasin.[23] The discrepancy in interbasin flow needs to be addressed in the draft Forebay Subbasin GSP, or identified as a data gap that will be addressed through additional modeling as soon as possible. Without such information, the draft GSP cannot analyze how its implementation will impact the implementation of the 180/400-Foot Aquifer Subbasin GSP.

In sum, the draft GSPs must identify and analyze the inconsistencies in the modeling simulations and the time periods used for the water budgets in each of the GSPs in order to satisfy SGMA.[24] The *Alliance* identified a potential solution to this issue in its correspondence to the SVBGSA dated August 12, 2021, wherein the *Alliance* requested that the GSA conduct additional simulations with the SVIHM that are specifically focused on the issue of interbasin groundwater flows in order to understand the amount of Basin-wide groundwater discharge that is and has been captured by pumping. After adjusting the modelling simulations with GEMS data, the SVBGSA could integrate the data into the draft GSPs and provide an informed analysis of how each draft GSP will impact adjacent subbasins. Based upon the text of the draft GSPs, it appears that this modelling has already been completed in some capacity. In each of the draft GSPs for the Langley, Eastside, Forebay, and Upper Valley Subbasins, the GSPs state a "model simulation without any groundwater pumping in the model . . . was compared to the model simulation with groundwater pumping" to understand depletion of interconnected surface water.[25] However, the draft GSPs do not extrapolate this data to analyze impacts on surface or subsurface interbasin flows or adjacent subbasins. The *Alliance* understands that the SVBGSA is undertaking additional modeling for an update to the draft GSPs and strongly recommends that the SVBGSA incorporate the *Alliance's* requested modeling simulations into the update. If not, the *Alliance* urges the SVBGSA to commit to adding this information prior to adoption of the draft GSPs or committing to a timeline in which it will be added shortly thereafter. Without this information, the GSPs cannot not analyze each of the issues required to be addressed by SGMA.

B. The Draft GSPs Do Not Adequately Analyze Impacts to Adjacent Subbasins

As discussed above, a GSP must not adversely affect "the ability of an adjacent basin to implement their [GSP] or impede[] achievement of sustainability goals in an adjacent basin."[26] The GSP Regulations specify that minimum thresholds should be selected to "avoid causing undesirable results in adjacent basins or affecting the ability of adjacent basins to achieve sustainability goals."[27] And the GSP Regulations require DWR to evaluate a GSP to ensure it satisfies these objectives.[28] The draft GSPs as currently presented do not satisfy these requirements.

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[23] Draft Forebay Subbasin GSP, pp. 6-19, 21.
[24] See, e.g., DWR Water Budget BMP, pp. 16-17.
[25] See, e.g., Draft Forebay Subbasin GSP, p. 5-30.
[26] Wat. Code, § 10733.
[27] GSP Regs., § 354.28(b)(3).
[28] GSP Regs., § 355.4(b)(7).

1. The Draft Eastside Subbasin and Langley Subbasin GSPs

The Eastside Subbasin and Langley Subbasin GSPs largely require similar analysis and information to satisfy SGMA. The GSPs do not account for impacts to adjacent subbasins in defining sustainable yields or setting minimum thresholds and measurable objectives. Each of these issues is addressed in detail below.

a. *The GSPs do not account for impacts to adjacent subbasins in defining sustainable yields*

SGMA defines "sustainable yield" as "the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result."[29] Further, the sustainable yield must be defined in a manner that will not result in undesirable results in adjacent subbasins.[30] Here, the sustainable yields in the draft GSPs for both the Eastside and Langley Subbasins do not account for impacts on interbasin flow to the 180/400-Foot Aquifer Subbasin.

For example, the draft Eastside Subbasin GSP states that a pumping depression east of the City of Salinas creates a hydraulic gradient towards the depression, with groundwater flowing towards the pumping depression and away from the boundary with the 180/400-Foot Aquifer Subbasin.[31] This depression has reversed the natural downgradient groundwater flow from the Eastside Subbasin to the 180/400-Foot Aquifer Subbasin, drawing 3,600 AFY historically and 5,400 AFY currently of groundwater from the 180/400-Foot Aquifer Subbasin.[32] This amount is likely substantially underestimated as the SVIHM only accounts for 81% of groundwater pumping in the Subbasin.[33] Despite this unnatural hydraulic gradient and the pull of groundwater from the 180/400-Foot Aquifer Subbasin, the draft Eastside Subbasin GSP includes this interbasin flow in its calculation of sustainable yield,[34] but the draft GSP does not analyze how estimated sustainable yield will impact groundwater management in the 180/400-Foot Aquifer Subbasin.

Similarly, the draft Langley Subbasin GSP states that a pumping depression has formed in the center of the Langley Subbasin as a result of a pumping trough.[35] Groundwater is drawn towards the pumping depression and away from the 180/400-Foot Aquifer Subbasin despite the natural downward gradient flow towards the 180/400-Foot Aquifer and Eastside Subbasins.[36] The draft Langley Subbasin GSP then estimates that,

[29] Wat. Code, § 10721(w).
[30] See Wat. Code, § 10733.
[31] Draft Eastside Subbasin GSP, p. 5-11.
[32] *Id.* at pp. 6-19-20 ("Groundwater pumping near the [C]ity of Salinas has created a cone of depression . . . that draws in groundwater into the Eastside Aquifer Subbasin from the 180/400-Foot Aquifer Subbasin, which is naturally slightly downgradient in the Salinas area. Estimated groundwater inflows from the 180/400-Foot Aquifer Subbasin have slightly increased since 1980.").
[33] *Id.* at p. 6-17. The 180/400-Foot Aquifer Subbasin GSP estimates the outflow to the Eastside and Langley Subbasins amounts to 8,000 AFY. (*Id.* at p. 6-19.)
[34] *Id.* at pp. 6-22-24, Table 6-10.
[35] Draft Langley Subbasin GSP, p. 5-7.
[36] *Id.* at p. 5-18, Figure 5-11.

despite this reversal in groundwater elevations, the 180/400-Foot Aquifer Subbasin has historically received 3,700 AFY and currently receives 2,900 AFY in interbasin flow from the Langley Subbasin, while the Eastside Subbasin has historically received 1,100 AFY and currently receives 1,700 AFY in interbasin flow from the Langley Subbasin.[37] However, the draft Langley Subbasin GSP fails to analyze how the pumping depression in the Langley Subbasin has impacted and will continue to impact these interbasin flows—e.g., what are the outflows to the 180/400-Foot Aquifer and Eastside Subbasins if the pumping depression were ameliorated? Again, the draft GSP includes these unnatural interbasin flows in its calculation of the sustainable yield without analyzing the impacts on adjacent subbasins.[38]

Without understanding how groundwater production impacts interbasin flows, the draft GSPs cannot accurately estimate the sustainable yield of the subbasins and their impact on adjacent subbasins.[39] As discussed above, this issue can be addressed by undertaking the additional modeling simulations requested by the *Alliance* and revising the draft GSPs accordingly. This additional information should be added prior to the adoption of the draft GSPs, or the draft GSPs should commit to a timeline under which this information will be added as soon as possible after adoption of the draft GSPs.

b. *The GSPs do not analyze how their minimum thresholds and measurable objectives will impact adjacent subbasins*

The draft GSPs also do not consider impacts to adjacent subbasins in their setting of minimum thresholds and measurable objectives, as required by SGMA.[40]

For example, the draft Eastside Subbasin GSP sets the minimum threshold for groundwater elevations at 2015 levels.[41] As shown in Figure 8-1, these levels are only nominally above historic lows (approximately 6 feet higher) and barely above the lowest elevation since the introduction of the CSIP and Salinas Valley Water Project.[42] Consequently, these groundwater elevations will still produce a significant pumping

[37] *Id.* at p. 6-19.
[38] *Id.* at pp. 6-21-23.
[39] See DWR Water Budget BMP, p. 17 (To evaluate the impact on adjacent basin, "this will necessitate GSA coordination and sharing of water budget data, methodologies, and assumptions between contiguous basins including: • Accurate accounting and forecasting of surface water and groundwater flows across the basin boundaries.").
[40] GSP Regs., § 354.28(b)(3) ("The description of minimum thresholds shall include the following: . . . (3) How minimum thresholds have been selected to avoid causing undesirable results in adjacent basins or affecting the ability of adjacent basins to achieve sustainability goals."); see also GSP Regs., § 355.4(b)(7); DWR Sustainable Management Criteria BMP, p. 9; DWR Sustainable Management Criteria BMP, p. 10 ("The purpose of the specific requirements is to ensure consistency within groundwater basins and between adjacent groundwater basins.").
[41] Draft Eastside Subbasin GSP, p. 8-7.
[42] *Id.* at p. 8-13.

depression east of the City of Salinas that will draw water away from the boundary with the 180/400-Foot Aquifer Subbasin.[43]

Similarly, the draft Langley Subbasin GSP sets the minimum threshold for groundwater elevations at 2019 levels—the lowest elevations since the introduction of the CSIP and Salinas Valley Water Project and only nominally above the historic lows in the Subbasin.[44] These levels will continue to produce a significant pumping depression east of the City of Salinas that will draw water away from the boundary with the 180/400-Foot Aquifer Subbasin.[45] Despite the maintenance of these unnatural gradients, neither draft GSP analyzes how these minimum thresholds will impact adjacent subbasins (e.g., the 180/400-Foot Aquifer Subbasin).

The draft GSPs for the Eastside and Langley Subbasins merely include the statement that: "Minimum thresholds for the [subbasins] will be reviewed relative to information developed for the neighboring subbasins' GSPs to ensure that these minimum thresholds will not prevent the neighboring subbasins from achieving sustainability."[46] This statement is not evidence and it does not ensure the management of the subbasins will avoid impacts to adjacent subbasins.[47] As discussed above, this issue can be addressed by undertaking the additional modeling simulations requested by the *Alliance* and revising the draft GSPs accordingly.

The lack of analysis is concerning as both draft GSPs acknowledge that low groundwater elevations within the Langley and Eastside Subbasins may exacerbate seawater intrusion in the 180/400-Foot Aquifer Subbasin.[48] But the draft GSPs only mention this issue in concluding: "The chronic lowering of groundwater

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[43] *Id.* at p. 8-10, Figure 8-3. The same issue applies to the draft Eastside Subbasin GSP's measurable objective for groundwater elevations—it maintains a pumping depression that reverses the natural hydraulic gradient towards the 180/400-Foot Aquifer Subbasin but fails to explain how the measurable objective will not impact the 180/400-Foot Aquifer Subbasin. (See e.g., Draft Eastside Subbasin GSP, p. 8-19.)
[44] Draft Langley Subbasin GSP, pp. 8-8, 8-13.
[45] *Id.* at p. 8-10. Again, the same issue applies to the draft Langley Subbasin GSP's measurable objective for groundwater elevations—it maintains a pumping depression that reverses the natural hydraulic gradient towards the 180/400-Foot Aquifer Subbasin but fails to explain how the measurable objective will not impact the 180/400-Foot Aquifer Subbasin. (See e.g., Draft Langley Subbasin GSP, p. 8-19.)
[46] *Id.* at p. 8-6; Draft Eastside Subbasin GSP, p. 8-16.
[47] See Joint Exercise of Powers Agreement Establishing the SVBGSA, § 4.3 ("As set forth in Water Code section 10723.3, the GSA shall consider the interests of all beneficial uses and users of groundwater in the Basin, as well as those responsible for implementing the GSP. Additionally, as set forth in Water Code section 10720.5(a) any GSP adopted pursuant to this Agreement shall be consistent with Section 2 of Article X of the California Constitution and nothing in this Agreement modifies the rights or priorities to use or store groundwater consistent with Section 2 of Article X of the California Constitution . . . Likewise, as set forth in Water Code section 10720.5(b) nothing in this Agreement or any GSP adopted pursuant to this Agreement determines or alters surface water rights or groundwater rights under common law or ay provision of law that determines or grants surface water rights.").
[48] See Draft Langley Subbasin GSP, pp. 3-18, 4-32, 5-18 (Figure 5-11 "shows the groundwater elevations that are persistently below sea levels that, when paired with a pathway, enable seawater intrusion. The groundwater elevation contours show that groundwater is drawn toward the depression at the northern end of the Eastside Aquifer Subbasin. If the magnitude of this depression increases, it could potentially draw seawater intrusion into the Langley Subbasin."), 5-20 (Figure 5-11); Draft Eastside Subbasin GSP, pp. 3-17,

level minimum thresholds are set above historic lows. Therefore, the groundwater elevation minimum thresholds are intended to not exacerbate, and may help control, the rate of seawater intrusion."[49] That statement must be revised to acknowledge that the pumping depressions in the Langley and Eastside Subbasins will remain even if the groundwater elevation minimum thresholds and measurable objectives are achieved, and the seawater minimum thresholds set by the draft Langley and Eastside Subbasin GSPs only protect against seawater intrusion in their respective subbasins, not against seawater intrusion in adjacent subbasins like the 18/400-Foot Aquifer Subbasin.[50]

In sum, the draft Langley and Eastside Subbasin GSPs in their current form do not account for potential impacts to adjacent subbasins in setting their minimum thresholds and measurable objectives. As a result, the draft GSPs cannot provide any evidence that their implementation will not impair implementation of a GSP in an adjacent subbasin—e.g., the 180/400-Foot Aquifer Subbasin GSP's seawater intrusion minimum threshold, which requires seawater intrusion to be maintained at 2017 levels, and measurable objective, which requires the seawater intrusion isocontour to be pushed back to Highway 1.[51] This analysis should be added to the draft GSPs prior to adoption by the SVBGSA, or the draft GSPs should provide a commitment to incorporating this information within a time certain.[52]

c. *There is no support for using groundwater elevations as a proxy for groundwater storage minimum thresholds*

As mentioned above, the sustainable yield of the basin is the amount of water that can be withdrawn annually without causing an undesirable result, such as the "significant and unreasonable reduction of groundwater storage."[53] The GSP Regulations permit a minimum threshold for groundwater elevations to be used as the minimum threshold for other sustainability indicators, "where the Agency can demonstrate that the representative value is a reasonably proxy . . . as supported by adequate evidence."[54] Here, both the draft Eastside Subbasin GSP and the Langley Subbasin GSP utilize groundwater elevation minimum thresholds

4-35 ("the groundwater elevations in the northwestern portion of the Eastside Subbasin (near the City of Salinas) are below sea level, creating a groundwater gradient away from the coast and towards the Eastside Subbasin"), 5-26-29 .

[49] Draft Langley Subbasin GSP, p. 8-15; Draft Eastside Subbasin GSP, p. 8-15.

[50] Draft Langley Subbasin GSP, p. 8-28; Draft Eastside Subbasin GSP, p. 8-29.

[51] See 180/400-Foot Aquifer Subbasin GSP, pp. 8-32-37.

[52] A report prepared for MCWRA has highlighted the significant impact pumping in the Eastside and Langley Subbasins has on seawater intrusion in the 180/400-Foot Aquifer Subbasin. (See November 19, 2013, Technical Memorandum, Protective Elevations to Control Sea Water Intrusion in the Salinas Valley, attached hereto as **Exhibit D**.) The report states: "At one time (before excessive pumping), the East Side Subarea was one of the natural sources of recharge to the adjacent Pressure Subarea with ground water flowing from the northeast to the southwest. However, historical groundwater level declines have resulted in a reversal of the gradient." (*Id.* at p. 3.) The report then states that: "Artificial recharge in the East Side Subarea would reduce subsurface inflow from the Pressure Subarea and eventually restore the historical northeast to southwest recharge. Both northwest underflow from the Forebay Subarea as well as southwest recharge from the East Side Subarea would help control seawater intrusion." (*Id.* at pp. 6-7.) See also aquilogic Memo, pp. 8-12, attached hereto as **Exhibit A**.

[53] Wat. Code, § 10721(w), (x).

[54] GSP Regs., § 354.28(d); DWR Sustainable Management Criteria BMP, pp. 17-18.

as proxies for groundwater storage minimum thresholds.[55] However, there is insufficient evidence to support that approach.

In particular, each of the draft GSPs sets groundwater elevations at near historic lows, and show a substantial trend in declining groundwater storage over the historic period.[56] The minimum threshold groundwater elevations, in other words, have resulted in overdraft of the subbasins.[57] And by setting the minimum thresholds at historic low groundwater elevations, the draft GSPs will facilitate continued decline in groundwater storage.[58] In fact, because there is no commitment to pump at the sustainable yield of the subbasins, it is possible that production in the subbasins could increase over historic and current amounts so long as the subbasins do not experience another significant drought and still comply with the groundwater elevation minimum thresholds. The SVBGSA's prior actions seem to imply that utilizing groundwater elevations as a proxy in this scenario is improper—the 180/400-Foot Aquifer Subbasin GSP set the groundwater storage minimum threshold to production at the projected sustainable yield.[59] The draft GSP must explain why this different approach will suffice now.

2. The Draft Forebay and Upper Valley Subbasin GSPs

The draft Forebay and Upper Valley Subbasin GSPs lack the same analysis as the draft GSPs for the Eastside and Langley Subbasins—they do not adequately consider impacts to adjacent subbasins. These issues begin with the draft GSPs' water budget and estimate of sustainable yield, and cascade through the minimum thresholds, measurable objectives, and projects and management actions.

As discussed above, SGMA requires GSPs to define a sustainable yield for each basin that will avoid undesirable results and impacts to adjacent basins. The sustainable yields defined in the draft GSPs for the Forebay and Upper Valley Subbasins do not meet this threshold. Both draft GSPs conclude that the subbasins have not been in overdraft historically, but they do not analyze how groundwater pumping within the subbasins (151,100 to 174,500 AFY in the Forebay Subbasin and 108,500 to 129,600 AFY in the Upper Valley) impacts surface and subsurface flows to adjacent subbasins.[60]

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[55] Draft Eastside Subbasin GSP, p. 8-23; Draft Langley Subbasin GSP, p. 8-22.
[56] See discussion *supra;* Draft Eastside Subbasin GSP, p. 5-21; Draft Langley Subbasin GSP, p. 5-16.
[57] *Ibid*.
[58] See, e.g., Wat. Code, § 10721(x)(1) ("Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.").
[59] 180/400-Foot Aquifer Subbasin GSP, p. 8-25 ("The total volume of groundwater that can be annually withdrawn from the Subbasin without leading to a long-term reduction in groundwater storage or interfering with other sustainability indicators is the calculated sustainable yield of the Subbasin."); see also DWR GSP Assessment Staff Report, p. 25 ("The Plan describes how setting the minimum threshold as the long-term sustainable yield for the Subbasin is a reasonable, protective approach against overdraft and the long-term reduction of groundwater storage.").
[60] Draft Forebay Subbasin GSP, pp. 6-45-46; Draft Upper Valley Subbasin GSP, pp. 6-22-23.

For example, the draft Forebay Subbasin GSP states that the SVIHM, which undercounts groundwater pumping by 35%, estimates the Forebay Subbasin received 90,300 AFY historically through stream exchange, currently receives 77,800 AFY, and 31,800 AFY of that stream exchange on average is caused by groundwater pumping.[61] Similarly, the draft Upper Valley Subbasin GSP states that the SVIHM, which under counts groundwater pumping by 24%, estimates the Upper Valley Subbasin received 89,100 AFY historically through stream exchange, currently receives 65,500 AFY, and 1,100 AFY of that stream exchange on average is caused by groundwater pumping.[62] This recharge is substantially induced by the operation of the Nacimiento and San Antonio Reservoirs; prior to that time groundwater storage was significantly decreasing in the subbasins.[63] However, neither draft GSP analyzes: (a) how streamflow recharges the subbasins during drought years, offering instead averages over the historical period, and (b) how groundwater pumping impacts natural surface or subsurface flows to adjacent subbasins—i.e., without pumping, how much groundwater would flow to the downgradient subbasin? Instead, the draft GSPs use the average stream exchange amounts to facilitate a "finding" that the subbasins are presently managed within their sustainable yield. Without understanding how pumping impacts streamflow during drought years and interbasin surface and subsurface flow, the draft GSPs cannot reasonably estimate sustainable yield in the subbasins or analyze how implementation of the draft GSPs will impact adjacent subbasins' GSPs.

The failure to analyze impacts to adjacent subbasins becomes more apparent in the draft GSPs' discussion of minimum thresholds. The draft Forebay Subbasin GSP sets the minimum threshold for groundwater elevations at 2015 groundwater levels, only a few feet above the historic low, while the draft Upper Valley Subbasin GSP sets the minimum threshold for groundwater elevations at "5 feet <u>below</u> the lowest ground elevation between 2012 and 2016," significantly below the historic low.[64] These minimum thresholds are not reasonable—set at levels experienced at the bottom of a historic drought, or even lower—and cannot be qualified as sustainable groundwater management.[65] The draft Upper Valley GSP admits as much, stating: "The groundwater elevations during the 2012 to 2016 drought in the Upper Valley Aquifer Subbasin are the lowest groundwater elevations seen in the Subbasin and are considered <u>significant and unreasonable</u>."[66]

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[61] Draft Forebay Subbasin GSP, pp. 5-30, 6-23. Note that the draft GSPs may also underestimate streamflow depletion by only analyzing stream cells that are connected to groundwater more than 50% of the time. (See aquilogic Memo, p. 5, attached hereto as **Exhibit A**.)
[62] Draft Upper Valley Subbasin GSP, pp. 5-31, 6-22.
[63] Draft Upper Valley Subbasin GSP, p. 5-18; Draft Forebay Subbasin GSP, p. 5-17; see also Hydrogeology and Water Supply of Salinas Valley, pp. 15-16, attached hereto as **Exhibit D**.
[64] Draft Forebay Subbasin GSP, pp. 8-8, 8-14; Draft Upper Valley Subbasin GSP, pp. 8-7, 8-12 (emphasis added).
[65] Wat. Code, § 10720.1 ("In enacting this part, it is the intent of the Legislature to do all of the following: (a) To provide for the sustainable management of groundwater basins. . . . (c) To establish minimum standards for sustainable groundwater management."]; GSP Regs., § 355.4(b) ("When evaluating whether a Plan is likely to achieve the sustainability goal for the basin, the Department shall consider the following: (1) Whether the assumptions, criteria, findings, and objectives, including the sustainability goal, undesirable results, minimum thresholds, measurable objectives, and interim milestones are reasonable and supported by the best available information and best available science. . . .").
[66] Draft Upper Valley Subbasin GSP, p. 8-10 (emphasis added).

Moreover, the draft GSPs do not analyze how the minimum thresholds will impact flows in the Salinas River or adjacent subbasins. Rather, this analysis appears to be deferred to the future. The draft GSPs state that: "Minimum thresholds . . . will be reviewed relative to information developed for neighboring subbasins' GSPs to ensure that these minimum thresholds will not prevent the neighboring subbasin from achieving sustainability."[67] As discussed above, this issue can be addressed by undertaking the additional modeling simulations requested by the *Alliance* and revising the draft GSPs accordingly. This additional information should be added prior to the adoption of the draft GSPs, or the draft GSPs should commit to a timeline under which this information will be added as soon as possible after adoption of the draft GSPs.

These same concerns are raised with respect to the groundwater storage minimum thresholds. The draft Upper Valley Subbasin GSP uses the groundwater elevation minimum threshold as a proxy, which is permitted, as discussed above, as long as it is supported by adequate evidence.[68] However, there is no evidence supporting that approach as the groundwater elevation minimum threshold suffers the flaws discussed above, and evidence in the draft GSP relating groundwater elevations to groundwater storage shows groundwater storage at historic lows by a wide margin when groundwater levels were 5 feet above the groundwater elevation minimum threshold in 2016.[69] Similarly, the draft Forebay Subbasin GSP sets the minimum threshold for groundwater storage based upon the groundwater elevation minimum threshold: "The minimum threshold groundwater elevation contours . . . were used to estimate the amount of groundwater in storage when groundwater elevations are held at the minimum threshold levels."[70] Again, there is no evidence supporting that approach as the groundwater elevation minimum threshold is flawed as discussed above, and evidence in the draft GSP shows the groundwater elevation minimum threshold results in historic lows in groundwater storage.[71] In fact, the groundwater elevation minimum thresholds allow for additional production in the subbasins over historic and current amounts so long as the subbasins do not experience another significant drought. There is no commitment in the draft GSPs that the production in the subbasins will be restricted to the estimated sustainable yield in the subbasins, and there is no model simulation showing the minimum threshold for groundwater elevations will prevent continued decline in groundwater storage.

Finally, the draft GSPs also utilize groundwater elevations as proxies to set the minimum thresholds for depletion of interconnected surface water.[72] But again, there is no evidence supporting this approach. These groundwater elevation proxies are at or near historic lows, and there is no evidence proving these elevations will prevent the depletion of interconnected surface water that would have a significant and unreasonable impact on beneficial uses. Rather, the draft GSPs merely state that these levels will not impact beneficial uses because there is not currently any litigation over surface water uses, and due to the operation of the Nacimiento Reservoir.[73] However, this statement does not acknowledge that decreased groundwater

[67] Draft Upper Valley Subbasin GSP, p. 8-14; Draft Forebay Subbasin GSP, p. 8-17.
[68] Draft Upper Valley Subbasin GSP, p. 8-20.
[69] Draft Upper Valley Subbasin GSP, pp. 5-13, 5-18.
[70] Draft Forebay Subbasin GSP, p. 8-24.
[71] Draft Forebay Subbasin GSP, p. 5-17.
[72] See Draft Upper Valley Subbasin GSP, p. 8-39; Draft Forebay Subbasin GSP 8-42.
[73] Draft Forebay Subbasin GSP, pp. 8-44-45; Draft Upper Valley Subbasin GSP, pp. 8-41-42.

elevations will increase depletion of the Salinas River, and reduce flow to downstream uses, including those uses in adjacent subbasins.[74] Lastly, the draft GSPs do not analyze how these minimum thresholds for depletion of interconnected surface water will impact adjacent subbasins.

In sum, the draft Forebay and Upper Valley GSPs require additional data and analysis to satisfy SGMA. These issues must be addressed before the GSPs are adopted, or the draft GSPs must be provide for their provision by a date certain.[75]

3. The Inadequacies in the Draft GSPs Addressed Above Threaten to Impinge Upon Water Rights

As stated previously, each of the groundwater sustainability agencies has an obligation to consider the interests of all beneficial users of the Basin[76] when implementing SGMA. Moreover, SGMA does not "determine[] or alter[] surface water rights or groundwater rights under common law or any provision of law that determines or grants surface water rights."[77]

By not analyzing potential impacts to adjacent subbasins in each draft GSP, the groundwater sustainability agencies disproportionately allocate the burden of sustainability across the Basin and threaten to impair groundwater users' rights in and to the Basin. This approach violates SGMA and must be addressed before the groundwater sustainability agencies adopt the draft GSPs or, as discussed above, through a commitment in the draft GSPs to modify or update their contents within a time certain.

III. THE DRAFT GSPS MUST INCORPORATE PROJECTS AND MANAGEMENT ACTIONS TO ACHIEVE SUSTAINABILITY

The GSP Regulations require each GSP to "include a description of the projects and management actions the Agency has determined will achieve the sustainability goal for the basin, including projects and management actions to respond to changing conditions in the basin."[78] Because the draft GSPs are lacking the data and analysis described in Section II above, the draft GSPs cannot meet this requirement (e.g., the draft GSPs' lack of analysis of impacts to adjacent basins prevents an adequate proposal of projects and management actions to achieve sustainability). Further, without understanding impacts on interbasin surface and subsurface flow and how implementation of the draft GSPs will impact adjacent subbasins, the groundwater sustainability agencies will be unable to properly assess the benefits associated with any future projects or management actions—e.g., if they propose projects involving dam operations, how can the groundwater sustainability agencies assess the benefits of those projects to the Lower Valley? Accordingly,

[74] aquilogic Memo, pp. 3-8, attached hereto as **Exhibit A**; DWR Water Budget BMP, pp. 4-5.
[75] See also aquilogic Memo, pp. 3-8, attached hereto as **Exhibit A**.
[76] Wat. Code, § 10723.2
[77] Wat. Code, § 10720.5(b); see also Wat. Code, § 10720.1(a) and (b).
[78] GSP Regs., § 354.44(a).

the *Alliance* reserves the right to comment on the draft GSPs' proposed projects and management actions once the issues described above have been addressed.

However, as a preliminary note, the draft GSPs as currently presented do not include sufficient projects or management actions to achieve sustainable groundwater management Basin-wide. Rather, the draft GSPs appear to foist the burden of sustainable groundwater management on the Eastside, Langley, 180/400-Foot Aquifer, and Monterey Subbasins, while avoiding consequential projects and management actions in the Forebay and Upper Valley Subbasins. Indeed, the draft GSPs for the Eastside, Langley, and Monterey Subbasins each include a management action for pumping allocations and controls, but no such management action is included in the draft Forebay Subbasin or Upper Valley Subbasin GSPs.[79] Instead, the draft Forebay Subbasin and Upper Valley Subbasin GSPs include management actions that only superficially impact the subbasins—e.g., the proposed Subbasin "Sustainable Management Criteria Technical Advisory Committees," which require the formation of a "TAC for each Subbasin" that will "develop recommendations to correct negative trends in groundwater conditions and continue to meet the measurable objectives."[80] This issue must be addressed in the next draft of the GSPs.

The *Alliance* also notes that the draft GSPs do not mention the project proposed in the Hydrogeology and Water Supply of Salinas Valley White Paper prepared by the Salinas Valley Groundwater Basin Hydrology Conference for MCWRA in 1995 ("Salinas Valley White Paper"), which is attached hereto as **Exhibit E**. The "Conference" was a "panel of 10 geologists, hydrogeologists, and engineers familiar with Salinas Valley ground water basin" that was convened to "reach agreement on the basic physical characteristics of the basin, and the surface and ground water flow within the basin."[81] The Conference had a "remarkable unanimity of opinion" on the understanding of the "physical characteristics of the basin, the hydrologic system, the interaction between surface water and ground water, and definition of the specific ground water problems in the basin."[82] The Conference agreed that this understanding pointed "compellingly toward an already identified *regional* solution to the Valley's groundwater water resources problem" and recommended pursuing that solution.[83]

> The need for conjunctive operation of surface water and ground water storage was recognized as early as 1946. In 1946, the California Department of Water Resources published a report on Salinas Valley that described the occurrence of seawater intrusion and declining ground water levels. The report recommended a project to eliminate these problems that included development of surface water and ground water storage. Surface water storage was to be accomplished by the construction of dams on tributaries to Salinas River, and ground water storage was to be accomplished by ground water transfers from the Forebay Area to the Pressure Area and East [S]ide Area. The Department

[79] See Draft Eastside Subbasin GSP, § 9.4.12; Draft Langley Subbasin GSP, § 9.4.5; Draft Monterey Subbasin GSP, § 9.4.8; see also 180/400-Foot Aquifer Subbasin GSP, § 9.2 [water charges framework].
[80] Draft Upper Valley Subbasin GSP, § 9.4.1; Draft Forebay Subbasin GSP, § 9.4.1.
[81] *Id.* at p. 5.
[82] *Ibid.*
[83] *Ibid.*

> recommended transfer facilities that include wells in the Forebay Area, conveyance facilities from the Forebay Area to the Pressure and East Side Areas, and distribution facilities within the Pressure and East Side Areas. In such a conjunctive operation, the increased extraction in the Forebay Area and conveyance of water to the Pressure and East Side Areas would vacate ground water storage in the Forebay Area. This empty storage space would be refilled by additional infiltration from Salinas River . . . Part of the recommended facilities for surface water and ground water storage have been completed by the construction of the dams for San Antonio and Nacimiento reservoirs, but the facilities for the effective use of groundwater storage have not been completed. The operation of San Antonio and Nacimiento reservoirs has produced benefits to [S]alinas Valley, but the ultimate benefits that would result from the construction and operation of transfer facilities have not been realized. **The panel concluded that the facilities recommended in 1946 by the California Department of Water Resources should be completed immediately** . . . The result of partially completing the project has been an uneven distribution of benefits throughout the Valley. The Forebay Area and Upper Valley Areas have enjoyed relatively large benefits from San Antonio and Nacimiento reservoirs that would have been shared equally with the Pressure and East Side Areas if the intended transfer facilities had been built. In the absence of the transfer facilities, seawater intrusion into the Pressure Area and water-level declines within the East Side Area have not been mitigated.[84]

The Conference noted that this solution is practical as the "water resources problem in Salinas Valley is not a water supply problem. It is a water distribution problem. The basin has enough surface and ground water to meet existing and projected future average annual agricultural, and municipal and industrial water demand through the year 2030. The problem lies in managing those supplies to meet water demands at all locations in the Valley at all times."[85] This project is an example of integrated groundwater management for the Basin as a whole and should be included in the list of projects and management actions in each of the draft GSPs.[86]

IV. CONCLUSION

The *Alliance* appreciates the opportunity to provide these comments on the draft GSPs, as well as the groundwater sustainability agencies' consideration of the *Alliance*'s input. At present, the draft GSPs do not provide a sufficient basis for integrated management of the Basin given their inconsistent analytical approaches and inadequate analysis of impacts on adjacent subbasins. The *Alliance* makes these comments with the hope that these issues can be addressed through additional engagement prior to the adoption of the GSPs. It is critical that the groundwater sustainability agencies lay the foundation now for the integrated sustainable management of the Basin; without such a foundation, the agencies will not be able to satisfy their obligations under SGMA.

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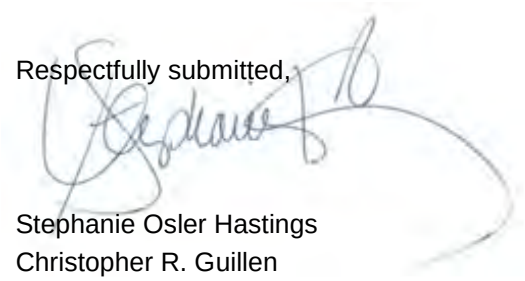
[84] Salinas Valley White Paper, pp. 15-16, attached hereto as **Exhibit E (**emphasis added).
[85] *Id.* at p. 7.
[86] See aquilogic Memo, pp. 12-13, attached hereto as **Exhibit A**.

Respectfully submitted,



Stephanie Osler Hastings
Christopher R. Guillen

Exhibits:

A. October 15, 2021 aquilogic, inc. memorandum
B. February 26, 2019 Letter from Derrik Williams to Les Girard
C. March 4, 2019 Memorandum from Howard Franklin to Gary Petersen & Les Girard
D. November 19, 2013 Technical Memorandum re Protective Elevations to Control Sea Water Intrusion in the Salinas Valley
E. June 1995 Salinas Valley Ground Water Basin Hydrology Conference White Paper re Hydrogeology and Water Supply of Salinas Valley

cc: Emily Gardner, Senior Advisor / Deputy General Manager (gardnere@svbgsa.org)
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COMMUNITY WATER CENTER
EL CENTRO COMUNITARIO POR EL AGUA

San Jerardo Cooperative, Inc.

October 15, 2021

Salinas Valley Basin Groundwater Sustainability Agency
Submitted electronically to:
Emily Gardner, Deputy General Manager
Donna Meyers, General Manager

Subject: Comments on the Draft Salinas Valley Subbasin GSPs for the Langley, East Side, Forebay, Upper Valley and Monterey Subbasins

Dear Salinas Valley Basin Groundwater Sustainability Agency:

The Community Water Center (CWC) and the San Jerardo Cooperative offer comments and recommendations in response to the draft Groundwater Sustainability Plans (GSPs) for the Langley, East Side, Forebay, and Upper Valley Subbasins as released in the Fall of 2021 by the Salinas Valley Basin Groundwater Sustainability Agency (SVB GSA). Previously, we submitted comments on April 23, 2021 regarding Chapters 1-8, on April 28, 2021 on a preliminary draft of Chapter 9, and on June 17, 2021 regarding Chapters 2, 9, and 10.

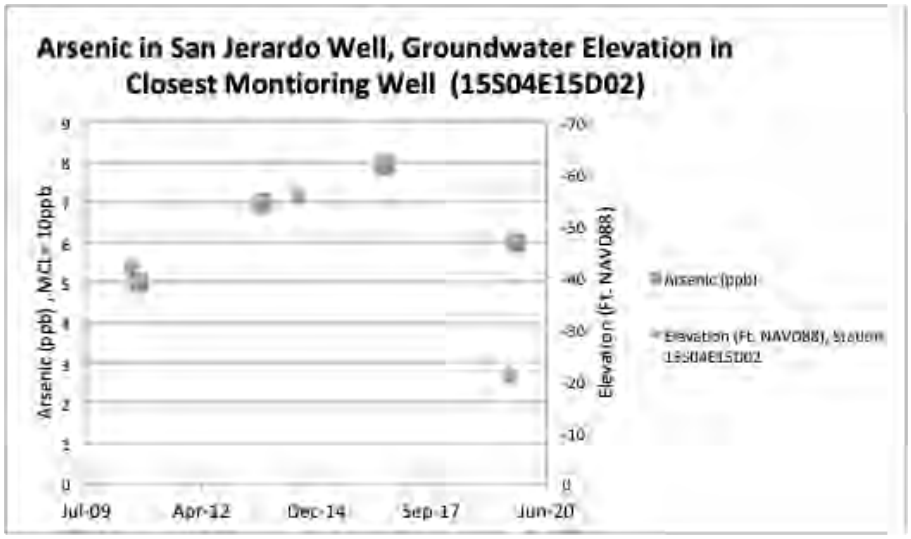
Because the Subbasin GSP drafts are now to be reviewed and voted upon by the SVB GSA Board, we take this opportunity to synthesize many of our comments into one document and provide relevant updates based on SVB GSA Staff responses and our answers in turn. Responses included here from SVB GSA, unless otherwise cited, were published in the Comment Letter Comment Tables responding to public comments made mid-2021 when drafts were prepared for the Subbasin Committees.[1] Additionally, unless otherwise noted, GSP Section numbers refer to the Eastside Subbasin GSP and the comments apply to all SVB GSA subbasins. As always, these comments are intended to add to the public record and are submitted in addition to previous written and spoken comments.

We reiterate the following context for this comment letter and the San Jerardo Cooperative's participation in particular. The challenges facing San Jerardo and similar communities throughout all the Subbasins in the Salinas Valley are the foundation of our comments in this letter. The San Jerardo Cooperative's well is highly vulnerable to changes in groundwater levels and groundwater quality. Over decades of living and working at San Jerardo Cooperative, Advisory Committee Member Horacio Amezquita has observed firsthand how the irrigation practices on properties surrounding the cooperative impact the water quality in their current and former wells. The San Jerardo Cooperative receives drinking water from a small public water system (CA2701904) and is very concerned that

[1] SVB GSA. (2021). *Subbasin GSP Comment Letter Comment Tables*. On file with SVB GSA and available at: svbgsa.org. *See e.g.*, https://svbgsa.org/wp-content/uploads/2021/08/Eastside-Comment-Letters-Responses-081021.pdf.

pumping, irrigation practices, and groundwater management in the East Side Subbasin will cause their drinking water well, which currently meets all drinking water standards, to exceed the maximum contaminant levels for arsenic and/or nitrate. Unfortunately, data from the State Water Board indicates increasing levels of nitrate and arsenic in their well with a high arsenic level of 8 ppb on 8/22/2016 that also corresponds to a low groundwater elevation of -61.5 in Station 15S04E15D02, the closest monitoring well to the San Jerardo Cooperative's well (See CWC Figures 1 and 2).[2] While there are too few monitoring data points to draw significant conclusions, CWC Figure 1 does suggest that arsenic levels are higher when groundwater levels are lower. Scientific studies confirm that contaminants like arsenic, uranium, and chromium (including hexavalent chromium) are more likely to be released under certain geochemical conditions influenced by pumping rates, geological materials, and water level fluctuations.[3]

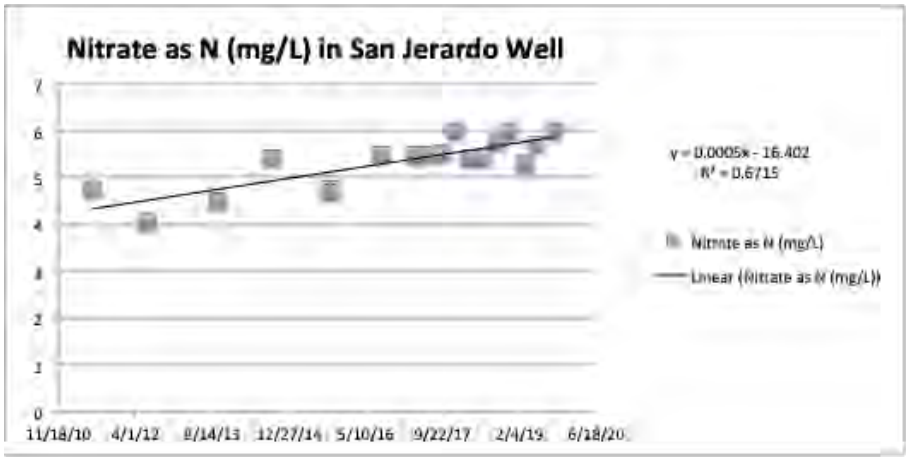
CWC Figure 1: Arsenic in San Jerardo Well, Groundwater Elevation in Closest Monitoring Well
(Note: The groundwater elevation y-axis is reversed to illustrate that lower groundwater elevations are associated with higher arsenic levels.)



[2] CWC Figure 1 contains all available arsenic data from the State Water Board's Drinking Water Watch online database (https://sdwis.waterboards.ca.gov/PDWW/) which was collected in October 2010, 9/11/13, 8/22/16, and 9/23/19. We then added the monitoring data for Station 15S04E15D02 for the dates most close to the arsenic sampling dates (August 2010, August 2014, August 2016, and August 2019). CWC Figure 2 data was also downloaded from the same online database.

[3] Community Water Center and Stanford University (2019). *Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium*. Available at: https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896.

CWC Figure 2: Nitrate in San Jerardo Well.



We provide more specific chapter-by-chapter comments below. We emphasize that the GSP must be revised throughout to further incorporate the best available science[4] showing that groundwater pumping and groundwater level changes can influence water quality, and the GSA has obligations to prevent the significant and unreasonable exacerbation of degraded water quality. We also note that a management decision to *not* regulate pumping and to therefore permit current pumping rates is still a management decision. This recommendation is supported by DWR's 180/400 ft Aquifer GSP Determination on June 3, 2021:

> "**[S]taff find that the approach to focus only on water quality impacts associated with GSP implementation, i.e., GSP-related projects, is inappropriately narrow.** Department staff recognize that GSAs are not responsible for improving existing degraded water quality conditions. **GSAs are required; however, to manage future groundwater extraction to ensure that groundwater use subject to its jurisdiction does not significantly and unreasonably exacerbate existing degraded water quality conditions.**
> Where natural and other human factors are contributing to water quality degradation, the GSAs may have to confront complex technical and scientific issues regarding the causal role of groundwater extraction and other groundwater management activities, as opposed to other factors, in any continued degradation; but **the analysis should be on whether groundwater extraction is causing the**

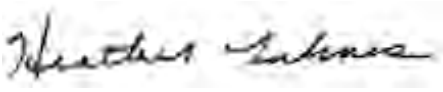
[4] 23 CCR § 355.4(b)(1). "When evaluating whether a Plan is likely to achieve the sustainability goal for the basin, the Department shall consider the following:
(1) Whether the assumptions, criteria, findings, and objectives, including the sustainability goal, undesirable results, minimum thresholds, measurable objectives, and interim milestones are reasonable and supported by the best available information and best available science."

> **degradation in contrast to only looking at whether a specific project or management activity results in water quality degradation**.
> Department staff recommend that the SVBGSA coordinate with the appropriate water quality regulatory programs and agencies in the Subbasin to understand and **develop a process for determining when groundwater management and extraction is resulting in degraded water quality in the Subbasin** (see Recommended Corrective Action 5)."[5]

We strongly recommend that the GSPs incorporate a more robust and representative monitoring network and minimum thresholds to protect vulnerable communities like San Jerardo and those dependent on shallow domestic drinking water wells. This network should include state and local small water systems. In tandem, we recommend the incorporation of a Well Impact Mitigation Program, as discussed below.

Thank you for reviewing this letter and for the consideration of our comments on the draft GSP chapters. We look forward to working with the SVB GSA to ensure that the GSPs are protective of the drinking water sources of vulnerable, and often underrepresented, groundwater stakeholders. Please do not hesitate to contact us with any questions or concerns. We also look forward to meeting with you in the future to further discuss issues raised in these and past comments.

Sincerely,



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[5] Department of Water Resources. (2021). *Statement of Findings Regarding the Approval of the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan.* Pp. 26-27. (Internal citations omitted; emphasis and paragraph breaks added). Available for download at: https://sgma.water.ca.gov/portal/gsp/status.

GSP Chapter 2: Communications and Public Engagement

SGMA requires GSAs to consider all beneficial users in groundwater management decisions and specifically names domestic well users and disadvantaged communities (DACs) as beneficial users.[6] SGMA also requires GSAs to "encourage the active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin *prior to and during the development and implementation of the groundwater sustainability plan.*"[7] The regulations similarly require that a GSP summarize and identify, "opportunities for public engagement and a discussion of how public input and response will be used."[8] The GSA thus must engage, "diverse social, cultural, and economic elements of the population within the basin."[9] SGMA Regulations recognize that failure to engage adequately with a diverse cross-section of the public undermines the likelihood that a GSP will avoid undesirable results and meet its sustainability goal.[10]

Community Water Center appreciates the statement found in Chapter 2 of the Langley, Eastside, Forebay, and Upper Valley subbasins: "[T]he success of the... Subbasin GSP will be determined by the collective action of every groundwater user."[11] Public engagement invites citizens to get involved in deliberation and to take action on public issues that are important to them. More importantly, it helps leaders and decision-makers have a better understanding of the perspectives, opinions, and concerns of citizens and stakeholders, especially those who are traditionally underrepresented. DWR's Guidance for Stakeholder Communication and Engagement acknowledges that public engagement, when done well, goes far beyond the usual participants to include those members of the community whose voices have traditionally been left out of political and policy debates.[12] Additionally, as part of a Strategic Planning Review, SVB GSA has recently recognized an overrepresentation of agricultural interests in its GSP formation process and voiced interest in balancing its representation, however has not yet taken action to do so. In this light, we offer the following recommendations:

- **Fast-track stakeholder outreach efforts in order to meaningfully engage beneficial users throughout the basin in the GSP development process currently underway.**
    - Based on our review of the language in Chapter 2 of the Subbasin GSPs, it appears that the outreach and engagement strategies outlined in Section 2.7, which are specific to the underrepresented communities and disadvantaged communities in the Basin, are to be put in place only after the GSP is submitted in 2022.

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[6] Cal. Water Code § 10723.2.
[7] Water Code § 10727.8. (Emphasis added).
[8] 23 CCR § 354.10(d)(2).
[9] DWR (2018). *Guidance Document for Groundwater Sustainability Plan: Stakeholder Communication and Engagement.* P. 1. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Assistance-and-Engagement/Files/Guidance-Doc-for-GSP---Stakeholder-Communication-and-Engagement.pdf.
[10] 23 CCR §355.4(b)(4).
[11] SVB GSA (2021). *Subbasin GSPs Draft - Chapter 2: Goals for Communication and Public Engagement.* P. 10 (in all drafts). Available at: https://svbgsa.org/subbasins/.
[12] DWR (2018). *Guidance Document for Groundwater Sustainability Plan: Stakeholder Communication and Engagement.* Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Assistance-and-Engagement/Files/Guidance-Doc-for-GSP---Stakeholder-Communication-and-Engagement.pdf.

    - This delay results in little to no participation or input from these communities during the GSP development process currently underway.
- Update: While SVB GSA held workshops with DAC representatives to develop a plan for outreach to DACs, **the resulting plan to solicit DAC input regarding the core management decisions in the GSP—including the setting of SMCs and the representative monitoring network—was *not* implemented during GSP development.** Consulting DAC stakeholders solely in regards to outreach strategies is not sufficient engagement. It is likely that due to SVB GSA's lack of implementation of their outreach strategy plan[13] many DAC voices and opinions have been left out of this current GSP because DAC residents have not been made aware of this process. Even if they are aware of the GSP process, many still lack the information and tools they need to participate. It is critical to have DAC stakeholders engaged in the development of the GSP as well as on a continuing basis.
    - Section 2.4 asserts that SVB GSA "deployed… [an] inclusive outreach and education process conducted that best supports the success of a well- prepared GSP that meets SGMA requirements." However, acknowledging that initial steps were taken, the GSA has not provided evidence of carrying out this outreach and fulfilling SGMA requirements.
- **Specify which outreach strategies will be used to reach underrepresented communities and disadvantaged communities.** The proposed goals for communication and engagement actions and strategies in this chapter lack important details to ensure that all beneficial users, especially underrepresented communities and disadvantaged communities, will have access to the resources that are being proposed. It must be noted that underrepresented communities and disadvantaged communities may not have access to the internet, therefore they may not have access to the online resources on either the SVB GSA website or through social media. Additionally, in the case that they do have access to the internet, they may lack knowledge or familiarity regarding how to access the online resources.
- **Provide a strategy for how to reach stakeholders with limited or no SGMA knowledge.** In Subbasin GSPs' Section 2.6.3, SVB GSA acknowledges that there is a "variety of audiences targeted within the Basin whose SGMA knowledge varies from high to little or none." However, no strategy is provided for how those with no knowledge will be reached. This chapter should be modified to include more details on how and what additional strategies will be implemented to ensure that SVB GSA is reaching all beneficial users. We recommend the following approaches:
    - **Include more grassroots-based approaches to request and incorporate DAC and drinking water user feedback in the GSP, which are critical to actually reaching stakeholders and fulfilling the GSA's goal.** One of the goals of the Communications and Public Engagement (CPE) Actions which we strongly support is to "invite input from the public at every step in the decision-making process and provide transparency in outcomes and recommendations." However, based on the communication/ outreach strategies mentioned in the chapter, efforts fall short of inclusivity. The general public

[13] As outlined in February 2021 SVB GSA Staff Report, Available at: https://legistarweb-production.s3.amazonaws.com/uploads/attachment/pdf/820418/Item_5a_-_Staff_Report.pdf.

does not always have access to certain resources like the internet, and even if they do have access they may not know how to use social media, use email, or browse the web.

- **Document and continue the policy of providing translation services at public meetings and of providing bilingual (English and Spanish) information and materials on the website, via email, and paper mail.** The Dymally-Alatorre Bilingual Services Act requires that public agencies serving over 10% of non-English speaking constituents provide appropriate translation services.[14] At a minimum, translated information should be provided during Plan updates and prior to critical decisions. In particular, the submitted GSP released during the formal comment period should include bilingual materials highlighting key summaries of the GSP. Critical decision points also include the adoption of groundwater fees, the approval of new groundwater projects or management actions, and decisions around pumping restrictions.
- **Consider inserting short notices in water bills and/or community newsletters on a monthly basis (notices should include key messages, visuals and information that is relevant to the average water user).** These notices must be translated as described above.
- **Specify how and when the accessible and culturally responsive GSA materials mentioned in Section 2.7 will be developed to communicate impacts of groundwater management on local water conditions and how they will be delivered or made available to URCs and DACs that do not have internet access.** Accessibility includes appropriate visual content and translation.
- **Consider using USPS every door direct mail (EDDM) to send out educational materials and updates to all stakeholders.** This tool can be used to map ZIP Code(s) and neighborhoods, it also has a filter feature that lets you filter by age, income, or household size using U.S. Census data. This tool can be helpful to reach stakeholders that do not have internet access.
- **Clearly identify and utilize existing community venues (on a monthly basis if possible) for community meetings, workshops, and events to provide information**. For example, the GSA could hold educational workshops during water board and school district board meetings, or after church services. Venues should be carefully selected in order to meet the needs of the targeted audience.
- **Clearly identify radio channels, social media avenues, websites, and other media outlets readily accessible to the community**. The submitted GSP should be revised with a policy requiring a broader outreach effort in the near future, with bilingual outlets.
- **Specify a timeline to work with key community leaders or trusted messengers on at least a monthly basis to distribute information and encourage community participation.** Venues for such leaders to share information could include churches, civic groups, clubs, non-profit organizations, and schools.
- **Consider hosting Spanish-only outreach meetings, as they can be more effective in transferring knowledge and receiving feedback.** It can be a challenge to provide

[14] California Government Code §7290.

real-time translation of technical groundwater terms and concepts in a way that is understandable and promotes participation, so it may be appropriate to conduct a meeting entirely in Spanish so that participants can be fully immersed in the discussion.

- **Consider hiring a bilingual Stakeholder and Outreach Communication specialist as part of the SVB GSA staff.** Expanding the GSA's reach to different audiences and maintaining a robust stakeholder list of interested individuals, groups and/or organizations is a good step to ensure that the general public is informed about the GSA's activities. However, it will require substantial time and effort to develop a clear outreach methodology, obtain a representative list of stakeholders (including those who do not engage online), ensure language accessibility, and make sure stakeholders stay informed and engaged. A bilingual Stakeholder and Outreach Communication specialist could support this work.

- **We recognize and appreciate the inclusion of Appendix 2D Disadvantaged Communities in this draft of the subbasin GSPs. We recommend the following corrections / improvements to better represent DACs and their drinking water sources:**
  - **Clarify the number of domestic water systems that Monterey County Department of Environmental Health regulates under its Local Primacy Agency Authority as well as the local small water systems regulated under County Code.** See page 61 of the Eastside Volume 1 Appendices which states "There are approximately 160 such systems in the County regulated under this program."[15] This number is likely referring to the total number of public water systems serving less than 200 connections regulated by Monterey County but does not include state and local small water systems. From Monterey County's webpage on Small Water Systems "The Drinking Water Protection Services regulates Local and State Small Water Systems, which serve 2-14 connections. Many residents and visitors receive their water from these systems. Drinking Water Protection Services currently administers 969 systems, which serve about 4232 connections."[16]
  - Update the maps of **all disadvantaged communities (DACs) currently in Appendix 2D in the following ways:**
    - To reflect more recent census data from 2019 or later (the current map shows data from 2016). Continue to share the DAC/SDAC status of all census block groups, census designated places, and census tracts.
    - Include DAC or SDAC communities according to household income surveys conducted in accordance with state and federal agency guidelines to determine eligibility for state funding programs.
    - More clearly show the location of DACs, their drinking water sources, and their water quality in the subbasin including private wells. Figure 2 in Appendix 2D

[15] https://svbgsa.org/wp-content/uploads/2021/08/Eastside-Volume-1-Appendices.pdf

[16] https://www.co.monterey.ca.us/government/departments-a-h/health/environmental-health/drinking-water-protection/state-and-local

should combine data from GAMA and Monterey County to show the levels of COCs, including but not limited to nitrate, in recent years in drinking water sources in DAC areas. This would also provide data for Figure 2 in the Monterey County Subbasin which currently does not show any water quality data, because the Monterey Subbasin was not part of the geographic scope of the CCGS (2015) information included in the appendix.

- Update Figure 2 to show the entire Salinas Valley and not only the subbasins in the north. The Upper Valley Subbasin Volume 1 Appendices, for example, includes Figure 2 that does not show the Upper Valley subbasin.[17]

GSP Chapter 3: Description of Plan Area

The description of the plan area can be improved by clarifying the descriptions of the drinking water users in the area. In order to develop a GSP that addresses the needs of all beneficial users, it is critical that the location and groundwater needs of Disadvantaged Communities (DACs) and all drinking water users including domestic well communities are explicitly addressed early on in the GSP. In addition to comments previously submitted to the GSA on July 10, 2020, we recommend the following updates to this chapter:

- **Clarify the number and type of public water systems in the subbasins throughout the entire plan.** In each subbasin plan, there are discrepancies between types and numbers of public water systems in different chapters. It is absolutely critical to clearly include the number of public supply wells *currently in use* in the GSPs. For example, the East Side GSP lists the following:
  - Table 3-2 Well Count Summary shows “Public Supply= **24 wells**”
  - Table 5-3 GAMA Water Quality Summary shows "Number of Existing Wells in Monitoring Network Sampled for COC to be **78** for 123-TCP, **89** for Nitrate, and **70** for TDS.
  - Section 7.5 says "**Ninety** DDW wells have been chosen to be part of the RMS network. These wells are shown on Figure 7-4 and listed in Appendix 7D.” This table includes all DDW wells that were sampled for COCs between December 1982 to December 2019, yet it is unclear whether all these wells are still active, and after consulting Appendix 7D, it is unclear whether these wells are all public water system wells, as defined in Section 7.5, or whether wells of other types are also included.
  - Table 8-4 Groundwater Quality Minimum Thresholds - **No well count shown**.

  We recognize that different data sources have different limitations and recommend using the best available data consistently throughout the plan.
- Add a clear reference to a **table of all public water systems, their names, locations, number of connections, and number of active wells** in the text that is consistent with the numbers of wells in Table 3-2, Table 5-3, Section 7.5, and other locations where mentioned in the GSPs.

[17] See page 58 of Upper Valley Subbasin Volume 1 Appendices: https://svbgsa.org/wp-content/uploads/2021/08/Upper-Valley-Volume-1-Appendices-1.pdf)

- Appendix 7-D: DDW and ILRP Wells in the Water Quality Monitoring Network should be updated to include the number of connections served by that well and the status of the well as active or inactive according to DDW.

- **Revise Section 3.6.2 on the Agricultural Order to indicate that Agricultural Order 4.0 includes monitoring requirements including on-farm domestic well monitoring of nitrate and 123-trichloropropane (123-TCP).** 123-TCP should also be included in the monitoring network (see comments in Chapter 7).

GSP Chapter 4: Hydrogeologic Conceptual Model

The hydrogeologic conceptual model is a key component of the basin setting. The basin setting represents the baseline assumptions that the GSA relies on throughout the GSP when choosing minimum thresholds, measurable objectives, and undesirable results, as well as when planning projects and management actions. We recommend that the GSA:

- **Revise Section 4.6 on Water Quality to acknowledge that "natural groundwater quality in the Subbasin" can be influenced by pumping and the way groundwater is managed.**[18] As indicated in our cover letter, this is of particular importance for the San Jerardo Cooperative who has experienced increases in nitrate and arsenic in their well.
    - SVB GSA response (Section 5.4.3): "Text about the effect of groundwater pumping on groundwater quality was added to Chapter 5 in the "Distribution and Concentrations of Diffuse or Natural Groundwater Constituents" section. A discussion on the effect of lowering groundwater elevation on groundwater quality is included in Chapter 8 in the "Relationship between Individual Minimum Thresholds and Relationship to Other Sustainability Indicators" section for groundwater elevations under the degraded water quality bullet."
    - Our response: We appreciate the addition of a paragraph in Section 5.4.3 and recommend that this is also acknowledged in Section 4.6 since the topic of "natural groundwater quality" is being discussed. Furthermore, the release of arsenic into groundwater can be attributed to low dissolved oxygen levels, high rates of pumping, and an increase in pH. These changes can all be attributed to how groundwater is managed.

GSP Chapter 5: Groundwater Conditions

SGMA Regulations require: "Each Plan shall provide a description of current and historical groundwater conditions in the basin, including data from January 1, 2015, to current conditions, based on the best available information that includes the following: … (d) Groundwater quality issues that may affect the

[18] Community Water Center and Stanford University, 2019. Factsheet "Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium" for more information.https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896.

supply and beneficial uses of groundwater, including a description and map of the location of known groundwater contamination sites and plumes."[19] We do not believe the GSA is meeting this requirement and recommend that the GSA make the following changes to Chapter 5 of all subbasin GSPs (East Side, Langley, Upper Valley, Forebay, and Monterey) to clearly represent current and past water quality conditions in the subbasin in order to inform the monitoring network, sustainable management criteria, planning, management actions, and projects.

Groundwater Quality Distribution and Trends

- **Clearly state in the introduction to Section 5.4 that the amount and location of pumping can impact groundwater quality distribution and trends.** We recommend including the following language in the letter submitted by the State Water Board to DWR regarding the 180/400 foot aquifer GSP (Dec. 2020): "Not all water quality impacts to groundwater must be addressed in the GSP, but significant and unreasonable water quality degradation due to groundwater conditions occurring throughout the subbasin, and that were not present prior to January 1, 2015, must be addressed in the GSP's minimum thresholds."[20] High rates of groundwater pumping can pull in contaminant plumes towards drinking water wells, cause the release of arsenic from the strata in the ground, and when shallow wells go dry or are too contaminated to use, new wells must be drilled into deeper portions of the aquifer where they are more likely to encounter high arsenic levels.[21] As previously mentioned, this is of direct concern to the San Jerardo Cooperative, which has observed increasing arsenic levels in their relatively new drinking water well, which was drilled to replace a more shallow well contaminated with nitrate and 123-trichloropropane.
    - SVB GSA response: "The SVBGSA does not have regulatory authority over groundwater quality and is not charged with improving groundwater quality in the Salinas Valley Groundwater Basin. Projects and actions implemented by the SVBGSA are not required to improve groundwater quality; however, they must not further degrade groundwater quality."[22]
    - Our response: CWC recommendation in this section is not to extend the GSA's responsibility to improving water quality. But if extraction rates that the GSA allows to occur result in water quality degradation, then that is within the GSA's responsibility to address. The GSA has explicit statutory authority and responsibility to prevent significant and unreasonable water quality degradation.[23] In line with this responsibility, DWR has instructed GSAs to map out where water quality issues exist in the basin, and to prevent

[19] Cal. Code of Regulations § 354.16(d)
[20] DWR SGMA GSP Portal: https://sgma.water.ca.gov/portal/gsp/comments/29
[21] Community Water Center and Stanford University, (2019). *Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium*. Available at: https://www.communitywatercenter.org/sgmaresources.
[22] Salinas Valley Groundwater Sustainability Agency, Langley Area Subbasin GSP, p. 5-21.
[23] Cal Water Code § 10721, subd. (x)(4).

new impacts from occurring.[24] This includes managing contaminant plumes that may migrate or increase in concentration due to extraction rates and locations.

- **Include trend data for drinking water wells in the subbasins.** In some places, nitrate and other contaminants are increasing in drinking water wells. It is important to understand current contamination values and also whether well water quality is improving, staying the same or declining as well as the relationship of water quality to other sustainability indicators. As indicated by the data provided in this section, Monterey County maintains an exceptional dataset of water quality data for over 900 state and local small water systems serving 2-14 connections that should be utilized throughout the GSPs. Monterey County has sampled many small water systems for decades. CWC Figures 3 and 4 show nitrate concentrations increasing over time in two state small water systems in the East Side sub basin with high levels in one of the systems (Middlefield Rd. Water System #4) in 2015. Figure 5 illustrates arsenic concentrations in the Metz Road Water System #4 in the Forebay Subbasin. In some cases, data shows fluctuations and peaks in concentrations during the 2015-2016 timeframe. This is similar to the San Jerardo example shared previously. Further, the Central Coast Regional Water Board has analyzed data from their Irrigated Lands Regulatory Program to show that many wells across the region are showing increasing levels of nitrate concentrations and recent studies have confirmed that there is a link between decreased water quality and declining groundwater levels observed during times of drought.[25]
    - SVB GSA staff responded: "Nitrate trends are included based on a review of existing studies. The analysis of temporal trends are not required and would entail substantial additional work that would not likely change the management approach. Water quality data for DDW wells and ILRP on-farm domestic and irrigation supply wells were used to make maps showing the spatial distribution of water quality exceedances of Title 22 or Basin Plan standards from 2013 to 2019 are now included in a new Chapter 5 Appendix."
        - Our response: : We maintain our position on the importance of including trend data as previously recommended because the way in which the GSA manages the basin impacts water quality. GSAs are responsible for monitoring water quality conditions in the basin and ensuring that they do not degrade beyond 2015 conditions.[26] The rate, timing, and location of pumping as well as fluctuations in groundwater levels overtime can result in the horizontal and

[24] Dept. of Water Resources, 180/400 Foot Aquifer Groundwater Sustainability Plan Determination, (June 3, 2021), pp. 26-27.
[25] Draft Ag Order, Attachment A, 141-143. Available at: https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/docs/ag_order4_renewal/2021april/pao4_att_a_clean.pdf; *see also* U.S. Geological Survey (USGS). (Sept 2021). *Increased Pumping in California's Central Valley During Drought Worsens Groundwater Quality.* California State Water Resources Control Board's Groundwater Ambient Monitoring and Assessment Program (GAMA). Available at: https://www.usgs.gov/news/increased-pumping-california-s-central-valley-during-drought-worsens-groundwater-quality.
[26] Cal. Water Code §§ 10721 subd. (x)(4) and 10722.2 subd. (b)(4).

vertical migration of contaminant plumes into drinking water sources, including vulnerable private domestic wells.

- SVB GSA Staff replied: "The relationship between declining water levels and water quality degradation was evaluated for the Eastside Subbasin as presented in the December 2020 Subbasin Planning Committee Meeting. Although there seems to be a relationship between decreasing groundwater elevations and degrading water quality, within the analysis for the Eastside, subbasin-wide data does not show a strong correlation. Thus, the data is not definitive enough to determine if the decline in groundwater quality is due to additional loading of constituents or lowering of groundwater elevations. There may be a correlation within individual wells, like is seen in San Jerardo, however, that could be due to those other factors."
    - Our response: The current best available science[27] clearly links decreasing groundwater levels, including through overpumping of groundwater, to exacerbated degradation of groundwater quality. The U. S. Geological Survey (USGS) analyzed trends of increased pumping in California's Central Valley and further degradation of water quality and concluded that they are interlinked.[28] There is no reason to assume that the Central Coast would be subject to a hydrology so distinct as to negate the applicability of this finding to SVB GSA's groundwater management. Because of this established correlation, in instances of further water quality degradation, particularly when resulting in impacts to drinking water wells, SVB GSA should have the burden of proof to show that exacerbated water quality degradation is *not* linked to pumping practices, and identify the responsible source.
        - This is another example of why a more representative monitoring system for water quality (ie including SSWS and LSWS data from the Monterey County Environmental Health Department) would benefit Salinas Valley groundwater management, so that impacts can be identified and addressed in a highly localized manner. Additionally, even if the Subbasin GSPs plan to maintain current water levels, the GSA should be prepared to respond in case basin conditions do not evolve as planned and water quality degradation is exacerbated by ongoing pumping practices, including if hotspots (highly concentrated areas of

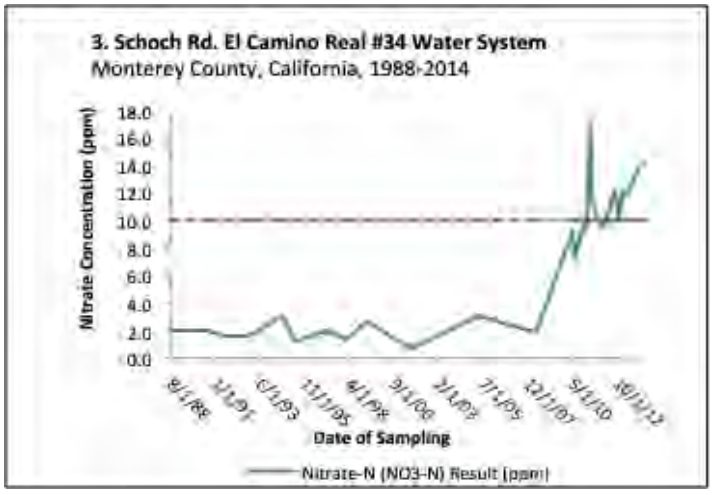
[27] 23 CCR § 355.4(b)(1). "When evaluating whether a Plan is likely to achieve the sustainability goal for the basin, the Department shall consider the following:
(1) Whether the assumptions, criteria, findings, and objectives, including the sustainability goal, undesirable results, minimum thresholds, measurable objectives, and interim milestones are reasonable and supported by the best available information and best available science."

[28] U.S. Geological Survey (USGS). (Sept 2021). *Increased Pumping in California's Central Valley During Drought Worsens Groundwater Quality.* California State Water Resources Control Board's Groundwater Ambient Monitoring and Assessment Program (GAMA). Available at: https://www.usgs.gov/news/increased-pumping-california-s-central-valley-during-drought-worsens-groundwater-quality.

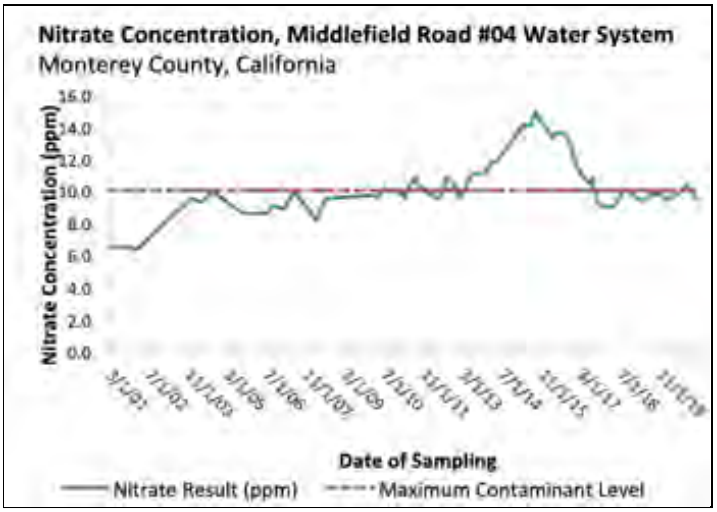
impact) of contamination form which impact drinking water beneficial users.

- We further request additional information be added to the GSP about the analysis conducted by the SVB GSA to understand the relationship between groundwater quality and groundwater levels. It is not sufficient to say this analysis was conducted without also providing the public information about the data sources, methods, and findings.

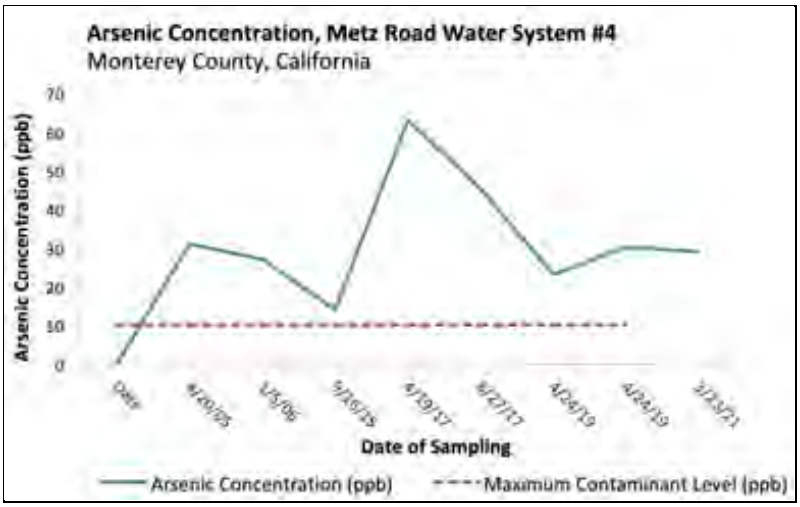
CWC Figure 3: El Camino Real WS #34 - Nitrate as N, East Side Subbasin



CWC Figure 4: Middlefield Road WS #4 - Nitrate as N, East Side Subbasin



CWC Figure 5: Metz Road Water System #4, Arsenic, Forebay Subbasin



- **Revise Section 5.4 to include a specific discussion, supported by maps and charts, of the spatial or temporal water quality trends for all constituents that have been detected in the subbasin and may affect drinking water beneficial users, as required under 23 CCR § 354.16(d).** This section should include water quality data (both in map and tabular form) for all constituents (where available) with primary drinking water standards that have been detected in the subbasin including, but not limited to, **nitrate, 123-trichloropropane, hexavalent chromium,[29] arsenic, uranium, and perchlorate for all public drinking water wells, state and local small water system wells, and private domestic wells.** It is especially important for all groundwater stakeholders to be able to understand and visualize the location of contaminant hotspots throughout each subbasin.
    - **Present maps and supporting data for all constituents of concern.** The review of water quality data in the groundwater conditions section of the draft Section 5.4 in the subbasin GSPs is focused primarily on nitrate. The GSPs identify numerous constituents that have been detected in groundwater above drinking water standards, but, with the exception of nitrate, do not present this data spatially. Even though the subbasin GSPs set water quality minimum thresholds for additional constituents (See Tables 8-4 and 8-5), the supporting data is not all presented, and limited analyses of spatial or temporal water quality trends are presented. This does not present a clear and transparent assessment of current water quality conditions in the subbasin with respect to drinking water beneficial use (23 CCR § 354.16(d)).
    - We reiterate the request made in previous comment letters and acknowledge the inclusion of Appendix 5-B, Figure 1: Water Quality Exceedances for DDW Wells which shows DDW wells that have had a COC exceedance between 1986-2019. This new appendix has significant limitations. For example, San Jerardo Cooperative's well is

[29] The maximum contaminant level for hexavalent chromium should be reinstated in 2021. Data is available from the State Water Resources Control Board and Monterey County Environmental Health Bureau (public water system data, state/local small water system data) as well as on GAMA from the Central Coast Regional Water Quality Control Board's private well testing program.

shown to have multiple exceedances of COCs during the time period shown (between 1986-2019). Yet, the well that had these exceedances is no longer active. Instead, San Jerardo's new well is showing increased trends of nitrate and arsenic. CWC's Figures in this comment letter illustrate the importance of presenting trend data for San Jerardo Cooperative's well and others throughout the Salinas Valley Basin. It is also important to include COC data for wells that are not yet in violation of drinking water standards. In addition, *CWC Figure 6: Arsenic Concentrations in Public Water System Wells, Monterey, Langley East Side Subbasins (Red dots = >10 ppb, Orange = 5-9.9 ppb, Yellow = 0.6-5.9 ppb, Green= non-detect)* illustrates hot spots for arsenic and also areas in orange (5-9.9 ppb arsenic), like San Jerardo, that are at risk if business-as-usual groundwater management continues.

- **Augment and clarify data presented in Table 5-3 GAMA Water Quality Data Summary and Section 5.4.1 in the following ways:**
    - **Add all state and local small water systems data.** Table 5-3 should include all state and local small water system data for nitrate, arsenic, hexavalent chromium, and any other contaminants that Monterey County monitors in the subbasin.
    - **Include additional contaminants that have been detected in the subbasin(s) to be consistent with Tables 8-5 and 8-6.** Our review of publicly available data on drinking water wells of all types (private domestic wells, state/local small water systems, and public water systems) indicate that there are additional constituents of concern beyond those currently listed. We included CWC Figure 6 (page 9) to highlight the spatial distribution of arsenic in public water system wells in the **East Side, Langley and Monterey Subbasins**, and CWC Figure 7 (page 10) to highlight the spatial distribution of hexavalent chromium in public water system wells in the **Langley Subbasin**. We recommend a more comprehensive analysis of all other constituents in the subbasins, including, but not limited to the following[30]:
        - **East Side Subbasin:** Table 5-3 presents data on two primary contaminants in drinking water: nitrate and 123-trichloropropane, but arsenic is also of particular concern to San Jerardo Cooperative and others in the subbasin. GAMA shows that four public water system wells have exceedances of the arsenic MCL in the past three years (CWC Figure 8), and state/local small water system out of compliance lists from the Monterey County Health Department (2021) show that both Old Stage Rd WS #6 and Old Stage Rd WS #7 are out of compliance for arsenic and that at least five other state or local small water systems have between 6-8 ppb of arsenic, which means they are similar to San Jerardo

[30] All Monterey County data shared in this section was collected by the small water system program. https://www.co.monterey.ca.us/government/departments-a-h/health/environmental-health/drinking-water-protection/state-and-local
It was downloaded from the Greater Monterey County Community Water Tool on April 22, 2021: http://www.greatermontereyirwmp.org/documents/disadvantaged-community-plan-for-drinking-water-and-wastewater/

Cooperative in terms of their vulnerability to water level fluctuations or other changes.

- **Forebay Subbasin:** While arsenic is less common in the Forebay than in the Langley, Monterey, and East Side Subbasins, our review of the Monterey County Health Department data indicates that 17 state or local smalls had arsenic at levels above 1 ppb in the 2015-2017 time period, and at least two of these had levels above the MCL. See CWC Figure 5 (page 8) which illustrates trends in one of the out-of-compliance small water systems, Metz Road Water System #4. In addition, three systems monitored by Monterey County as part of their Local Primacy Program for public water systems serving 15-199 connections had hexavalent chromium detections of 2.8 ppb, 3.4 ppb, and 2.1 ppb in the 2014-2017 timeframe.
- **Upper Valley Subbasin:** Although arsenic is not as common in the Upper Valley as other subbasins, it has been detected in levels between 3.2 and 5 ppb in six small water systems monitored by Monterey County.

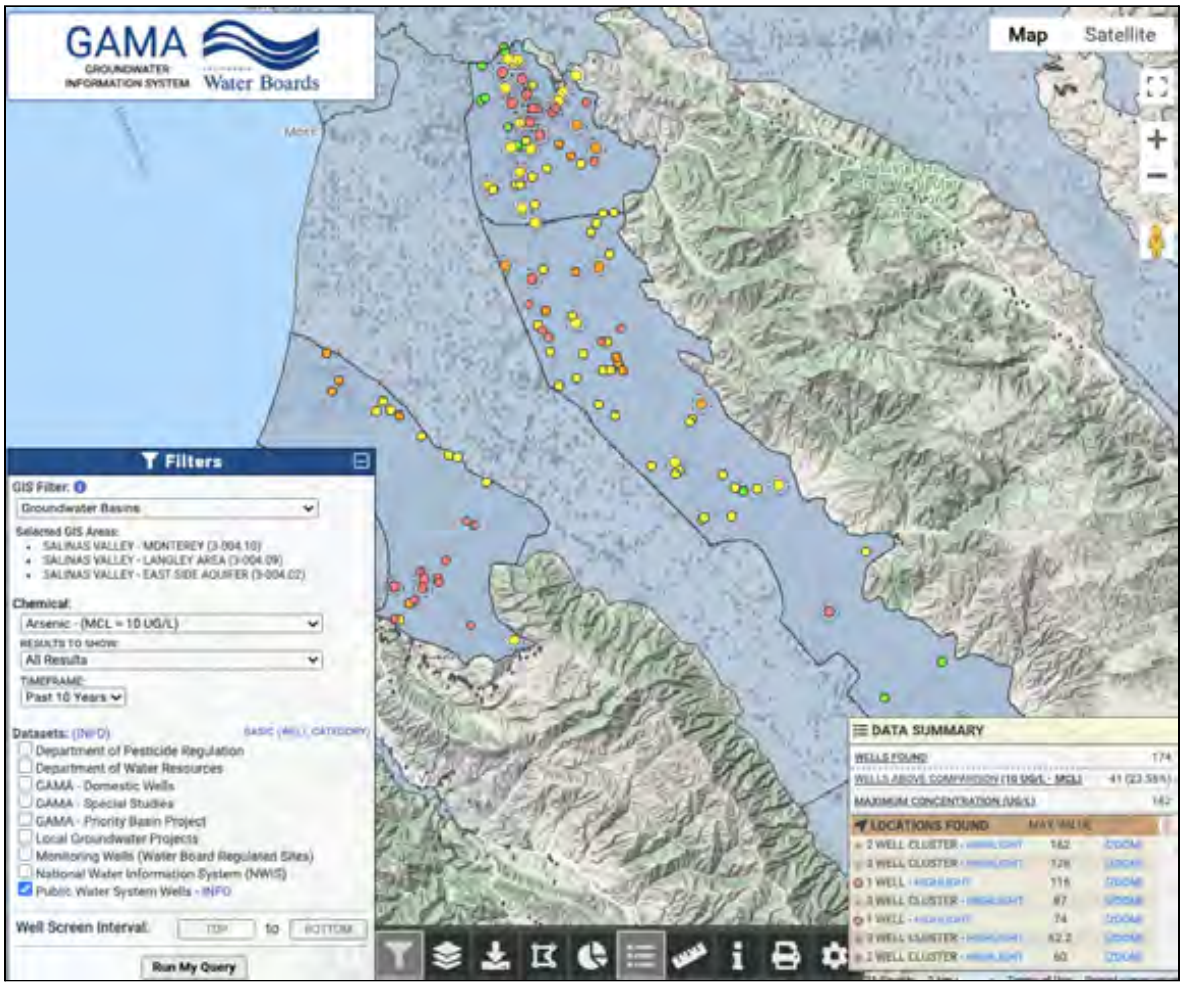
- SVB GSA Response: "The water quality analysis was redone for V2 to include both current and historic groundwater quality data, and arsenic is now a constituent of concern in the Eastside Subbasin. Section 5.4.3 and 5.4.4 text was also revised to provide more specificity about the constituents and wells sampled."
  - Our Response: We acknowledge that the SVB GSA added arsenic as a constituent of concern in the Eastside Subbasin GSP. We reiterate these comments to ensure that all subbasin GSPs include all contaminants detected in the subbasins as COCs. It is important to include all contaminants detected in the subbasins as COCs and not only those greater than the MCLs because many contaminants, such as arsenic and hexavalent chromium, pose a risk to public health at levels much lower than the MCL. The Office of Environmental Health Hazard Assessment (OEHHA) sets a public health goal (PHG) for each chemical. PHGs are levels of a contaminant in drinking water that do not pose a significant risk to health. The public health goal for Arsenic is 0.004 ppb and hexavalent chromium is 0.02 ppb.[31]
  - SVB GSA Staff replied: “Table 5-3 list the constituents of concern (COC) with exceedances in the latest sample for each COC in each well that has not been destroyed or abandoned, and it has been updated to be consistent with Table 8-5 that lists the minimum thresholds and measurable objectives for these constituents only. Table 8-6 list all the constituents for which data is available for the 3 types of wells in the monitoring network (DDW wells, ILRP on-farm domestic, and ILRP irrigation supply wells). Table 5-3 and Table 8-5 do not list all the constituents that have had an the exceedance in these 3 sets of wells, it only includes exceedances that occured in the latest sample, while Table 8-6 includes

[31] https://oehha.ca.gov/water/public-health-goals-phgs

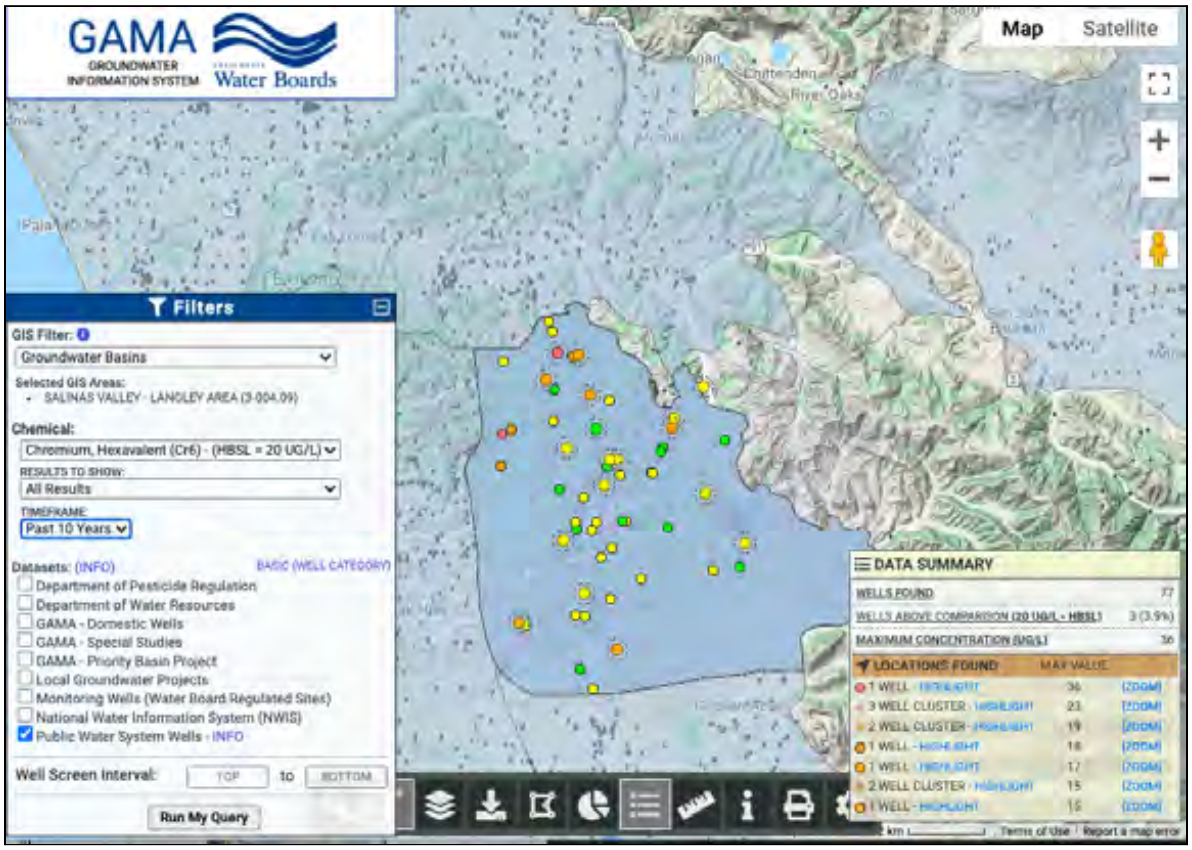
all the constituents that were included in the analysis that have been sampled for historically in each set of wells."

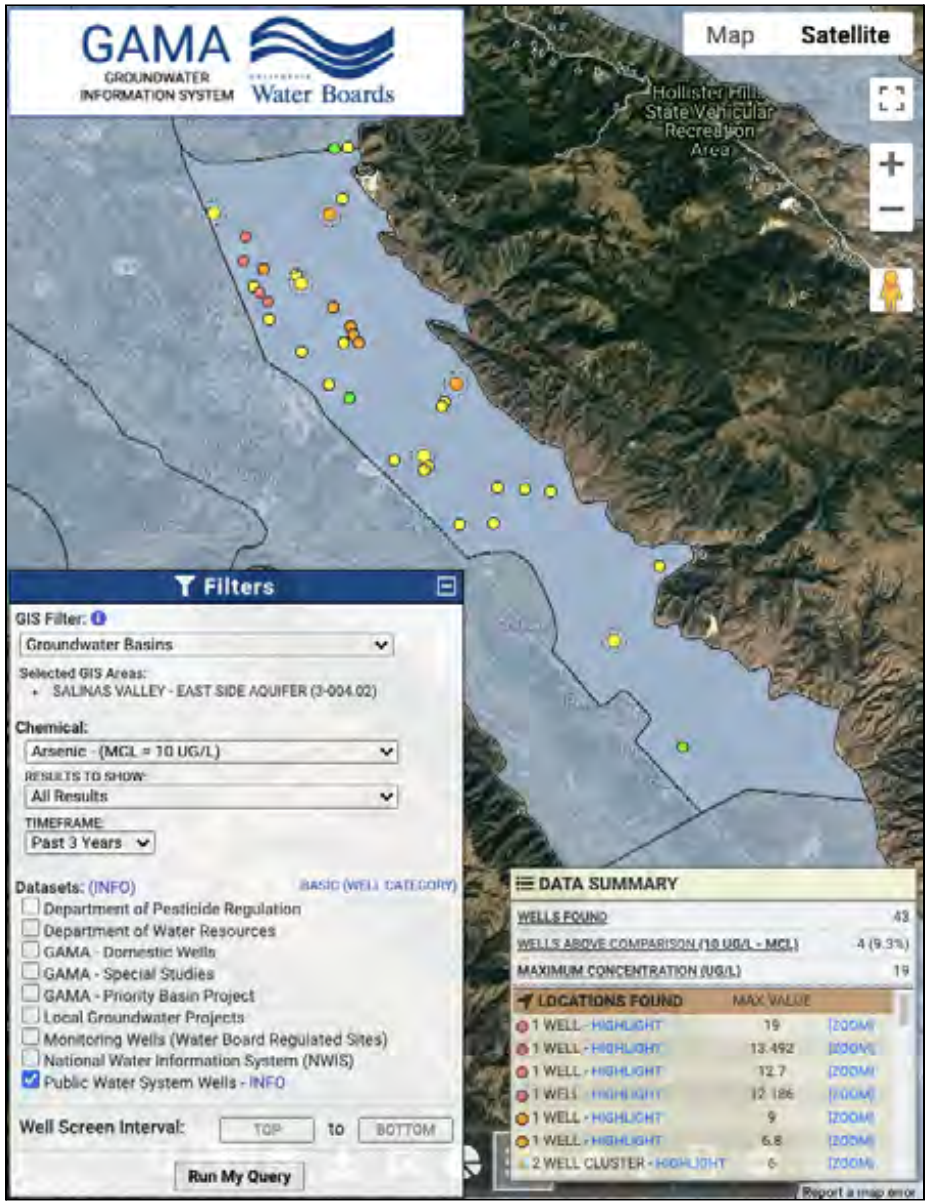
- Our response: We acknowledge the updates to Table 5-3 and request clarity on whether the DDW wells are all public water system wells, as defined in Section 7.5, or whether wells of other types are also included. Also, please add text explaining why two different time periods of data used in this table for DDW and ILRP wells. This table includes DDW wells sampled for COCs between December 1982 to December 2019, and ILRP Wells sampled from May 2013-December 2019.

CWC Figure 6: Arsenic Concentrations in Public Water System Wells, Monterey, Langley East Side Subbasins (Red dots = >10 ppb, Orange = 5-9.9 ppb, Yellow = 0.6-5.9 ppb, Green= non-detect)



CWC FIgure 7: Hexavalent Chromium Concentrations in Public Water System Wells, Langley Subbasin





CWC Figure 8: 43 Public Water System Wells have arsenic data in the past 3 years. One well at San Jerardo Cooperative appears orange on this map.

CWC Figure 9: Only 18 Public Water Systems Wells have arsenic data in the past year. San Jerardo Cooperative's wells are not shown on this map.

GSP Chapter 6: Water Budgets

SGMA requires a GSP to quantify the water budget in sufficient detail in order to build local understanding of how historic changes have affected the six sustainability indicators in the basin.[32] Ultimately, this information is intended to be used to predict how these same variables may affect or guide future management actions.[33] GSAs must provide adequate water budget information to demonstrate that the GSP adheres to all SGMA and GSP regulation requirements, that the GSA will be able to achieve the sustainability goal within 20 years, and be able to maintain sustainability over the 50 year planning and implementation horizon.[34]

The calculations of sustainable yield and the water budget in this chapter may *overestimate the actual sustainable yield and water availability of the subbasins*. We highlight points of concern below and recommended changes.

6.4 Projected Water Budgets

The SVB GSA Subbasin GSPs explain that "[p]rojected water budgets are extracted from the SVOM, which simulates future hydrologic conditions with assumed climate change. Two projected water budgets are presented, one incorporating estimated 2030 climate change projections and one incorporating estimated 2070 climate change projections. … The climate change projections are based on data provided by DWR (2018)."[35] Including climate change scenarios in water planning is an important step for California's increased resiliency. However, which scenarios to include is a critical question.

Climate change is affecting when, where, and how the state receives precipitation.[36] Impacts to water supply, particularly drinking water supply, could be devastating if planning is inadequate or too optimistic. GSAs must adequately incorporate climate change scenarios in water budgets. As such, the DWR Climate Change Guidance[37] makes recommendations to GSAs for how to conduct their climate change analysis while preparing water budgets. DWR also provides climate data for a 2030 Central Tendency scenario and 2070 Central Tendency, 2070 Dry-Extreme Warming (DEW), and 2070 Wet-Moderate Warming (WMW) scenarios. While DWR's Guidance should be improved with more specific guidelines and requirements, the current Guidance specifically encourages GSAs to analyze the more extreme DEW and WMW projections for 2070 to plan for likely events that may have costly outcomes. Therefore, we recommend that the SVB GSA subbasin GSPs:

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[32] 23 CCR § 354.18.
[33] California Department of Water Resources (DWR), 2016. Best Management Practices for the Sustainable Management of Groundwater, Modeling (BMP #5), December 2016.
[34] 23 CCR § 354.24.
[35] California Department of Water Resources (DWR), 2018. Guidance for Climate Change Data Use During Groundwater Sustainability Plan Development. https://data.cnra.ca.gov/dataset/sgma-climate-change-resources/resource/f824eb68-1751-4f37-9a15-d9edbc854e1f?inner_span=True.
[36] Union of Concerned Scientists. Troubled Waters: Preparing for Climate Threats to California's Water System, 2020. https://www.ucsusa.org/resources/troubled-waters#top.
[37] See DWR (2018) reference above.

- **Include water budget analyses based on DWR's 2070 DEW and WMW scenarios in order to analyze the full range of likely scenarios[38] that the region faces.**
    - Currently, the SVB GSA's exclusive use of the "central tendency" climate scenario predicts an increase in surface water availability, as represented in the tables in Section 6.4.3 of the subbasin GSPs. The Projected Groundwater Budgets show increases in deep percolation of stream flow, deep percolation of precipitation, and irrigation. The subbasin GSPs are relying on this presumed increase for their water budgets. However, the 2070 DEW scenario provided by DWR could likely result in a significant decrease in precipitation and increase in evapotranspiration, which would have substantial effects on the subbasin water budgets. By analyzing only the central tendency scenario and not other likely scenarios such as the extremely dry and wet scenarios provided by DWR, the SVB GSA is ignoring the specific 2070 DEW and WMW scenarios provided by DWR as well as an increasing trend in drought frequency. In doing so, the GSP could be overestimating groundwater recharge or underestimating water demands, inadequately planning, and jeopardizing groundwater sustainability. This will waste precious time to prepare and reduce the vulnerability of the basin's agriculture and already vulnerable communities.
    - DWR's guidance (2018) states that the central tendency scenarios *might* be considered most likely future conditions -- that is not a clear endorsement of a higher statistical probability. It appears that they are calling it the central tendency merely because it falls in the middle of the other two projections, not because it is significantly more probable.
    - DWR (2018) explicitly encourages GSAs to plan for more stressful future conditions:
        - "GSAs should understand the uncertainty involved in projecting future conditions. The recommended 2030 and 2070 central tendency scenarios describe what might be considered most likely future conditions; there is an approximately equal likelihood that actual future conditions will be more stressful or less stressful than those described by the recommended scenarios. Therefore, GSAs are encouraged to plan for future conditions that are more stressful than those evaluated in the recommended scenarios by analyzing the 2070 DEW and 2070 WMW scenarios.."[39]

[38] Terminology used in the California Climate Change Assessment, 2019. (Table 3). https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf.

[39] California Department of Water Resources (DWR), 2018. Guidance for Climate Change Data Use During Groundwater Sustainability Plan Development. Section 4.7.1. https://data.cnra.ca.gov/dataset/sgma-climate-change-resources/resource/f824eb68-1751-4f37-9a15-d9edbc854e1f?inner_span=True. (In red is a statement about the central tendency scenarios referenced in SVB GSA public meetings and email communications by the GSA's engineering consultant, and in blue is the important text accompanying it, urging GSAs to analyze the more extreme scenarios. CWC staff cited this complete paragraph in email communications with the consultant and GSA staff on April 8, 2021. CWC also raised this point at Forebay and Upper Valley Subbasin Committee meetings in March and at the April SVB GSA Board Meeting.)

    - Including the DEW and WMW climate scenarios as part of the 2070 water budget analysis is necessary to meet the statutory requirement to use the "best available information and best available science."[40] Sustainable planning must include planning for foreseeable negative and challenging scenarios. The extreme scenarios provided by DWR are certainly foreseeable, as they have been modeled and made available to the GSA for analysis.
    - It is important for the SVB GSA to include the 2070 DEW and WMW scenarios, because shallow drinking water wells in the area are particularly vulnerable to various extreme conditions, especially drought.
- **Share water budget results based on the 2070 central tendency, DEW and WMW scenarios that DWR has provided with the Subbasin committees, the Advisory Committee, and the GSA board**. This should be done at a *minimum* to see what the difference in outcomes could be, and to provide a transparent process for selecting the preferred scenario. This analysis is particularly important because of the drastic differences between the dry and wet scenarios for this region. Drought and/or intensified rainfall (more water falling over a shorter period of time) would pose severe challenges[41] to the Subbasins' plans for recharge, which is a critical component of their plans to reach sustainability.
- **Plan for potential adverse climate conditions when determining Projects and Management Actions.** The results of limited-scope planning will be detrimental to beneficial users throughout the SVB GSA. "If water planning continues to fail to account for the full range of likely climate impacts, California risks wasted water investments, unmet sustainability goals, and increased water supply shortfalls."[42] This is true not just generally across California, but also specifically on the Central Coast. "Without effective adaptations, projected future extreme droughts will challenge the management of the Central Coast region's already stressed water supplies, including existing local surface storage and groundwater recharge as well as imported surface water supplies from the State Water Project which will become less reliable, and more expensive."[43]

GSP Chapter 7: Monitoring Network

Robust monitoring networks are critical to ensuring that the GSP is on track to meet sustainability goals. GSAs undertaking recharge, significant changes in pumping volume or location, conjunctive management or other forms of active management as part of GSP implementation must consider the interests of all

[40] See 23 CCR § 355.4(b)(1).

[41] Union of Concerned Scientists. Inter-model agreement on projected shifts in California hydroclimate characteristics critical to water management. 2020, p. 13. https://link.springer.com/content/pdf/10.1007/s10584-020-02882-4.pdf.

[42] See Union of Concerned Scientists. Troubled Waters (2020) cited above.

[43] Regional Climate Change Assessment for the Central Coast, 2019. (Discussing drought pp. 21-23. Internal citations omitted). https://www.energy.ca.gov/sites/default/files/2019-11/Reg_Report-SUM-CCCA4-2018-006_CentralCoast_ADA.pdf.

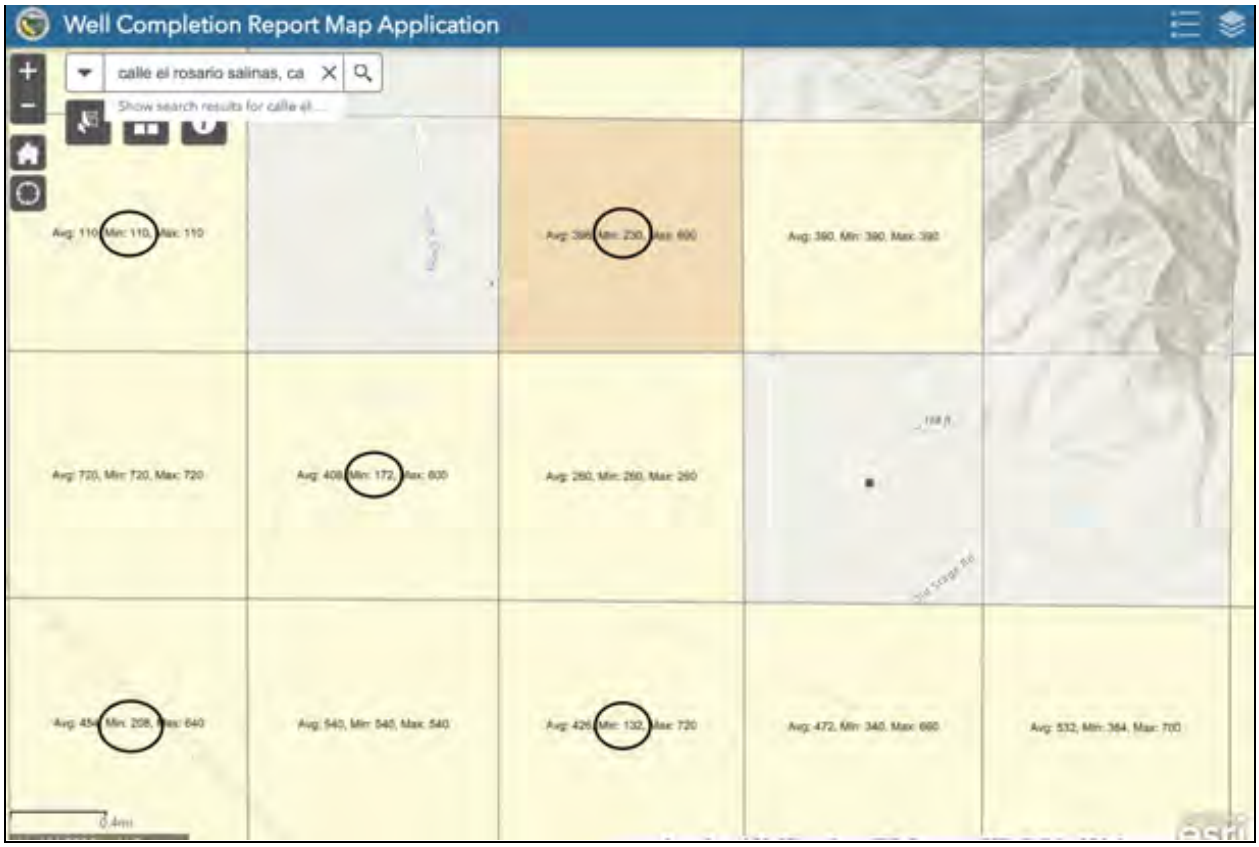
beneficial users, including domestic well owners and S/DACs. We have the following overarching recommendations for this chapter and provide more details for sub-sections below:

- **Require well registration and metering for all wells in the Salinas Valley, and begin implementation of a well registration and metering program in early 2022 with a dedicated budget.** We voice our strong support, with modifications indicated in our comments below, for proposed "Implementation Action 12: Well Registration" in Section 9.1 of Chapter 9 released in April 2021 and recommend that this action be updated and moved to Chapter 7. We agree with the SVB GSA's statement in Section 7.3.2 Groundwater Storage Monitoring Data Gaps that: "Accurate assessment of the amount of pumping requires an accurate count of the number of municipal, agricultural, and domestic wells in the GSP area. During implementation, the SVB GSA will finalize a database of existing and active groundwater wells in the Eastside Aquifer Subbasin." This is essential for the plan to achieve sustainability for all beneficial users and influences many different chapters including:
    - Monitoring networks: In order to develop a monitoring network that is representative, it will be essential to understand the number, location, well construction, and type (domestic, irrigation, other) of all wells located in the subbasins.
    - Water budget and minimum thresholds: Understanding the amount and location of pumping of all water users will be essential for creating an accurate water budget and minimum thresholds consistent with achieving sustainability.
    - Projects and management actions: Section 9.2.1 Well Registration and Metering is a key management action and component of the Water Charges Framework (in the 180/400 foot aquifer) and forthcoming subbasin GSPs. This will underpin the funding structure for many future projects.
- **Require flowmeter calibration to ensure consistent and fair monitoring among all agricultural groundwater users (Section 7.3.1).** Rather than "consider the value of developing protocols for flowmeter calibration," the GSPs should require flowmeter calibration. The water budget and sustainable yield calculation depend on reliable and fair monitoring and reporting of pumping.
- **Provide a plan and schedule for data gap resolution in Chapter 10 of the subbasin GSPs.** In the 180/400 foot aquifer GSP, there was not a clear plan or schedule for the resolution of data gaps in Chapter 7 even though it indicated that this would be included in Chapter 10.
- **Revise GSP monitoring chapters such that monitoring networks for groundwater storage (pumping), groundwater elevation, and groundwater quality adequately monitor how groundwater management actions could impact vulnerable communities including those reliant on domestic wells and shallow portions of the aquifers** (see more detail below).

7.2 Groundwater Elevation Monitoring Network

- **Include groundwater elevation monitoring sites in the network that are representative in terms of the depth and geographic distribution of private domestic wells, and that take into account areas of high agricultural pumping and wells vulnerable to groundwater decline.**
    - The draft East Side Subbasin GSP Table 7-1 of "Eastside Aquifer Groundwater Elevation Representative Monitoring Site Network" shows all irrigation and observation wells (and no domestic wells) which range in depth from 299 to 1122 feet.[44] Yet, the DWR Well Completion Report Map Application[45] shows that 1 mile by 1 mile square sections near San Jerardo Cooperative include private domestic wells with the following minimum depths: 110 ft, 210 ft, 172 ft, 208 ft, and 132 ft which are more shallow than all the wells in the current monitoring network (See CWC Figure 10).
- **Overlay the private well density map (Figure 3-7), the DWR Well Completion Report Map Application (with minimum, average, and maximum depths), the water level monitoring network (with well depths), and available pumping data to better illustrate if and how representative the proposed groundwater elevation monitoring network is of private domestic wells and which areas are vulnerable to water elevation changes.** The GSPs state: "The BMP notes that professional judgment should be used to design the monitoring network to account for high-pumping areas, proposed projects, and other subbasin-specific factors." This will also help to better visualize where there are gaps in the monitoring network which the GSAs can address.

[44] One well shows "0" depth but that must be an error or missing value.
[45] https://water.ca.gov/Programs/Groundwater-Management/Wells/Well-Completion-Reports



CWC Figure 10: Screenshot of DWR Well Completion Report Map application in the area near San Jerardo Cooperative highlighting that several 1 mi. by 1 mi. square sections include private domestic wells less than 250 feet deep.

7.5 Water Quality Monitoring Network

- **Clarify the number of public water system wells that will be included in the water quality monitoring network.** As indicated in Chapter 3 and Chapter 5 comments, the GSPs should also clearly identify the total number of public supply wells as well as the number of public supply wells that are out of compliance and at risk in each subbasin. Section 7.5 currently states that "Ninety DDW wells have been chosen to be part of the RMS network. These wells are shown on Figure 7-4 and listed in Appendix 7D." This section and appendix should be consistent with the total number of wells represented in Table 8-4 which includes groundwater quality minimum thresholds. As previously noted, we also recommend clearly presenting the number of public water system wells and state and local small water system wells located in each subbasin. A review of Appendix 7D indicates that perhaps not all wells listed are public water system wells.
- **Representative Water Quality Monitoring Wells for the shallow aquifer should be established in the GSPs based on all currently available data sources with direct agreements with landowners or public entities established.**

- **Develop long-term access agreements for Representative Monitoring Wells (RMWs) that use private wells.** It is currently difficult to reliably collect data from private wells due to access challenges, lack of well construction information, and unreliable accounting of pumping or non-pumping measurements. The GSPs should specifically identify the RMW owners and operators, include signed long-term access agreements, and identify a plan to obtain adequate monitoring data, if for any reason the well owners decide to not grant access to the wells or provide associated data to the SVB GSA. In order to maintain consistency for future sustainability analyses, the SVB GSA should also consider conducting its own water quality analysis of wells where access agreements have already been established to water quality RMWs.
- **Clarify that state and local small water systems will be added to the water quality monitoring network and that well construction information is no longer needed in order to fill this data gap.** Monterey County Environmental Health Bureau permits and monitors over 900 state and local small water systems in the County and have managed the data collected for decades. This dataset has advantages over the ILRP domestic well dataset in that it includes data on contaminants like arsenic and hexavalent chromium in addition to nitrate. Local small water systems serve 2-4 households and are much more similar to private domestic wells than public water systems in terms of depth, well construction, age, size, and maintenance - thus this data would provide a broader representation of shallow drinking water wells. State and local small water systems are located in areas of irrigated agricultural lands as well as rural residential and other land uses. This dataset should complement and not replace ILRP domestic well data.
    - **Clearly add state and local small water system data as a data gap in Section 7.5.2.** In Section 7.5 Water Quality Monitoring Network, the draft GSPs state: “These [state and local small] wells are not in the current monitoring system because well location coordinates and construction information are currently missing. SVB GSA will work with the County to fill this data gap. When location and well construction data become available, these wells will be added to the monitoring network and included in Appendix 7E and Figure 7-4." However Section 7.5.2 Groundwater Quality Monitoring Data Gaps states: "There is adequate spatial coverage to assess impacts to beneficial uses and users."
- SVB response: Small public water systems wells, regulated by Monterey County Health Department, include both state small water systems that serve 5 to 14 connections and local water systems that serve 2 to 4 service connections. SVBGSA had originally planned to work with the County to add data from small and local water systems into the monitoring network. These wells are not in the current proposed monitoring system because well location coordinates, construction information and quality data are not easily accessible. The Monterey County Health Department monitors water quality in the state small and local water systems and their data is not readily transferable. In addition, there is sufficient other available data to characterize the basin. There were no water quality data gaps identified per SGMA requirements for GSPs as there is adequate

spatial coverage to assess impacts to beneficial uses and users. As stated above, the water quality monitoring approach has been updated in V2 to include last time any well was sampled, not just the most current year.

- Our response: We reaffirm our previous comments, requests, and arguments in support of including the SSWS and LSWS data. We would also like additional clarity on what the barriers are to including this important dataset and to explore how they can be resolved. SVB GSA has successfully incorporated the GIS data for the SSWS/LSWS boundaries into its dataviewer and now also into Chapter 3's recent updates. The water quality data was also included in the 180/400 foot aquifer GSP in Chapter 8 in a table indicating exceedances of nitrate and arsenic. CWC, San Jerardo Cooperative and the Greater Monterey County Regional WAter Management Group have also utilized this data successfully in past projects. The value of the full dataset, particularly that it more accurately represents domestic well conditions than any of the other current components of the water quality monitoring network, should outweigh any administrative burden to transfer the data.
- **Do not rely solely on ILRP well data to represent private domestic wells (which are often more shallow than public water system wells).** Similar to CASGEM, the current groundwater quality monitoring network includes monitoring points on private property including ILRP domestic and irrigation wells, but it should not be restricted to ILRP sites only. While on-farm domestic and irrigation wells monitored through the ILRP provide a potentially useful, though limited, source of water quality information, additional representative monitoring wells in the shallow aquifer are important to include for several reasons: (1) The ILRP network only includes wells located on agricultural irrigated lands, and not all ILRP properties include domestic wells. Agricultural land use is not the primary land use in the Langley and Monterey Subbasins so this monitoring network offers very limited coverage. While agricultural land use is the primary land use in the East Side, Upper Valley, and Forebay Subbasins, there are private domestic wells in areas with different primary land uses (e.g. rural), and SGMA requires that monitoring networks are geographically representative. Monitoring network wells must also be sufficiently representative to cover all uses and users in the basin, (2) There are other, more robust networks established by USGS, GAMA, and Monterey County that could be drawn on and included to make the groundwater quality monitoring network more comprehensive and representative of conditions in the shallow aquifer, (3) Ag Order 4.0 was adopted on April 15, 2021, which means the first year of monitoring data will not be available until late 2022, (4) The GSA has no authority to determine the robustness or enforcement of monitoring in the irrigated lands network, and (5) while Ag Order 4.0 proposes to require testing for 1,2,3-TCP as well as nitrate, the current ILRP domestic well data only samples for nitrate, and neither Order tests for other contaminants found in the region. In our experience, not all growers are consistent with their water quality and other reporting, despite the regulatory requirements in place.

- SVB GSA response: "Section 7.5 text was revised to specify that the groundwater quality

monitoring network is dependent on the existing samping and well density of the ILRP and DDW monitoring programs. Chapter 5 and 8 text include the constituents of concern that will be monitored in each type of well. SGMA Regulations only require "spatial and temporal coverage." Furthermore, the vertical coverage of the monitoring system cannot be further determined because ILRP well data do not include well depths or screen intervals, which would make it difficult to map vertical water quality."

- Our response: SGMA Regulations instruct GSAs to "[c]ollect sufficient spatial and temporal data from each applicable principal aquifer to determine groundwater quality trends for water quality indicators, as determined by the Agency, to address known water quality issues."[46] Sufficient "spatial" data would include appropriate well depths in order to adequately capture potential groundwater quality trends, particularly those that would affect domestic well owners and DACs.

GSP Chapter 8: Sustainable Management Criteria

SGMA requires a GSA to define existing conditions within the basin and characterize undesirable results, including minimum thresholds and measurable objectives to determine a sustainability goal as sustainable management criteria.[47] We have grouped our comments in this section into general recommendations related to all sustainable management criteria (SMCs) followed by a section specific to the water quality SMCs.

General Recommendations

- **Undertake a drinking water well impact analysis that adequately quantifies and captures well impacts at the minimum thresholds, proposed undesirable results, and potential interim conditions.** Include this analysis during the annual reporting process. We disagree with the assumption included in all draft GSPs that the exact location of wells needs to be known in order to include them in a drinking water well impact analysis. In the 180/400 Foot Aquifer Subbasin GSP, the SVB GSA included a domestic well impact analysis. Although the SVB GSA did not describe the methods used in this analysis,[48] it is CWC's understanding that the analysis was based on Public Land Survey System (PLSS) section location data, demonstrating that such an analysis is feasible. Similar analyses in the Water Foundation Whitepaper (June 2020)[49] and in the Kings River East GSP[50] were completed using the same PLSS section location data for private domestic wells that is available to the SVB GSA. The current analysis is incomplete as it includes

[46] 23 CCR § 354.34(c)(4).
[47] 23 CCR §§ 354.22-354.30.
[48] Community Water Center and San Jerardo Cooperative, Inc. Comments on the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan. May 15, 2020. https://sgma.water.ca.gov/portal/service/gspdocument/download/4012
[49] The Water Foundation Whitepaper, April 2020: "Estimated Numbers of Californians Reliant on Domestic Wells Impacted as a Result of the Sustainability Criteria Defined in Selected San Joaquin Valley Groundwater Sustainability Plans and Associated Costs to Mitigate Those Impacts." April 9, 2020. http://waterfdn.org/wp-content/uploads/2020/05/Domestic-Well-Impacts_White-Paper_2020-04-09.pdf
[50] Kings River East Groundwater Sustainability Agency. Groundwater Sustainability Plan. Adopted December 13, 2019.

very few wells in all subbasins. The current analysis is also substantially inaccurate as it relies on the "average computed depth of domestic wells in the Subbasin," and groundwater elevations vary significantly across the subbasin and also on an annual basis. For example, only 8 of the 154 domestic wells in the Forebay GSP with an average depth of 292.45 feet, and only 20 of 2016 domestic wells in the East Side GSP with an average depth of 365.5 feet were included. CWC Figure 10 illustrates that the average computive depth is not representative of conditions in shallow domestic wells. Therefore, we recommend revising Section 8.6.2.2 Minimum Threshold Impact on Domestic wells following the process explained below:

- **Include a map of potentially impacted wells so the public can better assess well impacts specific to DACs, small water systems, or other beneficial users of water.**
- **Quantify impacts for all drinking water wells in the subbasin for which approximate location (PLSS section) and well depth are available.** Similar analyses based on the PLSS section location of private domestic wells have been completed by Water Foundation (June 2020)[51] and in the Kings River East GSP[52].
- **Account for well screen and pump depth when available.** When not available, well screen and pump depth should be estimated conservatively to capture potential impacts to well operability under water scarcity conditions.
- **Quantify impacts for potential unfavorable interim conditions, such as droughts and short-term lowering of groundwater levels while implementation measures are put in effect.**
- **Quantify the elevation difference (in feet) between current groundwater levels and well bottoms, screens, and pumps.** If current groundwater levels are nearing well bottoms, screens or pumps, that indicates that the wells are vulnerable to interim lowering of groundwater levels.
- **Quantify the elevation difference (in feet) between the minimum threshold groundwater levels and well bottoms, screens, and pumps.** If the minimum threshold is near the well bottom, screen or pump, that well will be impacted if groundwater levels in the vicinity drop below the minimum threshold (even if minimum thresholds are met at 90 percent of monitoring wells and an undesirable result has not technically occurred).
- **Quantify the number of potentially impacted wells of each well type (irrigation, domestic, state/local small water system, public water system) for water quality, water levels, and sea water intrusion MTs.**
- **Quantify the costs associated with impacted wells including desalinization/treatment, lowering pumps, well replacement and increased pumping costs associated with the increased lift at the projected water levels.**

[51] *Id.*
[52] *Id.*

- SVB GSA's response: Domestic well analyses were conducted for the minimum thresholds and measurable objectives. Wells that did not have accurate locations were not included, because water levels vary greatly throughout the Subbasin, thus, it is unlikely that the water level for the centroid of a PLSS section can accurately represent all wells that have the centroid of the section as their location.
- Our response: We reiterate that including the centroid of the section is a reasonable and feasible way of conducting this analysis and has been used by other GSAs and researchers. As noted, we believe that SVB GSA itself used PLSS data to conduct the well impact analysis for the 1800/400 Foot Aquifer GSP. Including such a disproportionately low number of wells in the studies is likely to produce unrepresentative results.

Groundwater Quality

We are pleased that the Salinas Valley Subbasin GSPs establish minimum thresholds based on maximum contaminant levels (MCLs) for contaminants of concern for drinking water supply systems. However, there are other areas in regards to groundwater quality sustainable management criteria that are not clear and could cause significant impacts to drinking water users if not adequately addressed. Therefore, we recommend the following revisions:

- **Add state and local small water systems to the monitoring network with the same water quality minimum thresholds and measurable objectives for reasons stated in Chapter 7 comments.** A table for state and local small water system minimum thresholds was included in the 180/400 foot aquifer GSP, but in the draft subbasin GSPs, there is no such table and Table 8-1 only mentions public supply and on-farm domestic wells.
- **If a contaminant was already above the MCL as of January 1, 2015, subbasin GSPs should set a MT to prevent further degradation or aim to improve groundwater quality conditions where possible.** Increased contamination levels can require water systems to utilize more expensive treatment methods and/or to purchase additional alternative supplies as blending may become more difficult or impossible. Communities reliant on domestic wells who are aware of contamination in their water and use point-of-use/point-of-entry (POU/POE) treatment systems may no longer be able to use their devices if contaminate levels rise too high. Higher contaminant levels can also result in higher costs of waste disposal from certain types of treatment systems. Further, residents who rely upon domestic wells, state small water systems, or local small water systems may not even know what contaminants are in their water and at what levels. Users of these drinking water sources are not required to conduct testing, and many times do not have the resources necessary to conduct regular testing. Rising contaminant levels put these users and their health at serious risk. Increased contamination levels result in unreasonable impacts to access to safe and affordable water and are, thus, inconsistent with SGMA and the Human Right to Water. This recommendation is consistent with the State Water Board's recommendations regarding this topic in their letter to DWR regarding the 180/400 foot aquifer GSP in which they state: "Increasing concentrations of nitrate, arsenic, and other constituents at monitoring wells with existing exceedances may represent worsening of existing

conditions due to groundwater pumping. Staff recommend setting concentration threshold levels for these wells in order to determine if impacts due to pumping are occurring."[53]

    - **Develop management areas to protect areas where drinking water wells have water quality that are vulnerable, including the San Jerardo area.**

- **For monitoring network wells with contamination less than 75% of the MCL for all contaminants, the GSPs should set MOs at 75% of the MCLs.** Subbasin GSPs should include MOs as action triggers at 75% of MCL for each constituent of concern so that groundwater can be managed in that area to prevent a minimum threshold exceedance at a representative monitoring well. This buffer is particularly critical with contaminants like nitrate that can cause acute health effects. If the GSA waits until the minimum threshold is exceeded, it may be too late or difficult for actions to be effective. Actions to prevent minimum threshold exceedances should also be clearly explained in this Chapter including a description of what action will be taken, what type of evaluation will be used, under what time period action will take place, and how this action will be funded. We also recommend that groundwater quality and trigger levels at 75% are added to the Water Quality Partnership plans and/or a Well Impact Mitigation Program
    - SVB GSA response: The GSA is not responsible for improving water quality and 75% of MCLs would require remediation.
    - Our response: To clarify, our recommendation is, where water quality is currently below 75% of MCLs, to maintain levels below that mark instead of allowing them to progress up to the MCL. The objective should not be to allow water quality to degrade up to just below the MCL. Many contaminants, such as 123-TCP and arsenic, have public health goals far below the MCL. The MCL is not an established safe level, but rather is a legal limit that also takes into account the economic and technical feasibility of compliance for public water systems. For those contaminants, increasing from 50% to 75% of the MCL represents an increase in health risk.
- **Clearly identify and describe past and present levels of contamination and salinity at each representative monitoring well (RMW) and attribute specific numeric values for MTs/MOs at each RMW for each contaminant of concern.** Quantitative values need to be established for MTs/MOs for each applicable sustainability indicator at each RMW as required by 23 CCR § 354.28 and 23 CCR § 354.30. The GSPs should include a map and tables that include each individual RMW along with water quality data for each RMW (this data is currently summarized in Table 8-4 and Table 8-5). This information should be presented clearly so that the public can determine how the proposed monitoring network and sustainable management criteria (SMCs) relate to their own drinking water well or water supply system.
- **Include hexavalent chromium as a contaminant of concern and plan to add contaminants of emerging concern to the monitoring network.** While there is currently not a Maximum Contaminant Level for hexavalent chromium, there is still a Public Health Goal and public health

[53] State Water Resources Control Board. (Dec. 2020). Comments to DWR regarding 180/400 Foot Aquifer GSP. Downloaded from SGMA GSP Portal. Available under the tab "Submitted After Public Comment Period" at: https://sgma.water.ca.gov/portal/gsp/comments/29.

threat posed by this contaminant in drinking water. The State is required to adopt an MCL for chromium-6 again and is in the process of updating the MCL. In addition to including hexavalent chromium, the GSPs must explain how the Plans will be updated to align groundwater monitoring efforts and the sustainable management criteria with any contaminants of emerging concern in the basin and any future new MCLs.

- The text in Section 8.6.2.3 now acknowledges that groundwater pumping can not only cause the movement of contaminant plumes, but can also cause the release of naturally occurring contaminants such as arsenic and chromium. It states:
    - 1. Changes in groundwater elevation could change groundwater gradients, which could cause poor quality groundwater to flow toward production and domestic wells that would not have otherwise been impacted. These groundwater gradients, however, are only dependent on differences between groundwater elevations, not on the groundwater elevations themselves. Therefore, the minimum threshold groundwater levels do not directly lead to a significant and unreasonable degradation of groundwater quality in production and domestic wells.
    - 2. Decreasing groundwater elevations can mobilize constituents of concern that are concentrated at depth, such as arsenic. The groundwater level minimum thresholds are near or above historical lows. Therefore, any depth dependent constituents have previously been mobilized by historical groundwater levels. Maintaining groundwater elevations above the minimum thresholds assures that no new depth dependent constituents of concern are mobilized, and are therefore protective of beneficial uses and users.
- **Include an analysis of the relationship between changes in groundwater levels and groundwater quality concentrations.** In order to clearly evaluate the relationship between changes in groundwater levels and groundwater quality, SVB GSA should undertake an analysis of the change in water quality constituent concentrations relative to change in water levels,[54] particularly over drought periods, to evaluate the potential relationship between water quality

[54] *See* P.A.M. Bachand et. al. Technical Report: Modeling Nitrate Leaching Risk from Specialty Crop Fields During On-Farm Managed Floodwater Recharge in the Kings Groundwater Basin and the Potential for its Management https://suscon.org/wp-content/uploads/2018/10/Nitrate_Report_FInal.pdf. *See also,* Groundwater Recharge Assessment Tool, created by Sustainable Conservation to help groundwater managers make smart decisions in recharging overdrafted basins, including modeling whether a particular recharge project would result in short or long term benefits or harms to water quality, http://www.groundwaterrecharge.org/.

and groundwater management activities.[55] It is our understanding that groundwater quality issues in the Salinas Valley Basin did, in fact, worsen and continue to do so during low groundwater elevations years.[56] Arsenic in the San Jerardo well was at its highest during the lowest groundwater elevation measurement (See CWC Figure 1).

- **Add the total number of wells in each category that will be included in the water quality monitoring network and have SMCs evaluated to Table 8-4. For each constituent of concern, add the number of wells included in the chart and the number exceeding the MT/MO based on the latest sample.** This comment has the same goal as the comment we provided in Chapter 7. SMCs should be set at every public drinking water well and a representative network of drinking water wells that rely on more shallow aquifers. It is essential to track the same wells each year in the monitoring network. If a well is no longer active, it should be removed from the network. In the current representation, it is not clear which wells are included in the monitoring network, which wells have data for each constituent, and which wells are exceeding the regulatory standard.
    - We acknowledge that new information was provided in Chapter 5 that partially addresses this comment, yet we still recommend that the GSP clarify the total number wells in the water quality monitoring network in each category (DDW and ILRP) and that this information be added to Table 8-4.
- **Engage stakeholders and scientists in a transparent discussion regarding "the process the GSAs would use to decide whether or not an exceedance of an MT for water quality degradation was caused by GSP implementation."**[57] The State Water Board recommended that the 180/400 foot aquifer GSP outline this process "otherwise, it is difficult to judge how adequately the GSP addresses undesirable results related to water quality degradation." This relates to the

[55] More information about groundwater quality and the relationship between changes in groundwater levels can be found in the following resources:
U.S. Geological Survey (USGS). (Sept 2021). *Increased Pumping in California's Central Valley During Drought Worsens Groundwater Quality.* California State Water Resources Control Board's Groundwater Ambient Monitoring and Assessment Program (GAMA). Available at: https://www.usgs.gov/news/increased-pumping-california-s-central-valley-during-drought-worsens-groundwater-quality. *See also,* Stanford, Community Water Center (2019). *Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium.* Available at: https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896. *See also,* Community Water Center. (2019). *Guide to Protecting Drinking Water Quality Under the Sustainable Groundwater Management Act*. https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1559328858/Guide_to_Protecting_Drinking_Water_Quality_Under_the_Sustainable_Groundwater_Management_Act.pdf?1559328858.

[56] U.S. Geological Survey (USGS). (Sept 2021). *Increased Pumping in California's Central Valley During Drought Worsens Groundwater Quality.* California State Water Resources Control Board's Groundwater Ambient Monitoring and Assessment Program (GAMA). Available at: https://www.usgs.gov/news/increased-pumping-california-s-central-valley-during-drought-worsens-groundwater-quality.

[57] State Water Board comments to DWR on 180/400 Foot Aquifer GSP (Dec. 2020). Downloaded from SGMA GSP Portal: https://sgma.water.ca.gov/portal/gsp/comments/29.

undesirable result for water quality which currently reads: "There shall be no additional minimum threshold exceedances beyond existing groundwater quality conditions during any one year as a direct result of projects or management actions taken as part of GSP implementation."

Chapter 9 Projects and Management Actions

Projects and Management Actions should benefit the basin and all beneficial users.[58] Drinking water users and DACs, who are protected as beneficial users of water under SGMA,[59] can be adversely impacted by either groundwater levels or water quality degradation. Thus, projects and management actions outlined in the GSP, including those currently referred to as implementation actions, should address sustainability issues facing drinking water and other domestic water uses, hold those who cause impacts accountable for remedying them, and address secondary impacts of the projects in order to ensure continued drinking water availability.

While determining how such benefits will be distributed based on the nature of different projects and actions, and who should bear the associated costs, the SVB GSA should keep in mind the **"polluters pay" principle.** Drinking water users should not be put into the position of shouldering additional costs to protect their basic Human Right to Water. Domestic water use has not led to overdraft conditions, as evidenced by the statutory designation of "de minimis" use. Nor should benefits be distributed based on which interested parties can most easily fund a project, but rather towards the overall sustainability of the basin and equity of benefits among beneficial users.

The SVB GSA Subbasin GSPs should (1) clearly identify potential impacts to water quality from all projects and management actions, (2) include management actions that respond to immediate needs and (3) develop a more robust implementation schedule and funding plan for projects and management actions. We acknowledge that the implementation actions are currently in the beginning stages of design but encourage incorporating these elements as soon as possible so that the public and DWR can accurately assess their benefits and feasibility.

Further, because SVB GSA defines its sustainability criteria in a way that potentially allows for drinking water well impacts and because there is so much uncertainty regarding potential domestic well impacts, we recommend incorporating a **Robust Drinking Water Well Mitigation Program.** This program should include the Dry Well Notification System as well as (1) a plan to prevent impacts to drinking water users from dewatering, increases in contaminant levels and increases in salinity, and (2) a plan to mitigate the drinking water impacts that occur even when precautions are taken.

- This type of adaptive management implementation action is crucial to ensuring that all beneficial users within the basin are protected under the GSP. As we have highlighted in previous comments[60]:

[58] As outlined in the Eastside and Upper Valley April 7 meeting materials, soliciting feedback, "[p]rojects implement the GSP and enable the subbasin to reach sustainability by 2042, then maintain sustainability for another 30 years."
[59] Cal. Water Code § 10723.2.
[60] Community Water Center and San Jerardo Cooperative, Inc. Comments on the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan. May 15, 2020. Available at: https://sgma.water.ca.gov/portal/service/gspdocument/download/4012.

- A GSP that lacks a mitigation program to curtail the effects of projects and management actions as to the safety, quality, affordability, or availability of domestic water, violates both SGMA itself and the Human Right to Water (HR2W).[61] The California legislature has recognized that water used for domestic purposes has priority over all other uses since 1913[62] in Water Code § 106, which declares it, "established policy of this State that the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation."[63]
- The passage of the Safe and Affordable Drinking Water Fund by Governor Newsom indicates a clear State-level commitment to provide safe and affordable drinking water to California's most vulnerable residents.[64] To ensure compliance with the Legislature's long established position, the HR2W requires that state agencies, including the Department of Water Resources and the State Water Board, must consider the effects on domestic water users when reviewing and approving GSPs.[65] Therefore, GSPs that cause disparate impacts to domestic water use are in violation of the HR2W, and cannot be approved in a manner that meets DWR's requirements under SGMA, and Water Code § 106.3.
- It is important to note that SAFER should not be counted on to remedy impacts to domestic wells that result from GSA management. In order for the state to uphold the HR2W, SAFER funds need to be reserved for issues where there are currently no other responsible regulatory authorities to cover the costs. This is not the case where GSAs are managing the groundwater in their basin in a way that allows domestic wells to go dry or degrade water quality. Local prioritization of continued pumping should not be subsidized by the SAFER fund when the demand for those funds already outstrips the available funds nearly 10-fold.[66]
- The SAFER Needs Assessment Executive Summary highlights: "$10.25 billion represents the total estimated cost of implementing interim and long-term solutions for HR2W list systems, At-Risk water systems and well owners."[67]

- In order to effectively protect drinking water users during GSP implementation, we recommend that the GSA's **Drinking Water Well Impact Mitigation Program Implementation Action,** in line with and expanding upon the currently proposed Dry Well Notification System and potentially incorporated into actions carried out under the Water Quality Partnership, should include the following components:

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[61] WAT § 106.3 (a).
[62] Senate Floor Analysis, AB 685, 08/23/2012.
[63] This policy is also noted in the Legislative Counsel's Digest for AB 685.
[64] SB 200 (Monning, 2019).
[65] WAT § 106.3 (b).
[66] SWB. *SAFER Needs Assessment*. Available at: https://www.waterboards.ca.gov/drinking_water/programs/safer_drinking_water/docs/draft_white_paper_indicators_for_risk_assessment_07_15_2020_final.pdf.
[67] SWB. *SAFER Needs Assessment: Executive Summary.* P. 23 Available at: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/needs/executive_summary.pdf

- **Include a vulnerability analysis of Disadvantaged Communities (DACs) and drinking water supplies in order to protect drinking water for these vulnerable beneficial uses and users.** Although rural domestic and small water system demand does not contribute substantially to the overdraft conditions, drinking water users could face significant impacts, particularly if the region faces another drought. Without a clear commitment and timeline for actions regarding establishing groundwater allocations or reductions in groundwater pumping, the SVB GSA may create disparate impacts on already vulnerable communities. See comments submitted by CWC and San Jerardo Cooperative on April 23, 2021 regarding Chapter 8 of SVB GSA Subbasin GSPs for further recommendations for conducting well impact analyses.
- **Develop a trigger system for both groundwater levels and quality in collaboration with stakeholders, in particular groups that are more susceptible to groundwater elevation and quality changes. Stakeholder recommendations provided back to the GSA should be incorporated into quantifiable measures, such as the GSP measurable objectives, MCLs, and numbers of partially or fully dry drinking water wells.**[68]
- **Ensure that the monitoring network is representative of conditions in all aquifers in general, including the shallow aquifer upon which domestic wells rely.**
- **Routinely monitor for all contaminants that could impact public health, including those with established MCLs, such as nitrates, and contaminants of emerging concern,through the representative water quality monitoring network.** Contaminated drinking water can cause both acute and long-term health impacts and can affect the long-term viability of impacted regions.[69] Among other causes, groundwater contamination can result through the use of man-made chemicals, fertilizers, or naturally-occurring elements in soils and sediments.[70] Routinely monitoring for contaminants will allow the GSA to accurately monitor for impacts on the most vulnerable beneficial users, and protect DACs' and domestic well owners' access to safe and affordable drinking water.[71]
    - **For monitoring network wells with contamination less than 75% of the MCL for all contaminants, the GSP should set MOs at 75% of the MCLs.** The GSP should include MOs as action triggers at 75% of MCL for each constituent of concern so that groundwater can be managed in that area to prevent a minimum threshold

[68] See previous reference for *Framework for a Drinking Water Well Impact Mitigation Program.*
[69] Community Water Center. (2019). Guide to Protecting Drinking Water Quality Under the Sustainable Groundwater Management Act. https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1559328858/Guide_to_Protecting_Drinking_Water_Quality_Under_the_Sustainable_Groundwater_Management_Act.pdf?1559328858.
[70] See previous Community Water Center (2019) reference.
[71] See previous reference for *Framework for a Drinking Water Well Impact Mitigation Program.*

exceedance at a representative monitoring well.[72] This buffer is particularly critical with contaminants like nitrate that can cause acute health effects. As discussed in previous submitted comments, water quality impacts can intensify as water levels decrease.[73] If the GSA waits until a minimum threshold set at an MCL is exceeded, it may be too late or difficult for actions to be protective of public health and prevent undesirable results. Actions to prevent minimum threshold exceedances should also be clearly explained in this Chapter including a description of what action will be taken, what type of evaluation will be used, under what time period action will take place, and how this action will be funded.

- **Include a combination of different strategies for mitigation including: replacing impacted wells with new, deeper wells, connecting domestic well users to a nearby public water system, or providing interim bottled water.**
- **Include an implementation timeframe, budget, and funding source**.[74] As currently written, the Dry Well Notification System suggests convening "a working group to assess the groundwater situation if the number of wells that go dry in a specific area cross a specified threshold." We support emergency response if one or more wells are impacted, and also request that this section be updated to include strategies to prevent impacts from occuring in the first place. Additionally, plans to address and mitigate those impacts should be solidified beforehand so resources can be mobilized in a timely manner. Drinking water users cannot afford to wait for interim plans to be developed once their primary sources of water for drinking, cooking and hygiene are compromised.

In response to our previous comments, the SVB GSA stated:

> "Thanks for support of the program (now titled Dry Well Notification System). This program focuses on access, not quality. A robust drinking water well mitigation program falls within the responsibilities of other agencies; however, the GSA may consider supporting such a program. The text has been revised to explicitly include it as a potential program that the GSA can collaborate with other agencies on through the Water Quality Partnership. To set MOs at 75% of the MCLs for drinking water, the GSA would need to take on responsibility for cleaning up groundwater contamination present prior to 2015, which would take significant effort and is not the GSA's responsibility. The GSA does acknowledge the need for action on water quality, and will work with other agencies to determine what the GSA's role in that is."

[72] This recommendation was also made previously in a comment letter to SVB GSA from CWC and San Jerardo Cooperative regarding Chapter 8 of the 180/400 ft Aquifer GSP on November 25, 2020, as well as in our comments to the SVB GSA on April 23, 2021 regarding Chapter 8 of drafts for the SVB GSA Subbasin GSPs.
[73] Community Water Center and Stanford University. Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium. (2019). https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896.
[74] See previous reference for *Framework for a Drinking Water Well Impact Mitigation Program.*

Our response:

A drinking water well mitigation program deals with more than just water quality. Such a program also protects wells from becoming dewatered due to lowering groundwater levels. As both pertain to the GSA's mandate to manage pumping in the basin in a way to avoid undesirable results, a drinking water well impact mitigation programs would be appropriate and should be required in the SVB GSA Subbasins.

- In regard to water quality, the GSA has responsibilities, mandated by statute, to prevent significant and unreasonable degradation of water quality.[75] DWR has clarified that water quality is a meaningful component of GSA management and has specifically given corrective instructions to SVB GSA, as cited in our prior comments and above. As this is such a critical point of contention with the GSA, we again quote this section from DWR's 180/400 foot Aquifer Determination:
    - "[S]taff find that the approach to focus only on water quality impacts associated with GSP implementation, i.e., GSP-related projects, is **inappropriately narrow.** Department staff recognize that GSAs are not responsible for improving existing degraded water quality conditions. **GSAs are required; however, to manage future groundwater extraction to ensure that groundwater use subject to its jurisdiction does not significantly and unreasonably exacerbate existing degraded water quality conditions."**[76]
    - DWR clearly identifies the responsibility of the GSA to manage future groundwater extraction in order to prevent significant and unreasonable degradation of water quality conditions. DWR does not limit this duty to merely apply when the GSA regulates groundwater pumping for the purpose of maintaining sustainable groundwater levels, but rather posits an affirmative duty for the GSA to manage extraction in order to avoid exacerbating existing degraded water quality conditions. SVB GSA's jurisdiction does not hinge on whether or not a Subbasin Committee decides to instate allocations or pumping restrictions. SVB GSA does not have the power to discard this authority by opting against regulating pumping. Instead, SVB GSA is exercising its authority as an affirmative action to continue to allow pumping at current rates.
- DWR clarifies further:
    - "Where natural and other human factors are contributing to water quality degradation, the GSAs may have to confront complex technical and scientific issues regarding the **causal role of groundwater extraction and other groundwater management activities**, as opposed to other factors, in any continued degradation; but **the analysis should be on whether groundwater extraction is causing the degradation**

[75] Cal. Water Code § 10721(x)(4).
[76] Department of Water Resources. (2021). *Statement of Findings Regarding the Approval of the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan.* Pp. 26-27. (Internal citations omitted; emphasis added). Available for download at: https://sgma.water.ca.gov/portal/gsp/status.

in contrast to only looking at whether a specific project or management activity results in water quality degradation."[77]

- SVB GSA must establish a viable plan to prevent the exacerbation of degraded water quality conditions in the basin. In response to previous comments, SVB GSA asserted, "Groundwater quality is included within the purview of the SMC TAC, so it can make recommendations of projects that mitigate groundwater quality degradation for drinking water users, including impacts due to pumping."

Recharge Projects (Direct or Indirect)

We offer the following overarching comments regarding Recharge Projects in the Subbasin GSPs:

- **Assess constituents in the ground before using land for recharge, to avoid further contamination.** Reference the Groundwater Recharge Assessment Tool (GRAT) developed by Sustainable Conservation.[78]
  - On-farm recharge has the potential to further spread contaminants. Soil contaminants should be measured before dedicating the land to recharge purposes. "Short-term" impacts on domestic wells due to recharge efforts, which can include increased leaching of certain contaminants such as uranium, or displacement of contaminant plumes, should be mitigated in order to minimize the harm to beneficial drinking water users, and to replace water sources if compromised.[79]
- **In order to achieve successful recharge management, the GSA must identify where groundwater contaminant plumes are currently located, in order to then assess whether recharge projects could cause problematic movement of plumes. Implement recommendations from our previous comment letters regarding Section 5.4:**
  - "**[I]nclude a specific discussion, supported by maps and charts, of the spatial or temporal water quality trends for all constituents that have been detected in the subbasin and may affect drinking water beneficial users, as required under 23 CCR § 354.16(d).** This section should include water quality data (both in map and tabular form) for all constituents (where available) with primary drinking water standards that have been detected in the subbasin including, but not limited to, nitrate, 123-trichloropropane, hexavalent chromium, arsenic, uranium, and perchlorate for all public drinking water wells, state and local small water system wells, and private domestic wells. It is especially important for all groundwater stakeholders to be able to understand and visualize the location of contaminant hotspots throughout each subbasin.

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[77] *Id.*

[78] Sustainable Conservation. *Groundwater Recharge Assessment Tool.* Available at: https://suscon.org/wp-content/uploads/2016/08/GRAT-Summary-8-2017.pdf.

[79] Community Water Center and Stanford University (2019). *Groundwater Quality in the Sustainable Groundwater Management Act (SGMA): Scientific Factsheet on Arsenic, Uranium, and Chromium*. Available at: https://d3n8a8pro7vhmx.cloudfront.net/communitywatercenter/pages/293/attachments/original/1560371896/CWC_FS_GrndwtrQual_06.03.19a.pdf?1560371896.

    - **Present maps and supporting data for all constituents of emerging concern.** The review of water quality data in the groundwater conditions section of the draft Section 5.4 in the subbasin GSPs is focused primarily on nitrate. The GSPs identify numerous constituents that have been detected in groundwater above drinking water standards, but, with the exception of nitrate, do not present this data spatially. Even though the subbasin GSPs set water quality minimum thresholds for additional constituents (See Tables 8-4 and 8-5), the supporting data is not all presented, and no analyses of spatial or temporal water quality trends are presented. This does not present a clear and transparent assessment of current water quality conditions in the subbasin with respect to drinking water beneficial use (23 CCR § 354.16(d)).”[80]

- We appreciate the identification of multi-benefit improvements to streams, and agree that slowing the speed of groundwater in its course of movement is a useful way to increase recharge. Such improvements to multi-benefit streams are a cost-effective and low-harm recharge method.

Reoperation of Reservoirs

We offer the following overarching comments regarding Reoperation of Reservoirs projects:

- **Conduct holistic cost-benefit analyses for large-scale infrastructure projects such as the MCWRA Interlake Tunnel and Spillway Modification, taking into account the specific benefits that projects will or will not confer on underrepresented communities and DACs, including the San Jerardo Cooperative in the Eastside Subbasin.**
    - Benefits should be equitable and take into account how different climate projections would impact the potential benefits from such a project in the case of little to no rainfall.
    - Cost-benefit analyses should also consider alternatives that could provide affordable long-term benefits.
- **The MCWRA Drought TAC should ensure that all beneficial water users are considered, and that drinking water needs are particularly protected from harm during current and future droughts, in line with the Human Right to Water.**

Management Actions

Conservation and Agricultural BMPs

- **Best Management Practices (BMPs) should utilize the latest technologies and take advantage of opportunities to modify agricultural pumping needs in order to provide overall groundwater basin benefits for all beneficial users.**

[80] Community Water Center and San Jerardo Cooperative, Inc. *Comments on the Draft Salinas Valley GSP Chapters 1-8 for the Langley, East Side, Forebay, Upper Valley and Monterey Subbasins.* (April 2021). P. 7. On file with SVB GSA and available at: https://drive.google.com/file/d/1wH7wvCMmQd4bu_PIri5o66_y5caW9ti7/view.

- **BMPs should also be used as a mechanism to improve or stabilize groundwater quality by using evapotranspiration (ET) data with soil moisture sensors and soil nutrient data to promote efficient irrigation practices and limit the application of synthetic fertilizers.**
- **BMPs should include best available science, including climate-smart approaches and nature-based solutions which have been recognized on state, national, and international levels.** For example, while written with the Central Valley in mind, FoodFirst's *Healthy Soils, Healthy Communities* outlines the following strategies and benefits which can also be applied to the Central Coast:
    - **Soil organic matter can reduce soil fumigant emissions** – Pesticides applied directly to soils form short-lived climate pollutants, and contribute to air and water pollution. Increased soil organic matter can reduce fumigant emissions and reduce the need for fumigants in the first place.
    - **Soil organic matter slows water contamination** – Synthetic fertilizer and pesticides have contaminated drinking water in the Central Valley over the last 70 years. Soils higher in organic matter leach fewer pollutants, including nitrates and pesticides. Soils high in organic matter also require less synthetic fertilizer to produce a crop. Using compost instead of synthetic fertilizer can reduce nitrogen loads in the area. Over time, increased soil organic matter and riparian restoration could help reduce groundwater contamination.
    - **Composted manure from dairies could be a source of soil organic matter** – Concentrated manure from industrial dairies is a major local air quality and water quality issue. If that manure were properly composted, it could become a source of valuable nutrients and soil organic matter instead of a pollutant, and help displace the use and manufacture of synthetic fertilizers.[81]
    - **Composting farm waste could prevent black carbon emissions** – Instead of burning orchard waste, another local air pollutant, mulches and composted farm waste could be a source of soil organic matter for farms and rangelands.
    - **BMPs are an opportunity for rural workforce development and wildfire management** – From the Conservation Corps, to ecological restoration, nursery stock production, wetland management and fire prevention, there is a lot of work to do to conserve and increase terrestrial carbon on public and private lands. This is an opportunity to both train and employ young people with low-to-moderate incomes and in communities of color in natural resource and agricultural management.
    - **Carbon-friendly practices can support small-scale and immigrant farmers** – Public support for carbon-friendly practices could help make small to mid-scale and immigrant farmers more resilient and boost their bottom line through a combination of financial support for carbon-friendly practices and more stable land access. These programs will

[81] USDA. *Manure in Organic Production Systems.* Available at: https://www.ams.usda.gov/sites/default/files/media/Manure%20in%20Organic%20Production%20Systems_FINAL.pdf. (Citation added).

have to be accessible to small-scale farmers and take into account chronic issues around access to land, credit and technical assistance.

