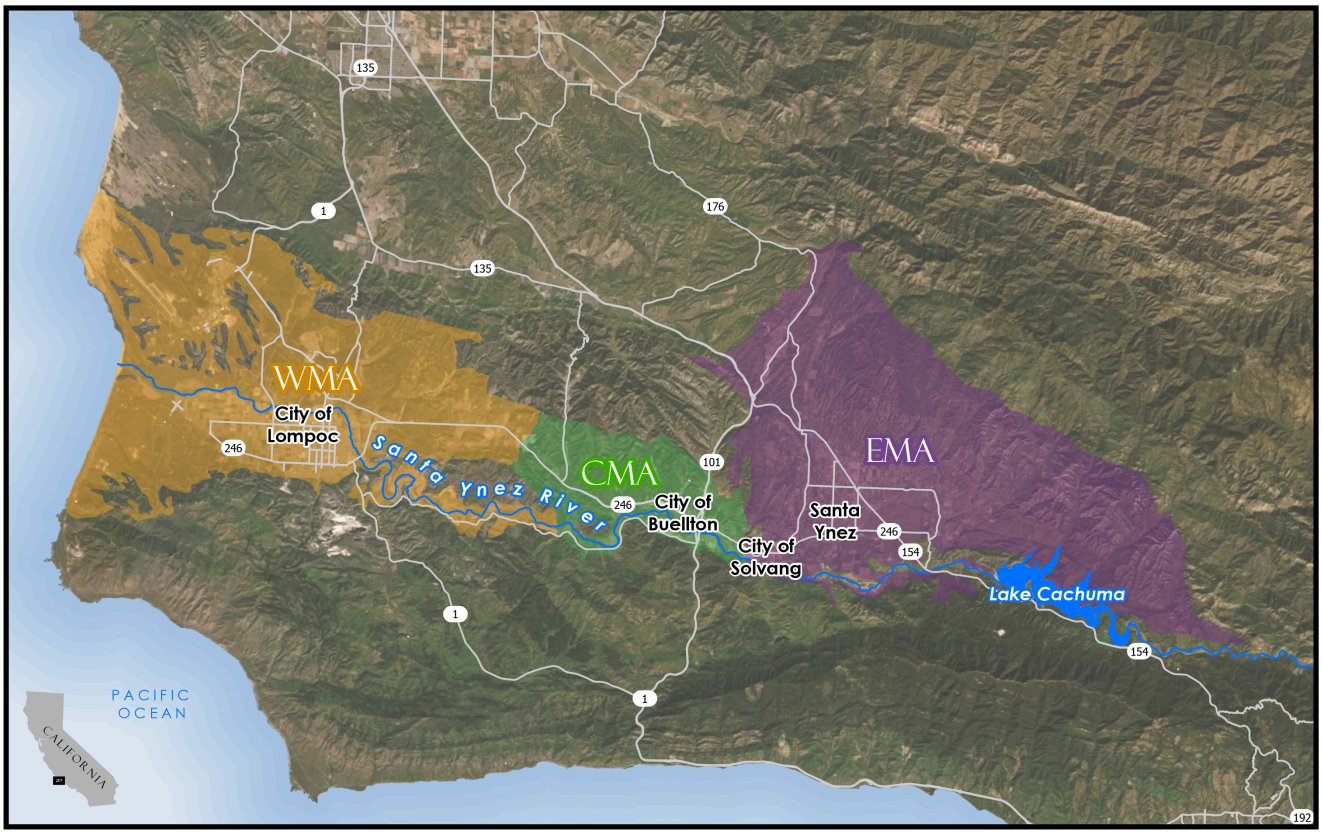
# FORTY-SECOND ANNUAL ENGINEERING AND SURVEY REPORT ON WATER SUPPLY CONDITIONS OF THE SANTA YNEZ RIVER WATER CONSERVATION DISTRICT 2019-2020

April 24, 2020




STETSON ENGINEERS INC.

Northern California • Southern California • Arizona • Colorado • Oregon

# FORTY-SECOND ANNUAL
# ENGINEERING AND SURVEY REPORT ON
# WATER SUPPLY CONDITIONS OF THE
# SANTA YNEZ RIVER WATER CONSERVATION DISTRICT
# 2019-2020

**April 24, 2020**

STETSON ENGINEERS INC.

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1126-13 April 24, 2020 San Rafael

Board of Directors
Santa Ynez River Water
Conservation District
P.O. Box 719
Santa Ynez, California 93460

Re: Forty-Second Annual Engineering Survey and Report on Water Supply Conditions of the Santa Ynez River Water Conservation District, 2019-2020

Dear Board Members:

Transmitted herewith is our Engineering Survey and Report on Water Supply Conditions of the Santa Ynez River Water Conservation District for 2019-2020. This, the Forty-Second Annual Report, presents the required and pertinent information for the Board of Directors to make necessary determinations for levying groundwater charges upon the production of groundwater from water-producing facilities (water wells) within the District. As such, it provides information on the status of the groundwater and surface water supplies, as well as the annual production of groundwater from within the District.

Sincerely,

Oliver S. Page

OSP:rrk
Enclosures

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## LIST OF TERMS

Accumulated Overdraft.....The amount of water necessary to be replaced in the intake areas of the groundwater basins within the District or any zone or zones thereof to prevent the landward movement of salt water into the fresh groundwater body, or to prevent subsidence of the land within the District or any zone or zones thereof, as determined by the board from time to time. Defined in Water Code Section 75505. See also Dewatered Storage

Acre-Foot .....Volume of water to flood one acre to a depth of one foot (325,851 gallons).

Ad Valorem property tax .....Property tax assessed according to value of property.

AF, AC-FT .....Acre-Foot.

Agricultural water .....Produced water first used on lands in the production of plant crops or livestock for market.
Defined in Water Code Section 75508.

Alluvium .....Sediments deposited through stream or river action.
In Santa Ynez these sediments are generally much younger, less consolidated, with greater hydraulic conductivity, than the surrounding marine and non-marine sediments.

ANA.....Above Narrows Account.
Water rights release from Bradbury Dam (Lake Cachuma) made to replenish the groundwater basin upstream of the Lompoc Narrows area.

Annual Overdraft .....The amount, determined by the board, by which the production of water from groundwater supplies within the District or any zone or zones thereof during the water year exceeds the natural replenishment of such groundwater supplies in such water year.
Defined in Water Code Section 75506.

BNA .....Below Narrows Account.
Water rights release from Bradbury Dam (Lake Cachuma) made to replenish the groundwater basin downstream of the Lompoc Narrows area, i.e. for the Lompoc Plain subarea.

Board .....Refers to the five Directors of the Santa Ynez River Water Conservation District.

Bradbury Dam .....Completed in 1953, the dam impounds the Santa Ynez River to form Lake Cachuma. Bradbury Dam and water rights releases are operated by the USBR. The dam stores floodwaters of the Santa Ynez River and SWP water.

Cachuma Member Units .....Beneficiary organizations of the Cachuma Project. Consists of:
Carpinteria Valley Water District
City of Santa Barbara
Goleta Water District
Montecito Water District
Santa Ynez River Water Conservation District, Improvement District No. 1 (ID No. 1).

Calendar Year .....January 1 through December 31.

CCWA.....Central Coast Water Authority.
Public entity which owns and operates pipelines and water treatment facilities enabling deliveries of water from the State Water Project to Santa Barbara and San Luis Obispo Counties.

CFS .....Cubic Feet per Second.
Flow rate units commonly used in describing surface water flows.

Contractor .....Organization contracted to receive State Water Project water.
Term is used by the Department of Water Resources as well as CCWA.

Current Water Year.....The water year in which the investigation and report on the groundwater conditions of the District is made, the hearing thereon held, and the determination is made by the board as to whether a zone or zones should be established and a groundwater charge levied therein.
Defined in Water Code Section 75507 (b).

Dewatered Storage .....Unused and available space in the aquifer available for storing additional groundwater. See also Accumulated Overdraft.

Deposits .....See Unconsolidated Deposits.

District.....Santa Ynez River Water Conservation District.
Water conservation district representing the interests of the Santa Ynez and Lompoc Valleys.

District Fiscal Year .....July 1 through June 30.

Drought Buffer.....A term used to identify a source of supply within the State Water Project (SWP) system that will provide a higher level of reliability during times of drought. For most CCWA water purveyors, the drought buffer equals 10% of Table A amount.

Ensuing Water Year.....The water year immediately following the current water year.
Defined in Water Code Section 75507 (d).

Entitlement.....A term used formerly to refer to "Table A" amounts. Table A amounts are the maximum amount of State Water Project (SWP) water that the State agreed to make available to each SWP contractor for delivery during the year.

Forebay ..... Generally, a term applied to refer to a natural or artificial body of water below a dam. In the Santa Ynez River Basin, the term is used to refer to the area where most of the percolation occurs from the Santa Ynez River to the Lompoc Plain aquifer, which consists of the eastern four miles of the river beginning at the Robinson Road Bridge and downstream to Floradale Avenue.

Groundwater .....All water beneath the earth's surface, but does not include water which is produced with oil in the production of oil and gas, or in a bona fide mining operation, or during construction operations, or from gravity or artesian springs.
Defined in Water Code Section 75502.

ID No.1 .....Santa Ynez River Water Conservation District, Improvement District No. 1.
Special improvement district which distributes and serves municipal and irrigation water in the Santa Ynez Uplands.

Lake Cachuma .....Reservoir formed by Bradbury Dam.

MG/L.....Milligrams per Liter.
Concentration units of mass per volume. In fresh water this is approximately equivalent to parts per million (ppm).

NOAA .....National Oceanic and Atmospheric Administration
Federal agency organized under the Department of the Commerce concerned with oceans, waterways, and atmosphere.

Operator .....Public agencies, federal, state, and local, private corporations, firms, partnerships, limited liability companies, individuals, or groups of individuals, whether legally organized or not.
Defined in Water Code Section 75501.

Other Water.....Water used for purposes not including: agriculture or irrigation at parks, golf courses, schools, cemeteries and publicly owned historic sites. Generally, refers to municipal, industrial or domestic uses of pumped or produced water.

Overdraft .....Net water loss to groundwater basin. Calculated as the increase in dewatered storage.

Owner .....Person to whom a water-producing facility is assessed by the county assessor of an affected county, or, if not separately assessed, the person who owns the land upon which a water-producing facility is located.
Defined in Water Code Section 75501.

Person .....See Operator.

Preceding Water Year.....The water year immediately preceding the current water year.
Defined in Water Code Section 75507 (c).

Precipitation.....Combination of rainfall, snow, and any other form of water vapor that condenses on the ground.

Producer.....An entity (person or corporate) which "produces" water by pumping groundwater from a well.

Production.....The act of extracting groundwater by pumping or otherwise.
Defined in Water Code Section 75503.

Project.....Cachuma Project.
Includes Bradbury Dam, Tecolote Tunnel and all conveyance infrastructure to deliver project water to the South Coast.

Pump Charge .....Fee for extraction of groundwater from a well.

Purchased Water .....See definition of Turnback Pool Water. Refers to State Water Project (SWP) water purchased from another SWP Contractor.

Safe Yield .....The amount of water that can be withdrawn from a groundwater basin without producing an undesired effect.

SBCWA .....Santa Barbara County Water Agency.
County agency organized under the Santa Barbara County Public Works Department tasked with providing technical support to other public agencies and manages several water supply and public information programs.

South Coast ..... Located in southern Santa Barbara County and includes the communities of Carpinteria, Goleta and portions of the Gaviota Coast, Montecito, Santa Barbara and Summerland.

Special Irrigation Water ..... Produced water used for irrigation purposes at parks, golf courses, schools, cemeteries, and publicly owned historic sites.

Streamflow Infiltration ..... Stream or river water that percolates into the subsurface.

Surface Water ..... Water on the ground surface, including lakes, rivers, and canals.

SWP ..... State Water Project.
Water storage and delivery system operated by California Department of Water Resources which transports water from northern California to users located primarily in the San Francisco Bay area and southern California.

SWRCB ..... State of California Water Resources Control Board.

Turnback Pool ..... Turnback Pool Water refers to State Water Project (SWP) water that contractors may choose to offer from their allocated SWP Table A water to other Contractors through two pools in February and March.

Unconsolidated Deposits ..... Sedimentary material that is loosely arranged and have not been cemented (generally through a combination of physical compaction or chemical deposition) into a cohesive whole.

USBR ..... U.S. Bureau of Reclamation.
Federal bureau organized under the Department of the Interior concerned with construction and operation of dams.
Specifically, operates Bradbury Dam at Lake Cachuma.

USGS ..... U.S. Geological Survey.
Federal bureau organized under the Department of the Interior concerned with natural science research.

Water Code ..... California state law related to water and water districts.

Water-producing facility ..... Any device or method, mechanical or otherwise, for the production of water from the groundwater supplies within the District.
Defined in Water Code Section 75504.

Water Year (hydrologic) ..... One year period from October 1 through September 30 of the following year.

Water Year (statutory) ..... One year period from July 1 through June 30 of the following year, defined by Water Code Section 75507 (a).

WR 73-37 ..... SWRCB Order of 1973.
Order addresses the storage and release of water in Lake Cachuma, and the operation of the ANA and BNA accounts.

WR 89-18 ..... SWRCB Order of 1973, as amended in 1989.
Amends the permits regarding the operation of the Cachuma Project.

WR 94-5.....SWRCB Order of 1973, as amended in 1994. Amends the permits regarding the operation of the Cachuma Project.

Zones.....Specific geographic areas of the Santa Ynez Basin within the District with distinct groundwater charge rates:

| | |
|---|---|
| Zone A | Santa Ynez River alluvium within the Santa Ynez subarea, Buellton subarea, and Santa Rita subarea |
| Zone B | Lompoc Area: Lompoc Plain subarea, Lompoc Upland subarea, Lompoc Terrace subarea |
| Zone C | Miscellaneous unconsolidated deposits and consolidated rocks |
| Zone D | Buellton Upland subarea |
| Zone E | Santa Ynez Upland subarea |
| Zone F | Santa Rita Upland subarea |

Cover Photograph: Santa Ynez River Valley Groundwater Basin including Western, Central and Eastern Management Areas, based on Department of Water Resources Bulletin 118 (2016 Update), California's Groundwater. Sources: ESRI Aerial Imagery (Maxar 2018), USGS National Hydrography Dataset, and ESRI Major Roads.

# 1.0 EXECUTIVE SUMMARY

This, the Forty-Second Annual Engineering Survey and Report on Water Supply Conditions of the Santa Ynez River Water Conservation District, 2019-2020 presents the required and pertinent information for the Board of Directors to make the necessary determinations with respect to levying groundwater charges upon the production of groundwater from water-producing facilities within the District. As such, it provides information on the status of groundwater and surface water supplies as well as the annual production of groundwater from within the District.

This introduction provides: (1) historical background on the Santa Ynez River Water Conservation District (hereinafter called District), inclusive of its purpose and its use of pump charges to finance its activities in part; (2) an overview of the boundaries and water resources of the District; (3) a summary of this report; and (4) findings and determinations required by the Water Code to establish the amount and set the rates of groundwater charges necessary to generate sufficient revenue to supplement existing revenue sources of the District.

Subsequent chapters provide information on groundwater production and charges (Chapter 2.0), precipitation (Chapter 3.0), surface water conditions (Chapter 4.0) and groundwater conditions (Chapter 5.0). Additional information on provisions of the Water Code pertinent to groundwater charges, historical groundwater charge rates, streamflow records, water right releases, a general description of the hydrogeology of groundwater sources, water-level hydrographs of selected wells and well inventory data are found in the Appendices.

## 1.1. HISTORICAL BACKGROUND

The District was formed in 1939 for the primary purpose of protecting water rights on the lower Santa Ynez River. Reservoirs had been constructed in the upper reaches of the Santa Ynez River by the City of Santa Barbara (Gibraltar Reservoir) and the Montecito Water District (Jameson Lake), and litigation by downstream riparian landowners challenging those projects was not totally successful. Additional projects or exportation of water were being studied and the Cachuma Project was administratively authorized under

Section 9(a) of the Federal Reclamation Act of 1939. For these reasons, the people of the Santa Ynez and Lompoc Valleys joined together to form the District. The purpose of the District is to protect, and if necessary, augment the water supplies of the District, which are necessary for the public health, welfare and safety of all residents.

In recent years, the District has received only about half of its necessary operating budget from ad valorem property taxes, the remainder of the budget is funded from charges levied on the production of groundwater. The Water Conservation District Law of 1931 includes a detailed procedure set forth in Part 9 of Division 21 of the Water Code (Water Code Section 75500 through 75642) providing for implementation of a pump charge. Initiated by the District in 1979, these charges are authorized to be levied on the production of groundwater from water-producing facilities. They are levied as an additional source of revenue to the extent that such charges are deemed necessary by the District Directors to cover the remaining operating funds to accomplish District activities, all associated with managing, protecting, conserving and enhancing water resources within the District.

Groundwater charges are incurred by the owners of water production facilities and are charged at uniform rates (for each category of water) within the District or each Zone thereof, based on the amount of groundwater produced. Production is measured by water meter or is estimated by a variety of methods acceptable to the District. Use of meters has never been required. However, all methods used to estimate production are based on criteria relating to water use. Various legal remedies exist for non-registration of wells, non-payment of groundwater charges, and submittal of fraudulent information. Should court action be necessary and a judgment obtained, a lien is placed against the water-producing facility owner's real or personal property.

## 1.2. DESCRIPTION OF THE DISTRICT

The District, comprised of two non-contiguous parcels, encompasses approximately 180,000 acres including most of the Santa Ynez River watershed from the mouth of the river at Surf to a point about three miles downstream of Bradbury Dam and smaller watershed areas northeast and south of Lake Cachuma. Ground surface elevations vary from sea level at Surf to more than 1,700 feet above sea level along portions of the southern District boundary. The terrain south of the river rises relatively steeply to the crest of the Santa Ynez

Mountains. North of the river the rise in elevation is generally gradual over upland terraces and hilly areas. The District boundary and various geographic features within or adjacent to the District are shown on Figure 1.

The Santa Ynez River flows westerly, generally parallel to the southern boundary of the District until entering the Lompoc Plain. Thence, it flows northwesterly and westerly across the Plain to the Pacific Ocean. The flow of the river is intermittent throughout the District, carrying mainly flood flows from tributary watershed land downstream of Bradbury Dam and occasional spills and releases of water from Lake Cachuma. During summer months, water is released from Lake Cachuma to meet downstream water rights.

Groundwater occurs within the District primarily in younger unconsolidated alluvial deposits and in older unconsolidated deposits. In most cases, the older and often deeper deposits are not in hydrologic continuity with the shallower alluvial deposits. The major occurrences of groundwater are in the alluvial deposits of the Santa Ynez River and Lompoc Plain, and in the older unconsolidated deposits of the Santa Ynez Upland, Lompoc Upland, Buellton Upland, Santa Rita Upland and the Lompoc Terrace subareas.

Classification of water production within the District by water-use type is 73% ”Agricultural”, 3% “Special” and 24% ”Other” which includes domestic, municipal, and industrial water production. With the exception of the Cities of Lompoc, Solvang and Buellton and the communities of Santa Ynez and Los Olivos, as well as two federal installations, (Vandenberg Airforce Base and the Lompoc Federal Penitentiary), most of the District is a mixture of rural areas with, agriculture and suburban development.

## 1.3. REPORT SUMMARY

The following is a summary of the information contained in this report.

1. Revenues from groundwater charges collected by the District for production during the July-June fiscal year 2018-19 amounted to $552,151.83. Revenues collected through April 6, 2020 for production during the first half of fiscal year 2019-20 amounted to $219,431.85. An additional $2,362.37 has been received as late payments and assessments in connection with production prior to fiscal year 2018-19.

2. The Board, for fiscal year 2019-20, reaffirmed the following six groundwater charge zones for the District.

   Zone A - District portion of the Santa Ynez River alluvial channel from San Lucas Bridge downstream to Lompoc Narrows.

   Zone B - District portion of the Lompoc Plain, Lompoc Upland and Lompoc Terrace groundwater subareas.

   Zone C - All other portions of the District not included in Zones A, B, D, E, and F.

   Zone D - District portion of the Buellton Upland subarea.

   Zone E - District portion of the Santa Ynez Upland subarea.

   Zone F - District portion of the Santa Rita Upland subarea.

3. The groundwater charge rates per acre-foot of production for fiscal year 2019-20 were as follows:

| | Agricultural Water | Other Water | Special Irrigation Water |
|---|---|---|---|
| Zone A | 7.15 | 25.00 | 14.30 |
| Zone B | 7.15 | 25.00 | 14.30 |
| Zone C | 7.15 | 25.00 | 14.30 |
| Zone D | 7.15 | 25.00 | 14.30 |
| Zone E | 7.15 | 25.00 | 14.30 |
| Zone F | 7.15 | 25.00 | 14.30 |

4. As of April 6, 2020, reported groundwater production for fiscal year 2018-19 totaled 46,270 acre-feet. This is about 90 percent of the 51,170 acre-feet total water production reported for fiscal year 2017-18.

5. Groundwater production, reported as of April 6, 2020 for the first half of fiscal year 2019-20 totaled 21,023 acre-feet or about 88 percent of the 23,833 acre-feet total water production reported for the first half of fiscal year 2018-19 as of April 3, 2019.

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Santa Ynez River Water Conservation District Boundary

Drainage Basin Boundary

# SANTA YNEZ RIVER WATER CONSERVATION DISTRICT

0 3 6 Miles

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FIGURE 1

6. Annual reported (as of April 6, 2020) groundwater production within the District for the past five years was as follows:

| Fiscal Year (July-June) | Total Production (Acre-Feet) |
|---|---|
| 2014-15 | 55,009 |
| 2015-16 | 53,035 |
| 2016-17 | 50,153 |
| 2017-18 | 51,170 |
| 2018-19 | 46,270 |

7. The projected estimated total groundwater production for fiscal years 2019-20 and 2020-21 is 46,300 acre-feet per year.

8. As of April 6, 2020, 1,146 wells have been registered with the District. Of that number, approximately 926 are active and 220 are inactive.

9. Precipitation at Bradbury Dam and Lompoc during calendar year 2019 and the October-September hydrologic water year 2019-20 through March was as follows:

| | Bradbury Dam | Lompoc |
|---|---|---|
| 2019 Calendar Year Precipitation (Inches) | 32.02 | 22.17 |
| Percent of Normal | 145 | 139 |
| 2019-20 Hydrologic Water Year through March 2020 partial year (Inches) | 17.27 | 10.26 |
| Percent of Normal | 86 | 71 |

*Source: Santa Barbara County Flood Control District and National Oceanic and Atmospheric Administration (NOAA).*

10. During hydrologic water year 2018-19, the flow of the Santa Ynez River at the Lompoc Narrows was 42,989 acre-feet. Through March 2020, the flow at the Narrows for hydrologic water year 2019-20 was 1,817 acre-feet.

11. No water rights releases were made in 2019.

12. Deliveries to Central Coast Water Authority contractors receiving State Water Project water within the District were as follows:

| Fiscal Year (July-June) | State Water Project Deliveries (Acre-Feet) | | | |
|---|---|---|---|---|
| | Improvement District No. 1 | City of Solvang | City of Buellton | Vandenberg AFB |
| 2018-19 | 1,462 | 690 | 211 | 2,296 |
| 2019-20 (First Half) | 1,954 | 492 | 155 | 1,433 |

*Source: Central Coast Water Authority*

13. The estimated change in the quantity of groundwater in storage within the District and the estimated accumulated dewatered storage are summarized below.

| Source of Groundwater | Change in Storage 2019 to 2020 (Acre-Feet) | Accumulated Dewatered Storage 2019-20 (Acre-Feet) |
|---|---|---|
| Santa Ynez River Alluvium | 600 | 14,700 |
| Lompoc Plain | 2,900 | 15,100 |
| Lompoc Upland | -400 | 36,200 |
| Lompoc Terrace | -100 | 700 |
| Santa Rita Upland | -1,000 | 14,400 |
| Buellton Upland (Eastern Portion) | -500 | 1,800 |
| Santa Ynez Upland (District) | 200 | 59,100 |
| **TOTAL** | 1,700 | **142,000** |

## 1.4. FINDINGS

The findings of this investigation are summarized below so that the Board may make the determinations required by law (Water Code Section 75574) for the July 1-June 30 water year (statutory). These findings are based upon either Spring 2020 water-level data or pumpage reported through April 6, 2020 and are applicable to the entire District.

(a) The average annual overdraft for the immediate past ten (10) water years (statutory): 3,470± acre-feet;

(b) The estimated annual overdraft for the current (2019-20) water year (statutory): 2,000± acre-feet;

(c) The estimated annual overdraft for the ensuing (2020-21) water year (statutory): 2,000± acre-feet;

(d) The accumulated overdraft as of the last day of the preceding (2018-19) water year (statutory): 143,700± acre-feet in terms of accumulated dewatered storage. Accumulated overdraft as defined in Water Code Section 75505 is nominal, at this time;

(e) The estimated accumulated overdraft as of the last day of the current (2019-20) water year (statutory): 142,000± acre-feet in terms of accumulated dewatered storage. Accumulated overdraft as defined in Water Code 75505 is nominal, at this time;

(f) The estimated amount of agricultural water to be withdrawn from the groundwater supplies of the District for the ensuing water year (2020-21); 33,560 acre-feet of agricultural water and 1,350 acre-feet of special irrigation water;

(g) The estimated amount of water other than agricultural water or special irrigation water to be withdrawn from the groundwater supplies of the District for the ensuing (2020-21) water year (statutory): approximately 11,350 acre-feet;

(h) The estimated amount of water necessary for surface distribution for the ensuing (2020-21) water year (statutory): approximately 4,900 acre-feet scheduled to be delivered by the Central Coast Water Agency to contractors within the District;

(i) The amount of water, which is necessary for the replenishment of the groundwater supplies of the District: 142,000± acre-feet to completely replenish accumulated dewatered storage;

(j) The amount of water the District is obligated by contract to purchase: The District is not obligated by contract to purchase water.

The amount of groundwater charge levied by the Board should be based upon the estimated amount of supplemental revenue required to continue essential District activities without increasing the cost of water to a producer to a point where it is not financially

feasible for the producer to utilize the water. The State Water Code requires that non-agricultural rates cannot be less than three times, nor more than five times the rate established for agricultural water and special irrigation water rates shall not be less than the rate for agricultural water and shall not be more than the rate for non-agricultural water.

The actual groundwater charge the Board will levy for fiscal year 2020-21 will be based upon the District's anticipated expenses and revenue.

## 1.5. SOURCES OF INFORMATION

The information and data utilized to prepare this report were obtained from the following sources:

- Pumpage, revenue and well registration – District
- State Water Project use – Central Coast Water Authority
- Water-level measurements – Santa Barbara County Water Agency (SBCWA), U.S. Geological Survey (USGS), City of Buellton and U.S. Bureau of Reclamation (USBR)
- Precipitation measurements – Santa Barbara County Flood Control District
- Water quality analyses – USGS
- Lake Cachuma operations – USBR
- Surface water flow – USGS

## 2.0 GROUNDWATER CHARGES

The Board has previously established six groundwater charge zones for the District which are described below.

Zone A – District portion of the Santa Ynez River alluvial channel from San Lucas Bridge downstream to Lompoc Narrows.

Zone B – District portion of the Lompoc Plain, Lompoc Upland and Lompoc Terrace groundwater subareas.

Zone C – All other portions of the District not included in Zones A, B, D, E and F.

Zone D – District portion of the Buellton Upland subarea.

Zone E – District portion of the Santa Ynez Upland subarea.

Zone F – District portion of the Santa Rita Upland subarea.

A map showing the location of these zones is included as Figure 2.

For fiscal year 2019-20 the Board established the following groundwater charge rates, in dollars per acre-foot of production, for each zone.

| | Agricultural Water | Other Water | Special Irrigation Water |
|---|---|---|---|
| Zone A | 7.15 | 25.00 | 14.30 |
| Zone B | 7.15 | 25.00 | 14.30 |
| Zone C | 7.15 | 25.00 | 14.30 |
| Zone D | 7.15 | 25.00 | 14.30 |
| Zone E | 7.15 | 25.00 | 14.30 |
| Zone F | 7.15 | 25.00 | 14.30 |

The above rates are based on a ratio of 1:3.5 with other water rates three and one-half times the agricultural rates. Special irrigation water rates are at a ratio of 1:2 with agricultural rates. More information on groundwater charge rates, including a summary of historical rates, is presented in Appendices A and B.

## 2.1. REVENUES

Revenues collected by the District based on groundwater production through April 6, 2020 are presented below for specific time frames.

| | 2018-19 | 2017-18 | 2016-17 |
|---|---|---|---|
| Fiscal Year (July through June) | $552,151.83 | $408,671.71 | $287,817.06 |
| First-Half of Fiscal Year (July through December) | $219,431.85 | $294,678.58 | $203,061.03 |
| Years Prior | $2,362.37 | $7,514.95 | $1,605.59 |

## 2.2. GROUNDWATER PRODUCTION

Summarized below is the reported (as of April 6, 2020) water production within the District, in acre-feet, for fiscal year 2018-19.

| | Agricultural Water | Other Water | Special Irrigation Water | Total |
|---|---|---|---|---|
| Zone A | 10,898.63 | 2,107.51 | 639.47 | 13,645.61 |
| Zone B | 15,950.40 | 5,849.17 | 671.29 | 22,470.86 |
| Zone C | 41.96 | 1,167.03 | 11.90 | 1,220.89 |
| Zone D | 1,850.73 | 590.80 | 27.00 | 2,468.53 |
| Zone E | 2,749.60 | 1,476.31 | 7.34 | 4,233.25 |
| Zone F | 2,069.64 | 159.82 | 0.00 | 2,229.46 |
| **TOTAL** | **33,560.96** | **11,350.64** | **1,357.00** | **46,268.60** |

The above total water production reported, as of April 6, 2020, for fiscal year 2018-19 is about 91 percent of the total water production reported for fiscal year 2017-18 as of April 3, 2019.

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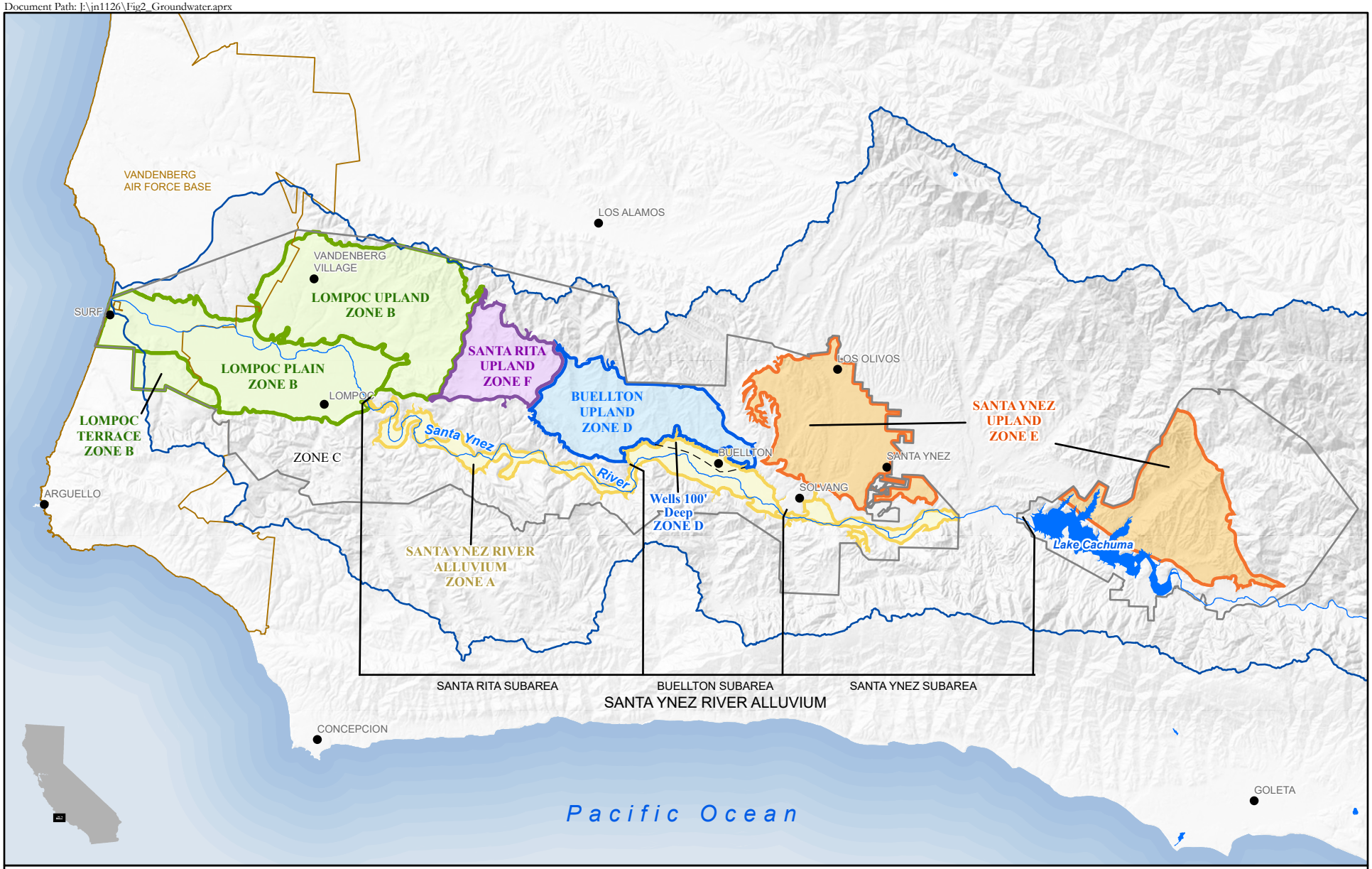


STETSON ENGINEERS INC.

