# Board Meeting Agenda

Russ Baggerly, Director
Mary Bergen, Director
Bill Hicks, Director
Pete Kaiser, Director
James Word, Director

CASITAS MUNICIPAL WATER DISTRICT
Meeting to be held at the
Casitas Board Room
1055 Ventura Ave.
Oak View, CA 93022
February 28, 2018 @ 3:00 P.M.

Right to be heard: Members of the public have a right to address the Board directly on any item of interest to the public which is within the subject matter jurisdiction of the Board. The request to be heard should be made immediately before the Board's consideration of the item. No action shall be taken on any item not appearing on the agenda unless the action is otherwise authorized by subdivision (b) of ¶54954.2 of the Government Code and except that members of a legislative body or its staff may briefly respond to statements made or questions posed by persons exercising their public testimony rights under section 54954.3 of the Government Code.

1. Roll Call

2. Public comments (Items not on the agenda – three minute limit).

3. General Manager comments.

4. Board of Director comments.

5. Board of Director Verbal Reports on Meetings Attended.

6. Consent Agenda

   a. Minutes from the February 14, 2018 meeting.
   b. Recommend approval of annual air conditioning maintenance services for Lake Casitas Recreational area in the amount of $4,596.00 to BMI Pac West of Santa Maria.

   RECOMMENDED ACTION: Adopt Consent Agenda.

7. Review of District Accounts Payable Report for the Period of 1/08/18 - 02/21/18.

   RECOMMENDED ACTION: Motion approving report.

8. Appeal of Roger Wilde requesting relief of his water conservation penalty in the amount of $625.00.

RECOMMENDED ACTION: Direction to Staff

9. Request of Malcolm Knight for relief for his October and November Water Conservation Penalty of $345.00.

RECOMMENDED ACTION: Direction to Staff

10. Request of Laura Shell for relief on water consumption for the month of December.

RECOMMENDED ACTION: Direction to Staff

11. Hydrology Report for Water Year 2016 – 2017.

12. Presentation of the Ojai Valley Water Advisory Group's Report on State Water.

13. Recommend formation of an Ad Hoc committee for the purpose of State Water issues.

RECOMMENDED ACTION: Motion forming Ad Hoc Committee

14. Resolution supporting the Water Supply and Water Quality Act of 2018.

RECOMMENDED ACTION: Adopt Resolution

15. Recommend signing a Memorandum of Understanding for collaboration between agencies.

RECOMMENDED ACTION: Motion approving recommendation

16. ACWA Request for Contributions for the No Drinking Water Tax Education and Outreach Campaign.

RECOMMENDED ACTION: Direction to Staff

17. Information Items:

a. Finance Committee Minutes.
b. Investment Report.

18. Adjournment.

If you require special accommodations for attendance at or participation in this meeting, please notify our office 24 hours in advance at (805) 649-2251, ext. 113. (Govt. Code Section 54954.1 and 54954.2(a)).

Minutes of the Casitas Municipal Water District
Board Meeting Held
February 14, 2018

A meeting of the Board of Directors was held February 14, 2018 at the Casitas Municipal Water District located at 1055 Ventura Ave. in Oak View, California. The meeting was called to order at 3:00 p.m. President Word led the group in the flag salute.

1. Roll Call

Directors Baggerly, Word, Hicks, Bergen and Kaiser were present. Also present were Steve Wickstrum, General Manager, Rebekah Vieira, Clerk of the Board, and Attorney, John Mathews. There were five staff members and seven members of the public in attendance.

2. Public comments (Items not on the agenda – three minute limit).

Richard Hajas addressed the board stating that after reviewing Steve's response to Mr. Summer we may both have a little bit of a communication problem. Several members of board have expressed frustration with the community and their concerns that Casitas may not be doing enough on the water shortage. It appears Casitas plan is based on the goal of having a minimum supply. It appears to us you believe there is enough water on average but we will periodically have shortage. You have a five stage plan. For extra insurance you are looking for additional supply such as the HOBO to ensure enough water for the basic needs of community. Our proposal has a different goal. It would have a minimum storage level to prevent the need of the five stage plan. We will have dryer cycles in the future. Our plan hopes to prevent chronic stage 3 and 4 conditions. Look at how much more water we believe we need on average, 6,000-8,000 af per year. The sources you are considering do not provide that amount of water. Casitas needs to reach an agreement with the community on the definition of the problem. Residents of Ventura are not subjected to stage 5. Communities with greatest interest are Ojai valley and Rincon. Those that suffer the most are your direct customers. The threat of stage 4 and 5 damage quality of life. There may be alternatives. We are hopeful for all of us to have a basic discussion of the nature of the problem and come to agreement on the defined problem.

Ron Calkins informed the board that he has been a resident in the Ojai Valley for over 40 years. I worked for the City of Ventura as the Director of Public Works from the early 1990s to 2010 when I retired. I was responsible for the water utility. Water is my favorite issue to deal with. Your major focus is on demand management and you are doing a great job. You need to focus on supply management. Most Ventura water agencies are slow on the uptake for supply management. Lake inflow is restricted for the benefit of Ventura River and the ecosystem. The lake is at lowest level ever. What is the source if the lake runs dry? All options are on the table. One option is should we use state water. We have paid for our part for over 50 years and have no benefit to show for that. I see you are selling your allocation to United. There was debate in '90s should we do state water or ocean desal. The debate no longer makes since in terms of 2018 realities. The drought is more severe with no relief in sight. Now it is not a question of should we import state water but shouldn't we have the plumbing in place to use various water supplies. A water pipeline from Ventura to Camarillo allows opportunity to weather drought conditions. There are benefits to water exchanges with Ventura. Negatives are is state water too expensive. The existence of a pipeline does not require the use of state water. We are talking about infrastructure. Thank you for your time and I urge you to support and contribute resources on proposed pipeline to tie east and west water agencies. Ron was asked to describe the difference between demand and supply management. Ron answered that Demand Management is to focus on what can you do for conservation and what to reduce production and consumption of water. You have done a great job of that. Supply management is what you are going to do to provide water. Casitas along with other west county agencies and Calleguas need to work together to put the plumbing in place. One water agency would have been tied together decades ago. East and West county need to help each other.

3. <u>General Manager comments</u>.

Mr. Wickstrum mentioned that we need to continue working on these issues and it is a topic that has been discussed for many years such as the plans for a super district many years ago. We need to follow through into future meetings and move to committee level for regular discussion and get down to facts and figures of what we are talking about on a project like this. He then informed the board that yesterday began the public negotiation for the California Water Fix and how to put together that agreement including shared costs for the water contractors and the central valley. There will be an increase in state water discussions in the near future and I have been involved in the last 4 years in these discussions.

4. <u>Board of Director comments</u>.

Director Bergen reported that she met with Richard Hajas and Larry Yee. We have to get down to nuts and bolts. We authorized $200,000 to the intertie project and I suggest we need a feasibility study. We need a financial analysis

for the cost of water and look at legalities in terms of water rights. Some of this is ongoing. City is doing the intertie and feasibility. What it would take to get water east to west and up the hill to casitas?

Director Hicks added one wildcard is environmental if we put more water in the lake they want more water for the fish.

Director Baggerly suggested paying special attention to the advisory groups report and establish an ad hoc committee to review that and meet more than once a month to review the report. He also requested that the quagga mussel committee that is scheduled for Presidents Day be set for February 26th.

5. Board of Director Verbal Reports on Meetings Attended.

None

6. Consent Agenda ADOPTED

a. Minutes from the January 24, 2018 meeting.
b. Recommend approval of a purchase order to Dell Computers in the amount of $39,684.59 for the purchase of replacement file servers.

The Consent Agenda was offered by Director Kaiser, seconded by Director Baggerly and adopted by the following roll call vote:

| | | |
|---|---|---|
| AYES: | Directors: | Baggerly, Kaiser, Bergen, Hicks, Word |
| NOES: | Directors: | None |
| ABSENT: | Directors: | None |

7. Review of District Accounts Payable Report for the Period of 1/18/18 - 02/07/18. APPROVED

Director Hicks questioned the payment to Fred Pryor and Mr. Wickstrum explained that this is for online training that is available for our employees throughout the year. Director Hicks then requested a copy of the most recent invoices to Mr. Long as it appears he is charging about $300 for oil changes. Director Kaiser questioned if there is any type of post or reinforcement of the training. Mr. Wickstrum responded that having qc after the training has not been established at this point.

On the motion of Director Hicks, seconded by Director Kaiser, the bills were approved by the following roll call vote:

| | | |
|---|---|---|
| AYES: | Directors: | Baggerly, Kaiser, Bergen, Hicks, Word |
| NOES: | Directors: | None |
| ABSENT: | Directors: | None |

8. Presentation of the Casitas Water Adventure 2017 End of Season Report.

Aaron Wall presented the End of Season report and showed a presentation of some of the work that the department performs. It was another successful season with 82,442 customers in a shortened season of 74 days. The season was shortened due to challenges in finding qualified staff to become lifeguards. There are less kids in the valley and we have to attract youth from Ventura. Minimum wages are increasing by a dollar each year. We have to have 70-80 lifeguards each season. Last year we had over 203 documented first aids. Most are with a Band-Aid. We had seven calls for service and two transports. Aaron reminded the board that the waterpark is there to provide an alternative to swimming in Lake Casitas. The waterpark operates like an enterprise fund and is operating in the black.

On the motion of Director Kaiser, seconded by Director Bergen, the annual report was accepted by the following roll call vote:

| | | |
|---|---|---|
| AYES: | Directors: | Baggerly, Kaiser, Bergen, Hicks, Word |
| NOES: | Directors: | None |
| ABSENT: | Directors: | None |

9. Resolution setting a public hearing for March 14, 2018 to hear input from the public on the proposed modification to rates and fees for the Casitas Water Adventure. ADOPTED

The resolution was offered by Director Baggerly, seconded by Director Kaiser and adopted by the following roll call vote:

| | | |
|---|---|---|
| AYES: | Directors: | Baggerly, Kaiser, Bergen, Hicks, Word |
| NOES: | Directors: | None |
| ABSENT: | Directors: | None |

10. Recommend approval of Amendment No. 1 to Agreement for Special Event, Ojai Wine Festival to amend subsection1 (c) to allow for VIP attendees to be in the VIP area from 10:30 – 11:00 a.m. for a champagne toast. APPROVED

On the motion of Director Hicks, seconded by Director Kaiser, the above recommendation was approved by the following roll call vote:

| | | |
|---|---|---|
| AYES: | Directors: | Baggerly, Kaiser, Bergen, Hicks, Word |
| NOES: | Directors: | None |
| ABSENT: | Directors: | None |

11. Recommend approval of an agreement with United Water Conservation District for purchase of 2018 Table A State Water Project Water.

Moved to Committee

The board discussed concerns with selling table A water to United Water Conservation District because of the quagga mussel issue. Typically the desire has been to be cooperative and sell this within the county if feasible. Director Baggerly expressed that he felt Casitas would be an enabler of the agreement and that the responsibility would rest on Casitas for the release of that water infested with invasive species that we have been fighting against for ten years. He felt that would be in violation of California Department of Fish & Wildlife code and that it is probably a discretionary project and subject to CEQA. He felt that United would get the advantage and Casitas would get the risk.

Pat Baggerly representing the Environmental Coalition of Ventura County expressed concerns over the proposal stating that there was no environmental review or mention of it. There are endangered species in the Santa Clara river. As you are aware UWCD reported to CMWD in Dec 2013 invasive species were discovered. Last year United purchased and released water and after that quagga mussels were found in creek and lake. If more water is purchased the quagga mussels could move further downstream. Casitas has written numerous letters to try to prevent the spread of quagga mussels in Ventura county. United thought that the velocity of the downstream release would kill the mussels but a few months later the mussels were found downstream. What United tells you does not protect the environment. When farmers lose the ability to water crops because their pipes are clogged up with quagga mussels they will have all kinds of issues. Pleasant Valley stopped taking water from United.

Director Kaiser moved that this move to the Quagga Committee for further investigation. The motion was seconded by Director Bergen and passed by the following roll call vote:

| | | |
|---|---|---|
| AYES: | Directors: | Baggerly, Kaiser, Bergen, Hicks, Word |
| NOES: | Directors: | None |
| ABSENT: | Directors: | None |

12. Information Items:

a. Water Conservation Update for January 2018.
b. Lake Casitas Recreation Area Report for November 2017.
c. Lake Casitas Recreation Area Report for December 2017.
d. Lake Casitas Monthly Status Report for January.
e. Letter from Department of Water Resources regarding California WaterFix.
f. Letter from Michael Swimmer regarding availability of water and General Manager's response.
g. Memo regarding the completion of the emergency pipeline replacement at the Padre Juan Crossing in the Faria Beach area.

h. Ojai Valley Chamber of Commerce Gala 2018.
i. Finance Committee Minutes.
j. Water Resources Committee Minutes.
k. Recreation Committee Minutes.
l. Executive Committee Minutes.
m. Water Consumption Report.
n. CFD No. 2013-1 (Ojai) Monthly Cost Analysis.
o. Investment Report.

On the motion of Director Kaiser, seconded by Director Baggerly the information items were approved by the following roll call vote:

| | | |
|---|---|---|
| AYES: | Directors: | Baggerly, Kaiser, Bergen, Hicks, Word |
| NOES: | Directors: | None |
| ABSENT: | Directors: | None |

President Word moved the meeting to closed session at 4:05 p.m.

13. Closed Session

CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION
(Subdivision (a) of Section 54956.9
Name of Case: Santa Barbara Channelkeeper v. State Water Resources Control Board; City of Buenaventura
San Francisco Superior Court, Case number CPF-14-513875

Mr. Word moved the meeting back into open session at 4:18p.m. with Mr. Mathews stating that the Board met with general counsel to discuss case and no action was taken.

14. Adjournment.

President Word adjourned the meeting at 4:18 p.m.

_____
Mary Bergen, Secretary

# MEMORANDUM

TO: Board of Directors

From: Michael Flood – Assistant General Manager

RE: Annual Air Conditioning Maintenance Services at Lake Casitas Recreation Area

Date: February 23, 2018

RECOMMENDATION:

- Approve annual air conditioning maintenance services for the Lake Casitas Recreational Area (LCRA) in the amount of $4,596.00 to BMI Pac West of Santa Maria, Ca.

BACKGROUND:

The Board recently reviewed and awarded a contract for air conditioning maintenance services for the administrative offices to BMI Pac West (BMIPW). BMIPW was the only a/c service organization to respond to a request for proposals that had the willingness to comply with the State's prevailing wage requirements.

BMIPW was again contacted by staff to quote similar services at the LCRA, which involves the periodic maintenance of (6) air conditioning units and (1) ice machine for the annual cost of $4,596.00. This cost includes yearly sanitation of the ice machine and all filters needed for the air conditioning units.

**CASITAS MUNICIPAL WATER DISTRICT**
**Payable Fund Check Authorization**
**Checks Dated 02/08/18-02/21/18**
**Presented to the Board of Directors For Approval February 28, 2018**

| Check | Payee | | | Description | Amount |
|---|---|---|---|---|---|
| 000785 | Payables Fund Account | # | 9759651478 | Accounts Payable Batch 021418 | $272,723.18 |
| 000786 | Payables Fund Account | # | 9759651478 | Accounts Payable Batch 022118 | $228,932.39 |
| | | | | | $501,655.57 |
| 000787 | Payroll Fund Account | # | 9469730919 | Estimated Payroll 03/15/18 | $170,000.00 |
| | | | | Total | $671,655.57 |

Publication of check register is in compliance with Section 53065.6 of the Government Code which requires the District to disclose reimbursements to employees and/or directors.

The above numbered checks,
000785-000787
have been duly audited is hereby certified as correct.

Denise Collin 2/21/18

Denise Collin, Accounting Manager/Treasurer

Signature

Signature

Signature

CERTIFICATION

Payroll disbursements for the pay period ending 02/10/18
Pay Date of 02/15/18
have been duly audited and are
hereby certified as correct.

Signed: Denise Collin 2/12/18
Denise Collin

Signed: _____
Signature

Signed: _____
Signature

Signed: _____
Signature

^

# *A/P Fund*

Publication of check register is in compliance with Section 53065.6 of the Government Code which requires the District to disclose reimbursements to employees and/or directors.

| | | |
|---|---|---|
| 000785 | A/P Checks: | 029263-029290 |
| | A/P Draft to P.E.R.S. | 000000 |
| | A/P Draft to State of CA | 000000 |
| | A/P Draft to I.R.S. | 000000 |
| | Voids: | |
| 000786 | A/P Checks: | 029291-029391 |
| | A/P Draft to P.E.R.S. | |
| | A/P Draft to State of CA | |
| | A/P Draft to I.R.S. | |
| | Voids: | 029348, 029349, 029350, 029358 |

Denise Collin 2/21/18

Denise Collin, Accounting Manager/Treasurer

_____

Signature

_____

Signature

_____

Signature

VENDOR SET: 01 Casitas Municipal Water D
BANK: * ALL BANKS
DATE RANGE: 2/08/2018 THRU 2/21/2018

| VENDOR I.D. | NAME | | STATUS | CHECK DATE | INVOICE AMOUNT | DISCOUNT | CHECK NO | CHECK STATUS | CHECK AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| C-CHECK | VOID CHECK | | V | 2/21/2018 | | | 029348 | | |
| C-CHECK | VOID CHECK | | V | 2/21/2018 | | | 029349 | | |
| C-CHECK | VOID CHECK | | V | 2/21/2018 | | | 029350 | | |
| 00165 | OJAI LUMBER CO, INC | | | | | | | | |
| C-CHECK | OJAI LUMBER CO, INC | VOIDED | V | 2/21/2018 | | | 029358 | | 1,122.17CR |

| * * T O T A L S * * | NO | | | INVOICE AMOUNT | DISCOUNTS | CHECK AMOUNT |
|---|---|---|---|---|---|---|
| REGULAR CHECKS: | 0 | | | 0.00 | 0.00 | 0.00 |
| HAND CHECKS: | 0 | | | 0.00 | 0.00 | 0.00 |
| DRAFTS: | 0 | | | 0.00 | 0.00 | 0.00 |
| EFT: | 0 | | | 0.00 | 0.00 | 0.00 |
| NON CHECKS: | 0 | | | 0.00 | 0.00 | 0.00 |
| VOID CHECKS: | 4 | VOID DEBITS | 0.00 | | | |
| | | VOID CREDITS | 1,122.17CR | 1,122.17CR | 0.00 | |

TOTAL ERRORS: 0

| | | NO | INVOICE AMOUNT | DISCOUNTS | CHECK AMOUNT |
|---|---|---|---|---|---|
| VENDOR SET: 01 BANK: | TOTALS: | 4 | 1,122.17CR | 0.00 | 0.00 |
| BANK: | TOTALS: | 4 | 1,122.17CR | 0.00 | 0.00 |

VENDOR SET: 01 Casitas Municipal Water D
BANK: AP ACCOUNTS PAYABLE
DATE RANGE: 2/08/2018 THRU 2/21/2018

| VENDOR | I.D. | NAME | STATUS | CHECK DATE | INVOICE AMOUNT | DISCOUNT | CHECK NO | CHECK STATUS | CHECK AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 00049 | | STATE OF CALIFORNIA | | | | | | | |
| | I-T2 201802121321 | State Withholding | D | 2/14/2018 | 9,747.63 | | 000000 | | 9,747.63 |
| 00128 | | INTERNAL REVENUE SERVICE | | | | | | | |
| | I-T1 201802091319 | Federal Withholding | D | 2/14/2018 | 5.16 | | 000000 | | |
| | I-T1 201802121321 | Federal Withholding | D | 2/14/2018 | 25,455.25 | | 000000 | | |
| | I-T3 201802091319 | FICA Withholding | D | 2/14/2018 | 24.04 | | 000000 | | |
| | I-T3 201802121321 | FICA Withholding | D | 2/14/2018 | 30,379.80 | | 000000 | | |
| | I-T4 201802091319 | Medicare Withholding | D | 2/14/2018 | 5.62 | | 000000 | | |
| | I-T4 201802121321 | Medicare Withholding | D | 2/14/2018 | 7,105.00 | | 000000 | | 62,974.87 |
| 00187 | | CALPERS | | | | | | | |
| | I-PBB201802121321 | PERS BUY BACK | D | 2/14/2018 | 216.95 | | 000000 | | |
| | I-PBP201802121321 | PERS BUY BACK | D | 2/14/2018 | 161.96 | | 000000 | | |
| | I-PEB201802121321 | PEPRA EMPLOYEES PORTION | D | 2/14/2018 | 3,966.14 | | 000000 | | |
| | I-PEM201802121321 | PERS EMPLOYEE PORTION MGMT | D | 2/14/2018 | 3,125.83 | | 000000 | | |
| | I-PER201802121321 | PERS EMPLOYEE PORTION | D | 2/14/2018 | 6,766.05 | | 000000 | | |
| | I-PRB201802121321 | PEBRA EMPLOYER PORTION | D | 2/14/2018 | 4,145.64 | | 000000 | | |
| | I-PRR201802121321 | PERS EMPLOYER PORTION | D | 2/14/2018 | 10,978.10 | | 000000 | | 29,360.67 |
| 01666 | | AT & T | | | | | | | |
| | I-000010886578 | Acct# 9391064013 | R | 2/14/2018 | 195.15 | | 029263 | | 195.15 |
| 01153 | | RUSS BAGGERLY | | | | | | | |
| | I-Jan 18 | Reimburse Expenses 1/18 | R | 2/14/2018 | 236.37 | | 029264 | | 236.37 |
| 02720 | | Garda CL West, Inc. | | | | | | | |
| | I-10371763 | Armored Truck Service | R | 2/14/2018 | 681.52 | | 029265 | | |
| | I-20252283 | Excess Items - LCRA | R | 2/14/2018 | 41.80 | | 029265 | | 723.32 |
| 00437 | | HERC RENTALS INC | | | | | | | |
| | I-29715329-002 | Generator Rental Pump Plant-OM | R | 2/14/2018 | 4,851.71 | | 029266 | | |
| | I-29719911-001 | Generator Rental Fortress - OM | R | 2/14/2018 | 4,493.41 | | 029266 | | |
| | I-29719911-002 | Generator Rental Fortress - OM | R | 2/14/2018 | 4,207.87 | | 029266 | | |
| | I-29720583-002 | Generator Rental Fairview - OM | R | 2/14/2018 | 5,589.64 | | 029266 | | 19,142.63 |
| 01270 | | SCOTT LEWIS | | | | | | | |
| | I-Jan 18 | Reimburse Expense 1/18 | R | 2/14/2018 | 1,333.70 | | 029267 | | 1,333.70 |
| 00188 | | PETTY CASH | | | | | | | |
| | I-021218 | Replenish Safe - LCRA | R | 2/14/2018 | 5.00 | | 029268 | | 5.00 |
| 00188 | | PETTY CASH | | | | | | | |
| | I-021318 | Replenish Petty Cash - DO | R | 2/14/2018 | 502.28 | | 029269 | | 502.28 |

VENDOR SET: 01 Casitas Municipal Water D
BANK: AP ACCOUNTS PAYABLE
DATE RANGE: 2/08/2018 THRU 2/21/2018

| VENDOR | I.D. | NAME | STATUS | CHECK DATE | INVOICE AMOUNT | DISCOUNT | CHECK NO | CHECK STATUS | CHECK AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 02837 | | Sam Hill & Sons, Inc. | | | | | | | |
| | I-2321 | Lower Rincon Pipeline Replace | R | 2/14/2018 | 112,924.14 | | 029270 | | 112,924.14 |
| 02770 | | Stoner's One Off Customs | | | | | | | |
| | I-1250 | Steering Box Repair - Unit EZ5 | R | 2/14/2018 | 791.76 | | 029271 | | 791.76 |
| 00215 | | SOUTHERN CALIFORNIA EDISON | | | | | | | |
| | I-020918 | Acct#2397969643 | R | 2/14/2018 | 14,409.39 | | 029272 | | 14,409.39 |
| 02643 | | Take Care by WageWorks | | | | | | | |
| | I-6862363 | Reimburse Med/Dep Care | R | 2/14/2018 | 676.15 | | 029273 | | 676.15 |
| 01283 | | Verizon Wireless | | | | | | | |
| | I-9801041141 | Monthly Cell Charges - DO | R | 2/14/2018 | 1,569.69 | | 029274 | | |
| | I-9801041141a | Monthly Cell Charges - DO | R | 2/14/2018 | 405.59 | | 029274 | | |
| | I-9801041664 | Monthly Cell Charges - LCRA | R | 2/14/2018 | 858.27 | | 029274 | | 2,833.55 |
| 00102 | | FRANCHISE TAX BOARD | | | | | | | |
| | I-G03201802121321 | Payroll Deduction | R | 2/14/2018 | 357.96 | | 029275 | | 357.96 |
| 00124 | | ICMA RETIREMENT TRUST - 457 | | | | | | | |
| | I-CUI201802121321 | 457 CATCH UP | R | 2/14/2018 | 230.77 | | 029276 | | |
| | I-DCI201802121321 | DEFERRED COMP FLAT | R | 2/14/2018 | 1,467.31 | | 029276 | | |
| | I-DI%201802121321 | DEFERRED COMP PERCENT | R | 2/14/2018 | 47.15 | | 029276 | | 1,745.23 |
| 01960 | | Moringa Community | | | | | | | |
| | I-MOR201802121321 | PAYROLL CONTRIBUTIONS | R | 2/14/2018 | 16.75 | | 029277 | | 16.75 |
| 00985 | | NATIONWIDE RETIREMENT SOLUTION | | | | | | | |
| | I-CUN201802121321 | 457 CATCH UP | R | 2/14/2018 | 230.77 | | 029278 | | |
| | I-DCN201802121321 | DEFERRED COMP FLAT | R | 2/14/2018 | 5,140.39 | | 029278 | | |
| | I-DN%201802121321 | DEFERRED COMP PERCENT | R | 2/14/2018 | 354.12 | | 029278 | | 5,725.28 |
| 00180 | | S.E.I.U. - LOCAL 721 | | | | | | | |
| | I-COP201802121321 | SEIU 721 COPE | R | 2/14/2018 | 42.00 | | 029279 | | |
| | I-UND201802121321 | UNION DUES | R | 2/14/2018 | 775.00 | | 029279 | | 817.00 |
| | | JOHN W JUMP TRUST | | | | | | | |
| | I-000201802071308 | US REFUND | R | 2/14/2018 | 29.98 | | 029280 | | 29.98 |
| | | KNOXVILLE 2012 TRUST | | | | | | | |
| | I-000201802071309 | US REFUND | R | 2/14/2018 | 42.03 | | 029281 | | 42.03 |

VENDOR SET: 01 Casitas Municipal Water D
BANK: AP ACCOUNTS PAYABLE
DATE RANGE: 2/08/2018 THRU 2/21/2018

| VENDOR | I.D. | NAME | STATUS | CHECK DATE | INVOICE AMOUNT | DISCOUNT | CHECK NO | CHECK STATUS | CHECK AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | CORNEJO, JESUS | | | | | | | |
| | I-000201802071311 | US REFUND | R | 2/14/2018 | 100.00 | | 029282 | | 100.00 |
| 1 | | KOUROUNIAN, VAROUJAN | | | | | | | |
| | I-000201802071310 | US REFUND | R | 2/14/2018 | 27.41 | | 029283 | | 27.41 |
| 1 | | BROKAW, JOHN A. | | | | | | | |
| | I-000201802071312 | US REFUND | R | 2/14/2018 | 4.68 | | 029284 | | 4.68 |
| 1 | | FOSTER, DEION | | | | | | | |
| | I-000201802071313 | US REFUND | R | 2/14/2018 | 100.00 | | 029285 | | 100.00 |
| 1 | | HALL, JOHN | | | | | | | |
| | I-000201802071314 | US REFUND | R | 2/14/2018 | 130.05 | | 029286 | | 130.05 |
| 1 | | SMOKLER, ANNA | | | | | | | |
| | I-000201802071315 | US REFUND | R | 2/14/2018 | 1.16 | | 029287 | | 1.16 |
| 1 | | OJAI VALLEY INN | | | | | | | |
| | I-000201802071317 | US REFUND | R | 2/14/2018 | 4,872.09 | | 029288 | | 4,872.09 |
| 1 | | OJAI VALLEY INN | | | | | | | |
| | I-000201802071318 | US REFUND | R | 2/14/2018 | 2,844.15 | | 029289 | | 2,844.15 |
| - | | LINE, FRED J | | | | | | | |
| | I-000201802091320 | Refund AR REFUND | R | 2/14/2018 | 52.80 | | 029290 | | 52.80 |
| )2587 | | A&M LAWNMOWER SHOP | | | | | | | |
| | I-45213 | Chainsaw - MAINT | R | 2/21/2018 | 523.55 | | 029291 | | |
| | I-45214 | Wheel Kit - MAINT | R | 2/21/2018 | 216.49 | | 029291 | | |
| | I-45216 | Chain & Bar - LCRA | R | 2/21/2018 | 57.89 | | 029291 | | |
| | I-45217 | Repair Pump - UT | R | 2/21/2018 | 45.00 | | 029291 | | 842.93 |
| )0010 | | AIRGAS USA LLC | | | | | | | |
| | I-9072249851 | Clamp & Grinder - PL | R | 2/21/2018 | 79.55 | | 029292 | | |
| | I-9072665373 | Welding Supplies - PL | R | 2/21/2018 | 223.17 | | 029292 | | |
| | I-9072866438 | TIG Welder - PL | R | 2/21/2018 | 2,957.74 | | 029292 | | 3,260.46 |
| 0012 | | ALL-PHASE ELECTRIC SUPPLY CO. | | | | | | | |
| | I-5665-634205 | LED Strip Fixture - MAINT | R | 2/21/2018 | 2,510.83 | | 029293 | | 2,510.83 |
| 3044 | | Amazon Capital Services | | | | | | | |
| | C-1D7D-C1JD-6CNMb | Accrue Use Tax | R | 2/21/2018 | 5.73CR | | 029294 | | |
| | C-1T13-WJCX-66K4b | Accrue Use Tax | R | 2/21/2018 | 39.08CR | | 029294 | | |
| | D-1D7D-C1JD-6CNMa | Accrue Use Tax | R | 2/21/2018 | 5.73 | | 029294 | | |
| | D-1T13-WJCX-66K4a | Accrue Use Tax | R | 2/21/2018 | 39.08 | | 029294 | | |
| | I-1D7D-C1JD-6CNM | Headset - ADMIN | R | 2/21/2018 | 78.99 | | 029294 | | |
| | I-1MND-DWMM-DFVY | Camera Enclosure - TP | R | 2/21/2018 | 174.78 | | 029294 | | |
| | I-1T13-WJCX-66K4 | Cell Signal Booster - PL | R | 2/21/2018 | 539.00 | | 029294 | | 792.77 |

| VENDOR | I.D. | NAME | STATUS | CHECK DATE | INVOICE AMOUNT | DISCOUNT | CHECK NO | CHECK STATUS | CHECK AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 00836 | | AMERICAN RED CROSS | | | | | | | |
| | I-22072910 | First Aid/CPR Training - DO | R | 2/21/2018 | 308.00 | | 029295 | | 308.00 |
| 00029 | | AMERICAN TOWER CORP | | | | | | | |
| | I-2619118 | Tower Rent-Red Mtn.Rincon Peak | R | 2/21/2018 | 1,927.53 | | 029296 | | 1,927.53 |
| 00417 | | APPLIED INDUSTRIAL TECHNOLOGY | | | | | | | |
| | I-7012543788 | Reclaim System Motor - TP | R | 2/21/2018 | 291.01 | | 029297 | | 291.01 |
| 00014 | | AQUA-FLO SUPPLY | | | | | | | |
| | I-SI1088872 | Adapters & Couplings - WP | R | 2/21/2018 | 96.41 | | 029298 | | |
| | I-SI1153744 | Fitting & Cable Saw - WP | R | 2/21/2018 | 51.44 | | 029298 | | |
| | I-SI1154323 | Fittings & Valve - UT | R | 2/21/2018 | 162.19 | | 029298 | | |
| | I-SI1158950 | Solvent,Drain Gate,Fittings-WP | R | 2/21/2018 | 154.58 | | 029298 | | |
| | I-SI1158970 | Coupling & Shovel - UT | R | 2/21/2018 | 84.89 | | 029298 | | |
| | I-SI1159512 | Male Adapter - WP | R | 2/21/2018 | 9.76 | | 029298 | | |
| | I-SI1160098 | Backflow Device Repair - LCRA | R | 2/21/2018 | 143.97 | | 029298 | | |
| | I-SI1161223 | Sprayer & Nozzle - WP | R | 2/21/2018 | 21.12 | | 029298 | | |
| | I-SI1163238 | PVC Fittings - UT | R | 2/21/2018 | 12.52 | | 029298 | | 736.88 |
| 01666 | | AT & T | | | | | | | |
| | I-000010902217 | Acct#9391051740 | R | 2/21/2018 | 1,044.66 | | 029299 | | 1,044.66 |
| 01666 | | AT & T | | | | | | | |
| | I-000010902227 | Acct# 9391051750 | R | 2/21/2018 | 686.25 | | 029300 | | 686.25 |
| 01666 | | AT & T | | | | | | | |
| | I-000010907348 | Acct# 9391035542 | R | 2/21/2018 | 1,224.81 | | 029301 | | 1,224.81 |
| 00018 | | AT & T MOBILITY | | | | | | | |
| | I-829434088X02142018 | PT Wildlife Biol Monthly Cell | R | 2/21/2018 | 11.71 | | 029302 | | 11.71 |
| 00030 | | B&R TOOL AND SUPPLY CO | | | | | | | |
| | I-1900909075 | Coupler Plug - PL | R | 2/21/2018 | 3.15 | | 029303 | | |
| | I-1900909094 | Cloth Rags - WHS | R | 2/21/2018 | 415.51 | | 029303 | | |
| | I-1900909703 | Wrench & Flashlights - PL | R | 2/21/2018 | 179.35 | | 029303 | | |
| | I-1900909859 | Strips & Crimps - UT | R | 2/21/2018 | 22.97 | | 029303 | | 620.98 |
| 00679 | | BAKERSFIELD PIPE & SUPPLY INC | | | | | | | |
| | C-S2364630.002 | Weld Reducer Return - EM | R | 2/21/2018 | 375.38CR | | 029304 | | |
| | I-S2386964.001 | Weld Reducer - EM | R | 2/21/2018 | 868.46 | | 029304 | | |
| | I-S2420266.001 | Gaskets - TP | R | 2/21/2018 | 525.19 | | 029304 | | |
| | I-S2424574.001 | Ultra Seal - TP | R | 2/21/2018 | 97.08 | | 029304 | | |
| | I-S2430831.001 | Gaskets - EM | R | 2/21/2018 | 12.46 | | 029304 | | 1,127.81 |

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| VENDOR | I.D. | NAME | STATUS | CHECK DATE | INVOICE AMOUNT | DISCOUNT | CHECK NO | CHECK STATUS | CHECK AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 00032 | | BIOVIR LABORATORIES, INC | | | | | | | |
| | I-180148 | Giardia/Crypto Test 1/23/18 | R | 2/21/2018 | 365.00 | | 029305 | | 365.00 |
| 00756 | | BOARD OF EQUALIZATION | | | | | | | |
| | I-013118 | Use Tax Return 15300115 | R | 2/21/2018 | 1,124.52 | | 029306 | | 1,124.52 |
| 03059 | | Brenntag Pacific Inc. | | | | | | | |
| | I-BPI809735 | Chlorine for Ojai Sys. - TP | R | 2/21/2018 | 823.65 | | 029307 | | 823.65 |
| 01295 | | BSN CONSTRUCTION | | | | | | | |
| | I-020218 | Asphalt Patch - PL | R | 2/21/2018 | 16,963.00 | | 029308 | | |
| | I-020218a | Asphalt Patch - PL | R | 2/21/2018 | 11,990.00 | | 029308 | | |
| | I-020218b | Asphalt Patch - PL | R | 2/21/2018 | 13,886.00 | | 029308 | | 42,839.00 |
| 01023 | | CARQUEST AUTO PARTS | | | | | | | |
| | I-785125 | Bulbs - Unit 51 | R | 2/21/2018 | 4.20 | | 029309 | | 4.20 |
| 00055 | | CASITAS BOAT RENTALS | | | | | | | |
| | I-Jan 18 | Gas for Boats - LCRA | R | 2/21/2018 | 659.75 | | 029310 | | 659.75 |
| 00117 | | CERTEX USA, INC | | | | | | | |
| | I-10722661-00 | Turbidity Curtain Clamps&Cable | R | 2/21/2018 | 939.64 | | 029311 | | 939.64 |
| 01843 | | COASTAL COPY | | | | | | | |
| | I-773844 | Copier Usage - DO | R | 2/21/2018 | 290.36 | | 029312 | | 290.36 |
| 00059 | | COASTAL PIPCO | | | | | | | |
| | I-S1991995.001 | Ball Valve Injectors - TP | R | 2/21/2018 | 663.21 | | 029313 | | 663.21 |
| 00061 | | COMPUWAVE | | | | | | | |
| | I-SB02089003 | Color Cartridge - LCRA | R | 2/21/2018 | 162.07 | | 029314 | | 162.07 |
| 00062 | | CONSOLIDATED ELECTRICAL | | | | | | | |
| | I-9009-761217 | Memory Module - EM | R | 2/21/2018 | 203.41 | | 029315 | | 203.41 |
| 2115 | | Consumers Pipe Supply Co. | | | | | | | |
| | I-S1380263.001 | Diaphragm Repair Kit - EM | R | 2/21/2018 | 148.05 | | 029316 | | 148.05 |
| 3522 | | Barbara Corona | | | | | | | |
| | I-651927 | Camping Cancellation - LCRA | R | 2/21/2018 | 115.00 | | 029317 | | 115.00 |
| 0064 | | CROWDER BACKFLOW SERVICES, INC | | | | | | | |
| | I-27121 | Backflow Testing - LCRA | R | 2/21/2018 | 852.00 | | 029318 | | 852.00 |