Fallowing, Fallow Bank, and Agricultural Land Retirement

- **Dewatered drinking water wells or migration of contamination plumes should be considered as factors when deciding where to incentivize targeted agricultural fallowing or land retirement, and should trigger pumping restrictions in affected areas as necessary.**
    - This approach is further elaborated in the Drinking Water Well Impact Mitigation Framework.[82]

SMC Technical Advisory Committee (TAC)

- **Ensure that this TAC functions as a public decision-making space and not a consultative committee.** Discussions regarding SMCs and how or whether to intervene when conditions approach MTs should be fully public and held under Brown Act rules. These discussions are core to the management of the basin and necessarily must be informed by stakeholder input.
    - Additionally, plans to prevent and/or mitigate potential undesirable results should be finalized *prior* to the emergence of such conditions. We note that the formerly proposed Forebay Drought/Pumping TAC has been adapted to mirror the Upper Valley's SMC TAC and emphasize that planning for drought conditions must be done before those conditions arise, not as an improvised reaction in the moment. Such a delay in planning would be counter to the spirit and letter of SGMA.
- **Create management zones with pumping restrictions in areas with vulnerable drinking water wells.**
- **The SMC TAC should consider and recommend projects and management actions that mitigate groundwater quality degradation for drinking water users due to GSA actions, including impacts resulting from over-extraction under GSA management, as was clarified in DWR's 180/400ft Aquifer Determination Letter on pages 26 and 27.**

Pumping Allocations and Control

- **Quantify the demand reductions (pumping restrictions) necessary to meet all minimum thresholds in the short and long term, including in dry conditions.** Designing a feasible and effective allocation structure requires thorough groundwater elevation data as well as a comprehensive, ongoing assessment of the interrelated effects of SMCs on one another. Pumping allocations must be responsive to groundwater conditions throughout the basin and avoid undesirable results.
- **Parameters for pumping restrictions in times of widespread water shortages should be decided ahead of time as part of a publicly-informed, adaptive management approach.** Decisions around pumping regulation should be made as part of GSP development and not relegated to a later decision-making body which will be inherently less accountable to the public than SVB GSA's current Committees and Board. It will not be sufficient to solely bring pumping

[82] Self-Help Enterprises, Leadership Counsel for Justice and Accountability, Community Water Center. (2020). *Framework for a Drinking Water Well Impact Mitigation Program*. Available at: https://static1.squarespace.com/static/5e83c5f78f0db40cb837cfb5/t/5f3ca9389712b732279e5296/1597811008129/Well_Mitigation_English.pdf.

decisions to the public after actions have already been designed and are at the point of being approved. Lack of public input for such a critical component of the GSA's management is especially troubling in the negative—if action is not being taken.

- **As part of an adaptive management approach, pumping restrictions should be implemented by the GSA in a timely way so as to prevent harm to beneficial users, particularly vulnerable drinking water users and DACs.**
- **Consider hybrid allocation systems which account for de minimis users, regardless of homeownership status, to ensure sustainable yields for all beneficial users.** Langley GSP proposes such a hybrid allocation system in which de minimis users are included within the estimated sustainable yield. This approach will provide a more complete picture of groundwater use within the basin, to inform groundwater management decisions.

Implementation Projects

CWC and San Jerardo see value in the projects listed in this section, though we point out insufficiencies below and offer recommendations for how these proposed projects should be adjusted so that they will support SVB GSA in coming into compliance with SGMA. We also note that "Implementation Projects" is a separate category of GSA management activities that SGMA does not specify, and believe these projects should be integrated into either the Projects or the Management Actions sections.[83] GSA activities that are necessary to meet SGMA requirements, such as those intended to prevent a water quality UR, should fit within either Projects or Management Actions.

Groundwater Elevation Management System (GEMS) Expansion

- **Include data from more drinking water wells, including small water system wells and domestic wells, in order to have a sufficiently representative monitoring program.**

Water Quality Partnership (formerly Domestic Water Partnership)

CWC would like to voice conditional support for the Water Quality Partnership, as a step towards coordinating local and regional responses to water quality issues. However, the GSA remains directly responsible for recognizing and resolving water quality degradation that results from its policies and projects.

- The GSA must clarify the role that it will play in this partnership in dealing with water quality issues. Water quality is an integral part of SGMA, one of the six Undesirable Results that GSAs are tasked with preventing while achieving sustainability.[84] Impacts from extraction, including due to overdraft and projects and management actions undertaken by the GSA, fall under the purview of the GSA and should be tracked and remedied according to the GSP. Thus, the GSP must include plans to respond to problems should they arise. If, for example, a contaminant plume were to begin migrating based on pumping patterns or a project/MA, the GSA is not permitted to allow that problem to progress unchecked. If the GSA wishes to collaborate with

[83] 23 CCR § 354.44

[84] Cal. Water Code § 10721, subd. (x)(4). "Undesirable result" means one or more of the following effects caused by groundwater conditions occurring throughout the basin: ...(4) Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.

other regulatory agencies who also deal with water quality issues as a way to fulfill its obligations, the GSA should enter into a Joint Powers Agreement (JPA) or a formal Memorandum of Understanding (MOU) in order to formalize the roles and responsibilities. Otherwise, DWR cannot determine whether the plan is sustainable.[85]

- As currently drafted, the Water Quality Partnership only guarantees one meeting per year, and a review of water quality conditions resulting in a report. These proposed actions are not sufficient to ensure that the GSA is equipped to prevent or react to exacerbated water quality should those impacts occur.
- **The GSA should work with local and regional water agencies or the county to implement groundwater quality remediation projects to prevent degradation and potentially improve both groundwater quality as well as groundwater levels to ensure groundwater management does not cause further degradation of groundwater quality.[86]** The strategic governance structure of GSAs can uniquely leverage resources, provide local empowerment, centralize information, and help define a regional approach to groundwater quality management, unlike any other regional organization. When implemented effectively, GSPs have the potential to be instrumental in reducing levels of contaminants in their regions, thus reducing the cost of providing safe drinking water to residents. GSAs are the regional agency that can best comprehensively monitor and minimize negative impacts of declining groundwater levels and degraded groundwater quality that would directly impact rural domestic well users and DACs within their jurisdictions. When potential projects are proposed, SVB GSA should consider how projects could potentially both positively and negatively impact groundwater quality conditions and should take leadership in coordinating regional solutions.
- **Include - without delay - Monterey County water quality data for state and local small water systems.** This data is readily available and would add significantly to the proposed water quality monitoring network in draft subbasin Chapters 7. We do not want this potential partnership implementation/management action to delay the incorporation of this important data source. This action can and should, however, integrate this County data into current draft subbasin plans in order to identify potentially vulnerable populations and create management actions to protect them.
- **Integrate key components of a Drinking Water Well Mitigation Program Framework in order to protect drinking water users from losing access to their drinking water during GSP implementation.** CWC was informed by SVB GSA Staff that concepts from the Mitigation Framework were being incorporated into the Water Quality Partnership language in the GSP, but we do not see evidence of this in the current draft. CWC would like to coordinate with SVB GSA Staff to incorporate this item into the agenda of one or more of the remaining 2021 Advisory and Board meetings in order to present on the Framework to the Committees and Board.

[85] Cal. Water Code §§ 10721, subd.(x)(4) and 10723.6.
[86] Community Water Center and San Jerardo Cooperative, Inc. *Comments on the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan.* May 15, 2020. On file with SVB GSA and available at: https://sgma.water.ca.gov/portal/service/gspdocument/download/4012.

- **Integrate water quality considerations across planning and implementation.** As now acknowledged in the GSPs, groundwater quality in the Subbasins can be influenced by pumping and the way groundwater is managed. This is of particular importance for the San Jerardo Cooperative which has experienced increases in nitrate and arsenic in their well, as highlighted in our cover letter and previous comments.[87] This relationship between groundwater levels and groundwater quality should be reflected throughout planning and implementation so that the GSA can manage the basin in a way that does not exacerbate water quality degradation.
    - Support for this recommendation is evidenced by Recommendation #5 of DWR's 180/400 GSP Determination.
- **Fill previously identified water quality data gaps in baseline information and the monitoring network.**
    - DWR assessed water quality monitoring in the 180/400 Foot Aquifer as follows: "The monitoring network to evaluate degradation of groundwater water quality is based on three existing water quality regulatory programs operating in the Subbasin: Monterey County's small community water system wells program, the State Water Resources Control Board's public supply well program, and the Central Coast Water Board's Irrigated Lands Regulatory Program. The Plan proposes to use four sets of wells that are routinely sampled under these programs. Within each set of wells, a specific set of constituents of concern will be monitored. In total, the monitoring network consists of 136 small community water system wells, 51 public supply wells, and a currently unknown number of domestic and agricultural wells from the Irrigated Lands Regulatory Program. The specific number of Irrigated Lands Regulatory Program wells will be finalized when the Central Coast Water Board adopts Agricultural Order 4.0 (anticipated in 2020). The Plan identifies the lack of well construction information (e.g., the depth of well screens or the total depth of the well) for many groundwater quality monitoring wells as a data gap. The implementation chapter of the Plan simply states that "[d]uring implementation, the SVBGSA will obtain any missing well information, select wells to include in monitoring network, and finalize the water quality network." Department staff recommend the SVBGSA provide updates on the progress toward filling this data gap in its annual reports and that more details be provided in the first five-year assessment of the Plan."[88] The remaining SVB GSA Subbasins should match a similar standard for their monitoring systems, and anticipate the need to show progress on filling data gaps in annual reports and at the five year update.

[87] Community Water Center and San Jerardo Cooperative, Inc. *Comments on the Draft Salinas Valley GSP Chapters 1-8 for the Langley, East Side, Forebay, Upper Valley and Monterey Subbasins.* (April 2020). Pp. 4-5. On file with SVB GSA and available at: https://drive.google.com/file/d/1wH7wvCMmQd4bu_PIri5o66_y5caW9ti7/view.

[88] Department of Water Resources. (2021). *Statement of Findings Regarding the Approval of the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan.* Pp. 30-31. (Internal citations omitted). Available for download at: https://sgma.water.ca.gov/portal/gsp/status.

Dry Well Notification System (Previously Localized Groundwater Elevation Triggers)

The Dry Well Notification System, which is designed to "assist well owners (domestic or state small and local small water systems) whose wells go dry due to declining groundwater elevations" is an important potential component of the Subbasin GSPs, for tracking and responding to impacts due to droughts and overdraft. We support the inclusion of a "notification system whereby well owners can notify the GSA or relevant partner agency if their well goes dry," particularly linking them to DWR's reporting website. We also support the proposal that the GSA "could set up a trigger system whereby it would convene a working group to assess the groundwater situation if the number of wells that go dry in a specific area cross a specified threshold. A smaller area trigger system would initiate action independent of monitoring related to the groundwater level SMC." We encourage SVB GSA to commit to incorporating this project into implementation. Implementation of the Dry Well Notification System would significantly increase the GSA's ability to track and address impacts to domestic wells. To further improve upon the program's efficacy, we recommend:

- **Integrate technical assistance into this program, facilitate access to resources through a collaboration with state agencies and/or directly administer impact mitigation funding.**
    - Tracking instances of dry or depleted wells and linking impacted beneficial users to information about potential available resources is a positive step, however services such as directing DACs and other impacted drinking water users to apply for funding would only be minimally helpful while those households are experiencing a water shortage crisis. The GSA's efforts to respond to impacts due to low groundwater elevations should go further in order to be effective. Such services should include reducing pumping in areas where groundwater supply shortages are being exacerbated by over extraction, actively facilitating coordination between residents and assistance programs, and potentially providing a conduit to state funds directed towards water resiliency—a multi-billion dollar drought & water resiliency package was recently passed by the State Legislature.

Well Registration

- **We recommend that SVB GSA require all wells that pump over two acre-feet per year to be metered and charge fees based on the amount of water pumped, to pay for future projects and incentivize voluntary reductions.**

Support Protection of Areas of High Recharge

- **Develop criteria for recharge projects that prevent unintended impacts to drinking water.**
- **As with all recharge projects, evaluate whether recharge could have any unintended consequences such as moving contaminant plumes toward wells, thus degrading the water quality, and closely monitor water quality in all areas affected by recharge.** The GSP states that "[t]hese areas are typically identified using soils and soil classification maps but would need additional investigation and data to confirm." Accurate mapping of water quality issues in the basin is also crucial in order to prevent unintended water quality impacts.
- **Where applicable, encourage use of low-impact cover crops where water is captured at the site of precipitation or flooding.** Roots in the soil help to capture more water, clean the water source, and maintain healthy soils so that less fertilizer/pesticide is used, as evidenced in organic

and regenerative agricultural practices. Cover crops and compost cycles, as well as chicken manures or natural organic-matter fertilizers can also keep nitrogen in the soil longer, providing benefits to crops and keeping nitrate out of groundwater.

Deep Aquifers Study

- We support the Deep Aquifers Study due to the influence that hydrogeologic interconnections between aquifers in the Salinas Valley Basin would necessarily have on influencing better sustainable management of the basins.

New Water Supply Projects

- **Quantify which combinations of projects could address projected overdraft and what the costs of those combinations would be.** With high costs, permitting and other challenges, there is a high degree of uncertainty whether each project can be implemented. As written, it is difficult to evaluate how feasible it is to address overdraft via the options provided.
    - For example, in the Eastside GSP draft, Table 6-15 in Chapter 6 projects 20,400 AF/yr overdraft in 2030 and 20,500 AF/yr overdraft in 2070. Table 9-8 in Chapter 9 lists projects that could mitigate overdraft. However, Table 9-8 only quantifies benefits for some of the projects, and often for the Salinas Valley basin as a whole as opposed to the Eastside Subbasin. The table also omits costs. This information will be critical for planning and implementing projects to address overdraft.
- **Factor in known uncertainties when determining which projects to prioritize in implementation.** At the top of pg 9-24 for 11043 Diversion at Chualar, and also for 11043 Diversion of Soledad, the GSP states that the groundwater model used to estimate Salinas River flows "does not account for the uncertainty surrounding greater variations in precipitation, timing, intensities and subsequent flows." The model should provide a sensitivity analysis for potential conditions, particularly in light of large variations between climate change predictions in the region.
    - This recommendation is also in line with DWR's 180/400 Determination which instructs SVB GSA to determine how they will define "average hydrogeological conditions," in Section 4.3.3.2 and the overarching statutory requirement to continually update the GSP to meet the statutory requirement to use the "best available information and best available science."[89]
- **Where projects overlap between subbasins, clarify what effects the project will have across subbasins.** For example, provide clarity around what effects the Eastside Irrigation Water Supply Project (or Somavia Road Project) will have on the 180/400 Foot Aquifer Subbasin where water will be pumped from. Account for any effects in the 180/400-Foot GSP in ongoing updates, including pertinent sections of Annual Reports.

[89] 23 CCR § 355.4(b)(1). "When evaluating whether a Plan is likely to achieve the sustainability goal for the basin, the Department shall consider the following:
(1) Whether the assumptions, criteria, findings, and objectives, including the sustainability goal, undesirable results, minimum thresholds, measurable objectives, and interim milestones are reasonable and supported by the best available information and best available science."

- **Quantify what the sustainable yield is for the entire basin.** This calculation should be done to ensure that the water budgets balance across all the Subbasin Plans.

GSP Chapter 10: Groundwater Sustainability Plan Implementation

Our overarching recommendations for GSP Implementation and Updates are as follows:

- **Take interim actions while working toward long-term sustainability.**
- **Address missing data for domestic wells as recommended by DWR:**
    - "[T]he GSA should inventory and better define the location of active wells in the Basin and document known impacts to drinking water users caused by groundwater management … in subsequent annual reports and periodic updates."[90]
- **Continue to include the small water system data from the County as a data gap in the subbasin GSPs, as it was in the 180/400 foot Aquifer GSP.** As Tom Berg, a DWR representative, indicated at the SVB GSA Advisory Committee meeting on June 17, 2021, the specific decisions made during the formation of the 180/400 foot Aquifer GSP allowed for it to receive DWR's approval. Mr. Berg recommended that the SVB GSA review the three other letters that DWR released on June 3, 2021, to better understand the parameters of what is required for a GSP to receive approval.
- **Engage underrepresented communities immediately.** As this section acknowledges, underrepresented communities have little or no representation in water management and have often been disproportionately less represented in public policy decision making. It is important to note that their engagement and input around their main concerns must be noted and considered during routine GSA proceedings. Their input should be (or rather should have been) solicited and received while the GSP formation process is/was still active.
- **Continually update the GSP and Implementation strategy as best available science[91] evolves.** Meaningful updates to data sources and interpretation should occur at a minimum on a yearly basis, timed with the Annual Reports.

[90] Department of Water Resources. (2021). *Statement of Findings Regarding the Approval of the 180/400 Foot Aquifer Subbasin Groundwater Sustainability Plan.* P. 24. Available for download at: https://sgma.water.ca.gov/portal/gsp/status.

[91] 23 CCR § 355.4(b)(1).

October 15, 2021

Via Electronic Mail

Colby Pereira, Chairperson
Members of the Board of Directors
Salinas Valley Basin Groundwater Sustainability Agency
P.O. Box 1350
Carmel Valley, CA 93924
Email: board@svbgsa.org

Subject: Comments on Draft Groundwater Sustainability Plans for the Upper Valley Aquifer, Forebay Aquifer Subbasin, Eastside Aquifer Subbasin, Langley Aquifer Subbasin, and Monterey Subbasin

Dear Chair Pereira and Members of the Board of Directors:

Thank you for the opportunity to submit comments. The following comments are offered on behalf of the members of California Coastkeeper Alliance and Monterey Waterkeeper.

Our comments are offered for all subbasin groundwater sustainability plans, including for the Upper Valley Aquifer, Forebay Aquifer Subbasin, Eastside Aquifer Subbasin, Langley Aquifer Subbasin, and Monterey Subbasin (collectively "GSPs"). Given the interdependence of the planning for all subbasins, comments are relevant to all the GSPs and the approach of the Salinas Valley Basin Groundwater Sustainability Agency ("SVBGSA") as applied to every subbasin. There is urgency to begin implementing meaningful projects and management actions which are protective of all beneficial uses of water, and we voice our agreement with the comments Community Water Center and LandWatch Monterey County have provided on plans developed by the SVBGSA and incorporate them here by reference.[1]

1. **Overview of Requirements for Groundwater Sustainability Plans Under the Sustainable Groundwater Management Act.**

The Sustainable Groundwater Management Act ("SGMA") requires the SVBGSA to include findings in the GSPs demonstrating the sustainability goal is likely to be achieved within 20 years of Plan implementation and is likely to be maintained through the planning and

[1] All comments on the GSPs and the 180/400 Foot Subbasin Plan through October 15, 2021, including comments to the Department of Water Resources.

implementation horizon.[2] Projects and management actions must be sufficient to support a determination that the GSPs will achieve the sustainability goal,[3] including descriptions of "circumstances under which projects or management actions shall be implemented, the criteria that would trigger implementation . . . and the process by which the Agency shall determine that conditions requiring the implementation of particular projects or management actions have occurred."[4] Time-tables for initiation and completion must be included,[5] along with an explanation of how the project or management action will be accomplished. Sustainability Plans must identify and *cause* the implementation of projects and management actions.[6] Providing concrete triggers and timetables for implementation is a critical and required component for demonstrating the GSPs are likely to meet the sustainability goal.

The GSPs are also required to support decisions with the best available science,[7] while Sustainable Management Criteria ("SMCs") and projects and management actions must be commensurate with the level of understanding of the basin setting.[8]

2. The Disparity Between the Basin-Wide Integrated Management Approach of the 180/400 Aquifer Subbasin GSP, and The Remaining GSPs Must Be Resolved.

The GSPs do not satisfy the SVBGSA's duty under SGMA because of conflicts between the approaches across the numerous GSPs and the 180/400 Foot Aquifer Plan. Plans for adjacent basins must not adversely affect the ability of one another to maintain their sustainability goals over the planning and implementation horizon.[9] We voice our agreement with comments LandWatch Monterey County has provided to the SVBGSA outlining concerns with consistency across the SVBGSA's GSPs, namely that inconsistency undermines the likelihood that any of the SVBGSA's subbasin plans will achieve their sustainability goals.

The groundwater sustainability plan for the 180/400 Ft Aquifer that was approved by the Department of Water Resources ("DWR") identifies 13 projects that "constitute an integrated management program for the entire Valley."[10] However, this basin-wide integrated management program has not been carried forward into the GSPs being drafted now. The GSPs each identify different sets of projects, which are also different from the projects identified in the 180/400 GSP. There is little overlap among the projects, and there are no projects that are common to all of the GSPs. Perhaps the most problematic example relates to the water charges framework. DWR relied on the feasibility and likelihood of the integrated set of basin-wide projects funded by the basin-wide water charges framework:

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[2] 23 CCR § 354.24 (requiring discussion of measures that will be implemented to ensure likely achievement of sustainability goal).
[3] 23 CCR § 354.44(a).
[4] 23 CCR §§ 354.44(b)(1)(A).
[5] 23 CCR §354.44(b)(4).
[6] 10721(u) (emphasis added).
[7] *See* Cal. Water Code § 113; 23 CCR § 355.4.
[8] 23 CCR § 350.4.
[9] 23 CCR §350.4(f),
[10] 180/400 Aquifer plan, p. 9-25.

> The water charges framework, at this time, appears feasible and reasonably likely to mitigate overdraft, which is an important management action to help prevent undesirable results and ensure that the 180/400 Foot Aquifer Subbasin is operated within its sustainable yield.[11]

DWR considers the water charges framework to be the "fundamental structure of groundwater management" for the 180/400 Foot Subbasin.[12] The framework was intended to be implemented across all the SVBGSA basins.[13] However, the Upper Valley and Forebay Plans reject the Water Charges Framework,[14] meanwhile the Eastside, Monterey, and Langley plans do not mention the water charges framework in their discussions of funding options.[15]

The disparity between the basin-wide integrated management approach of the 180/400 Aquifer Subbasin GSP and the lack of integrated approach of the remaining GSPs must be resolved. After undertaking the process of developing and approving plans, a GSP must be implemented.[16] The conflict between the GSPs and the 180/400 Foot Aquifer Plan undermines the likelihood the approved 180/400 Foot Subbasin Plan will achieve its sustainability goal.

3. **Timelines for Implementation of Plans Must Be Concrete and Conservative to Ensure the Sustainability Goal Is Fulfilled.**

The GSPs do not satisfy the SVBGSA's duty to demonstrate a likelihood of achieving the sustainability goal by describing how projects and management actions are sufficiently concrete to be relied upon. The GSPs also fail to adequately address evidence of changing water supplies.

As a result of the passage of time, the SVBGSA forecloses its options to manage the basin sustainably. The SVBGSA is responsible for managing the basin sustainably, including being responsible for its choices *not* to initiate projects in a timely manner. Said differently, the choice to allow the status quo to persist is a management decision, the consequences of which the SVBGSA is responsible for under SGMA.

The urgency to begin implementation and commit to a *viable* strategy cannot be overstated. An increasing body of climate change research shows that drought will continue to intensify. For example, NOAA summarized the updated consensus on drought last month:

> The warm temperatures that have helped make this drought so intense and widespread will continue (and increase) until stringent climate mitigation is pursued and regional warming trends are reversed. As such, continued greenhouse gas warming of the U.S.

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[11] DWR, Statement of Findings, 180/400 Foot Aquifer Subbasin, p. 2.
[12] DWR, GSP Assessment Staff Report, 180/400 Foot Aquifer Subbasin (June 3, 2021), p. 31.
[13] DWR, GSP Assessment Staff Report, 180/400 Foot Aquifer Subbasin (June 3, 2021), p. 5 ("Groundwater users will be allowed to pump more than their sustainable allocation; however, this additional pumping (supplemental pumping) will be subject to higher extraction fees. The proposed water charges framework is also proposed to be instituted in the other five groundwater subbasins overseen by the SVBGSA, representing a Salinas Valley Basin-wide management action")
[14] Forebay GSP at 10-15 to 10-16; UVA GSP at 10-15 to 10-16.
[15] Eastside GSP at 10-15; Monterey GSP at 10-23; Langley GSP at 10-15.
[16] Cal. Water Code § 10727(a)

> Southwest will make even randomly-occurring seasons of average- to below-average precipitation a potential drought trigger, and intensify droughts beyond what would be expected from rainfall or snowpack deficits alone.[17]

We concur with Community Water Center's objections to the GSPs relying on the "Central Tendency" scenario in DWR's guidance.[18] Besides the fact that expectations of future drought scenarios have changed since DWR's guidance was published in 2018, the guidance itself encourages groundwater sustainability agencies to analyze the more extreme Dry-Extreme Warming and Wet-Moderate Warming scenarios. There is no reasonable basis for not following DWR guidance and analyzing these scenarios, and choosing not to consider these scenarios constitutes a failure to consider the best available science and information as required by SGMA.

Conservative estimates and plans for water budgeting will protect front line communities from the immediate impacts of groundwater overdraft. The GSPs are expressly required to consider these impacts by SGMA[19] and to ensure consistency with California's Human Right to Water Law[20] which holds up each person's right to have safe, clean, affordable, and accessible water. Overestimating the sustainable yield will undermine the likelihood of maintaining the sustainability goal through the planning and implementation horizon as required under SGMA.[21] Unfortunately, underrepresented communities and ecological and recreational beneficial uses will be the most impacted by the GSPs' failures in the short and long-term.

The SVBGSA's reliance on projects and management actions (such as large infrastructure projects) with uncertain viability due to issues including lack of funding and unpredictable political and permitting regimes that are outside its control does satisfy its legal duties. The SVBGSA must provide concrete triggers and timelines for projects within its control, including pumping restrictions, to demonstrate a likelihood of avoiding undesirable results and meeting the sustainability goal as required under SGMA. Indeed, the State Water Resources Control Board has emphasized to the SVBGSA the importance of establishing specific and reasonable timelines with respect to projects that may be reliant on water rights, including pumping restrictions.[22] Failure to avoid undesirable results, including sea water intrusion impacts, will be devastating, and will create irreversible and expensive impacts for the entire region to deal with once they occur. Management actions that will have an immediate, quantifiable impact, including limiting new wells and taking the necessary steps to initiate pumping restrictions must be included in the GSPs because they provide certainty and therefore are reasonably likely to help meet sustainability goals for the region as SGMA requires.

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17 NOAA Drought Task Force Report on the 2020–2021 Southwestern U.S. Drought, September 21, 2021. Available at https://www.drought.gov/documents/noaa-drought-task-force-report-2020-2021-southwestern-us-drought

[18] Community Water Center Comments on the Draft Salinas Valley GSP Chapters 1-8 for the Langley, East Side, Forebay, Upper Valley and Monterey Subbasins, April 23, 2021, p. 11-14

[19] Cal. Water Code §10723.2.

[20] Cal. Water Code § 106.3.

[21] *See* 23 Cal Code of Reg ("CCR") § 354.24.

[22] State Water Resources Board letter to Craig Altare, Supervising Geologist, SGMA Office, Department of Water Resources, 180/400 Foot Aquifer Groundwater Sustainability Plan (December 8, 2020).

4. The Sustainable Management Criteria and Management Actions for Depletion of Interconnected Surface Waters are Deficient and Violate SGMA and Public Trust and Reasonable Use Doctrines.

Ecological and recreational surface water beneficial uses are not adequately protected under the GSPs.

A. Legal Background and SVBGSA's Duties Related to Depletion of Interconnected Surface Waters.

Plans are required to define sustainable groundwater management by first characterizing undesirable results.[23] Undesirable result number six is defined as "depletions of interconnected surface water that have significant and unreasonable adverse on beneficial uses of the surface water."[24] Plans must include sustainable management criteria ("SMCs") for undesirable results along with sufficiently concrete timelines and commitments for projects and management actions to demonstrate the sustainability goal is likely to be achieved and maintained throughout the planning and implementation horizon.[25] The GSPs' decisions must be supported by the best available science,[26] and SMCs and projects and management actions must be commensurate with the level of understanding of the basin setting.[27]

California's Reasonable Use Doctrine requires the SVBGSA to protect water resources and balance competing beneficial uses consistent with public interest. This doctrine is enshrined in SGMA.[28] Article X, section 2 requires "water resources of the State be put to beneficial use to the fullest extent of which they are capable, and the water or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare." The Reasonable Use Doctrine is the principle governing all uses of water resources in California.[29] Section 100 of the Water Code further mandates "that the conservation of such water is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare."[30]

The SVBGSA also has an affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible.[31] The SVBGSA must consider public trust resources as they relate to groundwater pumping impacts to surface water beneficial uses.

To summarize, the GSPs must first establish criteria, set out measures in sufficient detail to ensure sustainability according to the criteria, and then implement the plan. The SVBGSA

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[23] *See* 23 CCR 354.22; Cal. Water Code § 10721(u).
[24] *See* Cal. Water Code § 10721(x)(6).
[25] *See* 23 CFR 354.22 et seq.
[26] *See* Cal. Water Code § 100; 23 CCR § 355.4.
[27] 23 CCR § 350.4.
[28] Cal. Water Code § 10720.1.
[29] *Joslin v. Mann Municipal Water Dist.,* (1967) 67 Cal.2d. 132, 137-38.
[30] Cal. Water Code § 100.
[31] *National Audubon Society v. Superior Court* (1983) 33 Cal.3d. 419, 446 (1983).

must be guided by the Public Trust and Reasonable Use doctrines, especially given the significant interaction between surface water and groundwater in the Salinas Valley. These doctrines are guideposts for developing the SMCs.[32] The GSPs must undertake an analysis of the impacts to public trust resources and ensure the reasonable use of water. Any consideration of reasonableness must include analysis of the costs to public trust resources and the reasonableness of the loss of fish populations, for example. Ecological beneficial uses of the Salinas River are essential to meeting the success and viability of the South Central Southern California Steelhead.[33]

B. The Sustainable Management Criteria for Depletion of Interconnected Surface Waters Fail to Adequately Consider Impacts to Ecological Beneficial Uses Including Habitat for Steelhead Trout.

Prevention of Undesirable Result Number Six requires the SVBGSA to develop SMCs considering all impacts beneficial uses of surface water including Steelhead habitat. The overarching legal doctrine of reasonable use and public trust provide boundaries governing beneficial uses of surface water, and inform the analysis of what constitute "significant and unreasonable adverse impacts" on beneficial uses of the surface water as a result of these depletions under SGMA.

Groundwater pumping will impact surface waters and have an adverse impact on fish and wildlife. Yet the GSPs fail to provide any analysis of the impacts to public trust resources, the first step in the process to satisfy the public trust doctrine.[34] The SVBGSA has not acknowledged, let alone provided any analysis of the damage to Steelhead Trout habitat that will be caused under the proposed SMCs. This failure also violates the Reasonable Use Doctrine.

I. Reliance on the 2007 Biological Opinion Does Not Fulfill the SVBGSA's duties under SGMA, the Public Trust Doctrine, or the Reasonable Use Doctrine.

The SVBGSA has been repeatedly alerted to the damage being caused under the Biological Opinion and Incidental Take Statement for the Salinas Valley Water Project ("2007 Biological Opinion"),[35] and it should not be used to develop SMCs for the preventing of undesirable results related to the depletion of interconnected surface water. The GSPs fail to consider the impacts on Steelhead populations in particular. Steelhead are of particular importance because of their protected status, and their value as an indicator species for the health and sustainability of Salinas River management. Stakeholders, The National Marine Fisheries Service ("NMFS") in particular, have pressed the SVBGSA for changes due to concerns about

[32] Belin, A., Guide to Compliance With California's Sustainable Groundwater Management Act: How to avoid the "undesirable result" of "significant and unreasonable adverse impacts on beneficial uses of surface waters" (2018) (available at https://stacks.stanford.edu/file/druid:kx058kk6484/Woods%20Groundwater%20Mgmt%20Act%20Report%20v06%20WEB.pdf).
[33] *See* NMFS Comment on UVA (May 7, 2021) Appendix A (Role of Salinas River in Meeting NMFS' South-Central California Coast Steelhead Viability/Recovery Criteria.)
[34] *National Audubon Society v. Superior Court* (1983) 33 Cal.3d. 419, 426.
[35] June 21, 2007.

the failure of the SMCs to undertake a meaningful analysis of impacts to ecological beneficial uses, including for Steelhead Trout habitat. The status quo management strategy under the withdrawn 2007 Biological Opinion does not adequately support ecological beneficial uses and constitutes an unauthorized take of steelhead trout under federal law.[36] This amounts to a violation of both the Reasonable Use Doctrine and Public Trust Doctrine. The GSPs, including projects and management actions that depend on the establishment of valid SMCs, must be revised accordingly.

The GSA has not interrogated the question of how recreational and ecological uses, including flows for Steelhead, are impacted under recent activities managing groundwater. NMFS has commented extensively throughout proceedings on the 180/400 and the proceedings on the remaining GSPs, explaining that the current regime does not protect ecological beneficial uses. Importantly, NMFS has explained that implementation of the withdrawn 2007 Biological Opinion should not be relied on by the GSA as evidence that the current regime supports ecological beneficial uses.

The 2007 Biological Opinion was withdrawn because it did not adequately protect Steelhead and was not protective of public trust resources. For example, the Biological Opinion assumed precipitation would follow historical wet and dry year patterns,[37] and the Salinas Valley Water Project would operate as planned. Neither assumption has proved correct, however. California has experienced severe, multi-year droughts that began after NMFS issued the Biological Opinion in 2007. The Flow Prescription only contemplated water releases from the Nacimiento and San Antonio Reservoirs for steelhead flows in the Salinas River when combined water storage is above 150,000 acre-feet for smolt outmigration or 220,000 acre-feet for adult upstream migration and juvenile passage to the lagoon. The Flow Prescription does allow for 2 cfs of flow to the lagoon during dry years where flows for migration are not triggered. Due to the droughts, reservoir storage capacity has not exceeded the migration-flow trigger levels, relieving Monterey County Water Resources Agency from any obligation to provide conservation releases. Due to declining reservoir storage and low rainfall, fish passage has been impossible, effectively precluding steelhead reproduction. As a result, steelhead trout receive essentially no conservation flow benefit from the Biological Opinion that was crafted with the object of protecting the species.

Since the Biological Opinion was withdrawn, federal and state agencies have made clear that the flow regime it proposed was inadequate and must be updated.[38] The SVBGSA has not explained how it can rely on a withdrawn Biological Opinion and comply with SGMA's mandate to use the best available science and information. The SVBGSA maintains that it can wait for a revised flow regime in a yet-to-be developed Habitat Conservation Plan. Meanwhile The

[36] "Unauthorized take" is defined as "to harass, harm pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C. § 1532(19).
[37] *See, e.g.*, 2007 Biological Opinion, p. 12-13.
[38] *See* South-Central California Coast Steelhead Recovery Plan, National Marine Fisheries Service, West Coast Region, California Coastal Area Office, Long Beach, California (2013) (explaining the failures).

California Department of Fish and Game advise conservatism in such situations, where impacts of groundwater-surface water dynamics are either unknown or in the process of being analyzed.[39]

The Biological Opinion does not support ecological beneficial uses, and the SVBGSA has not explained how reliance on it to establish SMCs will protect ecological beneficial uses, protect public trust resources, and reasonably balance beneficial uses of water. NMFS has commented that the using the proposed SMCs are "likely a take," explaining:

> Given that 2015 pumping levels, and the corresponding impact of surface water depletion on beneficial uses, were likely some of the highest on record due to California's historic drought, preventing those impacts from worsening in the future is hardly a "benefit" to ecological users of surface water, and akin to ensuring a dry river channel doesn't get any drier.[40]

The fact that implementation of the proposed SMCs will cause a take to occurr, in and of itself, constitutes a "red light" scenario under Undesirable Result Number Six, and requires remedial steps by the SVBGSA.[41] The SVBGSA has responded to NMFS concerns, not by changing the substance of the GSPs to better protect ecological uses with meaningful action, but merely by explaining the intent to wait for a new Habitat Conservation Plan to establish a new flow regime that will be protective. This strategy does not analyze, much less incorporate the best information or science as required under SGMA. Neither has the SVBGSA provided any discussion or support for how waiting for a new Habitat Conservation Plan, a process completely outside the control of the SVBGSA, satisfies its duties to safeguard public trust resources and ensure the reasonable use of water.

The fact that the current flow regime is inadequate to support ecological beneficial uses has consequences for the GSPs' water budgets as well. The GSPs must consider the best available information and science in establishing the water budget.[42] The GSPs use of the withdrawn Biological Opinion does not satisfy the SVBGSA's duty to use the best available information and science for the purpose of water budgeting.

II. The Use of Groundwater Levels as a Proxy for Interconnected Surface Water Sustainable Management Criteria is Not Adequately Supported.

Under SGMA, the use of groundwater levels as a proxy in the depletion of interconnected surface water SMCs requires that a "significant correlation exists between groundwater elevations" and undesirable surface water depletion impacts they are designed to measure.[43] However, the GSPs do not establish a significant correlation, ignoring significant and

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[39] Fish & Wildlife Groundwater Planning Considerations. California Department of Fish and Wildlife, Groundwater Program. California Department of Fish and Wildlife (2019) p. 14 (available at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=170185&inline)

[40] NMFS Comment to Upper Valley Aquifer GSA, May 7, 2021.

[41] Belin, A., Guide to Compliance With California's Sustainable Groundwater Management Act: How to avoid the "undesirable result" of "significant and unreasonable adverse impacts on beneficial uses of surface waters" (2018).

[42] 23 CCR § 354.18(e).

[43] 23 CCR § 354.36(b).

unreasonable impacts to Steelhead, and by proxy, to the ecological health of the Salinas Basin, that are accruing under the current and projected future levels of groundwater pumping. These local circumstances, including the most relevant and current facts and impacts on recreational and ecological resources must be analyzed to establish any significant correlation. Simply citing to a 2018 Environmental Defense Fund guidance, as the SVBGSA has done, is not adequate to establish the proxy relationship. In fact, that guidance makes clear that local conditions and circumstances must be analyzed, and does not suggest that groundwater levels should be used as a proxy without such analyses.[44]

The SMCs must be reevaluated in light of the body of evidence that ecological and recreational beneficial uses are not adequately being protected. SGMA requires this information be included in the analysis of significant and unreasonable adverse impacts on beneficial uses of surface water. Despite the requirements of the Public Trust and Reasonable Use doctrines, the GSPs fail to use reasonable means available under its authority to analyze, much less limit unreasonable impacts to surface water beneficial uses and public trust resources. The SVBGSA must, as a starting point, acknowledge what those impacts are. Then the SVBGSA must determine the implications for sustainable groundwater management in the Salinas Valley.

C. Projects and Management Actions for Preventing Undesirable Result Number Six Are Not Supported by the Best Available Science.

Projects and management actions to address depletion of interconnected surface waters must consider the best available science.[45] The GSA must support its conclusions with substantial evidence after applying the best science that is available now. As explained above, the proposed SMCs, which are supposedly designed to protect against undesirable result number six, depletion of interconnected surface waters, rely on outdated findings from the 2007 Biological Opinion that has been retracted, and ignore more recent data and information. The GSP ignores ample evidence that has been submitted to the SVBGSA demonstrating the need for increased flows to support ecological beneficial uses. Relying on the Biological Opinion's flow regime while ignoring the reasons it was withdrawn and supplemental information violates SGMA regulations requiring the best available science and information support decisions in plans.

D. The GSPs Do Not Include Reasonable Steps to Develop Protective Sustainable Management Criteria, Projects, and Management Actions.

As with other SMCs, SGMA's mandate that the GSPs address depletion of interconnected surface waters requires that management actions the GSPs proposes are reasonable and supported by the best available science. In addition, the Public Trust places an affirmative duty on the SVBGSA to consider public trust resources and protect them "whenever

[44] *See* Hall, M., Babbitt, C., Environmental Defense Fund, Addressing Regional Surface Water Depletions in California, A proposed approach for compliance with SGMA (2018) p. 7 (available at https://www.edf.org/sites/default/files/documents/edf_california_sgma_surface_water.pdf).
[45] 23 CCR § 354.44(c).

feasible,"[46] and the Reasonable Use Doctrine requires that GSPs provide for "the greatest number of beneficial uses which the supply can yield."[47]

The SVBGSA's plan to "continue to coordinate with NMFS on the effect of pumping on interconnected surface water and steelhead trout" falls well short of these standards. The GSPs must set forth concrete steps that will be taken to establish legally sufficient SMCs, including impacts to Public Trust resources. SGMA requires corresponding projects and management actions, sufficient to support the determination by the SVBGSA that the sustainability goal will be met, be included in the GSP, and then implemented. The SVBGSA must separately demonstrate that it has fulfilled its duties under the Reasonable Use and Public Trust doctrines. Indeed, an attempt to avoid or minimize the harm to public trust uses is the second step required by the Public Trust Doctrine.[48]

5. Sustainable Management Criteria and Management Actions Related to Water Quality Violate SGMA.

The GSPs must analyze how groundwater conditions impact and degrade water quality. While the SVBGSA may not be the only agency with some responsibility over groundwater quality, the fact that other agencies including the County and the Regional Water Quality Board have authority and responsibility to address water quality degradation does not relieve the SVBGSA from its duty to ensure groundwater conditions in the basin do not create undesirable results. DWR rejected the SVBGSA's narrow interpretation of its responsibility to protect against water degradation.[49] The fact that multiple other agencies share responsibility demonstrates that the statutory scheme does not intend to rely on the regulatory actions of any single agency.

SGMA requires the GSPs to address degradation of water quality that accrues after January 1, 2015.[50] SGMA states that a plan "may, but is not required to, address undesirable results that occurred before, and have not been corrected by, January 1, 2015." Thus, the GSPs must address all worsening water quality that results from groundwater use, including instances where water quality may have already violated maximum contaminant levels in 2015.

Nothing in SGMA's mandate that the GSPs address water quality degradation permits the SVBGSA to ignore water quality degradation that results from third party pumping. The GSPs must address the effects of its regulatory acts, and its failures to act.[51]

The State Water Resources Board identified the importance of the SVBGSA sorting out its responsibilities vis-à-vis other agencies in 2020:

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[46] *National Audubon Society v. Superior Court* (1983) 33 Cal.3d. 419, 446.
[47] *Peabody v. City of Vallejo*, 2 Cal. 3d 351, 368 (1935).
[48] *National Audubon Society v. Superior Court* (1983) 33 Cal.3d. 419, 426.
[49] DWR GSP Assessment Staff Report, Salinas Valley – 180/400 Foot Aquifer (June 3, 2021) p. 27.
[50] Cal. Water Code §§10727.2(b)(4); 10721(x)(4).
[51] *See, e.g.,* Cal. Water Code § 10721(u) (explaining that the plans must achieve the sustainability goal by identifying and causing the implementation of projects and management actions).

> The GSP states that only water quality impacts caused by GSP implementation are unacceptable but does not explain how SGMA-related water quality changes will be distinguished from other water quality changes. The GSP should outline the process the GSAs would use to decide whether or not an exceedance of an MT for water quality degradation was caused by GSP implementation; otherwise, it is difficult to judge how adequately the GSP addresses undesirable results related to water quality degradation. Staff recommends that the GSAs consult with the Central Coast Water Board in developing this process.[52]

Not only does the SVBGSA have responsibility to consider water quality impacts, but the GSPs must also put in place concrete plans for determining which agency will take responsibility under which circumstances, to ensure that water quality issues are dealt with. The State Water Board and DWR have identified the importance of consulting with the Central Coast Water Board to ensure responsibilities are understood and water quality is adequately protected.[53]

The proposed "Water Quality Partnership" project and/or management action in the GSPs[54] does not satisfy SGMA's requirement that he SVBGSA provide findings determining the project and management actions will achieve the sustainability goal,[55] nor do the GSPs include required descriptions of circumstances under which the partnership will be implemented, criteria triggering implementation,[56] time-tables for initiation and completion,[57] or an explanation of how the project or management action will be accomplished. The GSPs must identify and *cause* the implementation of the Water Quality Partnership actions.[58] Providing these details is a critical and required component for demonstrating the GSPs are likely to meet the sustainability goal, as the SVBGSA is required to do.

The Water Quality Partnership needs to be revised to be an effective, enforceable commitment to action by the agencies with the most direct oversight of the cause of any exceedance. At minimum, a management action that addresses water quality degradation should include the following specific details, which should be negotiated and memorialized in a memorandum of understanding ("MOU") to include the SVBGSA, the Regional Water Quality Board, and the Monterey County Department of Environmental Health:

- The agencies must monitor a sufficiently representative sampling of domestic wells to reliably determine any instance of a domestic well's failure to meet water quality standards;

- An approach to reach agreement between the agencies, for each instance of failure to meet the measurable threshold for water quality, about whether the cause includes (1)

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[52] State Water Resources Board letter to Craig Altare, Supervising Geologist, SGMA Office, Department of Water Resources, 180/400 Foot Aquifer Groundwater Sustainability Plan, Groundwater Subbasin No. 3-004.01(December 8, 2020), p. 3.
[53] *Id*; DWR GSP Assessment Staff Report, Salinas Valley – 180/400 Foot Aquifer (June 3, 2021), p. 27.
[54] *See, e.g.*, Eastside Aquifer Plan, pp. 9-100 - 9-101.
[55] 23 CCR § 354.44(a).
[56] 23 CCR § 354.44(b)(1)(A).
[57] 23 CCR §354.44(b)(4).
[58] Cal. Water Code § 10721(u) (emphasis added).

discharge of pollutants and/or (2) pumping activity that has concentrated, mobilized, or moved pollutants. Each instance, there must be public oversight and clear system of accountability for the agency/agencies that are assigned responsibility;

- Where the cause includes pumping activity, the SVBGSA should take action to abate the pumping that is causing the failure to meet water quality standards;

- Adequate funding for all aspects of the project, including financial support for outreach to underrepresented communities;

- Unless and until the Water Quality Partnership approach results in an improvement in the water quality for the impacted well immediately after reporting, the minimum threshold should be set at 75% of the relevant maximum contaminant level to adequately protect public health.

In addition, the MOU for the Water Quality Partnership should be finalized in a timely manner. Further, the agencies should report out to the public on those meetings regularly and the GSPs should establish a concrete timeline for when the respective requirements of the MOU will be complete, and consequences if the timelines are not met.

Lastly, we voice our agreement with the voluminous comments Community Water Center has provided to the SVBGSA on water quality impacts for disadvantaged communities in particular. We implore the SVBGSA to give attention to the robust and detailed contribution of Community Water Center staff on the GSPs.

6. The SVBGSA Should Take Meaningful Steps to Improve Representation of Underrepresented Communities

The SVBGSA must take meaningful steps to remedy the disparity of representation with the SVBGSA and its board, as required by SGMA[59] and to ensure consistency with California's Human Right to Water Law.[60]

The GSPs' discussion of Underrepresented Communities acknowledges that they "have little or no representation in water management and have often been disproportionately less represented in public policy decision making."[61] However, the SVBGSA makes no meaningful commitment to remedy this issue. The GSPs should identify funding for these projects, and provide specifics as to exactly how these plans will be executed. The GSPs should explain what metrics they will use to evaluate and demonstrate the increased "representation" for underrepresented communities. The GSPs should attach specific timelines to these metrics, and also describe binding consequences that will be triggered if the SVBGSA fails to meet its goals.

In addition, to increase the representation of underrepresented communities, we implore the SVBGSA to incorporate the suggestions and direction of organizations such as Community Water Center, an organization that has dedicated significant resources to the ongoing creation of

[59] Cal. Water Code § 10723.2 (expressly requiring SVBGSA to consider interests of all beneficial users).
[60] Cal. Water Code § 106.3.
[61] *E.g.,* Upper Valley Aquifer Subbasin plan, p. 10-8.

SVBGSA GSPs and which has an express mission to represent underrepresented communities on the Central Coast.

Lastly, there is a systemic flaw that underlies the SVBGSA creation of its plans and will surely plague the implementation until it is resolved: the structural over-representation of agricultural interests in decision making for the SVBGSA. In addition to strong agricultural interests intrinsic to seats appointed by municipalities and the County of Monterey, four seats of the eleven-seat board are allocated to "agricultural interests." A super majority of three of those four agricultural votes are required for the most consequential decisions including to impose certain fees and impose pumping limits. To increase "representation" of underrepresented communities who often bear the burdens of unsustainable groundwater use, the SVBGSA should increase the representation of non-agricultural beneficial users, especially underrepresented communities, on the SVBGSA board to allow interests of these other beneficial users to meaningfully participate in decision making. Funding should be set aside for seats designated for underrepresented communities to ensure the seats are accessible for those with limited resources.

Thank you for your consideration, and we look forward to ongoing work with the SVBGSA to ensure our shared groundwater resources are managed sustainably.

Sincerely,

Tyler Sullivan, Staff Attorney
Drevet Hunt, Legal Director
California Coastkeeper Alliance

Sean Bothwell, Board Member
Monterey Waterkeeper

Copy via email to:
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October 15, 2021

Donna Meyers, General Manager
Salinas Valley Basin Groundwater Sustainability Agency
1441 Schilling Place
Salinas, CA 93901

Re: Draft Forebay Aquifer Subbasin Groundwater Sustainability Plan

Dear Ms. Meyers:

Monterey County Water Resources Agency (Agency) appreciates the opportunity to comment on the draft Forebay Aquifer Subbasin Groundwater Sustainability Plan (GSP). As you know, Agency staff has been involved in reviewing this GSP in a technical role to assure that the data collected and curated by the Agency is utilized and described in an accurate manner.

What the Agency has been unable to do is to review most of management actions and projects in this document for feasibility and to verify the claims of benefits to groundwater sustainability. The management actions and projects that involve modifying many of the Agency's operations, projects, programs and/or permits have not been vetted by the Agency to ensure that Agency's goals and objectives will continue to be met if implemented. This document does not contain enough detail for an in-depth review which would be required before the Agency could provide support for these activities. Therefore, the Agency considers most of these management actions and projects as conceptual ideas that provide the Salinas Valley Groundwater Basin Sustainability Agency (SVGBSA) with a menu of options to move forward in this planning phase. What moves forward to implementation has yet to be decided. The Agency understands that feasibility studies will be conducted by the SVBGSA before any considerations for implementation of management actions or projects that utilize Agency facilities, operations or permits will proceed. Coordination and discussions between the Agency and SVBGSA are pertinent to this being successful.

SVGBSA staff has characterized this GSP as a starter document that will be revised in an iterative process and does not commit the Agency to any specific actions. The Agency looks forward to those revisions and updates that contain feasibility studies for the management actions and programs that include a complete project description that outlines specific tasks, identifies the benefits to the entire Salinas Valley Groundwater Basin and determines costs along with a sustainable funding mechanism for implementation.

MCWRA staff has reviewed the draft GSP, except for Chapter 9 – Projects & Management Actions, released by the SVGBSA on August 18, 2021 and provide the following comments for consideration:

Volume 1

Chapter 2, Section 2.2, page 2-2, last bullet: Correct “Resource” to “Resources” in listing Monterey County Water Resources Agency under water agencies.

Section 4.4.1.1, page 4-15, paragraph 3: The Deep Aquifers Study is now being spearheaded by the SVBGSA, not MCWRA.

Section 4.4.5.1, page 4-29: The discussion on interconnected surface water references results from the preliminary SVIHM (also depicted in Figure 4-9) but the USGS disclaimer about model results does not appear prior to this in the report. The disclaimer is included in Volume 2 (page 6-1), but it may be useful to include it sooner if data from the SVIHM is referenced.

Volume 2

Section 5.5.2, page 5-30, paragraph 4: Draft GSP states that the principal conservation release period is June through September. Is this intended to be the same as what MCWRA refers to as the conservation release period? If so, that period is April to October.

Section 6.1, pages 6-1 and 6-2: The watershed model in the SVIHM is referred to as the Salinas Valley Watershed Model (SVWM). It uses the HSPF code, in the same way that the SVIHM uses the MODFLOW-OWHM code, but it is known as the SVWM.

Section 6.3.1, page 6-15, Table 6-5: Same comment about the months that are referred to as the conservation release period (June through September in draft GSP vs April to October in typical MCWRA terminology).

MCWRA appreciates the opportunity to comment on the draft GSP for the Forebay Subbasin. If you have any questions regarding the enclosed comments, please contact MCWRA at 831-755-4860.

Sincerely,

Elizabeth Krafft
Deputy General Manager

Number	Chapter	Date	Commenter	Comment	Response	Action
1	3	7/10/2020	Heather Lukacs, Community Water Center	See letter attached.	Received	Comment about plan area description: - Lists of 1) large public, 2) small public, and 3) local small and state small water system names and IDs were added to Appendix 3A. The number of connections for each system was included is available. - Private domestic wells are not included in "Communities Dependent on Groundwater" figure in Section 3.2.1; however, domestic wells are included in the figure showing Domestic Well Density in Section 3.3. Comment about water system maps: - Map of locations and service areas for 1) large public, 2) small public, and 3) local small and state small water systems was added to Chapter 3, symbology of map categorizes the water systems by number of connections. This map replaces the previous "Communities Dependent on Groundwater" figure. The water systems are not labeled on the map because there are too many water systems too fit all the labels for them; however, names of the water systems are included in SVBGSA's Web Map: https://portal.elmontgomery.com/?14. - Monterey County Environmental Health was contacted and the parcel data used to make water system boundaries for maps was update. In regards to their water quality data, County Health monitors for coliform at least annually, and nitrate and arsenic sampling depends on level and history. SVBGSA had originally planned to work with the County to add data from small and local water systems into the monitoring network; however, water quality data can't be easily compiled and sent to us to analyze. Same goes for any specific well data. In addition, there is sufficient other available data to characterize the basin. There were no water quality data gaps identified per SGMA requirements for GSPs as there is adequate spatial coverage to assess impacts to beneficial uses and users. Comment on Section 3.2.2: An 'Other' category was added to the water use sectors, which includes rural residential water use added to Section 3.2.2. Comment on Chapter 3 water quality discussion: § 354.16(d) is addressed in Chapter 5. Groundwater Conditions, including groundwater quality issues that may affect the supply and beneficial uses of groundwater, including a description and map of the location of known groundwater contamination sites and plumes. Maps of 2013 to 2019 exceedances of the Title 22 regulations in DDW and ILRP on-farm domestic wells and Basin Plan water quality objectives for ILRP irrigation supply wells are included in a new Chapter 5 Appendix.
2	9	10/19/2020	Jerry Lohr	See letter attached.	Received	Thank you for the support for winter release with ASR, arundo removal, and drought reservoir operation, as well as the suggestions on potential agricultural BMPs to promote.
3	9	11/3/2020	Nancy Isakson, Salinas Valley Water Coalition Board	See letter attached.	Received	Thank you for the feedback on projects and management actions. SVBGSA will work with MCWRA and stakeholder partners on further refinement and implementation of projects and management actions, including those that result in reoperation of the reservoirs.
4	8	11/4/2020	Tom Virsik	See letter attached.	Received	Table 8-8's first line changed from "Appropriation" to "Appropriation per Permit." Text adjusted to say "the one **permitted** appropriative water right holder," and to note that pre-1914 rights might not be accounted for.
5		11/8/2020	James Sang	See letter attached.	Received	Thank you for the project ideas. Swales and rainwater collection could be promoted under the agricultural BMPs management action included in the GSP.
6	9	1/5/2021	Salinas Valley Water Coalition Board	See letter attached.	Received	Pumping allocations are not included in the Forebay Subbasin GSP.
7		1/12/2021	Salinas Valley Water Coalition Board	See letter attached.	Received	Thanks, river maintenance has been added as a component under the Multi-benefit Stream Channel Improvements.
8	All subbasins	3/10/2021	George Fontes, Salinas Basin Water Alliance (SBWA)	See letter attached.	Received	Concerns about the effect of water budget calculations on farming have been noted and will be considered. We understand the desire to review water budgets before discussing pumping allocations as a potential management actions. This was done to have sufficient time to discuss projects and management actions because the model that was used to develop the water budget was not available at that point. The water budget chapters were released prior to finalizing those actions. 2013 was used as an example for discussion, but the water budget uses data through 2016. Groundwater conditions chapter uses data through 2019. A key implementation action in the GSP will be GEMS expansion.
9		3/23/2021	Curtis Weeks, Arroyo Seco Groundwater Sustainability Agency	See letter attached.	Received	Comments received
10	7	4/21/2021	George Fontes, Salinas Basin Water Alliance (SBWA)	See letter attached.	Received	Noted. SVBGSA will work with MCWRA to determine the best way to improve the collection of groundwater pumping data in the Salinas Valley. The current GEMS data is the best available data and thus the data that is used to inform water budgets and projects and management actions.

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11	6	4/22/2021	Gus Yates	See letter attached.	Received	*Water Budget Analysis Period were Poorly Chosen* : Noted. The historical period was chosen to be consistent with the regulation requiring that historical water budgets be based on, "…the most recently available information and extending back a minimum of 10 years" (CCR, §354.18(c)(2)(B). The historical average accounts for conditions during dry and wet periods. The GSP has been edited to note that the trend in the groundwater storage is more important than the storage difference between the beginning and ending years. The current tool being used for developing the water budget was the SVIHM, which ends in 2017. We initially selected 2017 as the current year for water budgets. However, a limitation in the model inputs for 2017 resulted in large uncertainty for that year. Thus, 2016 was selected because it was the last year simulated by the SVIHM. Current water budgets are merely reported and are not used for managing the GSP. *SVIHM Model Produced Incorrect Storage Changes* : Noted. Adjustments were made to the reported water budgets in the GSP to account for potential error in simulated pumping and change in storage. *Estimated ASCMA Agricultural Pumping is too Low:* Noted. The pumping in the provisional SVIHM is less than reported pumping Adjustments were made in the GSP to the reported water budgets and sustainable yield estimates to account for this discrepancy. *A Different Method Should be Used to Estimate Sustainable Yield* : SVBGSA recognizes that there is uncertainty in any sustainable yield estimate. To address this uncertainty, the Forebay GSP now includes a range of likely sustainable yield estimates. The sustainable yield estimates now incorporate the most accurate pumping data, addressing the concerns about inaccuracies in the simulated pumping. The comment is correct that sustainable yield addresses more than change in storage. The GSPs state that sustainable yield values are simply guidelines. Sustainability will not be measured solely by pumping within the estimated sustainable yield, but will be measured by avoiding undesirable results for all six sustainability indicators. *Arroyo Seco Percolation is too Small* : The GSP has been modified to acknowledge this discrepancy between measured and simulated Arroyo Seco Percolation. Model parameters related to stream seepage will be evaluated in the future and adjusted if appropriate. Adjustments could be made based on measured flows at gauges along the stream and other known or estimated inflows to and outflows from the stream between the gauges. *Riparian ET Appears to be too Large* : Noted. Riparian ET is estimated by the provisional SVIHM using input parameters specified by the USGS. Documentation on how riparian ET is simulated is not available at this time.

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12	1 to 5, 7, and 8	4/23/2021	Heather Lukacs, Community Water Center & Horacio Amezquita, San Jerardo Cooperative, Inc	See letter attached.	Received	Chapter 3: A map of all DACs and a DAC appendix are added to Chapter 2. A map with all state and local small water systems for which the GSA has boundaries for is now included in Chapter 3. A table listing all water systems is added in Appendix 3A. Chapter 4: Text about the effect of groundwater pumping on groundwater quality was added to Chapter 5 in the "Distribution and Concentrations of Diffuse or Natural Groundwater Constituents" section. A discussion on the effect of lowering groundwater elevation on groundwater quality is included in Chapter 8 in the "Relationship between Individual Minimum Thresholds and Relationship to Other Sustainability Indicators" section for groundwater elevations under the degraded water quality bullet. Chapter 5: -Nitrate trends are included based on a review of exis. ng studies. The analysis of temporal trends are not required and would entail substantial additional work that would not likely change the management approach. Water quality data for DDW wells and ILRP on-farm domestic and irrigation supply wells were used to make maps showing the spatial distribution of water quality exceedances of Title 22 or Basin Plan standards from 2013 to 2019 are now included in a new Chapter 5 Appendix. -The relationship between declining water levels and water quality degradation was evaluated for the Eastside Subbasin as presented in the December 2020 Subbasin Planning Committee Meeting. Although there seems to be a relationship between decreasing groundwater elevations and degrading water quality, within the analysis for the Eastside, subbasin-wide data does not show a strong correlation. Thus, the data is not definitive enough to determine if the decline in groundwater quality is due to additional loading of constituents or lowering of groundwater elevations. There maybe a corrleation within individual wells, like is seen in San Jerardo, however, that could be due to those other factors. -Table 5-3 list the constituents of concern (COC) with exceedances in the latest sample for each COC in each well that has not been destroyed or abandoned, and it has been updated to be consistent with Table 8-5 that lists the minimum thresholds and measurable objectives for these constituents only. Table 8-6 list all the constituents for which data is available for the 3 types of wells in the monitoring network (DDW wells, ILRP on-farm domestic, and ILRP irrigation supply wells). Table 5-3 and Table 8-5 do not list all the constituents that have had an the exceedance in these 3 sets of wells, it only includes exceedances that occured in the latest sample, while Table 8-6 includes all the constituents that were included in the analysis that have been sampled for historically in each set of wells. Chapter 6: The sustainable yield derived from the model has been adjusted based on pumping reported through the GEMS program. This GSP uses the central tendency climate scenario recommended by DWR. Although DWR encourages evaluation of the other extreme climate scenarios, they are not required and would not likely change the management approach at this time, so they are not currently included. Climate change assumptions will be reevaluated as part of the 5-year update. Chapter 7: -Groundwater Elevations: RMS wells were chosen based on geospatial distribution and well depth. Additionally, the network is dependent on the wells that are already monitored by MCWRA. This was done to avoid any overlap in monitroing of groundwater elevations. Thus, the types of wells that SVBGSA has access to is dependent on the wells that MCWRA has permission to monitor. -Water Quality: Small public water systems wells, regulated by Monterey County Health Department, include both state small water systems that serve 5 to 14 connections and local water systems that serve 2 to 4 service connections. SVBGSA had originally planned to work with the County to add data from small and local water systems into the monitoring network. These wells are not in the current proposed monitoring system because well location coordinates, construction information and quality data are not easily accessible. The Monterey County Health Department monitors water quality in the state small and local water systems and their data is not readily transferable. In addition, there is sufficient other available data to characterize the basin. There were no water quality data gaps identified per SGMA requirements for GSPs as there is adequate spatial coverage to assess impacts to beneficial uses and users. As stated above, the water quality monitoring approach has been updated in V2 to include last time any well was sampled, not just the most current year. Chapter 8: -Groundwater Elevations: Domestic well analyses were conducted for the minimum thresholds and measurable objectives. Wells that did not have accurate locations were not included, because water levels vary greatly throughout the Subbasin, thus, it is unlikely that the water level for the centroid of a PLSS section can accurately represent all wells that have the centroid of the section as their location. -Water Quality: Subbasin planning committees determined the approach to setting SMC.

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13	9	4/28/2021	Community Water Center	See letter attached.	Received	Local Groundwater Elevation Trigger: Thanks for support of the program (now titled Dry Well Notification System). This program focuses on access, not quality. A robust drinking water well mitigation program falls within the responsibilities of other agencies; however, the GSA may consider supporting such a program. The text has been revised to explicitly include it as a potential program that the GSA can collaborate with other agencies on through the Water Quality Partnership. To set MOs at 75% of the MCLs for drinking water, the GSA would need to take on responsibility for cleaning up groundwater contamination present prior to 2015, which would take significant effort and is not the GSA's responsibility. The GSA does acknowledge the need for action on water quality, and will work with other agencies to determine what the GSA's role in that is. The Domestic Water Partnership: This has been expanded to be the Water Quality Partnership. Domestic water quality will be a main issue, but it will also include other collaboration needed on water quality, as identified by stakeholders and DWR.
14	7	5/12/2021	Norm Groot, Salinas Basin Agricultural Water Association (SBAWA)	See letter attached.	Received	The SVBGSA does not plan to set any additional water quality objectives in the GSP, rather the existing constituents of concern exceedance thresholds for irrigation wells are set based on Ag Order 4.0. This is clarified in the GSP text.
15	All subbasins	5/13/2021	Fred Nolan	See letter attached.	Received	We have scoped recycled water projects in subbasins where there is a sufficient quantity of available source water. We will continue to monitor future oppurtunities to use recycled water.
16	10	5/31/2021	Gus Yates	See letter attached.	Received	Section 10.1.1.1: MCWRA water level data is not confidential. All of the water level data used in GSP monitoring is made publicly available through the SVBGSA web map. There is a well in the middle of the circle on the right, so please clarify your request. SVBGSA is proposing to add a groundwater elevation monitoring well in the left-hand data gap for ISW and it will be used for groundwater elevations too. This is clarified in the text. Section 10.1.1: Correct, SGMA regulations require reporting of groundwater level data twice a year (fall/spring). In the Forebay, 17/39 of RMS are on the monthly program and the rest are on the annual program. You are correct that we need to collect water level data twice per year. We will update the monitoring protocols to ensure that all wells that are on the annual program at least get onto a semi-annual program. For consistency throughout the Valley and with MCWRA, MTs are measured in Nov/Dec. Section 10.1.3.2: SVBGSA is in the process of establishing the ISW monitoring network. We have identified wells that appear to be adequate as noted in Ch 7 and these wells and their construction information, if available, are provided in a new ISW monitoring network Appendix. Not all these wells belong to Monterey County, although monitored by MCWRA, so once permission is secured from the well owner, the well will be added to the network. Some existing shallow wells that have been identified are deeper than 30 feet because they are shallow enough that they effectively represent the water table and the depth to water within those wells are typically within 30 feet. Section 10.1.4.1: The aquifer properties tests will be completed in deeper wells more representative of the Forebay aquifer, not in shallow wells. Page 5, 1st top-level bullet: In the HCM, lithologic and hydrostratigraphic data of the Deep Aquifers is a data gap. SVBGSA is requesting that DWR fill this through installing a well as part of the SGMA Technical Support Program. Page 10, bullet list: Noted.
17	9	6/11/2021	Tom Virsik	See letter attached.	Received	*Sustainability Is Either to Be Maintained or Will Be Attained in The Future* : GSP text has been edited to reflect that the UV, F, and L subbasins need to maintain (not attain) sustainability. *Adaptation Cannot Be Limited To Deference To Others' Actions* : The intent of the language was not to omit other arrays of power or GSA duties, so the GSP text has been revised to read: "…the GSA will consider the effect of any such changes in meeting sustainability goals and will act in furtherance of reaching such goals." *Distinguishing Between Basin And "Valley" Must Be Clear and Specific* : Suggested edits made. *Price Of Land Is Not Uniform* : The average cost of land and rent was derived from a source that had subbasin-specific estimates. It is understandable that even within a subbasin the cost of land acquisition is highly variable; however, this was the best available information on the average cost of land. Text was added noting that the cost of land is highly variable. *Benefits and Costs Of Projects Are Inaccurate and/or Muddled* : Text has been clarified to note when costs/benefits are "multi-subbasin", not "valley-wide" or "regional." The determination of which subbasins will pay for projects will be determined through a benefits assessment during GSP implementation. The Interlake Tunnel project includes the spillway modification, and the cost has been updated to reflect that. *Water Metering Should Follow—Or At Least Not Contradict—State Regulations* : Additional text has been added to the GEMS expansion implementation action noting that "program revisions will consider and not contradict related state regulations."

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18	9 and 10	6/16/2021	Nancy Isakson, Salinas Valley Water Coalition Board	See letter attached.	Received	Per the Implementation Agreement, the ASCMA is not distinguished from the rest of the Forebay Subbasin in Ch 9 because the projects and management actions could be implemented anywhere within the Forebay Subbasin, including in the management area. Projects and management actions will be implemented only if necessary, but the GSP should not preclude their implementation there. All references to "attaining" sustainability have been changed to "maintaining" sustainability. Section 9.1: Projects and management actions provide options for the next 50 years, and therefore, even though the Forebay is sustainable now, it does not eliminate the potential need for projects and management actions, including providing incentives to constrain groundwater pumping with limits. Section 9.2.1: The 180/400-Foot Aquifer Subbasin GSP was developed as part of a Valley-wide process to identify projects and management actions throughout the Salinas Valley, and the GSP included projects that benefited the groundwater anywhere in the Valley, not just the Subbasin. SVBGSA recognizes the stakeholder engagement that went into that process and built on it for the Forebay Subbasin GSP, but decided to narrow the focus on the Forebay Subbasin GSP to those projects that directly affect the Forebay. Section 9.2.2: water purchase costs are referred to for existing infrastructure only, not new infrastructure, that is being funded by or bonds being repaid through fees to water users. For example, this could be occurring if a water system incorporated the costs of a new well into the water purchase cost to its users. If this is already occurring, the costs are not included in the cost estimates for these projects. Section 9.3: Reach has been changed to maintain. Table 9-1: the cost breakdown between subbasins cannot be determined until the benefits breakdown is determined by an engineers report; however, the term "valley-wide" was changed to "multi-subbasin" to reflect that it is not necessarily applicable to the whole valley, nor shared equally. Section 10.1.4: As presented at the November 4, 2020 Forebay Subbasin Planning Committee meeting, there is/are multiple published reports that indicate that the Deep Aquifers, and/or the sediments which comprise the Deep Aquifers, exist into the Forebay Subbasin, even though the boundaries of this extent is are still uncertain. The Deep Aquifers refer to all the water-bearing sediments beneath the 400-Foot Aquifer in the 180/400-Foot Aquifer Subbasin, or their equivalent in neighboring the subbasins: Monterey, Forebay, Langley, and Eastside (Hanson, 2001). Other published reports from Thorup, MCWRA, Brown & Caldwell, and others substantiate this statement as well. Furthermore, the extent and the continuity of the aquitards that separate the principal aquifers are unknown, and as such all the water-bearing sediments within the Forebay Subbasin are generally considered hydraulically connected. Therefore, any pumping at any depth within the Forebay Subbasin may have an impact on storage and recharge mechanisms throughout the Subbasin. MCWRA is preparing for the Deep Aquifers Study, and a more informed extent (lateral and vertical) of the Deep Aquifers will be investigated at this time. Additionally, the Zone 2C Subarea Boundaries, while analogous to the Bulletin 118 Subbasins, are not the same as the Bulletin 118 Subbasins. Section 10.3.2: The Forebay Pumping Restrictions TAC has been changed to an SMC TAC more similar to that of the Upper Valley, with Chapters 9 and 10 adjusted accordingly. Section 10.3: It has not yet been determined which agency will undertake these steps. SVBGSA and MCWRA have a collaborative relationship that acknowledges that the plans, policies, and infrastructure of each agency affects the other one. The text has been edited to clarify that "SVBGSA will work with MCWRA on these steps…". Section 10.5.3: Although a water charges framework and water marketing are potential funding mechanisms, the Forebay Subbasin Planning Committee agreed they are not their preferred funding mechanisms.

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19	2, 9, and 10	6/17/2021	Heather Lukacs, Community Water Center & Horacio Amezquita, San Jerardo Cooperative, Inc	See letter attached.	Received	Chapter 2: Outreach strategies are outlined in the "Strategic Engagement of Disadvantaged Communities" proposal which was approved by the Board of Directors. Short and middle term actions were identified to complete from January 2021-August 2021 and work has begun on these items during the GSP development period and will be operational for implementation in Fall 2021. Middle and long-term actions associated with working with Underrepresented communities were identified for 2022. Chapter 9: -Recharge projects: Additional text was added to address the potential water quality concerns associated with recharge projects. -Reoperation of the Reservoirs: The Interlake Tunnel and Drought TAC are MCWRA projects, and therefore MCWRA is responsible for conducting cost-benefit analyses and ensuring that all beneficial water users are considered. For any projects pursued by the SVBGSA, SVBGSA will consider impacts on underrepresented communities during the project design phase. -Conservation and Ag BMPs: text was added to communicate the environmental benefits of compost and soil organic matter. -Fallowing: Text was added that water quality and access for drinking water wells should be considered when deciding where to incentivize agricultural fallowing or land retirement. -Forebay Pumping TAC: The Subbasin Committee decided to change this project to be similar to the UV SMC TAC. -UV SMC TAC: Groundwater quality is included within the purview of the SMC TAC, so it can make recommendations of projects that mitigate groundwater quality degradation for drinking water users, including impacts due to pumping. -Pumping allocations and control: Quantification of demand reductions needed will be determined as part of project selection and design, as it depends on what other projects and management actions are implemented. -Floodplain enhancement and recharge: The following text has been added: “The effect of increased recharge on surrounding groundwater quality will be considered when selecting sites.” -GEMS Expansion: Which wells are included will be determined as part of the revision of the program. -Water Quality Partnership: The suggested activities (drinking water well mitigation program, integrating water quality across planning and implementation, and filling data gaps) are all potential activities under the Partnership. SVBGSA will work with partner agencies to prioritize activities that they will collaborate on under the Partnership. -Well registration:SVBGSA cannot meter de minimis users; however, the well registration program is intended to collect needed information on the wells that are in use. -Eastside Support Protection of Areas of High Recharge: This implementation action does not develop recharge projects itself, but rather seek to protect areas of naturally high recharge from future land uses that reduce its recharge capacity. This could include the use of low-impact cover crops, where appropriate. -Eastside new water supply projects: More detailed project scoping, cost-benefit analyses that will determine the benefit to each subbasin, and project prioritization will occur during GSP implementation and are needed steps prior to determining which projects will mitigate overdraft; however, as shown in Chapter 9, there are sufficient projects and management actions to mitigate overdraft in the Eastside. Chapter 10: -Whether to undertake interim actions and what those should be will be part of the discussion during GSP implementation. -The missing data on the locations of domestic wells will be gathered through the well registration program. -Small system data - Small public water systems wells, regulated by Monterey County Health Department, include both state small water systems that serve 5 to 14 connections and local water systems that serve 2 to 4 service connections. SVBGSA had originally planned to work with the County to add data from small and local water systems into the monitoring network. These wells are not in the current proposed monitoring system because well location coordinates, construction information and quality data is not easily accessible. The Monterey County Health Department monitors water quality in the state small and local water systems and their data is not readily transferable. In addition, there is sufficient other available data to characterize the basin. There were no water quality data gaps identified per SGMA requirements for GSPs as there is adequate spatial coverage to assess impacts to beneficial uses and users. -The GSA is already engaging with underrepresented communities. -Chapter 10 has been revised to include: “Implementation of this GSP will rely on best available science and will be continually updated as new data and analyses are available”

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20		7/6/2021	Comprehensive River Management	See 125 letters attached.	Received	Thanks to stakeholder feedback, river maintenance was added as component under the Multi-Benefit Stream Channel Improvements project. SVBGSA will collaborate with the agencies and organizations already undertaking this work - MCWRA, River Management Unit Association, and the Resource Conservation District of Monterey County.
21	9	7/10/2021	Steve McIntyre	See letter attached.	Received	MCWRA Drought Reoperation has been changed to acknowledge that it already exists. The ILT benefits were clarified, but due to subsequent stakeholder feedback this detail was removed from the plan. The average benefits are over the entire model period, not just the years in which the tunnel operates.
22	9 and 10	7/14/2021	Nancy Isakson, Salinas Valley Water Coalition Board	See letter attached.	Received	General GSP comments: These comments are noted. SVBGSA acknowledges that the current SVIHM results are preliminary and are subject to change. Thanks for your agreement on adding the distinction of the ASCMA. Chapter 9 comments: The focus of the chapter is on management actions that will maintain sustainability. The GSP includes all management actions and projects that will would have a substantial impact on groundwater conditions, regardless of the lead agency. The Forebay SMC TAC was formed based on intensive input from the Subbasin Planning Committee. Text has been added to clarify that it makes recommendations to the Subbasin Committee, which includes stakeholders, not just technical experts. The phrase 'unless pumping restrictions are triggered' has been removed, as it related more to a prior version of the TAC. The MCWRA Drought Reoperation now acknowledges that it will proceed regardless of the HCP, but will reflect the HCP when developed. The GSP includes estimated costs and benefits to show the rough level of effort and benefit of each, regardless of how preliminary the estimates are; other projects and management actions are as or more preliminary as the Inter-lake Tunnel. Chapter 10 comments: Underrepresented communities are defined in Chapter 2 Section 2.8.1. The language on compatibility has been removed, as it has been confusing for stakeholders. Chapters 9 and 10 have clarified the relationship between MCWRA and SVBGSA with regards to specific actions.
23	9	7/20/2021	James Sang	See letter attached.	Received	Infiltration and recharge to get water from the surface to the aquifer are complex mechanisms and not easily managed for a whole basin. Rainwater has the opportunity to infiltrate the soil at many places at the land surface, however this infiltrated water does not always readily translate into direct recharge to the aquifer. Water can be intercepted in the form of soil evaporation, plant roots, or clay layers, sending the water back up to the atmosphere or horizontally. At a basin-wide scale, recharge from precipitation travels more horizontally than downward because of how the sediments are layered. Additionally, water flowing in the subsurface flows significantly slower than at the surface, and may take many years or decades to reach portions of the aquifer that have been heavily impacted by human activity. Thanks for your recommendation for capturing more rainwater in the soil, and this specific conservation method may be readily incorporated into the GSP projects of Managed Aquifer Recharge of Overland Flow, Floodplain Enhancement and Recharge, Conservation and Agricultural BMPs, and the Eastside Implementation Action of Support Protection of Areas of High Recharge. Projects and management actions are intended to help raise groundwater levels. The surface water diversion projects are also important to the overall groundwater management because they provide important in-lieu recharge benefits by providing alternative water to groundwater pumping, as well as important direct recharge opportunities. With regards to the Deep Aquifers; multiple stakeholders, public figures, and managing agencies are currently hard at work to determine the best way to define and manage these important water-bearing units. The upcoming Deep Aquifers Study is to provide some answer that may address uncertainties and help manage the Aquifers.

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24	4, 5, 6, and 9	7/27/2021	Arroyo Seco Groundwater Sustainability Agency	See letter attached.	Received	Chapter 4, Section 4.4.1.1, 3rd paragraph: The text does not state that the lowest part of the Basin Fill Aquifer is a separate hydrogeologic unit. Wells in the Greenfield area are not sufficient to understand the deeper parts of the Basin Fill Aquifer throughout the Subbasin. Version 3 was changed to clarify that the Basin Fill Aquifer is a single hydrogeologic unit and does not apply different terms for different depth intervals. Chapter 5, Section 5.2.2, 3rd paragraph: The figure has been revised to show data through 2019. Page 5-16, 2nd paragraph: As shown in Figure 5-7, 1995 groundwater elevations in the Forebay Subbasin are not unusually high. The text states that there has only been a slight decrease in storage between 1995 and 2019, amounting to only 0.5 to 1 AF per acre over the entire period. The minimal decrease in storage does not indicate that the Subbasin is not sustainable, especially as groundwater elevations are not in chronic decline and rebound after wet years. The text has been clarified to note that. The paragraph and graphic on the Deep Aquifers were removed in Version 3. Chapter 6: The provisional SVIHM/SVOM models have provided reasonable estimates of water budgets across the Salinas Valley. As noted in the GSP text, this model is provisional and is being updated prior to its release to the public. Once updated, the extraction discrepancy is expected to be addressed. Due to the complexity of the model, how the update will change the predicted water budgets is unknown. As the model is refined and updated during GSP implementation, the water budgets and associated sustainability estimates will likewise be updated. The updated water budgets are believed to roughly resemble the presented water budgets. As you mention, some portion of the adjustment may come as updates to the Arroyo Seco infiltration/recharge, but that is unknown at this time.
25	9 and 10	7/31/2021	Jason Smith	See letter attached.	Received	Due to subbasin committee member feedback, Chapter 9 and 10 for the Forebay Subbasin have been changed to mirror the structure seen in the Upper Valley Subbasin GSP. In particular, management actions are listed before projects, the Multi-Benefit Stream Channel Improvements and Managed Aquifer Recharge of Overland Flow Projects are prefaced with an updated introduction highlighting the 50 year time frame, and the Interlake Tunnel Project and Winter Releases with ASR project descriptions are moved to a new management action called Reservoir Reoperation with abbreviated descriptions.
Comments above were received prior to the full public release of the GSP. Several comments led to revisions in the chapters.						
Comments below are on the publicly released review version of the GSP.						
26	Whole GSP	8/12/2021	Stephanie Hastings, Salinas Basin Water Alliance (SBWA)	See letter attached.	Received	Intersubbasin subsurface flow is included in the current water budgets. While the underestimated pumping in the SVIHM may affect the intersubbasin flow, the SVIHM is still the best available tool for the development of water budgets. Additional simulations and analysis of intersubbasin flow (beyond what's in the water budgets) will be considered by the integrated implementation committee after GSP submittal.
27	Whole GSP	8/12/2021	Nancy Isakson, Salinas Valley Water Coalition Board	See letter attached.	Received	SVBGSA is currently working on reconvening the 180/400-Foot GSP Subbasin committee to discuss implementation. The content of the Integrated Implementation Plan is still under development, but is not currently anticipated to include management actions and projects. The SVIHM is the best available tool to determine water budgets at this time, and future results will be used to update the GSPs when available. The paragraph regarding the development of projects and management actions for the 180/400-Foot Aquifer Subbasin GSP has been deleted. The support for the 11043 permit and seawater intrusion barrier projects is noted.

Number	Chapter	Date	Commenter	Comment	Response	Action
28	5 to 10	9/20/2021	Jerry Lohr	See letter attached.	Received	"Achieve" sustainability was changed to "maintain" sustainability and management actions were referenced before projects throughout the GSP. Page 6-2: In the HCM (Chapter 4), it is established that the Forebay Subbasin has a single principal aquifer—the Basin Fill Aquifer. Page 6-9: The model does not simulate 47 different years of future conditions, in other words it does not give results for 47 individual future years. Rather it takes the 2030 projected climate-change data and uses it to play out 47 different possible results for 2030. The same is done for the 2070 projections. Page 6-10: Noted, however, this is the best available tool to evaluate inflows and outflows into the groundwater system consistently throughout the Forebay Subbasin, even though the results do not exactly match what was observed in the Subbasin. Page 6-48: The first paragraph under 6.7.5 is meant to reiterate that sustainability does not simply depend on pumping within the sustainable yield, lowering pumping may not be enough to avoid undesirable results. Page 7-30: This is dependent on the State Water Resources Control Board and how quickly water users can gather their records and how fast the SWRCB staff can process and publish surface water diversion reports. Page 8-2: Text was revised as suggested. Page 9-2: Ideally, groundwater pumping is kept within sustainable yield, however, this might require some people to decrease their pumping at times which might require incentives if people are less willing to decrease their pumping. Page 9-3: This paragraph was removed. Page 9-7 (and other comments on the Reservoir Reoperation management action): This management action includes evaluation of potential options for reservoir reoperation. It is unknown at this time how many options will be evaluated. This was discussed with MCWRA and the agencies agreed this is a reasonable estimate, as it will likely include modeling and analysis of water permits and rights. Page 9-6: The language on the Arroyo Seco recharge came from ASGSA. Page 10-4: GEMS data reporting is based on a County ordinance, thus, there is not much SVBGSA or MCWRA can do to change that. Page 10-5: Costs were corrected in table.

Number	Chapter	Date	Commenter	Comment	Response	Action
29	Whole GSP	10/5/2021	Nancy Isakson, Salinas Valley Water Coalition Board	See letter attached.	Received	"Achieve" sustainability was changed to "maintain" sustainability and management actions were referenced before projects throughout the GSP. Section 1.3: The sentence was changed to read "While this GSP is focused on the Forebay Subbasin, the GSP will be implemented in accordance with SVBGSA's role in maintaining or achieving sustainability for all subbasins within the Salinas Valley Groundwater Basin." The Board has the ultimate authority over funding management actions and projects and must consider the entire valley. Section 2.3: The first set of proposed text has been added and the sentence now reads "Subsequent to that SVBGSA will complete a Salinas Valley Basin-wide Integrated Implementation Plan that is intended to be consistent with the groundwater sustainability plans of the subbasins within the Salinas Valley Groundwater Basin." The content of this plan is still under development, but is not currently anticipated to include projects and management actions. SGMA does not state that all subsequent actions must be consistent with GSPs, and SVBGSA understands that while the GSPs guide action, efforts to maintain sustainability will be adapted as conditions change. Chapter 3: The statement about the Forebay Subarea and Forebay Subbasin covering similar areas was changed to read "Figure 3-3 shows the overlap between the Forebay Subbasin and MCWRA's Forebay Subarea," and the subarea has been added to the map. Suggestion is not necessary and Counsel has advised against the changes. Chapter 4: It is not inaccurate nor misleading to state what previous investigators have hypothesized. Referencing past studies provides necessary background on the hydrogeology in this subbasin. To address the comment and Subbasin Committee feedback, the end of Deep Aquifers paragraph revised to read:… "…however, not all available studies have reached the same conclusion (Staal, Gardner, & Dunne Inc., 1994). This deeper portion of the Basin Fill Aquifer has not been investigated or developed in a substantial way, and may not exist beneath the entirety of the Forebay Subbasin. This is a data gap that will be filled within the first two years of implementation. Subsequently, this GSP does not make a conclusion from these previous investigations and the Deep Aquifers are not currently defined as a delineated, separate principal aquifer for this Subbasin." Chapter 6: The provisional SVIHM is currently the best available tool to holistically calculate budgets for the Salinas Valley subbasins. Reservoir operations are not dependent on water budget results. Added sentence to the Water Budget Chapter 6 that reads: 'Reservoir operations influence Salinas River inflow, which is a component to the water budget, but reservoir operations are not under the purview of the GSA.' Chapter 7: This GSP monitors depletion of interconnected surface water due to pumping. Further it focuses on depletion during the non-conservation release period since conservation releases are meant to recharge the basin. Accelerating the data lag mentioned in 7.7.2.2 depends on how quickly water users can gather their records and how fast SWRCB staff can process these surface water diversion reports. Chapter 8: Section 8.2: Text was revised as suggested. Section 8.6 and 8.7: The purpose of conservation releases is to recharge the groundwater system, thus, depletion of interconnected surface waters during conservation release periods are not measured against minimum thresholds. The minimum thresholds do have scientific support - they are based on historical groundwater levels, which included reservoir releases, among other factors. Management of surface water flows is outside the purview of SVBGSA. Additional paragraph was inserted into text to provide greater clarification. Minimum thresholds must apply every year; however, the additional text attempts to address commenter concerns by noting that temporary exceedances of the minimum thresholds, such as may occur during droughts, do not constitute undesirable results. Additional 8.11 response: No further revision made. Minimum thresholds are not reliant on year type or reservoir operations. Minimum thresholds reflect what local stakeholders feel would be significant or unreasonable during long-term groundwater management. The SVBGSA can modify the minimum thresholds during GSP implementation. However, lowering the groundwater elevation minimum threshold will mean that local interests believe it is acceptable to have lower groundwater levels in every year, not just specific years. The existing minimum thresholds consider potential reservoir operations during dry periods. The minimum thresholds are based on groundwater elevations observed after three years of limited or no reservoir releases. Therefore, there minimum thresholds acknowledge depletion during times of low flow. Chapter 9: Intro: Ideally, groundwater pumping is kept within sustainable yield. However, this might require some people to decrease their pumping at times that might require additional incentives. Section 9.2.1: This paragraph was removed. Page 9-7 (and other comments on the Reservoir Reoperation management action): This management action includes evaluation of potential options for reservoir reoperation. It is unknown at this time how many options will be evaluated. This was discussed with MCWRA and the agency agreed this is a reasonable estimate as it will likely include modeling and analysis of water permits and rights. Page 9-6: Text about Arroyo Seco River recharge came from ASGSA. Chapter 10: Text was changed as suggested.

30	Whole GSP	10/8/2021	Norm Groot, Monterey County Farm Bureau	See letter attached.	Received	Thank you for your support and input. The Integrated Implementation Plan will be written to with the goal of achieving sustainability in the entire Salinas Valley Basin and the Integrated Implementation Committee will focus on achieving sustainability in an integrated manner across the Valley.
31	Whole GSP	10/14/2021	John Farrow, LandWatch	See letter attached.	Received	A1. While the 180/400 looked at projects and management actions that involved the whole Valley, the focus was on the 180/400. During subbasin committee meetings, members agreed that while any projects and management actions will be evaluated in a valley-wide light, only the plans that would primarily help that subbasin reach or maintain sustainability should be included in the plan. To ensure projects and management actions are selected and implemented in an integrated manner, SVBGSA established the Integrated Implementation Committee. While the subbasin GSPs were developed through subbasin planning committees, GSA staff and consultants ensured the projects and management actions, as well as the plans, are not in conflict with each other. Additional steps needs to be completed before projects, management actions, or the water charges framework move forward, and the text of this GSP has clarified that the use of the word "will" is reflective of what will occur if/when a project or management action moves forward. The 180/400 GSP nor DWR's review of it commit SVBGSA to anything in other subbasins. A2. Not all the subbasins need all the projects or management actions that are planned in other subbasins. The projects included in the Eastside, Langley, Forebay, Upper Valley, and Monterey GSPs are not dependent on the water charges framework for funding. They took a different approach and described all potential funding mechanisms due to the recognition that the appropriate funding mechanism varies according to the specific project. A3. The Upper Valley and Forebay Subbasins are already sustainable and therefore the GSPs fewer projects and management actions than some other subbasins. Each GSP focuses on the specific projects or management actions that contribute to maintaining/achieving sustainability in that respective subbasin; however, the GSPs acknowledge that the impacts of any project or management action, regardless which subbasin it originated for, will be evaluated for the whole valley. Benefits assessments will determine who funds projects and management actions, if funded through a 218 vote, regardless of subbasin. D. SVBGSA in coordination with legal counsel has developed improved water quality SMC language to be included in the final draft of the GSP, which notably includes regulation of groundwater extraction. This language is in response to DWR's comments about the water quality SMC language in the 180/400-Foot Aquifer Subbasin GSP. This GSP also includes the Water Quality Coordination Group (formerly Water Quality Partnership) to elaborate on how SVBGSA will work with other agencies responsible for aspects of water quality.
32	Whole GSP	10/14/2021	Thomas Virsik	See letter attached.	Received	GSP's to work with and not against each other: Thanks for the agreement that the Salinas Valley subbasin GSPs should avoid adversely impacting adjacent subbasins' sustainability. Joinder in Other Comments: GSA authorities noted. See responses to SVWC [10/5/2021] for similar points. Caveat language agreed upon by ASGSA and SVBGSA is included in the text.

Number	Chapter	Date	Commenter	Comment	Response	Action
33	Whole GSP	10/14/2021	Audubon California, Clean Water Action, Clean Water Fund, Local Government Commission, The Nature Conservancy, Union of Concerned Scientists, and Community Water Center	See letter attached.	Received	1. A. DACS and Drinking Water Users: Average domestic well depths were added to Section 3.3 and the populations of identified DACs were added to Figure 2-3 in Chapter 2. ISW: The approach taken in the GSPs to determine ISW locations relies on the accuracy of the model calibration to measured water levels and streamflows, while the recommended approach relies on manually contoured data based on measured water levels. Both approaches depend on GDEs: The NC dataset only presents potential GDEs which are included in the GSP as potential GDEs. SVBGSA may consider field verifying these during GSP implementation. A higher depth-to-groundwater threshold may be considered if/when SVBGSA verifies that valley oaks are present. Text was added to re-emphasize that rooting depth data are limited. GSP Regulations do not require a complete list of fauna and flora in the Subbasin. 1. B. The Communication and Public Engagement Plan can be updated with more detail on the extensive outreach that has been carried out. When appropriate, DAC and environmental stakeholder feedback has been incorporated into the GSP - see responses to those comments. 1. C. DACS and Drinking Water Users: DACs are included in the GSP according to their water supply source, categorized according to the beneficial user types. The impact of chronic lowering of groundwater levels minimum thresholds on domestic well analysis uses PLSS section location data. The reasons for the exclusion of wells are outlined in the GSP. Undesirable results are not defined in the GSP Regulations, but they are a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the subbasin. Minimum thresholds are set at sites that "reflect general conditions in the Basin" (354.36(C). Regarding degraded water quality, Chapter 8 contains sufficient description of the minimum thresholds, measurable objectives, and undesirable results on "beneficial uses and users of groundwater or land uses and property interests" (354.28(b)(4), 354.26(b)(3)). Minimum thresholds and measurable objectives were developed by the Subbasin Planning Committee. Minimum thresholds and measurable objectives are based on Title 22 drinking water standards and Basin Plan irrigation water quality objectives. The Subbasin Planning Committees agreed to the minimum thresholds and measurable objectives. GDEs and ISW: The impacts on all beneficial uses and users were considered in establishing this SMC. What is significant and unreasonable is locally defined, balancing all uses and users. The effect of undesirable results on beneficial users are discussed in Section 8.10.4.3 of the GSP. 2. This GSP meets SGMA regulations with its use of DWR-recommended 2030 and 2070 climate scenarios for the future water budgets, including the base for the sustainable yield. Use of extremely wet and dry scenarios is not required. SVBGSA will reevaluate appropriate climate scenarios to use prior to the 5-year Update. Incorporation of climate change scenarios into project and management action benefits will be done as part of project feasibility and scoping for those selected to move forward. 3. The monitoring networks are to monitor groundwater conditions across the subbasin for all beneficial uses and users, not be prioritized for certain users. Additionally, monitoring networks were developed following DWR BMPs. Monitoring of shallow groundwater elevations near areas of interconnected surface water is sufficient to assess significant and unreasonable impacts to beneficial users. SGMA requires monitoring groundwater conditions that may impact beneficial uses and users, not monitoring the users themselves. The groundwater elevation and water quality monitoring networks are adequate and sufficient to monitor changing conditions in the principal aquifer. Monitoring networks do not need to cover every part of the Subbasin, the areas highlighted in Attachment E are represented by the current monitoring network. 4. The projects and management actions chosen by Subbasin Planning Committees are the ones that are included in the GSP. The GSA may consider this program in the future if it so chooses. Degradation of water quality due to GSA impact will be monitored as outlined in the GSP. As the GSP states, avoiding water quality impacts will be considered as part of project selection and design. Project-specific monitoring will be established as needed to ensure projects don't cause minimum thresholds to be exceeded. Recharge projects locations and site specifications have not been completely developed yet but this will be considered. Subbasin Planning Committees chose the management actions for each subbasin. The climate resilience of specific management actions will be considered during project selection and design.
34	Whole GSP	10/15/2021	Michael Griva, Franscioni & G	See letter attached.	Received	See responses to SVWC [10/5/2021] for similar points.
35	Whole GSP	10/14/2021	Douglas Deitch, Monterey Bay Conservation	See letter attached.	Received	1. SVBGSA has funded the Deep Aquifers Study and is co-funding the development of a Seawater Intrusion Model with MCWRA. The SVOM climate change simulation include sea level rise. DWR Climate Change guidance recommends using values of +15 cm for 2030 projected conditions and +45 cm for 2070 projected conditions. 2. SVBGSA is undertaking a study of the Deep Aquifers to better understand the Aquifers, their current condition, and management options. This is distinct from the Monterey One Water ASR wells, which are located in the Seaside Basin.

Number	Chapter	Date	Commenter	Comment	Response	Action
36	Whole GSP	10/15/2021	Stephanie Hastings, Salinas Basin Water Alliance	See letter attached.	Received	I. SVBGSA replaced the Integrated Sustainability Plan for the the Integrated Implementation Plan. The Integrated Implementation Committee will outline the implementation of the 6 GSPs in the Salinas Valley Basin and address questions of groundwater relationship between the subbasins. This Committee will help ensure all subbasins get to sustainability. II. A. The SVIHM is the best avialable tool to compute water budgets for the subbasins in the Salinas Valley. The 180/400-Foot Aquifer Subbasin GSP will be updated using the SVIHM to be consistent with the rest of the subbains in the 2-Year Update currently underway. The SVIHM was used to develop water budgets for the Langley, Eastside, 180/400, Forebay, and Upper Valley using the same model simulations so that they would be consistent. The Monterey Subbasin used a different model due in part to poor calibration of the SVIHM in the Monterey Subbasin; however, it adopted boundary conditions from the SVIHM to increase compatibility and the Monterey Subbasin GSP includes an implementation action to integrate the Monterey Subbasin Model into the SVIHM when it is released. SVBGSA ran a no pumping scenario with the SVIHM to determine locations of surface water depletion due to pumping; however, it is a static model that does not shed light on how intersubbasin flow would have changed. It is a static dataset that reflects how reservoirs were actually operated, not how they would have been operated with no pumping. The Integrated Implementation Committee will consider the flow and relationship between subbasins early in 2022. II. B. 1. a & b. Sustainable yields were defined according to SGMA regulations. The water budgets measure inflows and outflows of the groundwater system, and both interbasin flow and groundwater extraction are accounted for. Minimum thresholds are meant to be prevented to avoid undesirable results. If each subbasin avoids their minimum thresholds, then neighboring subbasins will likely not be prevented from reaching or maintaining sustainability. The GSP does not dispute that its conditions affect adjacent subbasins; however, it does not prevent them from reaching sustainability. The sediment relationships between the 180/400-Foot Aquifer Subbasin, and the adjacent Langley/Eastside Subbasin demonstrate a dynamic environment where different sediments were deposited over time and subsequently, impact groundwater flow. The boundary with the Eastside Subbasin generally represents the furthest extents of the alluvial fans, which are characterized by clays and other fine sediments. These sediments frequently act as an impediment to flow, if not fully a barrier in certain locations. Subsequently, the gradient relationship is not the only influence to groundwater flow between the 180/400-Foot and Eastside Subbasins, and needs to be considered along with all subsurface characteristics. While there is a relationship between the groundwater contours developed for the 180/400 and Eastside Subbasins, the contours themselves are not fully representative of flow between the subbasins. As the model is further refined with additional and expanded data during Implementation, the SVBGSA and stakeholders will have a clearer view of the groundwater flow relationships, particularly as they relate to the recorded sediments in this area. The boundary with the Langley Subbasin was selected based on topographical changes, and the GSP fully acknowledges there is no hydrogeologic boundary that coincides with the administrative boundary. The key characteristic of the Langley Subbasin is the Aromas Sands, which are very permeable. Despite this connection and high permeability along with lowered groundwater elevations, the seawater intrusion front is not advancing in the direction of the Langley Subbasin. Subsequently, it would be premature to conclude that groundwater elevations in the Langley Subbasin are inducing or facilitating seawater intrusion in the 180/400-Foot Aquifer Subbasin. The groundwater flow relationship between the Langley and the Eastside Subbasins is largely uncharacterized as a result of a lack of data both about the sediment changes and the groundwater elevations in the area. This is a data gap that will be addressed during implementation. It is important to note that the 180/400-Foot Aquifer Subbasin GSP includes a plan in place to halt and reverse seawater intrusion and increase groundwater elevations, which will also serve to prevent adverse seawater intrusion impacts to the Eastside Subbasin. Both the Eastside Subbasin and the Langley Subbasin have developed projects and management actions to raise groundwater levels in their subbasins. The SMC were largely developed to be both achievable, as well as provide for operational flexibility during future droughts. Furthermore, these subbasins will be a part of the Integrated Implementation Plan, which will work to address seawater intrusion through a variety of strategies, which include increasing groundwater elevations. Additionally, the SWIG has been meeting regularly to learn and strategize projects to address seawater intrusion. The subbasins under the SVBGSA will be integrated during implementation, data acquisition, further data development, and coordinated stakeholder engagement. II. B. 1. c. Subbasin Planning Committees for each subbasin chose how they wanted to measure reduction in groundwater storage. The definition of storage for groundwater is expressly based on a change in pressure heads, or groundwater elevations, within an aquifer. Freeze and Cherry, in their seminal 1979 textbook Groundwater state, “The specific storage Ss of a saturated aquifer is defined as the volume of water that a unit volume of aquifer releases from storage under a unit decline in hydraulic head.” Hydraulic head is the sum of all pressures acting on water in the subsurface, which in unconfined aquifers, is generally summarized as elevation. Therefore, given the direct relationship between groundwater elevations and specific storage, groundwater elevations are appropriate as a proxy for storage. This is also explained in chapter 4.4.2 of the GSP, and a reference to that section has been added into Ch 8.

						Action (cont.) Using the groundwater elevations as a proxy for storage is a reasonable alternative in Subbasins with less GEMS data available for estimating groundwater production. Additionally, the Langley, Eastside, Forebay, and Upper Valley Subbasins are characterized as having one principal aquifer, instead of multiple. This allows for the estimation of storage based on groundwater levels, since it is assumed that the groundwater is generally all connected in those Subbasins, and groundwater elevations are subsequently representative of groundwater conditions. II. B. 2. A description of how minimum thresholds will affect adjacent subbasins were provided per GSP Regulations. The Forebay and Upper Valley Subbaisn Planning Committees defined how the SMC for all sustainability indicators in their subbasins will be measured. The SMC in the Forebay and Upper Valley are set at similar levels to the other subbasins and will not prevent adjacent subbasins from reaching sustainability. Text was added to clarify how the minimum thresholds were developed based on the significant and unreasonable statement and why they are not in conflict. II. B. 3. SVBGSA has considered the interest of all beneficial users in the Salinas Valley. The GSA does not "allocate the burden of sustainability" nor undertake any actions that threaten or impinge on water rights. III. Projects and managment actions were chosen by Subbasin Planning Committees, and are sufficient to maintain or achieve sustainability. the project mentioned was not brought up in any of the Subbasin Committee discussions on projects and management actions; however, the GSP does not preclude additional projects to be considered in the future. The Integrated Implementation Committee will determine which projects will be used to maintain or achieve sustainability in the Salinas Valley. Aquilogic Memo: The SVBGSA agrees that impacts on adjoining basins or subbasins must be addressed before implementing any management actions or projects. SVBGSA plans to conduct these analyses, which will include, among other things, updating the water budgets and sustainable management criteria in the 5-year updates if necessary, to account for inter-basin flows and impacts on adjoining basins or subbasins, when an appropriate tool becomes available. SVBGSA additionally agrees that the superposition approach included in the comment is a reasonable approach for addressing any action's or project's impact on inter-basin flows. This type of approach lessens the influence of model errors by addressing changes between simulations, and not absolute values in any simulation. SVBGSA will use this approach to address both intra and inter-basin impacts from any action or project. SVBGSA further agrees that the additional simulations proposed in the comment letter will facilitate a deeper understanding of the Salinas Valley Groundwater Basin, even though the additional simulations are not associated with specific actions or projects. To that end, SVBGSA staff will propose to the SVBGSA Board of Directors that the requested simulations would be informative, that these simulations be conducted before the next GSP assessment, and that the additional simulations will provide essential background understanding that will allow a thorough vetting of any potential management actions or projects. If and when approved by the SVBGSA Board of Directors, SVBGSA staff will work with all interested parties and stakeholders through the Integrated Implementation Committee to develop the assumptions and approaches for these simulations.

Number	Chapter	Date	Commenter	Comment	Response	Action
37	Whole GSP	10/15/2021	Heather Lukacs, Justine Massey, and Mayra Hernandez, Community Water Center & Horacio Amezquita, San Jerardo Cooperative, Inc	See letter attached.	Received	See responses to letters by CWC and San Jerardo dated 7/10/20, 4/23/21, 4/28/21, and 6/17/21. SVBGSA in coordination with legal counsel has developed improved water quality SMC language to be included in the final draft of the GSP. This language is in response to DWR's comments about the water quality SMC language in the 180/400-Foot Aquifer Subbasin GSP. In addition, during the public comment period, an analysis on the Central Valley on groundwater extraction during droughts and nitrates was released. During GSP implementation, SVBGSA can consider this new analysis and whether it has potential applicability in the Salinas Valley. SVBGSA will look at climate change assumptions as part of 5-year update.
38	Whole GSP	10/15/2021	Tyler Sullivan, California Coastkeeper Alliance, and Sean Bothwell, Monterey Waterkeeper	See letter attached.	Received	2 and 3. While the 180/400 looked at projects and management actions that involved the whole Valley, the focus was on the 180/400. During subbasin committee meetings, members agreed that while any projects and management actions will be evaluated in a valley-wide light, only the plans that would primarily help that subbasin reach or maintain sustainability should be included in the plan. To ensure projects and management actions are selected and implemented in an integrated manner, SVBGSA established the Integrated Implementation Committee. While the subbasin GSPs were developed through subbasin planning committees, GSA staff and consultants ensured the projects and management actions, as well as the plans, are not in conflict with each other. SVBGSA will look at climate change assumptions as part of 5-year update. The GSP includes both projects and management actions. Subbasin committees preferred to pursue projects prior to pumping reductions; however, the Plan does include the potential for demand management if needed. SVBGSA is aware of its legal responsibilities and has developed plans that include sufficient options to meet sustainability goals. 4. Under SGMA, what constitutes 'significant and unreasonable' conditions are locally defined and balance uses and users. The subbasin committee established the SMC. According to the Belin article, the Salinas Valley constitutes an 'yellow light' - there are no ESA-related in-stream flow requirements, but impacts from groundwater extraction on both ESA-protected steelhead and other GDEs should be evaluated to see if there are adverse impacts. This GSP no longer relies on the biological opinion, including for water budgets. SVBGSA is only responsible for depletion of interconnected surface water due to groundwater extraction, not for reservoir releases or surface water flows. In addition to working with NMFS to determine what constitutes an adverse impact to steelhead in relation to groundwater extraction, this GSP includes both supply-side and demand-side management options to maintain sustainability. In particular, following each annual report, the SMC TAC will evaluate sustainability and recommend actions if necessary. 5. After careful consideration and consultation with attorneys, the final GSP includes revised water quality undesirable results text that addresses DWR's comments on the 180/400-Foot Aquifer Subbasin GSP. The Partnership (now called the Coordination Group), includes space to coordinate with the CCRQCB, as suggested. SVBGSA intends to establish that Coordination Group during the first two years of GSP implementation. 6. SVBGSA has made a concerted effort to address DAC issues and involve DACs in decision making. SVBGSA has met with CWC several times, and has also incorporated several of their suggestions into the GSPs. In a discussion regarding groundwater levels, at a workshop one DAC community member highlighted that the farmworkers depend on agriculture for their livelihoods in this basin, and they don't want to set groundwater level goals at a level that will significantly harm agriculture, so there must be a balance. SVBGSA has sought that balance, involving DACs all the way up to their permanent seat on the Board of Directors. Additionally, SVBGSA worked to assess the needs and barriers to DAC involvement and developed the DAC Engagement Strategy to guide outreach and involvement going forward. The GSP addresses the Human Right to Water and highlights how in Ch 3, 8, and 10.
39	Whole GSP	10/15/2021	Elizabeth Kraft, Monterey County Water Resources Agency	See letter attached.	Received	SVBGSA appreciates the support for the conceptual projects and management actions within the GSP, and during GSP implement will work with the MCWRA on the refinement and implementation of any that involve MCWRA infrastructure or water management. Volume 1 and 2 text was revised as suggested.

Chapter 2
Appendix 2-B

Agency-Wide Marketing & Communications Plan

Appendix 2B. Agency-Wide Marketing & Communications Plan

Chapter 2
Appendix 2-C

Key Messages

Appendix 2C. Key Messages

Initially, our message points focus on: (1) **getting to know your GSA**; (2) **an overview of groundwater sustainability planning for our community**; and (3) **how we got here**. The key messages will be expanded as the work evolves.

Key Messages: Get to Know Your GSA

- The SVBGSA is on a mission to develop a Salinas Valley Integrated Groundwater Sustainability Plan by 2023 and achieve groundwater sustainability in the Salinas Valley by 2040.
- Our groundwater basin is comprised of 6 subbasins one of which is identified as "Critically Over-Drafted" – the 180/400-Foot Aquifer.
- The rate of the community's current water use is unsustainable. To meet our community's ongoing water supply needs now and into the future we must balance the basin.
- The State has put us on a tight timeline to fix the problem. We ambitiously accept the challenge.
- As of 2020, we have GSP for the 180/400-Foot Aquifer Subbasin and have scoped projects and programs to bring the subbasin back into balance.
- From 2020 through 2022 we will work on GSPs for the other five basins.
- We will start implementing our plans immediately and efficiently use our GSA sustainability fee to work towards sustainability.
- Developing a sustainability plan for groundwater impacts everyone. That's why the SVBGSA Board and our Advisory Committee are diverse and include stakeholders from every walk of life in the Salinas Valley.
- We have an unprecedented opportunity, and responsibility, to work together collaboratively and develop a science-based Groundwater Sustainability Plan.
- Join us! Visit our website, sign up for updates, attend the next meeting and follow us on Facebook.

Key Messages: Groundwater Sustainability Plan

The Eastside Subbasin Groundwater Sustainability Plan and Salinas Valley Integrated Sustainability Plan are our 20-year plans to ensure that the Salinas Valley Groundwater Basin (SVGB) will be managed sustainably for our current and future generations.

- Aquifer subbasin planning is not only critical to our future - it's mandatory. SGMA mandates that science-based GSPs be developed for the Basin by 2020 and 2022, and that the plan be implemented by 2040.
- The stakes are high. Should we choose not to act, or fail to meet the 2020, 2022, or 2040 milestones, the State can intervene with required (and hefty) pumping restrictions and extraction fees.
- To meet these milestones, we have been granted the authority to develop GSPs, monitor and measure the basin and individual wells within the basin, implement capital projects, and assess necessary fees for planning and implementation.
- Six "Sustainability Indicators" will be evaluated in the GSPs and used to gauge what we need to do to bring our groundwater supply and demand back into balance.
- Given the hydrologic and geographic diversity of the SVGB, the ISP will identify overlapping projects and programs which benefit the basins. Our planning process includes initiating planning committees for the subbasins and maintains our governance structure of the Board, advisory committee, and planning committee.
- Stakeholder engagement is a key component to the development and implementation of the GSP. We encourage and invite the community to get involved. Attend our monthly Board meetings, attend a Subbasin Planning Committee meeting, sign up for our newsletter.

Key Messages: Our History

- The Salinas Valley Basin GSA is firmly rooted in stakeholder engagement.
- From 2015-2017, local agencies and stakeholders worked with the Consensus Building Institute (CBI) to facilitate the formation of the GSA.
- In 2015, CBI began by conducting a Salinas Valley Groundwater Stakeholder Issue Assessment, which included interviews and surveys. This process resulted in recommendations for a transparent, inclusive process for the local implementation of SGMA and the formation of the GSA.
- Following the Issue Assessment, The Collaborative Work Group of stakeholders representing a broad range of interests met from March 2016 through April 2017 and developed recommendations on the governance structure, voting, and legal structure of the GSA.
- The Stakeholder Forum was simultaneously held throughout 2016 and served as a critical element for interested stakeholders and the public to learn about and provide input on the GSA.

- After nearly two years of community engagement led by the top consensus-building professionals in the nation, the Salinas Valley Basin Groundwater Sustainability Agency was formed in April 2017 with a broad and diverse foundation of support.

Chapter 2
Appendix 2-D

Media Policy

Appendix 2D. Media Policy

The press is an important partner for getting our message out to the community. To maximize our effectiveness in working with the media, a consistent protocol will be followed by staff, consultants, board members, and committee members.

Agency Spokesperson(s)

- The primary spokesperson for all media inquiries is the General Manager (GM). Media inquiries should first be directed to the GM to coordinate a response.
- Reporters may want to also interview board and community members. Some board members may enjoy media conversations, while others do not. The SVBGSA will maintain a standby list of a few board and community members, who will be prepared and can be called on for media inquiries.
- In preparation for the interview, the GM and Public Information Officer (PIO) will work closely with the spokespeople in preparation for media interviews. Factual and coordinated talking points will be provided in advance of the interview.

Responding Quickly

- Reporters work on tight deadlines. To ensure an opportunity is not missed, all media inquiries should receive an immediate response and referred to the GM at the earliest possible opportunity.

The Back-Up Plan

- If the GM is unavailable and cannot be reached for comment, media inquiries should be directed to the Board's back-up media representative. The Board's representative will contact the PIO to determine whether a response is necessary. If the response is not urgent, offer the media an appointment time for when the GM is available. If it is a time sensitive and urgent matter, a statement will be released from the Board representative in close coordination with the PIO.

News Monitoring and Tracking

- Following the interview or statement, if published, the GM or PIO will circulate the coverage to the Board and committee members.

Chapter 2
Appendix 2-E

Disadvantaged Communities (DACs)

APPENDIX 2E. DISADVANTAGED COMMUNITIES (DACs)

Introduction and Purpose of Appendix

Many of the communities in the Salinas Valley Groundwater Basin are classified as Disadvantaged Communities (DACs) and Severely Disadvantaged Communities (SDACs), as well as Economically Distressed Areas (EDAs). The SVBGSA jurisdictional area has well documented DAC-designated areas including seven Census Designated Places (CDPs), 60 Block Groups, and 20 Tracts. Additionally, work conducted by the Greater Monterey County Integrated Regional Water Management (IRWM) Program identified 25 small disadvantaged, severely disadvantaged, and suspected disadvantaged communities in unincorporated areas of the IRWMP region (Greater Monterey County Regional Water Management Group, 2018), which includes the entire SVBGSA area. As many of these communities are dependent on groundwater for drinking water, they face challenges associated with drinking water quality.

The State of California has recognized challenges in providing clean, safe, and affordable drinking water to all of its citizens, especially low-income and minority communities. In 2012, California law AB 685, the Human Right to Water, declared that every person has a right to clean, safe, and affordable drinking water. In 2019, the State further made it a priority by passing SB 200, the Safe and Affordable Drinking Water Fund. In Fiscal Year 2019-2020 alone, it will dedicate $130 million for safe drinking water solutions in DACs that do not have access to safe drinking water.

The Salinas Valley Groundwater Basin is one of the most productive agricultural regions in the world. However, over several decades seawater intrusion and intensive fertilizer use resulting in nitrate contamination have compromised drinking water quality in parts of the Basin. Nitrate contamination in groundwater can pose serious health risks to pregnant women and infants if consumed at concentrations above the maximum contaminant level (MCL) of 10 milligrams per liter (mg/L) nitrate as nitrogen (NO_3-N). Nitrate contamination not only poses health risks, but also results in major costs for small rural communities. This is particularly challenging for the many economically disadvantaged communities in the Basin.

SGMA has limited requirements with regards to improving groundwater quality; the SGMA regulations are written in terms of avoiding degradation (CWC, §354.28 (c)(4)). However, the SVBGSA seeks to engage more constructively with disadvantaged communities moving forward in the subbasin planning processes. SVBGSA maintains excellent relationships with agencies monitoring and addressing water quality issues in the Basin. The purpose of this appendix is to provide background information on the relationship between DACs (including SDACs and EDAs) and groundwater, particularly with respect to the drinking water challenges in the Basin. Unless otherwise noted, the information in this appendix is based on and much is excerpted from

the Integrated Regional Water Management (IRWM) Plan for the Greater Monterey County Region (Greater Monterey Regional Water Management Group, 2018).

Identifying DACs in the Salinas Valley

A Disadvantaged Community (DAC) is defined in the California Water Code (§79505.5(a)) as a community with an annual median household income that is less than 80% of the statewide annual median household income, based on five-year estimates. Further, a Severely Disadvantaged Community (SDAC) is defined as a community with an annual median household income that is less than 60% of the statewide annual median household income, based on five-year estimates. For information on how these designations are determined, see the Greater Monterey County Integrated Regional Water Management Plan (Greater Monterey County Regional Water Management Group, 2018). These designations are significant because in order for a community to be eligible for State grant funds specially allocated for disadvantaged communities, or to be eligible for reduced matching fund requirements, a community must meet one of these strict definitions.

At the same time, the California Department of Water Resources (DWR) also recognizes the existence of communities that are economically challenged but that are not designated as being disadvantaged according to U.S. Census data. These communities have been labeled Suspected Disadvantaged Communities until their status can be proven either way.

In addition to disadvantaged communities, DWR recognizes Economically Distressed Areas. An economically distressed area (EDA) is defined as:

> *…a municipality with a population of 20,000 persons or less, a rural county, or a reasonably isolated and divisible segment of a larger municipality where the segment of the population is 20,000 persons or less, with an annual median household income that is less than 85 percent of the statewide median household income, and with one or more of the following conditions as determined by the department: (1) financial hardship, (2) unemployment rate at least 2 percent higher than the statewide average, or (3) low population density (Water Code §79702(k)).*

Figure 1 shows the communities currently designated as DACs, SDACs, or EDAs in the Salinas Valley. This figure combines census tracts, blocks, and places to give a more complete representation of the communities within this area. Currently, the statewide median household income is $63,783. Therefore, the calculated DAC and SDAC thresholds are $51,026 and $38,270, respectively (see https://water.ca.gov/Work-With-Us/Grants-And-Loans/Mapping-Tools). For example, Castroville has a median household income of $35,000 (Rural Community Assistance Corporation, 2017). Moss Landing is not currently designated as a DAC; however, according to a survey by the California Rural Water Association (2018), its median household income is $47,600.

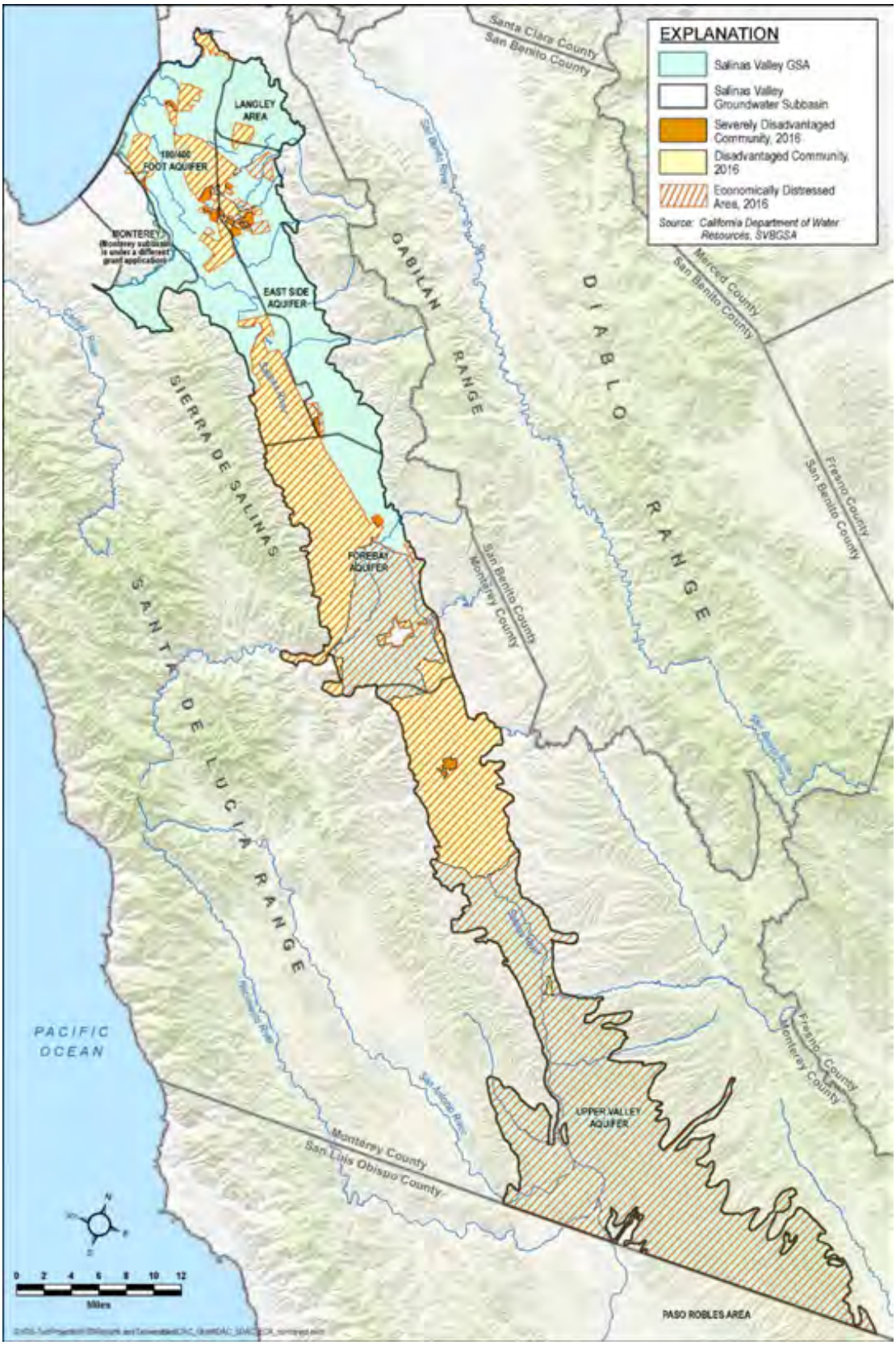

Figure 1. Map of DACs, SDACs, and EDAs in the Salinas Valley Groundwater Basin

As highlighted in the IWRM Plan, small disadvantaged communities in unincorporated areas often have small public water systems that serve fewer than 200 connections. The smallest of these communities have State Small Water Systems (SSWS), which serve between five and 14 connections); Local Small Water Systems (LSWS), which serve between two and four connections; and/or households served by private domestic groundwater wells. There is a significant difference in capacity, water supply, and infrastructure needs between a DAC served by a large water system (e.g., a large disadvantaged community of several thousand people, or a small disadvantaged community served by a large water utility) and a small disadvantaged community served by a small water system or by private wells. The State Water Resources Control Board (SWRCB) summarized these differences in its 2015 report, Safe Drinking Water Plan for California (SWRCB, 2015):

- Small water systems have the greatest difficulty in providing safe drinking water because they are least able to address the threats to public health associated with water quality.
- Larger water systems are better equipped to deal with water quality issues because they have more customers to fund the necessary improvements, have economy of scale, more technical expertise, better management skills and knowledge, are able to solve operational problems internally, and have dedicated financial and business-related staff. They generally have more sophisticated treatment and distribution system operators who are able to react to incidents and changes in treatment conditions that may occur during operations.
- On the other hand, small systems, especially those in disadvantaged communities, have only a small number of customers, which provides them with limited fiscal assets and no economy of scale. They often lack technical expertise, the ability to address many of the issues pertinent to operating a water system, as well as qualified management and financial and business personnel. In many instances, especially for very small water systems, the system operator may be just a part-time position.

Following the Greater Monterey County IRWM Plan, this Appendix includes DACs, SDACs, and EDAs and places an emphasis on small disadvantaged communities for the reasons highlighted by the SWRCB.

Jurisdictional Responsibilities

A number of agencies and groups have existing jurisdictional responsibility over groundwater quality. The SVBGSA will collaborate with these agencies and groups so as to not duplicate efforts or overstep its institutional authority. The following agencies and groups have responsibility over various aspects of groundwater (Greater Monterey County Regional Water Management Group, 2018):

- **Greater Monterey County IRWM Regional Water Management Group** – AB1630 appropriated State grant funds to enable this Group to develop solutions for DACs to be integrated into the broader IRWM planning effort. IRWM is a voluntary, collaborative effort to identify and implement water management solutions on a regional scale to increase regional self-reliance, reduce conflict, and manage water resources. The IRWM planning process brings together water and natural resource managers along with other community stakeholders to collaboratively plan for and ensure the region's continued water supply reliability, improved water quality, flood management, and healthy functioning ecosystems. The Department of Water Resources manages grant programs specifically designated for adopted IRWM Plans including funding for water quality improvement projects.
- **State Water Resources Control Board (SWRCB)** – The SWRCB administers the state's Drinking Water Program as the federally-designated Primary Agency responsible for the administration and enforcement of the Safe Drinking Water Act requirements in California. Prior to July 1, 2014, the California Department of Public Health was designated as the Primary Agency. These requirements are defined in the California Health and Safety Code and Titles 17 and 22, California Code of Regulations. The CDPH continues to maintain the State's Drinking Water and Radiation Laboratory, which serves as the state's principal laboratory as required for primacy under the Safe Drinking Water Act. The SWRCB is responsible for the regulatory oversight of over 7,600 public water systems in California. It may delegate oversight responsibility of public water systems with less than 200 service connections to local county health departments, which it has done in Monterey County.
- **Monterey County Department of Environmental Health (MCDEH)** – Delegated oversight responsibility by the SWRCB, MCDEH is the Local Primary Agency and its Drinking Water Protection Services regulates domestic water systems in the County that serve between two and 199 connections. There are approximately 160 such systems in the County regulated under this program. MCDEH also regulates all well construction in Monterey County.
- **SWRCB and Central Coast Regional Water Quality Control Board** – State policy on water quality control falls under the SWRCB, which is the state water pollution control agency for all purposes under the Clean Water Act (CWC §13160), including drinking water sources from both surface water and groundwater. The SWRCB has nine regional boards, including the Central Coast Regional Water Quality Control Board (CCRWQCB), which is responsible for the day-to-day implementation of the federal Clean Water Act and California's Porter-Cologne Water Quality Control Act in the Central Coast. Together, the State Water Board and Regional Boards are responsible for the protection of the quality of ambient surface and groundwater up to the point where the water enters a drinking water well or surface water intake. The Regional Boards are

responsible for developing and enforcing water quality objectives and implementation plans to protect the beneficial uses of the State's waters. The Regional Boards enforce water quality regulations through the following means.

- **Basin Plan –** Each Regional Board is directed to formulate a water quality control plan, called a Basin Plan, that includes water quality standards under the Clean Water Act. The CCRWQCB implements the Basin Plan in the Central Coast Region, in part by issuing and enforcing waste discharge requirements to individuals, communities, or businesses whose waste discharges can affect water quality, including surface water, groundwater, or wetlands.
- **Waste Discharge Requirements (WDRs) –** WDRs, sometimes simply known as Orders, for discharges to waters of the United States also serve as National Pollutant Discharge Elimination System (NPDES) permits. The SWRCB and CCRWQCB regulate discharges from wastewater treatment and disposal systems under general WDRs. Small, domestic wastewater treatment systems having a maximum daily flow of 100,000 gallons per day (gpd) or less that discharge to land are covered under a statewide general WDR permit for small systems (Order WQ 2014-0153-DWQ). The State and Regional Boards are also responsible for plans and permits related to other uses, such as farming, septic tanks, and larger scale sewage treatment that can also impact the quality of surface and ground waters.
- **Irrigated Lands Regulatory Program (ILRP) –** The SWRCB initiated the ILRP in 2003 to control agricultural runoff's impairment of surface waters. In 2012, groundwater regulations were added to the program. Waste discharge requirements, which protect both surface water and groundwater, address agricultural discharges throughout the Central Coast. Anyone who irrigates land to produce crops or pasture commercially must seek ILRP permit coverage and maintain in good standing with their coalitions.

- **Department of Pesticide Regulation** – The California Department of Pesticide Regulation is responsible for ensure that pesticides do not contaminate the groundwater.
- **Office of Environmental Health Hazard Assessment** – The California Office of Environmental Health Hazard Assessment is responsible for providing the SWRCB with health-based risk assessments for contaminants. These assessments are used to develop primary drinking water standards.
- **California Public Utilities Commission (CPUC)** – The CPUC is responsible for ensuring that California's investor-owned water utilities deliver clean, safe, and reliable water to their customers at reasonable rates. The Water Division regulates over 100 investor-owned water and sewer utilities under the CPUC's jurisdiction; providing water service to about 16 percent of California's residents.

- **Local Agency Formation Commissions (LAFCOs)** – These commissions oversee the expansion of service areas of public agencies, including cities that own or operate public water systems. They can review public agencies to determine if the agency is providing municipal services in a satisfactory manner, including the delivery of safe drinking water.
- **Central Coast Groundwater Coalition (CCGC)** – The CCGC is a non-profit 501(c)5 mutual benefit organization that represents landowners and growers who operate in Monterey, San Benito, Santa Clara, Santa Cruz, San Luis Obispo, and Santa Barbara counties, as well as the northern portion of Ventura County in the Central Coast Region. The CCGC is not a governmental organization like the other jurisdictional agencies, and therefore does not have legal jurisdictional authority. However, the CCGC is the primary organization tasked with fulfilling the groundwater quality regulatory requirements in the Irrigated Lands Regulatory Program (ILRP) of the Central Coast Regional Water Quality Control Board. The organization combines the resources of its members to achieve economies of scale to comply with the regulatory requirements of the CCRWQCB. Between 2013 and 2015, the CCGC characterized the rural drinking water supply and shallow groundwater aquifer in the CCGC region which includes the previously noted six counties. In addition to using data from member wells, CCGC gathered publicly available data generated by the counties and data submitted by landowners and growers who perform individual monitoring as part of the current ILRP. Information collected on tested wells included depth to groundwater and well perforation levels where available. For many wells, quality parameters were collected, such as nitrates and total dissolved solids (TDS). In the groundwater characterization report, the information from the six counties was compiled and analyzed to produce maps showing areas where groundwater quality exceeds drinking water limits for nitrates. This information enabled CCGC to develop an accurate groundwater characterization in 2015 which provides growers, regulators and the public with a better understanding of local aquifers and geology in the six-county region.

DAC Drinking Water Challenges

Drinking water systems are categorized according to the number of service connections:

- Public water systems, which are referred to as municipal public water systems in this GSP for clarity, are water systems that provide drinking water to at least 15 service connections or serve an average of at least 25 people for at least 60 days a year,
- State small water systems are water systems that provide piped drinking water to between five and 14 service connections, and do not regularly serve drinking water to more than an average of 25 individuals daily for more than 60 days out of the year,
- Local small water systems are water systems that provide drinking water to between two and four service connections, and

- Private domestic wells usually provide water to only one or two connections.

Since state small water systems, local small water systems, and private domestic wells face more severe drinking water challenges than public water systems, they are the focus for the following discussion.

Private domestic wells are not regulated by the State. MCDEH requires one-time nitrate testing of newly installed private domestic wells, but there are no additional requirements. The SWRCB's Groundwater Ambient Monitoring and Assessment (GAMA) Domestic Well Project was developed in order to address the lack of domestic well water quality data. The GAMA Groundwater Information System includes numerous datasets that can be downloaded by users. The CCRWQCB also collects domestic well data per Irrigated Lands Regulatory Program (ILRP) groundwater monitoring requirements.

Between October 2013 and August 2014, the CCGC compiled water quality data from 229 samples from domestic and irrigation wells in the Salinas Valley. Data were collected from the GeoTracker GAMA database that includes data from the California Department of Public Health, GAMA-SWRCB data collection efforts and Regulated Sites. Additional data were collected from the USGS National Water Information System data, and data were extracted from the GAMA special study carried out by Lawrence Livermore National Laboratory. In its 2015 *Groundwater Characterization Report* (CCGC, 2015), CCGC made the following conclusions regarding nitrate in the Salinas Valley:

- 41% of wells with nitrate concentrations (or 309 of 758 total wells sampled) had maximum concentrations over the MCL.
- 34% of the land area within the Salinas Valley has nitrate concentrations over the MCL.
- 55% of domestic wells or 121 of 221 total sampled on CCGC-member properties had concentrations exceeding the MCL.

Domestic wells and wells associated with local small and state small water systems are generally more susceptible to nitrate contamination since they are typically shallow and are more likely to be located in rural areas within or adjacent to agricultural areas. They are also more susceptible to potential nitrate contamination from nearby septic systems. Public water systems, on the other hand, tend to access deeper groundwater and are more likely to be located in areas that are less susceptible nitrate contamination. Public water system operators implement regular water quality testing and treatment as necessary, and wells are usually taken out of service once they become contaminated. Funding programs are often available for public water systems, and costs are spread out over a large number of ratepayers over time. When contamination is detected in private domestic wells, treatment options are limited and the individual homeowner will typically have to bear the full cost of addressing the problem (CCGC, 2015).

According to the IRWM Plan, only a very small percentage of domestic wells in Monterey County have been tested through the Central Coast Regional Water Quality Board's groundwater monitoring programs. MCDEH has recently adopted a policy to begin requiring well testing when an application for repair or replacement of a septic system is proposed, which will provide new additional data.

MCDEH Drinking Water Protection Services regulates state small and local small water systems through their Small Water System Program. There are currently 694 local small and 276 state small water systems in Monterey County, which serve about 4,232 connections (Greater Monterey County Regional Water Management Group, 2018).

DACs in the Basin rely primarily on groundwater for their drinking water supply, except for those who rely on bottled water due to unsafe or poor water quality conditions. The primary drinking water problems experienced by small DACs in Monterey County are related to nitrate contamination, seawater intrusion, or other contaminants of concern. Numerous studies over the decades have documented these challenges.

Insufficient water quantity is generally less of a problem in the Salinas Groundwater Basin than poor or unsafe water quality; although poor water quality effectively results in insufficient water supply. During the recent prolonged drought, while Monterey County was classified as experiencing "exceptional" drought, very few water users in the Greater Monterey County IRWM region actually suffered from a lack of water availability. While the drought had immediate impacts on surface water supplies throughout the State, it tended to have a more gradual impact on groundwater supplies. Groundwater quality, rather than quantity, is of primary concern for drinking water supplies in the Salinas Valley Groundwater Basin, particularly nitrate contamination and seawater intrusion.

Nitrate Contamination

Nitrate contamination is particularly problematic in the Salinas Valley Groundwater Basin, where agriculture dominates the landscape. Nitrate is currently extensively monitored and evaluated by the CCGC and is documented in a report submitted to the CCRWQCB (CCGC, 2015). Nitrate contamination in the Salinas Valley was first documented in a report published by the Association of Monterey Bay Area Governments (AMBAG) in 1978. In 1988, a report by the State Water Board documented that nitrate levels in the Salinas Valley groundwater had impaired its beneficial use as a drinking water supply. In a July 1995 staff report, the SWRCB ranked the Salinas Valley as their number one water quality concern due to the severity of nitrate contamination. All of the Salinas Valley cities have had to replace domestic water wells due to high nitrate levels that exceed the drinking water MCL. Maps prepared by the MCWRA indicate that elevated nitrate concentrations in groundwater were locally present through the 1960s, but significantly increased in the 1970s and 1980s.

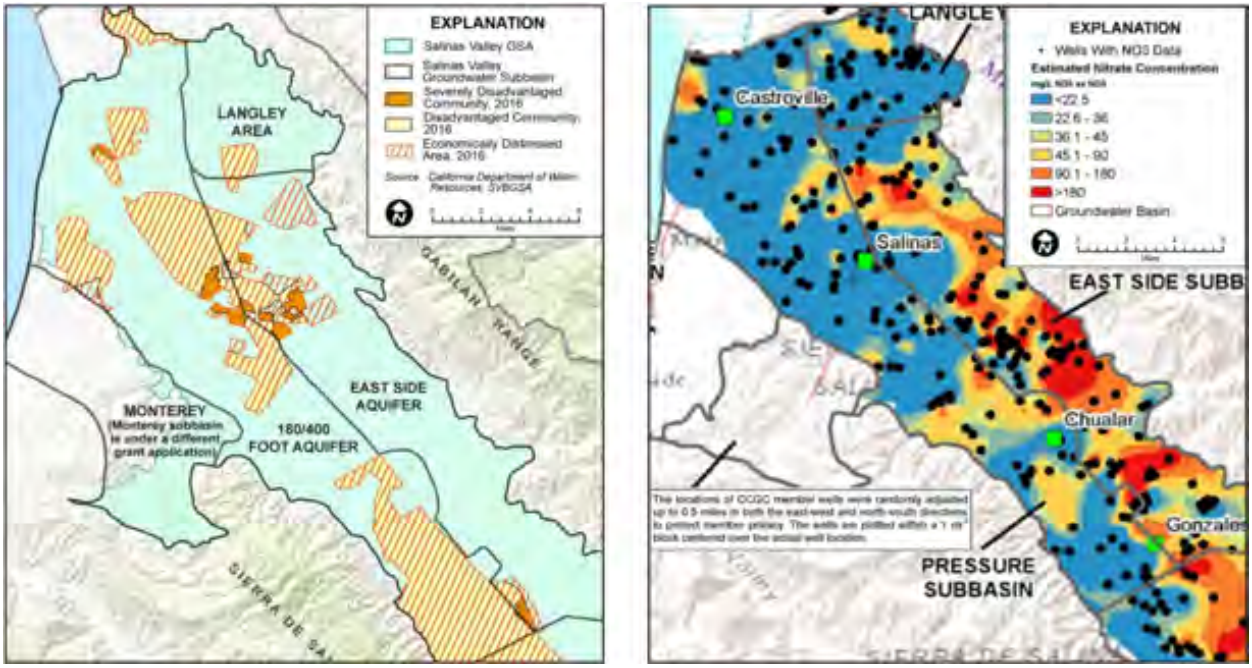

Figure 2. DACs, SDACs, and EDAs in the 180/400-Foot Aquifer Subbasin and Nitrate Concentration Map developed by CCGC (2015)

Seawater Intrusion

Seawater Intrusion is another major water quality concern for DACs and SDACs, primarily impacting coastal communities in the northern part of the Salinas Valley Groundwater Basin. Seawater intrusion has been observed in the 180-Foot and 400-Foot Aquifer Subbasin for over 70 years, and was documented in DWR Bulletin 52 in 1946. By the 1940s, many agricultural wells in the Castroville area had become so salty that they had to be abandoned (Greater Monterey County Regional Water Management Group, 2018). Seawater is high in chlorides. EPA defines the 500 mg/L threshold as an Upper Limit Secondary Maximum Contaminant Level (SMCL). Seawater intrusion is the primary threat to drinking water supplies for many DACs located in the northern coastal portion of the Basin.

Seawater has intruded inland in the 180-Foot and 400-Foot Aquifers, as shown on Figure 3 and Figure 4. Seawater intrusion in the 180-Foot Aquifer covered approximately 20,000 acres in 1995 and had expanded to approximately 28,000 acres by 2010. Since then, the rate of expansion has decreased, with an overlying area of 28,300 acres in 2017. The area overlying intrusion into the 400-Foot Aquifer is not as extensive, with an overlying area of approximately 12,000 acres in 2010. However, between 2013 and 2015, the 400-Foot Aquifer experienced a significant increase in the area of seawater intrusion, from approximately 12,500 acres to approximately 18,000 acres, likely resulting from localized downward migration between aquifers.

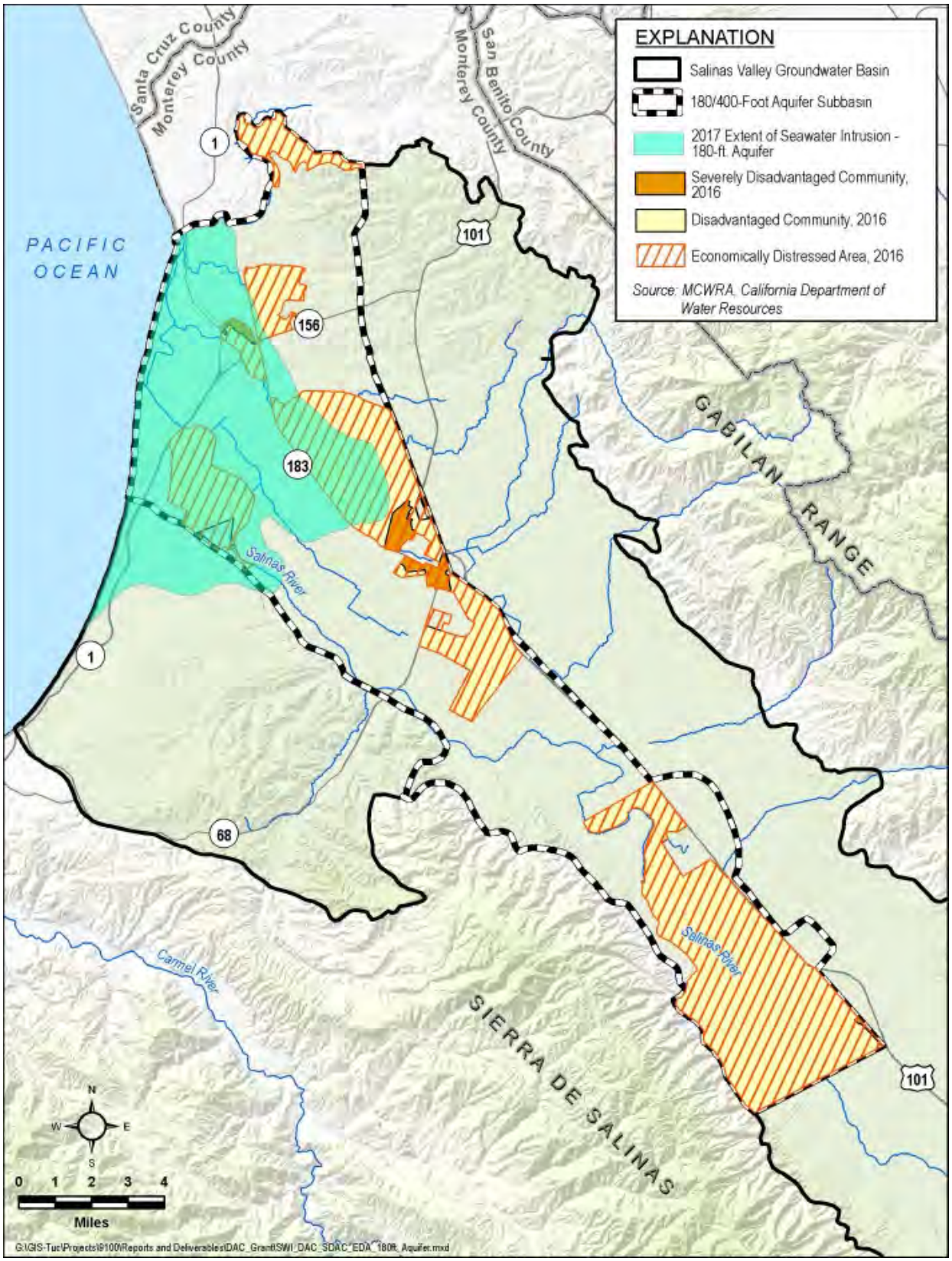

Figure 3. 2017 Extent of Seawater Intrusion in the 180-Foot Aquifer

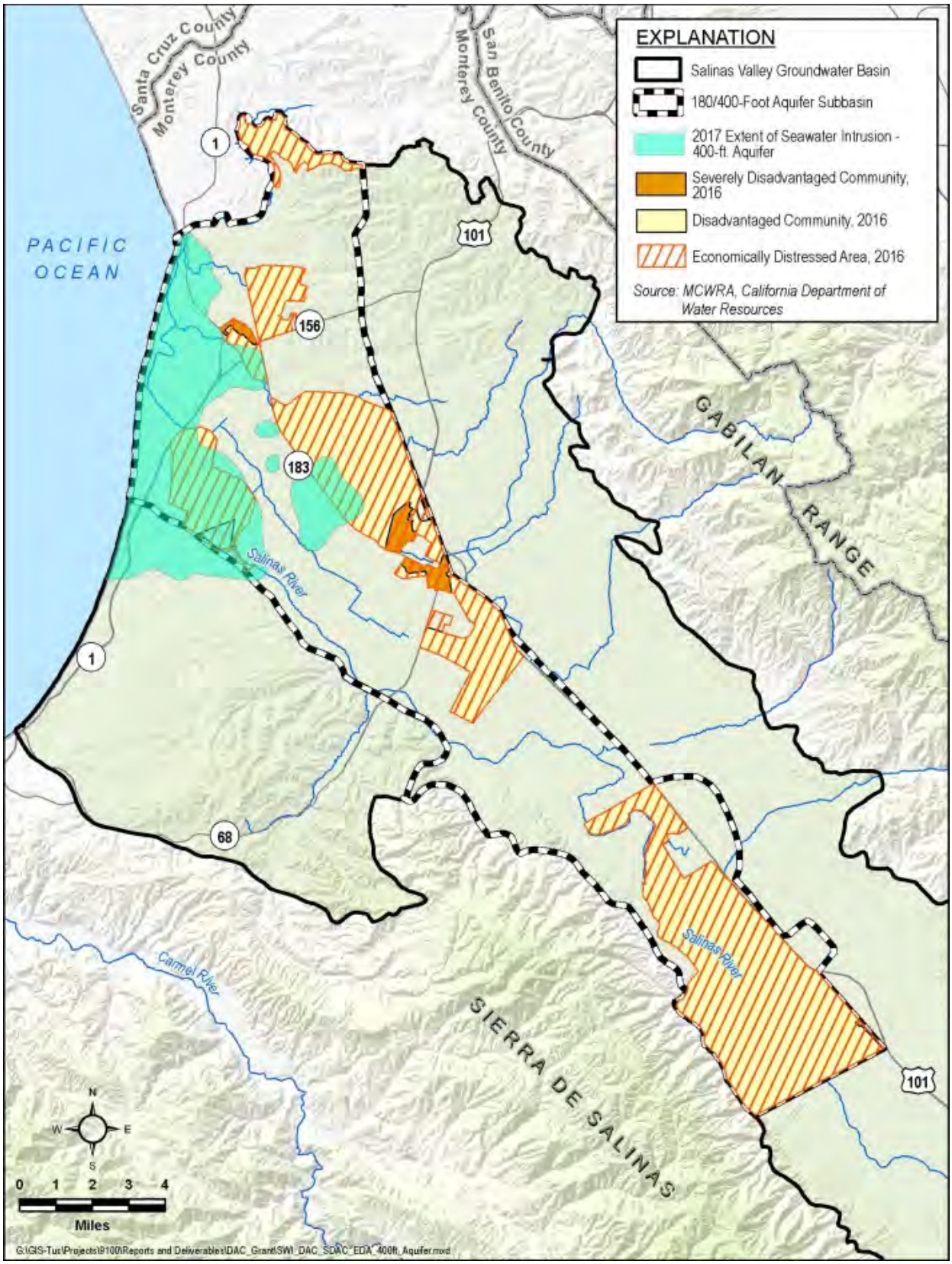

Figure 4. 2017 Extent of Seawater Intrusion in the 400-Foot Aquifer

Other Contaminants of Concern

In addition to nitrates and seawater intrusion, there are a few other contaminants of concern. With the recent passage of Assembly Bill (AB) 1249 (Salas, Chapter 717, Statutes of 2014), the State has recognized the prevalence, and urgency to address, the contamination of drinking water supplies in California by not only nitrate, but specifically by arsenic, perchlorate, and hexavalent chromium. The Greater Monterey County IRWM Regional Water Management Group is currently working with a Technical Advisory Committee, which includes MCDEH and the Central Coast Regional Water Quality Control Board, to identify the extent of nitrate, arsenic, perchlorate, and hexavalent chromium contamination in communities throughout the region. This group will develop a plan to address the contamination from these additional contaminants of concern.