Santa Ynez River Water Conservation District Boundary

Drainage Basin Boundary

# GROUNDWATER CHARGE ZONES
# SANTA YNEZ RIVER WATER CONSERVATION DISTRICT

0 2 4 Miles

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FIGURE 2

The reported (as of April 6, 2020) water production within the District, in acre-feet, for the first half of fiscal year 2019-20 is as follows:

| | Agricultural Water | Other Water | Special Irrigation Water | Total |
|---|---|---|---|---|
| Zone A | 4,564.18 | 989.66 | 412.86 | 5,966.70 |
| Zone B | 8,179.49 | 1,114.86 | 303.00 | 9,597.35 |
| Zone C | 12.06 | 482.93 | 7.18 | 502.17 |
| Zone D | 1,590.62 | 273.06 | 11.00 | 1,874.68 |
| Zone E | 1,191.66 | 654.68 | 2.12 | 1,848.46 |
| Zone F | 1,150.45 | 83.57 | 0.00 | 1,234.02 |
| **TOTAL** | **16,688.46** | **3,598.76** | **736.16** | **21,023.38** |

The above total water production reported, as of April 6, 2020, for the first half of fiscal year 2019-20 is about 88 percent of the total water production reported for the first half of fiscal year 2018-19 as of April 3, 2019.

Additional production that actually occurred prior to fiscal year 2018-19 was reported during the current fiscal year (2019-20). That late reported production, in acre-feet, is as follows:

| | Agricultural Water | Other Water | Special Irrigation Water | Total |
|---|---|---|---|---|
| Zone A | 189.86 | 17.25 | 0.00 | 207.11 |
| Zone B | 10.64 | 23.93 | 0.00 | 34.57 |
| Zone C | 0.00 | 0.00 | 0.00 | 0.00 |
| Zone D | 0.00 | 7.24 | 0.00 | 7.24 |
| Zone E | 35.00 | 4.04 | 0.00 | 39.04 |
| Zone F | 0.00 | 1.60 | 0.00 | 1.60 |
| **TOTAL** | **235.50** | **54.06** | **0.00** | **289.56** |

The above late reported production, as well as late reported production in previous years, has been posted to the appropriate years. Table 1 summarizes the total annual production for the period 1979-80 through 2018-19 reported to the District as of April 6, 2020. Figure 3 shows the 5-year average annual groundwater production by zone for the same period. The values of production shown on Table 1, Figure 3, and in this "Groundwater Production" section are subject to future revision as additional late reported production is received by the District.

The projected groundwater production, in acre-feet, within the District for the ongoing fiscal year (2019-20) and next fiscal year (2020-21) is tabulated below. The estimates are based on the reported groundwater production for fiscal year 2018-19.

| | Agricultural Water | Other Water | Special Irrigation Water | Total |
|---|---|---|---|---|
| Zone A | 10,900 | 2,110 | 640 | 13,650 |
| Zone B | 15,950 | 5,850 | 670 | 22,470 |
| Zone C | 40 | 1,165 | 10 | 1,215 |
| Zone D | 1,850 | 590 | 25 | 2,465 |
| Zone E | 2,750 | 1,475 | 5 | 4,230 |
| Zone F | 2,070 | 160 | 0 | 2,230 |
| **TOTAL** | **33,560** | **11,350** | **1,350** | **46,260** |

## 2.3. WELL REGISTRATION

As of April 6, 2020, 1,146 wells have been registered with the District. Of that number, approximately 926 are active and 220 are inactive.

## 2.4. MAJOR PRODUCERS

The major water producers, those reporting pumpage by ownership and/or lease during fiscal year 2018-19, as of April 6, 2020, were as follows:

| | Major Water Producer<br>Fiscal Year 2018-19 | Production<br>(Acre-Feet) |
|---|---|---|
| **Zone A** | Acin Farms | **1,687** |
| | Espinoza / Big E Produce (also in Zone B) | **963** |
| | SYRWCD, ID #1 (also in Zone E) | **794** |
| | City of Buellton (also in Zone D) | **683** |
| | Jackson, Palmer (The Alisal) | **554** |
| | Wygod, Martin (River Edge & Anvil Farms) | **527** |
| | Sea Smoke, Rita's Crown & Southing Holdings | **476** |
| | Rancho LaVina | **470** |
| | City of Solvang (also in Zones C and E) | **195** |
| | LTC Rancho Sanja Cota (was Gainey – also Zone E) | **73** |
| | Campbell Ranches (also in Zones B, D and F) | **46** |
| | Williams, Norman (also in Zone D) | **44** |
| **Zone B** | City of Lompoc (Parks Dept. & Water Div.) | **4,320** |
| | Santa Barbara Farms (Witt/Guerra) | **4,172** |
| | Lompoc Farming | **3,257** |
| | Espinoza / Big E Produce (also in Zone A) | **2,393** |
| | Campbell Ranches (also in Zones A, D and F) | **1,944** |
| | Vandenberg Village CSD | **1,188** |
| | U.S. Penitentiary Farm | **825** |
| | Hibbits (Ranch and Family Trust) | **599** |
| | Mission Hills CSD | **541** |
| | Wineman, Edward | **307** |
| | Bodger & Sons Company | **134** |
| **Zone C** | Imerys (was Celite Corporation) | **827** |
| | City of Solvang (also in Zone A and E) | **194** |
| **Zone D** | Buell, James (incl. Marcelino, LLC) | **546** |
| | Foley Estates Vineyards (also in Zone F) | **371** |
| | City of Buellton (also in Zone A) | **357** |
| | Williams, Norman (also in Zone A) | **230** |
| | Campbell Ranches (also in Zones A, B and F) | **17** |
| **Zone E** | SYRWCD, ID #1 (also in Zone A) | **927** |
| | City of Solvang (also in Zones A and C) | **26** |
| **Zone F** | Campbell Ranches (also in Zones A, B and D) | **438** |
| | Foley Estates Vineyards (also in Zone D) | **384** |
| | Oak Hills Ranch (was A & M Farms) | **355** |

# TABLE 1A
## ANNUAL REPORTED GROUNDWATER PRODUCTION WITHIN THE DISTRICT [a]
## ALL DISTRICT ZONES
(Acre-Feet)

| Fiscal Year [b] | All District Zones | | | |
|---|---|---|---|---|
| | Agricultural | Other | Special Irrigation [c] | Total Production |
| 1979-80 | 20,918 | 10,576 | | 31,494 |
| 1980-81 | 24,584 | 11,531 | | 36,115 |
| 1981-82 | 33,706 | 14,124 | | 47,830 |
| 1982-83 | 29,010 | 10,916 | | 39,926 |
| 1983-84 | 30,873 | 11,476 | | 42,349 |
| 1984-85 | 31,131 | 12,444 | | 43,575 |
| 1985-86 | 31,130 | 13,673 | 872 | 45,675 |
| 1986-87 | 34,474 | 12,781 | 1,546 | 48,801 |
| 1987-88 | 32,653 | 13,329 | 1,433 | 47,415 |
| 1988-89 | 33,938 | 11,918 | 1,780 | 47,636 |
| 1989-90 | 34,424 | 13,173 | 1,712 | 49,309 |
| 1990-91 | 37,317 | 12,569 | 1,691 | 51,577 |
| 1991-92 | 35,020 | 11,427 | 1,936 | 48,383 |
| 1992-93 | 34,160 | 11,720 | 2,507 | 48,387 |
| 1993-94 | 30,794 | 13,005 | 2,121 | 45,920 |
| 1994-95 | 28,254 | 13,155 | 1,821 | 43,230 |
| 1995-96 | 32,792 | 15,320 | 1,842 | 49,954 |
| 1996-97 | 35,757 | 14,552 | 1,955 | 52,264 |
| 1997-98 | 34,257 | 12,022 | 1,368 | 47,647 |
| 1998-99 | 34,605 | 12,384 | 1,736 | 48,725 |
| 1999-00 | 37,039 | 13,883 | 2,164 | 53,086 |
| 2000-01 | 38,314 | 13,247 | 2,004 | 53,565 |
| 2001-02 | 39,146 | 13,734 | 2,071 | 54,951 |
| 2002-03 | 33,894 | 12,354 | 2,107 | 48,355 |
| 2003-04 | 33,241 | 13,423 | 2,160 | 48,824 |
| 2004-05 | 31,907 | 12,425 | 1,764 | 46,096 |
| 2005-06 | 32,592 | 12,058 | 1,632 | 46,282 |
| 2006-07 | 32,663 | 13,346 | 1,893 | 47,902 |
| 2007-08 | 35,464 | 14,075 | 2,117 | 51,656 |
| 2008-09 | 35,086 | 13,902 | 2,075 | 51,063 |
| 2009-10 | 34,675 | 12,943 | 1,914 | 49,532 |
| 2010-11 | 33,959 | 12,002 | 1,557 | 47,518 |
| 2011-12 | 36,438 | 11,916 | 1,570 | 49,924 |
| 2012-13 | 40,485 | 13,539 | 1,900 | 55,924 |
| 2013-14 | 39,947 | 13,988 | 2,063 | 55,998 |
| 2014-15 | 40,610 | 12,784 | 1,615 | 55,009 |
| 2015-16 | 39,694 | 11,949 | 1,392 | 53,035 |
| 2016-17 | 37,421 | 11,193 | 1,539 | 50,153 |
| 2017-18 | 37,336 | 12,233 | 1,601 | 51,170 |
| 2018-19 | 33,562 | 11,351 | 1,357 | 46,270 |

[a] *Revised April 6, 2020.*

[b] *July 1 through June 30.*

[c] *Based upon a 1984 amendment to the California Water Code. First year for reporting special irrigation water production was 1985-86.*

# TABLE 1B
# ANNUAL REPORTED GROUNDWATER PRODUCTION WITHIN THE DISTRICT [a, b]
# AGRICULTURAL WATER
(Acre-Feet)

| Fiscal Year [c] | Agricultural Water | | | | | | |
|---|---|---|---|---|---|---|---|
| | Zone A | Zone B | Zone C | Zone D | Zone E | Zone F | Total |
| 1979-80 | 6,363 | 7,233 | 7,322 | | | | 20,918 |
| 1980-81 | 7,535 | 9,486 | 7,563 | | | | 24,584 |
| 1981-82 | 7,780 | 18,037 | 7,889 | | | | 33,706 |
| 1982-83 | 7,501 | 13,934 | 7,575 | | | | 29,010 |
| 1983-84 | 9,427 | 14,865 | 6,581 | | | | 30,873 |
| 1984-85 | 8,418 | 15,589 | 7,124 | | | | 31,131 |
| 1985-86 | 8,621 | 15,240 | 7,269 | | | | 31,130 |
| 1986-87 | 9,251 | 19,656 | 5,567 | | | | 34,474 |
| 1987-88 | 6,652 | 19,839 | 6,162 | | | | 32,653 |
| 1988-89 | 8,303 | 19,218 | 6,417 | | | | 33,938 |
| 1989-90 | 8,265 | 17,358 | 8,801 | | | | 34,424 |
| 1990-91 | 8,495 | 18,018 | 10,804 | | | | 37,317 |
| 1991-92 | 8,982 | 18,960 | 7,078 | | | | 35,020 |
| 1992-93 | 7,852 | 19,122 | 7,186 | | | | 34,160 |
| 1993-94 | 8,076 | 16,748 | 713 | 1,108 | 3,505 | 644 | 30,794 |
| 1994-95 | 8,173 | 14,190 | 1,060 | 843 | 3,018 | 970 | 28,254 |
| 1995-96 | 8,993 | 16,327 | 743 | 1,158 | 4,672 | 899 | 32,792 |
| 1996-97 | 8,977 | 19,235 | 787 | 970 | 4,347 | 1,441 | 35,757 |
| 1997-98 | 9,627 | 19,197 | 429 | 1,034 | 2,822 | 1,148 | 34,257 |
| 1998-99 | 9,702 | 18,724 | 115 | 1,693 | 3,088 | 1,283 | 34,605 |
| 1999-00 | 10,319 | 19,832 | 113 | 1,739 | 3,480 | 1,556 | 37,039 |
| 2000-01 | 11,169 | 20,261 | 121 | 2,247 | 3,306 | 1,210 | 38,314 |
| 2001-02 | 11,170 | 21,174 | 148 | 2,311 | 2,897 | 1,446 | 39,146 |
| 2002-03 | 10,515 | 17,559 | 153 | 1,549 | 2,744 | 1,374 | 33,894 |
| 2003-04 | 11,193 | 15,602 | 189 | 1,972 | 3,018 | 1,267 | 33,241 |
| 2004-05 | 10,622 | 15,768 | 141 | 1,856 | 2,439 | 1,081 | 31,907 |
| 2005-06 | 10,044 | 16,854 | 158 | 1,965 | 2,155 | 1,416 | 32,592 |
| 2006-07 | 10,756 | 15,834 | 172 | 1,719 | 2,679 | 1,503 | 32,663 |
| 2007-08 | 11,709 | 15,892 | 186 | 2,461 | 3,309 | 1,907 | 35,464 |
| 2008-09 | 11,182 | 16,004 | 174 | 2,823 | 3,155 | 1,748 | 35,086 |
| 2009-10 | 11,072 | 16,381 | 152 | 2,711 | 2,551 | 1,808 | 34,675 |
| 2010-11 | 9,635 | 17,493 | 161 | 2,227 | 2,652 | 1,791 | 33,959 |
| 2011-12 | 10,445 | 18,276 | 169 | 2,631 | 2,742 | 2,175 | 36,438 |
| 2012-13 | 11,498 | 21,257 | 145 | 2,357 | 3,365 | 1,863 | 40,485 |
| 2013-14 | 11,760 | 19,336 | 121 | 3,043 | 3,613 | 2,074 | 39,947 |
| 2014-15 | 12,342 | 19,511 | 106 | 3,468 | 3,067 | 2,116 | 40,610 |
| 2015-16 | 12,677 | 18,552 | 76 | 2,730 | 3,346 | 2,313 | 39,694 |
| 2016-17 | 11,428 | 18,162 | 77 | 2,890 | 2,914 | 1,950 | 37,421 |
| 2017-18 | 11,717 | 17,826 | 86 | 2,624 | 2,946 | 2,137 | 37,336 |
| 2018-19 | 10,899 | 15,950 | 42 | 1,851 | 2,750 | 2,070 | 33,562 |

[a] *Revised April 6, 2020.*

[b] *Ground-water charge zones for the period 1979-80 through 1992-93 included the District portion of:*

Zone A
Zone B
Zone C

*Ground-water charge zones since 1993-94 include the District portion of:*

Zone A
Zone B
Zone C
Zone D
Zone E
Zone F

[c] *July 1 through June 30.*

# TABLE 1C
# ANNUAL REPORTED GROUNDWATER PRODUCTION WITHIN THE DISTRICT [a, b]
# OTHER WATER
(Acre-Feet)

| Fiscal Year [c] | Other Water | | | | | | |
|---|---|---|---|---|---|---|---|
| | Zone A | Zone B | Zone C | Zone D | Zone E | Zone F | Total |
| 1979-80 | 1,815 | 6,399 | 2,362 | | | | 10,576 |
| 1980-81 | 1,940 | 7,283 | 2,308 | | | | 11,531 |
| 1981-82 | 2,471 | 7,506 | 4,147 | | | | 14,124 |
| 1982-83 | 2,110 | 6,644 | 2,162 | | | | 10,916 |
| 1983-84 | 2,380 | 6,714 | 2,382 | | | | 11,476 |
| 1984-85 | 2,380 | 7,905 | 2,159 | | | | 12,444 |
| 1985-86 | 2,119 | 9,407 | 2,147 | | | | 13,673 |
| 1986-87 | 1,794 | 8,992 | 1,995 | | | | 12,781 |
| 1987-88 | 2,358 | 8,546 | 2,425 | | | | 13,329 |
| 1988-89 | 2,750 | 7,445 | 1,696 | | | | 11,918 |
| 1989-90 | 2,516 | 8,495 | 2,162 | | | | 13,173 |
| 1990-91 | 2,433 | 7,547 | 2,589 | | | | 12,569 |
| 1991-92 | 2,761 | 6,698 | 1,968 | | | | 11,427 |
| 1992-93 | 1,993 | 7,307 | 2,420 | | | | 11,720 |
| 1993-94 | 1,662 | 7,681 | 1,224 | 430 | 1,930 | 78 | 13,005 |
| 1994-95 | 2,098 | 7,777 | 1,081 | 430 | 1,703 | 66 | 13,155 |
| 1995-96 | 2,144 | 8,585 | 1,079 | 469 | 2,993 | 50 | 15,320 |
| 1996-97 | 2,065 | 8,075 | 958 | 461 | 2,924 | 69 | 14,552 |
| 1997-98 | 1,581 | 7,463 | 978 | 264 | 1,658 | 78 | 12,022 |
| 1998-99 | 1,997 | 7,432 | 995 | 236 | 1,637 | 87 | 12,384 |
| 1999-00 | 2,262 | 7,906 | 1,208 | 340 | 2,084 | 83 | 13,883 |
| 2000-01 | 2,524 | 7,395 | 1,241 | 458 | 1,526 | 103 | 13,247 |
| 2001-02 | 2,806 | 7,509 | 1,476 | 537 | 1,284 | 122 | 13,734 |
| 2002-03 | 2,048 | 7,684 | 1,084 | 584 | 845 | 109 | 12,354 |
| 2003-04 | 2,260 | 8,027 | 1,067 | 508 | 1,455 | 106 | 13,423 |
| 2004-05 | 2,489 | 7,285 | 1,129 | 348 | 1,067 | 107 | 12,425 |
| 2005-06 | 1,991 | 7,624 | 880 | 265 | 1,194 | 104 | 12,058 |
| 2006-07 | 1,945 | 8,134 | 896 | 587 | 1,645 | 139 | 13,346 |
| 2007-08 | 2,215 | 8,173 | 886 | 813 | 1,844 | 144 | 14,075 |
| 2008-09 | 2,261 | 7,493 | 848 | 984 | 2,167 | 149 | 13,902 |
| 2009-10 | 2,610 | 7,006 | 830 | 1,026 | 1,317 | 154 | 12,943 |
| 2010-11 | 1,355 | 6,869 | 1,470 | 955 | 1,208 | 145 | 12,002 |
| 2011-12 | 1,510 | 6,859 | 982 | 711 | 1,702 | 152 | 11,916 |
| 2012-13 | 2,309 | 7,084 | 1,022 | 708 | 2,277 | 139 | 13,539 |
| 2013-14 | 2,443 | 7,203 | 1,121 | 750 | 2,325 | 146 | 13,988 |
| 2014-15 | 2,610 | 6,376 | 771 | 1,012 | 1,879 | 136 | 12,784 |
| 2015-16 | 2,271 | 5,993 | 1,081 | 909 | 1,585 | 110 | 11,949 |
| 2016-17 | 2,063 | 5,778 | 1,099 | 676 | 1,472 | 105 | 11,193 |
| 2017-18 | 2,446 | 6,174 | 1,223 | 557 | 1,714 | 119 | 12,233 |
| 2018-19 | 2,108 | 5,849 | 1,167 | 591 | 1,476 | 160 | 11,351 |

[a] *Revised April 6, 2020.*

[b] *Ground-water charge zones for the period 1979-80 through 1992-93 included the District portion of:*

Zone A
Zone B
Zone C

*Ground-water charge zones since 1993-94 include the District portion of:*

Zone A
Zone B
Zone C
Zone D
Zone E
Zone F

[c] *July 1 through June 30.*

# TABLE 1D
# ANNUAL REPORTED GROUNDWATER PRODUCTION WITHIN THE DISTRICT [a, b]
## SPECIAL IRRIGATION WATER
(Acre-Feet)

| | Special Irrigation Water [c] | | | | | | |
|---|---|---|---|---|---|---|---|
| Fiscal Year [d] | Zone A | Zone B | Zone C | Zone D | Zone E | Zone F | Total |
| 1979-80 | | | | | | | |
| 1980-81 | | | | | | | |
| 1981-82 | | | | | | | |
| 1982-83 | | | | | | | |
| 1983-84 | | | | | | | |
| 1984-85 | | | | | | | |
| 1985-86 | 554 | 303 | 15 | | | | 872 |
| 1986-87 | 523 | 955 | 68 | | | | 1,546 |
| 1987-88 | 594 | 805 | 34 | | | | 1,433 |
| 1988-89 | 738 | 1,002 | 40 | | | | 1,780 |
| 1989-90 | 658 | 1,028 | 26 | | | | 1,712 |
| 1990-91 | 669 | 981 | 41 | | | | 1,691 |
| 1991-92 | 753 | 1,163 | 20 | | | | 1,936 |
| 1992-93 | 1,052 | 1,205 | 250 | | | | 2,507 |
| 1993-94 | 1,059 | 1,005 | 0 | 57 | 0 | 0 | 2,121 |
| 1994-95 | 1,056 | 729 | 0 | 36 | 0 | 0 | 1,821 |
| 1995-96 | 941 | 839 | 10 | 52 | 0 | 0 | 1,842 |
| 1996-97 | 935 | 988 | 10 | 22 | 0 | 0 | 1,955 |
| 1997-98 | 838 | 445 | 74 | 11 | 0 | 0 | 1,368 |
| 1998-99 | 862 | 836 | 17 | 13 | 8 | 0 | 1,736 |
| 1999-00 | 976 | 1,152 | 17 | 19 | 0 | 0 | 2,164 |
| 2000-01 | 906 | 1,054 | 12 | 32 | 0 | 0 | 2,004 |
| 2001-02 | 899 | 1,132 | 17 | 23 | 0 | 0 | 2,071 |
| 2002-03 | 1,012 | 1,058 | 10 | 27 | 0 | 0 | 2,107 |
| 2003-04 | 965 | 1,161 | 20 | 14 | 0 | 0 | 2,160 |
| 2004-05 | 876 | 861 | 19 | 8 | 0 | 0 | 1,764 |
| 2005-06 | 726 | 883 | 20 | 3 | 0 | 0 | 1,632 |
| 2006-07 | 796 | 1,039 | 23 | 35 | 0 | 0 | 1,893 |
| 2007-08 | 870 | 1,171 | 30 | 46 | 0 | 0 | 2,117 |
| 2008-09 | 858 | 1,126 | 22 | 69 | 0 | 0 | 2,075 |
| 2009-10 | 795 | 1,053 | 20 | 46 | 0 | 0 | 1,914 |
| 2010-11 | 568 | 939 | 17 | 33 | 0 | 0 | 1,557 |
| 2011-12 | 620 | 900 | 21 | 29 | 0 | 0 | 1,570 |
| 2012-13 | 762 | 1,088 | 18 | 32 | 0 | 0 | 1,900 |
| 2013-14 | 804 | 1,203 | 18 | 38 | 0 | 0 | 2,063 |
| 2014-15 | 619 | 939 | 11 | 46 | 0 | 0 | 1,615 |
| 2015-16 | 576 | 765 | 13 | 38 | 0 | 0 | 1,392 |
| 2016-17 | 626 | 867 | 12 | 34 | 0 | 0 | 1,539 |
| 2017-18 | 754 | 809 | 14 | 24 | 0 | 0 | 1,601 |
| 2018-19 | 639 | 671 | 12 | 27 | 7 | 0 | 1,357 |

[a] *Revised April 6, 2020.*

[b] *Ground-water charge zones for the period 1979-80 through 1992-93 included the District portion of:*

Zone A
Zone B
Zone C

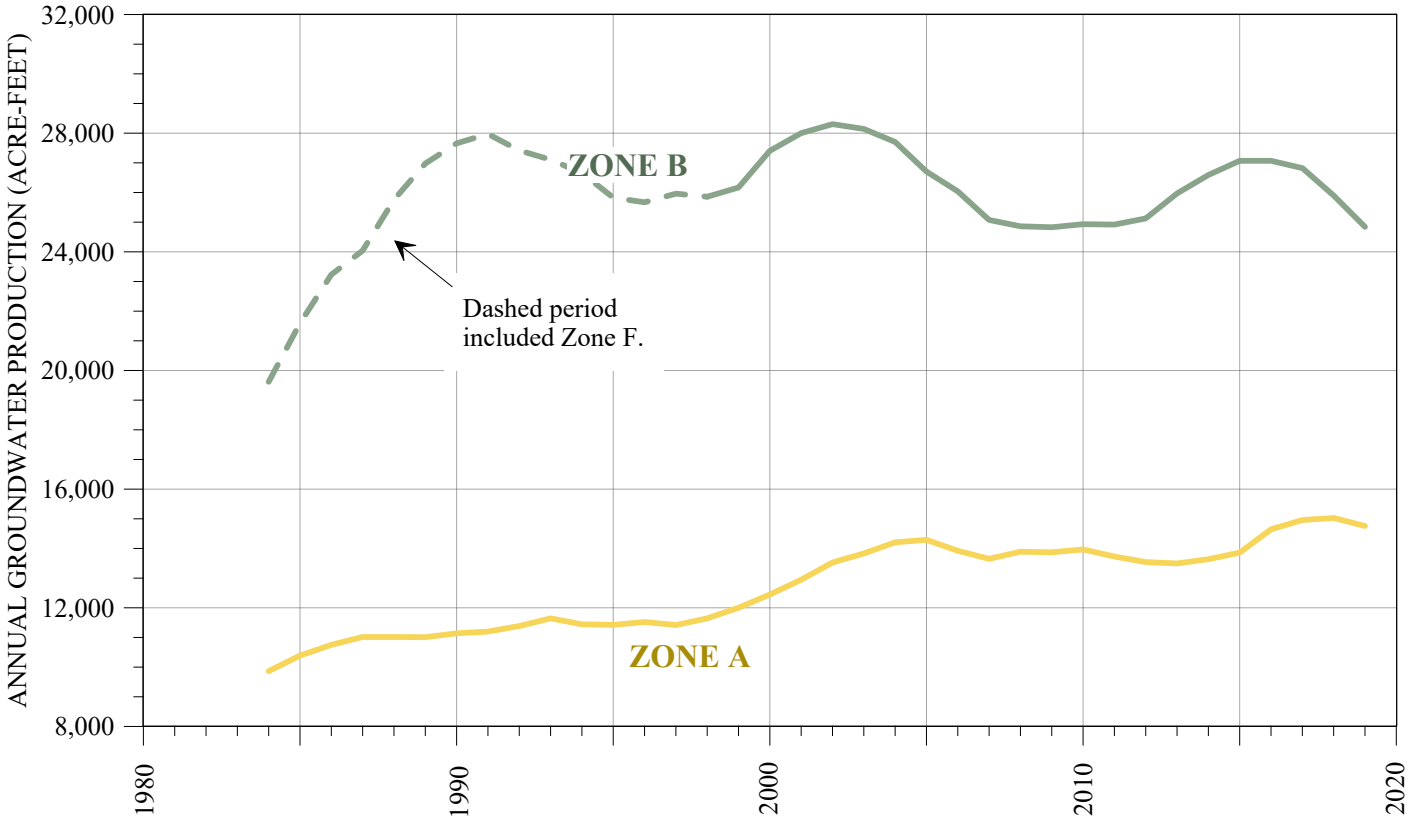
*Ground-water charge zones since 1993-94 include the District portion of:*

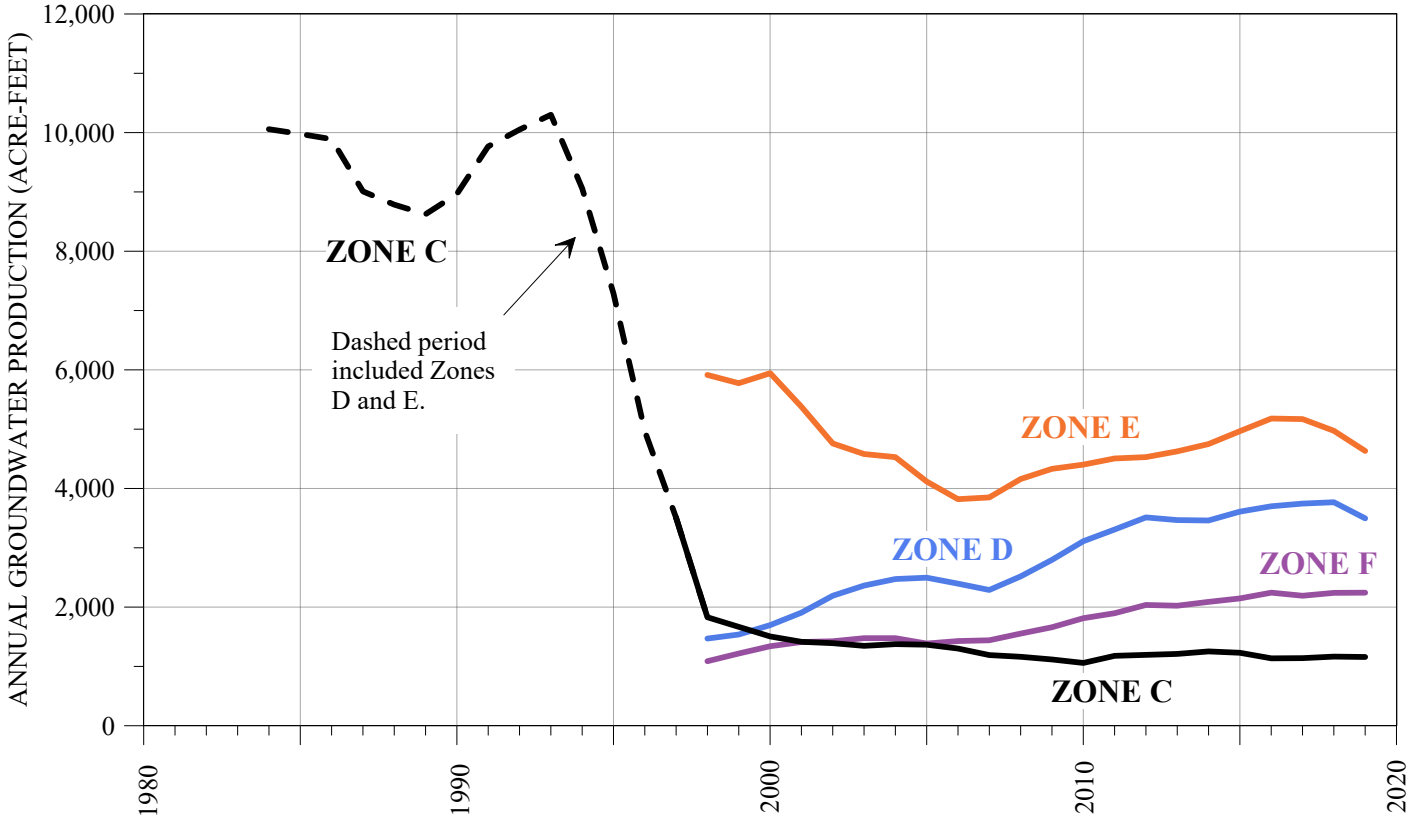
Zone A
Zone B
Zone C
Zone D
Zone E
Zone F

[c] *Based upon a 1984 amendment to the California Water Code. First year for reporting special irrigation water production was 1985-86.*

[d] *July 1 through June 30.*

# ANNUAL GROUNDWATER PRODUCTION WITHIN THE DISTRICT
# 5-YEAR MOVING AVERAGE



## 3.0 PRECIPITATION

Water supply and water use within the District as well as groundwater conditions are dependent upon precipitation. Precipitation, either directly or as streamflow infiltration, recharges the groundwater supplies. The quantity and timing of precipitation can provide an indication of future water-level conditions. Table 2 presents the monthly precipitation and departure from normal for two stations, Bradbury Dam and Lompoc, for the period January 2019 through March 2020. Precipitation during the current hydrologic water year to date (October 2019 through March 2020) is 86 and 71 percent of normal at Bradbury Dam and Lompoc, respectively.