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| VENDOR | I.D. | NAME | STATUS | CHECK DATE | INVOICE AMOUNT | DISCOUNT | CHECK NO | CHECK STATUS | CHECK AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 02544 | | Department of Justice | | | | | | | |
| | I-285447 | Fingerprinting - LCRA | R | 2/21/2018 | 292.00 | | 029319 | | 292.00 |
| 00086 | | E.J. Harrison & Sons Inc | | | | | | | |
| | I-1668 | Acct# 500546088 | R | 2/21/2018 | 196.69 | | 029320 | | 196.69 |
| 00488 | | ELECTRONIC SYSTEMS TECHNOLOGY | | | | | | | |
| | I-32216 | Esteem Radio Repair - EM | R | 2/21/2018 | 317.76 | | 029321 | | 317.76 |
| 02219 | | Evans Excavating | | | | | | | |
| | I-2234 | Sedimintation Basin Cleanout | R | 2/21/2018 | 35,710.00 | | 029322 | | 35,710.00 |
| 00095 | | FAMCON PIPE & SUPPLY | | | | | | | |
| | I-201741 | Ford Adapter - PL | R | 2/21/2018 | 424.71 | | 029323 | | |
| | I-201749 | Fittings,Connections,Clamps-PL | R | 2/21/2018 | 773.11 | | 029323 | | |
| | I-201977 | Air Valve,Lug,Restraint Kit-PL | R | 2/21/2018 | 749.14 | | 029323 | | |
| | I-202321 | Wrench Extension - UT | R | 2/21/2018 | 150.15 | | 029323 | | |
| | I-202531 | Fire Hydrant Extension Kit-WHS | R | 2/21/2018 | 2,595.45 | | 029323 | | 4,692.56 |
| 03523 | | FaucetDepot | | | | | | | |
| | I-5786254 | Ice Maker Filter - MAINT | R | 2/21/2018 | 35.67 | | 029324 | | 35.67 |
| 00575 | | FENCE FACTORY - SATICOY | | | | | | | |
| | I-404701 | Vault Fence Repair - WP | R | 2/21/2018 | 182.96 | | 029325 | | 182.96 |
| 00013 | | FERGUSON ENTERPRISES INC | | | | | | | |
| | I-5642213 | Copper Pipe - LCRA | R | 2/21/2018 | 177.54 | | 029326 | | 177.54 |
| 00099 | | FGL ENVIRONMENTAL | | | | | | | |
| | I-714757A | Gate 4 Analysis 12/21/17 | R | 2/21/2018 | 251.00 | | 029327 | | |
| | I-715584A | Gate 4 Analysis 12/19/17 | R | 2/21/2018 | 410.00 | | 029327 | | |
| | I-800072A | Annual Reservoir Monit. 1/3/18 | R | 2/21/2018 | 586.00 | | 029327 | | |
| | I-800612A | Managanese Monitoring 1/12/18 | R | 2/21/2018 | 130.00 | | 029327 | | 1,377.00 |
| 00101 | | FISHER SCIENTIFIC | | | | | | | |
| | I-8662542 | Sample Bottles - FISH | R | 2/21/2018 | 115.49 | | 029328 | | 115.49 |
| 00104 | | FRED'S TIRE MAN | | | | | | | |
| | I-106105 | Flat Repair - Unit 47 | R | 2/21/2018 | 20.00 | | 029329 | | 20.00 |
| 00106 | | FRONTIER PAINT | | | | | | | |
| | I-F0232834 | White Paint - WP | R | 2/21/2018 | 34.46 | | 029330 | | 34.46 |

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|---|---|---|---|---|---|---|---|---|---|
| 01280 | | FRY'S ELECTRONICS, INC. | | | | | | | |
| | I-7027498 | Cable Scissors,Cable,Mount-DO | R | 2/21/2018 | 44.15 | | 029331 | | |
| | I-7027498a | Battery Backup - LCRA | R | 2/21/2018 | 79.73 | | 029331 | | 123.88 |
| 00376 | | GALL'S, INC. | | | | | | | |
| | I-009271888 | Vehicle Paper Organizer - PL | R | 2/21/2018 | 117.12 | | 029332 | | 117.12 |
| 00115 | | GRAINGER, INC | | | | | | | |
| | I-9680582799 | Swaet Band&Coat Hooks-DO/LCRA | R | 2/21/2018 | 82.95 | | 029333 | | |
| | I-9683176375 | Hose - MAINT | R | 2/21/2018 | 84.60 | | 029333 | | |
| | I-9695906850 | Chemical Resistant Gloves-MAIN | R | 2/21/2018 | 70.65 | | 029333 | | |
| | I-9696806448 | Deep Well Pump - TP | R | 2/21/2018 | 1,395.43 | | 029333 | | 1,633.63 |
| 02217 | | Greg Rents | | | | | | | |
| | I-48744 | Cement Slurry - PL | R | 2/21/2018 | 102.95 | | 029334 | | |
| | I-48779 | Cement Slurry - PL | R | 2/21/2018 | 102.95 | | 029334 | | |
| | I-49235 | Cement Slurry - PL | R | 2/21/2018 | 102.95 | | 029334 | | 308.85 |
| 02572 | | Bob Herzig and Associates, Inc | | | | | | | |
| | I-HE18-10096 | ARC FLash Hazard Study - TP | R | 2/21/2018 | 4,272.50 | | 029335 | | 4,272.50 |
| 00596 | | HOME DEPOT | | | | | | | |
| | I-7884822 | Exit Door for Garage - MAINT | R | 2/21/2018 | 915.88 | | 029336 | | |
| | I-8401676 | Hooks & Tie Downs - MAINT | R | 2/21/2018 | 51.59 | | 029336 | | 967.47 |
| 03023 | | ID Modeling Inc. | | | | | | | |
| | I-302-001-04 | GIS Software & Server - ENG | R | 2/21/2018 | 10,400.00 | | 029337 | | 10,400.00 |
| 00127 | | INDUSTRIAL BOLT & SUPPLY | | | | | | | |
| | I-184820-1 | Air Studs - PL | R | 2/21/2018 | 48.49 | | 029338 | | |
| | I-185079-1 | Washers & Caps - WP | R | 2/21/2018 | 92.17 | | 029338 | | |
| | I-185256-1 | Flanges - EM | R | 2/21/2018 | 7.67 | | 029338 | | 148.33 |
| 02565 | | Industrial Networking Solution | | | | | | | |
| | I-INV-1552315 | Cradlepoint Adapter for SCADA | R | 2/21/2018 | 684.67 | | 029339 | | 684.67 |
| 00493 | | J & H ENGINEERING GENERAL | | | | | | | |
| | I-3196 | Mallory Way Paving - ENG | R | 2/21/2018 | 30,650.00 | | 029340 | | 30,650.00 |
| 02344 | | Janitek Cleaning Solutions | | | | | | | |
| | I-30020A | Restroom Cleaning in PL/WHS | R | 2/21/2018 | 147.68 | | 029341 | | 147.68 |
| 00131 | | JCI JONES CHEMICALS, INC | | | | | | | |
| | I-748204 | Chlorine - TP, CM 748222 | R | 2/21/2018 | 1,650.00 | | 029342 | | 1,650.00 |

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| VENDOR | I.D. | NAME | STATUS | CHECK DATE | INVOICE AMOUNT | DISCOUNT | CHECK NO | CHECK STATUS | CHECK AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 00935 | | PETER M. KAISER | | | | | | | |
| | I-Nov 17/Jan 18 | Reimburse Expense 11/17&1/18 | R | 2/21/2018 | 155.71 | | 029343 | | 155.71 |
| 02396 | | Kemira Water | | | | | | | |
| | I-9017579520 | Ferric Sulfate - TP | R | 2/21/2018 | 4,331.80 | | 029344 | | 4,331.80 |
| 00328 | | LIGHTNING RIDGE | | | | | | | |
| | I-1251802 | Uniform Shirts & Jackets - PL | R | 2/21/2018 | 1,754.71 | | 029345 | | 1,754.71 |
| 00539 | | LOS ANGELES TIMES | | | | | | | |
| | I-013018 | Subscription 3/31/18-9/4/18 | R | 2/21/2018 | 356.83 | | 029346 | | 356.83 |
| 00151 | | MEINERS OAKS ACE HARDWARE | | | | | | | |
| | I-807598 | Torch Trigger - FISH | R | 2/21/2018 | 18.53 | | 029347 | | |
| | I-809586 | Bit Drill - PL | R | 2/21/2018 | 7.31 | | 029347 | | |
| | I-810935 | Cable Ties, Bolts, Screws-LCRA | R | 2/21/2018 | 89.64 | | 029347 | | |
| | I-811250 | Gloves,Utility Knife,Rake - TP | R | 2/21/2018 | 72.51 | | 029347 | | |
| | I-811631 | Paint - LCRA | R | 2/21/2018 | 90.22 | | 029347 | | |
| | I-811997 | Connector - Unit 291 | R | 2/21/2018 | 12.32 | | 029347 | | |
| | I-812280 | Paintbrushes,Liners,Paint-LCRA | R | 2/21/2018 | 143.43 | | 029347 | | |
| | I-812423 | Glue,Straps,Batteries - MAINT | R | 2/21/2018 | 15.88 | | 029347 | | |
| | I-812480 | Threadlocker & Torch Head-LCRA | R | 2/21/2018 | 54.68 | | 029347 | | |
| | I-812531 | Batteries - UT | R | 2/21/2018 | 7.31 | | 029347 | | |
| | I-812641 | Planting Mix&Respirators -LCRA | R | 2/21/2018 | 24.84 | | 029347 | | |
| | I-812659 | Key, Fittings, Cement - LCRA | R | 2/21/2018 | 67.67 | | 029347 | | |
| | I-812689 | Clorox and Tape - LCRA | R | 2/21/2018 | 14.84 | | 029347 | | |
| | I-812749 | Rebar & Foam - LCRA | R | 2/21/2018 | 30.83 | | 029347 | | |
| | I-812790 | Door Stopper - MAINT | R | 2/21/2018 | 12.68 | | 029347 | | |
| | I-812830 | Copper Tube - WP | R | 2/21/2018 | 54.71 | | 029347 | | |
| | I-812858 | Tape & Windex - EM | R | 2/21/2018 | 37.12 | | 029347 | | |
| | I-812924 | Mini Mats & Rebar - LCRA | R | 2/21/2018 | 16.70 | | 029347 | | |
| | I-812931 | Wheel Cutoff & Concrete - WP | R | 2/21/2018 | 14.50 | | 029347 | | |
| | I-812941 | Paint Thinner,Cover,Chain-LCRA | R | 2/21/2018 | 41.84 | | 029347 | | |
| | I-812983 | Cement - LCRA | R | 2/21/2018 | 57.85 | | 029347 | | |
| | I-812989 | Clip,Seal,Elbow,Adapter - LCRA | R | 2/21/2018 | 46.10 | | 029347 | | |
| | I-813054 | Antifreeze & Cap - WP | R | 2/21/2018 | 10.07 | | 029347 | | |
| | I-813115 | Plugs & Saucer - LCRA | R | 2/21/2018 | 6.89 | | 029347 | | |
| | I-813314 | Gloves, Cord, Couplings - LCRA | R | 2/21/2018 | 19.14 | | 029347 | | |
| | I-813320 | Broom,Rake,Bungee Cord - UT | R | 2/21/2018 | 46.76 | | 029347 | | |
| | I-813354 | Key,Washers,Strap - MAINT | R | 2/21/2018 | 4.80 | | 029347 | | |
| | I-813441 | Staples - LCRA | R | 2/21/2018 | 5.83 | | 029347 | | |
| | I-813488 | Rakes - LCRA | R | 2/21/2018 | 32.15 | | 029347 | | |
| | I-813511 | Paintbrushes - UT | R | 2/21/2018 | 4.83 | | 029347 | | |
| | I-813667 | Pliers - LCRA | R | 2/21/2018 | 10.29 | | 029347 | | |
| | I-813668 | Flat Head & Liquid Nails -LCRA | R | 2/21/2018 | 34.29 | | 029347 | | |
| | I-813707 | Wire Brush,Paintbrush,Tape-UT | R | 2/21/2018 | 69.87 | | 029347 | | |
| | I-813708 | Spray Paint - UT | R | 2/21/2018 | 6.44 | | 029347 | | |
| | I-813940 | Mini Grinder Kit - UT | R | 2/21/2018 | 24.39 | | 029347 | | |

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|---|---|---|---|---|---|---|---|---|---|
| | I-813955 | Fittings - UT | R | 2/21/2018 | 15.47 | | 029347 | | |
| | I-813969 | Single Cut Key - EM | R | 2/21/2018 | 4.27 | | 029347 | | 1,227.00 |
| 03483 | | MicroscopeHub.com | | | | | | | |
| | I-SIN008752 | Microscope - Lab | R | 2/21/2018 | 1,617.33 | | 029351 | | 1,617.33 |
| 03444 | | Mission Linen Supply | | | | | | | |
| | I-506714993 | Uniform Pants - TP | R | 2/21/2018 | 28.05 | | 029352 | | |
| | I-506759618 | Uniform Pants - TP | R | 2/21/2018 | 56.40 | | 029352 | | |
| | I-506808863 | Uniform Pants - TP | R | 2/21/2018 | 28.05 | | 029352 | | 112.50 |
| 03520 | | Moonglo Work Lights USA, LLC. | | | | | | | |
| | I-2842 | Roadway Worklight - PL | R | 2/21/2018 | 3,400.00 | | 029353 | | 3,400.00 |
| 00163 | | OFFICE DEPOT | | | | | | | |
| | I-105970269001 | Office Supplies - DO | R | 2/21/2018 | 13.72 | | 029354 | | |
| | I-105971217001 | Office Supplies - DO | R | 2/21/2018 | 92.64 | | 029354 | | |
| | I-105971218001 | Office Supplies - DO | R | 2/21/2018 | 4.60 | | 029354 | | |
| | I-106716581001 | Paper & Highlighter - ADMIN | R | 2/21/2018 | 133.63 | | 029354 | | 244.59 |
| 00625 | | OfficeTeam | | | | | | | |
| | I-50258337 | Admin Temp | R | 2/21/2018 | 914.40 | | 029355 | | |
| | I-50260433 | Conservation Temp | R | 2/21/2018 | 803.99 | | 029355 | | 1,718.39 |
| 00160 | | OILFIELD ELECTRIC CO, INC | | | | | | | |
| | I-2024654 | Service Call to Rincon PP - EM | R | 2/21/2018 | 393.00 | | 029356 | | |
| | I-2024701 | Vault #5 Pump Repair - WP | R | 2/21/2018 | 2,052.93 | | 029356 | | 2,445.93 |
| 01570 | | Ojai Auto Supply | | | | | | | |
| | I-424516 | Safety Switch - Unit 28 | R | 2/21/2018 | 43.73 | | 029357 | | |
| | I-424590 | Spark Plug - Unit 281 | R | 2/21/2018 | 1.86 | | 029357 | | |
| | I-425781 | Blower Switch - Unit 34 | R | 2/21/2018 | 95.58 | | 029357 | | |
| | I-425787 | Battery - EZ Motor | R | 2/21/2018 | 40.05 | | 029357 | | |
| | I-426246 | Lamp - EM | R | 2/21/2018 | 28.44 | | 029357 | | |
| | I-426391 | Armor All, Glass Cleaner - UT | R | 2/21/2018 | 46.89 | | 029357 | | 256.55 |
| 00168 | | OJAI VALLEY NEWS | | | | | | | |
| | I-300020231 | Conservation Ad 2/9/18 | R | 2/21/2018 | 55.00 | | 029359 | | 55.00 |
| 02906 | | Craig R. Oswald | | | | | | | |
| | I-1267 | Door Installation - MAINT | R | 2/21/2018 | 950.00 | | 029360 | | |
| | I-1268 | Window Install - MAINT | R | 2/21/2018 | 950.00 | | 029360 | | 1,900.00 |

VENDOR SET: 01 Casitas Municipal Water D
BANK: AP ACCOUNTS PAYABLE
DATE RANGE: 2/08/2018 THRU 2/21/2018

| VENDOR | I.D. | NAME | STATUS | CHECK DATE | INVOICE AMOUNT | DISCOUNT | CHECK NO | CHECK STATUS | CHECK AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 00686 | | POLLARD WATER | | | | | | | |
| | I-0101289 | Wrench - LAB | R | 2/21/2018 | 44.11 | | 029361 | | 44.11 |
| 02149 | | PolyJohn Enterprises Corporati | | | | | | | |
| | I-191018 | Stall for Bathroom - MAINT | R | 2/21/2018 | 691.78 | | 029362 | | 691.78 |
| 03287 | | Porta-Stor | | | | | | | |
| | I-268198 | Storage Container Rental - ENG | R | 2/21/2018 | 110.00 | | 029363 | | 110.00 |
| 00184 | | POWERSTRIDE BATTERY CO, INC | | | | | | | |
| | I-V596851 | Battery - MAINT | R | 2/21/2018 | 68.76 | | 029364 | | 68.76 |
| 02833 | | Praxair, Inc | | | | | | | |
| | I-81304175 | Liquid Oxygen - TP | R | 2/21/2018 | 2,218.05 | | 029365 | | 2,218.05 |
| 01439 | | PRECISION POWER EQUIPMENT | | | | | | | |
| | I-2518 | Chain Saw Repair - PL | R | 2/21/2018 | 92.08 | | 029366 | | |
| | I-2519 | Chain Saw Repair - PL | R | 2/21/2018 | 308.78 | | 029366 | | 400.86 |
| 10042 | | PSR ENVIRONMENTAL SERVICE, INC | | | | | | | |
| | I-8534 | Gas Tank Inspection - DO | R | 2/21/2018 | 220.00 | | 029367 | | |
| | I-8535 | Gas Tank Inspection - LCRA | R | 2/21/2018 | 220.00 | | 029367 | | 440.00 |
| 03202 | | PTC Inc. | | | | | | | |
| | I-10346184 | Kepware Software for SCADA | R | 2/21/2018 | 1,765.69 | | 029368 | | 1,765.69 |
| 00313 | | ROCK LONG'S AUTOMOTIVE | | | | | | | |
| | I-22902 | Oil & Filters - Unit 31 | R | 2/21/2018 | 71.36 | | 029369 | | |
| | I-22903 | Oil & Filters - Unit 32 | R | 2/21/2018 | 73.70 | | 029369 | | |
| | I-22909 | Oil & Smog Inspection -Unit 23 | R | 2/21/2018 | 73.95 | | 029369 | | 219.01 |
| 03521 | | Miriam Rodriguez | | | | | | | |
| | I-021218 | Irrigation Controller Rebate | R | 2/21/2018 | 249.99 | | 029370 | | 249.99 |
| 01109 | | SALVADOR LOERA TRANSPORTATION | | | | | | | |
| | I-15669 | Base - PL | R | 2/21/2018 | 477.63 | | 029371 | | 477.63 |
| 02837 | | Sam Hill & Sons, Inc. | | | | | | | |
| | I-2320 | Excavator for Leak - PL | R | 2/21/2018 | 3,112.00 | | 029372 | | 3,112.00 |
| 01107 | | SAWYER PETROLEUM | | | | | | | |
| | I-S119152 | PP Oils - EM | R | 2/21/2018 | 1,449.61 | | 029373 | | 1,449.61 |

VENDOR SET: 01 Casitas Municipal Water D
BANK: AP ACCOUNTS PAYABLE
DATE RANGE: 2/08/2018 THRU 2/21/2018

| VENDOR | I.D. | NAME | STATUS | CHECK DATE | INVOICE AMOUNT | DISCOUNT | CHECK NO | CHECK STATUS | CHECK AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 02756 | | SC Fuels | | | | | | | |
| | I-1081288-IN | Gas & Diesel - LCRA | R | 2/21/2018 | 2,789.22 | | 029374 | | |
| | I-1087357-IN | Gasoline - DO | R | 2/21/2018 | 3,678.72 | | 029374 | | 6,467.94 |
| 03043 | | Sonotronics, Inc. | | | | | | | |
| | I-8112 | Equipment Marking Transmitter | R | 2/21/2018 | 251.81 | | 029375 | | 251.81 |
| 02840 | | Techstone Inc. | | | | | | | |
| | I-12495 | Concrete Overlay - LCRA | R | 2/21/2018 | 189.70 | | 029376 | | 189.70 |
| 01959 | | The Wharf | | | | | | | |
| | I-020118 | Safety Boots - OM | R | 2/21/2018 | 612.71 | | 029377 | | 612.71 |
| 01173 | | TOICO INDUSTRIES, INC. | | | | | | | |
| | I-0170182-IN | Gloves - LCRA | R | 2/21/2018 | 61.19 | | 029378 | | 61.19 |
| 02527 | | Traffic Technologies LLC | | | | | | | |
| | I-26834 | Measuring Wheel & Vest - UT | R | 2/21/2018 | 179.89 | | 029379 | | |
| | I-26835 | Cones - UT | R | 2/21/2018 | 226.28 | | 029379 | | 406.17 |
| 00254 | | VENTURA LOCKSMITHS | | | | | | | |
| | I-43623 | Board Room Lock Change | R | 2/21/2018 | 215.00 | | 029380 | | |
| | I-43623a | Key Duplicates - TP | R | 2/21/2018 | 73.27 | | 029380 | | 288.27 |
| 00258 | | VENTURA STEEL, INC | | | | | | | |
| | I-205072 | Tubing - PL | R | 2/21/2018 | 98.67 | | 029381 | | |
| | I-205354 | Plate & Box Tube - PL | R | 2/21/2018 | 301.86 | | 029381 | | 400.53 |
| 09955 | | VENTURA WHOLESALE ELECTRIC | | | | | | | |
| | I-229305 | Bushings & Connector - EM | R | 2/21/2018 | 64.65 | | 029382 | | |
| | I-229513 | Den Rails - EM | R | 2/21/2018 | 32.33 | | 029382 | | 96.98 |
| 03203 | | Water Systems Consulting, Inc. | | | | | | | |
| | I-2956 | Ojai System Master Plan - ENG | R | 2/21/2018 | 27,402.75 | | 029383 | | 27,402.75 |
| 00270 | | Wells Fargo Bank | | | | | | | |
| | I-020818 | Sight Glass - EM | R | 2/21/2018 | 52.99 | | 029384 | | |
| | I-020818a | CAPIO Seminar - CONS | R | 2/21/2018 | 20.00 | | 029384 | | |
| | I-020818b | Office Supplies - MGMT | R | 2/21/2018 | 18.30 | | 029384 | | |
| | I-020818c | Labor Law Posters - MGMT | R | 2/21/2018 | 375.29 | | 029384 | | |
| | I-020818d | Break Room Supplies - MGMT | R | 2/21/2018 | 56.07 | | 029384 | | 522.65 |
| 00403 | | WESTERN WATER WORKS SUPPLY CO. | | | | | | | |
| | I-480063-00 | Booster Pump Repair Parts - EM | R | 2/21/2018 | 446.59 | | 029385 | | 446.59 |

VENDOR SET: 01 Casitas Municipal Water D
BANK: AP ACCOUNTS PAYABLE
DATE RANGE: 2/08/2018 THRU 2/21/2018

| VENDOR | I.D. | NAME | STATUS | CHECK DATE | INVOICE AMOUNT | DISCOUNT | CHECK NO | CHECK STATUS | CHECK AMOUNT |
|---|---|---|---|---|---|---|---|---|---|
| 00330 | | WHITE CAP CONSTRUCTION SUPPLY | | | | | | | |
| | I-10008244582 | Respirators & Ear plugs - PL | R | 2/21/2018 | 624.48 | | 029386 | | 624.48 |
| 00086 | | E.J. Harrison & Sons Inc | | | | | | | |
| | I-25141 | Acct#1C00054240 | R | 2/21/2018 | 167.57 | | 029387 | | 167.57 |
| 00812 | | KEVIN NGUYEN | | | | | | | |
| | I-Jan 18 | Reimburse Mileage 1/18 | R | 2/21/2018 | 65.40 | | 029388 | | 65.40 |
| 00165 | | OJAI LUMBER CO, INC | | | | | | | |
| | I-1801-857023a | Pallet Delivery - TP | R | 2/21/2018 | 48.26 | | 029389 | | |
| | I-1802-861946a | Sand Bags - TP | R | 2/21/2018 | 1,017.63 | | 029389 | | 1,065.89 |
| 00169 | | OJAI VALLEY SANITARY DISTRICT | | | | | | | |
| | I-20032A | Cust # 52921 | R | 2/21/2018 | 56.28 | | 029390 | | 56.28 |
| 1 | | OJAI VALLEY INN | | | | | | | |
| | I-000201802141322 | US REFUND | R | 2/21/2018 | 148.90 | | 029391 | | 148.90 |

| * * T O T A L S * * | NO | | | INVOICE AMOUNT | DISCOUNTS | CHECK AMOUNT |
|---|---|---|---|---|---|---|
| REGULAR CHECKS: | 125 | | | 399,572.40 | 0.00 | 399,572.40 |
| HAND CHECKS: | 0 | | | 0.00 | 0.00 | 0.00 |
| DRAFTS: | 3 | | | 102,083.17 | 0.00 | 102,083.17 |
| EFT: | 0 | | | 0.00 | 0.00 | 0.00 |
| NON CHECKS: | 0 | | | 0.00 | 0.00 | 0.00 |
| VOID CHECKS: | 0 | VOID DEBITS | 0.00 | | | |
| | | VOID CREDITS | 0.00 | 0.00 | 0.00 | |

TOTAL ERRORS: 0

| | NO | INVOICE AMOUNT | DISCOUNTS | CHECK AMOUNT |
|---|---|---|---|---|
| VENDOR SET: 01 BANK: AP TOTALS: | 128 | 501,655.57 | 0.00 | 501,655.57 |
| BANK: AP TOTALS: | 128 | 501,655.57 | 0.00 | 501,655.57 |
| REPORT TOTALS: | 128 | 501,655.57 | 0.00 | 501,655.57 |

FEB 0 8 2018

**George I. Wilde Family Beach House**
**3710 W. Pacific Coast Highway**
**Ventura, CA 93001**

January 31, 2018

Board of Directors
c/o Steve Wickstrum, General Manager
Casitas Municipal Water District
1055 Ventura Avenue
Oak View, CA 93022-9622

Dear Board of Directors:

On December 29, 2017, my family and I received a bill for 103,972 gallons (139 units) of water supposedly used at our Faria Beach House for the November 1, 2017 to December 1, 2017 billing cycle. I called your office about this matter and your staff stated that they did not have discretion to adjust our water bill. Your office suggested I write to you and the Board about this.

This bill is for a small, single-story residence (2 bedrooms; 1.5 baths) with no grass, no pool, and no spa. Historically we used 9 units the previous November 2016, 9 units in September 2017, 17 units in October 2017, and 6 units in December 2017. The most units we have used was in April 2017 equaling 33 units (24,684 gallons). The residence was used for only five days in November. The Thomas fire did not happen until December. We had no leaks as reported by your office (you checked December 4, 2017 at 9:17 am). I have inquired of our property manager, Chuck Menzel (his letter is attached), and our gardener – neither saw any evidence of leakage.

So, our question is why are you charging us for water in the amount of $300.65 and a conservation penalty in the amount of $625.00 (for water we did not use)? Or tell us how we used this tremendous volume of water at our small beach house (we can provide photos if you would like).

We have paid the entire balance due of $985.85 (check 3102), but we would appreciate your consideration of this letter and an abatement and refund of your penalty and an adjustment to a "normalized" water usage amount and refund of excess.

Please call me at (805) 570-7405 at your earliest convenience. I would like to come to the next Board meeting to speak on this matter. Thank you for your consideration.

Very truly yours,

R. E. Wilde

Roger E. Wilde, Co-owner
Wilde Beach House
940 El Centro Street
Ojai, CA 93023

COASTLINE

01/31/18

To Whom it May Concern

RE: Wilde Beach House Water Usage for November;

I manage the Wilde property at 3710 Pacific Coast Hwy.

The house was empty all of the entire month of November 2017, except for five nights. I inspect the property multiple times a week as part of my property management responsibilities. I never saw an issue with water leaking or excess water anywhere on the property. I also manage the property adjacent and would have notice any issues with the water. There is outside drip irrigation, but it is for approximately one planter about 2 feet by 20 feet of water. If there was any leak on the property, it would have been very obvious.

Regards,

Charles Menzel
Coastline Property Management
65 Fix Way
Ventura, CA. 93001

Tel: 805-320-3308

FEB 0 5 2018

February 2, 2018

Casitas Municipal Water District
1055 Ventura Ave
Oak View, CA 93022-9622

Attention: Denise Collin

I am requesting that the conservation penalties for our November and December statements be forgiven due to the following reasons:

1. The first penalty happened during the Thomas Fire. We did not receive the statement for that period until much later than usual due to delays in mail delivery. The excessive consumption was not noticed until the next statement.

2. The meter for our address is 250 feet from our house on Cruzero Street. It was not obviously leaking. After calling CMWD your service personnel came out to check for problems and discovered that the ground was wet deep underneath where our pressure regulator is located. The pressure regulator had started leaking slowly at first and so it was unnoticed. It was losing water at an increasing rate. The water was shut off and a replacement regulator was installed.

4. I feel paying for the lost water is reasonable but to be fined for the equipment failure was not something that I could control. I should not be punished financially for something I had no control over. We already were being charged the highest rate for the lost water. To fine us on top of that is unreasonable and counter productive.

Please take these circumstances under consideration. In the future, my hope is that CMWD would notify their customers of unusually high consumption.

Generally fines are to punish people for things they do have control over. Fining people for this circumstance will in no way prevent it from happening again especially for your senior citizens who are on fixed incomes. If you will check our payment history you'll find we have an excellent record.

Please remove both conservation penalties. Removing those two penalties will be greatly appreciated.

Sincerely,

Malcolm Knight

Malcolm Knight
320 Cruzero St.
Ojai, CA 93023-3526
Account number 30-28479-00
805 558 5710


**Denise Collin <dcollin@casitaswater.com>**

# Re: Thomas Fire / water bill

1 message

**rbaggerly@casitaswater.com** <rbaggerly@casitaswater.com> Wed, Feb 7, 2018 at 3:54 PM
To: Laura Shell <laura_shell1@yahoo.com>
Cc: Steve Wickstrum <swickstrum@casitaswater.com>, Mike Flood <mflood@casitaswater.com>, Denise Collin <dcollin@casitaswater.com>

Laura,

I am forwarding your email to CMWD management for review. I will follow up with them and you soon.

Russ

Save water as if your life depends on it!

> On Feb 7, 2018, at 2:31 PM, Laura Shell <laura_shell1@yahoo.com> wrote:
>
> Mr. Baggerly,
>
> My name is Laura Shell and my husband and I own 88 acres on Reeves Road in Ojai. Much of our property burned in the Thomas fire, fortunately not the home, though we did lose 2 structures. Our property includes a tar pit which has been a real nightmare, one area was still smoldering 2 weeks ago.
>
> I am emailing as out water bill for the month of December is outrageous, as you can imagine. The Fire Department instructed our caretaker to keep watering the tar pit, which we have done and continue to do. I called the water district office and was told the penalties were waived which is of course appreciated (you might want to put that on the district website). However, I cannot imagine we are on the hook for water used in an emergency such as this? Is the district not able to seek reimbursement from the state or federal governments for this? Does the district have insurance that might cover? Is there at least not a discounted rate that could be used??????? Its not like we put in a new lawn or tropical plants, this was water used to fight the fire.
>
> Can you help? We lost two structures in the fire as well as all of the equipment used to maintain our property. To get hit with this ridiculous water bill, for water used to fight the fire and protect life and property, is just shocking.
>
> The bill is attached for your review.
>
> Thank you,
>
> Laura Shell
>
> <Doc Feb 07, 2018, 08:16.pdf>
>
>
>

# CASITAS MUNICIPAL WATER DISTRICT
# INTEROFFICE MEMORANDUM

**TO:** SEVE WICKSTRUM, GENERAL MANAGER

**FROM:** JORDAN SWITZER, ENGINEERING TECHNICIAN

**SUBJECT:** HYDROLOGY REPORT – WATER YEAR 2016 - 2017

**DATE:** FEBRUARY 23RD, 2018

## RECOMMENDATION:

It is recommended that the Hydrology Report for the 2016-2017 Water Year be provided to the Board of Directors for their information.

## DISCUSSION:

The Casitas Municipal Water District is required by water rights license to account for its water resources. The accounting is being performed on a daily basis and summarized at the close of each water year along with comparisons to historical calendar year data. These summaries provide excellent insight on the hydrologic trends of the Ventura River system and water use responses to rainfall (or drought) events.

The 2017 Water Year was the first year of above average rainfall since the 2011 Water year allowing for diversions from the Ventura River to take place for a total of 52 days. The Casitas Reservoir experienced a net-storage increase of 6,389 AF during the 2017 Water Year.

The acquisition of the Ojai Water System has brought new water sources to the District's system. A brief discussion regarding the hydrologic aspects of this system, along with a summary of production and deliveries has been included in this report. Reporting will be expanded in future reports as more data become available.

Staff is providing the summary report for the review by the Board of Directors. If you have any questions regarding this summary report, please bring those questions to my attention.

## CASITAS MUNICIPAL WATER DISTRICT

# HYDROLOGY REPORT
# WATER YEAR 2016 - 2017

**February 23rd, 2018**

Prepared by
Jordan Switzer – Engineering Technician

## Introduction

Casitas Municipal Water District (CMWD), in cooperation with the Ventura County Watershed Protection District (VCWPD) and the U.S. Geological Service (USGS), collects hydrology data on the Ventura River system. The hydrology data constitutes a valuable asset for developing an understanding of the water resources of the Ventura River system. Since 1981, the CMWD has summarized the data into a series of annual reports. This is an annual report that presents information and data for the 2016 – 2017 Water Year (2017 WY). Data is also presented for the 2017 Calendar Year for comparison to historical data.

Casitas acquired a pre-existing water system in June of 2017 consisting of services to approximately 3,000 customers. Water sources for this system include a well-field which draws from the Ojai Valley Groundwater Basin, located within the San Antonio Creek Watershed, a sub-basin to the Ventura River Watershed. This "Ojai System" has been historically supplemented by surface water deliveries from Casitas Reservoir, particularly in times of drought when aquifers are typically depleted and well production is reduced.

An additional rainfall station located on Ojai's East End and a San Antonio Creek gaging station has been added to this report to reflect hydrologic conditions within the San Antonio Creek Watershed. A table showing Ojai Water System Sources and Deliveries has also been added to this report. Reporting of the hydrologic aspects of this system may be expanded in the future as more data become available.

## Water Year 2016 – 2017 Summarized

The water year is a standard used for reporting hydrological cycles. It begins on October 01 of the preceding year and ends September 30 of the named water year. For this report, the 2017 WY began on October 01, 2016, and ended September 30, 2017.

There are four key elements of collected data that go into this report: 1) rainfall, 2) streamflow conditions, 3) lake storage & systems delivery and 4) ambient air temperatures.