Conclusion

The State of California has recognized the severity of drinking water challenges for DACs with the passage of the 2012 Human Right to Water Act (AB 685), which declared that every person has a right to clean, safe, and affordable drinking water. Further, it emphasized this state-wide focus with the Safe and Affordable Drinking Water Fund in 2019, which provides funding specifically for safe drinking water solutions in DACs that do not have access to safe drinking water.

This appendix highlights the relationship between DACs and groundwater in the Salinas Valley Groundwater Basin, particularly with respect to drinking water. It provides a base for the SVBGSA to engage DACs in a strategic dialogue and support state and local efforts related to drinking water.

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MONTGOMERY & ASSOCIATES

Chapter 4

Appendix 4A

ISW Seasonality Analysis

Appendix 4a. ISW Seasonality Analysis

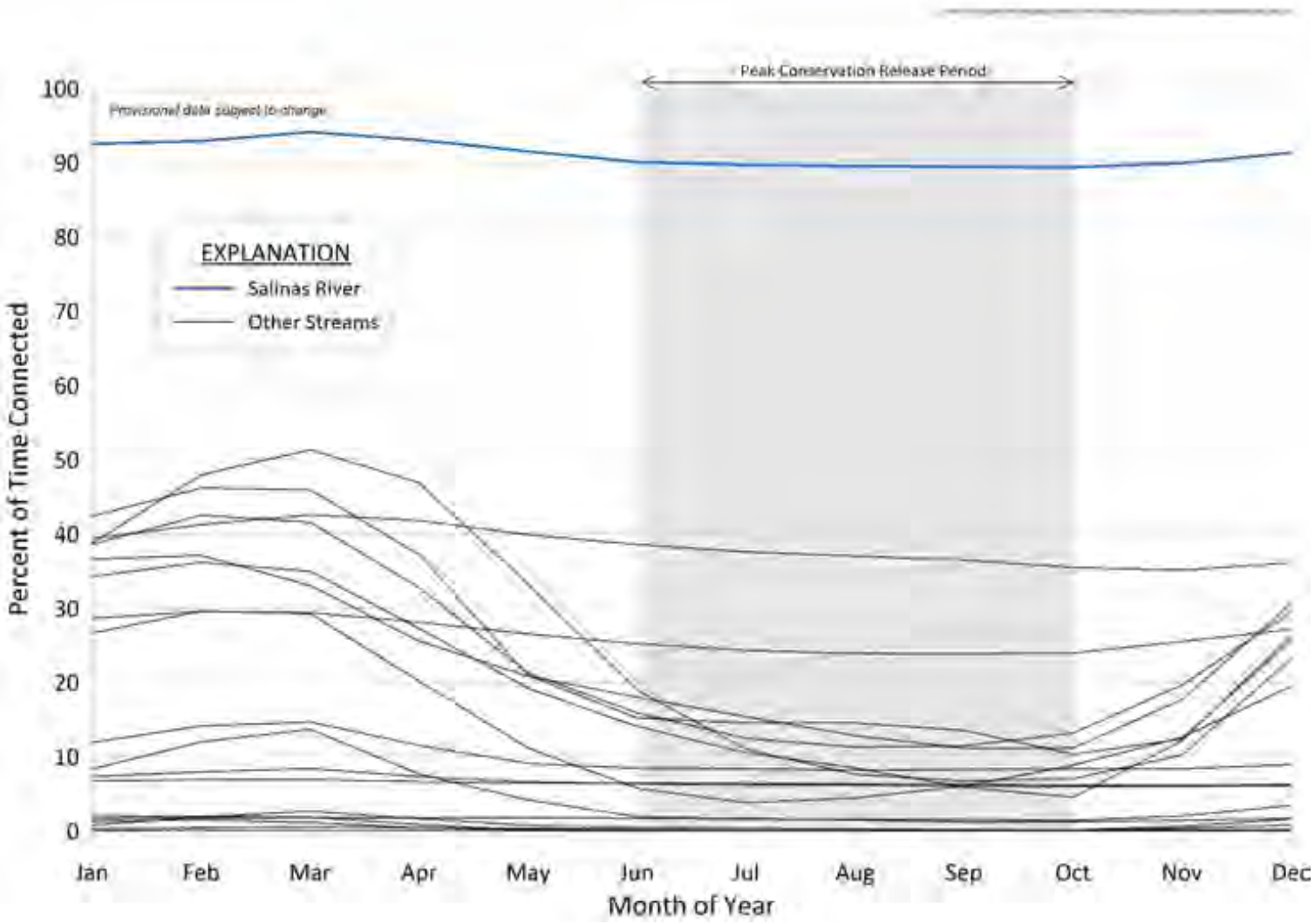
Surface water and groundwater can be hydrologically connected along a stream reach during some months of the year and not others. These temporal variations of interconnected surface water (ISW) during a given year are the result of variations in recharge, precipitation, groundwater pumping, and riparian evapotranspiration. Along the Salinas River, monthly changes in reservoir operations also influence ISW reaches. Hydrologic connectivity in the Salinas Valley is estimated using results from the provisional SVIHM. Along the Salinas River, the timing of reservoir releases is used to determine the months that the ISW sustainable management criteria applies since releases during the peak conservation period (June through September) are intended for groundwater recharge. The ISW delineated along the Salinas River in section 4.4.5.1 of the GSP represent reaches that are connected during a majority (greater than 50%) of months during the non-peak conservation release period (October through May) over the full SVIHM simulation period from 1967 to 2017. However, model results indicate that the ISW length along the Salinas River is virtually the same throughout the year, connected the vast majority of time.

For tributaries or streams away from the Salinas River, reservoir releases have less impact on ISW, if any, than for the Salinas River. To estimate the seasonal variability of ISW for stream reaches away from the Salinas River, a monthly analysis. These locations are the best estimates of where persistent hydrologic connections occur along streams in the Salinas Valley. However, the lateral extents (lengths) of these reaches vary from month to month during the year, as well as from year to year.

To understand whether surface water is connected to groundwater only during certain months, a monthly analysis was undertaken. The monthly analysis produces 2 pieces of information for each month of the year: (1) the average percent of years simulated by the SVIHM that a stream has hydrologic connection, based on the average monthly connectivity of every model grid cell identified as ISW along the stream, and (2) the average extent of where hydrologic connection occurs. Figure 1 shows the average percent of time when connectivity occurs at any location along a given stream in Salinas Valley. These data show the average temporal connectivity along the entire length of a stream; however, some reaches of the stream have much lower or higher connectivity then indicated by the average values. The results on Figure 1 are most useful for identifying the seasonal trends of connectivity for streams. Tributaries to the river and streams away from the river show seasonal variation in connectivity, with higher average connectivity in the Winter and Spring months and lower average connectivity in the Summer months.

Consistent with the seasonal variations in average time of connectivity, the lengths of ISW along the streams away from the Salinas River are generally longest during the late Winter and Spring months and shortest during the late Summer months. The average ISW length varies during the year in the Langley Area Subbasin and along Arroyo Seco in Forebay Subbasin, with the locations of ISW in 4.4.5.1 representing the stream reaches with more consistent connection. The

lengths of average ISW away from Salinas River in Upper Valley vary very little, if at all, during the year. The average monthly variations and extents are based on results from the provisional SVIHM and are subject to change in future updates to the GSP as additional data increases the understanding regarding ISW extents.


Peak Conservation Release Period
Provisional data subject to change
EXPLANATION
Salinas River
Other Streams
Percent of Time Connected
100
90
80
70
60
50
40
30
20
10
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month of Year

Chapter 3
Appendix 3-A

Water Systems

Table 1. Small Water Systems (2-14 connections)

Water System Name	ID	Connections	Population Served	Subbasin
ALISAL RD WS #01	2702233	N/A	N/A	EASTSIDE AQUIFER
ALISAL RD WS #02	2702497	N/A	N/A	EASTSIDE AQUIFER
ALISAL RD WS #03	2702519	N/A	N/A	EASTSIDE AQUIFER
BORONDA RD WS #07	2702557	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #01	2701188	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #03	2701523	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #04	2701775	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #05	2701810	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #07	2701478	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #09	2702136	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #11	2702386	N/A	N/A	EASTSIDE AQUIFER
CORONA RD WS 3	2702505	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #01	2700560	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #28	2701758	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #33	2701108	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #34	2700508	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #35	2701218	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #37	2701920	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #43	2702282	N/A	N/A	EASTSIDE AQUIFER
ESPINOSA RD WS #08	2702012	N/A	N/A	EASTSIDE AQUIFER
ESPINOSA RD WS #09	2702298	N/A	N/A	EASTSIDE AQUIFER
GLORIA RD WS #01	2701678	N/A	N/A	EASTSIDE AQUIFER
GOULD RD WS #01	2701064	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #02	2701433	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #03	2701746	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #04	2701994	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #06	2702128	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #07	2702297	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #08	2702401	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #09	2702549	N/A	N/A	EASTSIDE AQUIFER
HARTNELL RD WS #01	2702681	N/A	N/A	EASTSIDE AQUIFER
HWY 101 WS #05	2702436	N/A	N/A	EASTSIDE AQUIFER
IVERSON RD WS #01	2701846	N/A	N/A	EASTSIDE AQUIFER
KOHARA NURSERY WS	2702161	N/A	N/A	EASTSIDE AQUIFER
MARTINES RD WS #03	2702119	N/A	N/A	EASTSIDE AQUIFER
MIDDLEFIELD RD WS #02	2700651	N/A	N/A	EASTSIDE AQUIFER
MIDDLEFIELD RD WS #03	2700652	N/A	N/A	EASTSIDE AQUIFER
MIDDLEFIELD RD WS #04	2700653	N/A	N/A	EASTSIDE AQUIFER
MIDDLEFIELD RD WS #09	2702515	N/A	N/A	EASTSIDE AQUIFER

Water System Name	ID	Connections	Population Served	Subbasin
MONTEREY ROSES WS	2700851	N/A	N/A	EASTSIDE AQUIFER
NATIVIDAD RD WS #03	2701456	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #06	2702107	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #07	2701993	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #08	2702366	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #13	2701780	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #14	2702017	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #15	2702191	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #16	2702310	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #17	2702443	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #19	2702548	N/A	N/A	EASTSIDE AQUIFER
RANCHO SALINAS PACKING WS	2702067	N/A	N/A	EASTSIDE AQUIFER
SAN JUAN GRADE WS #01	2701521	N/A	N/A	EASTSIDE AQUIFER
SAN JUAN GRADE WS #02	2700737	N/A	N/A	EASTSIDE AQUIFER
SPENCE RD WS #04	2701964	N/A	N/A	EASTSIDE AQUIFER
SPENCE RD WS #08	2701729	N/A	N/A	EASTSIDE AQUIFER
UTO GREENHOUSE WS	2701716	N/A	N/A	EASTSIDE AQUIFER
WHITE RD WS #01	2700805	N/A	N/A	EASTSIDE AQUIFER
ZABALA RD WS #01	2700860	N/A	N/A	EASTSIDE AQUIFER
ZABALA RD WS #02	2702518	N/A	N/A	EASTSIDE AQUIFER
APPLE AVE WS #01	2701580	N/A	N/A	FOREBAY AQUIFER
APPLE AVE WS #04	2705021	N/A	N/A	FOREBAY AQUIFER
AROYO SECO RD WS #04	2701831	N/A	N/A	FOREBAY AQUIFER
ARROYO SECO RD WS #08	2701045	N/A	N/A	FOREBAY AQUIFER
ARROYO SECO RD WS #13	2702352	N/A	N/A	FOREBAY AQUIFER
ARROYO SECO RD WS #14	2702376	N/A	N/A	FOREBAY AQUIFER
BOEKENOOGAN WINERY WS	2702744	N/A	N/A	FOREBAY AQUIFER
BRYAN EQUIP/VALLEY ELECT WS	2702359	N/A	N/A	FOREBAY AQUIFER
CENTRAL AVE WS	2701419	N/A	N/A	FOREBAY AQUIFER
DOUD RD WS #01	2701790	N/A	N/A	FOREBAY AQUIFER
DOUD RD WS #02	2702062	N/A	N/A	FOREBAY AQUIFER
EL CAMINO REAL WS #32	2701794	N/A	N/A	FOREBAY AQUIFER
ELM AVE WS #01	2701845	N/A	N/A	FOREBAY AQUIFER
FAIRVIEW RD WS #01	2702181	N/A	N/A	FOREBAY AQUIFER
FORT ROMIE RD WS #01	2700562	N/A	N/A	FOREBAY AQUIFER
FORT ROMIE RD WS #02	2701830	N/A	N/A	FOREBAY AQUIFER
KITZMILLER RD WS #01	2701574	N/A	N/A	FOREBAY AQUIFER
LUCERNE RD WS	2701900	N/A	N/A	FOREBAY AQUIFER
MAESTRI RANCH WS	2701110	N/A	N/A	FOREBAY AQUIFER
METZ RD WS #01	2701713	N/A	N/A	FOREBAY AQUIFER

Water System Name	ID	Connections	Population Served	Subbasin
METZ RD WS #02	2701209	N/A	N/A	FOREBAY AQUIFER
METZ RD WS #04	2701147	N/A	N/A	FOREBAY AQUIFER
METZ RD WS #06	2702016	N/A	N/A	FOREBAY AQUIFER
METZ RD WS #09	2701180	N/A	N/A	FOREBAY AQUIFER
MILE END RD WS #01	2700603	N/A	N/A	FOREBAY AQUIFER
MILE END RD WS #02	2702367	N/A	N/A	FOREBAY AQUIFER
MISSION RD WS #02	2702170	N/A	N/A	FOREBAY AQUIFER
MISSION RD WS #03	2702543	N/A	N/A	FOREBAY AQUIFER
MISSION RD WS #04	2702619	N/A	N/A	FOREBAY AQUIFER
MORISOLI RD WS	2701038	N/A	N/A	FOREBAY AQUIFER
PINE ST WS #03	2701916	N/A	N/A	FOREBAY AQUIFER
PRYOR FARMS INC WS	2702911	N/A	N/A	FOREBAY AQUIFER
RIVER RD WS #27	2702419	N/A	N/A	FOREBAY AQUIFER
RIVER RD WS #33	2702754	N/A	N/A	FOREBAY AQUIFER
SAN VICENTE RD WS #01	2700774	N/A	N/A	FOREBAY AQUIFER
THIRD ST WS #01	2701730	N/A	N/A	FOREBAY AQUIFER
UNDERWOOD RD WS #01	2702340	N/A	N/A	FOREBAY AQUIFER
VIDA RD WS #01	2702603	N/A	N/A	FOREBAY AQUIFER
WALNUT AVE WS #01	2701999	N/A	N/A	FOREBAY AQUIFER
WALNUT AVE WS #02	2702099	N/A	N/A	FOREBAY AQUIFER
AVERY LN WS #01	2701620	N/A	N/A	LANGLEY AREA
AVERY LN WS #02	2701834	N/A	N/A	LANGLEY AREA
AVERY LN WS #03	2702159	N/A	N/A	LANGLEY AREA
AVERY LN WS #04	2702580	N/A	N/A	LANGLEY AREA
BERTA CANYON WS #03	2700513	N/A	N/A	LANGLEY AREA
BERTA CANYON WS #04	2702570	N/A	N/A	LANGLEY AREA
BERTA CANYON WS #06	2700985	N/A	N/A	LANGLEY AREA
BERTA CANYON WS #07	2702167	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #04	2700517	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #06	2700843	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #07	2701524	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #08	2701555	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #09	2701594	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #10	2701607	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #11	2701651	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #15	2702218	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #16	2702139	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #17	2702142	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #19	2702341	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #20	2701602	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #01	2700524	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
CASTROVILLE BLVD WS #03	2700526	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #04	2700527	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #06	2700529	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #09	2702385	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #10	2702423	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #11	2702463	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #14	2702632	N/A	N/A	LANGLEY AREA
COKER RD WS #01	2700533	N/A	N/A	LANGLEY AREA
COKER RD WS #02	2701148	N/A	N/A	LANGLEY AREA
COKER RD WS #03	2702228	N/A	N/A	LANGLEY AREA
CRAZY HORSE WS #01	2700537	N/A	N/A	LANGLEY AREA
CRAZY HORSE WS #05	2702124	N/A	N/A	LANGLEY AREA
CRAZY HORSE WS #06	2701720	N/A	N/A	LANGLEY AREA
CRAZY HORSE WS #07	2702278	N/A	N/A	LANGLEY AREA
CRAZY HORSE WS #08	2702582	N/A	N/A	LANGLEY AREA
CROSS RD WS #01	2701509	N/A	N/A	LANGLEY AREA
CROSS RD WS #02	2701585	N/A	N/A	LANGLEY AREA
CROSS RD WS #03	2701771	N/A	N/A	LANGLEY AREA
CROSS RD WS #04	2701807	N/A	N/A	LANGLEY AREA
CROSS RD WS #05	2701818	N/A	N/A	LANGLEY AREA
CROSS RD WS #06	2701817	N/A	N/A	LANGLEY AREA
CROSS RD WS #08	2700951	N/A	N/A	LANGLEY AREA
CROSS RD WS #09	2701921	N/A	N/A	LANGLEY AREA
CROSS RD WS #10	2702095	N/A	N/A	LANGLEY AREA
CUNHA LN WS #01	2702126	N/A	N/A	LANGLEY AREA
DEL MONTE FARMS RD WS #09	2702054	N/A	N/A	LANGLEY AREA
DESMOND RD WS #01	2700545	N/A	N/A	LANGLEY AREA
DESMOND RD WS #02	2700546	N/A	N/A	LANGLEY AREA
DESMOND RD WS #05	2701571	N/A	N/A	LANGLEY AREA
DESMOND RD WS #06	2701644	N/A	N/A	LANGLEY AREA
DESMOND RD WS #08	2702109	N/A	N/A	LANGLEY AREA
DESMOND RD WS #09	2702117	N/A	N/A	LANGLEY AREA
DESMOND RD WS #10	2702207	N/A	N/A	LANGLEY AREA
DESMOND RD WS #11	2702536	N/A	N/A	LANGLEY AREA
DYER RD WS #02	2700550	N/A	N/A	LANGLEY AREA
DYER RD WS #03	2701559	N/A	N/A	LANGLEY AREA
DYER RD WS #04	2701610	N/A	N/A	LANGLEY AREA
DYER RD WS #05	2701646	N/A	N/A	LANGLEY AREA
DYER RD WS #06	2702618	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #01	2700553	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #02	2700554	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
ECHO VALLEY RD WS #03	2700555	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #04	2700556	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #06	2701893	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #07	2701210	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #08	2701424	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #09	2701235	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #10	2701425	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #11	2701556	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #12	2701640	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #13	2701642	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #14	2701662	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #15	2701749	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #18	2701808	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #19	2701914	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #22	2702234	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #25	2702400	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #26	2702417	N/A	N/A	LANGLEY AREA
EDEN LN WS #01	2701650	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #02	2700561	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #07	2700566	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #08	2700567	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #15	2700574	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #19	2701426	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #23	2701427	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #25	2702362	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #26	2701536	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #29	2701785	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #31	2701429	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #36	2701934	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #38	2702201	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #39	2702106	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #40	2702127	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #42	2702158	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #48	2702808	N/A	N/A	LANGLEY AREA
EL DORO WS #01	2700576	N/A	N/A	LANGLEY AREA
ERMCO WATER SYSTEM	2702721	N/A	N/A	LANGLEY AREA
EXECUTIVE DR WS #01	2700583	N/A	N/A	LANGLEY AREA
FRISCH RD WS #01	2700584	N/A	N/A	LANGLEY AREA
FRISCH RD WS #02	2700588	N/A	N/A	LANGLEY AREA
HIDDEN VALLEY RD WS #13	2701534	N/A	N/A	LANGLEY AREA
HOLLY HILLS MOTEL WS #01	2700582	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
HOLLY HILLS MOTEL WS #02	2700604	N/A	N/A	LANGLEY AREA
HOLLY HILLS WS #01	2701141	N/A	N/A	LANGLEY AREA
HOLLY HILLS WS #02	2701979	N/A	N/A	LANGLEY AREA
HOLLY HILLS WS #03	2702424	N/A	N/A	LANGLEY AREA
HWY 156 WS #01	2701844	N/A	N/A	LANGLEY AREA
HWY 156 WS #02	2705582	N/A	N/A	LANGLEY AREA
JOSHUA LN WS	2701007	N/A	N/A	LANGLEY AREA
KING RD WS #01	2702288	N/A	N/A	LANGLEY AREA
KING RD WS #02	2702307	N/A	N/A	LANGLEY AREA
KING RD WS #03	2702313	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #01	2700617	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #02	2700618	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #03	2700619	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #04	2700620	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #05	2700621	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #06	2701440	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #08	2701243	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #09	2701244	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #10	2701762	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #12	2701437	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #13	2701908	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #15	2701441	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #16	2702346	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #17	2702232	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #18	2702309	N/A	N/A	LANGLEY AREA
LAVENDER LN WS #01	2700623	N/A	N/A	LANGLEY AREA
LAVENDER LN WS #02	2701548	N/A	N/A	LANGLEY AREA
LINDA VISTA MWC	2701400	N/A	N/A	LANGLEY AREA
MAHER RD WS #04	2700637	N/A	N/A	LANGLEY AREA
MAHER RD WS #07	2701395	N/A	N/A	LANGLEY AREA
MAHER RD WS #09	2701883	N/A	N/A	LANGLEY AREA
MAHER RD WS #11	2702162	N/A	N/A	LANGLEY AREA
MAHER RD WS #14	2702281	N/A	N/A	LANGLEY AREA
MAHER RD WS #18	2701781	N/A	N/A	LANGLEY AREA
MAHER RD WS #21	2702301	N/A	N/A	LANGLEY AREA
MAHER RD WS #22	2702433	N/A	N/A	LANGLEY AREA
MAHER RD WS #23	2702447	N/A	N/A	LANGLEY AREA
MAHER RD WS #24	2702589	N/A	N/A	LANGLEY AREA
MAHER RD WS #25	2702683	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #01	2701917	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #02	2700640	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
MALLORY CANYON WS #03	2700641	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #04	2701637	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #05	2701448	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #07	2701840	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #08	2701546	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #09	2701723	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #10	2702114	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #11	2702435	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #12	2705586	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #20	2701137	N/A	N/A	LANGLEY AREA
MARJORIE RD WS	2700921	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #01	2700644	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #03	2701409	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #05	2701596	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #06	2702355	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #07	2702096	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #08	2701449	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #09	2701632	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #10	2702236	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #11	2701643	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #12	2702160	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #02	2700646	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #03	2700647	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #04	2701091	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #06	2701451	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #07	2701494	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #08	2701502	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #10	2701875	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #11	2701135	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #12	2701664	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #13	2701919	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #14	2702092	N/A	N/A	LANGLEY AREA
MESSICK RD WS #01	2700649	N/A	N/A	LANGLEY AREA
MESSICK RD WS #02	2701953	N/A	N/A	LANGLEY AREA
MESSICK RD WS #03	2702112	N/A	N/A	LANGLEY AREA
MESSICK RD WS #04	2702459	N/A	N/A	LANGLEY AREA
MORO RD WS #01	2700657	N/A	N/A	LANGLEY AREA
MORO RD WS #02	2700658	N/A	N/A	LANGLEY AREA
MORO RD WS #03	2700659	N/A	N/A	LANGLEY AREA
MORO RD WS #04	2701925	N/A	N/A	LANGLEY AREA
MORO RD WS #06	2701238	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
MORO RD WS #07	2701454	N/A	N/A	LANGLEY AREA
MORO RD WS #08	2701453	N/A	N/A	LANGLEY AREA
MORO RD WS #10	2702357	N/A	N/A	LANGLEY AREA
MORO RD WS #13	2701528	N/A	N/A	LANGLEY AREA
MORO RD WS #15	2701764	N/A	N/A	LANGLEY AREA
MORO RD WS #16	2700744	N/A	N/A	LANGLEY AREA
MORO RD WS #17	2702725	N/A	N/A	LANGLEY AREA
MUSTANG WA	2701801	N/A	N/A	LANGLEY AREA
OAK ESTATES DR WS #01	2700661	N/A	N/A	LANGLEY AREA
OAK RD WS #01	2700666	N/A	N/A	LANGLEY AREA
OAKRIDGE DR WS #02	2702272	N/A	N/A	LANGLEY AREA
OLD STAGE RD WS #18	2702446	N/A	N/A	LANGLEY AREA
ORCHARD LN WS #01	2700668	N/A	N/A	LANGLEY AREA
ORCHARD LN WS #03	2700670	N/A	N/A	LANGLEY AREA
ORCHARD LN WS #04	2701387	N/A	N/A	LANGLEY AREA
ORCHARD LN WS #06	2701514	N/A	N/A	LANGLEY AREA
PARADISE RD WS #02	2700675	N/A	N/A	LANGLEY AREA
PARADISE RD WS #03	2700676	N/A	N/A	LANGLEY AREA
PARADISE RD WS #04	2700677	N/A	N/A	LANGLEY AREA
PARADISE RD WS #06	2700679	N/A	N/A	LANGLEY AREA
PARADISE RD WS #07	2700680	N/A	N/A	LANGLEY AREA
PARADISE RD WS #11	2701134	N/A	N/A	LANGLEY AREA
PARADISE RD WS #12	2701460	N/A	N/A	LANGLEY AREA
PARADISE RD WS #13	2701461	N/A	N/A	LANGLEY AREA
PARADISE RD WS #22	2701634	N/A	N/A	LANGLEY AREA
PARADISE RD WS #23	2701638	N/A	N/A	LANGLEY AREA
PARADISE RD WS #28	2701462	N/A	N/A	LANGLEY AREA
PARADISE RD WS #29	2701696	N/A	N/A	LANGLEY AREA
PARADISE RD WS #31	2702263	N/A	N/A	LANGLEY AREA
PARADISE RD WS #33	2702337	N/A	N/A	LANGLEY AREA
PESANTE RD WS #01	2701021	N/A	N/A	LANGLEY AREA
PESANTE RD WS #03	2700688	N/A	N/A	LANGLEY AREA
PESANTE RD WS #04	2700689	N/A	N/A	LANGLEY AREA
PESANTE RD WS #07	2700692	N/A	N/A	LANGLEY AREA
PESANTE RD WS #08	2701083	N/A	N/A	LANGLEY AREA
PESANTE RD WS #12	2700734	N/A	N/A	LANGLEY AREA
PESANTE RD WS #13	2701399	N/A	N/A	LANGLEY AREA
PESANTE RD WS #14	2700616	N/A	N/A	LANGLEY AREA
PESANTE RD WS #15	2701923	N/A	N/A	LANGLEY AREA
PESANTE RD WS #16	2701990	N/A	N/A	LANGLEY AREA
PESANTE RD WS #17	2702006	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
PESANTE RD WS #18	2701983	N/A	N/A	LANGLEY AREA
PESANTE RD WS #19	2702111	N/A	N/A	LANGLEY AREA
PESANTE RD WS #21	2701788	N/A	N/A	LANGLEY AREA
PESANTE RD WS #22	2702131	N/A	N/A	LANGLEY AREA
PESANTE RD WS #24	2707025	N/A	N/A	LANGLEY AREA
PESANTE RD WS #25	2702333	N/A	N/A	LANGLEY AREA
PESANTE RD WS #27	2702648	N/A	N/A	LANGLEY AREA
PESANTE RD WS #29	2702794	N/A	N/A	LANGLEY AREA
PEZZINI LN WS #01	2701392	N/A	N/A	LANGLEY AREA
PINE TREE WAY WS #01	2700695	N/A	N/A	LANGLEY AREA
PINE TREE WAY WS #02	2700696	N/A	N/A	LANGLEY AREA
PLAZA SERENA WS	2701636	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #01	2700697	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #02	2701129	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #03	2700699	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #04	2701088	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #05	2702005	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #06	2702051	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #07	2702051	N/A	N/A	LANGLEY AREA
PRUNEDALE RD WS #02	2700704	N/A	N/A	LANGLEY AREA
PRUNEDALE RD WS #03	2701469	N/A	N/A	LANGLEY AREA
PRUNEDALE RD WS #04	2702360	N/A	N/A	LANGLEY AREA
PRUNEDALE RD WS #06	2702425	N/A	N/A	LANGLEY AREA
REESE CIR WS #01	2700712	N/A	N/A	LANGLEY AREA
REESE CIR WS #03	2702222	N/A	N/A	LANGLEY AREA
REESE CIR WS #04	2702591	N/A	N/A	LANGLEY AREA
SAN JUAN GRADE WS #03	2702775	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #02	2700739	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #06	2700743	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #08	2700745	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #13	2700750	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #18	2701680	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #20	2700767	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #26	2701474	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #29	2701501	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #30	2701506	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #31	2701530	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #37	2701988	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #38	2701567	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #39	2701962	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #43	2701674	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
SAN MIGUEL WS #44	2701715	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #45	2701748	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #49	2702120	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #54	2702420	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #59	2702599	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #62	2702690	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #64	2702731	N/A	N/A	LANGLEY AREA
SANDY HILL DR WS #01	2701787	N/A	N/A	LANGLEY AREA
STRAWBERRY RD WS #01	2700761	N/A	N/A	LANGLEY AREA
STRAWBERRY RD WS #03	2700763	N/A	N/A	LANGLEY AREA
STRAWBERRY RD WS #10	2700770	N/A	N/A	LANGLEY AREA
STRAWBERRY RD WS #22	2702389	N/A	N/A	LANGLEY AREA
STRONG CIR WS	2702264	N/A	N/A	LANGLEY AREA
TARAWILD CT WS #01	2701657	N/A	N/A	LANGLEY AREA
TIMEVIEW WAY WS #01	2702504	N/A	N/A	LANGLEY AREA
TUCKER RD WS #01	2701554	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #01	2700776	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #02	2700777	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #03	2700778	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #04	2701484	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #05	2701380	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #07	2702380	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #08	2700569	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #09	2701366	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #10	2701485	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #14	2701591	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #15	2701724	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #16	2701767	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #17	2701728	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #18	2701970	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #19	2701992	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #20	2702177	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #21	2702178	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #22	2702260	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #23	2702415	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #01	2700780	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #02	2700781	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #03	2700782	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #04	2700783	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #05	2700784	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #09	2702168	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
VALLE PACIFICO WS #11	2702379	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #12	2702025	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #14	2702152	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #15	2702470	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #16	2702695	N/A	N/A	LANGLEY AREA
VIA DEL SOL WS #01	2701652	N/A	N/A	LANGLEY AREA
VIA DEL SOL WS #02	2700814	N/A	N/A	LANGLEY AREA
VIA DEL SOL WS #03	2702153	N/A	N/A	LANGLEY AREA
VIA DEL SOL WS #04	2702499	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #01	2701719	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #02	2700791	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #04	2700793	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #05	2700794	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #06	2700795	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #07	2700796	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #08	2701119	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #09	2701488	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #10	2701512	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #11	2701531	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #12	2701532	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #13	2701533	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #14	2700667	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #15	2701565	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #16	2701601	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #17	2701611	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #18	2701617	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #20	2701660	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #21	2701895	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #23	2701725	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #24	2701747	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #27	2701401	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #28	2700722	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #32	2702129	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #33	2702169	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #34	2702249	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #35	2702402	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #36	2702489	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #37	2702429	N/A	N/A	LANGLEY AREA
WILD HORSE WS #01	2701933	N/A	N/A	LANGLEY AREA
WILD PINTO WS #01	2701795	N/A	N/A	LANGLEY AREA
WILD PINTO WS #02	2701913	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
WILDER CT WS #01	2702287	N/A	N/A	LANGLEY AREA
CATTLEMEN RD WS #01	2701677	N/A	N/A	UPPER VALLEY AQUIFER
DELICATO VINEYARD WS	2702538	N/A	N/A	UPPER VALLEY AQUIFER
INDIAN VALLEY RD WS #01	2702547	N/A	N/A	UPPER VALLEY AQUIFER
LOS LOBOS RD WS	2701693	N/A	N/A	UPPER VALLEY AQUIFER
MESA VERDE RD WS #01	2701741	N/A	N/A	UPPER VALLEY AQUIFER
MONTEREY-DIXIE WS	2701960	N/A	N/A	UPPER VALLEY AQUIFER
NACIMIENTO LAKE DR WS #01	2701936	N/A	N/A	UPPER VALLEY AQUIFER
RANCHITA CANYON RD WS #01	2705555	N/A	N/A	UPPER VALLEY AQUIFER
SARGENTS RD WS #01	2701710	N/A	N/A	UPPER VALLEY AQUIFER
SARGENTS RD WS #03	2701710	N/A	N/A	UPPER VALLEY AQUIFER
SPRECKELS RD WS - KING CITY	2702075	N/A	N/A	UPPER VALLEY AQUIFER
TEAGUE AVE WS #04	2702465	N/A	N/A	UPPER VALLEY AQUIFER
TOPO RANCH WS	2701162	N/A	N/A	UPPER VALLEY AQUIFER
VINEYARD CANYON WS	2701930	N/A	N/A	UPPER VALLEY AQUIFER

Table 2. Public Water Systems (15 < connections or serving more than 25 peoplefor at least 60 days out of the year)

Water System Name	PWSID	Connections	Population Served	Subbasin	State Water System Classification
ALBA WS	CA2702572	4	40	EASTSIDE AQUIFER	NC
ALCO WATER SERVICE	CA2710001	9,272	29,179	EASTSIDE AQUIFER	C
ALTMAN PLANTS WS #01	CA2700856	5	45	EASTSIDE AQUIFER	NTNC
ALTMAN PLANTS WS #02	CA2702616	3	25	EASTSIDE AQUIFER	NTNC
ASSISI MWC	CA2700503	42	126	EASTSIDE AQUIFER	C
CAL AM WATER COMPANY - RALPH LANE WS	CA2702004	30	66	EASTSIDE AQUIFER	C
COLOR SPOT NURSERY WS #01	CA2700853	4	200	EASTSIDE AQUIFER	NTNC
COLOR SPOT NURSERY WS #02	CA2702482	1	25	EASTSIDE AQUIFER	NTNC
CWSC FOOTHILL ESTATES	CA2702198	45	183	EASTSIDE AQUIFER	C
CWSC SALINAS	CA2710010	24,036	106,858	EASTSIDE AQUIFER	C
EL CAMINO WC INC	CA2702409	31	90	EASTSIDE AQUIFER	C
ENCINAL RD WS #01	CA2701241	18	41	EASTSIDE AQUIFER	C
ESPERANZA RD WS	CA2702615	1	160	EASTSIDE AQUIFER	NTNC
FOOTHILL ESTATES WS	CA2702198	61	183	EASTSIDE AQUIFER	C
FREE WILL BAPTIST CHURCH WS	CA2702475	2	80	EASTSIDE AQUIFER	NC
GABILAN WC	CA2700586	162	454	EASTSIDE AQUIFER	C

Water System Name	PWSID	Connections	Population Served	Subbasin	State Water System Classification
GREEN VALLEY FLORAL WS	CA2701151	1	25	EASTSIDE AQUIFER	NTNC
GROWERS COMPANY INC WS	CA2702202	6	200	EASTSIDE AQUIFER	NTNC
HARRISON RD WS #01	CA2700592	4	40	EASTSIDE AQUIFER	NTNC
IVERSON & JACKS APTS WS	CA2701068	31	150	EASTSIDE AQUIFER	C
IVERSON RD WS #03	CA2702621	1	40	EASTSIDE AQUIFER	NTNC
JOHNSON CYN WS #01	CA2702626	8	28	EASTSIDE AQUIFER	NTNC
LHOIST NORTH AMERICA WS	CA2702259	1	100	EASTSIDE AQUIFER	NTNC
MATSUI NURSERY WS	CA2701931	2	75	EASTSIDE AQUIFER	NTNC
MISIONERO VEGETABLES WS	CA2701946	3	60	EASTSIDE AQUIFER	NTNC
NATIVIDAD RD WS #02	CA2701922	3	35	EASTSIDE AQUIFER	NTNC
OLD NATIVIDAD RD WS #01	CA2701232	3	25	EASTSIDE AQUIFER	NC
PENTECOSTAL WS	CA2700558	1	25	EASTSIDE AQUIFER	NTNC
PREMIUM PACKING WS	CA2702537	1	5	EASTSIDE AQUIFER	NC
ROSEHART INDUSTRIAL PARK WS	CA2702121	13	28	EASTSIDE AQUIFER	NTNC
SAN JERARDO COOP WS	CA2701904	67	249	EASTSIDE AQUIFER	C
SPENCE RD WS #05	CA2701726	4	25	EASTSIDE AQUIFER	NTNC
SUNNY ACRES MWS	CA2701589	15	45	EASTSIDE AQUIFER	C
APPLE AVE WS #02	CA2701034	18	75	FOREBAY AQUIFER	C
APPLE AVE WS #03	CA2701036	20	60	FOREBAY AQUIFER	C
ARROYO SECO ESTATES MWS	CA2702520	20	70	FOREBAY AQUIFER	C
CAMPHORA APARTMENTS	CA2701046	42	126	FOREBAY AQUIFER	C
CAMPHORA STATION WS	CA2701579	5	25	FOREBAY AQUIFER	NTNC
CAMPHORA-GLORIA RD WS #01	CA2702642	2	25	FOREBAY AQUIFER	NC
CORRECTIONAL TRAINING FACILITY - SOLEDAD	CA2710850	2,769	5,500	FOREBAY AQUIFER	C
DOLE FRESH VEGETABLES WS	CA2702412	1	80	FOREBAY AQUIFER	NTNC
ESTANCIA WINERY WS	CA2702613	1	70	FOREBAY AQUIFER	NTNC
FOOTHILL RD WS #01	CA2702431	4	25	FOREBAY AQUIFER	NTNC
GOLDEN STATE VINTNERS WS	CA2701550	1	30	FOREBAY AQUIFER	NTNC
GONZALES, CITY OF	CA2710007	1,930	8,383	FOREBAY AQUIFER	C
GREENFIELD, CITY OF	CA2710008	3,720	17,517	FOREBAY AQUIFER	C
KENDALL-JACKSON WINERY WS	CA2702496	2	45	FOREBAY AQUIFER	NTNC
MCCOY RD WS #05	CA2701040	24	72	FOREBAY AQUIFER	C
MISSION SCHOOL WS	CA2702317	1	100	FOREBAY AQUIFER	NTNC
OAK PARK WS	CA2700999	1	29	FOREBAY AQUIFER	NC
OASIS CAFE WS	CA2701000	5	31	FOREBAY AQUIFER	NC

Water System Name	PWSID	Connections	Population Served	Subbasin	State Water System Classification
PARADISE RD WS #21	CA2701633	16	48	FOREBAY AQUIFER	C
PARAISO HOT SPRINGS WS	CA2701001	5	25	FOREBAY AQUIFER	NC
PINE ST WS #01	CA2701403	17	65	FOREBAY AQUIFER	C
SALINAS VALLEY STATE PRISON	CA2710851	2,208	3,386	FOREBAY AQUIFER	C
SAN SABA WINERY WS	CA2702609	2	29	FOREBAY AQUIFER	NC
SAN VICENTE MWC	CA2702466	21	90	FOREBAY AQUIFER	C
SOLEDAD MISSION WS	CA2701176	2	25	FOREBAY AQUIFER	NC
SOLEDAD, CITY OF	CA2710011	3,669	16,729	FOREBAY AQUIFER	C
AMERICAN LEGION #593 WS	CA2702679	2	25	LANGLEY AREA	NC
BLACKIE RD WS #05	CA2700837	18	54	LANGLEY AREA	C
BLACKIE RD WS #18	CA2702094	21	60	LANGLEY AREA	C
CABANA HOLIDAY WS	CA2700522	146	400	LANGLEY AREA	C
CALVARY CHURCH INC WS	CA2700703	5	150	LANGLEY AREA	NTNC
CENTRAL BAY HIGH SCHOOL WS	CA2702490	1	250	LANGLEY AREA	NTNC
CHETMOORE ACRES WA	CA2700634	24	50	LANGLEY AREA	C
COLONIAL OAK WC INC	CA2700534	66	198	LANGLEY AREA	C
COUNTRY MEADOWS MWC	CA2701929	107	621	LANGLEY AREA	C
COUNTRYSIDE ESTATES MWC	CA2702374	18	73	LANGLEY AREA	C
CWSC COUNTRY MEADOWS	CA2701929	107	294	LANGLEY AREA	C
CWSC OAK HILLS	CA2710019	894	3,904	LANGLEY AREA	C
ECHO VALLEY RD WS #05	CA2701423	16	48	LANGLEY AREA	C
ECHO VALLEY SCHOOL WS	CA2700552	1	579	LANGLEY AREA	NTNC
GARLEN COURT WS	CA2700686	23	69	LANGLEY AREA	C
GLENN AVE WS #01	CA2700589	26	78	LANGLEY AREA	C
HIDDEN CANYON RANCH MWC	CA2702554	27	102	LANGLEY AREA	C
HIDDEN VALLEY WA	CA2700594	31	51	LANGLEY AREA	C
HOLLY HILLS MWC	CA2701789	27	108	LANGLEY AREA	C
LA TAPATIA TAQUERIA WS	CA2702382	1	25	LANGLEY AREA	NC
LANGLEY/VALLE PACIFICO WS	CA2701670	31	81	LANGLEY AREA	C
MAHER RD WS #05	CA2700638	17	51	LANGLEY AREA	C
MANZANITA PARK WS	CA2702229	1	300	LANGLEY AREA	NC
MERIDIAN RD WS #09	CA2701837	2	35	LANGLEY AREA	NTNC
MONTEREY BAY NURSERY WS	CA2702336	3	25	LANGLEY AREA	NTNC
MONTEREY DUNES MWA	CA2701452	137	280	LANGLEY AREA	C
MONTEREY MUSHROOMS WS	CA2701940	1	450	LANGLEY AREA	NTNC
MORO COJO MWA	CA2700656	19	67	LANGLEY AREA	C

Water System Name	PWSID	Connections	Population Served	Subbasin	State Water System Classification
MORO RD WS #09	CA2701926	65	210	LANGLEY AREA	C
NORMCO	CA2700511	267	928	LANGLEY AREA	C
OAK HEIGHTS W & R CO INC	CA2700665	35	105	LANGLEY AREA	C
OAK MANOR WS	CA2700509	28	71	LANGLEY AREA	C
ORCHARD LN WS #02	CA2700669	16	32	LANGLEY AREA	C
ORCHARD LN WS #09	CA2702165	5	25	LANGLEY AREA	NC
PAJARO/SUNNY MESA COMMUNITY SERVICES DISTRICT	CA2710020	457	6,500	LANGLEY AREA	C
PARADISE RD WS #05	CA2700678	15	42	LANGLEY AREA	C
PARADISE RD WS #09	CA2700682	18	250	LANGLEY AREA	C
PESANTE RD WS #02	CA2700687	40	120	LANGLEY AREA	C
PESANTE RD WS #06	CA2700691	16	48	LANGLEY AREA	C
POND-DEROSA OAKS WC	CA2701553	72	216	LANGLEY AREA	C
PRUNEDALE CHEVRON WS	CA2701630	1	25	LANGLEY AREA	NC
PRUNEDALE MWC	CA2700702	84	252	LANGLEY AREA	C
PRUNEDALE PLAZA WS	CA2701814	11	90	LANGLEY AREA	NC
PRUNEDALE SCHOOL WS	CA2700705	1	400	LANGLEY AREA	NTNC
PRUNEDALE SHOPPING CENTER WS	CA2701231	1	150	LANGLEY AREA	NTNC
PRUNETREE SHOPPING CENTER WS	CA2702368	38	200	LANGLEY AREA	NTNC
RANCHO BORROMEO MWS	CA2700709	36	100	LANGLEY AREA	C
ROLLING HILLS RANCHO WA	CA2700713	59	177	LANGLEY AREA	C
ROYAL OAK PLACE WS	CA2702388	20	60	LANGLEY AREA	C
ROYAL OAKS PARK WS	CA2700636	1	25	LANGLEY AREA	NC
SALINAS TRANSPLANT WS	CA2702021	1	58	LANGLEY AREA	NC
SAN MIGUEL WS #01	CA2700738	34	100	LANGLEY AREA	C
SAN MIGUEL WS #03	CA2700740	16	48	LANGLEY AREA	C
SAN MIGUEL WS #22	CA2702073	31	93	LANGLEY AREA	C
SPRING CANYON WA	CA2700838	33	99	LANGLEY AREA	C
SUMMERHILL MHP WS	CA2700792	34	102	LANGLEY AREA	C
THIMIO MWC	CA2702608	21	60	LANGLEY AREA	C
VIERRA CANYON WS #29	CA2701942	2	25	LANGLEY AREA	NC
VIERRA ESTATES WS	CA2702007	53	164	LANGLEY AREA	C
VIERRA KNOLLS MWC	CA2702055	22	66	LANGLEY AREA	C
VIERRA MEADOWS MWC	CA2702003	25	75	LANGLEY AREA	C
WOODLAND HEIGHTS MWC	CA2702439	19	57	LANGLEY AREA	C
AERA ENERGY LLC WS	CA2701187	1	75	UPPER VALLEY AQUIFER	NTNC

Water System Name	PWSID	Connections	Population Served	Subbasin	State Water System Classification
BERNARDO RD WS #02	CA2702486	3	25	UPPER VALLEY AQUIFER	NC
BRADLEY UNION SCHOOL WS	CA2700964	1	100	UPPER VALLEY AQUIFER	NTNC
CALIFORNIA ORCHARD WS	CA2701742	50	150	UPPER VALLEY AQUIFER	C
CAMP ROBERTS - CALIFORNIA NATIONAL GUARD	CA2710705	342	385	UPPER VALLEY AQUIFER	NTNC
CHEVRON OIL FIELD WS	CA2701171	1	75	UPPER VALLEY AQUIFER	NTNC
CWSC KING CITY	CA2710009	2,778	14,441	UPPER VALLEY AQUIFER	C
LITTLE BEAR WATER COMPANY	CA2710016	705	2,303	UPPER VALLEY AQUIFER	C
SAN ARDO WD	CA2700728	162	550	UPPER VALLEY AQUIFER	C
SAN LUCAS WD	CA2701676	96	500	UPPER VALLEY AQUIFER	C
SCHEID VINEYARD WS	CA2702539	1	45	UPPER VALLEY AQUIFER	NTNC
WILDHORSE CAFE WS	CA2701172	6	50	UPPER VALLEY AQUIFER	NTNC

Chapter 3
Appendix 3-B

Land Use Plans

APPENDIX 3-A. LAND USE PLANS IN THE SUBBASIN

3-A (a) Monterey County General Plan

Relevant elements of the Monterey County General Plan (Monterey County, 2010) are summarized in Table 3-3.

Table 3-1 Monterey County General Plan Summary

Element	Goal / Policy	
Land Use	LU-1.4	Growth areas shall be designated only where an adequate level of services and facilities such as water, sewerage, fire and police protection, transportation, and schools exist or can be assured concurrent with growth and development. Phasing of development shall be required as necessary in growth areas in order to provide a basis for long-range services and facilities planning.
Open Space	OS-3.8	The County shall cooperate with appropriate regional, state and federal agencies to provide public education/outreach and technical assistance programs on erosion and sediment control, efficient water use, water conservation and re-use, and groundwater management. This cooperative effort shall be centered through the Monterey County Water Resources Agency.
et seq. Public Services	GOAL PS-2	Assure an adequate and safe water supply to meet the county's current and long-term needs.
	PS-2.1	Coordination among, and consolidation with, those public water service providers drawing from a common water table to prevent overdrawing the water table is encouraged.
	PS-2.2	The County of Monterey shall assure adequate monitoring of wells in those areas experiencing rapid growth provided adequate funding mechanisms for monitoring are established in the CIFP.
	PS-2.3	New development shall be required to connect to existing water service providers where feasible. Connection to public utilities is preferable to other providers.
	PS-2.4	Regulations for installing any new domestic well located in consolidated materials (e.g., hard rock areas) shall be enacted by the County.
	PS-2.5	Regulations shall be developed for water quality testing for new individual domestic wells on a single lot of record to identify: a) Water quality testing parameters for a one-time required water quality test for individual wells at the time of well construction. b) A process that allows the required one-time water quality test results to be available to future owners of the well. Regulations pursuant to this policy shall not establish criteria that will prevent the use of the well in the development of the property. Agricultural wells shall be exempt from the regulation.
	GOAL PS-3	Ensure that new development is assured a long-term sustainable water supply.

Element	Goal / Policy	
	PS-3.1	Except as specifically set forth below, new development for which a discretionary permit is required, and that will use or require the use of water, shall be prohibited without proof, based on specific findings and supported by evidence, that there is a long-term, sustainable water supply, both in quality and quantity to serve the development [see Plan for list].
	PS-3.2	Specific criteria for proof of a Long-Term Sustainable Water Supply and an Adequate Water Supply System for new development requiring a discretionary permit, including but not limited to residential or commercial subdivisions, shall be developed by ordinance with the advice of the General Manager of the Water Resources Agency and the Director of the Environmental Health Bureau. A determination of a Long-Term Sustainable Water Supply shall be made upon the advice of the General Manager of the Water Resources Agency. The following factors shall be used in developing the criteria for proof of a long-term sustainable water supply and an adequate water supply system: [see Plan for list]
	PS-3.3	Specific criteria shall be developed by ordinance for use in the evaluation and approval of adequacy of all domestic wells. The following factors shall be used in developing criteria for both water quality and quantity including, but not limited to: [see Plan for list]
	PS-3.4	The County shall request an assessment of impacts on adjacent wells and instream flows for new high-capacity wells, including high-capacity urban and agricultural production wells, where there may be a potential to affect existing adjacent domestic or water system wells adversely or in-stream flows, as determined by the Monterey County Water Resources Agency. In the case of new high-capacity wells for which an assessment shows the potential for significant adverse well interference, the County shall require that the proposed well site be relocated or otherwise mitigated to avoid significant interference. The following factors shall be used in developing criteria by ordinance for use in the evaluation and approval of adequacy of all such high-capacity wells, including but not limited to: a) Effect on wells in the immediate vicinity as required by the Monterey County Water Resources Agency or Environmental Health Bureau. b) Effects of additional extractions or diversion of water on in-stream flows necessary to support riparian vegetation, wetlands, fish, and other aquatic life including migration potential for steelhead, for the purpose of minimizing impacts to those resources and species. This policy is not intended to apply to replacement wells.
	PS-3.5	The Monterey County Health Department shall not allow construction of any new wells in known areas of saltwater intrusion as identified by Monterey County Water Resources Agency or other applicable water management agencies: a) Until such time as a program has been approved and funded that will minimize or avoid expansion of saltwater intrusion into useable groundwater supplies in that area; or b) Unless approved by the applicable water resource agency. This policy shall not apply to deepening or replacement of existing wells, or wells used in conjunction with a desalination project.
	PS-3.6	The County shall coordinate and collaborate with all agencies responsible for the management of existing and new water resources.

Element	Goal / Policy	
	PS-3.7	A program to eliminate overdraft of water basins shall be developed as part of the Capital Improvement and Financing Plan (CIFP) for this Plan using a variety of strategies, which may include but are not limited to: a) Water banking; b) Groundwater and aquifer recharge and recovery; c) Desalination; d) Pipelines to new supplies; and/or e) A variety of conjunctive use techniques. The CIFP shall be reviewed every five years in order to evaluate the effectiveness of meeting the strategies noted in this policy. Areas identified to be at or near overdraft shall be a high priority for funding.
	PS-3.8	Developments that use gray water and cisterns for multi-family residential and commercial landscaping shall be encouraged, subject to a discretionary permit.
	PS-3.9	A tentative subdivision map and/or vesting tentative subdivision map application for either a standard or minor subdivision shall not be approved until the applicant provides evidence of a long-term sustainable water supply in terms of yield and quality for all lots that are to be created through subdivision.
	PS-3.10	In order to maximize agricultural water conservation measures to improve water use efficiency and reduce overall water demand, the County shall establish an ordinance identifying conservation measures that reduce agricultural water demand.
	PS-3.11	In order to maximize urban water conservation measures to improve water use efficiency and reduce overall water demand, the County shall establish an ordinance identifying conservation measures that reduce potable water demand
	PS-3.12	The County shall maximize the use of recycled water as a potable water offset to manage water demands and meet regulatory requirements for wastewater discharge, by employing strategies including, but not limited to, the following: a) Increase the use of treated water where the quality of recycled water is maintained, meets all applicable regulatory standards, is appropriate for the intended use, and re-use will not significantly impact beneficial uses of other water resources. b) Work with the agricultural community to develop new uses for tertiary recycled water and increase the use of tertiary recycled water for irrigation of lands currently being irrigated by groundwater pumping. c) Work with urban water providers to emphasize use of tertiary recycled water for irrigation of parks, playfields, schools, golf courses, and other landscape areas to reduce potable water demand. d) d. Work with urban water providers to convert existing potable water customers to tertiary recycled water as infrastructure and water supply become available.
	PS-3.13	To ensure accuracy and consistency in the evaluation of water supply availability, the Monterey County Health Department, in coordination with the MCWRA, shall develop guidelines and procedures for conducting water supply assessments and determining water availability. Adequate availability and provision of water supply, treatment, and conveyance facilities shall be assured to the satisfaction of the County prior to approval

Element	Goal / Policy	
		of final subdivision maps or any changes in the General Plan Land Use or Zoning designations.
	PS-3.14	The County will participate in regional coalitions for the purpose of identifying and supporting a variety of new water supply projects, water management programs, and multiple agency agreements that will provide additional domestic water supplies for the Monterey Peninsula and Seaside basin, while continuing to protect the Salinas and Pajaro River groundwater basins from saltwater intrusion. The County will also participate in regional groups including representatives of the Pajaro Valley Water Management Agency and the County of Santa Cruz to identify and support a variety of new water supply, water management and multiple agency agreement that will provide additional domestic water supplies for the Pajaro Groundwater Basin. The County's general objective, while recognizing that timeframes will be dependent on the dynamics of each of the regional groups, will be to complete the cooperative planning of these water supply alternatives within five years of the adoption of the General Plan and to implement the selected alternatives within five years after that time.
	PS-3.15	The County will pursue expansion of the Salinas Valley Water Project (SVWP) by investigating expansion of the capacity for the Salinas River water storage and distribution system. This shall also include, but not be limited to, investigations of expanded conjunctive use, use of recycled water for groundwater recharge and seawater intrusion barrier, and changes in operations of the reservoirs. The County's overall objective is to have an expansion planned and in service by the date that the extractions from the Salinas Valley groundwater basin are predicted to reach the levels estimated for 2030 in the EIR for the Salinas Valley Water Project. The County shall review these extraction data trends at five-year intervals. The County shall also assess the degree to which the Salinas Valley Groundwater Basin (Zone 2C) has responded with respect to water supply and the reversal of seawater intrusion based upon the modeling protocol utilized in the Salinas Valley Water Project EIR. If the examination indicates that the growth in extractions predicted for 2030 are likely to be attained within ten years of the date of the review, or the groundwater basin has not responded with respect to water supply and reversal of seawater intrusion as predicted by the model, then the County shall convene and coordinate a working group made up of the Salinas Valley cities, the MCWRA, and other affected entities. The purpose will be to identify new water supply projects, water management programs, and multiple agency agreements that will provide additional domestic water supplies for the Salinas Valley. These may include, but not be limited to, expanded conjunctive use programs, further improvements to the upriver reservoirs, additional pipelines to provide more efficient distribution, and expanded use of recycled water to reinforce the hydraulic barrier against seawater intrusion. The county's objective will be to complete the cooperative planning of these water supply alternatives within five years and to have the projects on-line five years following identification of water supply alternatives.

The Monterey County General Plan does not include population projections; however, the Association of Monterey Bay Area Governments (AMBAG) has developed population projections through 2050, as shown in Table 3-4.

Table 3-2. Monterey County Population Projections
(AMBAG, 2018)

Geography	2015	2020	2025	2030	2035	2040	Change 2015-2040 Numeric	Change 2015-2040 Percent
AMBAG Region	**762,676**	**791,600**	**816,900**	**840,100**	**862,200**	**883,300**	**120,624**	**16%**
Monterey County	**432,637**	**448,211**	**462,678**	**476,588**	**489,451**	**501,751**	**69,114**	**16%**
Carmel-By-The-Sea	3,824	3,833	3,843	3,857	3,869	3,876	52	1%
Del Rey Oaks	1,655	1,949	2,268	2,591	2,835	2,987	1,332	80%
Gonzales	8,411	8,827	10,592	13,006	15,942	18,756	10,345	123%
Greenfield	16,947	18,192	19,425	20,424	21,362	22,327	5,380	32%
King City	14,008	14,957	15,574	15,806	15,959	16,063	2,055	15%
Marina	20,496	23,470	26,188	28,515	29,554	30,510	10,014	49%
Marina balance	19,476	20,957	22,205	22,957	23,621	24,202	4,726	24%
CSUMB (portion)	1,020	2,513	3,983	5,558	5,933	6,308	5,288	518%
Monterey	28,576	28,726	29,328	29,881	30,460	30,976	2,400	8%
Monterey balance	24,572	24,722	25,324	25,877	26,456	26,972	2,400	10%
DLI & Naval Postgrad	4,004	4,004	4,004	4,004	4,004	4,004	0	0%
Pacific Grove	15,251	15,349	15,468	15,598	15,808	16,138	887	6%
Salinas	159,486	166,303	170,824	175,442	180,072	184,599	25,113	16%
Sand City	376	544	710	891	1,190	1,494	1,118	297%
Seaside	34,185	34,301	35,242	36,285	37,056	37,802	3,617	11%
Seaside balance	26,799	27,003	27,264	27,632	28,078	28,529	1,730	6%
Fort Ord (portion)	4,450	4,290	4,340	4,490	4,690	4,860	410	9%
CSUMB (portion)	2,936	3,008	3,638	4,163	4,288	4,413	1,477	86%
Soledad	24,809	26,399	27,534	28,285	29,021	29,805	4,996	20%
Soledad balance	16,510	18,100	19,235	19,986	20,722	21,506	4,996	30%
SVSP & CTF	8,299	8,299	8,299	8,299	8,299	8,299	0	0%
Balance Of County	104,613	105,361	105,682	106,007	106,323	106,418	1,805	2%
San Benito County	**56,445**	**62,242**	**66,522**	**69,274**	**72,064**	**74,668**	**18,223**	**32%**
Hollister	36,291	39,862	41,685	43,247	44,747	46,222	9,931	27%
San Juan Bautista	1,846	2,020	2,092	2,148	2,201	2,251	405	22%
Balance Of County	18,308	20,360	22,745	23,879	25,116	26,195	7,887	43%
Santa Cruz County	**273,594**	**281,147**	**287,700**	**294,238**	**300,685**	**306,881**	**33,287**	**12%**
Capitola	10,087	10,194	10,312	10,451	10,622	10,809	722	7%
Santa Cruz	63,830	68,381	72,091	75,571	79,027	82,266	18,436	29%
Santa Cruz balance	46,554	49,331	51,091	52,571	54,027	55,266	8,712	19%
UCSC	17,276	19,050	21,000	23,000	25,000	27,000	9,724	56%
Scotts Valley	12,073	12,145	12,214	12,282	12,348	12,418	345	3%
Watsonville	52,562	53,536	55,187	56,829	58,332	59,743	7,181	14%
Balance Of County	135,042	136,891	137,896	139,105	140,356	141,645	6,603	5%

Sources: Data for 2015 are from the U.S. Census Bureau and California Department of Finance. Forecast years were prepared by AMBAG and PRB.

The Land Use and Conservation/Open Space Elements of the City of Salinas General Plan (City of Salinas, 2002) are relevant to water resources within the Eastside Aquifer Subbasin, and are summarized in Table 3-5.

Table 3-3. City of Salinas General Plan Summary
(City of Salinas, 2002)

Element	Goal / Policy	
Land Use	Goal LU-6	Work with water suppliers and distributors such as Cal Water and Alco to continue to provide quality water supply and treatment capacity to meet community needs.
	Policy LU-6.1	Actively work with Cal Water and Alco, as well as regional water suppliers and distributors, to ensure that high quality water is available for the community.
	Policy LU-6.2	Review development proposals to ensure that adequate water supplies, treatment, and distribution capacity is available to meet the needs of the development without negatively impacting the existing community,
	Policy LU-6.3	Participate in and support regional programs and projects that target the improvement and conservation of the region's groundwater and surface water supply.
	Policy LU-6.4	Actively promote water conservation by City residents, businesses, and surrounding agricultural producers.
	Policy LU-6.5	Review projects subject, such as residential projects with 500 or more units, for compliance with Section 10910-10915 of the California Water Code.
Conservation	Goal COS-1	Provide a safe and adequate water supply for community uses.
	Policy COS-1.1	Work with regional and local water providers to ensure that adequate supplies of water are available to meet existing and future demand.
	Policy COS-1.2	Cooperate with local, regional, and state water agencies to develop new water sources.
	Policy COS-1.3	Work with local and regional water providers to increase the production, distribution, and use of recycled water,
	Policy COS-1.4	Maintain and restore natural watersheds to recharge the aquifers and ensure the viability of the ground water resources.
	Policy COS-1.5	Cooperate with the Monterey County Water Resources Agency, the State Water Resources Control Board and the Regional Water Quality Control Board to implement programs that address the two primary causes of poor water quality in the planning area: salt water intrusion and nitrate contamination.
	Policy COS-1.6	Enforce national (NPDES) requirements and participate in regional efforts to protect and enhance water quality.
	Goal COS-2	Encourage the conservation of water resources.
	Policy COS-2.1	Participate in and implement local and regional programs that promote water conservation.
	Policy COS-2.2	Work with water providers to institute conservation programs to address water supply problems caused by groundwater overdrafting,
	Policy COS-2.3	Apply standards that promote water conservation in agricultural, residential and non-residential uses.
	Policy COS-2.4	Enforce the City's Water Conservation Ordinance.

3-A (c) City of Gonzales General Plan

Relevant elements of the City of Gonzales General Plan (City of Gonzales, 2011) are summarized in Table 3-6.

Table 3-4. City of Gonzales General Plan Summary
(City of Gonzales, 2011)

Element	Goal / Policy	
Land Use	LU-1.2.2	New developments must have adequate water supplies.
	LU-8.3.1:	Modify proposed designs for industrial development to reduce adverse environmental impacts, particularly noise, air, and water pollution, odor, soil, and groundwater contamination, traffic, and visual blight to the degree practicable.
	LU-8.3.2	Plan for Sewer and Water Expansion. Ensure that adequate water and sewer capacity is available to support all areas designated for industrial development
Housing	HE-9.2	Promote Water Conservation. Promote the use of water-saving devices, drought-tolerant landscaping, and other water conservation measures to achieve a reduction in home water bills for residential customers
	HE-9.4.1	Water Conservation. The City will continue to promote ways to reduce monthly home water bills. Such measures already include: (a) requiring new houses to utilize low-flow toilets, low-flow shower heads, and low flow faucets consistent with the requirements of the Monterey County Water Resources Agency, and (b) requiring the use of drought-tolerant landscaping within new developments (as specified in the State Model Landscape Ordinance). The City will also support new water retrofitting programs undertaken by the Monterey County Water Resources Agency, such as providing free low-flow plumbing fixtures to existing customers in Gonzales. Responsibility: Building Department, Public Works Department, Planning Department Timing: Ongoing
Community Health and Safety	Community Health and Safety Element, Paragraph H Water Quality	Groundwater and surface water quality both affect the health of Gonzales residents. Because groundwater is the sole source of domestic water in Gonzales, a healthful supply is essential to the city's future. Surface water pollution creates negative aesthetic and environmental impacts, as well as creating potential health hazards locally and downstream. The Community Health and Safety Element includes policies to reduce the extent of water pollution that could occur from urban development in Gonzales, as well as policies to minimize potential risks if contamination does occur. The groundwater beneath Gonzales is vulnerable to contamination from lawn fertilizer, leaking underground storage tanks, failing septic systems, animal waste, and naturally occurring minerals. High nitrate levels are a persistent problem in the Salinas Valley, with about half of the 58 wells sampled exceeding the State water standard over a testing period of about 30 years. Nitrate problems around Gonzales are most prevalent on the northeast side of the Planning Area, where former greenhouse and dairy operations and the existing feed lot are probably the primary contaminant sources. Elsewhere in the Planning Area, groundwater quality is generally acceptable and meets all water quality standards. The Gonzales Public Works Department conducts regular measurements of water quality for city wells and takes corrective actions if nitrate levels exceed acceptable standards. In the past, well water quality problems have been addressed with special seals which block nitrates from entering the water supply. If activities and land uses around the wells are not properly managed in the future, contamination could result. This would require that wells be relocated or that well-head treatment be introduced.

References

AMBAG (Association of Monterey Bay Area Governments). 2018. 2018 Regional Growth Forecast, Technical Documentation. June 13, 2018. 61p.

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Chapter 4
Appendix 4-A

ISW Seasonality Analysis

Appendix 4a. ISW Seasonality Analysis

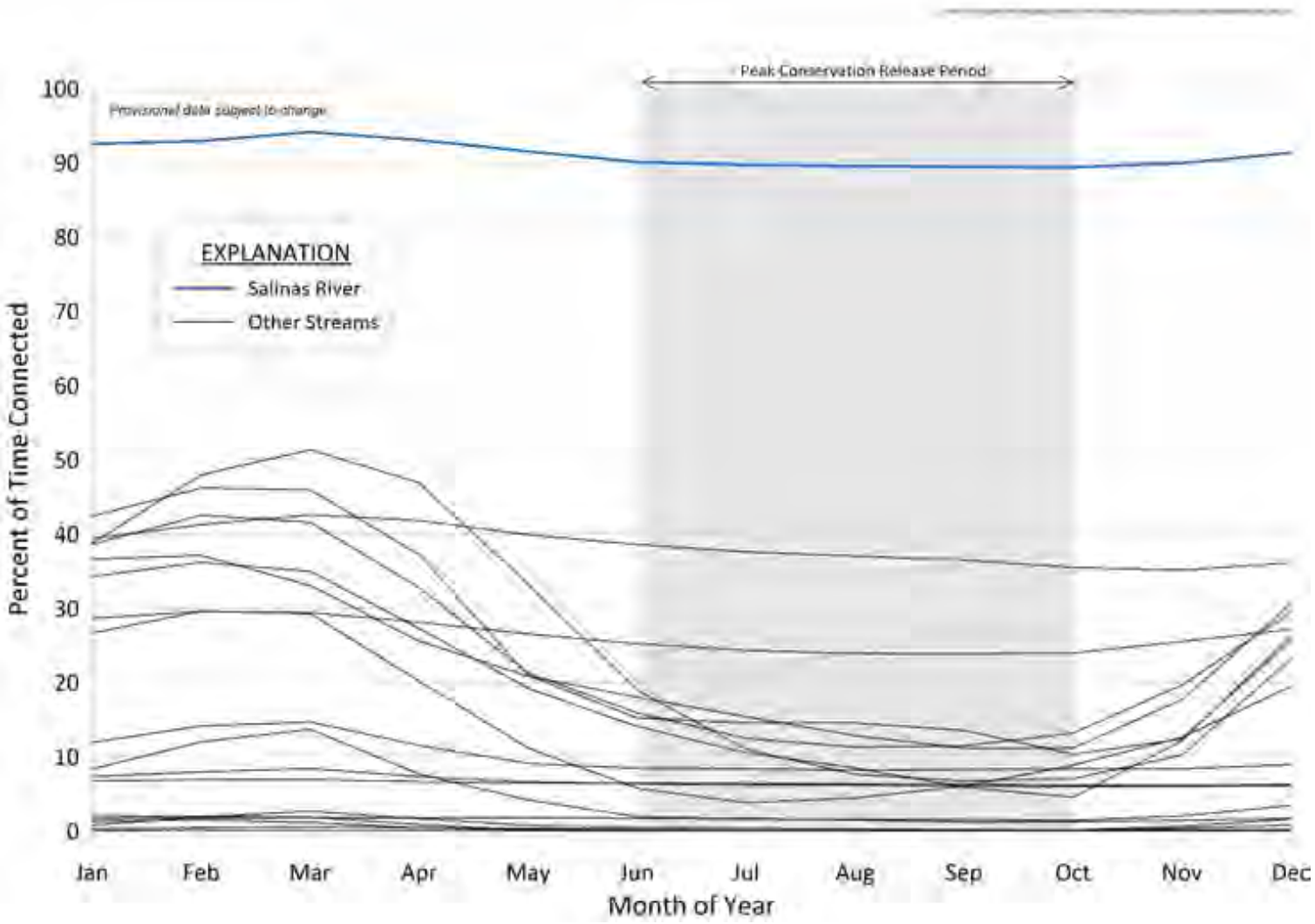
Surface water and groundwater can be hydrologically connected along a stream reach during some months of the year and not others. These temporal variations of interconnected surface water (ISW) during a given year are the result of variations in recharge, precipitation, groundwater pumping, and riparian evapotranspiration. Along the Salinas River, monthly changes in reservoir operations also influence ISW reaches. Hydrologic connectivity in the Salinas Valley is estimated using results from the provisional SVIHM. Along the Salinas River, the timing of reservoir releases is used to determine the months that the ISW sustainable management criteria applies since releases during the peak conservation period (June through September) are intended for groundwater recharge. The ISW delineated along the Salinas River in section 4.4.5.1 of the GSP represent reaches that are connected during a majority (greater than 50%) of months during the non-peak conservation release period (October through May) over the full SVIHM simulation period from 1967 to 2017. However, model results indicate that the ISW length along the Salinas River is virtually the same throughout the year, connected the vast majority of time.

For tributaries or streams away from the Salinas River, reservoir releases have less impact on ISW, if any, than for the Salinas River. To estimate the seasonal variability of ISW for stream reaches away from the Salinas River, a monthly analysis. These locations are the best estimates of where persistent hydrologic connections occur along streams in the Salinas Valley. However, the lateral extents (lengths) of these reaches vary from month to month during the year, as well as from year to year.

To understand whether surface water is connected to groundwater only during certain months, a monthly analysis was undertaken. The monthly analysis produces 2 pieces of information for each month of the year: (1) the average percent of years simulated by the SVIHM that a stream has hydrologic connection, based on the average monthly connectivity of every model grid cell identified as ISW along the stream, and (2) the average extent of where hydrologic connection occurs. Figure 1 shows the average percent of time when connectivity occurs at any location along a given stream in Salinas Valley. These data show the average temporal connectivity along the entire length of a stream; however, some reaches of the stream have much lower or higher connectivity then indicated by the average values. The results on Figure 1 are most useful for identifying the seasonal trends of connectivity for streams. Tributaries to the river and streams away from the river show seasonal variation in connectivity, with higher average connectivity in the Winter and Spring months and lower average connectivity in the Summer months.

Consistent with the seasonal variations in average time of connectivity, the lengths of ISW along the streams away from the Salinas River are generally longest during the late Winter and Spring months and shortest during the late Summer months. The average ISW length varies during the year in the Langley Area Subbasin and along Arroyo Seco in Forebay Subbasin, with the locations of ISW in 4.4.5.1 representing the stream reaches with more consistent connection. The

lengths of average ISW away from Salinas River in Upper Valley vary very little, if at all, during the year. The average monthly variations and extents are based on results from the provisional SVIHM and are subject to change in future updates to the GSP as additional data increases the understanding regarding ISW extents.


Peak Conservation Release Period
Provisional data subject to change
EXPLANATION
Salinas River
Other Streams
Percent of Time Connected
100
90
80
70
60
50
40
30
20
10
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month of Year

Chapter 5
Appendix 5-A

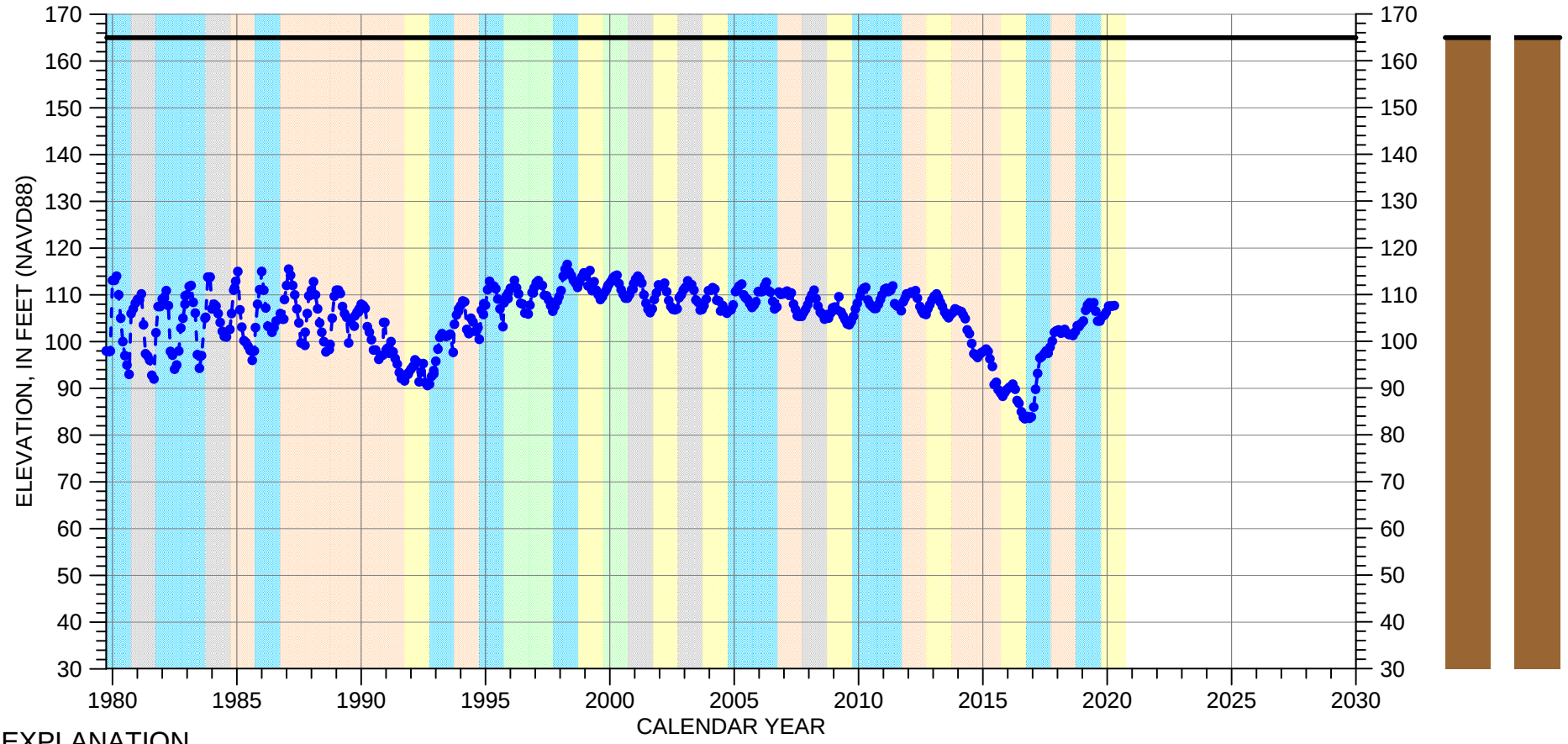
Hydrographs

Hydr_17S_05E-02N04 3
Hydr_17S_05E-03R50 4
Hydr_17S_05E-04R01 5
Hydr_17S_05E-06Q01 6
Hydr_17S_05E-08L02 7
Hydr_17S_05E-09R01 8
Hydr_17S_05E-12E01 9
Hydr_17S_05E-27A01 10
Hydr_17S_05E-36F02 11
Hydr_17S_06E-16N01 12
Hydr_17S_06E-19D01 13
Hydr_17S_06E-27K01 14
Hydr_17S_06E-29C01 15
Hydr_17S_06E-33R01 16
Hydr_17S_06E-33R02 17
Hydr_17S_06E-35J01 18
Hydr_18S_06E-01E01 19
Hydr_18S_06E-02N01 20
Hydr_18S_06E-05R03 21
Hydr_18S_06E-06M01 22
Hydr_18S_06E-11J01 23
Hydr_18S_06E-16L01 24
Hydr_18S_06E-22B02 25
Hydr_18S_06E-22B03 26
Hydr_18S_06E-22B04 27
Hydr_18S_06E-24M01 28
Hydr_18S_06E-24M02 29
Hydr_18S_06E-25F01 30
Hydr_18S_06E-34B01 31
Hydr_18S_06E-35F01 32

Hydr_18S_06E-35F02 33
Hydr_18S_07E-19G02 34
Hydr_18S_07E-20K01 35
Hydr_18S_07E-28K01 36
Hydr_19S_06E-01H01 37
Hydr_19S_06E-11C01 38
Hydr_19S_07E-04Q01 39
Hydr_19S_07E-05B02 40
Hydr_19S_07E-10P01 41

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-02N04

Forebay Aquifer Subbasin

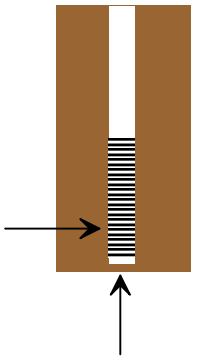


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



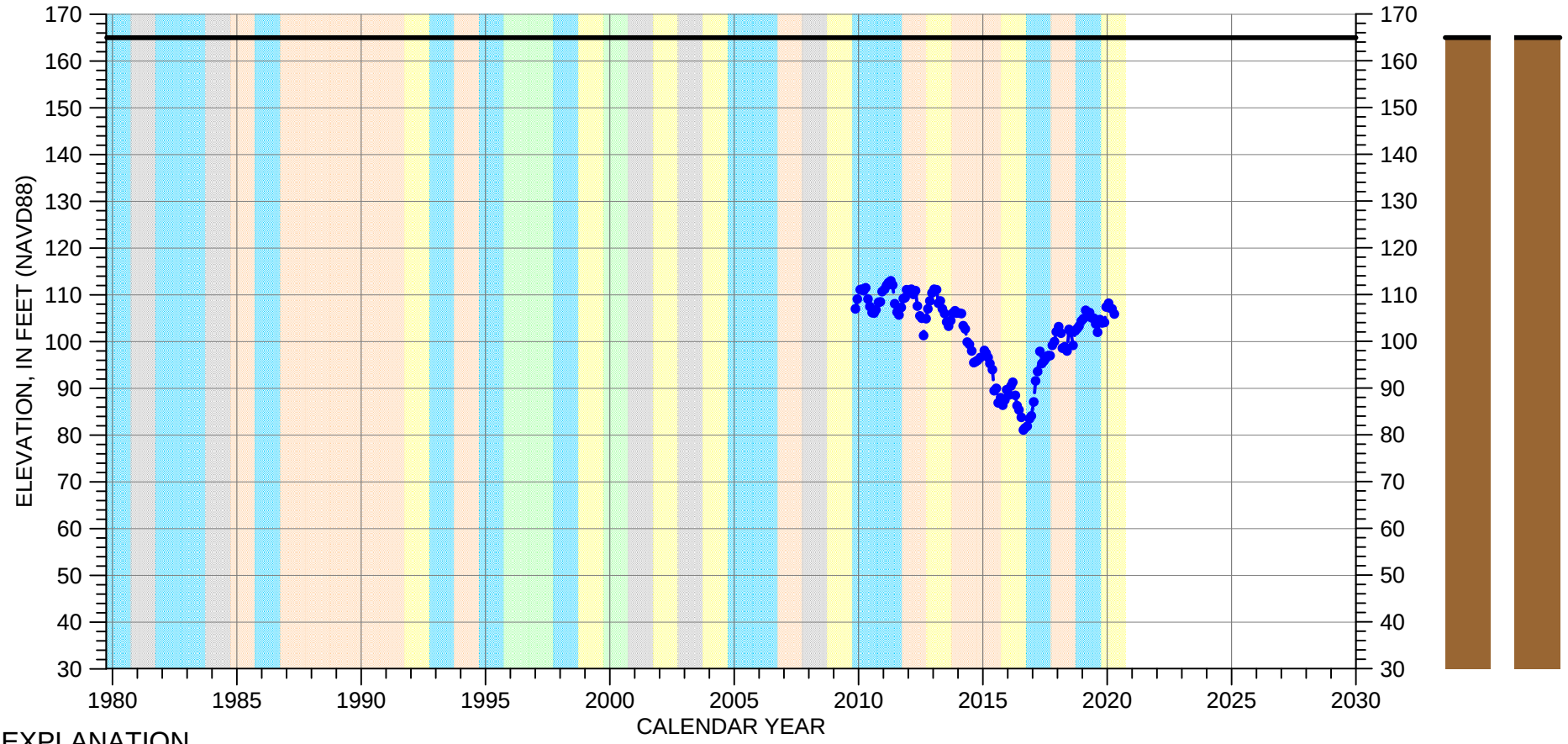
Multiple perforated intervals from -25 to -447 feet msl

Well bottom -465 feet msl

Plot1 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-03R50

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

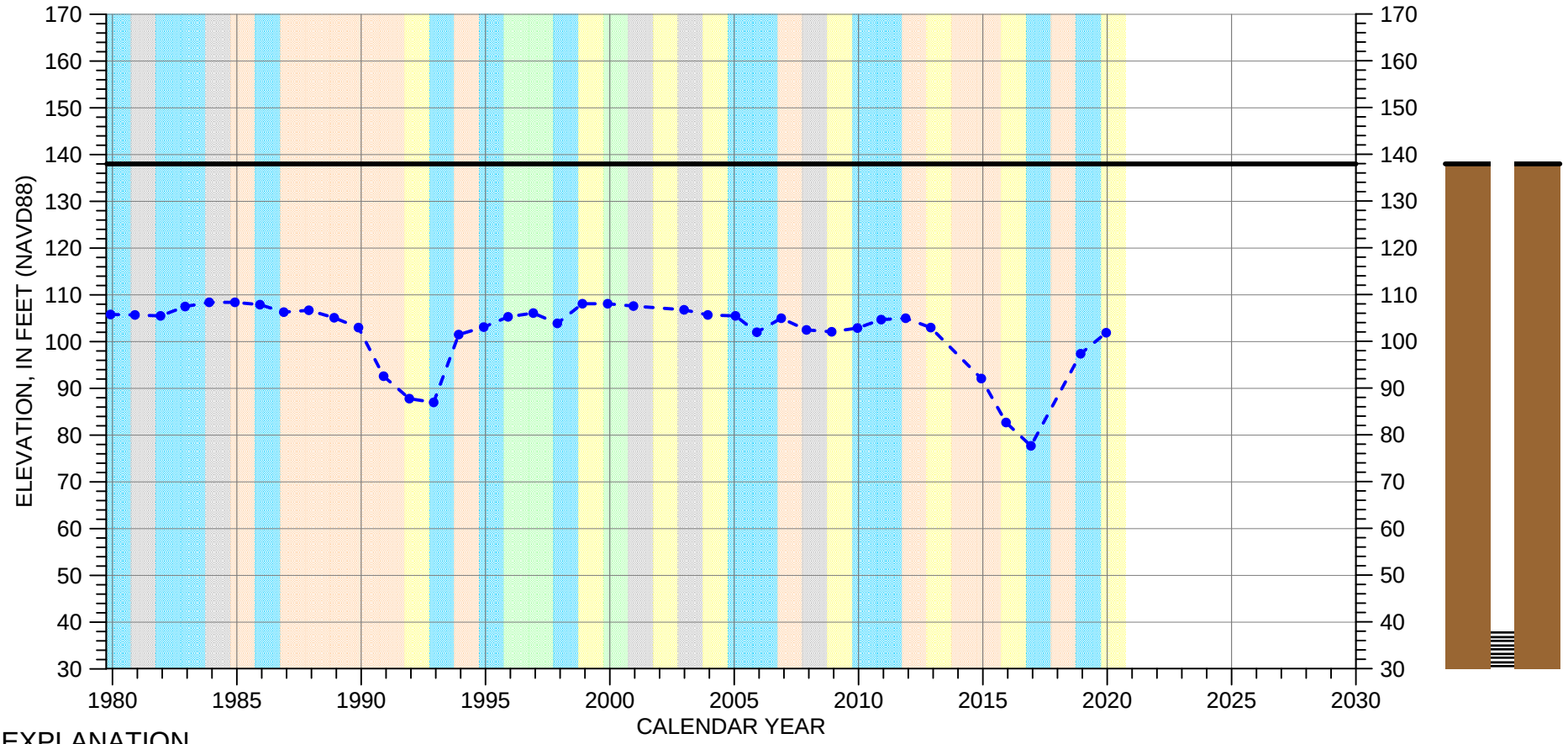
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot2 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-04R01

Forebay Aquifer Subbasin

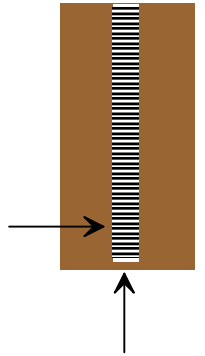


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



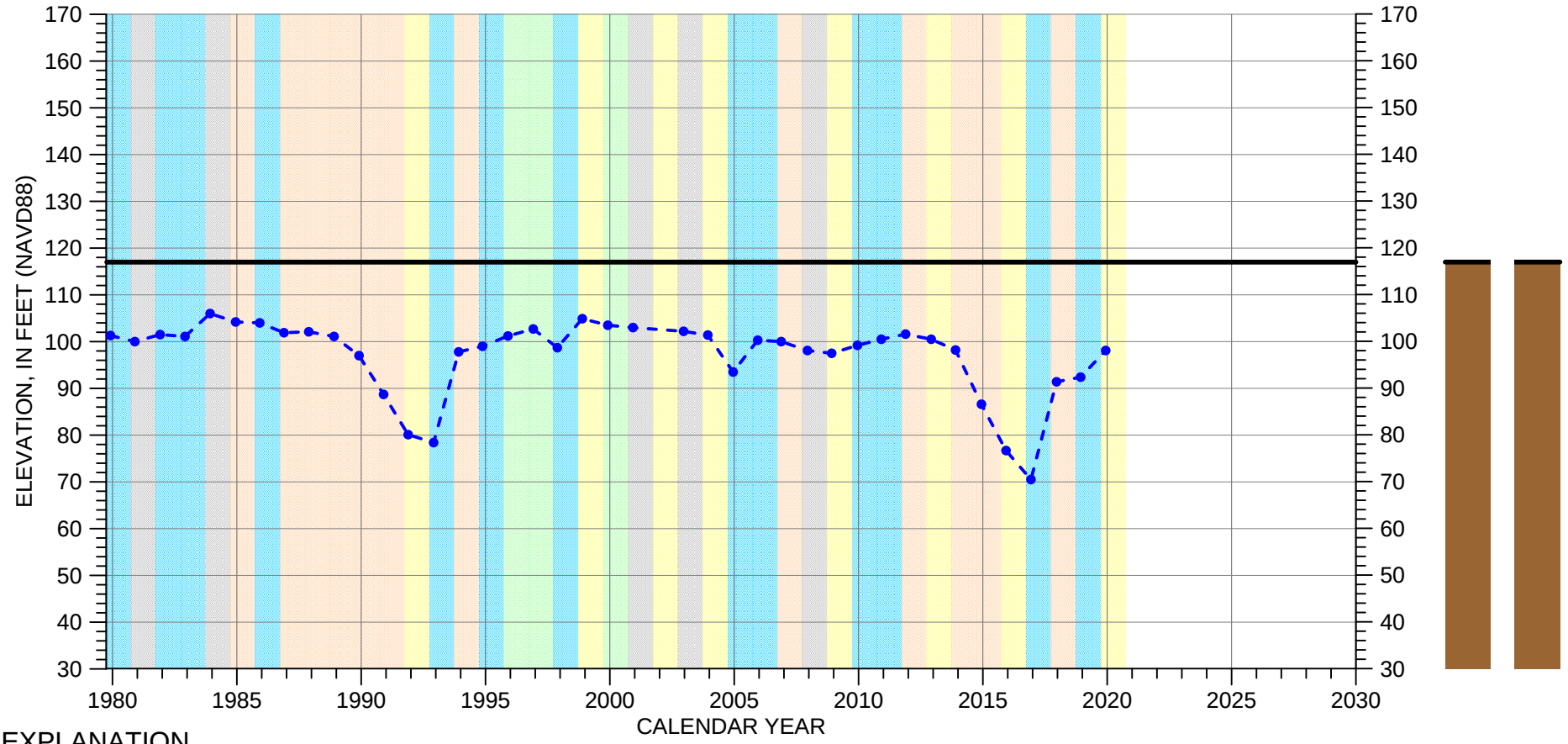
Multiple perforated intervals from 38 to -280 feet msl

Well bottom -304 feet msl

Plot3 *

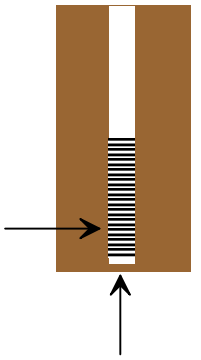
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-06Q01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



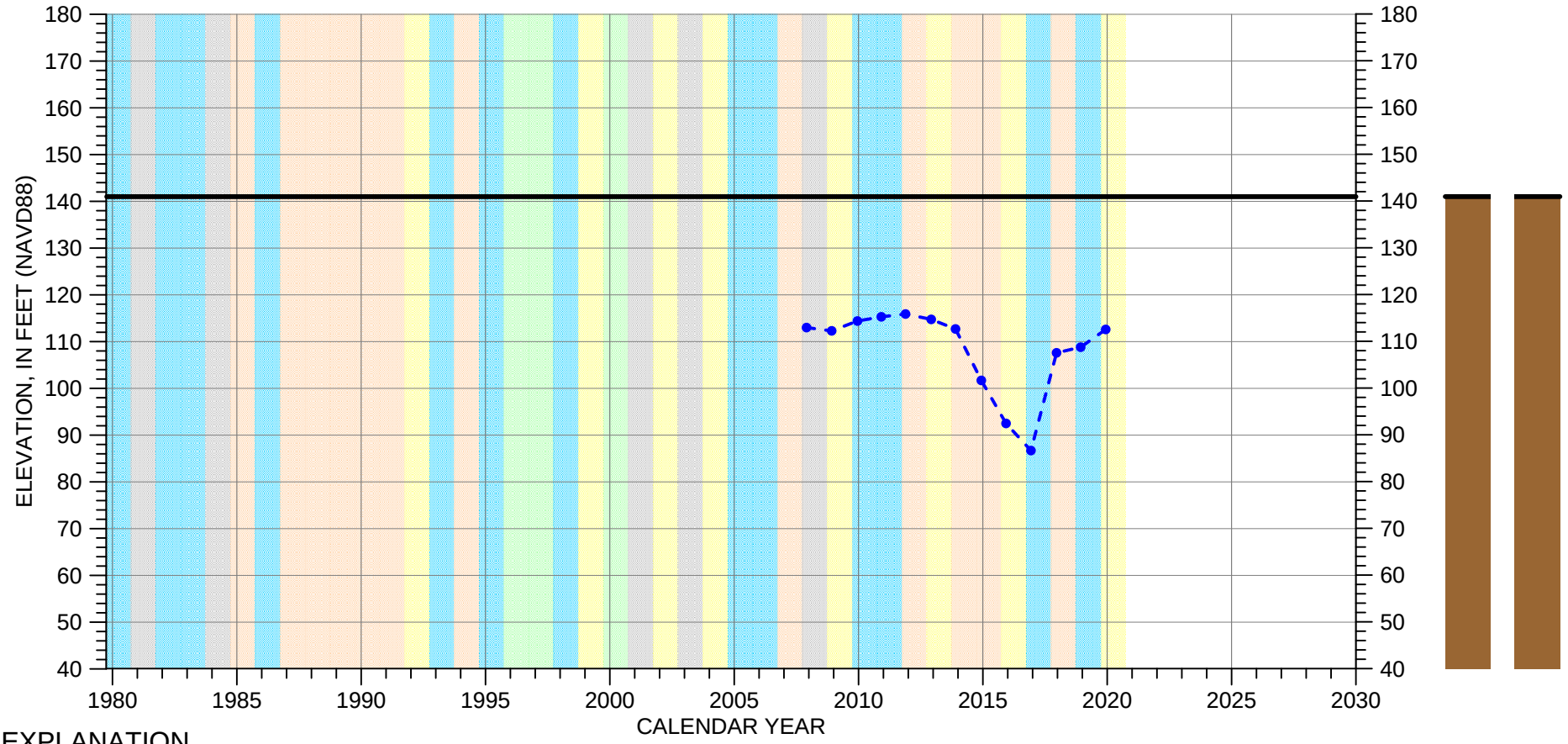
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot4 *

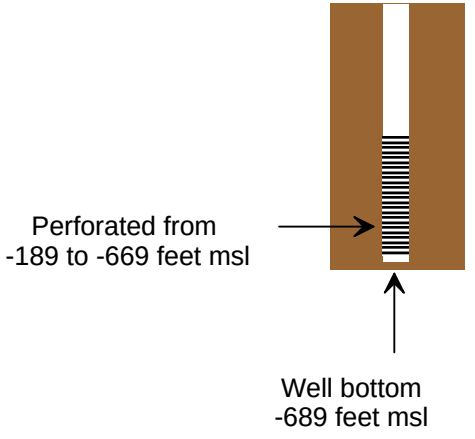
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-08L02

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



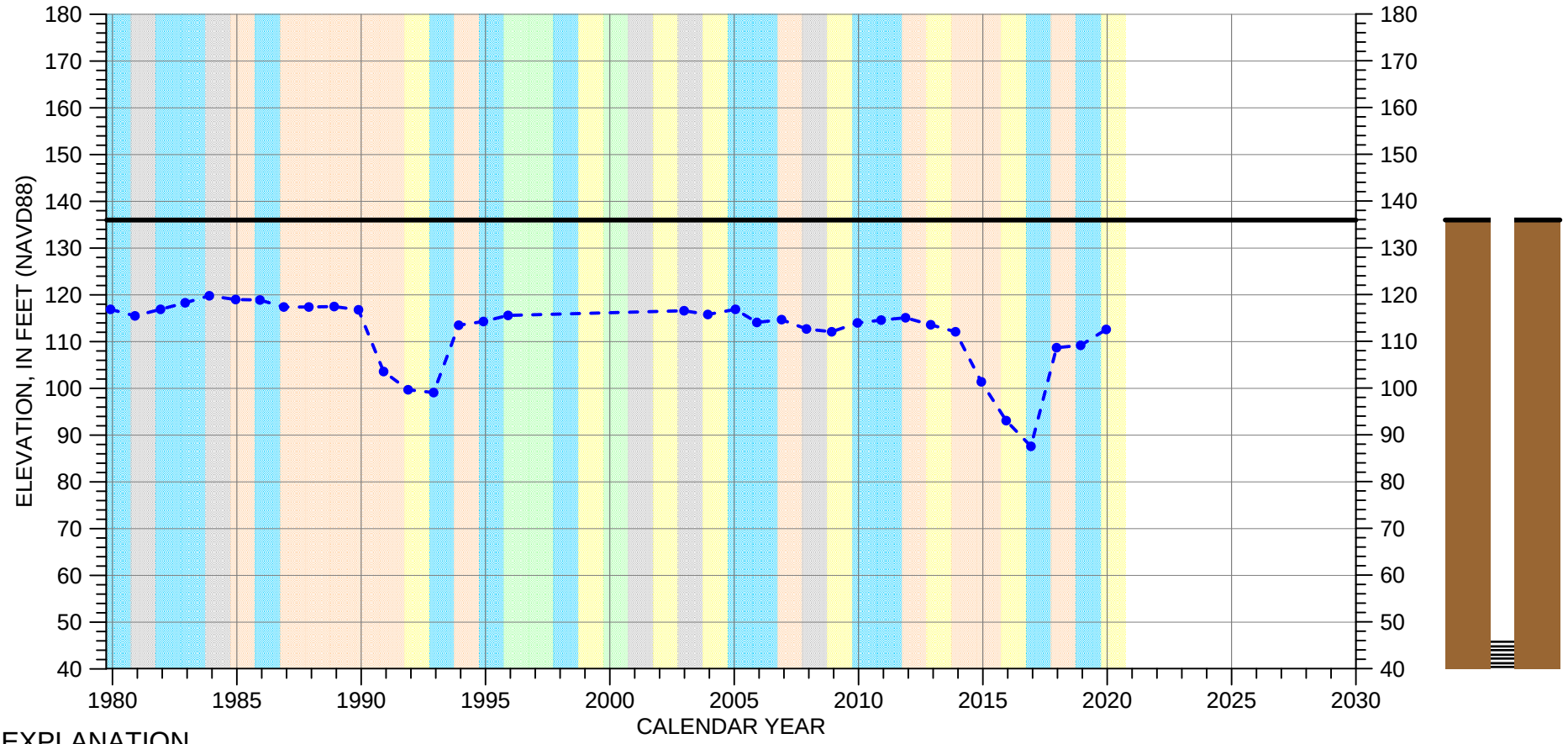
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot5 *

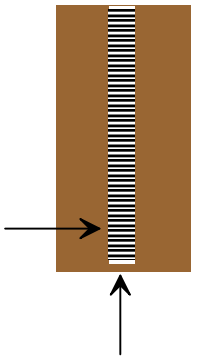
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-09R01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



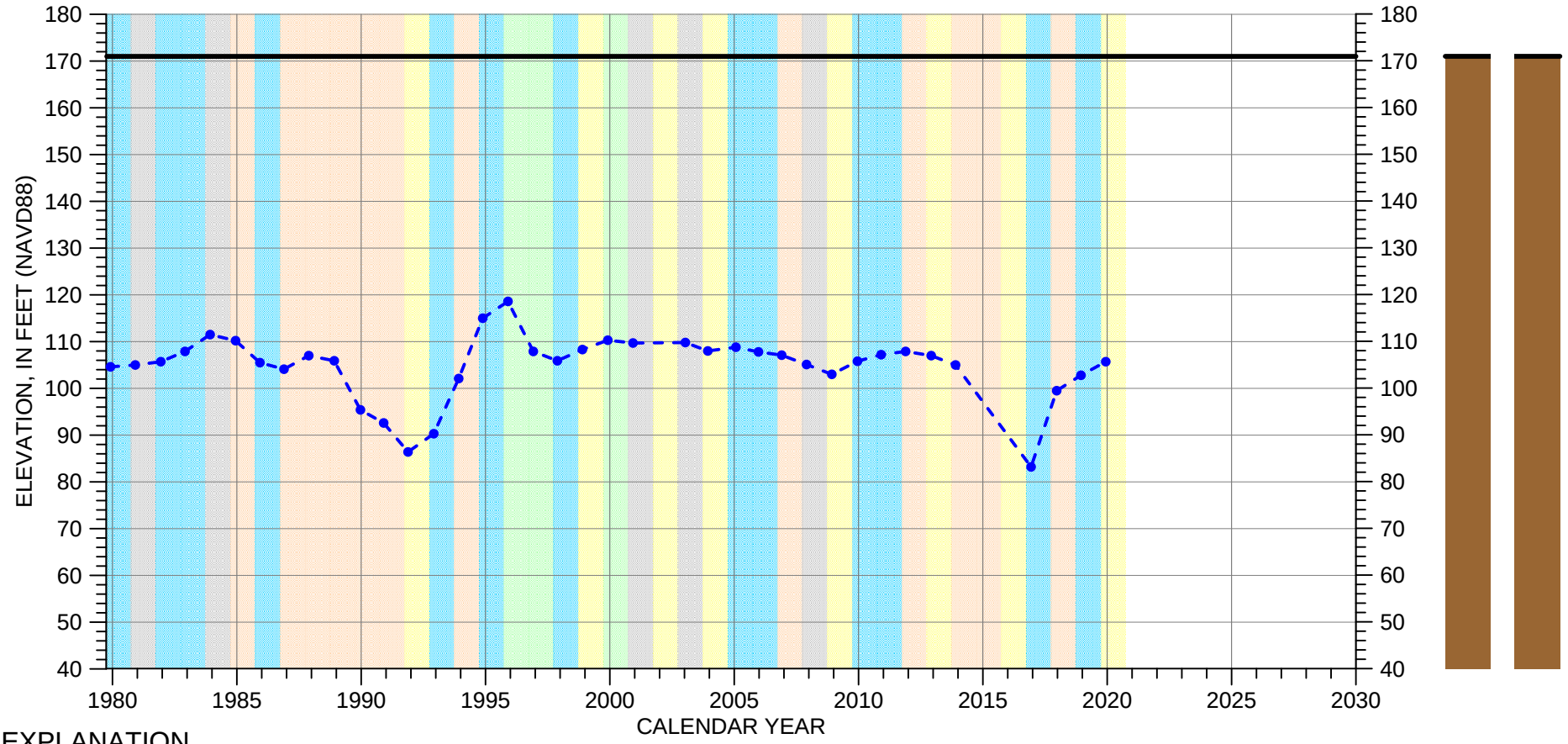
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot6 *

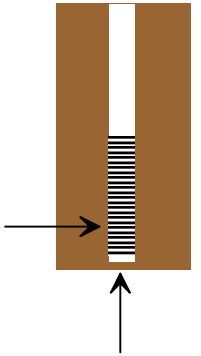
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-12E01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



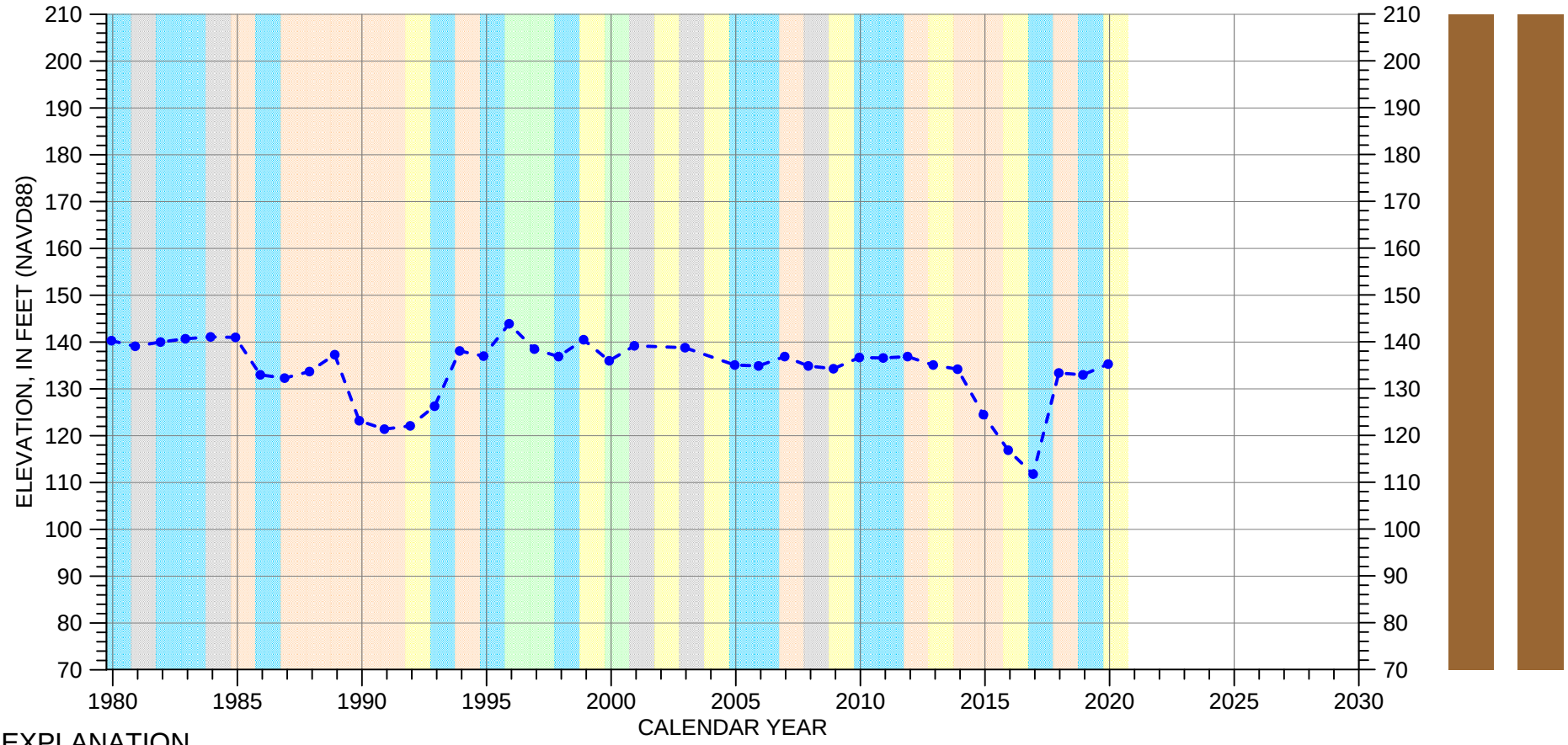
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot7 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-27A01

Forebay Aquifer Subbasin

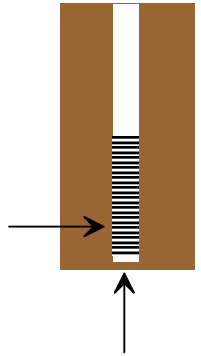


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (263 FT MSL)

WATER YEAR TYPE DESIGNATION

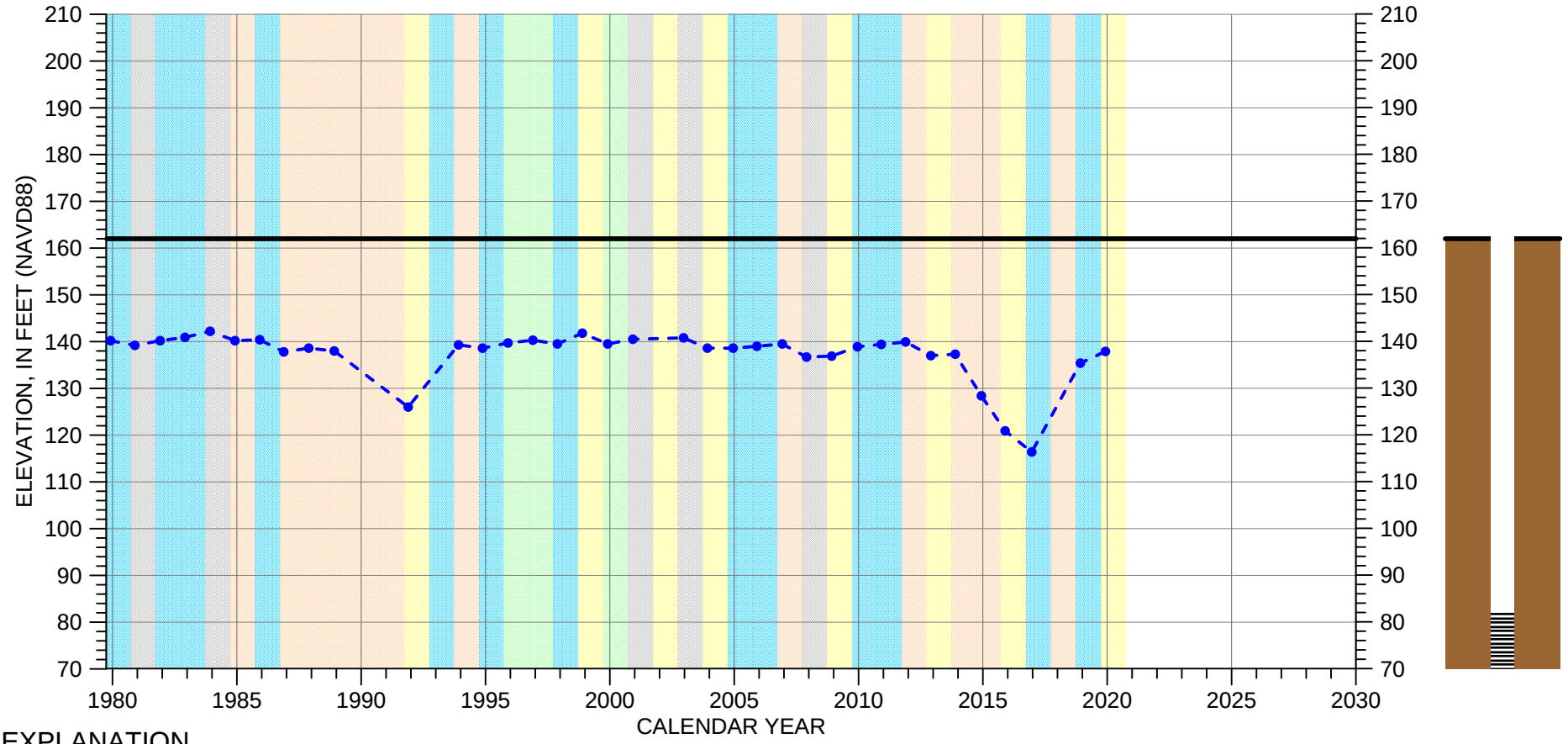
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot8 *

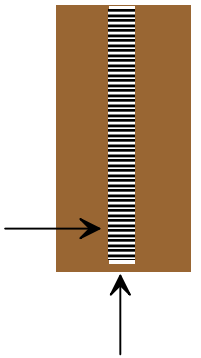
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-36F02

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



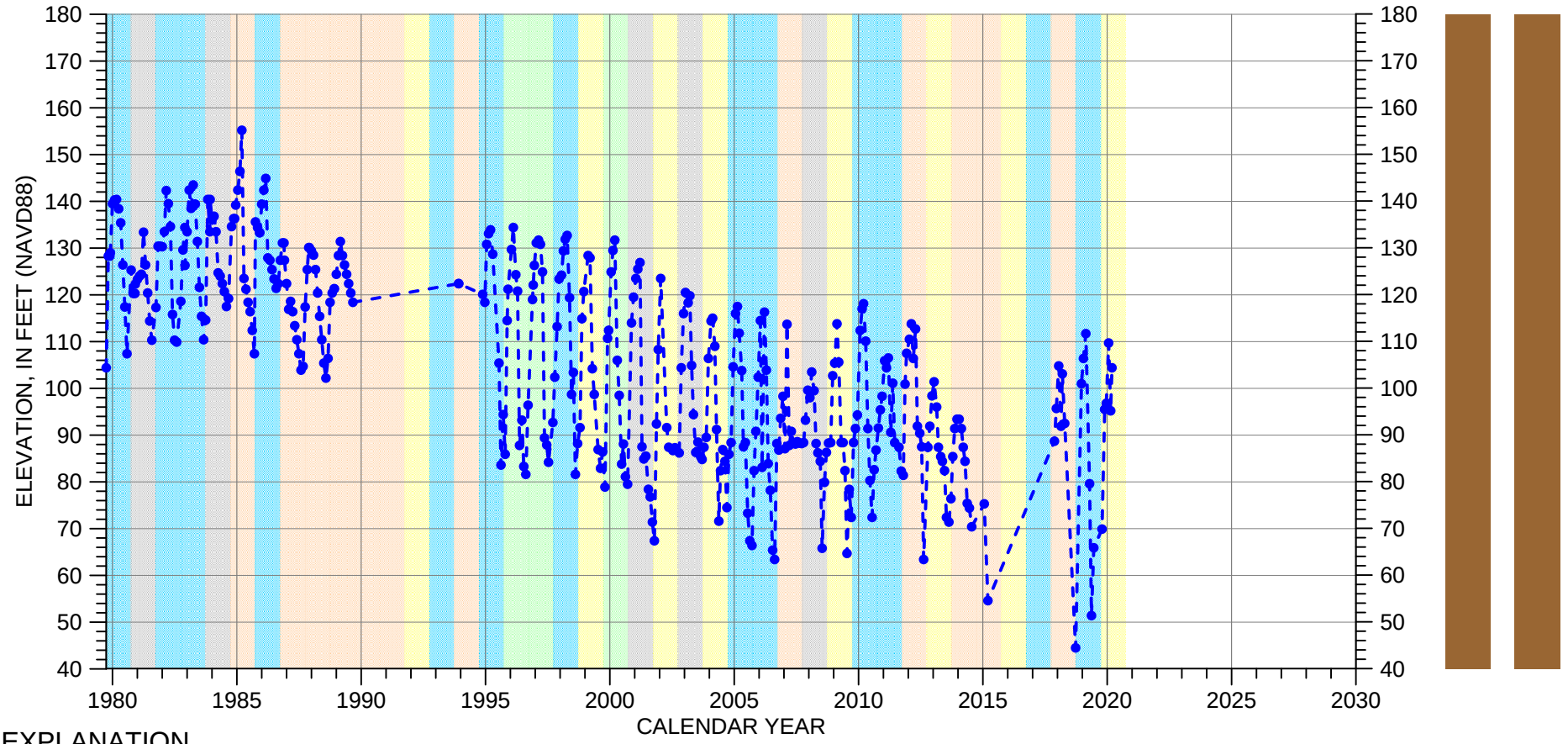
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot9 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-16N01

Forebay Aquifer Subbasin

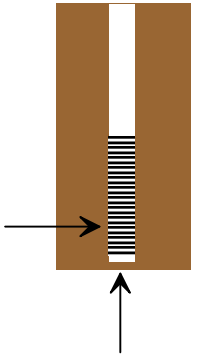


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (232 FT MSL)

WATER YEAR TYPE DESIGNATION

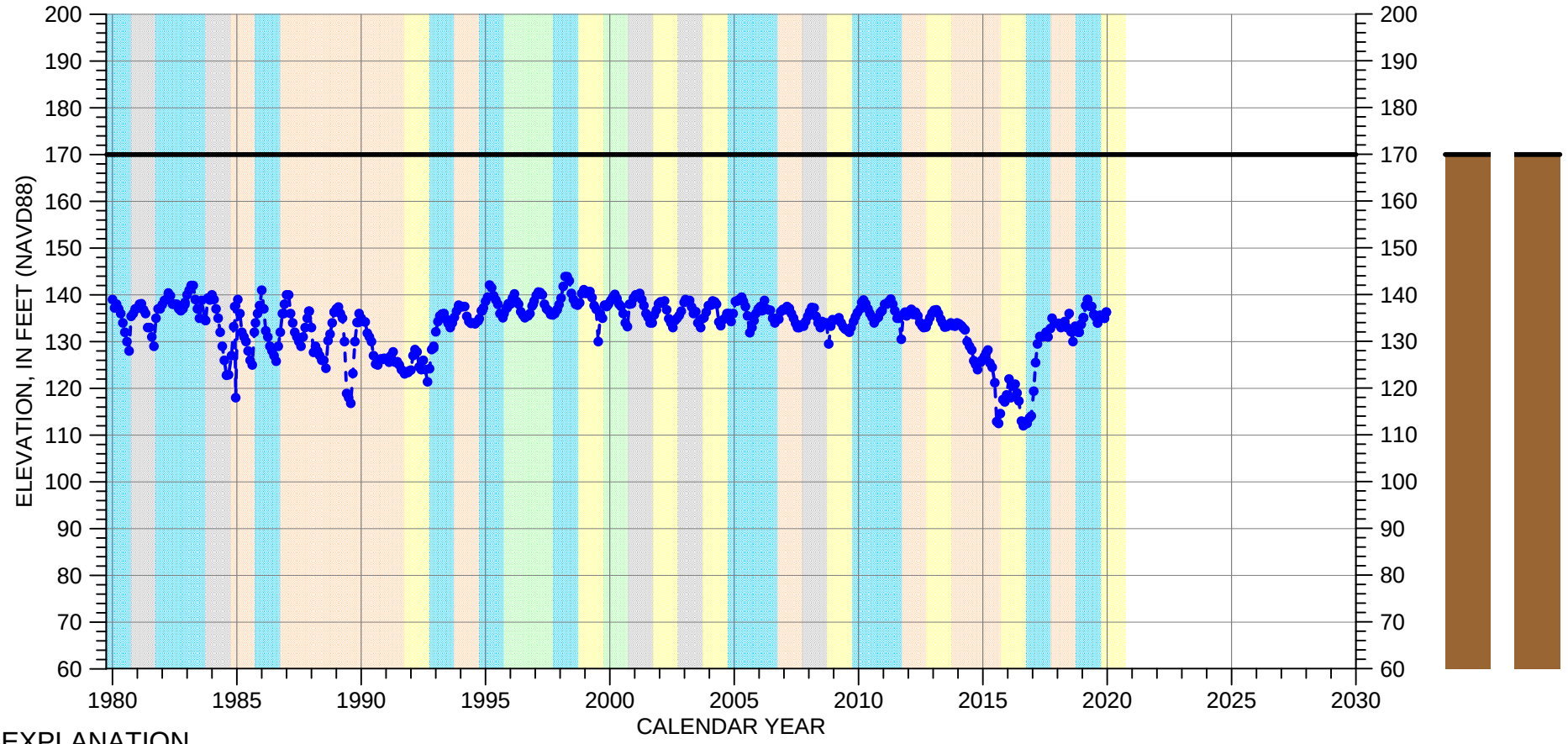
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot10 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-19D01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

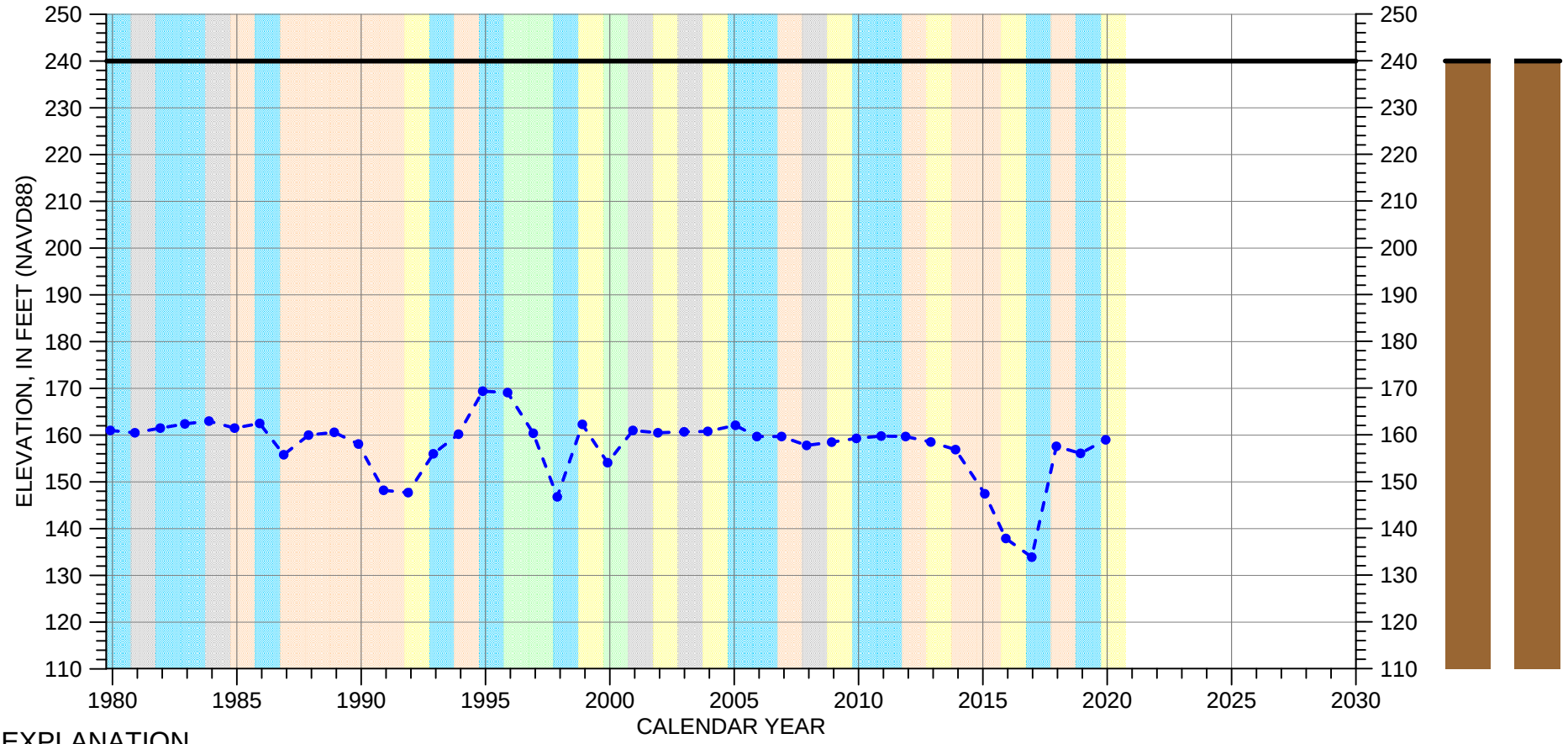
Perforated interval unknown

Well bottom -82 feet msl

Plot11 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-27K01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

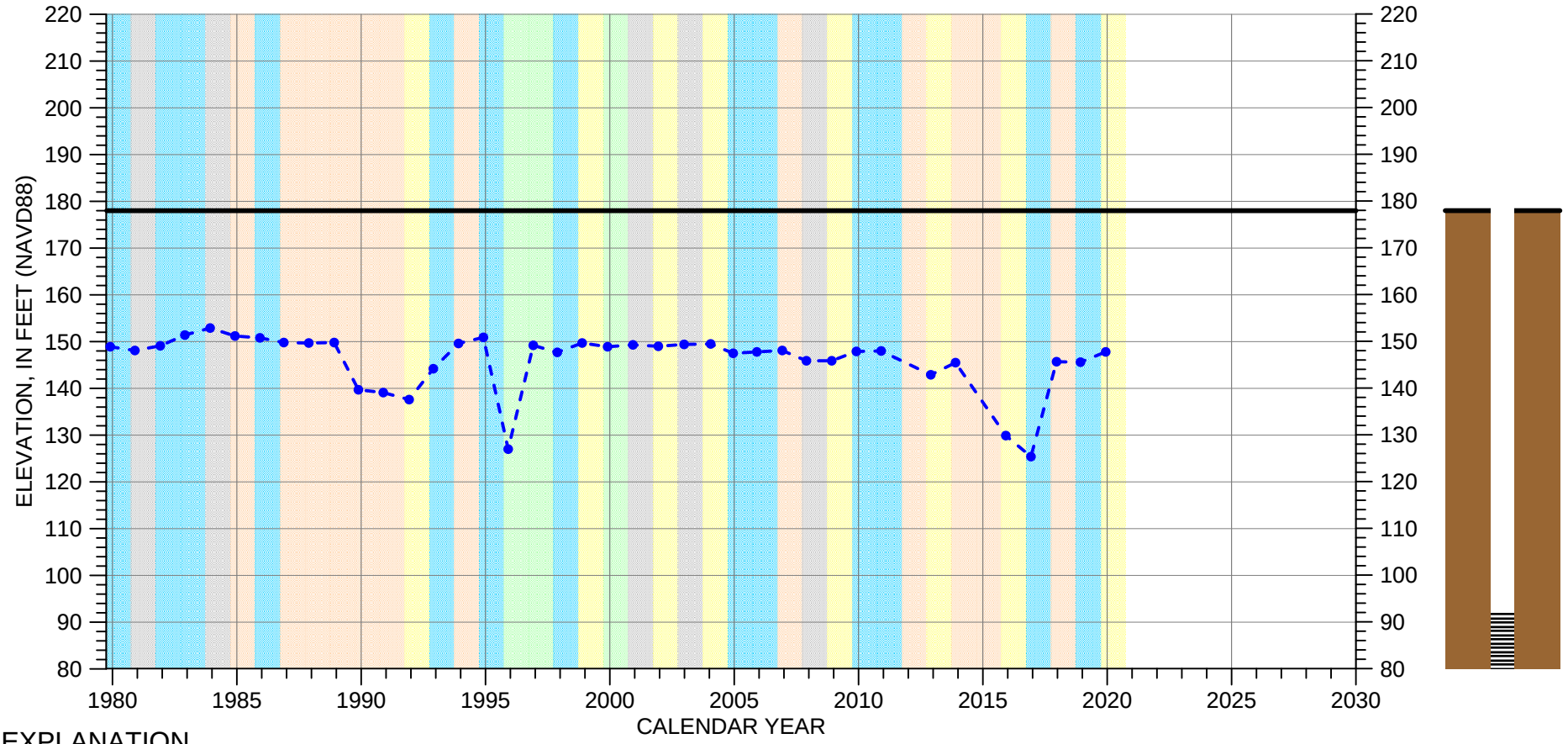
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot12 *

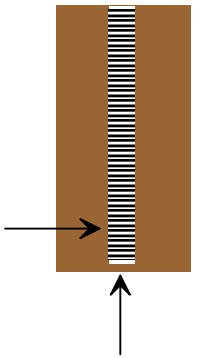
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-29C01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



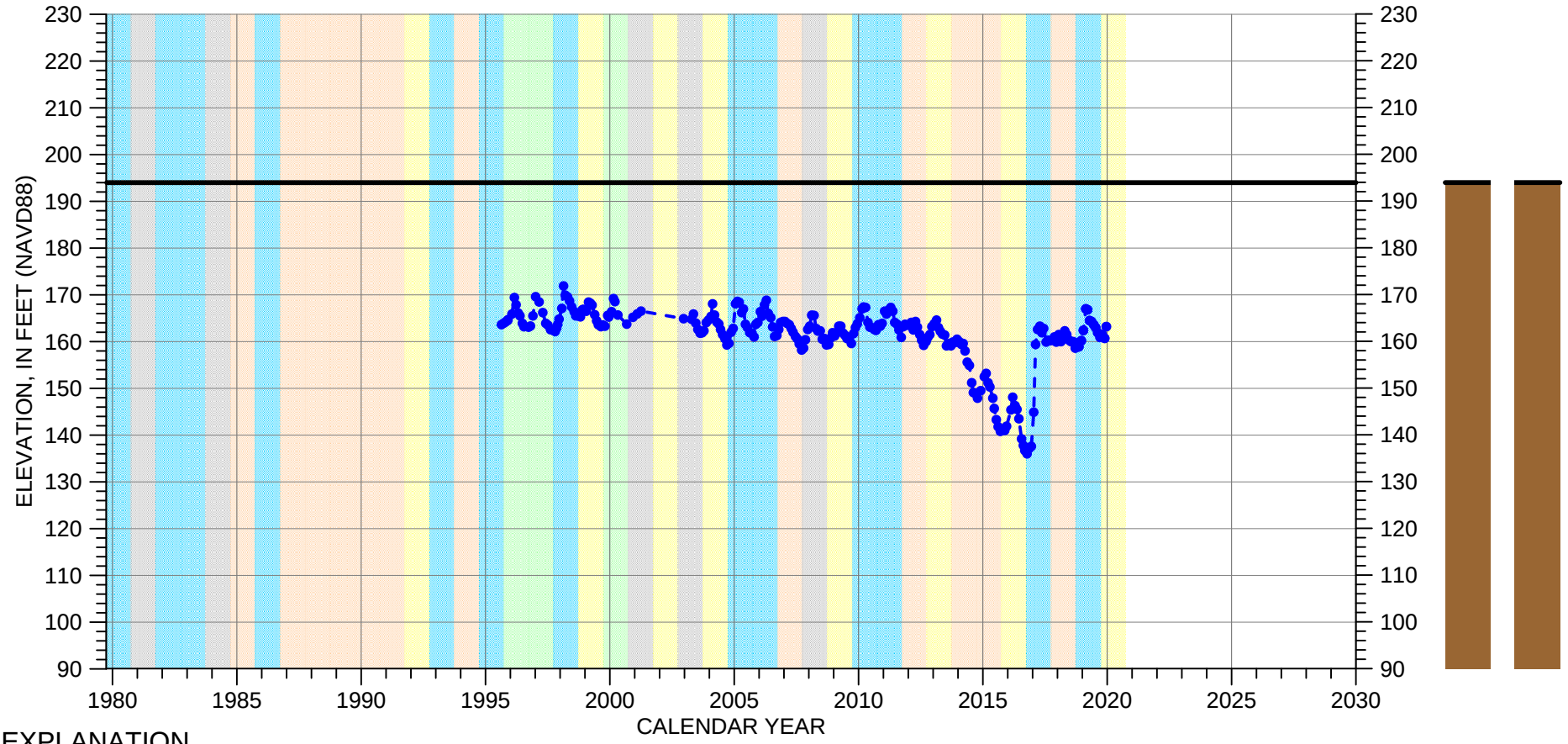
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot13 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-33R01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

Perforated from
-6 to -56 feet msl

Well bottom
-66 feet msl

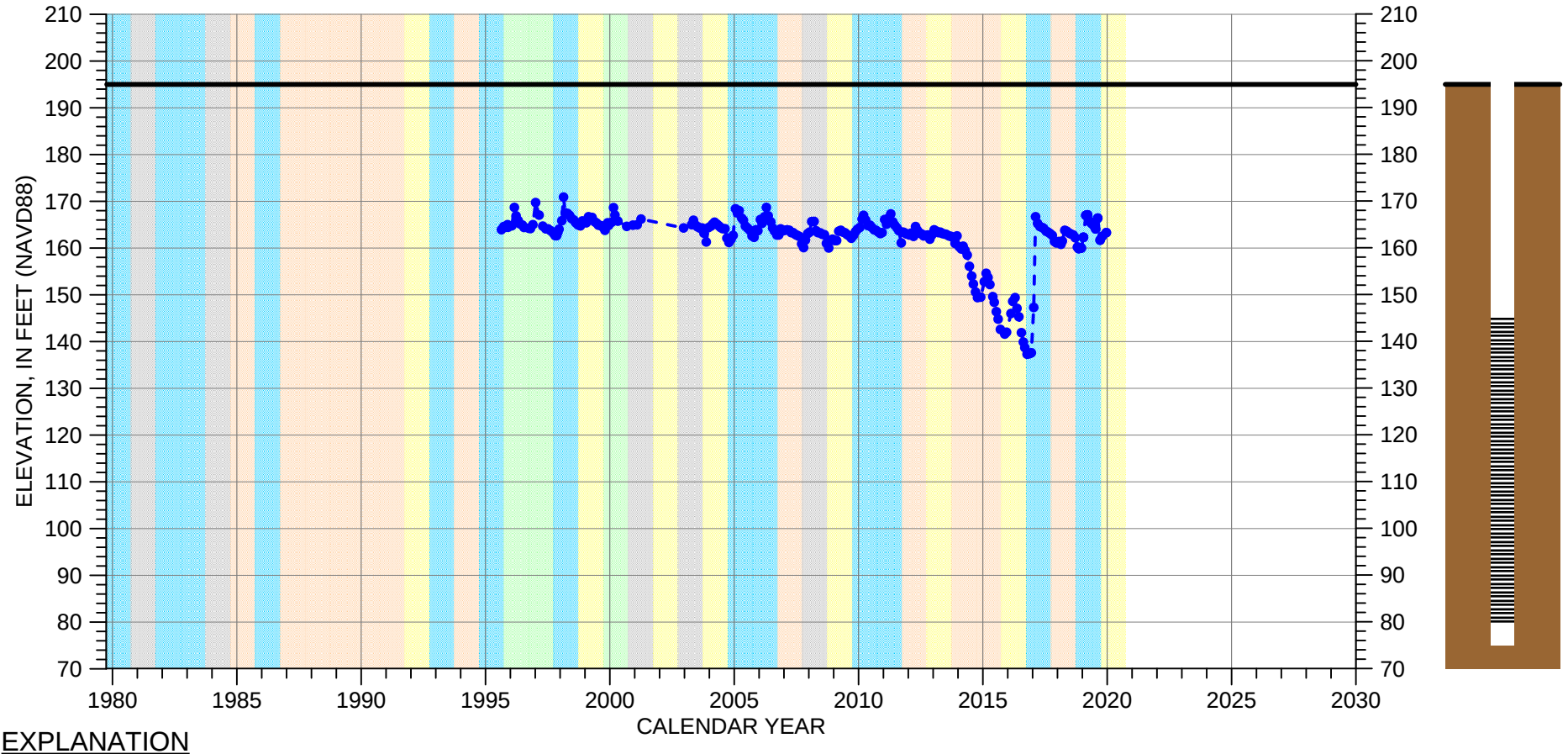
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot14 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-33R02

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

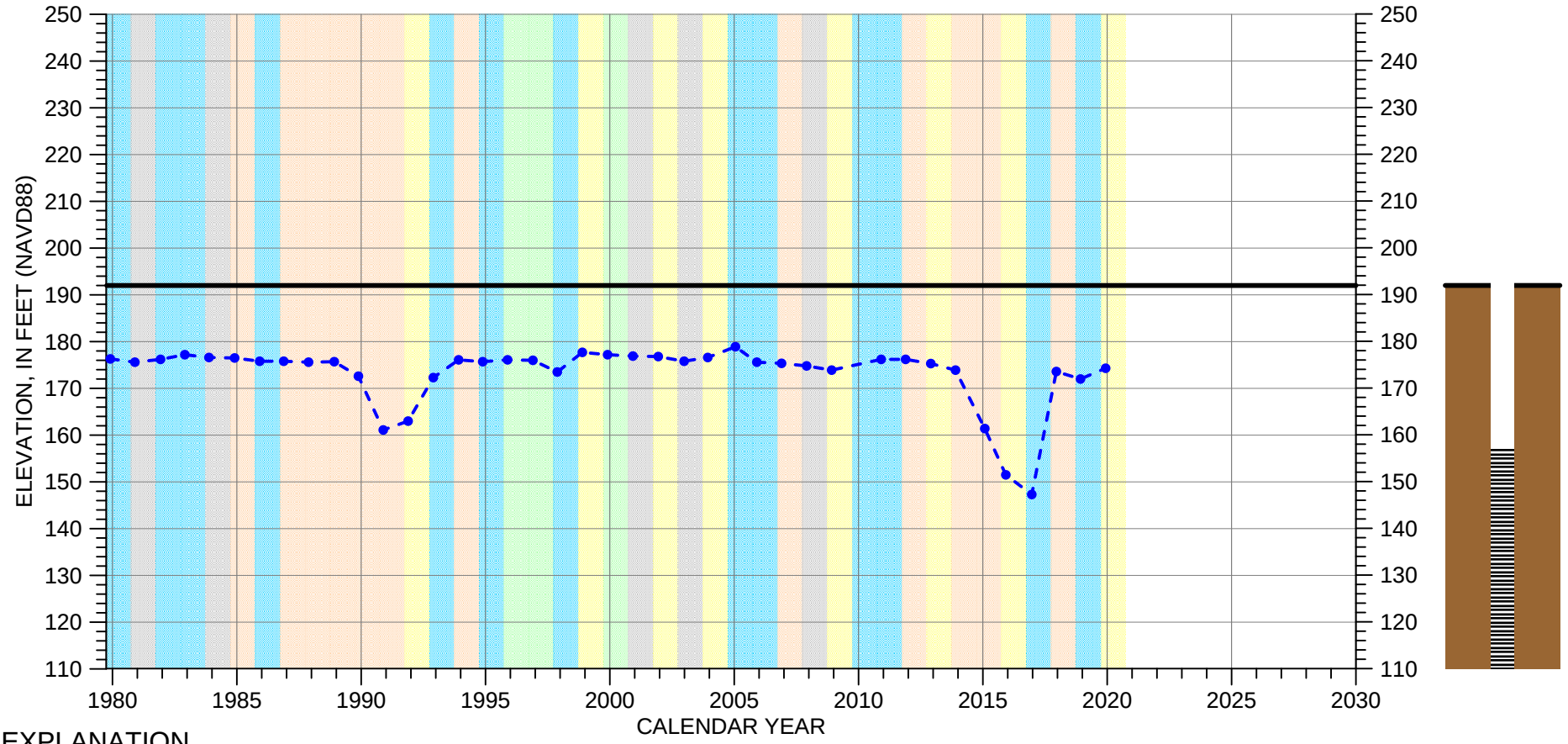
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot15 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-35J01

Forebay Aquifer Subbasin

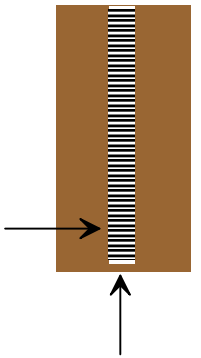


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



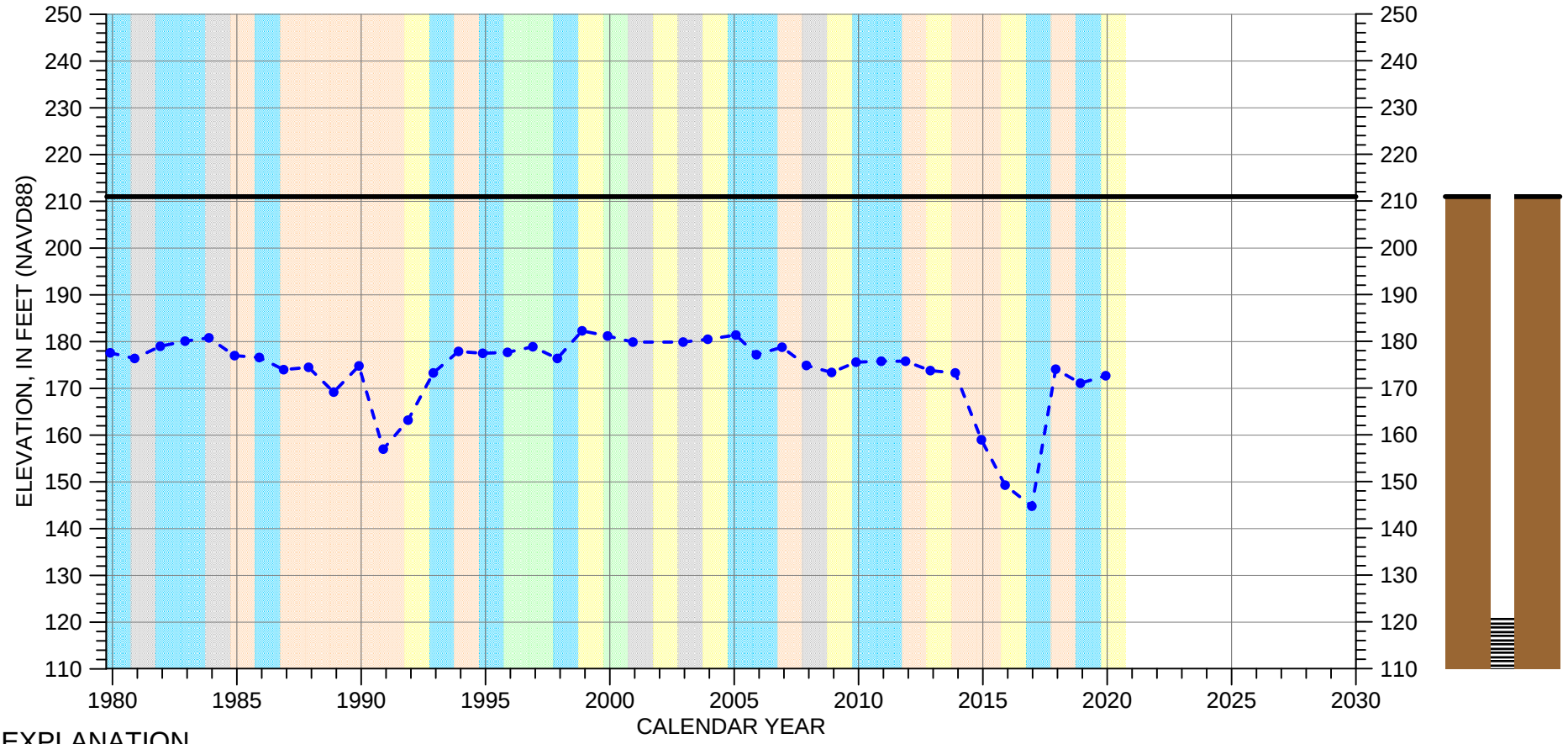
Perforated from
157 to 52 feet msl

Well bottom
48 feet msl

Plot16 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-01E01

Forebay Aquifer Subbasin

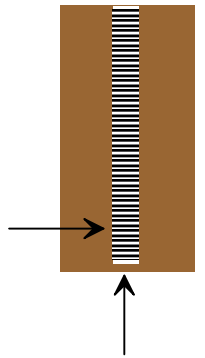


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

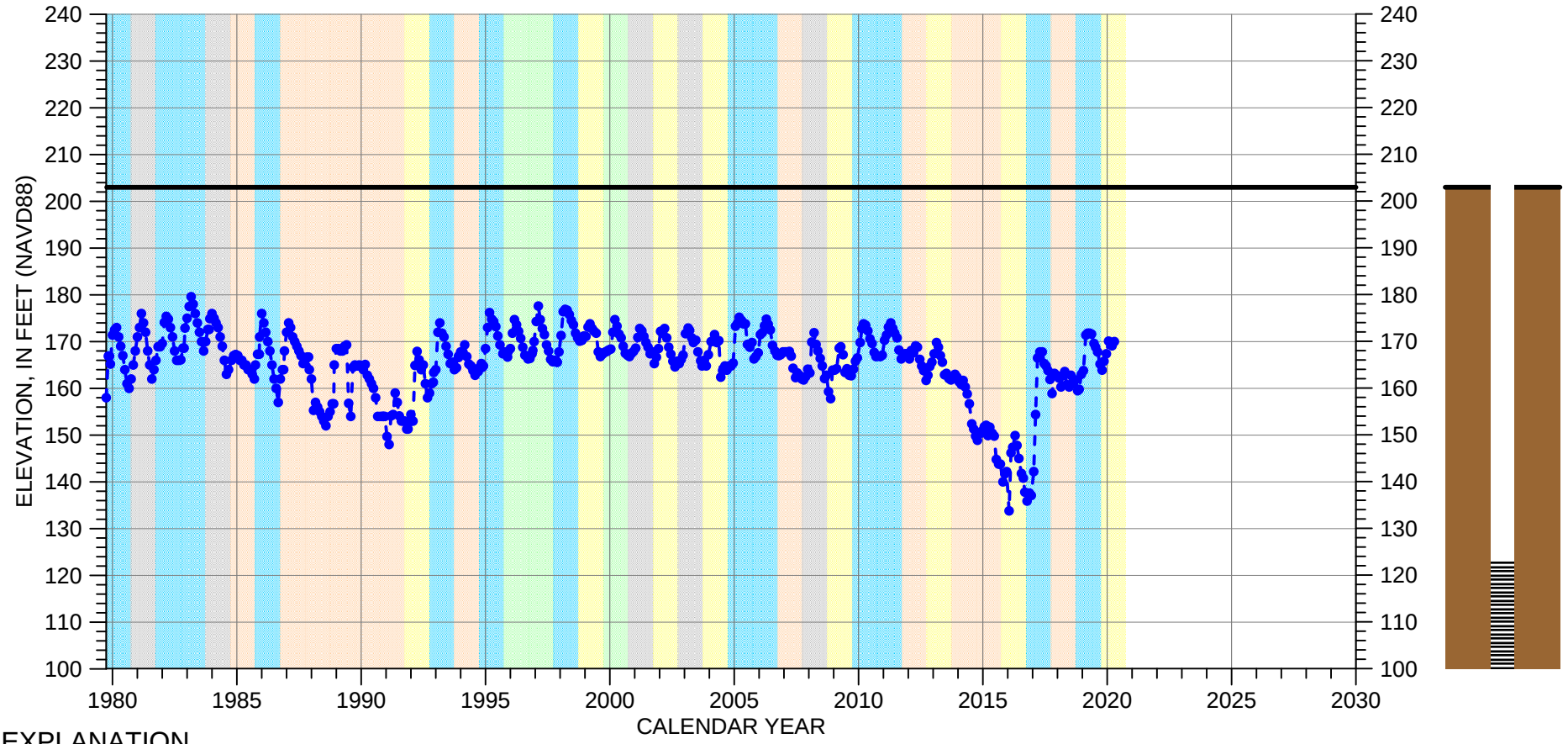
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot17 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-02N01