The long-term annual variation in precipitation at Santa Barbara, Gibraltar Dam, Bradbury Dam and Lompoc is shown graphically on Figure 4. Also shown on Figure 4 is a graph of the accumulated departure from the mean annual precipitation. The analysis represented by these graphs indicates the historical wet and dry periods. A wet period is indicated by an upward trend of the graph over a period of years. Conversely, where the graph trends downward over a period of years a dry period is indicated.

## TABLE 2
## MONTHLY PRECIPITATION AND DEPARTURE FROM NORMAL AT BRADBURY DAM AND LOMPOC JANUARY 2019 THROUGH MARCH 2020 [a]

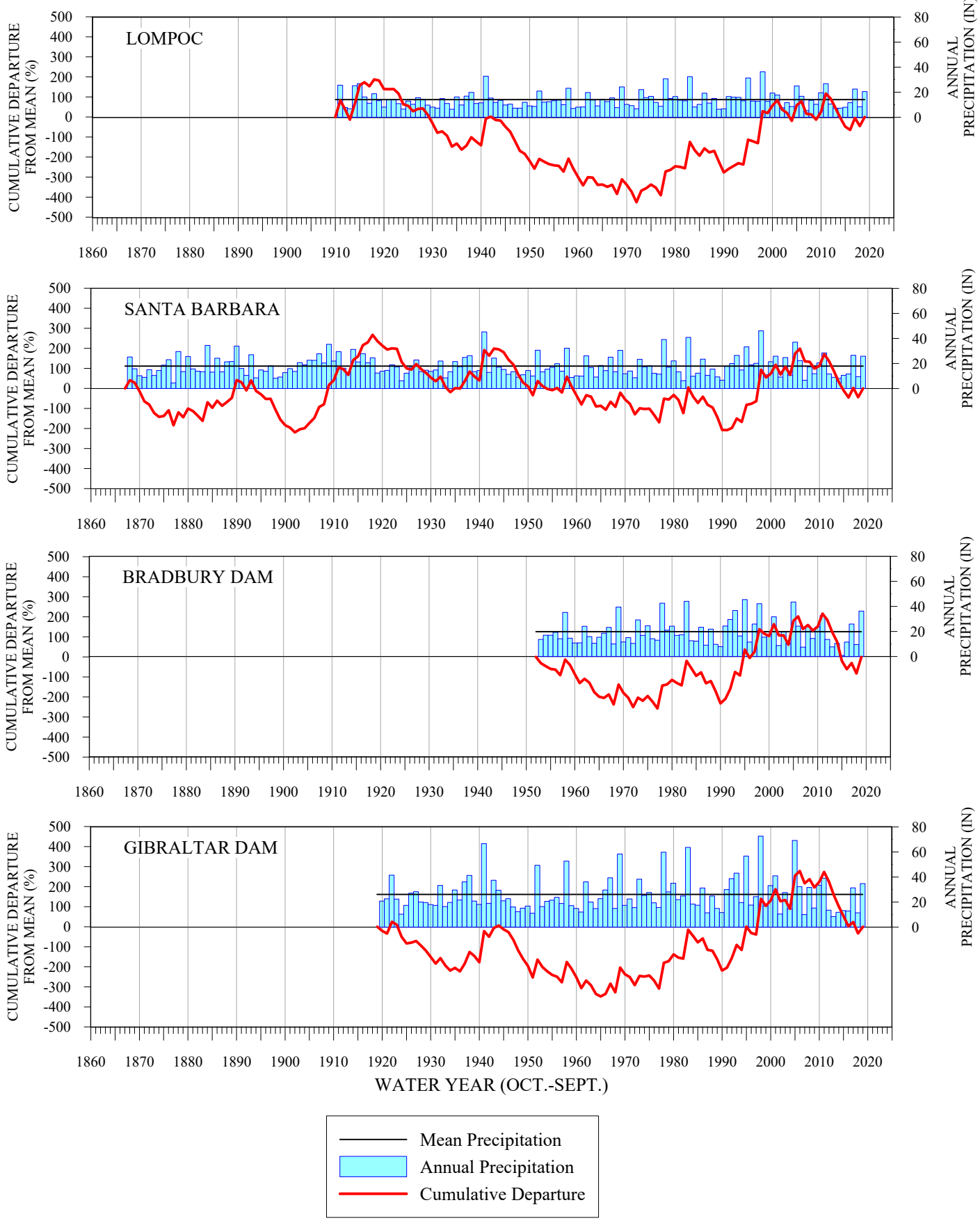
(Inches)

| Month | Bradbury Dam | | Lompoc | |
|---|---|---|---|---|
| | Precipitation | Departure [b] | Precipitation | Departure [b] |
| January 2019 | 9.44 | 4.50 | 6.15 | 2.82 |
| February | 8.89 | 3.71 | 6.43 | 2.84 |
| March | 3.33 | -0.60 | 2.61 | -0.27 |
| April | 0.13 | -1.30 | 0.16 | -0.85 |
| May | 1.74 | 1.28 | 1.11 | 0.82 |
| June | 0.00 | -0.05 | 0.02 | -0.02 |
| July | 0.00 | -0.01 | 0.01 | 0.00 |
| August | 0.00 | -0.03 | 0.04 | 0.01 |
| September | 0.02 | -0.11 | 0.00 | -0.10 |
| October | 0.00 | -0.99 | 0.00 | -0.74 |
| November | 1.56 | -0.02 | 1.23 | -0.18 |
| December | 6.91 | 3.55 | 4.41 | 1.85 |
| **2019 Total** | **32.02** | **9.93** | **22.17** | **6.18** |
| **Percent of Normal** | **145** | | **139** | |
| January 2020 | 0.52 | -4.42 | 0.79 | -2.54 |
| February | 0.10 | -5.08 | 0.01 | -3.58 |
| March | 8.18 | 4.25 | 3.82 | 0.94 |
| **2019-20 Hydrologic Water Year Total Through March** | **17.27** | | **10.26** | |
| **Percent of Normal** | **86** | | **71** | |

[a] Data from Santa Barbara County Flood Control District

[b] Departure from normal is based on an averaging period of 1981 to 2010 as established by the National Oceanic and Atmospheric Administration (NOAA).

# ANNUAL PRECIPITATION AND CUMULATIVE DEPARTURE FROM MEAN FOR LOMPOC, SANTA BARBARA, BRADBURY DAM, AND GIBRALTAR DAM



# 4.0 SURFACE WATER CONDITIONS

Surface water supplies potentially available in the watershed include the main stem and tributaries of the Santa Ynez River and imported water from northern California through the State Water Project (SWP). As mentioned in Chapter 1, upstream diversion works constructed on the river system by South County interests and the Federal Government were designed to export all or most of the diverted water out of the watershed. These diversion facilities include Juncal Dam (Jameson Reservoir), Doulton Tunnel, and Fox and Alder Creeks by the Montecito Water District, Gibraltar Dam (Gibraltar Reservoir), Mission Tunnel, and Devil's Canyon by the City of Santa Barbara, and Bradbury Dam (Lake Cachuma), and Tecolote Tunnel by the U.S. Bureau of Reclamation (USBR). Drainage areas upstream of these diversion dams are approximately 14 (Juncal), 216 (Gibraltar), and 417 (Bradbury) square miles with the latter representing about 47 percent of the total watershed. These diversions significantly affect recharge to the groundwater in the River alluvial aquifer and the Lompoc Plain groundwater subarea.

The Cachuma Project is by far the largest of the upstream diversion facilities with a reservoir capacity of 184,121 acre-feet at water surface elevation of 750 feet (193,305 acre-feet with a fish surcharge of three feet, December 2013 survey) and annual operational yield of 25,714 acre-feet. The annual operations of this Project, from its start in 1952 through hydraulic water year 2018-19, are summarized in Table 3.

## 4.1. BASIN SURFACE WATER USE

This District contracted with the USBR through the Santa Barbara County Water Agency for 10.3 percent of the annual Cachuma Project yield and established the Improvement District No. 1 (ID No. 1) to distribute and serve municipal and irrigation water in the Santa Ynez Valley. The service area of ID No. 1 is roughly bordered by the towns of Santa Ynez, Los Olivos and Solvang. ID No. 1 became essentially a separate entity and later this District assigned its Cachuma entitlement to ID No. 1. ID No. 1 later exchanged this water (approximately 2,600 acre-feet) for treated SWP water with the other (South Coast) Cachuma Member Units. ID No. 1 continues to use a small portion of its Cachuma

# TABLE 3
## SUMMARY OF CACHUMA PROJECT OPERATIONS
## WATER YEARS 1953 THROUGH 2019 [a]

(Acre-Feet)

| Water Year (Oct.-Sept.) [b] | [1] Lake Cachuma End-of-Year Storage | [2] Computed Inflow | [3] CCWA | [4] Precipitation on Reservoir | [5] Reservoir Evaporation | [6] Estimated Spill | [7] Diversion to Tunnel | [8] Park Diversions | [9] SYRWCD ID No.1 Deliveries | [10] Downstream Release [c] | [11] Fish Water Release |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1953 | 9,188 | 17,942 | | 106 | 1,319 | 0 | | | | 7,541 | |
| 1954 | 21,779 | 18,955 | | 598 | 2,327 | 0 | | | | 4,635 | |
| 1955 | 19,584 | 4,941 | | 936 | 2,540 | 0 | | | | 3,922 | |
| 1956 | 36,629 | 24,330 | | 1,482 | 4,200 | 0 | 2,118 | | | 2,449 | |
| 1957 | 30,154 | 6,150 | | 1,162 | 4,642 | 0 | 5,470 | | | 3,674 | |
| 1958 | 196,889 | 219,129 | | 4,459 | 11,210 | 35,738 | 4,850 | | | 5,050 | |
| 1959 | 187,178 | 15,068 | | 3,629 | 14,624 | 3,056 | 8,432 | | | 2,296 | |
| 1960 | 163,149 | 2,643 | | 2,669 | 13,613 | 0 | 11,410 | 169 | 300 | 3,849 | |
| 1961 | 134,493 | 795 | | 2,382 | 12,015 | 0 | 17,309 | 662 | 239 | 1,608 | |
| 1962 | 190,475 | 100,134 | | 4,963 | 12,446 | 21,822 | 11,921 | 402 | 890 | 1,633 | |
| 1963 | 171,736 | 4,270 | | 3,788 | 12,157 | 0 | 10,595 | 510 | 694 | 2,843 | |
| 1964 | 141,506 | 2,439 | | 2,378 | 11,786 | 0 | 17,352 | 447 | 1,504 | 3,958 | |
| 1965 | 122,308 | 12,314 | | 3,043 | 10,204 | 0 | 14,909 | 182 | 1,837 | 7,423 | |
| 1966 | 168,926 | 79,292 | | 3,707 | 12,524 | 0 | 17,522 | 345 | 2,129 | 3,862 | |
| 1967 | 191,622 | 208,961 | | 5,774 | 12,683 | 153,823 | 14,155 | 246 | 2,575 | 8,557 | |
| 1968 | 160,871 | 10,404 | | 2,414 | 13,524 | 0 | 18,199 | 357 | 3,669 | 7,820 | |
| 1969 | 190,181 | 525,370 | | 9,727 | 12,305 | 472,411 | 15,031 | 240 | 2,597 | 3,199 | |
| 1970 | 176,407 | 28,740 | | 1,793 | 13,525 | 0 | 21,448 | 335 | 4,115 | 4,888 | |
| 1971 | 161,345 | 31,045 | | 3,497 | 12,308 | 0 | 22,800 | 357 | 3,115 | 11,028 | |
| 1972 | 121,314 | 8,754 | | 2,231 | 11,452 | 0 | 28,158 | 167 | 4,469 | 6,769 | |
| 1973 | 185,591 | 125,804 | | 5,948 | 12,056 | 29,300 | 18,456 | 129 | 3,552 | 3,982 | |
| 1974 | 182,039 | 33,670 | | 4,112 | 12,677 | 5,655 | 17,805 | 138 | 3,469 | 1,590 | |
| 1975 | 184,467 | 50,544 | | 5,867 | 11,866 | 16,804 | 20,854 | 128 | 3,057 | 1,275 | |
| 1976 | 145,187 | 5,310 | | 3,189 | 11,804 | 0 | 26,020 | 148 | 4,655 | 5,152 | |
| 1977 | 112,077 | 1,520 | | 2,601 | 10,775 | 0 | 18,740 | 98 | 4,583 | 3,035 | |
| 1978 | 193,424 | 329,219 | | 9,573 | 13,535 | 219,295 | 20,701 | 114 | 3,011 | 790 | |
| 1979 | 183,949 | 61,692 | | 5,250 | 13,917 | 36,385 | 20,102 | 147 | 4,029 | 1,837 | |
| 1980 | 187,382 | 153,543 | | 6,003 | 13,353 | 116,915 | 22,057 | 139 | 2,483 | 1,166 | |
| 1981 | 168,871 | 22,066 | | 4,019 | 13,811 | 0 | 20,856 | 178 | 5,007 | 4,743 | |
| 1982 | 159,528 | 26,848 | | 3,868 | 11,479 | 0 | 20,956 | 187 | 2,963 | 4,474 | |
| 1983 | 196,347 | 428,601 | | 10,995 | 12,630 | 361,675 | 22,616 | 183 | 1,532 | 4,142 | |
| 1984 | 171,599 | 39,074 | | 3,354 | 14,534 | 17,217 | 25,601 | 193 | 5,054 | 4,577 | |
| 1985 | 135,748 | 5,057 | | 2,816 | 12,275 | 0 | 22,781 | 142 | 2,664 | 5,862 | |
| 1986 | 171,873 | 76,571 | | 4,831 | 12,782 | 0 | 21,690 | 108 | 2,686 | 8,010 | |
| 1987 | 128,352 | 2,374 | | 1,996 | 12,147 | 0 | 27,209 | 150 | 3,812 | 4,573 | |
| 1988 | 99,150 | 8,732 | | 4,092 | 10,293 | 0 | 23,917 | 102 | 2,803 | 4,911 | |
| 1989 | 66,098 | 4,044 | | 1,459 | 8,366 | 0 | 20,632 | 86 | 2,802 | 6,670 | |

## TABLE 3 – CONTINUED
## SUMMARY OF CACHUMA PROJECT OPERATIONS
## WATER YEARS 1953 THROUGH 2019 [a]

(Acre-Feet)

| Water Year (Oct.-Sept.) [b] | [1] Lake Cachuma End-of-Year Storage | [2] Computed Inflow | [3] CCWA | [4] Precipitation on Reservoir | [5] Reservoir Evaporation | [6] Estimated Spill | [7] Diversion to Tunnel | [8] Park Diversions | [9] ID No.1 Deliveries | [10] Downstream Release [c] | [11] Fish Water Release |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1990 | 34,188 | 2,627 | | 909 | 6,019 | 0 | 16,384 | 66 | 863 | 4,792 | |
| 1991 | 60,995 | 53,566 | | 2,057 | 6,373 | 0 | 15,762 | 43 | 1,656 | 4,983 | |
| 1992 | 157,066 | 135,828 | | 4,022 | 11,239 | 0 | 18,170 | 52 | 891 | 13,427 | |
| 1993 | 177,479 | 333,387 | | 8,875 | 13,428 | 280,698 | 22,582 | 79 | 2,042 | 1,591 | 1,429 |
| 1994 | 151,046 | 16,729 | | 4,144 | 12,561 | 0 | 22,821 | 73 | 1,819 | 9,537 | 494 |
| 1995 | 134,855 | 365,092 | | 10,063 | 10,321 | 354,402 | 23,887 | 64 | 109 | 1,823 | 740 |
| 1996 | 120,503 | 33,243 | | 2,653 | 11,627 | 0 | 24,721 | 76 | 2,109 | 9,703 | 2,012 |
| 1997 | 124,771 | 56,552 | 148 | 2,911 | 11,861 | 0 | 26,785 | 83 | 1,785 | 13,205 | 1,623 |
| 1998 | 185,500 | 475,175 | 1354 | 12,071 | 11,350 | 386,055 | 24,473 | 60 | 0 | 3,956 | 1,976 |
| 1999 | 168,772 | 21,562 | 323 | 4,077 | 12,341 | 0 | 26,397 | 70 | 0 | 883 | 2,999 |
| 2000 | 170,840 | 51,895 | 2156 | 4,972 | 12,435 | 6,067 | 30,365 | 79 | 0 | 5,972 | 2,037 |
| 2001 | 173,479 | 152,773 | 818 | 7,712 | 11,995 | 112,313 | 26,089 | 78 | 0 | 3,502 | 2,157 |
| 2002 | 129,370 | 5,508 | 4,627 | 2,040 | 11,004 | 0 | 30,976 | 90 | 0 | 11,961 | 2,253 |
| 2003 | 115,449 | 18,822 | 6,816 | 3,707 | 9,402 | 0 | 28,781 | 99 | 0 | 2,292 | 2,691 |
| 2004 | 71,378 | 5,750 | 5,924 | 1,782 | 8,829 | 0 | 32,269 | 83 | 0 | 14,217 | 2,131 |
| 2005 | 179,997 | 401,755 | 3,137 | 8,365 | 11,763 | 260,078 | 26,796 | 62 | 0 | 2,894 | 3,045 |
| 2006 | 180,203 | 100,562 | 1,014 | 6,075 | 12,354 | 62,869 | 24,119 | 66 | 0 | 0 | 8,037 |
| 2007 | 132,392 | 4,348 | 5,204 | 1,716 | 11,940 | 0 | 32,797 | 83 | 0 | 9,327 | 4,932 |
| 2008 | 173,280 | 109,536 | 4,701 | 4,712 | 13,449 | 22,994 | 32,591 | 63 | 0 | 2,274 | 6,689 |
| 2009 | 142,479 | 13,218 | 2,602 | 3,112 | 12,220 | 0 | 27,634 | 82 | 0 | 0 | 8,688 |
| 2010 | 152,855 | 56,628 | 1,736 | 5,057 | 11,374 | 0 | 27,259 | 73 | 0 | 7,165 | 7,175 |
| 2011 | 180,986 | 151,343 | 1,258 | 7,226 | 11,871 | 85,755 | 26,866 | 79 | 0 | 1,481 | 5,642 |
| 2012 | 142,970 | 6,005 | 408 | 2,959 | 11,724 | 0 | 28,682 | 79 | 0 | 0 | 6,904 |
| 2013 | 91,922 | 2,982 | 2,101 | 1,497 | 9,943 | 0 | 31,039 | 76 | 0 | 12,613 | 3,956 |
| 2014 | 61,107 | 3,947 | 11,522 | 1,367 | 8,441 | 0 | 29,023 | 34 | 0 | 7,561 | 2,591 |
| 2015 | 32,989 | 4,006 | 8,316 | 1,074 | 7,443 | 0 | 17,137 | 25 | 0 | 12,600 | 2,156 |
| 2016 | 14,222 | 4,697 | 10,220 | 860 | 5,444 | 0 | 15,604 | 24 | 0 | 11,620 | 1,853 |
| 2017 | 82,459 | 87,508 | 14,073 | 2,196 | 11,352 | 0 | 14,451 | 25 | 0 | 8,612 | 807 |
| 2018 | 61,273 | 4,910 | 13,308 | 1,269 | 7,730 | 0 | 18,681 | 23 | 0 | 11,654 | 2,584 |
| 2019 | 144,475 | 105,371 | 4,606 | 3,500 | 9,467 | 0 | 13,867 | 23 | 0 | 0 | 6,918 |
| Average [d] | 134,578 # | 81,816 # | 4,625 # | 3,936 # | 10,851 # | 45,691 # | 21,089 # | 145 # | 1,626 # | 5,275 # | 3,501 |

[a] Source of Information: U.S. Bureau of Reclamation.

[b] October 1 through September 30.

[c] Includes leakage and water rights releases

[d] For period of record

entitlement water to serve the County Park at Lake Cachuma. Table 3 shows annual deliveries of Cachuma Project water to ID No. 1 prior to the exchange and direct diversions from the reservoir for the County Park.

Alisal Reservoir was constructed by the Petan Company on Alisal Creek about three miles south of Solvang at the southern boundary of the District. The Permit issued by the State Water Resources Control Board (SWRCB) in 1969 allows for the diversion and storage of 2,342 acre-feet per year for irrigation, stock watering, domestic and recreational uses. Actual water use for this reservoir has not been quantified.

The District acquired Permit No. 17447 in 1978, which allowed for the diversion of up to 40 thousand acre-feet per year of winter flow from the Santa Ynez River near Lompoc. Earthen dams were constructed and maintained in the River for several years. When the District petitioned the SWRCB for an Extension of Time to further develop its rights under the Permit, the SWRCB placed the Permit in abeyance for many years, only to request a revised Petition for Extension of Time in 2001. The District filed the Time Extension Petition, as well as a Petition for Change at that time. There followed a decade of studies of various alternative designs and locations for an off-channel spreading facility, which was environmentally superior to the earlier project design. In 2014, when it became clear that the project was not feasible or cost-effective, the District, with concurrence by the City of Lompoc, requested the SWRCB to revoke the Permit.

### 4.2. STATE WATER PROJECT WATER USE

Three water purveyors within the Santa Ynez Valley and one located partially in the Lompoc Valley have contracted for SWP water. Excluding drought buffers, the entities and their annual entitlements (in acre-feet) include: ID No. 1 (500); Solvang (1,500, contracted through ID No. 1); Buellton (578); and, Vandenberg AFB (5,500, located partly in the Lompoc Valley). SWP deliveries to these entities, as reported by the Central Coast Water Authority (CCWA), for the preceding fiscal year (2018-19) and the first half of the current fiscal year (2019-20) in acre-feet are as follows:

| Fiscal Year (July-June) | ID No. 1 (Acre-Feet) | City of Solvang (Acre-Feet) | City of Buellton (Acre-Feet) | Vandenberg AFB (Acre-Feet) |
|---|---|---|---|---|
| 2018-19 | 1,462 | 690 | 211 | 2,296 |
| 2019-20 (First Half) | 1,954 | 492 | 155 | 1,433 |

*Source: Central Coast Water Authority*

Deliveries to ID No. 1 include entitlement, drought buffer entitlement, exchange, and (turnback pool) purchased water.

### 4.3. RIVER SYSTEM FLOW CONDITIONS

Annual and monthly flows of the Santa Ynez River near Lompoc are summarized in Table 4 and shown as bar graphs in Figure 5. Annual flows of Salsipuedes Creek near Lompoc, a major tributary of the Santa Ynez River upstream of the Lompoc Narrows, are shown on Table 5. Flow records for additional streams in the Basin are included in Appendix C.

### 4.4. WATER RIGHTS RELEASES

Water rights releases for users downstream of Lake Cachuma are set forth in the SWRCB Order of 1973 (WR 73-37), as amended in 1989 (WR 89-18). These releases are based on the establishment of two accounts, and accrual of credits (storing water) in Lake Cachuma for the above and below Narrows areas. Releases from the Above Narrows Account (ANA) are made at Bradbury Dam for the benefit of downstream water users between the dam and the Lompoc Narrows. Releases from the Below Narrows Account (BNA) are conveyed to the Narrows for the benefit of water users in the Lompoc Plain subarea. ANA releases are made to replenish the groundwater basin in the above Narrows area and combined releases of ANA and BNA are made to replenish the groundwater basin in the above and below Narrows areas.

# TABLE 4
## FLOW OF THE SANTA YNEZ RIVER AT THE LOMPOC NARROWS
(Acre-Feet)

| Water Year (Oct.-Sept.) | Flow | Water Year (Oct.-Sept.) | Flow | Water Year (Oct.-Sept.) | Flow | Water Year (Oct.-Sept.) | Flow | Water Year (Oct.-Sept.) | Flow | Water Year (Oct.-Sept.) | Flow |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1925 | 7,300 | 1945 | 50,700 | 1965 | 4,980 | 1985 | 3,100 | 2005 | 431,420 |
| | | 1926 | 90,100 | 1946 | 38,970 | 1966 | 29,240 | 1986 | 30,110 | 2006 | 87,730 |
| | | 1927 | 152,000 | 1947 | 13,940 | 1967 | 161,700 | 1987 | 5,210 | 2007 | 6,864 |
| 1908 | 222,000 | 1928 | 30,800 | 1948 | 50 | 1968 | 5,700 | 1988 | 3,590 | 2008 | 72,553 |
| 1909 | 681,000 | 1929 | 9,770 | 1949 | 2,040 | 1969 | 617,700 | 1989 | 30 | 2009 | 3,743 |
| 1910 | 115,000 | 1930 | 5,780 | 1950 | 1,460 | 1970 | 8,500 | 1990 | 0 | 2010 | 31,900 |
| 1911 | 533,000 | 1931 | 2,390 | 1951 | 0 | 1971 | 7,420 | 1991 | 20,900 | 2011 | 135,294 |
| 1912 | 50,400 | 1932 | 142,000 | 1952 | 261,900 | 1972 | 3,180 | 1992 | 62,090 | 2012 | 5,635 |
| 1913 | 47,400 | 1933 | 17,700 | 1953 | 19,910 | 1973 | 80,770 | 1993 | 391,530 | 2013 | 4,032 |
| 1914 | 546,000 | 1934 | 24,170 | 1954 | 5,830 | 1974 | 20,400 | 1994 | 15,600 | 2014 | 4,484 |
| 1915 | 395,000 | 1935 | 56,830 | 1955 | 2,060 | 1975 | 61,860 | 1995 | 485,520 | 2015 | 46 |
| 1916 | 258,000 | 1936 | 40,830 | 1956 | 28,860 | 1976 | 3,980 | 1996 | 24,820 | 2016 | 2,310 |
| 1917 | 137,000 | 1937 | 209,000 | 1957 | 1,460 | 1977 | 270 | 1997 | 39,130 | 2017 | 31,918 |
| 1918 | 320,000 | 1938 | 352,400 | 1958 | 140,000 | 1978 | 391,600 | 1998 | 681,520 | 2018 | 4,812 |
| 1919 | 60,300 | 1939 | 32,960 | 1959 | 16,940 | 1979 | 70,200 | 1999 | 28,460 | 2019 | 42,989 |
| 1920 | 43,500 | 1940 | 20,610 | 1960 | 1,570 | 1980 | 189,100 | 2000 | 51,850 | 2020 | 1,817 |
| 1921 | 16,800 | 1941 | 652,300 | 1961 | 330 | 1981 | 20,240 | 2001 | 250,425 | (through Mar) | |
| 1922 | 190,500 | 1942 | 67,310 | 1962 | 87,890 | 1982 | 6,450 | 2002 | 9,530 | | |
| 1923 | 23,000 | 1943 | 231,900 | 1963 | 9,520 | 1983 | 503,600 | 2003 | 15,730 | | |
| 1924 | 5,300 | 1944 | 119,400 | 1964 | 0 | 1984 | 34,110 | 2004 | 6,710 | | |

| | |
|---|---|
| Average (1908-2019) | 105,410 |
| Average (1953-2019) | 82,490 |

2019 flows do not include equipment failure January 14-17, likely totalling less than 400 Acre-Feet.
Data from U.S. Geological Survey include periods of 1908 through 1918, 1926 though 1950, 1952 through 1963, and 1965 through March 2015.

Data from U.S. Bureau of Reclamation include periods of 1919 through 1925, 1951, and 1964.

Flow regulated by Lake Cachuma since November 1952.

# MONTHLY SURFACE FLOW, SANTA YNEZ RIVER NEAR LOMPOC

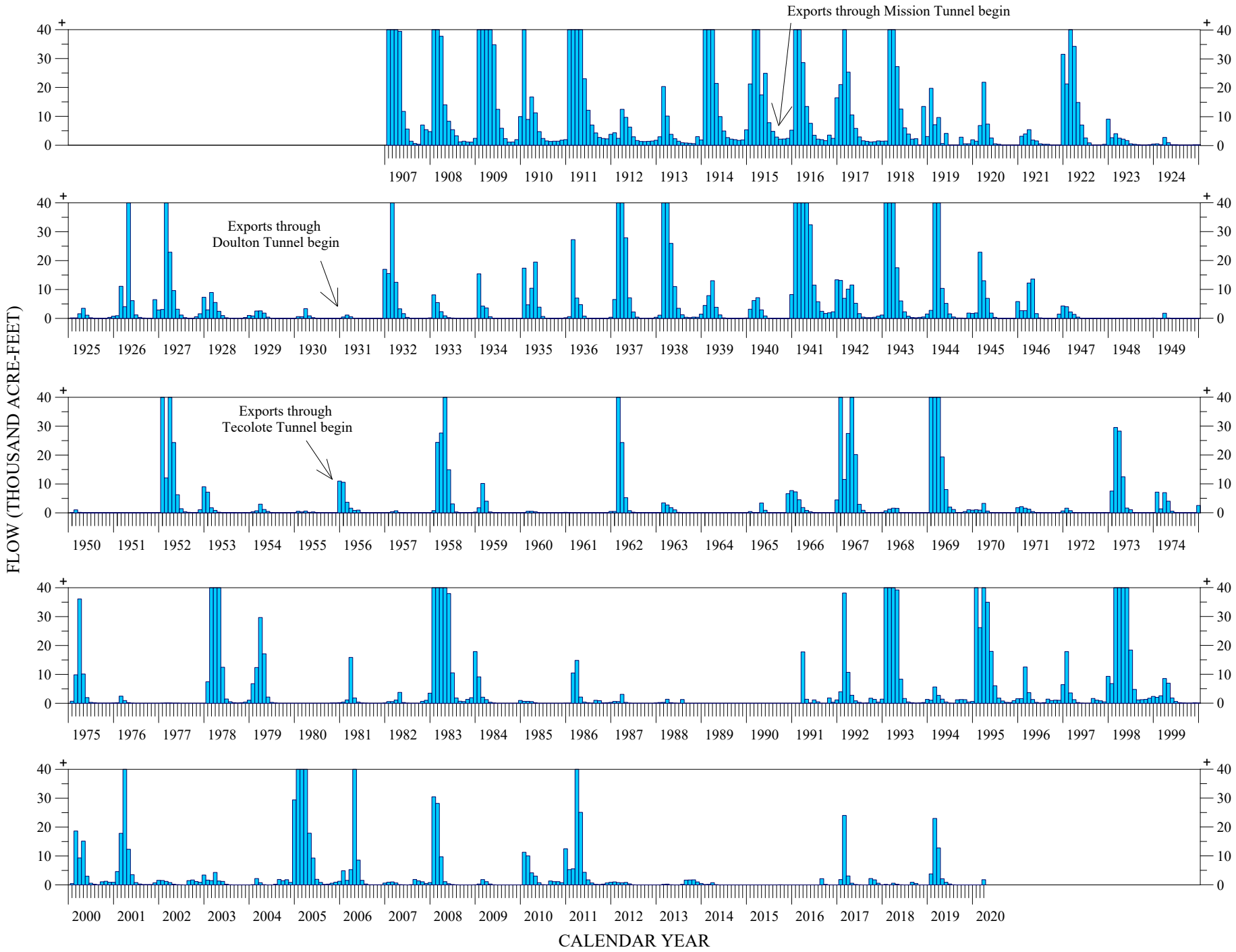



FIGURE 5

## TABLE 5
## FLOW OF SALSIPUEDES CREEK NEAR LOMPOC
(Acre-Feet)

| Water Year (Oct.-Sept.) | Flow | Water Year (Oct.-Sept.) | Flow | Water Year (Oct.-Sept.) | Flow | Water Year (Oct.-Sept.) | Flow | Water Year (Oct.-Sept.) | Flow |
|---|---|---|---|---|---|---|---|---|---|
| | | 1945 | 2,270 | 1965 | 2,720 | 1985 | 1,170 | 2005 | 33,230 |
| | | 1946 | 1,790 | 1966 | 9,480 | 1986 | 10,290 | 2006 | 5,620 |
| | | 1947 | 870 | 1967 | 6,710 | 1987 | 1,610 | 2007 | 695 |
| | | 1948 | 400 | 1968 | 780 | 1988 | 890 | 2008 | 8,736 |
| | | 1949 | 1,710 | 1969 | 20,520 | 1989 | 210 | 2009 | 645 |
| | | 1950 | 1,280 | 1970 | 1,810 | 1990 | 130 | 2010 | 4,841 |
| | | 1951 | 320 | 1971 | 1,180 | 1991 | 4,420 | 2011 | 15,023 |
| | | 1952 | 16,870 | 1972 | 520 | 1992 | 6,690 | 2012 | 1,108 |
| | | 1953 | 4,630 | 1973 | 15,660 | 1993 | 17,030 | 2013 | 370 |
| | | 1954 | 2,410 | 1974 | 5,320 | 1994 | 2,750 | 2014 | 243 |
| | | 1955 | 1,320 | 1975 | 13,780 | 1995 | 58,360 | 2015 | 108 |
| | | 1956 | 15,610 | 1976 | 1,520 | 1996 | 3,610 | 2016 | 172 |
| | | 1957 | 1,250 | 1977 | 600 | 1997 | 5,480 | 2017 | 9,695 |
| | | 1958 | 23,570 | 1978 | 36,290 | 1998 | 41,180 | 2018 | 239 |
| | | 1959 | 2,620 | 1979 | 8,410 | 1999 | 6,160 | 2019 | 12,314 |
| | | 1960 | 1,420 | 1980 | 14,980 | 2000 | 10,850 | 2020 | 668 |
| | | 1961 | 690 | 1981 | 5,060 | 2001 | 19,986 | (through Mar) | |
| 1942 | 10,650 | 1962 | 22,200 | 1982 | 1,610 | 2002 | 1,653 | | |
| 1943 | 10,710 | 1963 | 5,330 | 1983 | 36,850 | 2003 | 3,630 | | |
| 1944 | 8,870 | 1964 | 930 | 1984 | 3,360 | 2004 | 1,662 | | |
| | | | | | | | | Average (1942-2019) | 7,890 |

Data from U.S. Geological Survey.