Each of these elements are monitored and recorded by CMWD on a daily basis. The following are brief summaries of the hydrologic characteristics of the 2017 WY.

- **Rainfall** – Rainfall and evaporation data are collected on a daily basis at two stations, one at the Casitas Dam and one at the Lake Casitas Recreational Area. The methods for data collection are standardized for consistency. Rainfall data for Matilija Dam and Thacher School are obtained from VCWPD.

  The average of the four rainfall stations was 31.26 inches for the 2017 WY. This is above the long-term average of 24.14 inches and is the first above-average water year since the 2011 WY. Casitas Dam received 31.53 inches while Matilija Dam received 35.46 inches.

  The bulk of precipitation fell in the months of January and February, when cumulative monthly rainfall at Casitas Dam was 10.88 and 12.91 inches respectively. The highest daily rainfall was recorded on February 18th, with 7.04 inches of rainfall measured at Casitas Dam.

- **Streamflow Conditions**– Streamflow conditions are assessed by collecting data at key points in the Ventura River system. Gage station locations can be found on the Hydrology Map for the Ventura River System. The above average rainfall along with several storm events contributed to significant run-off within the watershed.

  Preliminary data provided by VCWPD indicate discharge from North Fork Matilija Creek totaled 5,036 acre-feet (AF) between October 01, 2016 and August 04, 2017. Discharge from Matilija Dam measured at the Matilija Hot Springs gage totaled 19,746 AF with a peak flow of approximately 5,600 cfs on February 17th, 2017.

  Surface flow at the measurement weir of the Robles Fish Passage and Diversion Facility (Robles) was present beginning January 08 and lasted until June 20 of 2017. During that period, 19,003 AF were released downstream with an additional 700 AF of un-gaged flow estimated to have overtopped the Robles Dam and bypass the facility during the February 17th storm event. There were four storm peaks that met the Biological Opinion's parameters to initiate supplemental downstream releases for fish passage: 1) January 20, 2017 – 437 cfs peak Robles inflow, 2) January 22, 2017 – 2,573 cfs, 3) February 06, 2017 – 243 cfs; and 4) February 17, 2017 – 10,000 cfs. Downstream release requirements were met when Robles inflow was sufficient to do so. All flow was released downstream when inflow was less than the required supplemental release.

  Diversions to the Casitas Reservoir first began on January 22, 2017. Prior to January 22, all inflow was released downstream to allow for aquifer levels to rise to the extent that would be expected under natural conditions for the time of year and type of year (Trial Operating Criteria for Robles Casitas Diversion Facilities, 1959). The diversion canal was operated for 52 days and 6,091 AF was diverted during the 2017 WY.

Coyote Creek and Santa Ana Creek drainages contribute directly to Lake Casitas storage. A total of 5,381 AF were measured at the Santa Ana Creek gage while 11,404 AF were measured at the Coyote Creek gage for the 2017 WY.

- **Lake Storage & Systems Deliveries** – Water storage volumes for system reservoirs, Casitas Dam and Matilija Dam, were ascertained by the daily recording of the reservoir elevation and applying the elevation number to a storage table for each reservoir.

  Lake Casitas Reservoir had a net increase in water storage for the 2017 WY. Lake elevation was 489.00 feet MSL on October 01, 2016 and ended on September 30, 2017 at 493.43 feet MSL, corresponding to 99,853 AF of storage in Lake Casitas at the end of the WY. The reservoir's 4.4-foot increase in elevation resulted in a net gain of 6,389 AF. Storage increased by 22,200 AF during the three-month period of January through March; net monthly storage losses occurred outside of that period.

  The CMWD Board of Directors approved the adoption of a new Casitas Reservoir storage rating table prepared by Tetra Tech after completion of a LIDAR and bathymetric study resulting in a re-calculated reservoir capacity of 237,760 acre-feet (down from 254,000 acre-feet). This table was implemented on October 01, 2017 (start of 2018 WY) and Casitas Reservoir storage reported from that date forward will reflect this adjustment.

  Water deliveries from the reservoir to the main conveyance system totaled 12,174 AF for the WY. This is down 21% from 2016 and 30% from the average deliveries during the previous 10 years. Mira Monte well production was 157 AF during the 2017 WY. Deliveries within the Ojai Water System totaled 1,563 AF; 1,281 AF of which was sourced from the Ojai System Well-Field with the additional 282 AF coming from water deliveries through the main conveyance system.

  Casitas Municipal Water District did not conduct any controlled releases from Matilija Dam nor operate any valves at the dam during the water year. All flow was allowed to spill over the dam for the entire water year. The valves were exercised on November 21, 2017 per the request of the Department of Dam Safety. After several years of non-operation through the direction of the National Marine Fisheries Services due to concerns of downstream biological-impacts, the dam piping is presumably clogged with sediment, and no water was discharged during the exercise.

- **Ambient Air Temperatures** – Data was recorded by CMWD staff at two locations, Casitas Dam and the Lake Casitas Recreation Area. These measurements are made on a daily basis and include the maximum and minimum ambient air temperatures and wind speed. Several temperature records dating back to 1960 were tied or broken during the 2017 calendar year: highest monthly maximum (November for Casitas Dam; July, August, September, October, November, and December for Recreation), and highest monthly average (December for Casitas Dam; July, August, and November for Recreation). The all-time high temperature for Recreation (112° F) was tied on five separate occasions.

## Hydrology Stations

The following hydrology stations are operated and maintained by the Casitas Municipal Water District:

Reservoir water surface elevations:

- Casitas Dam

Rainfall and Evaporation Monitoring Stations

- Lake Casitas (Upper) Recreation Area
- Casitas Dam

Streamflow Gaging Stations:

- Matilija Creek at Matilija Hot Springs
- Ventura River near Meiners Oaks
- Robles-Casitas Canal
- Santa Ana Creek near Oak View
- Coyote Creek near Oak View

The following hydrology stations are operated and maintained by other agencies:

Reservoir water surface elevations:

- Matilija Dam – Operated by Ventura County Watershed Protection District.

Rainfall Monitoring Stations

- Matilija Dam – Operated by Ventura County Watershed Protection District.
- Ojai – Thacher School – Operated by Ventura County Watershed Protection District.

Streamflow Gauging Stations:

- Ventura River near Ventura (Foster Park) – USGS service contract
- North Fork Matilija at Matilija Hot Springs– Operated by Ventura County Watershed Protection District.
- San Antonio Creek at Old Creek Rd – Operated by Ventura County Watershed Protection District

## Historical Hydrology Period – 1959 through 2017

The historical data has been updated for the reporting period and is presented for the period from 1959 through 2017. The historical data includes summaries for the Casitas Reservoir operation, Robles Diversion, rainfall, and ambient air temperature.

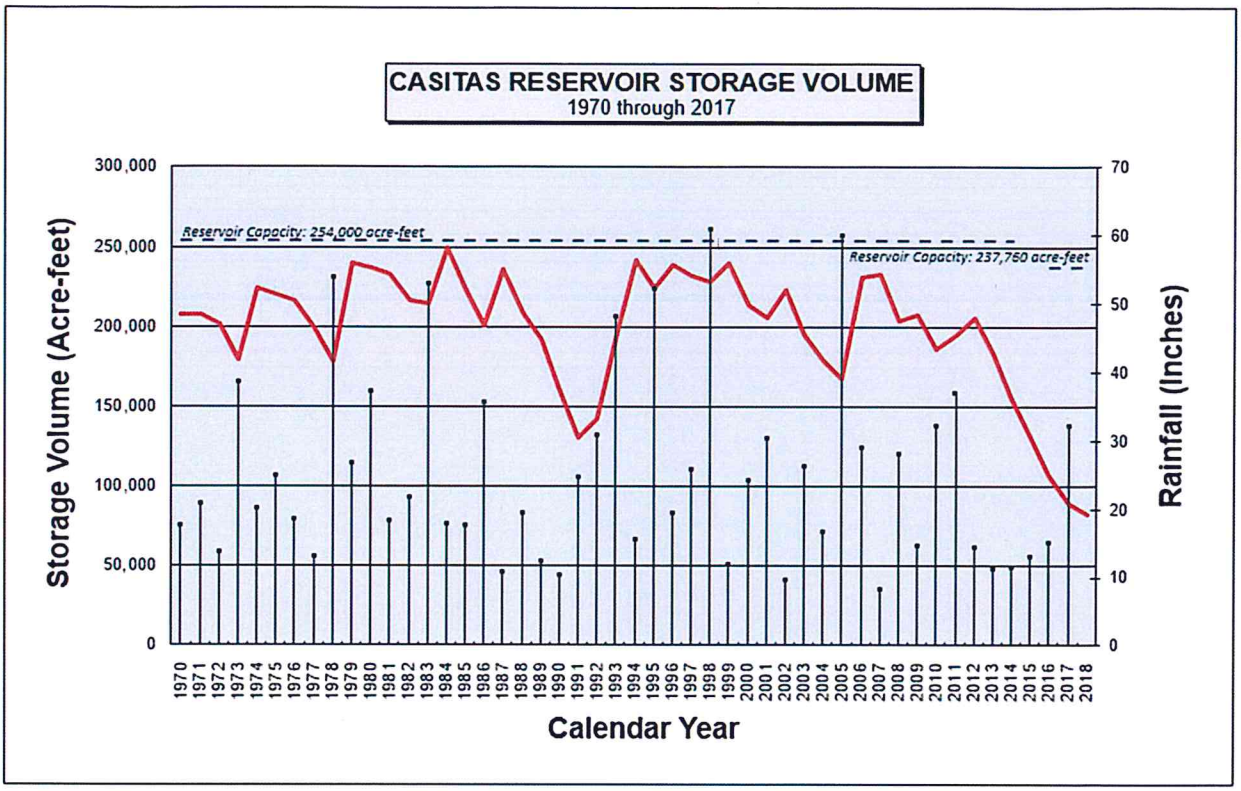


Figure 1. Storage volume, represented by a solid line, is reservoir storage at the start of each calendar year (elevation measured on last day of previous calendar year). Rainfall, represented by data points with drop lines, is the three-station water year average for Casitas Dam, Casitas Recreation and Matilija Dam rain gages. Reservoir volume prior to 1970 (not shown) represents initial filling period after Casitas Dam completion in 1959.

## Trends

The historical section of this summary report contains data tables and figures that illustrate trends experienced by CMWD pertaining to rainfall and water use.

**Ten-Year Moving Average of Mean Precipitation**. The trend presented here is a ten-year moving average of precipitation from 1880 to present (Figure 2). It is created by calculating an average of a water year's three-station average rainfall combined with the previous nine years. The trend has resulted in what appears to be a somewhat sinusoidal curve, illustrating reoccurring periods of wet and dry conditions. From the curve, we may gain an insight on whether we are heading into a wet period or a drought.

The trend indicates that CMWD may be in or at the end of an overall dry period as illustrated by the downward direction of the trendline. Previous downward trends have lasted between 4 and 19 years. It is unknown if the above-average rainfall in WY 2017 marks the end of a 15 year dry period or if it is only a short respite during the ongoing drought. This trend does not guarantee or predict future occurrences.

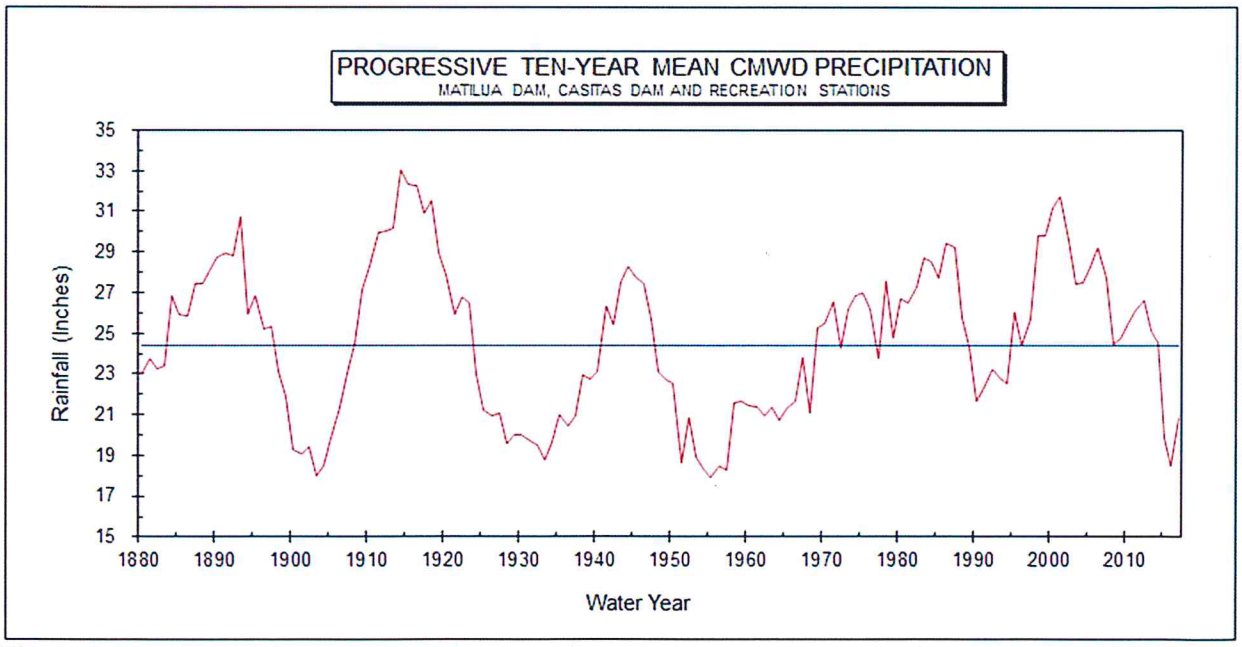


Figure 2. The ten-year moving average is represented by the solid line traversing across the overall average for the period (24.4 inches). Rainfall data for all three stations are available since 1959, rainfall prior to 1959 was assembled using comparable nearby stations and/or correlation factors with other available stations within the watershed.

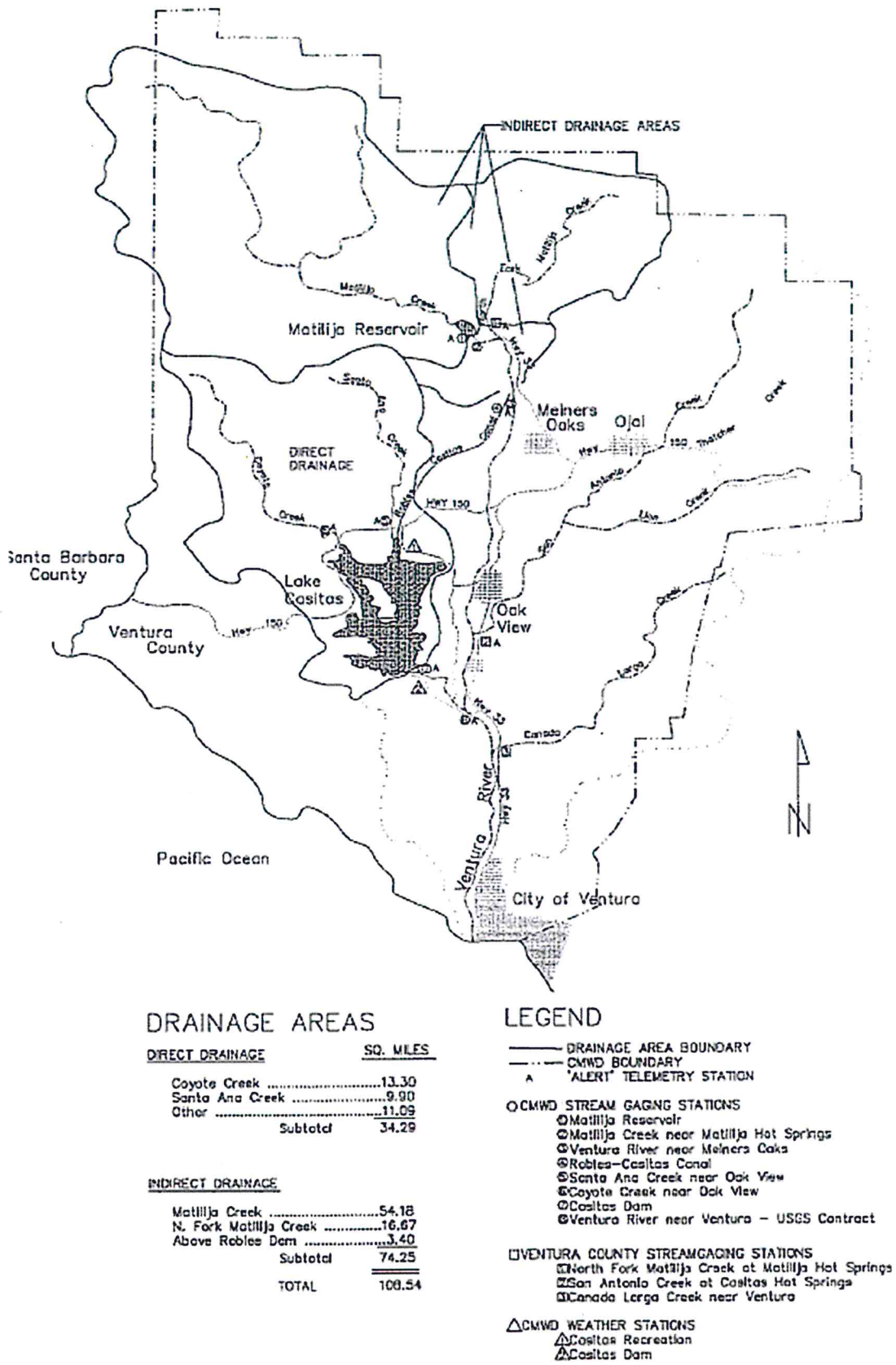


Figure 3. Hydrology map of Ventura River Watershed indicating drainages boundaries, stream gaging stations, and weather stations.

# ANNUAL HYDROLOGY DATA

**Casitas Reservoir Water Inventory Summary**

**Mira Monte Well Water Production**

**Ojai System Sources and Deliveries**

**Reservoir Water Surface Elevations:**

- Matilija Dam
- Casitas Dam (listed in Monthly Casitas Reservoir Inventory)

**Rainfall Stations:**

- Matilija Dam
- Lake Casitas (upper) Recreation Area
- Casitas Dam
- Ojai – Thacher School

**Streamflow Gaging Stations:**

- Matilija Creek at Matilija Hot Springs
- North Fork Matilija Creek at Matilija Hot Springs
- Ventura River near Meiners Oaks (Robles measurement weir)
- Robles – Casitas Canal
- Ventura River near Ventura (Foster Park)
- Santa Ana Creek near Oak View
- Coyote Creek near Oak View
- San Antonio Creek at Old Creek Rd

# Casitas Reservoir Water Inventory Summary

CASITAS RESERVOIR WATER INVENTORY SUMMARY

**2016 - 2017 WATER YEAR**

figures in acre-feet except where otherwise noted

| | RESERVOIR (last of previous month) | | RESERVOIR INFLOW | | | | RESERVOIR RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| MONTH | ELEV (ft) | STORAGE | DIRECT | VENTURA RIVER DIVERSIONS | TOTAL | PRECIP | EVAP | TO MAIN SYSTEM | SPILL | CHANGE IN STORAGE |
| OCT 2016 | 489.00 | 93464 | -159 | 0 | -159 | 82 | 322 | 1526 | 0 | -1924 |
| NOV 2016 | 487.62 | 91540 | -166 | 0 | -166 | 90 | 205 | 1080 | 0 | -1362 |
| DEC 2016 | 486.63 | 90178 | -389 | 0 | -389 | 450 | 146 | 749 | 0 | -834 |
| JAN 2017 | 486.02 | 89344 | 2768 | 578 | 3346 | 1219 | 79 | 436 | 0 | 4050 |
| FEB 2017 | 488.95 | 93394 | 10786 | 4482 | 15268 | 1519 | 87 | 257 | 0 | 16443 |
| MAR 2017 | 499.95 | 109837 | 1152 | 1031 | 2183 | 172 | 277 | 371 | 0 | 1707 |
| APR 2017 | 501.02 | 111544 | 61 | 0 | 61 | 67 | 491 | 1026 | 0 | -1388 |
| MAY 2017 | 500.15 | 110156 | 105 | 0 | 105 | 20 | 649 | 1202 | 0 | -1725 |
| JUN 2017 | 499.06 | 108431 | 74 | 0 | 74 | 0 | 746 | 1339 | 0 | -2011 |
| JUL 2017 | 497.77 | 106420 | -61 | 0 | -61 | 0 | 842 | 1463 | 0 | -2366 |
| AUG 2017 | 496.23 | 104054 | -65 | 0 | -65 | 1 | 702 | 1412 | 0 | -2178 |
| SEP 2017 | 494.79 | 101876 | -166 | 0 | -166 | 16 | 560 | 1313 | 0 | -2023 |
| OCT 2017 | 493.43 | 99853 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| TOTAL | | | 13941 | 6091 | 20032 | 3637 | 5106 | 12174 | 0 | 6389 |

reservoir capacity = 254,000 a.f. @ 567 ft.

\\CWDBKUPDC\eng\ENGR.WKS\HYDROLOGY\Casitas Dam\Annual\[CasitasReservoir2017.xls]Mar. 2017

CASITAS RESERVOIR OPERATION

**OCTOBER 2016**

*figures in acre-feet except where otherwise noted

| | RESERVOIR (@ 0800 hrs.) | | | INFLOW | | | EVAPORATION | | | PRECIPITATION | | | RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Elevation (ft MSL) | *Sep 30th 93464* Storage | Surface Area (acres) | Direct | Ventura River Divers'n | Total | Pan @Dam (in) | Pan @Rec (in) | Lake Total | at Dam (in) | at Rec (in) | Lake Total | To Main System | To River | Spill | **STORAGE CHANGE** |
| 1 | 488.94 | 93380 | 1404 | -19 | 0 | -19 | 0.21 | 0.11 | 14 | 0 | 0 | 0 | 51 | 0 | 0 | -84 |
| 2 | 488.89 | 93310 | 1403 | -7 | 0 | -7 | 0.28 | 0.11 | 17 | 0 | 0 | 0 | 46 | 0 | 0 | -70 |
| 3 | 488.84 | 93240 | 1403 | 3 | 0 | 3 | 0.15 | 0.09 | 11 | 0 | 0 | 0 | 63 | 0 | 0 | -70 |
| 4 | 488.76 | 93128 | 1401 | -34 | 0 | -34 | 0.16 | 0.08 | 11 | 0 | 0 | 0 | 67 | 0 | 0 | -112 |
| 5 | 488.71 | 93058 | 1401 | 3 | 0 | 3 | 0.17 | 0.09 | 11 | 0 | 0 | 0 | 61 | 0 | 0 | -70 |
| 6 | 488.64 | 92960 | 1400 | -26 | 0 | -26 | 0.23 | 0.09 | 14 | 0 | 0 | 0 | 58 | 0 | 0 | -98 |
| 7 | 488.59 | 92889 | 1398 | 2 | 0 | 2 | 0.19 | 0.10 | 13 | 0 | 0 | 0 | 60 | 0 | 0 | -71 |
| 8 | 488.53 | 92806 | 1398 | -27 | 0 | -27 | 0.24 | 0.08 | 14 | 0 | 0 | 0 | 42 | 0 | 0 | -83 |
| 9 | 488.49 | 92751 | 1396 | 6 | 0 | 6 | 0.34 | 0.11 | 20 | 0 | 0 | 0 | 41 | 0 | 0 | -55 |
| 10 | 488.42 | 92653 | 1396 | -29 | 0 | -29 | 0.13 | 0.09 | 10 | 0 | 0 | 0 | 59 | 0 | 0 | -98 |
| 11 | 488.35 | 92555 | 1395 | -15 | 0 | -15 | 0.27 | 0.08 | 15 | 0 | 0 | 0 | 68 | 0 | 0 | -98 |
| 12 | 488.29 | 92471 | 1393 | -17 | 0 | -17 | 0.19 | 0.08 | 12 | 0 | 0 | 0 | 55 | 0 | 0 | -84 |
| 13 | 488.24 | 92401 | 1393 | 5 | 0 | 5 | 0.24 | 0.12 | 16 | 0 | 0 | 0 | 60 | 0 | 0 | -70 |
| 14 | 488.19 | 92331 | 1392 | -7 | 0 | -7 | 0.14 | 0.12 | 11 | 0 | 0 | 0 | 52 | 0 | 0 | -70 |
| 15 | 488.15 | 92275 | 1392 | -5 | 0 | -5 | 0.17 | 0.09 | 11 | 0 | 0 | 0 | 39 | 0 | 0 | -56 |
| 16 | 488.11 | 92219 | 1392 | -10 | 0 | -10 | 0.24 | 0.09 | 14 | 0 | 0 | 0 | 32 | 0 | 0 | -56 |
| 17 | 488.14 | 92261 | 1392 | 71 | 0 | 71 | 0.00 | 0.00 | 0 | 0.22 | 0.07 | 17 | 46 | 0 | 0 | 42 |
| 18 | 488.10 | 92205 | 1392 | 9 | 0 | 9 | 0.14 | 0.08 | 10 | 0 | 0 | 0 | 55 | 0 | 0 | -56 |
| 19 | 488.03 | 92106 | 1390 | -26 | 0 | -26 | 0.17 | 0.11 | 12 | 0 | 0 | 0 | 61 | 0 | 0 | -99 |
| 20 | 487.96 | 92010 | 1388 | -26 | 0 | -26 | 0.08 | 0.09 | 7 | 0 | 0 | 0 | 63 | 0 | 0 | -97 |
| 21 | 487.89 | 91914 | 1387 | -18 | 0 | -18 | 0.21 | 0.10 | 13 | 0 | 0 | 0 | 65 | 0 | 0 | -96 |
| 22 | 487.82 | 91817 | 1387 | -38 | 0 | -38 | 0.20 | 0.08 | 12 | 0 | 0 | 0 | 47 | 0 | 0 | -97 |
| 23 | 487.78 | 91760 | 1385 | -5 | 0 | -5 | 0.13 | 0.09 | 10 | 0 | 0 | 0 | 42 | 0 | 0 | -56 |
| 24 | 487.77 | 91747 | 1385 | 47 | 0 | 47 | 0.07 | 0.09 | 7 | 0 | 0 | 0 | 54 | 0 | 0 | -14 |
| 25 | 487.72 | 91678 | 1385 | -5 | 0 | -5 | 0.17 | 0.08 | 11 | 0 | 0 | 0 | 53 | 0 | 0 | -69 |
| 26 | 487.68 | 91622 | 1384 | 3 | 0 | 3 | 0.17 | 0.09 | 11 | 0 | 0 | 0 | 47 | 0 | 0 | -55 |
| 27 | 487.65 | 91581 | 1384 | 1 | 0 | 1 | 0.08 | 0.08 | 7 | 0 | 0 | 0 | 36 | 0 | 0 | -41 |
| 28 | 487.64 | 91567 | 1384 | -29 | 0 | -29 | 0.00 | 0.00 | 0 | 0.26 | 0.45 | 41 | 26 | 0 | 0 | -14 |
| 29 | 487.63 | 91553 | 1384 | 12 | 0 | 12 | 0.08 | 0.06 | 6 | 0.06 | 0.00 | 3 | 23 | 0 | 0 | -14 |
| 30 | 487.61 | 91526 | 1384 | -10 | 0 | -10 | 0.00 | 0.06 | 3 | 0.08 | 0.00 | 5 | 19 | 0 | 0 | -28 |
| 31 | 487.62 | 91540 | 1384 | 38 | 0 | 38 | 0.00 | 0.00 | 0 | 0.00 | 0.19 | 11 | 35 | 0 | 0 | 14 |
| TOTAL | | | | -159 | 0 | -159 | 4.85 | 2.54 | 322 | 0.71 | 0.71 | 82 | 1526 | 0 | 0 | -1924 |

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

**NOVEMBER 2016**

*figures in acre-feet except where otherwise noted

| | RESERVOIR (@ 0800 hrs.) | | | INFLOW | | | EVAPORATION | | | PRECIPITATION | | | RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Elevation (ft MSL) | *Oct 31st* *91540* Storage | Surface Area (acres) | Direct | Ventura River Divers'n | Total | Pan @Dam (in) | Pan @Rec (in) | Lake Total | at Dam (in) | at Rec (in) | Lake Total | To Main System | To River | Spill | **STORAGE CHANGE** |
| 1 | 487.58 | 91484 | 1382 | -31 | 0 | -31 | 0.04 | 0.08 | 5 | 0 | 0 | 0 | 19 | 0 | 0 | -55 |
| 2 | 487.55 | 91443 | 1382 | -13 | 0 | -13 | 0.03 | 0.09 | 5 | 0 | 0 | 0 | 23 | 0 | 0 | -41 |
| 3 | 487.54 | 91429 | 1382 | 17 | 0 | 17 | 0.11 | 0.09 | 8 | 0 | 0 | 0 | 23 | 0 | 0 | -14 |
| 4 | 487.50 | 91374 | 1382 | -13 | 0 | -13 | 0.15 | 0.08 | 10 | 0 | 0 | 0 | 33 | 0 | 0 | -55 |
| 5 | 487.47 | 91333 | 1380 | -4 | 0 | -4 | 0.12 | 0.07 | 8 | 0 | 0 | 0 | 30 | 0 | 0 | -41 |
| 6 | 487.43 | 91277 | 1380 | -20 | 0 | -20 | 0.09 | 0.09 | 7 | 0 | 0 | 0 | 28 | 0 | 0 | -55 |
| 7 | 487.41 | 91250 | 1380 | 29 | 0 | 29 | 0.03 | 0.08 | 5 | 0 | 0 | 0 | 52 | 0 | 0 | -28 |
| 8 | 487.36 | 91181 | 1379 | -10 | 0 | -10 | 0.07 | 0.10 | 7 | 0 | 0 | 0 | 52 | 0 | 0 | -68 |
| 9 | 487.29 | 91083 | 1377 | -24 | 0 | -24 | 0.18 | 0.19 | 15 | 0 | 0 | 0 | 59 | 0 | 0 | -98 |
| 10 | 487.25 | 91028 | 1377 | 15 | 0 | 15 | 0.10 | 0.10 | 8 | 0 | 0 | 0 | 62 | 0 | 0 | -55 |
| 11 | 487.20 | 90959 | 1377 | 2 | 0 | 2 | 0.16 | 0.09 | 10 | 0 | 0 | 0 | 61 | 0 | 0 | -69 |
| 12 | 487.14 | 90876 | 1376 | -19 | 0 | -19 | 0.11 | 0.11 | 9 | 0 | 0 | 0 | 55 | 0 | 0 | -83 |
| 13 | 487.10 | 90821 | 1376 | -5 | 0 | -5 | 0.17 | 0.11 | 12 | 0 | 0 | 0 | 38 | 0 | 0 | -55 |
| 14 | 487.07 | 90779 | 1374 | 7 | 0 | 7 | 0.15 | 0.07 | 9 | 0 | 0 | 0 | 40 | 0 | 0 | -42 |
| 15 | 487.03 | 90724 | 1374 | 7 | 0 | 7 | 0.11 | 0.07 | 7 | 0 | 0 | 0 | 55 | 0 | 0 | -55 |
| 16 | 486.97 | 90641 | 1372 | -25 | 0 | -25 | 0.09 | 0.06 | 6 | 0 | 0 | 0 | 52 | 0 | 0 | -83 |
| 17 | 486.92 | 90573 | 1372 | -8 | 0 | -8 | 0.13 | 0.09 | 9 | 0 | 0 | 0 | 51 | 0 | 0 | -68 |
| 18 | 486.83 | 90451 | 1371 | -65 | 0 | -65 | 0.10 | 0.07 | 7 | 0 | 0 | 0 | 50 | 0 | 0 | -122 |
| 19 | 486.79 | 90395 | 1369 | -12 | 0 | -12 | 0.23 | 0.05 | 12 | 0 | 0 | 0 | 32 | 0 | 0 | -56 |
| 20 | 486.75 | 90341 | 1369 | -32 | 0 | -32 | 0.11 | 0.07 | 7 | 0 | 0 | 0 | 16 | 0 | 0 | -54 |
| 21 | 486.79 | 90395 | 1369 | 28 | 0 | 28 | 0.00 | 0.00 | 0 | 0.35 | 0.40 | 43 | 16 | 0 | 0 | 54 |
| 22 | 486.77 | 90368 | 1369 | 15 | 0 | 15 | 0.00 | 0.06 | 2 | 0 | 0 | 0 | 40 | 0 | 0 | -27 |
| 23 | 486.74 | 90327 | 1369 | -7 | 0 | -7 | 0.00 | 0.05 | 2 | 0 | 0 | 0 | 32 | 0 | 0 | -41 |
| 24 | 486.70 | 90273 | 1369 | -25 | 0 | -25 | 0.08 | 0.07 | 6 | 0 | 0 | 0 | 23 | 0 | 0 | -54 |
| 25 | 486.67 | 90233 | 1368 | -5 | 0 | -5 | 0.12 | 0.06 | 7 | 0 | 0 | 0 | 27 | 0 | 0 | -40 |
| 26 | 486.63 | 90178 | 1368 | -32 | 0 | -32 | 0.10 | 0.00 | 4 | 0 | 0 | 0 | 18 | 0 | 0 | -55 |
| 27 | 486.64 | 90192 | 1368 | -8 | 0 | -8 | 0.00 | 0.06 | 2 | 0.48 | 0.34 | 47 | 22 | 0 | 0 | 14 |
| 28 | 486.67 | 90233 | 1368 | 60 | 0 | 60 | 0.00 | 0.05 | 2 | 0 | 0 | 0 | 17 | 0 | 0 | 41 |
| 29 | 486.65 | 90206 | 1368 | 2 | 0 | 2 | 0.10 | 0.06 | 7 | 0 | 0 | 0 | 23 | 0 | 0 | -27 |
| 30 | 486.63 | 90178 | 1368 | 10 | 0 | 10 | 0.06 | 0.05 | 5 | 0 | 0 | 0 | 33 | 0 | 0 | -27 |
| TOTAL | | | | -166 | 0 | -166 | 2.74 | 2.22 | 205 | 0.83 | 0.74 | 90 | 1080 | 0 | 0 | -1362 |