Forebay Aquifer Subbasin

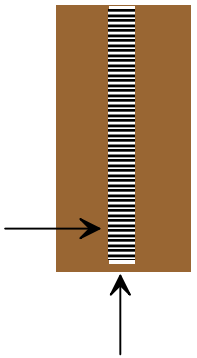


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

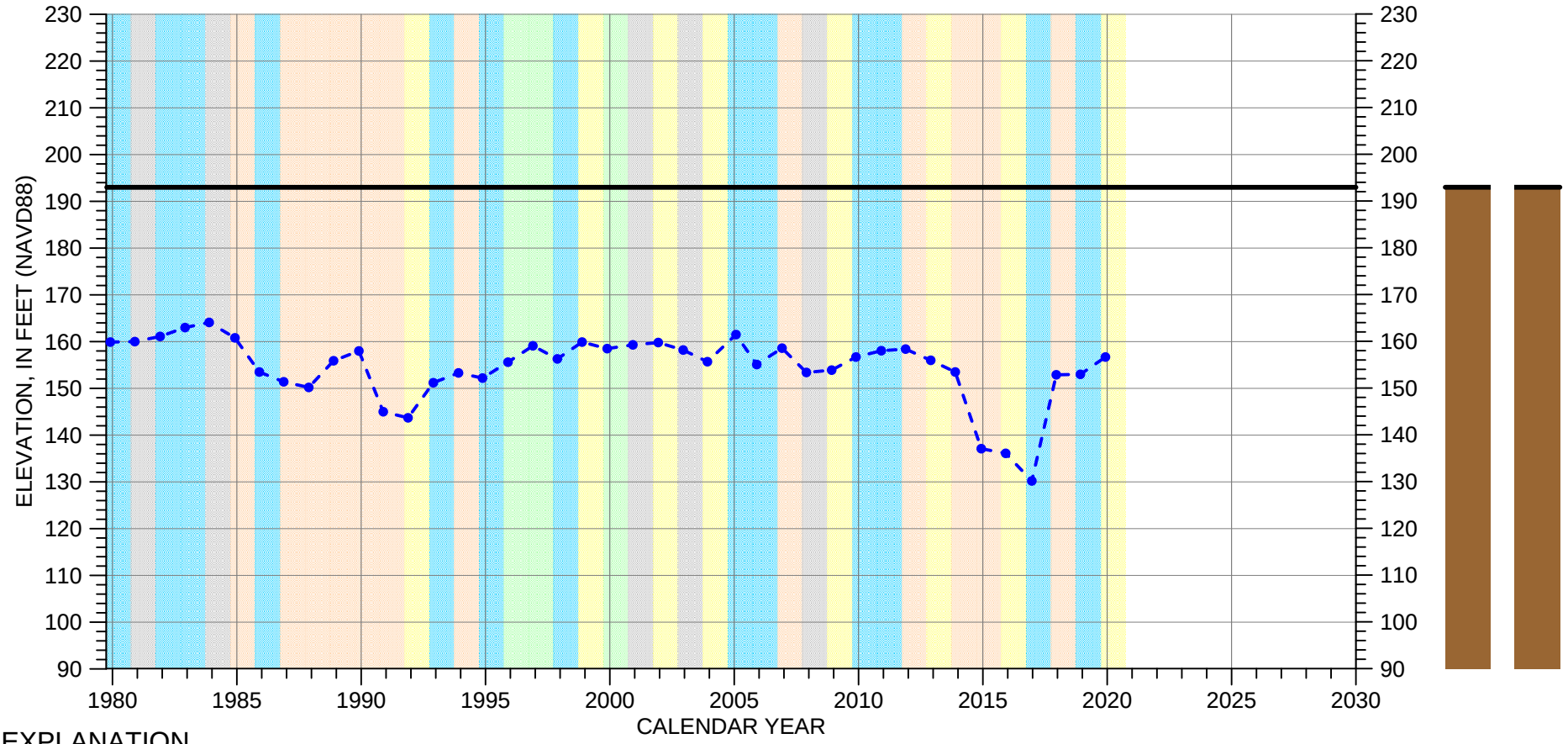
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot18 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-05R03

Forebay Aquifer Subbasin

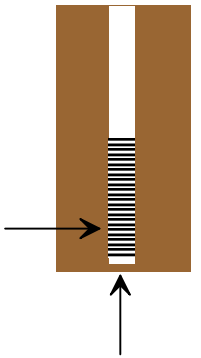


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

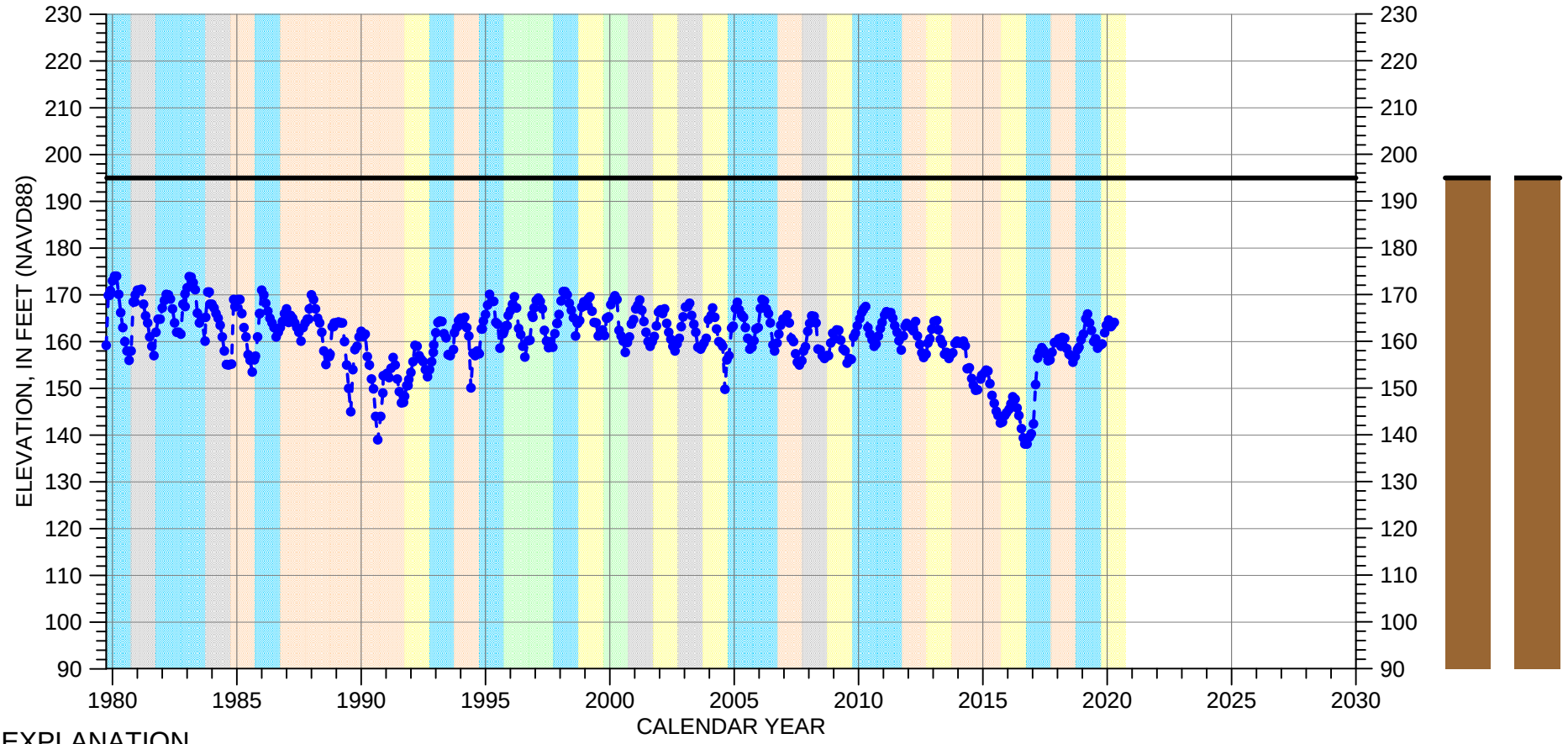
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot19 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-06M01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

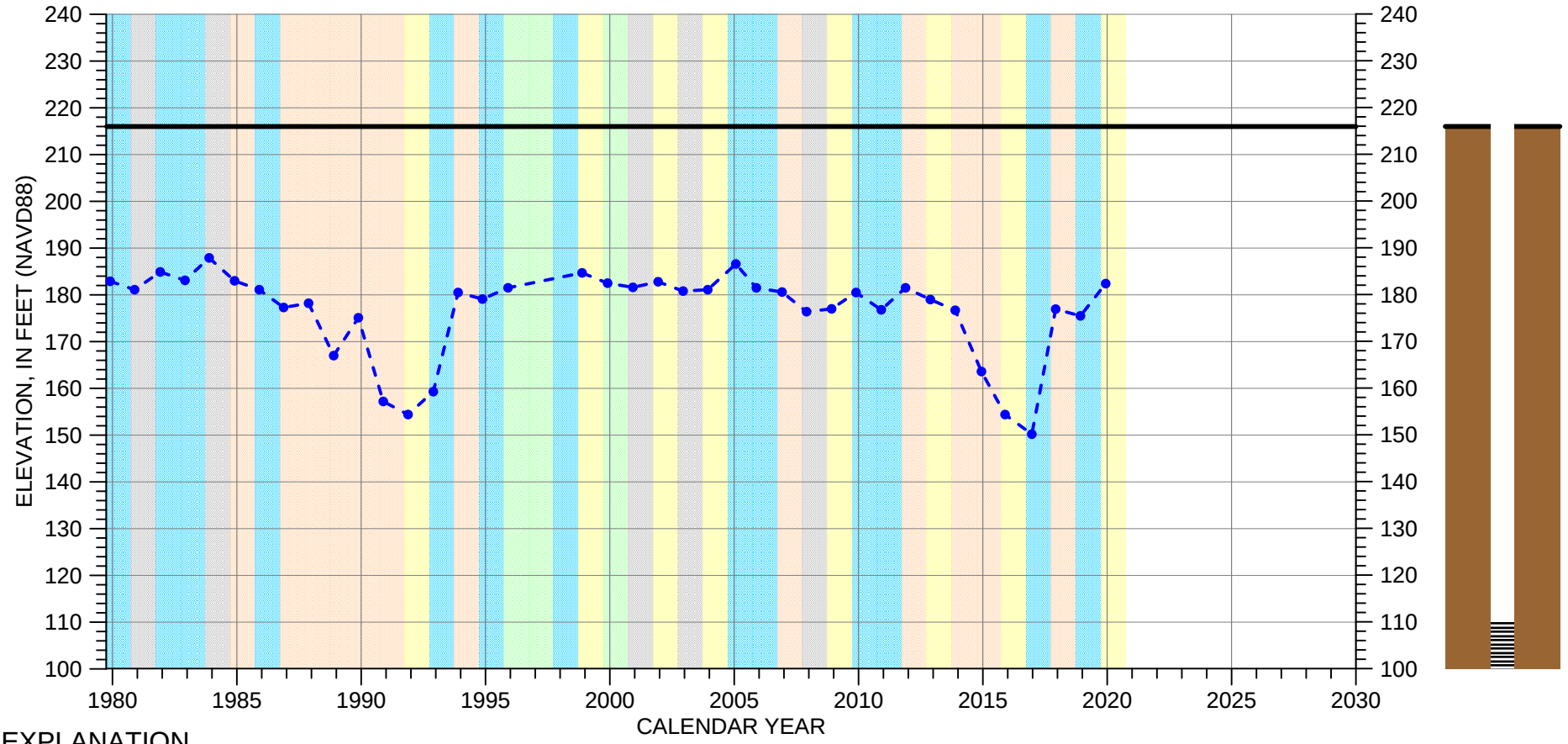
Perforated interval unknown

Well bottom -155 feet msl

Plot20 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-11J01

Forebay Aquifer Subbasin

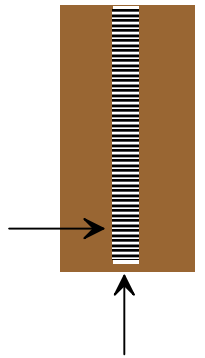


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



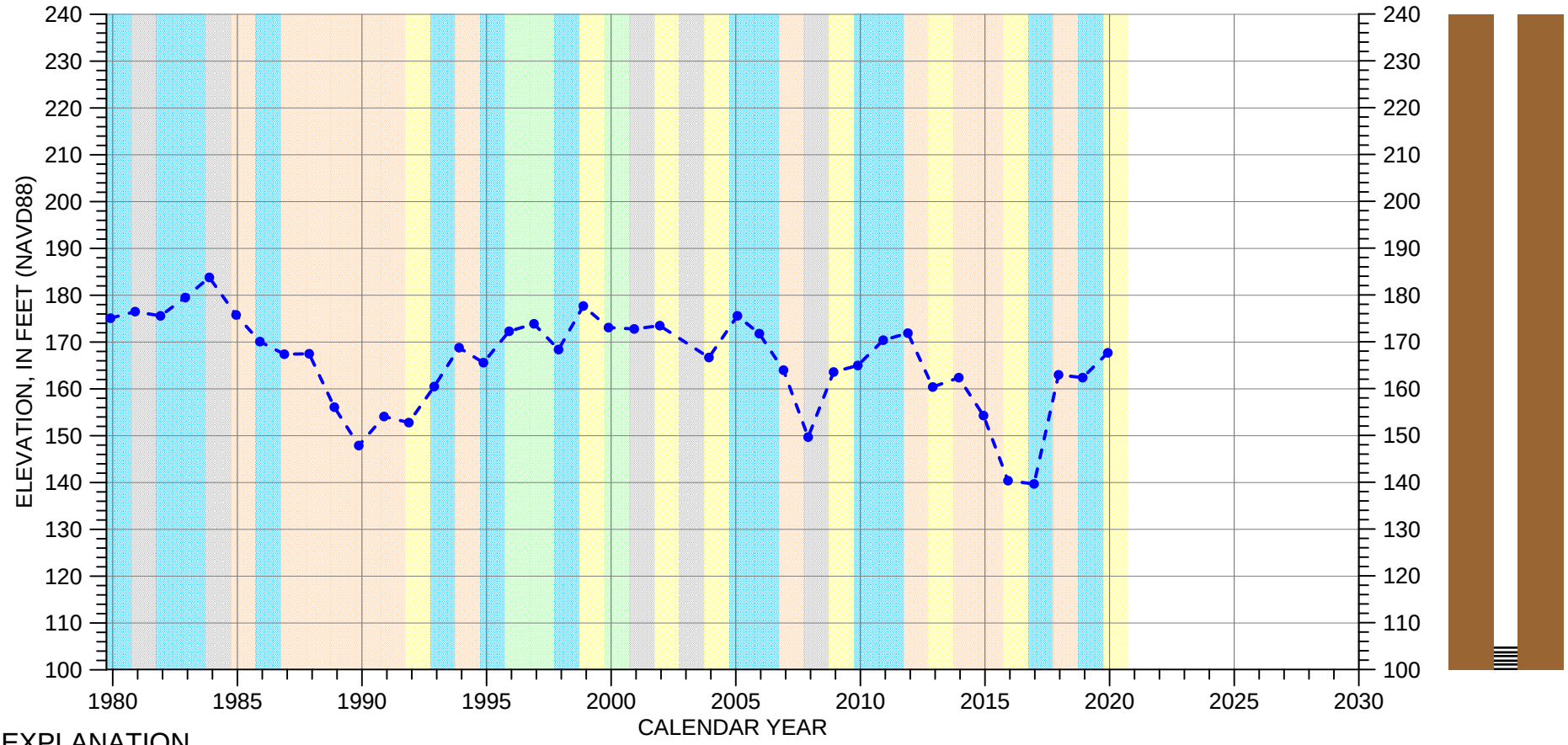
Multiple perforated intervals from 110 to -16 feet msl

Well bottom -19 feet msl

Plot21 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-16L01

Forebay Aquifer Subbasin

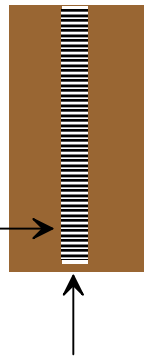


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (304 FT MSL)

WATER YEAR TYPE DESIGNATION

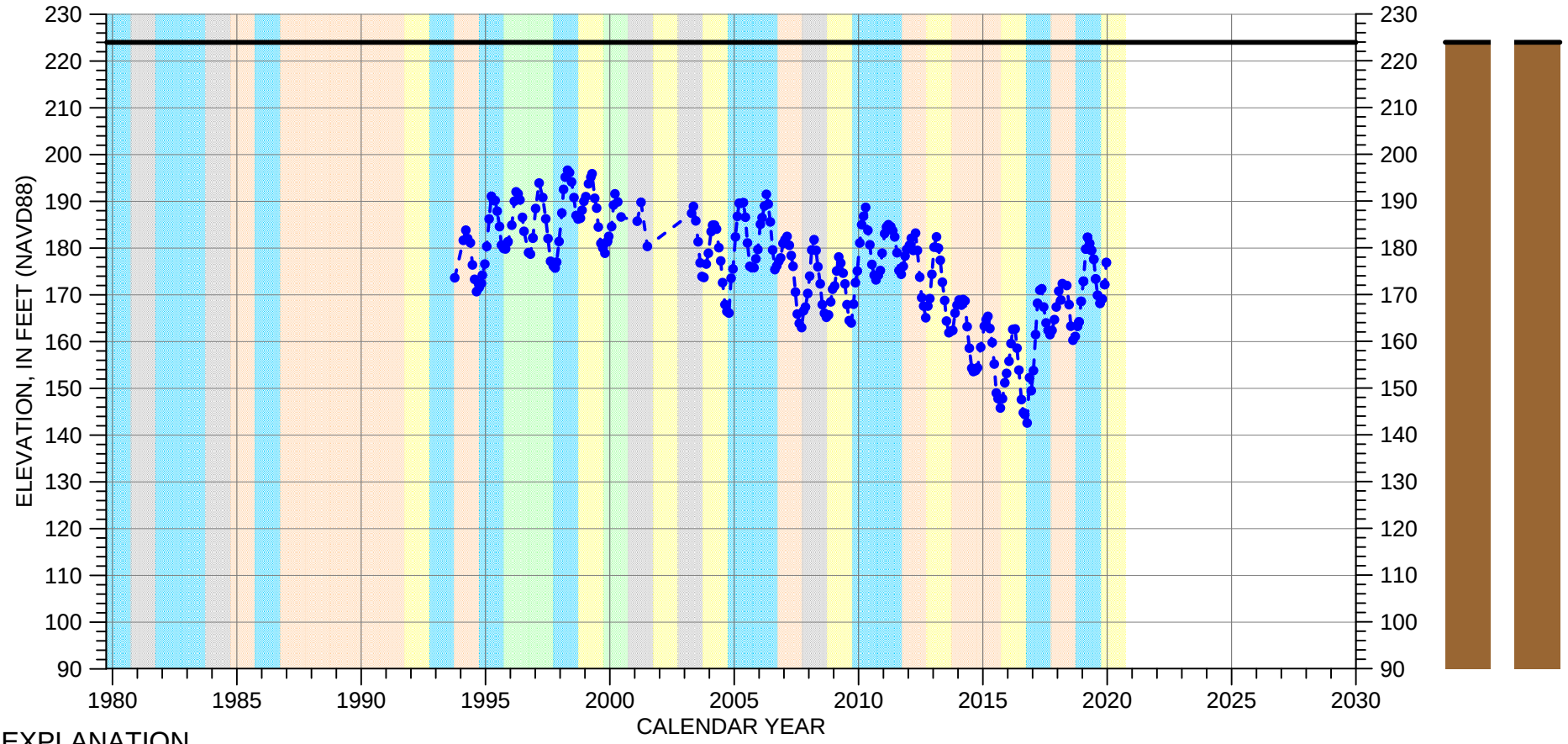
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot22 *

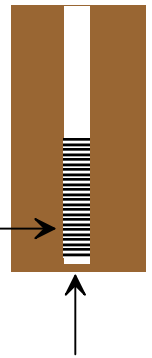
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-22B02

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



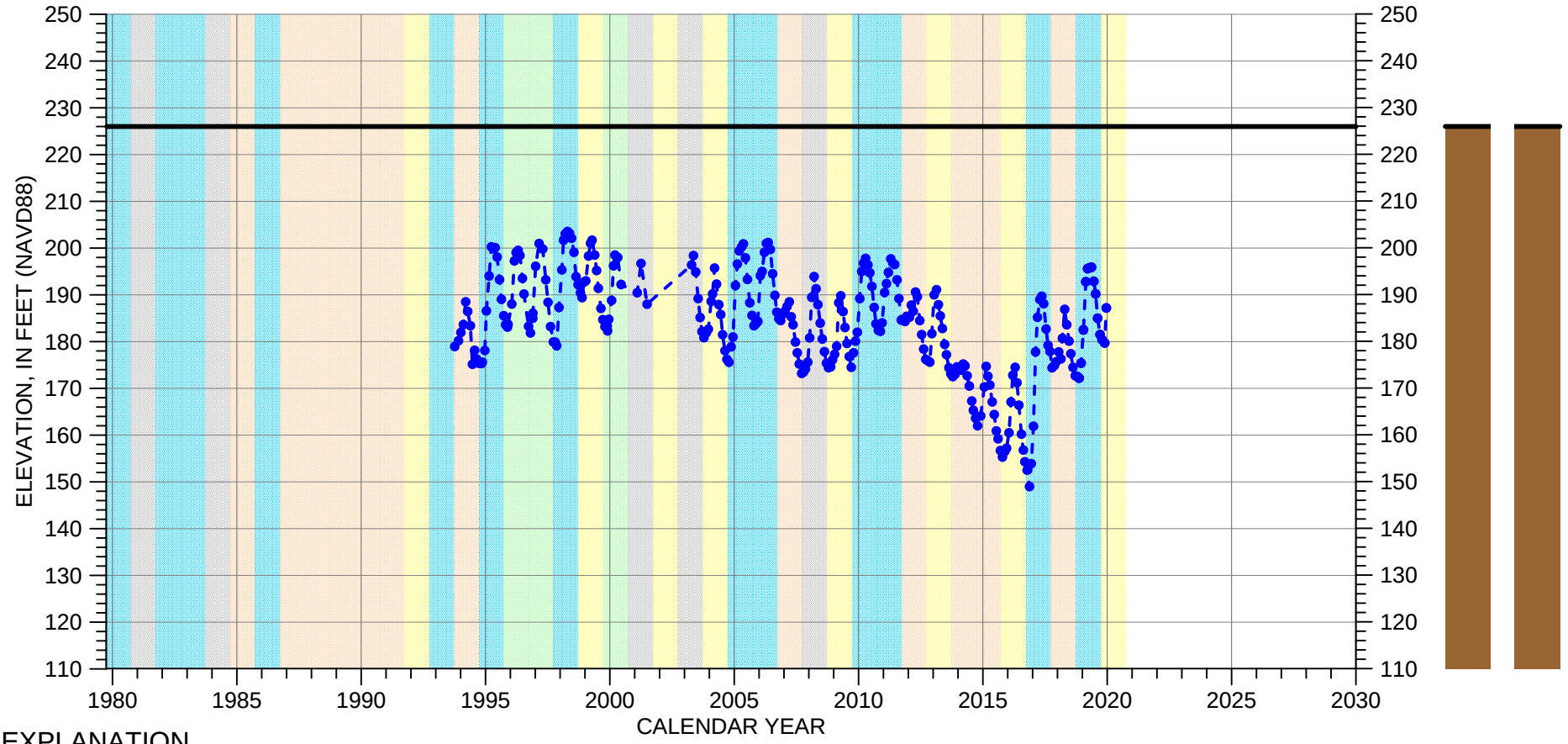
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot23 *

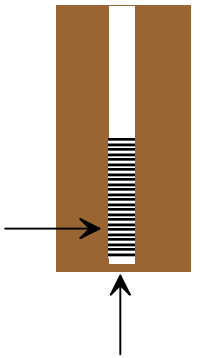
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-22B03

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



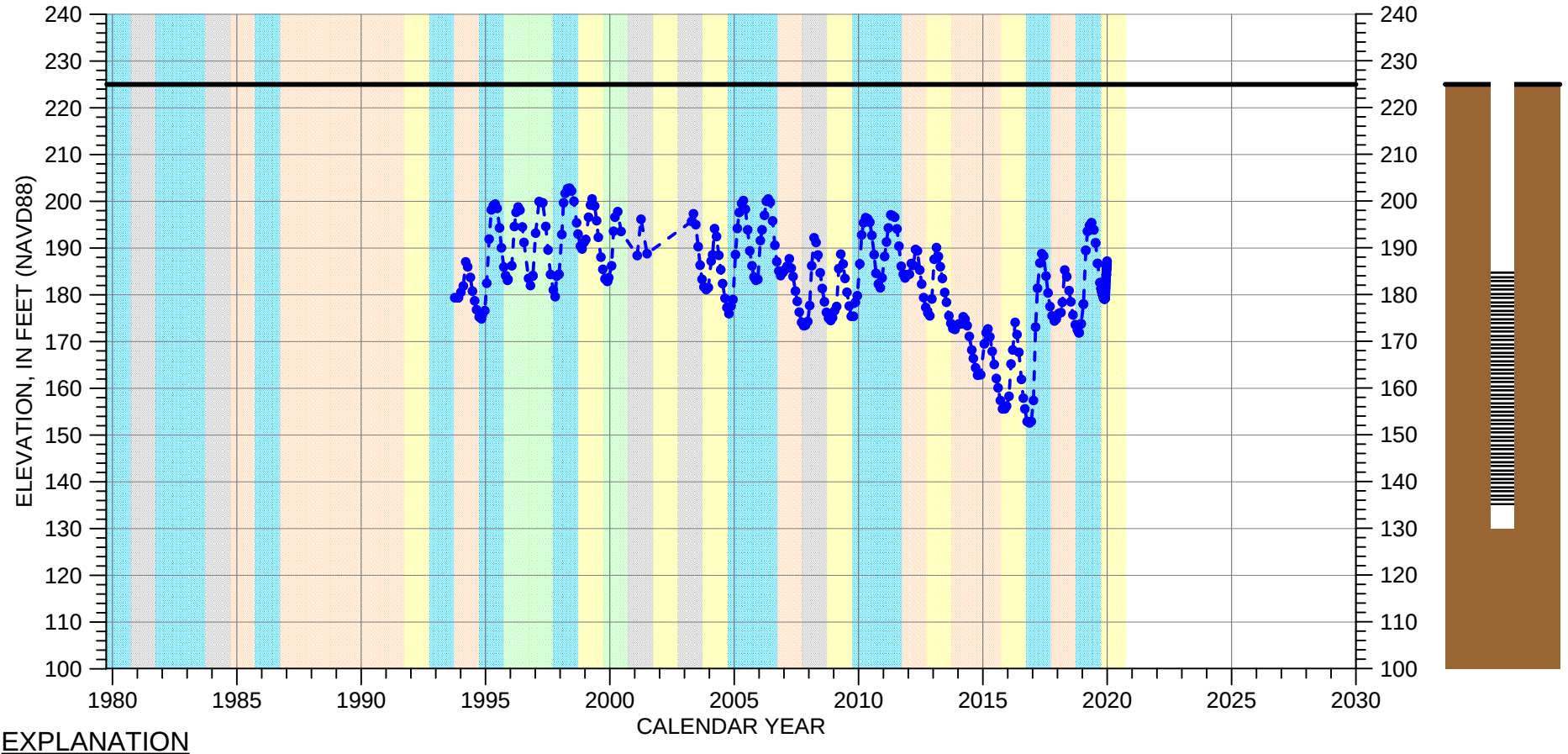
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot24 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-22B04

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

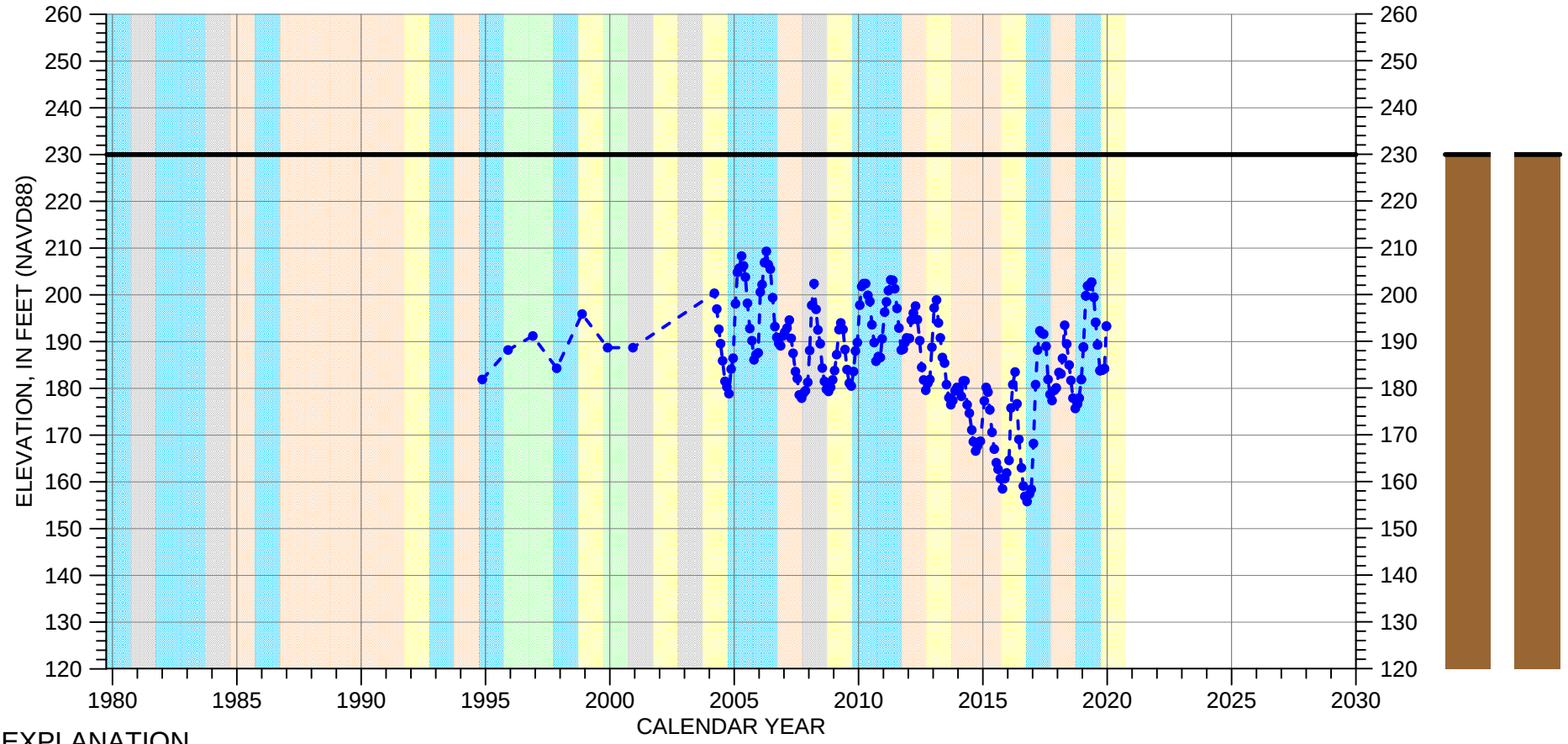
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot25 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-24M01

Forebay Aquifer Subbasin

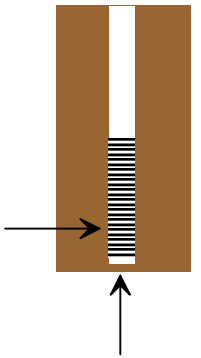


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

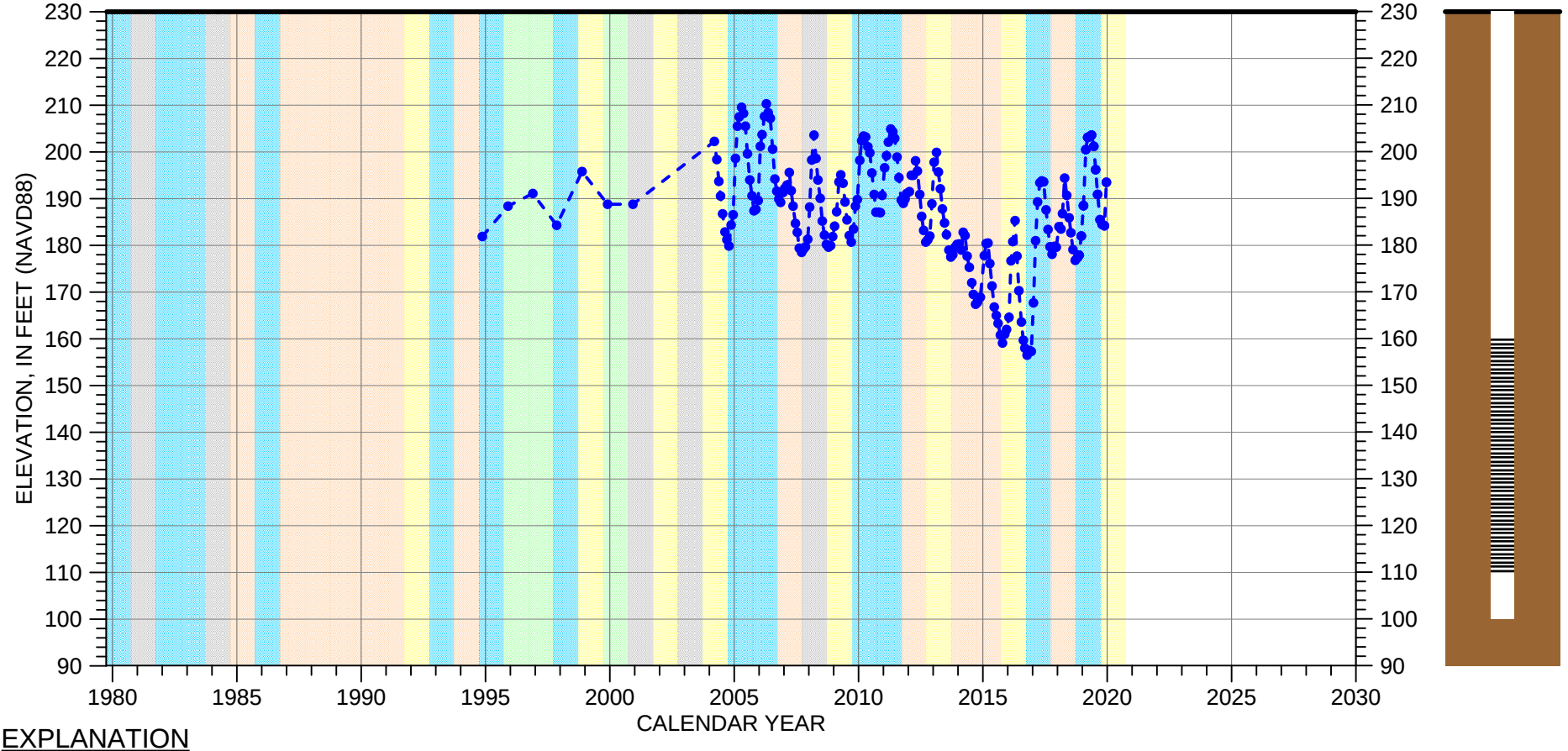
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot26 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-24M02

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

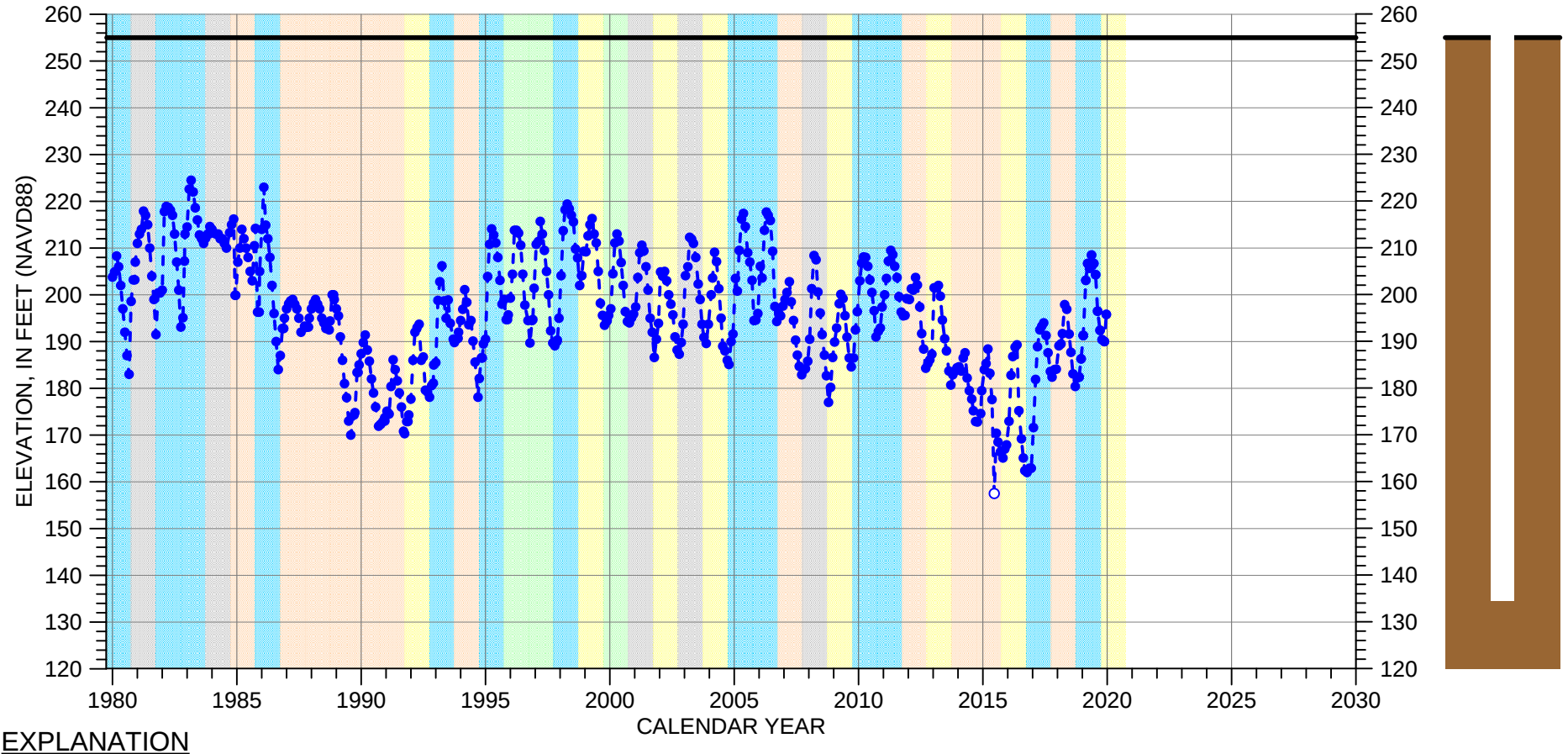
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot27 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-25F01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

Perforated interval unknown

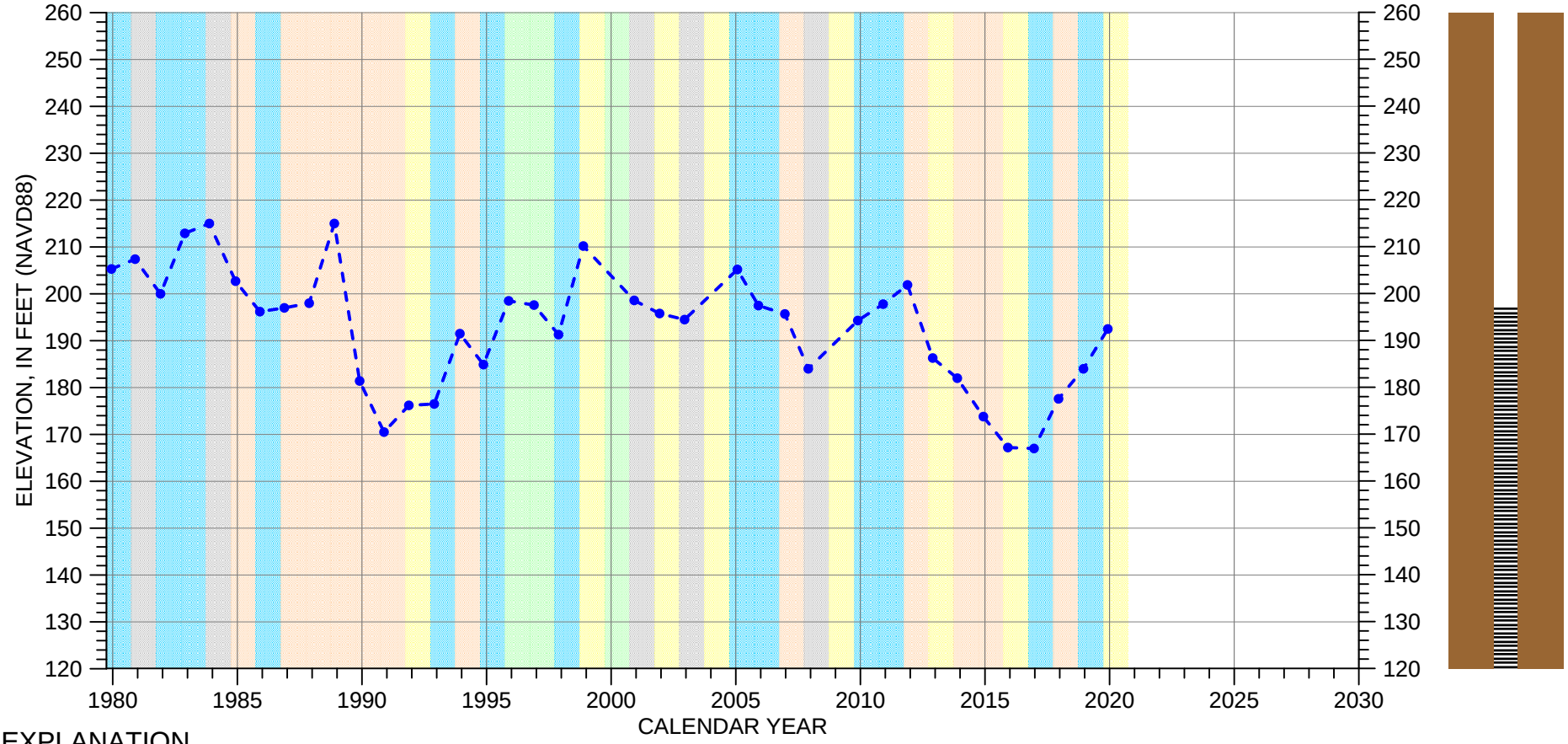
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot28 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-34B01

Forebay Aquifer Subbasin

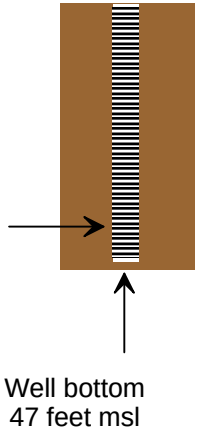


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (347 FT MSL)

WATER YEAR TYPE DESIGNATION

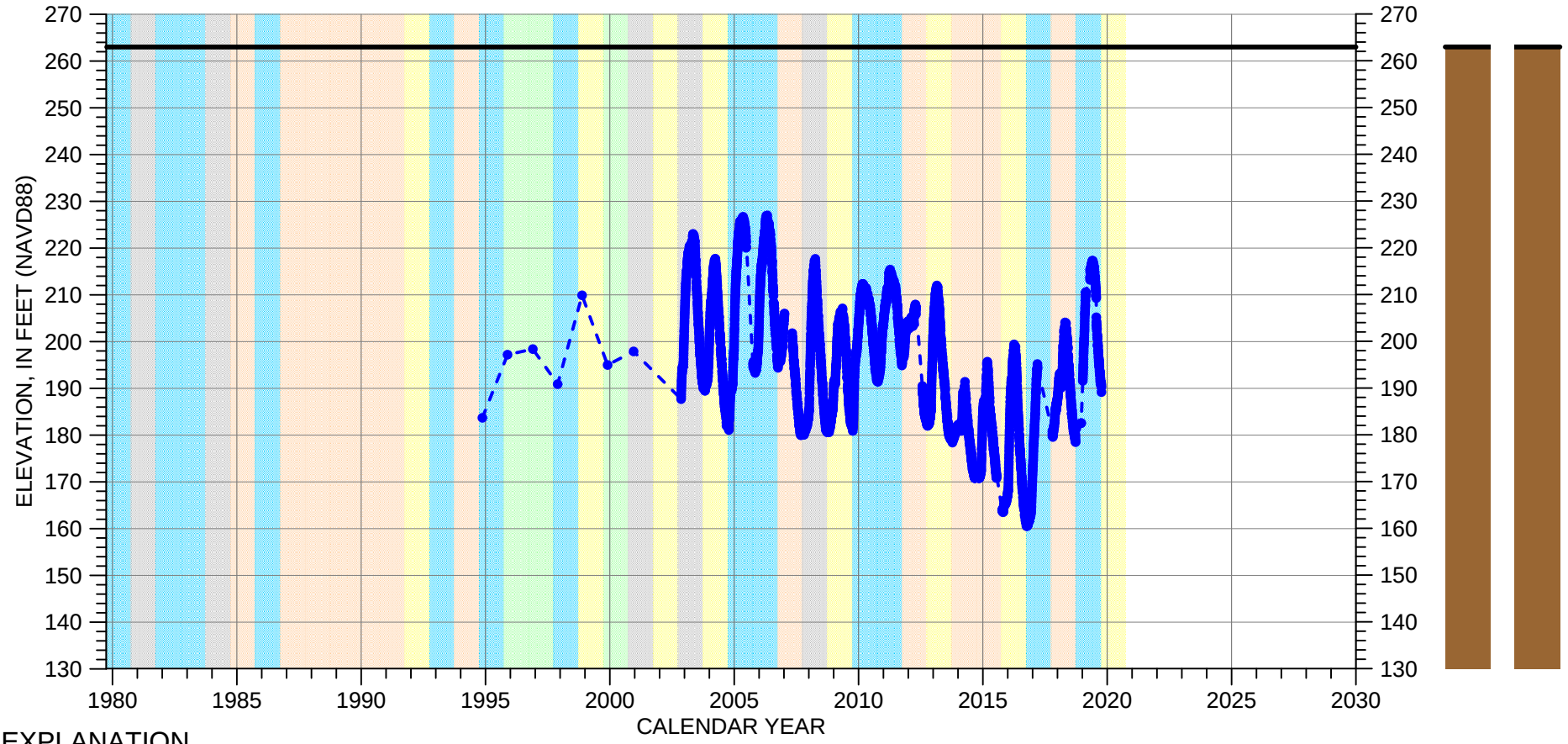
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot29 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-35F01

Forebay Aquifer Subbasin

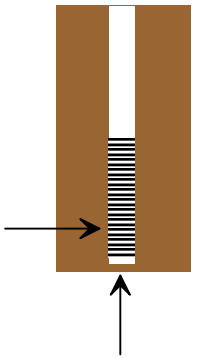


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

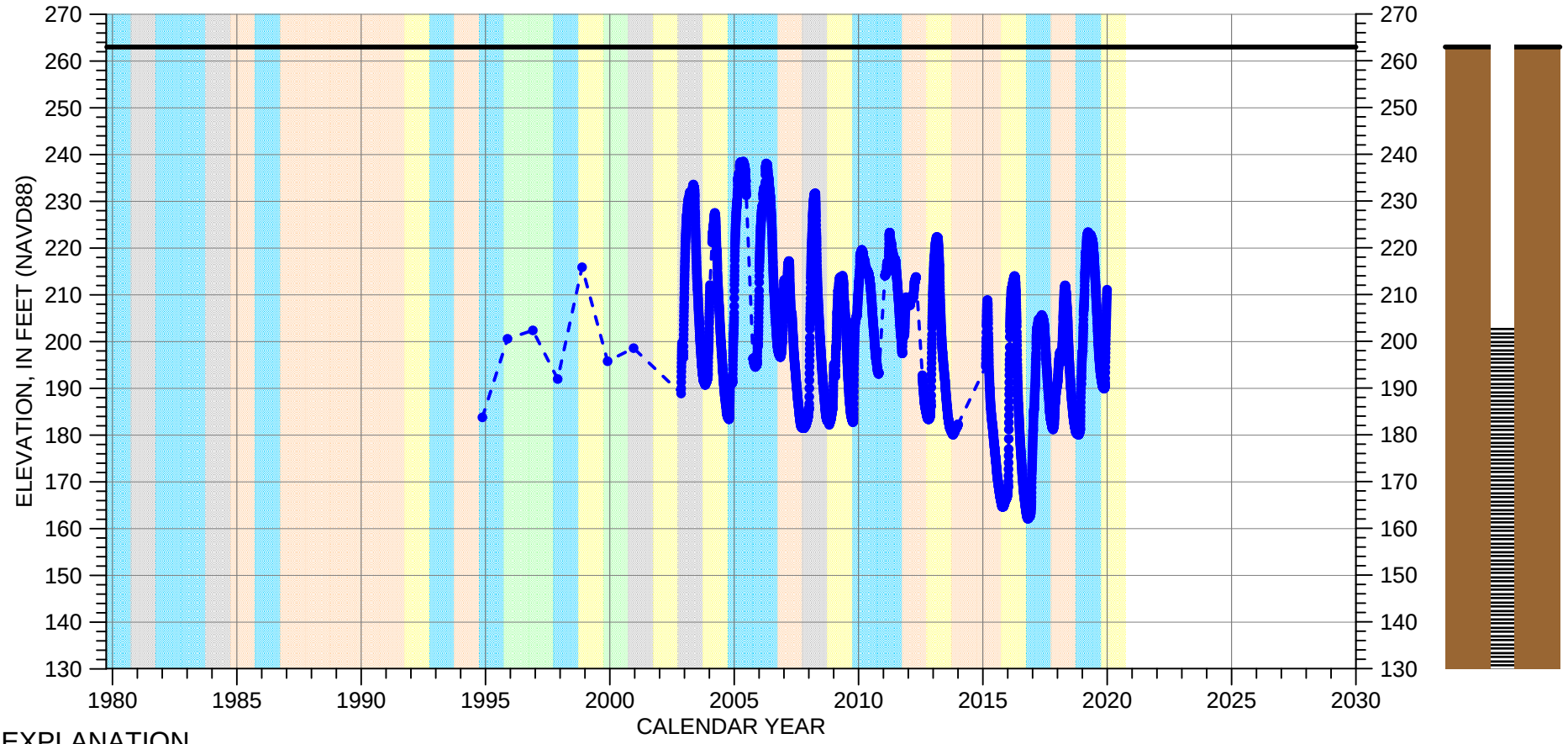
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot30 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-35F02

Forebay Aquifer Subbasin

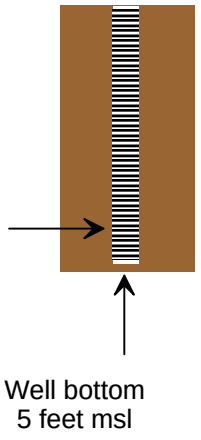


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

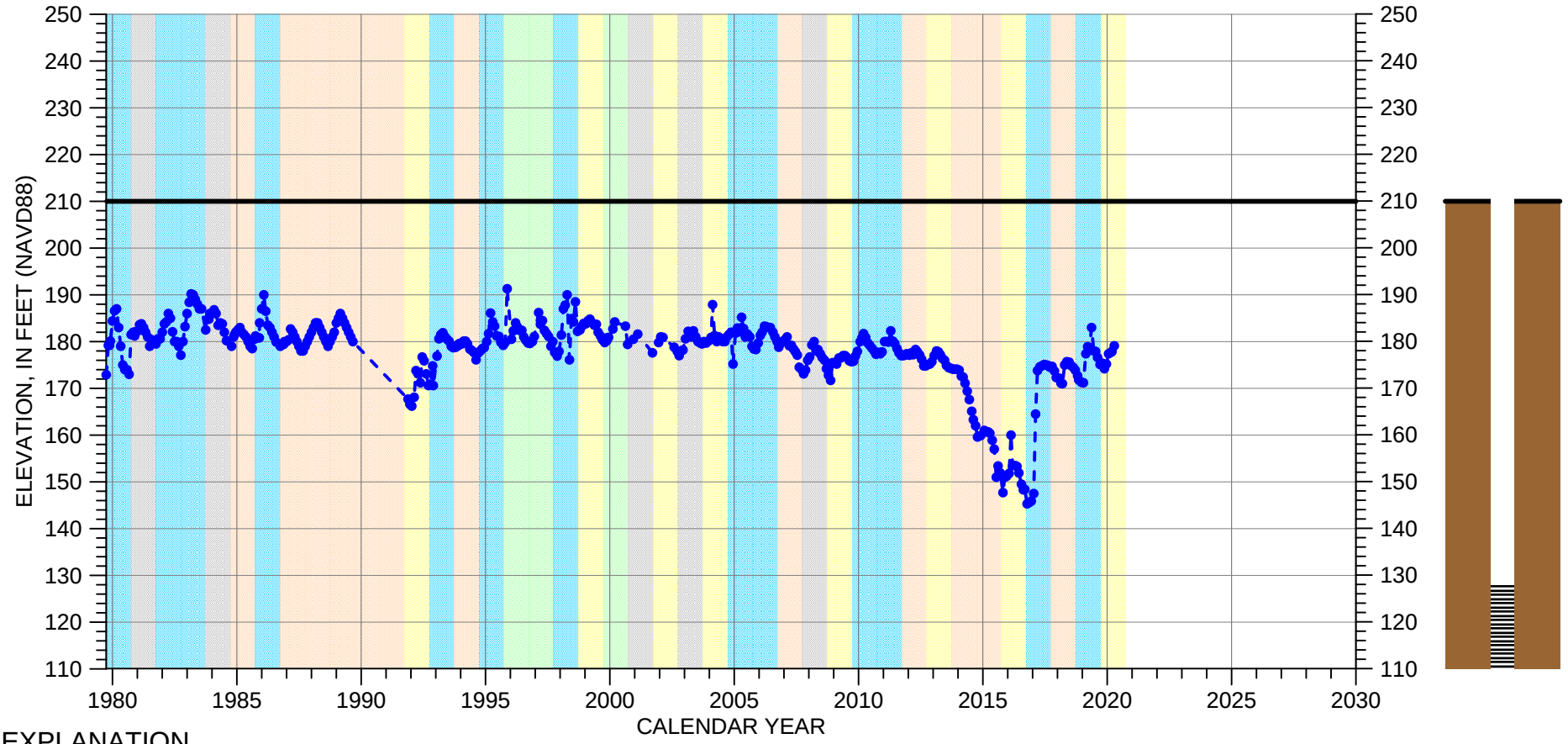
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot31 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/07E-19G02

Forebay Aquifer Subbasin

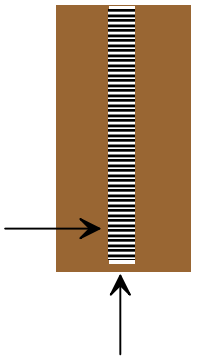


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



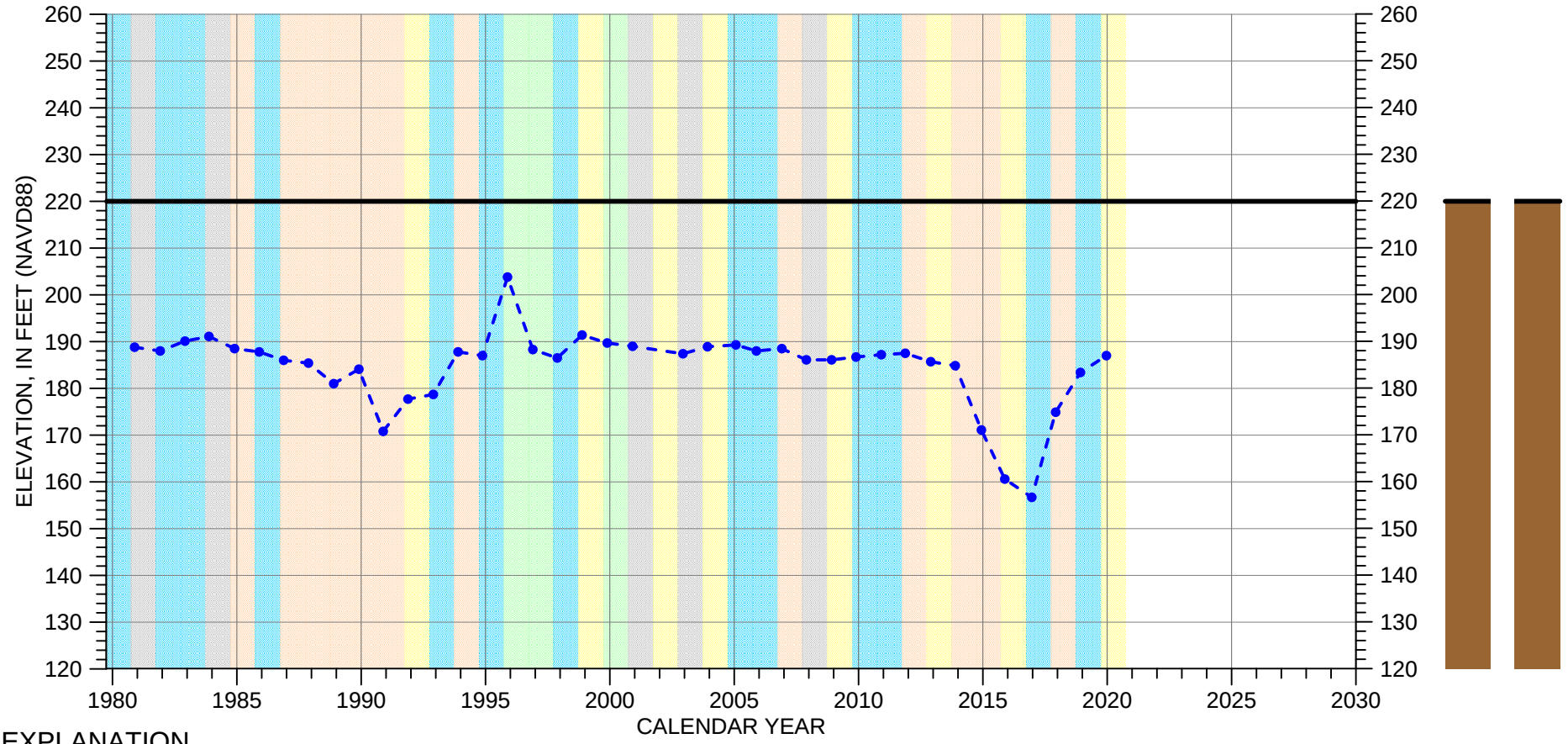
Multiple perforated intervals from 128 to -10 feet msl

Well bottom -55 feet msl

Plot32 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/07E-20K01

Forebay Aquifer Subbasin

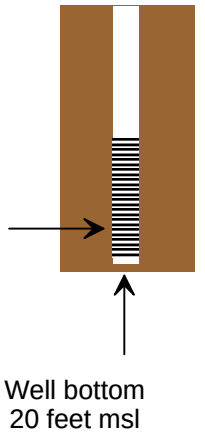


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

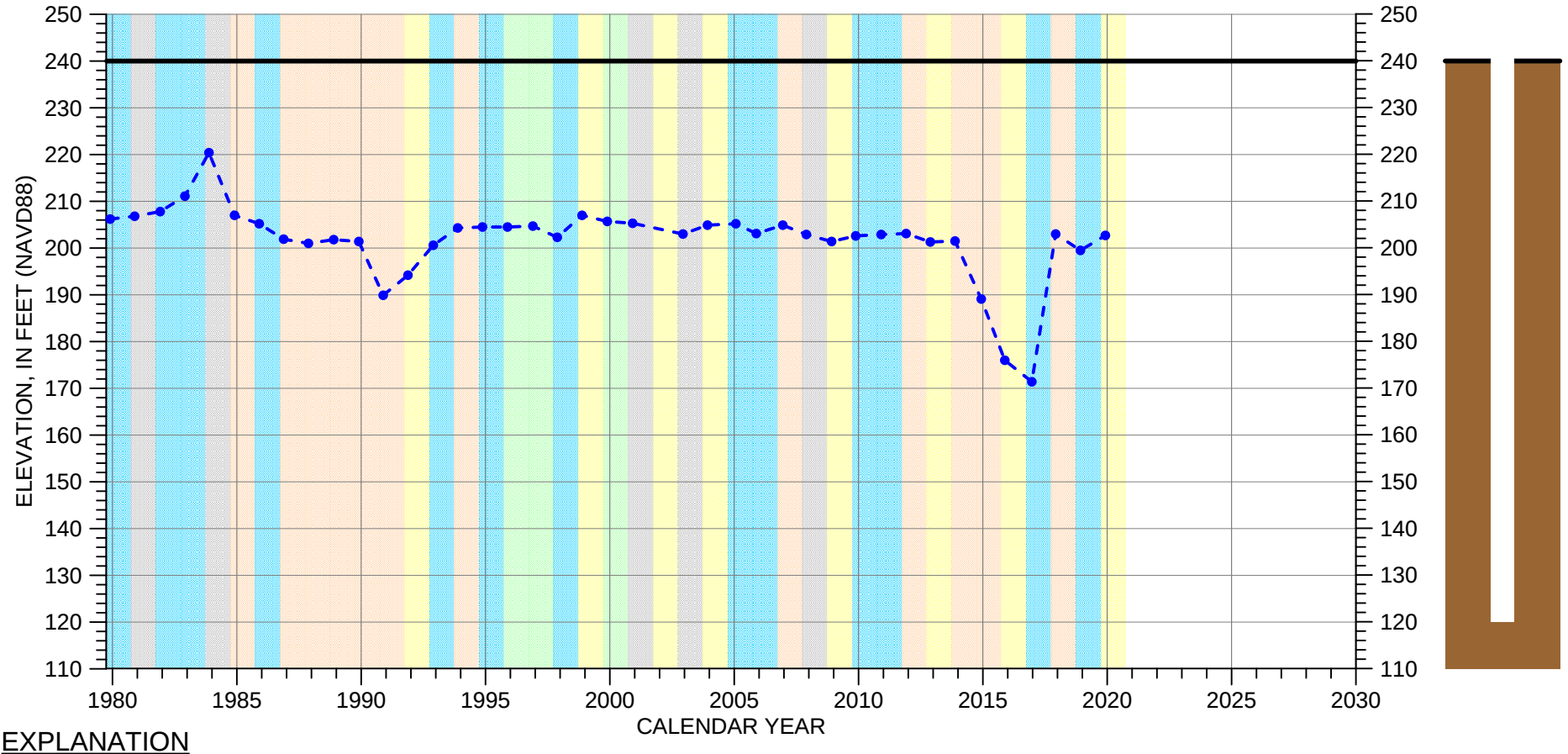
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot33 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/07E-28K01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

Perforated interval unknown

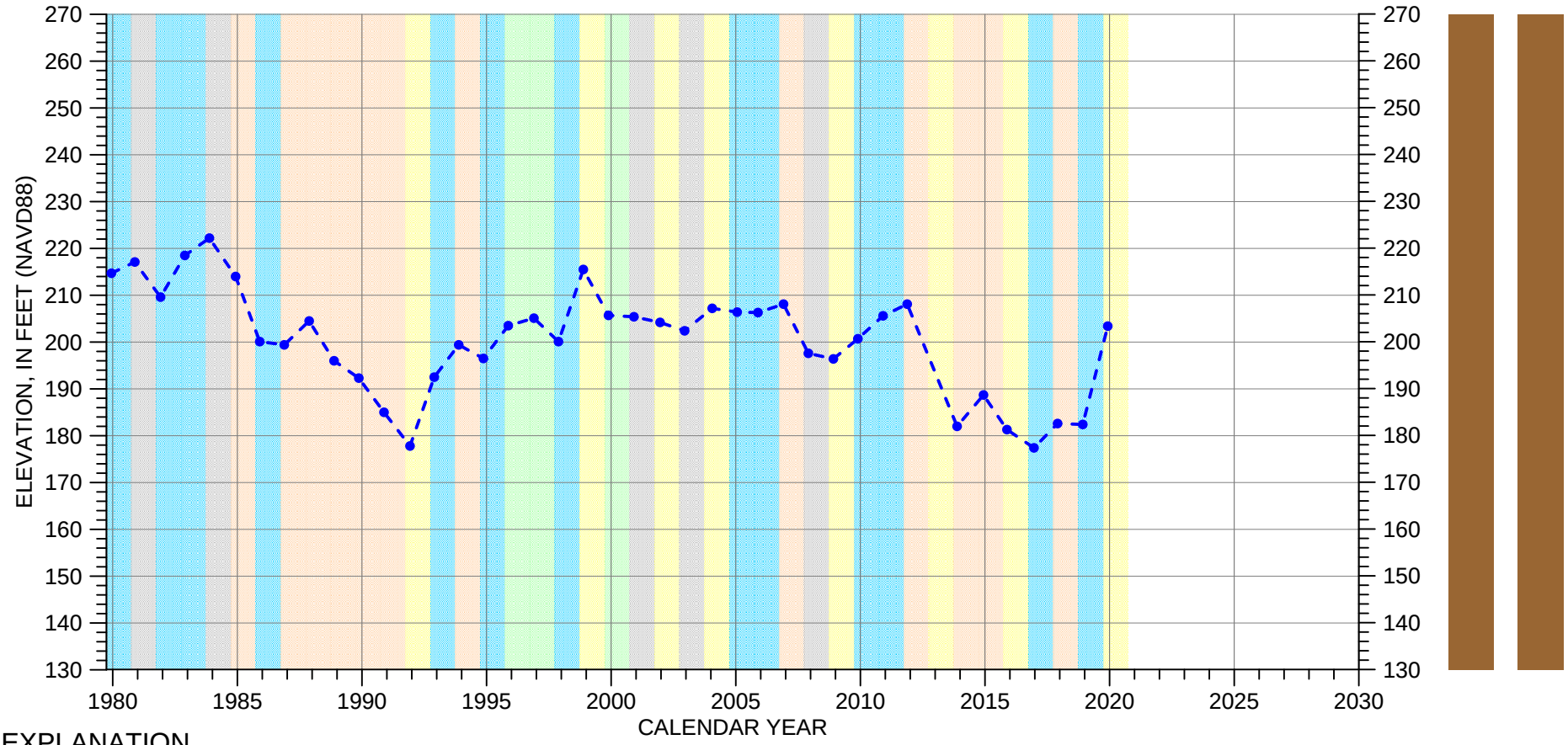
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot34 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/06E-01H01

Forebay Aquifer Subbasin

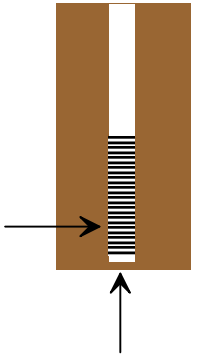


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (320 FT MSL)

WATER YEAR TYPE DESIGNATION

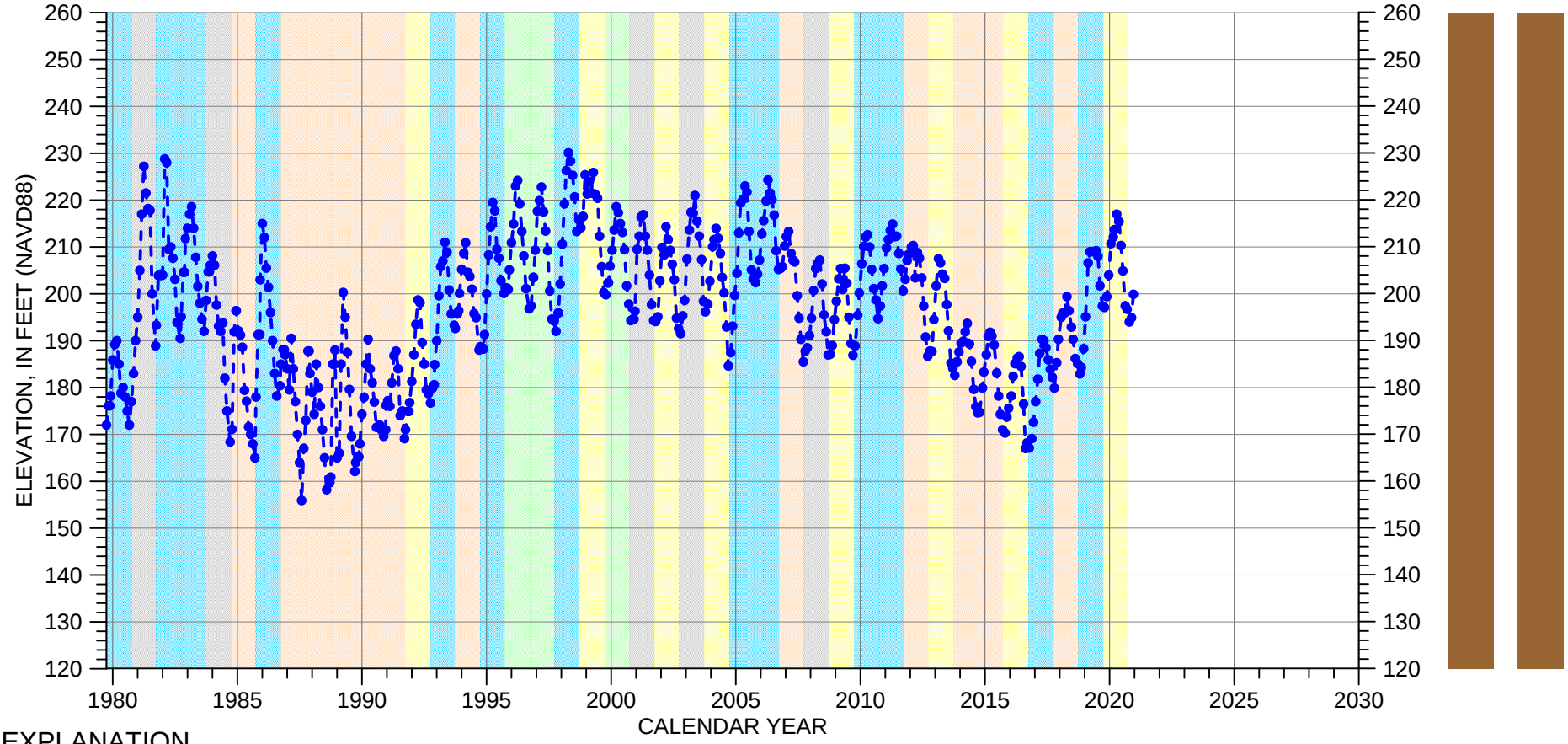
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot35 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/06E-11C01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (375 FT MSL)

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

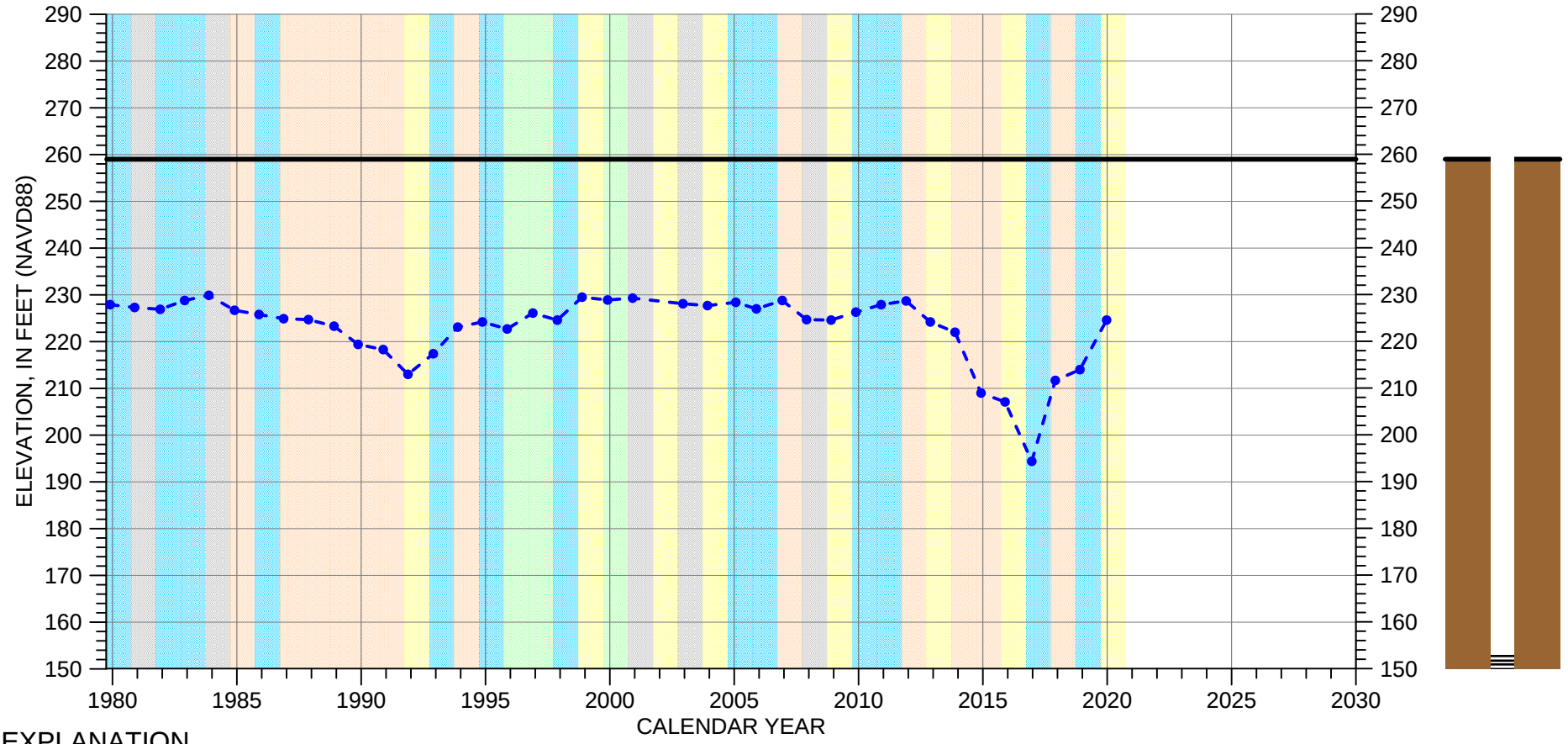
Perforated interval unknown

Well bottom 55 feet msl

Plot36 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/07E-04Q01

Forebay Aquifer Subbasin

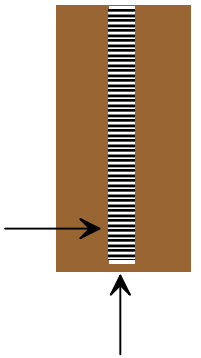


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

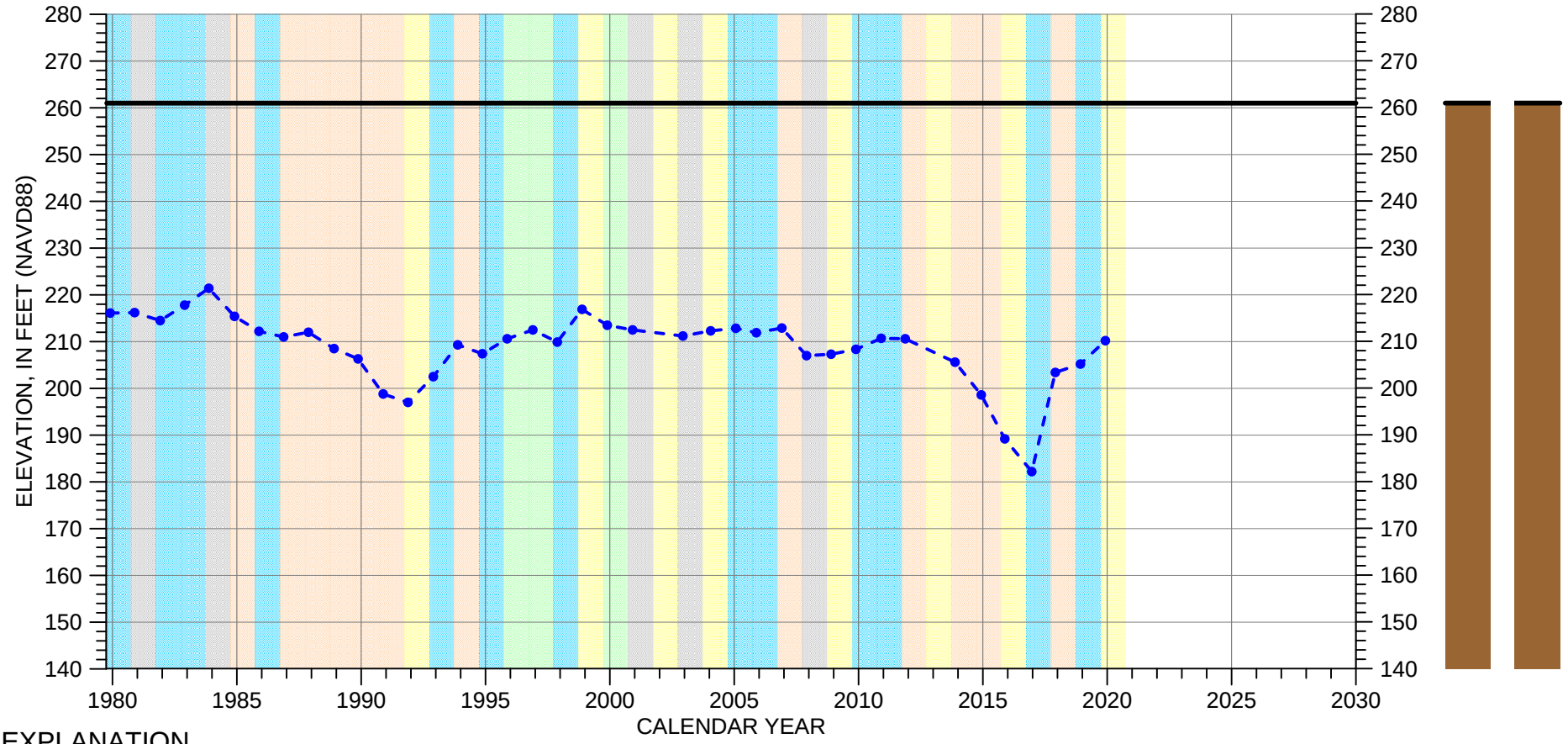
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot37 *

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/07E-05B02

Forebay Aquifer Subbasin

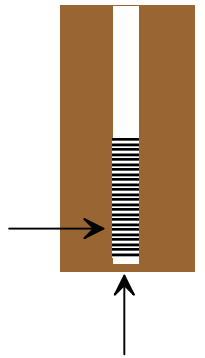


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

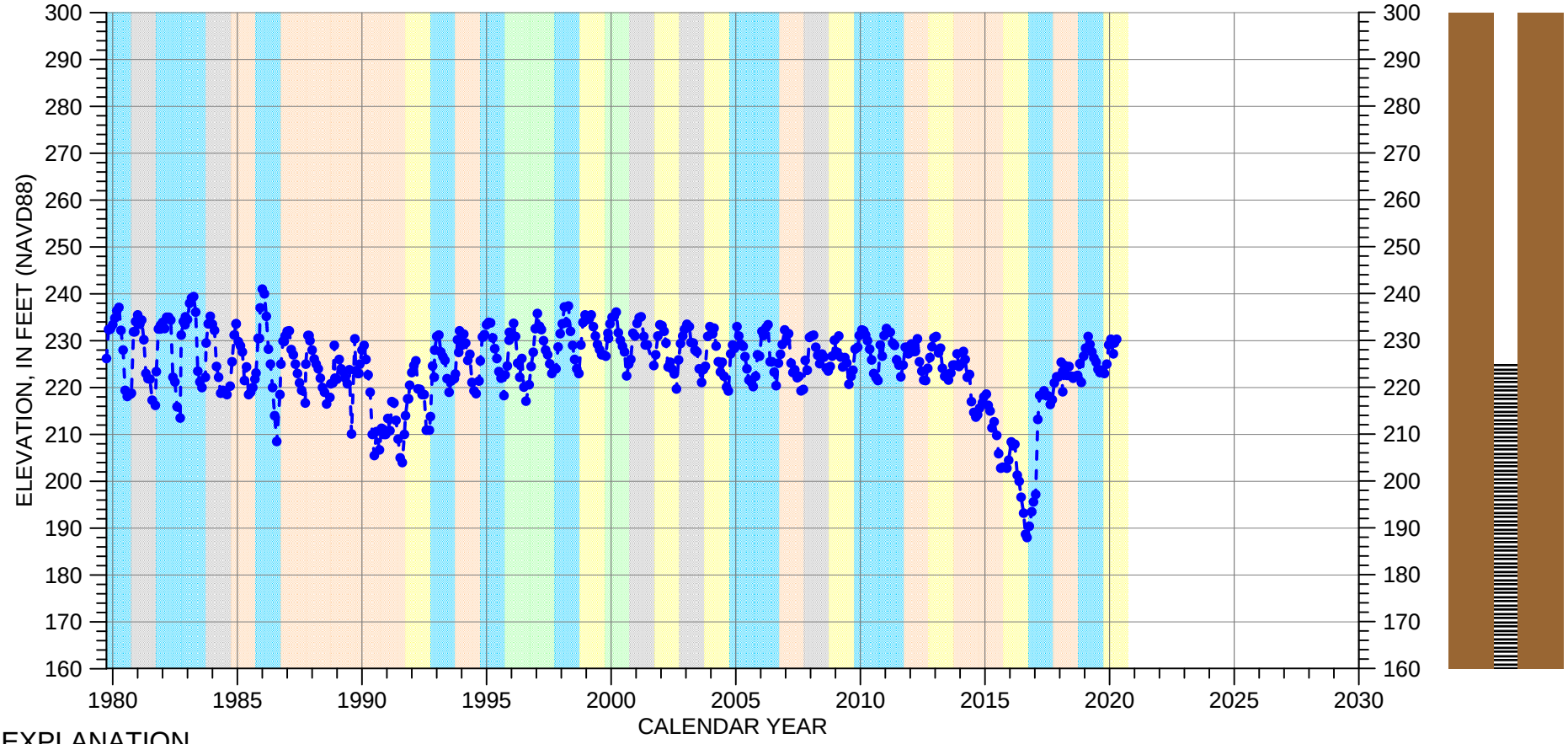
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Plot38 *

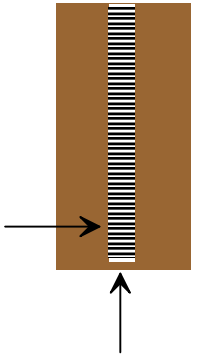
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/07E-10P01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (315 FT MSL)



WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Plot39 *

Chapter 5
Appendix 5-B

COC Exceedance Maps

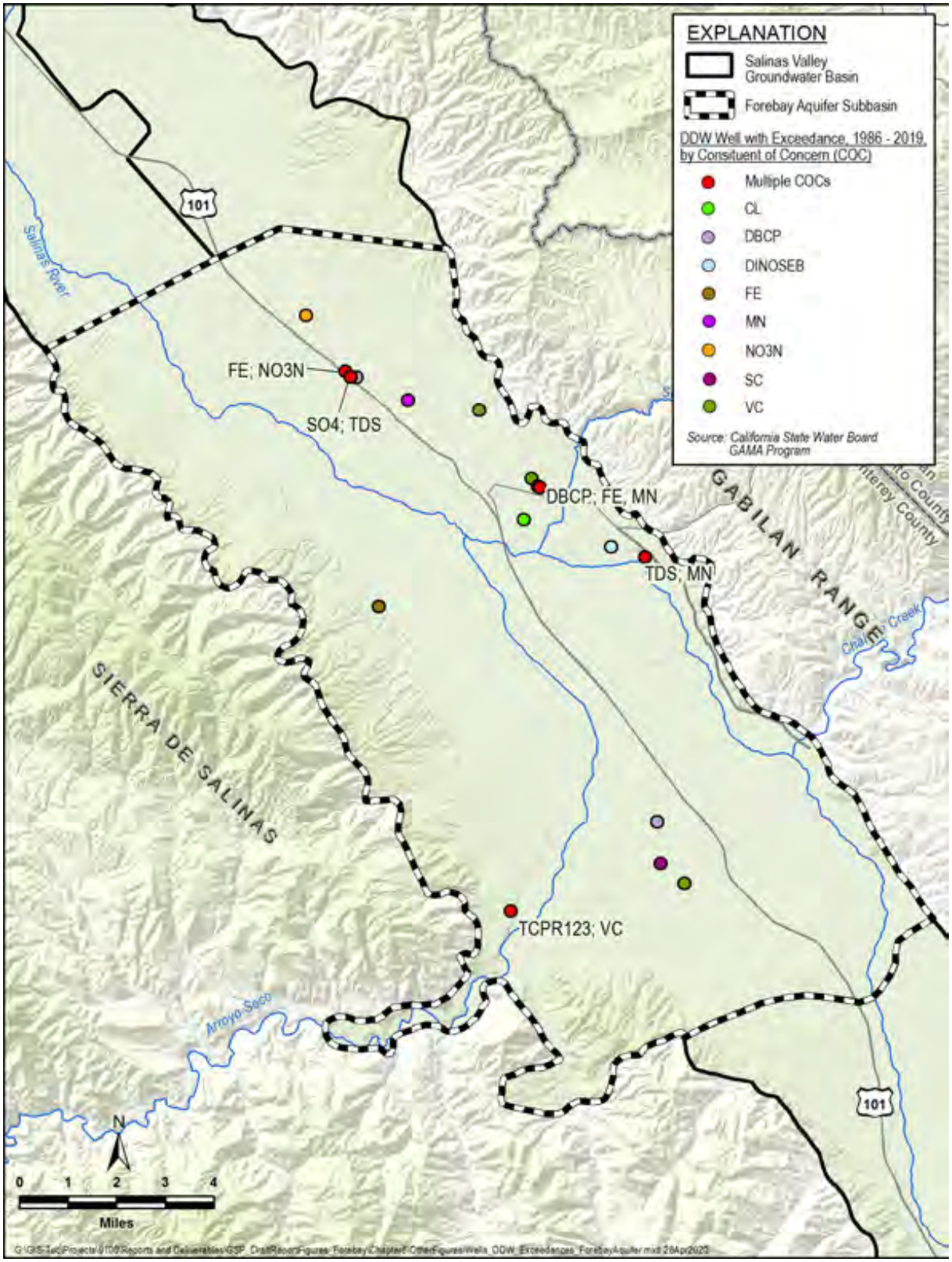


Figure 1. Water Quality Exceedances for DDW Wells

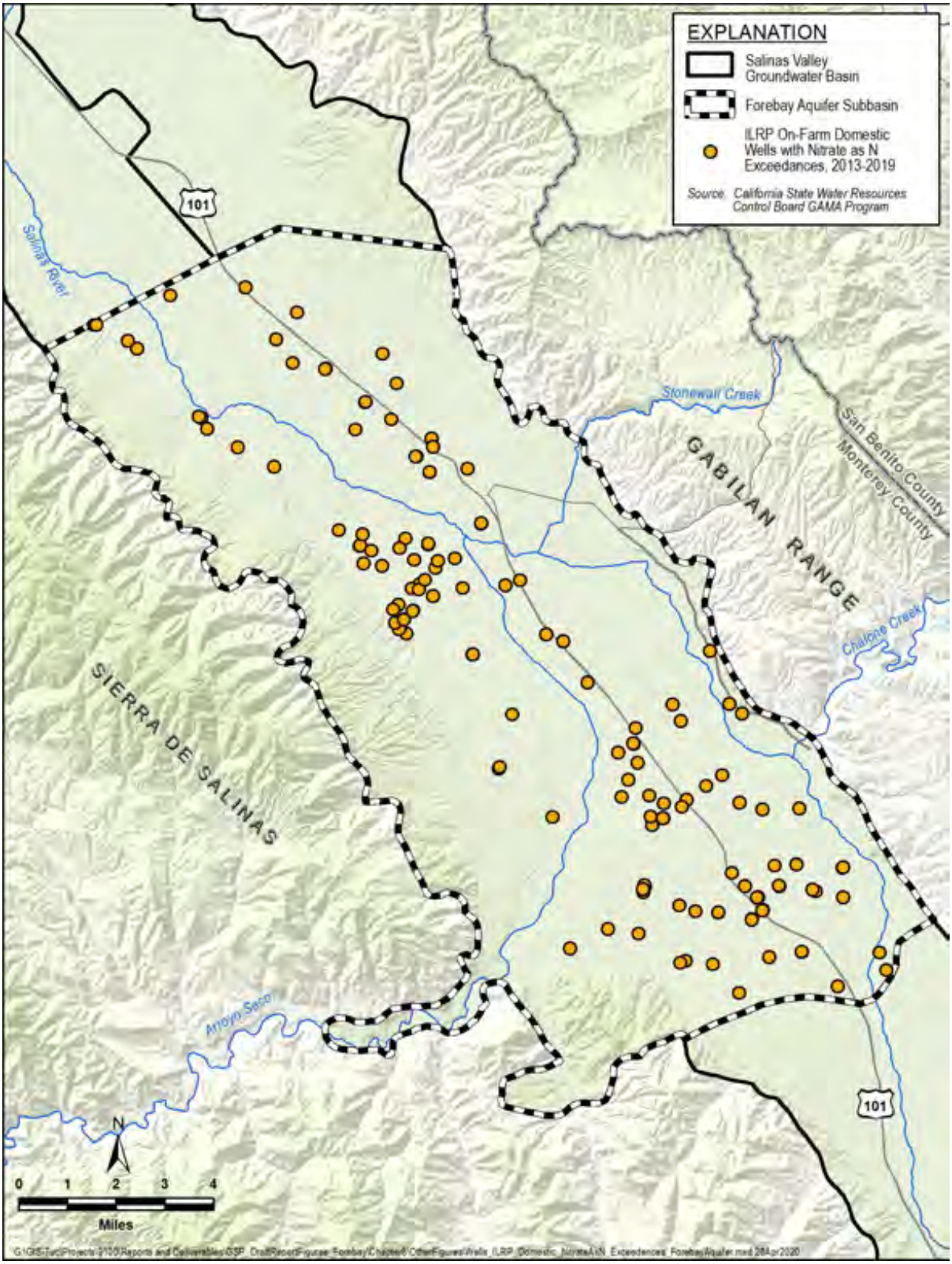


Figure 2.Nitrate Exceedances for ILRP On-Farm Domestic Wells

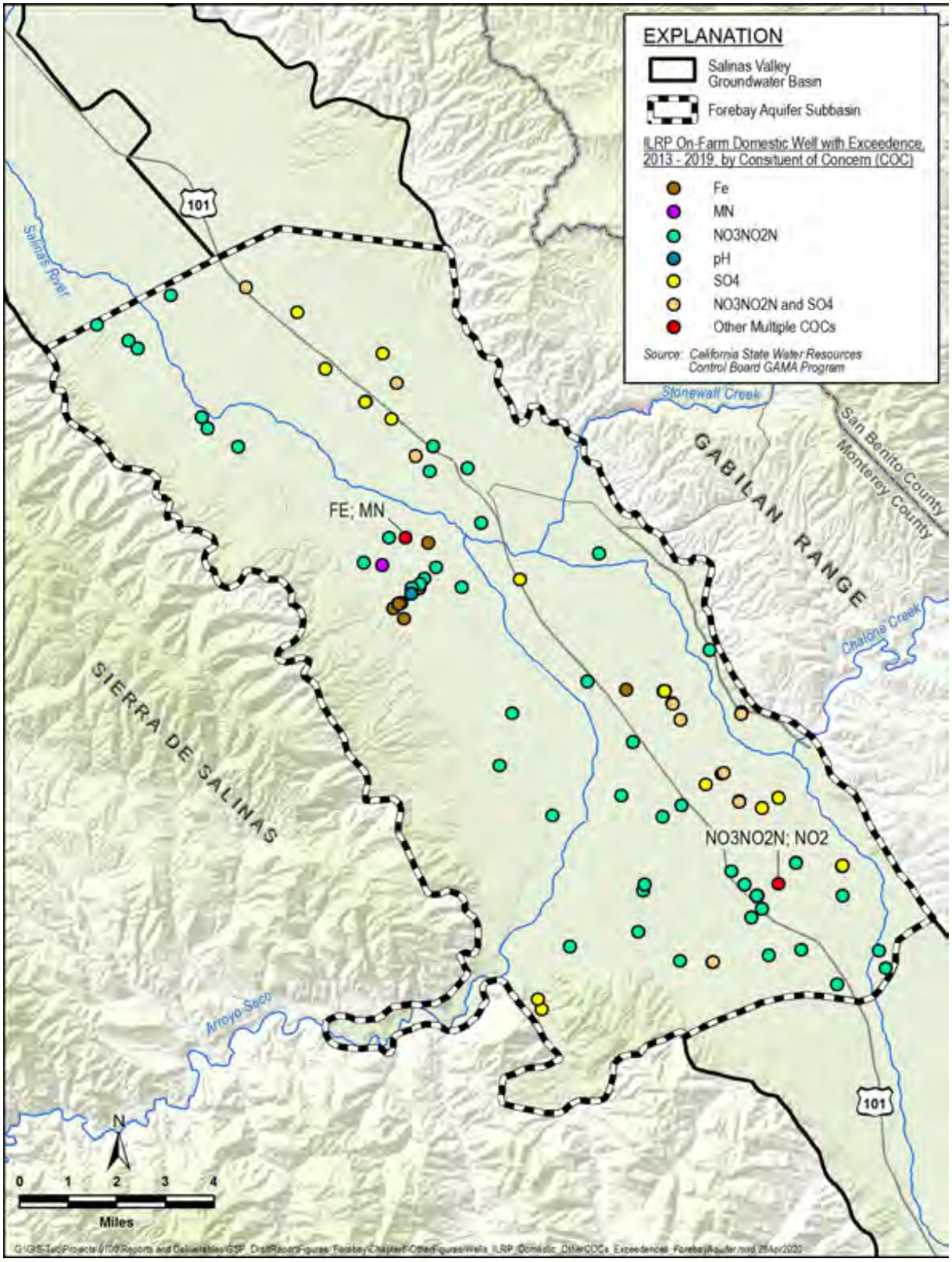


Figure 3. Exceedances for other Constituents of Concern for ILRP On-Farm Domestic Wells

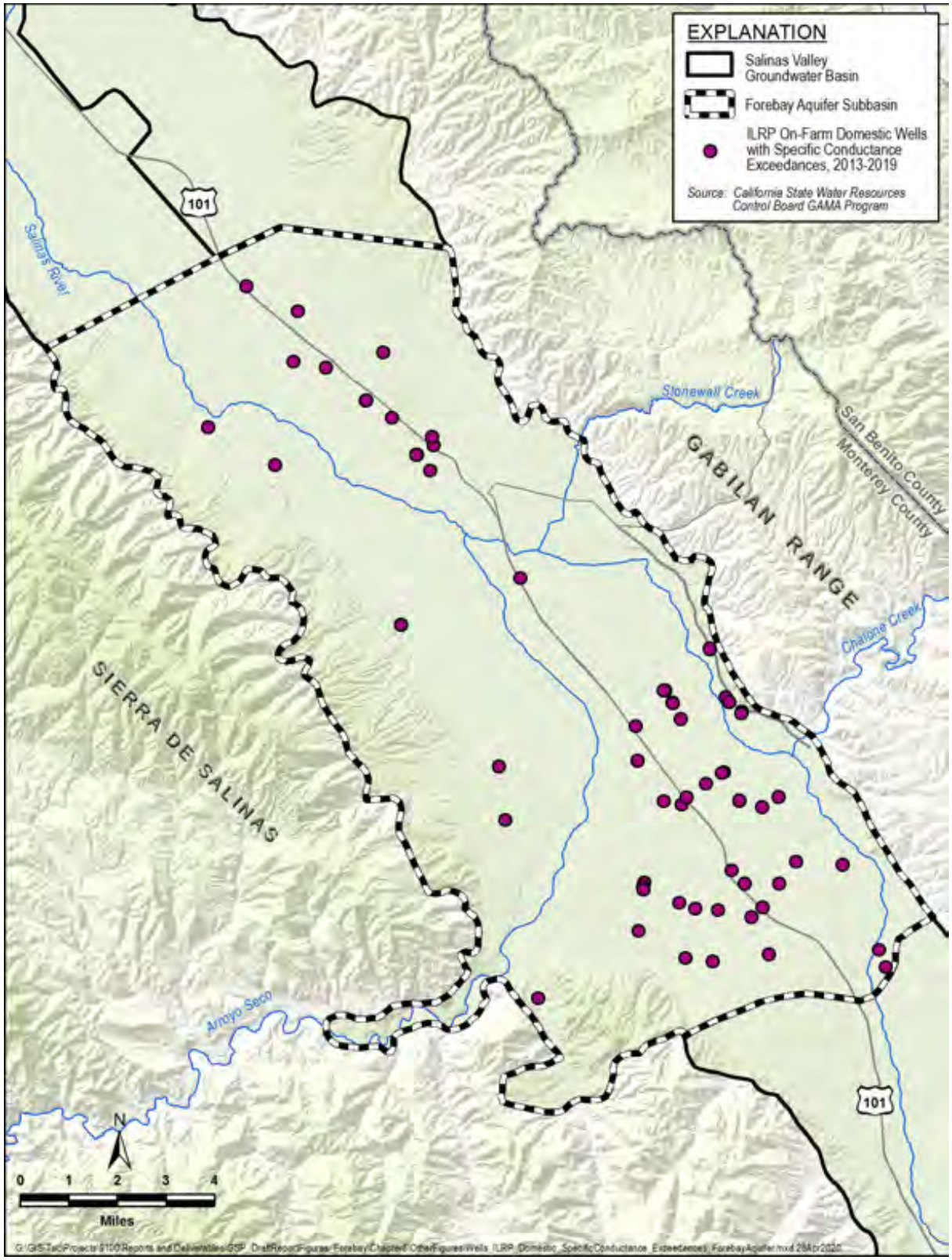


Figure 4. Exceedances for Specific Conductance for ILRP On-Farm Domestic Wells

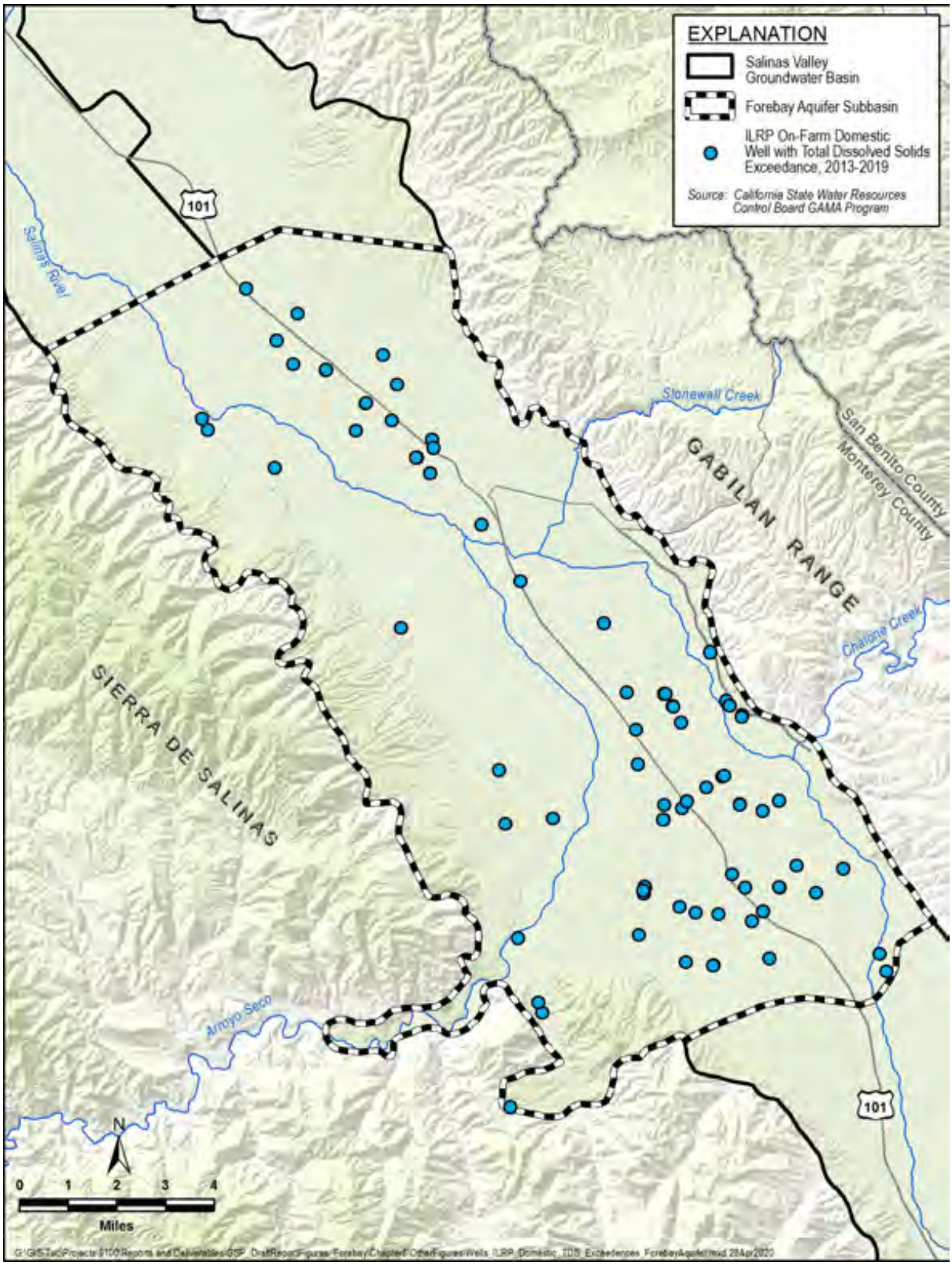


Figure 5. Total Dissolved Solids Exceedances for ILRP On-Farm Domestic Wells

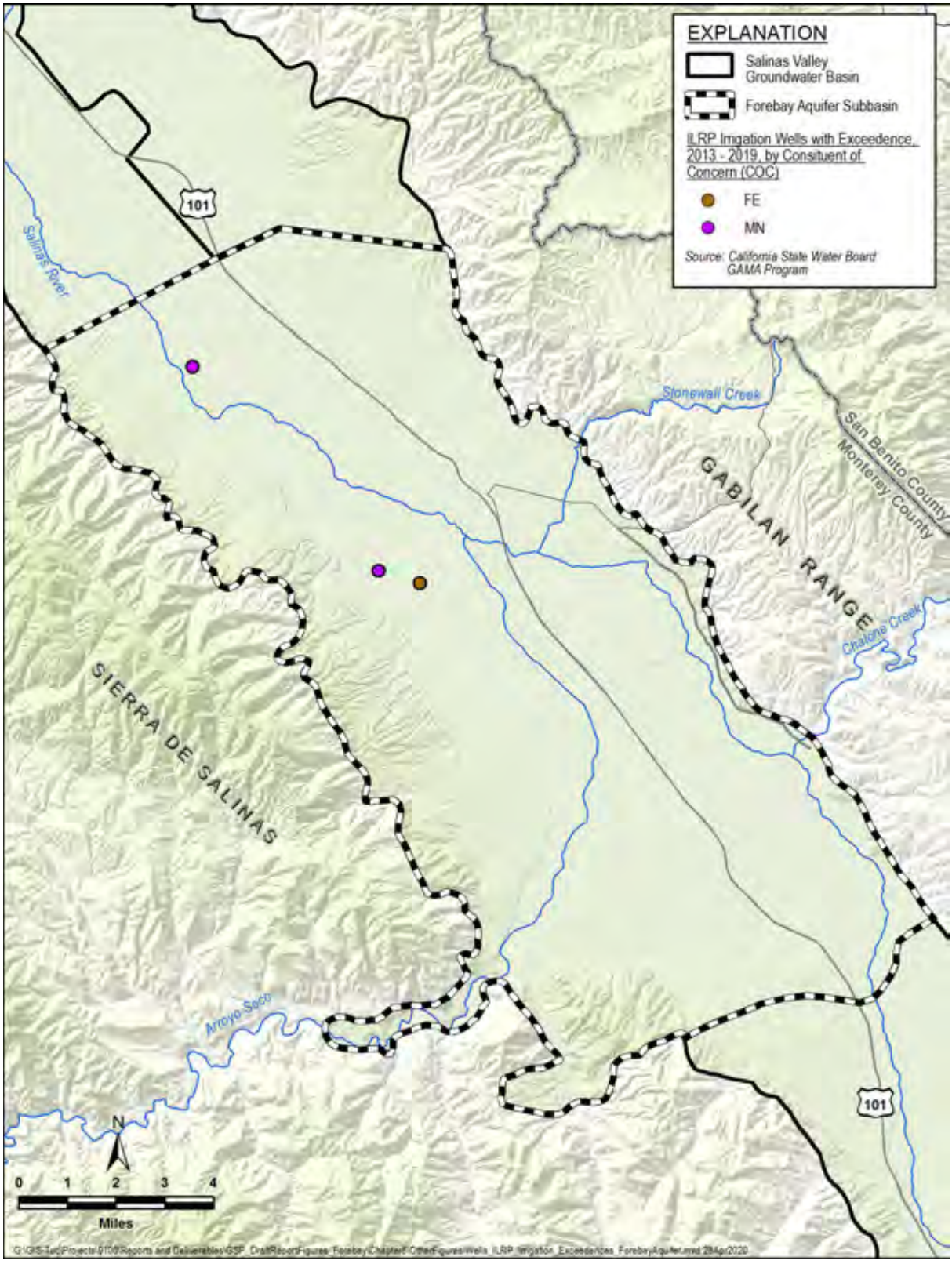


Figure 6. Quality Exceedances for ILRP Irrigation Wells

Chapter 6
Appendix 6-A

Salinas Valley Models Project Progress Report

United States Department of the Interior

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California Water Science Center
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Sacramento, California 95819-6129
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http:\water.usgs.gov

Project Progress Report
November 2, 2021

Wesley Henson, PhD., Project Chief, US Geological Survey California Water Science Center

In cooperation with Monterey County, Monterey County Water Resources Agency, and the Salinas Valley Basin GSA.

Overview of Salinas Valley Models

Introduction

In January 2016, the U.S. Geological Survey California Water Science Center (USGS CAWSC) began collaborating with Monterey County and the Monterey County Water Resources Agency (MCWRA) to create a suite of geologic and hydrologic models. The primary purpose of these models is to inform the County's five-year (2014 – 2018) hydrologic study of the water supply and groundwater quality in the MCWRA's Zone 2C, within the Salinas Valley Aquifers as part of a settlement agreement (Monterey County 2010). The suite of models include: (1) a geologic model to estimate aquifer properties and aquifer and aquitard extents; (2) a watershed model to simulate surface processes and inflows to the groundwater basin from adjacent catchments; (3) an integrated hydrologic model of the Salinas Valley Groundwater Basin; and (4) an operational reservoir model. The Salinas Valley models will contribute to several other regional modeling efforts: for MCWRA's Interlake Tunnel Project, the development of Groundwater Sustainability Plans under the State's Sustainable Groundwater Management Act (SGMA; CADWR, 2014), and a future water supply risk assessment for the Salinas and Carmel River Basins Study (SCRBS) by the U.S. Bureau of Reclamation (2015) in cooperation with local partners.

Salinas Valley model development and use in these studies are keystones of regional drought planning tools for managing conjunctive use of groundwater and surface water. These models provide vital information for evaluating strategies to achieve groundwater sustainability. These decision tools provide estimates of groundwater storage, surface and subsurface storage and flows, groundwater-surface water (GW-SW) interactions, and hydrologic and agricultural budgets. In addition, the cooperative research partnership between the Monterey County Water Resources Agency and the USGS has resulted in development of model update utilities, cutting-edge reservoir simulation and land use methods, and SGMA reporting utilities that will benefit multiple California modeling efforts.

The purposes of this project update are to (1) describe the model development (2) describe how model results are used to understand seawater intrusion, water levels (hydraulic heads), and land use, (3) provide

an overview of the model review process and anticipated completion timeline, and (4) discuss how modeling results and future model updates can be used in ongoing and future hydrologic investigations in the basin.

Model development and Updates

Model development has been a collaborative process with regular guidance and input from Monterey County, MCWRA, and their consultants. Additional guidance and review were provided by an independent Technical Advisory Committee with regional stakeholders, consultants, agricultural commissioners, and the Salinas Valley Basin Groundwater Sustainability Agency.

The models were constructed using published open-source modeling software. The Salinas Valley integrated hydrologic model (SVIHM) and Salinas Valley Operational Model (SVOM) are built using the latest version of MODFLOW-OWHM (Boyce and others, 2020) with the MODFLOW Farm Process (Schmid and others (2006), Schmid and Hanson (2009)). The software can be downloaded in its entirety here, https://code.usgs.gov/modflow/mf-owhm. You can also find helpful information on this webpage https://www.usgs.gov/software/modflow-one-water-hydrologic-flow-model-conjunctive-use-simulation-software-mf-owhm. The SVIHM has been developed using two sub-models, a 3-D geologic framework and texture model (Salinas Valley Geologic Model; SVGM; Sweetkind and others, In Prep), and a Hydrologic Simulation Program – Fortran watershed model (HSPF; Bicknell and others, 1997) for the entire Salinas Valley Watershed (Salinas Valley Watershed Model, SVWM).

Geologic Framework and Texture Model

The geologic framework model was used to define the spatial extent, depth, and distribution of geologic material textures for the offshore region, five major aquifers of the Salinas Valley, aquitards between each aquifer, and the depth to bedrock. The aquifers are defined consistent with previous studies and include the surficial aquifer, 180-ft aquifer, 400-ft aquifer, Purisima aquifer, and Paso Robles aquifer.

Each of the aquifers was explicitly defined using well borehole data, and local geologic investigations (Tinsley, 1975; Feeney and Rosenberg, 2003; Kennedy/Jenks, 2004; Hanson and others, 2002; Colgan and others, 2012; Langenheim and others 2012, Hanson and Sweetkind, 2014; Taylor and Sweetkind, 2014; Hanson and others, 2014a; Baillie and others, 2015;). The distribution of texture in each aquifer was developed for each borehole location and kriged to create a continuous surface. These depth-discrete spatial layers for each aquifer were used to define a geologic texture for each model cell as a percentage of coarse material (K_{coarse}). This method has been widely used in hydrologic models (Faunt and others, 2009a; Faunt and others, 2009b; Faunt and others, 2010) to relate geologic texture to hydraulic properties. This approach defines aquifer properties using a coarse-grained (K_{coarse}) and fine-grained (K_{fine}) end member defined as:

$K_{fine}=1.0-K_{coarse}$

Hydraulic conductivity ranges for each aquifer were defined using data from previous models (Hanson and others, 1990; Hanson and Benedict, 1993; Hanson and others, 2003, 2004, 2014 a,c,d,e; Sweetkind and others, 2013; Phillips and others, 2007; Faunt and others, 2009a,b; Ludington and others, 2007; MCWRA

monitoring well database), aquifer tests, and estimated ranges for geologic materials.

The hydraulic conductivity value at the upper extent of the range is assigned to cells in areas where the percentage of coarse material is 100% (K_{coarse} =1.0). Similarly, the hydraulic conductivity value at the lower extent of the range is assigned to cells in areas where the percentage of coarse material is 0% (K_{fine} = 1.0). For all other model cells, a composite hydraulic conductivity was generated using a power law relationship between the values for the K_{coarse} and K_{fine} end members.

Data from previous offshore studies (Johnson and others, 2016) were used to define the structure, distribution, and properties of the offshore region. The offshore region was parameterized similarly to the onshore region of the model domain providing continuity between the offshore and onshore regions of each aquifer that facilitates a robust estimation of fluxes between the offshore and onshore areas of each aquifer.

Climate data

Climate data for the SVWM and SVIHM include minimum and maximum air temperature, precipitation, and potential evapotranspiration. Climate data for both models were developed using the Basin Characteristics Model (BCM) tools (Flint and others, 2004; Flint and Flint, 2007 a,b,c) from national climate data stations (for example, Daly and others, 2004) and data from the California Irrigation Management System stations (CIMIS, 2005). The BCM tools were used to develop daily spatially distributed 270-m resolution climate datasets for the future climate scenarios. Climate input datasets are precipitation, maximum and minimum air temperature, and solar radiation; the latter two are used to compute evapotranspiration.

Climate input were developed as spatially distributed grids. Gridded data were interpolated onto the model grid using an area-weighted approach. For the SVWM, the 270-m climate data were interpolated onto the hydrologic response units (HRUs). For the SVIHM, the 270-m climate grids were interpolated onto the model grid.

Salinas Valley Watershed Model

The (SVWM) simulates watershed processes for the entire Salinas River watershed (figure 1). The model simulates the historical period between 10/1/1948 - 9/30/2018. Each sub-catchment in the domain was defined as a hydrologic response unit (HRU). Hydrologic processes simulated for each HRU include evapotranspiration, runoff, interflow and baseflow. Each HRU is connected to stream segments and tributaries that represent a drainage network to route surface waterthrough the SVWM from upland areas to the Pacific Ocean. Streamflow in each stream segment is simulated using the kinematic wave method. The simulation includes the discharge volume, stream velocity, stage, and water volume for the segment, as well as stream losses from evaporation and streamchannel infiltration.

The SVWM combines the BCM tools and HSPF models to simulate the climate and hydrology for the upland areas and tributaries draining into the alluvial valleys simulated by the SVIHM. The SVWM domain consists of an upper Salinas Valley subarea and lower Salinas Valley subarea simulated as sub-catchments connected at the location of USGS streamgage 11150500 (SALINAS R NR BRADLEY CA, https://waterdata.usgs.gov/nwis/uv?site_no=11150500), with all surface water outflows from the upper SVWM entering the lower SVWM as Salinas River streamflow at the location of the streamgage. The upper SVWM includes five sub-watershed areas that contain most of the Paso Robles area of the Upper Salinas

River Valley in San Luis Obispo County area, while the lower SVWM contains most of the SVIHM area within its five sub-watershed areas.

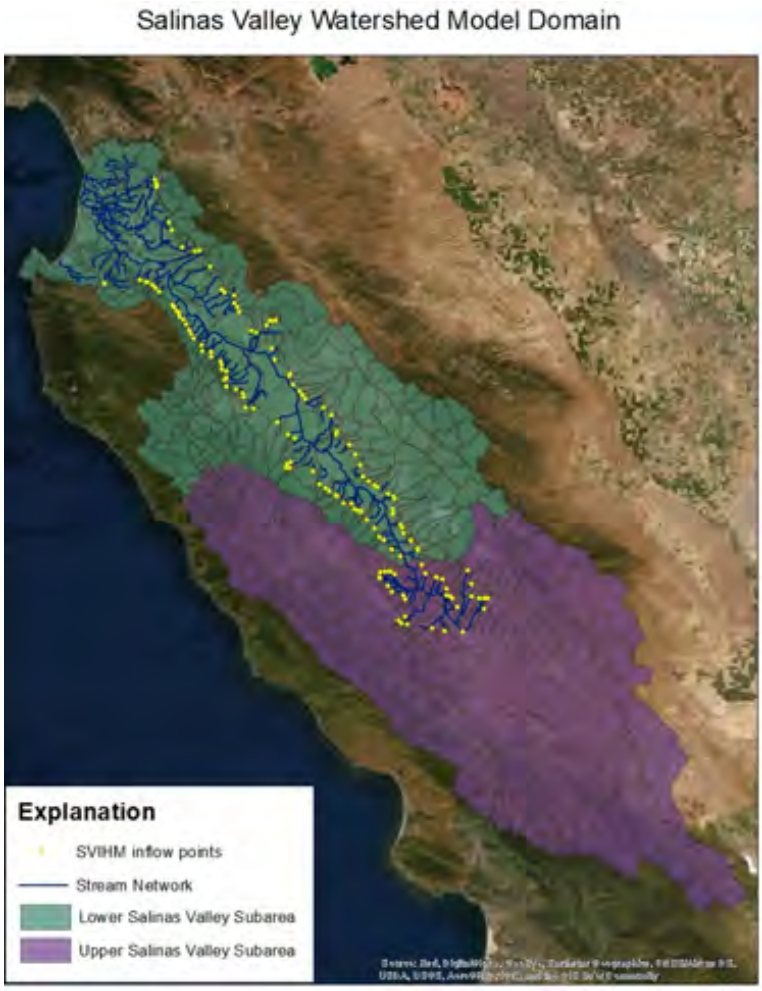

Figure 1: Salinas Valley Watershed Model (SVWM) domain showing Upper and Lower Salinas Valley Subareas, stream network, and inflow points where watershed flows are routed into the Salinas Valley Integrated Hydrologic Model (SVIHM).

Spatial discretization of the SVWM was based on topographically defined watersheds that were subdivided into smaller sub-drainage areas using a combination of surface flow-routing defined by a 10-meter digital elevation model (DEM) and pre-defined sub-drainages (CalWater version 2.2.1, Department of Forestry and Fire Protection, http://frap.fire.ca.gov/data/frapgisdata-sw-calwaterdownload). The smaller sub-drainages were used to (1) represent spatially varying climate and topography in the upland areas of the SVWM model domain, and (2) define pour points to route estimated ungaged flows from the SVWM to the SVIHMstream networks. The SVWM spatial discretization resulted in HSPF segments varying in area from 65 acres to about 25,000 acres and a total of 148 pour-point connections for inflows from upstream drainagesalong the Salinas Valley.

The HSPF model is run as a continuous simulation using an hourly time step; however, in the current

SVWM version, the daily climate inputs are uniformly distributed to hourly values. Therefore, only daily results are used for calibration and for developing SVIHM inflows.

SVWM model parameters were developed using geographic information system (GIS) data sets that included: DEM-derived elevation, slope and aspect, estimated soil water storage capacity (State Soil Survey Geographic ((SSURGO), Web Soil Survey, available online at https://websoilsurvey.nrcs.usda.gov/), percent forest canopy and impervious land cover (National Land Cover Data, NLCD; U.S. Geological Survey, 2007, 2011, 2014). For discrete data such as land cover type, GISanalysis was used to calculate the weighted average values for each HSPF parameter based on the fractional area of a given discrete data value within each HSPF segment. The fractional areas for discretedata are calculated in GIS, and the weighted averages are calculated in spreadsheets, resulting in a uniqueset of HSPF parameters for each model segment. This method provided a better representation of the physical watershed characteristics for each segment as compared to simply using the dominant discrete data within each segment. Continuous data such as slope and percent canopy cover were mapped directly to HSPF segments as area-average values using GIS.

The SVWM was used to estimate inflows into the Salinas Valley from adjoining ungaged watersheds. These inflows are provided as a monthly inflow time series to the SVIHM. Although the model is only used to estimate ungaged watershed inflows to the SVIHM, the SVWM is calibrated for the entire basin, providing many opportunities for future evaluations where surface water and sediment and nutrient transport are of greater concern than groundwater storage. These potential applications will be discussed in the section on Future model updates, applications, and developments.

Salinas Valley Integrated Hydrologic Model

The Salinas Valley Integrated Hydrologic Model (SVIHM) is an integrated water resources management tool that simulates the conjunctive use of groundwater and surface-water in the Salinas Valley (Figure 2). The Salinas Valley model simulates the period between 10/1/1967 to 9/30/2018 and has been calibrated for the period from 10/1/1967 to 12/31/14. The SVIHM includes explicit representation of climate, groundwater and surface water, recharge, runoff, inflows from ungaged watersheds, reservoir releases, Salinas River diversions, municipal and industrial water supply pumping, and a rigorous simulation of the substantial Salinas Valley agricultural industry.

The SVIHM is built using the latest version of MODFLOW-OWHM (Boyce and others, 2020) with the MODFLOW farm process. OWHM simulates water supply and demand for natural, urban, and cultivated lands. OWHM uses an embedded land use and crop model based on the widely used FAO56 method (Allen and others, 2005) to estimate water demands for a set of user-specified land uses. If precipitation and direct groundwater root uptake are insufficient to meet simulated land use water demands, then additional supplies can be provided to meet the deficit (groundwater pumping, surface water diversions, wastewater reclamation, and reservoirs). Additionally, for cultivated lands, water demand efficiencies can be specified for land-use type, irrigation type, climate regime (wet or dry), and region. This well-developed model framework facilitates evaluation of water demand by region, crop, and climate regime and allows for scenario testing to evaluate the effects of potential changes in agricultural practices, increases in efficiency, and optimization of agricultural development within the basin. This tool is well suited for the analyses that will be needed throughout the next century to manage sustainability of the Salinas Valley aquifer system.

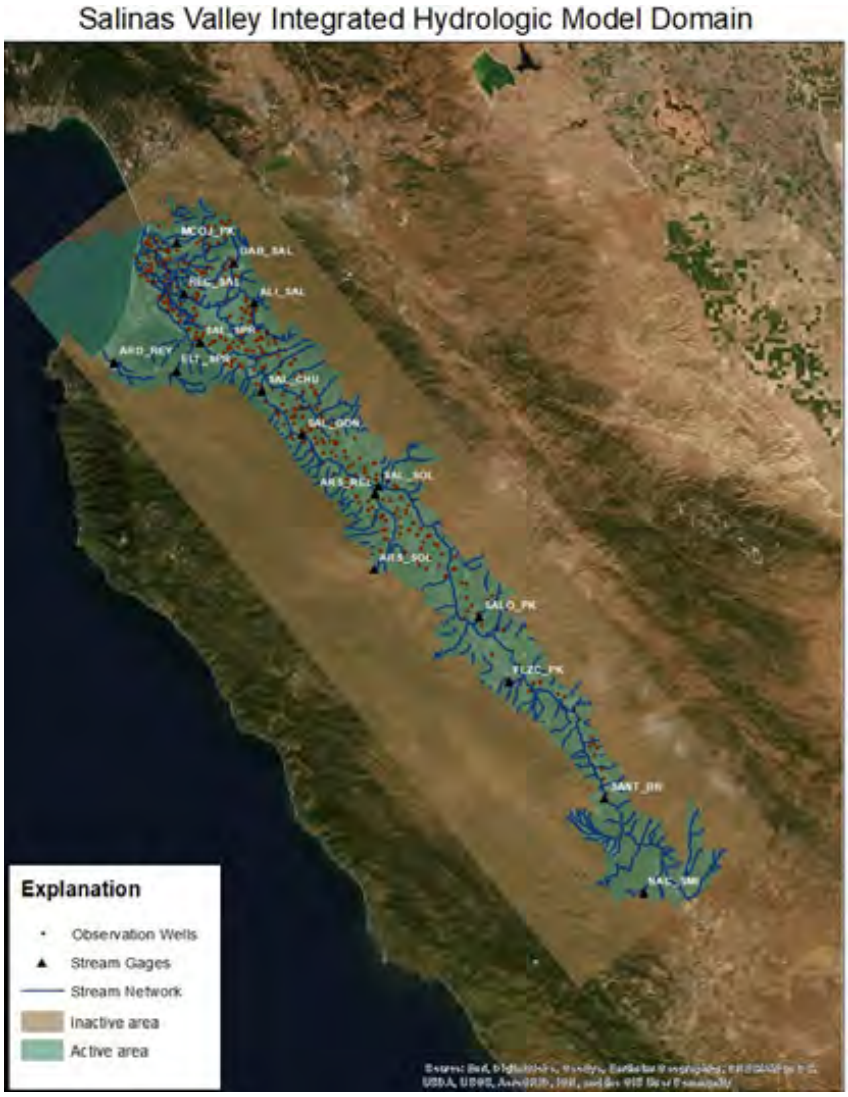

Figure 2: Salinas Valley Integrated Hydrologic Model (SVIHM) showing domain extent with inactive and active areas, stream network, stream gages, and observation wells.

The total active modeled area in the SVIHM is 10,266 mi^2. The model grid is uniform, where each grid cell is approximately 6.42 acres (529-by-529 ft). There are 976 rows, 567 columns, and 9 layers having a varying number of active cells in each layer, for a total of 265,382 active model cells. To assess changes in aquifer storage due to seawater intrusion, the model includes approximately 84,000 active cells onshore and 11,000 active cells offshore. The SVIHM includes nine model layers that correspond to locally defined hydrostratigraphic units such as the defined aquifers (180-Foot and 400-Foot aquifers), confining units, and geologic units (e.g., basement bedrock). The top of SVIHM is represented by the altitude of the land surface, but because hydrostratigraphic units are discontinuous across the study area, the uppermost active layer is a composite of model layers 1, 3, 5, 7, and 9.

The SVIHM is partitioned into 31 water balance subregions (WBS; Figure 3 and Table 1). Each WBS has

simulatedwater demands for each land use and a unique set of available water supplies that can be used by the model to meet the demands. The model includes WBS representing the Zone 2C jurisdictional area and associated subareas, the Castroville Seawater Intrusion Project (CSIP) area, Seaside Basin, and areas outside the Zone 2C boundary but within the SVIHM model domain.

Table 1. Summary of water-balance subregions within the Salinas Valley Integrated Hydrologic Model, Monterey and San Luis Obispo Counties, California. (SW= Surface water, GW = Groundwater, None = No Deliveries).

Water Balance Subregion	Region Name	Region Description	Irrigation Water Supply
1	Riparian Corridor	Monterey and SLO Counties	None
2	CSIP Area	Castroville Seawater Intrusion Project Region	GW/SW/recycled water
3	Coastal Urban areas	Salinas, Castroville, Marina, Seaside, Sand City, Monterey, Del Rey Oaks	None
4	Inland Urban areas	Chualar, Gonzales, Soledad, Greenfield, King City, & San Ardo	None
5	Highlands South	North of Eastside outside of Zone 2C	GW
6	Granite Ridge	North of Eastside outside of Zone 2C	GW
7	Corral De Tierra	South of Pressure part within Zone 2C	GW
8	Blanco Drain Area	Drain subarea within Pressure subarea of Zone2C	GW
9	East Side	Remainder of Eastside subarea in Zone2C	GW
10	Pressure Northeast	Pressure subarea NE of Salinas River in Zone 2C	GW
11	Pressure Southwest	Pressure subarea SW of Salinas River in Zone 2C	GW
12	Forebay Northeast	Forebay subarea NE of Salinas River in Zone 2C	GW
13	Forebay Southwest	Forebay subarea SW of Salinas River in Zone 2C	GW
14	Arroyo Seco	Subarea SW of Salinas River outside of Zone 2C	GW
15	Clark Colony	Subarea SW of Salinas River partly outside of Zone 2C	SW/GW
16	Upper Valley Northeast	Upper Valley subarea NE of Salinas River and northeast of King City in Zone 2C	GW
17	Upper Valley Northwest	Upper Valley subarea NW of Salinas River and west of King City in Zone 2C	GW
18	Upper Valley Southeast	Upper Valley subarea SE of Salinas River and east of King City in Zone 2C	GW
19	Upper Valley Southwest	Upper Valley subarea SW of Salinas River and west of King City in Zone 2C	GW
20	Below Dam	Subregion below Nacimiento Dam and within Zone 2C	GW

21	Westside Region	Westside Regions of SVIHM outside of Zone 2C boundary in Monterey County Inland Southwest of Arroyo Seco and Clark Colony subregion	GW
22	Hames Valley	Outside Zone 2C but in Monterey County	GW
23	NE Quarries	Outside Zone 2C but in Monterey County	GW
24	Northeast Region	Northeast Regions of SVIHM outside of Zone 2C on the Northeast side of the Eastside, Granite Ridge, and Highlands South subregions	GW
25	Southwest Region	Southwest regions of SVIHM outside of Coastal Pressure subregion Zone 2C boundary in Monterey County	GW
26	Northeast Region	Northeast Region of SVIHM outside of Zone 2C Forebay subregion in Monterey County	GW
27	Southwest Region	Southwest regions of SVIHM outside of the Upper Valley and Forebay regions subregions of Zone 2C in Monterey County plus outside of Arroyo Seco, Hames Valley, and SLO active subregions	GW
28	Southeast Region	Southeast Region of SVIHM outside of Below Dam and Upper Valley subregions of Zone 2C boundary in Monterey County	GW
29	Paso Robles Region	Remainder of Paso Robles Basin in active model grid in San Luis Obispo County	GW
30	Seaside Basin	Seaside Adjudicated Basin (landward only)	GW
31	Offshore	Offshore (groundwater analysis only)	None

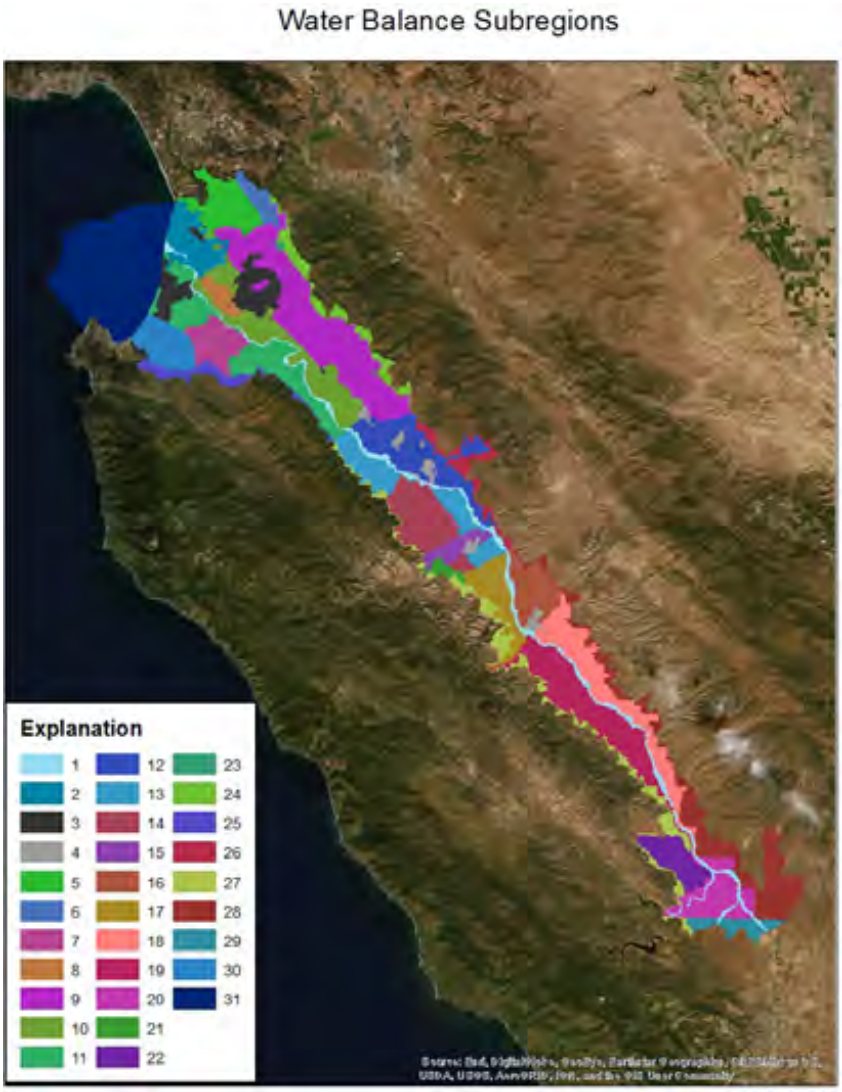

Figure 3: Salinas Valley Integrated Hydrologic Model Water Balance Subregions.

The SVIHM has 56 specified land use types (Table 2), each with defined water sources, irrigation type and efficiency (if applicable), and crop water demand properties (crop coefficients, area, crop development timeline). For each model year, two six-month land use maps were generated using a composite of available land use data from California Department of Water Resources, Monterey County, and the National Land Cover Database (NLCD, U.S. Geological Survey, 2014) and a newly developed method that leverages the California Pesticide Use Reporting (CalPUR) database.

The new CalPUR method is used to provide greater detail about the distribution of crops within areas with vague land use types such as “truck and vegetable crops” (Henson and others, in Prep). This approach captures complex cultivation methods including multi-cropping and crop rotations, providing a rich dataset for estimating agricultural water demands.

Table 2: Salinas Valley Integrated Hydrologic Model (SVIHM) Land Use Types

Land Use Type		Land Use Type		Land Use Type	
1	Celery – coastal	20	Root vegetables – inland	39	Outdoor nurseries – coastal
2	Celery – inland	21	Tomato/pepper – coastal	40	Outdoor nurseries – inland
3	Cucumber/melon/squash – coastal	22	Tomato/pepper – inland	41	Indoor nurseries
4	Cucumber/melon/squash – inland	23	Strawberries – coastal	42	Artichokes
5	Legumes – coastal	24	Strawberries – inland	43	Pasture
6	Legumes – inland	25	Corn – coastal	44	Non-irrigated
7	Lettuce – coastal	26	Corn – inland	45	Semi-agricultural
8	Lettuce – inland	27	Field crops – coastal	46	Idle/fallow
9	Rotational 30-day – coastal	28	Field crops – inland	47	Ag-trees
10	Rotational 30-day – inland	29	Grain crops – coastal	48	Golf course turf/parks
11	Crucifers/cabbages – coastal	30	Grain crops – inland	49	Urban
12	Crucifers/cabbages – inland	31	Cane/bush berries – coastal	50	Quarries
13	Unspecified irrigated row crops – coastal	32	Cane/bush berries – inland	51	Water
14	Unspecified irrigated row crops – inland	33	Deciduous fruits and nuts – coastal	52	Riparian
15	Carrots – coastal	34	Deciduous fruits and nuts – inland	53	Upland grasslands/shrub lands
16	Carrots – inland	35	Citrus/subtropical – coastal	54	Woodlands
17	Onions/garlic – coastal	36	Citrus/subtropical – inland	55	Beach/dunes
18	Onions/garlic – inland	37	Vineyards – coastal	56	Barren/burned
19	Root vegetables – coastal	38	Vineyards – inland		

The SVIHM was calibrated using over 63,098 monthly observations including: 1,738 measurements from the MCWRA observation well network (Figure 2); 6,448 streamflow measurements of at 17 streamgages (Figure 2 and Table 3); 127,683 monthly reported groundwater extraction values; and 162 reported monthly diversions. In addition, calibration included second-order observations of streamflow differences between gages and vertical hydraulic head differences between aquifers with multiple nested observation wells.

Table 3: Stream gage information showing Gage ID, U.S. Geological Survey National Water Information System (NWIS) gage number and gage name.

Gage ID	NWIS Gage Number	Gage Name
ARS_SOL	11152000	ARROYO SECO NR SOLEDAD CA
ARS_REL	11152050	ARROYO SECO BL RELIZ C NR SOLEDAD CA
SAL_SOL	11151700	SALINAS R A SOLEDAD CA
ELT_SPR	11152540	EL TORO C NR SPRECKELS CA
SAL_CHU	11152300	SALINAS R NR CHUALAR CA
ALI_SAL	11152570	ALISAL C NR SALINAS CA
SANT_BR	11150500	SALINAS R NR BRADLEY CA
SAL_SPR	11152500	SALINAS R NR SPRECKELS CA
SALO_PK	11151500	SAN LORENZO C A KING CITY CA
NAC_SMI	11149500	NACIMIENTO R BL NACIMIENTO DAM NR BRADLEY CA
REC_SAL	11152650	RECLAMATION DITCH NR SALINAS CA
GAB_SAL	11152600	GABILAN C NR SALINAS CA
ARD_REY	11143300	ARROYO DEL REY A DEL REY OAKS CA
FLZC_PK	11150700	FELIZ CYN TRIB NR SAN LUCAS CA
MCOJ_PK	11152700	MORO COJO SLOUGH TRIB NR CASTROVILLE CA
SAL_GON	11152200	SALINAS R NR GONZALES CA

In collaboration with MCWRA and the Pajaro Valley Water Management Agency, self-updating model tools have been developed which allow temporal datasets of MODFLOW-OWHM models to be updated using spreadsheets with updated temporal data. This approach is an improvement that allows models to continue to be updated and useful for the wide range of resource questions and scenarios that arise. These self-updating model tools can be used to update or correct input data describing climate data, ungaged inflow data, land use properties, observed hydraulic heads, groundwater extraction, wastewater reclamation, surface water diversions, reservoir releases, and agricultural pumping, irrigation types and efficiencies. All these updates can be completed without rebuilding the entire model. Model updates are described in the section “Future model updates, applications, and developments”.

Salinas Valley Operational Model

The Salinas Valley operational model (SVOM) uses the Surface Water Operations Module of MODFLOW-OWHM. This implementation of reservoir operations is based on a wealth of prior publications (Ferguson and others 2015; Ferguson and others, 2016; Hevesi and others, 2019; Hanson and others, 2020; Boyce and others, 2020). The SVOM is a baseline model that is used to evaluate water supply projects such as the reservoir modification and changes to operations to aide with groundwater sustainability efforts. The SVOM is similar to the SVIHM for simulation of hydrologic processes, surface and subsurface properties, and simulation of agricultural operations. In this model, the land use is fixed to 2014, the time step is shorter, about five to six days, and the reservoir operations are explicitly simulated. The reservoir operations rules are human readable text files that formulate the logic for the current mandated operational rules for conservation, water supply, flood mitigation, and water rights. These operations include fish passage rules that support the life cycle of threatened steelhead fish populations. These input

data just translate existing flow charts and figures from the approved operations into text that the model can read in. These data are available from MCWRA upon request, both in the form used in the model and in public documents.

Model Representation of Seawater Intrusion, Groundwater Levels and Land Use

The following descriptions of methods are provided to illustrate how the model will inform future evaluations of Seawater Intrusion, groundwater sustainability evaluations and scenarios, and responses to changes in land use and climate.

Seawater Intrusion

Interactions with onshore freshwater aquifers and near-shore saltwater aquifers are driven by contrast in aquifer hydraulic heads and pore water densities between freshwater and seawater and the distribution of aquifer permeability along the coast. Seawater Intrusion (SWI) is estimated in the SVIHM as flux across the coastal boundary. The monthly elevation of the 9413450 NOAA Station buoy in Monterey Bay is used as a proxy for the sea water elevation (H_{sw}). In the model, the sea level is simulated as an equivalent freshwater head (h_{fw}) using the following relation from Motz (2005):

$$h_{fw} = \frac{\rho_{sw}}{\rho_{fw}} h_{sw} - \left(\frac{\rho_{sw} - \rho_{fw}}{\rho_{fw}} \right) Z$$

where

h_{fw} is the seawater's equivalent freshwater hydraulic head at elevation Z (L),
ρ_{sw} is the seawater density (M/L^3),
ρ_{fw} is the freshwater density (M/L^3), and
Z is the elevation point where the equivalent freshwater head is calculated (L).

Similar to other models in the region (Hanson, 2003a,b), the freshwater-seawater interface is simulated as general head boundary (GHB), that is, a boundary that depends on the aquifer hydraulic heads along the coast. To specify an ocean boundary condition with the GHB, the sea level is converted to an equivalent freshwater head at the model cell's center. The density of seawater is assumed to have an average value of 1,025 kg/m^3, and the density of freshwater is assumed to be 1,000 kg/m^3 (Motz, 2005). When hydraulic head in an aquifer is greater than h_{fw} along the coast, hydrologic flows are seaward. Conversely, when hydraulic head in an aquifer is less than h_{fw} along the coast, seawater intrusion into the aquifer occurs. The net annual flux values along the coastline for each aquifer are simulated by the SVIHM to inform interpretation of chloride monitoring by MCWRA.

Although these estimates do not provide information about the onshore spatial extent of SWI, the model is well-poised to be used to provide this information in future model updates and applications. These more explicit methods will be described in the Future model updates, applications, and developments section.

Groundwater Elevations

The SVIHM and SVOM estimate groundwater elevations using well-developed methods of the MODFLOW framework. MODFLOW uses the method of finite differences to solve the groundwater flow equation for

each model cell. This approach assumes Darcian flow that is based upon hydraulic gradients within and among aquifers and the spatial distribution of hydraulic conductivity. Additional boundary conditions or processes that can increase or decrease hydraulic heads in the model are simulated such as barriers to flow (for example, faults), groundwater extraction (for example, municipal and agricultural pumping), stream-aquiferinteractions, sea water intrusion, and recharge.

After successful calculation of the hydraulic head in each aquifer, well depth-weighted composite heads are developed for wells screened in multiple aquifers. Composite- and single-well aquifer values for the simulated and observed hydraulic heads are compared. If the comparison between simulated and observed hydraulic heads is reasonable, the spatial distribution of simulated aquifer hydraulic heads provides another source for evaluating groundwater elevations and complements independently developed groundwater contour maps by MCWRA.

Land Use

Land use will be updated in future updates of the SVIHM using available spatial datasets and the CalPUR method to attribute vague land use categories. As new spatial data become available, they can be prioritized in the composite land use map and replace co-located data. The process for developing land use input data has four steps: develop a composite map, enhance map with CalPUR data, interpolate onto model grid, and generate the input files. In the future, new land use properties may need to be developed for new crop types not already represented in the current version of the historical model. An example of the 2017 land use map is provided to illustrate the representation of land use for every year in the model (Figure 4).

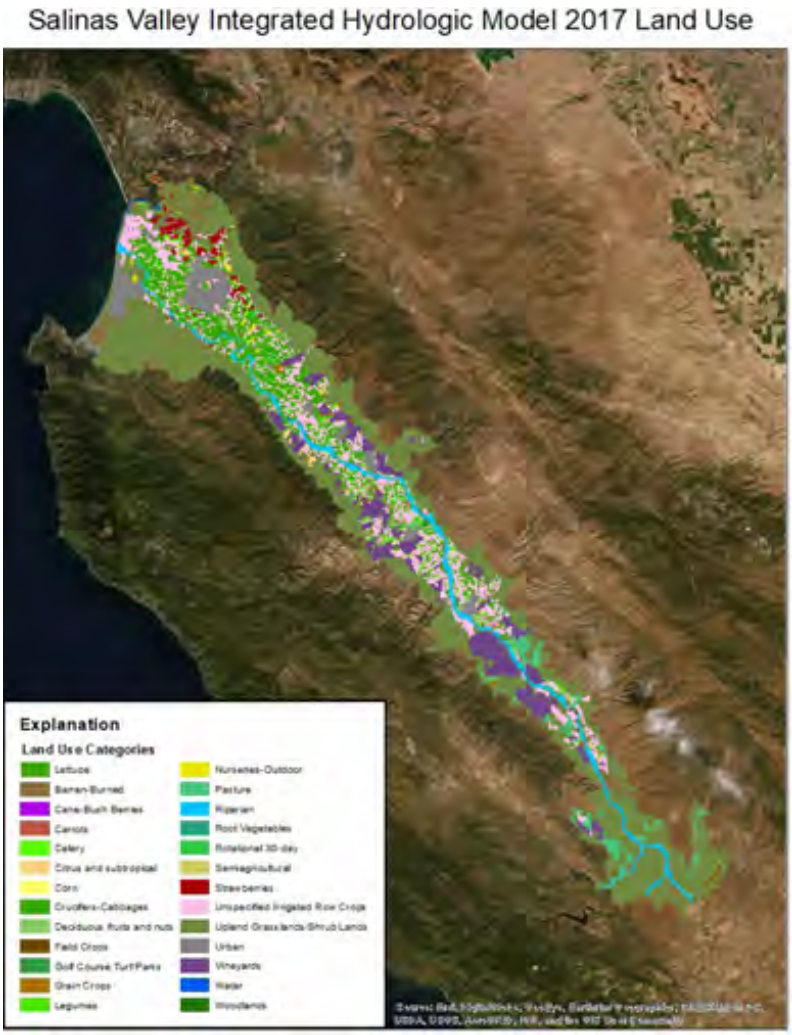

Figure 4: Salinas Valley Integrated Hydrologic Model (SVIHM) 2017 land use.

Model Review and Public Release

The model public release will consist of three elements: (1) a report about geologic and development and calibration of hydrologic models, (2) a data release with SVGM model input files and metadata, and (3) a data release with SVWM, SVIHM, and SVOM model input files and metadata in a public repository. The SVWM and SVIHM reports will document how the historical models were constructed. The SVOM report will include a description of the adaptations to the SVIHM to generate a baseline reservoir operations model, describe reservoir model implementation, and document implementation of rules. The report and data releases will be publicly available after completion of fundamental science review by the USGS. The USGS fundamental science review has multiple levels of scientific and technical review. These include technical, scientific, editorial, and regional review. This review ensures complete and accurate documentation of model development and results before data are potentially used for decision-making. The model is undergoing final calibration and has been updated through water year 2018. Final calibration is occurring simultaneously with report development.

The Salinas Valley models have been developed to address additional applications for ongoing regulatory and management efforts. A comprehensive 51-year climate, surface and groundwater, agricultural and reservoir operations model of the entire Salinas Valley is a substantial effort that

warrants and benefits greatly from a sufficient technical review. This review provides a rigorous basis for further tool development and refinement and scenario testing. The technical review has been enhanced by use and further development of the Salinas Valley Suite in two regional projects, (1) the WaterSMART water supply vulnerability study cooperatively funded in partnership with the U.S. Bureau of Reclamation and (2) the Interlake Tunnel project. The WaterSMART Study includes forecast and analysis framework to evaluate conditions to 2100 for multiple possible climates, socio-economic growth scenarios, projects, and conservation strategies in the Salinas Valley and region. The Interlake Tunnel benefit analysis facilitated the operational model development which will benefit future project evaluations for years to come. These applications of the model allowed for more rigorous review of model input data, better implementation of important processes, and improved representation of land use.