In calendar year 2019, there were no water right releases because there was relatively low dewatered storage in the Above Narrows basin. Historical water rights releases are summarized in Table 6.

# TABLE 6
# HISTORICAL WATER RIGHTS RELEASES

| Calendar Year | Releases (Acre-Feet) Above Narrows Account (ANA) | Below Narrows Account (BNA) | Total |
|---|---|---|---|
| **Releases under Live Stream** | | | |
| 1953 | - | - | 7,540 |
| 1954 | - | - | 4,632 |
| 1955 | - | - | 3,921 |
| 1956 | - | - | 2,449 |
| 1957 | - | - | 3,674 |
| 1958 | - | - | 4,142 |
| 1959 | - | - | 1,294 |
| 1960 | - | - | 3,411 |
| 1961 | - | - | 1,365 |
| 1962 | - | - | 380 |
| 1963 | - | - | 2,239 |
| 1964 | - | - | 3,665 |
| 1965 | - | - | 7,251 |
| 1966 | - | - | 6,860 |
| 1967 | - | - | 3,274 |
| 1968 | - | - | 6,705 |
| 1969 | - | - | 1,499 |
| 1970 | - | - | 6,100 |
| 1971 | - | - | 8,095 |
| 1972 | - | - | 6,320 |
| 1973 | - | - | 1,245 |
| **Releases under WR 73-37** | | | |
| 1974 | 1,353 | 0 | 1,353 |
| 1975 | 1,134 | 0 | 1,134 |
| 1976 | 4,237 | 0 | 4,237 |
| 1977 | 2,299 | 0 | 2,299 |
| 1978 | 62 | 0 | 62 |
| 1979 | 1,200 | 0 | 1,200 |
| 1980 | 0 | 0 | 0 |
| 1981 | 4,175 | 0 | 4,175 |
| 1982 | 6,655 | 755 | 7,410 |
| 1983 | 0 | 0 | 0 |
| 1984 | 3,162 | 0 | 3,162 |
| 1985 | 5,686 | 0 | 5,686 |
| 1986 | 5,317 | 1,780 | 7,097 |
| 1987 | 3,887 | 0 | 3,887 |
| 1988 | 5,050 | 1,283 | 6,333 |
| 1989 | 5,192 | 0 | 5,192 |
| **Releases under WR 89-18** | | | |
| 1990 | 4,792 | 0 | 4,792 |
| 1991 | 7,745 | 3,638 | 11,383 |
| 1992 | 4,930 | 3,287 | 8,217 |
| 1993 | 0 | 0 | 0 |
| 1994 | 6,727 | 4,012 | 10,739 |
| 1995 | 0 | 0 | 0 |
| 1996 | 7,319 | 3,459 | 10,778 |
| 1997 | 9,572 | 3,438 | 13,010 |
| 1998 | 0 | 0 | 0 |
| 1999 | 0 | 0 | 0 |
| 2000 | 4,360 | 1,858 | 6,218 |
| 2001 | 0 | 0 | 0 |
| 2002 | 9,054 | 4,412 | 13,466 |
| 2003 | 0 | 0 | 0 |
| 2004 | 11,494 | 4,512 | 16,006 |
| 2005 | 0 | 0 | 0 |
| 2006 | 0 | 0 | 0 |
| 2007 | 6,703 | 4,897 | 11,600 |
| 2008 | 0 | 0 | 0 |
| 2009 | 0 | 0 | 0 |
| 2010 | 5,122 | 3,524 | 8,646 |
| 2011 | 0 | 0 | 0 |
| 2012 | 0 | 0 | 0 |
| 2013 | 10,694 | 6,779 | 17,473 |
| 2014 | 4,698 | 0 | 4,698 |
| 2015 | 10,603 | 0 | 10,603 |
| 2016 | 9,334 | 2,286 | 11,620 |
| 2017 | 7,758 | 4,454 | 12,212 |
| 2018 | 6,606 | 1,448 | 8,054 |
| 2019 | 0 | 0 | 0 |

## 4.5. STATE WATER CODE REQUIREMENTS

The Water Code requires the Board to estimate for the ensuing water year the amount of water necessary for surface distribution, the amount of water necessary for replenishment of groundwater supplies, and the amount of water the District is obligated by contract to purchase (Water Code Sections 75574 (h), (i) and (j)). The amount of water necessary for surface distribution would be that scheduled for delivery by ID No. 1, Solvang, Buellton, and Vandenberg AFB. As a part of State Water delivery schedules submitted by ID No. 1, Solvang, Buellton, and Vandenberg AFB, the following delivery requests are indicated for fiscal year 2019-20. However, the actual delivery amounts would vary depending on changes in the delivery schedule and availability of SWP water.

| | Acre-Feet [a] |
|---|---|
| ID No. 1 | 945 |
| City of Solvang | 876 |
| City of Buellton | 375 |
| Vandenberg AFB | 2,685 |

[a] *Includes buffer.*

In addition, ID No. 1 is scheduled to receive its Cachuma entitlement (approximately 2,600 acre-feet) subject to shortage reductions for surface distribution in fiscal year 2019-20. The District does not have any contracts to purchase surface water nor the facilities to divert Santa Ynez River and/or tributary flow.

# 5.0 GROUNDWATER CONDITIONS

There are two general types of water-bearing deposits within the District. They are: (1) river channel deposits and younger alluvium present along the Santa Ynez River and beneath the Lompoc Plain; and (2) older unconsolidated deposits either underlying the younger alluvial deposits or filling basins generally not in hydrologic continuity with the Santa Ynez River and its associated alluvial deposits.

## 5.1. SOURCES OF GROUNDWATER

The sources of groundwater comprising each of the District's zones are as follows:

Zone A - Santa Ynez River alluvial deposits

- Santa Ynez subarea
- Buellton subarea
- Santa Rita subarea

Zone B - Lompoc Area

- Lompoc Plain subarea
- Lompoc Upland subarea
- Lompoc Terrace subarea

Zone C - Miscellaneous unconsolidated deposits and consolidated rocks

Zone D - Buellton Upland subarea

Zone E - Santa Ynez Upland subarea

Zone F - Santa Rita Upland subarea

The locations of the major groundwater sources are shown on Figure 6. A general description of the hydrogeology of the various sources of groundwater within the District is included as Appendix E.

## 5.2. GROUNDWATER LEVEL CHANGES

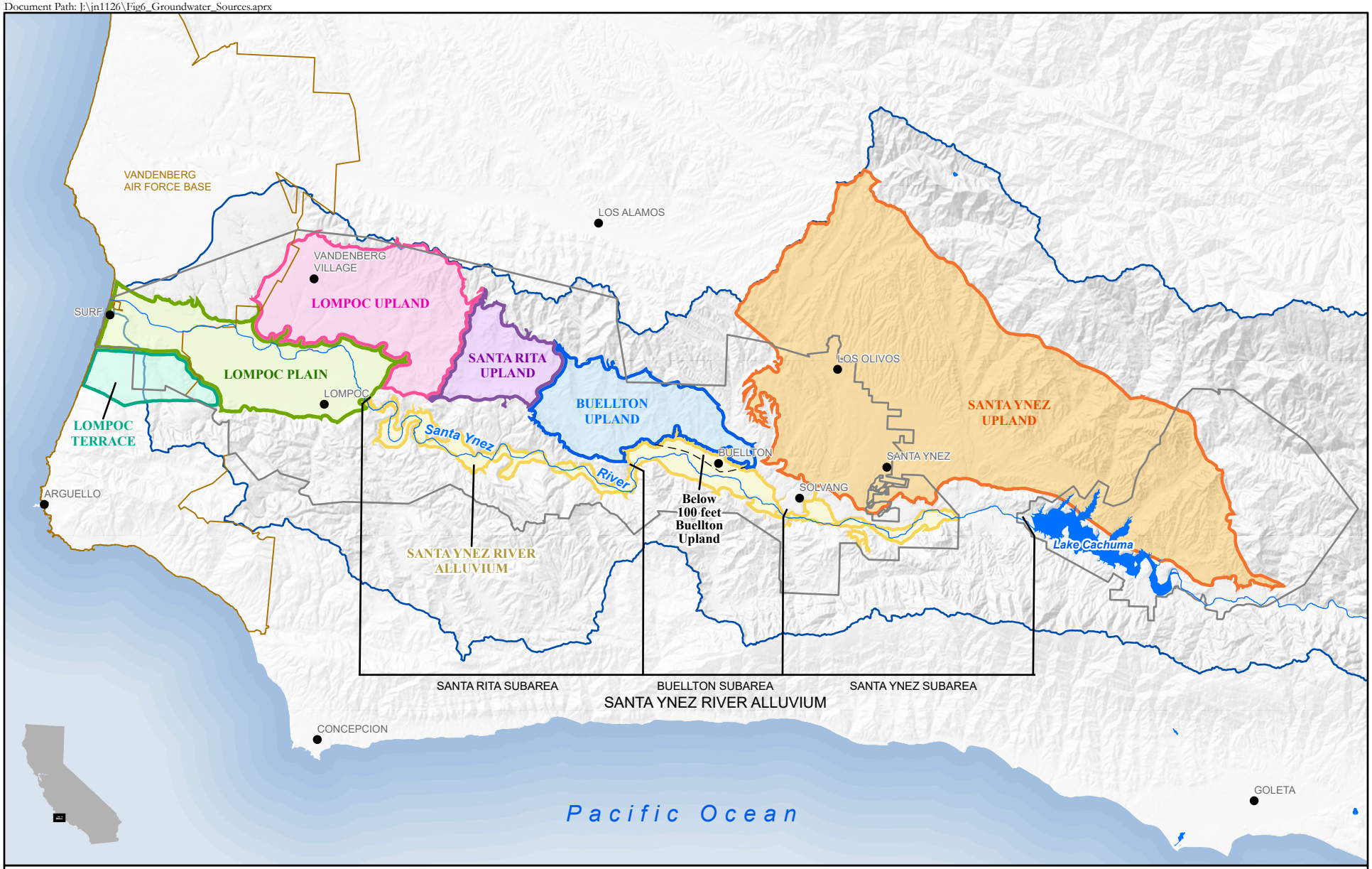
Water-level changes from Spring 2019 to Spring 2020 provide the best direct indication of groundwater conditions during the past year. The water-level changes in wells monitored by the Santa Barbara County Water Agency (SBCWA), USGS, and USBR are summarized for the Lompoc Plain, Lompoc Upland, Lompoc Terrace, Santa Rita Upland, Buellton Upland and Santa Ynez Upland subareas. In Tables 7 through 10 a 0.0 reading indicates a change of less than 0.1 feet, while a dash is a null value meaning the change could not be quantified due to one or two years of missing data

Table 7 presents the water-level changes for eight wells quantified by the USBR and SBCWA in the forebay of the Lompoc Plain subarea and 30 additional wells quantified by the SBCWA in the central and western portions of the Lompoc Plain. In the forebay, water levels increased from Spring 2019 to Spring 2020 in five of the wells quantified, decreased in two wells, and one well was the same. The forebay well not quantified by SBCWA and USGS has been dry since March 2016, so the water level change at this location is unknown. The water levels declined over the past year in 21 of the 29 measured wells located in the central and western portion of the Lompoc Plain while increased in eight of the 29 measured wells. The hydrographs of three wells located in the Lompoc Plain subarea are shown on Figure F-1 (Appendix F).

Water-level changes over the past year are shown on Table 8 for seven wells quantified by the SBCWA in the Lompoc Upland subarea. The water levels declined from Spring 2019 to Spring 2020 in five of the seven wells quantified, and increased in two of the seven wells. Hydrographs for five wells located in the Lompoc Upland subarea are shown in Figure F-2 (Appendix F). The water level in the only well measured in the Lompoc Terrace subarea declined 0.4 feet over the past year (Table 8 and Figure F-3, Appendix F).

Water levels declined over the past year in all three wells with two years of valid measurements in the Santa Rita Upland subarea (Table 9). A hydrograph of Well 7N/33W-27G1 is shown on Figure F-3 (Appendix F).

Document Path: J:\jn1126\Fig6_Groundwater_Sources.aprx




STETSON ENGINEERS INC.

Santa Ynez River Water Conservation District Boundary

Drainage Basin Boundary

# MAJOR GROUNDWATER SOURCES
# SANTA YNEZ RIVER BASIN

0 2 4 Miles

N

FIGURE 6

# TABLE 7
# WATER-LEVEL CHANGES
# LOMPOC PLAIN SUBAREA
# 2019 TO 2020

| Forebay [a] | | Central and Western Plain [b] | |
|---|---|---|---|
| Well No. | Water-Level Change (Feet) | Well No. | Water-Level Change (Feet) |
| 6N/34W-4G4 | 5.7 | 6N/34W-6C4 | -3.4 |
| 7N/34W-22M6 | 3.0 | 7N/34W-20K4 | -2.0 |
| 7N/34W-25F3 | 2.0 | 7N/34W-27G6 | -1.6 |
| 7N/34W-26B4 | 8.2 | 7N/34W-29E4 | -4.4 |
| 7N/34W-26H3 | -- [b] | 7N/34W-29N6 | -0.6 |
| 7N/34W-26Q5 | 0.0 | 7N/34W-29N7 | -1.5 |
| 7N/34W-27F9 | -0.7 | 7N/34W-30L10 | -1.4 |
| 7N/34W-34R1 | 10.7 | 7N/34W-31R2 | -2.2 |
| 7N/34W-35K9 | -2.0 | 7N/34W-32H2 | 0.5 |
| | | 7N/35W-15M1 | 0.4 |
| | | 7N/35W-17M1 | 3.6 |
| | | 7N/35W-17K20 | 4.7 |
| | | 7N/35W-18J2 | -- |
| | | 7N/35W-21G2 | -- |
| | | 7N/35W-22J1 | -2.0 |
| | | 7N/35W-22M1 | -0.1 |
| | | 7N/35W-23B2 | 0.3 |
| | | 7N/35W-23Q2 | 2.3 |
| | | 7N/35W-23Q3 | -1.2 |
| | | 7N/35W-23Q4 | -1.3 |
| | | 7N/35W-24J4 | -1.9 |
| | | 7N/35W-24K5 | -2.3 |
| | | 7N/35W-24N3 | -1.2 |
| | | 7N/35W-25F6 | 0.8 |
| | | 7N/35W-25F7 | 4.5 |
| | | 7N/35W-26F4 | -0.8 |
| | | 7N/35W-26L1 | -0.6 |
| | | 7N/35W-26L2 | -0.9 |
| | | 7N/35W-26L4 | -1.7 |
| | | 7N/35W-27C1 | -1.6 |
| | | 7N/35W-35A3 | -0.4 |

[a] Based upon measurements made during March by the U.S. Bureau of Reclamation.

[b] Based upon measurements made during March and April by the Santa Barbara County Water Agency. Well 26H3 has been dry since 2016, so change in groundwater elevation could not be determined.

## TABLE 8
## WATER-LEVEL CHANGES
## LOMPOC UPLAND AND LOMPOC TERRACE SUBAREAS
## 2019 TO 2020

| Lompoc Upland Subarea | | Lompoc Terrace Subarea | |
|---|---|---|---|
| Well No. | Water-Level Change (Feet) | Well No. | Water-Level Change (Feet) |
| 7N/33W-17M1 | -1.4 | 7N/35W-27P1 | -0.4 |
| 7N/33W-17N2 | -- | | |
| 7N/33W-19D1 | -0.7 | | |
| 7N/33W-20G1 | -- | | |
| 7N/34W-12E1 | -0.2 | | |
| 7N/34W-14F4 | -- | | |
| 7N/34W-14L1 | -2.5 | | |
| 7N/34W-15D3 | -0.7 | | |
| 7N/34W-15E1 | 1.2 | | |
| 7N/34W-15P2 | 0.6 | | |

Based upon measurements made during March and April by the Santa Barbara County Water Agency.

## TABLE 9
## WATER-LEVEL CHANGES
## SANTA RITA AND BUELLTON UPLAND SUBAREAS
## 2019 TO 2020

| Santa Rita Upland Subarea | | Buellton Upland Subarea | |
|---|---|---|---|
| Well No. | Water-Level Change (Feet) | Well No. | Water-Level Change (Feet) |
| 7N/33W-16G5 | -- | 6N/31W-7F1 | 2.0 |
| 7N/33W-21G2 | -1.5 | 6N/32W-2Q1 | -0.5 |
| 7N/33W-21N1 | -1.2 | 6N/32W-12K2 | -6.4 |
| 7N/33W-27G1 | -- | 7N/32W-31M1 | -- |
| 7N/33W-28D3 | -1.8 | 7N/33W-36J1 | -1.4 |

Based upon measurements made during March by the Santa Barbara County Water Agency.

The change in water levels over the past year in four wells measured in the Buellton Upland subarea are also presented in Table 9. Water levels declined in three of the four wells and increased in one well. The hydrograph of well 6N/31W-7F1 showing water-level elevations is included in Figure F-3 (Appendix F).

The change in water levels from Spring 2019 to Spring 2020 in 24 wells located in the Santa Ynez Upland subarea are shown in Table 10. Twelve of these wells are located within the District portion of the Santa Ynez Upland subarea. Within the District portion of the subarea, the water level was observed to decrease in eleven of the twelve wells, and increase in one of the twelve measured wells. Hydrographs of two wells located in the Santa Ynez Upland subarea are included as Figure F-4 (Appendix F).

# TABLE 10
# WATER-LEVEL CHANGES
# SANTA YNEZ UPLAND SUBAREA
# 2019 TO 2020

**District Portion of Subarea**

| Well No. | Water-Level Change (Feet) |
|---|---|
| 6N/30W-7G5 | -3.5 |
| 6N/30W-7G6 | -3.6 |
| 6N/31W-1P2 | -3.9 |
| 6N/31W-1P3 | -3.7 |
| 6N/31W-2K1 | -2.8 |
| 6N/31W-3A1 | -3.2 |
| 6N/31W-4A1 | -1.4 |
| 6N/31W-10F1 | -2.3 |
| 6N/31W-11D4 | -2.3 |
| 6N/31W-13D1 | -0.2 |
| 7N/31W-23P1 | 14.8 |
| 7N/31W-36L2 | -5.8 |

**Non-District Portion of Subarea**

| Well No. | Water-Level Change (Feet) |
|---|---|
| 6N/29W-5A1 | -- |
| 6N/29W-6F1 | -- |
| 6N/29W-6G1 | -0.1 |
| 6N/29W-7L1 | -35.7 |
| 6N/29W-8P1 | -- |
| 6N/29W-8P2 | -11.1 |
| 6N/30W-1R3 | -- |
| 6N/30W-11G4 | -8.9 |
| 7N/30W-16B1 | 7.5 |
| 7N/30W-19H1 | 0.2 |
| 7N/30W-22E1 | 2.2 |
| 7N/30W-24Q1 | 3.2 |
| 7N/30W-27H1 | -- |
| 7N/30W-29D1 | -4.7 |
| 7N/30W-30M1 | -5.4 |
| 7N/30W-32R1 | -- |
| 7N/30W-33M1 | -3.1 |
| 7N/30W-35R1 | -- |
| 7N/31W-22A3 | -- |
| 8N/30W-30R1 | -- |
| 8N/31W-36H1 | -20.1 |

Based upon measurements made during March by the Santa Barbara County Water Agency.

## 5.3. STORAGE CHANGES

The general status of groundwater conditions of the District can be shown by estimates of change in groundwater storage of the major sources of groundwater within the District. The USBR, in connection with SWRCB Order No. 89-18, determines on a monthly basis the quantity of dewatered storage beneath the forebay on the Lompoc Plain and in the Santa Ynez River alluvial deposits. Under normal water supply conditions, the Santa Ynez River alluvial deposits are replenished yearly. During extended drought periods, some shortages in supply may occur in these deposits.

In order to monitor the groundwater conditions of the District portions of the Lompoc Upland, Santa Ynez Upland, Lompoc Terrace, Santa Rita Upland and the eastern portion of the Buellton Upland, nodal systems for each source were established. The nodal systems are used to estimate the annual change in the quantity of groundwater in storage and overdraft.

Table 11 summarizes the estimated annual (Spring to Spring) change in groundwater storage in the alluvium of the Santa Ynez River for the past ten years, 2009-2010 through 2018-19 and the current year, 2019-20. The change in groundwater storage is based upon the USBR's 25 node nodal system, which extends from Robinson Bridge near Lompoc to Bradbury Dam at Lake Cachuma. One node and a portion of another node lie outside the District, upstream of San Lucas Bridge. Changes in the groundwater storage in these nodes are reflected in the totals shown on Table 11 for the Santa Ynez subarea. Table 11 indicates that the accumulated dewatered storage at the end of March 2020 was about 14,700 acre-feet. As of March 31, 2020, the District had 14,738 acre-feet in the Above Narrows Account in Lake Cachuma.

Table 12 summarizes the estimated annual (Spring to Spring) change in groundwater storage in the Lompoc Plain subarea for the past ten years, 2009-10 through 2018-19 and the current year, 2019-20. Table 12 indicates that the accumulated dewatered storage at the end of March 2020 was 15,100 acre-feet. There was a gain in groundwater in storage in the Lompoc Plain subarea of 2,900 acre-feet during the past year. As of March 31, 2020, the District had 6,405 acre-feet of water in the Below Narrows Account in Lake Cachuma which could otherwise be considered groundwater in storage in the alluvium of the Lompoc Plain.

## TABLE 11
## ESTIMATED ANNUAL CHANGE OF GROUNDWATER IN STORAGE IN THE SANTA YNEZ RIVER ALLUVIUM FOR THE PAST TEN YEARS AND CURRENT YEAR (2019-20)

(Acre-Feet)

| Year (Spring to Spring) | Santa Ynez Subarea | | Buellton Subarea | | Santa Rita Subarea | | Total Santa Ynez River Alluvium | |
|---|---|---|---|---|---|---|---|---|
| | Change in Storage | Accumulated Dewatered Storage | Change in Storage | Accumulated Dewatered Storage | Change in Storage | Accumulated Dewatered Storage | Change in Storage | Accumulated Dewatered Storage |
| 2008-09 | | 4,200 | | 6,000 | | 4,700 | | 14,900 |
| 2009-10 | 300 | 3,900 | 100 | 5,900 | 700 | 4,000 | 1,100 | 13,800 |
| 2010-11 | 1,300 | 2,600 | 2,200 | 3,700 | 1,900 | 2,100 | 5,400 | 8,400 |
| 2011-12 | -1,200 | 3,800 | -2,100 | 5,800 | -2,400 | 4,500 | -5,700 | 14,100 |
| 2012-13 | -300 | 4,100 | -300 | 6,100 | -1,900 | 6,400 | -2,500 | 16,600 |
| 2013-14 | -600 | 4,700 | -300 | 6,400 | 1,300 | 5,100 | 400 | 16,200 |
| 2014-15 | -800 | 5,500 | -200 | 6,600 | -3,500 | 8,600 | -4,500 | 20,700 |
| 2015-16 | 500 | 5,000 | -100 | 6,700 | 1,800 | 6,800 | 2,200 | 18,500 |
| 2016-17 | 1,400 | 3,600 | 600 | 6,100 | 3,600 | 3,200 | 5,600 | 12,900 |
| 2017-18 | -1,000 | 4,600 | -200 | 6,300 | -2,500 | 5,700 | -3,700 | 16,600 |
| 2018-19 | 600 | 4,000 | -300 | 6,600 | 1,000 | 4,700 | 1,300 | 15,300 |
| 2019-20 | 400 | 3,600 | 1,300 | 5,300 | -1,100 | 5,800 | 600 | 14,700 |

Based upon dewatered storage estimated by the U.S. Bureau of Reclamation (USBR). Values are rounded.

## TABLE 12
## ESTIMATED ANNUAL CHANGE OF GROUNDWATER IN STORAGE IN THE LOMPOC PLAIN SUBAREA FOR THE PAST TEN YEARS AND CURRENT YEAR (2019-20)

(Acre-Feet)

| Year (Spring to Spring) | Change in Storage | Accumulated Dewatered Storage |
|---|---|---|
| 2008-09 | | 13,600 |
| 2009-10 | -300 | 13,900 |
| 2010-11 | 2,800 | 11,100 |
| 2011-12 | 200 | 10,900 |
| 2012-13 | -4,200 | 15,100 |
| 2013-14 | 100 | 15,000 |
| 2014-15 | -4,500 | 19,500 |
| 2015-16 | -2,300 | 21,800 |
| 2016-17 | 1,100 | 20,700 |
| 2017-18 | 900 | 19,800 |
| 2018-19 | 1,800 | 18,000 |
| 2019-20 | 2,900 | 15,100 |

Based upon dewatered storage estimated by the U.S. Bureau of Reclamation (USBR). Values are rounded.

The estimated annual change in groundwater storage beneath the Lompoc Upland and the Lompoc Terrace subareas, is shown on Table 13 for the past ten years, 2009-10 through 2018-19 and the current year, 2019-20. Table 13 indicates that during that 10-year period there has been a total decrease of 5,600 acre-feet in the quantity of groundwater in storage in the Lompoc Upland. During the current year, 2019-20, there has been a decrease of 400 acre-feet in storage. The estimated total dewatered storage in the Lompoc Upland subarea through Spring 2020 is 36,200 acre-feet. In the Lompoc Terrace during the current year, 2019-20, there has been a decrease of 100 acre-feet in storage. The estimated dewatered storage in the Lompoc Terrace subarea through Spring 2020 is 700 acre-feet.

The estimated annual change in groundwater storage in the Santa Rita Upland subarea is shown on Table 14 for the past ten years, 2009-10 through 2018-19 and the current year. Table 14 indicates that during that 10-year period, there has been a decrease of 1,500 acre-feet in the quantity of groundwater in storage in the Santa Rita Upland subarea. During the current year, 2019-20, there has been a decrease of 1,000 acre-feet in storage.

The estimated annual change in groundwater storage in the eastern portion of the Buellton Upland subarea (deeper aquifer in the Buellton area) is shown on Table 15 for the past ten years, 2009-10 through 2018-19 and the current year. Table 15 indicates that during that 10-year period, there has been an increase of 1,000 acre-feet in the quantity of groundwater in storage. During the current year, 2019-20, there has been a decrease in storage of 500 acre-feet.

The estimated annual change in groundwater storage within the District portion of the Santa Ynez Upland subarea is shown on Table 16 for the past ten years, 2009-10 through 2018-19 and for the current year. Table 16 indicates that during that 10-year period, there has been a decrease of about 22,300 acre-feet in the quantity of groundwater in storage in the District portion of the subarea. During the current year, 2019-20, there has been an increase of quantity of water in storage of 200 acre-feet. The estimated total dewatered storage in the District portion of the subarea through Spring 2020 is 59,100 acre-feet.

## TABLE 13
## ESTIMATED ANNUAL CHANGE OF GROUNDWATER IN STORAGE IN THE LOMPOC UPLAND AND LOMPOC TERRACE SUBAREAS FOR THE PAST TEN YEARS AND CURRENT YEAR (2019-20)
(Acre-Feet)

| Year (Spring to Spring) | Lompoc Upland Subarea | | Lompoc Terrace Subarea | |
|---|---|---|---|---|
| | Change in Storage | Accumulated Dewatered Storage | Change in Storage | Accumulated Dewatered Storage |
| 2008-09 | | 30,200 | | 100 |
| 2009-10 | -700 | 30,900 | 0 | 100 |
| 2010-11 | 400 | 30,500 | 0 | 100 |
| 2011-12 | -400 | 30,900 | -100 | 200 |
| 2012-13 | 0 | 30,900 | -100 | 300 |
| 2013-14 | -1,400 | 32,300 | -100 | 400 |
| 2014-15 | -800 | 33,100 | -200 | 600 |
| 2015-16 | -400 | 33,500 | -100 | 700 |
| 2016-17 | -1,800 | 35,300 | 200 | 500 |
| 2017-18 | -300 | 35,600 | -500 | 1,000 |
| 2018-19 | -200 | 35,800 | 400 | 600 |
| 2019-20 | -400 | 36,200 | -100 | 700 |

The accumulated dewatered storage is based upon an estimate of existing dewatered storage of 25,500 acre-feet through 1973 from the Lompoc Upland subarea, and 800 acre-feet from the Lompoc Terrace subarea. The 1973 estimates were based upon review of water-level data and trends, and published USGS investigations.

## TABLE 14
## ESTIMATED ANNUAL CHANGE OF GROUNDWATER IN STORAGE IN THE SANTA RITA UPLAND SUBAREA FOR THE PAST TEN YEARS AND CURRENT YEAR (2019-20)

(Acre-Feet)

| Year (Spring to Spring) | Change in Storage | Accumulated Dewatered Storage |
|---|---|---|
| 2008-09 | | 11,900 |
| 2009-10 | -1,000 | 12,900 |
| 2010-11 | -1,700 | 14,600 |
| 2011-12 | 900 | 13,700 |
| 2012-13 | 100 | 13,600 |
| 2013-14 | 300 | 13,300 |
| 2014-15 | -900 | 14,200 |
| 2015-16 | 400 | 13,800 |
| 2016-17 | 100 | 13,700 |
| 2017-18 | -700 | 14,400 |
| 2018-19 | 1,000 | 13,400 |
| 2019-20 | -1,000 | 14,400 |

The accumulated dewatered storage is based upon an estimate of existing dewatered storage of 7,400 acre-feet through 1973. The 1973 estimate was based upon review of water-level data and trends, and published USGS investigations.

## TABLE 15
## ESTIMATED ANNUAL CHANGE OF GROUNDWATER IN STORAGE IN THE EASTERN PORTION OF THE BUELLTON UPLAND SUBAREA FOR THE PAST TEN YEARS AND CURRENT YEAR (2019-2020)

(Acre-Feet)

| Year (Spring to Spring) | Change in Storage | Accumulated Dewatered Storage |
|---|---|---|
| 2008-09 | | 2,300 |
| 2009-10 | 300 | 2,000 |
| 2010-11 | -1,200 | 3,200 |
| 2011-12 | -200 | 3,400 |
| 2012-13 | 600 | 2,800 |
| 2013-14 | -1,700 | 4,500 |
| 2014-15 | 700 | 3,800 |
| 2015-16 | 900 | 2,900 |
| 2016-17 | 100 | 2,800 |
| 2017-18 | 1,700 | 1,100 |
| 2018-19 | -200 | 1,300 |
| 2019-20 | -500 | 1,800 |

Accumulated dewatered storage was originally estimated as 2,000 acre-feet through 1973 based upon review of water-level data and trends and published USGS investigations. Recent (2006) water-level measurements indicated that the accumulated dewatered storage was more likely on the order of 2,400 acre-feet in 1973.