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

**DECEMBER 2016**

*figures in acre-feet except where otherwise noted

| | RESERVOIR (@ 0800 hrs.) | | | INFLOW | | | EVAPORATION | | | PRECIPITATION | | | RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Elevation (ft MSL) | *Nov 30th 90178* Storage | Surface Area (acres) | Direct | Ventura River Divers'n | Total | Pan @Dam (in) | Pan @Rec (in) | Lake Total | at Dam (in) | at Rec (in) | Lake Total | To Main System | To River | Spill | **STORAGE CHANGE** |
| 1 | 486.59 | 90123 | 1366 | -5 | 0 | -5 | 0.43 | 0.06 | 18 | 0 | 0 | 0 | 32 | 0 | 0 | -55 |
| 2 | 486.56 | 90082 | 1366 | -7 | 0 | -7 | 0.04 | 0.06 | 4 | 0 | 0 | 0 | 31 | 0 | 0 | -41 |
| 3 | 486.54 | 90055 | 1366 | 7 | 0 | 7 | 0.10 | 0.07 | 6 | 0 | 0 | 0 | 28 | 0 | 0 | -27 |
| 4 | 486.51 | 90014 | 1366 | -10 | 0 | -10 | 0.13 | 0.07 | 8 | 0 | 0 | 0 | 24 | 0 | 0 | -41 |
| 5 | 486.47 | 89958 | 1364 | -9 | 0 | -9 | 0.02 | 0.05 | 3 | 0 | 0 | 0 | 44 | 0 | 0 | -56 |
| 6 | 486.37 | 89823 | 1363 | -82 | 0 | -82 | 0.07 | 0.05 | 4 | 0 | 0 | 0 | 49 | 0 | 0 | -135 |
| 7 | 486.27 | 89685 | 1361 | -92 | 0 | -92 | 0.04 | 0.06 | 4 | 0 | 0 | 0 | 42 | 0 | 0 | -138 |
| 8 | 486.23 | 89631 | 1361 | 4 | 0 | 4 | 0.01 | 0.06 | 3 | 0 | 0 | 0 | 55 | 0 | 0 | -54 |
| 9 | 486.17 | 89550 | 1360 | -46 | 0 | -46 | 0.04 | 0.06 | 4 | 0 | 0 | 0 | 31 | 0 | 0 | -81 |
| 10 | 486.13 | 89495 | 1360 | -20 | 0 | -20 | 0.15 | 0.05 | 7 | 0.01 | 0.00 | 1 | 28 | 0 | 0 | -55 |
| 11 | 486.10 | 89454 | 1360 | -10 | 0 | -10 | 0.02 | 0.16 | 7 | 0 | 0 | 0 | 24 | 0 | 0 | -41 |
| 12 | 486.09 | 89439 | 1358 | 19 | 0 | 19 | 0.01 | 0.04 | 2 | 0 | 0 | 0 | 33 | 0 | 0 | -16 |
| 13 | 486.07 | 89412 | 1358 | -5 | 0 | -5 | 0.01 | 0.06 | 3 | 0 | 0 | 0 | 20 | 0 | 0 | -27 |
| 14 | 486.04 | 89371 | 1358 | -18 | 0 | -18 | 0.00 | 0.06 | 2 | 0 | 0 | 0 | 21 | 0 | 0 | -41 |
| 15 | 486.03 | 89358 | 1358 | 12 | 0 | 12 | 0.02 | 0.07 | 3 | 0 | 0 | 0 | 22 | 0 | 0 | -14 |
| 16 | 486.15 | 89523 | 1360 | -40 | 0 | -40 | 0.00 | 0.00 | 0 | 1.93 | 1.91 | 218 | 12 | 0 | 0 | 165 |
| 17 | 486.14 | 89509 | 1360 | 17 | 0 | 17 | 0.35 | 0.09 | 16 | 0 | 0 | 0 | 14 | 0 | 0 | -14 |
| 18 | 486.10 | 89454 | 1360 | -28 | 0 | -28 | 0.03 | 0.08 | 4 | 0 | 0 | 0 | 23 | 0 | 0 | -55 |
| 19 | 486.08 | 89425 | 1358 | -12 | 0 | -12 | 0.08 | 0.02 | 4 | 0 | 0 | 0 | 13 | 0 | 0 | -29 |
| 20 | 486.07 | 89412 | 1358 | 8 | 0 | 8 | 0.06 | 0.05 | 4 | 0 | 0 | 0 | 18 | 0 | 0 | -14 |
| 21 | 486.06 | 89398 | 1358 | 5 | 0 | 5 | 0.07 | 0.07 | 5 | 0 | 0 | 0 | 14 | 0 | 0 | -14 |
| 22 | 486.02 | 89344 | 1358 | -44 | 0 | -44 | 0.00 | 0.00 | 0 | 0.06 | 0.04 | 6 | 16 | 0 | 0 | -54 |
| 23 | 486.00 | 89317 | 1358 | -10 | 0 | -10 | 0.04 | 0.05 | 3 | 0 | 0 | 0 | 14 | 0 | 0 | -27 |
| 24 | 486.14 | 89509 | 1360 | 27 | 0 | 27 | 0.00 | 0.00 | 0 | 1.76 | 1.50 | 185 | 20 | 0 | 0 | 192 |
| 25 | 486.16 | 89536 | 1360 | 48 | 0 | 48 | 0.09 | 0.06 | 6 | 0 | 0 | 0 | 15 | 0 | 0 | 27 |
| 26 | 486.15 | 89523 | 1360 | 7 | 0 | 7 | 0.08 | 0.07 | 6 | 0 | 0 | 0 | 15 | 0 | 0 | -14 |
| 27 | 486.10 | 89454 | 1360 | -46 | 0 | -46 | 0.09 | 0.06 | 6 | 0 | 0 | 0 | 17 | 0 | 0 | -69 |
| 28 | 486.07 | 89412 | 1358 | -16 | 0 | -16 | 0.07 | 0.07 | 5 | 0 | 0 | 0 | 21 | 0 | 0 | -43 |
| 29 | 486.04 | 89371 | 1358 | -11 | 0 | -11 | 0.08 | 0.16 | 9 | 0 | 0 | 0 | 21 | 0 | 0 | -41 |
| 30 | 486.04 | 89371 | 1358 | 1 | 0 | 1 | 0.00 | 0.00 | 0 | 0.17 | 0.14 | 18 | 18 | 0 | 0 | 0 |
| 31 | 486.02 | 89344 | 1358 | -37 | 0 | -37 | 0.01 | 0.00 | 0 | 0.22 | 0.20 | 24 | 14 | 0 | 0 | -27 |
| TOTAL | | | | -389 | 0 | -389 | 2.14 | 1.76 | 146 | 4.15 | 3.79 | 450 | 749 | 0 | 0 | -834 |

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

**JANUARY 2017**

*figures in acre-feet except where otherwise noted

| | RESERVOIR (@ 0800 hrs.) | | | INFLOW | | | EVAPORATION | | | PRECIPITATION | | | RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Elevation (ft MSL) | *Dec 31st* *89344* Storage | Surface Area (acres) | Direct | Ventura River Divers'n | Total | Pan @Dam (in) | Pan @Rec (in) | Lake Total | at Dam (in) | at Rec (in) | Lake Total | To Main System | To River | Spill | STORAGE CHANGE |
| 1 | 486.04 | 89371 | 1358 | 41 | 0 | 41 | 0.00 | 0.06 | 2 | 0 | 0 | 0 | 12 | 0 | 0 | 27 |
| 2 | 486.00 | 89317 | 1358 | -30 | 0 | -30 | 0.05 | 0.05 | 4 | 0 | 0 | 0 | 21 | 0 | 0 | -54 |
| 3 | 485.99 | 89304 | 1357 | 3 | 0 | 3 | 0.02 | 0.06 | 3 | 0 | 0 | 0 | 13 | 0 | 0 | -14 |
| 4 | 485.98 | 89290 | 1357 | 13 | 0 | 13 | 0.03 | 0.04 | 3 | 0 | 0 | 0 | 24 | 0 | 0 | -14 |
| 5 | 486.04 | 89371 | 1358 | 44 | 0 | 44 | 0.00 | 0.00 | 0 | 0.00 | 0.90 | 51 | 14 | 0 | 0 | 81 |
| 6 | 486.05 | 89385 | 1358 | -32 | 0 | -32 | 0.08 | 0.06 | 5 | 1.14 | 0.00 | 65 | 14 | 0 | 0 | 14 |
| 7 | 486.06 | 89398 | 1358 | 1 | 0 | 1 | 0.00 | 0.00 | 0 | 0.02 | 0.50 | 29 | 17 | 0 | 0 | 14 |
| 8 | 486.08 | 89425 | 1358 | 18 | 0 | 18 | 0.00 | 0.06 | 2 | 0.39 | 0.00 | 22 | 11 | 0 | 0 | 27 |
| 9 | 486.11 | 89468 | 1360 | -7 | 0 | -7 | 0.00 | 0.00 | 0 | 0.17 | 1.10 | 72 | 22 | 0 | 0 | 43 |
| 10 | 486.13 | 89495 | 1360 | -15 | 0 | -15 | 0.09 | 0.02 | 4 | 1.10 | 0.00 | 62 | 15 | 0 | 0 | 27 |
| 11 | 486.20 | 89590 | 1361 | 76 | 0 | 76 | 0.00 | 0.00 | 0 | 0.00 | 0.65 | 37 | 18 | 0 | 0 | 95 |
| 12 | 486.19 | 89577 | 1360 | -53 | 0 | -53 | 0.07 | 0.00 | 3 | 0.87 | 0.00 | 49 | 7 | 0 | 0 | -13 |
| 13 | 486.21 | 89604 | 1361 | 41 | 0 | 41 | 0.00 | 0.00 | 0 | 0.09 | 0.00 | 5 | 20 | 0 | 0 | 26 |
| 14 | 486.23 | 89631 | 1361 | 29 | 0 | 29 | 0.08 | 0.04 | 4 | 0.35 | 0.00 | 20 | 17 | 0 | 0 | 27 |
| 15 | 486.20 | 89590 | 1361 | -21 | 0 | -21 | 0.13 | 0.06 | 7 | 0 | 0 | 0 | 12 | 0 | 0 | -41 |
| 16 | 486.18 | 89564 | 1360 | -6 | 0 | -6 | 0.03 | 0.07 | 4 | 0 | 0 | 0 | 17 | 0 | 0 | -26 |
| 17 | 486.17 | 89550 | 1360 | 1 | 0 | 1 | 0.02 | 0.03 | 2 | 0 | 0 | 0 | 13 | 0 | 0 | -14 |
| 18 | 486.15 | 89523 | 1360 | -11 | 0 | -11 | 0.05 | 0.04 | 3 | 0 | 0 | 0 | 13 | 0 | 0 | -27 |
| 19 | 486.25 | 89658 | 1361 | -8 | 0 | -8 | 0.00 | 0.00 | 0 | 1.16 | 1.50 | 151 | 8 | 0 | 0 | 136 |
| 20 | 486.29 | 89712 | 1361 | 36 | 0 | 36 | 0.00 | 0.00 | 0 | 0.58 | 0.00 | 33 | 15 | 0 | 0 | 54 |
| 21 | 486.99 | 90668 | 1372 | 738 | 0 | 738 | 0.08 | 0.00 | 3 | 1.93 | 2.10 | 230 | 10 | 0 | 0 | 956 |
| 22 | 487.09 | 90806 | 1374 | -111 | 154 | 43 | 0.00 | 0.00 | 0 | 0.83 | 1.00 | 105 | 9 | 0 | 0 | 138 |
| 23 | 488.43 | 92667 | 1396 | 1196 | 395 | 1591 | 0.00 | 0.00 | 0 | 2.22 | 2.70 | 286 | 17 | 0 | 0 | 1861 |
| 24 | 488.85 | 93254 | 1403 | 575 | 28 | 603 | 0.15 | 0.00 | 6 | 0.03 | 0.00 | 2 | 12 | 0 | 0 | 587 |
| 25 | 488.90 | 93324 | 1404 | 85 | 1 | 87 | 0.07 | 0.00 | 3 | 0 | 0 | 0 | 14 | 0 | 0 | 70 |
| 26 | 488.92 | 93352 | 1404 | 38 | 0 | 38 | 0.05 | 0.01 | 2 | 0 | 0 | 0 | 8 | 0 | 0 | 28 |
| 27 | 488.93 | 93366 | 1404 | 28 | 0 | 28 | 0.04 | 0.04 | 3 | 0 | 0 | 0 | 11 | 0 | 0 | 14 |
| 28 | 488.91 | 93338 | 1404 | -11 | 0 | -11 | 0.02 | 0.07 | 3 | 0 | 0 | 0 | 14 | 0 | 0 | -28 |
| 29 | 488.91 | 93338 | 1404 | 15 | 0 | 15 | 0.12 | 0.04 | 6 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 30 | 488.92 | 93352 | 1404 | 33 | 0 | 33 | 0.08 | 0.07 | 6 | 0 | 0 | 0 | 13 | 0 | 0 | 14 |
| 31 | 488.95 | 93394 | 1404 | 61 | 0 | 61 | 0.00 | 0.04 | 2 | 0 | 0 | 0 | 17 | 0 | 0 | 42 |
| TOTAL | | | | 2768 | 578 | 3346 | 1.26 | 0.86 | 79 | 10.88 | 10.45 | 1219 | 436 | 0 | 0 | 4050 |

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

**FEBRUARY 2017**

*figures in acre-feet except where otherwise noted

| | RESERVOIR (@ 0800 hrs.) | | | INFLOW | | | EVAPORATION | | | PRECIPITATION | | | RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Elevation (ft MSL) | *Jan 31st* *93394* Storage | Surface Area (acres) | Direct | Ventura River Diversn | Total | Pan @Dam (in) | Pan @Rec (in) | Lake Total | at Dam (in) | at Rec (in) | Lake Total | To Main System | To River | Spill | STORAGE CHANGE |
| 1 | 488.94 | 93380 | 1404 | 0 | 0 | 0 | 0.07 | 0.06 | 6 | 0 | 0 | 0 | 8 | 0 | 0 | -14 |
| 2 | 488.96 | 93408 | 1404 | 46 | 0 | 46 | 0.07 | 0.04 | 5 | 0 | 0 | 0 | 13 | 0 | 0 | 28 |
| 3 | 488.99 | 93450 | 1404 | 16 | 0 | 16 | 0.00 | 0.00 | 0 | 0.21 | 0.35 | 33 | 7 | 0 | 0 | 42 |
| 4 | 489.00 | 93464 | 1406 | 18 | 0 | 18 | 0.00 | 0.03 | 1 | 0.17 | 0.00 | 10 | 13 | 0 | 0 | 14 |
| 5 | 488.99 | 93450 | 1404 | -1 | 0 | -1 | 0.06 | 0.00 | 3 | 0 | 0 | 0 | 10 | 0 | 0 | -14 |
| 6 | 489.29 | 93875 | 1409 | -23 | 195 | 172 | 0.00 | 0.00 | 0 | 2.46 | 2.00 | 262 | 9 | 0 | 0 | 425 |
| 7 | 489.85 | 94666 | 1419 | 600 | 123 | 723 | 0.00 | 0.00 | 0 | 0.29 | 1.00 | 76 | 9 | 0 | 0 | 791 |
| 8 | 490.09 | 95005 | 1422 | 269 | 46 | 315 | 0.00 | 0.00 | 0 | 0.43 | 0.10 | 31 | 7 | 0 | 0 | 339 |
| 9 | 490.20 | 95164 | 1425 | 149 | 15 | 164 | 0.00 | 0.00 | 0 | 0.08 | 0.00 | 5 | 9 | 0 | 0 | 159 |
| 10 | 490.26 | 95250 | 1425 | 89 | 4 | 93 | 0.00 | 0.00 | 0 | 0.03 | 0.00 | 2 | 9 | 0 | 0 | 86 |
| 11 | 490.40 | 95450 | 1428 | 117 | 31 | 149 | 0.00 | 0.00 | 0 | 0.47 | 0.55 | 61 | 9 | 0 | 0 | 200 |
| 12 | 490.47 | 95550 | 1428 | 97 | 15 | 112 | 0.10 | 0.00 | 5 | 0.03 | 0.00 | 2 | 9 | 0 | 0 | 100 |
| 13 | 490.51 | 95607 | 1430 | 69 | 6 | 75 | 0.20 | 0.00 | 9 | 0 | 0 | 0 | 9 | 0 | 0 | 57 |
| 14 | 490.54 | 95650 | 1430 | 55 | 1 | 56 | 0.05 | 0.05 | 5 | 0 | 0 | 0 | 8 | 0 | 0 | 43 |
| 15 | 490.56 | 95679 | 1430 | 45 | 0 | 45 | 0.09 | 0.11 | 9 | 0 | 0 | 0 | 7 | 0 | 0 | 29 |
| 16 | 490.58 | 95707 | 1430 | 39 | 0 | 39 | 0.07 | 0.00 | 3 | 0 | 0 | 0 | 7 | 0 | 0 | 29 |
| 17 | 490.61 | 95750 | 1432 | -110 | 122 | 12 | 0.00 | 0.00 | 0 | 0.28 | 0.35 | 38 | 7 | 0 | 0 | 43 |
| 18 | 495.26 | 102584 | 1506 | 5378 | 628 | 6006 | 0.00 | 0.00 | 0 | 7.04 | 6.25 | 834 | 7 | 0 | 0 | 6833 |
| 19 | 496.81 | 104940 | 1534 | 1491 | 875 | 2366 | 0.04 | 0.00 | 2 | 0.07 | 0.00 | 4 | 12 | 0 | 0 | 2357 |
| 20 | 497.58 | 106128 | 1545 | 546 | 568 | 1114 | 0.00 | 0.00 | 0 | 0.67 | 0.65 | 85 | 12 | 0 | 0 | 1188 |
| 21 | 498.19 | 107072 | 1555 | 496 | 432 | 928 | 0.00 | 0.00 | 0 | 0.26 | 0.25 | 33 | 17 | 0 | 0 | 944 |
| 22 | 498.64 | 107774 | 1563 | 358 | 328 | 686 | 0.05 | 0.00 | 3 | 0.19 | 0.25 | 29 | 10 | 0 | 0 | 702 |
| 23 | 498.99 | 108321 | 1568 | 308 | 256 | 564 | 0.09 | 0.04 | 7 | 0 | 0 | 0 | 11 | 0 | 0 | 547 |
| 24 | 499.22 | 108685 | 1574 | 171 | 207 | 378 | 0.13 | 0.01 | 7 | 0 | 0 | 0 | 8 | 0 | 0 | 363 |
| 25 | 499.44 | 109032 | 1577 | 189 | 171 | 361 | 0.11 | 0.00 | 6 | 0 | 0 | 0 | 8 | 0 | 0 | 348 |
| 26 | 499.65 | 109363 | 1581 | 159 | 169 | 328 | 0.00 | 0.04 | 2 | 0.22 | 0.00 | 14 | 10 | 0 | 0 | 331 |
| 27 | 499.80 | 109600 | 1584 | 96 | 155 | 251 | 0.10 | 0.05 | 8 | 0.01 | 0.00 | 1 | 7 | 0 | 0 | 237 |
| 28 | 499.95 | 109837 | 1586 | 119 | 133 | 252 | 0.10 | 0.05 | 8 | 0 | 0 | 0 | 7 | 0 | 0 | 237 |
| TOTAL | | | | 10786 | 4482 | 15268 | 1.33 | 0.48 | 87 | 12.91 | 11.75 | 1519 | 257 | 0 | 0 | 16443 |

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

**MARCH 2017**

*figures in acre-feet except where otherwise noted

| | RESERVOIR (@ 0800 hrs.) | | | INFLOW | | | EVAPORATION | | | PRECIPITATION | | | RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Elevation (ft MSL) | *Feb 28th* *109837* Storage | Surface Area (acres) | Direct | Ventura River Divers'n | Total | Pan @Dam (in) | Pan @Rec (in) | Lake Total | at Dam (in) | at Rec (in) | Lake Total | To Main System | To River | Spill | **STORAGE CHANGE** |
| 1 | 500.08 | 110042 | 1588 | 108 | 110 | 219 | 0.09 | 0.06 | 8 | 0 | 0 | 0 | 6 | 0 | 0 | 205 |
| 2 | 500.19 | 110220 | 1590 | 92 | 101 | 192 | 0.12 | 0.06 | 9 | 0 | 0 | 0 | 6 | 0 | 0 | 178 |
| 3 | 500.29 | 110378 | 1591 | 86 | 89 | 176 | 0.10 | 0.05 | 8 | 0 | 0 | 0 | 10 | 0 | 0 | 158 |
| 4 | 500.37 | 110507 | 1593 | 66 | 84 | 149 | 0.13 | 0.17 | 15 | 0 | 0 | 0 | 5 | 0 | 0 | 129 |
| 5 | 500.45 | 110634 | 1594 | 59 | 83 | 142 | 0.15 | 0.04 | 10 | 0 | 0 | 0 | 6 | 0 | 0 | 127 |
| 6 | 500.54 | 110778 | 1596 | 43 | 69 | 112 | 0.00 | 0.00 | 0 | 0.18 | 0.40 | 39 | 6 | 0 | 0 | 145 |
| 7 | 500.60 | 110874 | 1598 | 50 | 59 | 109 | 0.06 | 0.02 | 4 | 0 | 0 | 0 | 9 | 0 | 0 | 96 |
| 8 | 500.65 | 110954 | 1598 | 45 | 54 | 99 | 0.16 | 0.04 | 10 | 0 | 0 | 0 | 9 | 0 | 0 | 80 |
| 9 | 500.70 | 111033 | 1599 | 55 | 45 | 100 | 0.08 | 0.06 | 7 | 0 | 0 | 0 | 14 | 0 | 0 | 79 |
| 10 | 500.75 | 111113 | 1599 | 64 | 41 | 105 | 0.18 | 0.04 | 11 | 0 | 0 | 0 | 14 | 0 | 0 | 80 |
| 11 | 500.79 | 111176 | 1599 | 45 | 37 | 82 | 0.13 | 0.06 | 10 | 0 | 0 | 0 | 9 | 0 | 0 | 64 |
| 12 | 500.82 | 111225 | 1601 | 40 | 32 | 72 | 0.16 | 0.05 | 11 | 0 | 0 | 0 | 13 | 0 | 0 | 49 |
| 13 | 500.84 | 111257 | 1601 | 32 | 29 | 60 | 0.10 | 0.05 | 8 | 0 | 0 | 0 | 21 | 0 | 0 | 32 |
| 14 | 500.86 | 111289 | 1601 | 33 | 25 | 58 | 0.12 | 0.04 | 8 | 0 | 0 | 0 | 18 | 0 | 0 | 32 |
| 15 | 500.87 | 111305 | 1601 | 22 | 21 | 43 | 0.15 | 0.06 | 11 | 0 | 0 | 0 | 17 | 0 | 0 | 16 |
| 16 | 500.89 | 111337 | 1601 | 41 | 19 | 60 | 0.16 | 0.05 | 11 | 0 | 0 | 0 | 17 | 0 | 0 | 32 |
| 17 | 500.90 | 111352 | 1602 | 22 | 17 | 39 | 0.11 | 0.07 | 9 | 0 | 0 | 0 | 15 | 0 | 0 | 15 |
| 18 | 500.91 | 111368 | 1602 | 23 | 14 | 37 | 0.07 | 0.05 | 6 | 0 | 0 | 0 | 15 | 0 | 0 | 16 |
| 19 | 500.92 | 111384 | 1602 | 29 | 13 | 42 | 0.21 | 0.06 | 14 | 0 | 0 | 0 | 12 | 0 | 0 | 16 |
| 20 | 500.93 | 111400 | 1602 | 30 | 10 | 40 | 0.18 | 0.07 | 13 | 0 | 0 | 0 | 12 | 0 | 0 | 16 |
| 21 | 500.95 | 111432 | 1602 | -33 | 26 | -7 | 0.00 | 0.00 | 0 | 0.39 | 0.33 | 48 | 9 | 0 | 0 | 32 |
| 22 | 501.06 | 111608 | 1604 | 81 | 23 | 104 | 0.00 | 0.00 | 0 | 0.68 | 0.57 | 84 | 11 | 0 | 0 | 177 |
| 23 | 501.06 | 111608 | 1604 | 3 | 12 | 15 | 0.11 | 0.00 | 6 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 24 | 501.07 | 111624 | 1604 | 24 | 8 | 32 | 0.10 | 0.04 | 7 | 0 | 0 | 0 | 9 | 0 | 0 | 16 |
| 25 | 501.07 | 111624 | 1604 | 7 | 6 | 13 | 0.11 | 0.03 | 7 | 0.02 | 0.00 | 1 | 8 | 0 | 0 | 0 |
| 26 | 501.08 | 111640 | 1604 | 35 | 3 | 38 | 0.21 | 0.05 | 13 | 0 | 0 | 0 | 9 | 0 | 0 | 16 |
| 27 | 501.07 | 111624 | 1604 | -1 | 1 | 0 | 0.09 | 0.04 | 7 | 0 | 0 | 0 | 9 | 0 | 0 | -16 |
| 28 | 501.06 | 111608 | 1604 | 10 | 0 | 10 | 0.14 | 0.07 | 11 | 0 | 0 | 0 | 15 | 0 | 0 | -16 |
| 29 | 501.05 | 111592 | 1604 | 19 | 0 | 19 | 0.08 | 0.06 | 7 | 0 | 0 | 0 | 28 | 0 | 0 | -16 |
| 30 | 501.03 | 111560 | 1604 | -5 | 0 | -5 | 0.28 | 0.05 | 17 | 0 | 0 | 0 | 11 | 0 | 0 | -32 |
| 31 | 501.02 | 111544 | 1604 | 27 | 0 | 27 | 0.38 | 0.06 | 22 | 0 | 0 | 0 | 20 | 0 | 0 | -16 |
| TOTAL | | | | 1152 | 1031 | 2183 | 3.96 | 1.50 | 277 | 1.27 | 1.30 | 172 | 371 | 0 | 0 | 1707 |

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

**APRIL 2017**

*figures in acre-feet except where otherwise noted

| | RESERVOIR (@ 0800 hrs.) | | | INFLOW | | | EVAPORATION | | | PRECIPITATION | | | RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Elevation (ft MSL) | *Mar 31st* *111544* Storage | Surface Area (acres) | Direct | Ventura River Divers'n | Total | Pan @Dam (in) | Pan @Rec (in) | Lake Total | at Dam (in) | at Rec (in) | Lake Total | To Main System | To River | Spill | STORAGE CHANGE |
| 1 | 501.00 | 111512 | 1604 | 5 | 0 | 5 | 0.13 | 0.16 | 16 | 0 | 0 | 0 | 22 | 0 | 0 | -32 |
| 2 | 500.98 | 111479 | 1602 | 3 | 0 | 3 | 0.30 | 0.07 | 20 | 0 | 0 | 0 | 16 | 0 | 0 | -33 |
| 3 | 500.96 | 111447 | 1602 | 21 | 0 | 21 | 0.19 | 0.07 | 14 | 0 | 0 | 0 | 39 | 0 | 0 | -32 |
| 4 | 500.94 | 111416 | 1602 | 19 | 0 | 19 | 0.11 | 0.07 | 10 | 0 | 0 | 0 | 41 | 0 | 0 | -32 |
| 5 | 500.91 | 111368 | 1602 | -12 | 0 | -12 | 0.09 | 0.07 | 9 | 0 | 0 | 0 | 27 | 0 | 0 | -48 |
| 6 | 500.88 | 111321 | 1602 | -9 | 0 | -9 | 0.13 | 0.06 | 10 | 0 | 0 | 0 | 27 | 0 | 0 | -47 |
| 7 | 500.85 | 111273 | 1601 | -4 | 0 | -4 | 0.21 | 0.06 | 14 | 0 | 0 | 0 | 29 | 0 | 0 | -48 |
| 8 | 500.86 | 111289 | 1601 | -6 | 0 | -6 | 0.00 | 0.00 | 0 | 0.38 | 0.33 | 47 | 26 | 0 | 0 | 16 |
| 9 | 500.83 | 111241 | 1601 | -10 | 0 | -10 | 0.21 | 0.06 | 14 | 0 | 0 | 0 | 24 | 0 | 0 | -48 |
| 10 | 500.81 | 111209 | 1601 | 14 | 0 | 14 | 0.12 | 0.00 | 6 | 0 | 0 | 0 | 40 | 0 | 0 | -32 |
| 11 | 500.77 | 111144 | 1599 | -10 | 0 | -10 | 0.23 | 0.04 | 14 | 0 | 0 | 0 | 40 | 0 | 0 | -65 |
| 12 | 500.74 | 111097 | 1599 | -3 | 0 | -3 | 0.10 | 0.04 | 7 | 0 | 0 | 0 | 37 | 0 | 0 | -48 |
| 13 | 500.72 | 111065 | 1599 | 10 | 0 | 10 | 0.12 | 0.06 | 10 | 0 | 0 | 0 | 33 | 0 | 0 | -32 |
| 14 | 500.68 | 111002 | 1598 | -2 | 0 | -2 | 0.19 | 0.06 | 13 | 0 | 0 | 0 | 48 | 0 | 0 | -63 |
| 15 | 500.65 | 110954 | 1598 | -14 | 0 | -14 | 0.03 | 0.05 | 4 | 0 | 0 | 0 | 30 | 0 | 0 | -48 |
| 16 | 500.62 | 110906 | 1598 | 5 | 0 | 5 | 0.29 | 0.05 | 18 | 0 | 0 | 0 | 34 | 0 | 0 | -48 |
| 17 | 500.60 | 110874 | 1598 | 16 | 0 | 16 | 0.24 | 0.05 | 15 | 0 | 0 | 0 | 33 | 0 | 0 | -32 |
| 18 | 500.58 | 110842 | 1596 | 16 | 0 | 16 | 0.07 | 0.07 | 7 | 0 | 0 | 0 | 41 | 0 | 0 | -32 |
| 19 | 500.56 | 110810 | 1596 | -15 | 0 | -15 | 0.00 | 0.08 | 4 | 0.15 | 0.15 | 20 | 33 | 0 | 0 | -32 |
| 20 | 500.54 | 110778 | 1596 | 34 | 0 | 34 | 0.28 | 0.06 | 18 | 0 | 0 | 0 | 48 | 0 | 0 | -32 |
| 21 | 500.50 | 110714 | 1596 | -15 | 0 | -15 | 0.19 | 0.08 | 14 | 0 | 0 | 0 | 35 | 0 | 0 | -64 |
| 22 | 500.47 | 110665 | 1594 | 15 | 0 | 15 | 0.24 | 0.24 | 26 | 0 | 0 | 0 | 38 | 0 | 0 | -49 |
| 23 | 500.44 | 110618 | 1594 | 15 | 0 | 15 | 0.40 | 0.40 | 43 | 0 | 0 | 0 | 20 | 0 | 0 | -48 |
| 24 | 500.43 | 110602 | 1594 | 25 | 0 | 25 | 0.13 | 0.13 | 14 | 0 | 0 | 0 | 27 | 0 | 0 | -16 |
| 25 | 500.38 | 110523 | 1593 | -12 | 0 | -12 | 0.18 | 0.18 | 19 | 0 | 0 | 0 | 47 | 0 | 0 | -79 |
| 26 | 500.34 | 110459 | 1593 | -2 | 0 | -2 | 0.23 | 0.23 | 24 | 0 | 0 | 0 | 37 | 0 | 0 | -64 |
| 27 | 500.30 | 110395 | 1593 | -3 | 0 | -3 | 0.18 | 0.18 | 19 | 0 | 0 | 0 | 41 | 0 | 0 | -64 |
| 28 | 500.23 | 110283 | 1591 | -30 | 0 | -30 | 0.34 | 0.34 | 36 | 0 | 0 | 0 | 46 | 0 | 0 | -112 |
| 29 | 500.19 | 110220 | 1590 | -7 | 0 | -7 | 0.21 | 0.21 | 22 | 0 | 0 | 0 | 33 | 0 | 0 | -63 |
| 30 | 500.15 | 110156 | 1590 | 17 | 0 | 17 | 0.46 | 0.46 | 49 | 0 | 0 | 0 | 32 | 0 | 0 | -64 |
| TOTAL | | | | 61 | 0 | 61 | 5.60 | 3.63 | 491 | 0.53 | 0.48 | 67 | 1026 | 0 | 0 | -1388 |

Evaporation at Recreation unavailable. Estimated as equal to evaporation at dam.

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

**MAY 2017**

*figures in acre-feet except where otherwise noted

| | RESERVOIR (@ 0800 hrs.) | | | INFLOW | | | EVAPORATION | | | PRECIPITATION | | | RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Elevation (ft MSL) | *Apr 30th* *110156* Storage | Surface Area (acres) | Direct | Ventura River Divers'n | Total | Pan @Dam (in) | Pan @Rec (in) | Lake Total | at Dam (in) | at Rec (in) | Lake Total | To Main System | To River | Spill | STORAGE CHANGE |
| 1 | 500.13 | 110124 | 1590 | 30 | 0 | 30 | 0.21 | 0.21 | 23 | 0 | 0 | 0 | 40 | 0 | 0 | -32 |
| 2 | 500.09 | 110058 | 1588 | -16 | 0 | -16 | 0.15 | 0.05 | 11 | 0 | 0 | 0 | 39 | 0 | 0 | -66 |
| 3 | 500.05 | 109995 | 1588 | 8 | 0 | 8 | 0.20 | 0.22 | 23 | 0 | 0 | 0 | 49 | 0 | 0 | -63 |
| 4 | 500.01 | 109932 | 1588 | 11 | 0 | 11 | 0.29 | 0.35 | 34 | 0 | 0 | 0 | 40 | 0 | 0 | -63 |
| 5 | 499.97 | 109869 | 1586 | -12 | 0 | -12 | 0.16 | 0.09 | 13 | 0 | 0 | 0 | 37 | 0 | 0 | -63 |
| 6 | 499.94 | 109821 | 1586 | 0 | 0 | 0 | 0.26 | 0.15 | 22 | 0 | 0 | 0 | 25 | 0 | 0 | -47 |
| 7 | 499.92 | 109790 | 1586 | -21 | 0 | -21 | 0.14 | 0.02 | 9 | 0.06 | 0.12 | 12 | 13 | 0 | 0 | -32 |
| 8 | 499.90 | 109758 | 1586 | -7 | 0 | -7 | 0.05 | 0.17 | 12 | 0.08 | 0.03 | 7 | 20 | 0 | 0 | -32 |
| 9 | 499.87 | 109711 | 1584 | -4 | 0 | -4 | 0.06 | 0.04 | 5 | 0 | 0 | 0 | 38 | 0 | 0 | -47 |
| 10 | 499.84 | 109663 | 1584 | 10 | 0 | 10 | 0.22 | 0.14 | 19 | 0 | 0 | 0 | 38 | 0 | 0 | -47 |
| 11 | 499.80 | 109600 | 1584 | -1 | 0 | -1 | 0.17 | 0.12 | 16 | 0 | 0 | 0 | 47 | 0 | 0 | -63 |
| 12 | 499.76 | 109537 | 1583 | -13 | 0 | -13 | 0.10 | 0.22 | 17 | 0 | 0 | 0 | 33 | 0 | 0 | -63 |
| 13 | 499.73 | 109489 | 1583 | -8 | 0 | -8 | 0.07 | 0.13 | 11 | 0 | 0 | 0 | 29 | 0 | 0 | -47 |
| 14 | 499.70 | 109442 | 1583 | 4 | 0 | 4 | 0.35 | 0.16 | 27 | 0 | 0 | 0 | 24 | 0 | 0 | -47 |
| 15 | 499.67 | 109395 | 1581 | 14 | 0 | 14 | 0.20 | 0.17 | 20 | 0 | 0 | 0 | 41 | 0 | 0 | -47 |
| 16 | 499.63 | 109331 | 1581 | 4 | 0 | 4 | 0.23 | 0.15 | 20 | 0 | 0 | 0 | 47 | 0 | 0 | -63 |
| 17 | 499.59 | 109267 | 1579 | 6 | 0 | 6 | 0.19 | 0.22 | 22 | 0 | 0 | 0 | 48 | 0 | 0 | -64 |
| 18 | 499.54 | 109189 | 1579 | -1 | 0 | -1 | 0.19 | 0.38 | 30 | 0 | 0 | 0 | 47 | 0 | 0 | -79 |
| 19 | 499.51 | 109142 | 1579 | 20 | 0 | 20 | 0.18 | 0.24 | 22 | 0 | 0 | 0 | 45 | 0 | 0 | -47 |
| 20 | 499.47 | 109080 | 1577 | 2 | 0 | 2 | 0.29 | 0.26 | 29 | 0 | 0 | 0 | 35 | 0 | 0 | -62 |
| 21 | 499.42 | 109001 | 1577 | -11 | 0 | -11 | 0.26 | 0.27 | 28 | 0 | 0 | 0 | 40 | 0 | 0 | -79 |
| 22 | 499.39 | 108953 | 1575 | 32 | 0 | 32 | 0.39 | 0.25 | 34 | 0 | 0 | 0 | 45 | 0 | 0 | -47 |
| 23 | 499.34 | 108874 | 1575 | -3 | 0 | -3 | 0.08 | 0.27 | 19 | 0 | 0 | 0 | 57 | 0 | 0 | -79 |
| 24 | 499.32 | 108843 | 1575 | 68 | 0 | 68 | 0.48 | 0.24 | 38 | 0 | 0 | 0 | 62 | 0 | 0 | -32 |
| 25 | 499.27 | 108764 | 1574 | -26 | 0 | -26 | 0.17 | 0.19 | 19 | 0.00 | 0.02 | 1 | 35 | 0 | 0 | -79 |
| 26 | 499.24 | 108716 | 1574 | 16 | 0 | 16 | 0.05 | 0.27 | 17 | 0 | 0 | 0 | 47 | 0 | 0 | -47 |
| 27 | 499.20 | 108653 | 1574 | -7 | 0 | -7 | 0.19 | 0.29 | 25 | 0 | 0 | 0 | 31 | 0 | 0 | -63 |
| 28 | 499.17 | 108606 | 1572 | 0 | 0 | 0 | 0.23 | 0.19 | 22 | 0 | 0 | 0 | 26 | 0 | 0 | -47 |
| 29 | 499.14 | 108558 | 1572 | 7 | 0 | 7 | 0.23 | 0.14 | 20 | 0 | 0 | 0 | 34 | 0 | 0 | -47 |
| 30 | 499.10 | 108495 | 1572 | 4 | 0 | 4 | 0.20 | 0.29 | 26 | 0 | 0 | 0 | 42 | 0 | 0 | -63 |
| 31 | 499.06 | 108431 | 1570 | -4 | 0 | -4 | 0.17 | 0.13 | 16 | 0 | 0 | 0 | 45 | 0 | 0 | -64 |
| TOTAL | | | | 105 | 0 | 105 | 6.16 | 6.02 | 649 | 0.14 | 0.17 | 20 | 1202 | 0 | 0 | -1725 |