Every effort is being made to publish the models within the estimated timeframe. However, it is important to note that the initial model scope was to address specific concerns about historical conditions for the Monterey County Basin Investigation. Since the start of project, the models have been refined with better representation wells and updated with four additional years of critical climate, land use, water supply, and reservoir storage, that represent drought recovery between 2014 and 2018. These data allow for (1) better representation of stakeholder conservation efforts that are essential for evaluation of water budgets and potential sustainability projects, (2) a longer duration for evaluation of operations, and (3) many updates to model input data sets to better represent the groundwater well network.

The Salinas Valley hydrologic model suite development has leveraged a unique opportunity to benefit multiple projects for stakeholders throughout the entire Salinas Valley. Although the technical review and model development has taken longer than anticipated, the value-added information and consistent analysis framework for these concurrent studies benefits both stakeholders and the models. As presented at the Model Workshop, the SVIHM is expected to be submitted for USGS Specialist Review in winter 2021-2022

Future model updates, developments, and applications

The SVWM and SVIHM will need annual updates to keep the models relevant for evaluating and reporting sustainability efforts for Sustainable Groundwater Management Act (SGMA) compliance or for use with other future projects. Updates to the SVIHM conceptual model, aquifer parameters, and input data facilitate timely SVOM updates, so that reservoir operations can continue to be refined to meet stakeholder needs. The SVWM and SVIHM will require periodic calibration to maintain model accuracy with potential changes in hydrology, climate, and land use. The model can also be improved with additional stakeholder support and refined to keep the model relevant to decision-making.

MCWRA and USGS continue to develop workflows and train staff to use model update tools. These self-updating model tools can convert MCWRA hydrologic data into model input. However, climate, land use, observation, extraction, diversion, and reservoir release datasets require some development. Data describing observed hydraulic heads, municipal and industrial groundwater extraction, wastewater reclamation, reported diversions, reservoir releases, and reported agricultural pumping are readily available in various MCWRA and Monterey County databases and require monthly aggregation and conversion to model units. These tools facilitate a model framework that can be readily updated with minimal lag time with support from the USGS.

PRISM climate data and climate station data are used to generate spatially distributed temperature,

precipitation and potential evapotranspiration estimates using the BCM tools. There is a six-month lag time for some of these climate datasets. Climate data are used in the SVWM to develop ungaged watersheds inflows to the valley.

Land use will be updated in future updates of the SVIHM using available spatial datasets and the CalPUR method to attribute vague land use categories. As new spatial data become available, they can be prioritized in the composite land-use map and replace co-located data. The process for developing land-use input data will be to develop a composite map, enhance with CalPUR data, map onto model grid, and generate the input files. Additionally, new land use properties may need to be developed for new crop types not already represented in the current version of the historical model. As remote sensing technologies, such as satellite multi -spectral data analysis, are developed and refined alternate approaches to assigning time series crop water demand will be evaluated for future model updates.

The SVWM can be extended to look at nutrient and sediment loading and transport in the Salinas River watershed. This could be a powerful tool for soil conservation, nutrient evaluations, and water quality assessments. The SVWM can also be used to examine changes in runoff and recharge in response to land surface change. This can be a useful tool for initial assessments of potential surface storage sites, habitat restoration and flood flows.

The SVGM provides a basis for evaluating aquifer structure, evaluation of faults and other structures that may influence subsurface flow paths and facilitate interpretation of geophysics such as airborne electromagnetic (AEM) surveys.

The SVIHM can be extended to provide insights into several county initiatives: (1) assessment of Sea Water Intrusion (SWI) and contaminant transport, (2) evaluation of conceptual models of potential interactions between 180-ft and 400-ft aquifers (3) evaluation of optimal monitoring network expansion, (4) uncertainty estimates for important hydrologic predictions (SWI, GW-SW interactions, recharge).

The SVIHM could be extended to evaluate Sea Water Intrusion (SWI) more completely. Currently the model examines net volumes of landward flow from the ocean. In order of increasing effort, other options for SWI evaluation include particle tracking, the sharp water interface Modflow package (SWI2, Bakker and others 2013)), and coupled simulation of sea- and fresh water such as SEAWAT (Guo and Langevin, 2002; Langevin, 2001). The SVIHM geologic texture model, aquifer parameters, and model structure provide a backbone for any of these options for evaluating SWI.

SWI monitoring and analysis by the MCWRA has identified the occurrence of vertical migration of seawater from the overlying intruded Pressure 180-foot aquifer to the Pressure 400-foot aquifer (MCWRA, 2017). More information is needed to understand these interactions among aquifers and aquifer responses to stress. As monitoring and data collection efforts are refined and expanded, along with continued refinement of hydrostratigraphic information, the SVIHM can be used to evaluate new conceptual models of the aquifers and evaluate the aquifer's response under various management scenarios.

Summary

A suite of geologic and hydrologic models has been developed to estimate water supply and availability in the Salinas Valley. These models will be documented and released to the public after completion of review and approval according to USGS fundamental science practices. After publication these models will continue to be updated to support future water management objectives.

Disclaimer

Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

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Chapter 7
Appendix 7-A

Monitoring Procedures from MCWRA CASGEM Monitoring Plan

4.0 Monitoring Procedures

This section addresses the various procedures and protocols involved in collecting, processing, and reporting data from wells in the CASGEM network.

4.1 Monitoring Frequency and Timing

Nineteen (19) of the CASGEM wells are currently, and will continue to be, measured on a monthly basis. The three (3) voluntary wells are also measured monthly. MCWRA will use the monthly measurements from August and either January, February, or March to satisfy the biannual CASGEM reporting criteria.

To determine the monthly distribution of seasonal high and low groundwater elevations, MCWRA analyzed measurements from approximately 50 wells throughout the Salinas Valley Groundwater Basin. This included wells in the 180/400 Foot Aquifer, East Side Aquifer, Forebay Aquifer, and Upper Valley Aquifer. The measurements were collected during eight (8) different Water Years (WY): WY 1985, representative of near normal conditions; WY 1991, representative of dry conditions; and the six most recent Water Years, WY 2009 through WY 2014. MCWRA reports this data on a quarterly basis; a sample report is included in Appendix B.

Based on this analysis of historical data, August is typically representative of seasonal low conditions (Figure 10). A relaxation of groundwater levels, or seasonal high conditions, is evident during the period from January to March (Figure 11). Data from these three months will be evaluated and the highest groundwater elevation from that series will be submitted to the CASGEM online submittal system. The month chosen to be representative of the seasonal high groundwater conditions will be consistent across all data groups.

Nineteen (19) of the CASGEM wells are equipped with pressure transducers which collect depth to water data on an hourly basis. This data will be synthesized so that biannual measurements representing seasonal high and low conditions are available for CASGEM reporting. The groundwater level measurement collected at noon on the fifteenth day of the month will be selected and compared to other monthly data to ensure that it is a representative value. Data from the month of August will be used to represent the seasonal low and a fall/winter measurement from either January, February, or March will be used to represent the seasonal high; the same month will be used as was selected based on monthly well measurements, as discussed above.

Four (4) of the wells in the CASGEM network are currently measured once per year, during the period from November to January. Based on the recent analysis of seasonal groundwater highs, this period will be shifted to cover the months from January through March. An additional measurement event will be added during the month of August for these wells in order to also capture the seasonal groundwater low.

Appendix C contains a summary of the frequency and timing of measurement of wells in the CASGEM network. Any new wells that are brought into the CASGEM program will be monitored on a

biannual basis, with data collection occurring on the same schedule as the other wells that are measured twice a year.

4.2 Well Locations

The latitude and longitude of each well was collected using a handheld GPS unit, which has accuracy to within one (1) meter. Coordinates for wells in the CASGEM network are shown in Appendix A. Any wells incorporated into the CASGEM network in the future will be geographically located using a similar method.

4.3 Reference Points

All of the wells that comprise the CASGEM network described herein are currently part of a groundwater level monitoring program conducted by MCWRA. As part of the existing monitoring programs, reference points (RP) have been established for all of the wells. To ensure consistency in measuring depth to water, a description of each well's RP is recorded in a field data collection notebook. In many cases, photographs have also been taken of the RP. Reference point elevations have been determined for all wells that are currently in a monitoring program; this data is listed in Appendix A.

A reference point will be determined for any new wells that are brought into the CASGEM network. Reference point elevations are determined using a digital elevation model from the United States Geological Survey (USGS) with a cell size of 32 feet by 32 feet.

Figure 10 – Distribution of Seasonal High Groundwater Elevations by Month

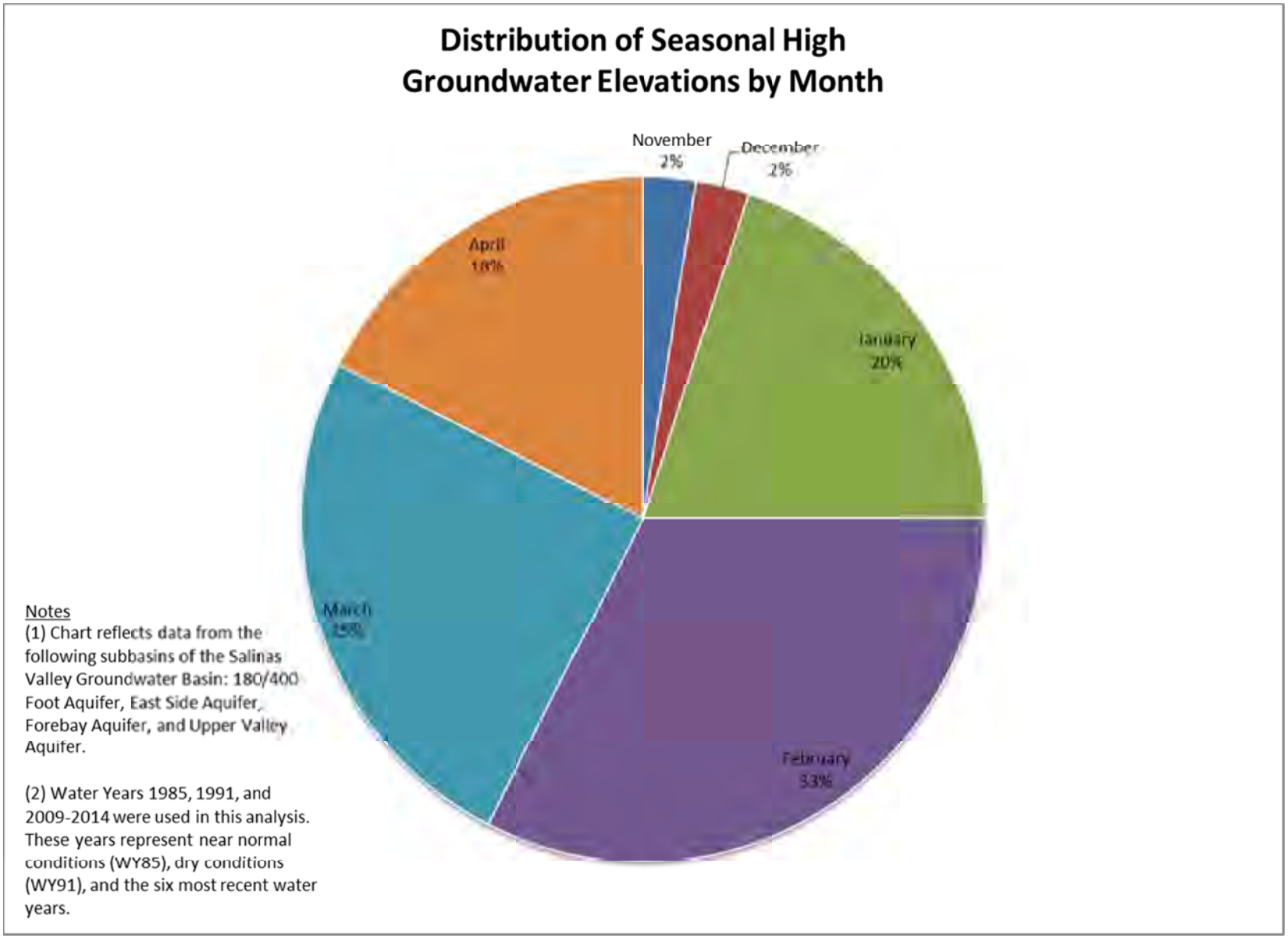
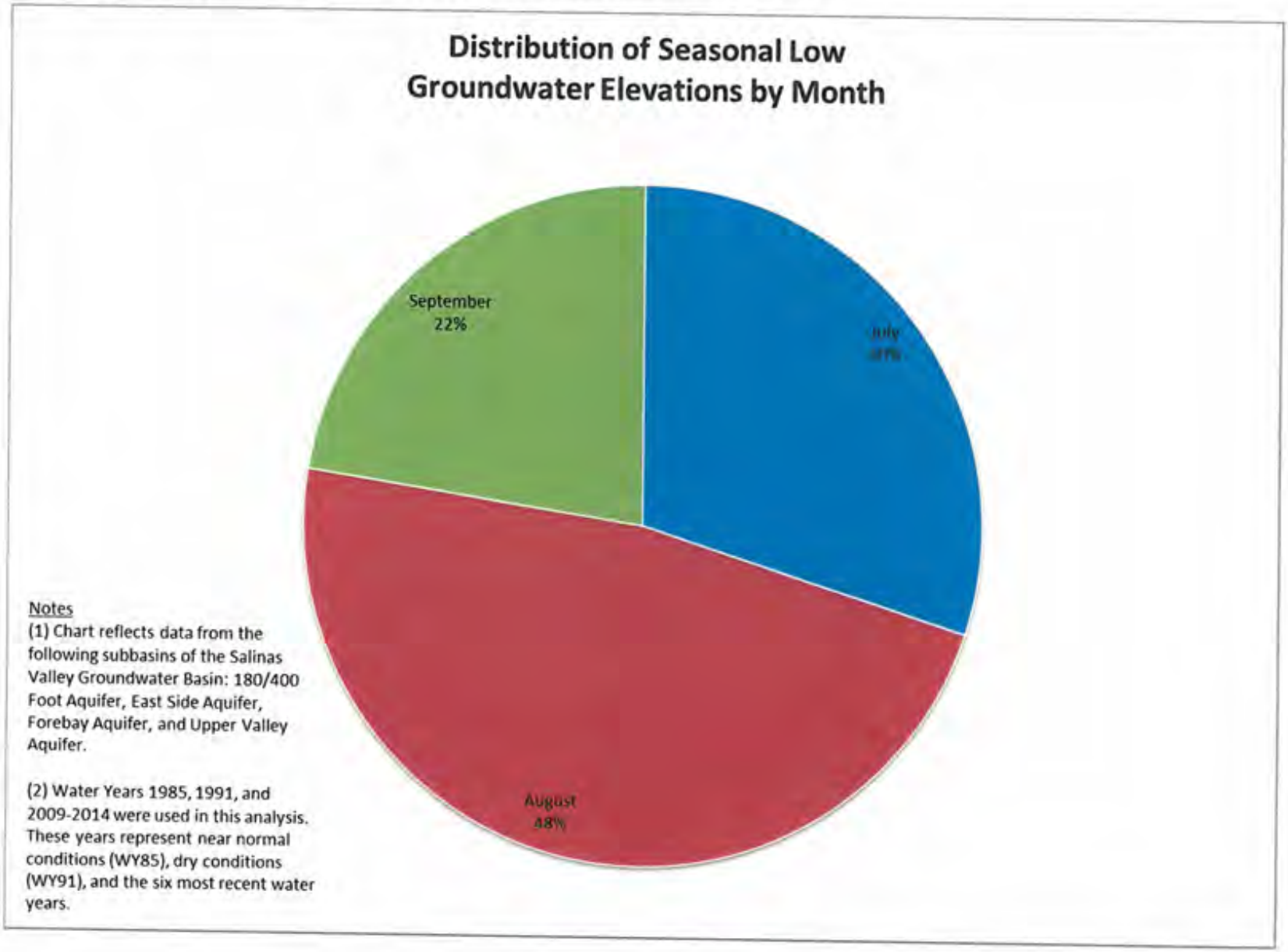


Figure 11 – Distribution of Seasonal Low Groundwater Elevations by Month



4.4 Field Methods

Groundwater elevation data collected from wells in the CASGEM network is intended to reflect static conditions. Best efforts will be made to ensure that wells have not recently been pumped prior to collecting a data point. Depth to water measurements will be made using one or more of the methods discussed in the following sections. Measurement methods described in the following sections are based on the Department of Water Resources document *Groundwater Elevation Monitoring Guidelines* (December 2010) with some alterations specific to wells in the monitored basins/subbasins described in this Monitoring Plan.

4.4.1 Graduated steel tape

Prior to measurement:

- Ensure that the reference point on the well can be clearly determined. Check notes in the field data collection notebook.
- Review the notes and comments for previous measurements in the field data collection notebook to determine if there are any unique circumstances at this well.
- Take note of whether oil has previously been present at this well; this will be recorded in the comments section of the data form.

Making a measurement:

- Use the previous depth to water measurement to estimate a length of tape that will be needed.
- Lower the tape into the well, feeling for a change in the weight of the tape, which typically indicates that either (a) the tape has reached the water surface or (b) the tape is sticking to the side of the well casing.
- Continue lowering the tape into the well until the next whole foot mark is at the reference point. This value on the tape should be recorded in the field data collection notebook.
- Bring the tape to the surface and record the number of the wetted interval to the nearest foot.
- If an oil layer is present, read the tape at the top of the oil mark to the nearest foot. Note in the comments section of the data form that oil was present.
- Repeat this procedure a second time and note any differences in measurement in the field data collection notebook.

4.4.2 Electric water level meter

This method of measurement employs a battery-powered water level meter and a small probe attached to a ruled length of cable. Depth to water measurements collected using this equipment are recorded to the nearest tenth of an inch. This instrument is sometimes referred to as a "sounder".

Prior to measurement:

- Review the field data sheet for the well and note whether oil has been present at this well in the past. The electric water level meter should not be used in wells where oil is present.
- Ensure that the reference point on the well can be clearly determined. Check notes in the field data collection notebook.
- Confirm that the water level meter is functioning and is turned on so that the beeping indicator will operate properly.

Making a measurement:

- Review previous depth to water measurements for the well to estimate the length of tape that will be needed.
- Lower the electrode into the well until the indicator sounds, showing the probe is in contact with the water surface.
- Place the tape against the reference point and read the depth to water to the nearest 0.1 foot. Record this value on the field data sheet.
- Make a second measurement and note any differences in measurement in the field data collection notebook.

4.4.3 Sonic water level meter

This meter uses sound waves to measure the depth to water in a well. The meter must be adjusted to the air temperature outside the well; there is a card with reference temperatures in the case with the sonic meter.

Making a measurement:

- Insert the meter probe into the access port and push the power-on switch. Record the depth from the readout.
- Record the depth to water measurement in the field data collection notebook.

4.4.4 Pressure transducer

Automated water-level measurements are made with a pressure transducer attached to a data logger. Pressure transducers are lowered to a depth below the water level in the well and fastened to the well head at a reference point. Data points are logged on an hourly basis. MCWRA uses factory-calibrated, vented pressure transducers (Appendix D). MCWRA staff collects the pressure transducer data once per quarter. During the data collection process, data loggers are stopped, and the data is downloaded onto a laptop, and then the data logger is reactivated and scheduled to begin collecting data again on the next hour. Upon return from the field, data is processed and reviewed for errors.

4.5 Data Collection, Processing, and Reporting

Following completion of all fieldwork, data is transcribed from field data sheets and checked for errors before being loaded into MCWRA's Oracle platform database. All data will be stored in the MCWRA database before being uploaded to the CASGEM website. Submittal of data to the CASGEM website will occur at a minimum of twice per year, no later than January 1 and July 1, per DWR CASGEM program guidelines.

Bi-annual submittal of data to the CASGEM website will include the following for each well in the CASGEM network, as described in the DWR document *CASGEM Procedures for Monitoring Entity Reporting*:

- Well identification number
- Measurement date
- Reference point and land surface elevation, in feet, using NAVD88 vertical datum
- Depth to water, in feet
- Method of measuring water depth
- Measurement quality codes
- Measuring agency identification
- Comments about measurement, if applicable

The following information will also be submitted to the CASGEM online system, as it is required by DWR unless otherwise noted:

- Monitoring Entity name, address, telephone number, contact person name and email address, and any other relevant contact information
- Groundwater basins being monitored (both entire and partial basins)
- State Well Identification number (recommended)
- Decimal latitude/longitude coordinates of well (NAD83)
- Groundwater basin or subbasin
- Reference point elevation of the well, in feet, using NAVD88 vertical datum
- Elevation of land surface datum at the well, in fee, using NAVD88 vertical datum
- Use of well
- Well completion type (e.g. single well, nested well, or multi-completion well)
- Depth of screened interval(s) and total depth of well, in feet, if available
- Well Completion Report number (DWR Form 188), if available

Chapter 7
Appendix 7-B

DDW and ILRP Wells in the Water Quality Monitoring Network

Forebay DDW Wells

Well ID	Water System Name	Well Screen Info			Coordinates		Monitoring Date Range	
		Top of Screen Depth (ft bgs)	Bottom of Screen Depth (ft bgs)	Screen Length (ft)	Latitude (NAD83)	Longitude (NAD83)	First Year	Last Year
2702466-002	SAN VICENTE MWC	60	100	40	36.407276	-121.267312	7/30/2003	12/17/2019
2701046-001	CAMPHORA APARTMENTS	610	690	80	36.459027	-121.375666	4/22/2008	1/29/2020
2710850-005	CORRECTIONAL TRAINING FACILITY - SOLEDAD	275	725	450	36.475845	-121.372894	5/5/1984	6/30/2020
2710851-001	SALINAS VALLEY STATE PRISON	400	850	450	36.477	-121.394833	4/30/1996	12/4/2002
2701579-003	CAMPHORA STATION WS	NA	NA	NA	36.452062	-121.368326	3/5/2008	7/8/2020
2701403-001	PINE ST WS #01	NA	NA	NA	36.328472	-121.259305	11/12/2019	11/12/2019
2702317-001	MISSION SCHOOL WS	215	245	30	36.390504	-121.365271	1/8/2008	4/6/2020
2702431-001	FOOTHILL RD WS #01	200	NA	NA	36.389836	-121.365554	NA	NA
2710850-002	CORRECTIONAL TRAINING FACILITY - SOLEDAD	NA	NA	NA	36.463611	-121.383889	11/21/2000	11/21/2000
2710851-002	SALINAS VALLEY STATE PRISON	430	880	450	36.48283	-121.374115	4/30/1996	6/9/2020
2704520-002	WILLIAMS - RC FARMS WS	NA	NA	NA	36.469356	-121.43663	NA	NA
2710850-007	CORRECTIONAL TRAINING FACILITY - SOLEDAD	500	816	316	36.471197	-121.377784	9/14/1993	4/21/2020
2701550-001	GOLDEN STATE VINTNERS WS	95	215	120	36.427676	-121.307602	5/8/2002	2/28/2017
2701550-002	GOLDEN STATE VINTNERS WS	NA	NA	NA	36.427333	-121.306777	1/5/2005	4/16/2020
2702412-002	DOLE FRESH VEGETABLES WS	390	540	150	36.453168	-121.356761	12/10/2009	9/16/2019
2702520-001	ARROYO SECO ESTATES MWS	348	800	452	36.304627	-121.320518	1/28/2003	1/7/2020
2710011-013	SOLEDAD, CITY OF	674	915	241	36.439144	-121.333216	5/9/2002	12/18/2019
2710008-001	GREENFIELD, CITY OF	313	863	550	36.317687	-121.272447	1/17/1983	4/14/2020
2710850-006	CORRECTIONAL TRAINING FACILITY - SOLEDAD	475	775	300	36.473364	-121.375625	9/14/1993	5/5/2020
2800736-002	DOMAINE CHANDON	NA	NA	NA	36.427333	-121.306778	11/13/2006	5/14/2018
2710011-007	SOLEDAD, CITY OF	544	694	150	36.42336	-121.32146	9/27/1993	2/20/2020
2710011-008	SOLEDAD, CITY OF	450	600	150	36.417586	-121.31246	2/3/1994	4/7/2020
2702466-021	SAN VICENTE MWC	NA	NA	NA	36.407363	-121.269595	NA	NA
2701165-003	N/A	690	900	210	36.326528	-121.268806	1/3/2007	1/14/2010
2710008-006	GREENFIELD, CITY OF	280	940	660	36.318161	-121.271693	12/8/1999	4/14/2020
2702466-001	SAN VICENTE MWC	60	100	40	36.407362	-121.267725	NA	NA
2701403-007	PINE ST WS #01	550	650	100	36.328291	-121.260417	11/14/2011	10/22/2018
2710008-010	GREENFIELD, CITY OF	NA	NA	160	36.327316	-121.250519	10/16/2007	4/14/2020
2702412-001	DOLE FRESH VEGETABLES WS	400	800	400	36.452361	-121.356388	9/11/2008	9/23/2019
2710011-006	SOLEDAD, CITY OF	580	710	130	36.428351	-121.323091	9/17/1987	6/2/2020
2701034-001	APPLE AVE WS #02	680	780	100	36.312111	-121.265833	10/6/2015	5/6/2016
2701036-001	APPLE AVE WS #03	70	180	110	36.315778	-121.258879	4/12/2002	6/3/2020
2701040-001	MCCOY RD WS #05	290	310	20	36.459122	-121.377776	5/28/2003	4/1/2020
2704520-001	WILLIAMS - RC FARMS WS	NA	NA	NA	36.476906	-121.436077	12/29/2017	4/8/2020
2710851-004	SALINAS VALLEY STATE PRISON	NA	NA	NA	36.470715	-121.373816	12/11/2003	6/2/2020
2710011-014	SOLEDAD, CITY OF	540	750	210	36.432371	-121.333303	3/8/2004	12/18/2019
2701063-001	RIVER RD WS #25	NA	NA	60	36.459122	-121.377776	5/9/2003	6/3/2020
2700948-001	N/A	NA	NA	NA	36.43	-121.33	NA	NA
2702068-001	N/A	NA	NA	NA	36.31	-121.25	NA	NA
2701900-001	LUCERNE RD WS	NA	NA	NA	36.39	-121.34	NA	NA
2701165-001	N/A	NA	NA	NA	36.326527	-121.268805	1/8/2003	1/11/2006
2701000-002	OASIS CAFE WS	435	495	60	36.449113	-121.363716	11/22/2004	3/11/2020
2701713-001	METZ RD WS #01	NA	NA	NA	36.41	-121.28	1/16/2002	8/26/2003
2701176-001	SOLEDAD MISSION WS	NA	NA	NA	36.404946	-121.355916	4/16/2007	6/26/2020
2710850-001	CORRECTIONAL TRAINING FACILITY - SOLEDAD	NA	NA	NA	36.460556	-121.379722	11/21/2000	11/21/2000
2701045-001	ARROYO SECO RD WS #08	NA	NA	NA	36.300555	-121.313888	12/6/2001	8/26/2003
2700774-001	SAN VICENTE RD WS #01	NA	NA	NA	36.45	-121.33	7/23/2002	7/23/2002
2701826-001	N/A	NA	NA	NA	36.43	-121.31	9/5/2001	9/5/2001
2702495-001	FOLKTALE WINERY WS	NA	NA	20	36.452361	-121.356389	12/3/2003	3/26/2020
2700999-001	OAK PARK WS	NA	NA	NA	36.335805	-121.212055	5/25/2010	5/4/2020
2701110-001	MAESTRI RANCH WS	NA	NA	NA	36.44	-121.43	NA	NA
2702520-002	ARROYO SECO ESTATES MWS	NA	NA	NA	36.308426	-121.31179	8/15/2006	8/15/2006
2701550-003	GOLDEN STATE VINTNERS WS	NA	NA	NA	36.42714	-121.309846	7/12/2006	7/12/2006

Forebay ILRP Wells

Well ID	Well Type	Well Screen Info			Coordinates		Monitoring Date Range	
		Top of Screen Depth (ft bgs)	Bottom of Screen Depth (ft bgs)	Screen Length (ft)	Latitude (NAD83)	Longitude (NAD83)	First Year	Last Year
AGC100000001-CCGC_0164	ON-FARM DOMESTIC	NA	NA	NA	36.34329	-121.31948	3/11/2014	3/11/2014
AGC100000001-CCGC_0190	ON-FARM DOMESTIC	NA	NA	NA	36.39142	-121.35635	3/19/2014	3/19/2014
AGL020001231-LUCHES_2DU	ON-FARM DOMESTIC	NA	NA	NA	36.4111833	-121.3561	6/12/2017	12/18/2017
AGL020003761-OLD DOM	ON-FARM DOMESTIC	NA	NA	NA	36.43715	-121.41879	9/4/2013	9/29/2017
AGL020004175-DOM_BLHOUS	ON-FARM DOMESTIC	NA	NA	NA	36.367394	-121.273117	9/6/2013	4/5/2018
AGL020014790-HOUSE D	ON-FARM DOMESTIC	NA	NA	NA	36.465804	-121.456758	2/10/2014	11/1/2017
AGL020027364-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.29333	-121.28169	11/20/2017	4/8/2019
AGL020030080-THORNE_W2	ON-FARM DOMESTIC	NA	NA	NA	36.327104	-121.306419	11/2/2017	4/24/2018
AGL020020162-MCLASK_DOM	ON-FARM DOMESTIC	NA	NA	NA	36.3976167	-121.3503833	6/12/2017	12/15/2017
AGL020011786-WELL DOM	ON-FARM DOMESTIC	NA	NA	NA	36.28076	-121.19274	6/23/2017	9/20/2017
AGC100000001-CCGC_0158	ON-FARM DOMESTIC	NA	NA	NA	36.4324	-121.33373	3/11/2014	3/11/2014
AGC100000001-CCGC_0191	ON-FARM DOMESTIC	NA	NA	NA	36.40871	-121.37283	3/19/2014	3/19/2014
AGL020004065-CCGC_0006	ON-FARM DOMESTIC	NA	NA	NA	36.346033	-121.268367	5/30/2017	6/26/2019
AGL020004503-CCGC_0432	ON-FARM DOMESTIC	NA	NA	NA	36.46608	-121.3662	11/15/2017	12/11/2019
AGC100000001-CCGC_0014	ON-FARM DOMESTIC	NA	NA	NA	36.33533	-121.24994	10/23/2013	10/23/2013
AGC100000001-CCGC_0490	ON-FARM DOMESTIC	NA	NA	NA	36.33558	-121.27396	8/27/2014	8/27/2014
AGC100000001-CCGC_0638	ON-FARM DOMESTIC	NA	NA	NA	36.47784	-121.39806	8/27/2015	8/27/2015
AGL020003532-JOHNSON DW 2	ON-FARM DOMESTIC	NA	NA	NA	36.3925	-121.3341667	5/6/2013	3/3/2020
AGL020011788-WELL DOM 1	ON-FARM DOMESTIC	NA	NA	NA	36.34902	-121.27554	6/23/2017	9/20/2017
AGL020003768-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.42125	-121.30609	9/4/2013	9/29/2017
AGL020001205-HOME HSE LOT 4	ON-FARM DOMESTIC	NA	NA	NA	36.39455	-121.353233	12/13/2013	3/12/2014
AGL020002614-DOMESTIC	ON-FARM DOMESTIC	NA	NA	NA	36.37782	-121.3222	12/4/2017	9/30/2019
AGL020001270-HOUSE LOT 2	ON-FARM DOMESTIC	NA	NA	NA	36.394062	-121.349487	12/16/2013	3/14/2014
AGL020001273-HOUSE LOT 3	ON-FARM DOMESTIC	NA	NA	NA	36.39629	-121.353233	12/13/2013	3/12/2014
AGL020002872-R2_YARD1	ON-FARM DOMESTIC	NA	NA	NA	36.431727	-121.405092	4/14/2017	4/25/2018
AGL020003324-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.34361111	-121.2952778	7/2/2015	4/9/2019
AGL020003372-R-D	ON-FARM DOMESTIC	NA	NA	NA	36.306683	-121.2228	12/19/2017	12/19/2017
AGC100000001-CCGC_0491	ON-FARM DOMESTIC	NA	NA	NA	36.45155	-121.37209	8/27/2014	8/27/2014
AGL020001205-HOME HSE LOT 2	ON-FARM DOMESTIC	NA	NA	NA	36.396027	-121.350601	12/13/2013	3/12/2014
AGL020001279-VAUGH_DOM	ON-FARM DOMESTIC	NA	NA	NA	36.3969	-121.3345667	6/8/2017	12/13/2017

AGC100000001-CCGC_0161	ON-FARM DOMESTIC	NA	NA	NA	36.35162	-121.26997	3/12/2014	3/12/2014
AGL020002795-CCGC_0044	ON-FARM DOMESTIC	NA	NA	NA	36.28595	-121.17496	8/29/2017	7/10/2019
AGC100000001-CCGC_0186	ON-FARM DOMESTIC	NA	NA	NA	36.33007	-121.26299	3/14/2014	3/14/2014
AGC100000001-CCGC_0196	ON-FARM DOMESTIC	NA	NA	NA	36.39684	-121.33446	3/19/2014	3/19/2014
AGC100000001-CCGC_0176	ON-FARM DOMESTIC	NA	NA	NA	36.33413	-121.25842	3/14/2014	3/14/2014
AGC100000001-CCGC_0179	ON-FARM DOMESTIC	NA	NA	NA	36.46963	-121.40553	3/12/2014	3/12/2014
AGC100000001-CCGC_0155	ON-FARM DOMESTIC	NA	NA	NA	36.41637	-121.32824	3/11/2014	3/11/2014
AGL020004185-CCGC_0003	ON-FARM DOMESTIC	NA	NA	NA	36.44242	-121.43027	7/26/2017	8/27/2019
AGL020028035-24-DOM	ON-FARM DOMESTIC	NA	NA	NA	36.36730556	-121.25925	6/13/2017	10/25/2017
AGC100000001-CCGC_0050	ON-FARM DOMESTIC	NA	NA	NA	36.3648	-121.33192	10/24/2013	10/24/2013
AGL020001149-SPV DOM	ON-FARM DOMESTIC	NA	NA	NA	36.36638	-121.31194	5/26/2017	12/15/2017
AGL020001375-ALVES WELL	ON-FARM DOMESTIC	NA	NA	NA	36.3609	-121.2305	6/20/2017	11/28/2017
AGL020011782-WELL DOM	ON-FARM DOMESTIC	NA	NA	NA	36.41631	-121.32828	6/23/2017	9/20/2017
AGL020028112-RANCH2_D	ON-FARM DOMESTIC	NA	NA	NA	36.32978	-121.25854	7/26/2017	10/21/2019
AGC100000001-CCGC_0174	ON-FARM DOMESTIC	NA	NA	NA	36.27799	-121.22902	3/14/2014	3/14/2014
AGC100000001-CCGC_0493	ON-FARM DOMESTIC	NA	NA	NA	36.44666	-121.3623	8/27/2014	8/27/2014
AGL020001189-S.NICHOLAS DOM	ON-FARM DOMESTIC	NA	NA	NA	36.30081	-121.31477	6/19/2015	12/15/2017
AGL020001233-RIANDA_D1	ON-FARM DOMESTIC	NA	NA	NA	36.4096833	-121.3476167	6/6/2017	12/18/2017
AGC100000001-CCGC_0431	ON-FARM DOMESTIC	NA	NA	NA	36.35948	-121.31496	8/8/2014	8/8/2014
AGL020004449-DOMESTIC	ON-FARM DOMESTIC	NA	NA	NA	36.47424	-121.34899	7/12/2016	10/26/2017
AGC100000001-CCGC_0040	ON-FARM DOMESTIC	NA	NA	NA	36.47243	-121.473	10/24/2013	10/24/2013
AGC100000001-CCGC_0067	ON-FARM DOMESTIC	NA	NA	NA	36.40799	-121.28429	10/25/2013	10/25/2013
AGC100000001-CCGC_0024	ON-FARM DOMESTIC	NA	NA	NA	36.462833	-121.455517	10/24/2013	10/24/2013
AGC100000001-CCGC_0029	ON-FARM DOMESTIC	NA	NA	NA	36.377417	-121.322167	10/24/2013	10/24/2013
AGC100000001-CCGC_0028	ON-FARM DOMESTIC	NA	NA	NA	36.37715	-121.33015	10/24/2013	10/24/2013
AGC100000001-CCGC_0064	ON-FARM DOMESTIC	NA	NA	NA	36.29063	-121.193	10/22/2013	10/22/2013
AGC100000001-CCGC_0073	ON-FARM DOMESTIC	NA	NA	NA	36.32706	-121.30637	10/25/2013	10/25/2013
AGC100000001-CCGC_0156	ON-FARM DOMESTIC	NA	NA	NA	36.43111	-121.34762	3/11/2014	3/11/2014
AGC100000001-CCGC_0160	ON-FARM DOMESTIC	NA	NA	NA	36.34895	-121.27556	3/12/2014	3/12/2014
AGC100000001-CCGC_0175	ON-FARM DOMESTIC	NA	NA	NA	36.30955	-121.26472	3/14/2014	3/14/2014
AGC100000001-CCGC_0187	ON-FARM DOMESTIC	NA	NA	NA	36.30734	-121.26504	3/14/2014	3/14/2014
AGC100000001-CCGC_0392	ON-FARM DOMESTIC	NA	NA	NA	36.31028	-121.21503	8/6/2014	8/6/2014
AGC100000001-CCGC_0395	ON-FARM DOMESTIC	NA	NA	NA	36.34285	-121.23707	8/6/2014	8/6/2014
AGC100000001-CCGC_0489	ON-FARM DOMESTIC	NA	NA	NA	36.28898	-121.21815	8/27/2014	8/27/2014

AGC100000001-CCGC_0500	ON-FARM DOMESTIC	NA	NA	NA	36.30297	-121.22092	8/28/2014	8/28/2014
AGC100000001-CCGC_0144	ON-FARM DOMESTIC	NA	NA	NA	36.3939	-121.27659	3/10/2014	3/10/2014
AGC100000001-CCGC_0206	ON-FARM DOMESTIC	NA	NA	NA	36.38713	-121.35583	3/19/2014	3/19/2014
AGC100000001-CCGC_0430	ON-FARM DOMESTIC	NA	NA	NA	36.38371	-121.30326	8/8/2014	8/8/2014
AGC100000001-CCGC_0514	ON-FARM DOMESTIC	NA	NA	NA	36.28727	-121.24889	8/28/2014	8/28/2014
AGC100000001-CCGC_0565	ON-FARM DOMESTIC	NA	NA	NA	36.3094	-121.20271	6/25/2015	6/25/2015
AGC100000001-CCGC_0594	ON-FARM DOMESTIC	NA	NA	NA	36.27123	-121.30154	6/25/2015	6/25/2015
AGC100000001-CCGC_0640	ON-FARM DOMESTIC	NA	NA	NA	36.29074	-121.20619	4/27/2016	4/27/2016
AGL020000762-CCGC_0513	ON-FARM DOMESTIC	NA	NA	NA	36.33358	-121.2084	7/26/2017	10/21/2019
AGL020001017-CCGC_0024	ON-FARM DOMESTIC	NA	NA	NA	36.463	-121.4556	5/16/2017	4/25/2019
AGL020001207-HOUSE IN YARD	ON-FARM DOMESTIC	NA	NA	NA	36.392788	-121.364998	12/13/2013	3/13/2014
AGL020001210-LANINI_DOM	ON-FARM DOMESTIC	NA	NA	NA	36.4121667	-121.3718833	6/5/2017	12/13/2017
AGL020001213-CASACCAHSELOT 2	ON-FARM DOMESTIC	NA	NA	NA	36.402573	-121.34449	12/13/2013	3/13/2014
AGL020001213-CASACCA_D	ON-FARM DOMESTIC	NA	NA	NA	36.4026	-121.3445667	6/7/2017	12/13/2017
AGL020001261-ANDERSON_D	ON-FARM DOMESTIC	NA	NA	NA	36.3934	-121.3212833	6/6/2017	12/14/2017
AGL020001273-BALEMI_D3	ON-FARM DOMESTIC	NA	NA	NA	36.3962667	-121.3531667	6/5/2017	12/13/2017
AGL020001273-HOUSE LOT 8	ON-FARM DOMESTIC	NA	NA	NA	36.389919	-121.359795	12/13/2013	3/12/2014
AGL020001279-VAUGHAN HSLOT 5	ON-FARM DOMESTIC	NA	NA	NA	36.396768	-121.3347394	12/16/2013	12/16/2013
AGL020001200-THOMPSON_D	ON-FARM DOMESTIC	NA	NA	NA	36.3943167	-121.3452833	6/6/2017	12/14/2017
AGL020001292-NELSON_DOM	ON-FARM DOMESTIC	NA	NA	NA	36.3918833	-121.3510333	6/8/2017	12/15/2017
AGL020002748-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.29078	-121.20628	11/20/2017	4/8/2019
AGL020001290-RADAVE_3DU	ON-FARM DOMESTIC	NA	NA	NA	36.38705	-121.3559167	6/15/2017	12/19/2017
AGL020001290-RADAV_6DOM	ON-FARM DOMESTIC	NA	NA	NA	36.3847	-121.3571	6/8/2017	12/14/2017
AGL020003063-AF11-11DOM	ON-FARM DOMESTIC	NA	NA	NA	36.3996	-121.313309	10/31/2012	3/17/2017
AGL020003200-CCGC_0030	ON-FARM DOMESTIC	NA	NA	NA	36.40488	-121.35264	6/8/2017	6/8/2017
AGL020003756-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.303725	-121.251653	9/3/2013	4/22/2014
AGL020003526-HOME DW	ON-FARM DOMESTIC	NA	NA	NA	36.3944444	-121.3311111	5/6/2013	3/3/2020
AGL020003542-CLARK DW	ON-FARM DOMESTIC	NA	NA	NA	36.3686111	-121.3211111	11/26/2012	11/15/2017
AGL020003751-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.36607	-121.35168	9/4/2013	9/29/2017
AGL020003766-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.39029	-121.25172	9/4/2013	9/29/2017
AGL020004064-CCGC_0011	ON-FARM DOMESTIC	NA	NA	NA	36.34095	-121.271633	5/30/2017	6/26/2019
AGL020004286-DOM_OFFICE	ON-FARM DOMESTIC	NA	NA	NA	36.446652	-121.362243	10/10/2017	10/3/2018
AGL020004190-DOM_DOUD10	ON-FARM DOMESTIC	NA	NA	NA	36.398012	-121.318717	9/6/2013	6/7/2019
AGL020004302-PRYOR_OFFICE_D	ON-FARM DOMESTIC	NA	NA	NA	36.462641	-121.39917	3/14/2017	11/8/2017

AGL020006540-CCGC_0051	ON-FARM DOMESTIC	NA	NA	NA	36.408	-121.38689	5/31/2017	3/25/2019
AGL020006680-CCGC_0050	ON-FARM DOMESTIC	300	380	80	36.3648	-121.33192	5/31/2017	3/25/2019
AGL020007345-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.31611	-121.1919	9/11/2017	3/12/2019
AGL020005183-DOMESTIC	ON-FARM DOMESTIC	NA	NA	NA	36.31934	-121.28431	12/14/2012	10/17/2017
AGL020010224-HOU SAR QVF	ON-FARM DOMESTIC	NA	NA	NA	36.3346	-121.2304	6/29/2017	12/27/2017
AGL020011784-WELL DOM 2	ON-FARM DOMESTIC	NA	NA	NA	36.43579	-121.35295	6/23/2017	9/20/2017
AGL020011785-WELL DOM	ON-FARM DOMESTIC	NA	NA	NA	36.43886	-121.34665	6/23/2017	9/20/2017
AGL020014774-SILVIO D	ON-FARM DOMESTIC	NA	NA	NA	36.462495	-121.450758	12/17/2012	11/1/2017
AGL020014788-LEO D	ON-FARM DOMESTIC	NA	NA	NA	36.363656	-121.25604	2/10/2014	5/14/2014
AGL020027322-FERRASCI DOM	ON-FARM DOMESTIC	NA	NA	NA	36.403561	-121.371319	3/15/2016	3/15/2016
AGL020027322-FERRASCI_D	ON-FARM DOMESTIC	NA	NA	NA	36.4035667	-121.3712833	6/6/2017	12/14/2017
AGL020027404-BIANCHI	ON-FARM DOMESTIC	NA	NA	NA	36.48275	-121.40619	9/29/2017	9/29/2017
AGL020028604-DOMESTIC	ON-FARM DOMESTIC	NA	NA	NA	36.31226	-121.29242	10/17/2017	4/3/2018
AGL020035367-PATRICIA_DOM	ON-FARM DOMESTIC	NA	NA	NA	36.30667	-121.22314	8/27/2019	8/27/2019
AGL020003987-DOMESTIC	ON-FARM DOMESTIC	NA	NA	NA	36.33532	-121.24995	5/24/2017	5/24/2017
AGC100000001-CCGC_0011	ON-FARM DOMESTIC	NA	NA	NA	36.34095	-121.271633	10/25/2013	10/25/2013
AGC100000001-CCGC_0044	ON-FARM DOMESTIC	NA	NA	NA	36.28595	-121.17496	10/22/2013	10/22/2013
AGC100000001-CCGC_0052	ON-FARM DOMESTIC	NA	NA	NA	36.3001	-121.22495	10/23/2013	10/23/2013
AGC100000001-CCGC_0061	ON-FARM DOMESTIC	NA	NA	NA	36.30838	-121.26529	10/23/2013	10/23/2013
AGL020009562-TOM-D1	ON-FARM DOMESTIC	NA	NA	NA	36.37995	-121.24268	7/8/2015	2/8/2019
AGL020027304-SILLIMAN_D	ON-FARM DOMESTIC	NA	NA	NA	36.4083	-121.3581333	6/5/2017	12/14/2017
AGL020027482-LEONARDI DOM	ON-FARM DOMESTIC	NA	NA	NA	36.363451	-121.255808	6/8/2017	12/27/2017
AGC100000001-CCGC_0512	ON-FARM DOMESTIC	NA	NA	NA	36.30671	-121.22313	8/26/2014	8/26/2014
AGL020002902-R24_YARD	ON-FARM DOMESTIC	NA	NA	NA	36.4513556	-121.3532222	8/10/2015	4/26/2018
AGL020011793-WELL DOM	ON-FARM DOMESTIC	NA	NA	NA	36.45739	-121.36063	9/20/2017	9/20/2017
AGL020027322-FERRAS_2DU	ON-FARM DOMESTIC	NA	NA	NA	36.4029667	-121.36445	6/8/2017	12/15/2017
AGC100000001-CCGC_0143	ON-FARM DOMESTIC	NA	NA	NA	36.38183	-121.29684	3/10/2014	3/10/2014
AGC100000001-CCGC_0152	ON-FARM DOMESTIC	NA	NA	NA	36.45139	-121.35331	3/11/2014	3/11/2014
AGC100000001-CCGC_0157	ON-FARM DOMESTIC	NA	NA	NA	36.43579	-121.35264	3/11/2014	3/11/2014
AGL020001156-SMITH WELL	ON-FARM DOMESTIC	NA	NA	NA	36.38919	-121.36487	6/19/2015	12/15/2017
AGL020001196-SALMINA_D	ON-FARM DOMESTIC	NA	NA	NA	36.3985167	-121.3386167	6/6/2017	12/13/2017
AGL020001233-RIANDAHSELOT 3	ON-FARM DOMESTIC	NA	NA	NA	36.40984	-121.347504	12/16/2013	3/12/2014
AGL020001290-RADAV_1DUA	ON-FARM DOMESTIC	NA	NA	NA	36.3915	-121.3521167	6/8/2017	12/19/2017
AGL020014789-SHOP D	ON-FARM DOMESTIC	NA	NA	NA	36.367258	-121.258704	2/10/2014	5/14/2014
AGL020001261-HOUSE LOT 1	ON-FARM DOMESTIC	NA	NA	NA	36.3908	-121.347458	12/12/2013	3/13/2014

AGL020001294-HILDAGO_D	ON-FARM DOMESTIC	NA	NA	NA	36.3990333	-121.3485667	6/13/2017	12/14/2017
AGL020018062-CCGC_0142	ON-FARM DOMESTIC	NA	NA	NA	36.38771	-121.28213	8/29/2017	5/2/2019
AGL020028453-SUNKENNR_D	ON-FARM DOMESTIC	NA	NA	NA	36.28662	-121.23877	12/19/2017	4/30/2019
AGL020030077-R29_W2	ON-FARM DOMESTIC	NA	NA	NA	36.404952	-121.35266	11/2/2017	4/25/2018
AGC100000001-CCGC_0484	ON-FARM DOMESTIC	NA	NA	NA	36.33614	-121.21587	8/27/2014	8/27/2014
AGC100000001-CCGC_0488	ON-FARM DOMESTIC	NA	NA	NA	36.34947	-121.22742	8/27/2014	8/27/2014
AGC100000001-CCGC_0492	ON-FARM DOMESTIC	NA	NA	NA	36.46137	-121.38706	8/27/2014	8/27/2014
AGC100000001-CCGC_0508	ON-FARM DOMESTIC	NA	NA	NA	36.30729	-121.19161	8/28/2014	8/28/2014
AGC100000001-CCGC_0513	ON-FARM DOMESTIC	NA	NA	NA	36.33358	-121.2084	8/27/2014	8/27/2014
AGC100000001-CCGC_0561	ON-FARM DOMESTIC	NA	NA	NA	36.38605	-121.35908	6/24/2015	6/24/2015
AGC100000001-CCGC_0042	ON-FARM DOMESTIC	NA	NA	NA	36.38488	-121.35819	10/24/2013	10/24/2013
AGC100000001-CCGC_0188	ON-FARM DOMESTIC	NA	NA	NA	36.41224	-121.37193	3/19/2014	3/19/2014
AGL020001273-BALEMI_D6	ON-FARM DOMESTIC	NA	NA	NA	36.3915	-121.35795	6/5/2017	12/13/2017
AGL020004281-DOM_HOUSES	ON-FARM DOMESTIC	NA	NA	NA	36.451586	-121.371936	10/3/2018	10/29/2019
AGL020001594-DOMESTIC	ON-FARM DOMESTIC	NA	NA	NA	36.404724	-121.343812	11/14/2012	5/9/2013
AGC100000001-CCGC_0498	ON-FARM DOMESTIC	NA	NA	NA	36.36425	-121.235	8/28/2014	8/28/2014
AGC100000001-CCGC_0511	ON-FARM DOMESTIC	NA	NA	NA	36.36147	-121.23032	8/27/2014	8/27/2014
AGC100000001-CCGC_0002	ON-FARM DOMESTIC	NA	NA	NA	36.44576	-121.4324	10/24/2013	10/24/2013
AGC100000001-CCGC_0027	ON-FARM DOMESTIC	NA	NA	NA	36.371617	-121.33835	10/24/2013	10/24/2013
AGC100000001-CCGC_0049	ON-FARM DOMESTIC	NA	NA	NA	36.48196	-121.44509	10/23/2013	10/23/2013
AGC100000001-CCGC_0053	ON-FARM DOMESTIC	NA	NA	NA	36.333033	-121.221883	10/23/2013	10/23/2013
AGL020002679-R14 DOM	ON-FARM DOMESTIC	NA	NA	NA	36.31034	-121.21512	9/11/2017	9/11/2017
AGC100000001-CCGC_0063	ON-FARM DOMESTIC	NA	NA	NA	36.3019	-121.23729	10/23/2013	10/23/2013
AGC100000001-CCGC_0072	ON-FARM DOMESTIC	NA	NA	NA	36.327	-121.30461	10/23/2013	10/23/2013
AGC100000001-CCGC_0177	ON-FARM DOMESTIC	NA	NA	NA	36.32974	-121.25831	3/14/2014	3/14/2014
AGL020002884-R10_MYARD	ON-FARM DOMESTIC	NA	NA	NA	36.342925	-121.30125	4/24/2015	4/24/2018
AGL020005643-AG DOM	ON-FARM DOMESTIC	NA	NA	NA	36.3275	-121.2625	11/27/2012	9/19/2019
AGC100000001-CCGC_0195	ON-FARM DOMESTIC	NA	NA	NA	36.38474	-121.35709	3/19/2014	3/19/2014
AGC100000001-CCGC_0207	ON-FARM DOMESTIC	NA	NA	NA	36.38966	-121.35275	3/19/2014	3/19/2014
AGC100000001-CCGC_0394	ON-FARM DOMESTIC	NA	NA	NA	36.33481	-121.23042	8/6/2014	8/6/2014
AGC100000001-CCGC_0396	ON-FARM DOMESTIC	NA	NA	NA	36.35886	-121.25274	8/6/2014	8/6/2014
AGC100000001-CCGC_0189	ON-FARM DOMESTIC	NA	NA	NA	36.39424	-121.34523	3/19/2014	3/19/2014
AGC100000001-CCGC_0432	ON-FARM DOMESTIC	NA	NA	NA	36.46608	-121.3662	8/8/2014	8/8/2014
AGL020003532-JOHNSON DW 1	ON-FARM DOMESTIC	NA	NA	NA	36.383638	-121.33078	11/26/2012	3/3/2020

AGL020003533-ALBERTONI DW	ON-FARM DOMESTIC	NA	NA	NA	36.3822222	-121.3283333	11/26/2012	3/3/2020
AGC100000001-CCGC_0566	ON-FARM DOMESTIC	NA	NA	NA	36.27416	-121.30305	6/25/2015	6/25/2015
AGC100000001-CCGC_0610	ON-FARM DOMESTIC	NA	NA	NA	36.46019	-121.40813	8/25/2015	8/25/2015
AGL020003526-HOME DW 2	ON-FARM DOMESTIC	NA	NA	NA	36.3863889	-121.3294444	5/6/2013	3/3/2020
AGL020003537-SKY RCH DW	ON-FARM DOMESTIC	NA	NA	NA	36.3194444	-121.3133333	11/26/2012	3/3/2020
AGL020004281-CALLAGHAN_SHOP	ON-FARM DOMESTIC	NA	NA	NA	36.443276	-121.375527	3/13/2014	10/3/2018
AGL020003751-DUAL WELL	ON-FARM DOMESTIC	NA	NA	NA	36.378644	-121.341585	9/4/2013	3/8/2017
AGL020003759-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.302108	-121.245799	9/3/2013	4/22/2014
AGL020007794-33-W1-AME-0061	ON-FARM DOMESTIC	NA	NA	NA	36.308435	-121.265284	6/27/2017	12/16/2019
AGL020008552-BUTLER_WELL_1	ON-FARM DOMESTIC	NA	NA	NA	36.471583	-121.458778	7/17/2017	11/8/2017
AGL020004068-CCGC_0008	ON-FARM DOMESTIC	120	160	40	36.356367	-121.269417	5/30/2017	6/26/2019
AGL020011784-WELL DOM 1	ON-FARM DOMESTIC	NA	NA	NA	36.43122	-121.34762	6/23/2017	9/20/2017
AGL020011787-WELL DOM	ON-FARM DOMESTIC	NA	NA	NA	36.34372	-121.31927	6/23/2017	9/20/2017
AGL020011789-WELL DOM	ON-FARM DOMESTIC	NA	NA	NA	36.43245	-121.33372	6/23/2017	9/20/2017
AGL020011795-WELL DOM	ON-FARM DOMESTIC	NA	NA	NA	36.44645	-121.3321	6/23/2017	9/20/2017
AGL020000767-CCGC_0490	ON-FARM DOMESTIC	NA	NA	NA	36.33558	-121.27396	7/26/2017	10/21/2019
AGL020000781-OAK DOM	ON-FARM DOMESTIC	NA	NA	NA	36.30929079	-121.2645922	12/12/2017	5/23/2018
AGL020004302-PRYOR_LABOR_D	ON-FARM DOMESTIC	NA	NA	NA	36.46126	-121.38721	7/13/2017	11/8/2017
AGL020030311-GV16_DOM	ON-FARM DOMESTIC	NA	NA	NA	36.3087	-121.22728	6/27/2018	8/27/2019
AGL020014162-DOMESTIC	ON-FARM DOMESTIC	NA	NA	NA	36.29015	-121.2916	12/11/2012	9/18/2017
AGL020001149-STE PHILIPPE SO	ON-FARM DOMESTIC	NA	NA	NA	36.3639	-121.30795	6/19/2015	12/15/2017
AGL020004455-CCGC_0431	ON-FARM DOMESTIC	NA	NA	NA	36.35948	-121.31496	11/15/2017	12/11/2019
AGL020014772-VANOLI D	ON-FARM DOMESTIC	NA	NA	NA	36.309951	-121.227712	2/10/2014	11/1/2017
AGL020014789-HOUSE D	ON-FARM DOMESTIC	NA	NA	NA	36.367307	-121.258954	2/10/2014	5/14/2014
AGL020014791-BLAIR D	ON-FARM DOMESTIC	NA	NA	NA	36.36966	-121.287463	2/10/2014	11/1/2017
AGL020001196-SALMINAHSELOT 3	ON-FARM DOMESTIC	NA	NA	NA	36.398357	-121.338615	12/12/2013	3/12/2014
AGL020001205-HOME_D2	ON-FARM DOMESTIC	NA	NA	NA	36.3960333	-121.3505667	6/5/2017	12/15/2017
AGL020001233-RIANDA3DOM	ON-FARM DOMESTIC	NA	NA	NA	36.4099167	-121.3474833	6/8/2017	6/8/2017
AGC100000001-CCGC_0075	ON-FARM DOMESTIC	NA	NA	NA	36.3331	-121.25175	10/23/2013	10/23/2013
AGL020001270-LINSTR_DOM	ON-FARM DOMESTIC	NA	NA	NA	36.3940333	-121.3494333	6/12/2017	12/19/2017
AGL020001272-VIO_HO_DOM	ON-FARM DOMESTIC	NA	NA	NA	36.3917167	-121.3570167	6/5/2017	12/14/2017
AGL020001273-HOUSE LOT 6	ON-FARM DOMESTIC	NA	NA	NA	36.391434	-121.358055	12/13/2013	3/12/2014
AGL020001275-BARLOGGI_D	ON-FARM DOMESTIC	NA	NA	NA	36.4088333	-121.3727333	6/7/2017	12/13/2017
AGL020001290-RADAV_1DOM	ON-FARM DOMESTIC	NA	NA	NA	36.3897833	-121.3526	6/8/2017	12/14/2017

AGL020001292-NELSON HSELOT 1	ON-FARM DOMESTIC	NA	NA	NA	36.391891	-121.351021	12/16/2013	3/13/2014
AGL020001200-YARD LOT 2	ON-FARM DOMESTIC	NA	NA	NA	36.394207	-121.345284	12/12/2013	12/12/2013
AGL020001390-DOM HSE/SHOP	ON-FARM DOMESTIC	NA	NA	NA	36.4079	-121.2843	6/20/2017	11/20/2017
AGL020001468-WELL	ON-FARM DOMESTIC	NA	NA	NA	36.38165	-121.3683	6/28/2017	3/25/2019
AGL020001470-WELL	ON-FARM DOMESTIC	NA	NA	NA	36.472546	-121.472092	5/22/2017	3/25/2019
AGC100000001-CCGC_0025	ON-FARM DOMESTIC	NA	NA	NA	36.446217	-121.433183	10/24/2013	10/24/2013
AGC100000001-CCGC_0151	ON-FARM DOMESTIC	NA	NA	NA	36.46724	-121.46189	3/12/2014	3/12/2014
AGL020001231-LUCHES_1DU	ON-FARM DOMESTIC	NA	NA	NA	36.4073	-121.3685	6/8/2017	12/14/2017
AGL020014794-BLOOM D	ON-FARM DOMESTIC	NA	NA	NA	36.484926	-121.4173	2/10/2014	11/1/2017
AGL020001207-RODDICK_D	ON-FARM DOMESTIC	NA	NA	NA	36.3931833	-121.3648	6/5/2017	12/13/2017
AGL020001382-MCCOY DOM	ON-FARM DOMESTIC	NA	NA	NA	36.3657	-121.2363	6/20/2017	11/28/2017
AGL020001273-BALEMI_D8	ON-FARM DOMESTIC	NA	NA	NA	36.3899667	-121.3598667	6/5/2017	12/13/2017
AGC100000001-CCGC_0006	ON-FARM DOMESTIC	NA	NA	NA	36.346033	-121.268367	10/25/2013	10/25/2013
AGC100000001-CCGC_0393	ON-FARM DOMESTIC	NA	NA	NA	36.31628	-121.21696	8/6/2014	8/6/2014
AGC100000001-CCGC_0505	ON-FARM DOMESTIC	NA	NA	NA	36.2963	-121.27789	8/28/2014	8/28/2014
AGL020000599-WELL 1	ON-FARM DOMESTIC	NA	NA	NA	36.30297992	-121.3068965	3/22/2014	10/23/2018
AGL020000781-14 DOM	ON-FARM DOMESTIC	NA	NA	NA	36.30739062	-121.2650498	12/12/2017	5/23/2018
AGL020003041-DOM	ON-FARM DOMESTIC	NA	NA	NA	36.300297	-121.298556	7/15/2015	4/27/2020
AGC100000001-CCGC_0162	ON-FARM DOMESTIC	NA	NA	NA	36.28077	-121.1926	3/11/2014	3/11/2014
AGL020003534-ZABALA DW	ON-FARM DOMESTIC	NA	NA	NA	36.3272222	-121.3166667	11/26/2012	3/3/2020
AGC100000001-CCGC_0030	ON-FARM DOMESTIC	NA	NA	NA	36.40488	-121.35264	10/24/2013	10/24/2013
AGL020020162-MCCLASKEYHSLOT1	ON-FARM DOMESTIC	NA	NA	NA	36.397522	-121.350304	12/16/2013	3/12/2014
AGL020011788-WELL DOM 2	ON-FARM DOMESTIC	NA	NA	NA	36.35187	-121.27022	6/23/2017	9/20/2017
AGL020014790-YARD D	ON-FARM DOMESTIC	NA	NA	NA	36.468514	-121.45889	2/10/2014	11/1/2017
AGC100000001-CCGC_0008	ON-FARM DOMESTIC	NA	NA	NA	36.356367	-121.269417	10/22/2013	10/22/2013
AGC100000001-CCGC_0043	ON-FARM DOMESTIC	NA	NA	NA	36.29099	-121.17747	10/22/2013	10/22/2013
AGC100000001-CCGC_0197	ON-FARM DOMESTIC	NA	NA	NA	36.40559	-121.33753	3/19/2014	3/19/2014
AGC100000001-CCGC_0503	ON-FARM DOMESTIC	NA	NA	NA	36.29504	-121.26646	8/28/2014	8/28/2014
AGC100000001-CCGC_0150	ON-FARM DOMESTIC	NA	NA	NA	36.44643	-121.33204	3/11/2014	3/11/2014
AGC100000001-CCGC_0545	ON-FARM DOMESTIC	NA	NA	NA	36.46818	-121.46027	4/7/2015	4/7/2015
AGC100000001-CCGC_0560	ON-FARM DOMESTIC	NA	NA	NA	36.38646	-121.34103	6/24/2015	6/24/2015
AGC100000001-CCGC_0612	ON-FARM DOMESTIC	NA	NA	NA	36.35614	-121.21375	8/25/2015	8/25/2015
AGL020001205-HOME_D4	ON-FARM DOMESTIC	NA	NA	NA	36.39455	-121.3533333	6/5/2017	12/18/2017
AGL020001294-HILDAGOHSELOT 1	ON-FARM DOMESTIC	NA	NA	NA	36.399094	-121.348633	12/17/2013	3/14/2014
AGL020001360-WELL 2	ON-FARM DOMESTIC	NA	NA	NA	36.290673	-121.192552	5/11/2017	11/17/2017
AGL020002885-R11_MYARD	ON-FARM DOMESTIC	NA	NA	NA	36.4132028	-121.38075	4/24/2015	4/25/2018

AGC100000001-CCGC_0509	ON-FARM DOMESTIC	NA	NA	NA	36.30882	-121.20156	8/28/2014	8/28/2014
AGL020007438-CCGC_0610	ON-FARM DOMESTIC	NA	NA	NA	36.46024	-121.40824	6/29/2017	4/12/2018
AGL020002807-CCGC_0049	ON-FARM DOMESTIC	NA	NA	NA	36.48196	-121.44509	8/29/2017	7/10/2019
AGL020014780-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.435716	-121.436244	3/4/2015	11/1/2017
AGL020014785-PUEBLO D	ON-FARM DOMESTIC	NA	NA	NA	36.313876	-121.2326	2/10/2014	11/1/2017
AGL020001293-FROLLI_DOM	ON-FARM DOMESTIC	NA	NA	NA	36.4055667	-121.3376167	6/8/2017	12/13/2017
AGC100000001-CCGC_0165	ON-FARM DOMESTIC	NA	NA	NA	36.4413	-121.34727	3/12/2014	3/12/2014
AGC100000001-CCGC_0502	ON-FARM DOMESTIC	NA	NA	NA	36.31638	-121.19172	8/28/2014	8/28/2014
AGL020004497-CCGC_0430	ON-FARM DOMESTIC	NA	NA	NA	36.38371	-121.30326	11/15/2017	12/11/2019
AGL020014796-HOUSE D	ON-FARM DOMESTIC	NA	NA	NA	36.490448	-121.419456	5/14/2014	11/1/2017
AGC100000001-CCGC_0613	ON-FARM DOMESTIC	NA	NA	NA	36.38437	-121.35744	8/25/2015	8/25/2015
AGL020002606-DOMESTIC	ON-FARM DOMESTIC	NA	NA	NA	36.38728	-121.33917	12/4/2017	9/30/2019
AGL020027686-SANCTUARY DOM	ON-FARM DOMESTIC	NA	NA	NA	36.293333	-121.31111	8/4/2015	11/5/2015
AGC100000001-CCGC_0507	ON-FARM DOMESTIC	NA	NA	NA	36.31693	-121.20884	8/28/2014	8/28/2014
AGC100000001-CCGC_0026	ON-FARM DOMESTIC	NA	NA	NA	36.387383	-121.339117	10/24/2013	10/24/2013
AGL020030317-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.43112	-121.34764	6/26/2019	6/26/2019
AGL020001231-LUCHESSAHSLOT 4	ON-FARM DOMESTIC	NA	NA	NA	36.41111	-121.362175	12/17/2013	3/13/2014
AGC100000001-CCGC_0142	ON-FARM DOMESTIC	NA	NA	NA	36.38771	-121.28213	3/10/2014	3/10/2014
AGL020010222-HUDSON DOM	ON-FARM DOMESTIC	NA	NA	NA	36.35885	-121.2527	6/8/2017	6/8/2017
AGL020000758-CCGC_0488	ON-FARM DOMESTIC	NA	NA	NA	36.34947	-121.22742	7/26/2017	10/21/2019
AGC100000001-CCGC_0487	ON-FARM DOMESTIC	NA	NA	NA	36.38291	-121.35477	8/26/2014	8/26/2014
AGL020002750-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.33308	-121.22185	11/20/2017	4/8/2019
AGL020001377-10-W3-DME-0063	ON-FARM DOMESTIC	NA	NA	NA	36.301905	-121.237301	6/27/2017	12/16/2019
AGL020003874-CCGC_0144	ON-FARM DOMESTIC	NA	NA	NA	36.3939	-121.27659	8/29/2017	5/2/2019
AGC100000001-CCGC_0003	ON-FARM DOMESTIC	NA	NA	NA	36.44242	-121.43027	10/24/2013	10/24/2013
AGC100000001-CCGC_0074	ON-FARM DOMESTIC	NA	NA	NA	36.33628	-121.26376	10/23/2013	10/23/2013
AGC100000001-CCGC_0173	ON-FARM DOMESTIC	NA	NA	NA	36.2865	-121.23887	3/14/2014	3/14/2014
AGL020009563-RIV-D1	ON-FARM DOMESTIC	NA	NA	NA	36.41136	-121.34639	7/8/2015	2/8/2019
AGC100000001-CCGC_0041	ON-FARM DOMESTIC	NA	NA	NA	36.45403	-121.44292	10/24/2013	10/24/2013
AGC100000001-CCGC_0641	ON-FARM DOMESTIC	NA	NA	NA	36.29336	-121.28169	4/27/2016	4/27/2016
AGL020007574-DW	ON-FARM DOMESTIC	NA	NA	NA	36.24277778	-121.3125	1/28/2014	1/28/2014
AGC100000001-CCGC_0614	ON-FARM DOMESTIC	NA	NA	NA	36.40788	-121.27025	8/25/2015	8/25/2015
AGL020004159-WELL 3	ON-FARM DOMESTIC	NA	NA	NA	36.402909	-121.364456	11/27/2012	12/31/2013
AGL020004084-CCGC0638 DOM	ON-FARM DOMESTIC	NA	NA	NA	36.47784	-121.39808	12/11/2017	12/11/2017

AGL020001046-CCGC_0025	ON-FARM DOMESTIC	NA	NA	NA	36.446	-121.4333	5/16/2017	4/25/2019
AGC100000001-CCGC_0015	ON-FARM DOMESTIC	NA	NA	NA	36.33954	-121.24298	10/25/2013	10/25/2013
AGL020007500-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.27415	-121.30316	9/11/2017	3/12/2019
AGL020005420-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.30768	-121.30939	10/9/2015	5/8/2018
AGL020000548-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.32927	-121.29931	4/8/2019	9/3/2019
AGC100000001-CCGC_0051	ON-FARM DOMESTIC	NA	NA	NA	36.408	-121.38689	10/24/2013	10/24/2013
AGL020003797-WELL	ON-FARM DOMESTIC	NA	NA	NA	36.3331	-121.25175	12/4/2017	10/1/2019
AGL020010226-HOUSE MOR QVF	ON-FARM DOMESTIC	NA	NA	NA	36.3432	-121.2364	6/29/2017	6/29/2017
AGL020027422-CCGC_0545	ON-FARM DOMESTIC	NA	NA	NA	36.46818	-121.46027	11/28/2017	3/28/2019
AGL020004185-CCGC_0002	ON-FARM DOMESTIC	150	270	120	36.44576	-121.4324	7/26/2017	8/27/2019
AGL020002751-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.30013	-121.22499	11/20/2017	4/8/2019
AGL020001074-CCGC_0612	ON-FARM DOMESTIC	NA	NA	NA	36.35614	-121.21375	11/28/2017	4/30/2019
AGL020002827-CCGC_0043	ON-FARM DOMESTIC	NA	NA	NA	36.29099	-121.17747	8/29/2017	4/24/2020
AGL020027322-FERRASCI WELL 2	ON-FARM DOMESTIC	NA	NA	NA	36.402996	-121.364501	3/15/2016	3/15/2016
AGL020007346-DOM LOT 7	ON-FARM DOMESTIC	NA	NA	NA	36.28661	-121.25083	9/11/2017	3/12/2019
AGL020007436-CCGC_0719	ON-FARM DOMESTIC	NA	NA	NA	36.46967	-121.40563	6/29/2017	6/29/2017
AGL020007346-DOM SHOP	ON-FARM DOMESTIC	NA	NA	NA	36.29505	-121.26652	9/11/2017	3/12/2019
AGL020000766-CCGC_0489	ON-FARM DOMESTIC	NA	NA	NA	36.28898	-121.21815	7/26/2017	10/21/2019
AGL020001019-CCGC_0613	ON-FARM DOMESTIC	NA	NA	NA	36.384	-121.3575	5/16/2017	4/25/2019
AGL020002612-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.37716	-121.33022	12/4/2017	9/30/2019
AGL020007496-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.3073	-121.1915	9/11/2017	3/12/2019
AGL020001070-CCGC_0484	ON-FARM DOMESTIC	NA	NA	NA	36.33614	-121.21587	4/30/2019	4/30/2019
AGL020007494-DOM	ON-FARM DOMESTIC	NA	NA	NA	36.31667	-121.20898	9/11/2017	3/12/2019
AGL020007326-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.30292	-121.22109	9/11/2017	3/12/2019
AGL020004913-DOM WELL	ON-FARM DOMESTIC	NA	NA	NA	36.38273	-121.35461	12/4/2017	9/30/2019
AGL020000769-WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.2948759	-121.2400746	8/21/2015	8/21/2015
AGL020001074-MATHIAS_I	IRRIGATION SUPPLY	NA	NA	NA	36.35495	-121.21868	11/28/2017	4/30/2019
AGL020001205-HOME WELL	IRRIGATION SUPPLY	NA	NA	NA	36.398418	-121.347755	12/13/2013	3/12/2014
AGL020002881-R8 W1	IRRIGATION SUPPLY	NA	NA	NA	36.4934694	-121.4214917	10/18/2013	10/18/2013
AGL020001224-UP_BINS_AG	IRRIGATION SUPPLY	NA	NA	NA	36.3868333	-121.3444667	6/6/2017	12/14/2017
AGL020003324-WELL 3	IRRIGATION SUPPLY	NA	NA	NA	36.345	-121.2858333	7/2/2015	4/9/2019
AGL020003533-ALBERTONI AW 2	IRRIGATION SUPPLY	NA	NA	NA	36.3822222	-121.3291667	11/26/2012	3/3/2020
AGL020003756-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.2984	-121.26092	9/3/2013	9/29/2017
AGL020002614-DIESEL	IRRIGATION SUPPLY	NA	NA	NA	36.37632	-121.3215	12/4/2017	12/4/2017
AGL020004433-SALINAS	IRRIGATION SUPPLY	NA	NA	NA	36.42676	-121.40316	11/30/2012	10/24/2017
AGL020008124-WEST PINNACLES	IRRIGATION SUPPLY	NA	NA	NA	36.427489	-121.307711	12/31/2012	11/27/2017

AGL020011788-WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.35406	-121.274	6/23/2017	9/20/2017
AGL020014162-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.29644	-121.29506	12/11/2012	9/18/2017
AGL020028112-RANCH2_I	IRRIGATION SUPPLY	NA	NA	NA	36.32672	-121.25646	7/26/2017	10/22/2019
AGL020015566-JFGRAVEL_I	IRRIGATION SUPPLY	NA	NA	NA	36.32185	-121.2655	11/15/2017	12/11/2019
AGL020008549-MANZONI_1	IRRIGATION SUPPLY	NA	NA	NA	36.474969	-121.465008	7/17/2017	11/8/2017
AGL020010827-REDDING	IRRIGATION SUPPLY	NA	NA	NA	36.295	-121.2033333	9/17/2012	9/11/2018
AGL020013063-R11 W7	IRRIGATION SUPPLY	NA	NA	NA	36.4281639	-121.384475	10/17/2013	4/25/2018
AGL020004084-WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.47546	-121.40048	6/23/2017	12/11/2017
AGL020004188-AG_MORIS5	IRRIGATION SUPPLY	NA	NA	NA	36.419221	-121.332745	9/6/2013	6/7/2019
AGL020007351-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.29683	-121.278005	9/11/2017	3/12/2019
AGL020003063-AF11-12WELL	IRRIGATION SUPPLY	NA	NA	NA	36.399609	-121.313609	10/31/2012	3/17/2017
AGL020001196-SALMINA_AG	IRRIGATION SUPPLY	NA	NA	NA	36.3966167	-121.3382167	6/7/2017	12/14/2017
AGL020000538-WINDMILL	IRRIGATION SUPPLY	NA	NA	NA	36.283654	-121.316311	12/11/2012	9/18/2017
AGL020000724-BINSACCA	IRRIGATION SUPPLY	NA	NA	NA	36.382434	-121.349113	11/14/2012	9/22/2017
AGL020000767-PURARCH5_I	IRRIGATION SUPPLY	NA	NA	NA	36.33525	-121.27416	7/26/2017	10/21/2019
AGL020007346-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.29566	-121.26604	9/11/2017	3/12/2019
AGL020004196-AG_WILL28	IRRIGATION SUPPLY	NA	NA	NA	36.469995	-121.424296	9/19/2013	6/7/2019
AGL020030169-AG_JACKS	IRRIGATION SUPPLY	NA	NA	NA	36.372625	-121.294792	12/14/2017	6/7/2019
AGL020003758-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.31176	-121.26804	9/3/2013	9/29/2017
AGL020003788-WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.34121	-121.26165	12/4/2017	10/1/2019
AGL020011786-WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.28067	-121.19298	6/23/2017	9/20/2017
AGL020015982-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.3053	-121.2529	12/11/2012	9/18/2017
AGL020007554-WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.34347	-121.30191	12/27/2017	8/6/2019
AGL020009582-METZ_WELL	IRRIGATION SUPPLY	NA	NA	NA	36.41952	-121.290227	6/21/2017	6/21/2017
AGL020013564-AG WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.33524	-121.2417	5/24/2017	6/18/2019
AGL020001095-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.32066	-121.208105	12/14/2012	6/27/2017
AGL020001149-SPU NORTH WELL	IRRIGATION SUPPLY	NA	NA	NA	36.37089	-121.30795	6/19/2015	12/15/2017
AGL020001017-RO AGWELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.461	-121.4522	5/16/2017	4/25/2019
AGL020001293-FROLLI_AG	IRRIGATION SUPPLY	NA	NA	NA	36.4058	-121.33745	6/7/2017	12/19/2017
AGL020001372-#13 RIVER	IRRIGATION SUPPLY	NA	NA	NA	36.3019	-121.1672	5/26/2017	11/17/2017
AGL020028035-R24-7	IRRIGATION SUPPLY	NA	NA	NA	36.36883333	-121.2544444	6/13/2017	10/25/2017
AGL020011784-WELL 2 AG	IRRIGATION SUPPLY	NA	NA	NA	36.43063	-121.34846	6/23/2017	9/20/2017
AGL020003043-BAILEY_HILL_AG	IRRIGATION SUPPLY	NA	NA	NA	36.284139	-121.300542	5/23/2017	10/2/2017
AGL020027322-FERRAS3_AG	IRRIGATION SUPPLY	NA	NA	NA	36.4012333	-121.3656167	6/13/2017	12/15/2017
AGL020027835-WELL #1	IRRIGATION SUPPLY	NA	NA	NA	36.493447	-121.421441	11/1/2017	11/1/2017
AGL020016302-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.327354	-121.299465	8/6/2013	3/11/2014
AGL020017922-WELL 5	IRRIGATION SUPPLY	NA	NA	NA	36.4455	-121.32597	10/10/2017	10/10/2017
AGL020028453-SUNKENNR_I	IRRIGATION SUPPLY	NA	NA	NA	36.29486	-121.24022	12/19/2017	4/30/2019

AGL020030311-GV16_IRR	IRRIGATION SUPPLY	NA	NA	NA	36.30841	-121.2266	6/27/2018	8/27/2019
AGL020000983-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.43723	-121.46665	1/16/2018	6/19/2018
AGL020003324-WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.33222222	-121.2905556	7/2/2015	11/14/2017
AGL020001189-S.NICHOLAS NORT	IRRIGATION SUPPLY	NA	NA	NA	36.30739	-121.31417	6/19/2015	12/15/2017
AGL020004503-HACIENDA_I	IRRIGATION SUPPLY	NA	NA	NA	36.46125	-121.35818	11/15/2017	12/11/2019
AGL020006681-MCINTYRE	IRRIGATION SUPPLY	NA	NA	NA	36.2811	-121.2748	3/11/2013	3/25/2019
AGL020009563-RIV-A1	IRRIGATION SUPPLY	NA	NA	NA	36.40901	-121.34639	7/8/2015	2/8/2019
AGL020001354-R1-W1-AME	IRRIGATION SUPPLY	NA	NA	NA	36.410496	-121.282636	6/27/2017	12/16/2019
AGL020003530-LOS COCHES AW 2	IRRIGATION SUPPLY	NA	NA	NA	36.4041667	-121.3202778	11/26/2012	3/3/2020
AGL020003751-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.37867	-121.34164	9/4/2013	9/29/2017
AGL020004455-JFWCLARK_I	IRRIGATION SUPPLY	NA	NA	NA	36.36253	-121.31915	11/15/2017	12/11/2019
AGL020006622-CARMEL MAIN	IRRIGATION SUPPLY	NA	NA	NA	36.276	-121.2216	3/11/2013	3/11/2013
AGL020027836-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.49342	-121.421478	3/30/2017	3/30/2017
AGL020027899-MORANDA_AG	IRRIGATION SUPPLY	NA	NA	NA	36.4020667	-121.37255	6/6/2017	12/14/2017
AGL020004157-WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.406377	-121.349799	11/27/2012	12/31/2013
AGL020000781-WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.30904629	-121.2651873	8/21/2015	7/29/2019
AGL020014790-WELL #1	IRRIGATION SUPPLY	NA	NA	NA	36.468495	-121.458865	12/17/2012	11/14/2017
AGL020006626-GARCIA MAIN	IRRIGATION SUPPLY	NA	NA	NA	36.2717	-121.237	3/11/2013	6/1/2017
AGL020001019-SI AGWELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.385	-121.3578	5/16/2017	4/25/2019
AGL020003532-JOHNSON AW 1	IRRIGATION SUPPLY	NA	NA	NA	36.383333	-121.3308333	11/26/2012	3/3/2020
AGL020001273-BALEMI WELL	IRRIGATION SUPPLY	NA	NA	NA	36.396446	-121.352913	12/12/2013	3/13/2014
AGL020020162-MCLASK_AG	IRRIGATION SUPPLY	NA	NA	NA	36.3979667	-121.35025	6/15/2017	12/19/2017
AGL020004189-HERSCH_I_2	IRRIGATION SUPPLY	NA	NA	NA	36.4404186	-121.411507	8/27/2019	8/27/2019
AGL020008409-LA REINA	IRRIGATION SUPPLY	NA	NA	NA	36.4697222	-121.4666667	6/3/2013	12/18/2013
AGL020007326-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.30276	-121.22079	9/11/2017	3/12/2019
AGL020004506-JFWPDM_I	IRRIGATION SUPPLY	NA	NA	NA	36.49813	-121.41194	11/15/2017	12/11/2019
AGC100000001-CCGC_0483	IRRIGATION SUPPLY	NA	NA	NA	36.34198	-121.20883	8/27/2014	8/27/2014
AGL020000522-PN-4	IRRIGATION SUPPLY	NA	NA	NA	36.28409	-121.17342	3/30/2017	9/27/2017
AGL020000758-RANCH1_I	IRRIGATION SUPPLY	NA	NA	NA	36.34881	-121.22631	7/26/2017	10/21/2019
AGL020000766-RANCH4_I	IRRIGATION SUPPLY	NA	NA	NA	36.2962	-121.20961	7/26/2017	10/21/2019
AGL020000778-WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.3268447	-121.2565407	8/21/2015	8/21/2015
AGL020001153-LONE OAK WELL	IRRIGATION SUPPLY	NA	NA	NA	36.46033	-121.45108	6/19/2015	12/15/2017
AGL020001196-SALMINA WELL	IRRIGATION SUPPLY	NA	NA	NA	36.396503	-121.338219	12/12/2013	3/12/2014
AGL020001233-RIANDA_2AG	IRRIGATION SUPPLY	NA	NA	NA	36.387	-121.3558333	6/12/2017	12/18/2017
AGL020001272-VIO_HO_AG	IRRIGATION SUPPLY	NA	NA	NA	36.3913667	-121.35645	6/7/2017	12/14/2017
AGL020001287-BINSACCA WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.406364	-121.336136	12/16/2013	3/12/2014
AGL020000548-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.32577	-121.2979	2/7/2018	4/8/2019

AGL020000783-WELL 3	IRRIGATION SUPPLY	NA	NA	NA	36.33287169	-121.2616027	8/21/2015	5/23/2018
AGL020001046-SO AGWELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.446	-121.4331	5/16/2017	4/25/2019
AGL020001155-DOCTORS WELL	IRRIGATION SUPPLY	NA	NA	NA	36.39973	-121.37676	6/19/2015	12/15/2017
AGL020001217-WELL N18	IRRIGATION SUPPLY	NA	NA	NA	36.35923	-121.335	10/8/2012	10/9/2017
AGL020001390-#19 OSHITA 421	IRRIGATION SUPPLY	NA	NA	NA	36.411	-121.2882	6/20/2017	11/20/2017
AGL020002679-R14 AG	IRRIGATION SUPPLY	NA	NA	NA	36.31003	-121.21537	9/11/2017	9/11/2017
AGL020002872-R2 W1	IRRIGATION SUPPLY	NA	NA	NA	36.4332889	-121.4016028	10/17/2013	4/25/2018
AGL020002884-R10 W2	IRRIGATION SUPPLY	NA	NA	NA	36.342875	-121.3014722	10/15/2013	4/24/2018
AGL020001469-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.45404	-121.44304	7/10/2018	3/25/2019
AGL020001472-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.43612	-121.42595	6/28/2017	3/25/2019
AGL020002684-RANCH 13	IRRIGATION SUPPLY	NA	NA	NA	36.31613	-121.21689	9/11/2017	9/11/2017
AGL020003319-GV9-2	IRRIGATION SUPPLY	NA	NA	NA	36.3050367	-121.274675	7/23/2012	12/20/2017
AGL020003324-WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.33277778	-121.2611111	7/2/2015	4/9/2019
AGL020003367-A-1	IRRIGATION SUPPLY	NA	NA	NA	36.27645	-121.2354	12/19/2017	12/19/2017
AGL020003041-AW 1	IRRIGATION SUPPLY	NA	NA	NA	36.298859	-121.300749	7/15/2015	12/12/2019
AGL020003041-AW 3	IRRIGATION SUPPLY	NA	NA	NA	36.295332	-121.296352	7/15/2015	4/27/2020
AGL020003311-GV1	IRRIGATION SUPPLY	NA	NA	NA	36.321106	-121.2760107	7/23/2012	12/20/2017
AGL020003533-ALBERTONI AW 1	IRRIGATION SUPPLY	NA	NA	NA	36.3825	-121.3225	11/26/2012	3/3/2020
AGL020003759-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.30669	-121.23351	9/3/2013	9/29/2017
AGL020003526-HOME AW 1	IRRIGATION SUPPLY	NA	NA	NA	36.3858333	-121.3291667	5/6/2013	3/3/2020
AGL020003534-ZABALA AW 1	IRRIGATION SUPPLY	NA	NA	NA	36.323889	-121.3141667	11/26/2012	3/3/2020
AGL020003721-LEV WELL	IRRIGATION SUPPLY	NA	NA	NA	36.46814	-121.46023	11/21/2014	11/21/2014
AGL020003722-AG_SHOP	IRRIGATION SUPPLY	NA	NA	NA	36.3061887	-121.2829816	7/1/2015	6/18/2019
AGL020003751-RANCH 8	IRRIGATION SUPPLY	NA	NA	NA	36.38092	-121.34898	9/29/2017	9/29/2017
AGL020003761-NEW AG	IRRIGATION SUPPLY	NA	NA	NA	36.43553	-121.41164	9/4/2013	9/29/2017
AGL020004065-HARRIS_CLA	IRRIGATION SUPPLY	NA	NA	NA	36.34915	-121.26556	5/30/2017	6/26/2019
AGL020004084-NEW WELL	IRRIGATION SUPPLY	NA	NA	NA	36.47558	-121.40942	6/23/2017	12/11/2017
AGL020004175-AG_BLAIR5	IRRIGATION SUPPLY	NA	NA	NA	36.367042	-121.273346	9/6/2013	6/7/2019
AGL020004068-HARRIS_HAND	IRRIGATION SUPPLY	NA	NA	NA	36.35615	-121.26878	5/30/2017	5/30/2017
AGL020003874-COCPMP10_I	IRRIGATION SUPPLY	NA	NA	NA	36.39318	-121.30561	8/29/2017	5/2/2019
AGL020004185-HOME_IRR_1	IRRIGATION SUPPLY	NA	NA	NA	36.4411665	-121.4211395	8/27/2019	8/27/2019
AGL020004281-CALLAGHAN_11	IRRIGATION SUPPLY	NA	NA	NA	36.442713	-121.382375	7/13/2017	11/8/2017
AGL020004913-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.38276	-121.35454	12/4/2017	9/30/2019
AGL020006684-SUNRISE MAIN 2	IRRIGATION SUPPLY	NA	NA	NA	36.2938	-121.2527	3/11/2013	6/1/2017
AGL020007354-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.3219	-121.22113	9/11/2017	3/12/2019
AGL020007563-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.46726	-121.46194	12/27/2017	8/6/2019
AGL020007574-AW	IRRIGATION SUPPLY	NA	NA	NA	36.2975	-121.3044444	1/28/2014	1/28/2014
AGL020005174-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.3214977	-121.299437	12/14/2012	5/23/2017
AGL020005420-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.3071	-121.30634	10/9/2015	5/8/2018
AGL020005723-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.31323	-121.27166	1/4/2013	11/14/2017

AGL020011793-WELL 1 AG	IRRIGATION SUPPLY	NA	NA	NA	36.45269	-121.36758	6/23/2017	9/20/2017
AGL020013564-AG WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.32989	-121.22928	5/24/2017	6/18/2019
AGL020014782-WELL #1	IRRIGATION SUPPLY	NA	NA	NA	36.479082	-121.40928	12/11/2012	11/1/2017
AGL020014786-SCHOOLWELL	IRRIGATION SUPPLY	NA	NA	NA	36.318384	-121.234303	4/13/2018	4/13/2018
AGL020009782-RED P2 WELL	IRRIGATION SUPPLY	NA	NA	NA	36.3057	-121.1783	7/7/2017	4/24/2020
AGL020014778-WELL #1	IRRIGATION SUPPLY	NA	NA	NA	36.495708	-121.396667	12/19/2012	11/14/2017
AGL020014794-WELL #1	IRRIGATION SUPPLY	NA	NA	NA	36.482726	-121.414796	12/11/2012	11/1/2017
AGL020017922-AG_RCH1_P2	IRRIGATION SUPPLY	NA	NA	NA	36.4454667	-121.3292333	11/24/2014	3/16/2015
AGL020027304-SILLIMA_AG	IRRIGATION SUPPLY	NA	NA	NA	36.4082	-121.3616333	6/6/2017	12/14/2017
AGL020027686-SANCTUARY AG	IRRIGATION SUPPLY	NA	NA	NA	36.29777778	-121.304444	8/4/2015	6/1/2017
AGL020028035-R24-4	IRRIGATION SUPPLY	NA	NA	NA	36.36911111	-121.2468333	6/13/2017	10/25/2017
AGL020028035-R24-5	IRRIGATION SUPPLY	NA	NA	NA	36.36777778	-121.2654722	6/13/2017	10/30/2017
AGL020030080-THORNE_W1	IRRIGATION SUPPLY	NA	NA	NA	36.32701	-121.304625	11/2/2017	4/24/2018
AGL020030317-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.43062	-121.34853	6/26/2019	6/26/2019
AGL020023282-WELL #1	IRRIGATION SUPPLY	NA	NA	NA	36.381165	-121.350951	5/14/2014	11/1/2017
AGL020026602-COCPMP5_I	IRRIGATION SUPPLY	NA	NA	NA	36.38364	-121.29391	8/29/2017	5/2/2019
AGL020028290-S-1	IRRIGATION SUPPLY	NA	NA	NA	36.28597	-121.17494	4/19/2017	10/3/2017
AGL020028604-WELL 6	IRRIGATION SUPPLY	NA	NA	NA	36.31485	-121.2996	10/17/2017	4/3/2018
AGL020030105-YRWELL	IRRIGATION SUPPLY	NA	NA	NA	36.3473	-121.25379	11/6/2017	11/6/2017
AGL020035378-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.30703	-121.2224	3/12/2019	3/12/2019
AGL020036652-STONEWALL IW	IRRIGATION SUPPLY	NA	NA	NA	36.41881	-121.29308	12/5/2019	12/5/2019
AGL020035762-TABIANCH_I	IRRIGATION SUPPLY	NA	NA	NA	36.43328	-121.4016	#N/A	#N/A
AGL020003752-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.30917	-121.31403	9/4/2013	9/29/2017
AGL020035367-PATRICIA_IW	IRRIGATION SUPPLY	NA	NA	NA	36.307	-121.22214	8/27/2019	8/27/2019
AGL020002749-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.3149	-121.23401	11/20/2017	4/8/2019
AGL020002885-R11 W8	IRRIGATION SUPPLY	NA	NA	NA	36.4233333	-121.3861472	10/17/2013	4/25/2018
AGL020027364-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.29281	-121.2813	11/20/2017	4/8/2019
AGL020027303-TORRONI_AG	IRRIGATION SUPPLY	NA	NA	NA	36.40645	-121.3498	6/7/2017	12/18/2017
AGL020010223-MASSA #2	IRRIGATION SUPPLY	NA	NA	NA	36.36245	-121.24858	6/8/2017	6/8/2017
AGL020011789-WELL AG	IRRIGATION SUPPLY	NA	NA	NA	36.43112	-121.33567	6/23/2017	9/20/2017
AGL020003318-GV8	IRRIGATION SUPPLY	NA	NA	NA	36.29932044	-121.2786753	7/23/2012	12/20/2017
AGL020003324-WELL 5	IRRIGATION SUPPLY	NA	NA	NA	36.35138889	-121.2816667	7/2/2015	4/9/2019
AGL020014776-WELL #1	IRRIGATION SUPPLY	NA	NA	NA	36.485076	-121.418626	12/11/2012	11/1/2017
AGL020027303-TORRONI WELL	IRRIGATION SUPPLY	NA	NA	NA	36.40642	-121.34982	3/15/2016	3/15/2016
AGL020000763-WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.27808	-121.2291	8/21/2015	12/12/2017
AGL020027728-RIV AW 1	IRRIGATION SUPPLY	NA	NA	NA	36.327303	-121.299482	5/22/2017	4/27/2020
AGL020014796-WELL #1	IRRIGATION SUPPLY	NA	NA	NA	36.48888	-121.422539	5/14/2014	11/30/2017
AGL020005722-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.30304	-121.22652	1/4/2013	11/14/2017
AGL020007348-WELL LOT 1	IRRIGATION SUPPLY	NA	NA	NA	36.29972	-121.21593	9/11/2017	3/12/2019
AGL020001273-BALEMI_AG	IRRIGATION SUPPLY	NA	NA	NA	36.3964	-121.3545333	6/8/2017	12/14/2017

AGL020001275-BARLOG1_AG	IRRIGATION SUPPLY	NA	NA	NA	36.40705	-121.3695667	6/13/2017	12/18/2017
AGL020001279-VAUGHAN HM WELL	IRRIGATION SUPPLY	NA	NA	NA	36.396912	-121.334267	12/16/2013	12/16/2013
AGL020001377-10-W2-AME	IRRIGATION SUPPLY	NA	NA	NA	36.301512	-121.238225	12/16/2019	12/16/2019
AGL020001392-22-W1-AME	IRRIGATION SUPPLY	NA	NA	NA	36.282282	-121.221673	6/27/2017	12/16/2019
AGL020001205-HOME_AG	IRRIGATION SUPPLY	NA	NA	NA	36.3983333	-121.3476333	6/5/2017	12/19/2017
AGL020001224-UPPER BINSACCA	IRRIGATION SUPPLY	NA	NA	NA	36.386808	-121.344327	11/1/2016	11/1/2016
AGL020012504-R10 W12	IRRIGATION SUPPLY	NA	NA	NA	36.3313972	-121.30795	10/15/2013	4/24/2018
AGL020014769-FC NORTH	IRRIGATION SUPPLY	NA	NA	NA	36.33574	-121.31741	11/27/2012	10/9/2017
AGL020015810-FREYLOTG_I	IRRIGATION SUPPLY	NA	NA	NA	36.42359	-121.33981	6/28/2017	7/15/2019
AGL020003534-ZABALA AW 3	IRRIGATION SUPPLY	NA	NA	NA	36.3277778	-121.3152778	11/26/2012	3/3/2020
AGL020003761-LANDLORD	IRRIGATION SUPPLY	NA	NA	NA	36.43477	-121.40977	9/4/2013	9/29/2017
AGL020000763-FREW WELL	IRRIGATION SUPPLY	NA	NA	NA	36.27806699	-121.2290635	5/23/2018	7/29/2019
AGL020004152-ALISAL 2	IRRIGATION SUPPLY	NA	NA	NA	36.38833	-121.32531	11/5/2012	11/5/2012
AGL020015884-AG_WILL35	IRRIGATION SUPPLY	NA	NA	NA	36.476914	-121.436128	9/6/2013	6/7/2019
AGL020004844-SOLEDWELL	IRRIGATION SUPPLY	NA	NA	NA	36.4079	-121.27023	12/11/2018	12/11/2018
AGL020000783-WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.32776064	-121.2628965	8/21/2015	5/23/2018
AGL020009562-TOM-A1	IRRIGATION SUPPLY	NA	NA	NA	36.37662	-121.24505	7/8/2015	2/8/2019
AGL020017922-AG_RCH1_P5	IRRIGATION SUPPLY	NA	NA	NA	36.4454333	-121.3258667	11/24/2014	4/28/2017
AGL020018062-BRM9LT45_I	IRRIGATION SUPPLY	NA	NA	NA	36.38319	-121.2609	8/29/2017	5/2/2019
AGL020002613-LOWER	IRRIGATION SUPPLY	NA	NA	NA	36.37262	-121.32543	12/4/2017	9/30/2019
AGL020002618-METZ	IRRIGATION SUPPLY	NA	NA	NA	36.39835	-121.25544	12/4/2017	9/30/2019
AGL020002750-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.33233	-121.22245	11/20/2017	4/8/2019
AGL020005183-WELL 5	IRRIGATION SUPPLY	NA	NA	NA	36.31953	-121.28613	12/14/2012	10/17/2017
AGL020002875-R3 W1	IRRIGATION SUPPLY	NA	NA	NA	36.4389083	-121.4105083	10/17/2013	4/25/2018
AGL020003041-AW 2	IRRIGATION SUPPLY	NA	NA	NA	36.300467	-121.298622	7/15/2015	4/27/2020
AGL020002829-P2 WELL	IRRIGATION SUPPLY	NA	NA	NA	36.3182	-121.1783	8/1/2018	4/24/2020
AGL020007345-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.30954	-121.19011	9/11/2017	3/12/2019
AGL020007436-3622-004	IRRIGATION SUPPLY	NA	NA	NA	36.46451	-121.41714	6/29/2017	6/29/2017
AGL020007438-3730-005	IRRIGATION SUPPLY	NA	NA	NA	36.45572	-121.4192	6/29/2017	4/12/2018
AGL020007494-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.31762	-121.20746	9/11/2017	3/12/2019
AGL020007500-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.27688	-121.30272	9/11/2017	3/12/2019
AGL020003200-HOMER1_I	IRRIGATION SUPPLY	NA	NA	NA	36.40487	-121.35262	6/8/2017	6/8/2017
AGL020003319-GV9-1	IRRIGATION SUPPLY	NA	NA	NA	36.3083948	-121.275857	7/23/2012	12/20/2017
AGL020003320-GV10	IRRIGATION SUPPLY	NA	NA	NA	36.323659	-121.270197	5/3/2017	12/20/2017
AGL020003324-WELL 4	IRRIGATION SUPPLY	NA	NA	NA	36.34277778	-121.2952778	7/2/2015	4/9/2019
AGL020007554-WELL 3	IRRIGATION SUPPLY	NA	NA	NA	36.34104	-121.311	12/27/2017	8/6/2019
AGL020007562-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.30846	-121.31182	12/27/2017	8/6/2019
AGL020003532-JOHNSON AW 2	IRRIGATION SUPPLY	NA	NA	NA	36.3852776	-121.3313889	11/26/2012	3/3/2020
AGL020003537-SKY RCH AW 1	IRRIGATION SUPPLY	NA	NA	NA	36.3175	-121.3119444	11/26/2012	3/3/2020
AGL020008409-LA REINA MAIN W	IRRIGATION SUPPLY	NA	NA	NA	36.275261	-121.28263	12/31/2012	12/31/2012

AGL020003754-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.2953	-121.24026	9/3/2013	9/29/2017
AGL020003757-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.30257	-121.27364	9/3/2013	9/29/2017
AGL020003722-AG_BLK_4_5	IRRIGATION SUPPLY	NA	NA	NA	36.3007415	-121.2824952	7/1/2015	6/18/2019
AGL020003761-OLD AG	IRRIGATION SUPPLY	NA	NA	NA	36.43772	-121.41509	9/4/2013	9/29/2017
AGL020003766-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.39007	-121.25148	9/4/2013	9/29/2017
AGL020003768-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.42111	-121.30607	9/4/2013	9/29/2017
AGL020004064-HARRIS_PHI	IRRIGATION SUPPLY	NA	NA	NA	36.3378	-121.27693	5/30/2017	6/26/2019
AGL020010222-HUDSON SN	IRRIGATION SUPPLY	NA	NA	NA	36.349852	-121.262611	6/8/2017	6/8/2017
AGL020011782-WELL AG	IRRIGATION SUPPLY	NA	NA	NA	36.41641	-121.32835	6/23/2017	9/20/2017
AGL020028606-WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.31774	-121.2854	10/17/2017	4/3/2018
AGL020000725-ALTURAS	IRRIGATION SUPPLY	NA	NA	NA	36.36606	-121.366112	11/14/2012	5/9/2013
AGL020004153-WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.37255	-121.29497	11/27/2012	11/7/2017
AGL020004185-HOME_IRR_2	IRRIGATION SUPPLY	NA	NA	NA	36.4210273	-121.4213326	8/27/2019	8/27/2019
AGL020004190-AG_DOUD21	IRRIGATION SUPPLY	NA	NA	NA	36.388352	-121.3098	9/6/2013	6/7/2019
AGL020011792-WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.43474	-121.33853	6/23/2017	9/20/2017
AGL020030232-CENTENNIAL IW	IRRIGATION SUPPLY	NA	NA	NA	36.27934	-121.21099	8/27/2019	8/27/2019
AGL020004286-ARNOLD_3	IRRIGATION SUPPLY	NA	NA	NA	36.427273	-121.363301	7/13/2017	10/3/2018
AGL020032756-SAVAGE1_I	IRRIGATION SUPPLY	NA	NA	NA	36.32891	-121.19334	10/21/2019	10/21/2019
AGL020036493-SARMENTO_I	IRRIGATION SUPPLY	NA	NA	NA	36.43884	-121.41051	10/30/2019	10/30/2019
AGL020001043-GA AGWELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.456	-121.4431	5/16/2017	4/25/2019
AGL020001156-HOOK WELL	IRRIGATION SUPPLY	NA	NA	NA	36.38783	-121.36282	6/19/2015	12/15/2017
AGL020004449-GABILAN	IRRIGATION SUPPLY	NA	NA	NA	36.47458	-121.36793	12/5/2012	10/26/2017
AGL020014786-WELL #1	IRRIGATION SUPPLY	NA	NA	NA	36.318384	-121.234303	12/20/2012	11/30/2017
AGL020004441-BLOCK3	IRRIGATION SUPPLY	NA	NA	NA	36.43124	-121.30766	11/30/2012	10/26/2017
AGL020001200-THOMPSON WELL	IRRIGATION SUPPLY	NA	NA	NA	36.392555	-121.341438	12/12/2013	12/12/2013
AGL020001207-RODDIC2_AG	IRRIGATION SUPPLY	NA	NA	NA	36.3951167	-121.3655667	6/8/2017	12/18/2017
AGL020001210-LANINI_AG1	IRRIGATION SUPPLY	NA	NA	NA	36.4127	-121.37255	6/5/2017	12/18/2017
AGL020001217-WELL NN1-DOM	IRRIGATION SUPPLY	NA	NA	NA	36.336866	-121.340276	10/8/2012	10/9/2017
AGC100000001-CCGC_0019	IRRIGATION SUPPLY	NA	NA	NA	36.41301	-121.38024	10/24/2013	10/24/2013
AGL020001261-ANDERSON IRR WE	IRRIGATION SUPPLY	NA	NA	NA	36.390518	-121.347305	12/12/2013	3/14/2014
AGL020001287-BINSAC_AG1	IRRIGATION SUPPLY	NA	NA	NA	36.4061833	-121.3361333	6/6/2017	12/14/2017
AGL020003534-ZABALA AW 2	IRRIGATION SUPPLY	NA	NA	NA	36.3319444	-121.3211111	11/26/2012	3/3/2020
AGL020001360-WELL 3	IRRIGATION SUPPLY	NA	NA	NA	36.295451	-121.185819	5/11/2017	11/17/2017
AGL020001382-#16 MCCOY	IRRIGATION SUPPLY	NA	NA	NA	36.3685	-121.2383	5/26/2017	11/17/2017
AGL020001387-21-W1-AME	IRRIGATION SUPPLY	NA	NA	NA	36.275785	-121.233421	6/27/2017	12/16/2019
AGL020001171-FANBRO_AG1	IRRIGATION SUPPLY	NA	NA	NA	36.3985167	-121.3386167	6/6/2017	9/12/2019
AGL020001231-LUCHESSA WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.407284	-121.368362	12/16/2013	3/12/2014
AGL020016163-WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.32628	-121.25341	12/6/2012	9/27/2017

AGL020010226-MORGANTINI #4	IRRIGATION SUPPLY	NA	NA	NA	36.340225	-121.240431	6/10/2017	6/10/2017
AGL020001279-VAUGH_AG	IRRIGATION SUPPLY	NA	NA	NA	36.3970167	-121.33425	6/8/2017	12/19/2017
AGL020004844-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.4079	-121.27023	6/27/2017	12/17/2019
AGL020001261-ANDERSO_AG	IRRIGATION SUPPLY	NA	NA	NA	36.3905667	-121.3473	6/12/2017	12/19/2017
AGL020003767-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.41887	-121.29319	9/4/2013	9/29/2017
AGL020004302-PRYOR_7	IRRIGATION SUPPLY	NA	NA	NA	36.453989	-121.391608	3/14/2017	11/8/2017
AGL020004441-BLOCK41	IRRIGATION SUPPLY	NA	NA	NA	36.4234	-121.29601	11/30/2012	10/26/2017
AGL020011787-WELL 1 AG	IRRIGATION SUPPLY	NA	NA	NA	36.34394	-121.3196	6/23/2017	9/20/2017
AGL020001200-THOMPSO_AG	IRRIGATION SUPPLY	NA	NA	NA	36.39255	-121.3415	6/6/2017	12/14/2017
AGL020001594-AG	IRRIGATION SUPPLY	NA	NA	NA	36.402676	-121.343528	11/14/2012	5/9/2013
AGL020028257-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.304119	-121.227753	5/22/2017	11/6/2017
AGL020003722-AG_BLK6	IRRIGATION SUPPLY	NA	NA	NA	36.300704	-121.2824268	12/21/2015	6/18/2019
AGL020001426-PRISON WELL	IRRIGATION SUPPLY	NA	NA	NA	36.4822722	-121.3680389	12/31/2012	12/31/2012
AGL020027404-RANCH 9	IRRIGATION SUPPLY	NA	NA	NA	36.42896	-121.40582	9/29/2017	9/29/2017
AGL020014780-WELL #1	IRRIGATION SUPPLY	NA	NA	NA	36.437913	-121.430797	12/17/2012	11/1/2017
AGL020015502-AG_SALMIN7	IRRIGATION SUPPLY	NA	NA	NA	36.424375	-121.331227	9/6/2013	6/7/2019
AGL020013062-R11 W5	IRRIGATION SUPPLY	NA	NA	NA	36.4130806	-121.3927222	10/17/2013	4/25/2018
AGL020004152-ALISAL 3	IRRIGATION SUPPLY	NA	NA	NA	36.38701	-121.32538	11/5/2012	11/5/2012
AGL020002902-R24 W2	IRRIGATION SUPPLY	NA	NA	NA	36.4425056	-121.3529667	10/18/2013	4/26/2018
AGL020009563-RIV-A2	IRRIGATION SUPPLY	NA	NA	NA	36.411368	-121.345671	7/8/2015	7/8/2015
AGL020004441-BLOCK11	IRRIGATION SUPPLY	NA	NA	NA	36.425157	-121.305124	11/30/2012	4/12/2013
AGL020003324-WELL 6	IRRIGATION SUPPLY	NA	NA	NA	36.35611111	-121.2986111	7/2/2015	4/9/2019
AGL020020162-MCCLASKEY WELL	IRRIGATION SUPPLY	NA	NA	NA	36.398048	-121.350365	12/16/2013	3/13/2014
AGL020015885-AG_WILL51	IRRIGATION SUPPLY	NA	NA	NA	36.469396	-121.436594	9/6/2013	6/7/2019
AGL020015886-AG_WILL72	IRRIGATION SUPPLY	NA	NA	NA	36.46094	-121.436209	9/6/2013	6/7/2019
AGL020001189-S.NICHOLAS SOUT	IRRIGATION SUPPLY	NA	NA	NA	36.30428	-121.31277	6/19/2015	12/15/2017
AGL020001207-RODDICK WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.395176	-121.365494	12/13/2013	3/13/2014
AGL020001426-MCCOY IRR	IRRIGATION SUPPLY	NA	NA	NA	36.474587	-121.363811	6/23/2017	11/28/2017
AGL020003042-DOUD 1	IRRIGATION SUPPLY	NA	NA	NA	36.285616	-121.277047	7/15/2015	4/27/2020
AGL020002752-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.29498	-121.23504	11/20/2017	4/8/2019
AGL020003530-LOS COCHES AW 1	IRRIGATION SUPPLY	NA	NA	NA	36.4052778	-121.3236111	11/26/2012	3/3/2020
AGL020003537-SKY RCH AW 2	IRRIGATION SUPPLY	NA	NA	NA	36.3194444	-121.3138889	11/26/2012	3/3/2020
AGL020003722-AG_PUMP9	IRRIGATION SUPPLY	NA	NA	NA	36.2962654	-121.2824269	6/14/2017	6/18/2019
AGL020004189-HERSCH_I	IRRIGATION SUPPLY	NA	NA	NA	36.4393	-121.41006	8/24/2018	8/27/2019
AGL020004433-KINGCITY	IRRIGATION SUPPLY	NA	NA	NA	36.42607	-121.40262	11/30/2012	10/24/2017
AGL020004497-RANTIER_I	IRRIGATION SUPPLY	NA	NA	NA	36.3806	-121.30596	11/15/2017	12/11/2019
AGL020002883-R9 W1	IRRIGATION SUPPLY	NA	NA	NA	36.4509056	-121.438725	10/17/2013	4/25/2018
AGL020007554-WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.33476	-121.29994	12/27/2017	8/13/2019
AGL020011785-WELL 5	IRRIGATION SUPPLY	NA	NA	NA	36.43866	-121.34521	6/23/2017	9/20/2017

AGL020030077-R29_W1	IRRIGATION SUPPLY	NA	NA	NA	36.404741	-121.35272	11/2/2017	4/25/2018
AGL020000883-AG_BLAIRSC	IRRIGATION SUPPLY	NA	NA	NA	36.360473	-121.279561	9/6/2013	6/7/2019
AGL020027482-LEONARDI #2	IRRIGATION SUPPLY	NA	NA	NA	36.36281	-121.25537	6/8/2017	12/27/2017
AGL020000762-RANCH3_I	IRRIGATION SUPPLY	NA	NA	NA	36.33074	-121.20745	7/26/2017	10/21/2019
AGL020007498-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.31288	-121.199	9/11/2017	3/12/2019
AGL020014769-FC SOUTH	IRRIGATION SUPPLY	NA	NA	NA	36.33451	-121.31741	11/27/2012	11/27/2012
AGL020028385-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.33733	-121.283859	5/22/2017	11/6/2017
AGL020000769-WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.2792834	-121.2265992	8/21/2015	8/21/2015
AGL020001095-NEW WELL	IRRIGATION SUPPLY	NA	NA	NA	36.3235	-121.21181	11/20/2017	11/20/2017
AGL020002612-UPPER WELL	IRRIGATION SUPPLY	NA	NA	NA	36.37611	-121.33741	12/4/2017	9/30/2019
AGL020012703-SCHIPPER	IRRIGATION SUPPLY	NA	NA	NA	36.35749	-121.22079	12/4/2017	9/30/2019
AGL020003987-WELL 2	IRRIGATION SUPPLY	NA	NA	NA	36.33006	-121.24291	5/24/2017	6/18/2019
AGL020011795-WELL 1 AG	IRRIGATION SUPPLY	NA	NA	NA	36.44082	-121.33591	9/20/2017	9/20/2017
AGL020002616-LANINI	IRRIGATION SUPPLY	NA	NA	NA	36.38641	-121.34107	12/4/2017	9/30/2019
AGL020003372-R-1	IRRIGATION SUPPLY	NA	NA	NA	36.306833	-121.22255	12/19/2017	12/19/2017
AGL020007561-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.45718	-121.44702	12/27/2017	8/6/2019
AGL020002606-NORTH WELL	IRRIGATION SUPPLY	NA	NA	NA	36.38712	-121.3376	12/4/2017	9/30/2019
AGL020002748-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.28805	-121.21126	11/20/2017	4/8/2019
AGL020002817-DOU P1 WELL	IRRIGATION SUPPLY	NA	NA	NA	36.47592	-121.41324	7/21/2017	5/5/2020
AGL020003063-AF11-30	IRRIGATION SUPPLY	NA	NA	NA	36.412817	-121.315395	9/7/2016	3/17/2017
AGL020007496-AG WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.30701	-121.19133	9/11/2017	9/11/2017
AGL020027737-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.33171	-121.22809	9/11/2017	3/12/2019
AGL020003788-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.33321	-121.25176	12/4/2017	12/4/2017
AGL020003987-WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.33792	-121.24466	5/24/2017	6/18/2019
AGL020009502-#2 SAROR IW	IRRIGATION SUPPLY	NA	NA	NA	36.3019	-121.1672	11/17/2017	4/2/2018
AGL020035924-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.31385	-121.23251	3/12/2019	3/12/2019
AGL020003788-WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.33626	-121.26393	12/4/2017	10/1/2019
AGL020027322-FERRASCI WELL 3	IRRIGATION SUPPLY	NA	NA	NA	36.401272	-121.365675	3/15/2016	3/15/2016
AGL020002751-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.29811	-121.22152	11/20/2017	4/8/2019
AGL020002610-WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.37163	-121.33842	12/4/2017	9/30/2019
AGL020003987-WELL 3	IRRIGATION SUPPLY	NA	NA	NA	36.33754	-121.2525	5/24/2017	6/18/2019
AGL020012707-VOSTI	IRRIGATION SUPPLY	NA	NA	NA	36.38594	-121.35906	12/4/2017	9/30/2019
AGL020003526-HOME AW 2	IRRIGATION SUPPLY	NA	NA	NA	36.3919444	-121.3275	5/6/2013	3/3/2020
AGL020012706-BINSACA	IRRIGATION SUPPLY	NA	NA	NA	36.38441	-121.35591	12/4/2017	9/30/2019
AGL020001070-CCGC_0483	IRRIGATION SUPPLY	NA	NA	NA	36.34198	-121.20883	11/28/2017	4/30/2019
AGL020002817-DOU P3 WELL	IRRIGATION SUPPLY	NA	NA	NA	36.4591	-121.4263	7/21/2017	5/5/2020
AGL020001233-RIANDA WELL 1	IRRIGATION SUPPLY	NA	NA	NA	36.409695	-121.347549	12/16/2013	3/12/2014
AGL020004466-PANORAMA_I	IRRIGATION SUPPLY	NA	NA	NA	36.35461	-121.32857	11/15/2017	11/15/2017
AGL020007496-AG WELL	IRRIGATION SUPPLY	NA	NA	NA	36.30702	-121.1914	3/12/2019	3/12/2019
AGL020007344-WELL	IRRIGATION SUPPLY	NA	NA	NA	36.30952	-121.20275	9/11/2017	3/12/2019

Chapter 7
Appendix 7-C

Central Coast Ag Order 3.0 **and Ag Order 4.0**
Monitoring and Reporting Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

MONITORING AND REPORTING PROGRAM
ORDER NO. R3-2017-0002-01

TIER 1

DISCHARGERS ENROLLED UNDER
CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR
DISCHARGES FROM IRRIGATED LANDS

This Monitoring and Reporting Program Order No. R3-2017-0002-01 (MRP) is issued pursuant to California Water Code (Water Code) sections 13267 and 13269, which authorize the California Regional Water Quality Control Board, Central Coast Region (hereafter Central Coast Water Board) to require preparation and submittal of technical and monitoring reports. Water Code section 13269 requires a waiver of waste discharge requirements to include as a condition the performance of monitoring and the public availability of monitoring results. *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands*, Order No. R3-2017-0002 (Order) includes criteria and requirements for three tiers. This MRP sets forth monitoring and reporting requirements for **Tier 1 Dischargers** enrolled under the Order. A summary of the requirements is shown below.

SUMMARY OF MONITORING AND REPORTING REQUIREMENTS FOR TIER 1:

Part 1: Surface Receiving Water Monitoring and Reporting *(cooperative or individual)*
Part 2: Groundwater Monitoring and Reporting *(cooperative or individual)*

Pursuant to Water Code section 13269(a)(2), monitoring requirements must be designed to support the development and implementation of the waiver program, including, but not limited to, verifying the adequacy and effectiveness of the waiver's conditions. The monitoring and reports required by this MRP are to evaluate effects of discharges of waste from irrigated agricultural operations and individual farms/ranches on waters of the state and to determine compliance with the Order.

MONITORING AND REPORTING BASED ON TIERS

The Order and MRP include criteria and requirements for three tiers, based upon those characteristics of individual farms/ranches at the operation that present the highest level of waste discharge or greatest risk to water quality. Dischargers must meet conditions of the Order and MRP for the appropriate tier that applies to their land and/or the individual farm/ranch. Within a tier, Dischargers comply with requirements based on the

specific level of discharge and threat to water quality from individual farms/ranches. The lowest tier, Tier 1, applies to dischargers who discharge the lowest level of waste (amount or concentration) or pose the lowest potential to cause or contribute to an exceedance of water quality standards in waters of the State or of the United States. The highest tier, Tier 3, applies to dischargers who discharge the highest level of waste or pose the greatest potential to cause or contribute to an exceedance of water quality standards in waters of the State or of the United States. Tier 2 applies to dischargers whose discharge has a moderate threat to water quality. Water quality is defined in terms of regional, state, or federal numeric or narrative water quality standards. Per the Order, Dischargers may submit a request to the Executive Officer to approve transfer to a lower tier. If the Executive Officer approves a transfer to a lower tier, any interested person may request that the Central Coast Water Board conduct a review of the Executive Officer's determination.

PART 1. SURFACE RECEIVING WATER MONITORING AND REPORTING REQUIREMENTS

The surface receiving water monitoring and reporting requirements described herein are generally a continuation of the surface receiving water monitoring and reporting requirements of Monitoring and Reporting Program Order No. 2012-0011-01, as revised August 22, 2016, with the intent of uninterrupted regular monitoring and reporting during the transition from Order No. R3-2012-0011-01 to Order No. R3-2017-0002-01.

Monitoring and reporting requirements for surface receiving water identified in Part 1.A. and Part 1.B. apply to Tier 1 Dischargers. Surface receiving water refers to water flowing in creeks and other surface waters of the State. Surface receiving water monitoring may be conducted through a cooperative monitoring program on behalf of Dischargers, or Dischargers may choose to conduct surface receiving water monitoring and reporting individually. Key monitoring and reporting requirements for surface receiving water are shown in Tables 1 and 2.

A. Surface Receiving Water Quality Monitoring

1. Dischargers must elect a surface receiving water monitoring option (cooperative monitoring program or individual receiving water monitoring) to comply with surface receiving water quality monitoring requirements, and identify the option selected on the Notice of Intent (NOI).

2. Dischargers are encouraged to choose participation in a cooperative monitoring program (e.g., the existing Cooperative Monitoring Program or a similar program) to comply with receiving water quality monitoring requirements. Dischargers not participating in a cooperative monitoring program must conduct surface receiving water quality monitoring individually that achieves the same purpose.

3. Dischargers (individually or as part of a cooperative monitoring program) must conduct surface receiving water quality monitoring to a) assess the impacts of their waste discharges from irrigated lands to receiving water, b) assess the status of receiving water quality and beneficial use protection in impaired waterbodies dominated by irrigated agricultural activity, c) evaluate status, short term patterns and long term trends (five to ten years or more) in receiving water quality, d) evaluate water quality impacts resulting from agricultural discharges (including but not limited to tile drain discharges), e) evaluate stormwater quality, f) evaluate condition of existing perennial, intermittent, or ephemeral streams or riparian or wetland area habitat, including degradation resulting from erosion or agricultural discharges of waste, and g) assist in the identification of specific sources of water quality problems.

Surface Receiving Water Quality Sampling and Analysis Plan

4. **By March 1, 2018, or as directed by the Executive Officer**, Dischargers (individually or as part of a cooperative monitoring program) must submit a surface receiving water quality Sampling and Analysis Plan (SAAP) and Quality Assurance Project Plan (QAPP); this requirement is satisfied if an approved SAAP and QAPP addressing all surface receiving water quality monitoring requirements described in this Order has been submitted pursuant to Order No. R3-2012-0011 and associated Monitoring and Reporting Programs. Dischargers (or a third party cooperative monitoring program) must develop the Sampling and Analysis Plan to describe how the proposed monitoring will achieve the objectives of the MRP and evaluate compliance with the Order. The Sampling and Analysis Plan may propose alternative monitoring site locations, adjusted monitoring parameters, and other changes as necessary to assess the impacts of waste discharges from irrigated lands to receiving water. The Executive Officer must approve the Sampling and Analysis Plan and QAPP.

5. The Sampling and Analysis Plan must include the following minimum required components:
    a. Monitoring strategy to achieve objectives of the Order and MRP;
    b. Map of monitoring sites with GIS coordinates;
    c. Identification of known water quality impairments and impaired waterbodies per the 2010 Clean Water Act 303(d) List of Impaired Waterbodies (List of Impaired Waterbodies);
    d. Identification of beneficial uses and applicable water quality standards;
    e. Identification of applicable Total Maximum Daily Loads;
    f. Monitoring parameters;
    g. Monitoring schedule, including description and frequencies of monitoring events;

h. Description of data analysis methods;

6. The QAPP must include receiving water and site-specific information, project organization and responsibilities, and quality assurance components of the MRP. The QAPP must also include the laboratory and field requirements to be used for analyses and data evaluation. The QAPP must contain adequate detail for project and Water Board staff to identify and assess the technical and quality objectives, measurement and data acquisition methods, and limitations of the data generated under the surface receiving water quality monitoring. All sampling and laboratory methodologies and QAPP content must be consistent with U.S. EPA methods, State Water Board's Surface Water Ambient Monitoring Program (SWAMP) protocols and the Central Coast Water Board's Central Coast Ambient Monitoring Program (CCAMP). Following U.S. EPA guidelines[1] and SWAMP templates[2], the receiving water quality monitoring QAPP must include the following minimum required components:
    a. Project Management. This component addresses basic project management, including the project history and objectives, roles and responsibilities of the participants, and other aspects.
    b. Data Generation and Acquisition. This component addresses all aspects of project design and implementation. Implementation of these elements ensures that appropriate methods for sampling, measurement and analysis, data collection or generation, data handling, and quality control activities are employed and are properly documented. Quality control requirements are applicable to all the constituents sampled as part of the MRP, as described in the appropriate method.
    c. Assessment and Oversight. This component addresses the activities for assessing the effectiveness of the implementation of the project and associated QA and QC activities. The purpose of the assessment is to provide project oversight that will ensure that the QA Project Plan is implemented as prescribed.
    d. Data Validation and Usability. This component addresses the quality assurance activities that occur after the data collection, laboratory analysis and data generation phase of the project is completed. Implementation of these elements ensures that the data conform to the specified criteria, thus achieving the MRP objectives.

[1] USEPA. 2001 (2006) USEPA Requirements for Quality Assurance Project Plans (QA/R-5) Office of Environmental Information, Washington, D.C. USEPA QA/R-5
[2] http://waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#qa

7. The Central Coast Water Board may conduct an audit of contracted laboratories at any time in order to evaluate compliance with the QAPP.

8. The Sampling and Analysis Plan and QAPP, and any proposed revisions are subject to approval by the Executive Officer. The Executive Officer may also revise the Sampling and Analysis Plan, including adding, removing, or changing monitoring site locations, changing monitoring parameters, and other changes as necessary to assess the impacts of waste discharges from irrigated lands to receiving water.

Surface Receiving Water Quality Monitoring Sites

9. The Sampling and Analysis Plan must, at a minimum, include monitoring sites to evaluate waterbodies identified in Table 1, unless otherwise approved by the Executive Officer. The Sampling and Analysis Plan must include sites to evaluate receiving water quality impacts most directly resulting from areas of agricultural discharge (including areas receiving tile drain discharges). Site selection must take into consideration the existence of any long term monitoring sites included in related monitoring programs (e.g. CCAMP and the existing CMP). Sites may be added or modified, subject to prior approval by the Executive Officer, to better assess the pollutant loading from individual sources or the impacts to receiving waters caused by individual discharges. Any modifications must consider sampling consistency for purposes of trend evaluation.

Surface Receiving Water Quality Monitoring Parameters

10. The Sampling and Analysis Plan must, at a minimum, include the following types of monitoring and evaluation parameters listed below and identified in Table 2:

    a. Flow Monitoring;
    b. Water Quality (physical parameters, metals, nutrients, pesticides);
    c. Toxicity (water and sediment);
    d. Assessment of Benthic Invertebrates.

11. All analyses must be conducted at a laboratory certified for such analyses by the State Department of Public Health (CDPH) or at laboratories approved by the Executive Officer. Unless otherwise noted, all sampling, sample preservation, and analyses must be performed in accordance with the latest edition of *Test Methods for Evaluating Solid Waste*, SW-846, U.S. EPA, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories can be found at the web link: http://www.cdph.ca.gov/certlic/labs/Documents/ELAPLablist.xls

12. Water quality and flow monitoring is used to assess the sources, concentrations, and loads of waste discharges from individual farms/ranches and groups of Dischargers to surface waters, to evaluate impacts to water quality and beneficial uses, and to evaluate the short term patterns and long term trends in receiving water quality. Monitoring data must be compared to existing numeric and narrative water quality objectives.

13. Toxicity testing is to evaluate water quality relative to the narrative toxicity objective. Water column toxicity analyses must be conducted on 100% (undiluted) sample. At sites where persistent unresolved toxicity is found, the Executive Officer may require concurrent toxicity and chemical analyses and a Toxicity Identification Evaluation (TIE) to identify the individual discharges causing the toxicity.

Surface Receiving Water Quality Monitoring Frequency and Schedule

14. The Sampling and Analysis Plan must include a schedule for sampling. Timing, duration, and frequency of monitoring must be based on the land use, complexity, hydrology, and size of the waterbody. Table 2 includes minimum monitoring frequency and parameter lists. Agricultural parameters that are less common may be monitored less frequently. Modifications to the receiving water quality monitoring parameters, frequency, and schedule may be submitted for Executive Officer consideration and approval. At a minimum, the Sampling and Analysis Plan schedule must consist of monthly monitoring of common agricultural parameters in major agricultural areas, including two major storm events during the wet season (October 1 – April 30).

15. Storm event monitoring must be conducted within 18 hours of storm events, preferably including the first flush run-off event that results in significant increase in stream flow. For purposes of this MRP, a storm event is defined as precipitation producing onsite runoff (surface water flow) capable of creating significant ponding, erosion or other water quality problem. A significant storm event will generally result in greater than 1-inch of rain within a 24-hour period.

16. Dischargers (individually or as part of a cooperative monitoring program) must perform receiving water quality monitoring per the Sampling and Analysis Plan and QAPP approved by the Executive Officer.

B. Surface Receiving Water Quality Reporting

Surface Receiving Water Quality Data Submittal

1. Dischargers (individually or as part of a cooperative monitoring program) must submit water quality monitoring data to the Central Coast Water Board electronically, in a format specified by the Executive Officer and compatible with SWAMP/CCAMP electronic submittal guidelines, each January 1, April 1, July 1, and October 1.

Surface Receiving Water Quality Monitoring Annual Report

2. **By July 1, 2017,** and every July 1 annually thereafter, Dischargers (individually or as part of a cooperative monitoring program) must submit an Annual Report, electronically, in a format specified by the Executive Officer including the following minimum elements:
    a. Signed Transmittal Letter;
    b. Title Page;
    c. Table of Contents;
    d. Executive Summary;
    e. Summary of Exceedance Reports submitted during the reporting period;
    f. Monitoring objectives and design;
    g. Monitoring site descriptions and rainfall records for the time period covered;
    h. Location of monitoring sites and map(s);
    i. Tabulated results of all analyses arranged in tabular form so that the required information is readily discernible;
    j. Summary of water quality data for any sites monitored as part of related monitoring programs, and used to evaluate receiving water as described in the Sampling and Analysis Plan.
    k. Discussion of data to clearly illustrate compliance with the Order and water quality standards;
    l. Discussion of short term patterns and long term trends in receiving water quality and beneficial use protection;
    m. Evaluation of pesticide and toxicity analyses results, and recommendation of candidate sites for Toxicity Identification Evaluations (TIEs);
    n. Identification of the location of any agricultural discharges observed discharging directly to surface receiving water;
    o. Laboratory data submitted electronically in a SWAMP/CCAMP comparable format;
    p. Sampling and analytical methods used;
    q. Copy of chain-of-custody forms;
    r. Field data sheets, signed laboratory reports, laboratory raw data;
    s. Associated laboratory and field quality control samples results;
    t. Summary of Quality Assurance Evaluation results;

u. Specify the method used to obtain flow at each monitoring site during each monitoring event;
v. Electronic or hard copies of photos obtained from all monitoring sites, clearly labeled with site ID and date;
w. Conclusions.

PART 2. GROUNDWATER MONITORING AND REPORTING REQUIREMENTS

Groundwater monitoring may be conducted through a cooperative monitoring and reporting program on behalf of growers, or Dischargers may choose to conduct groundwater monitoring and reporting individually. Qualifying cooperative groundwater monitoring and reporting programs must implement the groundwater monitoring and reporting requirements described in this Order, unless otherwise approved by the Executive Officer. An interested person may seek review by the Central Coast Water Board of the Executive Officer's approval or denial of a cooperative groundwater monitoring and reporting program.

Key monitoring and reporting requirements for groundwater are shown in Table 3.

A. Groundwater Monitoring

1. Dischargers must sample private domestic wells and the primary irrigation well on their farm/ranch to evaluate groundwater conditions in agricultural areas, identify areas at greatest risk for nitrogen loading and exceedance of drinking water standards, and identify priority areas for follow up actions.

2. Dischargers must sample at least one groundwater well for each farm/ranch on their operation, including groundwater wells that are located within the property boundary of the enrolled county assessor parcel numbers (APNs). For farms/ranches with multiple groundwater wells, Dischargers must sample all domestic wells and the primary irrigation well. For the purposes of this MRP, a "domestic well" is any well that is used or may be used for domestic use purposes, including any groundwater well that is connected to a residence, workshop, or place of business that may be used for human consumption, cooking, or sanitary purposes. Groundwater monitoring parameters must include well screen interval depths (if available), general chemical parameters, and general cations and anions listed in Table 3.

3. Dischargers must conduct two rounds of monitoring of required groundwater wells during calendar year 2017; one sample collected during spring (**March - June)** and one sample collected during fall **(September - December)**.

4. Groundwater samples must be collected by a qualified third party (e.g., consultant, technician, person conducting cooperative monitoring) using proper sampling methods, chain-of-custody, and quality assurance/quality

control protocols. Groundwater samples must be collected at or near the well head before the pressure tank and prior to any well head treatment. In cases where this is not possible, the water sample must be collected from a sampling point as close to the pressure tank as possible, or from a cold-water spigot located before any filters or water treatment systems.

5. Laboratory analyses for groundwater samples must be conducted by a State certified laboratory according to U.S. EPA approved methods; unless otherwise noted, all monitoring, sample preservation, and analyses must be performed in accordance with the latest edition of *Test Methods for Evaluating Solid Waste*, SW-846, United States Environmental Protection Agency, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories can be found at the web link below: http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/docs/resources4growers/2016_04_11_labs.pdf

6. If a discharger determines that water in any domestic well exceeds 10 mg/L of nitrate as N, the discharger or third party must provide notice to the Central Coast Water Board within 24 hours of learning of the exceedance. For domestic wells on a Discharger's farm/ranch that exceed 10 mg/L nitrate as N, the Discharger must provide written notification to the users within 10 days of learning of the exceedance and provide written confirmation of the notification to the Central Coast Water Board.

   The drinking water notification must include the statement that the water poses a human health risk due to elevated nitrate concentration, and include a warning against the use of the water for drinking or cooking. In addition, Dischargers must also provide prompt written notification to any new well users (e.g. tenants and employees with access to the affected well), whenever there is a change in occupancy.

   For all other domestic wells not on a Discharger's farm/ranch but that may be impacted by nitrate, the Central Coast Water Board will notify the users promptly.

   The drinking water notification and confirmation letters required by this Order are available to the public.

B. Groundwater Reporting

1. **Within 60 days of sample collection,** Dischargers must coordinate with the laboratory to submit the following groundwater monitoring results and information, electronically, using the Water Board's GeoTracker electronic deliverable format (EDF):
   a. GeoTracker Ranch Global Identification Number

b. Field point name (Well Name)
c. Field Point Class (Well Type)
d. Latitude
e. Longitude
f. Sample collection date
g. Analytical results
h. Well construction information (e.g., total depth, screened intervals, depth to water), as available

2. Dischargers must submit groundwater well information required in the electronic Notice of Intent (eNOI) for each farm/ranch and update the eNOI to reflect changes in the farm/ranch information within 30 days of the change. Groundwater well information reported on the eNOI includes, but is not limited to:

a. Number of groundwater wells present at each farm/ranch
b. Identification of any groundwater wells abandoned or destroyed (including method destroyed) in compliance with the Order
c. Use for fertigation or chemigation
d. Presence of back flow prevention devices
e. Number of groundwater wells used for agricultural purposes
f. Number of groundwater wells used for or may be used for domestic use purposes (domestic wells).

PART 3. GENERAL MONITORING AND REPORTING REQUIREMENTS

A. Submittal of Technical Reports

1. Dischargers must submit reports in a format specified by the Executive Officer. A transmittal letter must accompany each report, containing the following penalty of perjury statement signed by the Discharger or the Discharger's authorized agent:

   "In compliance with Water Code §13267, I certify under penalty of perjury that this document and all attachments were prepared by me, or under my direction or supervision following a system designed to assure that qualified personnel properly gather and evaluate the information submitted. To the best of my knowledge and belief, this document and all attachments are true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment".

2. If the Discharger asserts that all or a portion of a report submitted pursuant to this Order is subject to an exemption from public disclosure (e.g. trade secrets or secret processes), the Discharger must provide an explanation of how those portions of the reports are exempt from public disclosure. The

Discharger must clearly indicate on the cover of the report (typically an electronic submittal) that the Discharger asserts that all or a portion of the report is exempt from public disclosure, submit a complete report with those portions that are asserted to be exempt in redacted form, submit separately (in a separate electronic file) unredacted pages (to be maintained separately by staff). The Central Coast Water Board staff will determine whether any such report or portion of a report qualifies for an exemption from public disclosure. If the Central Coast Water Board staff disagrees with the asserted exemption from public disclosure, the Central Coast Water Board staff will notify the Discharger prior to making such report or portions of such report available for public inspection.

B. Central Coast Water Board Authority

1. Monitoring reports are required pursuant to section 13267 of the California Water Code. Pursuant to section 13268 of the Water Code, a violation of a request made pursuant to section 13267 may subject you to civil liability of up to $1000 per day.

2. The Water Board needs the required information to determine compliance with Order No.R3-2017-0002. The evidence supporting these requirements is included in the findings of Order No.R3-2017-0002.

_____
John M. Robertson
Executive Officer

March 8, 2017
_____
Date

Table 1. Major Waterbodies in Agricultural Areas[1]

Hydrologic SubArea	Waterbody Name	Hydrologic SubArea	Waterbody Name
30510	Pajaro River	30920	Quail Creek
30510	Salsipuedes Creek	30920	Salinas Reclamation Canal
30510	Watsonville Slough	31022	Chorro Creek
30510	Watsonville Creek[2]	31023	Los Osos Creek
30510	Beach Road Ditch[2]	31023	Warden Creek
30530	Carnadero Creek	31024	San Luis Obispo Creek
30530	Furlong Creek[2]	31024	Prefumo Creek
30530	Llagas Creek	31031	Arroyo Grande Creek
30530	Miller's Canal	31031	Los Berros Creek
30530	San Juan Creek	31210	Bradley Canyon Creek
30530	Tesquisquita Slough	31210	Bradley Channel
30600	Moro Cojo Slough	31210	Green Valley Creek
30910	Alisal Slough	31210	Main Street Canal
30910	Blanco Drain	31210	Orcutt Solomon Creek
30910	Old Salinas River	31210	Oso Flaco Creek
30910	Salinas River (below Gonzales Rd.)	31210	Little Oso Flaco Creek
30920	Salinas River (above Gonzales Rd. and below Nacimiento R.)	31210	Santa Maria River
30910	Santa Rita Creek[2]	31310	San Antonio Creek[2]
30910	Tembladero Slough	31410	Santa Ynez River
30920	Alisal Creek	31531	Bell Creek
30920	Chualar Creek	31531	Glenn Annie Creek
30920	Espinosa Slough	31531	Los Carneros Creek[2]
30920	Gabilan Creek	31534	Arroyo Paredon Creek
30920	Natividad Creek	31534	Franklin Creek

[1] At a minimum, monitoring sites must be included for these waterbodies in agricultural areas, unless otherwise approved by the Executive Officer. Monitoring sites may be proposed for addition or modification to better assess the impacts of waste discharges from irrigated lands to surface water. Dischargers choosing to comply with surface receiving water quality monitoring, individually (not part of a cooperative monitoring program) must only monitor sites for waterbodies receiving the discharge.

[2] These creeks are included because they are newly listed waterbodies on the 2010 303(d) list of Impaired Waters that are associated with areas of agricultural discharge.

Table 2. Surface Receiving Water Quality Monitoring Parameters

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Photo Monitoring		
Upstream and downstream photographs at monitoring location		With every monitoring event
WATER COLUMN SAMPLING		
Physical Parameters and General Chemistry		
Flow (field measure) (CFS) following SWAMP field SOP[9]	.25	Monthly, including 2 stormwater events
pH (field measure)	0.1	"
Electrical Conductivity (field measure) (µS/cm)	2.5	"
Dissolved Oxygen (field measure) (mg/L)	0.1	"
Temperature (field measure) (°C)	0.1	"
Turbidity (NTU)	0.5	"
Total Dissolved Solids (mg/L)	10	"
Total Suspended Solids (mg/L)	0.5	"
Nutrients		
Total Nitrogen (mg/L)	0.5	Monthly, including 2 stormwater events
Nitrate + Nitrite (as N) (mg/L)	0.1	"
Total Ammonia (mg/L)	0.1	"
Unionized Ammonia (calculated value, mg/L))		"
Total Phosphorus (as P) (mg/L)	0.02	
Soluble Orthophosphate (mg/L)	0.01	"
Water column chlorophyll a (µg/L)	1.0	"
Algae cover, Floating Mats, % coverage	-	"
Algae cover, Attached, % coverage	-	"
Water Column Toxicity Test		
Algae - *Selenastrum capricornutum (*96-hour chronic; Method1003.0 in EPA/821/R-02/013)	-	4 times each year, twice in dry season, twice in wet season
Water Flea – *Ceriodaphnia dubia* (7-day chronic; Method 1002.0 in EPA/821/R-02/013)	-	"
Midge - *Chironomus spp.* (96-hour acute; Alternate test species in EPA 821-R-02-012)	-	"

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Toxicity Identification Evaluation (TIE)	-	As directed by Executive Officer
Pesticides[2] /Herbicides (µg/L)		
Organophosphate Pesticides		
Azinphos-methyl	0.02	2 times in both 2017 and 2018, once in dry season and once in wet season of each year, concurrent with water toxicity monitoring
Chlorpyrifos	0.005	"
Diazinon	0.005	"
Dichlorvos	0.01	"
Dimethoate	0.01	"
Dimeton-s	0.005	"
Disulfoton (Disyton)	0.005	"
Malathion	0.005	"
Methamidophos	0.02	"
Methidathion	0.02	"
Parathion-methyl	0.02	"
Phorate	0.01	"
Phosmet	0.02	"
Neonicotinoids		
Thiamethoxam	.002	"
Imidacloprid	.002	"
Thiacloprid	.002	"
Dinotefuran	.006	"
Acetamiprid	.01	"
Clothianidin	.02	"
Herbicides		
Atrazine	0.05	"
Cyanazine	0.20	"
Diuron	0.05	"
Glyphosate	2.0	"
Linuron	0.1	"
Paraquat	0.20	"
Simazine	0.05	"
Trifluralin	0.05	"
Metals (µg/L)		
Arsenic (total) [5,7]	0.3	2 times in both 2017 and 2018, once in dry season and once in wet season of each year, concurrent with water toxicity monitoring
Boron (total) [6,7]	10	"
Cadmium (total & dissolved) [4.5,7]	0.01	"

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Copper (total and dissolved) [4,7]	0.01	"
Lead (total and dissolved) [4,7]	0.01	"
Nickel (total and dissolved) [4,7]	0.02	"
Molybdenum (total) [7]	1	"
Selenium (total)[7]	0.30	"
Zinc (total and dissolved) [4.5,7]	0.10	"
Other (µg/L)		
Total Phenolic Compounds[8]	5	2 times in 2017, once in spring (April-May) and once in fall (August-September)
Hardness (mg/L as CaCO3)	1	"
Total Organic Carbon (ug/L)	0.6	"
SEDIMENT SAMPLING		
Sediment Toxicity - *Hyalella azteca* 10-day static renewal (EPA, 2000)		2 times each year, once in spring (April-May) and once in fall (August-September)
Pyrethroid Pesticides in Sediment (µg/kg)		
Gamma-cyhalothrin	2	2 times in both 2017 and 2018, once in spring (April-May) and once in fall (August-September) of each year, concurrent with sediment toxicity sampling
Lambda-cyhalothrin	2	"
Bifenthrin	2	"
Beta-cyfluthrin	2	"
Cyfluthrin	2	"
Esfenvalerate	2	"
Permethrin	2	"
Cypermethrin	2	"
Danitol	2	"
Fenvalerate	2	"
Fluvalinate	2	"
Other Monitoring in Sediment		
Chlorpyrifos (µg/kg)	2	"
Total Organic Carbon	0.01%	"
		"
Sediment Grain Size Analysis	1%	"

[1]Monitoring frequency may be used as a guide for developing alternative Sampling and Analysis Plans implemented by individual growers.
[2]Pesticide list may be modified based on specific pesticide use in Central Coast Region. Analytes on this list must be reported, at a minimum.
[3] Reporting Limit, taken from SWAMP where applicable.
[4] Holmgren, Meyer, Cheney and Daniels. 1993. Cadmium, Lead, Zinc, Copper and Nickel in Agricultural Soils of the United States. J. of Environ. Quality 22:335-348.

[5]Sax and Lewis, ed. 1987. Hawley's Condensed Chemical Dictionary. 11th ed. New York: Van Nostrand Reinhold Co., 1987. Zinc arsenate is an insecticide.
[6]Http://www.coastalagro.com/products/labels/9%25BORON.pdf; Boron is applied directly or as a component of fertilizers as a plant nutrient.
[7]Madramootoo, Johnston, Willardson, eds. 1997. Management of Agricultural Drainage Water Quality. International Commission on Irrigation and Drainage. U.N. FAO. SBN 92-6-104058.3.
[8]http://cat.inist.fr/?aModele=afficheN&cpsidt=14074525; Phenols are breakdown products of herbicides and pesticides. Phenols can be directly toxic and cause endocrine disruption.
[9]See SWAMP field measures SOP, p. 17
mg/L – milligrams per liter; ug/L – micrograms per liter; ug/kg – micrograms per kilogram;
NTU – Nephelometric Turbidity Units; CFS – cubic feet per second.