## TABLE 16
## ESTIMATED ANNUAL CHANGE OF GROUNDWATER IN STORAGE IN THE DISTRICT PORTION OF THE SANTA YNEZ UPLAND SUBAREA FOR THE PAST TEN YEARS AND CURRENT YEAR (2019-2020)

(Acre-Feet)

| Year (Spring to Spring) | Change in Storage | Accumulated Dewatered Storage |
|---|---|---|
| 2008-09 | | 37,000 |
| 2009-10 | -1,100 | 38,100 |
| 2010-11 | 500 | 37,600 |
| 2011-12 | -1,800 | 39,400 |
| 2012-13 | -2,400 | 41,800 |
| 2013-14 | -5,300 | 47,100 |
| 2014-15 | -3,800 | 50,900 |
| 2015-16 | -3,100 | 54,000 |
| 2016-17 | -1,200 | 55,200 |
| 2017-18 | -2,300 | 57,500 |
| 2018-19 | -1,800 | 59,300 |
| 2019-20 | 200 | 59,100 |

The accumulated dewatered storage is based upon an estimate of existing dewatered storage of 42,000 acre-feet through 1973. The 1973 estimate was based upon review of water-level data and trends, and published USGS investigations.

A summary of the annual change in storage for 2018 to 2019, 2019 to 2020, and the accumulated dewatered storage through 2018-19 and through 2019-20 are shown on Table 17 for the major sources of groundwater in the District.

## 5.4. CHANGE IN STORAGE TRENDS

There has been a nearly continuous significant increase in dewatered storage since 2006 in the Santa Ynez Upland subarea. In the other groundwater subareas, as shown in Figure 7, there appears to be a gradual to no increase in the quantity of accumulated dewatered storage.

## 5.5. SAFE YIELD

Table 18 shows estimates of average annual pumping safe yield of the principal sources of groundwater within the District for the immediate past ten years and for the current year. It is assumed that the specified safe yield values are applicable to both the current year and the immediate past ten years.

## 5.6. HISTORICAL PUMPAGE

Table 19 shows estimated reported average historical groundwater pumpage from the principal sources for groundwater within the District for the immediate past ten years (2009-10 through 2018-19).

## 5.7. OVERDRAFT

For the District portion of each subarea, the average annual overdraft for the immediate past ten years and the estimated annual overdraft for the current (2019-20) and ensuing (2020-21) years is shown on Table 20. The information shown on Table 20 is based on estimates of change in the quantity of groundwater in storage. The values of overdraft were determined solely for the purpose of meeting the provisions in the California

## TABLE 17
## SUMMARY OF CHANGE IN QUANTITY OF GROUNDWATER IN STORAGE WITHIN THE DISTRICT
(Acre-Feet)

| Source of Groundwater | Change in Storage [a] | | Accumulated Dewatered Storage | |
|---|---|---|---|---|
| | 2018-19 | 2019-20 | 2018-19 | 2019-20 |
| Santa Ynez River Alluvium | 1,300 | 600 | 15,300 | 14,700 |
| Lompoc Plain | 1,800 | 2,900 | 18,000 | 15,100 |
| Lompoc Upland | -200 | -400 | 35,800 | 36,200 |
| Lompoc Terrace | 400 | -100 | 600 | 700 |
| Santa Rita Upland | 1,000 | -1,000 | 13,400 | 14,400 |
| Buellton Upland (Eastern Portion) | -200 | -500 | 1,300 | 1,800 |
| Santa Ynez Upland (District Portion) | -1,800 | 200 | 59,300 | 59,100 |
| **TOTAL** | **2,300** | **1,700** | **143,700** | **142,000** |

[a] Spring to Spring.

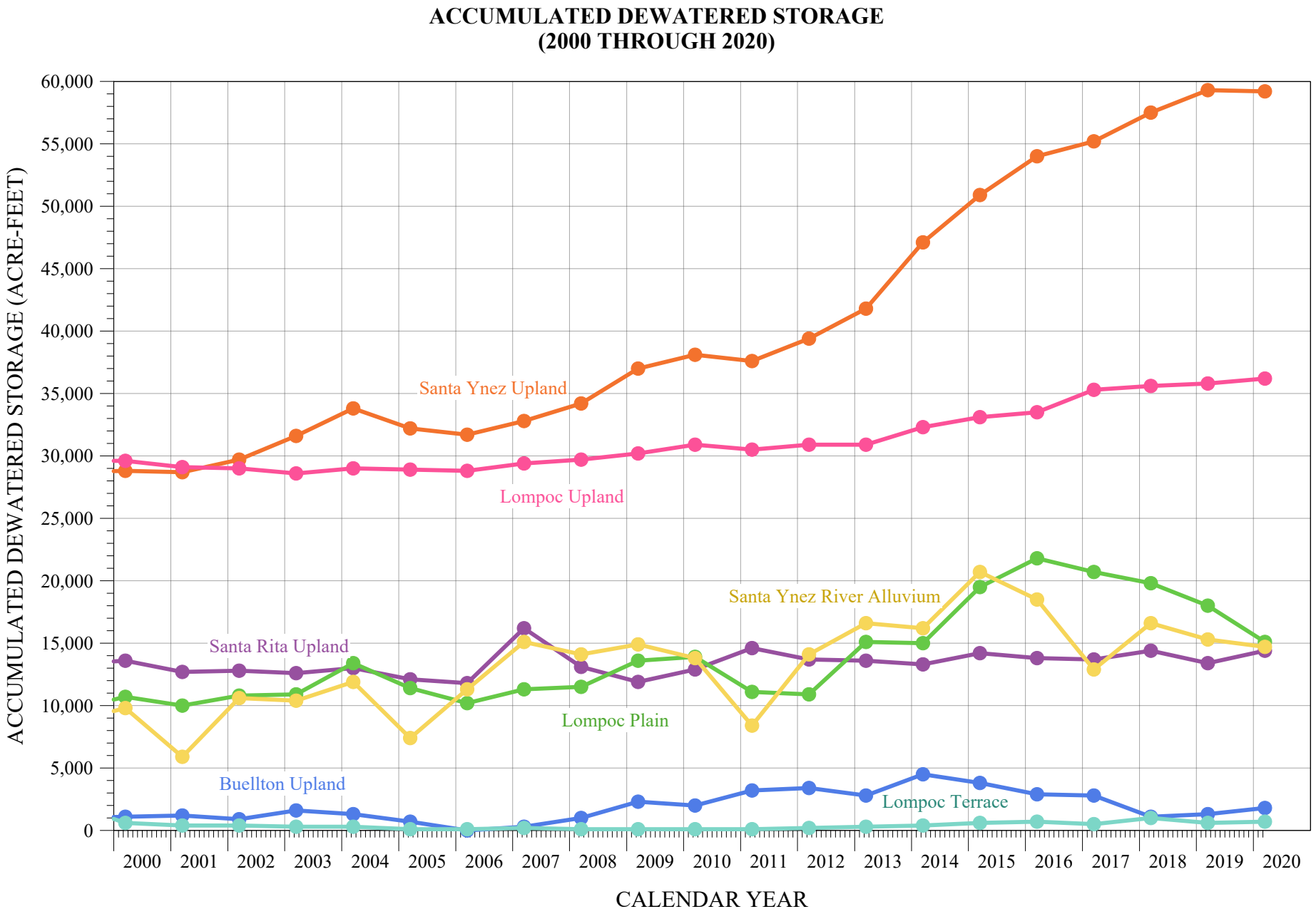

ACCUMULATED DEWATERED STORAGE
(2000 THROUGH 2020)
ACCUMULATED DEWATERED STORAGE (ACRE-FEET)
60,000
55,000
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Santa Ynez Upland
Lompoc Upland
Santa Ynez River Alluvium
Santa Rita Upland
Lompoc Plain
Buellton Upland
Lompoc Terrace
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
CALENDAR YEAR

FIGURE 7

## TABLE 18
## ESTIMATED AVERAGE SAFE YIELD OF PRINCIPAL SOURCES OF GROUNDWATER WITHIN THE DISTRICT

| Source of Groundwater | Safe Yield (Acre-Feet per Year) |
|---|---|
| Santa Ynez River Alluvium | Subject to shortages during drought periods. |
| Lompoc Plain Subarea | 24,100 |
| Lompoc Upland Subarea | 3,300 |
| Lompoc Terrace Subarea | 300 |
| Santa Rita Upland Subarea | 1,800 |
| Buellton Upland Subarea [a] | 2,800 |
| Santa Ynez Upland Subarea [a] | 9,800 |
| Bedrock and other deposits | Unknown |

[a] Estimated safe yield of entire subarea.
Does not include return flow from imported water.

Source:
Stetson Engineers, August 31, 1992, Santa Ynez River Water Conservation District, Water Resource Management Planning Process, Phase I: Baseline Data and Background Information

## TABLE 19
## ESTIMATED AVERAGE ANNUAL HISTORICAL REPORTED GROUNDWATER PUMPAGE FROM THE PRINCIPAL SOURCES OF GROUNDWATER WITHIN THE DISTRICT
(Acre-Feet)

| Source of Groundwater | Estimated Average Annual Pumpage for the Immediate Past Ten Years (2009-10 through 2018-19) |
|---|---|
| **Zone A**<br>Santa Ynez River Alluvium | 14,196 |
| **Zone B**<br>Lompoc Plain, Lompoc Upland, and Lompoc Terrace Subareas | 25,717 |
| **Zone C**<br>All portions of the District not included in other zones | 1,206 |
| **Zone D**<br>Buellton Upland Subarea | 3,477 |
| **Zone E**<br>Santa Ynez Upland Subarea (District Portion) | 4,691 |
| **Zone F**<br>Santa Rita Upland Subarea | 2,166 |
| **DISTRICT TOTAL** | **51,453** |

## TABLE 20
## AVERAGE ANNUAL OVERDRAFT OF PRINCIPAL SOURCES OF GROUNDWATER WITHIN THE DISTRICT
(Acre-Feet)

| Source of Groundwater | Average Annual Overdraft for the Immediate Past Ten Years (2009-10 through 2018-19) | Annual Overdraft Estimated 2019-20 | Annual Overdraft Projected 2020-21 |
|---|---|---|---|
| **Zone A** | | | |
| Santa Ynez River Alluvium | 40 | 0 | 0 |
| **Zone B** | | | |
| Lompoc Plain Subarea | 440 | 0 | 0 |
| Lompoc Upland Subarea | 560 | 400 | 400 |
| Lompoc Terrace Subarea | 50 | 100 | 100 |
| **Zone C** | | | |
| Bedrock and other deposits | Unknown | Unknown | Unknown |
| **Zone D** | | | |
| Buellton Upland Subarea (Eastern Portion) | 0 | 500 | 500 |
| **Zone E** | | | |
| Santa Ynez Upland Subarea (District Portion) | 2,230 | 0 | 0 |
| **Zone F** | | | |
| Santa Rita Upland Subarea | 150 | 1,000 | 1,000 |
| **DISTRICT TOTALS** | **3,470 ±** | **2,000 ±** | **2,000 ±** |

Overdraft is based upon annual estimates of change in groundwater storage.

Water Code pertaining to the implementation of a groundwater charge and do not necessarily represent the hydrologic status of the groundwater basin. The values of overdraft for the ensuing water year are assumed to be the same as for the current water year.

Estimates of accumulated overdraft based upon estimated groundwater storage depletions are shown on Table 21. As of March 31, 2020, there were 6,405 acre-feet of water in the Below Narrows Account in Lake Cachuma to off-set some of the accumulated overdraft in the alluvium of the Lompoc Plain and 14,738 acre-feet in the Above Narrows Account in Lake Cachuma to off-set the accumulated overdraft in the Santa Ynez River alluvium.

## 5.8. GROUNDWATER QUALITY

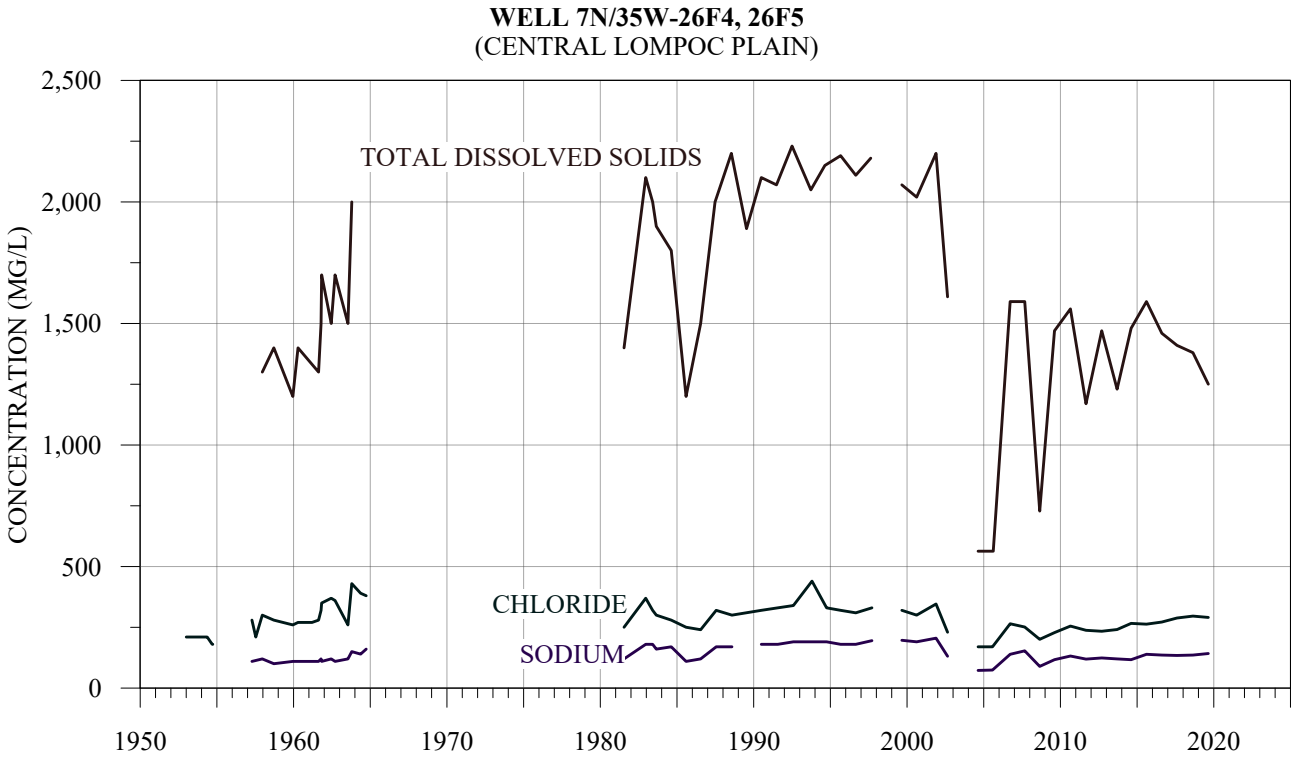
High concentrations of dissolved solids in the upper aquifer of the Lompoc Plain along the coast have been attributed by the USGS to downward leakage of brackish water from the overlying estuary. Graphs showing total dissolved solids, chloride and sodium concentrations of water from two wells located in the Lompoc Plain are presented on Figure 8. One of the wells (7N/35W-17K20) is located about one mile inland from the ocean. This well is situated in such a manner that it can be used to monitor potential sea water intrusion.

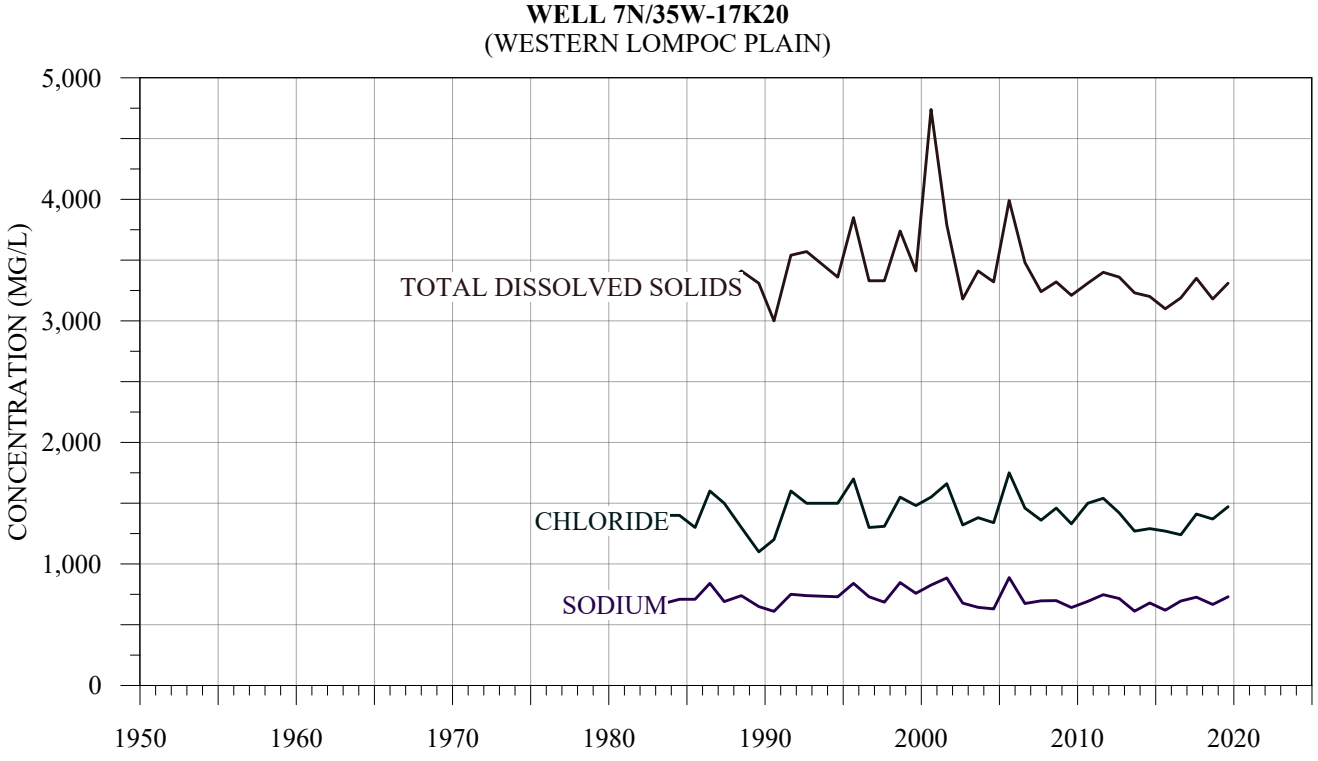
## TABLE 21
## ESTIMATED ACCUMULATED OVERDRAFT OF PRINCIPAL SOURCES OF GROUNDWATER WITHIN THE DISTRICT
(Acre-Feet)

| Principal Source of Groundwater | Accumulated Overdraft Through Preceding Year (2018-19) | Accumulated Overdraft Through Current Year (2019-20) |
|---|---|---|
| **Zone A** | | |
| Santa Ynez River Alluvium (Subarea is replenished annually. Some shortages in supply during drought periods) | 15,300 | 14,700 |
| **Zone B** | | |
| Lompoc Plain Subarea | 18,000 | 15,100 |
| Lompoc Upland Subarea | 35,800 | 36,200 |
| Lompoc Terrace Subarea | 600 | 700 |
| **Zone C** | | |
| Bedrock and other deposits | Unknown | Unknown |
| **Zone D** | | |
| Buellton Upland Subarea (Eastern Portion) | 1,300 | 1,800 |
| **Zone E** | | |
| Santa Ynez Upland Subarea (District Portion) | 59,300 | 59,100 |
| **Zone F** | | |
| Santa Rita Upland Subarea | 13,400 | 14,400 |
| **DISTRICT TOTALS** | **143,700 ±** | **142,000 ±** |

Accumulated overdraft is based upon estimates of accumulated dewatered storage (Table 17).

# GRAPHS SHOWING TOTAL DISSOLVED SOLIDS, CHLORIDE AND SODIUM CONCENTRATIONS IN GROUNDWATER FROM SELECTED WELLS LOCATED IN THE LOMPOC PLAIN SUBAREA



# Appendix A

## SUMMARY OF PROVISIONS IN THE CALIFORNIA WATER CODE PERTAINING TO THE IMPLEMENTATION OF A GROUNDWATER CHARGE

# Appendix A

## SUMMARY OF PROVISIONS IN THE CALIFORNIA WATER CODE PERTAINING TO THE IMPLEMENTATION OF A GROUNDWATER CHARGE

Implementation of a groundwater charge within the District requires an engineering investigation report on the groundwater conditions of the District. The annual report requires that the following be included (Water Code Section 75560).

1. Information for the consideration of the Board in its determination of the annual overdraft;

2. Information for the consideration of the Board in its determination of the accumulated overdraft as of the last day of the preceding water year;

3. A report as to the total production of water from the groundwater supplies of the District for the preceding water year;

4. An estimate of the annual overdraft for the current water year and for the ensuing water year;

5. The amount of water the District is obligated to purchase during the ensuing water year, a recommendation as to the quantity of water needed for surface delivery and for replenishment of the groundwater supplies of the District for the ensuing year;

6. Such other information as the District desires.

The annual report should contain sufficient data from which the Board of Directors of the District can make the following determinations (Water Code Section 75574).

1. The average annual overdraft for the immediate past ten water years;

2. The estimated annual overdraft for the current water year;

3. The estimated annual overdraft for the ensuing water year;

4. The accumulated overdraft as of the last day of the preceding water year;

5. The estimated accumulated overdraft as of the last day of the current water year;

6. The estimated amount of agricultural water to be withdrawn from the groundwater supplies of the District for the ensuing water year;

7. The amount of water other than agricultural water to be withdrawn from the groundwater supplies of the District for the ensuing water year;

8. The estimated amount of water necessary for surface distribution for the ensuing water year;

9. The amount of water which is necessary for the replenishment of the groundwater supplies of the District;

10. The amount of water the District is obligated by contract to purchase.

Upon completion of the engineering report, the Board is required to call a noticed public hearing at which operators of water producing facilities within the District and any person interested in the condition of the groundwater or surface water supplies of the District are invited to submit evidence concerning the groundwater and surface water supplies of the District. The Board thereafter makes findings and determinations relating to the status of water supplies and groundwater conditions within the District. Prior to the beginning of the water year (July 1 to June 30), the Board determines whether or not it should modify the existing zone or zones in which a groundwater charge is levied.

The Board must then establish the groundwater charge to be levied in any zone or zones and proceed to assess such charge against all persons operating groundwater producing facilities within such zone or zones during the ensuing water year. The charge must be a fixed and uniform rate per acre-foot for agricultural water and for other water in each zone. Different rates may be established for different zones. Within any given zone, the fixed and uniform rate per acre-foot for other than agricultural water must be not less than three times nor more than five times the fixed and uniform rate established for agricultural water in that zone.

A 1984 amendment to the Water code established a rate for special irrigation water (irrigation water for parks, golf courses, cemeteries, schools and publicly owned historic sites). The rate shall not be less than the rate for agricultural water and shall not be more than the rate for non-agricultural water.

Within six months after establishing the existing zones within the District, all water-producing facilities located within the boundaries of the zones are required to be registered with the District. As new wells are drilled within the District, they must be registered. The District then annually gives notice to each operator of a water-producing facility of the groundwater charge for each acre-foot of water to be produced during the ensuing year.

Prior to January 31, and July 31, of each year, each water producer is required to file with the District a statement setting forth his total water production, in acre-feet, for the preceding six month period, excluding the month in which the statement is due, a general description or number locating each water-producing facility and the method or basis of the computation of such water production. This is to be a verified statement. The groundwater charge is payable to the District on or before the last date that the water production statement is due, January 31 and July 31.

# Appendix B

## HISTORICAL GROUNDWATER CHARGE RATES

# Appendix B

## HISTORICAL GROUNDWATER CHARGE RATES

(Dollars per Acre-Foot)

| Fiscal Year | Zone | Agri-cultural Water | Other Water | Special Irrigation Water |
|---|---|---|---|---|
| 1979-80 | Zone A | 0.60 | 2.40 | |
| | Zone B | 0.62 | 2.48 | |
| | Zone C | 0.50 | 2.00 | |
| 1980-81 | Zone A | 0.60 | 2.40 | |
| | Zone B | 0.62 | 2.48 | |
| | Zone C | 0.50 | 2.00 | |
| 1981-82 | Zone A | 0.45 | 1.80 | |
| | Zone B | 0.47 | 1.88 | |
| | Zone C | 0.35 | 1.40 | |
| 1982-83 | Zone A | 0.60 | 2.40 | |
| | Zone B | 0.42 | 1.68 | |
| | Zone C | 0.40 | 1.60 | |
| 1983-84 | Zone A | 0.40 | 1.60 | |
| | Zone B | 0.22 | 0.88 | |
| | Zone C | 0.20 | 0.80 | |
| 1984-85 | Zone A | 0.30 | 1.20 | |
| | Zone B | 0.12 | 0.48 | |
| | Zone C | 0.10 | 0.40 | |
| 1985-86 | Zone A | 0.25 | 1.00 | 0.50 |
| | Zone B | 0.10 | 0.40 | 0.20 |
| | Zone C | 0.08 | 0.32 | 0.16 |
| 1986-87 | Zone A | 0.50 | 2.00 | 1.00 |
| | Zone B | 0.35 | 1.40 | 0.70 |
| | Zone C | 0.33 | 1.32 | 0.66 |
| 1987-88 | Zone A | 0.50 | 2.00 | 1.00 |
| | Zone B | 0.35 | 1.40 | 0.70 |
| | Zone C | 0.33 | 1.32 | 0.66 |
| 1988-89 | Zone A | 0.60 | 2.40 | 1.20 |
| | Zone B | 0.50 | 2.00 | 1.00 |
| | Zone C | 0.40 | 1.60 | 0.80 |
| 1989-90 | Zone A | 0.80 | 3.20 | 1.60 |
| | Zone B | 0.70 | 2.80 | 1.40 |
| | Zone C | 0.60 | 2.40 | 1.20 |
| 1990-91 | Zone A | 1.00 | 4.00 | 2.00 |
| | Zone B | 1.00 | 4.00 | 2.00 |
| | Zone C | 0.80 | 3.20 | 1.60 |
| 1991-92 | Zone A | 1.00 | 4.00 | 2.00 |
| | Zone B | 1.00 | 4.00 | 2.00 |
| | Zone C | 0.80 | 3.20 | 1.60 |
| 1992-93 | Zone A | 2.20 | 8.80 | 4.40 |
| | Zone B | 2.20 | 8.80 | 4.40 |
| | Zone C | 2.00 | 8.00 | 4.00 |
| 1993-94 | Zone A | 3.80 | 15.20 | 7.60 |
| | Zone B | 2.70 | 10.80 | 5.40 |
| | Zone C | 2.30 | 9.20 | 4.60 |
| | Zone D | 2.90 | 11.60 | 5.80 |
| | Zone E | 2.60 | 10.40 | 5.20 |
| | Zone F | 2.50 | 10.00 | 5.00 |
| 1994-95 | Zone A | 4.89 | 17.10 | 9.77 |
| | Zone B | 2.74 | 9.58 | 5.47 |
| | Zone C | 1.77 | 6.19 | 3.54 |
| | Zone D | 3.32 | 11.62 | 6.64 |
| | Zone E | 2.40 | 8.41 | 4.80 |
| | Zone F | 3.31 | 11.59 | 6.62 |
| 1995-96 | Zone A | 3.08 | 10.78 | 6.16 |
| | Zone B | 2.73 | 9.56 | 5.46 |
| | Zone C | 1.06 | 3.71 | 2.12 |
| | Zone D | 3.77 | 13.20 | 7.54 |
| | Zone E | 3.68 | 12.88 | 7.36 |
| | Zone F | 1.06 | 3.71 | 2.12 |
| 1996-97 | Zone A | 3.85 | 13.48 | 7.70 |
| | Zone B | 3.26 | 11.41 | 6.52 |
| | Zone C | 1.56 | 5.46 | 3.12 |
| | Zone D | 3.70 | 12.95 | 7.40 |
| | Zone E | 3.46 | 12.11 | 6.92 |
| | Zone F | 1.56 | 5.46 | 3.12 |
| 1997-98 | Zone A | 3.85 | 13.48 | 7.70 |
| | Zone B | 3.26 | 11.41 | 6.52 |
| | Zone C | 1.56 | 5.46 | 3.12 |
| | Zone D | 3.70 | 12.95 | 7.40 |
| | Zone E | 2.27 | 7.95 | 4.54 |
| | Zone F | 1.56 | 5.46 | 3.12 |
| 1998-99 | Zone A | 3.85 | 13.48 | 7.70 |
| | Zone B | 3.26 | 11.41 | 6.52 |
| | Zone C | 1.56 | 5.46 | 3.12 |
| | Zone D | 2.36 | 8.26 | 4.72 |
| | Zone E | 1.56 | 5.46 | 3.12 |
| | Zone F | 1.56 | 5.46 | 3.12 |
| 1999-00 | Zone A | 3.80 | 13.30 | 7.60 |
| | Zone B | 3.26 | 11.41 | 6.52 |
| | Zone C | 1.56 | 5.46 | 3.12 |
| | Zone D | 1.56 | 5.46 | 3.12 |
| | Zone E | 1.56 | 5.46 | 3.12 |
| | Zone F | 1.56 | 5.46 | 3.12 |

# Appendix B

## HISTORICAL GROUNDWATER CHARGE RATES

(Dollars per Acre-Foot)

| Fiscal Year | Zone | Agri-cultural Water | Other Water | Special Irrigation Water |
|---|---|---|---|---|
| 2000-01 | Zone A | 3.80 | 13.30 | 7.60 |
| | Zone B | 3.26 | 11.41 | 6.52 |
| | Zone C | 1.56 | 5.46 | 3.12 |
| | Zone D | 1.56 | 5.46 | 3.12 |
| | Zone E | 1.56 | 5.46 | 3.12 |
| | Zone F | 1.56 | 5.46 | 3.12 |
| 2001-02 | Zone A | 3.50 | 12.25 | 7.00 |
| | Zone B | 3.26 | 11.41 | 6.52 |
| | Zone C | 1.56 | 5.46 | 3.12 |
| | Zone D | 1.56 | 5.46 | 3.12 |
| | Zone E | 0.71 | 2.49 | 1.42 |
| | Zone F | 1.56 | 5.46 | 3.12 |
| 2002-03 | Zone A | 3.35 | 11.73 | 6.70 |
| | Zone B | 3.00 | 10.50 | 6.00 |
| | Zone C | 1.40 | 4.90 | 2.80 |
| | Zone D | 1.40 | 4.90 | 2.80 |
| | Zone E | 0.60 | 2.10 | 1.20 |
| | Zone F | 1.40 | 4.90 | 2.80 |
| 2003-04 | Zone A | 3.20 | 11.20 | 6.40 |
| | Zone B | 2.85 | 9.98 | 5.70 |
| | Zone C | 1.35 | 4.73 | 2.70 |
| | Zone D | 1.35 | 4.73 | 2.70 |
| | Zone E | 1.35 | 4.73 | 2.70 |
| | Zone F | 1.35 | 4.73 | 2.70 |
| 2004-05 | Zone A | 3.20 | 11.20 | 6.40 |
| | Zone B | 2.85 | 9.98 | 5.70 |
| | Zone C | 1.35 | 4.73 | 2.70 |
| | Zone D | 1.35 | 4.73 | 2.70 |
| | Zone E | 1.35 | 4.73 | 2.70 |
| | Zone F | 1.35 | 4.73 | 2.70 |
| 2005-06 | Zone A | 2.20 | 7.70 | 4.40 |
| | Zone B | 2.20 | 7.70 | 4.40 |
| | Zone C | 1.20 | 4.20 | 2.40 |
| | Zone D | 1.20 | 4.20 | 2.40 |
| | Zone E | 1.20 | 4.20 | 2.40 |
| | Zone F | 1.20 | 4.20 | 2.40 |
| 2006-07 | Zone A | 2.20 | 7.70 | 4.40 |
| | Zone B | 2.20 | 7.70 | 4.40 |
| | Zone C | 1.20 | 4.20 | 2.40 |
| | Zone D | 1.20 | 4.20 | 2.40 |
| | Zone E | 1.20 | 4.20 | 2.40 |
| | Zone F | 1.20 | 4.20 | 2.40 |
| 2007-08 | Zone A | 2.20 | 7.70 | 4.40 |
| | Zone B | 2.20 | 7.70 | 4.40 |
| | Zone C | 1.20 | 4.20 | 2.40 |
| | Zone D | 1.20 | 4.20 | 2.40 |
| | Zone E | 1.20 | 4.20 | 2.40 |
| | Zone F | 1.20 | 4.20 | 2.40 |
| 2008-09 | Zone A | 2.20 | 7.70 | 4.40 |
| | Zone B | 2.20 | 7.70 | 4.40 |
| | Zone C | 1.20 | 4.20 | 2.40 |
| | Zone D | 1.20 | 4.20 | 2.40 |
| | Zone E | 1.20 | 4.20 | 2.40 |
| | Zone F | 1.20 | 4.20 | 2.40 |
| 2009-10 | Zone A | 2.20 | 7.70 | 4.40 |
| | Zone B | 2.20 | 7.70 | 4.40 |
| | Zone C | 1.20 | 4.20 | 2.40 |
| | Zone D | 1.20 | 4.20 | 2.40 |
| | Zone E | 1.20 | 4.20 | 2.40 |
| | Zone F | 1.20 | 4.20 | 2.40 |
| 2010-11 | Zone A | 2.55 | 8.93 | 5.10 |
| | Zone B | 2.55 | 8.93 | 5.10 |
| | Zone C | 1.40 | 4.90 | 2.80 |
| | Zone D | 1.40 | 4.90 | 2.80 |
| | Zone E | 1.40 | 4.90 | 2.80 |
| | Zone F | 1.40 | 4.90 | 2.80 |
| 2011-12 | Zone A | 2.70 | 9.45 | 5.40 |
| | Zone B | 2.70 | 9.45 | 5.40 |
| | Zone C | 1.48 | 5.18 | 2.96 |
| | Zone D | 1.48 | 5.18 | 2.96 |
| | Zone E | 1.48 | 5.18 | 2.96 |
| | Zone F | 1.48 | 5.18 | 2.96 |
| 2012-13 | Zone A | 3.00 | 10.50 | 6.00 |
| | Zone B | 3.00 | 10.50 | 6.00 |
| | Zone C | 1.65 | 5.78 | 3.30 |
| | Zone D | 1.65 | 5.78 | 3.30 |
| | Zone E | 1.65 | 5.78 | 3.30 |
| | Zone F | 1.65 | 5.78 | 3.30 |
| 2013-14 | Zone A | 3.25 | 11.40 | 6.50 |
| | Zone B | 3.25 | 11.40 | 6.50 |
| | Zone C | 1.80 | 6.30 | 3.60 |
| | Zone D | 1.80 | 6.30 | 3.60 |
| | Zone E | 1.80 | 6.30 | 3.60 |
| | Zone F | 1.80 | 6.30 | 3.60 |