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

**JUNE 2017**

*figures in acre-feet except where otherwise noted

| | RESERVOIR (@ 0800 hrs.) | | | INFLOW | | | EVAPORATION | | | PRECIPITATION | | | RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Elevation (ft MSL) | *May 31st* *108431* Storage | Surface Area (acres) | Direct | Ventura River Divers'n | Total | Pan @Dam (in) | Pan @Rec (in) | Lake Total | at Dam (in) | at Rec (in) | Lake Total | To Main System | To River | Spill | STORAGE CHANGE |
| 1 | 499.02 | 108368 | 1570 | 7 | 0 | 7 | 0.26 | 0.17 | 23 | 0 | 0 | 0 | 47 | 0 | 0 | -62 |
| 2 | 498.98 | 108306 | 1568 | 1 | 0 | 1 | 0.04 | 0.20 | 13 | 0 | 0 | 0 | 51 | 0 | 0 | -62 |
| 3 | 498.93 | 108228 | 1568 | -5 | 0 | -5 | 0.29 | 0.19 | 26 | 0 | 0 | 0 | 47 | 0 | 0 | -78 |
| 4 | 498.89 | 108165 | 1567 | -9 | 0 | -9 | 0.21 | 0.23 | 24 | 0 | 0 | 0 | 30 | 0 | 0 | -62 |
| 5 | 498.85 | 108103 | 1567 | 5 | 0 | 5 | 0.29 | 0.20 | 26 | 0 | 0 | 0 | 42 | 0 | 0 | -62 |
| 6 | 498.81 | 108041 | 1567 | 19 | 0 | 19 | 0.29 | 0.26 | 29 | 0 | 0 | 0 | 52 | 0 | 0 | -62 |
| 7 | 498.78 | 107995 | 1565 | 14 | 0 | 14 | 0.21 | 0.12 | 18 | 0 | 0 | 0 | 43 | 0 | 0 | -46 |
| 8 | 498.74 | 107932 | 1565 | -11 | 0 | -11 | 0.14 | 0.13 | 14 | 0 | 0 | 0 | 37 | 0 | 0 | -63 |
| 9 | 498.72 | 107900 | 1565 | 27 | 0 | 27 | 0.17 | 0.12 | 16 | 0 | 0 | 0 | 42 | 0 | 0 | -31 |
| 10 | 498.68 | 107837 | 1563 | -25 | 0 | -25 | 0.20 | 0.12 | 17 | 0 | 0 | 0 | 22 | 0 | 0 | -64 |
| 11 | 498.66 | 107806 | 1563 | 4 | 0 | 4 | 0.12 | 0.12 | 13 | 0 | 0 | 0 | 23 | 0 | 0 | -31 |
| 12 | 498.63 | 107759 | 1563 | 11 | 0 | 11 | 0.19 | 0.16 | 19 | 0 | 0 | 0 | 39 | 0 | 0 | -47 |
| 13 | 498.59 | 107696 | 1562 | 9 | 0 | 9 | 0.25 | 0.28 | 28 | 0 | 0 | 0 | 43 | 0 | 0 | -62 |
| 14 | 498.55 | 107634 | 1562 | 10 | 0 | 10 | 0.23 | 0.16 | 21 | 0 | 0 | 0 | 52 | 0 | 0 | -62 |
| 15 | 498.49 | 107540 | 1560 | -6 | 0 | -6 | 0.27 | 0.24 | 27 | 0 | 0 | 0 | 60 | 0 | 0 | -94 |
| 16 | 498.43 | 107447 | 1560 | -18 | 0 | -18 | 0.27 | 0.24 | 27 | 0 | 0 | 0 | 49 | 0 | 0 | -94 |
| 17 | 498.39 | 107384 | 1558 | -6 | 0 | -6 | 0.29 | 0.22 | 27 | 0 | 0 | 0 | 29 | 0 | 0 | -62 |
| 18 | 498.36 | 107338 | 1558 | 5 | 0 | 5 | 0.20 | 0.22 | 22 | 0 | 0 | 0 | 29 | 0 | 0 | -47 |
| 19 | 498.33 | 107291 | 1558 | 31 | 0 | 31 | 0.31 | 0.29 | 32 | 0 | 0 | 0 | 46 | 0 | 0 | -47 |
| 20 | 498.29 | 107228 | 1556 | 32 | 0 | 32 | 0.49 | 0.28 | 41 | 0 | 0 | 0 | 53 | 0 | 0 | -62 |
| 21 | 498.24 | 107150 | 1556 | 17 | 0 | 17 | 0.36 | 0.29 | 35 | 0 | 0 | 0 | 60 | 0 | 0 | -78 |
| 22 | 498.18 | 107057 | 1555 | 5 | 0 | 5 | 0.40 | 0.27 | 36 | 0 | 0 | 0 | 63 | 0 | 0 | -94 |
| 23 | 498.12 | 106963 | 1555 | -36 | 0 | -36 | 0.06 | 0.23 | 15 | 0 | 0 | 0 | 42 | 0 | 0 | -94 |
| 24 | 498.06 | 106868 | 1553 | -23 | 0 | -23 | 0.43 | 0.20 | 33 | 0 | 0 | 0 | 38 | 0 | 0 | -95 |
| 25 | 498.04 | 106838 | 1553 | 11 | 0 | 11 | 0.05 | 0.20 | 13 | 0 | 0 | 0 | 29 | 0 | 0 | -31 |
| 26 | 497.99 | 106762 | 1551 | 11 | 0 | 11 | 0.34 | 0.30 | 34 | 0 | 0 | 0 | 54 | 0 | 0 | -76 |
| 27 | 497.94 | 106684 | 1551 | 1 | 0 | 1 | 0.26 | 0.28 | 29 | 0 | 0 | 0 | 50 | 0 | 0 | -78 |
| 28 | 497.88 | 106591 | 1550 | -2 | 0 | -2 | 0.24 | 0.36 | 32 | 0 | 0 | 0 | 59 | 0 | 0 | -93 |
| 29 | 497.82 | 106498 | 1550 | -10 | 0 | -10 | 0.34 | 0.20 | 29 | 0 | 0 | 0 | 55 | 0 | 0 | -93 |
| 30 | 497.77 | 106420 | 1548 | 4 | 0 | 4 | 0.27 | 0.26 | 28 | 0 | 0 | 0 | 54 | 0 | 0 | -78 |
| TOTAL | | | | 74 | 0 | 74 | 7.47 | 6.54 | 746 | 0.00 | 0.00 | 0 | 1339 | 0 | 0 | -2011 |

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

**JULY 2017**

*figures in acre-feet except where otherwise noted

| | RESERVOIR (@ 0800 hrs.) | | | INFLOW | | | EVAPORATION | | | PRECIPITATION | | | RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Elevation (ft MSL) | *Jun 30th* *106420* Storage | Surface Area (acres) | Direct | Ventura River Divers'n | Total | Pan @Dam (in) | Pan @Rec (in) | Lake Total | at Dam (in) | at Rec (in) | Lake Total | To Main System | To River | Spill | **STORAGE CHANGE** |
| 1 | 497.73 | 106358 | 1548 | -5 | 0 | -5 | 0.23 | 0.12 | 18 | 0 | 0 | 0 | 38 | 0 | 0 | -62 |
| 2 | 497.69 | 106297 | 1547 | 10 | 0 | 10 | 0.49 | 0.31 | 42 | 0 | 0 | 0 | 30 | 0 | 0 | -62 |
| 3 | 497.65 | 106235 | 1547 | 12 | 0 | 12 | 0.33 | 0.18 | 27 | 0 | 0 | 0 | 47 | 0 | 0 | -62 |
| 4 | 497.60 | 106158 | 1547 | -23 | 0 | -23 | 0.16 | 0.16 | 17 | 0 | 0 | 0 | 38 | 0 | 0 | -77 |
| 5 | 497.56 | 106097 | 1545 | 13 | 0 | 13 | 0.20 | 0.30 | 26 | 0 | 0 | 0 | 48 | 0 | 0 | -61 |
| 6 | 497.51 | 106020 | 1545 | 3 | 0 | 3 | 0.23 | 0.18 | 21 | 0 | 0 | 0 | 59 | 0 | 0 | -78 |
| 7 | 497.48 | 105973 | 1543 | 45 | 0 | 45 | 0.44 | 0.23 | 35 | 0 | 0 | 0 | 57 | 0 | 0 | -47 |
| 8 | 497.44 | 105911 | 1543 | 21 | 0 | 21 | 0.32 | 0.32 | 33 | 0 | 0 | 0 | 50 | 0 | 0 | -62 |
| 9 | 497.40 | 105849 | 1543 | 6 | 0 | 6 | 0.24 | 0.35 | 31 | 0 | 0 | 0 | 37 | 0 | 0 | -62 |
| 10 | 497.36 | 105786 | 1542 | 18 | 0 | 18 | 0.29 | 0.27 | 29 | 0 | 0 | 0 | 52 | 0 | 0 | -63 |
| 11 | 497.31 | 105709 | 1542 | 10 | 0 | 10 | 0.15 | 0.30 | 23 | 0 | 0 | 0 | 64 | 0 | 0 | -77 |
| 12 | 497.24 | 105602 | 1540 | -14 | 0 | -14 | 0.35 | 0.24 | 31 | 0 | 0 | 0 | 63 | 0 | 0 | -108 |
| 13 | 497.16 | 105479 | 1539 | -35 | 0 | -35 | 0.40 | 0.23 | 33 | 0 | 0 | 0 | 55 | 0 | 0 | -123 |
| 14 | 497.09 | 105369 | 1537 | -32 | 0 | -32 | 0.29 | 0.16 | 23 | 0 | 0 | 0 | 55 | 0 | 0 | -110 |
| 15 | 497.01 | 105246 | 1537 | -64 | 0 | -64 | 0.20 | 0.25 | 23 | 0 | 0 | 0 | 35 | 0 | 0 | -122 |
| 16 | 496.95 | 105155 | 1535 | -36 | 0 | -36 | 0.19 | 0.24 | 22 | 0 | 0 | 0 | 34 | 0 | 0 | -92 |
| 17 | 496.89 | 105063 | 1534 | -9 | 0 | -9 | 0.34 | 0.33 | 35 | 0 | 0 | 0 | 48 | 0 | 0 | -92 |
| 18 | 496.83 | 104971 | 1534 | -22 | 0 | -22 | 0.13 | 0.21 | 18 | 0 | 0 | 0 | 53 | 0 | 0 | -92 |
| 19 | 496.77 | 104879 | 1532 | 1 | 0 | 1 | 0.38 | 0.27 | 34 | 0 | 0 | 0 | 60 | 0 | 0 | -92 |
| 20 | 496.71 | 104787 | 1532 | -6 | 0 | -6 | 0.34 | 0.25 | 31 | 0 | 0 | 0 | 55 | 0 | 0 | -92 |
| 21 | 496.68 | 104741 | 1530 | 30 | 0 | 30 | 0.19 | 0.21 | 21 | 0 | 0 | 0 | 55 | 0 | 0 | -46 |
| 22 | 496.65 | 104696 | 1530 | 17 | 0 | 17 | 0.20 | 0.25 | 23 | 0 | 0 | 0 | 40 | 0 | 0 | -46 |
| 23 | 496.60 | 104619 | 1530 | -19 | 0 | -19 | 0.31 | 0.24 | 28 | 0 | 0 | 0 | 30 | 0 | 0 | -77 |
| 24 | 496.57 | 104572 | 1529 | 34 | 0 | 34 | 0.36 | 0.22 | 30 | 0 | 0 | 0 | 51 | 0 | 0 | -47 |
| 25 | 496.51 | 104481 | 1529 | -16 | 0 | -16 | 0.18 | 0.23 | 21 | 0 | 0 | 0 | 54 | 0 | 0 | -91 |
| 26 | 496.46 | 104406 | 1527 | 3 | 0 | 3 | 0.20 | 0.20 | 21 | 0 | 0 | 0 | 58 | 0 | 0 | -75 |
| 27 | 496.40 | 104314 | 1527 | -14 | 0 | -14 | 0.25 | 0.26 | 26 | 0 | 0 | 0 | 52 | 0 | 0 | -92 |
| 28 | 496.35 | 104238 | 1525 | 8 | 0 | 8 | 0.47 | 0.31 | 40 | 0 | 0 | 0 | 45 | 0 | 0 | -77 |
| 29 | 496.30 | 104161 | 1525 | -17 | 0 | -17 | 0.16 | 0.25 | 21 | 0 | 0 | 0 | 39 | 0 | 0 | -77 |
| 30 | 496.27 | 104115 | 1523 | 8 | 0 | 8 | 0.33 | 0.22 | 28 | 0 | 0 | 0 | 26 | 0 | 0 | -46 |
| 31 | 496.23 | 104054 | 1523 | 11 | 0 | 11 | 0.39 | 0.22 | 31 | 0 | 0 | 0 | 41 | 0 | 0 | -61 |
| TOTAL | | | | -61 | 0 | -61 | 8.74 | 7.51 | 842 | 0.00 | 0.00 | 0 | 1463 | 0 | 0 | -2366 |

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

**August 2017**

*figures in acre-feet except where otherwise noted

| | RESERVOIR (@ 0800 hrs.) | | | INFLOW | | | EVAPORATION | | | PRECIPITATION | | | RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Elevation (ft MSL) | *Jul 31st* *104054* Storage | Surface Area (acres) | Direct | Ventura River Divers'n | Total | Pan @Dam (in) | Pan @Rec (in) | Lake Total | at Dam (in) | at Rec (in) | Lake Total | To Main System | To River | Spill | STORAGE CHANGE |
| 1 | 496.18 | 103977 | 1522 | -4 | 0 | -4 | 0.19 | 0.25 | 23 | 0 | 0 | 0 | 50 | 0 | 0 | -77 |
| 2 | 496.13 | 103901 | 1522 | -9 | 0 | -9 | 0.11 | 0.22 | 17 | 0 | 0.02 | 1 | 52 | 0 | 0 | -77 |
| 3 | 496.08 | 103823 | 1520 | 6 | 0 | 6 | 0.24 | 0.21 | 23 | 0 | 0 | 0 | 61 | 0 | 0 | -78 |
| 4 | 496.03 | 103747 | 1520 | 9 | 0 | 9 | 0.31 | 0.25 | 29 | 0 | 0 | 0 | 56 | 0 | 0 | -76 |
| 5 | 495.98 | 103672 | 1518 | -5 | 0 | -5 | 0.20 | 0.21 | 21 | 0 | 0 | 0 | 50 | 0 | 0 | -76 |
| 6 | 495.93 | 103596 | 1518 | -30 | 0 | -30 | 0.16 | 0.18 | 17 | 0 | 0 | 0 | 28 | 0 | 0 | -76 |
| 7 | 495.88 | 103521 | 1517 | 4 | 0 | 4 | 0.26 | 0.33 | 30 | 0 | 0 | 0 | 50 | 0 | 0 | -76 |
| 8 | 495.83 | 103445 | 1517 | -8 | 0 | -8 | 0.19 | 0.21 | 20 | 0 | 0 | 0 | 47 | 0 | 0 | -76 |
| 9 | 495.78 | 103370 | 1515 | 17 | 0 | 17 | 0.37 | 0.25 | 32 | 0 | 0 | 0 | 61 | 0 | 0 | -76 |
| 10 | 495.73 | 103294 | 1515 | -6 | 0 | -6 | 0.14 | 0.24 | 19 | 0 | 0 | 0 | 50 | 0 | 0 | -76 |
| 11 | 495.68 | 103220 | 1513 | 2 | 0 | 2 | 0.30 | 0.24 | 28 | 0 | 0 | 0 | 49 | 0 | 0 | -75 |
| 12 | 495.63 | 103144 | 1513 | -32 | 0 | -32 | 0.09 | 0.17 | 13 | 0 | 0 | 0 | 31 | 0 | 0 | -76 |
| 13 | 495.59 | 103082 | 1512 | -3 | 0 | -3 | 0.32 | 0.26 | 30 | 0 | 0 | 0 | 29 | 0 | 0 | -62 |
| 14 | 495.55 | 103022 | 1512 | 5 | 0 | 5 | 0.23 | 0.24 | 24 | 0 | 0 | 0 | 41 | 0 | 0 | -60 |
| 15 | 495.51 | 102961 | 1512 | 0 | 0 | 0 | 0.16 | 0.15 | 16 | 0 | 0 | 0 | 44 | 0 | 0 | -60 |
| 16 | 495.47 | 102901 | 1510 | 4 | 0 | 4 | 0.19 | 0.18 | 19 | 0 | 0 | 0 | 46 | 0 | 0 | -60 |
| 17 | 495.43 | 102840 | 1510 | 6 | 0 | 6 | 0.24 | 0.12 | 18 | 0 | 0 | 0 | 48 | 0 | 0 | -60 |
| 18 | 495.39 | 102780 | 1508 | 5 | 0 | 5 | 0.23 | 0.14 | 19 | 0 | 0 | 0 | 47 | 0 | 0 | -60 |
| 19 | 495.34 | 102704 | 1508 | -26 | 0 | -26 | 0.15 | 0.19 | 17 | 0 | 0 | 0 | 32 | 0 | 0 | -76 |
| 20 | 495.30 | 102644 | 1508 | -11 | 0 | -11 | 0.21 | 0.20 | 21 | 0 | 0 | 0 | 29 | 0 | 0 | -60 |
| 21 | 495.26 | 102584 | 1506 | 1 | 0 | 1 | 0.26 | 0.23 | 25 | 0 | 0 | 0 | 36 | 0 | 0 | -60 |
| 22 | 495.22 | 102523 | 1506 | 13 | 0 | 13 | 0.19 | 0.22 | 21 | 0 | 0 | 0 | 53 | 0 | 0 | -60 |
| 23 | 495.17 | 102448 | 1505 | -2 | 0 | -2 | 0.17 | 0.19 | 18 | 0 | 0 | 0 | 55 | 0 | 0 | -76 |
| 24 | 495.12 | 102372 | 1505 | -3 | 0 | -3 | 0.25 | 0.21 | 23 | 0 | 0 | 0 | 49 | 0 | 0 | -76 |
| 25 | 495.07 | 102295 | 1503 | -7 | 0 | -7 | 0.40 | 0.13 | 27 | 0 | 0 | 0 | 43 | 0 | 0 | -77 |
| 26 | 495.03 | 102236 | 1503 | -7 | 0 | -7 | 0.18 | 0.25 | 22 | 0 | 0 | 0 | 31 | 0 | 0 | -60 |
| 27 | 494.99 | 102177 | 1501 | -3 | 0 | -3 | 0.20 | 0.23 | 22 | 0 | 0 | 0 | 34 | 0 | 0 | -59 |
| 28 | 494.94 | 102102 | 1501 | 5 | 0 | 5 | 0.37 | 0.21 | 29 | 0 | 0 | 0 | 51 | 0 | 0 | -75 |
| 29 | 494.89 | 102027 | 1500 | -1 | 0 | -1 | 0.20 | 0.29 | 25 | 0 | 0 | 0 | 49 | 0 | 0 | -75 |
| 30 | 494.84 | 101952 | 1500 | 5 | 0 | 5 | 0.23 | 0.25 | 24 | 0 | 0 | 0 | 56 | 0 | 0 | -75 |
| 31 | 494.79 | 101876 | 1498 | 9 | 0 | 9 | 0.26 | 0.33 | 30 | 0 | 0 | 0 | 55 | 0 | 0 | -76 |
| TOTAL | | | | -65 | 0 | -65 | 7.00 | 6.78 | 702 | 0.00 | 0.02 | 1 | 1412 | 0 | 0 | -2178 |

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation.

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

CASITAS RESERVOIR OPERATION

**SEPTEMBER 2017**

*figures in acre-feet except where otherwise noted

| | RESERVOIR (@ 0800 hrs.) | | | INFLOW | | | EVAPORATION | | | PRECIPITATION | | | RELEASES | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | Elevation (ft MSL) | *Aug 30th* *101876* Storage | Surface Area (acres) | Direct | Ventura River Divers'n | Total | Pan @Dam (in) | Pan @Rec (in) | Lake Total | at Dam (in) | at Rec (in) | Lake Total | To Main System | To River | Spill | STORAGE CHANGE |
| 1 | 494.74 | 101802 | 1498 | 14 | 0 | 14 | 0.41 | 0.27 | 32 | 0 | 0 | 0 | 56 | 0 | 0 | -75 |
| 2 | 494.69 | 101727 | 1497 | 13 | 0 | 13 | 0.15 | 0.33 | 23 | 0 | 0 | 0 | 65 | 0 | 0 | -75 |
| 3 | 494.63 | 101638 | 1497 | -36 | 0 | -36 | 0.19 | 0.32 | 24 | 0.04 | 0.00 | 2 | 32 | 0 | 0 | -89 |
| 4 | 494.59 | 101579 | 1495 | 8 | 0 | 8 | 0.32 | 0.16 | 23 | 0.00 | 0.05 | 3 | 47 | 0 | 0 | -59 |
| 5 | 494.55 | 101519 | 1495 | 2 | 0 | 2 | 0.16 | 0.15 | 15 | 0 | 0 | 0 | 47 | 0 | 0 | -60 |
| 6 | 494.51 | 101459 | 1495 | 17 | 0 | 17 | 0.12 | 0.19 | 15 | 0 | 0 | 0 | 62 | 0 | 0 | -60 |
| 7 | 494.45 | 101369 | 1493 | -9 | 0 | -9 | 0.34 | 0.21 | 26 | 0 | 0 | 0 | 55 | 0 | 0 | -90 |
| 8 | 494.40 | 101294 | 1493 | -12 | 0 | -12 | 0.17 | 0.22 | 18 | 0 | 0 | 0 | 45 | 0 | 0 | -75 |
| 9 | 494.36 | 101233 | 1492 | -16 | 0 | -16 | 0.20 | 0.12 | 15 | 0 | 0 | 0 | 29 | 0 | 0 | -61 |
| 10 | 494.32 | 101174 | 1492 | -7 | 0 | -7 | 0.22 | 0.25 | 22 | 0.04 | 0.00 | 2 | 33 | 0 | 0 | -60 |
| 11 | 494.29 | 101129 | 1490 | 21 | 0 | 21 | 0.38 | 0.13 | 24 | 0.00 | 0.10 | 6 | 47 | 0 | 0 | -45 |
| 12 | 494.24 | 101055 | 1490 | -7 | 0 | -7 | 0.11 | 0.20 | 15 | 0 | 0 | 0 | 53 | 0 | 0 | -75 |
| 13 | 494.19 | 100981 | 1489 | -2 | 0 | -2 | 0.09 | 0.21 | 14 | 0.01 | 0.00 | 1 | 58 | 0 | 0 | -74 |
| 14 | 494.13 | 100891 | 1489 | -18 | 0 | -18 | 0.27 | 0.21 | 23 | 0 | 0 | 0 | 49 | 0 | 0 | -90 |
| 15 | 494.09 | 100829 | 1487 | -15 | 0 | -15 | 0.13 | 0.03 | 8 | 0 | 0 | 0 | 39 | 0 | 0 | -62 |
| 16 | 494.05 | 100770 | 1487 | -13 | 0 | -13 | 0.13 | 0.15 | 13 | 0 | 0 | 0 | 33 | 0 | 0 | -59 |
| 17 | 494.00 | 100696 | 1487 | -40 | 0 | -40 | 0.15 | 0.13 | 13 | 0 | 0 | 0 | 21 | 0 | 0 | -74 |
| 18 | 493.96 | 100637 | 1485 | -5 | 0 | -5 | 0.15 | 0.10 | 12 | 0.01 | 0.00 | 1 | 43 | 0 | 0 | -59 |
| 19 | 493.93 | 100592 | 1485 | 4 | 0 | 4 | 0.15 | 0.11 | 12 | 0.01 | 0.00 | 1 | 36 | 0 | 0 | -44 |
| 20 | 493.89 | 100533 | 1484 | -3 | 0 | -3 | 0.12 | 0.11 | 11 | 0 | 0 | 0 | 45 | 0 | 0 | -59 |
| 21 | 493.84 | 100459 | 1484 | -19 | 0 | -19 | 0.22 | 0.14 | 17 | 0 | 0 | 0 | 38 | 0 | 0 | -74 |
| 22 | 493.81 | 100415 | 1484 | 2 | 0 | 2 | 0.16 | 0.06 | 10 | 0 | 0 | 0 | 36 | 0 | 0 | -44 |
| 23 | 493.78 | 100370 | 1482 | 12 | 0 | 12 | 0.30 | 0.30 | 28 | 0 | 0 | 0 | 29 | 0 | 0 | -44 |
| 24 | 493.74 | 100311 | 1482 | -3 | 0 | -3 | 0.41 | 0.24 | 31 | 0 | 0 | 0 | 26 | 0 | 0 | -59 |
| 25 | 493.69 | 100237 | 1481 | -11 | 0 | -11 | 0.20 | 0.22 | 20 | 0 | 0 | 0 | 44 | 0 | 0 | -74 |
| 26 | 493.64 | 100163 | 1481 | -2 | 0 | -2 | 0.20 | 0.20 | 19 | 0 | 0 | 0 | 53 | 0 | 0 | -74 |
| 27 | 493.58 | 100074 | 1479 | -14 | 0 | -14 | 0.21 | 0.21 | 20 | 0 | 0 | 0 | 56 | 0 | 0 | -90 |
| 28 | 493.52 | 99985 | 1479 | -10 | 0 | -10 | 0.33 | 0.33 | 31 | 0 | 0 | 0 | 47 | 0 | 0 | -88 |
| 29 | 493.47 | 99913 | 1477 | -2 | 0 | -2 | 0.17 | 0.17 | 16 | 0 | 0 | 0 | 55 | 0 | 0 | -73 |
| 30 | 493.43 | 99853 | 1477 | -12 | 0 | -12 | 0.13 | 0.13 | 12 | 0 | 0 | 0 | 35 | 0 | 0 | -59 |
| TOTAL | | | | -166 | 0 | -166 | 6.29 | 5.60 | 560 | 0.11 | 0.15 | 16 | 1313 | 0 | 0 | -2023 |

Recreation evaporation equipment broken. Estimated as equal to evaporation at dam.

Reservoir capacity = 254,000 acre-feet at 567 ft. elevation. e = estimate

Direct reservoir inflow values may be negative due to innaccuracies of the evaporation coefficients (supplied by the USBR)

Evaporation and precipitation readings taken at approximately 8 a.m.

Monthly Evaporation Coefficients: Jan=0.65, Feb=0.77, Mar=0.76, Apr=0.80, May=0.81, Jun=0.82, Jul= Aug=0.81,Sep=0.76, Oct=0.75, Nov=0.72, Dec=0.66

# Mira Monte Well Water Production

# Mira Monte Well

Water Year 2016 – 2017

| Month | Acre Feet |
|---|---|
| Oct – 16 | 12.67 |
| Nov – 16 | 14.31 |
| Dec – 16 | 9.57 |
| Jan – 17 | 3.08 |
| Feb – 17 | 3.24 |
| Mar – 17 | 5.14 |
| Apr – 17 | 9.51 |
| May – 17 | 13.65 |
| Jun – 17 | 22.69 |
| Jul – 17 | 19.07 |
| Aug – 17 | 25.28 |
| Sep – 17 | 18.43 |
| **Total:** | **156.64 AF** |

# Ojai System Sources and Deliveries

# OJAI SYSTEM SOURCES AND DELIVERIES

## 2016 - 2017 WATER YEAR

figures in acre-feet except where otherwise noted

| | | | SOURCE | |
|---|---|---|---|---|
| MONTH | YEAR | SYSTEM DELIVERIES | WELL - FIELD PRODUCTION | SURFACE WATER |
| OCT | 2016 | 182 | 67 | 115 |
| NOV | 2016 | 72 | 67 | 5 |
| DEC | 2016 | 81 | 67 | 14 |
| JAN | 2017 | 74 | 71 | 3 |
| FEB | 2017 | 72 | 71 | 1 |
| MAR | 2017 | 72 | 71 | 1 |
| APR | 2017 | 140 | 139 | 1 |
| MAY | 2017 | 159 | 139 | 20 |
| JUN | 2017 | 149 | 139 | 10 |
| JUL | 2017 | 190 | 154 | 36 |
| AUG | 2017 | 192 | 155 | 37 |
| SEP | 2017 | 181 | 142 | 39 |
| | **TOTAL** | **1563** | **1281** | **282** |

*Well production only available for three-month summary periods prior to CMWD acquisition of the "Ojai System". Monthly well production estimated as 1/3 of three-month total.*

# Lake Matilija Water Surface Elevation

# Matilija Reservoir Lake Elevation

**WATER YEAR OCTOBER 2016 THROUGH SEPTEMBER 2017**

*Daily mean elevation, feet above mean sea level*

**SPILL OVER DAM @ 1095.35 ELEVATION**

| | 2016 | | | 2017 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
| 1 | 1094.61 | 1094.58 | 1094.79 | 1095.47 | 1095.64 | 1095.81 | 1095.62 | 1095.56 | 1095.55 | 1095.49 | 1095.46 | 1095.46 |
| 2 | 1094.60 | 1094.58 | 1094.80 | 1095.47 | 1095.64 | 1095.80 | 1095.62 | 1095.56 | 1095.55 | 1095.49 | 1095.47 | 1095.47 |
| 3 | 1094.58 | 1094.58 | 1094.81 | 1095.48 | 1095.67 | 1095.79 | 1095.62 | 1095.56 | 1095.54 | 1095.49 | 1095.47 | 1095.47 |
| 4 | 1094.57 | 1094.58 | 1094.82 | 1095.49 | 1095.66 | 1095.78 | 1095.62 | 1095.56 | 1095.54 | 1095.49 | 1095.46 | 1095.47 |
| 5 | 1094.57 | 1094.58 | 1094.84 | 1095.48 | 1095.65 | 1095.78 | 1095.61 | 1095.56 | 1095.54 | 1095.49 | 1095.46 | 1095.48 |
| 6 | 1094.56 | 1094.58 | 1094.85 | 1095.48 | 1095.78 | 1095.77 | 1095.61 | 1095.57 | 1095.54 | 1095.48 | 1095.46 | 1095.48 |
| 7 | 1094.54 | 1094.59 | 1094.86 | 1095.49 | 1095.81 | 1095.77 | 1095.61 | 1095.57 | 1095.54 | 1095.48 | 1095.46 | 1095.48 |
| 8 | 1094.53 | 1094.59 | 1094.87 | 1095.50 | 1095.76 | 1095.76 | 1095.61 | 1095.57 | 1095.54 | 1095.48 | 1095.46 | 1095.48 |
| 9 | 1094.52 | 1094.59 | 1094.88 | 1095.49 | 1095.73 | 1095.75 | 1095.61 | 1095.57 | 1095.54 | 1095.48 | 1095.46 | 1095.49 |
| 10 | 1094.51 | 1094.60 | 1094.89 | 1095.49 | 1095.73 | 1095.75 | 1095.60 | 1095.57 | 1095.55 | 1095.47 | 1095.46 | 1095.49 |
| 11 | 1094.50 | 1094.60 | 1094.90 | 1095.50 | 1095.74 | 1095.74 | 1095.60 | 1095.57 | 1095.55 | 1095.47 | 1095.46 | 1095.49 |
| 12 | 1094.50 | 1094.60 | 1094.92 | 1095.49 | 1095.73 | 1095.74 | 1095.60 | 1095.56 | 1095.54 | 1095.47 | 1095.46 | 1095.48 |
| 13 | 1094.50 | 1094.60 | 1094.93 | 1095.49 | 1095.71 | 1095.73 | 1095.60 | 1095.56 | 1095.54 | 1095.47 | 1095.46 | 1095.48 |
| 14 | 1094.50 | 1094.61 | 1094.94 | 1095.49 | 1095.70 | 1095.73 | 1095.59 | 1095.56 | 1095.54 | 1095.47 | 1095.46 | 1095.49 |
| 15 | 1094.50 | 1094.61 | 1094.95 | 1095.49 | 1095.70 | 1095.72 | 1095.60 | 1095.56 | 1095.54 | 1095.47 | 1095.46 | 1095.49 |
| 16 | 1094.50 | 1094.61 | 1095.38 | 1095.49 | 1095.69 | 1095.72 | 1095.59 | 1095.56 | 1095.53 | 1095.47 | 1095.47 | 1095.49 |
| 17 | 1094.52 | 1094.62 | 1095.25 | 1095.49 | 1096.54 | 1095.71 | 1095.59 | 1095.56 | 1095.53 | 1095.47 | 1095.47 | 1095.49 |
| 18 | 1094.51 | 1094.63 | 1095.25 | 1095.51 | 1096.88 | 1095.71 | 1095.60 | 1095.56 | 1095.53 | 1095.47 | 1095.47 | 1095.50 |
| 19 | 1094.50 | 1094.64 | 1095.26 | 1096.27 | 1096.24 | 1095.70 | 1095.59 | 1095.55 | 1095.52 | 1095.47 | 1095.47 | 1095.50 |
| 20 | 1094.49 | 1094.66 | 1095.27 | 1096.26 | 1096.10 | 1095.70 | 1095.57 | 1095.55 | 1095.52 | 1095.47 | 1095.47 | 1095.51 |
| 21 | 1094.48 | 1094.67 | 1095.27 | 1096.34 | 1096.02 | 1095.73 | 1095.58 | 1095.55 | 1095.52 | 1095.47 | 1095.47 | 1095.51 |
| 22 | 1094.48 | 1094.68 | 1095.34 | 1096.45 | 1095.96 | 1095.71 | 1095.58 | 1095.54 | 1095.51 | 1095.47 | 1095.47 | 1095.50 |
| 23 | 1094.47 | 1094.69 | 1095.48 | 1096.58 | 1095.92 | 1095.70 | 1095.58 | 1095.54 | 1095.51 | 1095.47 | 1095.47 | 1095.50 |
| 24 | 1094.47 | 1094.70 | 1095.50 | 1096.44 | 1095.90 | 1095.70 | 1095.57 | 1095.54 | 1095.50 | 1095.47 | 1095.47 | 1095.50 |
| 25 | 1094.47 | 1094.71 | 1095.48 | 1096.36 | 1095.88 | 1095.69 | 1095.55 | 1095.55 | 1095.50 | 1095.47 | 1095.47 | 1095.49 |
| 26 | 1094.47 | 1094.72 | 1095.47 | 1096.32 | 1095.87 | 1095.69 | 1095.56 | 1095.55 | 1095.49 | 1095.47 | 1095.47 | 1095.50 |
| 27 | 1094.47 | 1094.74 | 1095.47 | 1096.30 | 1095.84 | 1095.67 | 1095.55 | 1095.55 | 1095.49 | 1095.47 | 1095.47 | 1095.50 |
| 28 | 1094.51 | 1094.75 | 1095.47 | 1096.28 | 1095.82 | 1095.67 | 1095.55 | 1095.55 | 1095.49 | 1095.47 | 1095.47 | 1095.50 |
| 29 | 1094.53 | 1094.76 | 1095.47 | 1096.29 | --- | 1095.67 | 1095.57 | 1095.54 | 1095.49 | 1095.46 | 1095.46 | 1095.49 |
| 30 | 1094.55 | 1094.77 | 1095.47 | 1095.99 | --- | 1095.64 | 1095.56 | 1095.54 | 1095.49 | 1095.46 | 1095.46 | 1095.50 |
| 31 | 1094.57 | --- | 1095.47 | 1095.64 | --- | 1095.62 | --- | 1095.55 | --- | 1095.46 | 1095.46 | --- |

*Data is provisional and subject to revision.*

*Data logger malfunctioning. Data estimated using downstream gage and observational measurements.*

# Rainfall Stations

VENTURA COUNTY, CALIFORNIA

WATER SURVEY

# DAILY RAINFALL RECORD

| | | | |
|---|---|---|---|
| STATION: | Matilija Dam | NUMBER: | 134 |
| OBSERVER: | Automated | OBSER. TIME: | 0800 |
| AUTHORITY: | Ventura County Watershed Protection District | LATITUDE: | 34°29' N |
| ADDRESS: | 800 S. Victoria Ave, Ventura, CA 93009 | LONGITUDE: | 119°18' W |
| COMPILED: | Bill Carey/Hydrologist | ELEV: | 1060 ft |