Table 3. Groundwater Sampling Parameters

Parameter	RL	Analytical Method[3]	Units
pH	0.1	Field or Laboratory Measurement EPA General Methods	pH Units
Specific Conductance	2.5		µS/cm
Total Dissolved Solids	10		mg/L
Total Alkalinity as $CaCO_3$		EPA Method 310.1 or 310.2	
Calcium	0.05	General Cations[1] EPA 200.7, 200.8, 200.9	
Magnesium	0.02		
Sodium	0.1		
Potassium	0.1		
Sulfate (SO4)	1.0	General Anions EPA Method 300 or EPA Method 353.2	
Chloride	0.1		
Nitrate + Nitrite (as N)[2] or Nitrate as N	0.1		

[1]General chemistry parameters (major cations and anions) represent geochemistry of water bearing zone and assist in evaluating quality assurance/quality control of groundwater monitoring and laboratory analysis.
[2]The MRP allows analysis of "nitrate plus nitrite" to represent nitrate concentrations (as N). The "nitrate plus nitrite" analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short holding time required for nitrate.
[3]Dischargers may use alternative analytical methods approved by EPA.
RL – Reporting Limit; µS/cm – micro siemens per centimeter

Table 4. Tier 1 - Time Schedule for Key Monitoring and Reporting Requirements (MRPs)

REQUIREMENT	TIME SCHEDULE[1]
Submit Sampling And Analysis Plan and Quality Assurance Project Plan (SAAP/QAPP) for Surface Receiving Water Quality Monitoring *(individually or through cooperative monitoring program)*	By March 1, 2018, or as directed by the Executive Officer; satisfied if an approved SAAP/QAPP has been submitted pursuant to Order No. R3-2012-0011 and associated MRPs
Initiate surface receiving water quality monitoring *(individually or through cooperative monitoring program)*	Per an approved SAAP and QAPP
Submit surface receiving water quality monitoring data *(individually or through cooperative monitoring program)*	Each January 1, April 1, July 1, and October 1

Submit surface receiving water quality Annual Monitoring Report *(individually or through cooperative monitoring program)*	By July 1 2017; annually thereafter by July 1
Initiate monitoring of groundwater wells	First sample from March-June 2017, second sample from September-December 2017
Submit groundwater monitoring results	Within 60 days of the sample collection

[1] Dates are relative to adoption of this Order, unless otherwise specified.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

MONITORING AND REPORTING PROGRAM
ORDER NO. R3-2017-0002-02

TIER 2

DISCHARGERS ENROLLED UNDER THE CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES FROM IRRIGATED LANDS

This Monitoring and Reporting Program Order No. R3-2017-0002-02 (MRP) is issued pursuant to California Water Code (Water Code) sections 13267 and 13269, which authorize the California Regional Water Quality Control Board, Central Coast Region (hereafter Central Coast Water Board) to require preparation and submittal of technical and monitoring reports. Water Code section 13269 requires a waiver of waste discharge requirements to include as a condition the performance of monitoring and the public availability of monitoring results. *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands*, Order No. R3-2017-0002 (Order) includes criteria and requirements for three tiers. This MRP sets forth monitoring and reporting requirements for **Tier 2 Dischargers** enrolled under the Order. A summary of the requirements is shown below.

SUMMARY OF MONITORING AND REPORTING REQUIREMENTS FOR TIER 2:

Part 1: Surface Receiving Water Monitoring and Reporting *(cooperative or individual)*
Part 2: Groundwater Monitoring and Reporting *(cooperative or individual)*
Total Nitrogen Applied Reporting *(required for subset of Tier 2 Dischargers if farm/ranch growing any crop with high nitrate loading risk to groundwater);*
Part 3: Annual Compliance Form

Pursuant to Water Code section 13269(a)(2), monitoring requirements must be designed to support the development and implementation of the waiver program, including, but not limited to, verifying the adequacy and effectiveness of the waiver's conditions. The monitoring and reports required by this MRP are to evaluate effects of discharges of waste from irrigated agricultural operations and individual farms/ranches on waters of the state and to determine compliance with the Order.

MONITORING AND REPORTING BASED ON TIERS

The Order and MRP include criteria and requirements for three tiers, based upon those characteristics of the individual farms/ranches at the operation that present the highest level of waste discharge or greatest risk to water quality. Dischargers must meet conditions of the Order and MRP for the appropriate tier that applies to their land and/or the individual farm/ranch. Within a tier, Dischargers comply with requirements based on the specific level of discharge and threat to water quality from individual farms/ranches. The lowest tier, Tier 1, applies to dischargers who discharge the lowest level of waste (amount or concentration) or pose the lowest potential to cause or contribute to an exceedance of water quality standards in waters of the State or of the United States. The highest tier, Tier 3, applies to dischargers who discharge the highest level of waste or pose the greatest potential to cause or contribute to an exceedance of water quality standards in waters of the State or of the United States. Tier 2 applies to dischargers whose discharge has a moderate threat to water quality. Water quality is defined in terms of regional, state, or federal numeric or narrative water quality standards. Per the Order, Dischargers may submit a request to the Executive Officer to approve transfer to a lower tier. If the Executive Officer approves a transfer to a lower tier, any interested person may request that the Central Coast Water Board conduct a review of the Executive Officer's determination.

PART 1. SURFACE RECEIVING WATER MONITORING AND REPORTING REQUIREMENTS

The surface receiving water monitoring and reporting requirements described herein are generally a continuation of the surface receiving water monitoring and reporting requirements of Monitoring and Reporting Program Order No. 2012-0011-02, as revised August 22, 2016, with the intent of uninterrupted regular monitoring and reporting during the transition from Order No. R3-2012-0011-02 to Order No. R3-2017-0002-02.

Monitoring and reporting requirements for surface receiving water identified in Part 1.A. and Part 1.B. apply to Tier 2 Dischargers. Surface receiving water refers to water flowing in creeks and other surface waters of the State. Surface receiving water monitoring may be conducted through a cooperative monitoring program on behalf of Dischargers, or Dischargers may choose to conduct surface receiving water monitoring and reporting individually. Key monitoring and reporting requirements for surface receiving water are shown in Tables 1 and 2. Time schedules are shown in Table4.

A. Surface Receiving Water Quality Monitoring

1. Dischargers must elect a surface receiving water monitoring option (cooperative monitoring program or individual receiving water monitoring) to comply with surface receiving water quality monitoring requirements, and identify the option selected on the Notice of Intent (NOI).

2. Dischargers are encouraged to choose participation in a cooperative monitoring program (e.g., the existing Cooperative Monitoring Program or a similar program) to comply with receiving water quality monitoring requirements. Dischargers not participating in a cooperative monitoring program must conduct surface receiving water quality monitoring individually that achieves the same purpose.

3. Dischargers (individually or as part of a cooperative monitoring program) must conduct surface receiving water quality monitoring to a) assess the impacts of their waste discharges from irrigated lands to receiving water, b) assess the status of receiving water quality and beneficial use protection in impaired waterbodies dominated by irrigated agricultural activity, c) evaluate status, short term patterns and long term trends (five to ten years or more) in receiving water quality, d) evaluate water quality impacts resulting from agricultural discharges (including but not limited to tile drain discharges), e) evaluate stormwater quality, f) evaluate condition of existing perennial, intermittent, or ephemeral streams or riparian or wetland area habitat, including degradation resulting from erosion or agricultural discharges of waste, and g) assist in the identification of specific sources of water quality problems.

Surface Receiving Water Quality Sampling and Analysis Plan

4. **By March 1, 2018, or as directed by the Executive Officer**, Dischargers (individually or as part of a cooperative monitoring program) must submit a surface receiving water quality Sampling and Analysis Plan (SAAP) and Quality Assurance Project Plan (QAPP); this requirement is satisfied if an approved SAAP and QAPP addressing all surface receiving water quality monitoring requirements described in this Order has been submitted pursuant to Order No.R3-2012-0011 and associated Monitoring and Reporting Programs. Dischargers (or a third party cooperative monitoring program) must develop the Sampling and Analysis Plan to describe how the proposed monitoring will achieve the objectives of the MRP and evaluate compliance with the Order. The Sampling and Analysis Plan may propose alternative monitoring site locations, adjusted monitoring parameters, and other changes as necessary to assess the impacts of waste discharges from irrigated lands to receiving water. The Executive Officer must approve the Sampling and Analysis Plan and QAPP.

5. The Sampling and Analysis Plan must include the following minimum required components:
    a. Monitoring strategy to achieve objectives of the Order and MRP;
    b. Map of monitoring sites with GIS coordinates;

c. Identification of known water quality impairments and impaired waterbodies per the 2010 Clean Water Act 303(d) List of Impaired Waterbodies (List of Impaired Waterbodies);
d. Identification of beneficial uses and applicable water quality standards;
e. Identification of applicable Total Maximum Daily Loads;
f. Monitoring parameters;
g. Monitoring schedule, including description and frequencies of monitoring events;
h. Description of data analysis methods;

6. The QAPP must include receiving water and site-specific information, project organization and responsibilities, and quality assurance components of the MRP. The QAPP must also include the laboratory and field requirements to be used for analyses and data evaluation. The QAPP must contain adequate detail for project and Water Board staff to identify and assess the technical and quality objectives, measurement and data acquisition methods, and limitations of the data generated under the surface receiving water quality monitoring. All sampling and laboratory methodologies and QAPP content must be consistent with U.S. EPA methods, State Water Board's Surface Water Ambient Monitoring Program (SWAMP) protocols and the Central Coast Water Board's Central Coast Ambient Monitoring Program (CCAMP). Following U.S. EPA guidelines[1] and SWAMP templates[2], the receiving water quality monitoring QAPP must include the following minimum required components:
    a. Project Management. This component addresses basic project management, including the project history and objectives, roles and responsibilities of the participants, and other aspects.
    b. Data Generation and Acquisition. This component addresses all aspects of project design and implementation. Implementation of these elements ensures that appropriate methods for sampling, measurement and analysis, data collection or generation, data handling, and quality control activities are employed and are properly documented. Quality control requirements are applicable to all the constituents sampled as part of the MRP, as described in the appropriate method.
    c. Assessment and Oversight. This component addresses the activities for assessing the effectiveness of the implementation of the project and associated QA and QC activities. The purpose of the assessment is to provide project oversight that

[1] USEPA 2001 (2006) USEPA requirements for Quality Assurance Project Plans (QA/R-5) Office of Environmental Information, Washington, D.C. USEPA QA/R-5
[2] http://waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#qa

will ensure that the QA Project Plan is implemented as prescribed.

d. Data Validation and Usability. This component addresses the quality assurance activities that occur after the data collection, laboratory analysis and data generation phase of the project is completed. Implementation of these elements ensures that the data conform to the specified criteria, thus achieving the MRP objectives.

7. The Central Coast Water Board may conduct an audit of contracted laboratories at any time in order to evaluate compliance with the QAPP.

8. The Sampling and Analysis Plan and QAPP, and any proposed revisions are subject to approval by the Executive Officer. The Executive Officer may also revise the Sampling and Analysis Plan, including adding, removing, or changing monitoring site locations, changing monitoring parameters, and other changes as necessary to assess the impacts of waste discharges from irrigated lands to receiving water.

Surface Receiving Water Quality Monitoring Sites

9. The Sampling and Analysis Plan must, at a minimum, include monitoring sites to evaluate waterbodies identified in Table 1, unless otherwise approved by the Executive Officer. The Sampling and Analysis Plan must include sites to evaluate receiving water quality impacts most directly resulting from areas of agricultural discharge (including areas receiving tile drain discharges). Site selection must take into consideration the existence of any long term monitoring sites included in related monitoring programs (e.g. CCAMP and the existing CMP). Sites may be added or modified, subject to prior approval by the Executive Officer, to better assess the pollutant loading from individual sources or the impacts to receiving waters caused by individual discharges. Any modifications must consider sampling consistency for purposes of trend evaluation.

Surface Receiving Water Quality Monitoring Parameters

10. The Sampling and Analysis Plan must, at a minimum, include the following types of monitoring and evaluation parameters listed below and identified in Table 2:

    a. Flow Monitoring;
    b. Water Quality (physical parameters, metals, nutrients, pesticides);
    c. Toxicity (water and sediment);
    d. Assessment of Benthic Invertebrates.

11. All analyses must be conducted at a laboratory certified for such analyses by the State Department of Public Health (CDPH) or at laboratories approved by the Executive Officer. Unless otherwise noted, all sampling, sample preservation, and analyses must be performed in accordance with the latest edition of *Test Methods for Evaluating Solid Waste*, SW-846, U.S. EPA, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories can be found at the web link: http://www.cdph.ca.gov/certlic/labs/Documents/ELAPLablist.xls

12. Water quality and flow monitoring is used to assess the sources, concentrations, and loads of waste discharges from individual farms/ranches and groups of Dischargers to surface waters, to evaluate impacts to water quality and beneficial uses, and to evaluate the short term patterns and long term trends in receiving water quality. Monitoring data must be compared to existing numeric and narrative water quality objectives.

13. Toxicity testing is to evaluate water quality relative to the narrative toxicity objective. Water column toxicity analyses must be conducted on 100% (undiluted) sample. At sites where persistent unresolved toxicity is found, the Executive Officer may require concurrent toxicity and chemical analyses and a Toxicity Identification Evaluation (TIE) to identify the individual discharges causing the toxicity.

Surface Receiving Water Quality Monitoring Frequency and Schedule

14. The Sampling and Analysis Plan must include a schedule for sampling. Timing, duration, and frequency of monitoring must be based on the land use, complexity, hydrology, and size of the waterbody. Table 2 includes minimum monitoring frequency and parameter lists. Agricultural parameters that are less common may be monitored less frequently. Modifications to the receiving water quality monitoring parameters, frequency, and schedule may be submitted for Executive Officer consideration and approval. At a minimum, the Sampling and Analysis Plan schedule must consist of monthly monitoring of common agricultural parameters in major agricultural areas, including two major storm events during the wet season (October 1 – April 30).

15. Storm event monitoring must be conducted within 18 hours of storm events, preferably including the first flush run-off event that results in significant increase in stream flow. For purposes of this MRP, a storm event is defined as precipitation producing onsite runoff (surface water flow) capable of creating significant ponding, erosion or other water quality problem. A

significant storm event will generally result in greater than 1-inch of rain within a 24-hour period.

16. Dischargers (individually or as part of a cooperative monitoring program) must perform receiving water quality monitoring per the Sampling and Analysis Plan and QAPP approved by the Executive Officer.

B. Surface Receiving Water Quality Reporting

Surface Receiving Water Quality Data Submittal

1. Dischargers (individually or as part of a cooperative monitoring program) must submit water quality monitoring data to the Central Coast Water Board electronically, in a format specified by the Executive Officer and compatible with SWAMP/CCAMP electronic submittal guidelines, each January 1, April 1, July 1, and October 1.

Surface Receiving Water Quality Monitoring Annual Report

2. By July 1, 2017, and every July 1 annually thereafter, Dischargers (individually or as part of a cooperative monitoring program) must submit an Annual Report, electronically, in a format specified by the Executive Officer including the following minimum elements:

a. Signed Transmittal Letter;
b. Title Page;
c. Table of Contents;
d. Executive Summary;
e. Summary of Exceedance Reports submitted during the reporting period;
f. Monitoring objectives and design;
g. Monitoring site descriptions and rainfall records for the time period covered;
h. Location of monitoring sites and map(s);
i. Tabulated results of all analyses arranged in tabular form so that the required information is readily discernible;
j. Summary of water quality data for any sites monitored as part of related monitoring programs, and used to evaluate receiving water as described in the Sampling and Analysis Plan.
k. Discussion of data to clearly illustrate compliance with the Order and water quality standards;
l. Discussion of short term patterns and long term trends in receiving water quality and beneficial use protection;
m. Evaluation of pesticide and toxicity analyses results, and recommendation of candidate sites for Toxicity Identification Evaluations (TIEs);

n. Identification of the location of any agricultural discharges observed discharging directly to surface receiving water;
o. Laboratory data submitted electronically in a SWAMP/CCAMP comparable format;
p. Sampling and analytical methods used;
q. Copy of chain-of-custody forms;
r. Field data sheets, signed laboratory reports, laboratory raw data;
s. Associated laboratory and field quality control samples results;
t. Summary of Quality Assurance Evaluation results;
u. Specify the method used to obtain flow at each monitoring site during each monitoring event;
v. Electronic or hard copies of photos obtained from all monitoring sites, clearly labeled with site ID and date;
w. Conclusions.

PART 2. GROUNDWATER MONITORING AND REPORTING REQUIREMENTS

Groundwater monitoring may be conducted through a cooperative monitoring and reporting program on behalf of growers, or Dischargers may choose to conduct groundwater monitoring and reporting individually. Qualifying cooperative groundwater monitoring and reporting programs must implement the groundwater monitoring and reporting requirements described in this Order, unless otherwise approved by the Executive Officer. An interested person may seek review by the Central Coast Water Board of the Executive Officer's approval or denial of a cooperative groundwater monitoring and reporting program.

Key monitoring and reporting requirements for groundwater are shown in Table 3.

A. Groundwater Monitoring

1. Dischargers must sample private domestic wells and the primary irrigation well on their farm/ranch to evaluate groundwater conditions in agricultural areas, identify areas at greatest risk for nitrogen loading and exceedance of drinking water standards, and identify priority areas for follow up actions.

2. Dischargers must sample at least one groundwater well for each farm/ranch on their operation, including groundwater wells that are located within the property boundary of the enrolled county assessor parcel numbers (APNs). For farms/ranches with multiple groundwater wells, Dischargers must sample all domestic wells and the primary irrigation well. For the purposes of this MRP, a "domestic well" is any well that is used or may be used for domestic use purposes, including any groundwater well that is connected to a residence, workshop, or place of business that may be used for human consumption, cooking, or sanitary purposes. Groundwater monitoring

parameters must include well screen interval depths (if available), general chemical parameters, and general cations and anions listed in Table 3.

3. Dischargers must conduct two rounds of monitoring of required groundwater wells during calendar year 2017; one sample collected during spring (**March - June)** and one sample collected during fall **(September - December)**.

4. Groundwater samples must be collected by a qualified third party (e.g., consultant, technician, person conducting cooperative monitoring) using proper sampling methods, chain-of-custody, and quality assurance/quality control protocols. Groundwater samples must be collected at or near the well head before the pressure tank and prior to any well head treatment. In cases where this is not possible, the water sample must be collected from a sampling point as close to the pressure tank as possible, or from a cold-water spigot located before any filters or water treatment systems.

5. Laboratory analyses for groundwater samples must be conducted by a State certified laboratory according to U.S. EPA approved methods; unless otherwise noted, all monitoring, sample preservation, and analyses must be performed in accordance with the latest edition of *Test Methods for Evaluating Solid Waste*, SW-846, United States Environmental Protection Agency, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories can be found at the web link below: http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/docs/resources4growers/2016_04_11_labs.pdf

6. If a discharger determines that water in any domestic well exceeds 10 mg/L of nitrate as N, the discharger or third party must provide notice to the Central Coast Water Board within 24 hours of learning of the exceedance. For domestic wells on a Discharger's farm/ranch, that exceed 10 mg/L of nitrate as N, the Discharger must provide written notification to the users within 10 days of learning of the exceedance and provide written confirmation of the notification to the Central Coast Water Board.

   The drinking water notification must include the statement that the water poses a human health risk due to elevated nitrate concentration, and include a warning against the use of the water for drinking or cooking. In addition, Dischargers must also provide prompt written notification to any new well users (e.g. tenants and employees with access to the affected well), whenever there is a change in occupancy.

   For all other domestic wells not on a Discharger's farm/ranch but that may be impacted by nitrate, the Central Coast Water Board will notify the users promptly.

The drinking water notification and confirmation letters required by this Order are available to the public.

B. Groundwater Reporting

1. **Within 60 days of sample collection,** Dischargers must coordinate with the laboratory to submit the following groundwater monitoring results and information, electronically, using the Water Board's GeoTracker electronic deliverable format (EDF):
    a. GeoTracker Ranch Global Identification Number
    b. Field point name (Well Name)
    c. Field Point Class (Well Type)
    d. Latitude
    e. Longitude
    f. Sample collection date
    g. Analytical results
    h. Well construction information (e.g., total depth, screened intervals, depth to water), as available

2. Dischargers must submit groundwater well information required in the electronic Notice of Intent (eNOI) for each farm/ranch and update the eNOI to reflect changes in the farm/ranch information within 30 days of the change. Groundwater well information reported on the eNOI includes, but is not limited to:
    a. Number of groundwater wells present at each farm/ranch
    b. Identification of any groundwater wells abandoned or destroyed (including method destroyed) in compliance with the Order
    c. Use for fertigation or chemigation
    d. Presence of back flow prevention devices
    e. Number of groundwater wells used for agricultural purposes
    f. Number of groundwater wells used for or may be used for domestic use purposes (domestic wells).

C. Total Nitrogen Applied Reporting

1. By March 1, 2018, and by March 1 annually thereafter, Tier 2 Dischargers growing any crop with a high potential to discharge nitrogen to groundwater must record and report total nitrogen applied for each specific crop that was irrigated and grown for commercial purposes on that farm/ranch during the preceding calendar year (January through December).

    Crops with a high potential to discharge nitrogen to groundwater are: beet, broccoli, cabbage, cauliflower, celery, Chinese cabbage (napa), collard, endive, kale, leek, lettuce (leaf and head), mustard, onion (dry and green),

spinach, strawberry, pepper (fruiting), and parsley.

Total nitrogen applied must be reported on the Total Nitrogen Applied Report form as described in the Total Nitrogen Applied Report form instructions.

Total nitrogen applied includes any product containing any form or concentration of nitrogen including, but not limited to, organic and inorganic fertilizers, slow release products, compost, compost teas, manure, and extracts.

2. The Total Nitrogen Applied Report form includes the following information:
    a. General ranch information such as GeoTracker file numbers, name, location, acres.
    b. Nitrogen concentration of irrigation water
    c. Nitrogen applied in pounds per acre with irrigation water
    d. Nitrogen present in the soil
    e. Nitrogen applied with compost and amendments
    f. Specific crops grown
    g. Nitrogen applied in pounds per acre with fertilizers and other materials to each specific crop grown
    h. Crop acres of each specific crop grown
    i. Whether each specific crop was grown organically or conventionally
    j. Basis for the nitrogen applied
    k. Explanation and comments section
    l. Certification statement with penalty of perjury declaration
    m. Additional information regarding whether each specific crop was grown in a nursery, greenhouse, hydroponically, in containers, and similar variables.

PART 3. ANNUAL COMPLIANCE FORM

Tier 2 Dischargers must submit annual compliance information, electronically, on the Annual Compliance Form. The purpose of the electronic Annual Compliance Form is to provide information to the Central Coast Water Board to assist in the evaluation of threat to water quality from individual agricultural discharges of waste and measure progress towards water quality improvement and verify compliance with the Order and MRP. Time schedules are shown in Table 4.

A. Annual Compliance Form

1. **By March 1, 2018, and updated annually thereafter by March 1**, Tier 2 Dischargers must submit an Annual Compliance Form electronically, in a

format specified by the Executive Officer. The electronic Annual Compliance Form includes, but is not limited to the following minimum requirements[1]:

a. Question regarding consistency between the Annual Compliance Form and the electronic Notice of Intent (eNOI);
b. Information regarding type and characteristics of discharge (e.g., number of discharge points, estimated flow/volume, number of tailwater days);
c. Identification of any direct agricultural discharges to a stream, lake, estuary, bay, or ocean;
d. Identification of specific farm water quality management practices completed, in progress, and planned to address water quality impacts caused by discharges of waste including irrigation management, pesticide management, nutrient management, salinity management, stormwater management, and sediment and erosion control to achieve compliance with this Order; and identification of specific methods used, and described in the Farm Plan consistent with Order Provision 44.g., for the purposes of assessing the effectiveness of management practices implemented and the outcomes of such assessments;
e. Proprietary information question and justification;
f. Authorization and certification statement and declaration of penalty of perjury.

PART 5. GENERAL MONITORING AND REPORTING REQUIREMENTS

A. Submittal of Technical Reports

1. Dischargers must submit reports in a format specified by the Executive Officer. A transmittal letter must accompany each report, containing the following penalty of perjury statement signed by the Discharger or the Discharger's authorized agent:

   "In compliance with Water Code §13267, I certify under penalty of perjury that this document and all attachments were prepared by me, or under my direction or supervision following a system designed to assure that qualified personnel properly gather and evaluate the information submitted. To the best of my knowledge and belief, this document and all attachments are true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment".

[1] Items reported in the Annual Compliance Form are due by March 1, 2018, and annually thereafter, unless otherwise specified.

2. If the Discharger asserts that all or a portion of a report submitted pursuant to this Order is subject to an exemption from public disclosure (e.g. trade secrets or secret processes), the Discharger must provide an explanation of how those portions of the reports are exempt from public disclosure. The Discharger must clearly indicate on the cover of the report (typically an electronic submittal) that the Discharger asserts that all or a portion of the report is exempt from public disclosure, submit a complete report with those portions that are asserted to be exempt in redacted form, submit separately (in a separate electronic file) unredacted pages (to be maintained separately by staff). The Central Coast Water Board staff will determine whether any such report or portion of a report qualifies for an exemption from public disclosure. If the Central Coast Water Board staff disagrees with the asserted exemption from public disclosure, the Central Coast Water Board staff will notify the Discharger prior to making such report or portions of such report available for public inspection.

B. Central Coast Water Board Authority

1. Monitoring reports are required pursuant to section 13267 of the California Water Code. Pursuant to section 13268 of the Water Code, a violation of a request made pursuant to section 13267 may subject you to civil liability of up to $1000 per day.

2. The Water Board needs the required information to determine compliance with Order No. R3-2017-0002. The evidence supporting these requirements is included in the findings of Order No. R3-2017-0002.

_____
John M. Robertson
Executive Officer

March 8, 2017
_____
Date

Table 1. Major Waterbodies in Agricultural Areas[1]

Hydrologic SubArea	Waterbody Name	Hydrologic SubArea	Waterbody Name
30510	Pajaro River	30920	Quail Creek
30510	Salsipuedes Creek	30920	Salinas Reclamation Canal
30510	Watsonville Slough	31022	Chorro Creek
30510	Watsonville Creek[2]	31023	Los Osos Creek
30510	Beach Road Ditch[2]	31023	Warden Creek
30530	Carnadero Creek	31024	San Luis Obispo Creek
30530	Furlong Creek[2]	31024	Prefumo Creek
30530	Llagas Creek	31031	Arroyo Grande Creek
30530	Miller's Canal	31031	Los Berros Creek
30530	San Juan Creek	31210	Bradley Canyon Creek
30530	Tesquisquita Slough	31210	Bradley Channel
30600	Moro Cojo Slough	31210	Green Valley Creek
30910	Alisal Slough	31210	Main Street Canal
30910	Blanco Drain	31210	Orcutt Solomon Creek
30910	Old Salinas River	31210	Oso Flaco Creek
30910	Salinas River (below Gonzales Rd.)	31210	Little Oso Flaco Creek
30920	Salinas River above Gonzales Rd. and below Nacimiento R.)	31210	Santa Maria River
30910	Santa Rita Creek[2]	31310	San Antonio Creek[2]
30910	Tembladero Slough	31410	Santa Ynez River
30920	Alisal Creek	31531	Bell Creek
30920	Chualar Creek	31531	Glenn Annie Creek
30920	Espinosa Slough	31531	Los Carneros Creek[2]
30920	Gabilan Creek	31534	Arroyo Paredon Creek
30920	Natividad Creek	31534	Franklin Creek

[1] At a minimum, monitoring sites must be included for these waterbodies in agricultural areas, unless otherwise approved by the Executive Officer. Monitoring sites may be proposed for addition or modification to better assess the impacts of waste discharges from irrigated lands to surface water. Dischargers choosing to comply with surface receiving water quality monitoring, individually (not part of a cooperative monitoring program) must only monitor sites for waterbodies receiving the discharge.

[2] These creeks are included because they are newly listed waterbodies on the 2010 303(d) list of Impaired Waters that are associated with areas of agricultural discharge.

Table 2. Surface Receiving Water Quality Monitoring Parameters

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Photo Monitoring		
Upstream and downstream photographs at monitoring location		With every monitoring event
WATER COLUMN SAMPLING		
Physical Parameters and General Chemistry		
Flow (field measure) (CFS) following SWAMP field SOP[9]	.25	Monthly, including 2 stormwater events
pH (field measure)	0.1	"
Electrical Conductivity (field measure) (µS/cm)	2.5	"
Dissolved Oxygen (field measure) (mg/L)	0.1	"
Temperature (field measure) (^{o}C)	0.1	"
Turbidity (NTU)	0.5	"
Total Dissolved Solids (mg/L)	10	"
Total Suspended Solids (mg/L)	0.5	"
Nutrients		
Total Nitrogen (mg/L)	0.5	Monthly, including 2 stormwater events
Nitrate + Nitrite (as N) (mg/L)	0.1	"
Total Ammonia (mg/L)	0.1	"
Unionized Ammonia (calculated value, mg/L))		"
Total Phosphorus (as P) (mg/L)	0.02	
Soluble Orthophosphate (mg/L)	0.01	"
Water column chlorophyll a (µg/L)	1.0	"
Algae cover, Floating Mats, % coverage	-	"
Algae cover, Attached, % coverage	-	"
Water Column Toxicity Test		
Algae - *Selenastrum capricornutum (*96-hour chronic; Method1003.0 in EPA/821/R-02/013)	-	4 times each year, twice in dry season, twice in wet season
Water Flea – *Ceriodaphnia dubia* (7-day chronic; Method 1002.0 in EPA/821/R-02/013)	-	"
Midge - *Chironomus spp.* (96-hour acute; Alternate test species in EPA 821-R-02-012)	-	"

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Toxicity Identification Evaluation (TIE)	-	As directed by Executive Officer
Pesticides[2] /Herbicides (µg/L)		
Organophosphate Pesticides		
Azinphos-methyl	0.02	2 times in both 2017 and 2018, once in dry season and once in wet season of each year, concurrent with water toxicity monitoring
Chlorpyrifos	0.005	"
Diazinon	0.005	"
Dichlorvos	0.01	"
Dimethoate	0.01	"
Dimeton-s	0.005	"
Disulfoton (Disyton)	0.005	"
Malathion	0.005	"
Methamidophos	0.02	"
Methidathion	0.02	"
Parathion-methyl	0.02	"
Phorate	0.01	"
Phosmet	0.02	"
Neonicotinoids		
Thiamethoxam	.002	"
Imidacloprid	.002	"
Thiacloprid	.002	"
Dinotefuran	.006	"
Acetamiprid	.01	"
Clothianidin	.02	
Herbicides		
Atrazine	0.05	"
Cyanazine	0.20	"
Diuron	0.05	"
Glyphosate	2.0	"
Linuron	0.1	"
Paraquat	0.20	"
Simazine	0.05	"
Trifluralin	0.05	"
Metals (µg/L)		
Arsenic (total) [5,7]	0.3	2 times in both 2017 and 2018, once in dry season and once in wet season of each year, concurrent with water toxicity monitoring
Boron (total) [6,7]	10	"

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Cadmium (total & dissolved) [4.5,7]	0.01	"
Copper (total and dissolved) [4,7]	0.01	"
Lead (total and dissolved) [4,7]	0.01	"
Nickel (total and dissolved) [4,7]	0.02	"
Molybdenum (total) [7]	1	"
Selenium (total)[7]	0.30	"
Zinc (total and dissolved) [4.5,7]	0.10	"
Other (µg/L)		
Total Phenolic Compounds[8]	5	2 times in 2017, once in spring (April-May) and once in fall (August-September)
Hardness (mg/L as CaCO3)	1	"
Total Organic Carbon (ug/L)	0.6	"
SEDIMENT SAMPLING		
Sediment Toxicity - *Hyalella azteca* 10-day static renewal (EPA, 2000)		2 times each year, once in spring (April-May) and once in fall (August-September)
Pyrethroid Pesticides in Sediment (µg/kg)		
Gamma-cyhalothrin	2	2 times in both 2017 and 2018, once in spring (April-May) and once in fall (August-September) of each year, concurrent with sediment toxicity sampling
Lambda-cyhalothrin	2	"
Bifenthrin	2	"
Beta-cyfluthrin	2	"
Cyfluthrin	2	"
Esfenvalerate	2	"
Permethrin	2	"
Cypermethrin	2	"
Danitol	2	"
Fenvalerate	2	"
Fluvalinate	2	"
Other Monitoring in Sediment		
Chlorpyrifos (µg/kg)	2	"
Total Organic Carbon	0.01%	"
		"
Sediment Grain Size Analysis	1%	"

[1]Monitoring is ongoing through all five years of the Order, unless otherwise specified. Monitoring frequency may be used as a guide for developing alternative Sampling and Analysis Plan.
[2]Pesticide list may be modified based on specific pesticide use in Central Coast Region. Analytes on this list must be reported, at a minimum.

[3] Reporting Limit, taken from SWAMP where applicable.
[4] Holmgren, Meyer, Cheney and Daniels. 1993. Cadmium, Lead, Zinc, Copper and Nickel in Agricultural Soils of the United States. J. of Environ. Quality 22:335-348.
[5]Sax and Lewis, ed. 1987. Hawley's Condensed Chemical Dictionary. 11th ed. New York: Van Nostrand Reinhold Co., 1987. Zinc arsenate is an insecticide.
[6]Http://www.coastalagro.com/products/labels/9%25BORON.pdf; Boron is applied directly or as a component of fertilizers as a plant nutrient.
[7]Madramootoo, Johnston, Willardson, eds. 1997. Management of Agricultural Drainage Water Quality. International Commission on Irrigation and Drainage. U.N. FAO. SBN 92-6-104058.3.
[8]http://cat.inist.fr/?aModele=afficheN&cpsidt=14074525; Phenols are breakdown products of herbicides and pesticides. Phenols can be directly toxic and cause endocrine disruption.
[9]See SWAMP field measures SOP, p. 17
mg/L – milligrams per liter; ug/L – micrograms per liter; ug/kg – micrograms per kilogram;
NTU – Nephelometric Turbidity Units; CFS – cubic feet per second;

Table 3. Groundwater Monitoring Parameters

Parameter	RL	Analytical Method[3]	Units
pH	0.1	Field or Laboratory Measurement EPA General Methods	pH Units
Specific Conductance	2.5		µS/cm
Total Dissolved Solids	10		mg/L
Total Alkalinity as CaCO3	1	EPA Method 310.1 or 310.2	
Calcium	0.05	General Cations[1] EPA 200.7, 200.8, 200.9	
Magnesium	0.02		
Sodium	0.1		
Potassium	0.1		
Sulfate (SO4)	1.0	General Anions EPA Method 300 or EPA Method 353.2	
Chloride	0.1		
Nitrate + Nitrite (as N)[2] or Nitrate as N	0.1		

[1]General chemistry parameters (major cations and anions) represent geochemistry of water bearing zone and assist in evaluating quality assurance/quality control of groundwater sampling and laboratory analysis.
[2]The MRP allows analysis of "nitrate plus nitrite" to represent nitrate concentrations (as N). The "nitrate plus nitrite" analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short holding time required for nitrate.
[3]Dischargers may use alternative analytical methods approved by EPA.
RL – Reporting Limit; µS/cm – micro siemens per centimeter

Table4. Tier 2 - Time Schedule for Key Monitoring and Reporting Requirements (MRPs)

REQUIREMENT	TIME SCHEDULE[1]
Submit Sampling And Analysis Plan and Quality Assurance Project Plan (SAAP/QAPP) for Surface Receiving Water Quality Monitoring (*individually or through cooperative monitoring program*)	By March 1, 2018, or as directed by the Executive Officer; satisfied if an approved SAAP/QAPP has been submitted pursuant to Order No. R3-2012-0011 and associated MRPs
Initiate surface receiving water quality monitoring (*individually or through cooperative monitoring program*)	Per an approved SAAP and QAPP
Submit surface receiving water quality monitoring data (*individually or through cooperative monitoring program*)	Each January 1, April 1, July 1, and October 1
Submit surface receiving water quality Annual Monitoring Report *(individually or through cooperative monitoring program*)	By July 12017: annually thereafter by July 1
Initiate monitoring of groundwater wells	First sample from March-June 2017, second sample from September-December 2017
Submit electronic Annual Compliance Form	March 1, 2018 and every March 1 annually thereafter
Submit groundwater monitoring results	Within 60 days of the sample collection
Tier 2 Dischargers with farms/ranches growing high risk crops: Report total nitrogen applied on the Total Nitrogen Applied form	March 1, 2018 and every March 1annually thereafter

[1] Dates are relative to adoption of this Order or enrollment date for Dischargers enrolled after the adoption of this Order, unless otherwise specified.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

MONITORING AND REPORTING PROGRAM
ORDER NO. R3-2017-0002-03

TIER 3

DISCHARGERS ENROLLED UNDER
CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR
DISCHARGES FROM IRRIGATED LANDS

This Monitoring and Reporting Program Order No. R3-2017-0002-03 (MRP) is issued pursuant to California Water Code (Water Code) sections 13267 and 13269, which authorize the California Regional Water Quality Control Board, Central Coast Region (hereafter Central Coast Water Board) to require preparation and submittal of technical and monitoring reports. Water Code section 13269 requires a waiver of waste discharge requirements to include as a condition, the performance of monitoring and the public availability of monitoring results. *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands,* Order No. R3-2017-0002 (Order), includes criteria and requirements for three tiers. This MRP sets forth monitoring and reporting requirements for **Tier 3 Dischargers** enrolled under the Order. A summary of the requirements is shown below.

SUMMARY OF MONITORING AND REPORTING REQUIREMENTS FOR TIER 3:

Part 1: Surface Receiving Water Monitoring and Reporting *(cooperative or individual)*
Part 2: Groundwater Monitoring and Reporting *(cooperative or individual)*
Total Nitrogen Applied Reporting *(required for subset of Tier 3 Dischargers if farm/ranch growing any crop with high nitrate loading risk to groundwater);*
Part 3: Annual Compliance Form
Part 5: Individual Surface Water Discharge Monitoring and Reporting
Part 6: Irrigation and Nutrient Management Plan *(required for subset of Tier 3 Dischargers if farm/ranch has High Nitrate Loading Risk)*
Part 7: Water Quality Buffer Plan *(required for subset of Tier 3 Dischargers if farm/ranch contains or is adjacent to a waterbody impaired for temperature, turbidity or sediment)*

Pursuant to Water Code section 13269(a)(2), monitoring requirements must be designed to support the development and implementation of the waiver program, including, but not limited to, verifying the adequacy and effectiveness of the waiver's conditions. The monitoring and reports required by this MRP are to evaluate effects of discharges of waste from irrigated agricultural operations and individual farms/ranches on waters of the state and to determine compliance with the Order.

MONITORING AND REPORTING BASED ON TIERS

The Order and MRP includes criteria and requirements for three tiers, based upon those characteristics of the individual farms/ranches at the operation that present the highest level of waste discharge or greatest risk to water quality. Dischargers must meet conditions of the Order and MRP for the appropriate tier that applies to their land and/or the individual farm/ranch. Within a tier, Dischargers comply with requirements based on the specific level of discharge and threat to water quality from individual farms/ranches. The lowest tier, Tier 1, applies to dischargers who discharge the lowest level of waste (amount or concentration) or pose the lowest potential to cause or contribute to an exceedance of water quality standards in waters of the State or of the United States. The highest tier, Tier 3, applies to dischargers who discharge the highest level of waste or pose the greatest potential to cause or contribute to an exceedance of water quality standards in waters of the State or of the United States. Tier 2 applies to dischargers whose discharge has a moderate threat to water quality. Water quality is defined in terms of regional, state, or federal numeric or narrative water quality standards. Per the Order, Dischargers may submit a request to the Executive Officer to approve transfer to a lower tier. If the Executive Officer approves a transfer to a lower tier, any interested person may request that the Central Coast Water Board conduct a review of the Executive Officer's determination.

PART 1. SURFACE RECEIVING WATER MONITORING AND REPORTING REQUIREMENTS

The surface receiving water monitoring and reporting requirements described herein are generally a continuation of the surface receiving water monitoring and reporting requirements of Monitoring and Reporting Program Order No. 2012-0011-03, as revised August 22, 2016, with the intent of uninterrupted regular monitoring and reporting during the transition from Order No. R3-2012-0011-03 to Order No. R3-2017-0002-03.

Monitoring and reporting requirements for surface receiving water identified in Part 1.A. and Part 1.B. apply to Tier 3 Dischargers. Surface receiving water refers to water flowing in creeks and other surface waters of the State. Surface receiving water monitoring may be conducted through a cooperative monitoring program on behalf of Dischargers, or Dischargers may choose to conduct surface receiving water monitoring and reporting individually. Key monitoring and reporting requirements for surface receiving water are shown in Tables 1 and 2. Time schedules are shown in Table 5.

A. Surface Receiving Water Quality Monitoring

1. Dischargers must elect a surface receiving water monitoring option (cooperative monitoring program or individual receiving water monitoring) to comply with surface receiving water quality monitoring requirements, and identify the option selected on the Notice of Intent (NOI).

2. Dischargers are encouraged to choose participation in a cooperative monitoring program (e.g., the existing Cooperative Monitoring Program or a similar program) to comply with receiving water quality monitoring requirements. Dischargers not participating in a cooperative monitoring program must conduct surface receiving water quality monitoring individually that achieves the same purpose.

3. Dischargers (individually or as part of a cooperative monitoring program) must conduct surface receiving water quality monitoring to a) assess the impacts of their waste discharges from irrigated lands to receiving water, b) assess the status of receiving water quality and beneficial use protection in impaired waterbodies dominated by irrigated agricultural activity, c) evaluate status, short term patterns and long term trends (five to ten years or more) in receiving water quality, d) evaluate water quality impacts resulting from agricultural discharges (including but not limited to tile drain discharges), e) evaluate stormwater quality, f) evaluate condition of existing perennial, intermittent, or ephemeral streams or riparian or wetland area habitat, including degradation resulting from erosion or agricultural discharges of waste, and g) assist in the identification of specific sources of water quality problems.

Surface Receiving Water Quality Sampling and Analysis Plan

4. **By March 1, 2018, or as directed by the Executive Officer**, Dischargers (individually or as part of a cooperative monitoring program) must submit a surface receiving water quality Sampling and Analysis Plan (SAAP) and Quality Assurance Project Plan (QAPP); this requirement is satisfied if an approved SAAP and QAPP addressing all surface receiving water quality monitoring requirements described in this Order has been submitted pursuant to Order No.R3-2012-0011 and associated Monitoring and Reporting Programs. Dischargers (or a third party cooperative monitoring program) must develop the Sampling and Analysis Plan to describe how the proposed monitoring will achieve the objectives of the MRP and evaluate compliance with the Order. The Sampling and Analysis Plan may propose alternative monitoring site locations, adjusted monitoring parameters, and other changes as necessary to assess the impacts of waste discharges from irrigated lands to receiving water. The Executive Officer must approve the Sampling and Analysis Plan and QAPP.

5. The Sampling and Analysis Plan must include the following minimum required components:
    a. Monitoring strategy to achieve objectives of the Order and MRP;
    b. Map of monitoring sites with GIS coordinates;

c. Identification of known water quality impairments and impaired waterbodies per the 2010 Clean Water Act 303(d) List of Impaired Waterbodies (List of Impaired Waterbodies);
d. Identification of beneficial uses and applicable water quality standards;
e. Identification of applicable Total Maximum Daily Loads;
f. Monitoring parameters;
g. Monitoring schedule, including description and frequencies of monitoring events;
h. Description of data analysis methods;

6. The QAPP must include receiving water and site-specific information, project organization and responsibilities, and quality assurance components of the MRP. The QAPP must also include the laboratory and field requirements to be used for analyses and data evaluation. The QAPP must contain adequate detail for project and Water Board staff to identify and assess the technical and quality objectives, measurement and data acquisition methods, and limitations of the data generated under the surface receiving water quality monitoring. All sampling and laboratory methodologies and QAPP content must be consistent with U.S. EPA methods, State Water Board's Surface Water Ambient Monitoring Program (SWAMP) protocols and the Central Coast Water Board's Central Coast Ambient Monitoring Program (CCAMP). Following U.S. EPA guidelines[1] and SWAMP templates[2], the receiving water quality monitoring QAPP must include the following minimum required components:
    a. Project Management. This component addresses basic project management, including the project history and objectives, roles and responsibilities of the participants, and other aspects.
    b. Data Generation and Acquisition. This component addresses all aspects of project design and implementation. Implementation of these elements ensures that appropriate methods for sampling, measurement and analysis, data collection or generation, data handling, and quality control activities are employed and are properly documented. Quality control requirements are applicable to all the constituents sampled as part of the MRP, as described in the appropriate method.
    c. Assessment and Oversight. This component addresses the activities for assessing the effectiveness of the implementation of the project and associated QA and QC activities. The purpose of the assessment is to provide project oversight that

[1] USEPA. 2001 (2006) USEPA Requirements for Quality Assurance Project Plans (QA/R-5) Office of Environmental Information, Washington, D.C. USEPA QA/R-5
[2] http://waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#qa

will ensure that the QA Project Plan is implemented as prescribed.

d. Data Validation and Usability. This component addresses the quality assurance activities that occur after the data collection, laboratory analysis and data generation phase of the project is completed. Implementation of these elements ensures that the data conform to the specified criteria, thus achieving the MRP objectives.

7. The Central Coast Water Board may conduct an audit of contracted laboratories at any time in order to evaluate compliance with the QAPP.

8. The Sampling and Analysis Plan and QAPP, and any proposed revisions are subject to approval by the Executive Officer. The Executive Officer may also revise the Sampling and Analysis Plan, including adding, removing, or changing monitoring site locations, changing monitoring parameters, and other changes as necessary to assess the impacts of waste discharges from irrigated lands to receiving water.

Surface Receiving Water Quality Monitoring Sites

9. The Sampling and Analysis Plan must, at a minimum, include monitoring sites to evaluate waterbodies identified in Table 1, unless otherwise approved by the Executive Officer. The Sampling and Analysis Plan must include sites to evaluate receiving water quality impacts most directly resulting from areas of agricultural discharge (including areas receiving tile drain discharges). Site selection must take into consideration the existence of any long term monitoring sites included in related monitoring programs (e.g. CCAMP and the existing CMP). Sites may be added or modified, subject to prior approval by the Executive Officer, to better assess the pollutant loading from individual sources or the impacts to receiving waters caused by individual discharges. Any modifications must consider sampling consistency for purposes of trend evaluation.

Surface Receiving Water Quality Monitoring Parameters

10. The Sampling and Analysis Plan must, at a minimum, include the following types of monitoring and evaluation parameters listed below and identified in Table 2:

    a. Flow Monitoring;
    b. Water Quality (physical parameters, metals, nutrients, pesticides);
    c. Toxicity (water and sediment);
    d. Assessment of Benthic Invertebrates.

11. All analyses must be conducted at a laboratory certified for such analyses by the State Department of Public Health (CDPH) or at laboratories approved by the Executive Officer. Unless otherwise noted, all sampling, sample preservation, and analyses must be performed in accordance with the latest edition of *Test Methods for Evaluating Solid Waste*, SW-846, U.S. EPA, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories can be found at the web link: http://www.cdph.ca.gov/certlic/labs/Documents/ELAPLablist.xls

12. Water quality and flow monitoring is used to assess the sources, concentrations, and loads of waste discharges from individual farms/ranches and groups of Dischargers to surface waters, to evaluate impacts to water quality and beneficial uses, and to evaluate the short term patterns and long term trends in receiving water quality. Monitoring data must be compared to existing numeric and narrative water quality objectives.

13. Toxicity testing is to evaluate water quality relative to the narrative toxicity objective. Water column toxicity analyses must be conducted on 100% (undiluted) sample. At sites where persistent unresolved toxicity is found, the Executive Officer may require concurrent toxicity and chemical analyses and a Toxicity Identification Evaluation (TIE) to identify the individual discharges causing the toxicity.

Surface Receiving Water Quality Monitoring Frequency and Schedule

14. The Sampling and Analysis Plan must include a schedule for sampling. Timing, duration, and frequency of monitoring must be based on the land use, complexity, hydrology, and size of the waterbody. Table 2 includes minimum monitoring frequency and parameter lists. Agricultural parameters that are less common may be monitored less frequently. Modifications to the receiving water quality monitoring parameters, frequency, and schedule may be submitted for Executive Officer consideration and approval. At a minimum, the Sampling and Analysis Plan schedule must consist of monthly monitoring of common agricultural parameters in major agricultural areas, including two major storm events during the wet season (October 1 – April 30).

15. Storm event monitoring must be conducted within 18 hours of storm events, preferably including the first flush run-off event that results in significant increase in stream flow. For purposes of this MRP, a storm event is defined as precipitation producing onsite runoff (surface water flow) capable of creating significant ponding, erosion or other water quality problem. A

significant storm event will generally result in greater than 1-inch of rain within a 24-hour period.

16. Dischargers (individually or as part of a cooperative monitoring program) must perform receiving water quality monitoring per the Sampling and Analysis Plan and QAPP approved by the Executive Officer.

B. Surface Receiving Water Quality Reporting

Surface Receiving Water Quality Data Submittal

1. Dischargers (individually or as part of a cooperative monitoring program) must submit water quality monitoring data to the Central Coast Water Board electronically, in a format specified by the Executive Officer and compatible with SWAMP/CCAMP electronic submittal guidelines, each January 1, April 1, July 1, and October 1.

Surface Receiving Water Quality Monitoring Annual Report

2. By July 1, 2017, and every July 1 annually thereafter, Dischargers (individually or as part of a cooperative monitoring program) must submit an Annual Report, electronically, in a format specified by the Executive Officer including the following minimum elements:

a. Signed Transmittal Letter;
b. Title Page;
c. Table of Contents;
d. Executive Summary;
e. Summary of Exceedance Reports submitted during the reporting period;
f. Monitoring objectives and design;
g. Monitoring site descriptions and rainfall records for the time period covered;
h. Location of monitoring sites and map(s);
i. Tabulated results of all analyses arranged in tabular form so that the required information is readily discernible;
j. Summary of water quality data for any sites monitored as part of related monitoring programs, and used to evaluate receiving water as described in the Sampling and Analysis Plan.
k. Discussion of data to clearly illustrate compliance with the Order and water quality standards;
l. Discussion of short term patterns and long term trends in receiving water quality and beneficial use protection;

m. Evaluation of pesticide and toxicity analyses results, and recommendation of candidate sites for Toxicity Identification Evaluations (TIEs);
n. Identification of the location of any agricultural discharges observed discharging directly to surface receiving water;
o. Laboratory data submitted electronically in a SWAMP/CCAMP comparable format;
p. Sampling and analytical methods used;
q. Copy of chain-of-custody forms;
r. Field data sheets, signed laboratory reports, laboratory raw data;
s. Associated laboratory and field quality control samples results;
t. Summary of Quality Assurance Evaluation results;
u. Specify the method used to obtain flow at each monitoring site during each monitoring event;
v. Electronic or hard copies of photos obtained from all monitoring sites, clearly labeled with site ID and date;
w. Conclusions.

PART 2. GROUNDWATER MONITORING AND REPORTING REQUIREMENTS

Groundwater monitoring may be conducted through a cooperative monitoring and reporting program on behalf of growers, or Dischargers may choose to conduct groundwater monitoring and reporting individually. Qualifying cooperative groundwater monitoring and reporting programs must implement the groundwater monitoring and reporting requirements described in this Order, unless otherwise approved by the Executive Officer. An interested person may seek review by the Central Coast Water Board of the Executive Officer's approval or denial of a cooperative groundwater monitoring and reporting program.

Key monitoring and reporting requirements for groundwater are shown in Table 3.

A. Groundwater Monitoring

1. Dischargers must sample private domestic wells and the primary irrigation well on their farm/ranch to evaluate groundwater conditions in agricultural areas, identify areas at greatest risk for nitrogen loading and exceedance of drinking water standards, and identify priority areas for follow up actions.

2. Dischargers must sample at least one groundwater well for each farm/ranch on their operation, including groundwater wells that are located within the property boundary of the enrolled county assessor parcel numbers (APNs). For farms/ranches with multiple groundwater wells, Dischargers must sample all domestic wells and the primary irrigation well. For the purposes of this MRP, a "domestic well" is any well that is used or may be used for domestic

use purposes, including any groundwater well that is connected to a residence, workshop, or place of business that may be used for human consumption, cooking, or sanitary purposes. Groundwater monitoring parameters must include well screen interval depths (if available), general chemical parameters, and general cations and anions listed in Table 3.

3. Dischargers must conduct two rounds of monitoring of required groundwater wells during calendar year 2017; one sample collected during spring (**March - June)** and one sample collected during fall **(September - December)**.

4. Groundwater samples must be collected by a qualified third party (e.g., consultant, technician, person conducting cooperative monitoring) using proper sampling methods, chain-of-custody, and quality assurance/quality control protocols. Groundwater samples must be collected at or near the well head before the pressure tank and prior to any well head treatment. In cases where this is not possible, the water sample must be collected from a sampling point as close to the pressure tank as possible, or from a cold-water spigot located before any filters or water treatment systems.

5. Laboratory analyses for groundwater samples must be conducted by a State certified laboratory according to U.S. EPA approved methods; unless otherwise noted, all monitoring, sample preservation, and analyses must be performed in accordance with the latest edition of *Test Methods for Evaluating Solid Waste*, SW-846, United States Environmental Protection Agency, and analyzed as specified herein by the above analytical methods and reporting limits indicated. Certified laboratories can be found at the web link below: http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/docs/resources4growers/2016_04_11_labs.pdf

6. If a discharger determines that water in any domestic well exceeds 10 mg/L of nitrate as N, the discharger or third party must provide notice to the Central Coast Water Board within 24 hours of learning of the exceedance. For domestic wells on a Discharger's farm/ranch that exceed 10 mg/L nitrate as N, the Discharger must provide written notification to the users within 10 days of learning of the exceedance and provide written confirmation of the notification to the Central Coast Water Board.

   The drinking water notification must include the statement that the water poses a human health risk due to elevated nitrate concentration, and include a warning against the use of the water for drinking or cooking. In addition, Dischargers must also provide prompt written notification to any new well users (e.g. tenants and employees with access to the affected well), whenever there is a change in occupancy.

For all other domestic wells not on a Discharger's property, the Central Coast Water Board will notify the users promptly.

The drinking water notification and confirmation letters required by this Order are available to the public.

B. Groundwater Reporting

1. **Within 60 days of sample collection,** Dischargers must coordinate with the laboratory to submit the following groundwater monitoring results and information, electronically, using the Water Board's GeoTracker electronic deliverable format (EDF):
    a. GeoTracker Ranch Global Identification Number
    b. Field point name (Well Name)
    c. Field Point Class (Well Type)
    d. Latitude
    e. Longitude
    f. Sample collection date
    g. Analytical results
    h. Well construction information (e.g., total depth, screened intervals, depth to water), as available

2. Dischargers must submit groundwater well information required in the electronic Notice of Intent (eNOI) for each farm/ranch and update the eNOI to reflect changes in the farm/ranch information within 30 days of the change. Groundwater well information reported on the eNOI includes, but is not limited to:
    a. Number of groundwater wells present at each farm/ranch
    b. Identification of any groundwater wells abandoned or destroyed (including method destroyed) in compliance with the Order
    c. Use for fertigation or chemigation
    d. Presence of back flow prevention devices
    e. Number of groundwater wells used for agricultural purposes
    f. Number of groundwater wells used for or may be used for domestic use purposes (domestic wells)

C. Total Nitrogen Applied Reporting

1. By March 1, 2018, and by March 1 annually thereafter, Tier 3 Dischargers growing any crop with a high potential to discharge nitrogen to groundwater must record and report total nitrogen applied for each specific crop that was irrigated and grown for commercial purposes on that farm/ranch during the preceding calendar year (January through December).

    Crops with a high potential to discharge nitrogen to groundwater are: beet,

broccoli, cabbage, cauliflower, celery, Chinese cabbage (napa), collard, endive, kale, leek, lettuce (leaf and head), mustard, onion (dry and green), spinach, strawberry, pepper (fruiting), and parsley.

Total nitrogen applied must be reported on the Total Nitrogen Applied Report form as described in the Total Nitrogen Applied Report form instructions.

Total nitrogen applied includes any product containing any form or concentration of nitrogen including, but not limited to, organic and inorganic fertilizers, slow release products, compost, compost teas, manure, and extracts.

2. The Total Nitrogen Applied Report form includes the following information:
    a. General ranch information such as GeoTracker file numbers, name, location, acres.
    b. Nitrogen concentration of irrigation water
    c. Nitrogen applied in pounds per acre with irrigation water
    d. Nitrogen present in the soil
    e. Nitrogen applied with compost and amendments
    f. Specific crops grown
    g. Nitrogen applied in pounds per acre with fertilizers and other materials to each specific crop grown
    h. Crop acres of each specific crop grown
    i. Whether each specific crop was grown organically or conventionally
    j. Basis for the nitrogen applied
    k. Explanation and comments section
    l. Certification statement with penalty of perjury declaration
    m. Additional information regarding whether each specific crop was grown in a nursery, greenhouse, hydroponically, in containers, and similar variables.

PART 3. ANNUAL COMPLIANCE FORM

Tier 3 Dischargers must submit annual compliance information, electronically, on the Annual Compliance Form. The purpose of the electronic Annual Compliance Form is to provide information to the Central Coast Water Board to assist in the evaluation of threat to water quality from individual agricultural discharges of waste and measure progress towards water quality improvement and verify compliance with the Order and MRP. Time schedules are shown in Table 5.

A. Annual Compliance Form

1. **By March 1, 2018, and updated annually thereafter by March 1**, Tier 3 Dischargers must submit an Annual Compliance Form electronically, in a format specified by the Executive Officer. The electronic Annual Compliance Form includes, but is not limited to the following minimum requirements[1]:
    a. Question regarding consistency between the Annual Compliance Form and the electronic Notice of Intent (eNOI);
    b. Information regarding type and characteristics of discharge (e.g., number of discharge points, estimated flow/volume, number of tailwater days);
    c. Identification of any direct agricultural discharges to a stream, lake, estuary, bay, or ocean;
    d. Identification of specific farm water quality management practices completed, in progress, and planned to address water quality impacts caused by discharges of waste including irrigation management, pesticide management, nutrient management, salinity management, stormwater management, and sediment and erosion control to achieve compliance with this Order; and identification of specific methods used, and described in the Farm Plan consistent with Order Provision 44.g., for the purposes of assessing the effectiveness of management practices implemented and the outcomes of such assessments:
    e. Proprietary information question and justification;
    f. Authorization and certification statement and declaration of penalty of perjury.

PART 5. INDIVIDUAL SURFACE WATER DISCHARGE MONITORING AND REPORTING REQUIREMENTS

Monitoring and reporting requirements for individual surface water discharge identified in Part 5.A. and Part 5.B. apply to Tier 3 Dischargers with irrigation water or stormwater discharges to surface water from an outfall. Outfalls are locations where irrigation water and stormwater exit a farm/ranch, or otherwise leave the control of the discharger, after being conveyed by pipes, ditches, constructed swales, tile drains, containment structures, or other discrete structures or features that transport the water. Discharges that have commingled with discharges from another farm/ranch are considered to have left the control of the discharger. Key monitoring and reporting requirements for individual surface water discharge are shown in Tables 4A and 4B. Time schedules are shown in Table 5.

[1] Items reported in the Annual Compliance Form are due by March 1 2018, and annually thereafter, unless otherwise specified.

A. Individual Surface Water Discharge Monitoring

1. Tier 3 Dischargers must conduct individual surface water discharge monitoring to a) evaluate the quality of individual waste discharges, including concentration and load of waste (in kilograms per day) for appropriate parameters, b) evaluate effects of waste discharge on water quality and beneficial uses, and c) evaluate progress towards compliance with water quality improvement milestones in the Order.

Individual Sampling and Analysis Plan

2. **By March 1, 2018, or as directed by the Executive Officer**, Tier 3 Dischargers must submit an individual surface water discharge Sampling and Analysis Plan (SAAP) and QAPP to monitor individual discharges of irrigation water and stormwater that leaves their farm/ranch from an outfall. The Sampling and Analysis Plan and QAPP must be submitted to the Executive Officer; this requirement is satisfied if an approved SAAP and QAPP addressing all individual surface water discharge monitoring requirements described in this Order has been submitted pursuant to Order No.R3-2012-0011 and associated Monitoring and Reporting Programs.

3. The Sampling and Analysis Plan must include the following minimum required components to monitor irrigation water and stormwater discharges:
    a. Number and location of outfalls (identified with latitude and longitude or on a scaled map);
    b. Number and location of monitoring points;
    c. Description of typical irrigation runoff patterns;
    d. Map of discharge and monitoring points;
    e. Sample collection methods;
    f. Monitoring parameters;
    g. Monitoring schedule and frequency of monitoring events;

4. The QAPP must include appropriate methods for sampling, measurement and analysis, data collection or generation, data handling, quality control activities, and documentation.

5. The Sampling and Analysis Plan and QAPP, and any proposed revisions are subject to approval by the Executive Officer. The Executive Officer may require modifications to the Sampling and Analysis Plan or Tier 3 Dischargers may propose Sampling and Analysis Plan modifications for Executive Officer approval, when modifications are justified to accomplish the objectives of the MRP.

Individual Surface Water Discharge Monitoring Points

6. Tier 3 Dischargers must select monitoring points to characterize at least 80% of the estimated maximum irrigation run-off discharge volume from each farm/ranch based on that farm's/ranch's typical discharge patterns[1], including tailwater discharges and discharges from tile drains. Sample must be taken when irrigation activity is causing maximal run-off. Load estimates will be generated by multiplying flow volume of discharge by concentration of contaminants. Tier 3 Dischargers must include at least one monitoring point from each farm/ranch which drains areas where chlorpyrifos or diazinon are applied, and monitoring of runoff or tailwater must be conducted within one week of chemical application. If discharge is not routinely present, Discharger may characterize typical run-off patterns in the Annual Report. See Table 4A for additional details.

7. Tier 3 Dischargers must also monitor storage ponds and other terminal surface water containment structures that collect irrigation and stormwater runoff, unless the structure is (1) part of a tail-water return system where a major portion of the water in such structure is reapplied as irrigation water, or (2) the structure is primarily a sedimentation pond by design with a short hydraulic residence time (96 hours or less) and a discharge to surface water when functioning. If multiple ponds are present, sampling must cover at least those structures that would account for 80% of the maximum storage volume of the containment features. See Table 4B for additional details. Where water is reapplied as irrigation water. Dischargers shall document reuse in the Farm Plan.

Individual Surface Water Discharge Monitoring Parameters, Frequency, and Schedule

8. Tier 3 Dischargers must conduct monitoring for parameters, laboratory analytical methods, frequency and schedule described in Tables 4A and 4B. Dischargers may utilize in-field water testing instruments/equipment as a substitute for laboratory analytical methods if the method is approved by U.S. EPA, meets reporting limits (RL) and practical quantitation limits (PQL) specifications in the MRP, and appropriate sampling methodology and quality assurance checks can be applied to ensure that QAPP standards are met to ensure accuracy of the test.

[1] The requirement to select monitoring points to characterize at least 80% of the estimated maximum irrigation run-off based on typical discharge patterns is for the purposes of attempting to collect samples that represent a majority of the volume of irrigation run-off discharged; however the Board recognizes that predetermining these locations is not always possible and that sampling results may vary. The MRP does not specify the number or location of monitoring points to provide maximum flexibility for growers to determine how many sites necessary and exact locations are given the anticipated site-specific conditions.

9. Tier 3 Dischargers must initiate individual surface water discharge monitoring per an approved Sampling and Analysis Plan and QAPP, unless otherwise directed by the Executive Officer.

B. Individual Surface Water Discharge Reporting

Individual Surface Water Discharge Monitoring Data Submittal

By March 1, 2018, and annually thereafter by March 1, Tier 3 Dischargers must submit individual surface water discharge monitoring data and information to the Central Coast Water Board electronically, in a pdf format, containing at least the following items, or as otherwise approved by the Executive Officer:

a. Electronic laboratory data
- All reports of results must contain Ranch name and Global ID, site name(s), project contact, and date.
- Electronic laboratory data reports of chemical results shall include analytical results, as well as associated quality assurance data including method detection limits, reporting limits, matrix spikes, matrix spike duplicates, laboratory blanks, and other quality assurance results required by the analysis method.
- Electronic laboratory data reports of toxicity results shall include summary results comparable to those required in a CEDEN file delivery, including test and control results. For each test result, the mean, associated control performance, calculated percent of control, statistical test results and determination of toxicity, must be included. Test results must specify the control ID used to calculate statistical outcomes.
- Field data results, including temperature, pH, conductivity, turbidity and flow measurements, any field duplicates or blanks, and field observations.
- Calculations of un-ionized ammonia concentrations
- Calculations of total flow and pollutant loading (for nitrate, pesticides if sampled, total ammonia, and turbidity) (include formulas);

b. Narrative description of typical irrigation runoff patterns;
c. Location of sampling sites and map(s);
d. Sampling and analytical methods used;
e. Specify the method used to obtain flow at each monitoring site during each monitoring event;
f. Photos obtained from all monitoring sites, clearly labeled with location and date;
g. Sample chain-of-custody forms do not need to be submitted but must be made available to Central Coast Water Board staff, upon request.

PART 6. IRRIGATION AND NUTRIENT MANAGEMENT PLAN

Monitoring and reporting requirements related to the Irrigation and Nutrient Management Plan (INMP) identified in Part 6.A., and 6.B, apply to Tier 3 Dischargers identified by the Executive Officer that are newly enrolled in Order No. R3-2017-0002, and Tier 3 Dischargers that were subject to Irrigation and Nutrient Management Plan Requirements in Order R3-2012-0011 per MRP Order No. R3-2012-0011-03 Time schedules are shown in Table 5.

A. Irrigation and Nutrient Management Plan Monitoring

1. Tier 3 Dischargers required in Order No. R3-2012-0011 to develop and initiate implementation of an Irrigation and Nutrient Management Plan (INMP) certified by a Professional Soil Scientist, Professional Agronomist, or Crop Advisor certified by the American Society of Agronomy, or similarly qualified professional, are required to update (as necessary) and implement their INMP throughout the term of this Order.

2. The Executive Officer will assess whether an INMP is required for new Tier 3 Dischargers that enroll in Order No. R3-2017-0002 during the term of the Order. The Executive Officer will use the criteria established in Order No. R3-2012-0011 to make this assessment. If a Tier 3 Discharger is required to develop an INMP, the Tier 3 discharger must develop and initiate implementation of an Irrigation and Nutrient Management Plan (INMP) certified by a Professional Soil Scientist, Professional Agronomist, or Crop Advisor certified by the American Society of Agronomy, or similarly qualified professional, **within 18 months** of the Executive Officer's assessment of the INMP requirement.
3. The purpose of the INMP is to budget and manage the nutrients applied to each farm/ranch considering all sources of nutrients, crop requirements, soil types, climate, and local conditions in order to minimize nitrate loading to surface water and groundwater in compliance with this Order. The professional certification of the INMP must indicate that the relevant expert has reviewed all necessary documentation and testing results, evaluated total nitrogen applied relative to typical crop nitrogen uptake and nitrogen removed at harvest, with consideration to potential nitrate loading to groundwater, and conducted field verification to ensure accuracy of reporting.
4. Tier 3 Dischargers required to develop and initiate implementation an (INMP) must include the following elements in the INMP. The INMP is not submitted to the Central Coast Water Board, with the exception of the INMP Effectiveness Report:
    a. Proof of INMP certification;
    b. Map locating each farm/ranch;
    c. Identification of crop nitrogen uptake values for use in nutrient balance calculations;

d. Record keeping annually by either Method 1 or Method 2:

e. To meet the requirement to record total nitrogen in the soil,dischargers may take a nitrogen soil sample (e.g. laboratory analysis or nitrate quick test) or use an alternative method to evaluate nitrogen content in soil, prior to planting or seeding the field or prior to the time of pre-sidedressing, or at an alternative time when it is most effective to determine nitrogen present in the soil that is available for the next crop and to minimize nitrate leaching to groundwater. The amount of nitrogen remaining in the soil must be accounted for as a source of nitrogen when budgeting, and the soil sample or alternative method results must be maintained in the INMP.
f. Identification of irrigation and nutrient management practices in progress (identify start date), completed (identify completion date), and planned (identify anticipated start date) to reduce nitrate loading to groundwater to achieve compliance with this Order.
g. Description of methods Discharger will use to verify overall effectiveness of the INMP.

5. Tier 3 Dischargers must evaluate the effectiveness of the INMP. Irrigation and Nutrient Management Plan effectiveness monitoring must evaluate reduction in new nitrogen[1] loading potential based on minimized fertilizer use and improved irrigation and nutrient management practices in order to minimize new nitrogen loading to surface water and groundwater. Evaluation methods used may include, but are not limited to analysis of groundwater well monitoring data or soil sample data, or analysis of trends in new nitrogen application data.

B. Irrigation and Nutrient Management Plan Reporting

1. **By March 1, 2019**, Tier 3 Dischargers required to develop and initiate implementation of an INMP must submit an INMP Effectiveness Report to evaluate reductions in nitrate loading to surface water and groundwater based on the implementation of irrigation and nutrient management practices in a format specified by the Executive Officer. Dischargers in the same groundwater basin or subbasin may choose to comply with this requirement as a group by submitting a single report that evaluates the overall effectiveness of the broad scale implementation of irrigation and nutrient management practices identified in individual INMPs to protect groundwater. Group efforts must use data from each farm/ranch (e.g., data from individual groundwater wells, soil samples, or nitrogen application). The INMP

[1] New nitrogen is nitrogen from fertilizers, amendments, and other nitrogen sources applied other than nitrogen present in groundwater.

Effectiveness Report must include a description of the methodology used to evaluate and verify effectiveness of the INMP.

PART 7. WATER QUALITY BUFFER PLAN

Monitoring and reporting requirements related to the Water Quality Buffer Plan identified in Part 7.A. and Part 7.B. apply to Tier 3 Dischargers that have farms/ranches *that contain or are adjacent to waterbody identified on the List of Impaired Waterbodies as impaired for temperature, turbidity, or sediment).* Time schedules are shown in Table 5.

A. Water Quality Buffer Plan

1. **By 18 months following enrollment in Order No. R3-2017-0002 of a Tier 3 farm/ranch**, Tier 3 Dischargers adjacent to or containing a waterbody identified on the List of Impaired Waterbodies as impaired for temperature, turbidity or sediment must submit a Water Quality Buffer Plan (WQBP) to the Executive Officer that protects the listed waterbody and its associated perennial and intermittent tributaries. The purpose of the Water Quality Buffer Plan is to prevent waste discharge, comply with water quality standards (e.g., temperature, turbidity, sediment), and protect beneficial uses in compliance with this Order and the following Basin Plan requirement:

   Basin Plan (Chapter 5, p. V-13, Section V.G.4 – Erosion and Sedimentation, *"A filter strip of appropriate width, and consisting of undisturbed soil and riparian vegetation or its equivalent, must be maintained, wherever possible, between significant land disturbance activities and watercourses, lakes, bays, estuaries, marshes, and other water bodies. For construction activities, minimum width of the filter strip must be thirty feet, wherever possible…."*

2. The Water Quality Buffer Plan must include the following or the functional equivalent, to address discharges of waste and associated water quality impairments:

   a. A minimum 30 foot buffer (as measured horizontally from the top of bank on either side of the waterway, or from the high water mark of a lake and mean high tide of an estuary);
   b. Any necessary increases in buffer width to adequately prevent the discharge of waste that may cause or contribute to any excursion above or outside the acceptable range for any Regional, State, or Federal numeric or narrative water quality standard (e.g., temperature, turbidity);

c. Any buffer less than 30 feet must provide equivalent water quality protection and be justified based on an analysis of site-specific conditions and be approved by the Executive Officer;
d. Identification of any alternatives implemented to comply with this requirement, that are functionally equivalent to described buffer;
e. Schedule for implementation;
f. Maintenance provisions to ensure water quality protection;
g. Annual photo monitoring;

2. The WQPB must be submitted using the Water Quality Buffer Plan form, or, if an alternative to the WQBP is submitted, in a format approved by the Executive Officer.

3. **By March 1, 2019**, Tier 3 Dischargers that submitted a WQBP pursuant to Order No. R3-2012-0011 or Order No. R3-2017-0002, are required to update (as necessary) and implement their WQBP, and annually submit a WQBP Status Report of their WQBP implementation using the Water Quality Buffer Plan form, or, if an alternative to the WQBP was submitted, an Alternative to WQBP Status Report, electronically, in a format approved by the Executive Officer.

PART 8. GENERAL MONITORING AND REPORTING REQUIREMENTS

A. Submittal of Technical Reports

1. Dischargers must submit reports in a format specified by the Executive Officer (reports will be submitted electronically, unless otherwise specified by the Executive Officer). A transmittal letter must accompany each report, containing the following penalty of perjury statement signed by the Discharger or the Discharger's authorized agent:

   "In compliance with Water Code §13267, I certify under penalty of perjury that this document and all attachments were prepared by me, or under my direction or supervision following a system designed to assure that qualified personnel properly gather and evaluate the information submitted. To the best of my knowledge and belief, this document and all attachments are true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment".

2. If the Discharger asserts that all or a portion of a report submitted pursuant to this Order is subject to an exemption from public disclosure (e.g. trade secrets or secret processes), the Discharger must provide an explanation of how those portions of the reports are exempt from public disclosure. The

Discharger must clearly indicate on the cover of the report (typically an electronic submittal) that the Discharger asserts that all or a portion of the report is exempt from public disclosure, submit a complete report with those portions that are asserted to be exempt in redacted form, submit separately (in a separate electronic file) unredacted pages (to be maintained separately by staff). The Central Coast Water Board staff will determine whether any such report or portion of a report qualifies for an exemption from public disclosure. If the Central Coast Water Board staff disagrees with the asserted exemption from public disclosure, the Central Coast Water Board staff will notify the Discharger prior to making such report or portions of such report available for public inspection.

B. Central Coast Water Board Authority

1. Monitoring reports are required pursuant to section 13267 of the California Water Code. Pursuant to section 13268 of the Water Code, a violation of a request made pursuant to section 13267 may subject you to civil liability of up to $1000 per day.

2. The Water Board needs the required information to determine compliance with Order No.R3-2017-0002. The evidence supporting these requirements is included in the findings of Order No.R3-2017-0002.

_____
John M. Robertson
Executive Officer

_____
Date

Table 1. Major Waterbodies in Agricultural Areas[1]

Hydrologic SubArea	Waterbody Name	Hydrologic SubArea	Waterbody Name
30510	Pajaro River	30920	Quail Creek
30510	Salsipuedes Creek	30920	Salinas Reclamation Canal
30510	Watsonville Slough	31022	Chorro Creek
30510	Watsonville Creek[2]	31023	Los Osos Creek
30510	Beach Road Ditch[2]	31023	Warden Creek
30530	Carnadero Creek	31024	San Luis Obispo Creek
30530	Furlong Creek[2]	31024	Prefumo Creek
30530	Llagas Creek	31031	Arroyo Grande Creek
30530	Miller's Canal	31031	Los Berros Creek
30530	San Juan Creek	31210	Bradley Canyon Creek
30530	Tesquisquita Slough	31210	Bradley Channel
30600	Moro Cojo Slough	31210	Green Valley Creek
30910	Alisal Slough	31210	Main Street Canal
30910	Blanco Drain	31210	Orcutt Solomon Creek
30910	Old Salinas River	31210	Oso Flaco Creek
30910	Salinas River (below Gonzales Rd.)	31210	Little Oso Flaco Creek
30920	Salinas River (above Gonzales Rd. and below Nacimiento R.)	31210	Santa Maria River
30910	Santa Rita Creek[2]	31310	San Antonio Creek[2]
30910	Tembladero Slough	31410	Santa Ynez River
30920	Alisal Creek	31531	Bell Creek
30920	Chualar Creek	31531	Glenn Annie Creek
30920	Espinosa Slough	31531	Los Carneros Creek[2]
30920	Gabilan Creek	31534	Arroyo Paredon Creek
30920	Natividad Creek	31534	Franklin Creek

[1] At a minimum, monitoring sites must be included for these waterbodies in agricultural areas, unless otherwise approved by the Executive Officer. Monitoring sites may be proposed for addition or modification to better assess the impacts of waste discharges from irrigated lands to surface water. Dischargers choosing to comply with surface receiving water quality monitoring, individually (not part of a cooperative monitoring program) must only monitor sites for waterbodies receiving the discharge.

[2] These creeks are included because they are newly listed waterbodies on the 2010 303(d) list of Impaired Waters that are associated with areas of agricultural discharge.

Table 2. Surface Receiving Water Quality Monitoring Parameters

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Photo Monitoring		
Upstream and downstream photographs at monitoring location		With every monitoring event
WATER COLUMN SAMPLING		
Physical Parameters and General Chemistry		
Flow (field measure) (CFS) following SWAMP field SOP[9]	.25	Monthly, including 2 stormwater events
pH (field measure)	0.1	"
Electrical Conductivity (field measure) (µS/cm)	2.5	"
Dissolved Oxygen (field measure) (mg/L)	0.1	"
Temperature (field measure) (°C)	0.1	"
Turbidity (NTU)	0.5	"
Total Dissolved Solids (mg/L)	10	"
Total Suspended Solids (mg/L)	0.5	"
Nutrients		
Total Nitrogen (mg/L)	0.5	Monthly, including 2 stormwater events
Nitrate + Nitrite (as N) (mg/L)	0.1	"
Total Ammonia (mg/L)	0.1	"
Unionized Ammonia (calculated value, mg/L))		"
Total Phosphorus (as P) (mg/L)	0.02	
Soluble Orthophosphate (mg/L)	0.01	"
Water column chlorophyll a (µg/L)	1.0	"
Algae cover, Floating Mats, % coverage	-	"
Algae cover, Attached, % coverage	-	"
Water Column Toxicity Test		
Algae - *Selenastrum capricornutum (*96-hour chronic; Method1003.0 in EPA/821/R-02/013)	-	4 times each year, twice in dry season, twice in wet season
Water Flea – *Ceriodaphnia dubia* (7-day chronic; Method 1002.0 in EPA/821/R-02/013)	-	"
Midge - *Chironomus spp.* (96-hour acute; Alternate test species in EPA 821-R-02-012)	-	"

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Toxicity Identification Evaluation (TIE)	-	As directed by Executive Officer
Pesticides[2] /Herbicides (µg/L)		
Organophosphate Pesticides		
Azinphos-methyl	0.02	2 times in both 2017 and 2018, once in dry season and once in wet season of each year, concurrent with water toxicity monitoring
Chlorpyrifos	0.005	"
Diazinon	0.005	"
Dichlorvos	0.01	"
Dimethoate	0.01	"
Dimeton-s	0.005	"
Disulfoton (Disyton)	0.005	"
Malathion	0.005	"
Methamidophos	0.02	"
Methidathion	0.02	"
Parathion-methyl	0.02	"
Phorate	0.01	"
Phosmet	0.02	"
Neonicotinoids		
Thiamethoxam	.002	"
Imidacloprid	.002	"
Thiacloprid	.002	"
Dinotefuran	.006	"
Acetamiprid	.01	"
Clothianidin	.02	
Herbicides		
Atrazine	0.05	"
Cyanazine	0.20	"
Diuron	0.05	"
Glyphosate	2.0	"
Linuron	0.1	"
Paraquat	0.20	"
Simazine	0.05	"
Trifluralin	0.05	"
Metals (µg/L)		
Arsenic (total) [5,7]	0.3	2 times in both 2017 and 2018, once in dry season and once in wet season of each year, concurrent with water toxicity monitoring
Boron (total) [6,7]	10	"
Cadmium (total & dissolved) [4.5,7]	0.01	"

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Copper (total and dissolved) [4,7]	0.01	"
Lead (total and dissolved) [4,7]	0.01	"
Nickel (total and dissolved) [4,7]	0.02	"
Molybdenum (total) [7]	1	"
Selenium (total)[7]	0.30	"
Zinc (total and dissolved) [4.5,7]	0.10	"
Other (µg/L)		
Total Phenolic Compounds[8]	5	2 times in 2017, once in spring (April-May) and once in fall (August-September)
Hardness (mg/L as CaCO3)	1	"
Total Organic Carbon (ug/L)	0.6	"
SEDIMENT SAMPLING		
Sediment Toxicity - *Hyalella azteca* 10-day static renewal (EPA, 2000)		2 times each year, once in spring (April-May) and once in fall (August-September)
Pyrethroid Pesticides in Sediment (µg/kg)		
Gamma-cyhalothrin	2	2 times in both 2017 and 2018, once in spring (April-May) and once in fall (August-September) of each year, concurrent with sediment toxicity sampling
Lambda-cyhalothrin	2	"
Bifenthrin	2	"
Beta-cyfluthrin	2	"
Cyfluthrin	2	"
Esfenvalerate	2	"
Permethrin	2	"
Cypermethrin	2	"
Danitol	2	"
Fenvalerate	2	"
Fluvalinate	2	"
Other Monitoring in Sediment		
Chlorpyrifos (µg/kg)	2	"
Total Organic Carbon	0.01%	"
		"
Sediment Grain Size Analysis	1%	"

[1]Monitoring is ongoing through all five years of the Order, unless otherwise specified. Monitoring frequency may be used as a guide for developing alternative Sampling and Analysis Plan.
[2]Pesticide list may be modified based on specific pesticide use in Central Coast Region. Analytes on this list must be reported, at a minimum.
[3] Reporting Limit, taken from SWAMP where applicable.

[4] Holmgren, Meyer, Cheney and Daniels. 1993. Cadmium, Lead, Zinc, Copper and Nickel in Agricultural Soils of the United States. J. of Environ. Quality 22:335-348.
[5]Sax and Lewis, ed. 1987. Hawley's Condensed Chemical Dictionary. 11th ed. New York: Van Nostrand Reinhold Co., 1987. Zinc arsenate is an insecticide.
[6]Http://www.coastalagro.com/products/labels/9%25BORON.pdf; Boron is applied directly or as a component of fertilizers as a plant nutrient.
[7]Madramootoo, Johnston, Willardson, eds. 1997. Management of Agricultural Drainage Water Quality. International Commission on Irrigation and Drainage. U.N. FAO. SBN 92-6-104058.3.
[8]http://cat.inist.fr/?aModele=afficheN&cpsidt=14074525; Phenols are breakdown products of herbicides and pesticides. Phenols can be directly toxic and cause endocrine disruption.
[9]See SWAMP field measures SOP, p. 17
mg/L – milligrams per liter; ug/L – micrograms per liter; ug/kg – micrograms per kilogram;
NTU – Nephelometric Turbidity Units; CFS – cubic feet per second;

Table 3. Groundwater Monitoring Parameters

Parameter	RL	Analytical Method[3]	Units
pH	0.1	Field or Laboratory Measurement EPA General Methods	pH Units
Specific Conductance	2.5		µS/cm
Total Dissolved Solids	10		mg/L
Total Alkalinity as $CaCO_3$	1	EPA Method 310.1 or 310.2	
Calcium	0.05	General Cations[1] EPA 200.7, 200.8, 200.9	
Magnesium	0.02		
Sodium	0.1		
Potassium	0.1		
Sulfate (SO_4)	1.0	General Anions EPA Method 300 or EPA Method 353.2	
Chloride	0.1		
Nitrate + Nitrite (as N)[2] *or* Nitrate as N	0.1		

[1]General chemistry parameters (major cations and anions) represent geochemistry of water bearing zone and assist in evaluating quality assurance/quality control of groundwater monitoring and laboratory analysis.
[2]The MRP allows analysis of "nitrate plus nitrite" to represent nitrate concentrations (as N). The "nitrate plus nitrite" analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short holding time required for nitrate.
[3]Dischargers may use alternative analytical methods approved by EPA.
RL – Reporting Limit; µS/cm – micro siemens per centimeter

Table 4A. Individual Discharge Monitoring for Tailwater, Tile drain, and Stormwater Discharges

Parameter	Analytical Method[1]	Maximum PQL	Units	Min Monitoring Frequency
Discharge Flow or Volume	Field Measure	---	CFS	(a) (d)
Approximate Duration of Flow	Calculation	---	hours/month	
Temperature (water)	Field Measure	0.1	°Celsius	
pH	Field Measure	0.1	pH units	

Electrical Conductivity	Field Measure	100	µS/cm	
Turbidity	SM 2130B, EPA 180.1	1	NTUs	
Nitrate + Nitrite (as N)	EPA 300.1, EPA 353.2	0.1	mg/L	
Ammonia	SM 4500 NH3, EPA 350.3	0.1	mg/L	
Chlorpyrifos[2]	EPA 8141A, EPA 614	0.02	ug/L	(b) (c) (d)
Diazinon[2]				
Ceriodaphnia Toxicity (96-hr acute)	EPA-821-R-02-012	NA	% Survival	
Hyalella Toxicity in Water (96-hr acute)	EPA-821-R-02-012	NA	% Survival	

[1] In-field water testing instruments/equipment as a substitute for laboratory analysis if the method is approved by EPA, meets RL/PQL specifications in the MRP, and appropriate sampling methodology and quality assurance checks can be applied to ensure that QAPP standards are met to ensure accuracy of the test.
[2]If chlorpyrifos or diazinon is used at the farm/ranch, otherwise does not apply. The Executive Officer may require monitoring of other pesticides based on results of downstream receiving water monitoring.
(a) Two times per year during primary irrigation season for farms/ranches less than or equal to 500 acres, and four times per year during primary irrigation season for farms/ranches greater than 500 acres. Executive Officer may reduce sampling frequency based on water quality improvements.
(b) Once per year during primary irrigation season for farms/ranches less than or equal to 500 acres, and two times per year during primary irrigation season for farms/ranches greater than 500 acres.
(c) Sample must be collected within one week of chemical application, if chemical is applied on farm/ranch;
(d) Once per year during wet season (October – March) for farms/ranches less than or equal to 500 acres, and two times per year during wet season for farms/ranches greater than 500 acres, within 18 hours of major storm events;
CFS – Cubic feet per second; NTU – Nephelometric turbidity unit; PQL – Practical Quantitation Limit;
NA – Not applicable

Table 4B. Individual Discharge Monitoring for Tailwater Ponds and other Surface Containment Features

Parameter	Analytical Method[1]	Maximum PQL	Units	Minimum Monitoring Frequency
Volume of Pond	Field Measure	1	Gallons	(a) (d)
Nitrate + Nitrite (as N)	EPA 300.1, EPA 353.2	50	mg/L	

[1] In-field water testing instruments/equipment as a substitute for laboratory analysis if the method is approved by EPA, meets RL/PQL specifications in the MRP, and appropriate sampling methodology and quality assurance checks can be applied to ensure that QAPP standards are met to ensure accuracy of the test.
(a) Four times per year during primary irrigation season; Executive Officer may reduce monitoring frequency based on water quality improvements.
(d) Two times per year during wet season (October – March, within 18 hours of major storm events)

Table 5. Tier 3 - Time Schedule for Key Monitoring and Reporting Requirements (MRPs)

REQUIREMENT	TIME SCHEDULE[1]
Submit Sampling And Analysis Plan and Quality Assurance Project Plan (SAAP/QAPP) for Surface Receiving Water Quality Monitoring (*individually or*	By March 1, 2018, or as directed by the Executive Officer; satisfied if an approved SAAP/QAPP has been submitted pursuant

through cooperative monitoring program)	to Order No. R3-2012-0011 and associated MRPs
Initiate surface receiving water quality monitoring (*individually or through cooperative monitoring program*)	Per an approved SAAP and QAPP
Submit surface receiving water quality monitoring data (*individually or through cooperative monitoring program*)	Each January 1, April 1, July 1, and October 1
Submit surface receiving water quality Annual Monitoring Report (*individually or through cooperative monitoring program*)	By July 1 2017; annually thereafter by July 1
Initiate monitoring of groundwater wells	First sample from March-June 2017, second sample from September-December 2017
Submit individual surface water discharge SAAP and QAPP	By March 1, 2018 or as directed by the Executive Officer; waived if an approved SAAP and QAPP has been submitted and being implemented pursuant to Order No. R3-2012-0011.
Initiate individual surface water discharge monitoring	As described in an approved SAAP and QAPP
Submit individual surface water discharge monitoring data	March 1, 2018, and every March 1 annually thereafter
Submit electronic Annual Compliance Form	March 1, 2018 and every March 1 annually thereafter
Submit groundwater monitoring results	Within 60 days of the sample collection
Submit Water Quality Buffer Plan or alternative	Within 18 months of enrolling new Tier 3 farm/ranch in Order
Submit Status Report on Water Quality Buffer Plan or alternative	March 1, 2019
Tier 3 Dischargers with farms/ranches growing high risk crops:	
Report total nitrogen applied on the Total Nitrogen Applied form	March 1, 2018 and every March 1 annually thereafter
Submit INMP Effectiveness Report	March 1, 2019

[1] Dates are relative to adoption of this Order, unless otherwise specified.

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

PROPOSED GENERAL WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES FROM IRRIGATED LANDS

ORDER NO. R3-2021-0040

April XX, 2021

ORDER

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THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, CENTRAL COAST REGION FINDS:

Part 1, Section A. Findings

Background and Purpose

1. As described in the Water Quality Control Plan for the Central Coastal Basin (Basin Plan), the central coast region of California represents approximately 7.2 million acres of land. There are approximately 540,000 acres of irrigated land and approximately 3,000 agricultural operations that may be generating wastewater that falls into the category of discharges of waste from irrigated lands.

2. The central coast region has more than 17,000 miles of surface waters (linear streams/rivers) and approximately 4,000 square miles of groundwater basins that are, or may be, affected by discharges of waste from irrigated lands. Of the nine hydrologic regions in the state, the central coast region is the most groundwater dependent region with approximately 86% of its water supply being derived from groundwater.

3. The State Water Resources Control Board (State Water Board) and Regional Water Quality Control Boards (Regional Water Boards) are the principal state agencies with primary responsibility for the coordination and control of water quality for the health, safety and welfare of the people of the state pursuant to the Porter-Cologne Water Quality Control Act (Porter-Cologne Act, codified in Water Code Division 7). The legislature, in the Porter-Cologne Act, directed the state, through the Water Boards, to exercise its full power and jurisdiction to protect the quality of the waters in the state from degradation and to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible, and considering precipitation, topography, population, recreation, agriculture, industry, and economic development (Water Code section 13000).

4. Since the issuance of the first Agricultural Order in 2004 and subsequent Agricultural Orders in 2012 and 2017, the California Regional Water Quality Control Board, Central Coast Region (Central Coast Water Board) has compiled additional and substantial empirical data demonstrating that water quality conditions in agricultural areas of the region continue to be severely impaired or polluted by waste discharges from irrigated agricultural operations and activities that impair beneficial uses. The main impacts from irrigated agriculture in the central coast region are nitrate discharges to groundwater and associated drinking water impacts, nutrient discharges to surface water, pesticide discharges

and associated toxicity, sediment discharges, and degradation of riparian and wetland areas and the associated impairment or loss of beneficial uses.

5. The objectives of this Order are:

   a. Protect and restore beneficial uses and achieve water quality objectives specified in the Basin Plan for commercial irrigated agricultural areas in the central coast region by:
      i. Minimizing nitrate discharges to groundwater,
      ii. Minimizing nutrient discharges to surface water,
      iii. Minimizing toxicity in surface water from pesticide[1] discharges,
      iv. Protecting riparian and wetland habitat, and
      v. Minimizing sediment discharges to surface water.
   b. Effectively track and quantify achievement of 5.a.i through 5.a.v over a specific, defined time schedule.
   c. Comply with the State's Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (NPS Policy), the State Antidegradation Policy, relevant court decisions such as those pertaining to Coastkeeper *et al* lawsuits, the precedential language in the Eastern San Joaquin Watershed Agricultural Order, and other relevant statutes and water quality plans and policies, including total maximum daily loads in the central coast region.

6. This Order regulates discharges of waste from irrigated lands by requiring individuals subject to this Order to comply with the terms and conditions set forth herein to ensure that such discharges do not cause or contribute to the exceedance of any regional, state, or federal numeric or narrative water quality objectives or impair any beneficial uses in waters of the state and of the United States.

7. Water Code section 13260(a) requires that any person discharging waste or proposing to discharge waste that could affect the quality of the waters of the state, other than into a community sewer system, must file with the appropriate Regional Board a report of waste discharge (ROWD) containing such information and data as may be required by the Central Coast Water Board, unless the Central Coast Water Board waives such requirement.

8. Water Code section 13263(a) requires the Central Coast Water Board to prescribe waste discharge requirements (WDRs), or waive WDRs, for the discharge. The requirements must implement the Basin Plan and must take into

[1] A pesticide is any substance intended to control, destroy, repel, or otherwise mitigate a pest. The term pesticide is inclusive of all pest and disease management products, including insecticides, herbicides, fungicides, nematicides, rodenticides, algicides, etc.

consideration the beneficial uses to be protected and the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Water Code section 13241.

9. Water Code section 13263(b) states that, in prescribing requirements, the Central Coast Water Board need not authorize the utilization of the full waste assimilation capacities of the receiving waters.

10. This Order does not create a vested right to discharge; all discharges are a privilege, not a right, as described in Water Code section 13263(g).

11. Water Code section 13263(i) authorizes the Central Coast Water Board to prescribe general WDRs for a category of discharges if the Central Coast Water Board finds or determines that all the criteria listed below apply to the discharges in that category. Discharges associated with irrigated agricultural operations that will be regulated under this Order are consistent with these criteria and therefore a general order is appropriate.

    a. The discharges are produced by the same or similar operations.
    b. The discharges involve the same or similar type of waste.
    c. The discharges require the same or similar treatment standards.
    d. The discharges are more appropriately regulated under general WDRs than individual WDRs.

12. Water Code section 13243 authorizes the Central Coast Water Board, in WDRs, to specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.

13. Water Code section 13267(a) authorizes the Central Coast Water Board to, in establishing or reviewing waste discharge requirements, or in connection with any action to any plan or requirement authorized by the Porter-Cologne Act, investigate the quality of any waters of the state within the region. The monitoring and reporting requirements as set forth in Attachment B are established under Water Code section 13267(b).

14. Water Code section 13267(c) authorizes the Central Coast Water Board or its authorized representatives to, in conducting an investigation of the quality of waters of the state within the region, inspect the facilities of the Discharger upon consent, issuance of a warrant, or in an emergency affecting public health or safety, to ascertain compliance with this Order and to ascertain whether the purpose of the Porter-Cologne Act are being met. Inspections under Water Code section 13267(c) include sampling and monitoring.

15. Water Code section 13304 authorizes the Central Coast Water Board to, upon making the requisite findings, issue a cleanup and abatement order (CAO) that

requires Dischargers to provide emergency and long-term alternative water supplies or replacement water service, including wellhead treatment, to each affected public water supplier or private well owners. A CAO is a separate action from this Order; this Order does not require Dischargers to provide alternative water supplies or replacement water.

Public Participation Process

16. In August 2017, Central Coast Water Board staff held a series of listening sessions throughout the central coast region to solicit stakeholder input on potential improvements to the previous agricultural order. The Central Coast Water Board discussed the input received from stakeholders during the September 2017 board meeting.

17. In February 2018, the Central Coast Water Board published an initial study to begin soliciting input related to environmental review for the California Environmental Quality Act (CEQA), in preparation for developing a draft Environmental Impact Report (EIR). A 73-day public comment period was held for the initial study. In March 2018, Central Coast Water Board staff held a series of public CEQA scoping meetings throughout the region. Input received during the public comment period and public scoping meetings has been considered in the development of the draft EIR.

18. In March and May 2018, Central Coast Water Board meetings included informational items dedicated to a review of water quality conditions associated with agricultural activities and discharges. The March 2018 informational item focused on surface water quality conditions and agricultural discharges and the May 2018 informational item focused on groundwater quality conditions and nitrate impacts to groundwater. Both informational items incorporated presentations from several outside speakers.

19. In September 2018, the Central Coast Water Board's public meeting was dedicated to a workshop for agricultural order stakeholders. Panels of agricultural, environmental, and environmental justice representatives gave presentations to the board in response to a series of questions staff proposed:

    a. What can growers and the regional board do to demonstrate quantifiable progress to minimize nitrate discharge to groundwater to achieve water quality objectives?
    b. What can growers and the regional board do to demonstrate quantifiable progress to minimize nutrient discharge to surface waters to achieve water quality objectives?
    c. What can growers and the regional board do to demonstrate quantifiable progress to minimize toxicity in surface waters from pesticide discharges to achieve water quality objectives?

d. What can growers and the regional board do to ensure that riparian and wetland habitat is protected due to agricultural activities and discharges?
e. What can growers and the regional board do to demonstrate quantifiable progress to minimize sediment discharge to achieve water quality objectives?
f. How can the regional board use discharge permit requirements to ensure current and future affordable, safe, and clean water for drinking and environmental uses?

20. In November 2018, the Central Coast Water Board published a set of five conceptual options tables that serve as the Central Coast Water Board's framework to address the questions posed in the September 2018 meeting. The Central Coast Water Board reviewed and discussed the options tables during its public meeting in November, and a 64-day written public comment period was subsequently held to solicit detailed stakeholder input. Central Coast Water Board staff held a series of outreach meetings throughout the region during the comment period.

21. In March 2019, after the 64-day public comment period, the Central Coast Water Board published updated versions of the five conceptual options tables. During the public meetings in March and May 2019, the Central Coast Water Board discussed the updated tables and received additional stakeholder comment.

22. In September 2019, during its public meeting, the Central Coast Water Board held a workshop focused on co-managing food safety and environmental protection, the role of riparian vegetation in water quality and beneficial use protection, and Discharger experiences with food safety challenges.

23. On February 21, 2020, the Central Coast Water Board published the draft Order and draft EIR and began a 45-day public comment period. The comment period was extended twice and closed on June 22, 2020.

24. In June 2020, Central Coast Water Board staff conducted three outreach meetings, which included presentations of the draft Order and draft EIR, and a question and answer session for attendees. These outreach meetings were conducted virtually via the Zoom platform, due to the COVID-19 pandemic.

25. Beginning on September 10, 2020 and continuing to January 8, 2021, the Central Coast Water Board held 10 days of Board meetings to receive oral comments from the public and to discuss the draft Order. During these meetings, three of which were devoted entirely to receiving public comment and Board engagement with stakeholders, the Board deliberated on the draft Order using a consensus-based approach through which they directed staff on the development of a revised Order.

26. On January 26, 2021, the Central Coast Water Board circulated a revised draft Order for a 30-day public comment period that closed on February 25, 2021. Central Coast Water Board staff subsequently considered the public comments and developed a proposed Order for Board consideration during an April 14-16, 2021, public hearing.

27. The Central Coast Water Board, in a public hearing held on April 14-16, 2021, has heard and considered all comments pertaining to the discharge and proposed Order.

28. After considering all comments pertaining to this General Permit during a public hearing on April 14-16, 2021, this Order was found consistent with the findings in this Part 1 and Attachment A.

29. Any person aggrieved by this action of the Central Coast Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320 and title 23 California Code of Regulations sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of adoption falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day:

    State Water Resources Control Board
    Office of Chief Counsel
    P.O. Box 100, 1001 I Street
    Sacramento, CA 95812-0100

    Or by email at **waterqualitypetitions@waterboards.ca.gov**

    For instructions on how to file a petition for review, see **http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml**.

Scope of Order

Irrigated Lands and Agricultural Discharges Regulated Under this Order

30. This Order regulates (1) discharges of waste from commercial irrigated lands, including, but not limited to, land planted to row, vineyard, field and tree crops where water is applied for producing commercial crops; (2) discharges of waste from commercial nurseries, nursery stock production, and greenhouse operations with soil floors that do not have point source-type discharges and are not currently operating under individual WDRs; and (3) discharges of waste from

lands that are planted to commercial crops that are not yet marketable, such as vineyards and tree crops.

31. Discharges from irrigated lands regulated by this Order include discharges to surface water and groundwater, through mechanisms such as irrigation return flows, percolation, tailwater, tile drain water, stormwater runoff flowing from irrigated lands, stormwater runoff conveyed in channels or canals resulting from the discharge from irrigated lands, and runoff resulting from frost control or operational spills. These discharges can contain wastes that could affect the quality of waters of the state and impair beneficial uses.

32. This Order also regulates agricultural activities such as the removal or degradation of riparian vegetation resulting in the loss or degradation of instream beneficial uses.

Dischargers Regulated Under this Order

33. This Order regulates both landowners and operators of commercial irrigated lands on or from which there are discharges of waste or activities that could affect the quality of any surface water or groundwater or result in the impairment of beneficial uses (Dischargers). Dischargers are responsible for complying with the conditions of this Order. Both the landowner and the operator of the irrigated agricultural land are Dischargers under this Order. The Central Coast Water Board will hold both the landowner and the operator liable for noncompliance with this Order, regardless of whether the landowner or the operator is the party to enroll under this Order.

34. For the purposes of this Order, irrigated lands producing commercial crops are those operations that have one or more of the following characteristics:

    a. The landowner or operator has obtained a pesticide use permit from a local County Agricultural Commissioner;
    b. The crop is sold, including but not limited to 1) an industry cooperative, 2) a harvest crew/company, or 3) a direct marketing location, such as certified Farmers Markets;
    c. The federal Department of Treasury Internal Revenue Service for 1040 Schedule F Profit or Loss from Farming is used to file federal taxes.

35. The electronic Notice of Intent (eNOI) serves as a report of waste discharge (ROWD) for the purposes of this Order.

36. The Central Coast Water Board recognizes that certain limited resource growers[2] (as defined by the U.S. Department of Agriculture) may have difficulty achieving

[2] The term “Limited Resource Farmer or Rancher” means a participant:

compliance with this Order. The Central Coast Water Board will prioritize assistance for these growers, including but not limited to technical assistance, grant opportunities, and necessary flexibility to achieve compliance with this Order (e.g., adjusted monitoring, reporting, or time schedules).

Agricultural Dischargers Not Covered Under this Order and Who Must Apply for Individual Waste Discharge Requirements

37. This Order does not cover point source-type discharges from commercial nurseries, nursery stock production, greenhouses, or other operations. This Order does not cover discharges of waste from fully contained greenhouse operations (i.e., those that have no groundwater discharge due to impermeable floors but may have other discharges associated with the operation). These operations must either eliminate all such discharges of waste or submit a ROWD to apply for individual WDRs as set forth in Water Code section 13260.

Enforcement for Noncompliance

38. The State Water Board's Water Quality Enforcement Policy (Enforcement Policy) describes progressive enforcement action for violations of WDRs when appropriate. However, the Enforcement Policy recommends formal enforcement as a first response to more significant violations. Progressive enforcement is an escalating series of actions that allows for the efficient and effective use of enforcement resources to 1) assist cooperative Dischargers in achieving compliance; 2) compel compliance for repeat violations and recalcitrant violators; and 3) provide a disincentive for noncompliance. Progressive enforcement actions may begin with informal enforcement actions such as a verbal, written, or electronic communication between the Central Coast Water Board and a Discharger. The purpose of an informal enforcement action is to quickly bring the violation to the Discharger's attention and to give the Discharger an opportunity to return to compliance as soon as possible. The highest level of informal enforcement is a Notice of Violation.

39. The Enforcement Policy recommends formal enforcement actions for the highest priority violations, chronic violations, and/or threatened violations. Violations of this Order that will be considered a priority include, but are not limited to:

    a. Failure to obtain required regulatory coverage;

- With direct or indirect gross farm sales not more than the current indexed value in each of the previous two years, and
- Who has a total household income at or below the national poverty level for a family of four, or less than 50 percent of county median household income in each of the previous two years.

A Self-Determination Tool is available to the public and may be completed on-line or printed and completed hardcopy at the **USDA website**:
https://lrftool.sc.egov.usda.gov/DeterminationTool.aspx?fyYear=2020

b. Failure to achieve numeric limits;
c. Falsifying information or intentionally withholding information required by applicable laws, regulations, or an enforcement order;
d. Failure to monitor or provide complete and accurate information as required;
e. Failure to pay annual fees, penalties, or liabilities; and
f. Failure to submit required reports on time.

40. Water Code section 13350 provides that any person who violates WDRs may be 1) subject to administrative civil liability imposed by the Central Coast Water Board or State Water Board in an amount of up to $5,000 per day of violation, or up to $10 per gallon of waste discharged; or 2) subject to civil liability imposed by a court in an amount of up to $15,000 per day of violation, or up to $20 per gallon of waste discharged. The actual calculation and determination of administrative civil penalties must be consistent with the Enforcement Policy and the Porter-Cologne Act.

Order Effectiveness Evaluation

41. Water Code section 13263(e) states that for WDRs, "Upon application by any affected person, or on its own motion, the regional board may review and revise requirements. All requirements shall be reviewed periodically." It is the expressed intent of the Central Coast Water Board that its staff and, as appropriate, third-party groups or programs provide annual updates to the board during public meetings regarding the implementation of this Order. The purpose of the updates is to evaluate and report out on individual discharger and third-party group compliance; identify successes, challenges, and emerging science and management practices; consider potential Order modifications as may be appropriate at five-year intervals; and generally inform the Board and public regarding the Order's effectiveness towards achieving the stated objectives.

Additional Findings and Regulatory Considerations

42. Attachment A to this Order, incorporated herein, includes additional findings that further describe the Water Board's legal and regulatory authority; compliance with CEQA requirements; applicable plans and policies adopted by the State Water Board and the Central Coast Water Board that contain regulatory conditions that apply to the discharge of waste from irrigated lands; and the rationale for this Order, including descriptions of the environmental and agricultural resources in the central coast region and impacts to water quality and beneficial uses from agricultural discharges.

43. The Central Coast Water Board encourages Dischargers to participate in third-party groups or programs (e.g., certification program, watershed group, water quality coalition, monitoring coalition, or other third-party effort) to facilitate and document compliance with this Order. Third-party programs can be used to

implement outreach and education, monitoring and reporting, management practice and/or water quality improvement projects. Regionally scaled third-party programs addressing multiple Order requirements are preferred to provide economies of scale to reduce Discharger costs, maximize effectiveness, and streamline Water Board oversight; however, watershed- or basin-scale third-party programs of limited scope may be appropriate under certain circumstances and should be coordinated to the extent practicable for consistency and effectiveness. Commodity group certification programs may also be effective in facilitating compliance with this Order. Dischargers participating in an Executive Officer approved third-party program may be subject to permit fee reductions or alternative compliance pathways that substantively comply with this Order.

44. The Central Coast Water Board acknowledges that it will take time to develop meaningful and effective third-party programs that facilitate compliance with this Order. The Order considers this by allowing an initial grace period for the phasing in of various requirements. The phasing in of various requirements is also intended to allow Water Board staff time to develop online reporting tools and templates and to conduct outreach and education to help Dischargers and service providers come up to speed on the new requirements.

45. Third-party programs are discussed in **Part 2, Section A**. The Central Coast Water Board will provide more detailed third-party expectation documents and/or third-party program requests for proposals (RFPs) to inform and solicit third-party program proposals for Executive Officer consideration.

46. The Executive Officer may make non-substantive changes to the Order to correct typographical errors or to maintain consistency within the Order or between the Order and its Attachments, e.g., to conform changes made during the Order development process that were inadvertently not carried through the entire Order. [The Board will provide public notice of the non-substantive changes.]

IT IS HEREBY ORDERED that Order No. R3-2017-0002 is terminated as of the effective date of this Order except for the purposes of enforcement, and that pursuant to Water Code sections 13260, 13263, and 13267, Dischargers enrolled in this Order, their agents, successors, and assigns, must comply with the following terms and conditions to meet the provisions contained in Water Code Division 7 and regulations, plans, and policies adopted thereunder.

Part 2, Section A. Enrollment, Fees, Termination, General Provisions, and Third-Party Programs

1. This Order is effective upon adoption by the Central Coast Water Board.

2. Except where stated otherwise, all requirements of this Order apply to all Dischargers.

Enrollment

3. Enrollment in this Order requires the submittal of the electronic Notice of Intent (eNOI) pursuant to Water Code section 13260. Submittal of all other technical reports pursuant to this Order is required pursuant to Water Code section 13267. Failure to submit technical reports or the attachments in accordance with the time schedules established by this Order or Monitoring and Reporting Program (MRP), or failure to submit a complete technical report (i.e., of sufficient technical quality to be acceptable to the Executive Officer), may subject the Discharger to enforcement action pursuant to Water Code sections 13261, 13268, or 13350. Dischargers must submit technical reports in the format specified by the Executive Officer.

4. Dischargers who are not currently enrolled in the existing agricultural order must submit to the Central Coast Water Board a complete eNOI prior to discharging. Upon submittal of a complete and accurate eNOI, the Discharger is enrolled under this Order, unless otherwise informed by the Executive Officer.

5. Dischargers who were enrolled in Order R3-2017-0002 as of the effective date of this Order are automatically enrolled in this Order.

6. In the case where an operator may be operating for a period of less than 12 months, the landowner must submit the eNOI. In all other cases, either the landowner or the operator must submit the eNOI. Both the landowner and the operator are Dischargers and considered a responsible party for compliance with the requirements of this Order.

7. **Prior to any discharge or commencement of activities that may cause a discharge**, including land preparation prior to crop production, any Discharger proposing to control or own a new operation or ranch that has the potential to

discharge waste that could directly or indirectly reach waters of the state and/or affect the quality of any surface water and/or groundwater must submit an eNOI.

8. **Within 60 days** of any change in operation or ranch information, the Discharger must update the eNOI.

9. **Within 60 days** of any change in control or ownership of an operation, ranch, or land presently owned or controlled by the Discharger, the Discharger must notify the succeeding owner and operator of the existence of this Order.

10. **Within 60 days** of acquiring control or ownership of an existing operation or ranch, the succeeding Discharger must submit an eNOI.

11. Dischargers must submit all the information required in the eNOI form, including but not limited to the following information for the operation and individual ranch:

    a. Assessor parcel numbers (APNs) covered by enrollment,
    b. Landowner(s),
    c. Operator(s),
    d. Contact information,
    e. Third-party program membership,
    f. Location of operation, including specific ranch(es),
    g. Map with discharge locations and groundwater wells identified,
    h. Type and number of groundwater wells located on ranch parcels,
    i. Total and irrigated acreage,
    j. Crop types grown,
    k. Irrigation system type,
    l. Discharge type,
    m. Chemical use,
    n. Slope,
    o. Impermeable surfaces,
    p. Presence and location of any waterbodies on or adjacent to the ranch.
    q. Status of drinking water notification to well users

12. Dischargers or groups of Dischargers seeking regulatory requirements tailored to their specific operation, ranch, geographic area, or commodity may submit an ROWD to obtain an individual order or MRP, or request the development of a general order for a specific type of discharge (e.g., commodity-specific general order). This Order remains applicable to those Dischargers until the Central Coast Water Board adopts such an individual order, MRP, or general order, and, if applicable, the Dischargers are enrolled in the general order.

13. Dischargers seeking enrollment in this Order must submit a statement of understanding of the conditions of this Order and MRP signed by the Discharger (landowner or operator) with the eNOI. If the operator signs and submits the

electronic NOI, the operator must provide a copy of the complete NOI form to the landowner(s).

14. Coverage under this Order is not transferable to any person except after the succeeding Discharger's submittal to the Central Coast Water Board of an updated eNOI and approval by the Executive Officer.

Fees

15. Dischargers must pay a fee to the State Water Resources Control Board in compliance with the fee schedule contained in Title 23 California Code of Regulations.

16. Dischargers must pay any relevant third-party program fees (e.g., Surface Water Third-Party Monitoring Program (aka Cooperative Monitoring Program or CMP) necessary to comply with monitoring and reporting conditions of this Order or they must comply with monitoring and reporting requirements individually.

17. For Dischargers who choose to participate in a third-party program, failure to pay third-party program fees voids a selection or notification of the option to participate in the third-party program and hence requires Dischargers to immediately comply with individual groundwater protection and/or surface water protection requirements.

Termination

18. **Immediately**, if a Discharger wishes to terminate coverage under this Order for the operation or an individual ranch, the Discharger must submit a complete Notice of Termination (NOT), in a format specified by the Executive Officer. Termination from coverage is the date the termination request is approved, unless specified otherwise. All discharges must cease before the date of termination, and any discharges on or after the date of termination are violations of this Order, unless covered by other WDRs or waivers of WDRs. All required monitoring and reporting are due **within 60 days of the termination or March 1 following the termination date**, whichever is sooner, unless otherwise directed by the Executive Officer.

General Provisions

19. The unauthorized discharge of any waste not specifically regulated by this Order, is prohibited.

20. The discharge of waste at a location or in a manner different from that described in the eNOI is prohibited.

21. Dischargers must comply with the Monitoring and Reporting Program (MRP), incorporated herein as Attachment B.

22. All forms, reports, documents, and laboratory data must be submitted to the Central Coast Water Board electronically through the State Water Board's database systems (e.g., GeoTracker, CEDEN,[3] etc.).

23. Dischargers are defined in this Order as both the landowner and the operator of irrigated agricultural land on or from which there are discharges of waste from irrigated agricultural activities that could affect the quality of any surface water or groundwater. The Central Coast Water Board will hold both the landowner and the operator liable for noncompliance with this Order.

24. The Executive Officer may propose, and the Central Coast Water Board may adopt, individual WDRs for any Discharger at any time.

25. The Central Coast Water Board or the Executive Officer may, at any time, terminate applicability of this Order with respect to an individual Discharger upon written notice to the Discharger.

26. Noncompliance with requirements in this Order is grounds for enforcement action and/or termination of coverage for waste discharges under this Order, subjecting the Discharger to enforcement under the Water Code for further discharges of waste to surface water or groundwater.

27. The fact that it would have been necessary to halt or reduce the permitted discharge activity to maintain compliance with this Order is not a defense for the Discharger's violations of this Order.

28. Provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order will not be affected.

29. Upon the Central Coast Water Board's or Executive Officer's request and within a reasonable timeframe, Dischargers must submit any information required to determine compliance with this Order or to determine whether there is cause for modifying or terminating this Order.

30. Under authority of Water Code section 13267(c), the Discharger must allow the Central Coast Water Board, or an authorized representative, upon consent or other documents as may be required by law, to do the following:

    a. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this Order,

[3] CEDEN is the California Environmental Data Exchange Network.

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order,
c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order, and
d. Collect samples from and monitor waters of the state within or bordering property subject to this Order, at reasonable times for the purposes of assuring compliance with this Order or as otherwise authorized by the Water Code. The sampling and monitoring may include and is not limited to domestic and irrigation wells, surface receiving waters, and edge of field discharges to surface waters.

31. This Order may be reopened to address changes in statutes, regulations, plans, policies, or case law that govern water quality requirements for the discharges regulated herein.

Third-Party Programs

32. Dischargers may comply with portions of this Order by participating in third-party groups or programs (e.g., certification program, watershed group, water quality coalition, monitoring coalition, or other third-party effort) approved by the Executive Officer. In this case, the third-party will assist individual Dischargers in achieving compliance with this Order, including implementing water quality improvement projects and required monitoring and reporting as described in the MRP. Compliance with the requirements of this Order is still required for all members of the third-party program; however, the third-party may propose modified monitoring and reporting for approval by the Executive Officer. Third-party program proposals will be evaluated on a case-by-case basis relative to their ability to document compliance with this Order as part of a request for proposal process and as further informed by a forthcoming third-party expectations document.

33. This Order includes specific provisions and an alternative compliance pathway for third-party programs that will also be subject to a third-party request for proposal process and Executive Officer review and approval. Dischargers participating in a third-party administered alternative compliance pathway program, and that remain in good standing as defined in this Order and/or Executive Officer approved third-party work plan, are subject to the third-party program requirements in lieu of individual requirements as specified. The third-party alternative compliance pathway program's assessment and evaluation for groundwater protection and the regional groundwater quality trend monitoring program described in **Part 2, Section C.1** must be closely aligned and coordinated such that they are effectively measuring the objectives the programs are trying to achieve.

34. Third-party program proposals must include and identify specific membership eligibility requirements, for approval by the Executive Officer, to evaluate whether third-party program members are in good standing. Members that are not in good standing with the membership eligibility requirements lose their membership and must immediately comply with individual groundwater protection and/or surface water protection requirements. At a minimum, third-party program proposals must include membership eligibility requirements and follow-up consequences that are triggered, including revocation of membership eligibility, to address the following scenarios where members are no longer in good standing:

    a. Non-payment of fees
    b. Non-submittal of information
    c. Non-participation in education/outreach or site visits
    d. Failure to implement / adapt management practices

35. Consistent with the Water Board's Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program (NPS Policy), the ineffectiveness of a third-party program through which a Discharger participates in nonpoint source control efforts cannot be used as a justification for lack of individual discharger compliance. Dischargers continue to be responsible for complying with this Order individually.

36. Dischargers who elect to join a third-party program to facilitate compliance with this Order must retain their membership with the third-party in good standing. If the Discharger does not meet the requirements of membership in the third-party program, then the Discharger is responsible for complying with all requirements in this Order individually unless the approved third-party administered alternative compliance pathway or approved third-party work plan allows for specific deviations from the individual requirements.

37. Dischargers who elect to join an approved third-party program must notify the approved third-party program administrator of their election to participate in the third-party program within 60 days of: 1) approval of the third-party program, and/or 2) the Discharger's enrollment in this Order, whichever is later.

38. The third-party program administrator must notify the Central Coast Water Board of Dischargers electing to participate within 90 days of the third-party program approval, and then provide member participation updates on a quarterly basis thereafter. At a minimum, participating Discharger information provided to the Central Coast Water Board must include operation enrollment information (e.g., AW numbers and operation names) and ranch enrollment information (e.g., GeoTracker AGL numbers and ranch names) in a format specified by the Executive Officer.

39. Third-party programs must meet the following minimum criteria:

a. Effectiveness of scale and scope – The program must be of sufficient scale and scope relative to its intended purpose to maximize Discharger participation, implementation effectiveness and Order compliance. Although regionally scaled programs are preferred, watershed- or basin-scale programs will be considered as needed to address localized water quality issues.
b. Clearly stated goals and objectives – The program must have meaningful and clearly stated goals, objectives, and associated performance metrics relevant to the Order requirements that are the focus of the program.
c. Management and administration – The program must have a well-defined and robust governance and administrative structure with clearly defined roles and responsibilities.
d. Capacity and expertise – The program must demonstrate sufficient technical, managerial, and financial capacity to successfully achieve its goals and objectives.
e. Physical presence – The program should have a physical presence in the central coast region, including staff and a headquarters, that can assist its members on a continual and as-needed basis. If the third-party program administrator does not have or plan to have a physical presence in the region, they must demonstrate they can effectively establish, maintain, and engage with core membership without a headquarters in the central coast region.
f. Transparency and accountability – The program must provide regular assessments of its performance relative to its stated goals and objective based on meaningful performance metrics. This includes reporting of water quality data and farm-level data as needed to document compliance with this Order.
g. Membership and fee accounting – The program must track and provide ongoing accounting of its Discharger membership and fees to document Discharger compliance.
h. Data management – The program must upload data as required by this Order to the Water Boards' various data management systems (e.g., CEDEN, GeoTracker, etc.).
i. Member requirements – The program must have clearly stated and enforced Discharger membership eligibility requirements and report out on them as needed to document compliance.
j. Coordination – The program must consider and coordinate with other third-party programs/groups or local entities as may be appropriate to create consistency; leverage the efforts, infrastructure and expertise of others; and streamline the program to maximize effectiveness (e.g., coordination with Groundwater Sustainability Agencies [GSAs], flood control management agencies, watershed restoration and management entities, etc.).
k. Continuing education – The program must include continuing education opportunities as appropriate either directly through the program or through

coordination with other third-party programs/groups or local entities to ensure its members obtain technical skills and assistance necessary to achieve compliance with the limits established in this Order. In the instance of third-party monitoring programs, membership outreach and education should be implemented to inform members about the monitoring results relative to meeting specific water quality objectives, numeric targets, numeric interim quantifiable milestones, or numeric limits.

l. Specific project plan documents – The program must have a detailed work plan including a Quality Assurance Project Plan (QAPP) and Sampling and Analysis Plan (SAP) as may be appropriate based on the program goals and objectives and associated Order requirements.

40. The Central Coast Water Board's review of third-party program proposals will consider the criteria outlined above relative to overall program effectiveness, with an emphasis on approving programs that can effectively assist their members in complying with the requirements of this Order.

Part 2, Section B. Planning, Education, Management Practices, and CEQA

Farm Water Quality Management Plan (Farm Plan)

1. Dischargers must develop, implement, and update as necessary a Farm Water Quality Management Plan (Farm Plan) for each ranch. A current copy of the Farm Plan must be maintained by the Discharger and must be submitted to the Central Coast Water Board upon request. At a minimum, the Farm Plan must include the discrete sections listed below. Additional details regarding each section are included in subsequent sections of this Order. Certain elements included in the Farm Plan must be reported on; however, in general, the Farm Plan is a planning and recordkeeping tool used by Dischargers to manage various aspects of their agricultural operation.

    a. Irrigation and Nutrient Management Plan (INMP)
    b. Pesticide Management Plan (PMP)
    c. Sediment and Erosion Management Plan (SEMP)
    d. Water Quality Education
    e. CEQA Mitigation Measure Implementation

2. The INMP, PMP, and SEMP sections of the Farm Plan must include information on management practice implementation and assessment. Elements of the INMP are reported on in the Total Nitrogen Applied report or INMP Summary report. Elements of all the sections listed above are reported on in the Annual Compliance Form (ACF). Additional information on the monitoring and reporting requirements related to each of these sections is included in the MRP.

3. Where required by the Executive Officer based on groundwater quality or surface water quality conditions or exceedances of the numeric targets, numeric interim quantifiable milestones, or numeric limits established in this Order, the Farm Plan must incorporate ranch-level groundwater or surface water discharge monitoring information described in the MRP. The ranch-level groundwater and surface water discharge monitoring must be designed and implemented to inform improved management practices to protect groundwater and surface water quality.

4. Dischargers must maintain all records related to compliance with this Order for a minimum of ten years. Records include, but are not limited to, monitoring information, calculations, management practice implementation and assessment, education records, and all required reporting and information used to submit complete and accurate reports. Third parties that have been approved by the Executive Officer to assist Dischargers with complying with this Order, for example in the form of water quality monitoring, must also maintain all records for a minimum of ten years. Records must be submitted to the Central Coast Water Board upon request or as required by this Order or an approved work plan.

Continuing Education

5. Dischargers must attend outreach and education events annually to obtain technical skills and assistance necessary to achieve compliance with the numeric targets, numeric interim quantifiable milestones, and numeric limits established by this Order. Outreach and education events should focus on meeting water quality objectives and protecting beneficial uses by identifying water quality problems, implementing pollution prevention strategies, and implementing management practices and assessment designed to protect water quality and beneficial uses and resolve water quality problems to achieve compliance with this Order. Records of participation in continuing education must be maintained in the Farm Plan and submitted to the Central Coast Water Board upon request.

6. Dischargers who exceed the fertilizer nitrogen application targets or limits, nitrogen discharge targets or limits, numeric interim quantifiable milestones, or surface receiving water limits must complete additional relevant water quality education sufficient to fully inform the implementation of additional or improved management practices and assessment to avoid future exceedances.

7. A copy of this Order and MRP must be kept at the ranch for reference by operating personnel. Key operating and site management personnel must be familiar with the content of both documents.

Management Practice Implementation and Assessment

8. Dischargers must implement management practices and assessment, as necessary, to improve and protect water quality, protect beneficial uses, achieve compliance with applicable water quality objectives, achieve the numeric targets, numeric interim quantifiable milestones, and numeric limits established in this Order. Management practices implementation and assessment must be documented in the appropriate section of the Farm Plan (e.g., irrigation and nutrient management practices and assessment must be documented in the INMP section of the Farm Plan). Dischargers must report on management practice implementation and assessment in the ACF, as described in the MRP.

CEQA Mitigation Measure Implementation, Monitoring, and Reporting

9. Impacts and mitigation measures identified in CEQA Mitigation Monitoring and Reporting Program are set forth in the Final Environmental Impact Report (FEIR) at Appendix D, which is incorporated by reference. Mitigation measures identified in the FEIR for this Order and required to be implemented as described in Appendix D, will substantially reduce environmental effects of the project. The mitigation measures included in this Order have eliminated or substantially lessened all significant effects on the environment, where feasible. Where noted, some of the mitigation measures are within the responsibility and jurisdiction of other public agencies. Such mitigation measures can and should be adopted, as applicable, by those other agencies.

10. Dischargers must report on mitigation measure implementation electronically in the Annual Compliance Form (ACF), as described in the MRP. Draft mitigation monitoring and reporting is available for review in the FEIR.

Part 2, Section C.1. Groundwater Protection

1. Dischargers may not be subject to all provisions of **Part 2, Section C.1** if they are members in good standing with the third-party alternative compliance pathway program included within **Part 2, Section C.2**.

Phasing

2. Ranches are assigned the Groundwater Phase Area of the groundwater basin where the ranch is located based on the relative level of water quality and beneficial use impairment and risk to water quality. All ranches are assigned a Groundwater Phase Area of 1, 2, or 3. Groundwater Phase 1 areas represent greater water quality impairment and higher risk to water quality relative to Groundwater Phase 2 and 3 areas.

3. The requirements and implementation schedules for groundwater protection are based on the groundwater phase areas, listed in **Table C.1-1** and shown on the maps in **Figure C.1-1**.

4. In the event that a ranch spans multiple Groundwater Phase areas, the ranch will be assigned the earlier phase. For example, a ranch that spans both Groundwater Phase 1 and Groundwater Phase 2 areas will be assigned to Groundwater Phase 1.

5. The Groundwater Phase Area assigned to each ranch will be displayed on the ranch eNOI in GeoTracker.

Irrigation and Nutrient Management Plan

6. Dischargers must develop and implement an Irrigation and Nutrient Management Plan (INMP) that addresses both groundwater and surface water. This section applies to the groundwater related INMP requirements and the surface water related INMP requirements are contained within **Part 2, Section C.3** of this Order. The INMP is a section of the Farm Plan and must be maintained in the Farm Plan and submitted to the Central Coast Water Board upon request. Summary information from the INMP must be submitted in the INMP Summary report. At a minimum, the elements of the INMP related to groundwater protection must include:

    a. Monitoring and recordkeeping necessary to submit complete and accurate reports, including the ACF, Total Nitrogen Applied (TNA) report, and INMP Summary report.
    b. Planning and management practice implementation and assessment that results in compliance with the fertilizer nitrogen application limits in **Table C.1-2** and the nitrogen discharge targets and limits in **Table C.1-3**.
    c. Descriptions of all irrigation, nutrient, and salinity management practices implemented and assessed on the ranch.
    d. When INMP certification is required, e.g., as a follow-up action or as a consequence for not meeting the quantifiable milestones and time schedules below, the INMP certification shall include the following:

    The person signing this Irrigation and Nitrogen Management Plan (INMP) certifies, under penalty of law, that the INMP was prepared under his/her direction and supervision, that the information and data reported is to the best of his/her knowledge and belief, true, accurate, and complete, and that he/she is aware that there are penalties for knowingly submitting false information. The qualified professional signing the INMP may rely on the

information and data provided by the Discharger and is not required to independently verify the information and data.

The qualified professional signing the INMP below further certifies that he/she used sound irrigation and nitrogen management planning practices to develop irrigation and nitrogen application recommendations and that the recommendations are informed by applicable training to minimize nitrogen loss to surface water and groundwater. The qualified professional signing the INMP is not responsible for any damages, loss, or liability arising from subsequent implementation of the INMP by the Discharger in a manner that is inconsistent with the INMP's recommendations for nitrogen application. This certification does not create any liability or claims for environmental violations.

Qualified professional certification:
"I, _____, certify this INMP in accordance with the statement above."

_____ (Signature)

The discharger additionally agrees as follows:

"I, _____, Discharger, have provided information and data to the certifier above that is, to the best of my knowledge and belief, true, accurate, and complete, that I understand that the certifier may rely on the information and data provided by me and is not required to independently verify the information and data, and that I further understand that the certifier is not responsible for any damages, loss, or liability arising from subsequent implementation of the INMP by me in a manner that is inconsistent with the INMP's recommendations for nitrogen application. I further understand that the certification does not create any liability for claims for environmental violations."

Quantifiable Milestones and Time Schedules

7. As shown in **Table C.1-2**, the fertilizer nitrogen application limits go into effect during the second year of the this Order (December 31, 2023).

8. As shown in **Table C.1-3**, the nitrogen discharge targets go in to effect during the second year of this Order (December 31, 2023) and nitrogen discharge limits go in to effect during the fifth year of this Order (December 31, 2027).

Fertilizer Nitrogen Application Limits

9. Dischargers must not apply fertilizer nitrogen (**A_{FER}**) at rates greater than the limits in **Table C.1-2.** Compliance with fertilizer nitrogen application limits is assessed for each specific crop reported in the TNA report or INMP Summary report.

Nitrogen Discharge Targets and Limits

10. This Order requires Dischargers to submit information on nitrogen applied (**A**) and nitrogen removed (**R**). This Order also establishes nitrogen discharge targets and limits based on the calculation of nitrogen applied minus nitrogen removed (**A-R**) using the formulas below. Nitrogen must not be discharged at rates greater than the targets and limits in **Table C.1-3**. Compliance with nitrogen discharge targets and limits is assessed annually for the entire ranch in the INMP Summary report through one of the **three compliance pathways** shown below. Compliance with all pathways is not required.

    Compliance Pathway 1:

    A_{FER} + (C x A_{COMP}) + (O x A_{ORG}) + A_{IRR} – R = Nitrogen Discharge

    OR

    Compliance Pathway 2:

    A_{FER} + (C x A_{COMP}) + (O x A_{ORG}) = R

    OR

    Compliance Pathway 3:

    A_{FER} + (C x A_{COMP}) + (O x A_{ORG}) – R = Nitrogen Discharge

    In all formulas, R = R_{HARV} + R_{SEQ} + $R_{SCAVENGE}$ + R_{TREAT} + R_{OTHER}

    a. **A_{FER}** is the amount of fertilizer nitrogen applied in pounds per acre.
    b. **C** is the compost discount factor used to represent the amount of compost nitrogen mineralized during the year that the compost was applied.
    c. **A_{COMP}** is the total amount of compost nitrogen applied in pounds per acre.
    d. **O** is the organic fertilizer discount factor used to represent the amount of nitrogen mineralized during the first 12 weeks in the year it was applied.
    e. **A_{ORG}** is the total amount of organic fertilizer or amendment nitrogen applied in pounds per acre.

f. **A_{IRR}** is the amount of nitrogen applied in the irrigation water estimated from the volume required for crop evapotranspiration (ET) in pounds per acre.
g. **R** is the amount of nitrogen removed from the field through harvest, sequestration, or other removal methods, in pounds per acre.
h. **R_{HARV}** is the amount of nitrogen removed from the field through harvest or other removal of crop material.
i. **R_{SEQ}** is the amount of nitrogen removed from the field through sequestration in woody materials of permanent or semi-permanent crops.
j. **$R_{SCAVENGE}$** is the amount of nitrogen removed from the field through nitrogen scavenging cover crops and/or nitrogen scavenging high carbon amendments during the wet/rainy season.
k. **R_{TREAT}** is the amount of nitrogen removed from the ranch through a quantifiable treatment method (e.g., bioreactor).
l. **R_{OTHER}** is the amount of nitrogen removed from the ranch through other methods not previously quantified.

11. The Central Coast Water Board encourages the use of irrigation water nitrogen as a method of reducing the amount of fertilizer nitrogen applied to crops. The use of irrigation water nitrogen is typically referred to as “pump and fertilize” and is incentivized through compliance pathway 2 and 3 in **Table C.1-3**. The amount of irrigation water nitrogen is not used in the compliance calculation in these compliance pathways. The amount of irrigation water nitrogen must be reported regardless of the compliance pathway.

12. The Central Coast Water Board encourages the use of compost to improve soil health, nutrient and carbon sequestration, and water holding capacity consistent with the state’s Healthy Soils Initiative. All compost nitrogen (**A_{COMP}**) applied to the ranch must be reported in the TNA report or INMP Summary report; however, the use of compost is incentivized through the option for Dischargers to use a compost “discount” factor (**C**). Dischargers may use the compost discount factor provided by the Central Coast Water Board in the MRP or may determine their own discount factor. The discounted compost nitrogen must, at a minimum, represent the amount of compost mineralized during the year the compost was applied to the ranch. If the Discharger uses their own compost discount factor, they must maintain records of the method used to determine the compost discount factor in the Farm Plan, and these records must be submitted to the Central Coast Water Board upon request.

13. The Central Coast Water Board encourages the use of organic fertilizers and amendments to improve soil health, nutrient and carbon sequestration, and water holding capacity consistent with the state’s Healthy Soils Initiative. All organic fertilizer and amendment nitrogen (**A_{ORG}**) applied to the ranch must be reported in the TNA report or INMP Summary report; however, the use of organic fertilizers and amendments is incentivized through the option for Dischargers to

use an organic fertilizer "discount" factor (**O**). Dischargers may use the organic fertilizer discount factor associated with the products C:N ratio, provided by the Central Coast Water Board in the MRP. The discounted organic fertilizer nitrogen must, at a minimum, represent the amount of organic fertilizer mineralized during the first 12 weeks the organic fertilizer was applied to the ranch. The Discharger must maintain records of the organic products used and their associated C:N ratios in the Farm Plan, and these records must be submitted to the Central Coast Water Board upon request. The following products are not eligible to receive an organic fertilizer discount: a) products with no organic compounds (long chain carbon) molecules, such as conventional fertilizer, slow release fertilizers, b) products that do not depend on microbial mineralization to release nitrogen to mineral form to make it available for crop uptake, c) products without C:N ratio information available, and d) organic liquid fertilizers that are in the liquid and/or emulsified form.

14. The amount of **crop material** removed through harvest or other methods ($\mathbf{R_{HARV}}$) must be calculated using the formula described below. Dischargers must either use the crop-specific conversion coefficient values found in the MRP or develop their own conversion coefficient values following the approved method in the MRP. If Dischargers develop their own conversion coefficient, they must maintain information on the method used in the Farm Plan, and these records must be submitted to the Central Coast Water Board upon request.

    R_{HARV} = Conversion Coefficient x Material Removed

    a. The **Conversion Coefficient** is a crop-specific coefficient used to convert from units of material removed per acre to units of nitrogen removed per acre.
    b. **Material Removed** is the amount of nitrogen-containing material removed from the field, in units of pounds per acre.

15. The amount of nitrogen removed through **sequestration** in woody material of permanent or semi-permanent crops ($\mathbf{R_{SEQ}}$) must be estimated by the Discharger. Dischargers must maintain records detailing how they estimated the amount of nitrogen sequestered in their permanent crops. These records must be maintained in the Farm Plan and submitted to the Central Coast Water Board upon request.

16. The Central Coast Water Board encourages Dischargers to implement best management practices that reduce nitrogen leaching in the wet/rainy season. Dischargers may claim a nitrogen scavenging credit ($\mathbf{R_{SCAVENGE}}$) provided by the Central Coast Water Board in the MRP, one time per year for each ranch acre where nitrogen scavenging cover crops or nitrogen scavenging high carbon amendments are utilized during the wet/rainy season. The total acres receiving

the nitrogen scavenging credit may not exceed the ranch acres. Dischargers electing to claim the nitrogen scavenging credit must ensure that their cover crop and/or high carbon amendment best management practice meets the definitions of a nitrogen scavenging cover crop and/or nitrogen scavenging high carbon amendment, as noted in the MRP and Definitions. Substantiating records for this credit must be maintained in the Farm Plan and submitted to the Central Coast Water Board upon request.

17. The Central Coast Water Board encourages Dischargers to develop and implement innovative methods for removing nitrogen from the environment to improve water quality. Dischargers may use treatment methods (e.g., bioreactors) to remove nitrogen from groundwater or surface water and may count this towards their nitrogen removal (**R**) value if they are able to quantify the amount of nitrogen removed from ranch discharge to groundwater or surface water. This quantified removal through treatment or other innovative methods must be reported as $\mathbf{R_{TREAT}}$. Dischargers electing to account for this nitrogen removal must monitor the volume and concentration of water entering and exiting their treatment system and calculate the amount of nitrogen removed. These records must be maintained in the Farm Plan and submitted to the Central Coast Water Board upon request.

18. If Dischargers remove additional nitrogen through means other than removing crop material ($\mathbf{R_{HARV}}$), sequestration ($\mathbf{R_{SEQ}}$), scavenging credit ($\mathbf{R_{SCAVENGE}}$), or treatment methods ($\mathbf{R_{TREAT}}$), they must quantify and report this additional removal as $\mathbf{R_{OTHER}}$. Dischargers must maintain records detailing how they calculated $\mathbf{R_{OTHER}}$. These records must be maintained in the Farm Plan and submitted to the Central Coast Water Board upon request.

19. The discharge of nitrogen in excess of the nitrogen discharge **targets** in **Table C.1-3** may result in additional requirements, including obtaining additional education, INMP certification by a qualified professional, implementing additional or improved management practices, and increased monitoring and/or reporting.

20. The discharge of nitrogen in excess of the nitrogen discharge **limits** in **Table C.1-3** may result in additional requirements, including obtaining additional education, INMP certification by a qualified professional, implementing additional or improved management practices, increased monitoring and reporting, and/or progressive enforcement actions.

21. Dischargers who apply more fertilizer nitrogen ($\mathbf{A_{FER}}$) than the fertilizer nitrogen application limits in **Table C.1-2** to any specific crop **and** who are able to demonstrate compliance with the **final** nitrogen discharge limits, as shown in **Table C.1-3**, are exempt from the fertilizer nitrogen application limit.

22. Dischargers who can quantifiably demonstrate that their ranches pose no threat to surface water quality or groundwater quality may submit a technical report to the Executive Officer for review. If approved, the Discharger is not required to conduct the nitrogen application (**A**) or removal (**R**) monitoring and reporting or to submit the INMP Summary report, regardless of what Groundwater Phase area the ranch is in. The technical report must demonstrate that nitrogen applied at the ranch does not percolate below the root zone in an amount that could degrade groundwater and does not migrate to surface water through discharges, including drainage, runoff, or sediment erosion. Dischargers must provide the Executive Officer with annual updates to confirm that the exemption is still applicable. Failure to provide sufficient annual updates confirming that the exemption is still applicable will result in an immediate reinstatement of the requirement to submit the INMP Summary report for applicable Dischargers. Dischargers electing to use this approach are still eligible to participate in the third-party alternative compliance pathway for groundwater protection.

23. Dischargers who can quantifiably demonstrate that their ranch is achieving the **final** nitrogen discharge limits , as shown in **Table C.1-3,** are not required to submit the nitrogen removal (**R**) reporting in the INMP Summary report, regardless of what Groundwater Phase area the ranch is in. Example situations where this may apply include participation in an approved third-party program that certifies that the Discharger is meeting the final discharge limit and will continue to do so for the duration of the Discharger's participation in the approved third-party program, or by submitting a technical report, subject to Executive Officer review, that quantifies the amount of nitrogen discharge based on the volume and nitrogen concentration of all discharges from the ranch. In these situations, confirmation of membership in the approved third-party program or Executive Officer approval of a submitted technical report constitute compliance with the nitrogen removed (**R**) reporting requirement in the INMP Summary report. This exemption only applies to removal (**R**) in the INMP Summary report; all other requirements, including the TNA report, still apply as described in this Order. Dischargers must provide the Executive Officer with annual updates to confirm that the exemption is still applicable. Failure to provide sufficient annual updates confirming that the exemption is still applicable will result in an immediate reinstatement of the requirement to submit the nitrogen removal (R) reporting information in the INMP Summary report for applicable Dischargers. Dischargers electing to use this approach are still eligible to participate in the third-party alternative compliance pathway for groundwater protection.

24. Dischargers, groups of dischargers or commodity groups who can quantify the amount of nitrogen discharged from their ranch or for specific crops or via specific management practices by directly monitoring it at the points of discharge can propose an alternative monitoring methodology to comply with the nitrogen

discharge targets and limits, in lieu of using the A-R compliance formulas. Example situations where this may apply includes greenhouse, nursery, container production or intensive crop production where irrigation and drain water is captured and allows for direct monitoring of discharges. For these types of situations, it may be easier to monitor nitrogen discharge than to calculate the amount of nitrogen removed at harvest for each one of the many different crops and plants being grown. Dischargers must submit a request to the Executive Officer with a technical report of the methodology proposed to quantify nitrogen discharges. The methodology must include enough information to quantify the amount of nitrogen discharged and confirm compliance with the nitrogen discharge targets and limits, as shown in **Table C.1-3 or Table C.2-2** (for Dischargers participating in the Third-Party Alternative Compliance Pathway Program for Groundwater Protection described in **Part 2, Section C.2)**. Acceptable methodologies must include direct measurements of the volume and nitrogen concentration of the water discharged from each ranch per acre and year. Executive Officer approval of the method(s) must be granted before the discharger begins reporting nitrogen discharge based on the proposed methodology. Dischargers who obtain Executive Officer approval to directly monitor their nitrogen discharge from their ranches will not be required to submit nitrogen removal (R) reporting in the INMP Summary report. Dischargers electing to use this approach are still eligible to participate in the third-party alternative compliance pathway program for groundwater protection.

25. The initial 2027 nitrogen discharge limits, as shown in **Table C.1-3** will be re-evaluated based on Discharger reported nitrogen applied and removed data, new science, and management practice implementation and assessment before becoming effective.

Monitoring and Reporting

26. Dischargers must report on management practice implementation and assessment electronically in the **ACF**, as described in the MRP.

27. Dischargers must record and report total nitrogen applied to all crops grown on the ranch, electronically in the TNA report form, as described in the MRP.

28. Dischargers must track and record the following elements of the INMP Summary report that are not included in the TNA report: total nitrogen removed from the ranch and information on irrigation water application and discharge volumes. Dischargers must submit this information electronically in the INMP Summary report form as described in the MRP.

29. The INMP Summary report contains the same nitrogen application information as the TNA report, plus additional information related to nitrogen removed and irrigation management. **Therefore, the INMP Summary report satisfies the**

TNA report requirement and an additional TNA report is not required to be submitted when the INMP Summary report is submitted to the Central Coast Water Board.

30. Dischargers must conduct **irrigation well monitoring and reporting prior to the start of groundwater quality trend monitoring and reporting**, either individually or as part of a third-party effort, as described in the MRP.

31. Dischargers must conduct **on-farm domestic well monitoring and reporting**, either individually or as part of a third-party effort, as described in the MRP.

32. Dischargers must conduct **groundwater quality trend monitoring and reporting**, either individually or as part of a third-party effort, as described in the MRP. This requirement applies to all Dischargers enrolled in this Order, regardless of how many wells are currently present on their ranch.

    a. Dischargers who elect to perform groundwater quality trend monitoring and reporting as part of a **third-party** effort must form or join a third-party. The third-party must submit a work plan for Executive Officer review by the dates and covering the areas specified in the MRP unless it is associated with the Third-Party Alternative Compliance Pathway for Groundwater Protection described in **Part 2, Section C.2**. The work plan must be approved by the Executive Officer prior to implementation. Once approved by the Executive Officer, the work plan must be implemented.
    b. Dischargers who elect to perform groundwater quality trend monitoring and reporting individually must submit a work plan for Executive Officer review, by the date specified in the MRP, based on their ranch location. The work plan must be approved by the Executive Office prior to implementation. The work plan must describe how the ranch-level groundwater quality trend monitoring program will evaluate groundwater quality trends over time and assess the impacts of agricultural discharges on groundwater quality. Once approved by the Executive Officer, the work plan must be implemented. Dischargers without a well on their property may comply with individual ranch-level groundwater quality trend monitoring and reporting requirements by implementing one of the options specified in the MRP.

33. When required by the Executive Officer based on groundwater quality data or significant and repeated exceedance of the nitrogen discharge targets or limits, Dischargers must complete **ranch-level groundwater discharge monitoring and reporting**, either individually or as part of a third-party effort as described in the MRP. Water Board staff will coordinate with Dischargers prior to the Executive Officer invoking this requirement to determine if non-compliance is the result of unforeseen or uncontrollable circumstances and to provide the Discharger with 90-day advanced notice of the forthcoming requirement. When ranch-level groundwater discharge monitoring and reporting is required, a work

plan, including a SAP and QAPP, must be submitted for Executive Officer review prior to implementation. Once approved by the Executive Officer, the work plan must be implemented. Ranch-level groundwater discharge monitoring may be discontinued with the approval of the Executive Officer when the Discharger comes into compliance with the nitrogen discharge targets or limits, or the discharge has otherwise ceased.

Part 2, Section C.2. Third-Party Alternative Compliance Pathway for Groundwater Protection

1. Dischargers that are members in good standing in the third-party alternative compliance pathway program are subject to the provisions of this **Part 2, Section C.2**, unless otherwise stated. For purposes of this section, such Dischargers are referred to as "participating Dischargers."

   Participating dischargers:

   a. Are not subject to fertilizer nitrogen application limits in **Table C.1-2**, which are enforceable by the Central Coast Water Board.
   b. Are not subject to nitrogen discharge limits in **Table C.1-3**, which are enforceable by the Central Coast Water Board.
   c. Are subject to targets, which if exceeded result in consequences outlined in this **Part 2, Section C.2**.
   d. Are not subject to ranch-level groundwater discharge monitoring and reporting.
   e. Are generally provided more time to achieve fertilizer nitrogen application targets and nitrogen discharge targets, relative to non-participating dischargers.

2. Prior to the initiation of the work plan process outlined below and in the MRP for this third-party alternative compliance pathway program, entities wishing to implement the third-party alternative compliance pathway program described in this **Part 2, Section C.2** must submit a third-party alternative compliance pathway program proposal consistent with the third-party program requirements outlined in **Part 2, Section A** of this Order, as well as the request for proposal process and associated third-party program expectations document forthcoming after Order adoption. For purposes of this section, the entity approved to implement the third-party alternative compliance pathway is referred to as the approved third-party alternative compliance pathway program administrator.