# Appendix B

## HISTORICAL GROUNDWATER CHARGE RATES

(Dollars per Acre-Foot)

| Fiscal Year | Zone | Agri-cultural Water | Other Water | Special Irrigation Water |
|---|---|---|---|---|
| 2014-15 | Zone A | 3.25 | 11.40 | 6.50 |
| | Zone B | 3.25 | 11.40 | 6.50 |
| | Zone C | 1.80 | 6.30 | 3.60 |
| | Zone D | 1.80 | 6.30 | 3.60 |
| | Zone E | 1.80 | 6.30 | 3.60 |
| | Zone F | 1.80 | 6.30 | 3.60 |
| 2015-16 | Zone A | 3.50 | 12.25 | 7.00 |
| | Zone B | 3.50 | 12.25 | 7.00 |
| | Zone C | 2.15 | 7.53 | 4.30 |
| | Zone D | 2.15 | 7.53 | 4.30 |
| | Zone E | 2.15 | 7.53 | 4.30 |
| | Zone F | 2.15 | 7.53 | 4.30 |
| 2016-17 | Zone A | 3.85 | 13.48 | 7.70 |
| | Zone B | 3.85 | 13.48 | 7.70 |
| | Zone C | 3.00 | 10.50 | 6.00 |
| | Zone D | 3.00 | 10.50 | 6.00 |
| | Zone E | 3.00 | 10.50 | 6.00 |
| | Zone F | 3.00 | 10.50 | 6.00 |
| 2017-18 | Zone A | 4.85 | 16.98 | 9.70 |
| | Zone B | 4.85 | 16.98 | 9.70 |
| | Zone C | 4.85 | 16.98 | 9.70 |
| | Zone D | 4.85 | 16.98 | 9.70 |
| | Zone E | 4.85 | 16.98 | 9.70 |
| | Zone F | 4.85 | 16.98 | 9.70 |
| 2018-19 | Zone A | 7.15 | 25.00 | 14.30 |
| | Zone B | 7.15 | 25.00 | 14.30 |
| | Zone C | 7.15 | 25.00 | 14.30 |
| | Zone D | 7.15 | 25.00 | 14.30 |
| | Zone E | 7.15 | 25.00 | 14.30 |
| | Zone F | 7.15 | 25.00 | 14.30 |
| 2019-20 | Zone A | 7.15 | 25.00 | 14.30 |
| | Zone B | 7.15 | 25.00 | 14.30 |
| | Zone C | 7.15 | 25.00 | 14.30 |
| | Zone D | 7.15 | 25.00 | 14.30 |
| | Zone E | 7.15 | 25.00 | 14.30 |
| | Zone F | 7.15 | 25.00 | 14.30 |

# Appendix C

## ADDITIONAL STREAMFLOW RECORDS
## SANTA YNEZ RIVER BASIN

# Appendix C

## ADDITIONAL STREAMFLOW RECORDS
## SANTA YNEZ RIVER BASIN

(Acre-Feet)

| Water Year (Oct.-Sept.) | Alamo Pintado Creek near Solvang | Miguelito Creek at Lompoc | Santa Cruz Creek near Santa Ynez | Santa Ynez River at Jameson Lake near Montecito (Net Inflow) | Santa Ynez River at Solvang | Zaca Creek near Buellton | Santa Ynez River below Gibraltar Dam |
|---|---|---|---|---|---|---|---|
| 1942 | | | 8,250 | 2,490 | | | 19,170 |
| 1943 | | | 28,990 | 11,320 | | | 86,330 |
| 1944 | | | 17,500 | 5,230 | | | 44,990 |
| 1945 | | | 11,910 | 2,570 | | | 16,580 |
| 1946 | | | 6,600 | 3,550 | | | 18,600 |
| 1947 | | | 3,580 | 1,360 | 14,920 | | 6,260 |
| 1948 | | | 346 | 258 | 2,400 | | 24 |
| 1949 | | | 1,630 | 310 | 2,900 | | 23 |
| 1950 | | | 2,700 | 498 | 3,220 | | 38 |
| 1951 | | | 340 | 100 | 1,490 | | 41 |
| 1952 | | | 29,500 | 11,585 | 239,100 | | 85,500 |
| 1953 | | | 4,250 | 614 | 13,430 | | 7,990 |
| 1954 | | | 5,440 | 1,300 | 6,400 | | 9,240 |
| 1955 | | | 1,890 | 312 | 4,200 | | 84 |
| 1956 | | | 9,410 | 752 | 12,140 | | 3,480 |
| 1957 | | | 2,100 | 533 | 3,350 | | 71 |
| 1958 | | | 43,720 | 13,442 | 91,640 | | 123,600 |
| 1959 | | | 3,880 | 1,201 | 10,350 | | 4,500 |
| 1960 | | | 1,640 | 99 | 3,160 | | 16 |
| 1961 | | | 167 | | 625 | | |
| 1962 | | | 20,520 | 6,425 | 49,080 | | 46,260 |
| 1963 | | | 2,250 | 76 | 3,570 | | 74 |
| 1964 | | | 663 | 377 | 1,060 | 1 | 53 |
| 1965 | | | 5,050 | 1,050 | 5,890 | 5 | 1,480 |
| 1966 | | | 11,730 | 8,091 | 16,930 | 11 | 65,320 |
| 1967 | | | 36,540 | 9,451 | 148,700 | 755 | 123,470 |
| 1968 | | | 3,580 | 1,005 | 5,190 | | 1,400 |
| 1969 | | | 97,360 | 33,112 | 548,800 | 6,680 | 316,400 |
| 1970 | | | 6,250 | 1,903 | 4,410 | 19 | 13,610 |
| 1971 | 4 | 173 | 7,170 | 2,302 | 9,450 | 6 | 19,490 |
| 1972 | | 108 | 2,280 | 915 | 4,380 | 2 | 687 |
| 1973 | 173 | 1,740 | 19,910 | 13,835 | 48,100 | 611 | 69,780 |
| 1974 | 60 | 833 | 7,220 | 3,086 | 10,700 | 56 | 18,330 |
| 1975 | 107 | 1,640 | 8,570 | 3,529 | 34,490 | 122 | 26,270 |
| 1976 | 4 | 361 | 992 | 1,526 | 2,310 | 23 | 481 |
| 1977 | 6 | 124 | 587 | 342 | 1,010 | 11 | 162 |
| 1978 | 2,220 | 3,670 | 44,380 | 24,318 | 327,500 | 3,690 | 195,100 |
| 1979 | 89 | 1,100 | 13,040 | 5,358 | 54,350 | 185 | 34,550 |
| 1980 | 998 | 1,940 | 23,750 | 11,321 | 196,300 | 886 | 86,840 |
| 1981 | 167 | 916 | 5,150 | 1,617 | 10,690 | 349 | 4,870 |
| 1982 | 22 | 544 | 7,680 | 1,559 | 3,920 | | 11,910 |
| 1983 | 4,510 | 5,770 | 54,410 | 22,594 | 511,200 | | 236,500 |
| 1984 | 556 | 974 | 8,590 | 3,064 | 24,860 | | 23,530 |
| 1985 | 390 | 687 | 2,920 | 688 | 2,680 | | 24 |
| 1986 | | | 14,180 | 9,090 | 12,300 | | 56,160 |
| 1987 | | | 1,040 | 652 | 1,850 | | 70 |
| 1988 | | 511 | 3,430 | 2,335 | 4,120 | | 96 |
| 1989 | | 142 | 1,880 | 551 | 1,760 | | |
| 1990 | | 162 | 48 | 212 | 629 | | |

# Appendix C

## ADDITIONAL STREAMFLOW RECORDS
## SANTA YNEZ RIVER BASIN

(Acre-Feet)

| Water Year (Oct.-Sept.) | Alamo Pintado Creek near Solvang | Miguelito Creek at Lompoc | Santa Cruz Creek near Santa Ynez | Santa Ynez River at Jameson Lake near Montecito (Net Inflow) | Santa Ynez River at Solvang | Zaca Creek near Buellton | Santa Ynez River below Gibraltar Dam |
|---|---|---|---|---|---|---|---|
| 1991 | 1,080 | 855 | 14,030 | 5,738 | 12,360 | 588 | 31,100 |
| 1992 | 1,690 | 685 | 20,780 | 12,223 | 40,130 | 1,760 | 90,978 |
| 1993 | | 1,710 | 60,660 | 28,170 | 364,090 | | 217,980 |
| 1994 | | 705 | 4,261 | 1,542 | 9,390 | | 6,588 |
| 1995 | 7,660 | 9,960 | 46,454 | 43,537 | 533,900 | 5,600 | 236,032 |
| 1996 | 2,260 | 2,140 | 10,041 | 2,541 | 15,890 | 574 | 11,463 |
| 1997 | 1,658 | 677 | 14,867 | 2,951 | 152,940 | 1,658 | 29,935 |
| 1998 | 18,300 | 6,820 | 89,240 | 115,212 | 655,470 | 8,360 | 299,400 |
| 1999 | 2,710 | 1,104 | 5,450 | 1,088 | 10,950 | 261 | 6,170 |
| 2000 | 1,978 | 1,961 | 8,499 | 3,426 | | 504 | 25,269 |
| 2001 | 3,093 | 1,659 | 20,266 | 13,632 | | 1,720 | 65,659 |
| 2002 | 886 | 476 | 1,256 | 369 | 6,200 | 36 | 595 |
| 2003 | 350 | 622 | 5,522 | 1,369 | 7,710 | 47 | 3,844 |
| 2004 | 112 | 224 | 1,216 | 816 | 10,150 | 8 | 320 |
| 2005 | 3,707 | 2,194 | 50,508 | 21,630 | 373,548 | 2,143 | 212,452 |
| 2006 | 716 | 745 | 16,207 | 7,752 | 96,498 | 321 | 57,011 |
| 2007 | 323 | 135 | 992 | 191 | 10,883 | 0 | 0 |
| 2008 | 987 | 371 | 24,813 | 4,686 | 49,594 | | 68,518 |
| 2009 | 2 | 71 | 6,147 | 348 | 4,745 | 0 | 5,079 |
| 2010 | 159 | | 14,411 | 2524 | 18,602 | 119 | 41,872 |
| 2011 | 733 | | 27,316 | 5260 | 120,431 | 859 | 92,246 |
| 2012 | 0 | | 3,061 | 191 | 4,860 | 0 | 18 |
| 2013 | 0 | | 1,196 | | 381 | 0 | 0 |
| 2014 | 0 | | 1,112 | | 0 | 0 | 0 |
| 2015 | 0 | | 389 | | 0 | 0 | 0 |
| 2016 | 0 | | 377 | | 8,002 | 0 | 0 |
| 2017 | 463 | | 20,212 | | 18,652 | 626 | 44,664 |
| 2018 | 0 | | 2,078 | | 9,315 | 0 | 401 |
| 2019 | 180 | | 21,435 | | 14,179 | 197 | 61,195 |

Zeros represent annual gaged totals of zero acre-feet. Blanks represent incomplete gaged records.

# Appendix D

## WATER RIGHTS RELEASES

# Appendix D

In calendar year 2019, there were no water right releases because there was relatively low dewatered storage in the Above Narrows basin.

# Appendix E

## GENERAL DESCRIPTION OF THE HYDROGEOLOGY OF THE SOURCES OF GROUNDWATER WITHIN THE DISTRICT

# Appendix E

## GENERAL DESCRIPTION OF THE HYDROGEOLOGY OF THE SOURCES OF GROUNDWATER WITHIN THE DISTRICT

### Santa Ynez River Alluvial Deposits

Along the Santa Ynez River channel groundwater occurs in the river channel deposits and thin bodies of younger alluvium. The groundwater is generally unconfined and in hydrologic continuity with surface water. In the Santa Ynez subarea, Bradbury Dam to Solvang, these deposits are almost completely bordered and underlain by non-water bearing consolidated rocks. Replenishment is by natural seepage from the river, seepage from tributaries, return flow from applied water, treated wastewater effluent from the City of Solvang wastewater treatment plant, and releases from Lake Cachuma to satisfy downstream water rights.

In the Buellton subarea, Solvang to a point about five miles downstream of Buellton, the river channel deposits and younger alluvium partially overlie and abut on the north side of the river channel, older unconsolidated deposits of the Paso Robles formation and Careaga Sand that fill a northwest-trending structural basin (Buellton Upland subarea). The older deposits probably slowly discharge groundwater to the alluvial deposits. Additional recharge to the river alluvium in the Buellton subarea is primarily from seepage from the Santa Ynez River and tributary creeks. During the irrigation season, some return flow recharges these deposits. Treated wastewater effluent from the City of Buellton wastewater treatment plant also recharges the alluvial groundwater.

The alluvial deposits along the Santa Ynez River in the Santa Rita subarea downstream of the Buellton subarea to the Lompoc Narrows, occur in a very similar condition to those in the Santa Ynez subarea to the extent that they are essentially separated from older unconsolidated deposits by generally non-water bearing consolidated rocks. The alluvial deposits in this subarea are generally unconfined with some local confinement. Recharge is also primarily from the Santa Ynez River, tributary creek seepage and irrigation return flow.

Santa Ynez River alluvial deposits are relatively thin with typical thicknesses of 60 to 80 feet with local thicknesses of more than 100 feet. Wells in these deposits typically yield a few hundred to as high as 1,500 or more gallons per minute (gpm).

The storage capacity of the alluvial deposits under full water conditions as determined in connection with State Water Resources Control Board Order 73-37 is as follows:

| Subarea | Acre-Feet |
|---|---|
| Santa Ynez Subarea | 21,000 |
| Buellton Subarea | 27,500 |
| Santa Rita Subarea | 56,500 |
| TOTAL | 105,000 |

## Santa Ynez Upland Subarea

The Santa Ynez Upland subarea lies north of the Santa Ynez River and extends westward from about four miles east of Lake Cachuma (Red Rock Canyon) to include the Zaca Creek watershed where the creek crosses the subarea. Relatively non-water bearing rocks separate this subarea from Santa Ynez River alluvium to the south. The northern boundary of the subarea is formed by faulting of consolidated non-water bearing rocks of the San Rafael Mountains against the unconsolidated basin deposits.

The Santa Ynez Upland subarea is comprised of thick unconsolidated deposits primarily of the Paso Robles Formation and the Careaga Sand which are the primary sources of groundwater. Terrace and alluvial deposits are also present in portions of the subarea, but are generally not sources of major groundwater supplies. The thickness of the unconsolidated deposits is generally greater than 1,000 feet with maximum thicknesses of over 3,000 feet at places.

Recharge occurs from the deep percolation of precipitation, seepage from creeks, underflow from consolidated rocks surrounding the subarea and irrigation return flow including return flow from imported Cachuma Project water and pumped underflow of the Santa Ynez River.

The U.S. Geological Survey (USGS) (La Freniere and French, 1968) estimated the groundwater in storage in the Santa Ynez Upland groundwater subarea in 1964 to be ten million acre-feet with about one million acre-feet in the upper 200 saturated feet.

## Buellton Upland Subarea

The Buellton Upland subarea generally includes the area north of the Santa Ynez River that extends eastward from the Santa Rita Upland subarea to the east of the City of Buellton. For the most part, this subarea is underlain by the older unconsolidated deposits of the Paso Robles Formation and the Careaga Sand. These deposits fill a synclinal basin which may be an extension of the Santa Rita syncline. If that is the case, this area may be in hydrologic continuity with similar deposits to the west. Recharge to these older deposits is from precipitation falling on the outcrop area and seepage from small creeks that cross the outcrop area.

## Santa Rita Upland Subarea

Groundwater supplies are present in the older unconsolidated Orcutt Sand, Paso Robles Formation and Careaga Sand which fill a structural basin formed by the eastern portion of the Santa Rita syncline. The Santa Rita Upland subarea is in hydrologic continuity with the Buellton and Lompoc Upland subareas, but is separated from the Santa Ynez River alluvium by non-water bearing rocks. Groundwater is present in a "shallow" perched condition as well as a deep body. Both bodies appear to contain water under unconfined conditions.

## Lompoc Area Subareas

Three groundwater sources are present in the Lompoc area. They include the Lompoc Plain, Lompoc Upland and Lompoc Terrace subareas. The Lompoc Plain subarea is an alluvial filled trough cut into the south limb of the Santa Rita syncline. The principal water-bearing units beneath the Lompoc Plain are the river-channel deposits and younger alluvium that compose the upper aquifer and the Paso Robles Formation and Careaga Sand that comprise the lower aquifer.

The upper aquifer consists of three water-bearing zones: (1) the shallow zone; (2) the middle zone; and (3) the main zone. The main zone of the upper aquifer has been the primary source of water from the Lompoc Plain subarea. The shallow zone includes river-channel deposits and predominately fine grained sand, silt and clay deposits of the upper member of the alluvium that confine or partly confine the underlying deposits in the western, central and northeastern portions of the subarea. The base of the upper member of the alluvium includes interbedded lenses of permeable sand and gravel which the USGS (Bright et al., 1992) refer to as the middle zone. The main zone includes the lower member of the alluvium. Medium to coarse sand and gravel comprise this zone. The main zone throughout most of the Lompoc Plain subarea is separated from the middle zone by lenses of silt and clay that result in confined or partially confined conditions in the main zone. However, in the eastern, southern and northern portions of the Lompoc Plain subarea, the confining deposits are less continuous or absent, allowing movement of groundwater between the shallow, middle and main zones.

The central and northern parts of the western end of the Santa Rita syncline comprise the Lompoc Upland subarea which lies north of the Lompoc Plain. The main water bearing deposits in the subarea are the Paso Robles Formation and Careaga Sand. These deposits extend under the Lompoc Plain to form the lower aquifer. Most of the groundwater in storage occurs in these two formations. Perched groundwater occurs locally in the Orcutt Sand.

The Lompoc Terrace subarea, the hilly area adjacent to the southwest part of the Lompoc Plain subarea, is a down-faulted wedge of Careaga Sand overlain by Orcutt Sand.

Recharge to the aquifers beneath the Lompoc Plain subarea includes infiltration of precipitation, seepage from streams, groundwater underflow from tributary streams, underflow through aquifers underlying the Lompoc Upland and Lompoc Terrace subareas which extend under the Plain (lower aquifer beneath the Lompoc Plain subarea), irrigation return flow and wastewater effluent. Recharge to the Lompoc Upland subarea is primarily by infiltration of precipitation, some seepage from streams, and percolation of treated wastewater effluent from the Mission Hills Community Services District wastewater treatment plant. The Lompoc Upland subarea may also receive underflow along the Santa Rita syncline from the Santa Rita Upland subarea. Recharge to the Lompoc Terrace subarea is mainly from infiltration of precipitation.

The USGS (Miller, 1976) estimated the total groundwater in storage in the Lompoc area as follows:

| Subarea | Groundwater in Storage (Acre-Feet) |
|---|---|
| Lompoc Plain | |
| Main Zone | 80,000 |
| Shallow Zone | 135,000 |
| Lompoc Upland | 400,000 |
| Lompoc Terrace | 100,000 |
| TOTAL | 715,000 |

**REFERENCES CITED**

Bright, D.J. et al., 1992, Ground-Water Hydrology and Quality in the Lompoc Area, Santa Barbara County, California, 1987-88: U.S. Geological Survey Water Resources Investigations Report 91-4172.

LaFreniere, G.F., and French, J.J. 1968, Ground-Water Resources of the Santa Ynez Upland Ground-Water Basin, Santa Barbara County, California: U.S. Geological Survey Open File Report.

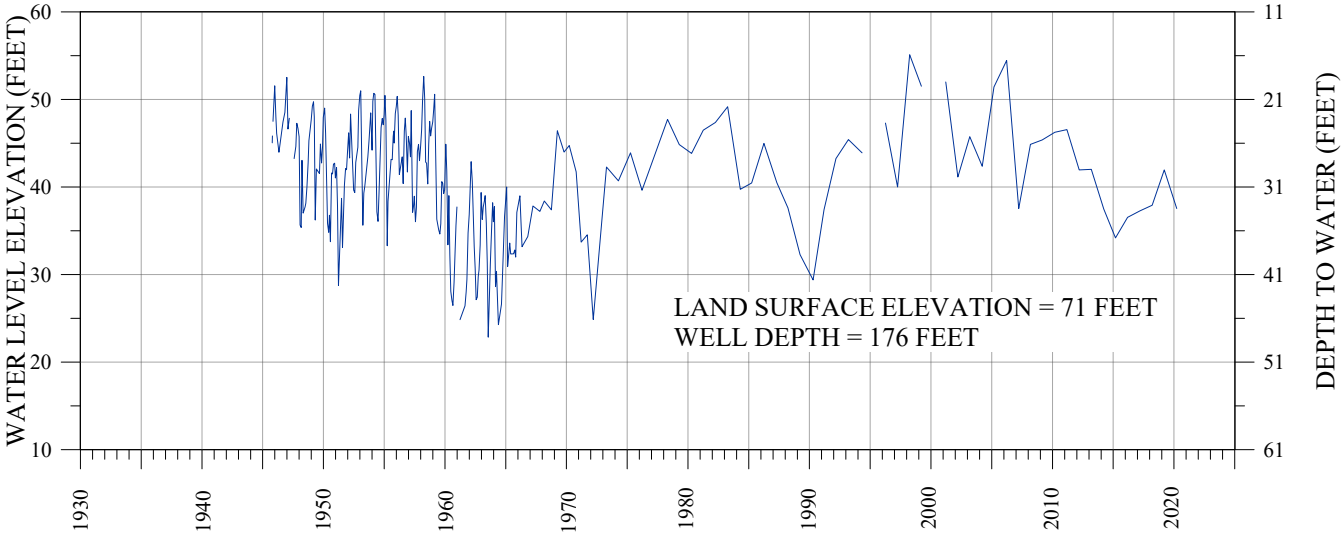
Miller, G.A., 1976, Ground-Water Resources in the Lompoc Area, Santa Barbara County, California: U.S. Geological Survey Open-File Report 76-183.

# Appendix F

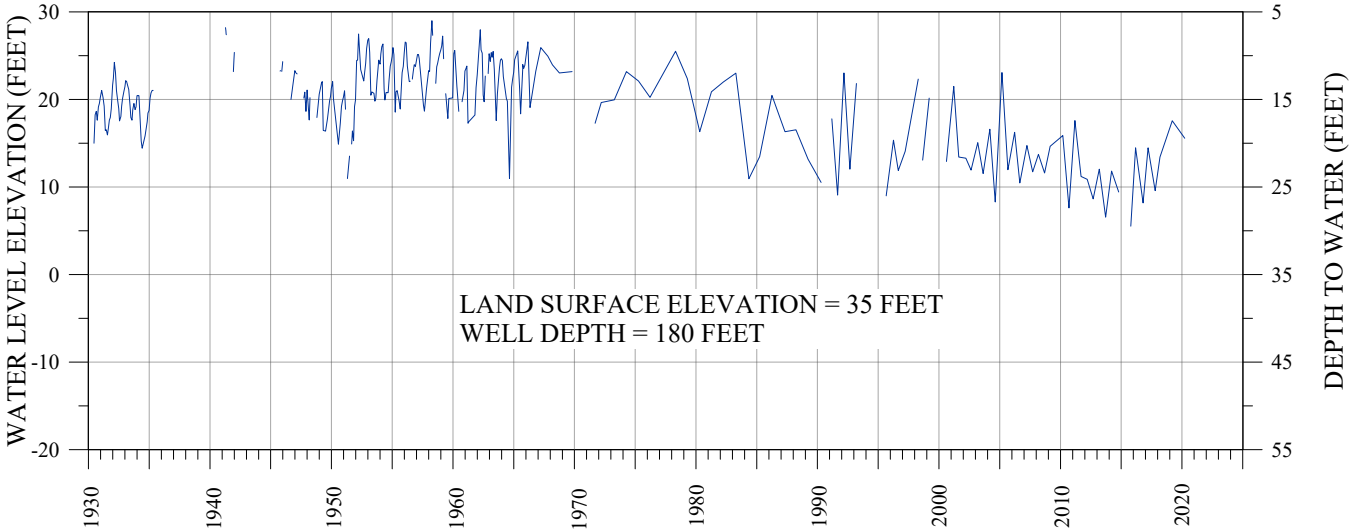
## WATER-LEVEL HYDROGRAPHS OF SELECTED WELLS

# HYDROGRAPHS OF WELLS LOCATED IN THE LOMPOC PLAIN SUBAREA

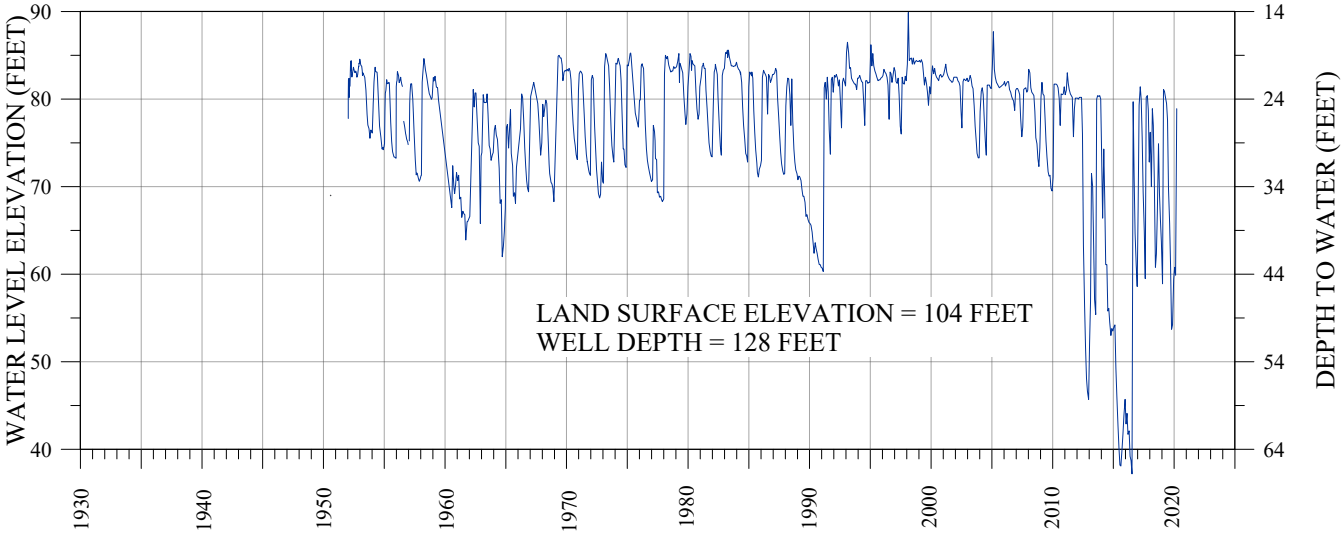
## WELL 7N/34W-29E4



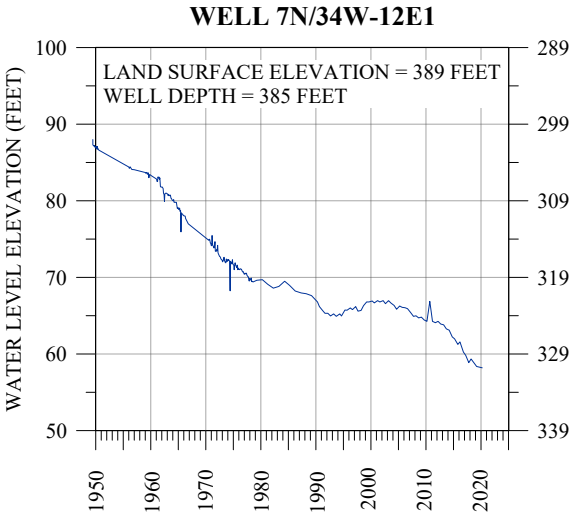

## WELL 7N/35W-22J1

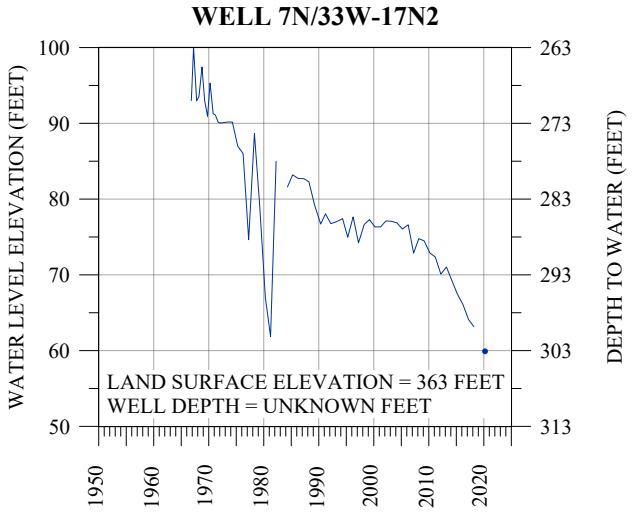


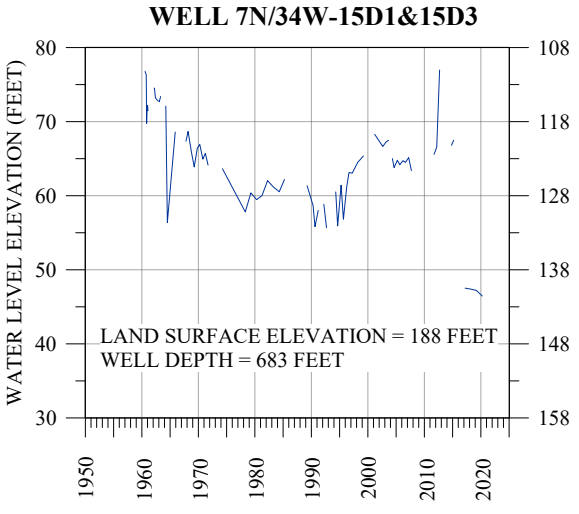

## WELL 7N/34W-35K9

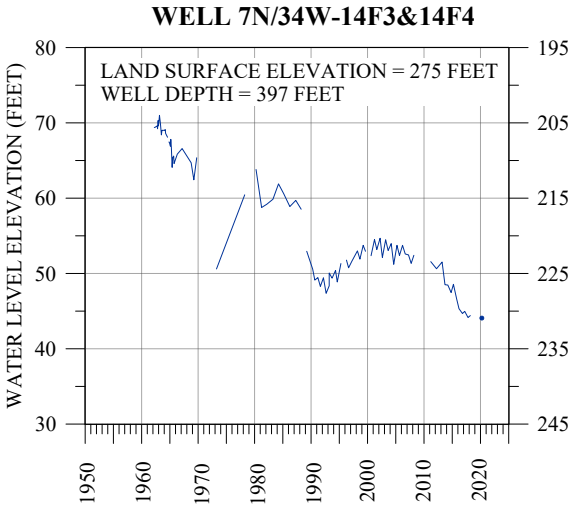


# HYDROGRAPHS OF WELLS LOCATED IN THE LOMPOC UPLAND SUBAREA



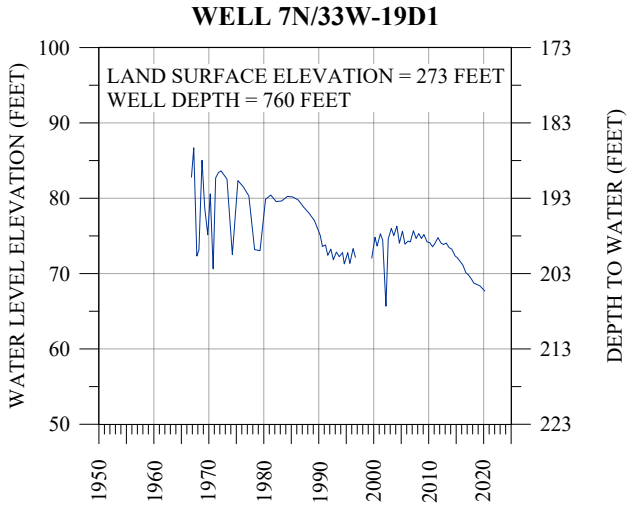
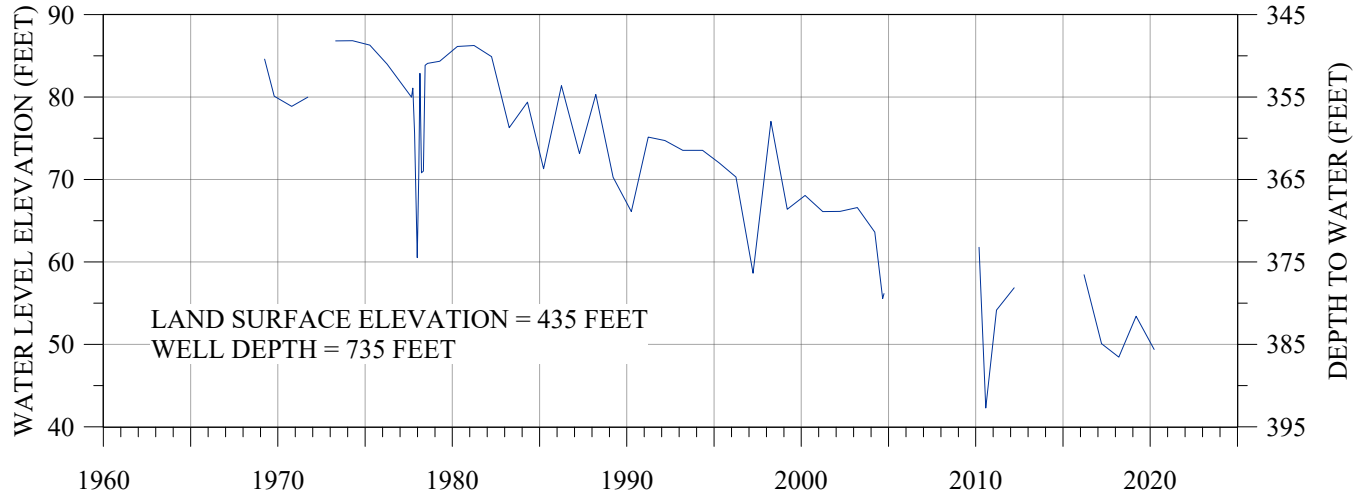