**2016-17**

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | 0.26 | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | 0.54 | | | | | | | |
| 4 | | | | | 0.96 | | | | | | | 0.02 |
| 5 | | | | 0.67 | | | | | | | | |
| 6 | | | | | 2.22 | 0.25 | | | | | | |
| 7 | | | | 0.75 | 0.54 | | | 0.16 | | | | |
| 8 | | | | 0.20 | 0.29 | | 0.13 | 0.04 | | | | |
| 9 | | | | 1.06 | 0.01 | | | | | | | |
| 10 | | | | | 0.01 | | | | | | | |
| 11 | | | | 0.83 | 0.81 | | | | | | | 0.06 |
| 12 | | | | 0.55 | 0.11 | | | | | | | |
| 13 | | | | 0.46 | | | | | | | | |
| 14 | | | | | | | 0.02 | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | 2.41 | | | | | | | | | |
| 17 | 0.15 | | | | 0.45 | | | | | | | |
| 18 | | | | | 5.55 | | | | | | | |
| 19 | | | | 1.22 | 0.13 | | 0.20 | | | | | |
| 20 | | | | 0.75 | 0.55 | | | | | | | |
| 21 | | 0.38 | | 2.26 | 0.19 | 0.39 | | | | | | |
| 22 | | | 0.07 | 0.78 | 0.09 | 0.82 | | | | | | |
| 23 | | | | 4.24 | | | | | | | | |
| 24 | | | 2.21 | 0.04 | | | | | | | | |
| 25 | | | 0.01 | 0.01 | | 0.01 | | | | | | |
| 26 | | | | | 0.24 | | | | | | | |
| 27 | | 0.34 | | | 0.01 | | | | | | | |
| 28 | 0.50 | 0.01 | | | | | | | | | | |
| 29 | | | | | | | | | | | | |
| 30 | 0.11 | | 0.15 | | | | | | | | | |
| 31 | 0.20 | | 0.02 | | | | | | | | 0.02 | |
| Mo Total | 0.96 | 0.73 | 4.87 | 14.08 | 12.70 | 1.47 | 0.35 | 0.20 | 0.00 | 0.00 | 0.02 | 0.08 |
| Yr Total | 0.96 | 1.69 | 6.56 | 20.64 | 33.34 | 34.81 | 35.16 | 35.36 | 35.36 | 35.36 | 35.38 | 35.46 |

*Rainfall in inches*

**Data is preliminary and subject to revision - VCWPD*

VENTURA COUNTY, CALIFORNIA
WATER SURVEY
**DAILY RAINFALL RECORD**

| | | | |
|---|---|---|---|
| STATION: | Lake Casitas Recreation Area | NUMBER: | 204 |
| OBSERVER: | CMWD Recreation staff | OBSER. TIME: | 0800 |
| AUTHORITY: | Casitas Municipal Water District | LATITUDE: | 34°25' N |
| ADDRESS: | 1055 Ventura Ave, Oak View, CA 93022 | LONGITUDE: | 119°20' W |
| COMPILED: | J. Switzer | ELEV: | 592 ft |

**2016-17**

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | 0.02 | |
| 3 | | | | | 0.35 | | | | | | | |
| 4 | | | | | | | | | | | | 0.05 |
| 5 | | | | 0.90 | | | | | | | | |
| 6 | | | | | 2.00 | 0.40 | | | | | | |
| 7 | | | | 0.50 | 1.00 | | | 0.12 | | | | |
| 8 | | | | | 0.10 | | 0.33 | 0.03 | | | | |
| 9 | | | | 1.10 | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | 0.65 | 0.55 | | | | | | | 0.10 |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | 1.91 | | | | | | | | | |
| 17 | 0.07 | | | | 0.35 | | | | | | | |
| 18 | | | | | 6.25 | | | | | | | |
| 19 | | | | 1.50 | | | 0.15 | | | | | |
| 20 | | | | | 0.65 | | | | | | | |
| 21 | | 0.40 | | 2.10 | 0.25 | 0.33 | | | | | | |
| 22 | | | 0.04 | 1.00 | 0.25 | 0.57 | | | | | | |
| 23 | | | | 2.70 | | | | | | | | |
| 24 | | | 1.50 | | | | | | | | | |
| 25 | | | | | | | | 0.02 | | | | |
| 26 | | | | | | | | | | | | |
| 27 | | 0.34 | | | | | | | | | | |
| 28 | 0.45 | | | | | | | | | | | |
| 29 | | | | | | | | | | | | |
| 30 | | | 0.14 | | | | | | | | | |
| 31 | 0.19 | | 0.20 | | | | | | | | | |
| Mo Total | 0.71 | 0.74 | 3.79 | 10.45 | 11.75 | 1.30 | 0.48 | 0.17 | 0.00 | 0.00 | 0.02 | 0.15 |
| Yr Total | 0.71 | 1.45 | 5.24 | 15.69 | 27.44 | 28.74 | 29.22 | 29.39 | 29.39 | 29.39 | 29.41 | 29.56 |

*Rainfall in inches*

VENTURA COUNTY, CALIFORNIA
WATER SURVEY
**DAILY RAINFALL RECORD**

| | | | |
|---|---|---|---|
| STATION: | Casitas Dam | NUMBER: | 004 |
| OBSERVER: | CMWD Damtender | OBSER. TIME: | 0800 |
| AUTHORITY: | Casitas Municipal Water District | LATITUDE: | 34°22' N |
| ADDRESS: | 1055 Ventura Ave, Oak View, CA 93022 | LONGITUDE: | 119°20' W |
| COMPILED: | J. Switzer | ELEV: | 400 ft |

**2016-17**

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | 0.21 | | | | | | | 0.04 |
| 4 | | | | | 0.17 | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 | | | | 1.14 | 2.46 | 0.18 | | | | | | |
| 7 | | | | 0.02 | 0.29 | | | 0.06 | | | | |
| 8 | | | | 0.39 | 0.43 | | 0.38 | 0.08 | | | | |
| 9 | | | | 0.17 | 0.08 | | | | | | | |
| 10 | | | 0.01 | 1.10 | 0.03 | | | | | | | 0.04 |
| 11 | | | | | 0.47 | | | | | | | |
| 12 | | | | 0.87 | 0.03 | | | | | | | |
| 13 | | | | 0.09 | | | | | | | | 0.01 |
| 14 | | | | 0.35 | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | 1.93 | | | | | | | | | |
| 17 | 0.22 | | | | 0.28 | | | | | | | |
| 18 | | | | | 7.04 | | | | | | | 0.01 |
| 19 | | | | 1.16 | 0.07 | | 0.15 | | | | | 0.01 |
| 20 | | | | 0.58 | 0.67 | | | | | | | |
| 21 | | 0.35 | | 1.93 | 0.26 | 0.39 | | | | | | |
| 22 | | | 0.06 | 0.83 | 0.19 | 0.68 | | | | | | |
| 23 | | | | 2.22 | | | | | | | | |
| 24 | | | 1.76 | 0.03 | | | | | | | | |
| 25 | | | | | | 0.02 | | | | | | |
| 26 | | | | | 0.22 | | | | | | | |
| 27 | | 0.48 | | | 0.01 | | | | | | | |
| 28 | 0.26 | | | | | | | | | | | |
| 29 | 0.06 | | | | | | | | | | | |
| 30 | 0.08 | | 0.17 | | | | | | | | | |
| 31 | 0.09 | | 0.22 | | | | | | | | | |
| Mo Total | 0.71 | 0.83 | 4.15 | 10.88 | 12.91 | 1.27 | 0.53 | 0.14 | 0.00 | 0.00 | 0.00 | 0.11 |
| Yr Total | 0.71 | 1.54 | 5.69 | 16.57 | 29.48 | 30.75 | 31.28 | 31.42 | 31.42 | 31.42 | 31.42 | 31.53 |

*Rainfall in inches*

VENTURA COUNTY, CALIFORNIA

WATER SURVEY

# DAILY RAINFALL RECORD

| | | | |
|---|---|---|---|
| STATION: | Ojai - Thacher School | NUMBER: | 059 |
| OBSERVER: | Automated | OBSER. TIME: | 0800 |
| AUTHORITY: | Ventura County Watershed Protection District | LATITUDE: | 34°28' N |
| ADDRESS: | 800 S. Victoria Ave, Ventura, CA 93009 | LONGITUDE: | 119°10' W |
| COMPILED: | | ELEV: | 1440 ft |

**2016-17**

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | 0.36 | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | 0.08 | | | | | | | |
| 4 | | | | | 0.15 | | | | | | | 0.04 |
| 5 | | | | 0.48 | 0.01 | | | | | | | |
| 6 | | | | 0.01 | 1.88 | 0.22 | | 0.07 | | | | |
| 7 | | | | 0.46 | 0.37 | | | 0.33 | | | | |
| 8 | | | | 0.16 | 0.13 | | 0.31 | 0.04 | | | | |
| 9 | | | | 1.03 | | | | | | | | |
| 10 | | | | | 0.02 | | | | | | | |
| 11 | | | | 0.98 | 0.71 | | | | 0.02 | | | 0.03 |
| 12 | | | | 0.18 | 0.01 | | | | | | | |
| 13 | | | | 0.52 | 0.01 | | 0.02 | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | 1.90 | | | | | | | | | |
| 17 | 0.09 | | | | 0.52 | | | | | | | |
| 18 | 0.01 | | | | 5.98 | | | | | | | |
| 19 | | | | 0.92 | 0.04 | | 0.15 | | | | | |
| 20 | | | | 0.55 | 0.38 | | | | | | | |
| 21 | | 0.28 | | 1.45 | 0.11 | 0.32 | | | | | | |
| 22 | | | 0.02 | 0.62 | 0.09 | 0.59 | | | | | | |
| 23 | | | | 2.39 | | | | | | | | |
| 24 | | | 1.54 | 0.03 | | | | | | | | |
| 25 | | | | | | 0.01 | | 0.01 | | | | |
| 26 | | | | | 0.25 | | | | | | | |
| 27 | | 0.35 | | | | | | | | | | |
| 28 | 0.37 | 0.02 | | | | | | | | | | |
| 29 | 0.01 | | | | | | | | | | | |
| 30 | 0.12 | | 0.31 | | | | | | | | | |
| 31 | 0.40 | | 0.04 | | | | | | | | | |
| Mo Total | 1.00 | 0.65 | 3.81 | 10.14 | 10.74 | 1.14 | 0.48 | 0.45 | 0.02 | 0.00 | 0.00 | 0.07 |
| Yr Total | 1.00 | 1.65 | 5.46 | 15.60 | 26.34 | 27.48 | 27.96 | 28.41 | 28.43 | 28.43 | 28.43 | 28.50 |

*Rainfall in inches*

**Data is preliminary and subject to revision - VCWPD*

# Streamflow Gaging Stations

# Matilija Creek at Matilija Hot Springs

| | | | |
|---|---|---|---|
| USGS #: | 11115500 | LATITUDE: | 34°28'58" N |
| VCWPD #: | 602 | LONGITUDE: | 119°18'7" W |
| DATE INSTALLED: | 10/1927 | ELEVATION: | 900 ft |
| MAINTAINED BY: | CMWD | DRAINAGE AREA: | 54 sq mi |

WATER YEAR OCTOBER 2016 TO SEPTEMBER 2017

Daily Mean Discharge, cubic feet per second

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.5 | 0.6 | 0.8 | 2 | 24 | 99 | 29 | 15 | 11 | 5 | 3 | 2 |
| 2 | 0.4 | 0.6 | 0.8 | 2 | 22 | 93 | 28 | 15 | 10 | 5 | 2 | 2 |
| 3 | 0.4 | 0.6 | 0.8 | 1 | 30 | 87 | 28 | 15 | 10 | 5 | 2 | 2 |
| 4 | 0.4 | 0.6 | 0.8 | 2 | 26 | 82 | 27 | 15 | 10 | 4 | 3 | 3 |
| 5 | 0.4 | 0.6 | 0.8 | 4 | 23 | 80 | 26 | 15 | 9 | 4 | 3 | 3 |
| 6 | 0.4 | 0.6 | 0.9 | 2 | 117 | 74 | 26 | 16 | 11 | 3 | 2 | 3 |
| 7 | 0.4 | 0.6 | 0.9 | 3 | 104 | 70 | 26 | 17 | 9 | 3 | 2 | 3 |
| 8 | 0.4 | 0.6 | 0.8 | 3 | 77 | 66 | 27 | 17 | 10 | 3 | 2 | 2 |
| 9 | 0.3 | 0.5 | 0.8 | 4 | 64 | 63 | 25 | 16 | 10 | 3 | 2 | 2 |
| 10 | 0.4 | 0.5 | 0.8 | 3 | 60 | 61 | 24 | 16 | 10 | 3 | 2 | 3 |
| 11 | 0.4 | 0.6 | 0.8 | 4 | 66 | 58 | 23 | 16 | 11 | 3 | 2 | 3 |
| 12 | 0.4 | 0.6 | 0.8 | 5 | 59 | 55 | 23 | 15 | 10 | 2 | 2 | 3 |
| 13 | 0.4 | 0.6 | 0.8 | 4 | 54 | 53 | 23 | 14 | 9 | 2 | 2 | 3 |
| 14 | 0.4 | 0.6 | 0.8 | 3 | 50 | 51 | 22 | 14 | 9 | 2 | 2 | 3 |
| 15 | 0.4 | 0.5 | 0.9 | 3 | 46 | 49 | 22 | 15 | 9 | 2 | 2 | 3 |
| 16 | 0.4 | 0.5 | 1 | 3 | 44 | 48 | 21 | 15 | 8 | 2 | 3 | 3 |
| 17 | 0.5 | 0.5 | 0.5 | 3 | 1337 | 46 | 21 | 14 | 9 | 2 | 2 | 3 |
| 18 | 0.4 | 0.5 | 0.5 | 3 | 1264 | 44 | 22 | 14 | 9 | 2 | 2 | 3 |
| 19 | 0.4 | 0.5 | 0.5 | 7 | 456 | 43 | 21 | 13 | 10 | 2 | 2 | 3 |
| 20 | 0.4 | 0.6 | 0.6 | 46 | 321 | 42 | 20 | 13 | 9 | 2 | 2 | 3 |
| 21 | 0.4 | 0.7 | 0.6 | 45 | 257 | 53 | 19 | 12 | 9 | 1 | 2 | 2 |
| 22 | 0.4 | 0.6 | 0.9 | 256 | 213 | 49 | 19 | 12 | 8 | 1 | 2 | 2 |
| 23 | 0.4 | 0.6 | 3 | 258 | 181 | 43 | 18 | 12 | 7 | 2 | 2 | 2 |
| 24 | 0.4 | 0.6 | 5 | 109 | 157 | 40 | 18 | 12 | 7 | 2 | 3 | 3 |
| 25 | 0.5 | 0.6 | 2 | 69 | 141 | 39 | 18 | 12 | 7 | 2 | 3 | 3 |
| 26 | 0.5 | 0.7 | 2 | 52 | 132 | 37 | 18 | 12 | 7 | 3 | 3 | 2 |
| 27 | 0.5 | 0.7 | 2 | 42 | 119 | 36 | 17 | 12 | 7 | 3 | 3 | 2 |
| 28 | 0.6 | 0.8 | 2 | 36 | 109 | 34 | 17 | 12 | 6 | 3 | 3 | 2 |
| 29 | 0.5 | 0.8 | 2 | 32 | --- | 33 | 16 | 11 | 6 | 3 | 3 | 2 |
| 30 | 0.6 | 0.8 | 2 | 29 | --- | 32 | 16 | 11 | 6 | 4 | 3 | 2 |
| 31 | 0.6 | --- | 2 | 26 | --- | 30 | --- | 11 | --- | 3 | 3 | --- |
| TOTAL | 13 | 18 | 36 | 1060 | 5553 | 1691 | 661 | 425 | 261 | 85 | 76 | 76 |
| MEAN | 0.4 | 0.6 | 1.2 | 34 | 198 | 55 | 22 | 14 | 8.7 | 2.7 | 2.4 | 2.5 |
| MAX | 0.6 | 0.8 | 4.6 | 258 | 1337 | 99 | 29 | 17 | 11 | 5.3 | 3.3 | 3.1 |
| MIN | 0.3 | 0.5 | 0.5 | 1.4 | 22 | 30 | 16 | 11 | 5.6 | 1.4 | 2.1 | 1.8 |
| ACRE FT | 27 | 36 | 71 | 2103 | 11015 | 3355 | 1311 | 843 | 518 | 169 | 150 | 151 |

*Data is provisional and subject to revision*

# North Fork Matilija Creek at Matilija Hot Springs

| | | | |
|---|---|---|---|
| USGS #: | 11116000 | LATITUDE: | 34°29'34" N |
| VCWPD #: | 604 | LONGITUDE: | 119°18'23" W |
| DATE INSTALLED: | 01/1934 | ELEVATION: | 1142 ft |
| MAINTAINED BY: | VCWPD | DRAINAGE AREA: | 15.8 sq mi |

WATER YEAR OCTOBER 2016 TO SEPTEMBER 2017

Daily Mean Discharge, cubic feet per second

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.1 | 0.2 | 0.3 | 2 | 8 | 17 | 5 | 3 | 2 | 1 | 0.5 | M |
| 2 | 0.1 | 0.2 | 0.3 | 2 | 8 | 16 | 5 | 3 | 2 | 1 | 0.4 | M |
| 3 | 0.1 | 0.2 | 0.3 | 2 | 10 | 15 | 5 | 3 | 2 | 1 | 0.4 | M |
| 4 | 0.1 | 0.2 | 0.3 | 2 | 10 | 15 | 5 | 3 | 2 | 0.9 | 0.4 | M |
| 5 | 0.1 | 0.2 | 0.3 | 2 | 10 | 15 | 5 | 3 | 2 | 0.9 | M | M |
| 6 | 0.1 | 0.2 | 0.3 | 2 | 39 | 15 | 5 | 3 | 2 | 0.9 | M | M |
| 7 | 0.1 | 0.2 | 0.3 | 3 | 18 | 14 | 5 | 3 | 2 | 0.9 | M | M |
| 8 | 0.1 | 0.2 | 0.3 | 2 | 13 | 13 | 5 | 3 | 2 | 0.9 | M | M |
| 9 | 0.1 | 0.2 | 0.3 | 4 | 11 | 12 | 4 | 3 | 2 | 0.9 | M | M |
| 10 | 0.1 | 0.3 | 0.3 | 3 | 11 | 11 | 4 | 3 | 2 | 0.8 | M | M |
| 11 | 0.1 | 0.3 | 0.3 | 3 | 12 | 11 | 4 | 3 | 2 | 0.8 | M | M |
| 12 | 0.1 | 0.3 | 0.3 | 3 | 12 | 11 | 4 | 3 | 2 | 0.8 | M | M |
| 13 | 0.1 | 0.3 | 0.3 | 3 | 11 | 11 | 4 | 3 | 2 | 0.8 | M | M |
| 14 | 0.1 | 0.3 | 0.3 | 3 | 10 | 10 | 4 | 3 | 2 | 0.8 | M | M |
| 15 | 0.1 | 0.3 | 0.3 | 3 | 9 | 10 | 4 | 3 | 2 | 0.7 | M | M |
| 16 | 0.1 | 0.3 | 2 | 2 | 9 | 10 | 4 | 3 | 2 | 0.7 | M | M |
| 17 | 0.1 | 0.3 | 2 | 2 | 435 | 9 | 4 | 3 | 2 | 0.7 | M | M |
| 18 | 0.1 | 0.3 | 1 | 2 | 372 | 9 | 4 | 3 | 2 | 0.7 | M | M |
| 19 | 0.1 | 0.3 | 1 | 4 | 116 | 9 | 4 | 2 | 1 | 0.7 | M | M |
| 20 | 0.1 | 0.3 | 1 | 40 | 82 | 9 | 3 | 2 | 1 | 0.7 | M | M |
| 21 | 0.2 | 0.3 | 1 | 11 | 63 | 9 | 3 | 2 | 1 | 0.6 | M | M |
| 22 | 0.2 | 0.3 | 1 | 170 | 49 | 8 | 3 | 2 | 1 | 0.6 | M | M |
| 23 | 0.2 | 0.3 | 3 | 70 | 41 | 7 | 3 | 2 | 1 | 0.6 | M | M |
| 24 | 0.2 | 0.3 | 3 | 25 | 34 | 7 | 3 | 2 | 1 | 0.6 | M | M |
| 25 | 0.2 | 0.3 | 2 | 13 | 29 | 7 | 3 | 2 | 1 | 0.6 | M | M |
| 26 | 0.2 | 0.3 | 2 | 10 | 25 | 6 | 3 | 2 | 1 | 0.6 | M | M |
| 27 | 0.2 | 0.3 | 2 | 9 | 22 | 6 | 3 | 2 | 1 | 0.5 | M | M |
| 28 | 0.2 | 0.3 | 2 | 8 | 19 | 6 | 3 | 2 | 1 | 0.5 | M | M |
| 29 | 0.2 | 0.3 | 2 | 8 | --- | 6 | 3 | 2 | 1 | 0.5 | M | M |
| 30 | 0.2 | 0.3 | 2 | 8 | --- | 5 | 3 | 2 | 1 | 0.5 | M | M |
| 31 | 0.2 | --- | 2 | 8 | --- | 5 | --- | 2 | --- | 0.5 | M | --- |
| TOTAL | 3.8 | 7.8 | 32 | 427 | 1489 | 315 | 118 | 80 | 44 | 23 | 1.7 | --- |
| MEAN | 0.1 | 0.3 | 1.0 | 14 | 53 | 10 | 3.9 | 2.6 | 1.5 | 0.7 | 0.4 | --- |
| MAX | 0.2 | 0.3 | 3.1 | 170 | 435 | 17 | 5 | 3.3 | 2.0 | 1.0 | 0.5 | --- |
| MIN | 0.1 | 0.2 | 0.3 | 1.6 | 8.2 | 5.2 | 3.0 | 2.0 | 1.0 | 0.5 | 0.4 | --- |
| ACRE FT | 7.6 | 15 | 64 | 848 | 2953 | 624 | 234 | 159 | 87 | 45 | --- | --- |

*Estimated daily data* M Missing Data

*These data are preliminary and subject to change until checked and evaluated by Ventura County. Unverified data may contain errors that have not been checked by Hydrology staff. Ventura County does not guarantee the accuracy of these data; please note that flows may vary considerably during each day and from day to day.*

# Ventura River near Meiners Oaks (Robles)

| | | | |
|---|---|---|---|
| USGS #: | 11116550 | LATITUDE: | 34°27'49" N |
| VCWPD #: | 607 | LONGITUDE: | 119°17'26" W |
| DATE INSTALLED: | 05/1959 | ELEVATION: | 740 ft |
| MAINTAINED BY: | CMWD | DRAINAGE AREA: | 74 sq mi |

WATER YEAR OCTOBER 2016 TO SEPTEMBER 2017

Daily Mean Discharge, cubic feet per second

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 26 | 32 | 28 | 13 | 3.9 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 24 | 31 | 27 | 12 | 1.2 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 28 | 31 | 27 | 12 | 2.6 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 27 | 31 | 26 | 11 | 1.8 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 24 | 30 | 25 | 11 | 4.0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 34 | 31 | 24 | 11 | 5.1 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 42 | 31 | 25 | 11 | 3.2 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0.3 | 50 | 31 | 26 | 10 | 1.4 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 3.9 | 50 | 32 | 24 | 10 | 1.0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 1.1 | 50 | 32 | 24 | 11 | 1.0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 1.8 | 49 | 32 | 23 | 11 | 0.7 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 3.9 | 51 | 31 | 23 | 11 | 0.8 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 3.2 | 51 | 31 | 23 | 10 | 1.0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 1.2 | 49 | 32 | 23 | 8.6 | 0.7 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0.9 | 46 | 32 | 22 | 8.2 | 0.1 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 | 0.6 | 44 | 32 | 22 | 6.8 | 0.0 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 | 0.2 | 2300 | 32 | 21 | 6.5 | 0.1 | 0 | 0 | 0 |
| 18 | 0 | 0 | 0 | 0.4 | 2800 | 31 | 22 | 7.1 | 0.0 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 | 7.0 | 136 | 32 | 22 | 6.3 | 0.1 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 | 93 | 83 | 32 | 20 | 7.5 | 0.1 | 0 | 0 | 0 |
| 21 | 0 | 0 | 0 | 64 | 66 | 33 | 19 | 7.5 | 0 | 0 | 0 | 0 |
| 22 | 0 | 0 | 0 | 592 | 59 | 32 | 18 | 6.6 | 0 | 0 | 0 | 0 |
| 23 | 0 | 0 | 0 | 150 | 53 | 32 | 18 | 5.4 | 0 | 0 | 0 | 0 |
| 24 | 0 | 0 | 1.0 | 117 | 49 | 32 | 16 | 3.7 | 0 | 0 | 0 | 0 |
| 25 | 0 | 0 | 0 | 80 | 49 | 32 | 16 | 6.0 | 0 | 0 | 0 | 0 |
| 26 | 0 | 0 | 0 | 55 | 42 | 32 | 15 | 5.1 | 0 | 0 | 0 | 0 |
| 27 | 0 | 0 | 0 | 43 | 34 | 32 | 15 | 4.3 | 0 | 0 | 0 | 0 |
| 28 | 0 | 0 | 0 | 37 | 32 | 32 | 14 | 4.0 | 0 | 0 | 0 | 0 |
| 29 | 0 | 0 | 0 | 32 | --- | 31 | 14 | 4.1 | 0 | 0 | 0 | 0 |
| 30 | 0 | 0 | 0 | 31 | --- | 30 | 13 | 5.1 | 0 | 0 | 0 | 0 |
| 31 | 0 | --- | 0 | 28 | --- | 29 | --- | 3.9 | --- | 0 | 0 | --- |
| TOTAL | 0 | 0 | 1.0 | 1344 | 6347 | 973 | 636 | 251 | 29 | 0 | 0 | 0 |
| MEAN | 0 | 0 | 0.0 | 43 | 227 | 31 | 21 | 8 | 1 | 0 | 0 | 0 |
| MAX | 0 | 0 | 1.0 | 592 | 2800 | 33 | 28 | 13 | 5 | 0 | 0 | 0 |
| MIN | 0 | 0 | 0 | 0 | 24 | 29 | 13 | 4 | 0 | 0 | 0 | 0 |
| ACRE FT | 0 | 0 | 2 | 2666 | 12590 | 1929 | 1262 | 497 | 57 | 0 | 0 | 0 |

*Data is provisional and subject to revision*

*Flow over cut-off wall not measured by VRNMO. Rating table not validated at high flows.*

*Data logger malfunctioning. Discharge estimated from staff gage and auxiliary / fishway flow-meters*

# Robles-Casitas Canal (First Bridge)

| | | | |
|---|---|---|---|
| USGS #: | N/A | LATITUDE: | 34°27'43" N |
| VCWPD #: | N/A | LONGITUDE: | 119°17'34" W |
| DATE INSTALLED: | 1958 | ELEVATION: | 770 ft |
| MAINTAINED BY: | CMWD | DRAINAGE AREA: | N/A |

WATER YEAR OCTOBER 2016 TO SEPTEMBER 2017

Daily Mean Discharge, cubic feet per second

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 56 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 98 | 35 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 62 | 30 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 23 | 27 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 8 | 23 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 2 | 21 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 16 | 19 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 7 | 16 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 3 | 14 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 | 0 | 61 | 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| 18 | 0 | 0 | 0 | 0 | 316 | 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 | 0 | 441 | 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 | 0 | 287 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| 21 | 0 | 0 | 0 | 0 | 218 | 13 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 | 0 | 0 | 0 | 77 | 166 | 12 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | 0 | 0 | 0 | 199 | 129 | 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | 0 | 0 | 0 | 14 | 105 | 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| 25 | 0 | 0 | 0 | 1 | 86 | 3 | 0 | 0 | 0 | 0 | 0 | 0 |
| 26 | 0 | 0 | 0 | 0 | 85 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27 | 0 | 0 | 0 | 0 | 78 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 28 | 0 | 0 | 0 | 0 | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | 0 | 0 | 0 | 0 | --- | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | 0 | 0 | 0 | 0 | --- | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 0 | --- | 0 | 0 | --- | 0 | --- | 0 | --- | 0 | 0 | --- |
| TOTAL | 0.0 | 0.0 | 0.0 | 291 | 2259 | 520 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| MEAN | 0.0 | 0.0 | 0.0 | 9.4 | 80.7 | 16.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| MAX | 0.0 | 0.0 | 0.0 | 199 | 441 | 56 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| MIN | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ACRE FT | 0 | 0 | 0 | 578 | 4482 | 1032 | 0 | 0 | 0 | 0 | 0 | 0 |

*Data is provisional and subject to revision.*

# Ventura River near Ventura (Foster Park)

| | | | |
|---|---|---|---|
| USGS #: | 11118500 | LATITUDE: | 34°21'09" N |
| VCWPD #: | 608 | LONGITUDE: | 119°18'29" W |
| DATE INSTALLED: | 10/1929 | ELEVATION: | 205 ft |
| MAINTAINED BY: | USGS, Water Resources Division | DRAINAGE AREA: | 187 sq mi |

WATER YEAR OCTOBER 2016 TO SEPTEMBER 2017

Daily Mean Discharge, cubic feet per second

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 17 | 54 | 28 | 20 | 9 | 7 | 7 | 3 |
| 2 | 0 | 0 | 0 | 0 | 16 | 52 | 28 | 19 | 8 | 8 | 6 | 3 |
| 3 | 0 | 0 | 0 | 0 | 18 | 50 | 26 | 20 | 8 | 7 | 5 | 3 |
| 4 | 0 | 0 | 0 | 0 | 18 | 49 | 24 | 18 | 8 | 6 | 5 | 4 |
| 5 | 0 | 0 | 0 | 0 | 20 | 49 | 26 | 18 | 7 | 6 | 6 | 4 |
| 6 | 0 | 0 | 0 | 0 | 503 | 46 | 28 | 18 | 7 | 5 | 7 | 4 |
| 7 | 0 | 0 | 0 | 0 | 86 | 45 | 28 | 18 | 7 | 4 | 7 | 4 |
| 8 | 0 | 0 | 0 | 0 | 64 | 43 | 30 | 17 | 6 | 4 | 6 | 4 |
| 9 | 0 | 0 | 0 | 0 | 56 | 43 | 29 | 15 | 6 | 4 | 8 | 3 |
| 10 | 0 | 0 | 0 | 0 | 58 | 42 | 28 | 16 | 6 | 4 | 13 | 3 |
| 11 | 0 | 0 | 0 | 0 | 64 | 41 | 27 | 16 | 6 | 5 | 7 | 2 |
| 12 | 0 | 0 | 0 | 0 | 54 | 41 | 25 | 16 | 6 | 4 | 6 | 2 |
| 13 | 0 | 0 | 0 | 0 | 52 | 39 | 26 | 15 | 6 | 5 | 6 | 2 |
| 14 | 0 | 0 | 0 | 0 | 49 | 38 | 22 | 15 | 5 | 5 | 6 | 2 |
| 15 | 0 | 0 | 0 | 0 | 46 | 38 | 17 | 15 | 5 | 5 | 5 | 2 |
| 16 | 0 | 0 | 0.1 | 0 | 48 | 37 | 16 | 14 | 6 | 5 | 5 | 2 |
| 17 | 0 | 0 | 0 | 0 | 4580 | 37 | 16 | 14 | 5 | 5 | 4 | 2 |
| 18 | 0 | 0 | 0 | 0 | 3760 | 36 | 16 | 14 | 5 | 5 | 4 | 2 |
| 19 | 0 | 0 | 0 | 0.1 | 404 | 36 | 15 | 14 | 6 | 5 | 4 | 2 |
| 20 | 0 | 0 | 0 | 467 | 274 | 35 | 17 | 13 | 6 | 5 | 4 | 2 |
| 21 | 0 | 0 | 0 | 37 | 199 | 49 | 17 | 13 | 6 | 6 | 4 | 2 |
| 22 | 0 | 0 | 0 | 1870 | 161 | 45 | 17 | 12 | 6 | 5 | 4 | 2 |
| 23 | 0 | 0 | 0 | 526 | 130 | 38 | 18 | 12 | 6 | 6 | 4 | 2 |
| 24 | 0 | 0 | 0.1 | 130 | 108 | 35 | 18 | 12 | 6 | 7 | 4 | 2 |
| 25 | 0 | 0 | 0 | 59 | 97 | 36 | 18 | 12 | 5 | 7 | 4 | 2 |
| 26 | 0 | 0 | 0 | 35 | 93 | 35 | 19 | 12 | 5 | 7 | 4 | 2 |
| 27 | 0 | 0 | 0 | 24 | 71 | 34 | 19 | 11 | 5 | 7 | 4 | 2 |
| 28 | 0 | 0 | 0 | 18 | 60 | 32 | 19 | 11 | 5 | 7 | 4 | 2 |
| 29 | 0 | 0 | 0 | 17 | --- | 32 | 19 | 10 | 6 | 7 | 4 | 2 |
| 30 | 0 | 0 | 0 | 16 | --- | 31 | 19 | 10 | 6 | 7 | 3 | 2 |
| 31 | 0 | --- | 0 | 17 | --- | 29 | --- | 9 | --- | 7 | 3 | --- |
| TOTAL | 0 | 0 | 0.2 | 3215 | 11104 | 1248 | 656 | 448 | 184 | 180 | 163 | 83 |
| MEAN | 0 | 0 | 0 | 104 | 397 | 40 | 22 | 14 | 6 | 6 | 5 | 3 |
| MAX | 0 | 0 | 0.1 | 1870 | 4580 | 54 | 30 | 20 | 9 | 8 | 13 | 4 |
| MIN | 0 | 0 | 0 | 0 | 16 | 29 | 15 | 9 | 5 | 4 | 3 | 2 |
| ACRE FT | 0 | 0 | 0.4 | 6377 | 22024 | 2475 | 1301 | 889 | 365 | 356 | 323 | 164 |

*Data is provisional and subject to revision*

# Santa Ana Creek, near Oak View

| | | | |
|---|---|---|---|
| USGS #: | 11117800 | LATITUDE: | 34°25'24" N |
| VCWPD #: | 606 | LONGITUDE: | 119°20'28" W |
| DATE INSTALLED: | 10/1958 | ELEVATION: | 630 ft |
| MAINTAINED BY: | CMWD | DRAINAGE AREA: | 9 sq mi |

## WATER YEAR OCTOBER 2016 THROUGH SEPTEMBER 2017

Daily Mean Discharge, cubic feet per second

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 6 | 23 | 3 | 0.7 | 0.1 | 0.6 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 5 | 20 | 3 | 0.7 | 0 | 0.6 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 6 | 19 | 3 | 0.7 | 0 | 0.6 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 5 | 18 | 3 | 0.7 | 0 | 0.5 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 5 | 19 | 2 | 0.7 | 0 | 0.5 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 73 | 17 | 2 | 0.9 | 0 | 0.4 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 43 | 15 | 2 | 1.0 | 0 | 0.4 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 32 | 14 | 2 | 0.9 | 0 | 0.3 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 22 | 13 | 2 | 0.8 | 0 | 0.3 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 20 | 9 | 2 | 0.8 | 0 | 0.2 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 23 | 7 | 2 | 0.8 | 0 | 0.1 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0.7 | 18 | 6 | 2 | 0.7 | 0 | 0.1 | 0 | 0 |
| 13 | 0 | 0 | 0 | 3 | 14 | 6 | 2 | 0.6 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 2 | 11 | 5 | 2 | 0.6 | 0.6 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 2 | 11 | 5 | 2 | 0.6 | 1 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 | 2 | 11 | 5 | 2 | 0.7 | 1 | 0 | 0 | 0 |
| 17 | 0 | 0 | 0 | 2 | 650 | 5 | 2 | 0.6 | 0.9 | 0 | 0 | 0 |
| 18 | 0 | 0 | 0 | 2 | 391 | 3 | 2 | 0.6 | 0.9 | 0 | 0 | 0 |
| 19 | 0 | 0 | 0 | 4 | 117 | 3 | 2 | 0.5 | 0.9 | 0 | 0 | 0 |
| 20 | 0 | 0 | 0 | 80 | 93 | 3 | 1 | 0.4 | 0.8 | 0 | 0 | 0 |
| 21 | 0 | 0 | 0 | 16 | 77 | 7 | 1 | 0.4 | 0.8 | 0 | 0 | 0 |
| 22 | 0 | 0 | 0 | 168 | 65 | 6 | 1 | 0.4 | 0.8 | 0 | 0 | 0 |
| 23 | 0 | 0 | 0 | 72 | 53 | 3 | 1 | 0.3 | 0.8 | 0 | 0 | 0 |
| 24 | 0 | 0 | 0 | 27 | 44 | 2 | 1 | 0.3 | 0.8 | 0 | 0 | 0 |
| 25 | 0 | 0 | 0 | 15 | 37 | 3 | 1 | 0.3 | 0.7 | 0 | 0 | 0 |
| 26 | 0 | 0 | 0 | 11 | 35 | 4 | 0.9 | 0.3 | 0.6 | 0 | 0 | 0 |
| 27 | 0 | 0 | 0 | 10 | 30 | 4 | 0.9 | 0.2 | 0.6 | 0 | 0 | 0 |
| 28 | 0 | 0 | 0 | 8 | 26 | 4 | 0.8 | 0.1 | 0.6 | 0 | 0 | 0 |
| 29 | 0 | 0 | 0 | 7 | --- | 3 | 0.7 | 0 | 0.6 | 0 | 0 | 0 |
| 30 | 0 | 0 | 0 | 7 | --- | 3 | 0.8 | 0.1 | 0.6 | 0 | 0 | 0 |
| 31 | 0 | --- | 0 | 6 | --- | 3 | --- | 0 | --- | 0 | 0 | --- |
| TOTAL | 0 | 0 | 0 | 444 | 1925 | 258 | 52 | 17 | 13 | 5 | 0 | 0 |
| MEAN | 0 | 0 | 0 | 14 | 69 | 8 | 2 | 0.5 | 0.4 | 0.2 | 0 | 0 |
| MAX | 0 | 0 | 0 | 168 | 650 | 23 | 3 | 1 | 1 | 0.6 | 0 | 0 |
| MIN | 0 | 0 | 0 | 0 | 5 | 2 | 0.7 | 0 | 0 | 0 | 0 | 0 |
| ACRE FT | 0 | 0 | 0 | 880 | 3818 | 512 | 103 | 33 | 26 | 9 | 0 | 0 |