3. Participating Dischargers must develop and implement an Irrigation and Nutrient Management Plan (INMP) that addresses groundwater. The INMP is a section of the Farm Plan and must be maintained in the Farm Plan and submitted to the Central Coast Water Board upon request. Summary information from the INMP must be submitted in the INMP Summary report. At a minimum, the elements of

the INMP related to groundwater and surface water protection for participating Dischargers in a third-party program must include:

a. Monitoring and recordkeeping necessary to submit complete and accurate reports, including the Annual Compliance form (ACF), Total Nitrogen Applied (TNA) report, and INMP Summary report.
b. Planning and management practice implementation and assessment that results in compliance with the fertilizer nitrogen application targets in **Table C.2-1,** the nitrogen discharge targets in **Table C.2-2**, and groundwater protection area targets to be determined and approved by the Executive Officer.
c. Descriptions of all irrigation, nutrient, and salinity management practices implemented and assessed on the ranch.

Quantifiable Milestones and Time Schedules

4. As shown in **Table C.2-1**, the fertilizer nitrogen application targets go in to effect during the third year of the this Order (December 31, 2024) for participating Dischargers in the third-party alternative compliance pathway.

5. As shown in **Table C.2-2**, the nitrogen discharge targets go in to effect during the third year of this Order (December 31, 2024) for participating Dischargers in the third-party alternative compliance pathway.

Fertilizer Nitrogen Application Targets

6. Participating Dischargers must not apply fertilizer nitrogen ($\mathbf{A_{FER}}$) at rates greater than the **targets** in **Table C.2-1.** Compliance with fertilizer nitrogen application targets is assessed annually for each specific crop reported in the TNA report or INMP Summary report.

7. Participating Dischargers that apply fertilizer nitrogen ($\mathbf{A_{FER}}$) at rates greater than the **targets** in **Table C.2-1** one year after the compliance date are subject to follow-up by the approved third-party program administrator, which could include additional education and/or implementation of additional or improved management practices.

8. Participating Dischargers that apply fertilizer nitrogen ($\mathbf{A_{FER}}$) at rates greater than the **targets** in **Table C.2-1** for a two-year running average after the compliance date, are no longer eligible to participate in the third-party alternative compliance pathway program and must comply with the individual groundwater protection requirements in **Part 2, Section C.1**. Water Board staff will coordinate with participating Dischargers prior to the Executive Officer invoking this requirement to determine if non-compliance is the result of unforeseen or uncontrollable

circumstances and to provide the Discharger with 90-day advanced notice of the forthcoming individual groundwater protection requirements.

Nitrogen Discharge Targets

9. Participating Dischargers must not discharge nitrogen at rates greater than the **targets** in **Table C.2-2**. Compliance with nitrogen discharge targets is assessed annually for the entire ranch using INMP Summary report information. Participating Dischargers must comply with at least one of the nitrogen discharge compliance pathways described in **Part 2, Section C.1** by the compliance date.

10. The final year 2028 nitrogen discharge **targets**, as shown in **Table C.2-2** will be re-evaluated based on discharger reported nitrogen applied and removed data, new science, management practice effectiveness assessment and evaluation, and groundwater protection area collective numeric interim and final targets before becoming effective.

11. Participating Dischargers that discharge nitrogen in excess of the nitrogen discharge **targets** in **Table C.2-2** one year after the compliance date are subject to follow-up by the approved third-party alternative compliance pathway program administrator, which could include additional education and/or implementation of additional or improved management practices.

12. Participating Dischargers that discharge nitrogen in excess of the nitrogen discharge **targets** in **Table C.2-2** for a two-year running average, must obtain annual INMP certification by a qualified professional until nitrogen discharge targets are achieved for a two-year running average. The INMP certification must include the certification language outlined in **Part 2, Section C.1**.

13. Participating Dischargers that discharge nitrogen in excess of the final nitrogen discharge target in **Table C.2-2** for a three-year running average after the compliance date, are no longer eligible to participate in the third-party alternative compliance pathway program and must comply with individual groundwater protection requirements in **Part 2, Section C.1**. Water Board staff will coordinate with participating Dischargers prior to the Executive Officer invoking this requirement to determine if non-compliance is the result of unforeseen or uncontrollable circumstances and to provide the Discharger with 90-day advanced notice of the forthcoming individual groundwater protection requirements.

Groundwater Protection Areas, Formulas, Values, and Targets

14. The approved third-party alternative compliance pathway program administrator, on behalf of its participating Dischargers, must develop and submit incremental 35%, 70%, and 100% work plans for Executive Officer approval, as described in

the MRP. The 35% and 70% work plans will be subject to Executive Officer approval following a 30-day written public period and a public meeting to receive public comments and board input.

15. The incremental draft and final work plans must include the following:

    a. Clearly defined objectives and scientific justification for all proposed groundwater protection (GWP) areas, formulas, values, and collective numeric interim and final targets.

    b. Scientific justification in support of the proposed GWP areas with respect to, but not limited to, geology, hydrogeology, groundwater basin and subbasin areas, recharge areas, land uses, cropping patterns, and potential membership coverage by acreage and number of members. The proposed GWP areas, formula, values, and collective interim and final targets must be tied together and scaled in a way that will allow for the effective evaluation of water quality and beneficial use protection and compliance with GWP interim and final targets on both a collective and individual basis.

    c. A program to assess and evaluate the performance and effectiveness of the third-party alternative compliance pathway program's collective numeric interim and final targets in achieving tangible groundwater quality improvements over time at the individual GWP area scale. The assessment and evaluation program must be scaled – spatially and temporally – in coordination with the regional groundwater quality trend monitoring program described in **Part 2, Section C.1** of the third-party program over time.

    d. Criteria and associated follow-up actions or consequences that the third-party alternative compliance pathway program administrator will implement if participating Dischargers do not meet collective numeric interim and final targets, and third-party program membership eligibility requirements including membership probation and revocation to address recalcitrant participating Dischargers.

16. The final work plans must be approved by the Executive Officer prior to implementation. Once approved by the Executive Officer, the work plans must be implemented.

17. Compliance with the collective numeric interim and final targets for a GWP area shall be determined by aggregating data from participating Dischargers within a GWP area to determine if the combined nitrogen discharge is achieving collective compliance with the GWP Area numeric interim and final targets.

18. Although compliance with GWP collective numeric interim and final targets is assessed using the combined nitrogen discharge of participating Dischargers in a GWP area, GWP collective numeric interim and final targets must be designed such that there is a clear and quantifiable means of assessing individual ranch level contribution to the success or failure of complying with the GWP area collective numeric interim and final targets.

19. Participating Dischargers in a GWP area that exceed the GWP collective numeric interim and final targets by 20% or more, as evaluated individually and on an annual basis, are subject to follow-up by the approved third-party alternative compliance pathway program administrator, which could include additional education or implementation of additional or improved management practices.

20. All participating Dischargers in a GWP area that exceeds the collective numeric interim and final GWP targets by 20% or more for a 3-year running average after the compliance date, are no longer eligible to participate in the third-party alternative compliance pathway program and must comply with the individual groundwater protection requirements in **Part 2, Section C.1**.

Monitoring and Reporting

21. Participating Dischargers must submit ACF, TNA, and INMP Summary information according to requirements outlined in **Part 2, Section C.1**, and as described in the MRP.

22. Participating Dischargers must submit ACF, TNA, and INMP Summary information accordingto the groundwater phase assigned to each ranch. Groundwater phases are outlined in **Part 2, Section C.1**.

23. Participating Dischargers must submit groundwater monitoring and reporting information according to requirements outlined in **Part 2, Section C.1** and as described in the MRP, either individually or as part of a third-party program.

Part 2, Section C.3. Surface Water Protection

Priority Areas (Individual)

1. Ranches are assigned the Surface Water Priority area of the HUC-8 watershed where the ranch is located based on the relative level of water quality, beneficial use impairment and risk to water quality. All ranches are assigned a Surface Water Priority of 1, 2, 3, or 4. Surface Water Priority Area 1 areas represent greater water quality impairment and higher risk to water quality relative to Surface Water Priority Areas 2, 3, and 4.

2. The follow-up surface receiving water implementation requirements for surface water protection are based on the surface water priority areas, listed in **Table C.3-1** and shown on the map in **Figure C.3-1**.

3. In the event that a ranch spans multiple Surface Water Priority areas, the ranch will either be assigned the earlier priority or will be assigned the priority of the watershed or drainage unit that the ranch drains or discharges to, if specific discharge information is provided to the Central Coast Water Board.

4. The Surface Water Priority assigned to each ranch will be displayed in the ranch eNOI in GeoTracker.

Priority Areas (Third-Party Program)

5. Ranches that are enrolled as part of an approved third-party follow-up surface receiving water implementation program are assigned the third-party program Surface Water Priority of high priority, medium priority, or low priority where the ranch is located, as shown in **Table C.3-1.3P** and the map shown in **Figure C-3.1. 3P**.

6. In the event that a ranch spans multiple third-party program Surface Water Priority areas, the ranch will either be assigned the earlier priority or will be assigned the priority of the watershed or drainage unit that the ranch drains or discharges to, if specific discharge information is provided to the Central Coast Water Board.

7. The third-party program Surface Water Priority assigned to each ranch will be displayed in the ranch eNOI in GeoTracker.

Irrigation and Nutrient Management

8. Dischargers must develop and implement an Irrigation and Nutrient Management Plan (INMP) that addresses both groundwater and surface water. This section applies to the surface water related INMP requirements and the groundwater related INMP requirements are contained within **Part 2, Section C.1** of this Order. The INMP is a section of the Farm Plan, must be maintained in the Farm Plan (see **Part 2, Section B** and Farm Plan paragraph 14 below), and submitted to the Central Coast Water Board upon request. Summary information from the INMP must be submitted in the ACF, as described in the MRP.

Pesticide Management

9. Dischargers must develop and implement a Pesticide Management Plan (PMP). The PMP is a section of the Farm Plan, must be maintained in the Farm Plan (see **Part 2, Section B** and Farm Plan paragraph 14 below), and submitted to

the Central Coast Water Board upon request. Summary information from the PMP must be submitted in the ACF, as described in the MRP.

Sediment and Erosion Management

10. Dischargers must develop and implement a Sediment and Erosion Management Plan (SEMP). The SEMP is a section of the Farm Plan, must be maintained in the Farm Plan (see **Part 2, Section B** and Farm Plan paragraph 14 below), and submitted to the Central Coast Water Board upon request. Summary information from the SEMP must be submitted in the ACF, as described in the MRP.

Impermeable Surfaces

11. Ranches with either 50 to 100 percent of fields covered by impermeable surfaces (defined in Attachment C of this Order), or with greater than or equal to 22,500 square feet (0.5 acre) of impermeable surfaces must manage stormwater discharge duration, rate, and volume as described below.

    a. Stormwater discharge intensity from fields with impermeable surfaces must not exceed the stormwater discharge intensity from equivalent permeable field area for any storm event up to and including the 10-year storm event. The *Santa Barbara Urban Hydrograph Method* [4] and the *Rational Method* [5] are two methods for determining the stormwater discharge intensity match, however other similar methods to determine stormwater discharge intensity may be used.

    b. Stormwater discharge volume from fields with impermeable surfaces must not exceed the stormwater discharge volume from equivalent permeable field area for any storm event up to and including the 95th percentile, 24-hour storm event. The *Curve Number Method* [6] is a method for determining the stormwater discharge volume match, however other similar methods to determined stormwater discharge volume may be used.

    c. Description and time schedules of management practices, treatment, and/or control measures implemented to meet design storm requirements and mitigate for increased stormwater runoff from impermeable surfaces must be kept in the Farm Plan. Methods for assessing the effectiveness of each management practice, treatment, and/or control measure include calculation of peak and runoff volumes, visual inspection, photo documentation, and local precipitation event data, however other storm event measurement

[4] The Santa Barbara Urban Hydrograph Method is based on the curve number approach and is useful for sheet flow over a plane surface, called overland flow.
[5] The Rational Method is used to determine peak discharge from runoff in a given area.
[6] The Curve Number Method was developed by the Soil Conservation Service to estimate runoff from rainfall on agricultural fields and provides runoff depth that can be used to calculate runoff volume.

types and recordkeeping that determine the effectiveness of management practices may be used.

Farm Plan

12. At a minimum, the elements of the Farm Plan related to surface water protection must include:

    a. Monitoring and recordkeeping necessary to submit complete and accurate reports, including the ACF.

    b. Planning and management practice implementation and assessment that results in compliance with the surface water limits in **Table C.3-2** (TMDL areas) and **Table C.3-3** (non-TMDL areas) for nutrients, **Table C.3-4** (TMDL areas) and **Table C-3.5** (non-TMDL areas) for pesticides and toxicity, and **Table C.3-6** (TMDL areas) for sediment and **Table C.3-7** (non-TMDL areas) for turbidity that apply to a ranch based on the ranch location.

    c. Descriptions of all management practices implemented on the ranch, as follows:

        i. All irrigation, nutrient, and salinity management practices (i.e., INMP).
        ii. All pesticide management practices (i.e., PMP), including pesticide application characteristics (e.g., timing, formulations, wind, and rainfall monitoring, etc.) and any integrated pest management (IPM) practices implemented (e.g., scouting, beneficial insects, etc.).
        iii. All sediment, erosion, irrigation, stormwater, road, agricultural drainage pump, and impermeable surface management practices (i.e., SEMP).

Quantifiable Milestones and Time Schedules

13. Dischargers in an area **with an established TMDL** (**Figure C.3-2** for Nutrient TMDL areas, **Figure C.3-3** for Pesticide and Toxicity TMDL areas, and **Figure C.3-4** for Sediment TMDL areas) for a pollutant must not cause or contribute to an exceedance of the pollutant's surface receiving water limit in **Table C.3-2** for nutrients, **Table C.3-4** for pesticides and toxicity, and **Table C.3-6** for sediment in accordance with the compliance dates specified in the applicable table.

14. Dischargers in an area **without an established TMDL** for a pollutant must not cause or contribute to an exceedance of the pollutant's surface receiving water limit in **Table C.3-3** for nutrients, **Table C-3.5** for pesticides and toxicity, and **Table C.3-7** for turbidity in accordance with the compliance dates specified in the applicable table.

15. The surface receiving water limits in **Table C.3-3** for nutrients, **Table C-3.5** for pesticides and toxicity, and **Table C.3-7** for turbidity, apply to all Dischargers unless a specific surface receiving water limit based on a TMDL in **Table C.3-2** for nutrients, **Table C.3-4** for pesticides and toxicity, and **Table C.3-6** for sediment applies to a Discharger.

16. Dischargers in areas where the water quality for a pollutant is better (i.e., of higher quality) than the applicable limit in **Table C.3-2** (TMDL areas) and **Table C.3-3** (non-TMDL areas) for nutrients, **Table C.3-4** (TMDL areas) and **Table C-3.5** (non-TMDL areas) for pesticides and toxicity, and **Table C.3-6** (TMDL areas) for sediment and **Table C.3-7** (non-TMDL areas) for turbidity must not cause or contribute to an increase of that pollutant in receiving waters, except as consistent with the antidegradation findings of this Order.

17. The discharge of pollutants from a ranch that cause or contribute to an exceedance of the applicable limits after the compliance date in **Table C.3-2** (TMDL areas) and **Table C.3-3** (non-TMDL areas) for nutrients, **Table C.3-4** (TMDL areas) and **Table C-3.5** (non-TMDL areas) for pesticides and toxicity, and **Table C.3-6** (TMDL areas) for sediment and **Table C.3-7** (non-TMDL areas) for turbidity may result in additional requirements, including obtaining additional education, implementing additional or improved management practices, follow-up monitoring and reporting, ranch-level surface discharge monitoring and reporting, and progressive enforcement actions.

Monitoring and Reporting

18. Dischargers must complete **surface receiving water monitoring and reporting** as described in the MRP, either individually or through a third-party monitoring program approved by the Executive Officer. Dischargers, either individually or through a third-party monitoring program, must submit a work plan, including a SAP and QAPP as described the MRP, for Executive Officer review prior to implementation. Once approved by the Executive Officer, the work plan must be implemented. The work plan must include applicable monitoring for the pollutants in **Table C.3-2** (TMDL areas) and **Table C.3-3** (non-TMDL areas) for nutrients, **Table C.3-4** (TMDL areas) and **Table C-3.5** (non-TMDL areas) for pesticides and toxicity, and **Table C.3-6** (TMDL areas) for sediment and **Table C.3-7** (non-TMDL areas) for turbidity and must describe the actions that will be taken to achieve the limits in the tables.

19. Dischargers must develop a **follow-up surface receiving water implementation work plan**, either individually or through a third-party program. The work plans per the MRP requirements are subject to Executive Officer approval following a 30-day period to receive written public comments. The work plan due date is based on the Surface Water Priority of the ranch.

a. Individual Dischargers that are not part of a third-party program approved to develop and implement follow-up surface receiving water implementation work plan(s) must submit an individual work plan by the dates specified below, based on the ranch's Surface Water Priority Area defined in **Table C.3-1** of the Order:
   i. March 1, 2023 for Surface Water Priority 1 areas
   ii. March 1, 2024 for Surface Water Priority 2 areas
   iii. March 1, 2025 for Surface Water Priority 3 areas
   iv. March 1, 2026 for Surface Water Priority 4 areas

b. Third-party program(s) approved to develop and implement follow-up surface receiving water implementation work plan(s) on behalf of participating Dischargers must submit work plan(s) by the dates specified below, based on the third-party program surface water priority area. Third-party program surface water priority areas are defined in **Table C.3-1.3P** of the Order:
   i. March 1, 2024 for High Priority areas
   ii. March 1, 2026 for Medium Priority areas
   iii. March 1, 2028 for Low Priority and All Other areas

c. The work plan must include numeric interim quantifiable milestones and follow-up actions, such as outreach, education, and management practice implementation and assessment, and, where applicable for pollutant source identification and abatement, additional surface receiving water monitoring locations. The work plan must include a SAP and QAPP. The work plan must describe the implementation measures that will be taken to reduce the discharge of relevant pollutants and achieve the applicable surface water numeric limits by the compliance dates in **Table C.3-2** (TMDL areas) and **Table C.3-3** (non-TMDL areas) for nutrients, **Table C.3-4** (TMDL areas) and **Table C-3.5** (non-TMDL areas) for pesticides and toxicity, and **Table C.3-6** (TMDL areas) for sediment and **Table C.3-7** (non-TMDL areas) for turbidity. The work plan must be submitted for Executive Officer review prior to implementation. Once approved, the work plan must be implemented.

d. Prior to the applicable compliance dates in **Table C.3-2** (TMDL areas) and **Table C.3-3** (non-TMDL areas) for nutrients, **Table C.3-4** (TMDL areas) and **Table C-3.5** (non-TMDL areas) for pesticides and toxicity, and **Table C.3-6** (TMDL areas) for sediment and **Table C.3-7** (non-TMDL areas) for turbidity, Dischargers who elect to participate in a third-party program to develop and implement their work plan will not be subject to ranch-level surface discharge monitoring and reporting.

e. Work plans must take into consideration the level of water quality impairment identified through surface receiving water monitoring. Work plans for areas with persistent exceedances of the surface water limits in **Table C.3-2**

(TMDL areas) and **Table C.3-3** (non-TMDL areas) for nutrients, **Table C.3-4** (TMDL areas) and **Table C-3.5** (non-TMDL areas) for pesticides and toxicity, and **Table C.3-6** (TMDL areas) for sediment and **Table C.3-7** (non-TMDL areas) for turbidity must identify follow-up actions to restore degraded areas and meet surface receiving water limits (e.g., numeric interim quantifiable milestones, outreach, education, management practice implementation and assessment) and additional surface receiving water monitoring locations for pollutant source identification and abatement. Work plans for areas that are already achieving the surface water limits in **Table C.3-2** (TMDL areas) and **Table C.3-3** (non-TMDL areas) for nutrients, **Table C.3-4** (TMDL areas) and **Table C-3.5** (non-TMDL areas) for pesticides and toxicity, and **Table C.3-6** (TMDL areas) for sediment and **Table C.3-7** (non-TMDL areas) for turbidity must identify actions to be taken to protect the high-quality areas (e.g., numeric interim quantifiable milestones, outreach and education).

f. Dischargers who elect to develop their work plan individually and whose ranches are located in areas where surface receiving water monitoring shows an exceedance of an applicable surface water limit in **Table C.3-2** (TMDL areas) and **Table C.3-3** (non-TMDL areas) for nutrients, **Table C.3-4** (TMDL areas) and **Table C-3.5** (non-TMDL areas) for pesticides and toxicity, and **Table C.3-6** (TMDL areas) for sediment and **Table C.3-7** (non-TMDL areas) for turbidity after the applicable compliance deadline may be subject to ranch-level surface discharge monitoring and reporting.

20. When required by the Executive Officer, based on surface receiving water quality data or significant and repeated exceedance of the surface water quality limits in **Table C.3-2** (TMDL areas) and **Table C.3-3** (non-TMDL areas) for nutrients, **Table C.3-4** (TMDL areas) and **Table C-3.5** (non-TMDL areas) for pesticides and toxicity, and **Table C.3-6** (TMDL areas) for sediment and **Table C.3-7** (non-TMDL areas) for turbidity, Dischargers must complete **ranch-level surface discharge monitoring and reporting** as described in the MRP. Dischargers can complete this requirement either individually or as part of a third-party program effort. Water Board staff will coordinate with Dischargers prior to the Executive Officer invoking this requirement to determine if non-compliance is the result of unforeseen or uncontrollable circumstances and to provide the Discharger with 90-day advanced notice of the forthcoming requirement. When ranch-level surface discharge monitoring and reporting is required, a work plan, including a SAP and QAPP, must be submitted for Executive Officer review prior to implementation. Once approved by the Executive Officer, the work plan must be implemented. Ranch-level surface discharge monitoring may be discontinued with the approval of the Executive Officer when the Discharger comes into compliance with the surface receiving water limits, or the discharge has otherwise ceased.

21. Dischargers must report on nutrient, pesticide, and sediment and erosion control management practice implementation and assessment electronically in the ACF, as described in the MRP.

22. Dischargers whose ranches have impermeable surfaces must report on stormwater management practice implementation and assessment electronically in the ACF, as described in the MRP.

23. Dischargers with waterbodies within or bordering their ranch must measure and report the current riparian area (average width and length, in feet) in the ACF, as described in the MRP.

Part 2, Section D. Additional Requirements and Prohibitions

Waste Discharge Control and Prohibitions

1. Except in compliance with this Order, Dischargers must not cause or contribute to exceedances of applicable water quality objectives, as defined in Attachment A, must protect all beneficial uses for inland surface waters, enclosed bays, and estuaries, and for groundwater, as outlined in sections 3.3.2 and 3.3.4 of the Basin Plan, and must prevent nuisance as defined in Water Code section 13050.

2. Dischargers must achieve applicable Total Maximum Daily Load (TMDL) Load Allocations (LAs) by achieving the surface water receiving limits established in this Order. Dischargers must incorporate planning elements from applicable TMDLs into the appropriate section of their Farm Plan and, as appropriate, into their follow-up surface receiving water implementation work plan(s).

3. Dischargers that anticipate exceeding a limit or condition of the Order after the final compliance date has passed may request a time schedule order pursuant to Water Code section 13300 for the Central Coast Water Board's consideration. A time schedule order must be requested 18 months in advance of a Discharger or a group of Dischargers anticipating that they will not be able to achieve the receiving water limit by the compliance date. At a minimum, the request for a time schedule order must include information outlined in Attachment A (Additional Findings). Dischargers may either individually request a time schedule order or may jointly request a time schedule order with other Dischargers subject to the same groundwater or surface receiving water limit.

4. The discharge of rubbish, refuse, trash, irrigation tubing or tape, or other solid wastes into surface waters is prohibited. The placement of such materials where they discharge or have the potential to discharge to surface waters is prohibited.

5. The discharge of chemicals such as fertilizers, fumigants, pesticides, herbicides, or rodenticides down a groundwater well casing is prohibited.

6. The discharge of chemicals, including those used to control wildlife (such as bait traps or poison), directly into surface waters or groundwater is prohibited. The placement of chemicals in a location where they may be discharged to surface waters or groundwater is prohibited.

7. Dischargers who apply fertilizers, fumigants, pesticides, herbicides, rodenticides, or other chemicals through an irrigation system must have functional and properly maintained backflow prevention devices installed at the well or pump to prevent pollution of groundwater and surface water that comply with any applicable DPR requirements or local ordinances. Backflow prevention devices used to protect water quality must be those approved by the United States Environmental Protection Agency (USEPA), DPR, California Department of Public Health (CDPH), or the local public health or water agency.

8. Dischargers must properly destroy all abandoned groundwater wells, exploration holes or test holes, as defined by Department of Water Resources (DWR) Bulletin 74-81 and revised in 1988, in such a manner that they will not produce water or act as a conduit for mixing or otherwise transfer groundwater or waste pollutants between permeable zones or aquifers. Well destruction must be performed in compliance with any applicable DWR requirements or local ordinances (including local well destruction permitting requirements).

9. This Order does not authorize the discharge of pollutants from point sources to waters of the United States, including wetlands. Where required, Dischargers must obtain authorization for such discharges by obtaining a Clean Water Act (CWA) section 402 National Pollutant Discharge Elimination System (NPDES) permit or a CWA section 404 dredge and fill permit.

10. Dischargers who utilize containment structures (such as retention ponds or reservoirs) to achieve treatment or control of the discharge of waste must manage, construct, and maintain such containment structures to avoid discharges of waste to groundwater and surface water that cause or contribute to exceedances of water quality objectives or impairment of beneficial uses. Dischargers may choose the method of compliance appropriate for the individual ranch, which may include, but is not limited to:

    a. Implementing chemical treatment (such as enzymes);
    b. Implementing biological treatment (such as wood chips);
    c. Recycling or reusing contained water to minimize infiltration or discharge of waste;
    d. Minimizing the volume of water in the containment structure to minimize percolation of waste; and/or
    e. Minimizing percolation of waste via a synthetic, concrete, clay, or low permeability soil liner.

11. Dischargers must implement proper handling, storage, disposal, and management of fertilizers, fumigants, pesticides, herbicides, rodenticides, and other chemicals to prevent or control the discharge of waste to waters of the state that causes or contributes to exceedances of water quality standards. All chemical storage areas must have appropriate secondary containment structures to protect water quality and prevent discharge through spillage, mixing, or seepage.

12. Dischargers must implement water quality protective management practices (such as source control or treatment) to prevent erosion, reduce stormwater runoff quantity and velocity, and hold fine particles in place.

13. Dischargers must minimize the presence of bare soil vulnerable to erosion and soil runoff to surface waters and implement erosion control, sediment, and stormwater management practices in non-cropped areas, such as unpaved roads and other heavy use areas.

14. Dischargers who utilize agricultural drainage pumps must implement management practices to dissipate flow and prevent channel and/or streambank erosion resulting in increased sediment transport and turbidity within surface water.

15. Dischargers must comply with any applicable stormwater permits.

16. Dischargers must implement best practicable treatment and control (BPTC) measures for the construction and maintenance of farm roads to minimize erosion and sediment discharges that contribute to nonpoint source pollution.

17. Dischargers must ensure that all farm roads are, to the extent possible, hydrologically disconnected from waters of the state by installing disconnecting drainage features, increasing the frequency of (inside) ditch drain relief as needed, constructing out-sloped roads, constructing energy dissipating structures, avoiding concentrating flows in unstable areas, and performing inspection and maintenance as needed to optimize access road performance.

18. Dischargers must ensure that farm road surfacing, especially within a segment leading to waters of the state, minimizes sediment delivery to waters of the state and maximizes road integrity.

19. Dischargers must ensure that farm roads are out-sloped whenever possible to promote even drainage of the farm road surface, prevent the concentration of stormwater flow within an inboard or inside ditch, and to prevent disruption of the natural sheet flow pattern off a hill slope to waters of the state.

20. Farm road stormwater drainage structures must not discharge onto unstable slopes, earthen fills, or directly into waters of the state. Drainage structures must discharge onto stable areas with straw bales, slash, vegetation, and/or rock riprap.

21. If used, chemical toilets or holding tanks must be maintained in a manner appropriate for the frequency and conditions of usage, sited in stable locations, and located outside of areas bordering surface waterbodies.

22. Dischargers who produce and apply compost in-house must comply with the following requirements:

    a. Materials and activities on-site must not cause, threaten to cause, or contribute to conditions of pollution, contamination, or nuisance;
    b. Activities must be set back at least 100 feet from the nearest surface waterbody and/or the nearest water supply well;
    c. Dischargers must implement practices to minimize or eliminate the discharge of waste that may adversely impact the quality or beneficial uses of waters of the state;
    d. Dischargers must manage the application of water to compost (including from precipitation events) to reduce the generation of wastewater;
    e. Working surfaces must be designed to prevent, to the greatest extent possible, ponding, infiltration, inundation, and erosion, notwithstanding precipitation events, equipment movement, and other aspects of the facility operations;
    f. Dischargers must maintain the following records in the Farm Plan. These records must be submitted to the Central Coast Water Board upon request.
        i. Total operational footprint of compost activities (in acres), including ancillary activities;
        ii. Compost operation records to provide background information on the composting operation history and a description of methods and operation used, including the following: feedstock types, volumes, sources, and suppliers. Description of the method of composting (e.g., windrow, static, forced air, mechanical). Description of how residuals are removed from the feedstocks and managed and/or disposed of.
        iii. Description of water supply.
        iv. Map detailing the location and size (in acres) of the working surface used for the storage of incoming feedstocks, additives, and amendments (receiving area); active and curing composting; final product; drainage patterns; location of any groundwater monitoring wells and water supply wells within and/or near the property boundary; location and distance (in feet) to nearby water supply wells (e.g., municipal supply, domestic supply, agricultural wells) from the nearest property boundary of the operation; identification of all surface waterbodies, including streams, ditches, canals, and other drainage

courses; and distances from the nearest property boundary of the operation to these surface waterbody areas.

v. Records of appropriate monitoring (dependent on method of composting) for composting to develop final product (temperature, turning, air flow, etc.).

vi. Records of final product use, including locations and volumes.

23. Disturbance (e.g., removal, degradation, or destruction) of existing, naturally occurring, and established native riparian vegetative cover (e.g., trees, shrubs, and grasses), unless authorized (e.g., Clean Water Act [CWA] section 404 permit and CWA section 401 certification, WDRs, waivers of WDRs, a California Department of Fish and Wildlife [CDFW] Lake and Streambed Alteration Agreement, or municipal ordinance), is prohibited. Dischargers must avoid disturbance in riparian areas to minimize waste discharges and protect water quality and beneficial uses.

24. In the case where disturbance of riparian areas is authorized, Dischargers must implement appropriate and practicable measures to avoid, minimize, and mitigate erosion and discharges of waste.

Additional Requirements

25. Upon the Central Coast Water Board's request, Dischargers must submit information regarding compliance with any DPR adopted or approved surface water or groundwater protection requirements to the Central Coast Water Board.

26. Upon the Central Coast Water Board's request, Dischargers must submit proof of an approved Lake and Streambed Alteration Agreement or other authorization or release from the CDFW to the Central Coast Water Board for any work conducted within the bed, bank, and channel, including riparian areas, of parcels enrolled in this order, that has the potential to result in erosion and discharges of waste to waters of the State.

27. Upon the Central Coast Water Board's request, Dischargers must submit proof of a Clean Water Act section 404 dredge and fill permit from the United States Army Corps of Engineers (USACE) for any work that has the potential to discharge wastes considered "fill" material, such as sediment, to waters of the United States to the Central Coast Water Board.

28. Dischargers must comply with DWR Bulletin 74-81 and supplement 74-90, Water Code sections 13700 through 13755, and any local permitting requirements associated with installation of new wells.

29. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in

the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C. sections 1531 to 1544). If a "take" will result from any act authorized under this Order, the Dischargers must obtain authorization for an incidental take prior to taking action. Dischargers are responsible for meeting all applicable requirements of the California and federal Endangered Species Acts for the discharge authorized by this Order.

30. Dischargers or a representative authorized by the Discharger must sign technical reports submitted to the Central Coast Water Board to comply with this Order. Any person signing or submitting a document must provide the following certification, whether written or implied:

    "In compliance with Water Code section 13267, I certify under penalty of perjury that this document and all attachments were prepared by me, or under my direction or supervision, following a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. To the best of my knowledge and belief, this document and all attachments are true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

CERTIFICATION

I, Matthew T. Keeling, Executive Officer, do hereby certify that this General Order with all its attachments is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Central Coast Region on April XX, 2021.

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Matthew T. Keeling, Executive Officer

Tables and Figures

Tables and Figures related to Part 2, Section C.1. Groundwater Protection

Table C.1-1. Groundwater Phase Areas

Groundwater Basin[1]	Groundwater Phase
Gilroy-Hollister Valley - Llagas Area	Phase 1, Phase 2
Salinas Valley - Forebay Aquifer	Phase 1, Phase 2
Salinas Valley - Upper Valley Aquifer	Phase 1, Phase 2
Santa Maria River Valley - Santa Maria	Phase 1, Phase 2
Santa Ynez River Valley	Phase 1, Phase 3
Corralitos - Pajaro Valley	Phase 2
Gilroy Hollister Valley - North San Benito	Phase 2
Salinas Valley - 180/400 Foot Aquifer	Phase 2
Salinas Valley - East Side Aquifer	Phase 2
San Luis Obispo Valley	Phase 2
All Other Basins and Areas Outside of Basins	Phase 3

[1]As defined in the 2019 California Department of Water Resources Bulletin 118.

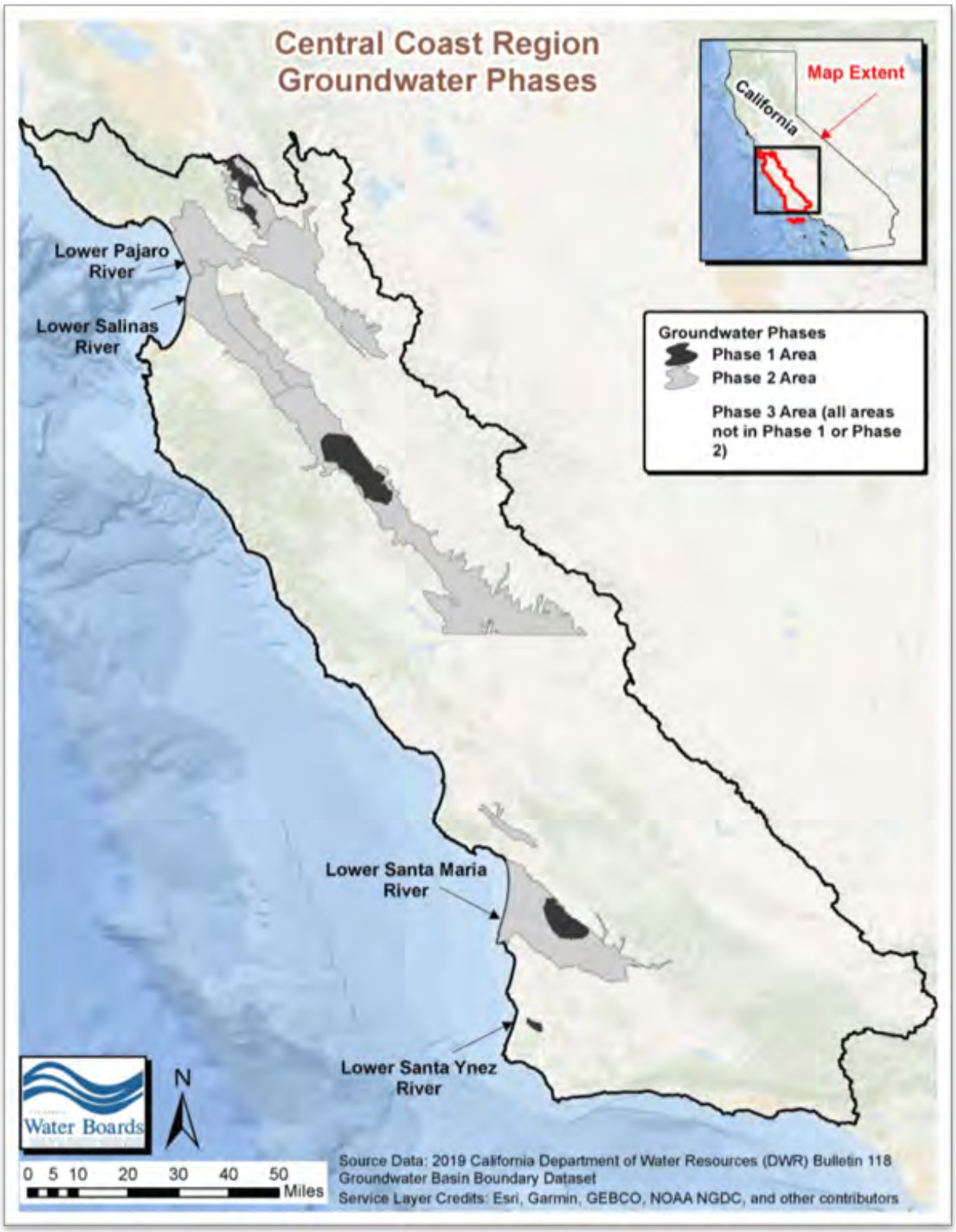

Figure C.1-1: Groundwater Phase Areas

Table C.1-2. Compliance Dates for Fertilizer Nitrogen Application Limits

Crop	90th Percentile A_{FER} =	Compliance Date	85th Percentile A_{FER} =	Compliance Date
Broccoli	295	12/31/2023	280	12/31/2025
Cauliflower	310		285	
Celery	360		330	
Lettuce	275		255	
Spinach	245		230	
Strawberry	320		295	
All Other Crops	500		480	

Note: For crops grown for less than one year (e.g., broccoli, lettuce, etc.), units are in pounds of nitrogen per acre per crop. In the situation where a Discharger grows a crop more than once during the year, e.g. grows a spring lettuce and a fall lettuce, the application limit applies to each of the crops separately: no more than 275 pounds of nitrogen per acre can be applied to the spring lettuce crop and no more than 275 pounds of nitrogen per acre can be applied to the fall lettuce crop. The two lettuce crops can be reported on separately or can be averaged together. For crops grown for more than one year (e.g., grapes, trees, etc.), units are in pounds of nitrogen per acre per year. The 90th and 85th percentile fertilizer nitrogen application limits were determined by using year 2014 to 2019 total nitrogen applied (TNA) reporting information.

Table C.1-3. Compliance Dates for Nitrogen Discharge Targets and Limits

Compliance Pathway 1 $A_{FER} + (C \times A_{COMP}) + (O \times A_{ORG}) + A_{IRR} - R =$	**Compliance Date**		
	Target	500	12/31/2023
	Target	400	12/31/2025
	Limit	300	12/31/2027
	Limit	200	12/31/2031
	Limit	150	12/31/2036
	Limit	100	12/31/2041
	Limit	50	12/31/2051
OR			
Compliance Pathway 2 $A_{FER} + (C \times A_{COMP}) + (O \times A_{ORG}) = R$	**Compliance Date**		
	Target	A = R	12/31/2023
	Target	A = R	12/31/2025
	Limit	A = R	12/31/2027
	Limit	A = R	12/31/2031
	Limit	A = R	12/31/2036
	Limit	A = R	12/31/2041
	Limit	A = R	12/31/2051
OR			
Compliance Pathway 3 $A_{FER} + (C \times A_{COMP}) + (O \times A_{ORG}) - R =$	**Compliance Date**		
	Target	300	12/31/2023
	Target	200	12/31/2025
	Limit	100	12/31/2027
	Limit	0	12/31/2031
	Limit	-50	12/31/2036
	Limit	-100	12/31/2041
	Limit	-150	12/31/2051

Note: All units are in pounds of nitrogen per acre per year and represent all crops grown and harvested on the entire ranch. The initial 2027 nitrogen discharge limits will be re-evaluated based on discharger reported nitrogen applied and removed data, new science, and management practice implementation and assessment before becoming effective.

A_{FER} is the amount of fertilizer nitrogen applied in pounds per acre.
C is the compost discount factor used to represent the amount of compost nitrogen mineralized during the year that the compost was applied.
A_{COMP} is the total amount of compost nitrogen applied in pounds per acre.
A_{IRR} is the amount of nitrogen applied in the irrigation water estimated from the volume required for crop evapotranspiration (ET) in pounds per acre.
O is the organic fertilizer discount factor used to represent the amount of nitrogen mineralized during the first 12 weeks in the year it was applied.
A_{ORG} is the total amount of organic fertilizer or amendment nitrogen applied in pounds per acre.
R is the amount of nitrogen removed from the field through harvest, sequestration, or other removal methods, in pounds per acre.

Note: Report due dates to confirm compliance with the fertilizer application limits and nitrogen discharge targets and limits are included in the MRP.

Tables and Figures related to Part 2, Section C.2. Third-Party Alternative Compliance Pathway for Groundwater Protection

Table C.2-1. Compliance Dates for Fertilizer Nitrogen Application Targets (Alternative Compliance Pathway)

Crop	90th Percentile A_{FER} =	Compliance Date	85th Percentile A_{FER} =	Compliance Date
Broccoli	295	12/31/2024	280	12/31/2026
Cauliflower	310		285	
Celery	360		330	
Lettuce	275		255	
Spinach	245		230	
Strawberry	320		295	
All Other Crops	500		480	

Note: For crops grown for less than one year (e.g., broccoli, lettuce, etc.), units are in pounds of nitrogen per acre per crop. In the situation where a Discharger grows a crop more than once during the year, e.g. grows a spring lettuce and a fall lettuce, the application limit applies to each of the crops separately: no more than 275 pounds of nitrogen per acre can be applied to the spring lettuce crop and no more than 275 pounds of nitrogen per acre can be applied to the fall lettuce crop. The two lettuce crops can be reported on separately or can be averaged together. For crops grown for more than one year (e.g., grapes, trees, etc.), units are in pounds of nitrogen per acre per year. The 90th and 85th percentile fertilizer nitrogen application targets were determined by using year 2014 to 2019 total nitrogen applied (TNA) reporting information.

Table C.2-2. Compliance Dates for Nitrogen Discharge Targets (Alternative Compliance Pathway)

	Target	Compliance Date
Compliance Pathway 1 $A_{FER} + (C \times A_{COMP}) + (O \times A_{ORG}) + A_{IRR} - R =$	500	12/31/2024
	400	12/31/2026
	300	12/31/2028
OR		
	Target	**Compliance Date**
Compliance Pathway 2 $A_{FER} + (C \times A_{COMP}) + (O \times A_{ORG}) = R$	A = R	12/31/2024
	A = R	12/31/2026
	A = R	12/31/2028
OR		
	Target	**Compliance Date**
Compliance Pathway 3 $A_{FER} + (C \times A_{COMP}) + (O \times A_{ORG}) - R =$	300	12/31/2024
	200	12/31/2026
	100	12/31/2028

Notes: All units are in pounds of nitrogen per acre per year and represent all crops grown and harvested on the entire ranch. All compliance pathway variables are defined above under **Table C.1-3**. The final 2028 nitrogen discharge targets will be re-evaluated based on discharger reported nitrogen applied and removed data, new science, management practice implementation and assessment, and third-party GWP collective numeric interim and final targets before becoming effective.

Tables and Figures related to Part 2, Section C.3. Surface Water Protection

Table C.3-1. Surface Water Priority Areas

HUC-8 Number[1]	HUC-8 Name	Surface Water Priority
18060008	Santa Maria	Priority 1
18060005	Salinas	Priority 2
18060002	Pajaro	Priority 3
18060015	Monterey Bay	Priority 3
18060010	Santa Ynez	Priority 3
18050003	Coyote	Priority 4
18050006	San Francisco Coastal South	Priority 4
18060004	Estrella	Priority 4
18060006	Central Coastal	Priority 4
18060003	Carrizo Plain	Priority 4
18060007	Cuyama	Priority 4
18060009	San Antonio	Priority 4
18060013	Santa Barbara Coastal	Priority 4
18060014	Santa Barbara Channel Islands	Priority 4
18070101	Ventura	Priority 4

[1]As defined by the National Hydrography Dataset Plus Watershed Boundary Dataset

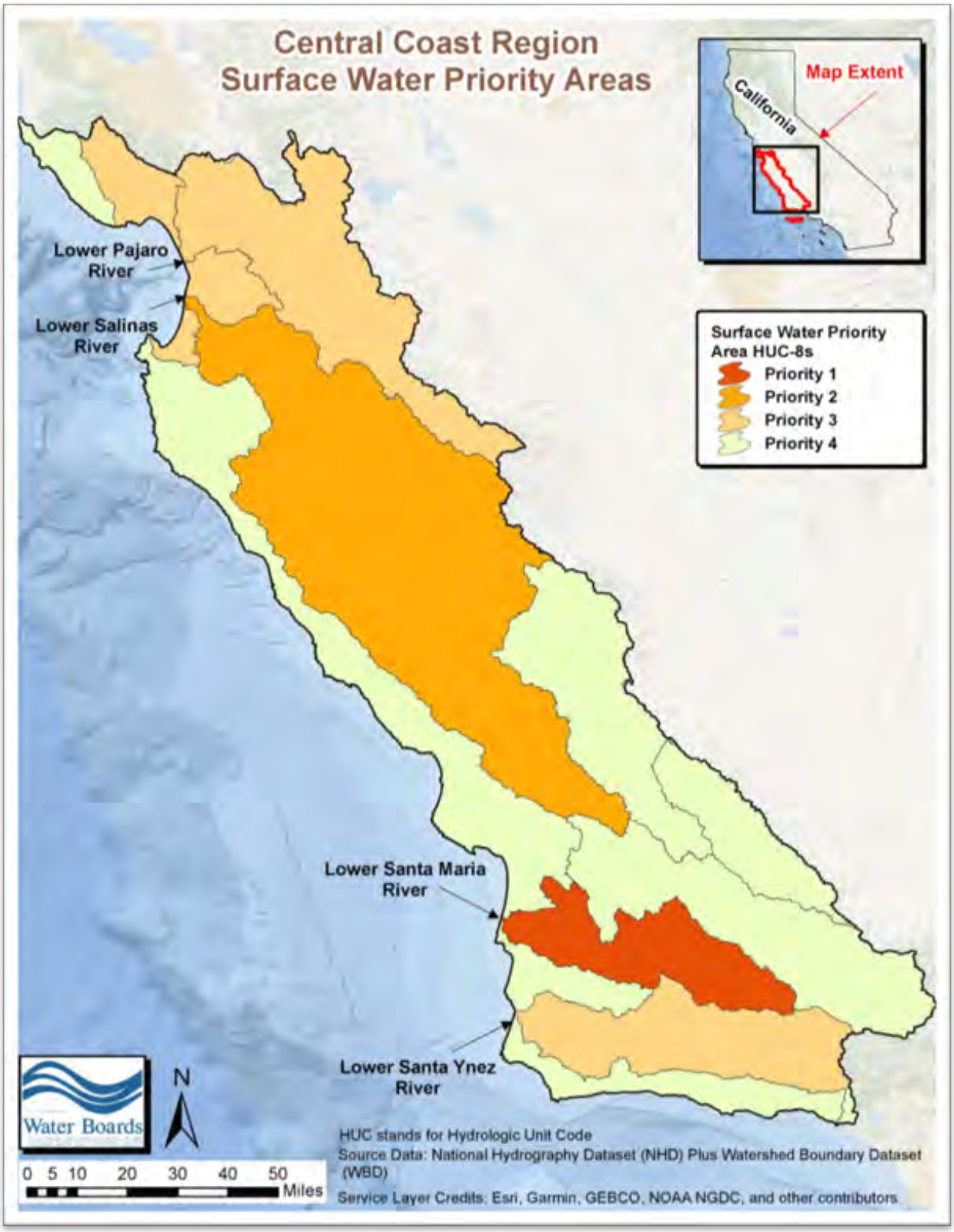

Figure C-3.1: Surface Water Priority Areas

Table C.3-1.3P. Surface Water Priority Areas (Third-Party Program)

High Priority	
305FUF	Furlong Creek at Frazier Lake Road
309ALG	Salinas Reclamation Canal at La Guardia
309CCD	Chualar Creek west of Highway 101
309CRR	Chualar Creek North Branch east of Highway 101
309ESP	Espinosa Slough upstream from Alisal Slough
309JON	Salinas Reclamation Canal at San Jon Road
309MER	Merrit Ditch upstream of Highway 183
309NAD	Natividad Creek upstream of Salinas Reclamation Canal
309OLD	Old Salinas River at Monterey Dunes Way
309QUI	Quail Creek at culvert on east side of Highway 101
309TEH	Tembladero Slough at Haro Street
312BCC	Bradley Canyon Creek at Culvert
312BCJ	Bradley Channel at Jones Street
312GVS	Green Valley at Simas
312MSD	Main Street Canal upstream of Ray Road at Highway 166
312OFC	Oso Flaco Creek at Oso Flaco Lake Road
312ORC	Orcutt Solomon Creek upstream of Santa Maria River
312ORI	Orcutt Solomon Creek at Highway 1
312SMA	Santa Maria River at Estuary
Medium Priority	
305BRS	Beach Road Ditch at Shell Road
305CAN	Carnadero Creek upstream of Pajaro River
305CHI	Pajaro River at Chittenden Gap
305FRA	Pajaro River Millers Canal at Frazier Lake Road
305LCS	Llagas Creek at Southside Avenue
305PJP	Pajaro River at Main Street
305SJA	San Juan Creek at Anzar Road
305TSR	Tequisquita Slough upstream of Pajaro River at Shore Road
305WCS	Watsonville Creek at Elkhorn Road / Hudson Landing
309ASB	Alisal Slough at White Barn
309BLA	Blanco Drain below Pump
309GAB	Gabilan Creek at Boronda Road
309MOR	Moro Cojo Slough at Highway 1
309RTA	Santa Rita Creek at Santa Rita Creek Park
310LBC	Los Berros Creek at Century Road
310PRE	Prefumo Creek at Calle Joaquin
310USG	Arroyo Grande Creek at old USGS Gauge
310WRP	Warden Creek at Wetlands Restoration Preserve
312OFN	Little Oso Flaco Creek
312SMI	Santa Maria at Highway 1
313SAE	San Antonio Creek at San Antonio Road east
314SYN	Santa Ynez River at 13th
315BEF	Bell Creek at Winchester Canyon Park
315FMV	Franklin Creek at Mountain View Lane
315GAN	Glenn Annie Creek
315LCC	Los Carneros Creek at Calle Real

Low Priority	
305COR	Salsipuedes Creek downstream of Corralitos Creek upstream of HWY 129
305WSA	Watsonville Slough at San Andreas Road
309GRN	Salinas River (Mid) at Elm Road in Greenfield
309SAC	Salinas River at Chualar
309SAG	Salinas River at Gonzales River Road Bridge
309SSP	Salinas River (Lower) at Spreckles Gauge
310CCC	Chorro Creek upstream of Chorro Flats
314SYF	Santa Ynez River at Flordale
314SYL	Santa Ynez River at River Park
315APF	Arroyo Paredon Creek at Foothill Bridge
All Other Areas	Low priority also includes all other areas not in high or medium priority areas

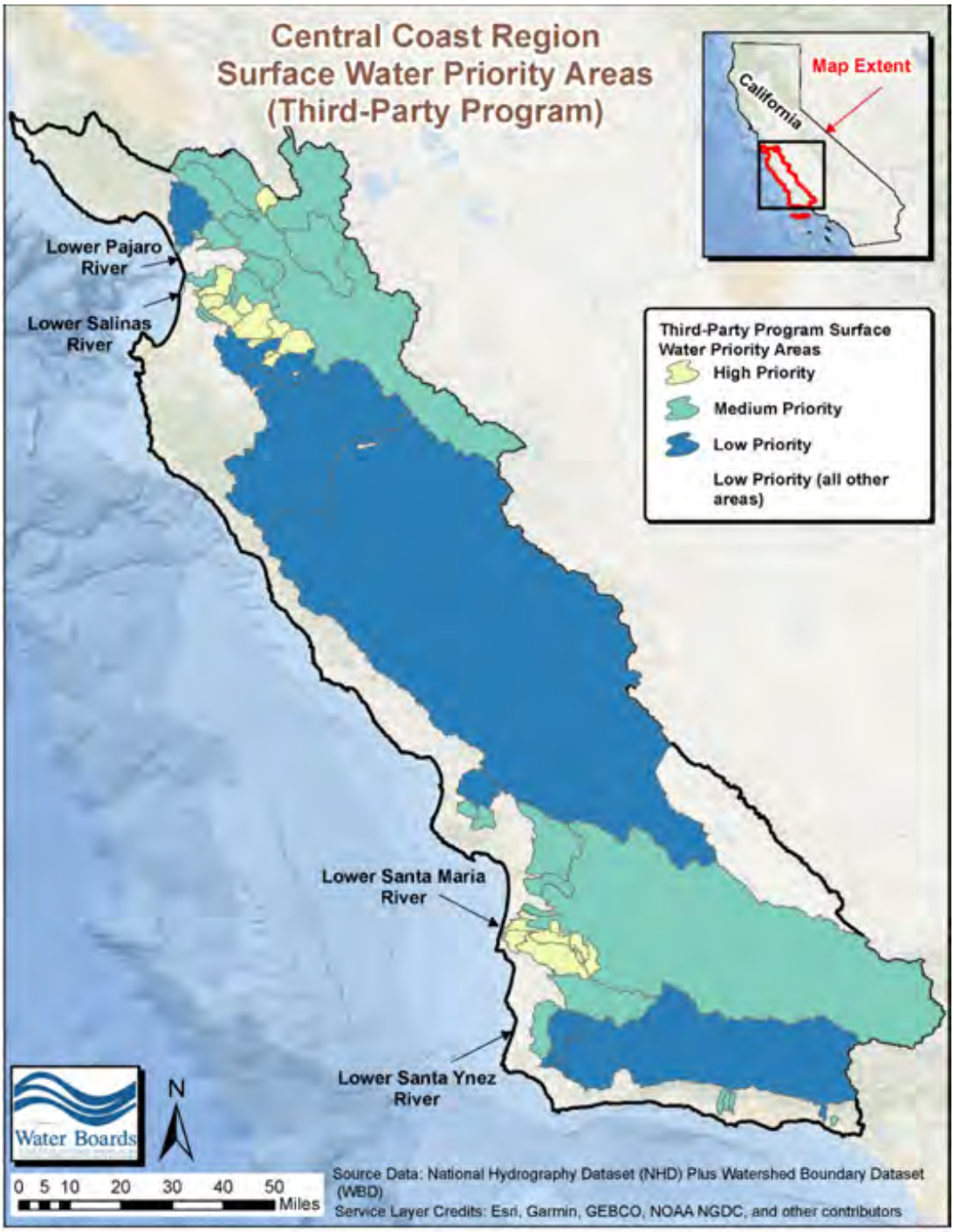

Figure C-3.1.3P: Surface Water Priority Areas (Third-Party Program)

Table C.3-2. Compliance Dates for Nutrient Limits (TMDL areas)

TMDL Project Name	Constituent	Matrix	Limit[1]	Units[2]	Compliance Date
Arroyo Paredon Nitrate TMDL	Nitrate, as N	Water Column	10.0	mg/L	12/31/2032
Bell Creek Nitrate TMDL	Nitrate, as N	Water Column	10.0	mg/L	12/31/2032
Franklin Creek Nutrients TMDL	Nitrate, as N	Water Column	10.0	mg/L	12/31/2032
Franklin Creek Nutrients TMDL	Total Nitrogen, as N	Water Column	Wet Season: 8.0	mg/L	3/4/2034
Franklin Creek Nutrients TMDL	Total Phosphorous	Water Column	Wet Season: 0.3	mg/L	3/4/2034
Franklin Creek Nutrients TMDL	Total Nitrogen, as N	Water Column	Dry Season: 1.1	mg/L	3/4/2044
Franklin Creek Nutrients TMDL	Total Phosphorous	Water Column	Dry Season: 0.075	mg/L	3/4/2044
Glen Annie Canyon, Tecolotito Creek, & Carneros Creek Nitrate TMDL	Nitrate, as N	Water Column	10.0	mg/L	12/31/2032
Los Berros Creek Nitrate TMDL	Nitrate, as N	Water Column	10.0	mg/L	12/31/2032
Los Osos Creek, Warden Creek, and Warden Lake Wetland Nutrient TMDL	Nitrate, as N	Water Column	10.0	mg/L	12/31/2032

TMDL Project Name	Constituent	Matrix	Limit[1]	Units[2]	Compliance Date
Lower Salinas River Watershed Nutrient TMDL	Ammonia (Un-Ionized), as N[3]	Water Column	0.025	mg/L	12/31/2032
Lower Salinas River Watershed Nutrient TMDL	Nitrate, as N	Water Column	10.0	mg/L	12/31/2032
Lower Salinas River Watershed Nutrient TMDL	Total Nitrogen, as N[4]	Water Column	Wet Season: 8.0	mg/L	5/7/2034
Lower Salinas River Watershed Nutrient TMDL	Nitrate, as N	Water Column	Wet Season: 8.0	mg/L	5/7/2034
Lower Salinas River Watershed Nutrient TMDL	Orthophosphate, as P	Water Column	Wet Season: 0.3	mg/L	5/7/2034
Lower Salinas River Watershed Nutrient TMDL	Total Nitrogen, as N[4]	Water Column	Dry Season: 1.7	mg/L	5/7/2044
Lower Salinas River Watershed Nutrient TMDL	Nitrate, as N	Water Column	Dry Season: 1.4 – 6.4[1]	mg/L	5/7/2044
Lower Salinas River Watershed Nutrient TMDL	Orthophosphate, as P	Water Column	Dry Season: 0.07 – 0.13[1]	mg/L	5/7/2044

TMDL Project Name	Constituent	Matrix	Limit[1]	Units[2]	Compliance Date
Pajaro River Watershed Nutrient TMDL	Ammonia (Un-ionized), as N[3]	Water Column	0.025	mg/L	12/31/2032
Pajaro River Watershed Nutrient TMDL	Nitrate, as N	Water Column	10.0	mg/L	12/31/2032
Pajaro River Watershed Nutrient TMDL	Total Nitrogen, as N	Water Column	Wet Season: 8.0	mg/L	12/31/2032
Pajaro River Watershed Nutrient TMDL	Nitrate, as N	Water Column	Wet Season: 8.0	mg/L	12/31/2032
Pajaro River Watershed Nutrient TMDL	Orthophosphate, as P	Water Column	Wet Season: 0.3	mg/L	12/31/2032
Pajaro River Watershed Nutrient TMDL	Total Nitrogen, as N[5]	Water Column	Dry Season: 1.1 – 2.1[1]	mg/L	7/12/2041
Pajaro River Watershed Nutrient TMDL	Nitrate, as N	Water Column	Dry Season: 1.8 – 3.9[1]	mg/L	7/12/2041
Pajaro River Watershed Nutrient TMDL	Orthophosphate, as P	Water Column	Dry Season: 0.04 – 0.14[1]	mg/L	7/12/2041
San Luis Obispo Creek Nitrate TMDL	Nitrate, as N	Water Column	10.0	mg/L	12/31/2032

TMDL Project Name	Constituent	Matrix	Limit[1]	Units[2]	Compliance Date
Santa Maria River Watershed Nutrients TMDL	Ammonia (Un-Ionized), as N[3]	Water Column	0.025	mg/L	12/31/2032
Santa Maria River Watershed Nutrients TMDL	Nitrate, as N	Water Column	10.0	mg/L	12/31/2032
Santa Maria River Watershed Nutrients TMDL	Nitrate, as N	Water Column	Wet Season or Year-Round: 5.7 – 8.0[1]	mg/L	5/22/2034
Santa Maria River Watershed Nutrients TMDL	Orthophosphate, as P	Water Column	Wet Season or Year-Round: 0.08 – 0.3[1]	mg/L	5/22/2034
Santa Maria River Watershed Nutrients TMDL	Nitrate, as N	Water Column	Dry Season: 4.3	mg/L	5/22/2044
Santa Maria River Watershed Nutrients TMDL	Orthophosphate, as P	Water Column	Dry Season: 0.19	mg/L	5/22/2044

[1]The Lower Salinas River Watershed Nutrient TMDL, Pajaro River Watershed Nutrient TMDL, and Santa Maria River Watershed Nutrient TMDL include load allocations for specific waterbody reaches within the TMDL project area. The limits for those TMDLs are summarized in this table as ranges; however, the exact load allocation values for each reach apply as described in the TMDL and Basin Plan and will be assessed as numeric limits for the purposes of this Order.
[2]mg/L is milligrams per liter
[3]Calculated using total ammonia and onsite instream measurements (field measurements) of pH and water temperature.
[4]Total nitrogen TMDL load allocation applies to Moro Cojo Slough only.
[5]Total nitrogen TMDL load allocation applies to the following sloughs: Watsonville, Harkins, Gallighan, and Struve.

Table C.3-3. Compliance Dates for Nutrient Limits (Non-TMDL areas)

Constituent Group	Constituent	Matrix	Limit	Units[1]	Compliance Date
Nutrients	Nitrate, as Nitrogen	Water Column	10.0	mg/L	12/31/2032
Nutrients	Ammonia (un-ionized), as Nitrogen[2]	Water Column	0.025	mg/L	12/31/2032

[1]mg/L is milligrams per liter
[2]Calculated using total ammonia and onsite instream measurements (field measurements) of pH and water temperature.

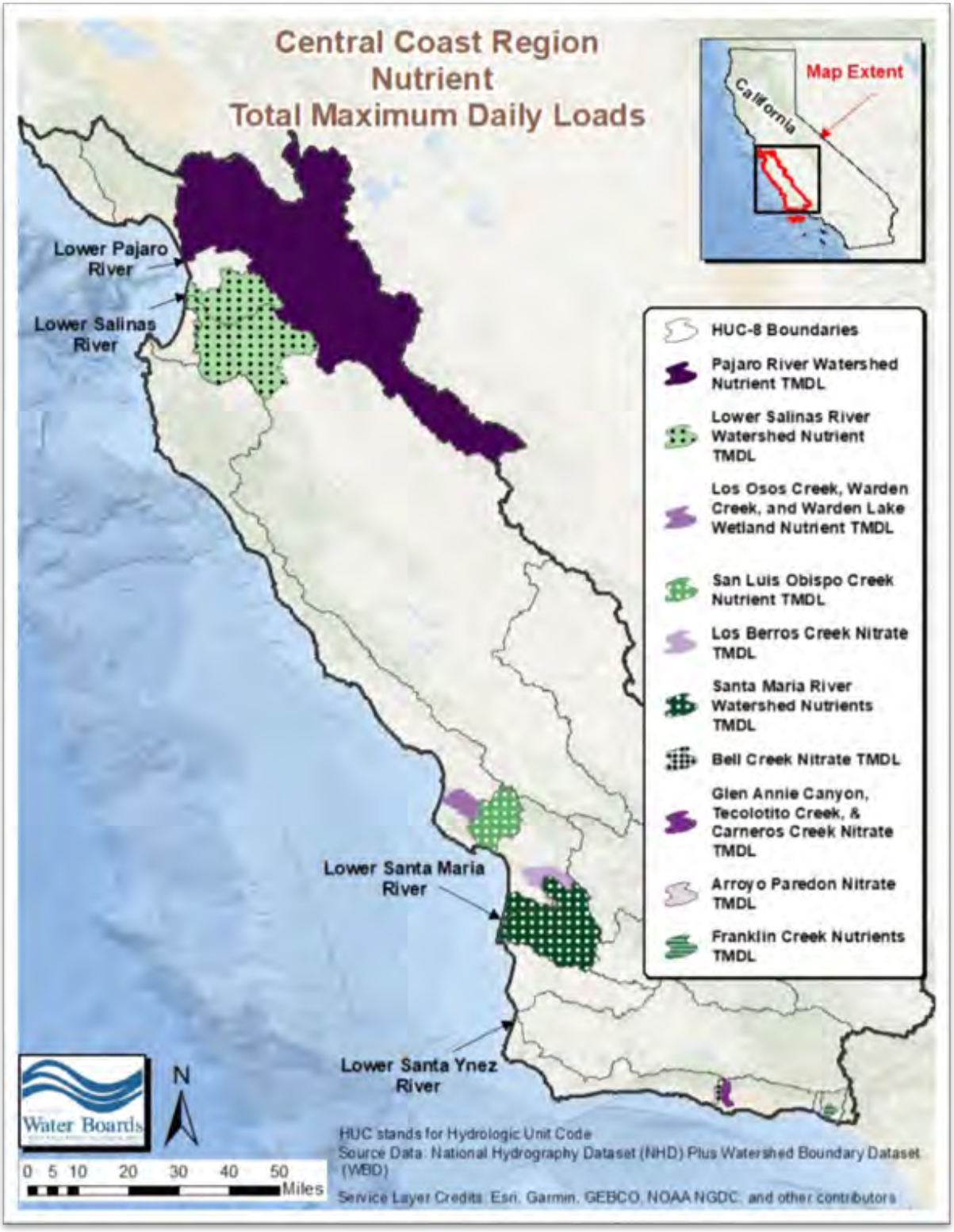

Figure C.3-2: Nutrient TMDL Areas

Table C.3-4. Compliance Dates for Pesticide and Toxicity Limits (TMDL areas)

TMDL Project Name	Constituent[1]	Matrix	Limit[2]	Units[3]	Compliance Date
Arroyo Paredon Diazinon TMDL	Additive Toxicity (Chlorpyrifos and Diazinon)	Water Column	Sum of Additive Toxicity, TU ≤ 1.0	TU	12/31/2032
Arroyo Paredon Diazinon TMDL	Diazinon	Water Column	CCC: 0.10 CMC: 0.16	µg/L	12/31/2032
Lower Salinas River Watershed Chlorpyrifos and Diazinon TMDL	Chlorpyrifos[4]	Water Column	CCC: 0.015 CMC: 0.025	µg/L	12/31/2032
Lower Salinas River Watershed Chlorpyrifos and Diazinon TMDL	Diazinon[4]	Water Column	CCC: 0.10 CMC: 0.16	µg/L	12/31/2032
Lower Salinas River Watershed Chlorpyrifos and Diazinon TMDL	Additive Toxicity (Chlorpyrifos and Diazinon)	Water Column	Sum of Additive Toxicity, TU ≤ 1.0	TU	12/31/2032

TMDL Project Name	Constituent[1]	Matrix	Limit[2]	Units[3]	Compliance Date
Lower Salinas River Watershed Sediment Toxicity and Pyrethroids in Sediment TMDL	Additive Toxicity (Pyrethroids)	Sediment	Sum of Pyrethroid TU < 1.0	TU	12/31/2032
Lower Salinas River Watershed Sediment Toxicity and Pyrethroids in Sediment TMDL	Aquatic Toxicity	Sediment	No significant toxic effect, 10-day, chronic exposure with *Hyalella azteca*	Survival endpoint	12/31/2032
Pajaro River Watershed Chlorpyrifos and Diazinon TMDL	Additive Toxicity (Chlorpyrifos and Diazinon)	Water Column	Sum of Additive Toxicity, TU ≤ 1.0	TU	12/31/2032
Pajaro River Watershed Chlorpyrifos and Diazinon TMDL	Chlorpyrifos	Water Column	CCC: 0.015 CMC: 0.025	µg/L	12/31/2032
Pajaro River Watershed Chlorpyrifos and Diazinon TMDL	Diazinon	Water Column	CCC: 0.10 CMC: 0.16	µg/L	12/31/2032

TMDL Project Name	Constituent[1]	Matrix	Limit[2]	Units[3]	Compliance Date
Pajaro River Watershed Chlorpyrifos and Diazinon TMDL	Aquatic Toxicity	Sediment	No significant toxic effect, 10-day, chronic exposure with *Hyalella azteca*	Survival and reproduction endpoints	12/31/2032
Pajaro River Watershed Chlorpyrifos and Diazinon TMDL	Aquatic Toxicity	Water Column	No significant toxic effect, 7-day, chronic exposure with *Ceriodaphnia dubia*	Survival and reproduction endpoints	12/31/2032
Santa Maria River Watershed Toxicity and Pesticide TMDL	Additive Toxicity (Chlorpyrifos and Diazinon)	Water Column	Sum of Additive Toxicity, TU ≤ 1.0	TU	12/31/2032
Santa Maria River Watershed Toxicity and Pesticide TMDL	Chlorpyrifos	Water Column	CCC: 0.015 CMC: 0.025	µg/L	12/31/2032
Santa Maria River Watershed Toxicity and Pesticide TMDL	Diazinon	Water Column	CCC: 0.10 CMC: 0.16	µg/L	12/31/2032

TMDL Project Name	Constituent[1]	Matrix	Limit[2]	Units[3]	Compliance Date
Santa Maria River Watershed Toxicity and Pesticide TMDL	Malathion	Water Column	CCC: 0.028 CMC: 0.17	µg/L	12/31/2032
Santa Maria River Watershed Toxicity and Pesticide TMDL	Additive Toxicity (Pyrethroids)	Sediment	Sum of Pyrethroid TU $\leq$ 1.0	TU	12/31/2032
Santa Maria River Watershed Toxicity and Pesticide TMDL	Aquatic Toxicity	Sediment	No significant toxic effect, 10-day, chronic exposure with *Hyalella azteca*	Survival endpoint	Not Defined[5]
Santa Maria River Watershed Toxicity and Pesticide TMDL	Aquatic Toxicity	Water Column	No significant toxic effect, 6-8 day, chronic exposure with *Ceriodaphnia dubia*	Survival and reproduction endpoints	Not Defined[5]
Santa Maria River Watershed Toxicity and Pesticide TMDL	4,4'-DDT (p,p-DDT)	Sediment	6.5	µg/kg o.c.	10/29/2044

TMDL Project Name	Constituent[1]	Matrix	Limit[2]	Units[3]	Compliance Date
Santa Maria River Watershed Toxicity and Pesticide TMDL	4,4'-DDE (p,p-DDE)	Sediment	5.5	µg/kg o.c.	10/29/2044
Santa Maria River Watershed Toxicity and Pesticide TMDL	4,4'-DDD (p,p-DDD)	Sediment	9.1	µg/kg o.c.	10/29/2044
Santa Maria River Watershed Toxicity and Pesticide TMDL	Total DDT (Sediment)	Sediment	10.0	µg/kg o.c.	10/29/2044
Santa Maria River Watershed Toxicity and Pesticide TMDL	Chlordane	Sediment	1.7	µg/kg o.c.	10/29/2044
Santa Maria River Watershed Toxicity and Pesticide TMDL	Dieldrin	Sediment	0.14	µg/kg o.c.	10/29/2044
Santa Maria River Watershed Toxicity and Pesticide TMDL	Endrin	Sediment	550.0	µg/kg o.c.	10/29/2044

TMDL Project Name	Constituent[1]	Matrix	Limit[2]	Units[3]	Compliance Date
Santa Maria River Watershed Toxicity and Pesticide TMDL	Toxaphene	Sediment	20.0	µg/kg o.c.	10/29/2044

[1]Toxic units and/or additive toxicity units are calculated using the relevant biological indicators, as described in the applicable TMDL, e.g. LC50, CCC, or CMC.
[2]CCC is Criterion Continuous Concentration or chronic (4-day (96-hour) average), not to be exceeded more than once in a three year period; CMC is Criterion Maximum Concentration or acute (1- hour average) not to be exceeded more than once in a three year period; the sum of additive toxicity is calculated by dividing each measured chemical concentration by that chemical's criterion (CCC or CMC) and summing those values as defined in the staff report for the respective TMDL project.
[3]µg/L is micrograms per liter; µg/kg is micrograms per kilogram; ng/g is nanograms per gram; o.c. means normalized for sediment organic carbon content; ppb is parts per million.
[4]Apply only when one of the two compounds (chlorpyrifos or diazinon) is present.
[5]A time schedule for aquatic toxicity was not identified in the Santa Maria River Watershed Toxicity and Pesticide TMDL; therefore, Dischargers in this area must comply with the aquatic toxicity compliance date defined in Table C.3-2.

Table C-3.5. Compliance Dates for Pesticide and Toxicity Limits (Non-TMDL areas)

Constituent Group	Constituent	Matrix	Limit[1]	Units[2]	Compliance Date
Pesticides	Acetamiprid	Water Column	2.10	µg/L	12/31/2032
Pesticides	Atrazine	Water Column	60.0	µg/L	12/31/2032
Pesticides	Bifenthrin	Sediment	0.52	µg/g o.c.	12/31/2032
Pesticides	Chlorpyrifos	Water Column	0.023	µg/L	12/31/2032
Pesticides	Chlorpyrifos	Sediment	1.77	µg/g o.c.	12/31/2032
Pesticides	Clothianidin	Water Column	0.05	µg/L	12/31/2032
Pesticides	Cyanazine	Water Column	27.0	µg/L	12/31/2032
Pesticides	Cyfluthrin	Sediment	1.08	µg/g o.c.	12/31/2032
Pesticides	Cypermethrin	Sediment	0.38	µg/g o.c.	12/31/2032
Pesticides	Danitol (fenpropathrin)	Sediment	1.10	µg/g o.c.	12/31/2032
Pesticides	Demeton-s-methyl sulfoxide (oxydemeton-methyl)	Water Column	46	µg/L	12/31/2032
Pesticides	Diazinon	Water Column	0.105	µg/L	12/31/2032
Pesticides	Dichlorvos	Water Column	0.0058	µg/L	12/31/2032
Pesticides	Dimethoate	Water Column	0.50	µg/L	12/31/2032
Pesticides	Dinotefuran	Water Column	23.5	µg/L	12/31/2032
Pesticides	Disulfoton (Disyton)	Water Column	0.01	µg/L	12/31/2032
Pesticides	Diuron	Water Column	80.0	µg/L	12/31/2032
Pesticides	Esfenvalerate	Sediment	1.54	µg/g o.c.	12/31/2032
Pesticides	Fenvalerate	Sediment	1.54	µg/g o.c.	12/31/2032
Pesticides	Glyphosate	Water Column	26,600	µg/L	12/31/2032
Pesticides	Imidacloprid	Water Column	0.01	µg/L	12/31/2032
Pesticides	Cyhalothrin, lambda	Sediment	0.45	µg/g o.c.	12/31/2032
Pesticides	Linuron	Water Column	0.09	µg/L	12/31/2032
Pesticides	Malathion	Water Column	0.049	µg/L	12/31/2032
Pesticides	Methamidophos	Water Column	4.50	µg/L	12/31/2032
Pesticides	Methidathion	Water Column	0.66	µg/L	12/31/2032

Constituent Group	Constituent	Matrix	Limit[1]	Units[2]	Compliance Date
Pesticides	Paraquat	Water Column	< 36.9	µg/L	12/31/2032
Pesticides	Parathion-methyl	Water Column	0.25	µg/L	12/31/2032
Pesticides	Permethrin	Sediment	10.83	µg/g o.c.	12/31/2032
Pesticides	Phorate	Water Column	0.21	µg/L	12/31/2032
Pesticides	Phosmet	Water Column	0.80	µg/L	12/31/2032
Pesticides	Simazine	Water Column	40.0	µg/L	12/31/2032
Pesticides	Thiacloprid	Water Column	0.97	µg/L	12/31/2032
Pesticides	Thiamethoxam	Water Column	0.74	µg/L	12/31/2032
Pesticides	Trifluralin	Water Column	2.40	µg/L	12/31/2032
Toxicity	Sediment Toxicity	Sediment	No significant effect based on chronic or acute toxicity to applicable test organism	Survival, growth, and reproduction endpoints[3]	12/31/2032
Toxicity	Water Column Toxicity	Water Column	No significant effect based on chronic or acute toxicity to applicable test organism	Survival, growth, and reproduction endpoints[3]	12/31/2032
Toxicity	Toxic Units	Sediment	Sum of additive toxicity ≤ 1	Toxic Unit (TU)[4]	12/31/2032
Toxicity	Toxic Units	Water Column	Sum of additive toxicity ≤ 1	Toxic Unit (TU)[4]	12/31/2032

[1]Attachment A to this Order describes the sources of the limits established in this table.

[2]µg/L is micrograms per liter; µg/kg is micrograms per kilogram; ng/g is nanograms per gram; o.c. means normalized for sediment organic carbon content; ppb is parts per million.

[3]Toxicity determinations will be pass/fail based on a comparison of the test organism's response (survival, growth, and reproduction) to the water sample compared to the control using the Test of Significant Toxicity (TST statistical approach), or a statistical t-test, based on the toxicity provisions in the State Water Board *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries in California* (in draft). If a sample is declared "fail" (i.e., toxic) for any endpoint, then the limit is not met. The most sensitive test species for each constituent must be used when evaluating toxicity.

[4]Toxic units (TU) and/or additive toxicity units are calculated using the relevant biological indicators, e.g. LC50, CCC, or CMC as follows: Calculate additive toxicity for organophosphate pesticides in non-TMDL watersheds as defined in the TMDL for Chlorpyrifos and Diazinon in the Lower Salinas River Watershed; and calculate TUs for pyrethroid pesticides in non-TMDL watersheds as defined in the TMDL for Sediment Toxicity and Pyrethroids in the Lower Salinas River Watershed.

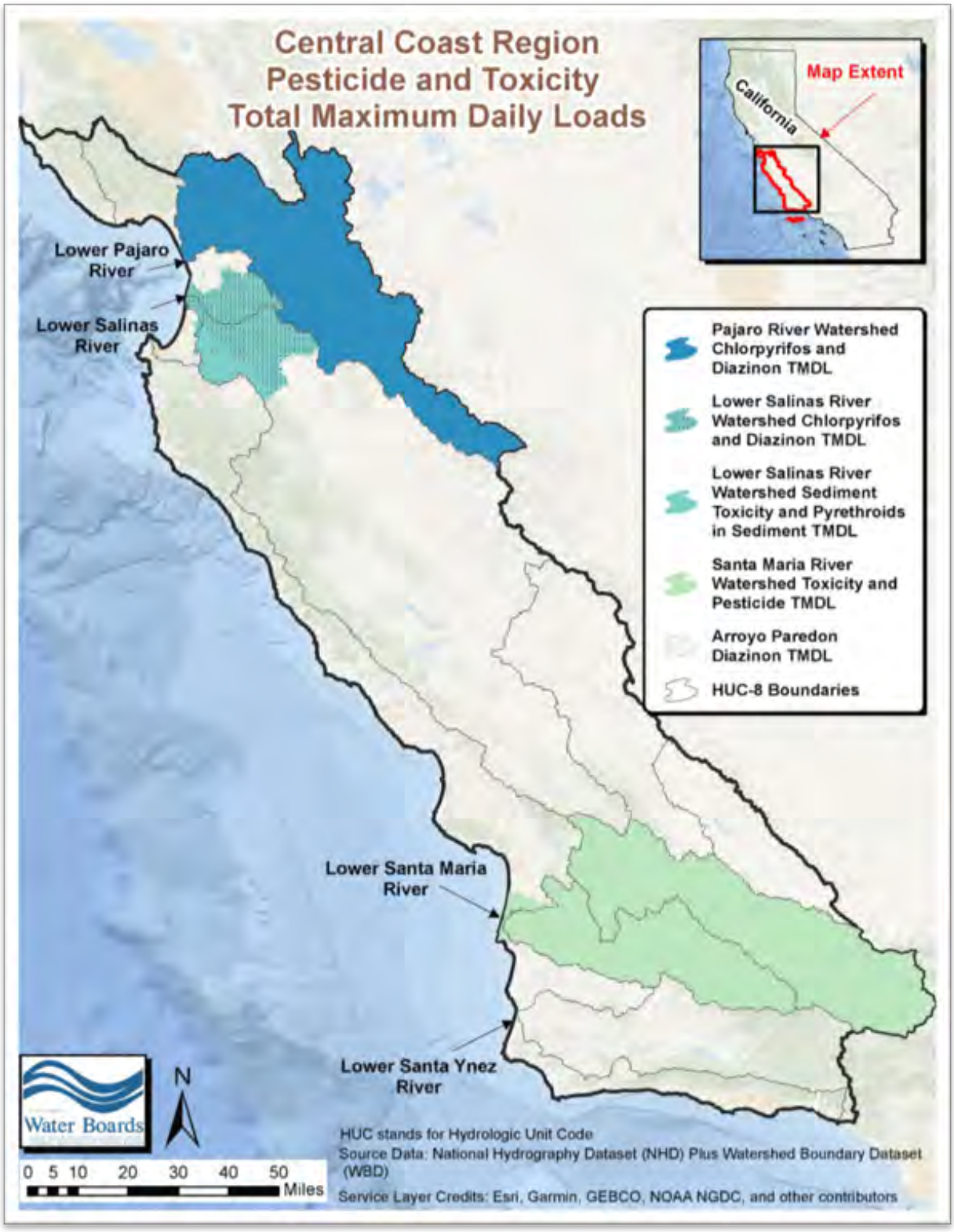

Figure C.3-3: Pesticide and Toxicity TMDL Areas

Table C.3-6. Compliance Dates for Sediment Limits (TMDL areas)

TMDL Project Name	Constituent	Limit[1]	Units	Compliance Date
Morro Bay Sediment TMDL	Sediment	285 – 6,662	Tons of sediment per year	12/3/2053
Pajaro River Watershed Sediment TMDL	Sediment	447 – 4,114	Tons of sediment per year	11/27/2051

[1]The Morro Bay Sediment TMDL and Pajaro River Watershed Sediment TMDL include load allocations for specific waterbody reaches within the TMDL project area. The limits for those TMDLs are summarized in this table as ranges; however, the exact load allocation values for each reach apply as described in the TMDL and Basin Plan and will be assessed as numeric limits for the purposes of this Order.

Table C.3-7. Compliance Dates for Turbidity Limits (Non-TMDL areas)

Constituent Group	Constituent	Beneficial Use	Limit	Units[1]	Compliance Date
Physical Parameters and General Chemistry	Turbidity	WARM	40.0	NTU	12/31/2032
Physical Parameters and General Chemistry	Turbidity	COLD	25.0	NTU	12/31/2032

[1]NTU is nephelometric turbidity units

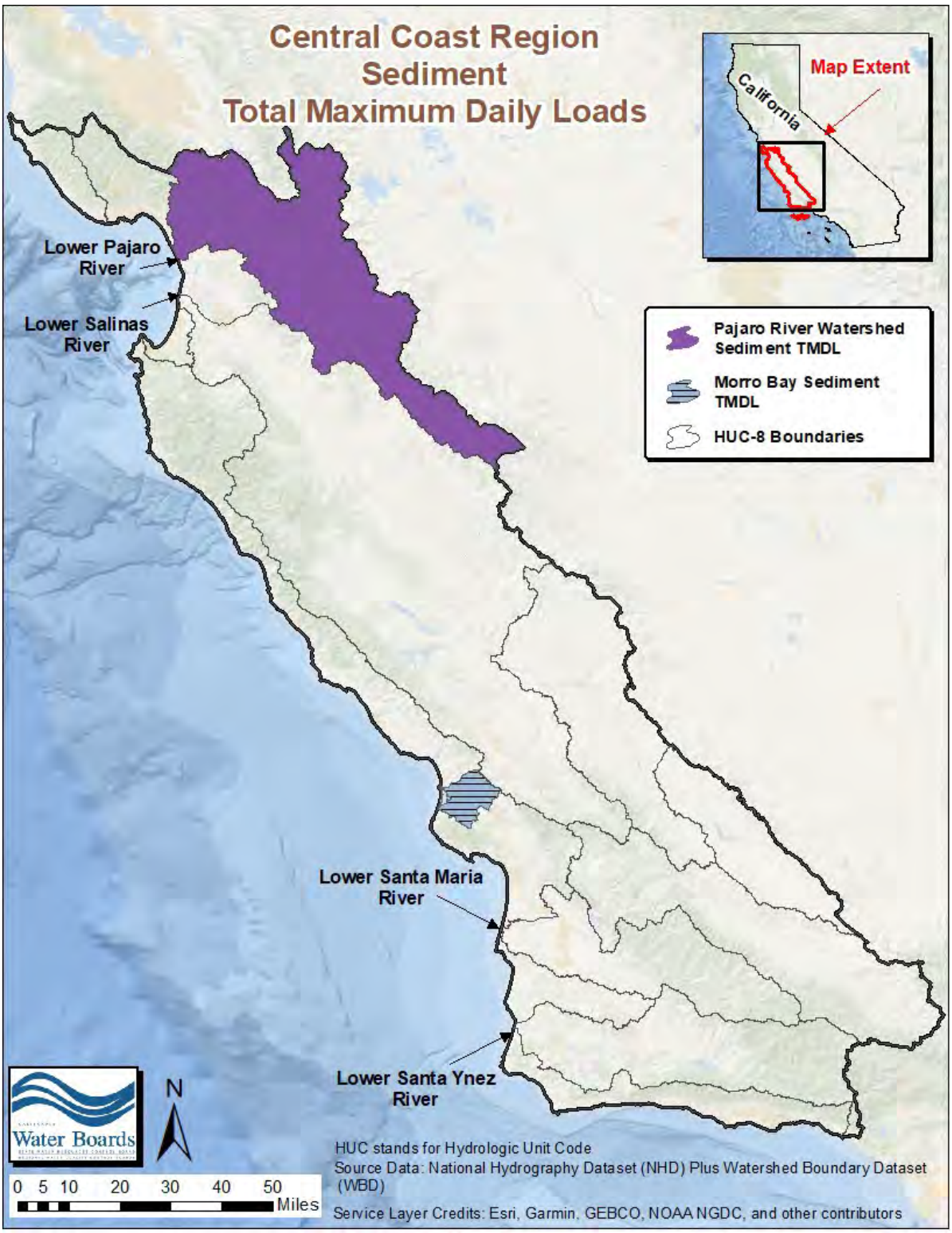

Figure C.3-4: Sediment TMDL Areas

Chapter 7
Appendix7-D

Interconnected Surface Water Monitoring Network

MONTGOMERY & ASSOCIATES

APPENDIX 7D. INTERCONNECTED SURFACE WATER MONITORING NETWORK

The interconnected surface water (ISW) monitoring network in the Salinas Valley Groundwater Basin is based on the approach recommended by the Environmental Defense Fund (EDF, 2018), which uses groundwater elevations as surrogates for streamflow depletion rates. EDF notes that the change in hydraulic gradient between stream stage and surrounding groundwater elevations is representative of variance in interconnection between surface water and groundwater. Thus, monitoring the gradient also monitors interconnection. The gradient will be monitored by measured shallow groundwater elevations.

The ISW monitoring network focuses on adding wells near USGS stream gauges and MCWRA River Series measurement sites, as shown in Figure 1. Existing wells from the MCWRA's groundwater elevation monitoring programs will be used for the ISW monitoring network. Criteria for selecting an existing monitoring well include (1) a total well depth of approximately 200 feet or less, and (2) recent (post-2014) measured groundwater elevations that are shallow (generally about 30 feet below land surface). SVBGSA has identified 10 existing monitoring wells that fit these criteria, shown in Figure 1. Where possible, an individual monitoring well should be located between the ISW and any pumping centers, and at a distance away from the Salinas River and its tributaries so groundwater levels are not strongly driven by surface water flows (EDF, 2018). However, active pumping wells are distributed throughout the Salinas Valley, including in close proximity to ISW locations and existing monitoring wells. Distance from the Salinas River was considered when selecting existing monitoring wells, and review of historical groundwater level and streamflow measurements indicate that groundwater elevations in the selected wells are not strongly driven by surface water flows. Additionally, the lateral and vertical extent of the Salinas Valley Aquitard (SVA) was considered in the selection of existing wells to add to the ISW monitoring network, as the monitoring network only applies to surface water connected to principal aquifers. The SVA separates the shallow sediments from the principal aquifers in most of the 180/400-Foot Aquifer Subbasin and becomes intermittent towards the Monterey and Eastside Aquifer Subbasins. In the 180/400-Foot Aquifer Subbasin, connection is likely between the shallow sediments and the 180-Foot Aquifer where the potential existing monitoring wells are located, based in part on limited lithologic information available from the DWR's Online System for Well Completion Reports. These existing wells provide the best available tools for establishing an initial network for monitoring impacts on ISW from groundwater pumping. SVBGSA is in the process of establishing this monitoring network, and the network will be adjusted during GSP implementation as needed, particularly if any wells are determined to be ineffective or inaccessible for this purpose.

Table 1 provides a summary of the 10 selected wells, their corresponding USGS gauge or MCWRA River Series measurement site, and distance to the Salinas River or its tributaries. SVBGSA will request access from MCWRA to each well's groundwater elevation records and permission to add to the ISW monitoring network.

Table 1. Potential Existing Interconnected Surface Water Monitoring Wells

Well Name	Well Depth (ft)	Reference Point (ft)	Corresponding USGS Stream Gauge/ MCWRA River Series Measurement Site	Subbasin
16S/04E-08H02	295	75.2	USGS Gauge in Salinas River near Chualar	180/400-Foot
16S/05E-31P02	115	118.2	River Series Site at Gonzalez	180/400-Foot
17S/06E-33R02	120	194.6	USGS Gauge in Salinas River at Soledad USGS Gauge in Arroyo Seco below Reliz Creek near Soledad	Forebay
18S/06E-03P01	195	189.0	USGS Gauge in Salinas River at Soledad USGS Gauge in Arroyo Seco below Reliz Creek near Soledad	Forebay
18S/07E-32G02	150	252.0	River Series Site at Greenfield	Forebay
19S/07E-14H01	200	261.0	N/A (in Upper Valley near border with Forebay)	Upper Valley
20S/08E-07F01	189	292.4	River Series Site at King City	Upper Valley
21S/09E-16E01	100	358.0	River Series Site at San Lucas	Upper Valley
22S/10E-16P01	178	425.0	N/A (in between Bradley USGS Gauge and San Lucas River Series Site)	Upper Valley
23S/10E-14D01	142	462.7	USGS Gauge in Salinas River near Bradley	Upper Valley

*No well depth available, instead the depth of the bottom of screen interval is provided.

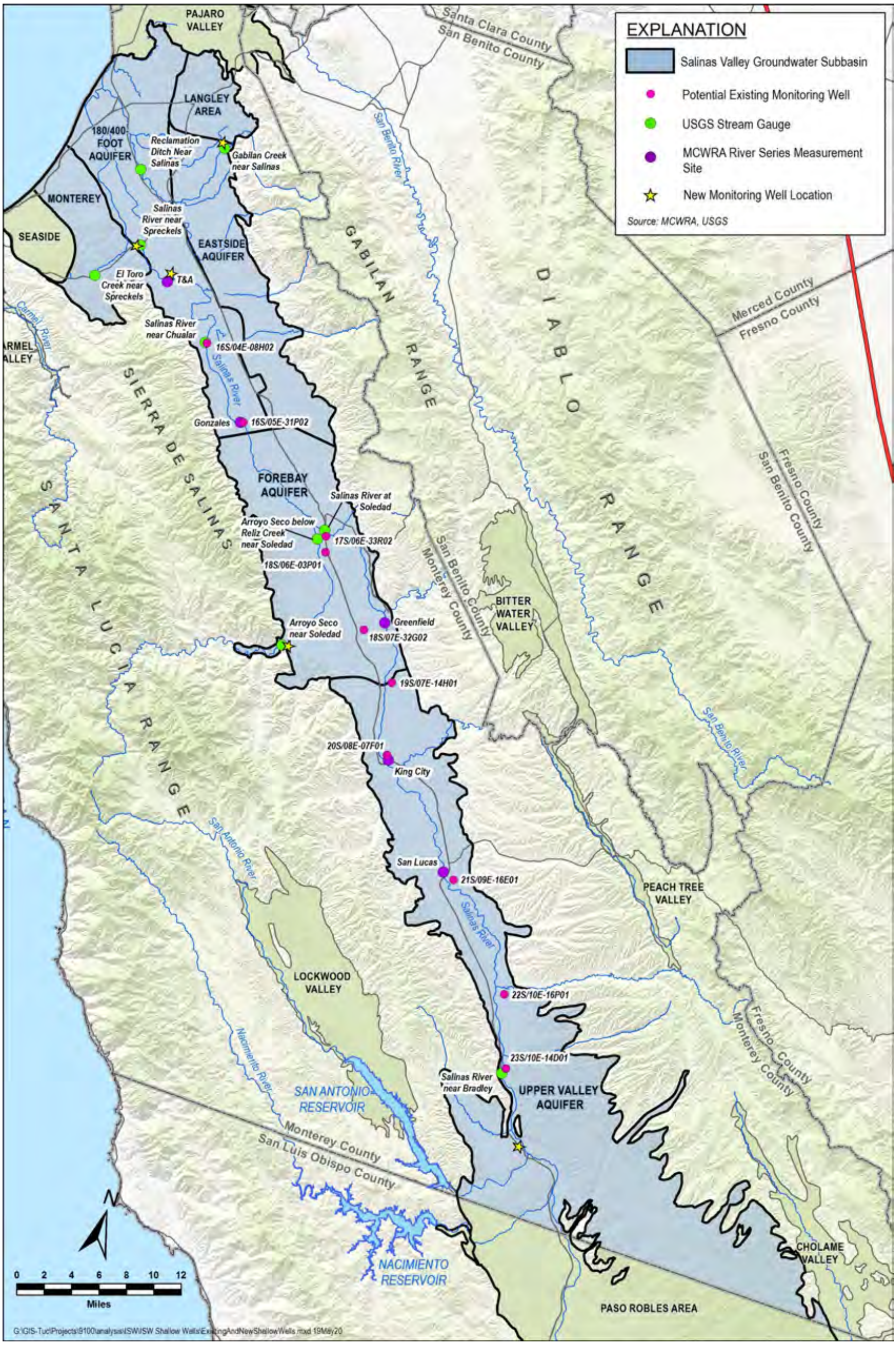

Figure 1. Locations of USGS Stream Gauges, MCWRA River Series Measurement Sites, Potential Existing Interconnected Surface Water Monitoring Wells, and Proposed New Interconnected Surface Water Monitoring Wells

Data gaps in the ISW monitoring network exist despite the identification of 10 existing monitoring wells. The SVBGSA will install new wells to fill these data gaps, as shown in Figure 1. As mentioned in the 180/400-Foot Aquifer Subbasin GSP, SVBGSA will drill and install up to two new wells for ISW monitoring in the Subbasin. SVBGSA will also drill one new shallow groundwater elevation monitoring well in each of the Eastside Aquifer, Forebay Aquifer, and Upper Valley Aquifer Subbasins:

- Eastside Aquifer Subbasin: Located along Gabilan Creek, which has a USGS gage located nearby in the Eastside Aquifer Subbasin.
- Forebay Aquifer Subbasin: Located along the upper Arroyo Seco, near the USGS gage on the Arroyo Seco. This area is a potential steelhead refugia.
- Upper Valley Aquifer Subbasin: Located along the Salinas River near the southern boundary of the basin, downstream of the San Antonio and Nacimiento Rivers.

If feasible, the new ISW monitoring wells will be installed in conjunction with the new wells needed to fill the data gaps in the groundwater elevation monitoring networks in the 180/400-Foot Aquifer, Eastside Aquifer, Forebay Aquifer, and Upper Valley Aquifer Subbasins that are discussed in Chapter 7.

Chapter 8
Appendix 8-A

Hydrographs with Minimum Thresholds and Measurable Objectives

Hydr_17S_05E-02N04 3
Hydr_17S_05E-03R50 4
Hydr_17S_05E-04R01 5
Hydr_17S_05E-06Q01 6
Hydr_17S_05E-08L02 7
Hydr_17S_05E-09R01 8
Hydr_17S_05E-12E01 9
Hydr_17S_05E-27A01 10
Hydr_17S_05E-36F02 11
Hydr_17S_06E-16N01 12
Hydr_17S_06E-19D01 13
Hydr_17S_06E-27K01 14
Hydr_17S_06E-29C01 15
Hydr_17S_06E-33R01 16
Hydr_17S_06E-33R02 17
Hydr_17S_06E-35J01 18
Hydr_18S_06E-01E01 19
Hydr_18S_06E-02N01 20
Hydr_18S_06E-05R03 21
Hydr_18S_06E-06M01 22
Hydr_18S_06E-11J01 23
Hydr_18S_06E-16L01 24
Hydr_18S_06E-22B02 25
Hydr_18S_06E-22B03 26
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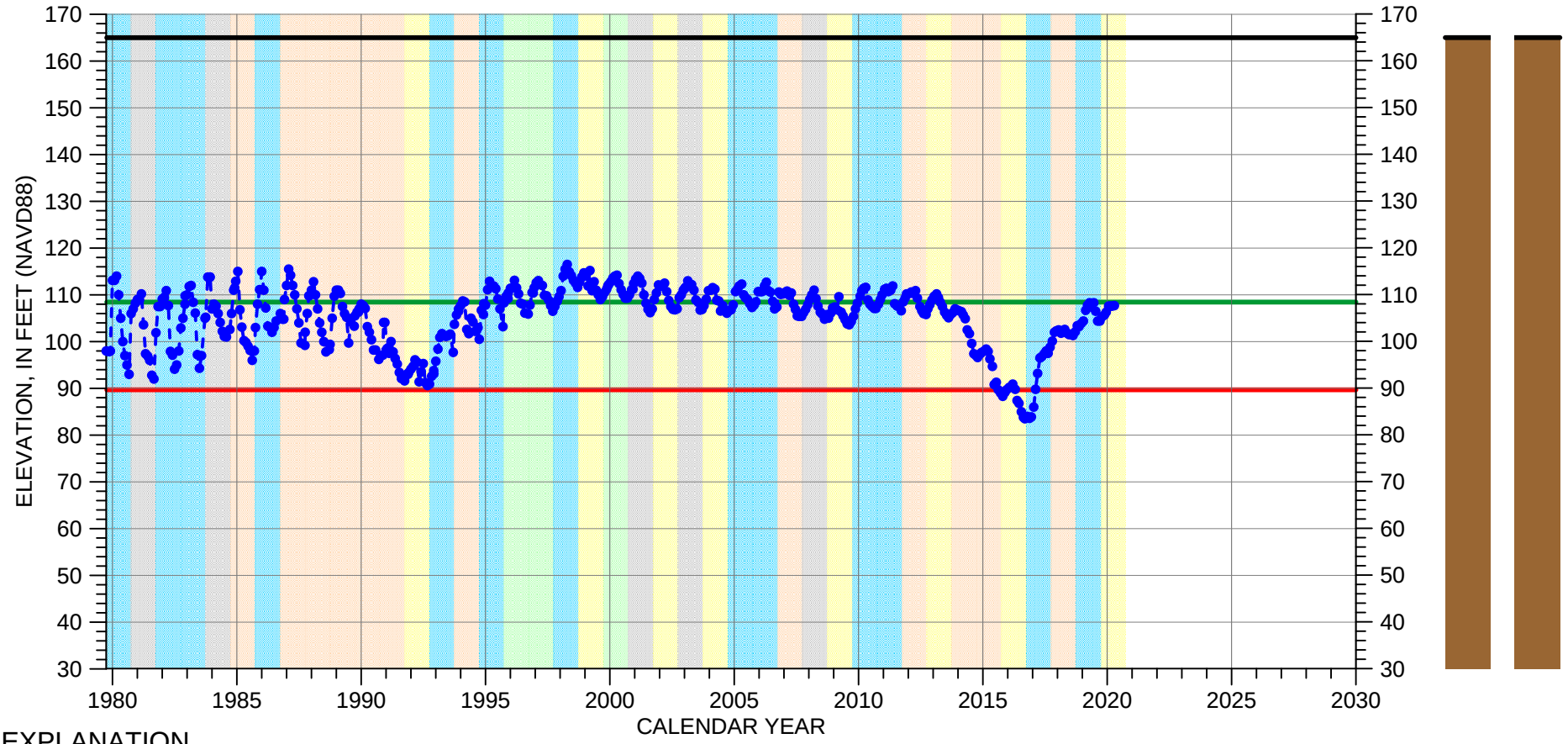
Hydr_18S_06E-24M01 28
Hydr_18S_06E-24M02 29
Hydr_18S_06E-25F01 30
Hydr_18S_06E-34B01 31
Hydr_18S_06E-35F01 32

Hydr_18S_06E-35F02 33
Hydr_18S_07E-19G02 34
Hydr_18S_07E-20K01 35
Hydr_18S_07E-28K01 36
Hydr_19S_06E-01H01 37
Hydr_19S_06E-11C01 38
Hydr_19S_07E-04Q01 39
Hydr_19S_07E-05B02 40
Hydr_19S_07E-10P01 41

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-02N04

Forebay Aquifer Subbasin

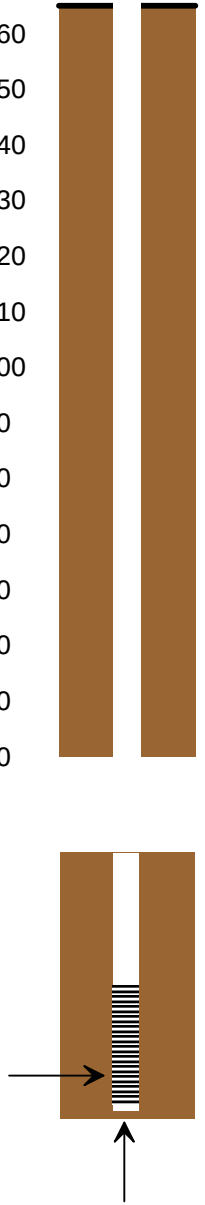


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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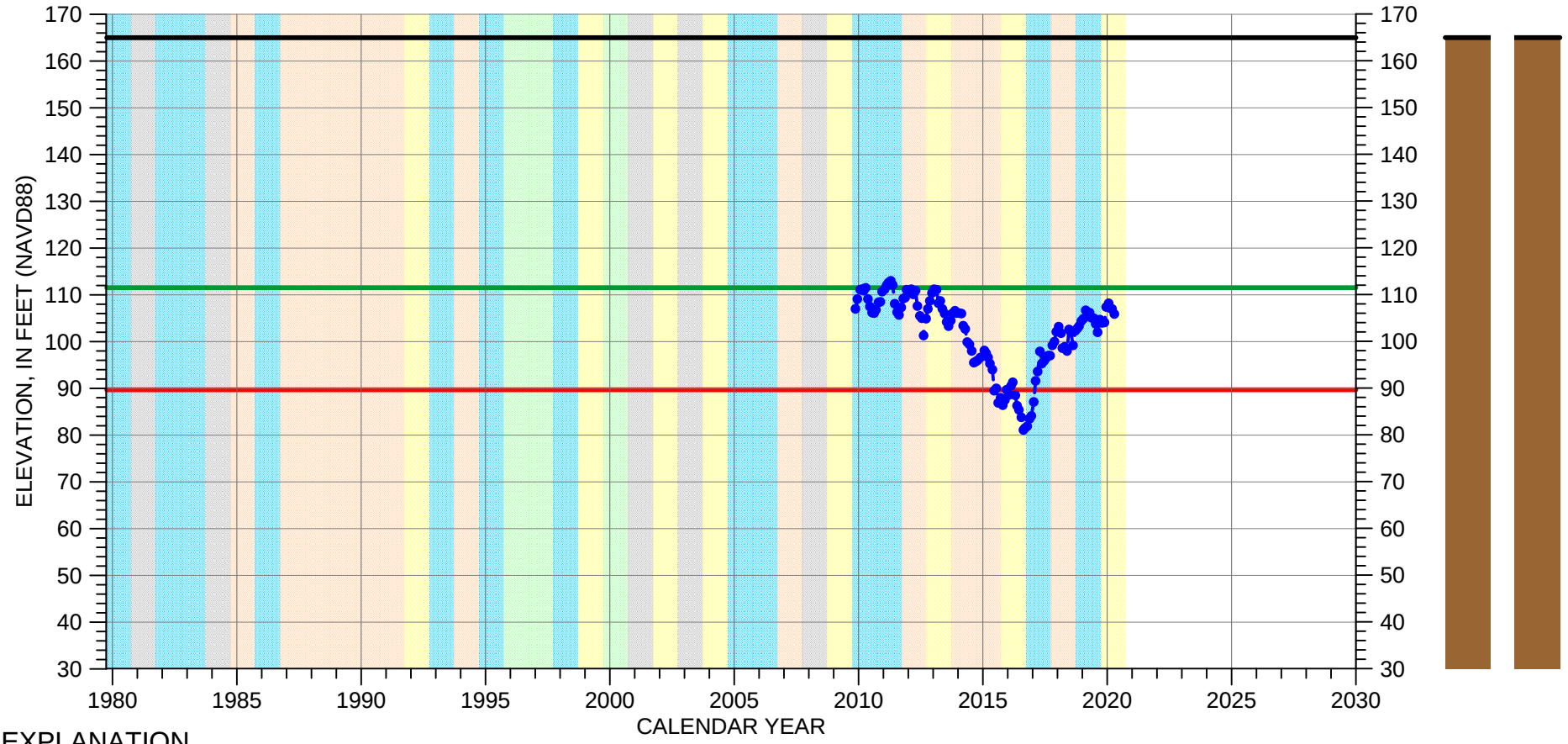
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-03R50

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Perforated interval unknown

Well bottom -645 feet msl

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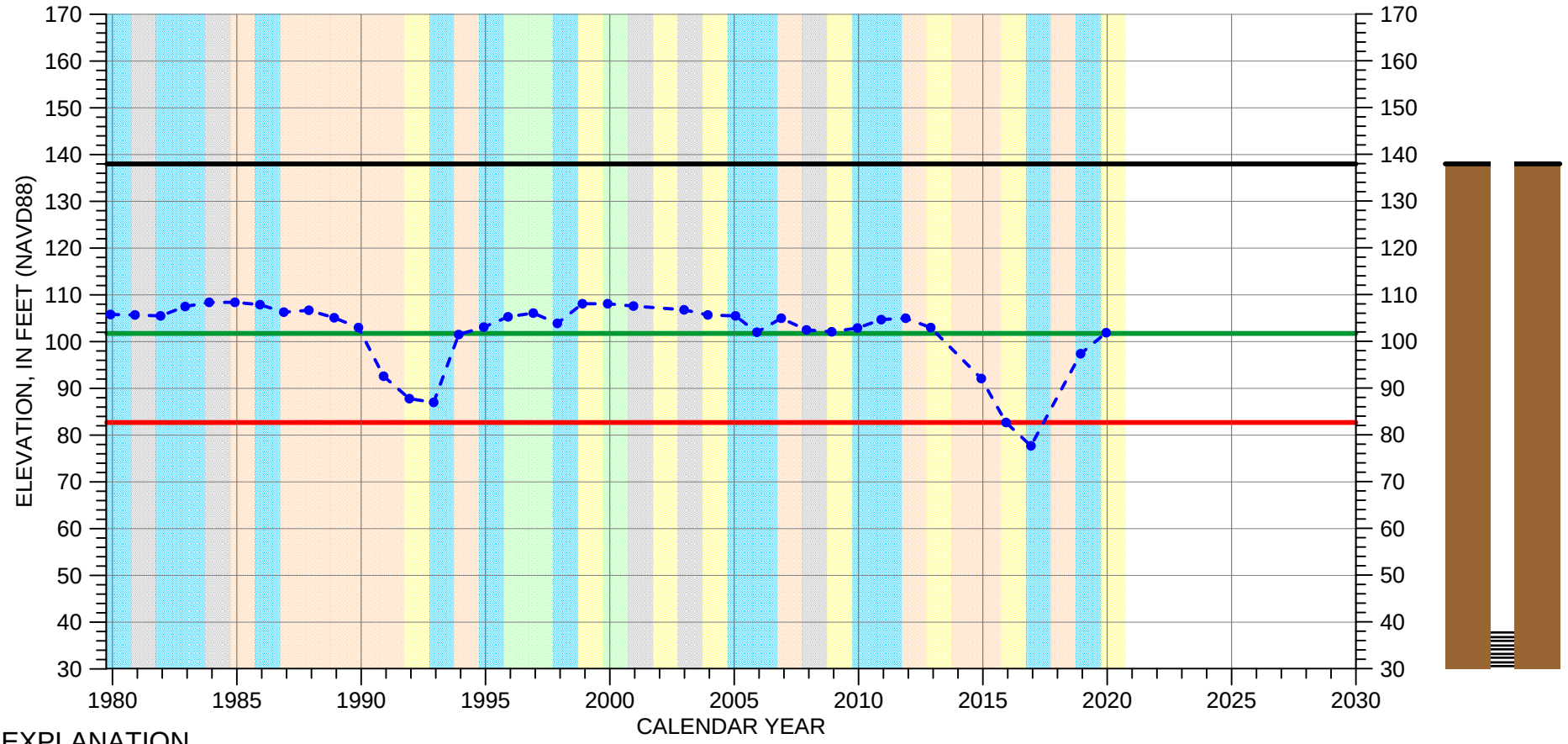
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-04R01

Forebay Aquifer Subbasin

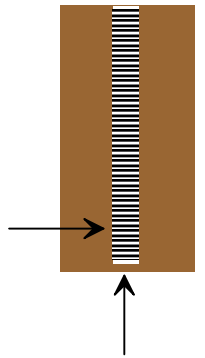


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



Multiple perforated intervals from 38 to -280 feet msl

Well bottom -304 feet msl

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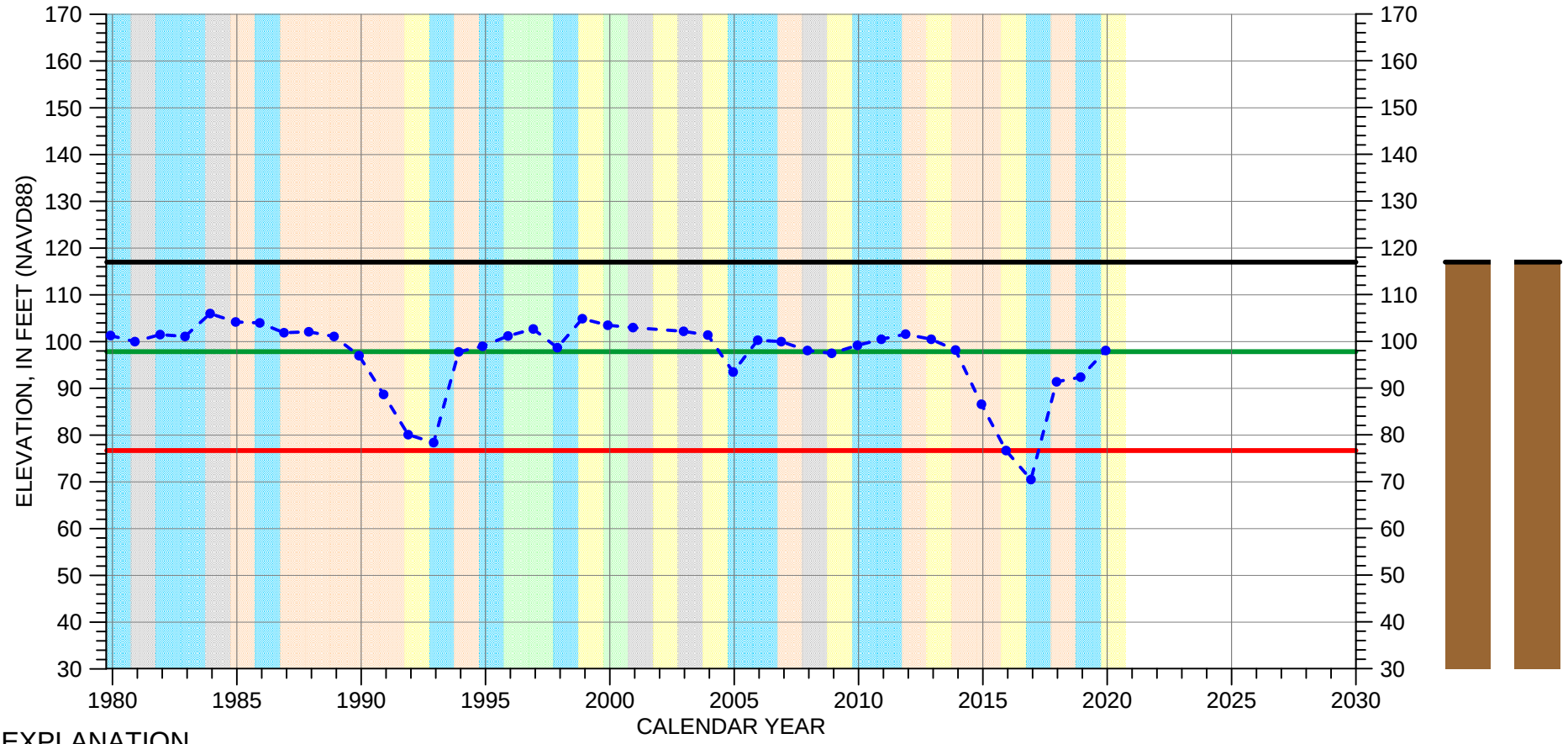
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-06Q01

Forebay Aquifer Subbasin

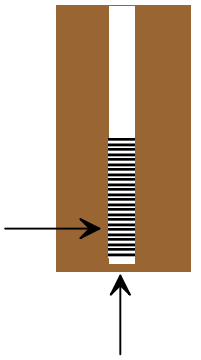


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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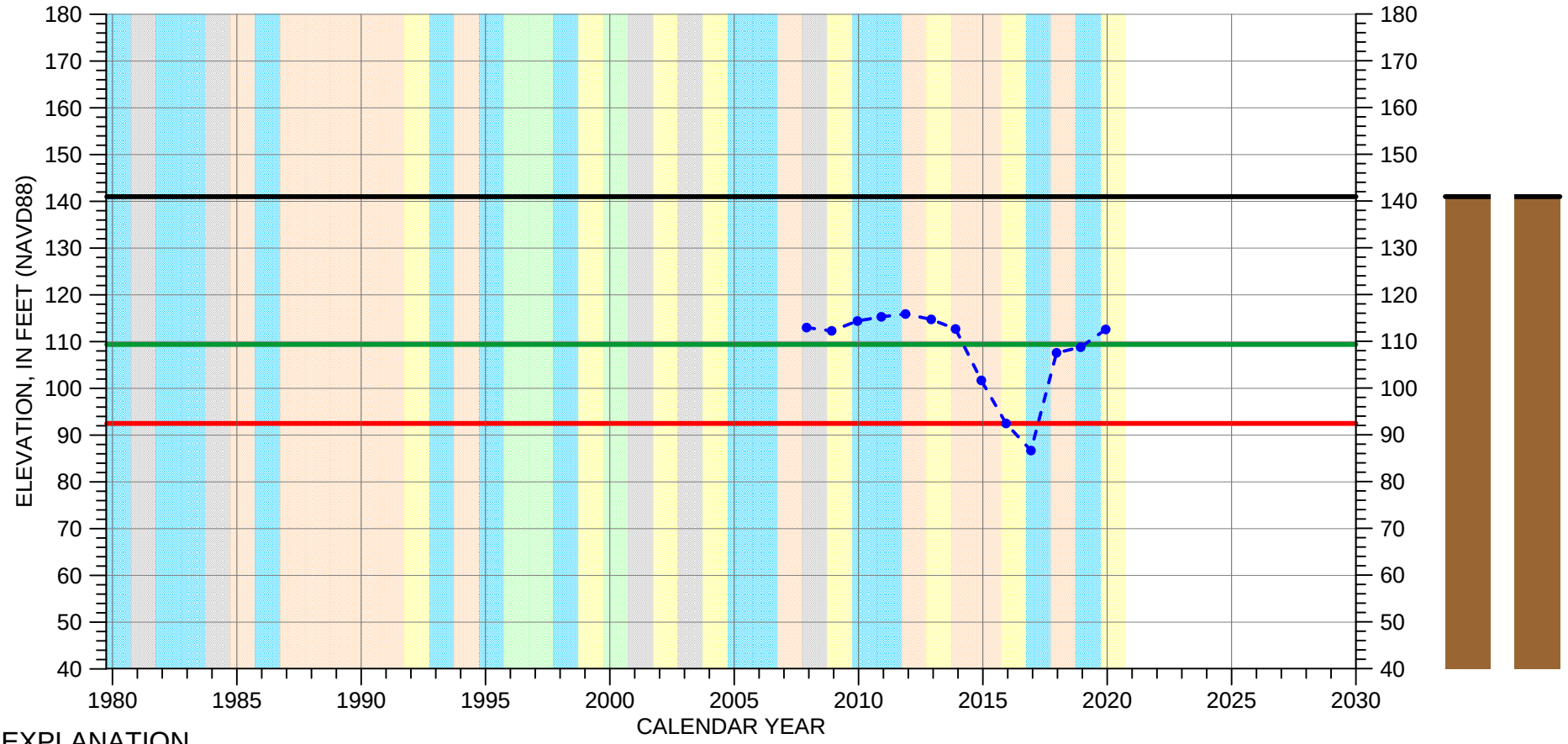
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-08L02

Forebay Aquifer Subbasin

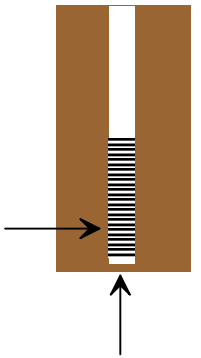


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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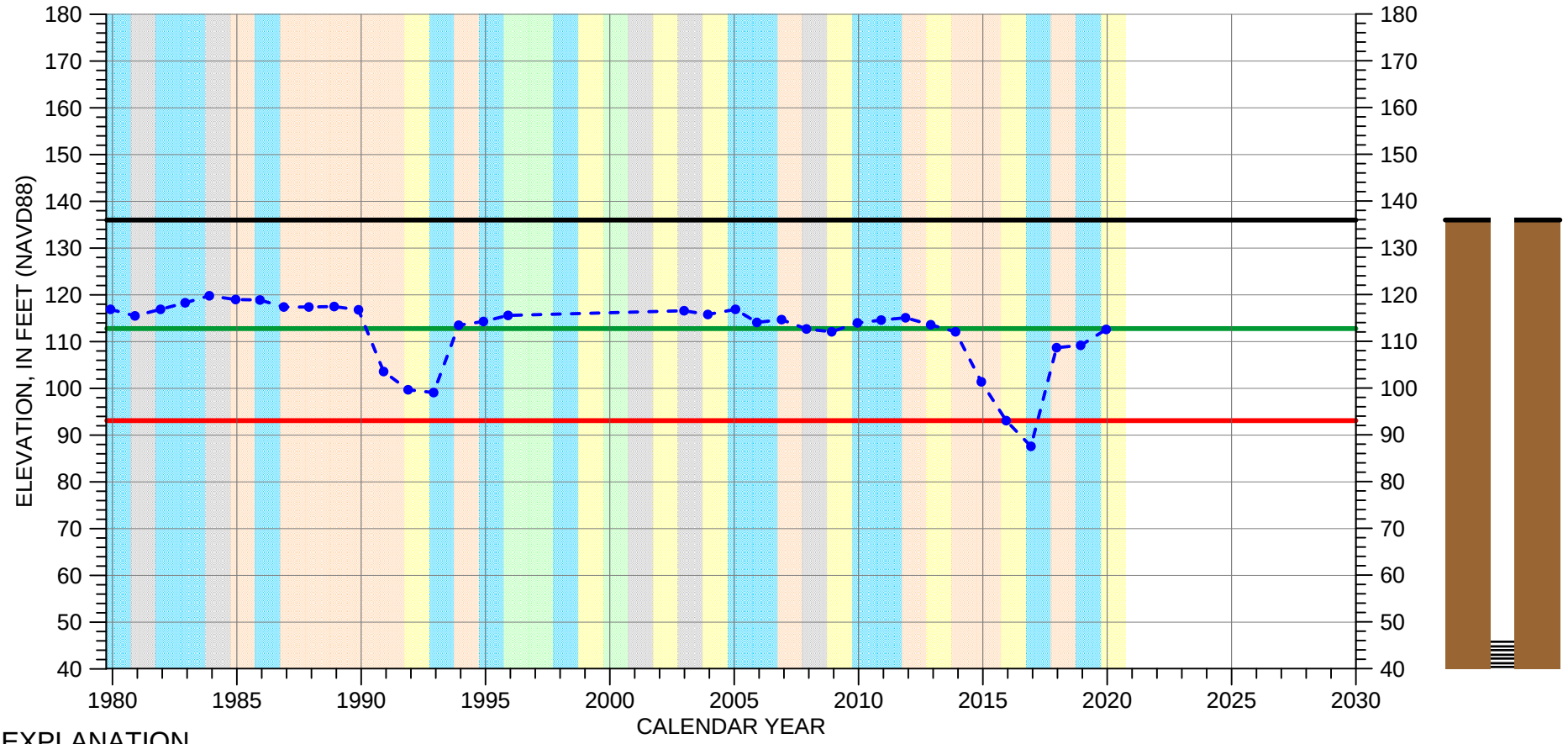
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-09R01

Forebay Aquifer Subbasin

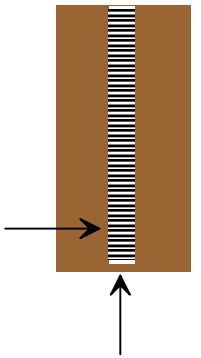


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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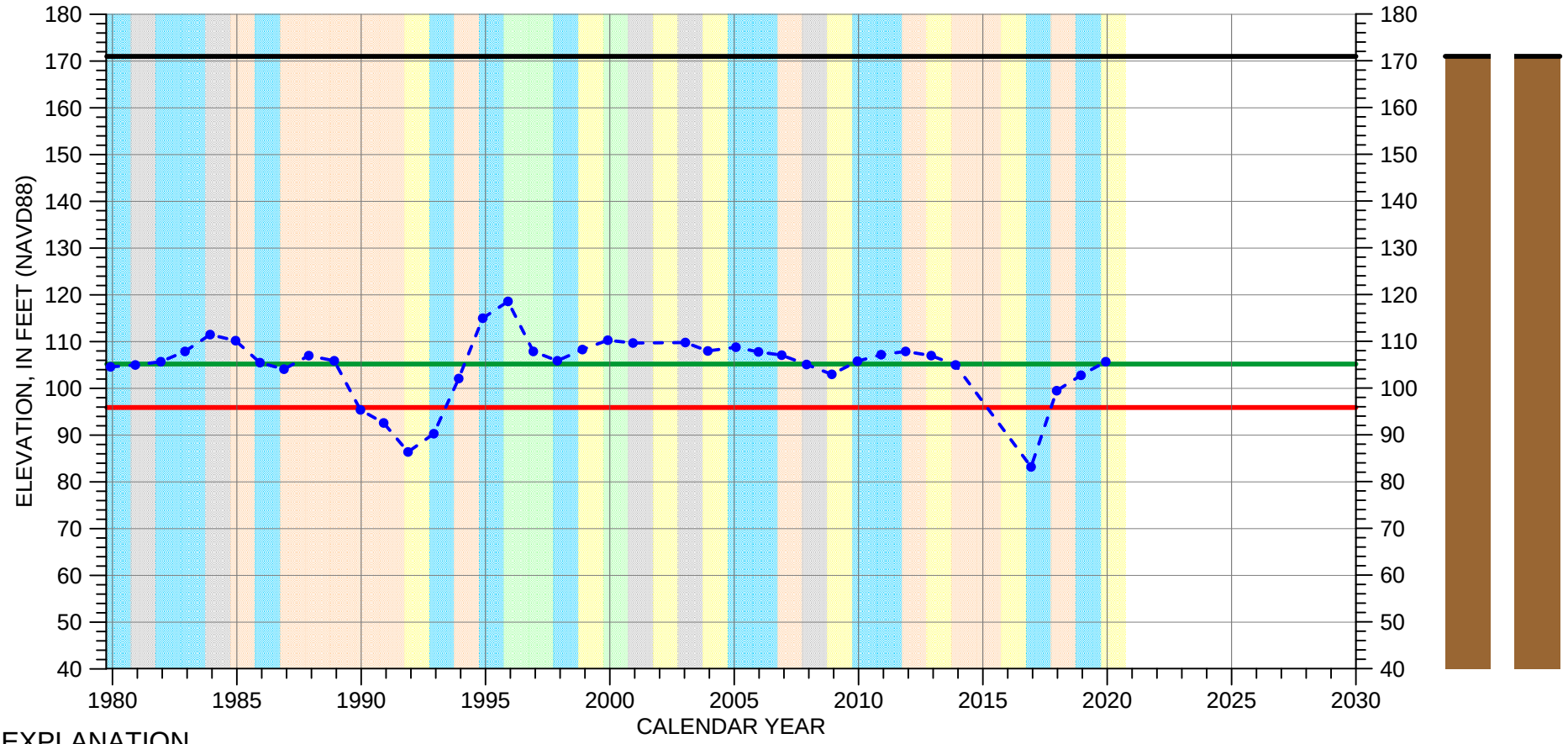
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-12E01

Forebay Aquifer Subbasin

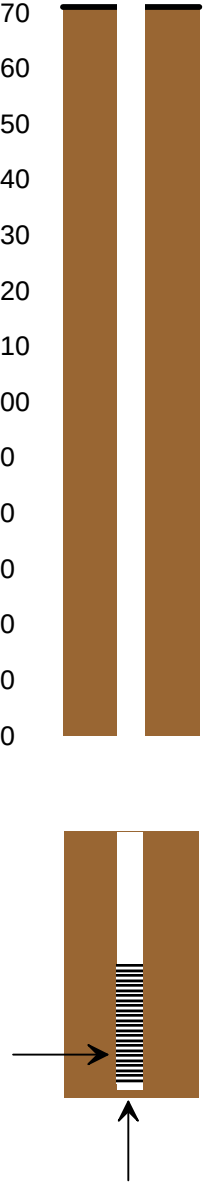


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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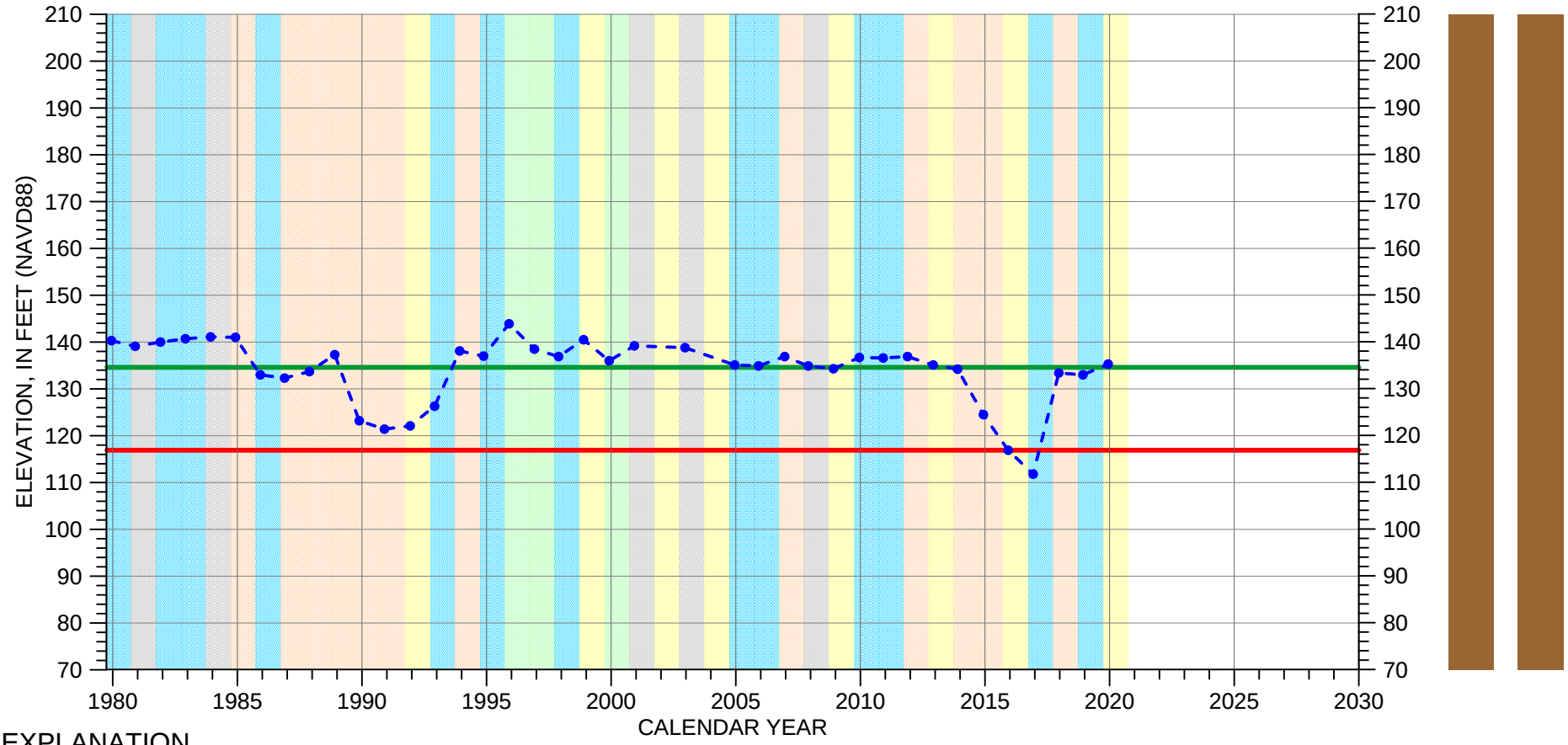
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-27A01

Forebay Aquifer Subbasin

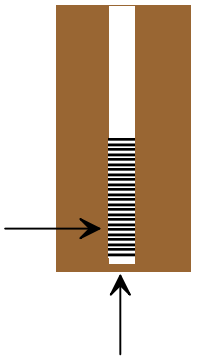


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (263 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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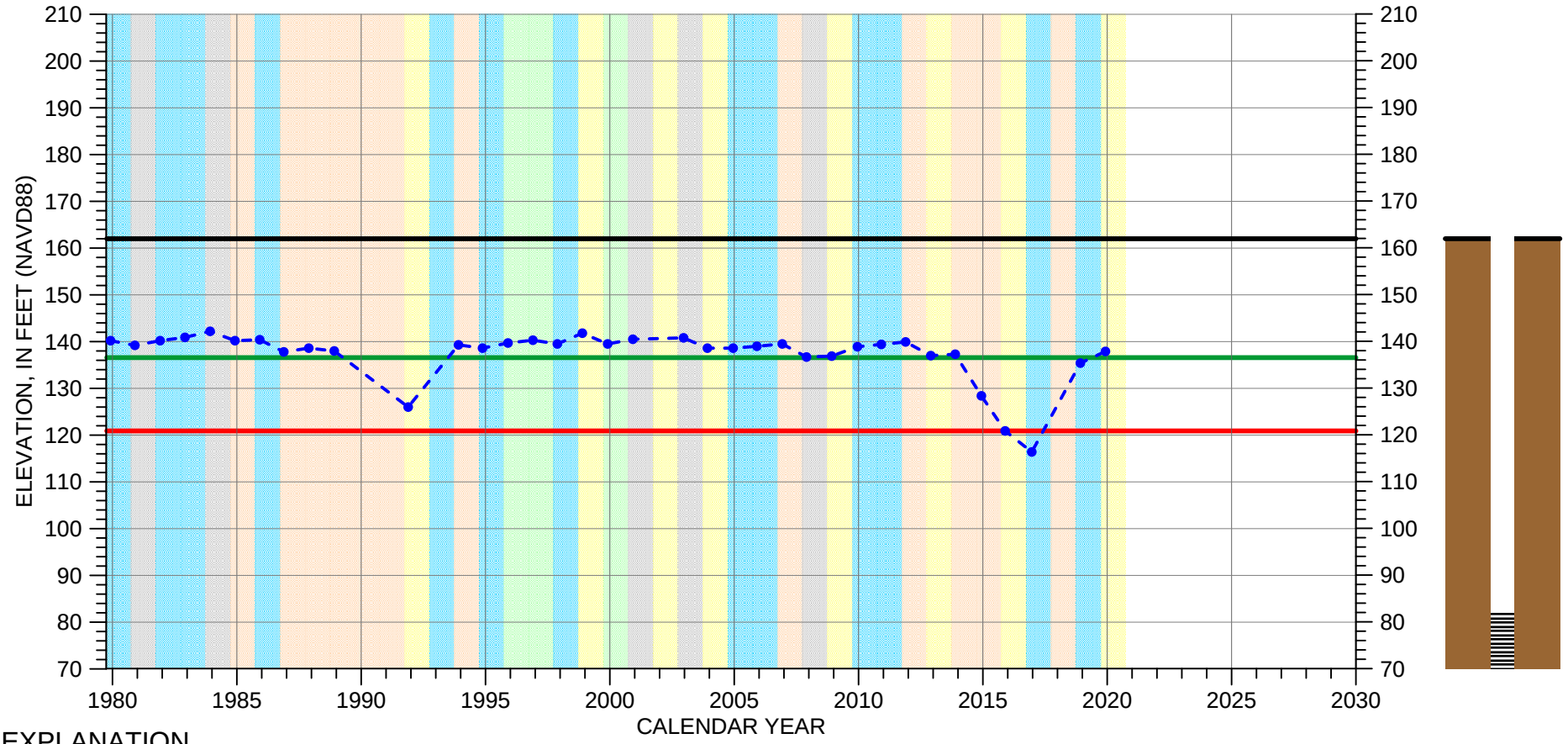
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-36F02

Forebay Aquifer Subbasin

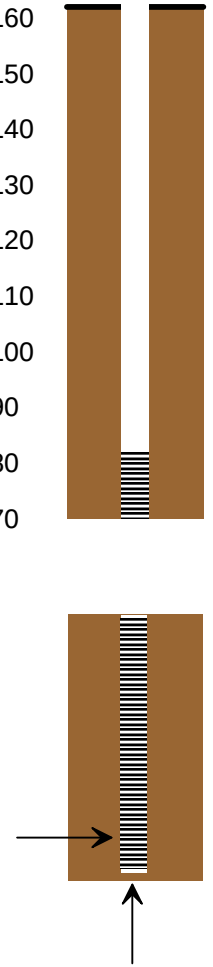


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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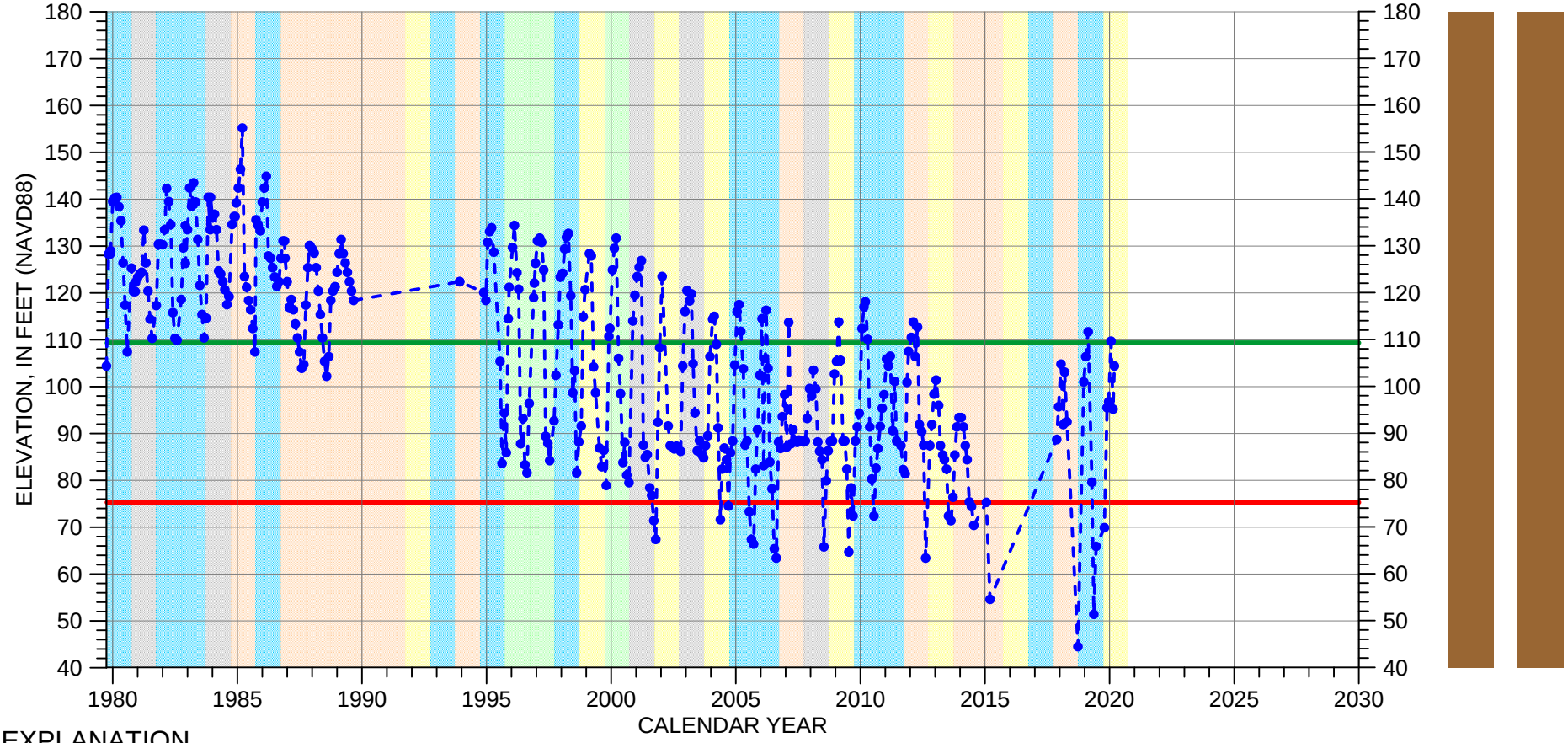
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-16N01

Forebay Aquifer Subbasin

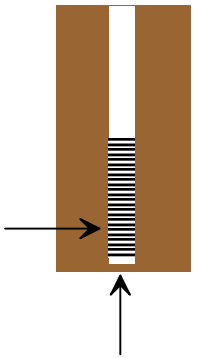


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (232 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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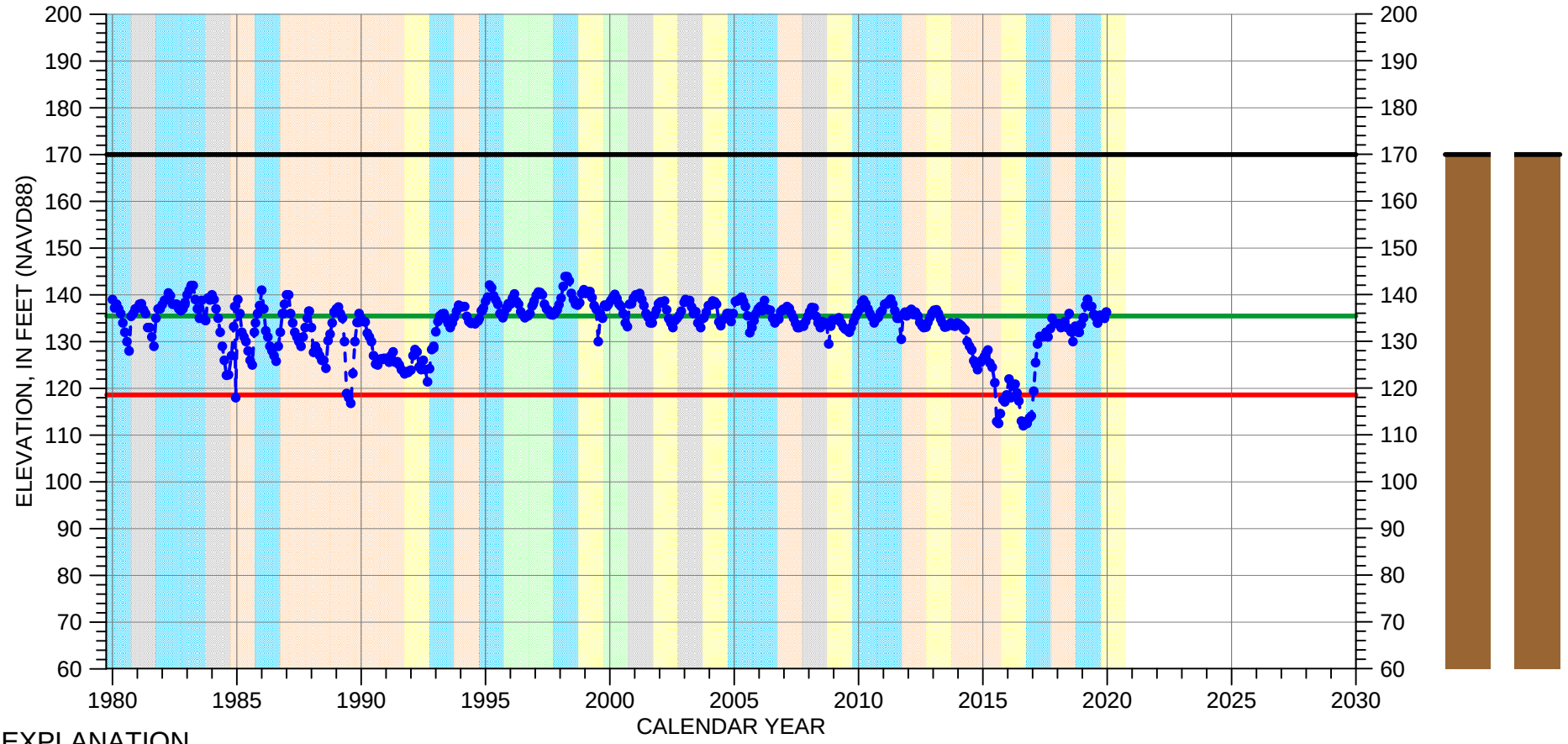
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-19D01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

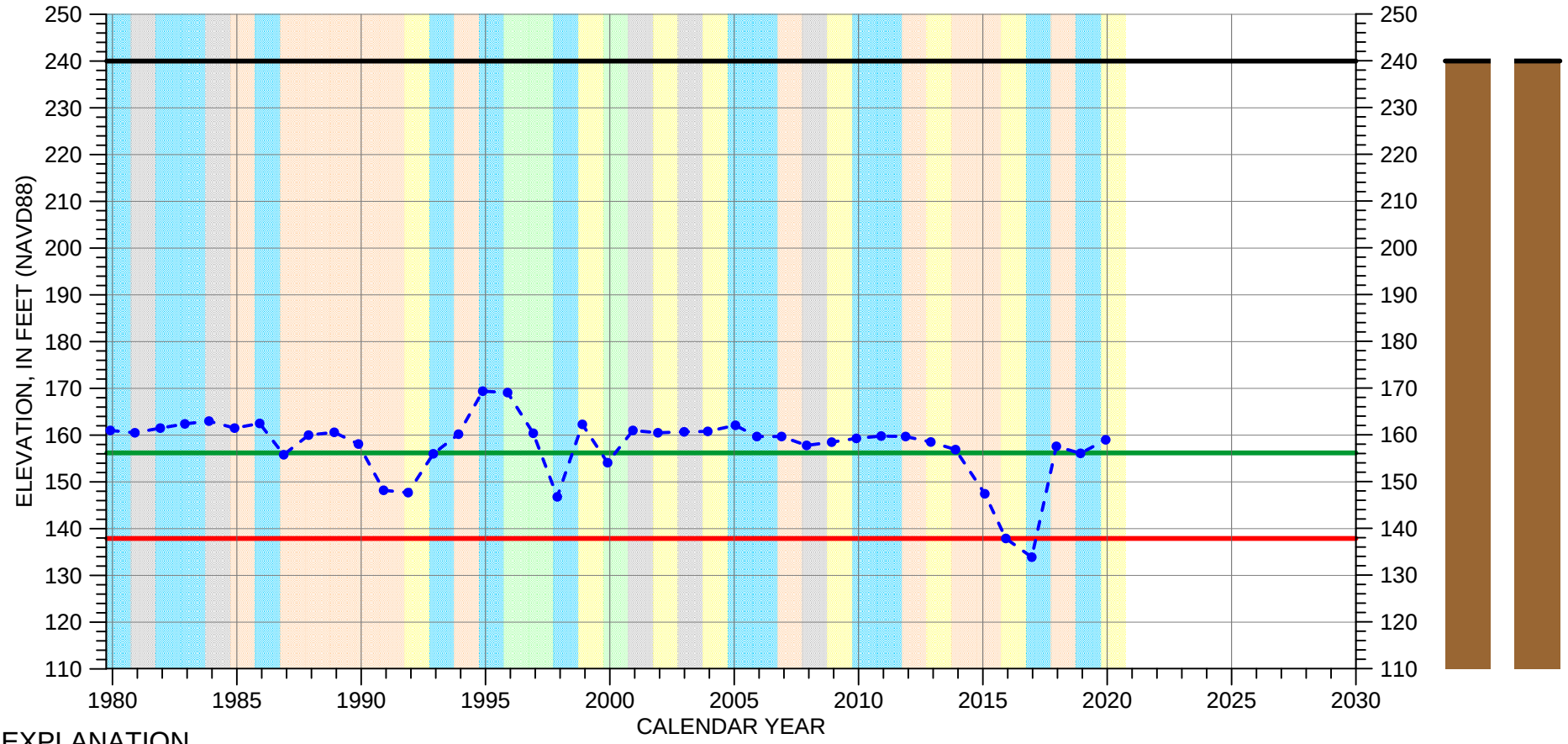
Perforated interval unknown

Well bottom -82 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\gsp\valley-wide\Chapter_5\Hydrographs\GRFs\17S_06E-19D01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-27K01