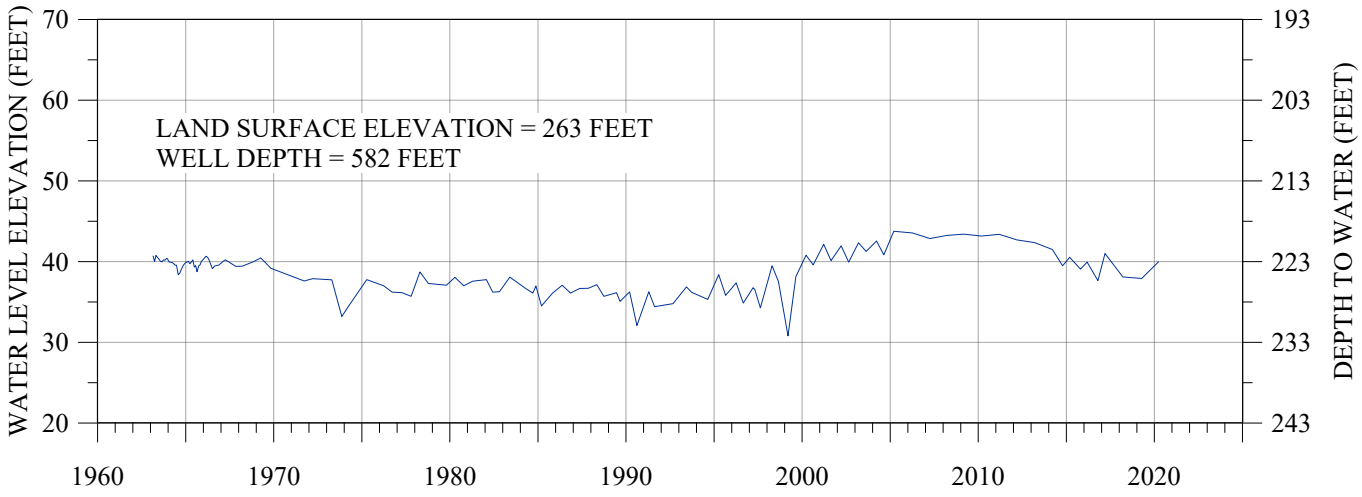

FIGURE F-2

# HYDROGRAPHS OF WELLS LOCATED IN THE SANTA RITA UPLAND, LOMPOC TERRACE, AND BUELLTON UPLAND SUBAREAS

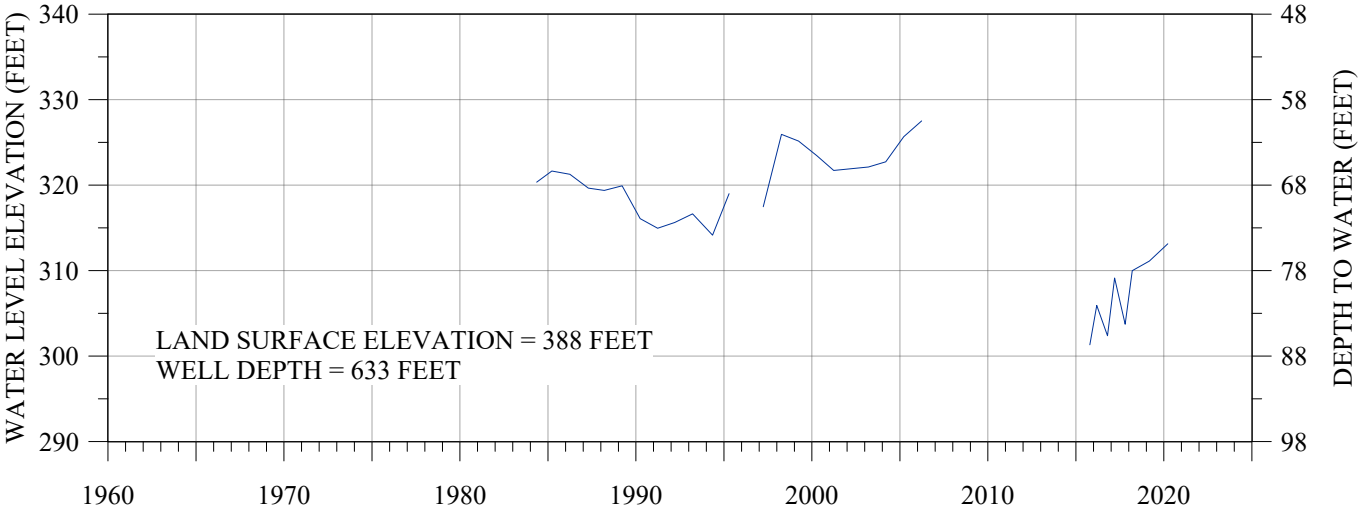
## WELL 7N/33W-27G1
SANTA RITA UPLAND



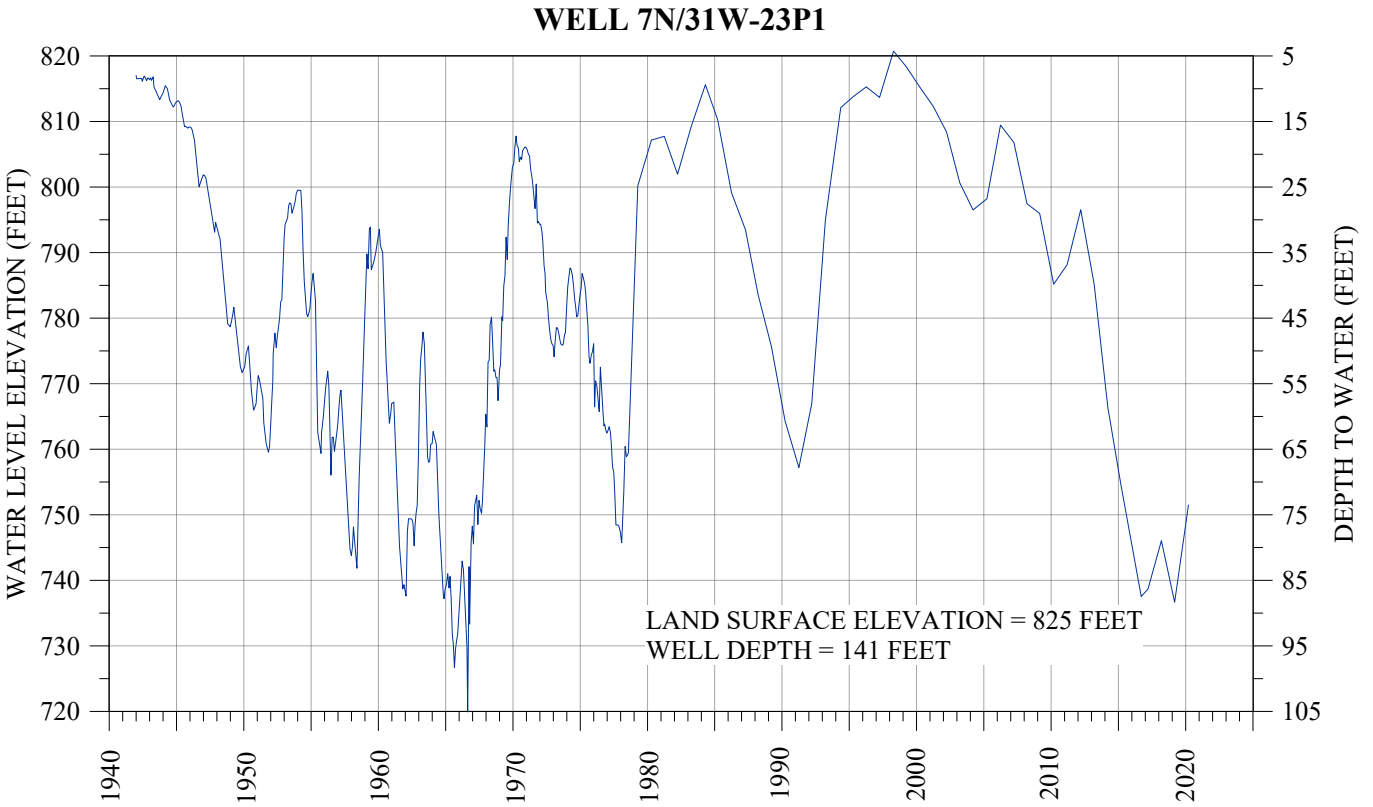

## WELL 7N/35W-27P1
LOMPOC TERRACE

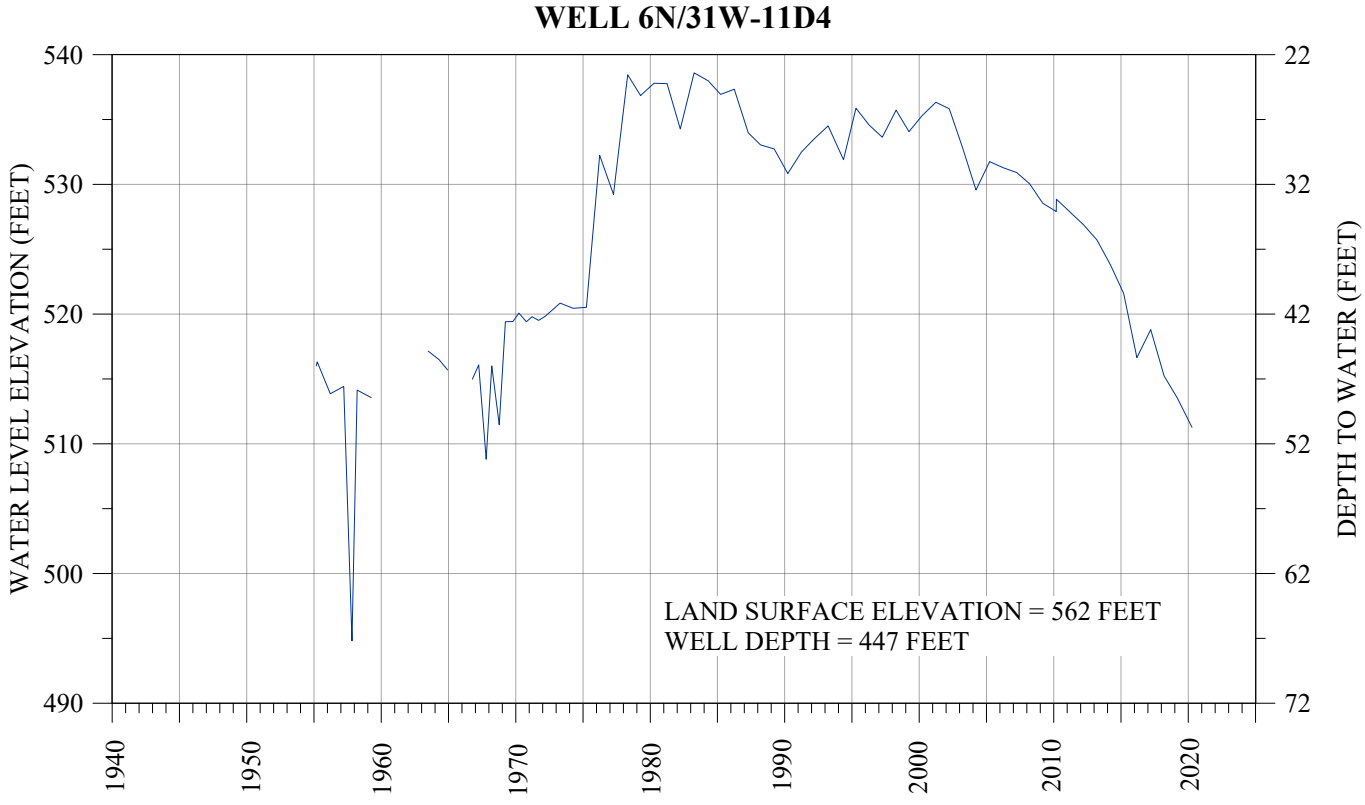



## WELL 6N/31W-7F1
BUELLTON UPLAND



# HYDROGRAPHS OF WELLS LOCATED IN THE SANTA YNEZ UPLAND SUBAREA

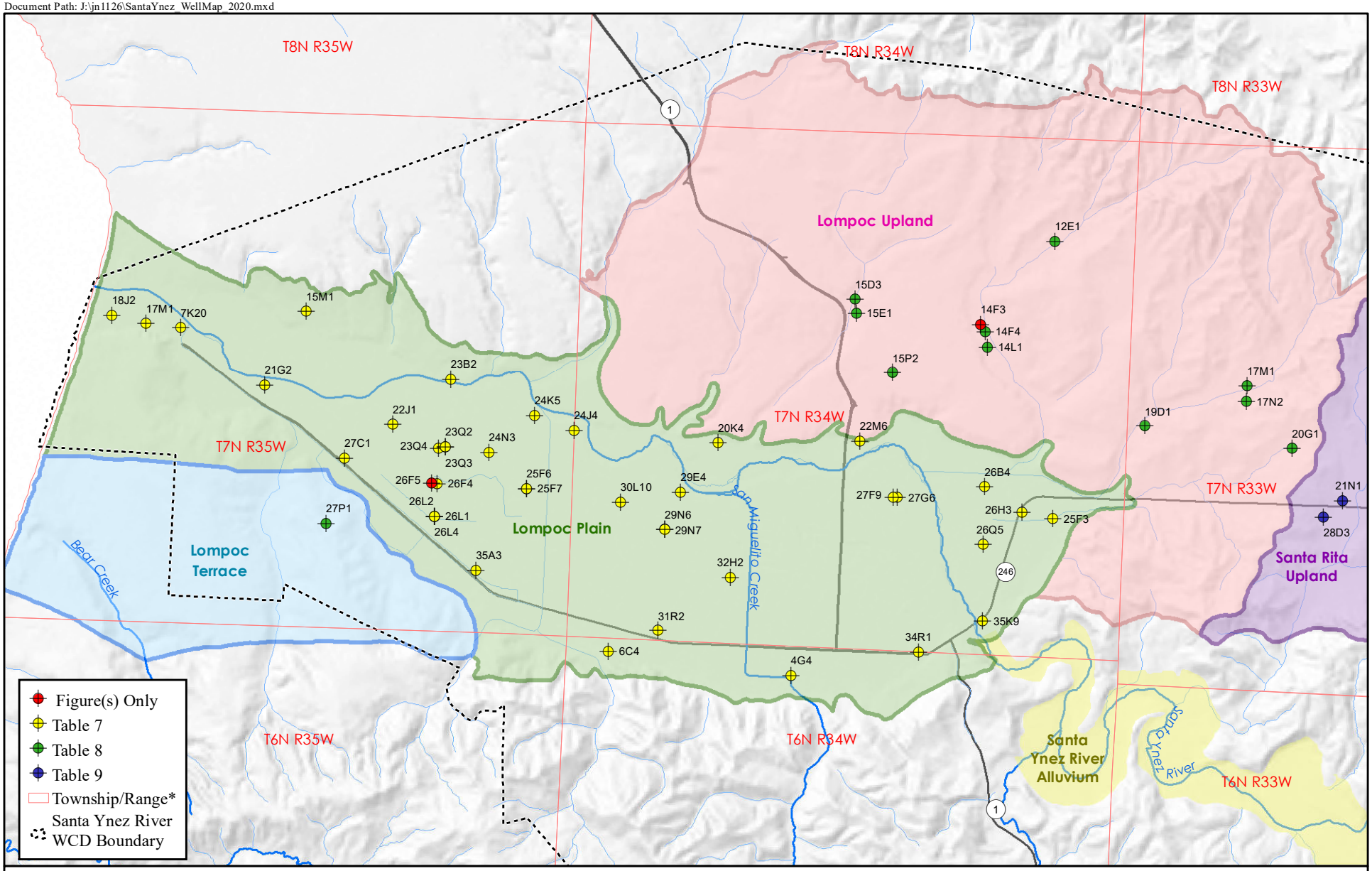


# Appendix G

## WELL INVENTORY

Document Path: J:\jn1126\SantaYnez_WellMap_2020.mxd




STETSON ENGINEERS INC.

# LOCATION OF WELLS REFERENCED IN TABLE 7, TABLE 8 AND IN FIGURES, LOMPOC TERRACE, LOMPOC PLAIN AND LOMPOC UPLAND SUBAREAS

0 0.75 1.5 Miles

N

* Note: Township/Range interpolated from USGS WSP-1107

FIGURE G-1

# Santa Barbara County Water Agency

130 E. Victoria Street, Suite 200, Santa Barbara, CA 93101 (805) 568-3440 fax (805) 568-3434 http://www.countyofsb.org

## *Spring 2020 Groundwater Measurements for the Western Lompoc Plain*

| Report Location | Map* | Well ID # | USGS # | Locality | Date of Read | Latitude | Longitude | Depth to Water (ft) | Sta-tus** | Well Elev. (ft, MSL) | W.S.E.L. Spr. 2020 (ft, MSL) | Spring 2019 DTW (ft) | Status 2019** | change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Table 7 | | 7N/35W-17K20 | 344112120351001 | Surf (old Barrier Bridge) | 24-Mar | 34 41 12" | 120 35' 11" | **13.46** | | 24.00 | 10.54 | **18.11** | | 4.7 |
| Table 7 | | 7N/35W-17M1 | 344114120353501 | Surf (near RR xing) | 24-Mar | 34 41' 14" | 120 35' 35" | **0.90** | | 9.74 | 8.84 | **4.48** | | 3.6 |
| Table 7 | | 7N/35W-18J2 | 344118120355902 | Surf (S. side of Lagoon) | -- | 34 41' 18" | 120 35' 59" | **--** | | 7.00 | -- | **1.91** | | -- |
| Table 7 | | 7N/35W-22J1 | 344021120324101 | W Valley: Jordan Farm | 25-Mar | 34 40' 21" | 120 32' 41" | **19.43** | | 32.00 | 12.57 | **17.43** | | -2.0 |
| | | 7N/35W-23E6 | 344043120322406 | W Valley: Jordan Farm | 24-Mar | 34 40' 43" | 120 32' 24" | **62.01** | | 30.00 | -32.01 | **21.94** | | -40.1 |
| | | 7N/35W-23J5 | 344025120313701 | N Artesia Ave | 24-Mar | 34 40' 25" | 120 31' 37" | **20.02** | | 142.5 | 122.48 | **20.08** | | 0.1 |
| Table 7 | | 7N/35W-23Q2 | 344009120320402 | W Valley: Jordan Farm | 24-Mar | 34 40' 09" | 120 32' 04" | **15.42** | | 37.22 | 21.80 | **17.74** | | 2.3 |
| Table 7 | | 7N/35W-23Q3 | 344009120320403 | W Valley: Jordan Farm | 24-Mar | 34 40' 09" | 120 32' 04" | **17.15** | | 37.10 | 19.95 | **16.00** | | -1.2 |
| Table 7 | | 7N/35W-23Q4 | 344008120320901 | W Valley: Jordan Farm | 24-Mar | 34 40' 08" | 120 32' 09" | **17.18** | | 37.32 | 20.14 | **15.93** | | -1.3 |
| Table 7 | | 7N/35W-24K5 | 344029120310305 | DeWolf Ave: Henning | 24-Mar | 34 40' 29" | 120 31' 03" | **23.52** | | 51.00 | 27.48 | **21.24** | | -2.3 |
| Table 7 | | 7N/35W-24N3 | 344046120321401 | N Artesia Ave: Beattie | 24-Mar | 34 40' 07" | 120 31' 34" | **14.21** | | 42.00 | 27.79 | **12.98** | | -1.2 |
| Table 7 | | 7N/35W-25F6 | 343947120310703 | NW of DeWolf & Central | 24-Mar | 34 39' 47" | 120 31' 07" | **15.56** | | 47.00 | 31.44 | **16.40** | | 0.8 |
| Table 7 | | 7N/35W-25F7 | 343947120310702 | NW of DeWolf & Central | 24-Mar | 34 39' 47" | 120 31' 07" | **7.09** | | 47.00 | 39.91 | **11.58** | | 4.5 |
| Table 7 | | 7N/35W-26F4 | 343948120320901 | W Valley: Jordan Farm | 24-Mar | 34 39' 48" | 120 32' 09" | **15.38** | | 35.00 | 19.62 | **14.60** | | -0.8 |
| Table 7 | | 7N/35W-26L1 | 343929120321001 | W of Union Sugar Ave | 24-Mar | 34 39' 29" | 120 32' 10" | **5.36** | | 36.09 | 30.73 | **4.76** | | -0.6 |
| Table 7 | | 7N/35W-26L2 | 343929120321002 | W of Union Sugar Ave | 24-Mar | 34 39' 29" | 120 32' 10" | **6.41** | | 35.77 | 29.36 | **5.51** | | -0.9 |
| Table 7 | | 7N/35W-26L4 | 343929120321004 | W of Union Sugar Ave | 24-Mar | 34 39' 29" | 120 32' 10" | **9.49** | | 36.00 | 26.51 | **7.80** | | -1.7 |
| Table 7 | | 7N/35W-27C1 | 344001120331401 | Ocean Ave & Renwick | 24-Mar | 34 40' 01" | 120 33' 14" | **14.81** | | 28.00 | 13.19 | **13.17** | | -1.6 |
| Table 7 | | 7N/35W-35A3 | 343859120314003 | S Artesia Ave | 24-Mar | 34 38' 59" | 120 31' 40" | **18.48** | | 46.00 | 27.52 | **18.05** | | -0.4 |

* Wells not in report are not shown on map.

** Status Information: P = pumping; R = recently pumped; S = nearby pumping; T = nearby recently pumped; O = obstruction; D = dry; X = well is destroyed; Z = other, a blank implies a normal water level measurement...

**Bolded** are reported values. DTW is depth to water.

# Santa Barbara County Water Agency

130 E. Victoria Street, Suite 200, Santa Barbara, CA 93101 (805) 568-3440 fax (805) 568-3434 http://www.countyofsb.org

## *Spring 2020 Groundwater Measurements for the Central and Eastern Lompoc Plain*

| Report Location | Map* | Well ID # | USGS # | Locality | Date of Read | Latitude | Longitude | Depth to Water (ft) | Sta-tus** | Well Elev. (ft, MSL) | W.S.E.L. Spr. 2020 (ft, MSL) | Spring 2019 DTW (ft) | Status 2019** | change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Table 7 | | 6N/34W-6C4 | 343815120300602 | E of San Pasqual Rd | 23-Mar | 34 38' 15" | 120 30' 06" | **71.04** | **R** | 103.00 | 31.96 | **67.66** | | -3.4 |
| Table 7 | | 7N/34W-20K4 | 344017120285502 | USPrison E of Floradale | 23-Mar | 34 40' 17" | 120 28' 55" | **32.30** | **R** | 75.00 | 42.70 | **30.30** | | -2.0 |
| | | 7N/34W-22J6 | 344033120263404 | E LV; W of Rucker Rd | 23-Mar | 34 40' 33" | 120 26' 34" | **49.13** | | 97.00 | 47.87 | **49.61** | | 0.5 |
| | | 7N/34W-24N1 | 344010120251601 | Purisima Mission nr 246 | 23-Mar | 34 40' 10" | 120 25' 16" | **82.44** | | 130.00 | 47.56 | **82.21** | | -0.2 |
| Table 7 | | 7N/34W-26H3 | 343943120252201 | Eastern Lompoc Valley | 23-Mar | 34 39' 43" | 120 25' 22" | **65.90** | | 112.92 | 47.02 | **--** | D | -- |
| Table 7 | | 7N/34W-27G6 | 343949120264901 | E of North A Street | 23-Mar | 34 39' 49" | 120 26' 49" | **40.92** | | 90.00 | 49.08 | **39.31** | | -1.6 |
| Table 7 | | 7N/34W-29E4 | 343948120292002 | E of Floradale: J Fischer | 23-Mar | 34 39' 48" | 120 29' 20" | **33.46** | | 68.00 | 34.54 | **29.05** | | -4.4 |
| Table 7 | | 7N/34W-29N6 | 343926120293001 | E of Floradale: Bob Witt | 23-Mar | 34 39' 26" | 120 29' 30" | **31.10** | | 66.70 | 35.60 | **30.46** | | -0.6 |
| Table 7 | | 7N/34W-29N7 | 343926120293002 | E of Floradale: Bob Witt | 23-Mar | 34 39' 26" | 120 29' 30" | **31.41** | | 66.70 | 35.29 | **29.92** | | -1.5 |
| Table 7 | | 7N/34W-30L10 | 343941120300106 | SW cor Central & Leege | 23-Mar | 34 39' 41" | 120 30' 01" | **26.65** | | 59.00 | 32.35 | **25.23** | | -1.4 |
| Table 7 | | 7N/34W-31R2 | 343828120293201 | NW of Floradale-Ocean | 23-Mar | 34 38' 28" | 120 29' 32" | **37.81** | | 70.35 | 32.54 | **35.62** | | -2.2 |
| Table 7 | | 7N/34W-32H2 | 343901120284201 | E of Bailey: Wineman | 23-Mar | 34 39' 01" | 120 28' 42" | **38.31** | | 77.00 | 38.69 | **38.82** | | 0.5 |
| Table 7 | | 7N/34W-35K9 | 343840120254701 | Eastern Lompoc Valley | 23-Mar | 34 38' 40" | 120 25' 47" | **27.75** | | 101.00 | 73.25 | **22.29** | | -5.5 |
| Table 7 | | 7N/35W-24J4 | 344021120303504 | At N end of Douglas Ave | 23-Mar | 34 40' 21" | 120 30' 35" | **29.29** | | 52.00 | 22.71 | **27.37** | | -1.9 |

* Wells not in report are not shown on map.

** Status Information: P = pumping; R = recently pumped; S = nearby pumping; T = nearby recently pumped; O = obstruction; D = dry; X = well is destroyed; Z = other, a blank implies a normal water level measurement...

**Bolded** are reported values. DTW is depth to water.

7N/34W-35K9 is monitored by the USGS and USBR. Monthly USBR records are used in Figure F-1 and Table 7.

# Santa Barbara County Water Agency

130 E. Victoria Street, Suite 200, Santa Barbara, CA 93101 (805) 568-3440 fax (805) 568-3434 http://www.countyofsb.org

## *Spring 2020 Groundwater Measurements for Vandenberg Air Force Base*

| Report Location | Map* | Well ID # | USGS # | Locality | Date of Read | Latitude | Longitude | Depth to Water (ft) | Sta-tus** | Well Elev. (ft, MSL) | W.S.E.L. Spr. 2020 (ft, MSL) | Spring 2019 DTW (ft) | Status 2019** | change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6N/36W-26G1 | 343426120380901 | South VAFB near SLC6 | -- | 34 34' 26" | 120 38' 09" | **--** | | 330 | -- | **--** | | -- |
| | | 6N/36W-26C1 | 343445120382601 | South VAFB near SLC6 | 25-Mar | 34 34' 45" | 120 38' 26" | **32.49** | | 170 | 137.51 | **33.31** | | 0.8 |
| | | 6N/36W-1K2 | 343755120372601 | South VAFB near SLC4 | 25-Mar | 34 37' 55" | 120 37' 22" | **150.44** | | 248.7 | 98.26 | **150.41** | | 0.0 |
| Table 7 | | 7N/35W-22M1 | 344025120333401 | W of VAFB entrance N | 25-Mar | 34 40' 25" | 120 33' 34" | **11.51** | | 29 | 17.49 | **11.43** | | -0.1 |
| Table 7 | | 7N/35W-15M1 | 344124120334401 | W. of 13th; N. of SYRivr | 25-Mar | 34 41' 24" | 120 33' 44" | **101.55** | | 115 | 13.45 | **101.93** | | 0.4 |
| Table 7 | | 7N/35W-21G2 | 344041120341101 | AFB: 3300' NW of 22M1 | -- | 34 40' 41" | 120 34' 11" | **--** | | 20 | -- | **--** | | -- |
| Table 7 | | 7N/35W-23B2 | 344048120320201 | N of SY River on VAFB | 25-Mar | 34 40' 48" | 120 32' 02" | **25.92** | | 30 | 4.08 | **26.20** | | 0.3 |
| | | 7N/35W-27F1 | 343952120332001 | E. of So. VAFB entrance | 25-Mar | 34 39' 52" | 120 33' 20" | **10.17** | | 28 | 17.83 | **9.80** | | -0.4 |
| | | 7N/35W-27H5 | 343941120325701 | E. of So. VAFB entrance | 25-Mar | 34 39' 41" | 120 32' 57" | **12.25** | | 33 | 20.75 | **8.19** | | -4.1 |
| | | 7N/35W-27J1 | 343942120325701 | E. of So. VAFB entrance | 25-Mar | 34 39' 42" | 120 32' 57" | **11.83** | | 28 | 16.17 | **12.71** | | 0.9 |
| Table 8 | | 7N/35W-27P1 | 343923120332501 | S. VAFB (Lom Terrace) | 25-Mar | 34 39' 23" | 120 33' 25" | **223.03** | | 260 | 36.97 | **222.59** | | -0.4 |
| | | 7N/35W-30G1 | 343944120361901 | South VAFB - Wade Rd. | -- | 34 39' 44" | 120 36' 19" | **--** | | 130 | -- | **--** | | -- |
| | | 7N/35W-31J2 | 343841120355202 | South VAFB: Bear Cyn. | -- | 34 38' 41" | 120 35' 52" | **--** | | 160 | -- | **5.79** | | -- |

* Wells not in report are not shown on map.