*Data is provisional and subject to revision*

*Discharges are based on previous gage's rating curve. Values will be updated when a new curve is available.*

# Coyote Creek, near Oak View

| | | | |
|---|---|---|---|
| USGS #: | 11117600 | LATITUDE: | 34°25'01" N |
| VCWPD #: | 600 | LONGITUDE: | 119°22'17" W |
| DATE INSTALLED: | 10/1958 | ELEVATION: | 630 ft |
| MAINTAINED BY: | CMWD | DRAINAGE AREA: | 13.1 sq mi |

WATER YEAR OCTOBER 2016 TO SEPTEMBER 2017

Daily Mean Discharge, cubic feet per second

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0.2 | 0.2 | 5 | 8 | 30 | 8 | 5 | 5 | 4 | 0.8 | 0.5 |
| 2 | 0 | 0.1 | 0.2 | 5 | 7 | 27 | 8 | 5 | 5 | 4 | 0.8 | 0.5 |
| 3 | 0 | 0.2 | 0.2 | 5 | 8 | 24 | 8 | 5 | 5 | 3 | 0.7 | 0.5 |
| 4 | 0 | 0.2 | 0.2 | 5 | 7 | 23 | 8 | 5 | 5 | 3 | 0.7 | 0.7 |
| 5 | 0 | 0.2 | 0.2 | 6 | 7 | 23 | 8 | 5 | 5 | 3 | 0.8 | 0.8 |
| 6 | 0 | 0.2 | 0.2 | 5 | 177 | 20 | 7 | 6 | 5 | 3 | 0.8 | 0.8 |
| 7 | 0 | 0.2 | 0.2 | 6 | 63 | 19 | 7 | 6 | 5 | 2 | 0.8 | 0.7 |
| 8 | 0 | 0.2 | 0.2 | 5 | 43 | 17 | 8 | 5 | 5 | 2 | 0.8 | 0.7 |
| 9 | 0 | 0.1 | 0.1 | 11 | 32 | 16 | 8 | 6 | 5 | 2 | 0.7 | 0.8 |
| 10 | 0 | 0.1 | 0.1 | 12 | 31 | 15 | 7 | 6 | 5 | 2 | 0.7 | 0.7 |
| 11 | 0 | 0.1 | 0.2 | 41 | 41 | 15 | 7 | 6 | 5 | 2 | 0.7 | 0.8 |
| 12 | 0 | 0.1 | 0.1 | 24 | 29 | 14 | 7 | 5 | 5 | 2 | 0.7 | 0.8 |
| 13 | 0.1 | 0.1 | 0.2 | 21 | 24 | 13 | 7 | 5 | 5 | 2 | 0.7 | 0.8 |
| 14 | 0.1 | 0.1 | 0.2 | 20 | 20 | 12 | 7 | 5 | 5 | 2 | 0.8 | 0.9 |
| 15 | 0.1 | 0.2 | 1 | 17 | 17 | 11 | 7 | 5 | 5 | 2 | 0.9 | 1.0 |
| 16 | 0.1 | 0.2 | 8 | 13 | 15 | 11 | 7 | 6 | 6 | 1 | 0.9 | 1.0 |
| 17 | 0.1 | 0.2 | 6 | 14 | 908 | 11 | 7 | 5 | 6 | 1 | 0.9 | 1.1 |
| 18 | 0.1 | 0.3 | 6 | 16 | 812 | 11 | 7 | 5 | 6 | 1 | 0.8 | 1.1 |
| 19 | 0.0 | 0.3 | 6 | 27 | 206 | 10 | 7 | 5 | 6 | 1 | 0.8 | 1.1 |
| 20 | 0.1 | 0.3 | 5 | 363 | 175 | 10 | 7 | 5 | 6 | 2 | 0.8 | 1.2 |
| 21 | 0.1 | 0.3 | 5 | 52 | 132 | 18 | 6 | 5 | 6 | 1 | 0.9 | 1.1 |
| 22 | 0.1 | 0.2 | 5 | 384 | 100 | 16 | 6 | 5 | 5 | 1 | 0.8 | 1.0 |
| 23 | 0.1 | 0.3 | 9 | 184 | 76 | 12 | 6 | 5 | 5 | 1 | 0.8 | 1.1 |
| 24 | 0.1 | 0.2 | 10 | 48 | 61 | 11 | 6 | 5 | 5 | 1 | 0.8 | 1.0 |
| 25 | 0.1 | 0.2 | 7 | 26 | 50 | 11 | 6 | 5 | 4 | 2 | 0.8 | 0.9 |
| 26 | 0.1 | 0.2 | 6 | 19 | 47 | 10 | 6 | 5 | 4 | 1 | 0.8 | 0.9 |
| 27 | 0.1 | 0.1 | 5 | 15 | 39 | 10 | 5 | 5 | 4 | 1 | 0.7 | 0.8 |
| 28 | 0.2 | 0.1 | 6 | 13 | 34 | 9 | 5 | 5 | 4 | 1 | 0.7 | 0.8 |
| 29 | 0.1 | 0.1 | 6 | 11 | --- | 9 | 5 | 5 | 4 | 0.8 | 0.6 | 0.8 |
| 30 | 0.2 | 0.1 | 7 | 10 | --- | 9 | 5 | 5 | 4 | 0.8 | 0.6 | 0.8 |
| 31 | 0.2 | --- | 6 | 9 | --- | 8 | --- | 5 | --- | 0.8 | 0.6 | --- |
| TOTAL | 2.4 | 5.4 | 108 | 1390 | 3169 | 453 | 204 | 161 | 151 | 56 | 24 | 26 |
| MEAN | 0.1 | 0.2 | 3.5 | 45 | 113 | 15 | 6.8 | 5.2 | 5.0 | 1.8 | 0.8 | 0.9 |
| MAX | 0.2 | 0.3 | 9.5 | 384 | 908 | 30 | 8.3 | 5.7 | 6.5 | 3.7 | 0.9 | 1.2 |
| MIN | 0.0 | 0.1 | 0.1 | 4.8 | 6.8 | 8.3 | 5.5 | 4.5 | 3.9 | 0.8 | 0.6 | 0.5 |
| ACRE FT | 5 | 11 | 215 | 2757 | 6285 | 898 | 405 | 320 | 300 | 112 | 47 | 51 |

*Data is provisional and subject to revision*

Peak stage height exceeded current rating table.

# San Antonio Creek at Old Creek Rd

| | | | |
|---|---|---|---|
| USGS #: | 11117500 | LATITUDE: | 34°22'57" N |
| VCWPD #: | 605A | LONGITUDE: | 119°18'10" W |
| DATE INSTALLED: | 10/1949 | ELEVATION: | 312 ft |
| MAINTAINED BY: | VCWPD | DRAINAGE AREA: | 51.2 sq mi |

## WATER YEAR OCTOBER 2016 THROUGH SEPTEMBER 2017

Daily Mean Discharge, cubic feet per second

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 18 | 17 | 0.2 | 2 | M | M | M | M |
| 2 | 0 | 0 | 0 | 0 | 18 | 14 | 0.1 | 1 | M | M | M | M |
| 3 | 0 | 0 | 0 | 0 | 18 | 13 | 0 | 0.7 | M | M | M | M |
| 4 | 0 | 0 | 0 | 0 | 18 | 12 | 0 | M | M | M | M | M |
| 5 | 0 | 0 | 0 | 0 | 18 | 11 | 0 | M | M | M | M | M |
| 6 | 0 | 0 | 0 | 0 | 151 | 10 | 0 | M | M | M | M | M |
| 7 | 0 | 0 | 0 | 0 | 80 | 8 | 0 | M | M | M | M | M |
| 8 | 0 | 0 | 0 | 0 | 48 | 8 | 0 | M | M | M | M | M |
| 9 | 0 | 0 | 0 | 12 | 33 | 7 | 0 | M | M | M | M | M |
| 10 | 0 | 0 | 0 | 0 | 34 | 5 | 0 | M | M | M | M | M |
| 11 | 0 | 0 | 0 | 4 | 42 | 4 | 0 | M | M | M | M | M |
| 12 | 0 | 0 | 0 | 4 | 27 | 4 | 0 | M | M | M | M | M |
| 13 | 0 | 0 | 0 | 1 | 24 | 3 | 0 | M | M | M | M | M |
| 14 | 0 | 0 | 0 | 0.5 | 22 | 2 | 0 | M | M | M | M | M |
| 15 | 0 | 0 | 0 | 0.4 | 22 | 2 | 0 | M | M | M | M | M |
| 16 | 0 | 0 | 0 | 0.4 | 22 | 2 | 0 | M | M | M | M | M |
| 17 | 0 | 0 | 0 | 0.4 | 863 | 1 | 0 | M | M | M | M | M |
| 18 | 0 | 0 | 0 | 0.5 | 428 | 0.8 | 0 | M | M | M | M | M |
| 19 | 0 | 0 | 0 | 12 | 118 | 0.4 | 0 | M | M | M | M | M |
| 20 | 0 | 0 | 0 | 173 | 89 | 0.2 | 0 | M | M | M | M | M |
| 21 | 0 | 0 | 0 | 65 | 64 | 3 | 0 | M | M | M | M | M |
| 22 | 0 | 0 | 0 | 298 | 56 | 3 | 0 | M | M | M | M | M |
| 23 | 0 | 0 | 3 | 209 | 39 | 2 | 0 | M | M | M | M | M |
| 24 | 0 | 0 | 4 | 99 | 28 | 2 | 0 | M | M | M | M | M |
| 25 | 0 | 0 | 0 | 59 | 23 | 1 | 0.2 | M | M | M | M | M |
| 26 | 0 | 0 | 0 | 31 | 23 | 1 | 0.5 | M | M | M | M | M |
| 27 | 0 | 0 | 0 | 23 | 20 | 0.8 | 0.6 | M | M | M | M | M |
| 28 | 0 | 0 | 0 | 22 | 18 | 0.7 | 0.6 | M | M | M | M | M |
| 29 | 0 | 0 | 0 | 20 | --- | 0.5 | 0.9 | M | M | M | M | M |
| 30 | 0 | 0 | 0 | 20 | --- | 0.4 | 1 | M | M | M | M | M |
| 31 | 0 | --- | 0 | 19 | --- | 0.2 | --- | M | --- | M | M | --- |
| TOTAL | 0 | 0 | 6.80 | 1073.51 | 2364.00 | 137.89 | 4.54 | 3.44 | 0 | 0 | 0 | 0 |
| MEAN | 0 | 0 | 0 | 35 | 84 | 4 | 0 | 1.1 | #DIV/0! | #DIV/0! | #DIV/0! | #DIV/0! |
| MAX | 0 | 0 | 4 | 298 | 863 | 17 | 1 | 2 | 0 | 0.0 | 0 | 0 |
| MIN | 0 | 0 | 0 | 0 | 18 | 0 | 0.0 | 1 | 0 | 0 | 0 | 0 |
| ACRE FT | 0 | 0 | 13 | 2129 | 4689 | 274 | 9 | 7 | 0 | 0 | 0 | 0 |

M Missing Data

*These data are preliminary and subject to change until checked and evaluated by Ventura County. Unverified data may contain errors that have not been checked by Hrdrology Staff. Ventura*

# HISTORICAL HYDROLOGY DATA

**Casitas Reservoir Inventory Annual Summary**

- Calendar Year 1959 – Present

**Annual Rainfall (Water Year 1959 – Present):**

- Matilija Dam
- Lake Casitas (upper) Recreation Area
- Casitas Dam
- Ojai – Thacher School

**Monthly Rainfall (Water Year 1960 – Present):**

- Lake Casitas (upper) Recreation Area

**Ambient Air Temperatures (Calendar Year 1960 – Present):**

- Lake Casitas (upper) Recreation Area
- Casitas Dam

**Robles – Casitas Canal Monthly Diversions**

- Calendar Year 1959 – Present

# CASITAS RESERVOIR INVENTORY
# ANNUAL SUMMARY

(CALENDAR YEAR - ALL VALUES IN ACRE-FEET UNLESS OTHERWISE NOTED)

| | RESERVOIR DATA (START OF YEAR-Last Day of Previous Month) | | INFLOW FOR YEAR | | | RELEASES FOR YEAR | | | | | | STORAGE VOLUME | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| YEAR | ELEVATION (FT ABOVE MSL) | STORAGE | DIRECT | VENTURA RIVER DIVERSION | TOTAL | TO CONV. SYSTEM | DOWN RIVER | TOTAL | SPILL FOR YEAR | EVAP FOR YEAR | RAINFALL ON LAKE SURFACE | MAXIMUM FOR YEAR | MINIMUM FOR YEAR |
| 1959 | 350.00 | - | 2,305 | 5,105 | 7,410 | 586 | 72 | 658 | - | 728 | 59 | 7,022 | 574 |
| 1960 | 366.66 | 5,908 | 1,322 | 24 | 1,346 | 1,277 | 80 | 1,357 | - | 1,068 | 372 | 6,846 | 5,201 |
| 1961 | 363.28 | 5,201 | 967 | 33 | 1,000 | 1,625 | 18 | 1,643 | - | 819 | 133 | 5,201 | 3,642 |
| 1962 | 355.46 | 3,870 | 26,428 | 21,915 | 48,343 | 1,988 | 55 | 2,043 | - | 3,505 | 1,014 | 51,977 | 3,845 |
| 1963 | 477.68 | 47,679 | 2,114 | 2,939 | 5,053 | 4,445 | 72 | 4,517 | - | 3,498 | 1,664 | 51,524 | 46,381 |
| 1964 | 446.13 | 46,381 | 1,841 | 354 | 2,195 | 6,024 | 72 | 6,096 | - | 3,406 | 1,293 | 46,381 | 38,606 |
| 1965 | 438.57 | 40,373 | 15,279 | 21,438 | 36,717 | 7,631 | 72 | 7,703 | - | 2,957 | 2,421 | 68,851 | 39,718 |
| 1966 | 469.42 | 68,851 | 11,941 | 25,323 | 37,264 | 7,162 | 73 | 7,235 | - | 5,030 | 1,915 | 95,765 | 70,068 |
| 1967 | 490.62 | 95,765 | 12,961 | 35,172 | 48,133 | 8,759 | 72 | 8,831 | - | 6,214 | 3,840 | 138,996 | 108,511 |
| 1968 | 513.22 | 132,333 | 1,677 | 1,070 | 2,747 | 13,729 | 74 | 13,803 | - | 6,593 | 2,133 | 132,549 | 116,818 |
| 1969 | 504.25 | 116,818 | 55,379 | 50,349 | 105,728 | 14,040 | 73 | 14,113 | - | 8,413 | 7,625 | 216,790 | 116,418 |
| 1970 | 548.94 | 207,694 | 7,112 | 15,859 | 22,971 | 16,417 | 72 | 16,489 | - | 9,841 | 5,395 | 217,656 | 207,214 |
| 1971 | 549.78 | 207,729 | 3,758 | 10,957 | 14,715 | 16,392 | 24 | 16,416 | - | 9,552 | 3,433 | 214,692 | 193,686 |
| 1972 | 546.52 | 201,908 | 813 | 1,718 | 2,531 | 17,878 | 73 | 17,951 | - | 8,758 | 1,706 | 202,690 | 179,435 |
| 1973 | 536.70 | 179,435 | 22,262 | 39,588 | 61,850 | 13,963 | 33 | 13,996 | - | 8,937 | 4,520 | 239,330 | 224,519 |
| 1974 | 555.75 | 224,519 | 5,240 | 11,732 | 16,972 | 17,400 | 23 | 17,423 | - | 9,394 | 5,423 | 238,096 | 217,063 |
| 1975 | 553.99 | 220,096 | 5,352 | 12,988 | 18,340 | 15,937 | 73 | 16,010 | - | 8,870 | 2,813 | 235,437 | 216,370 |
| 1976 | 552.49 | 216,370 | 3,031 | 3,438 | 6,469 | 18,371 | 104 | 18,475 | - | 9,142 | 3,782 | 219,324 | 198,885 |
| 1977 | 545.29 | 199,003 | 1,590 | 1,094 | 2,684 | 18,035 | 70 | 18,105 | - | 8,821 | 3,352 | 200,062 | 175,359 |
| 1978 | 536.10 | 178,113 | 49,376 | 28,695 | 78,071 | 12,390 | 2,677 | 15,067 | 1,572 | 9,622 | 9,879 | 255,307 | 178,025 |
| 1979 | 561.68 | 239,802 | 7,584 | 8,845 | 16,429 | 13,072 | 32 | 13,104 | 1,193 | 9,963 | 5,395 | 255,116 | 237,183 |
| 1980 | 560.75 | 237,365 | 28,923 | 2,717 | 31,640 | 16,283 | 73 | 16,356 | 16,855 | 9,900 | 7,393 | 260,034 | 233,286 |
| 1981 | 559.18 | 233,286 | 3,112 | 5,772 | 8,884 | 20,242 | 73 | 20,315 | - | 9,412 | 4,002 | 240,222 | 216,395 |
| 1982 | 552.52 | 216,444 | 5,206 | 9,933 | 15,139 | 14,739 | 73 | 14,812 | - | 8,339 | 5,645 | 223,208 | 206,564 |
| 1983 | 551.56 | 214,078 | 44,548 | 22,131 | 66,679 | 15,757 | 73 | 15,830 | 17,877 | 8,844 | 11,699 | 259,264 | 213,562 |
| 1984 | 565.49 | 249,931 | 2,878 | 2,087 | 4,965 | 23,007 | 73 | 23,080 | - | 10,637 | 2,924 | 249,958 | 220,748 |
| 1985 | 555.15 | 223,006 | 4,220 | 3,014 | 7,234 | 20,219 | 73 | 20,292 | - | 9,149 | 2,637 | 223,208 | 196,404 |
| 1986 | 545.97 | 200,605 | 18,711 | 39,316 | 58,027 | 17,797 | 73 | 17,870 | 742 | 9,700 | 5,589 | 254,926 | 200,558 |
| 1987 | 560.16 | 235,828 | -988 | 1,614 | 626 | 21,775 | 73 | 21,848 | - | 9,117 | 3,142 | 236,063 | 208,711 |
| 1988 | 549.35 | 208,687 | 1,431 | 9,154 | 10,585 | 21,974 | 73 | 22,047 | - | 9,005 | 3,715 | 216,543 | 191,890 |
| 1989 | 542.25 | 191,936 | 1,086 | 524 | 1,610 | 26,180 | 73 | 26,253 | - | 9,010 | 1,399 | 192,259 | 159,729 |
| 1990 | 527.43 | 159,688 | -1,115 | - | -1,115 | 21,494 | 73 | 21,567 | - | 8,353 | 1,447 | 159,688 | 130,141 |
| 1991 | 511.99 | 130,141 | 12,114 | 17,620 | 29,734 | 15,416 | 73 | 15,489 | - | 7,481 | 4,496 | 156,765 | 127,786 |
| 1992 | 518.58 | 142,203 | 20,483 | 44,202 | 64,685 | 12,042 | 73 | 12,114 | - | 8,704 | 5,620 | 201,197 | 142,203 |
| 1993 | 542.12 | 191,637 | 43,435 | 34,685 | 78,120 | 11,990 | 73 | 12,063 | 13,395 | 10,054 | 7,849 | 258,362 | 191,637 |
| 1994 | 562.58 | 242,177 | 1,806 | 3,504 | 5,310 | 16,345 | 73 | 16,418 | - | 10,347 | 3,458 | 245,810 | 224,141 |
| 1995 | 555.60 | 224,141 | 52,239 | 1,323 | 53,562 | 11,621 | 72 | 11,693 | 27,499 | 10,287 | 10,895 | 262,625 | 239,122 |
| 1996 | 561.42 | 239,122 | 6,883 | 5,371 | 12,254 | 15,902 | 23 | 15,925 | - | 10,489 | 6,897 | 244,346 | 224,898 |
| 1997 | 558.63 | 231,866 | 11,745 | 11,896 | 23,641 | 20,482 | - | 20,482 | - | 11,062 | 4,304 | 248,616 | 223,132 |
| 1998 | 557.06 | 227,839 | 51,727 | 6,338 | 58,065 | 13,411 | - | 13,411 | 34,907 | 9,503 | 12,632 | 267,542 | 227,743 |
| 1999 | 561.85 | 240,250 | 1,313 | - | 1,313 | 20,121 | - | 20,121 | - | 10,224 | 2,295 | 240,205 | 213,513 |
| 2000 | 551.33 | 213,513 | 13,541 | 4,483 | 18,024 | 21,506 | - | 21,506 | - | 9,801 | 5,134 | 227,132 | 205,434 |
| 2001 | 548.00 | 205,434 | 21,919 | 15,527 | 37,446 | 17,809 | - | 17,809 | - | 8,379 | 6,693 | 242,359 | 204,837 |
| 2002 | 555.24 | 223,233 | -403 | - | -403 | 22,092 | - | 22,092 | - | 8,286 | 2,718 | 223,183 | 194,359 |
| 2003 | 543.65 | 195,172 | 3,429 | 1,571 | 5,000 | 16,571 | - | 16,571 | - | 7,985 | 3,583 | 197,199 | 178,563 |
| 2004 | 536.62 | 179,219 | 9,006 | 2,853 | 11,859 | 20,214 | - | 20,214 | - | 7,783 | 4,897 | 182,113 | 157,595 |
| 2005 | 531.47 | 167,988 | 53,115 | 26,906 | 80,021 | 17,673 | - | 17,673 | - | 7,242 | 7,798 | 250,736 | 169,160 |
| 2006 | 558.25 | 230,891 | 9,382 | 12,070 | 21,452 | 17,253 | - | 17,253 | - | 7,649 | 5,534 | 252,651 | 231,585 |
| 2007 | 559.06 | 232,975 | -1,450 | - | -1,450 | 21,326 | - | 21,326 | - | 8,571 | 2,253 | 232,950 | 203,810 |
| 2008 | 547.35 | 203,882 | 15,470 | 9,916 | 25,386 | 18,325 | - | 18,325 | - | 8,753 | 5,538 | 231,071 | 203,595 |
| 2009 | 548.89 | 207,574 | -580 | 504 | -76 | 17,259 | - | 17,259 | - | 8,025 | 3,646 | 207,719 | 185,543 |
| 2010 | 539.59 | 185,881 | 12,419 | 10,915 | 23,334 | 14,637 | - | 14,637 | - | 6,898 | 7,051 | 199,945 | 182,049 |
| 2011 | 543.46 | 194,731 | 11,054 | 17,847 | 28,901 | 14,841 | - | 14,841 | - | 7,576 | 4,267 | 221,751 | 194,731 |
| 2012 | 548.02 | 205,482 | -837 | 87 | -750 | 16,244 | - | 16,244 | - | 8,263 | 3,165 | 205,482 | 183,746 |
| 2013 | 538.48 | 183,389 | -1,649 | - | -1,649 | 20,402 | - | 20,402 | - | 7,858 | 1,021 | 183,389 | 154,501 |
| 2014 | 524.88 | 154,501 | 217 | 1,018 | 1,235 | 18,811 | - | 18,811 | - | 7,678 | 2,353 | 154,501 | 131,511 |
| 2015 | 512.81 | 131,600 | -1,810 | - | -1,810 | 17,246 | - | 17,246 | - | 6,162 | 736 | 131,600 | 107,119 |
| 2016 | 498.22 | 107,119 | -1,707 | - | -1,707 | 14,151 | - | 14,151 | - | 4,311 | 2,394 | 107,759 | 89,317 |
| 2017 | 486.02 | 89,344 | 14,074 | 6,091 | 20,165 | 12,214 | - | 12,214 | - | 5,435 | 3,020 | 111,640 | 82,919 |
| 2018 | 489.74 | 82,919 | | | | | | | | | | | |
| AVG: | 524.30 | 172,712 | 11,920 | 10,672 | 22,592 | 15,296 | 87 | 15,383 | 1,933 | 7,820 | 4,203 | 191,587 | 163,221 |
| MAX: | 565.49 | 249,931 | 55,379 | 50,349 | 105,728 | 26,180 | 2,677 | 26,253 | 34,907 | 11,062 | 12,632 | 267,542 | 239,122 |
| MIN: | 350.00 | - | -1,810 | 0 | -1,810 | 586 | 0 | 658 | 0 | 728 | 59 | 5,201 | 574 |

*Total water supply delivered to Casitas System during 1991 includes 1240 a.f. state project water into system and 450 a.f. delivered to Santa Barbara out of system.

Reservoir storage rating table updated and adopted 01 Oct, 2017. Storage volumes after this date reported using 2017 Rating Table.

**HISTORICAL RAINFALL**
**CASITAS MUNICIPAL WATER DISTRICT**

| WATER YEAR | CASITAS DAM | CASITAS RECREATION | MATILIJA DAM | 3 - STATION MEAN | THACHER SCHOOL |
|---|---|---|---|---|---|
| 1958-59 | 10.22 | 11.84 | 16.62 | 12.89 | 11.34 |
| 59-60 | 15.79 | 14.70 | 14.45 | 14.98 | 13.26 |
| 1960-61 | 8.77 | 8.42 | 13.24 | 10.14 | 9.48 |
| 61-62 | 37.75 | 33.96 | 39.21 | 36.97 | 28.74 |
| 62-63 | 18.70 | 17.54 | 20.07 | 18.77 | 16.87 |
| 63-64 | 13.62 | 12.04 | 16.13 | 13.93 | 12.79 |
| 64-65 | 23.26 | 22.77 | 22.83 | 22.95 | 17.42 |
| 65-66 | 25.23 | 25.23 | 30.30 | 26.92 | 24.59 |
| 66-67 | 34.43 | 32.30 | 44.78 | 37.17 | 31.14 |
| 67-68 | 16.61 | 16.44 | 15.20 | 16.08 | 12.62 |
| 68-69 | 46.57 | 47.55 | 69.94 | 54.69 | 46.93 |
| 69-70 | 16.70 | 16.52 | 18.98 | 17.40 | **3.88** |
| 1970-71 | 19.72 | 19.71 | 22.65 | 20.69 | 20.72 |
| 71-72 | 11.94 | 13.72 | 15.49 | 13.72 | 10.83 |
| 72-73 | 34.79 | 34.56 | 45.91 | 38.42 | 30.14 |
| 73-74 | 19.95 | 18.43 | 22.16 | 20.18 | 18.91 |
| 74-75 | 23.83 | 24.05 | 26.83 | 24.90 | 22.37 |
| 75-76 | 17.90 | 17.23 | 20.85 | 18.66 | 15.24 |
| 76-77 | 12.90 | 11.98 | 13.75 | 12.88 | 11.42 |
| 77-78 | 49.05 | 49.66 | 63.04 | 53.92 | 50.04 |
| 78-79 | 25.80 | 25.64 | 28.66 | 26.70 | 25.45 |
| 79-80 | 34.06 | 35.15 | 42.43 | 37.21 | 30.58 |
| 1980-81 | 16.24 | 16.99 | 21.88 | 18.37 | 15.53 |
| 81-82 | 19.35 | 20.34 | 25.35 | 21.68 | 21.44 |
| 82-83 | 51.14 | 48.22 | 58.65 | 52.67 | 52.17 |
| 83-84 | 17.91 | 16.63 | 19.34 | 17.96 | 14.83 |
| 84-85 | 17.30 | 15.93 | 19.00 | 17.41 | 12.68 |
| 85-86 | 33.49 | 32.20 | 41.32 | 35.67 | 27.27 |
| 86-87 | 10.86 | 9.83 | 11.44 | 10.71 | 9.01 |
| 87-88 | 18.62 | 18.40 | 21.58 | 19.53 | 20.87 |
| 88-89 | 11.73 | 11.85 | 13.65 | 12.41 | 12.27 |
| 89-90 | 9.46 | 8.86 | 12.48 | 10.27 | 8.61 |
| 1990-91 | 24.43 | 23.59 | 26.01 | 24.68 | 21.78 |
| 91-92 | 29.75 | 28.53 | 34.27 | 30.85 | 34.25 |
| 92-93 | 41.20 | 43.31 | 60.38 | 48.30 | 45.71 |
| 93-94 | 16.08 | 14.69 | 16.27 | 15.68 | 15.60 |
| 94-95 | 49.84 | 49.04 | 58.17 | 52.35 | 46.89 |
| 95-96 | 18.80 | 16.91 | 22.78 | 19.50 | 17.71 |
| 96-97 | 24.37 | 25.27 | 27.80 | 25.81 | 22.12 |
| 97-98 | **59.54** | **58.78** | 64.27 | **60.86** | 52.29 |
| 98-99 | 12.68 | 10.67 | 12.56 | 11.97 | 12.92 |
| 99-00 | 24.35 | 21.94 | 26.79 | 24.36 | 19.73 |
| 2000-01 | 29.36 | 27.86 | 33.45 | 30.22 | 30.55 |
| 01-02 | 9.28 | 8.77 | 10.10 | 9.38 | 8.27 |
| 02-03 | 24.83 | 23.69 | 30.58 | 26.37 | 21.35 |
| 03-04 | 17.03 | 14.33 | 18.84 | 16.73 | 13.04 |
| 04-05 | 54.66 | 51.28 | **74.44** | 60.13 | **52.90** |
| 05-06 | 26.52 | 25.84 | 34.58 | 28.98 | 26.00 |
| 06-07 | **8.60** | **7.15** | **9.23** | **8.33** | 7.65 |
| 07-08 | 26.19 | 24.58 | 33.62 | 28.13 | 23.89 |
| 08-09 | 14.82 | 12.91 | 16.56 | 14.76 | 13.62 |
| 09-10 | 31.13 | 28.48 | 36.54 | 32.05 | 24.35 |
| 2010-11 | 35.99 | 34.04 | 40.28 | 36.77 | 31.18 |
| 11-12 | 15.11 | 13.18 | 14.21 | 14.17 | 12.09 |
| 12-13 | 10.99 | 10.11 | 11.85 | 10.98 | 9.11 |
| 13-14 | 9.90 | 9.52 | 14.76 | 11.39 | 11.30 |
| 14-15 | 11.65 | 10.06 | 17.57 | 13.09 | 14.91 |
| 15-16 | 14.64 | 14.33 | 16.20 | 15.06 | 11.07 |
| 16-17 | 31.53 | 29.56 | 35.46 | 32.18 | 28.50 |
| AVERAGE | 23.68 | 22.83 | 28.23 | 24.91 | 21.83 |
| MAXIMUM | 59.54 | 58.78 | 74.44 | 60.86 | 52.90 |
| MINIMUM | 8.60 | 7.15 | 9.23 | 8.33 | 3.88 |

*RAINFALL IN INCHES, WATER YEAR OCTOBER 1 THRU SEPTEMBER 30
BOLD NUMBERS INDICATE RECORD MAX/MIN RAINFALL AMOUNTS FOR THE PERIOD
**NOTE: Matilija Dam Rainfall records after 2005-06 season obtained from the Ventura County Watershed Protection District**