Forebay Aquifer Subbasin

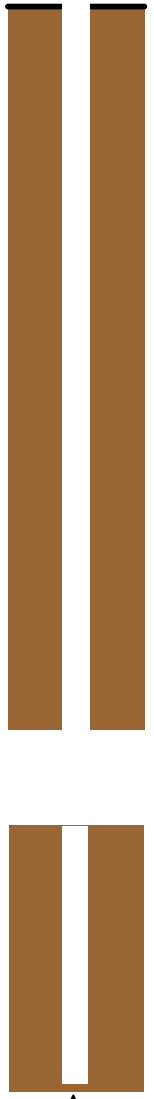


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



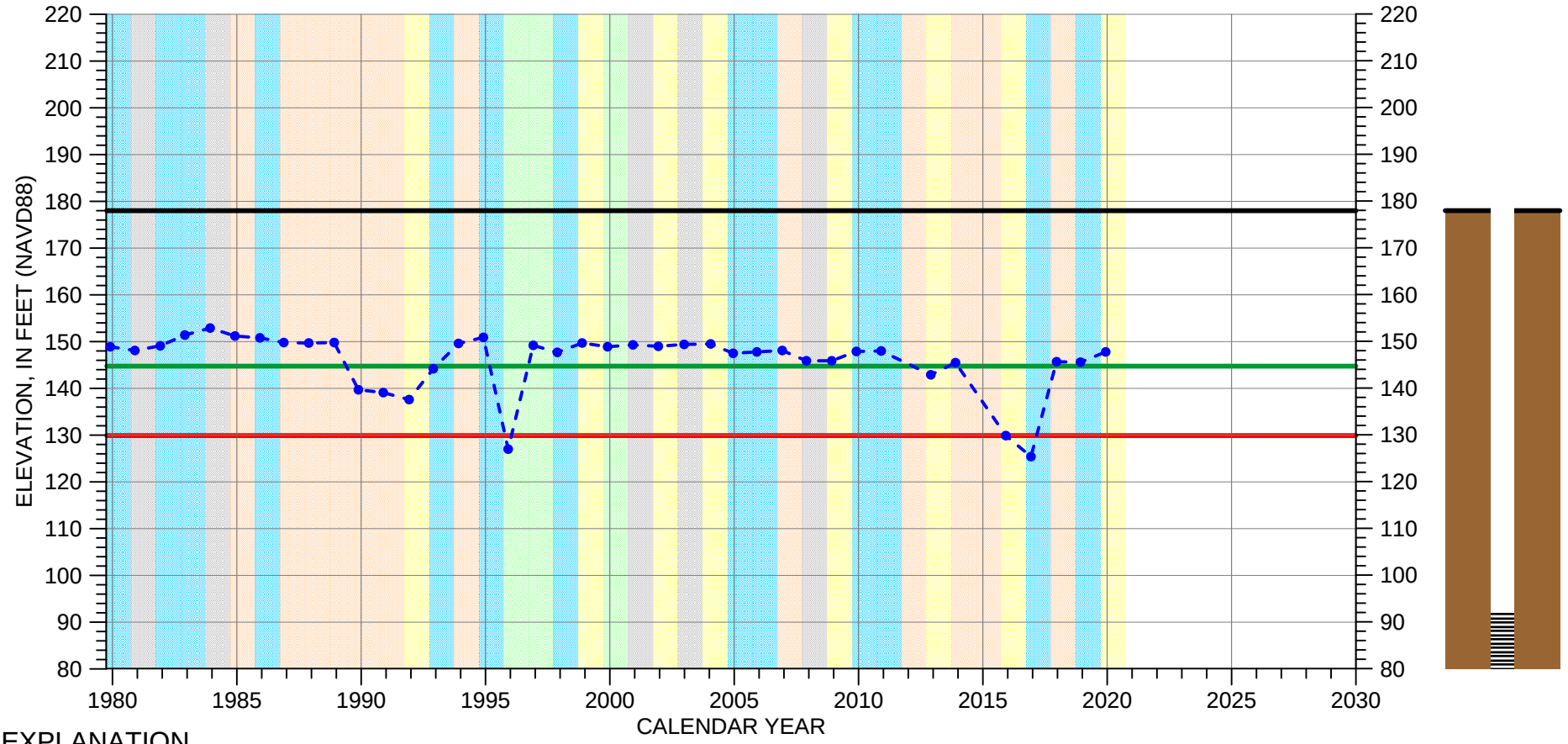
Perforated interval unknown

Well bottom -10 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\gsp\valley-wide\Chapter_5\Hydrographs\GRFs\17S_06E-27K01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-29C01

Forebay Aquifer Subbasin

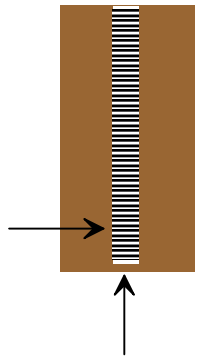


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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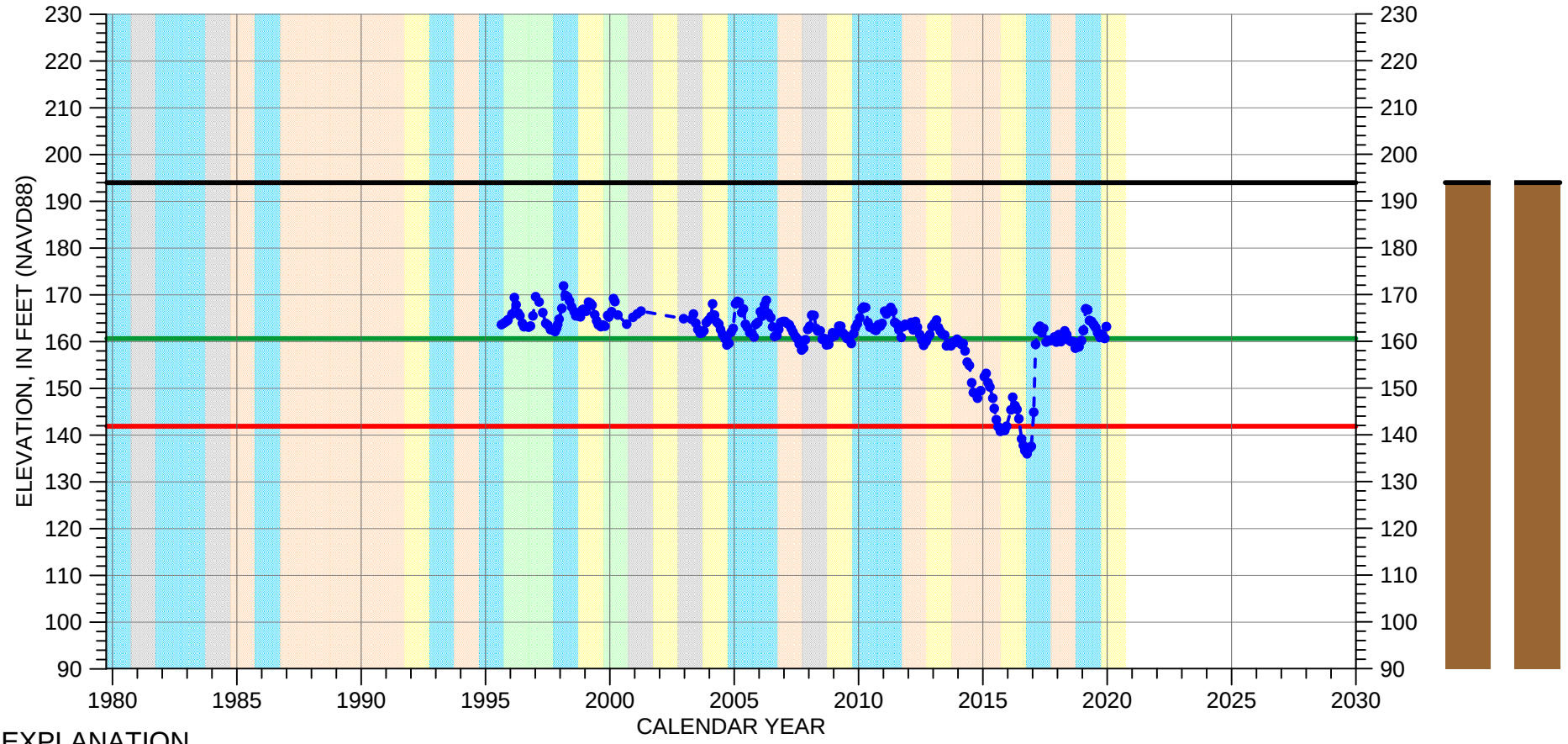
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-33R01

Forebay Aquifer Subbasin

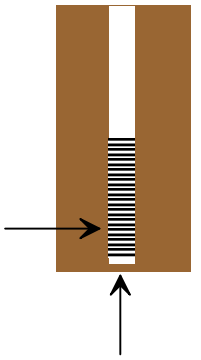


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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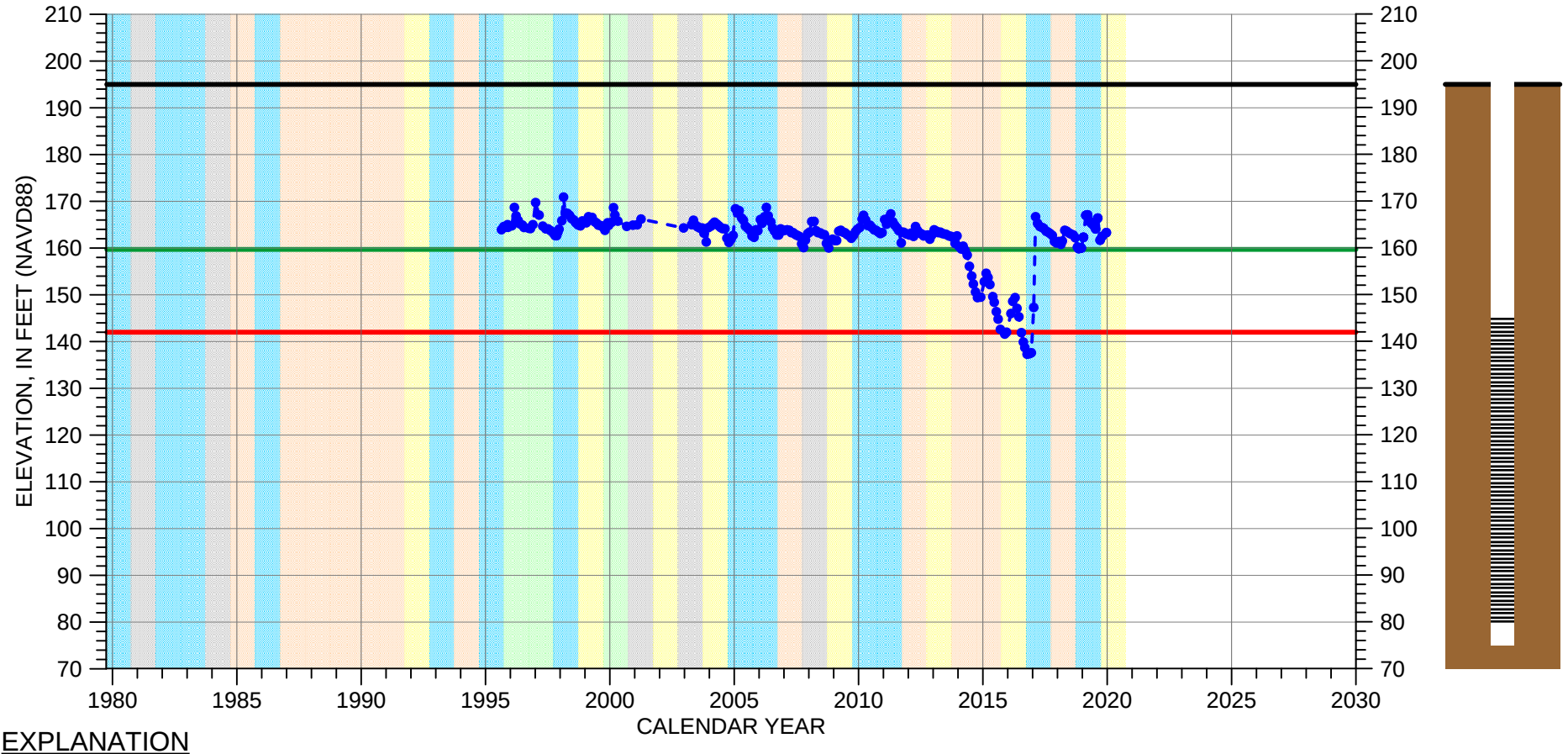
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-33R02

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

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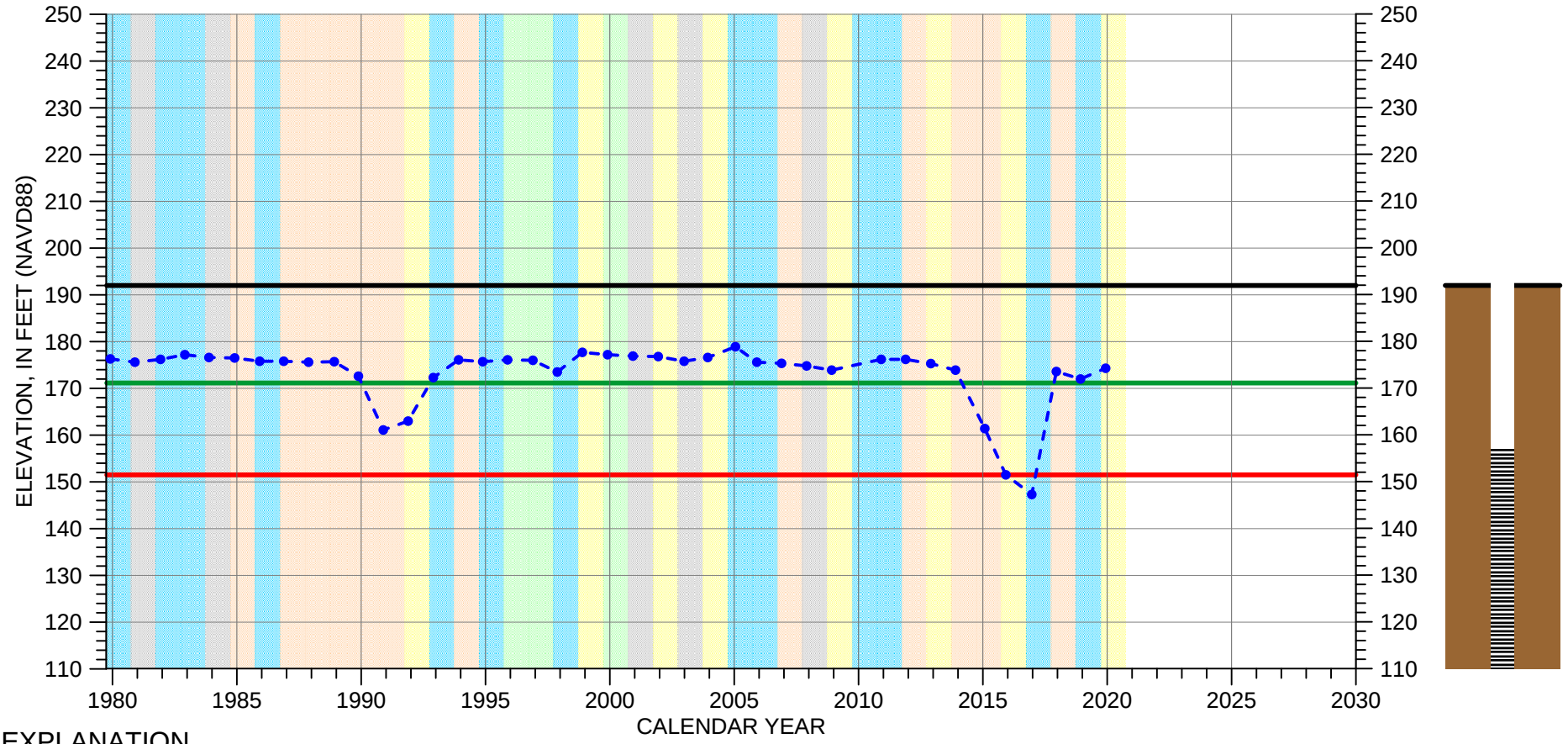
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/06E-35J01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

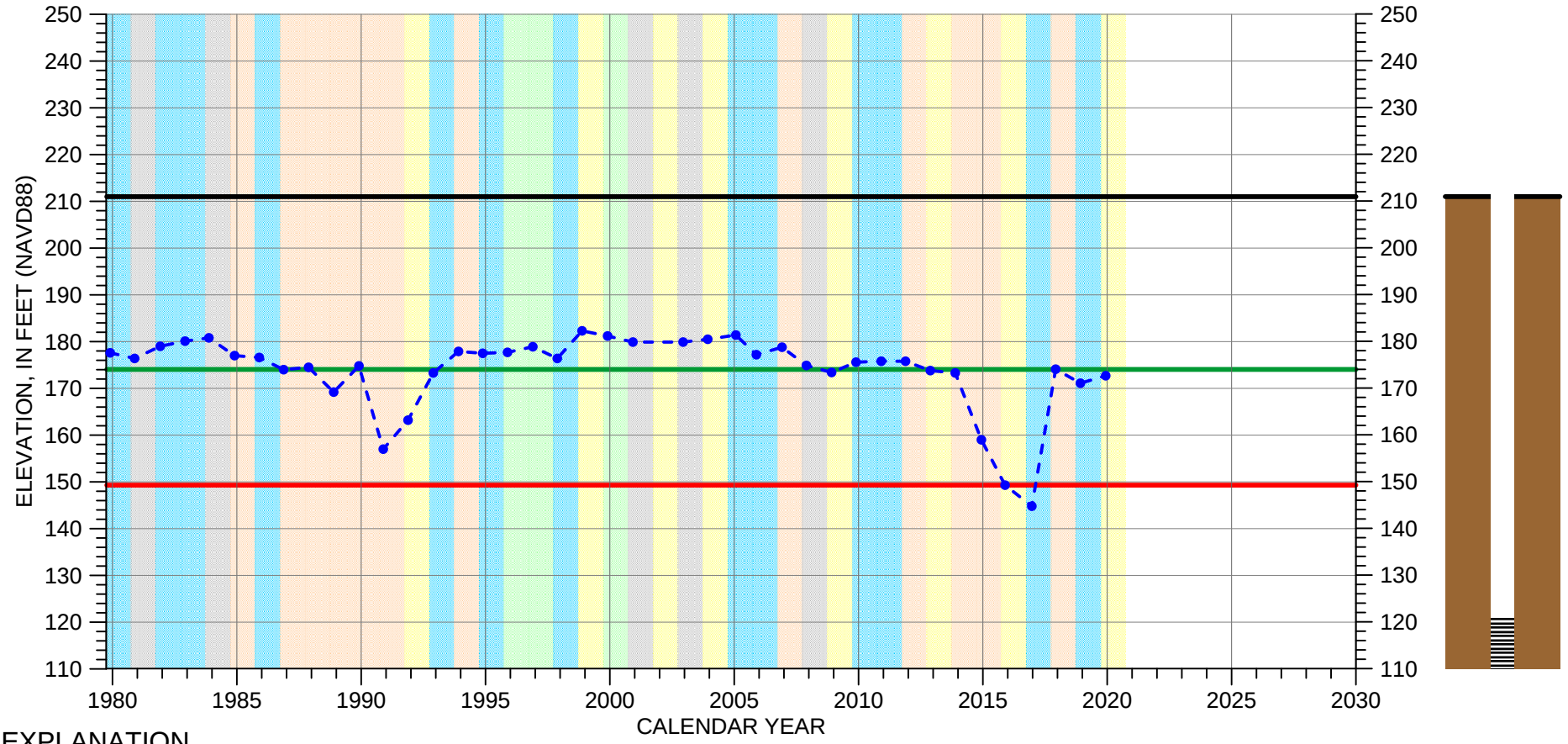
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\gsp\valley-wide\Chapter_5\Hydrographs\GRFs\17S_06E-35J01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-01E01

Forebay Aquifer Subbasin

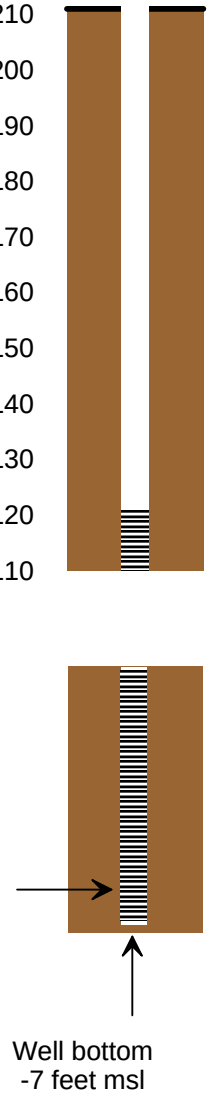


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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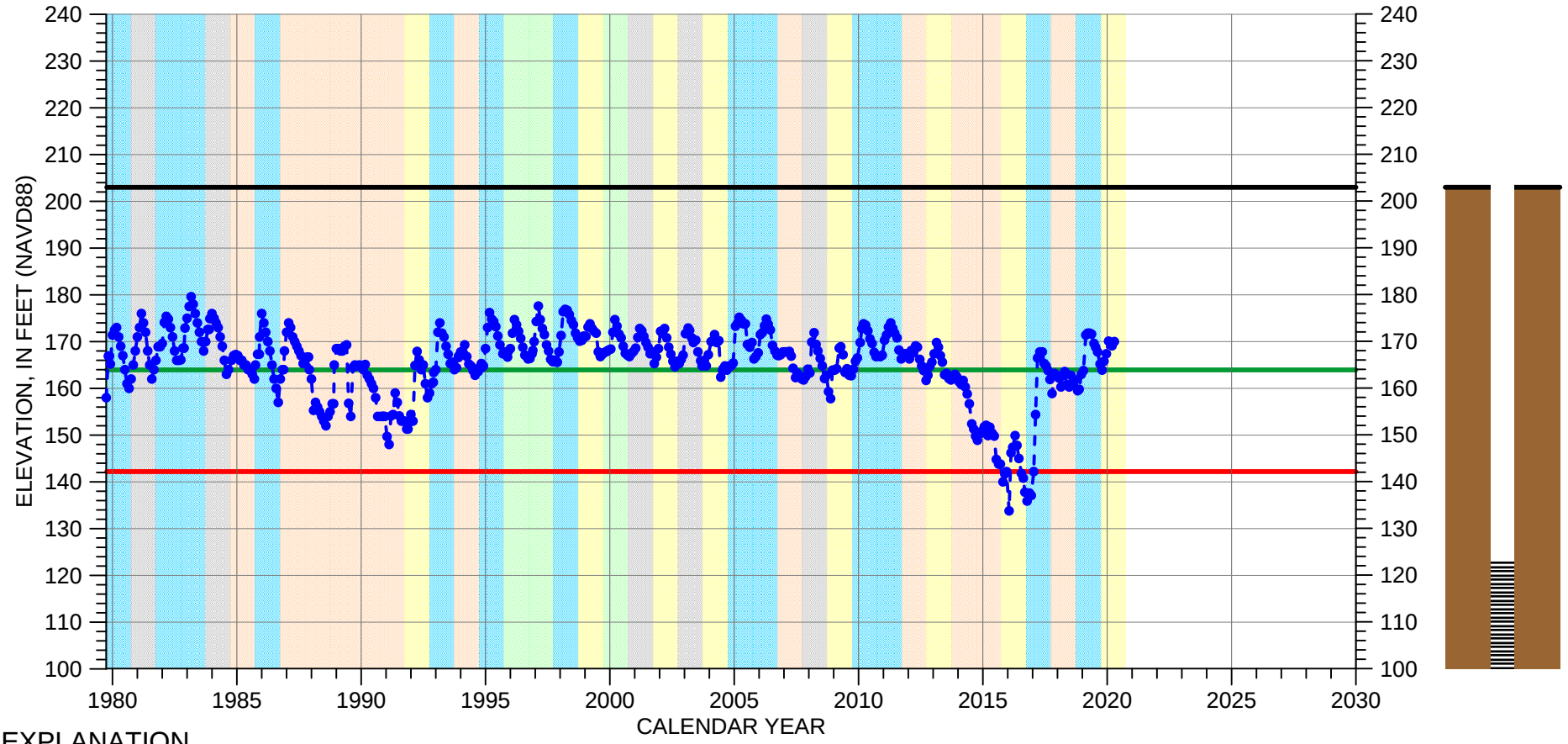
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-02N01

Forebay Aquifer Subbasin

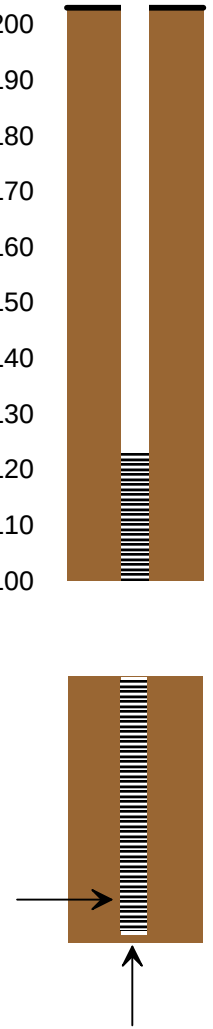


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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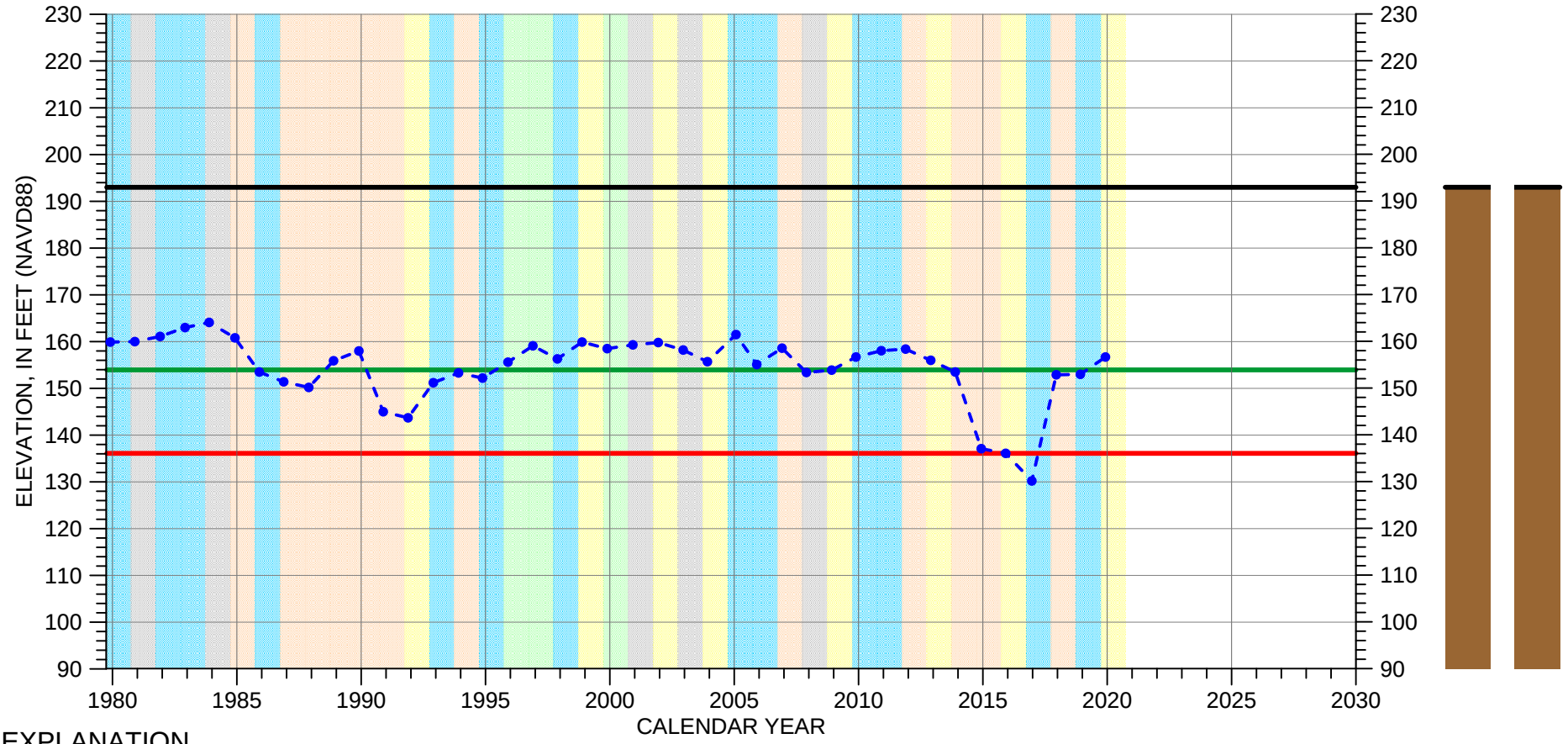
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-05R03

Forebay Aquifer Subbasin

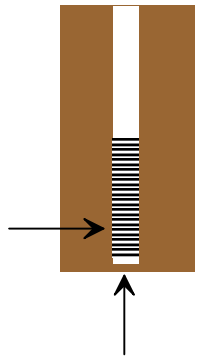


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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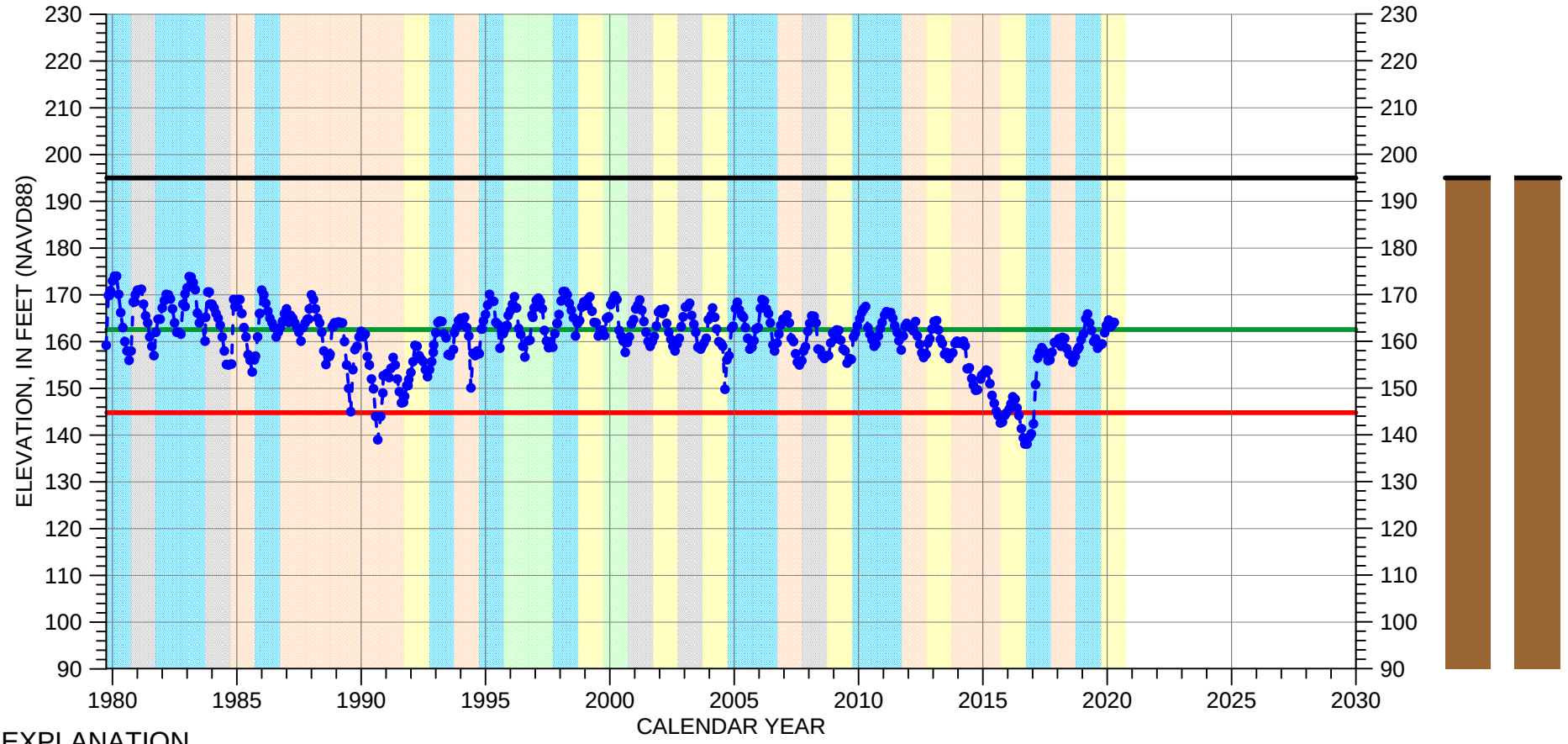
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-06M01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

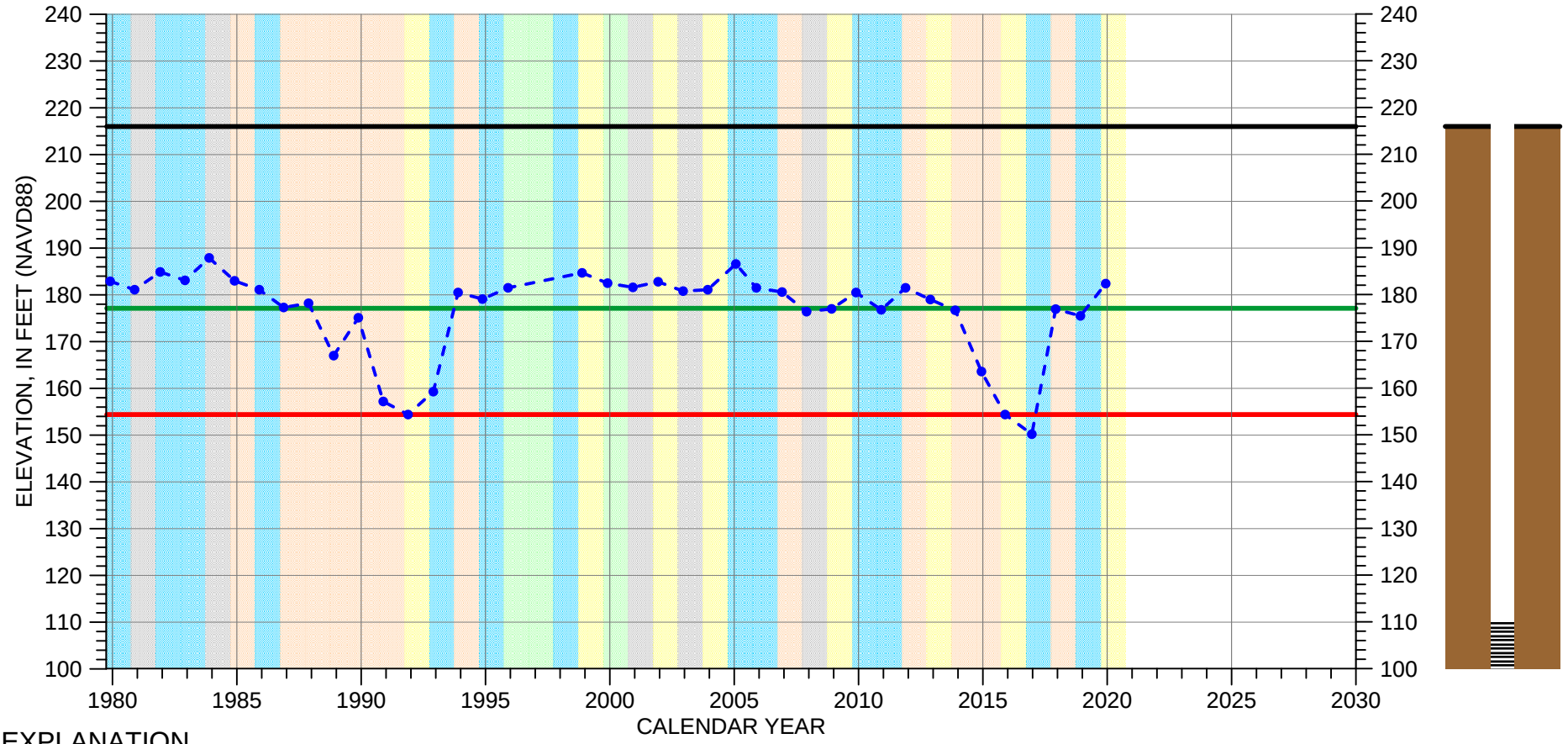
Perforated interval unknown

Well bottom -155 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\gsp\valley-wide\Chapter_5\Hydrographs\GRFs\18S_06E-06M01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-11J01

Forebay Aquifer Subbasin

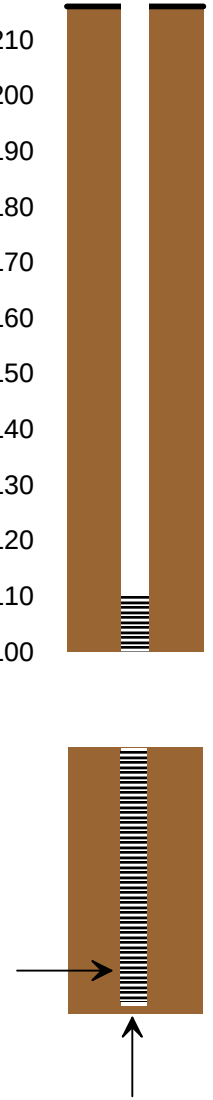


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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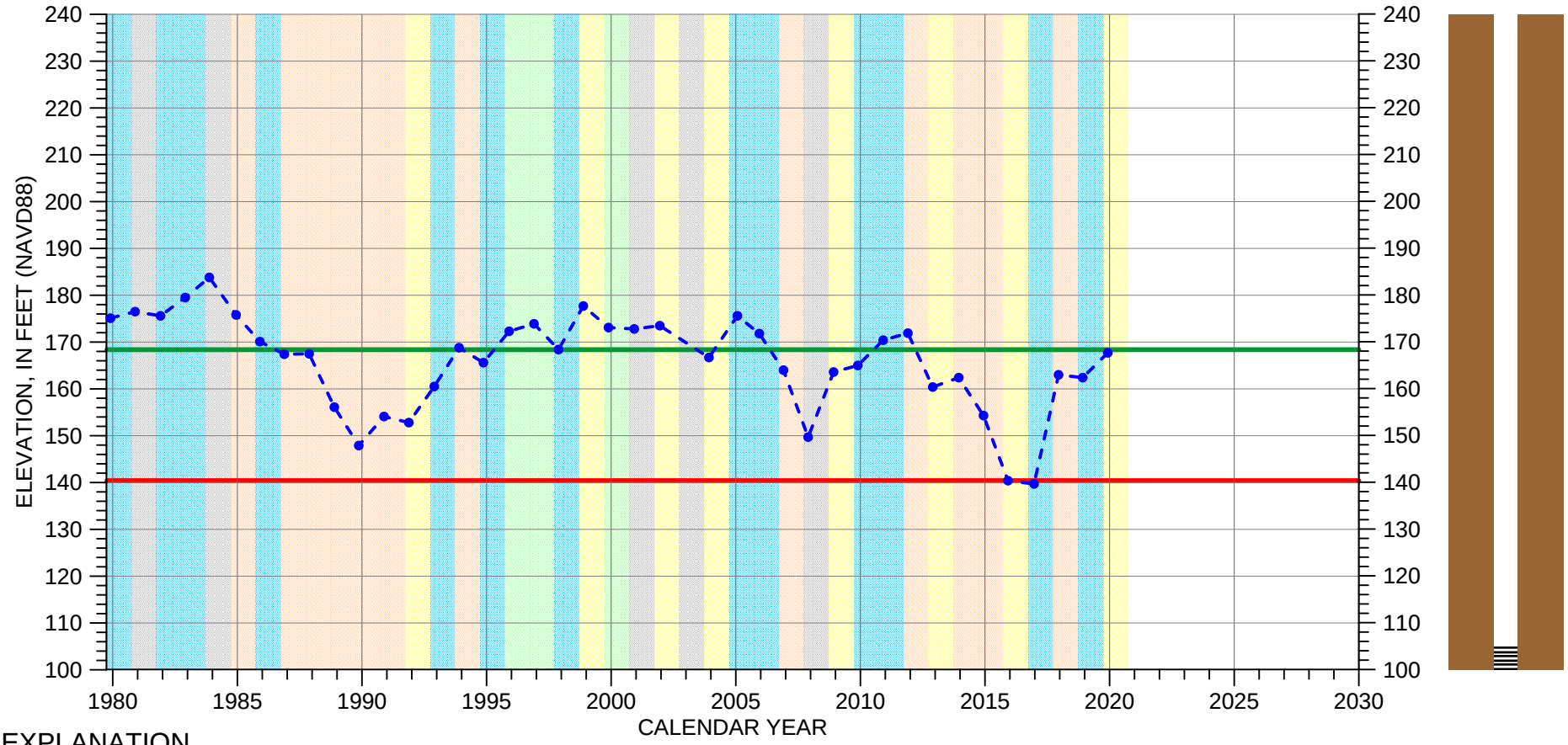
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-16L01

Forebay Aquifer Subbasin

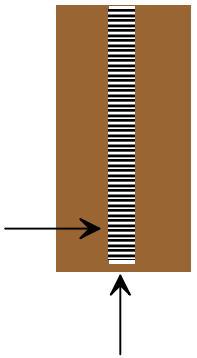


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (304 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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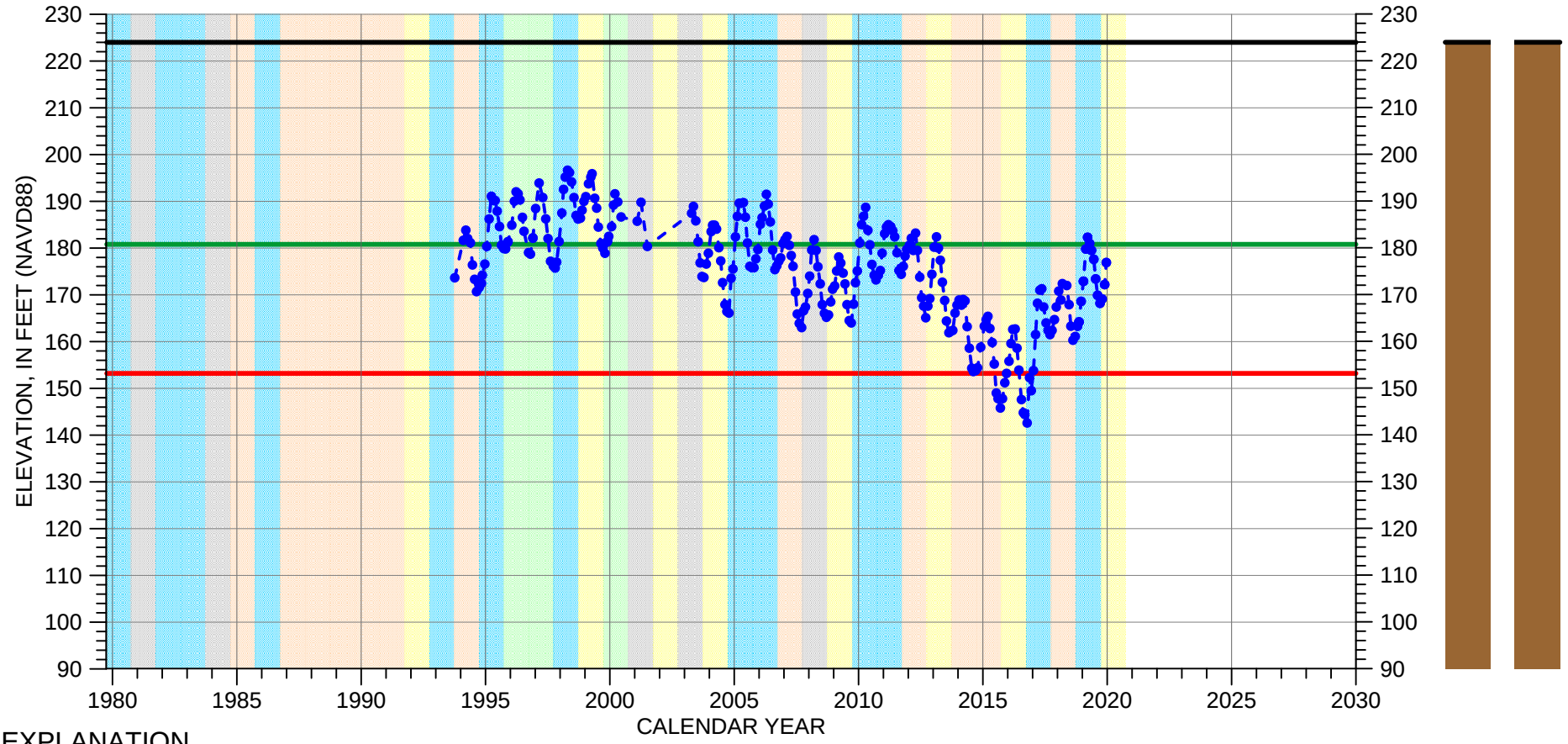
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-22B02

Forebay Aquifer Subbasin

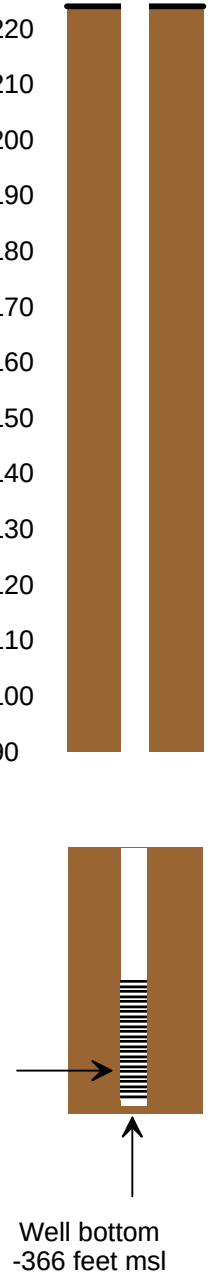


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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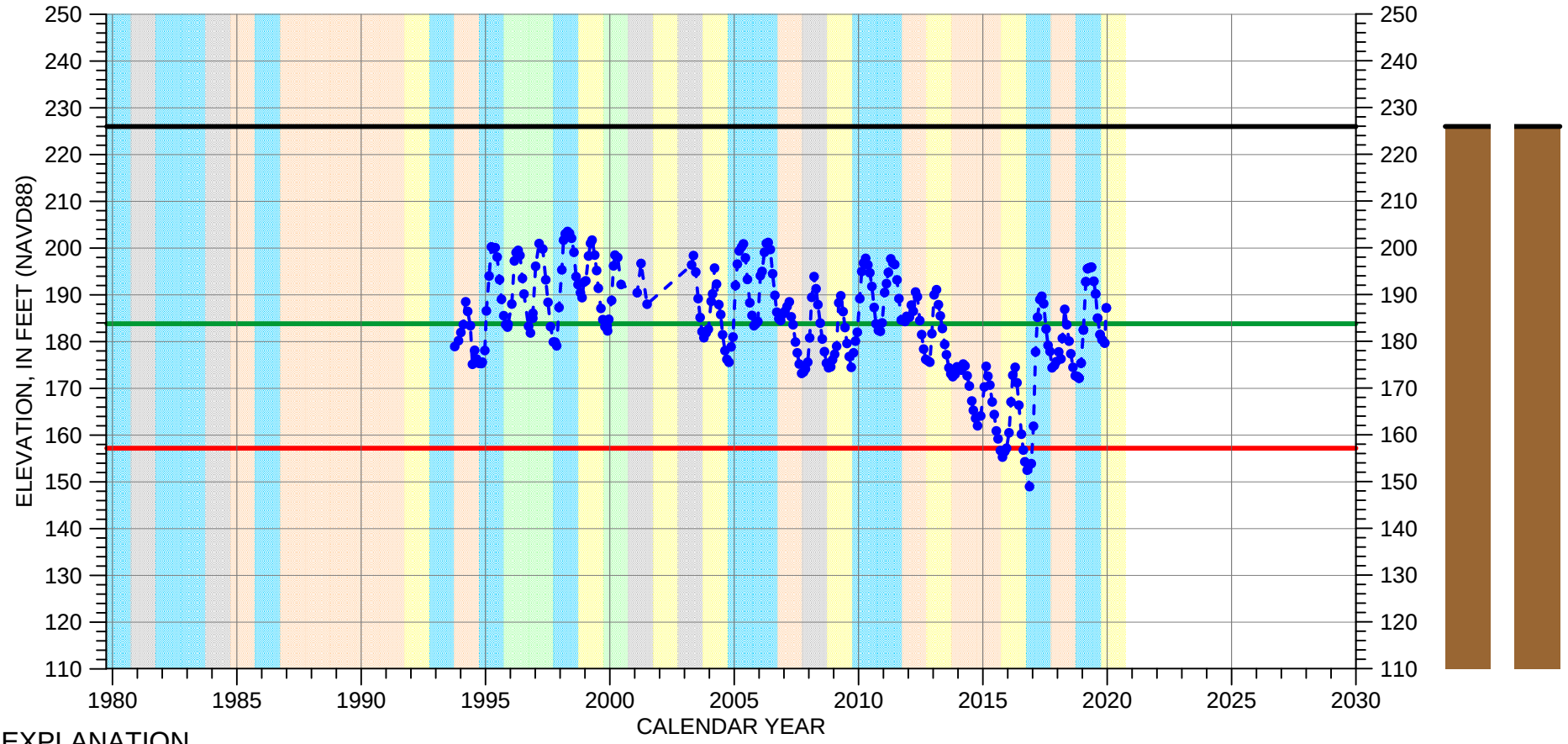
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-22B03

Forebay Aquifer Subbasin

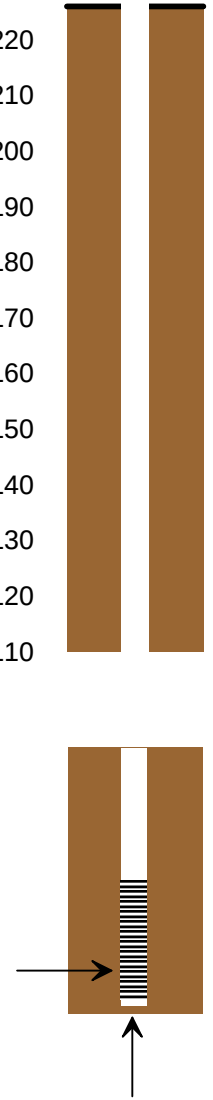


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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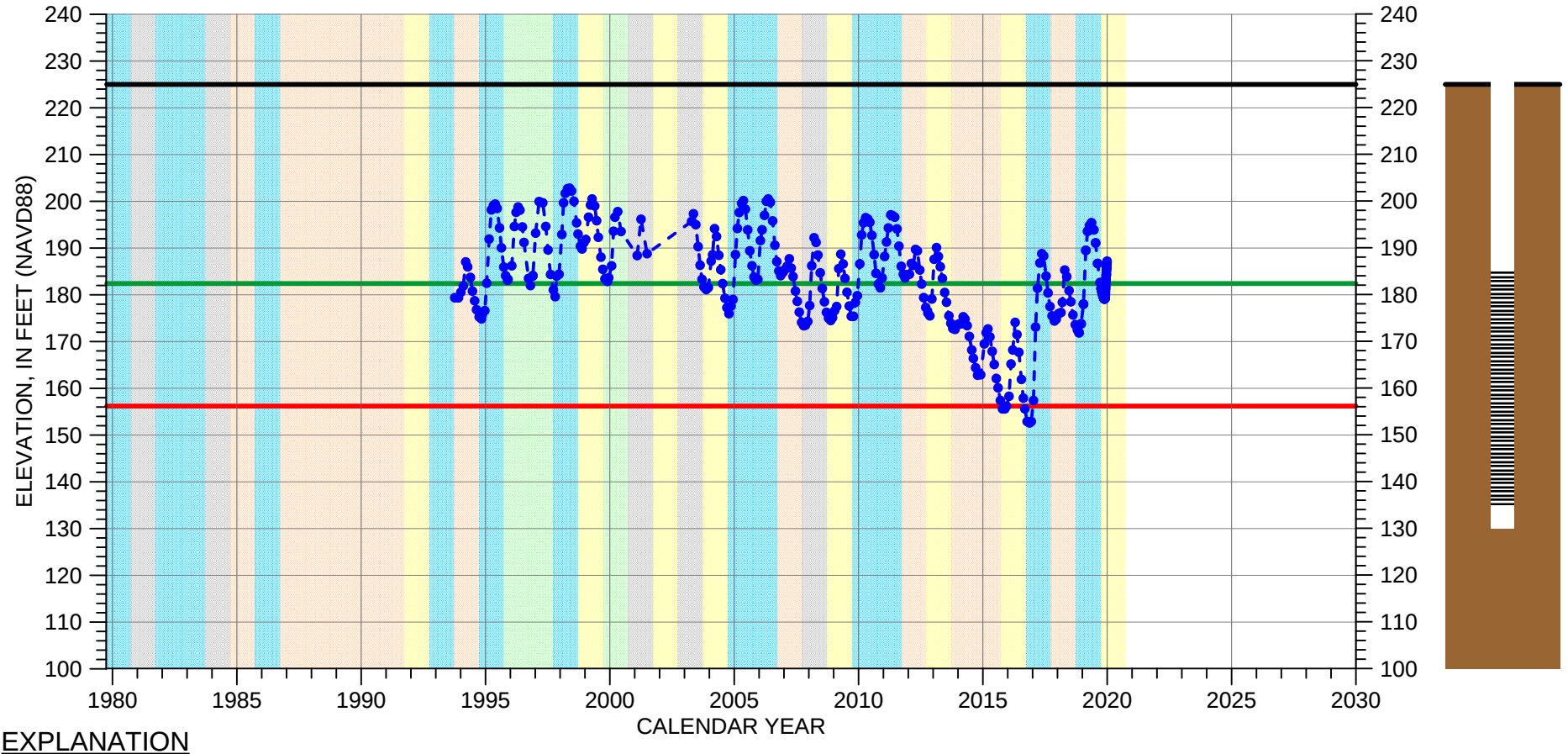
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-22B04

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

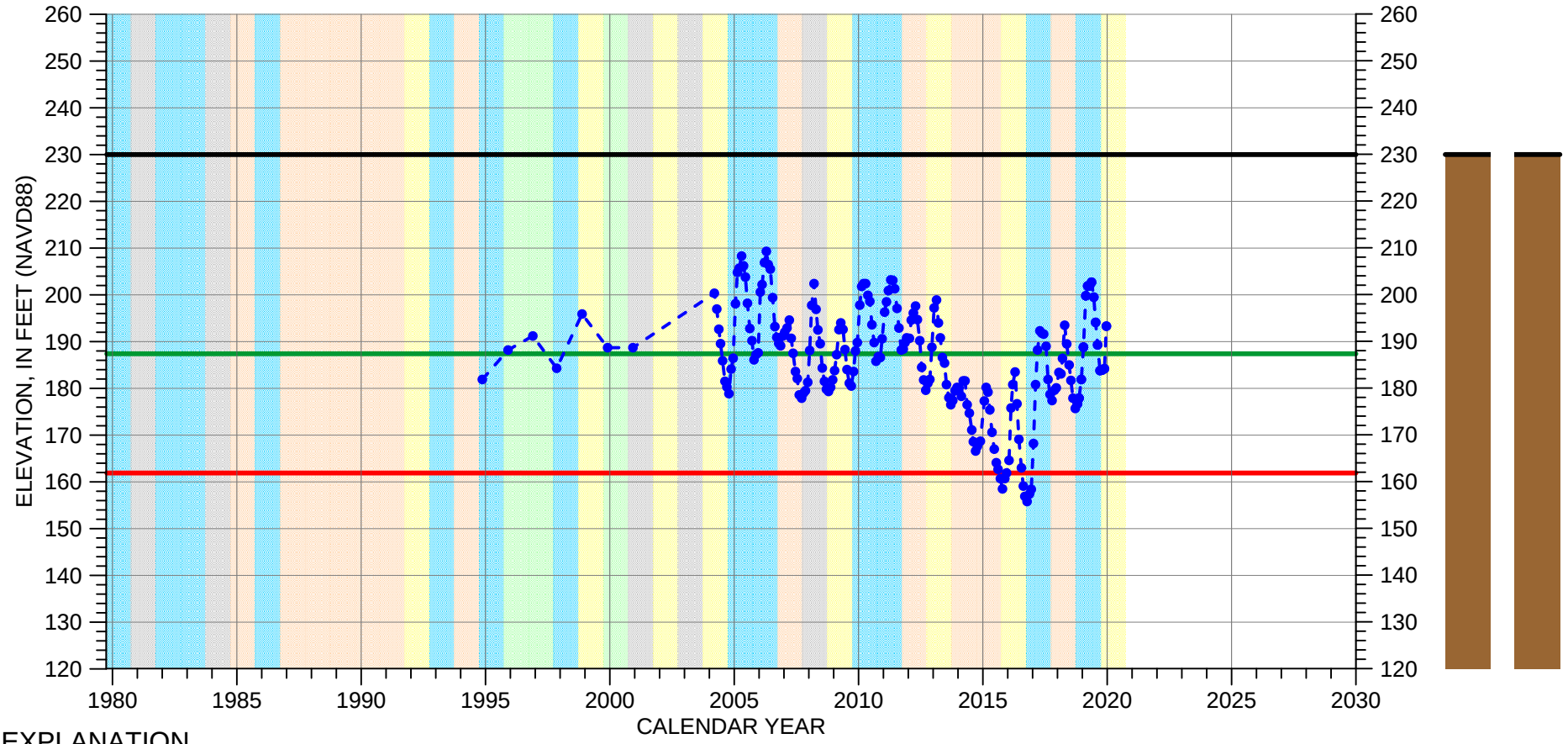
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\gsp\valley-wide\Chapter_5\Hydrographs\GRFs\18S_06E-22B04.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-24M01

Forebay Aquifer Subbasin

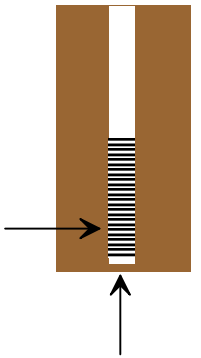


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



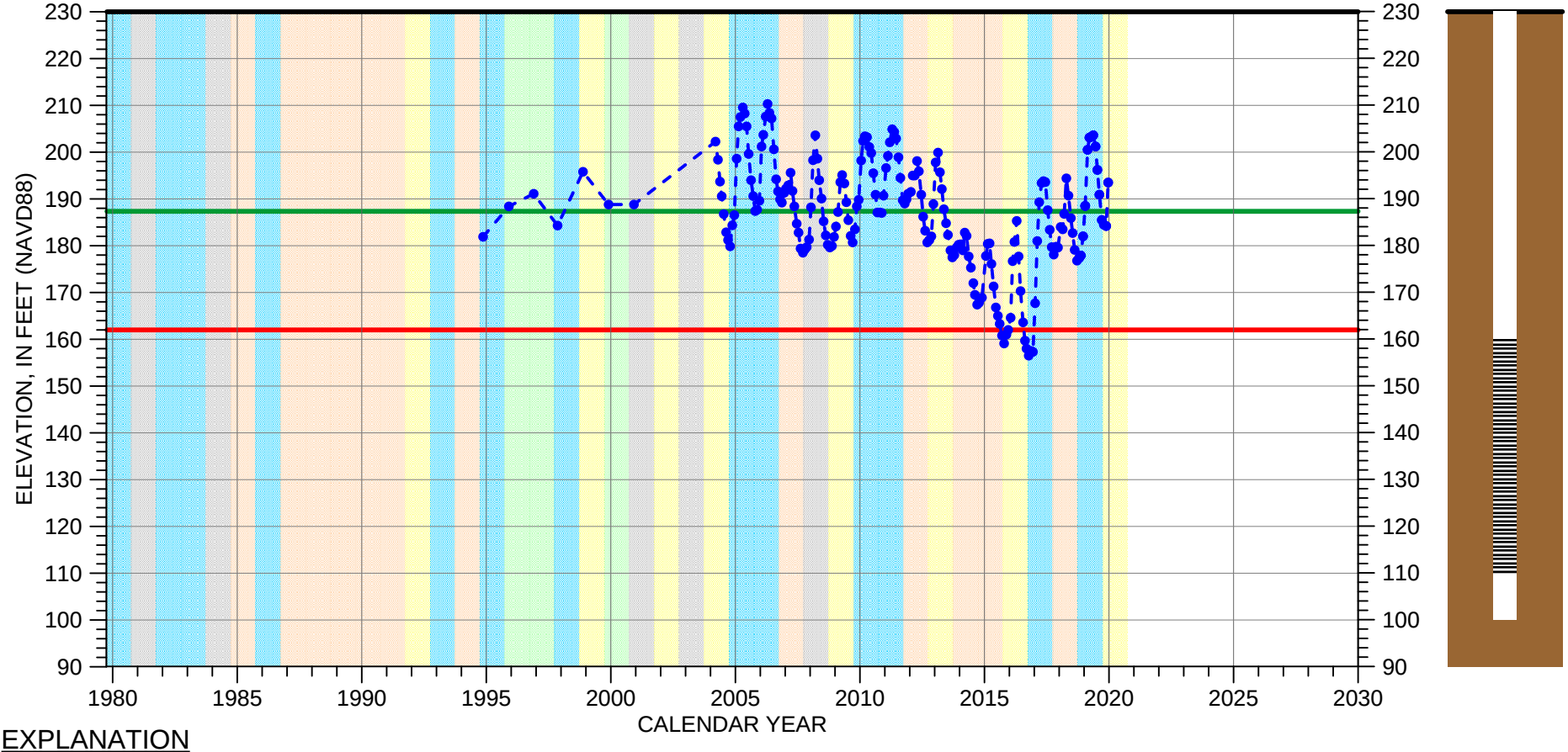
Perforated from
37 to -13 feet msl

Well bottom
-23 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\gsp\valley-wide\Chapter_5\Hydrographs\GRFs\18S_06E-24M01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-24M02

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

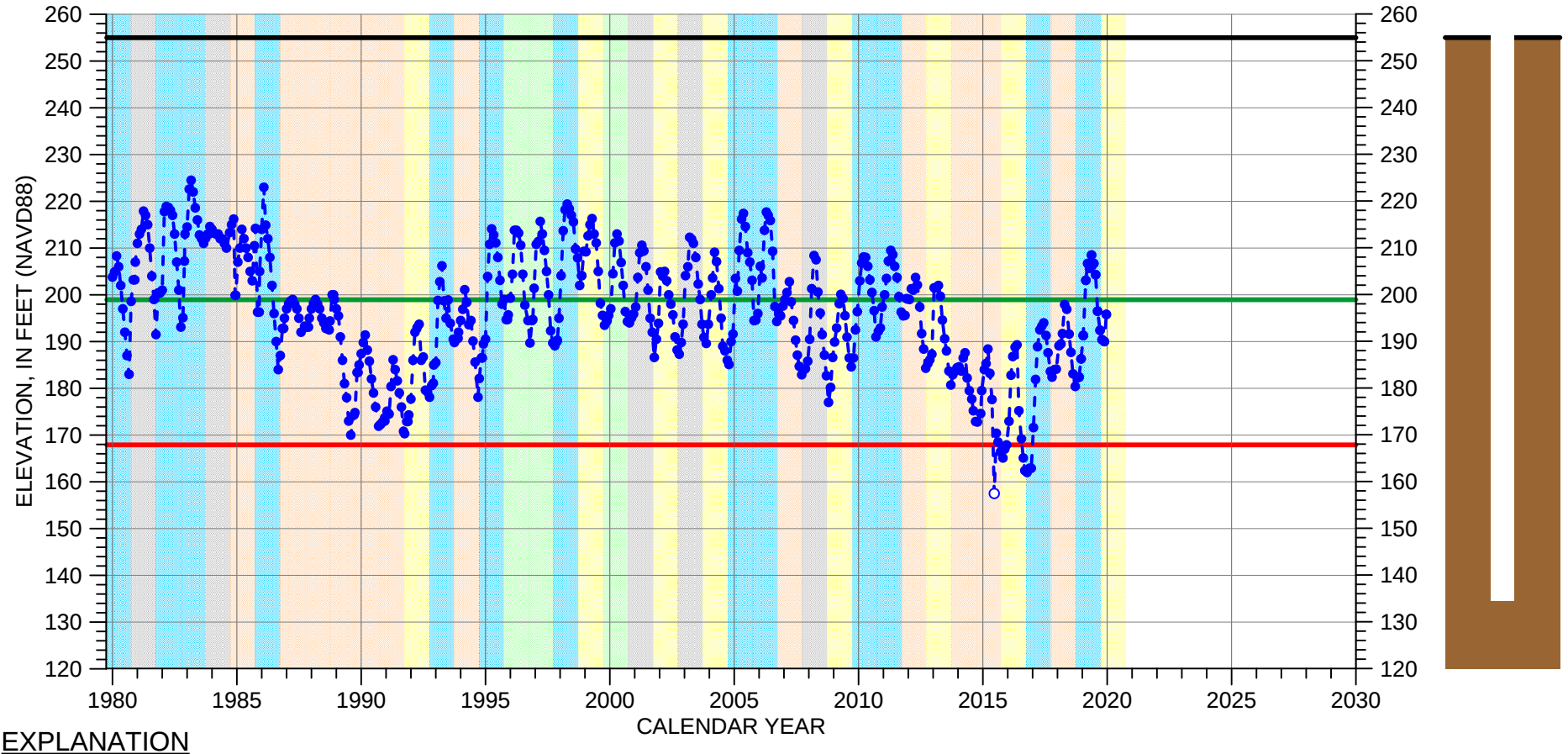
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\gsp\valley-wide\Chapter_5\Hydrographs\GRFs\18S_06E-24M02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-25F01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

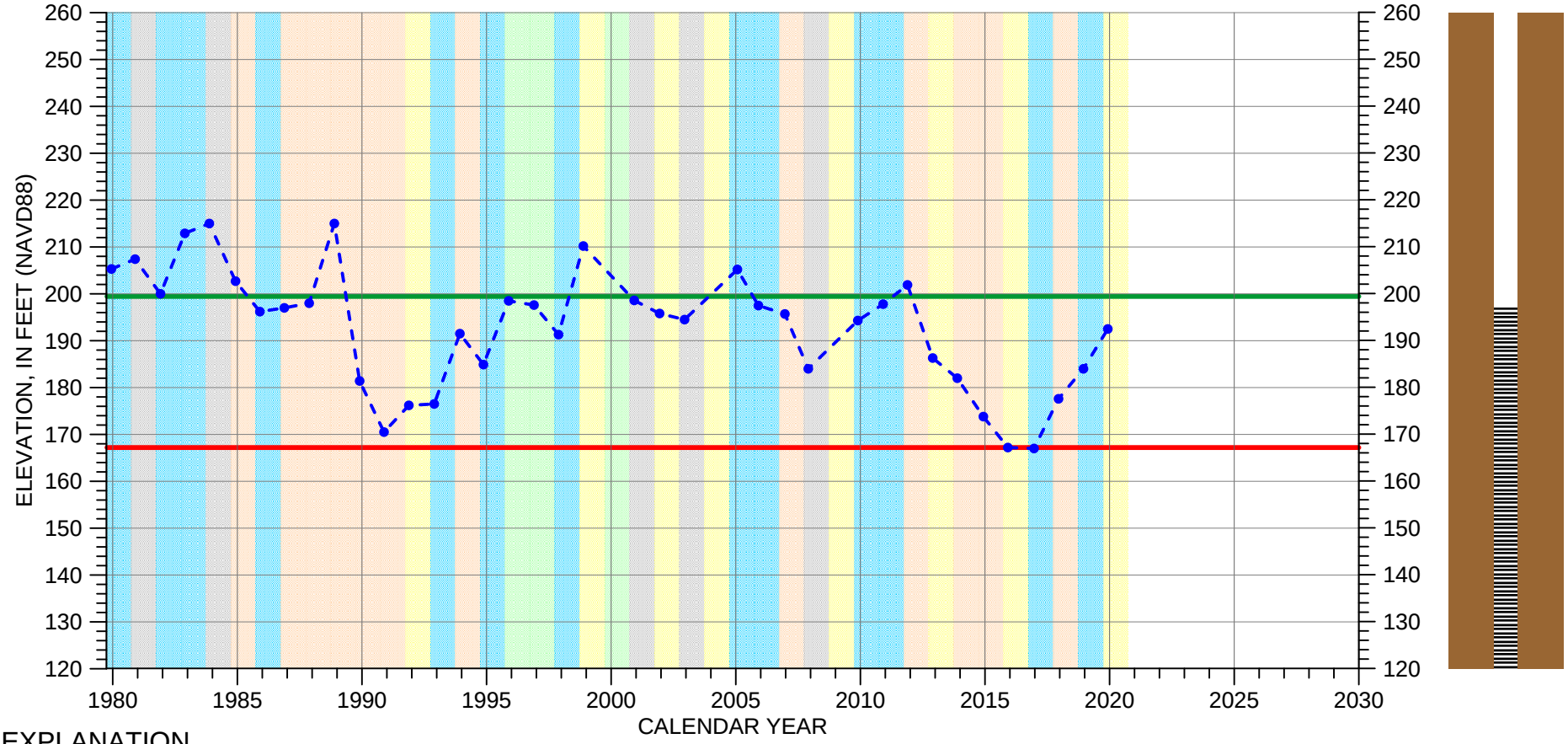
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Perforated interval unknown

\\tuc-data\public\projects\9100_Salinas_GSP\gsp\valley-wide\Chapter_5\Hydrographs\GRFs\18S_06E-25F01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-34B01

Forebay Aquifer Subbasin

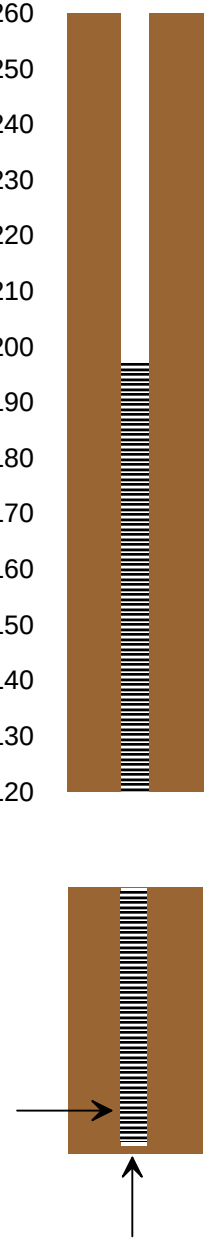


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (347 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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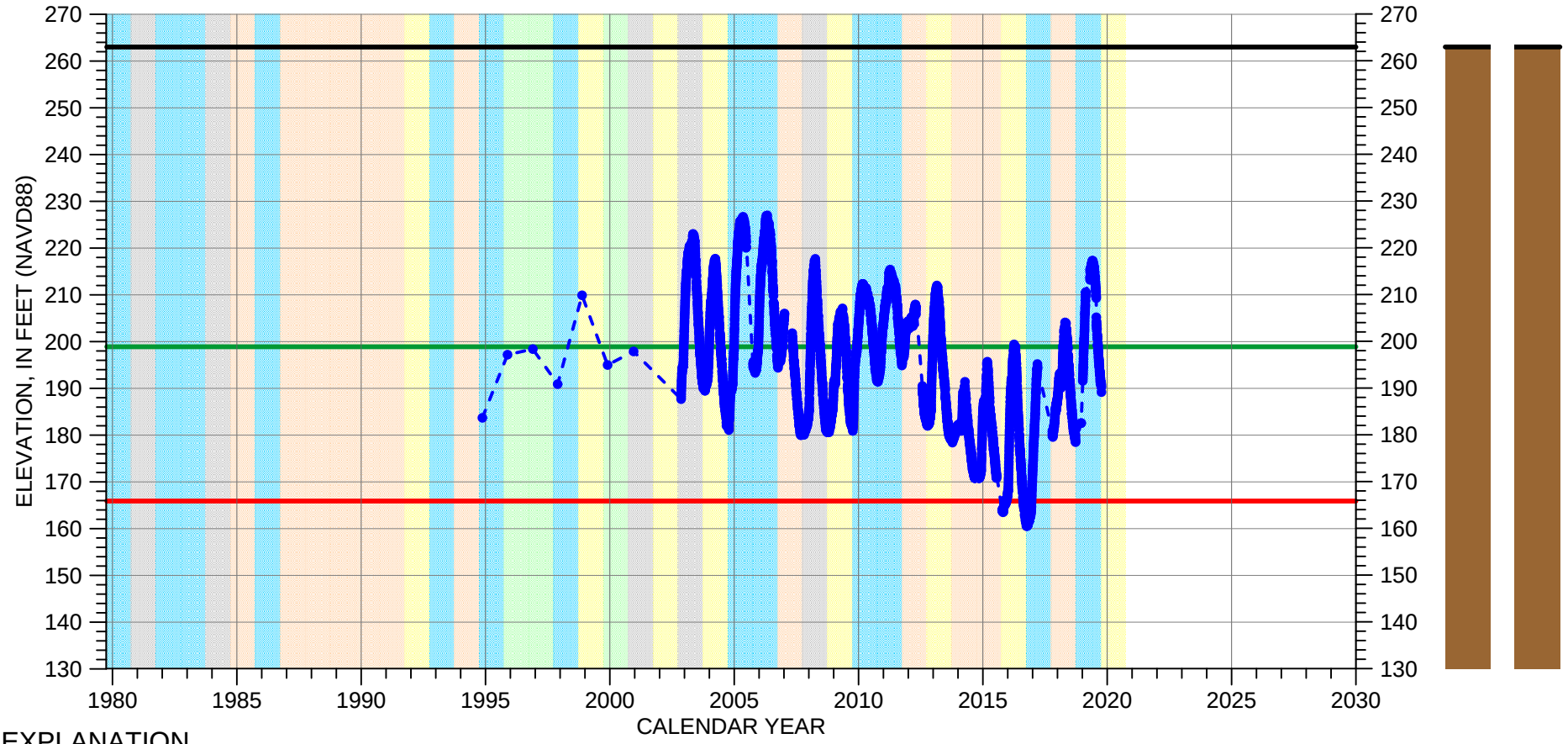
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-35F01

Forebay Aquifer Subbasin



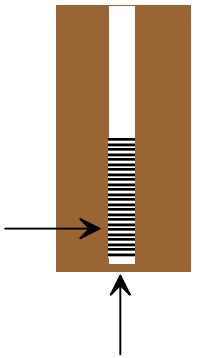
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Perforated from
65 to 15 feet msl



Well bottom
5 feet msl

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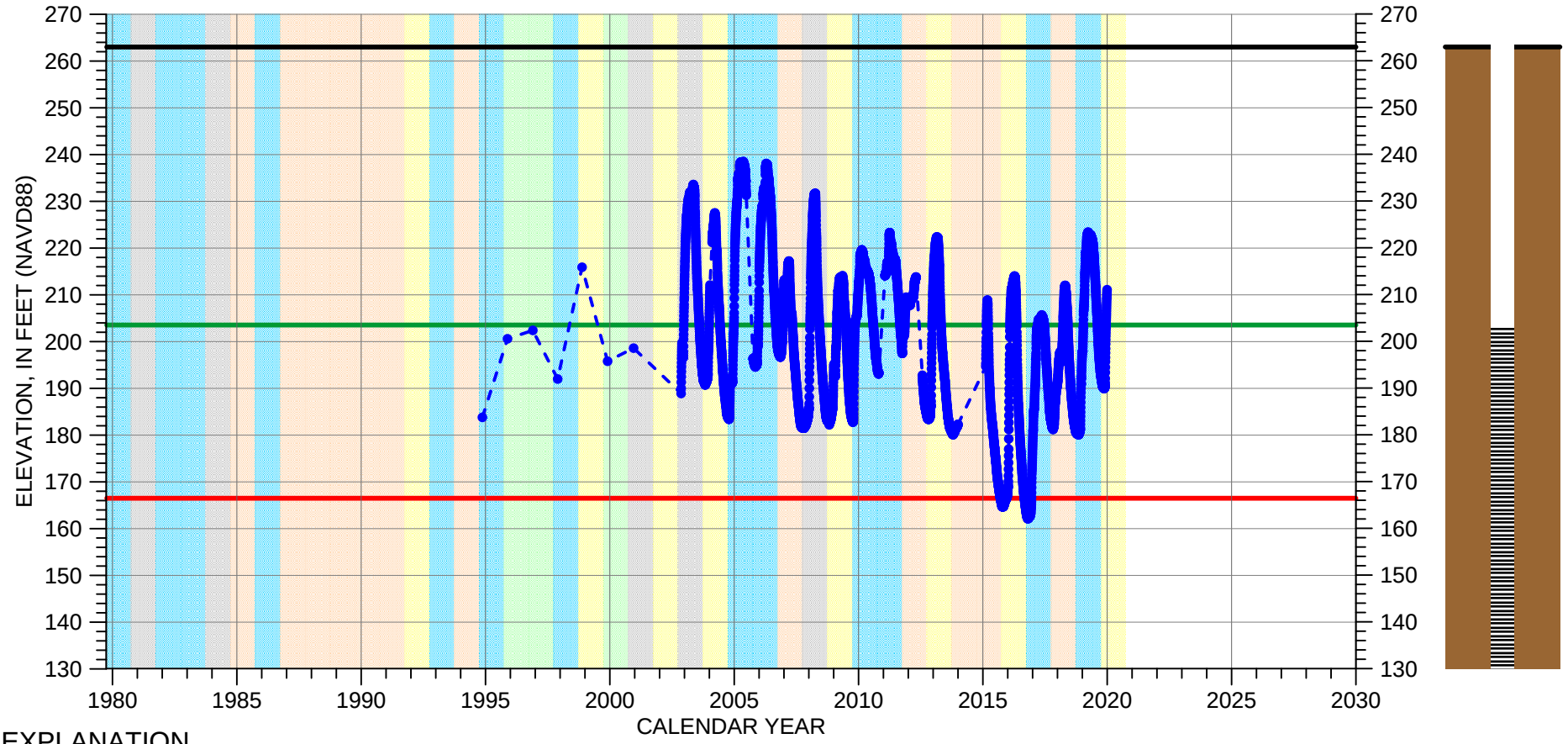
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/06E-35F02

Forebay Aquifer Subbasin

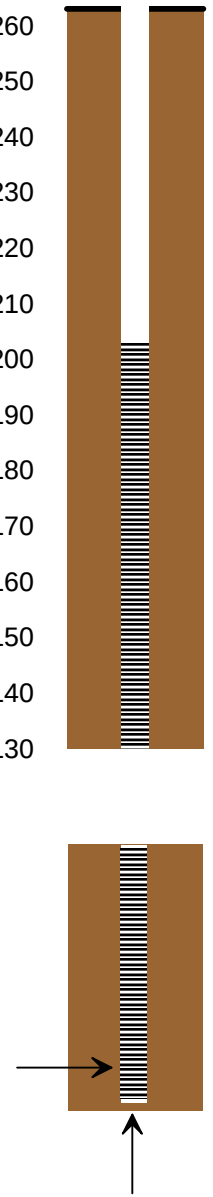


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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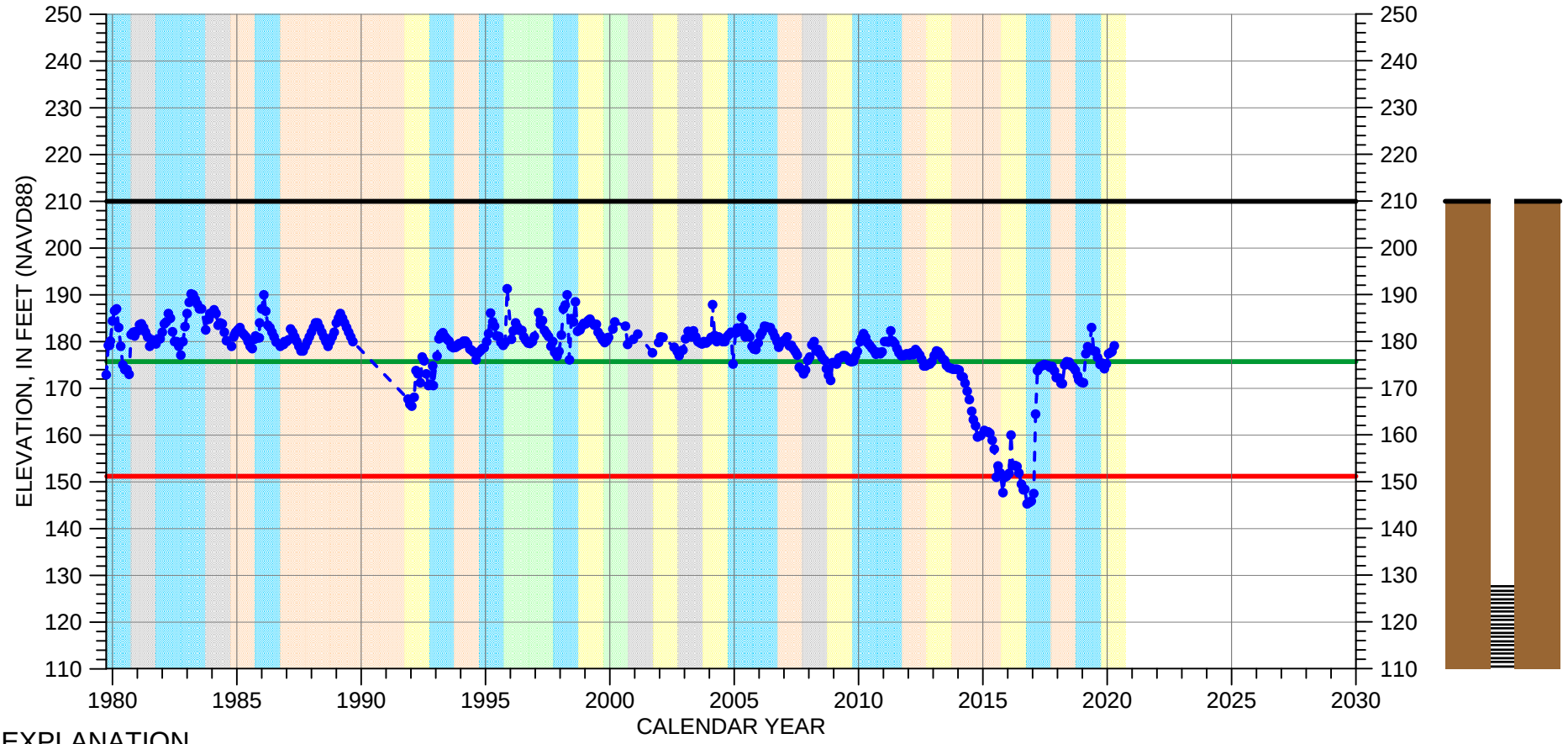
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/07E-19G02

Forebay Aquifer Subbasin

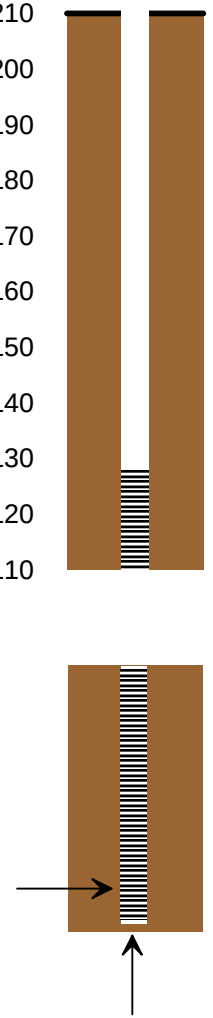


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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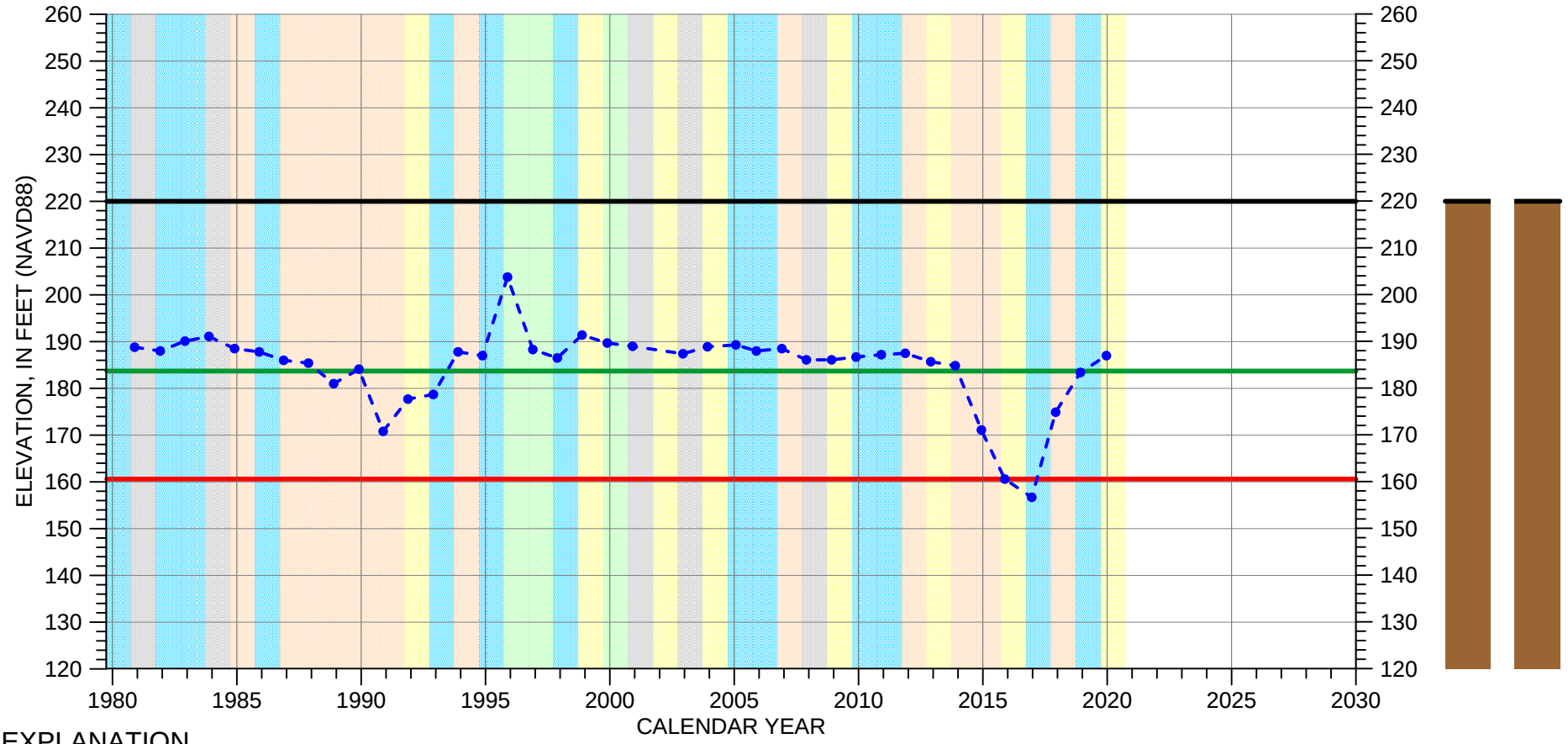
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/07E-20K01

Forebay Aquifer Subbasin

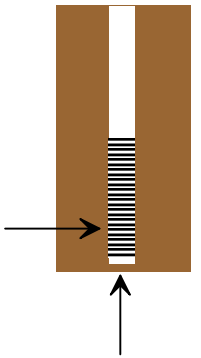


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



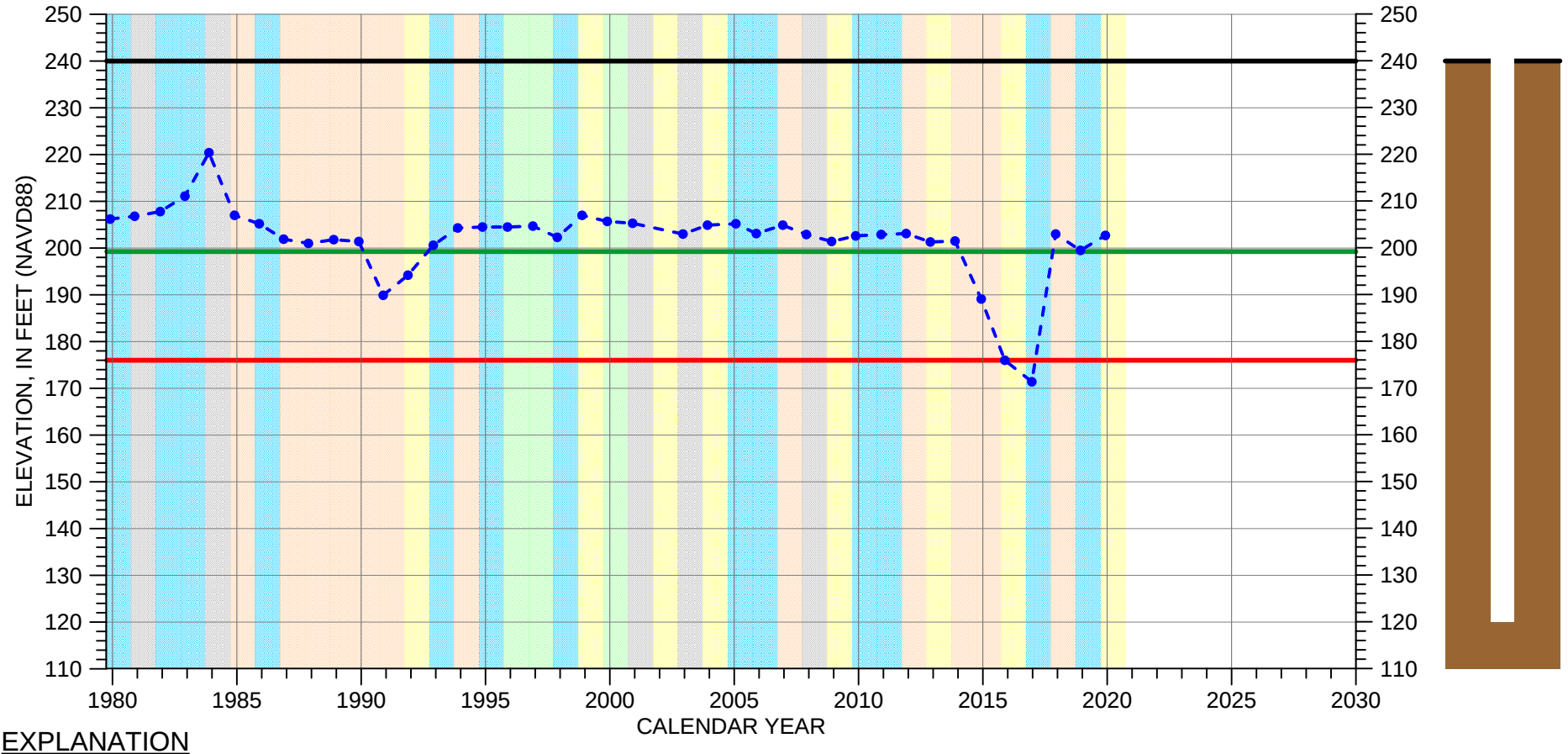
Perforated from
56 to 35 feet msl

Well bottom
20 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\gsp\valley-wide\Chapter_5\Hydrographs\GRFs\18S_07E-20K01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 18S/07E-28K01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

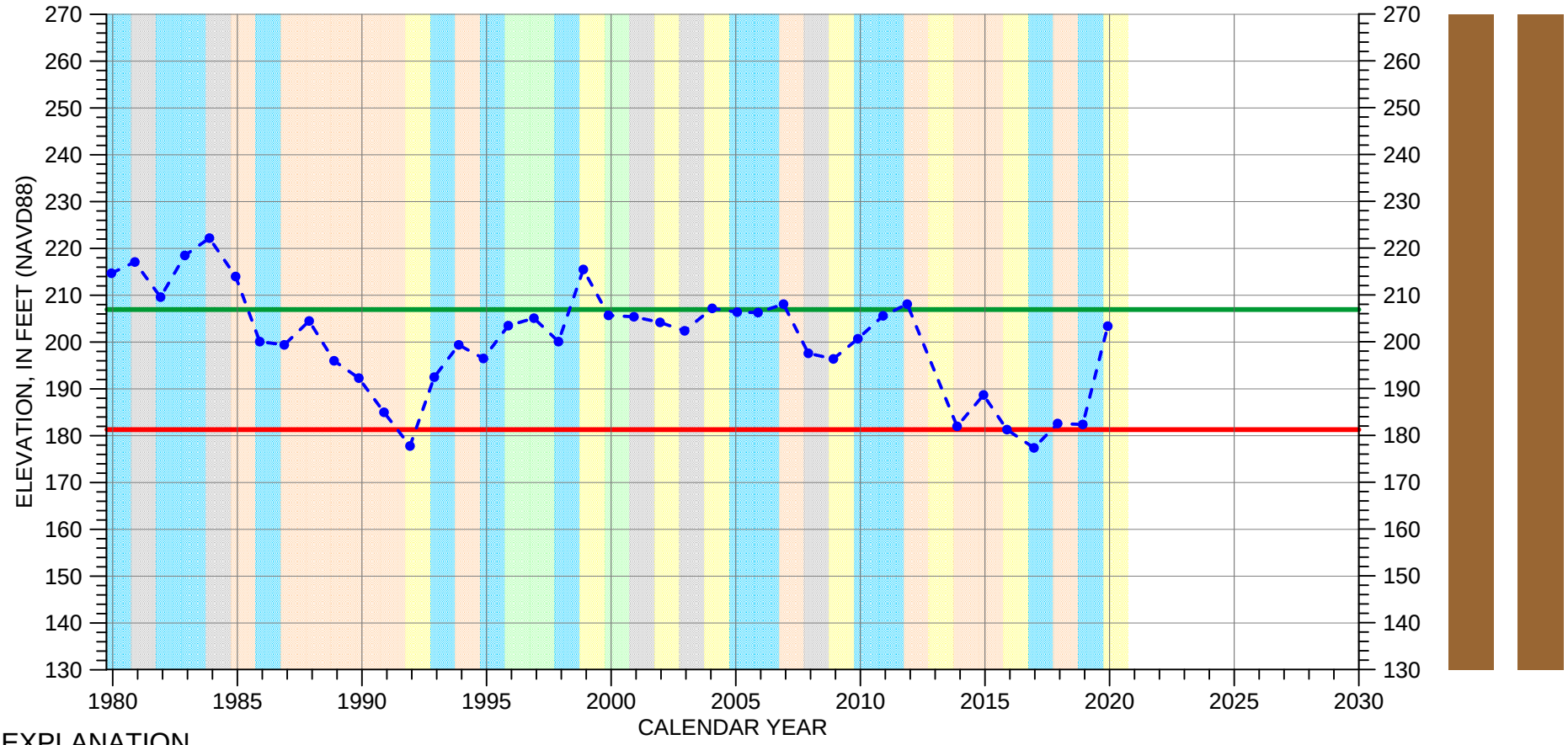
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

Perforated interval unknown

\\tuc-data\public\projects\9100_Salinas_GSP\gsp\valley-wide\Chapter_5\Hydrographs\GRFs\18S_07E-28K01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/06E-01H01

Forebay Aquifer Subbasin

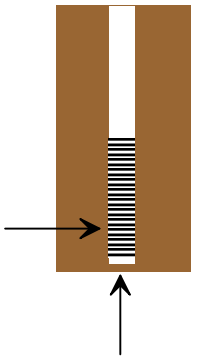


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (320 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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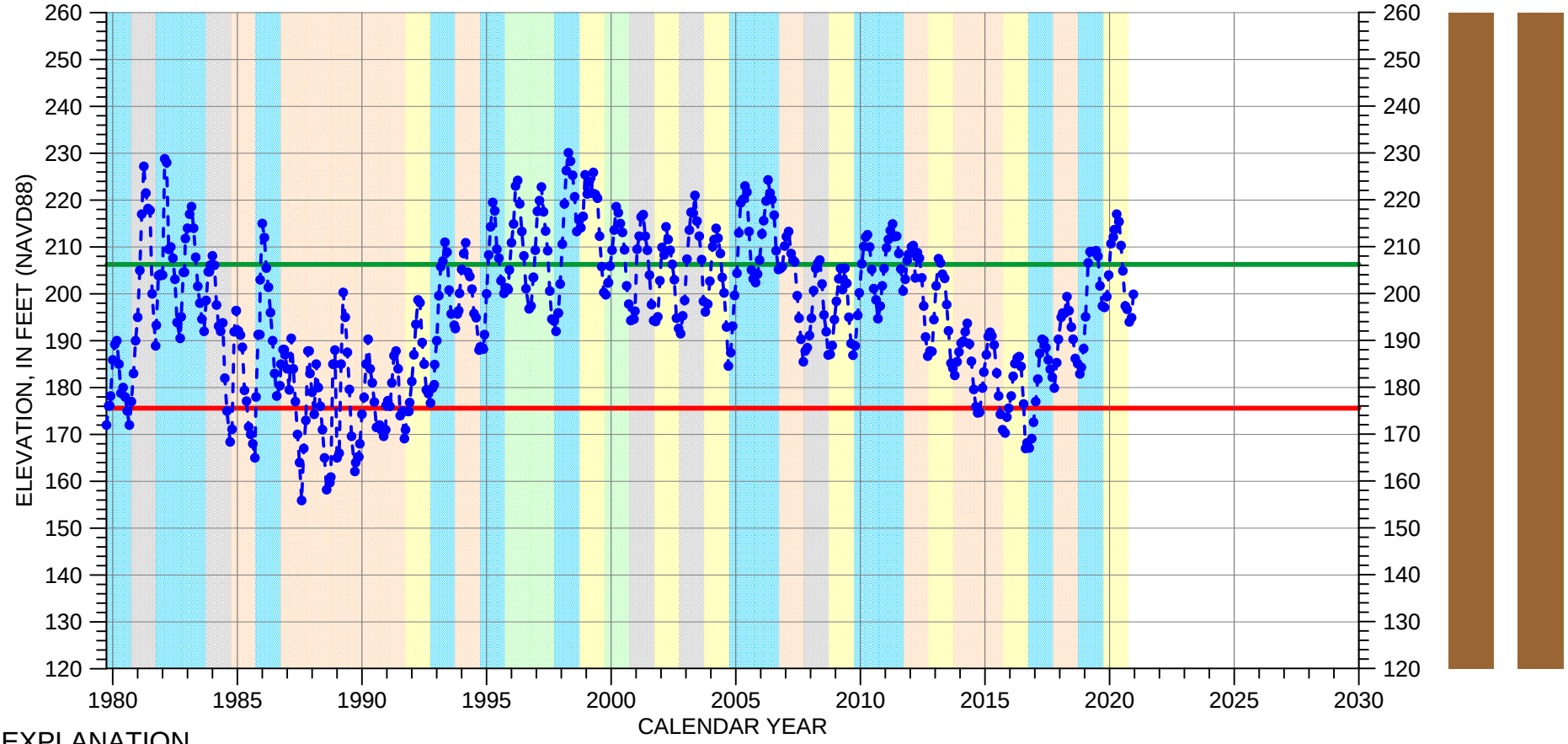
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/06E-11C01

Forebay Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (375 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

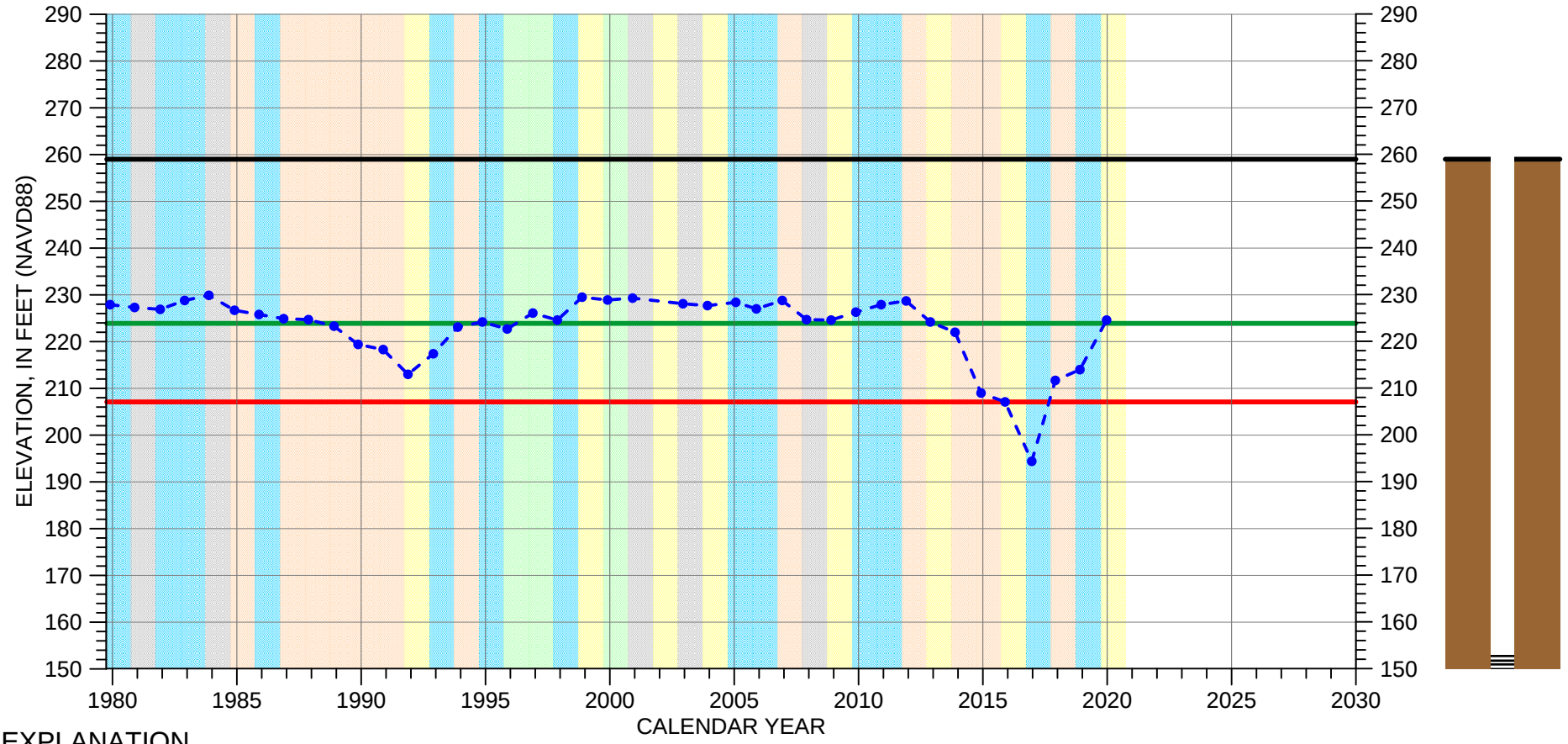
Perforated interval unknown

Well bottom 55 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\gsp\valley-wide\Chapter_5\Hydrographs\GRFs\19S_06E-11C01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/07E-04Q01

Forebay Aquifer Subbasin

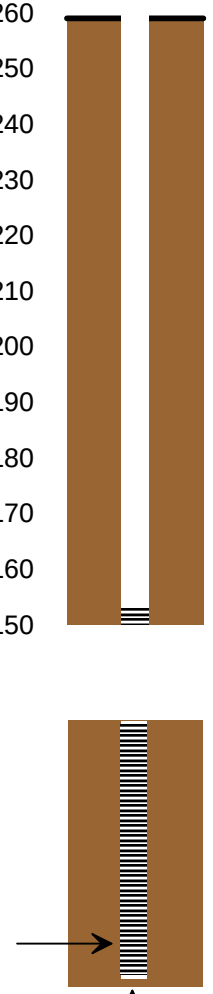


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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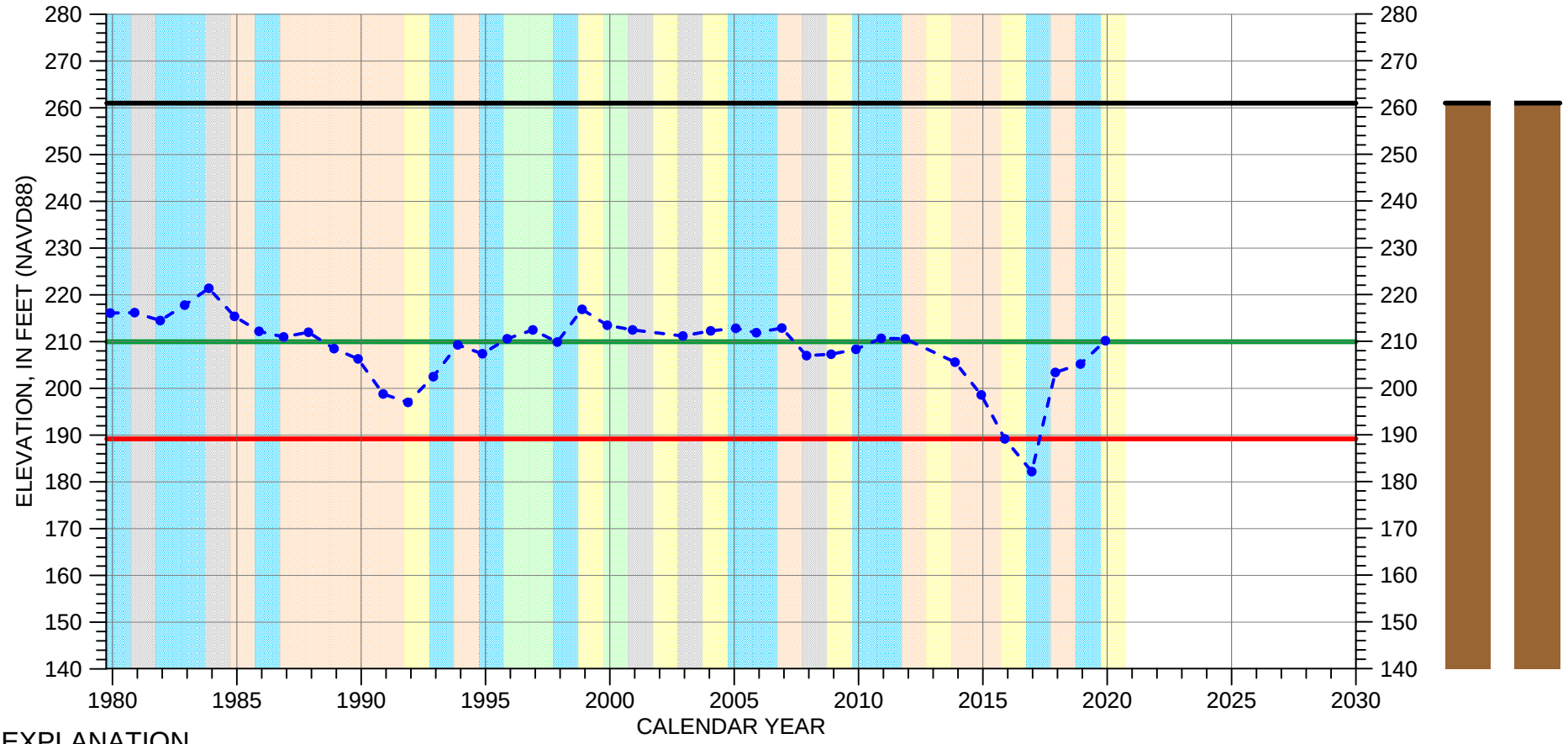
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/07E-05B02

Forebay Aquifer Subbasin

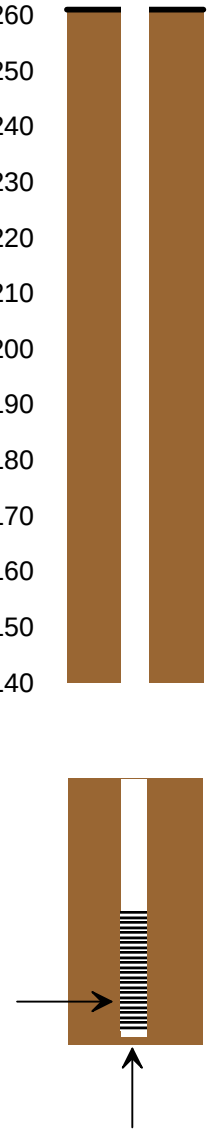


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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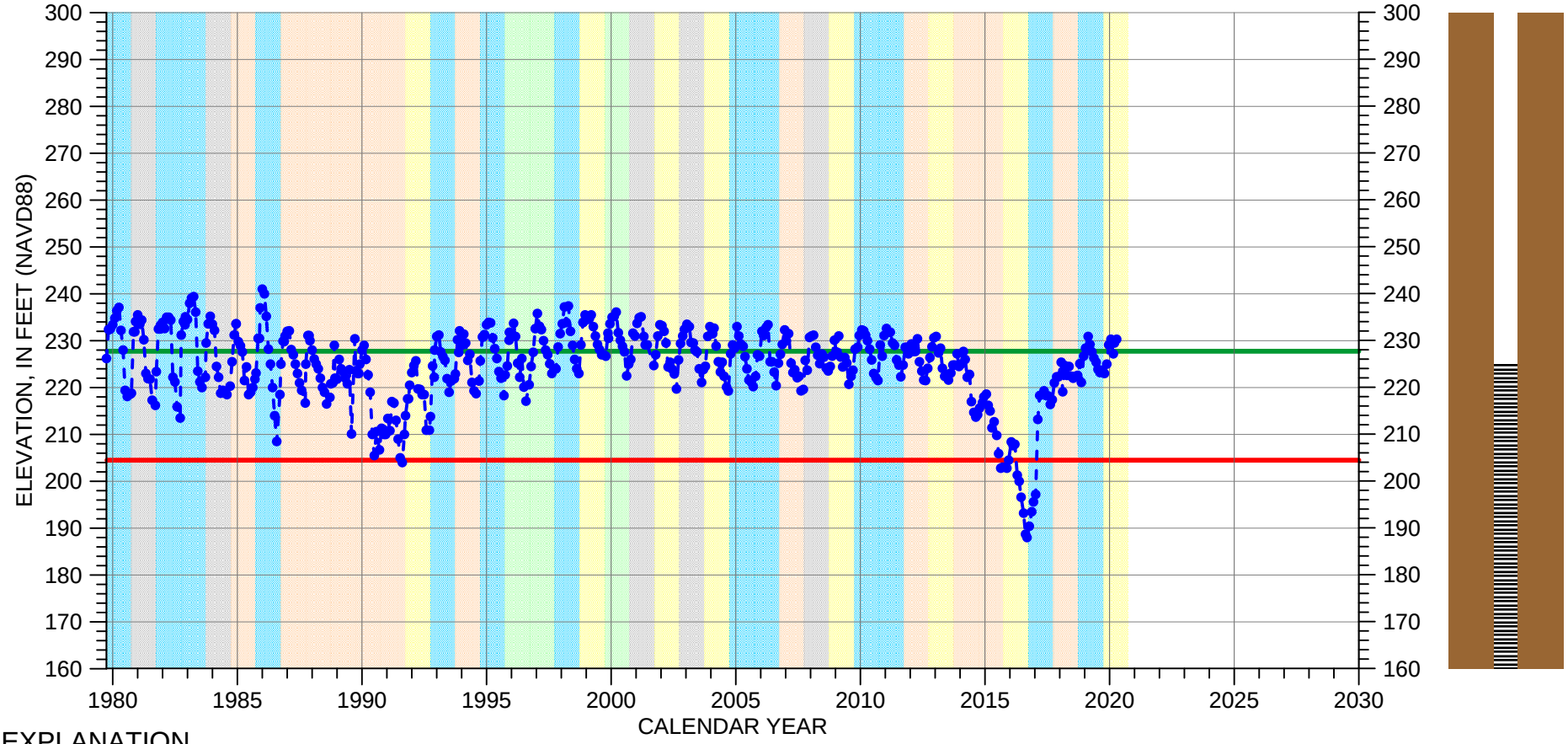
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/07E-10P01

Forebay Aquifer Subbasin

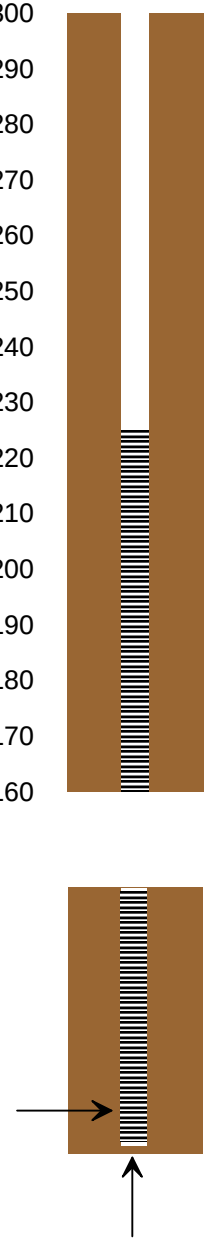


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (315 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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Chapter 9
Appendix 9-A

Cost Estimates for Projects and Management Actions

APPENDIX 9A. COST ESTIMATES FOR PROJECTS AND MANAGEMENT ACTIONS

Project A-1: Multi-benefit stream channel improvements

Component 2

RCD Arundo Eradication Cost Estimate

Five-year cost for treating arundo (includes three herbicide treatments and mowing or hand-cutting if applicable)

Work activity	Cost/acre for arundo control contractor	Cost/acre for biomonitoring	Cost/acre for biological* surveys	Cost/acre for RCD program administration	Total Cost/acre	Estimated acres remaining	Total Cost (Low Estimate	Total Cost (High Estimate)
Mowed arundo	$ 10,350.00	$ 358.04	$ 2,127.50	$ 2,486.60	$ 15,329.04	700	$ 10,730,328.00	$ 13,949,426.40
Unmowed arundo	$ 7,475.00	$ 349.60	$ 1,322.50	$ 1,759.50	$ 10,906.60	150	$ 1,635,990.00	$ 2,126,787.00
Hand-cut arundo	$ 34,500.00	$ 2,300.00	$ 2,875.00	$ 3,737.50	$ 43,412.50	50	$ 2,170,625.00	$ 2,821,812.50
						Est. cost of initial + retreatment	$ 14,536,943.00	$ 18,898,025.90

Cost of O&M	
WCS completed treatment on approximately 21 river miles in 2020	$151,599.00
Cost per river mile of 2020 treatment	$7,219.00
Cost per river mile rounded up *Cost includes biological surveys and monitoring *90 miles of river in Monterey County	$7,500.00
Cost for retreating whole river 1 time	$675,000.00
Cost to re-treat equivalent of whole river five times over 25 years	$3,375,000.00
Cost of helicopter survey to re-map arundo over whole river	$400,000.00
RCD admin costs @ 20% of contractor cost	$765,000.00
Total cost for O&M	**$4,130,000.00**
Average annual cost (total cost/25 years)	**$165,200.00**

Capital and Annualized Costs
Multi-Benefit Stream Channel Improvement - Component 2 - Low Estimate
(Preliminary Cost Estimate)

SUMMARY					
Line No.	**Description**		**Units**		**Total**
1	Project Yield (high estimate)		acre-feet per year		20,880
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		$		$14,536,943
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		$		$1,133,000
7	Annual O&M Cost		$		$166,200
8	Total Annualized Cost		$		$1,299,200
9	Unit Cost		$/AFY		$60
CAPITAL COSTS					
Line No.	**Capital**	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
10	Mowed arundo	700	Acres	$15,329	$10,730,328
11	Unmowed arundo	150	Acres	$10,907	$1,635,990
12	Hand-cut arundo	50	Acres	$43,413	$2,170,625
13	***Subtotal***				$14,536,943
OPERATIONS AND MAINTENANCE					
Line No.	**Markups**	**Quantity**	**Unit**	**Unit Cost**	**Total Cost**
16	O&M Estimate	1	LS	$166,200	$166,200
17	***Total O&M Cost***				$166,200

NOTES:
1. "Project Yield" based on Range of 6,000 to 36,000 AF, assumed an average of 20,000 AF
2. "Facility Life" selected based on 25-yr anticipated life of facilities
3. "Interest Rate" selected within expected range for public-financing options
4. "Capital Cost" based on Phase I and Phase II
5. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate
6. "Annualized Capital Cost" based on facility life and interest rate
7. "Annual O&M Cost" estimate based on average annual needs for on-going monitoring and maintenance (chemical treatment every 3 to 5 years)

Capital and Annualized Costs
Multi-Benefit Stream Channel Improvement - Component 2 - High Estimate
(Preliminary Cost Estimate)

SUMMARY					
Line No.	Description		Units		Total
1	Project Yield (low estimate)		acre-feet per year		2,790
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		$		$18,898,026
5	Cost Recovery Factor		-		0.079
6	Annualized Capital Cost		$		$1,500,000
7	Annual O&M Cost		$		$165,200
8	Total Annualized Cost		$		$1,665,200
9	Unit Cost		$/AFY		$600

CAPITAL COSTS					
Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mowed arundo	700	Acres	$19,928	$13,949,436
11	Unmowed arundo	150	Acres	$14,179	$2,126,787
12	Handpull arundo	50	Acres	$56,436	$2,821,803
13	***Subtotal***				$18,898,026

OPERATIONS AND MAINTENANCE					
Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
15	O&M Estimate	1	LS	$165,200	$165,200
17	***Total O&M Cost***				$165,200

NOTES:
1. "Project Yield" based on Range of 6,000 to 35,000 AF, assumed an average of 20,000 AF
2. "Facility Life" selected based on 25-yr anticipated life of facilities
3. "Interest Rate" selected within expected range for public-financing option
4. "Capital Cost" based on Phase I and Phase II
5. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate
6. "Annualized Capital Cost" based on facility life and interest rate
7. "Annual O&M Cost" estimate based on average annual needs for on-going monitoring and maintenance (chemical treatment every 3 to 5 years).

Component 3

Capital and Annualized Costs
Multi-Benefit Stream Channel Improvements - Component 3
(Preliminary Opinion of Probable Cost)

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		100
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		$		$1,116,000
5	Cost Recovery Factor				0.078
6	Annualized Capital Cost		$		$87,300
7	Annual O&M Cost		$		$6,000
8	Total Annualized Cost		$		$93,300
9	**Unit Cost**		$/AF		**$930**

CAPITAL COSTS

Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mobilization/Demobilization	1	LS	$52,000	$52,000
11	Environmental and Stormwater	1	LS	$105,000	$105,000
12	Off-Stream Recharge Basin	8.5	AC	$48,500	$412,250
13	Land Acquisition	1	AC	$45,000	$45,000
14	*Subtotal*				$612,250

Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
15	Construction Contingency			30%	$124,000
16	General Conditions			15%	$93,000
17	Contractor Overhead and Profit			15%	$92,000
18	Sales Tax			9.25%	$11,300
19	Engineering, Legal, Administrative, Contingencies			30%	$184,000
20	***Total Capital Cost***				$1,116,000

OPERATIONS AND MAINTENANCE

Line No.	Description	Quantity	Unit	Unit Cost	Total Cost
21	Detention Basin Maintenance	1	LS	$4,300	$4,300
22	Contingency			30%	$1,300
23	***Total O&M Cost***				$6,000

NOTES:
1. "Project Yield" based on Assumed 100 acre-feet per year.
2. "Facility Life" selected based on 25 yr anticipated life of facilities.
3. "Interest Rate" selected within expected range for public financing options.
4. "Capital Cost" includes land acquisition costs assumed for an area equivalent to 10% of required recharge basin area. Recharge basin unit cost assumes inclusion of site civil earthwork and access road improvements. Environmental and stormwater requirements are estimate at 15% of capital base costs for off-stream basins.
5. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.
6. "Annualized Capital Cost" based on Facility life and interest rate.

Project A-2: Managed Aquifer Recharge of Overland Flow

Capital and Annualized Costs
Managed Aquifer Recharge of Overland Flow Project
(Preliminary Opinion of Probable Cost)

Line No.	Description		Units		Total
1	Project Yield		acre-feet per year		100
2	Facility Life		years		25
3	Interest Rate		%		6
4	Capital Cost		$		$1,032,000
5	Cost Recovery Factor		--		0.078
6	Annualized Capital Cost		$		$80,700
7	Annual O&M Cost		$		$8,000
8	Total Annualized Cost		$		$88,700
9	**Unit Cost**		$/AF		**$870**

CAPITAL COSTS

Line No.	Capital	Quantity	Unit	Unit Cost	Total Cost
10	Mobilization/Demobilization	1	LS	$47,000	$47,000
11	Environmental and Stormwater	1	LS	$62,000	$62,000
12	Off-Stream Recharge Basin	6.5	AC	$48,500	$412,250
13	Land Access	1	LS	$40,000	$40,000
14	*Subtotal*				$561,250

Line No.	Markups	Quantity	Unit	Unit Cost	Total Cost
15	Construction Contingency			30%	$124,000
16	General Conditions			15%	$84,000
17	Contractor Overhead and Profit			15%	$84,000
18	Sales Tax			9.25%	$10,400
19	Engineering, Legal, Administrative, Contingencies			30%	$165,000
20	***Total Capital Cost***				$1,032,000

OPERATIONS AND MAINTENANCE

Line No.	Description	Quantity	Unit	Unit Cost	Total Cost
21	Detention Basin Maintenance	1	LS	$4,300	$4,300
22	Contingency			30%	$1,300
23	***Total O&M Cost***				$5,000

NOTES:
1. "Project Yield" based on Assumed 100 acre-feet per year.
2. "Facility Life" selected based on 25-yr anticipated life of facilities.
3. "Interest Rate" selected within expected range for public financing options.
4. Line 11 Environmental and stormwater requirements are estimated at 15% of capital base costs for off-stream basins.
5. Line 12 includes construction of the recharge basin. This cost assumes inclusion of site civil earthwork and access road improvements.
6. Line 13 land access costs are those for acquiring access to land for construction through an easement, license or other mechanism.
7. "Cost Recovery Factor" based on anticipated Facility Life and Interest Rate.

Chapter 9
Appendix 9-B

MCWRA Drought TAC

Drought Operations Technical Advisory Committee

Standards and Guiding Principles of Reservoir Operations During Drought Conditions

This document provides a foundation of standards and guiding principles to be used in the development of a proposed reservoir release schedule triggered under specific, seasonally defined conditions.

Standards: a level of quality or achievement that is considered acceptable or desirable.
Standards are in place to ensure that basic needs are met by partners through clearly defined behaviors that are acceptable. The drought operations technical advisory committee will strive to have attainable standards.

Guiding Principles: guide an organization towards its goals.
Guiding Principles are in place to ensure we continue to move toward our goals with flexibility and unity of effort.

Introduction

Prior to being formally established in 1991, the Monterey County Water Resources Agency (MCWRA) was the Monterey County Flood Control and Water Conservation District, established in 1947 and organized as a division of the Public Works Department of the County of Monterey. MCWRA provides services related to the control of flood and storm waters in Monterey County, conservation, protection of water quality, reclamation of water and the exchange of water. MCWRA is a public agency created by the State of California pursuant to the Monterey County Water Resources Agency Act (California Water Code, Appendix 52).

MCWRA owns and operates two dams along with associated reservoirs. Nacimiento Dam is on the Nacimiento River, a tributary to the Salinas River. Nacimiento Dam is approximately 12.3 river miles upstream of its confluence with the Salinas River and forms the Nacimiento Reservoir, with a maximum storage capacity of approximately 377,900 acre-feet. San Antonio Dam, on the San Antonio River is approximately 8.6 river miles upstream of its confluence with the Salinas River. San Antonio Dam forms the San Antonio Reservoir, with a maximum storage capacity of approximately 335,000 acre-feet of water. The Nacimiento and San Antonio Rivers enter the Salinas River at river miles 108 and 104, respectively, from its mouth at the Pacific Ocean in Monterey Bay.

The purpose of the Drought Operations Technical Advisory Committee (D-TAC) is to provide, when drought triggers occur, technical input and advice regarding the operations of Nacimiento and San Antonio Reservoirs. This document was developed by the members of the D-TAC to

provide a foundation of Standards and Guiding Principles to be used in the development of a proposed reservoir release schedule triggered under specific, seasonally defined conditions. A Habitat Conservation Plan (HCP) is currently being developed to address the effects of reservoir operations and other actions on Federally endangered species and will further address drought operations in the Salinas River system. Documents and procedures developed by the D-TAC will be considered during development of the HCP. MCWRA will convene with stakeholders to determine if modifications to these drought procedures are warranted in light of the terms of the final HCP. Drought operations developed by the D-TAC will also consider management actions and sustainability criteria within the Groundwater Sustainability Plans for the Salinas Valley groundwater basin.

Formation of the D-TAC

The D-TAC was formed through a settlement agreement (Appendix A) to develop Standards and Guiding Principles and proposed reservoir release schedules for MCWRA drought operations. The D-TAC is an ad hoc committee of independent third-party experts with expertise in any of the following fields: hydrology, hydrogeology, hydrologic modeling, civil engineering, ecology, or fish and wildlife biology. The experts are retained and paid for, but not employed by any interested person or organization. The U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife, State Water Resources Control Board, Salinas Valley Basin Groundwater Sustainability Agency and the Monterey County Water Resources Agency are using in-house staff as D-TAC members. Each time a Drought Trigger occurs, the chair of the D-TAC shall rotate, in alphabetical order, by the name of the organization D-TAC members represent. Organizations with multiple members will only have one-person chair in the rotation.

D-TAC Members (ordered alphabetically by organization):

- Donald Baldwin, Environmental Scientist, - California Department of Fish and Wildlife
- Dennis Michniuk, District Biologist Coastal Fisheries - California Department of Fish and Wildlife
- Robert Abrams, PhD, PG, CHg – Grower-Shipper Association
- William Stevens, Natural Resource Management Specialist - National Marine Fisheries Service
- Shaunna Murray, Senior Water Resources Engineer – Monterey County Water Resources Agency
- Germán Criollo, PE, Associate Hydrologist – Monterey County Water Resources Agency
- Jason Demers, Associate Engineer – Monterey County Water Resources Agency
- Emily Gardner, Dep. General Manager – Salinas Valley Basin Groundwater Sustainability Agency
- Curtis Weeks, PE, - Salinas Valley Water Coalition
- Mark Ogonowski, Senior Fish and Wildlife Biologist – U.S. Fish and Wildlife Service

Facilitation and Support:

- Howard Franklin, PG, Senior Hydrologist – Monterey County Water Resources Agency
- Nicole Koerth, GIT, Hydrologist – Monterey County Water Resources Agency

D-TAC Triggers

Drought Triggers, or reservoir storage thresholds for when the D-TAC shall meet to develop a release schedule, are defined in Exhibit B of the Settlement Agreement (Appendix A). These triggers are based on operational considerations and not water year type. The storage thresholds defined assume that MCWRA can make conservation releases to the Salinas River Diversion Facility (SRDF) for two months and maintain minimum releases until September.

A Drought Trigger occurs if the following criteria is met:

- At the October Reservoir Operations Advisory Committee meeting of each year, MCWRA staff will present an updated reservoir release schedule and the then-current forecast for December 1st storage at Nacimiento and San Antonio Reservoirs. If the December 1st forecasted combined reservoir storage volume at Nacimiento and San Antonio Reservoirs is below 220,000 acre-feet and the San Antonio Reservoir's December 1st forecasted storage is below 82,000 acre-feet, the D-TAC process shall commence.
- The MCWRA will schedule the first D-TAC meeting to occur no earlier than February 15th and the D-TAC will meet as needed through March 31st. The D-TAC will develop a recommended release schedule that is consistent with the Standards and Guiding Principles.
- If at any time between December 1st and March 31st the actual reservoir storage volumes equals or exceeds the combined or individual minimum storage thresholds, the D-TAC process will terminate, and no release schedule will be prepared by the D-TAC.

Standards:

- The proposed reservoir release operations schedule triggered under specific, seasonally defined conditions of drought will be developed based on the best available scientific knowledge, data, and understanding of the environmental biology, hydrology and hydrogeology of the Salinas Valley; under the technical expertise of the members of the D-TAC.
- The proposed reservoir release schedule will be implemented based on specific tools and templates made available to the D-TAC. These are discussed further in the Implementation Procedures section.
- The proposed reservoir release schedule will acknowledge, address, and balance the water needs of various stakeholders for limited resources during a drought.

Guiding Principles:

- MCWRA is a public agency charged with the long-term management of water resources in the Salinas Valley and is also the flood control agency for Monterey County. Therefore, any releases of water from Nacimiento or San Antonio Reservoirs will be made with consideration given first to safety, including flow conditions and the structural integrity of Nacimiento and San Antonio Dams.
- MCWRA operates Nacimiento and San Antonio Reservoirs under regulatory authorizations; as well as through legal agreements (Appendix C).
- Any reservoir release schedule developed by the D-TAC should:
    - When conservation releases are made, maintain geographic equity to fullest extent possible;
    - Comply with applicable regulations and agreements relating to the operation of Nacimiento and San Antonio Reservoirs;
    - Avoid, to the extent possible, consecutive years where only minimum releases are made from the reservoirs;
    - Avoid, to the extent possible, adverse effects to native species and their habitats;
    - Safely use existing MCWRA infrastructure while balancing water availability and use; and
    - Avoid, to the extent possible, adverse impacts to valley-wide agricultural operations.

Implementation Procedures:

- The D-TAC will use a MCWRA provided template when developing the release schedule. The specific actions will also be described in a narrative form to expound upon the actions taken for each month shown in the release schedule.
- The release schedule will be developed for April through December of the current year. If significant inflow occurs during this period, then modifications to the release schedule will be made through existing MCWRA protocols.
- The D-TAC will develop a dry winter scenario narrative for the following January- March period to allow for the possibility of multiple dry winter release operations.
- The reservoir release schedule includes estimated values for demands, releases and associated reservoir elevations and storage volumes. It serves as a guideline for reservoir operations. Actual operations will require the flexibility to respond to current hydrologic and facility conditions.
- The release schedule will be updated on a monthly basis for discussion at the Reservoir Operations Committee.
- Reservoir releases will be made under direction of the MCWRA Board of Directors or Board of Supervisors through the adoption of a reservoir release schedule or dry winter release priorities, to be executed by MCWRA staff.

Summary Actions

The Standards and Guiding Principles Document and any recommended release schedule prepared by the D-TAC will first be received by the Reservoir Operations Advisory Committee. The Reservoir Operations Advisory Committee will meet to discuss the Standards and Guiding Principles or release schedule and will solicit information, data and public comment regarding appropriate MCWRA operations during droughts. Following receipt of public input regarding the Standards and Guiding Principles or any subsequent release schedule, the Reservoir Operations Advisory Committee will then prepare a written recommendation regarding reservoir operations which will be transmitted to the MCWRA Board of Directors for consideration and action. Any interested party that dissents from the Reservoir Operations Committee's recommendation may submit separate written comments to the MCWRA Board of Directors. The MCWRA Board of Directors will determine, in accordance with applicable law, whether MCWRA will adopt and implement the Standards and Guiding Principles or release schedule, provided the MCWRA General Manager may, in his sole discretion, refer the question of whether MCWRA should adopt and implement the Standards and Guiding Principles or a release schedule to the MCWRA Board of Supervisors for final determination. In the event the MCWRA General Manager elects not to refer the question of adoption and implementation of Standards and Guiding Principles or a release schedule to the MCWRA Board of Supervisors, the decision of the MCWRA Board of Directors regarding such questions shall constitute final agency action for all purposes. The MCWRA Board of Directors (or MCWRA Board of Supervisors, if applicable) will retain full discretion and authority to accept or reject, in whole or in part, the written recommendations of the Reservoir Operations Advisory Committee.

APPENDICES

Appendix A: *Settlement Agreement Between Monterey County Water Resources Agency, The Agency Board of Supervisors, the Agency Board of Directors, the County of Monterey, the County Board of Supervisors, and the Salinas Valley Water Coalition; November 15, 2019*

- *https://www.co.monterey.ca.us/Home/ShowDocument?id=98911*

Documents referenced in Exhibit B of the Settlement Agreement

- *Salinas Valley Water Project, Engineer's Report, January 2003*
  - *https://www.co.monterey.ca.us/home/showdocument?id=24202*
- *Final Environmental Impact Report/Environmental Impact Statement for the Salinas Valley Water Project*
  - *Draft, June 2001: https://www.co.monterey.ca.us/home/showdocument?id=24180*
  - *Final Volume 1, April 2002: https://www.co.monterey.ca.us/home/showdocument?id=24186*
  - *Final Volume 2, April 2002: https://www.co.monterey.ca.us/home/showdocument?id=24188*
- *Salinas Valley Water Project EIR Addendum, July 17, 2007*
  - *https://www.co.monterey.ca.us/home/showpublisheddocument?id=98572*

Appendix B: *Definition of Terms*

Appendix C: *Monterey County Water Resources Agency's Water Rights and Agreements*

Appendix B: Definition of Terms

Adult Steelhead Upstream Migration Releases – Reservoir releases made to facilitate upstream migration of adult steelhead between February 1st- March 31st, when triggers are met. If the 1) combined storage of Nacimiento and San Antonio reservoirs is greater than 220,000 AF, 2) 340 cfs or higher flows are present at the Arroyo Seco near Soledad gage (USGS streamflow gage 11152000), and 3) 173 cfs or higher flows are present at the Arroyo Seco below the Reliz Creek gage (USGS streamflow gage 11152050), MCWRA will provide flows of at least 260 cfs at the Salinas River near Chualar (USGS streamflow gage 11152300) for five or more consecutive days, when the river mouth is open to the ocean.

Block Flow Releases – Reservoir releases made to facilitate the downstream migration of smolts and rearing juvenile steelhead in the Salinas River beginning March 15th in normal-category type years. The following triggers must be meet for releases to be made 1) water year type is dry-normal, normal or wet-normal, 2) combined storage of Nacimiento and San Antonio reservoirs is 150,000 AF or more on March 15th, and 3) 125 cfs or higher at the Nacimiento River below Sapaque Creek gage (USGS streamflow gage 111489000) or 70 cfs at the Arroyo Seco below Reliz Creek gage (USGS streamflow gage 11152050). Amount and duration of block flow depends on when the flows are triggered.

Conservation Pool – Water in reservoirs used for groundwater recharge, operation of the Salinas River Diversion Facility, water supply, fish migration, and fish habitat requirements. Volume of 289,013 acre-feet between 687.8 feet and 787.75 feet in Nacimiento Reservoir and volume of 282,000 acre-feet between 666 feet and 774.5 feet in San Antonio Reservoir.

Conservation Releases – Water discharged for the purpose of recharging the groundwater basin.

Dead Pool – The storage between the bottom of the reservoir and elevation 670 feet for Nacimiento Reservoir, the invert of the intake structure of the low-level outlet works, and elevation 645 feet for San Antonio Reservoir, the invert of the intake structure of the outlet works. The volume of the Dead Pool is 10,300 acre-feet in Nacimiento Reservoir and 10,000 acre-feet in San Antonio Reservoir. Water cannot flow out by gravity out of Nacimiento Reservoir below 670 feet elevation and out of San Antonio below 645 feet elevation.

Downstream Migration of Juvenile Steelhead and Kelts Releases – Reservoir releases and SRDF bypass flows made to enhance migration opportunities for juvenile steelhead and post-spawn adult steelhead (kelts) made in years when block flow releases for smolt migration don't occur by April 1st.

Dry Year – Water year in which unimpaired annual mean flow at the USGS streamgage on the Arroyo Seco near Soledad (USGS streamgage 11152000) falls in the 75-100% percentile of mean annual flows ranked in descending order (as defined in the Salinas Valley Water Project Flow Prescription for Steelhead Trout in the Salinas River).

Environmental Compliance – Conforming to any environmental regulatory requirements currently imposed or those that become imposed in the future.

Flood Pool – Water used to temporarily store flood water during the winter. Volume of 66,587 acre-feet between 787.75 feet and 800 feet in Nacimiento Reservoir and volume of 30,000 acre-feet between 774.5 feet and 780 feet in San Antonio Reservoir.

Maximum Reservoir Elevation – Maximum reservoir elevation that can be sustained, and the level at which the reservoir is considered full. Elevation of 800 feet in Nacimiento Reservoir and 780 feet in San Antonio Reservoir.

Minimum Releases – Reservoir releases made to provide steelhead spawning and rearing habitat flows. Minimum releases are 60 cfs from Nacimiento Dam as long as the water surface elevation of Nacimiento Reservoir is above 687.8 feet, and 10 cfs from San Antonio Dam as long as the water surface elevation of San Antonio Reservoir is above 666 feet.

Minimum Pool – The storage above Dead Pool and below Conservation Pool. This is between elevation 670 feet and 687.8 feet in Nacimiento Reservoir. The volume of this pool is 12,000 acre-feet which is reserved for use by the County of San Luis Obispo per the 1959 San Luis Obispo County Agreement. In San Antonio Reservoir, minimum pool is between elevation 670 feet and 687.7 feet, with a volume of 12,000 acre-feet.

Minimum Recreation Elevation – Lowest Nacimiento Reservoir elevation at which most of the boat ramps around the reservoir are useable and which most private property owners have access to the reservoir.

Natural Flow – Water that would exist in a stream at a given point in time in the absence of human activity *(Source: https://www.waterboards.ca.gov/waterrights/board_info/faqs.html)*

NWP Intake Elevation – Lowest Nacimiento Reservoir elevation at which San Luis Obispo County can take water through the Nacimiento Water Project. Elevation of 670 feet.

Operations Ratio – The ratio of empty space in the conservation pools of San Antonio and Nacimiento Reservoirs, with Nacimiento as the numerator. Historically, this ratio was defined as 3 to 1, and reservoir releases were made in such a manner that the ratio was reached prior to halting releases at onset of the rainy season.

Salinas River Diversion Facility (SRDF) – A component of the Salinas Valley Water Project that consists of an inflatable Obermeyer dam and a river intake structure to provide treated river water to growers within the Castroville Seawater Intrusion Project service area. This facility is located approximately 5 river miles upstream of the mouth of the Salinas River.

Salinas Valley Water Project (SVWP) – A project developed by MCWRA and Salinas Valley interests that consists of the modifications of the spillway at Nacimiento Dam and the construction of the Salinas River Diversion Facility, near the city of Marina. The goals of the project are to help stop seawater intrusion, improve flood control, recharge Salinas Valley groundwater, and improve conditions for steelhead trout.

Top of Dam – The dam crest. Elevation of 825 feet at Nacimiento Dam and 802 feet at San Antonio Dam.

Water Year – The 12-month period from October 1st through September 30th. The water year is designated by the calendar year in which it ends, and which included 9 out of the 12 months. For examples, the year ending on September 30th, 1959 is called “1959 water year”.

Water Year Type – Determination of water year type (e.g. dry, normal, wet) is made based on unimpaired annual mean flows at the USGS streamgage on the Arroyo Seco near Soledad (USGS Streamgage 11152000). Annual mean flows are ranked in descending order and stream flow corresponding to the 25th and 75th percentile are selected as the thresholds. Wet years are defined as flows below the 25th percentile, Normal years between the 25th and 75th percentile, and Dry years above the 75th percentile. Year type determinations are made on March 15th (preliminary) and April 1st (official) of each year. (as defined in the Salinas Valley Water Project Flow Prescription for Steelhead Trout in the Salinas River).

Appendix C: Monterey County Water Resources Agency's Water Rights and Agreements

Nacimiento Reservoir

Water Rights License 7543 – License for Diversion and Use of Water, No. 7543, from the California State Water Resources Control Board, was issued November 4, 1965.

This license was last amended September 5, 2008 to specify that the place of use of water from this license changed to include 421,435 acres of land comprising MCWRA's Zone 2C assessment zone, to add a point of rediversion at the Salinas River Diversion Facility (SRDF), and to add fish flow requirements that were consistent with the June 21, 2007, National Marine Fisheries Service (NMFS) biological opinion issued to the U.S. Army Corps of Engineers (biological opinion).

License No. 7543 gives MCWRA the right to store 350,000 AF from October 1 of each year to July 1 of the succeeding year and to withdraw a maximum of 180,000 AF per year. The purpose of use are for irrigation, domestic, municipal, industrial, and recreational uses. *Documents for this can be found in Appendix B of the Nacimiento Dam Operation Policy: https://www.co.monterey.ca.us/Home/ShowDocument?id=63151*

Water Rights Permit 21089 – Permit for Diversion and Use of Water, No. 21089, from the California State Water Resources Control Board, was issued March 23, 2001. This permit was last amended September 5, 2008, to specify that the place of use of water from this license changed to include 421,435 acres of land comprising MCWRA's Zone 2C assessment zone, to add a point of rediversion at the SRDF, and to add fish flow requirements that were consistent with the NMFS biological opinion.

The original reservoir volume computations submitted and subsequently approved in License No. 7543, were based on United States Geological Survey (USGS) Quad sheets from the 1940s. In the early 1990s, aerial surveys with increased accuracy showed that the actual volume of Nacimiento Reservoir was greater than the 350,000 AF in License 7543. In order to correct this discrepancy, MCWRA filed water rights Application No. 30532. Nacimiento Dam has never been modified in any way to increase storage and the reservoir volume is unchanged from the time of the dam's construction, with the exception of the inflow of silt from natural runoff which has decreased storage volume.

As a result of this application, MCWRA has a permit to collect to storage 27,900 AF per annum from October 1 of each year to July 1 of the succeeding year. The total quantity of water collected to storage under this permit and License 7543 shall not exceed 377,900 AF per year.

Documents for this can be found in Appendix B of the Nacimiento Dam Operation Policy:
https://www.co.monterey.ca.us/Home/ShowDocument?id=63151

Water Rights Permit 19940 – Permit for Diversion and Use of Water, No. 19940, from the California State Water Resources Control Board, was issued December 31, 1986. Permit 19940 gives MCWRA the right to divert up to 500 cfs through the Hydroelectric Plant from January 1 to December 31 of each year for irrigation, domestic, municipal, industrial and recreational uses. Diversion under this permit is incidental to releases being made for other purposes.

Documents for this can be found in Appendix B of the Nacimiento Dam Operation Policy:
https://www.co.monterey.ca.us/Home/ShowDocument?id=63151

San Luis Obispo County Agreement – MCWRA's Water Rights License No. 7543 is subject to an agreement between MCWRA and SLO District which gives SLO District the right to use 17,500 AF of water annually from Nacimiento Reservoir. The SLO District Board has adopted a policy designating a portion of the total, approximately 1,750 acre-feet per year (AFY), for use around Nacimiento Reservoir; Heritage Ranch Community Services District (HRCSD) has agreements with SLO District which collectively entitle HRCSD to use 889 AFY of the 1,750 AFY; pursuant to these agreements, HRCSD takes its allotment from a well gallery in the Nacimiento River downstream of the Dam. SLO District can use up to the remaining 15,750 AF per water year through the NWP. The agreement also provides that MCWRA shall not make conservation releases during the water year that result in a reservoir elevation below 687.8 feet on September 30 of each year in order to assure SLO District of its rights and entitlements to water under the terms of the agreement (i.e. in order to assure the maintenance of a minimum storage pool of 12,000 AF above the present low-level outlet works for SLO District use). The original agreement is dated October 19, 1959, and it has been amended six different times in 1959, 1967, 1970, 1977, 1988, and 2007. These documents are collectively referred to as the SLO County Agreement.

Documents for this can be found in Appendix C of the Nacimiento Dam Operation Policy:
https://www.co.monterey.ca.us/Home/ShowDocument?id=63151

Nacimiento Water Company Agreement – The 1984 agreement with MCWRA allows the Nacimiento Water Company a water allocation of up to 600 AF per year to be extracted from wells within the floodage easement of Nacimiento Reservoir. The Nacimiento Water Company shall pay MCWRA quarterly for water from the allocation on the basis of AF used at a rate determined by this agreement.

Documents for this can be found in Appendix D of the Nacimiento Dam Operation Policy:
https://www.co.monterey.ca.us/Home/ShowDocument?id=63151

San Antonio Reservoir

Water Rights License 12624 - License for Diversion and Use of Water, No. 12624, from the California State Water Resources Control Board, was issued December 2, 1965 and amended April 22, 1990. This license was most recently amended September 5, 2008 to specify that the place of use of water from this license changed to include 421,435 acres of land comprising MCWRA's Zone 2C assessment zone, to add a point of rediversion at the SRDF, and to add fish flow requirements consistent with the June 21, 2007, National Marine Fisheries Service BO.

License No. 12624 gives MCWRA the right to store 220,000 AF from October 1 of each year to July 1 of the succeeding year and to withdraw a maximum of 210,000 AF per year for municipal, domestic, industrial, irrigation, and recreational uses.

The amended license can be found on the CA State Water Resources Control Board website: https://www.waterboards.ca.gov/waterrights/board_decisions/adopted_orders/orders/2008/wro2008_0037dwr.pdf