** Status Information: P = pumping; R = recently pumped; S = nearby pumping; T = nearby recently pumped; O = obstruction; D = dry; X = well is destroyed; Z = other ; a blank implies a normal water level measurement

**Bolded** are reported values. DTW is depth to water.

# Santa Barbara County Water Agency

130 E. Victoria Street, Suite 200, Santa Barbara, CA 93101 (805) 568-3440 fax (805) 568-3434 http://www.countyofsb.org

## *Spring 2020 Groundwater Measurements for Lompoc Uplands*

| Report Location | Map* | Well ID # | USGS # | Locality | Date of Read | Latitude | Longitude | Depth to Water (ft) | Sta-tus** | Well Elev. (ft, MSL) | W.S.E.L. Spr. 2020 (ft, MSL) | Spring 2019 DTW (ft) | Status 2019** | change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Table 8 | | 7N/33W-17M1 | 344100120224901 | Upper Cebada Canyon | 10-Apr | 34 41' 00" | 120 22' 49" | **278.82** | | 360.0 | 81.18 | **277.39** | | -1.4 |
| Table 8 | | 7N/33W-17N2 | 344051120224901 | Upper Cebada Canyon | 23-Mar | 34 40' 51" | 120 22' 49" | **303.10** | | 360.0 | 56.90 | **--** | P | -- |
| Table 8 | | 7N/33W-19D1 | 344035120235901 | Lower Cebada Canyon | 23-Mar | 34 40' 35" | 120 23' 59" | **205.31** | | 270.0 | 64.69 | **204.63** | | -0.7 |
| Table 8 | | 7N/33W-20G1 | 344025120221601 | W of Tularosa Road | 24-Mar | 34 40' 25" | 120 22' 16" | **--** | O | 400.0 | -- | **--** | O | -- |
| Table 8 | | 7N/34W-12E1 | 344219120250601 | N of Mission Hills | 23-Mar | 34 42' 19" | 120 25' 06" | **330.80** | | 386.0 | 55.20 | **330.64** | | -0.2 |
| Table 8 | | 7N/34W-14F4 | 344126120255201 | Mission Hills CSD | 24-Mar | 34 41' 26" | 120 25' 52" | **230.92** | | 272.0 | 41.08 | **--** | P | -- |
| Table 8 | | 7N/34W-14L1 | 344117120255001 | Mission Hills CSD | 24-Mar | 34 41' 17" | 120 25' 50" | **220.83** | | 250.0 | 29.17 | **218.37** | | -2.5 |
| Table 8 | | 7N/34W-15D3 | 344142120272301 | Vandnbrg Village CSD | 23-Mar | 34 41' 42" | 120 27' 23" | **141.53** | | 188.0 | 46.47 | **140.80** | | -0.7 |
| Table 8 | | 7N/34W-15E1 | 344134120272201 | Vandnbrg Village CSD | 23-Mar | 34 41' 34" | 120 27' 22" | **135.08** | | 180.0 | 44.92 | **136.28** | R | 1.2 |
| Table 8 | | 7N/34W-15P2 | 344101120265901 | Uplands E of Hyw 1 | 23-Mar | 34 41' 00" | 120 27' 04" | **260.49** | | 305.0 | 44.51 | **261.05** | | 0.6 |

* Wells not in report are not shown on map.

** Status Information: P = pumping; R = recently pumped; S = nearby pumping; T = nearby recently pumped; O = obstruction; D = dry; X = well is destroyed; Z = other, a blank implies a normal water level measurement...

**Bolded** are reported values. DTW is depth to water.

# United States Bureau of Reclamation and Others

USBR 1243 'N' Street, Fresno, CA 93721 (559) 262-0359 http://www.usbr.gov

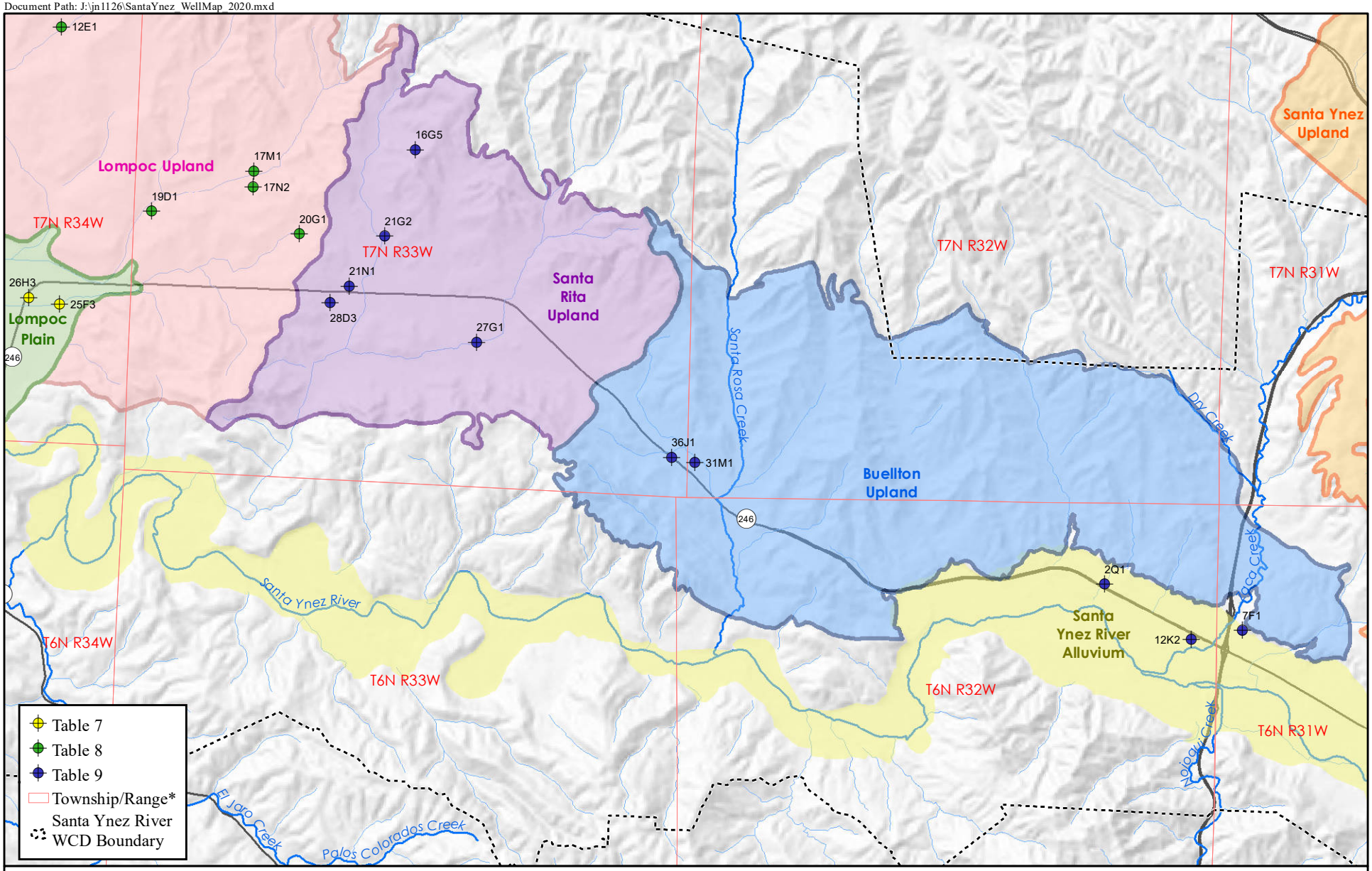
## *Spring 2020 Groundwater Measurements for Wells not Monitored by the County of Santa Barbara*

| Report Location | Map | Well ID # | USGS # | Source | Date of Read | Latitude | Longitude | Depth to Water (ft) | Well Elev. (ft, MSL) | W.S.E.L. Spr. 2020 (ft, MSL) | Spring 2019 DTW (ft) | Spring 2019 W.S.E.L. | W.S.E.L. change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Table 7 | | 7N/34W-22M6 | 344021120271301 | USBR | March | 34 40' 21" | 120 27' 13" | 43.6 | 100.0 | **56.4** | 46.6 | **53.4** | 3.0 |
| Table 7 | | 7N/34W-26B4 | 343957120254501 | USBR | March | 34 39' 57" | 120 25' 45" | 61.5 | 110.0 | **48.5** | 69.7 | **40.3** | 8.2 |
| Table 7 | | 7N/34W-27F9 | -- | USBR | March | 34 39' 49" | 120 26' 52" | -- | -- | **44.3** | -- | **45.0** | -0.7 |
| Table 7 | | 7N/34W-26Q5 | 343924120254501 | USBR | March | 34 39' 24" | 120 25' 45" | 49.8 | 105.0 | **55.2** | 49.8 | **55.2** | 0.0 |
| Table 7 | | 7N/34W-25F3 | 343940120245702 | USBR | March | 34 39' 40" | 120 24' 57" | 83.7 | 130.0 | **46.3** | 85.7 | **44.3** | 2.0 |
| Table 7 | | 6N/34W-4G4 | 343805120275501 | USBR | March | 34 38' 05" | 120 27' 55" | 45.9 | 97.5 | **51.6** | 51.6 | **45.9** | 5.7 |
| Table 7 | | 7N/34W-34R1 | 343821120262701 | USBR | March | 34 38' 21" | 120 26' 27" | 47.2 | 112.0 | **64.8** | 57.9 | **54.1** | 10.7 |
| Table 7 | | 7N/34W-35K9 | 343840120254701 | USBR | March | 34 38' 40" | 120 25' 47" | 25.1 | 101.0 | **75.9** | 23.1 | **77.9** | -2.0 |
| Figure 8 | | 7N/35W-26F5 | 343948120320902 | -- | -- | 34 39' 48" | 120 32' 09" | -- | 35.0 | -- | **--** | **--** | -- |
| Figure F-2 | | 7N/34W-14F3 | 344130120255201 | -- | -- | 34 41' 30" | 120 25' 52" | -- | 268.0 | -- | **--** | **--** | -- |
| Table 9 | | 6N/32W-12K2 | 343649120114401 | Buellton | March | 34 36' 49" | 120 11' 44" | **59** | 350.0 | 291 | **53** | 297 | -6 |

**Bolded** are reported values. DTW is depth to water.

7N/34W-35K9 is monitored by the USGS and USBR. Monthly USBR records are used in Figure F-1 and Table 7.

Document Path: J:\jn1126\SantaYnez_WellMap_2020.mxd




STETSON ENGINEERS INC.

## LOCATION OF WELLS REFERENCED IN TABLE 9, SANTA RITA UPLAND AND BUELLTON UPLAND SUBAREAS

0 0.75 1.5 Miles

N

* Note: Township/Range interpolated from USGS WSP-1107

FIGURE G-2

# Santa Barbara County Water Agency

130 E. Victoria Street, Suite 200, Santa Barbara, CA 93101 (805) 568-3440 fax (805) 568-3434 http://www.countyofsb.org

## *Spring 2020 Groundwater Measurements for Santa Rita and Santa Rosa Areas*

| Report Location | Map* | Well ID # | USGS # | Locality | Date of Read | Latitude | Longitude | Depth to Water (ft) | Sta-tus** | Well Elev. (ft, MSL) | W.S.E.L. Spr. 2020 (ft, MSL) | Spring 2019 DTW (ft) | Status 2019** | change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6N/32W-11L4 | 343644120131101 | SYR Alluvial; Buellton | -- | 34 36' 44" | 120 13' 11" | **--** | | 321.0 | -- | **38.11** | | -- |
| | | 6N/32W-16P3 | 343544120151801 | SYR Alluvial; Santa Rita | 19-Mar | 34 35' 44" | 120 15' 18" | **45.70** | | 293.0 | 247.30 | **44.58** | | -1.1 |
| | | 6N/32W-18H1 | 343613120164501 | SYR Alluvial; Santa Rita | 19-Mar | 34 36' 13" | 120 16' 45" | **32.78** | **R** | 267.0 | 234.22 | **30.85** | | -1.9 |
| | | 6N/33W-8J3 | 343645120220301 | SYR; BIG E packing plnt | 19-Mar | 34 36' 45" | 120 22' 03" | **45.11** | **R** | 186.0 | 140.89 | **42.50** | | -2.6 |
| | | 6N/33W-8R1 | 343640120220401 | SYR; BIG E packing plnt | 19-Mar | 34 36' 40" | 120 22' 04" | **50.18** | | 233.0 | 182.82 | **47.19** | | -3.0 |
| | | 6N/33W-9M1 | 343647120215001 | SYR; BIG E packing plnt | 19-Mar | 34 36' 47" | 120 21' 50" | **47.52** | | 201.0 | 153.48 | **45.82** | | -1.7 |
| | | 6N/34W-12C5 | 343735120245902 | SYR Alluvial; Santa Rita | 19-Mar | 34 37' 36" | 120 24' 59" | **45.62** | | 125.0 | 79.38 | **44.32** | | -1.3 |
| Table 9 | | 7N/32W-31M1 | 343821120173601 | Drum Cyn - Santa Rosa | 20-Mar | 34 38' 21" | 120 17' 36" | **--** | **X** | 450.0 | -- | **77.40** | | -- |
| | | 7N/32W-7B1 | 344215120170001 | Drum Cyn - Santa Rosa | 20-Mar | 34 42' 15" | 120 17' 00" | **--** | **D** | 77.0 | -- | **--** | **D** | -- |
| Table 9 | | 7N/33W-16G5 | 344115120212601 | Mid Santa Rita Valley | -- | 34 41' 15" | 120 21' 26" | **--** | | 520.0 | -- | **--** | **Z** | -- |
| Table 9 | | 7N/33W-21G2 | 344025120211501 | Mid Santa Rita Valley | 20-Mar | 34 40' 25" | 120 21' 15" | **354.85** | | 430.0 | 75.15 | **353.31** | | -1.5 |
| Table 9 | | 7N/33W-21N1 | 343956120214001 | W Santa Rita Valley | 20-Mar | 34 39' 56" | 120 21' 40" | **302.90** | | 360.0 | 57.10 | **301.70** | | -1.2 |
| Table 9 | | 7N/33W-27G1 | 343926120201001 | E Santa Rita Valley | 20-Mar | 34 39' 26" | 120 20' 10" | **385.21** | | 432.0 | 46.79 | **381.18** | | -4.0 |
| Table 9 | | 7N/33W-28D3 | 343946120215301 | W Santa Rita Valley | 20-Mar | 34 39' 46" | 120 21' 53" | **307.43** | | 360.0 | 52.57 | **305.64** | | -1.8 |
| Table 9 | | 7N/33W-36J1 | 343824120175201 | Drum Cyn - Santa Rosa | 10-Apr | 34 38' 24" | 120 17' 52" | **131.78** | | 495.0 | 363.22 | **130.35** | | -1.4 |

* Wells not in report are not shown on map.

** Status Information: P = pumping; R = recently pumped; S = nearby pumping; T = nearby recently pumped; O = obstruction; D = dry; X = well is destroyed; a blank implies a normal water level measurement...

**Bolded** are reported values. DTW is depth to water.

7N/34W-35K9 is monitored by the Santa Barbara County and USBR. Monthly USBR records are used in Figure F-1 and Table 7.

# Santa Barbara County Water Agency

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## *Spring 2020 Groundwater Measurements for Buellton, Solvang and Los Olivos Areas*

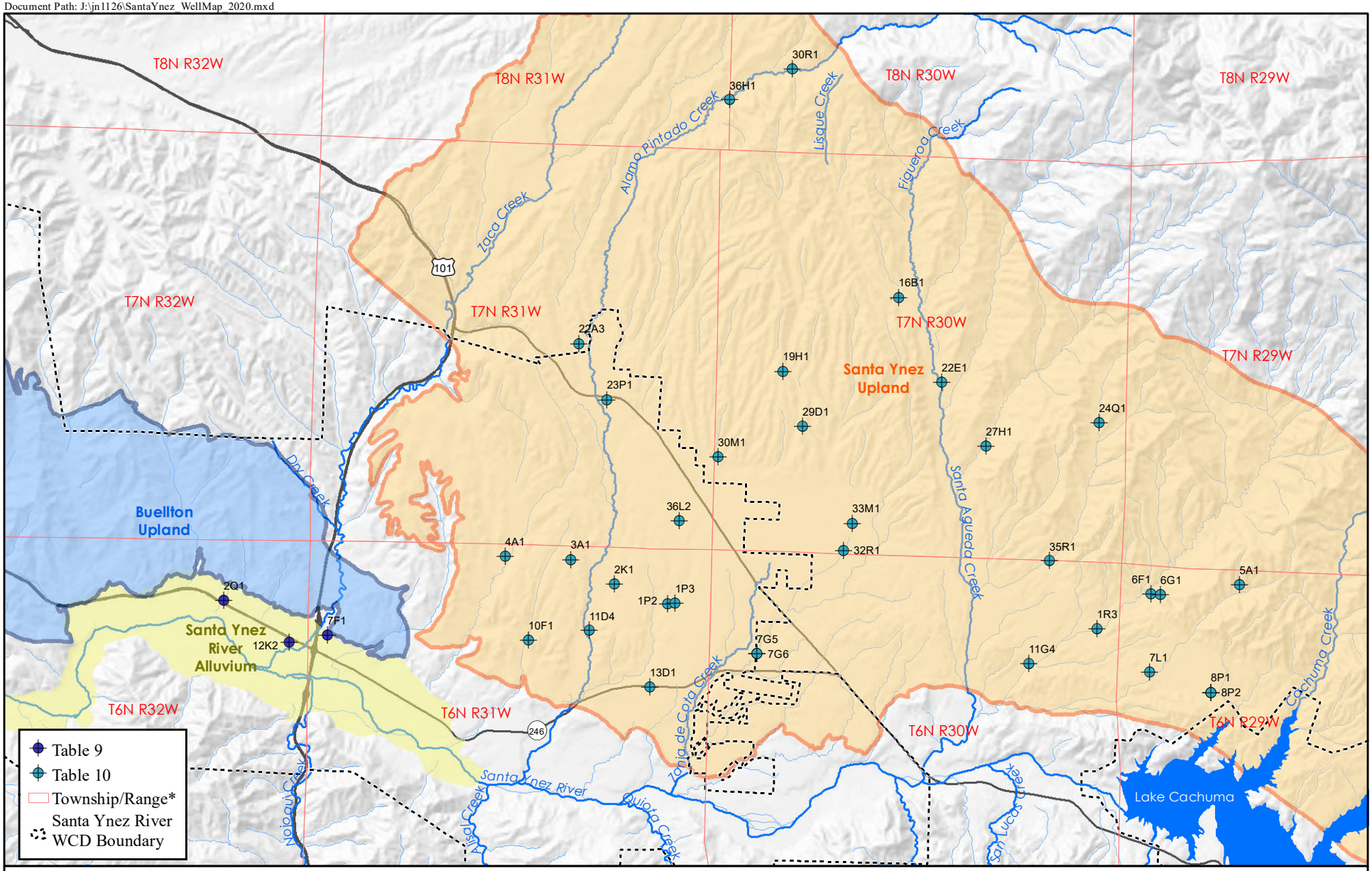
| Report Location | Map* | Well ID # | USGS # | Locality | Date of Read | Latitude | Longitude | Depth to Water (ft) | Sta-tus** | Well Elev. (ft, MSL) | W.S.E.L. Spr. 2020 (ft, MSL) | Spring 2019 DTW (ft) | Status 2019** | change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Table 10 | | 6N/31W-10F1 | 343656120080601 | Fredenborg Cyn: Solvng | 16-Mar | 34 36' 56" | 120 08' 06" | **82.88** | | 540.00 | 457.12 | **80.60** | | -2.3 |
| Table 10 | | 6N/31W-11D4 | 343705120071001 | Alamo Pintado Road | 10-Apr | 34 37' 05" | 120 07' 10" | **50.73** | | 559.00 | 508.27 | **48.48** | | -2.3 |
| | | 6N/31W-17F1 | 343609120101201 | SYR Alluvial; Buellton | 16-Mar | 34 36' 09" | 120 10' 12" | **--** | **D** | 363.00 | -- | **37.94** | **R** | -- |
| | | 6N/31W-17F3 | 343608120101001 | SYR Alluvial; Buellton | 16-Mar | 34 36' 08" | 120 10' 10" | **39.67** | | 360.00 | 320.33 | **38.68** | | -1.0 |
| Table 10 | | 6N/31W-2K1 | 343741120064801 | Alamo Pintado Road | 16-Mar | 34 37' 41" | 120 06' 48" | **51.21** | | 627.00 | 575.79 | **48.42** | | -2.8 |
| Table 10 | | 6N/31W-3A1 | 343759120072901 | Hilltop West of Ballard | 17-Mar | 34 37' 59" | 120 07' 29" | **156.60** | | 760.00 | 603.40 | **153.36** | | -3.2 |
| Table 10 | | 6N/31W-4A1 | 343800120083001 | Ballard Cyn nr Solvang | 16-Mar | 34 38' 00" | 120 08' 30" | **109.46** | | 615.00 | 505.54 | **108.08** | | -1.4 |
| Table 9 | | 6N/31W-7F1 | 343655120111201 | Buellton Upland Well | 19-Mar | 34 36' 55" | 120 11' 12" | **74.86** | | 385.00 | 310.14 | **76.89** | | 2.0 |
| Table 9 | | 6N/32W-2Q1 | 343719120124901 | SYR Alluvial; Buellton | 16-Mar | 34 37' 19" | 120 12' 49" | **61.89** | | 359.46 | 297.57 | **61.41** | | -0.5 |
| Table 10 | | 7N/31W-22A3 | 344044120072801 | Foxen Cyn nr Los Olivos | -- | 34 40' 44" | 120 07' 28" | **--** | **X** | 865.00 | -- | **--** | **X** | -- |
| Table 10 | | 7N/31W-23P1 | 344002120070001 | Los Olivos: Matties Tav | 16-Mar | 34 40' 02" | 120 07' 00" | **73.50** | | 822.00 | 748.50 | **88.32** | | 14.8 |
| | | 7N/31W-34M2 | 343833120082001 | Ballard Cyn nr Solvang | 16-Mar | 34 38' 33" | 120 08' 20" | **178.61** | | 823.00 | 644.39 | **177.17** | | -1.4 |
| Table 10 | | 7N/31W-36L2 | 343831120055001 | Refugio Rd N of Baseln | 16-Mar | 34 38' 31" | 120 05' 50" | **102.31** | | 721.00 | 618.69 | **96.49** | | -5.8 |
| Table 10 | | 8N/30W-30R1 | 344420120041701 | Midland School | 17-Mar | 34 44' 20" | 120 04' 17" | **--** | **P** | 1255.00 | -- | **--** | **P** | -- |
| | | 8N/30W-30R2 | 344419120042101 | Midland School | 17-Mar | 34 44' 19" | 120 04' 21" | **--** | **P** | 1256.00 | -- | **48.37** | **P** | -- |
| Table 10 | | 8N/31W-36H1 | 344354120051501 | Midland School | 17-Mar | 34 43' 54" | 120 05' 15" | **35.32** | | 1180.00 | 1144.68 | **15.19** | | -20.1 |

* Wells not in report are not shown on map.

** Status Information: P = pumping; R = recently pumped; S = nearby pumping; T = nearby recently pumped; O = obstruction; D = dry; X = well is destroyed; a blank implies a normal water level measurement...

**Bolded** are reported values. DTW is depth to water.

Document Path: J:\jn1126\SantaYnez_WellMap_2020.mxd




STETSON ENGINEERS INC.

# LOCATION OF WELLS REFERENCED IN TABLE 10, SANTA YNEZ UPLAND SUBAREA

0 0.75 1.5 Miles

N

* Note: Township/Range interpolated from USGS WSP-1107

FIGURE G-3

# Santa Barbara County Water Agency

130 E. Victoria Street, Suite 200, Santa Barbara, CA 93101 (805) 568-3440 fax (805) 568-3434 http://www.countyofsb.org

## *Spring 2020 Groundwater Measurements for Santa Ynez to Lake Cachuma Areas*

| Report Location | Map* | Well ID # | USGS # | Locality | Date of Read | Latitude | Longitude | Depth to Water (ft) | Sta-tus** | Well Elev. (ft, MSL) | W.S.E.L. Spr. 2020 (ft, MSL) | Spring 2019 DTW (ft) | Status 2019** | change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 5N/29W-1C1 | 343251119522201 | San Marcos Ranch | 19-Mar | 34 32' 51" | 119 52' 22" | **9.38** | | 794.00 | 784.62 | **4.12** | | -5.3 |
| Table 10 | | 6N/29W-5A1 | 343755119570901 | Phillips Ranch - North | 19-Mar | 34 37' 55" | 119 57' 09" | **--** | **D** | 1190.00 | -- | **--** | **D** | -- |
| Table 10 | | 6N/29W-6F1 | 343746119583101 | Happy Cyn: Kastner | 18-Mar | 34 37' 46" | 119 58' 31" | **15.89** | | 840.00 | 824.11 | **--** | | -- |
| Table 10 | | 6N/29W-6G1 | 343746119582201 | Happy Cyn: Kastner | 18-Mar | 34 37' 46" | 119 58' 22" | **50.36** | | 875.00 | 824.64 | **50.25** | | -0.1 |
| Table 10 | | 6N/29W-7L1 | 343646119583001 | N of Rd to Phillips Rnch | 19-Mar | 34 36' 46" | 119 58' 30" | **246.26** | | 868.00 | 621.74 | **210.52** | | -35.7 |
| Table 10 | | 6N/29W-8P1 | 343632119573301 | Phillips Ranch @ House | -- | 34 36' 32" | 119 57' 33" | **--** | | 910.00 | -- | **229.37** | | -- |
| Table 10 | | 6N/29W-8P2 | 343632119573302 | Phillips Ranch @ House | 19-Mar | 34 36' 32" | 119 57' 33" | **244.45** | | 910.00 | 665.55 | **233.32** | | -11.1 |
| | | 6N/30W-11G1 | 343649120001801 | Happy Cyn: Westerly | -- | 34 36' 49" | 120 00' 18" | **--** | | 680.00 | -- | **--** | **Z** | -- |
| Table 10 | | 6N/30W-11G4 | 343650120002501 | Happy Cyn: Westerly | 19-Mar | 34 36' 50" | 120 00' 25" | **161.00** | | 681.00 | 520.00 | **152.09** | | -8.9 |
| Table 10 | | 6N/30W-1R3 | 343718119592001 | Happy Canyon | 18-Mar | 34 37' 18" | 119 59' 20" | **--** | **P** | 760.00 | -- | **22.63** | **S** | -- |
| Table 10 | | 6N/30W-7G5 | 343651120043401 | S Ynez off Meadowvale | 18-Mar | 34 36' 51" | 120 04' 34" | **79.95** | | 600.00 | 520.05 | **76.50** | | -3.5 |
| Table 10 | | 6N/30W-7G6 | 343651120043402 | S Ynez off Meadowvale | 18-Mar | 34 36' 51" | 120 04' 34" | **79.43** | | 600.00 | 520.57 | **75.80** | | -3.6 |
| Table 10 | | 6N/31W-13D1 | 343623120061201 | Santa Ynez: nr Hyw 246 | 18-Mar | 34 36' 23" | 120 06' 12" | **116.97** | | 608.00 | 491.03 | **116.77** | | -0.2 |
| Table 10 | | 6N/31W-1P2 | 343727120055801 | West of Refugio Road | 18-Mar | 34 37' 27" | 120 05' 58" | **78.56** | | 620.00 | 541.44 | **74.68** | | -3.9 |
| Table 10 | | 6N/31W-1P3 | 343728120055101 | West of Refugio Road | 18-Mar | 34 37' 28" | 120 05' 51" | **107.80** | | 640.00 | 532.20 | **104.07** | | -3.7 |
| | | 7N/29W-29R1 | 343900119570201 | Happy Canyon | 18-Mar | 34 39' 00" | 119 57' 02" | **62.50** | | 1050.00 | 987.50 | **59.64** | | -2.9 |
| | | 7N/29W-29R2 | 343900119570301 | Happy Canyon | 18-Mar | 34 39' 00" | 119 57' 03" | **60.06** | | 1050.00 | 989.94 | **58.65** | | -1.4 |
| Table 10 | | 7N/30W-16B1 | 344127120023301 | Sedgewick Ranch | 17-Mar | 34 41' 27" | 120 02' 33" | **27.21** | | 1077.00 | 1049.79 | **34.71** | | 7.5 |
| Table 10 | | 7N/30W-19H1 | 344028120041801 | SY Upl: Long Cyn Loop | 17-Mar | 34 40' 28" | 120 04' 18" | **178.62** | | 1120.00 | 941.38 | **178.84** | | 0.2 |
| Table 10 | | 7N/30W-22E1 | 344023120015101 | Bar-Go Ranch | 17-Mar | 34 40' 23" | 120 01' 51" | **9.95** | | 920.00 | 910.05 | **12.18** | **P** | 2.2 |
| | | 7N/30W-22E2 | 344028120015701 | Bar-Go Ranch | 17-Mar | 34 40' 28" | 120 01' 57" | **199.92** | | 927.00 | 727.08 | **143.72** | | -56.2 |
| Table 10 | | 7N/30W-24Q1 | 343956119592401 | Starlane Ranch | 18-Mar | 34 39' 56" | 119 59' 24" | **52.85** | | 1190.00 | 1137.15 | **56.02** | | 3.2 |
| | | 7N/30W-25Q2 | 343907119593001 | Starlane Ranch mid-cyn | -- | 34 39 07' | 119 59' 30" | **--** | | 1059.00 | -- | **--** | | -- |
| Table 10 | | 7N/30W-27H1 | 343935120010801 | Bar-Go Ranch | -- | 34 39' 35" | 120 01' 08" | **--** | | 852.00 | -- | **6.99** | | -- |
| Table 10 | | 7N/30W-29D1 | 343946120035801 | SY Upl: Long Cyn Loop | 17-Mar | 34 39' 46" | 120 03' 58" | **56.40** | | 910.00 | 853.60 | **51.71** | | -4.7 |
| Table 10 | | 7N/30W-30M1 | 343921120051601 | SY Upl: Long Cyn Loop | 17-Mar | 34 39' 21" | 120 05' 16" | **246.06** | | 795.00 | 548.94 | **240.70** | | -5.4 |
| Table 10 | | 7N/30W-32R1 | 343812120031701 | NW Baseline-Mora Jct | -- | 34 38' 12" | 120 03' 17" | **--** | | 701.00 | -- | **--** | | -- |
| Table 10 | | 7N/30W-33M1 | 343833120030901 | 300 ft W of Mora Ave | 17-Mar | 34 38' 34" | 120 03' 00" | **238.58** | | 753.00 | 514.42 | **235.51** | | -3.1 |
| Table 10 | | 7N/30W-35R1 | 343809120000601 | Nr Starlane entrance rd | -- | 34 38' 09" | 120 00' 06" | **--** | | 880.00 | -- | **--** | **D** | -- |
| | | 7N/30W-36N2 | 343809120000301 | Starlane lower 1 | -- | 34 38 09' | 120 00' 03" | **--** | **O** | 865.00 | -- | **--** | **O** | -- |
| | | 7N/30W-36N3 | 343814119595901 | Starlane lower 2 | -- | 34 38 14' | 119 59' 59" | **--** | | 888.00 | -- | **324.76** | | -- |

* Wells not in report are not shown on map.

** Status Information: P = pumping; R = recently pumped; S = nearby pumping; T = nearby recently pumped; O = obstruction; D = dry; X = well is destroyed; a blank implies a normal water level measurement...

**Bolded** are reported values. DTW is depth to water.