**HISTORICAL MONTHLY RAINFALL**
**LAKE CASITAS RECREATION AREA (STA #204)**
**(WATER YEAR)**

| W. YEAR | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1960 | 0.00 | 0.00 | 1.25 | 5.40 | 4.29 | 0.78 | 2.98 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 14.70 |
| 1961 | 0.00 | 5.08 | 0.48 | 1.90 | 0.00 | 0.63 | 0.23 | 0.06 | 0.00 | 0.00 | 0.00 | 0.04 | 8.42 |
| 1962 | 0.00 | 5.47 | 1.78 | 2.56 | 22.65 | 1.45 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 33.96 |
| 1963 | 0.49 | 0.01 | 0.05 | 1.35 | 6.85 | 3.59 | 2.61 | 0.39 | 0.51 | 0.00 | 0.00 | 1.69 | 17.54 |
| 1964 | 0.48 | 4.57 | 0.00 | 2.53 | 0.00 | 1.84 | 2.17 | 0.11 | 0.13 | 0.00 | 0.21 | 0.00 | 12.04 |
| 1965 | 0.84 | 3.39 | 8.33 | 0.67 | 0.38 | 1.59 | 7.29 | 0.01 | 0.01 | 0.00 | 0.00 | 0.26 | 22.77 |
| 1966 | 0.00 | **14.19** | 7.07 | 2.51 | 1.11 | 0.04 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.21 | 25.23 |
| 1967 | 0.02 | 4.80 | 9.71 | 7.80 | 0.27 | 3.53 | 5.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.35 | 32.30 |
| 1968 | 0.00 | 5.03 | 1.15 | 1.53 | 1.51 | 4.76 | 1.13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 15.11 |
| 1969 | 1.23 | 0.91 | 2.62 | 26.58 | 12.81 | 1.26 | 2.01 | 0.01 | 0.00 | 0.12 | 0.00 | 0.00 | 47.55 |
| 1970 | 0.00 | 3.52 | 0.19 | 3.68 | 3.70 | 5.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.52 |
| 1971 | 0.00 | 6.36 | 6.94 | 1.51 | 0.00 | 0.71 | 0.55 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 16.10 |
| 1972 | 0.15 | 0.62 | 11.02 | 0.33 | 0.58 | 0.00 | 0.16 | 0.00 | 0.02 | 0.00 | 0.00 | 0.14 | 13.02 |
| 1973 | 0.13 | 6.75 | 1.20 | 9.14 | 14.17 | 3.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 34.55 |
| 1974 | 0.65 | 1.94 | 1.43 | 9.40 | 0.00 | 4.82 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 18.33 |
| 1975 | 0.67 | 0.12 | 10.26 | 0.00 | 4.96 | 6.50 | 1.54 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 24.05 |
| 1976 | 0.23 | 0.00 | 0.13 | 0.00 | 6.43 | 2.10 | 0.71 | 0.00 | 0.25 | 0.00 | 0.06 | **7.32** | 17.23 |
| 1977 | 0.01 | 0.63 | 0.71 | 4.96 | 0.25 | 2.27 | 0.00 | 2.76 | 0.00 | 0.00 | 0.39 | 0.00 | 11.98 |
| 1978 | 0.02 | 0.09 | 6.57 | 11.35 | 13.04 | 14.71 | 2.53 | 0.00 | 0.00 | 0.00 | 0.00 | 1.35 | 49.66 |
| 1979 | 0.00 | 2.57 | 2.48 | 6.00 | 5.90 | 7.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.86 | 25.64 |
| 1980 | 0.64 | 0.95 | 1.96 | 9.56 | 16.93 | 4.04 | 0.75 | 0.32 | 0.00 | 0.00 | 0.00 | 0.00 | 35.15 |
| 1981 | 0.00 | 0.00 | 2.21 | 4.59 | 2.15 | 7.45 | 0.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.99 |
| 1982 | 0.67 | 2.64 | 0.78 | 4.20 | 0.90 | 6.85 | 2.81 | 0.00 | 0.00 | 0.00 | 0.00 | 1.49 | 20.34 |
| 1983 | 0.71 | 5.87 | 4.60 | 12.59 | 8.48 | 9.13 | 4.86 | 0.18 | 0.00 | 0.00 | **1.18** | 0.62 | 48.22 |
| 1984 | 4.88 | 5.57 | 5.14 | 0.09 | 0.00 | 0.55 | 0.05 | 0.00 | 0.00 | 0.00 | 0.08 | 1.06 | 17.42 |
| 1985 | 0.41 | 4.21 | 6.91 | 1.42 | 1.71 | 1.62 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.30 |
| 1986 | 0.55 | 6.28 | 1.15 | 3.97 | 11.09 | 6.26 | 1.74 | 0.00 | 0.00 | 0.00 | 0.00 | 1.25 | 32.29 |
| 1987 | 0.00 | 1.66 | 0.49 | 2.16 | 2.06 | 3.32 | 0.12 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 | 9.84 |
| 1988 | 1.52 | 1.14 | 4.10 | 3.53 | 2.63 | 1.75 | 3.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 | 17.82 |
| 1989 | 0.00 | 1.18 | 3.91 | 0.48 | 4.74 | 0.87 | 0.34 | 0.22 | 0.00 | 0.00 | 0.00 | 0.11 | 11.85 |
| 1990 | 0.61 | 0.47 | 0.00 | 3.67 | 2.92 | 0.01 | 0.18 | 0.93 | 0.03 | 0.00 | 0.00 | 0.04 | 8.86 |
| 1991 | 0.00 | 0.36 | 0.00 | 2.03 | 3.85 | **17.19** | 0.00 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 23.59 |
| 1992 | 0.62 | 0.25 | 4.52 | 2.90 | 13.83 | 5.79 | 0.05 | 0.32 | 0.00 | 0.25 | 0.00 | 0.00 | 28.53 |
| 1993 | 1.53 | 0.00 | 7.58 | 14.97 | 11.88 | 6.22 | 0.00 | 0.19 | **0.94** | 0.00 | 0.00 | 0.00 | 43.31 |
| 1994 | 0.08 | 1.27 | 1.69 | 0.69 | 8.14 | 2.02 | 0.48 | 0.27 | 0.00 | 0.00 | 0.00 | 0.05 | 14.69 |
| 1995 | 0.69 | 1.48 | 0.96 | **27.61** | 2.29 | 14.03 | 0.29 | 1.29 | 0.40 | 0.00 | 0.00 | 0.00 | 49.04 |
| 1996 | 0.11 | 2.49 | 1.92 | 9.37 | 1.54 | 1.03 | 0.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 16.91 |
| 1997 | 4.06 | 2.92 | 7.99 | 10.21 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 25.27 |
| 1998 | 0.00 | 3.59 | 8.32 | 4.59 | **30.12** | 6.54 | 2.19 | **3.21** | 0.06 | 0.00 | 0.00 | 0.16 | **58.78** |
| 1999 | 0.00 | 1.27 | 0.84 | 2.74 | 0.81 | 2.38 | 2.19 | 0.00 | 0.17 | 0.00 | 0.00 | 0.27 | 10.67 |
| 2000 | 0.00 | 1.00 | 0.00 | 2.34 | 11.96 | 3.24 | 3.28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 21.94 |
| 2001 | 2.75 | 0.00 | 0.03 | 8.48 | 7.02 | 8.02 | 1.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 27.86 |
| 2002 | 0.41 | 4.37 | 1.60 | 1.10 | 0.36 | 0.53 | 0.08 | 0.23 | 0.00 | 0.00 | 0.00 | 0.02 | 8.70 |
| 2003 | 0.00 | 5.63 | 5.10 | 0.00 | 3.97 | 4.98 | 1.27 | 2.74 | 0.00 | 0.00 | 0.00 | 0.00 | 23.69 |
| 2004 | 0.05 | 2.68 | 2.13 | 0.79 | 8.08 | 0.60 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 14.33 |
| 2005 | **7.09** | 0.02 | 10.37 | 17.30 | 10.22 | 4.47 | 0.90 | 0.60 | 0.00 | 0.00 | 0.00 | 0.31 | 51.28 |
| 2006 | 0.97 | 0.87 | 0.79 | 4.93 | 3.73 | 4.87 | **8.21** | 1.47 | 0.00 | 0.00 | 0.00 | 0.00 | 25.84 |
| 2007 | 0.22 | 0.10 | 1.03 | 2.68 | 1.66 | 0.10 | 1.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.35 | **7.15** |
| 2008 | 0.46 | 0.04 | 3.40 | 17.93 | 2.49 | 0.00 | 0.09 | 0.06 | 0.00 | 0.00 | 0.11 | 0.00 | 24.58 |
| 2009 | 0.16 | 3.19 | 2.64 | 0.43 | 5.43 | 0.84 | 0.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 12.88 |
| 2010 | 6.91 | 0.00 | 4.33 | 8.71 | 5.47 | 0.37 | 2.39 | 0.30 | 0.00 | 0.00 | 0.00 | 0.00 | 28.48 |
| 2011 | 2.14 | 1.91 | **13.09** | 0.90 | 5.32 | 9.42 | 0.11 | 0.94 | 0.21 | 0.00 | 0.00 | 0.00 | 34.04 |
| 2012 | 1.69 | 2.64 | 0.30 | 1.22 | 0.27 | 3.89 | 3.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 13.18 |
| 2013 | 0.15 | 3.74 | 3.15 | 1.91 | 0.10 | 0.81 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.11 |
| 2014 | 0.03 | 0.77 | 0.44 | 0.00 | 4.31 | 3.49 | 0.42 | 0.00 | 0.00 | 0.00 | 0.06 | 0.00 | 9.52 |
| 2015 | 0.00 | 0.96 | 5.41 | 1.44 | 0.82 | 0.25 | 0.20 | 0.30 | 0.14 | **0.32** | 0.00 | 0.22 | 10.06 |
| 2016 | 0.40 | 0.00 | 0.36 | 6.72 | 2.35 | 4.00 | 0.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 14.33 |
| 2017 | 0.71 | 0.83 | 4.15 | 10.88 | 12.91 | 1.27 | 0.53 | 0.14 | 0.00 | 0.00 | 0.00 | 0.11 | 31.53 |
| AVG | 0.80 | 2.39 | 3.39 | 5.32 | 5.37 | 3.71 | 1.28 | 0.30 | 0.05 | 0.01 | 0.04 | 0.32 | 22.97 |
| MAX | 7.09 | 14.19 | 13.09 | 27.61 | 30.12 | 17.19 | 8.21 | 3.21 | 0.94 | 0.32 | 1.18 | 7.32 | 58.78 |
| MIN | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.15 |

RAINFALL IN INCHES, WATER YEAR OCTOBER 1 THRU SEPTEMBER 30

g:\engr.wks\hydrolody\rainfall\summaries\MonthlyRainFrom1960

**HISTORICAL TEMPERATURES**
**CMWD CASITAS RECREATION AREA WEATHER STATION**
**(Degrees F.)**

| YEAR | JANUARY | | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | | | OCTOBER | | | NOVEMBER | | | DECEMBER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg |
| 1960 | 75 | 22 | 48 | 73 | 29 | 51 | 84 | 34 | 56 | 89 | 33 | 59 | 92 | 35 | 62 | 99 | 43 | 66 | 107 | 46 | 72 | 98 | 44 | 69 | 107 | 41 | 71 | 92 | 35 | 62 | 84 | 33 | 56 | 81 | 27 | 52 |
| 1961 | 89 | 26 | 54 | 85 | 30 | 54 | 83 | 31 | 54 | 100 | 39 | 59 | 87 | 37 | 58 | 112 | 41 | 62 | 103 | 49 | 72 | 100 | 48 | 72 | 102 | 44 | 66 | 106 | 35 | 64 | 91 | 30 | 55 | 80 | 31 | 51 |
| 1962 | 88 | 24 | 50 | 75 | 25 | 50 | 79 | 28 | 50 | 92 | 34 | 60 | 87 | 39 | 58 | 94 | 43 | 63 | 95 | 45 | 67 | 101 | 45 | 72 | 99 | 43 | 68 | 96 | 40 | 61 | 87 | 31 | 57 | 84 | 19 | 53 |
| 1963 | 78 | 16 | 48 | 88 | 37 | 58 | 85 | 29 | 52 | 78 | 33 | 53 | 84 | 39 | 58 | 89 | 42 | 62 | 95 | 46 | 69 | 99 | 46 | 70 | 107 | 52 | 74 | 89 | 41 | 64 | 88 | 31 | 56 | 82 | 27 | 53 |
| 1964 | 80 | 25 | 49 | 82 | 27 | 50 | 82 | 27 | 49 | 83 | 32 | 54 | 82 | 34 | 57 | 10 | 42 | 62 | 97 | 46 | 70 | 94 | 46 | 69 | 98 | 41 | 66 | 100 | 43 | 62 | 85 | 27 | 54 | 75 | 25 | 52 |
| 1965 | 82 | 28 | 52 | 84 | 25 | 51 | 77 | 31 | 52 | 89 | 30 | 54 | 92 | 28 | 58 | 91 | 38 | 58 | 96 | 41 | 66 | 102 | 47 | 71 | 93 | 40 | 62 | 97 | 37 | 61 | 84 | 33 | 56 | 83 | 26 | 50 |
| 1966 | 80 | 26 | 49 | 76 | 28 | 48 | 95 | 27 | 55 | 92 | 37 | 59 | 85 | 41 | 60 | 96 | 42 | 65 | 93 | 41 | 68 | 94 | 50 | 72 | 97 | 42 | 62 | 96 | 37 | 64 | 95 | 32 | 56 | 79 | 25 | 52 |
| 1967 | 79 | 25 | 50 | 82 | 28 | 53 | 80 | 30 | 52 | 69 | 32 | 54 | 96 | 36 | 60 | 87 | 38 | 60 | 92 | 49 | 70 | 105 | 54 | 75 | 96 | 50 | 70 | 97 | 41 | 65 | 91 | 33 | 60 | 79 | 25 | 49 |
| 1968 | 80 | 25 | 50 | 85 | 35 | 56 | 84 | 32 | 56 | 86 | 31 | 57 | 99 | 34 | 60 | 93 | 35 | 62 | 95 | 36 | 72 | 96 | 42 | 62 | 98 | 38 | 62 | 96 | 40 | 62 | 87 | 27 | 56 | 87 | 21 | 48 |
| 1969 | 84 | 26 | 50 | 67 | 29 | 49 | 85 | 28 | 52 | 81 | 31 | 56 | 86 | 38 | 60 | 90 | 45 | 61 | 92 | 46 | 68 | 101 | 43 | 71 | 92 | 41 | 62 | 87 | 32 | 59 | 88 | 31 | 58 | 79 | 23 | 52 |
| 1970 | 68 | 20 | 52 | 76 | 32 | 50 | 79 | 31 | 56 | 87 | 30 | 47 | 96 | 35 | 60 | 97 | 44 | 67 | 100 | 48 | 71 | 102 | 42 | 69 | 102 | 42 | 66 | 99 | 34 | 62 | 86 | 33 | 55 | 76 | 29 | 49 |
| 1971 | 90 | 24 | 51 | 87 | 28 | 52 | 85 | 25 | 52 | 88 | 33 | 54 | 81 | 38 | 56 | 88 | 40 | 62 | 95 | 48 | 68 | 98 | 49 | 72 | 109 | 42 | 68 | 99 | 26 | 60 | 86 | 30 | 44 | 68 | 22 | 46 |
| 1972 | 77 | 24 | 43 | 82 | 26 | 54 | 90 | 30 | 58 | 85 | 30 | 58 | 96 | 31 | 62 | 93 | 38 | 65 | 100 | 40 | 71 | 103 | 44 | 71 | 95 | 32 | 67 | 92 | 33 | 60 | 83 | 33 | 55 | 80 | 23 | 51 |
| 1973 | 80 | 20 | 47 | 75 | 32 | 53 | 69 | 30 | 50 | 79 | 35 | 56 | 96 | 38 | 61 | 101 | 42 | 68 | 94 | 48 | 67 | 96 | 44 | 69 | 95 | 40 | 64 | 92 | 40 | 63 | 81 | 31 | 53 | 81 | 28 | 53 |
| 1974 | 75 | 23 | 49 | 79 | 28 | 51 | 78 | 32 | 54 | 87 | 35 | 56 | 97 | 35 | 58 | 96 | 41 | 65 | 95 | 48 | 70 | 89 | 46 | 68 | 95 | 45 | 68 | 97 | 41 | 60 | 90 | 30 | 56 | 79 | 24 | 49 |
| 1975 | 86 | 24 | 52 | 77 | 29 | 51 | 74 | 31 | 53 | 78 | 30 | 52 | 85 | 35 | 58 | 83 | 44 | 62 | 95 | 45 | 68 | 96 | 42 | 68 | 100 | 47 | 70 | 95 | 35 | 61 | 85 | 27 | 54 | 83 | 25 | 53 |
| 1976 | 87 | 21 | 53 | 79 | 32 | 51 | 82 | 28 | 54 | 86 | 35 | 54 | 94 | 43 | 61 | 104 | 42 | 67 | 96 | 49 | 67 | 102 | 49 | 67 | 92 | 50 | 69 | 94 | 36 | 63 | 95 | 28 | 59 | 82 | 27 | 52 |
| 1977 | 82 | 23 | 51 | 86 | 32 | NA | 78 | 28 | 50 | 84 | 32 | 57 | 81 | 39 | 57 | 85 | 39 | 63 | 100 | 47 | 69 | 94 | 49 | 70 | 96 | 44 | 65 | 90 | 38 | 62 | 92 | 31 | 58 | 78 | 33 | 56 |
| 1978 | 74 | 28 | 51 | 88 | 30 | 54 | 88 | 37 | 57 | 75 | 33 | 55 | 99 | 40 | 63 | 90 | 42 | 66 | 109 | 48 | 69 | 96 | 47 | 67 | 109 | 41 | 69 | 96 | 42 | 65 | 86 | 29 | 53 | 76 | 22 | 49 |
| 1979 | 69 | 26 | 48 | 76 | 28 | 50 | 84 | 35 | 54 | 79 | 35 | 57 | 95 | 40 | 60 | 102 | 44 | 66 | 98 | 45 | 69 | 89 | 48 | 68 | 105 | 44 | 72 | 90 | 37 | 63 | 82 | 25 | 56 | 87 | 25 | 54 |
| 1980 | 76 | 31 | 54 | 82 | 30 | 56 | 76 | 34 | 54 | 91 | 36 | 58 | 89 | 34 | 58 | 95 | 42 | 65 | 110 | 49 | 73 | 96 | 49 | 70 | 104 | 36 | 66 | 104 | 37 | 64 | 90 | 28 | 58 | 89 | 30 | 56 |
| 1981 | 82 | 33 | 56 | 88 | 30 | 57 | 79 | 36 | 55 | 94 | 36 | 59 | 88 | 40 | 62 | 102 | 42 | 72 | 93 | 49 | 71 | 102 | 47 | 73 | 95 | 48 | 68 | 93 | 34 | 60 | 89 | 34 | 58 | 84 | 25 | 54 |
| 1982 | 80 | 26 | 51 | 83 | 31 | 56 | 76 | 32 | 52 | 85 | 31 | 57 | 83 | 38 | 60 | 87 | 42 | 61 | 95 | 47 | 70 | 104 | 48 | 72 | 106 | 46 | 69 | 94 | 36 | 63 | 84 | 34 | 56 | 75 | 28 | 52 |
| 1983 | 90 | 29 | 55 | 79 | 32 | 55 | 82 | 31 | 55 | 79 | 32 | 55 | 89 | 21 | 59 | 86 | 39 | 64 | 96 | 43 | 68 | 99 | 40 | 73 | 103 | 41 | 72 | 93 | 33 | 62 | 86 | NA | NA | 75 | NA | 67 |
| 1984 | 80 | 30 | 53 | 80 | 28 | 52 | 81 | 34 | 56 | 86 | 34 | 57 | 100 | 40 | 65 | 94 | 48 | 65 | 96 | 52 | 73 | 94 | 52 | 72 | 101 | 50 | 74 | 90 | 37 | 60 | 78 | 30 | 53 | 71 | 28 | 50 |
| 1985 | 72 | 27 | 48 | 85 | 25 | 51 | 80 | 30 | 51 | 87 | 38 | 58 | 85 | 38 | 57 | 98 | 42 | 66 | 105 | 33 | 73 | 100 | 50 | 69 | 91 | 42 | 65 | 96 | 42 | 61 | 84 | 30 | 53 | 84 | 26 | 53 |
| 1986 | 84 | 33 | 57 | 85 | 30 | 55 | 82 | 38 | 57 | 87 | 35 | 57 | 88 | 39 | 59 | 88 | 49 | 65 | 89 | 50 | 68 | 94 | 53 | 71 | 87 | 42 | 61 | 88 | 38 | 61 | 86 | 33 | 59 | 76 | 28 | 52 |
| 1987 | 75 | 22 | 48 | 80 | 28 | 52 | 78 | 31 | 53 | 88 | 34 | 60 | 91 | 40 | 63 | 89 | 48 | 65 | 91 | 47 | 63 | 94 | 44 | 68 | 101 | 45 | 68 | 102 | 48 | 66 | 83 | 28 | 55 | 74 | 20 | 47 |
| 1988 | 80 | 26 | 50 | 80 | 28 | 54 | 93 | 30 | 57 | 89 | 34 | 58 | 94 | 36 | 61 | 87 | 40 | 64 | 91 | 52 | 70 | 92 | 49 | 68 | 104 | 44 | 66 | 96 | 41 | 63 | 86 | 28 | 55 | 82 | 26 | 50 |
| 1989 | 80 | 24 | 48 | 80 | 27 | 50 | 82 | 30 | 56 | 96 | 36 | 61 | 86 | 40 | 59 | 94 | 46 | 64 | 102 | 38 | 69 | 90 | 46 | 67 | 102 | 45 | 67 | 95 | 34 | 61 | 91 | 27 | 58 | 90 | 27 | 51 |
| 1990 | 84 | 24 | 50 | 81 | 20 | 50 | 86 | 31 | 54 | 86 | 39 | 59 | 98 | 37 | 58 | 110 | 41 | 67 | 98 | 48 | 71 | 96 | 44 | 69 | 99 | 46 | 68 | 92 | 38 | 62 | 89 | 25 | 56 | 82 | 8 | 45 |
| 1991 | 78 | 24 | 49 | 82 | 29 | 56 | 80 | 28 | 49 | 84 | 32 | 56 | 90 | 33 | 57 | 90 | 40 | 61 | 95 | 46 | 66 | 96 | 44 | 67 | 90 | 44 | 68 | 101 | 30 | 65 | 90 | 30 | 57 | 78 | 22 | 50 |
| 1992 | 80 | 24 | 50 | 82 | 30 | 53 | 76 | 32 | 53 | 90 | 36 | 60 | NA | NA | NA | NA | NA | NA | NA | NA | NA | 98 | 50 | 73 | NA | NA | NA | 97 | 44 | 64 | 87 | 31 | 57 | 74 | 23 | 48 |
| 1993 | 79 | 24 | 49 | 78 | 31 | 50 | **81** | 32 | 56 | **84** | 38 | 59 | NA | NA | NA | 102 | 40 | 66 | 95 | 50 | 66 | **90** | 50 | 70 | **100** | 46 | 70 | **97** | 42 | 66 | 90 | 34 | 58 | 85 | 30 | 54 |
| 1994 | 89 | 32 | 56 | 82 | 30 | 52 | **87** | 35 | 59 | **82** | 39 | 59 | **86** | 43 | 61 | 100 | 48 | 68 | **96** | 52 | 70 | 100 | 53 | 75 | **92** | 46 | 70 | 95 | 40 | 64 | 88 | 30 | 55 | 85 | 28 | 54 |
| 1995 | 78 | 33 | 53 | 92 | 40 | 61 | **78** | **34** | **56** | 87 | 40 | 60 | 83 | 40 | 61 | 91 | 39 | 65 | 104 | 51 | 71 | 97 | 50 | 75 | **100** | 48 | 71 | NA | NA | NA | 87 | 42 | 62 | 84 | 36 | 56 |
| 1996 | 90 | 29 | 55 | NA | NA | NA | 84 | 33 | 57 | 92 | 41 | 62 | 92 | 46 | 64 | 96 | 48 | 67 | 97 | 54 | 73 | 99 | 52 | 74 | 92 | 49 | 69 | 99 | 38 | 64 | 95 | 38 | 60 | 71 | 43 | 57 |
| 1997 | 82 | 32 | 54 | 86 | 34 | 57 | 94 | 34 | 59 | 92 | 36 | 61 | 94 | 46 | 68 | 82 | 52 | 67 | 91 | 42 | 69 | 102 | 55 | 74 | 99 | 52 | 75 | NA | NA | NA | 100 | 41 | 60 | 84 | 29 | 54 |
| 1998 | 83 | 31 | 54 | 72 | 37 | 51 | 83 | 35 | 56 | 84 | 36 | 55 | 77 | 38 | 58 | 81 | 40 | 61 | 94 | 43 | 69 | 105 | 44 | 75 | 105 | 45 | 68 | 89 | 40 | 62 | 81 | 35 | 56 | 85 | 22 | 52 |
| 1999 | 81 | 30 | 55 | 78 | 27 | 53 | 81 | 33 | 52 | 32 | 88 | 56 | 38 | 86 | 58 | 86 | 42 | 63 | 97 | 50 | 69 | 100 | 49 | 69 | 100 | 44 | 65 | 100 | 43 | 68 | 90 | 34 | 58 | 83 | 31 | 55 |
| 2000 | 79 | 30 | 54 | 79 | 35 | 53 | 81 | 35 | 55 | 84 | 39 | 59 | 99 | 40 | 64 | 91 | 48 | 68 | 96 | 48 | 69 | 98 | 51 | 72 | 104 | 47 | 67 | 88 | 41 | 61 | 86 | 30 | 54 | 81 | 31 | 55 |
| 2001 | 82 | 28 | 49 | 89 | 30 | 49 | 82 | 35 | 56 | 78 | 36 | 55 | 90 | 42 | 64 | 92 | 48 | 67 | 89 | 50 | 69 | 95 | 51 | 70 | 96 | 46 | 68 | 99 | 43 | 64 | 80 | 32 | 59 | 81 | 31 | 52 |
| 2002 | 81 | 24 | 50 | 72 | 35 | 54 | 80 | 30 | 53 | 90 | 38 | 61 | 90 | 43 | 64 | 94 | 49 | 69 | 94 | 49 | 69 | 96 | 48 | 68 | 101 | 44 | 72 | 97 | 40 | 61 | 89 | 38 | 59 | 71 | 29 | 51 |
| 2003 | 84 | 32 | 57 | 81 | 28 | 52 | 87 | 31 | 55 | 86 | 31 | 53 | 92 | 39 | 60 | 62 | 38 | 61 | 96 | 43 | 72 | 98 | 50 | 71 | 99 | 38 | 69 | 99 | 43 | 67 | 82 | 28 | 53 | 78 | 24 | 51 |
| 2004 | 78 | 28 | 49 | 71 | 29 | 49 | 90 | 35 | 59 | 99 | 31 | 56 | 99 | 41 | 62 | 86 | 39 | 62 | 93 | 48 | 68 | 96 | 40 | 68 | 99 | 43 | 69 | 89 | 39 | 60 | 77 | 26 | 53 | 84 | 23 | 52 |
| 2005 | 84 | 30 | 49 | 74 | 33 | 53 | 94 | 33 | 56 | 82 | 35 | 54 | 90 | 42 | 55 | 87 | 43 | 62 | 91 | 42 | 69 | 94 | 41 | 69 | 97 | 43 | 64 | 95 | 38 | 60 | 89 | 30 | 59 | 79 | 30 | 57 |
| 2006 | 81 | 25 | 48 | 88 | 27 | 54 | 76 | 28 | 49 | 80 | 38 | 57 | 82 | 43 | 63 | 97 | 50 | 71 | 106 | 55 | 76 | 98 | 51 | 71 | 97 | 51 | 70 | 86 | 48 | 64 | 92 | 30 | 61 | 80 | 26 | 55 |
| 2007 | 82 | 20 | 47 | 86 | 30 | 53 | 88 | 36 | 56 | 90 | 38 | 57 | 94 | 40 | 60 | 84 | 46 | 65 | 92 | 38 | 71 | 100 | 50 | 72 | 106 | 46 | 68 | 92 | 40 | 63 | 88 | 34 | 58 | 64 | 35 | 49 |
| 2008 | 74 | 30 | 46 | 80 | 30 | 52 | 86 | 34 | 56 | 94 | 36 | 58 | 96 | 40 | 61 | 106 | 48 | 66 | 96 | 48 | 70 | 94 | 52 | 71 | 96 | 48 | 69 | 98 | 40 | 66 | 92 | 40 | 60 | 82 | 20 | 50 |
| 2009 | 88 | 28 | 52 | 82 | 30 | 51 | 82 | 34 | 54 | 94 | 34 | 57 | 98 | 40 | 64 | 90 | 42 | 63 | 98 | 42 | 72 | 106 | 46 | 71 | 101 | 42 | 72 | 97 | 32 | 60 | 87 | 28 | 55 | 62 | 31 | 47 |
| 2010 | 76 | 26 | 46 | 80 | 28 | 50 | 82 | 30 | 52 | 80 | 30 | 52 | 84 | 38 | 56 | 82 | 42 | 59 | 92 | 42 | 63 | 102 | 42 | 64 | 102 | 38 | 61 | 88 | 36 | 56 | 92 | 27 | 53 | 78 | 26 | 47 |
| 2011 | 88 | 26 | 47 | 72 | 20 | 42 | 78 | 22 | 47 | 93 | 31 | 60 | 93 | 38 | 61 | 84 | 42 | 62 | 90 | 52 | 69 | 103 | 52 | 70 | 102 | 50 | 69 | 100 | 38 | 64 | 84 | 34 | 55 | 67 | 34 | 50 |
| 2012 | 86 | 28 | 51 | 78 | 32 | 59 | 84 | 28 | 54 | 82 | 38 | 58 | 80 | 44 | 60 | 82 | 40 | 63 | 92 | 40 | 66 | 94 | 50 | 72 | 96 | 48 | 70 | 106 | 42 | 66 | 88 | 34 | 43 | 78 | 29 | 53 |
| 2013 | 82 | 25 | 48 | 82 | 29 | 52 | 83 | 38 | 56 | 78 | 40 | 59 | 100 | 44 | 64 | 102 | 52 | 69 | 101 | 54 | 72 | 99 | 55 | 71 | 100 | 49 | 73 | 88 | 40 | 63 | 88 | 38 | 60 | 83 | 25 | 53 |
| 2014 | 82 | 36 | 53 | 82 | 34 | 56 | 90 | 39 | 59 | 90 | 38 | 61 | 100 | 45 | 67 | 89 | 46 | 68 | 105 | 50 | 75 | 101 | 50 | 73 | 110 | 48 | 74 | 97 | 42 | 69 | 85 | 38 | 61 | 79 | 26 | 54 |
| 2015 | 84 | 32 | 58 | 95 | 30 | 59 | 98 | 30 | 62 | 96 | 35 | 62 | 97 | 47 | 66 | 93 | 52 | 70 | 89 | 51 | 71 | 99 | 56 | 75 | 102 | 52 | 79 | 104 | 48 | 72 | 85 | 34 | 58 | 77 | 26 | 53 |
| 2016 | 74 | 30 | 52 | 90 | 31 | 62 | 82 | 35 | 59 | 83 | 43 | 61 | 79 | 43 | 61 | 105 | 45 | 71 | 98 | 48 | 72 | 92 | 51 | 71 | 105 | 45 | 69 | 91 | 44 | 65 | 84 | 34 | 60 | 73 | 30 | 53 |
| 2017 | 74 | 30 | 51 | 72 | 31 | 53 | 85 | 32 | 59 | **78** | **44** | **59** | 95 | 38 | 64 | 104 | 42 | 71 | 110 | 55 | 78 | 112 | 56 | 78 | 112 | 44 | 75 | 112 | 42 | 72 | 104 | 34 | 66 | **94** | **27** | **59** |
| Records and Avg of month | 90 | 16 | 51 | 95 | 20 | 53 | 98 | 22 | 54 | 100 | 30 | 57 | 100 | 21 | 61 | 112 | 35 | 65 | 110 | 33 | 70 | 112 | 40 | 71 | 112 | 32 | 68 | 112 | 26 | 63 | 104 | 25 | 56 | 94 | 8 | 52 |

## Daily values missing, accuracy limited

*Averages are averages of all max and min daily temperatures*
*NA = not available*
*g:\engr.wks\hydrology\temperatures\historicaltemps.xls*

**HISTORICAL TEMPERATURES**
**CMWD CASITAS DAM WEATHER STATION**
**(Degrees F.)**

| YEAR | JANUARY | | | FEBRUARY | | | MARCH | | | APRIL | | | MAY | | | JUNE | | | JULY | | | AUGUST | | | SEPTEMBER | | | OCTOBER | | | NOVEMBER | | | DECEMBER | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg | max | min | avg |
| 1960 | 77 | 24 | 48 | 75 | 29 | 52 | 85 | 35 | 56 | 90 | 37 | 59 | 88 | 35 | 61 | 93 | 45 | 63 | 106 | 46 | 69 | 95 | 44 | 66 | 102 | 44 | 69 | 93 | 37 | 62 | 82 | 31 | 55 | 83 | 25 | 51 |
| 1961 | 88 | 26 | 54 | 85 | 30 | 54 | 84 | 31 | 54 | 99 | 33 | 52 | 88 | 35 | 57 | 104 | 40 | 62 | 97 | 47 | 68 | 95 | 39 | 68 | 99 | 37 | 65 | 103 | 37 | 62 | 90 | 31 | 55 | 81 | 30 | 52 |
| 1962 | 89 | 25 | 52 | 74 | 31 | 50 | 80 | 29 | 50 | 91 | 37 | 60 | 90 | 38 | 57 | 82 | 42 | 62 | 89 | 47 | 65 | 92 | 47 | 68 | 100 | 45 | 65 | 93 | 41 | 62 | 89 | 32 | 56 | 87 | 22 | 54 |
| 1963 | 78 | 16 | 50 | 90 | 39 | 60 | 84 | 30 | 54 | 83 | 33 | 54 | 78 | 39 | 60 | 85 | 42 | 62 | 87 | 45 | 66 | 91 | 44 | 68 | 109 | 48 | 72 | 90 | 43 | 65 | 88 | 33 | 58 | 85 | 30 | 54 |
| 1964 | 82 | 28 | 50 | 82 | 29 | 50 | 85 | 32 | 50 | 94 | 34 | 66 | 84 | 35 | 66 | 87 | 42 | 61 | 94 | 45 | 67 | 95 | 48 | 62 | 100 | 44 | 66 | 99 | 44 | 66 | 88 | 28 | 54 | 77 | 28 | 53 |
| 1965 | 82 | 29 | 54 | 85 | 29 | 68 | 81 | 35 | 54 | 92 | 31 | 57 | 88 | 37 | 59 | 83 | 40 | 61 | 90 | 47 | 65 | 103 | 49 | 70 | 95 | 45 | 65 | 99 | 40 | 66 | 83 | 34 | 58 | 80 | 28 | 51 |
| 1966 | 79 | 28 | 50 | 78 | 30 | 48 | 88 | 29 | 56 | 96 | 38 | 60 | 81 | 43 | 60 | 88 | 42 | 65 | 89 | 46 | 66 | 94 | 49 | 70 | 98 | 44 | 68 | 98 | 39 | 66 | 96 | 34 | 58 | 78 | 27 | 53 |
| 1967 | 81 | 29 | 52 | 86 | 30 | 55 | 79 | 31 | 54 | 71 | 33 | 50 | 98 | 37 | 61 | 88 | 39 | 61 | 93 | 52 | 68 | 108 | 54 | 74 | 98 | 51 | 70 | 98 | 40 | 65 | 88 | 33 | 60 | 80 | 26 | 50 |
| 1968 | 82 | 27 | 51 | 84 | 36 | 57 | 90 | 35 | 58 | 85 | 34 | 56 | 102 | 37 | 60 | 88 | 42 | 62 | 97 | 48 | 68 | 90 | 46 | 65 | 102 | 40 | 67 | 85 | 32 | 58 | 98 | 42 | 64 | 81 | 20 | 49 |
| 1969 | 86 | 28 | 52 | 71 | 30 | 49 | 86 | 31 | 53 | 83 | 36 | 58 | 87 | 42 | 60 | 90 | 42 | 62 | 90 | 49 | 67 | 104 | 47 | 70 | 96 | 48 | 67 | 91 | 37 | 62 | 91 | 33 | 58 | 80 | 24 | 54 |
| 1970 | 70 | 24 | 53 | 81 | 34 | 51 | 81 | 33 | 58 | 87 | 32 | 55 | 99 | 37 | 61 | 100 | 45 | 64 | 103 | 48 | 68 | 97 | 48 | 68 | 102 | 43 | 65 | 102 | 35 | 61 | 82 | 35 | 56 | 78 | 30 | 50 |
| 1971 | 87 | 23 | 52 | 91 | 30 | 53 | 80 | 24 | 54 | 90 | 35 | 55 | 85 | 38 | 57 | 91 | 39 | 62 | 99 | 48 | 68 | 98 | 50 | 72 | 111 | 41 | 68 | 103 | 25 | 60 | 89 | 31 | 54 | 71 | 24 | 46 |
| 1972 | 78 | 23 | 49 | 81 | 25 | 53 | 92 | 30 | 57 | 84 | 31 | 56 | 97 | 37 | 61 | 90 | 45 | 63 | 104 | 47 | 70 | 106 | 48 | 70 | 99 | 43 | 67 | 96 | 30 | 61 | 85 | 32 | 55 | 81 | 22 | 49 |
| 1973 | 79 | 24 | 48 | 75 | 33 | 53 | 73 | 31 | 51 | 81 | 36 | 56 | 94 | 39 | 61 | 104 | 42 | 66 | 96 | 44 | 66 | 98 | 46 | 67 | 99 | 45 | 64 | 96 | 39 | 63 | 81 | 31 | 54 | 82 | 30 | 53 |
| 1974 | 75 | 24 | 49 | 81 | 30 | 51 | 78 | 32 | 53 | 85 | 35 | 57 | 97 | 34 | 58 | 98 | 46 | 64 | 94 | 46 | 69 | 84 | 45 | 66 | 98 | 46 | 67 | 103 | 39 | 62 | 92 | 31 | 56 | 79 | 23 | 51 |
| 1975 | 86 | 31 | 52 | 79 | 27 | 51 | 74 | 31 | 52 | 79 | 32 | 52 | 78 | 35 | 58 | 88 | 42 | 61 | 91 | 45 | 66 | 94 | 45 | 66 | 104 | 46 | 68 | 98 | 35 | 72 | 92 | 25 | 55 | 90 | 23 | 52 |
| 1976 | 90 | 23 | 54 | 86 | 31 | 53 | 85 | 29 | 55 | 89 | 33 | 54 | 89 | 42 | 60 | 104 | 43 | 66 | 90 | 48 | 68 | 102 | 47 | 68 | 92 | 50 | 68 | 97 | 37 | 65 | 97 | 26 | 60 | 83 | 29 | 53 |
| 1977 | 80 | 29 | 52 | 88 | 30 | 56 | 80 | 29 | 51 | 87 | 34 | 58 | 77 | 37 | 57 | 88 | 43 | 64 | 104 | 64 | 68 | 90 | 49 | 70 | 94 | 43 | 66 | 92 | 38 | 62 | 94 | 32 | 61 | 83 | 32 | 56 |
| 1978 | 76 | 29 | 54 | 82 | 31 | 53 | 88 | 35 | 57 | 78 | 34 | 55 | 99 | 39 | 64 | 92 | 46 | 66 | 106 | 45 | 67 | 94 | 46 | 68 | 108 | 43 | 70 | 92 | 43 | 65 | 92 | 30 | 54 | 77 | 20 | 49 |
| 1979 | 70 | 24 | 49 | 77 | 28 | 55 | 86 | 32 | 55 | 81 | 34 | 58 | 97 | 38 | 62 | 104 | 44 | 67 | 99 | 46 | 67 | 92 | 44 | 68 | 109 | 47 | 72 | 86 | 38 | 64 | 84 | 27 | 57 | 89 | 26 | 55 |
| 1980 | 79 | 30 | 55 | 84 | 32 | 57 | 80 | 29 | 54 | 86 | 36 | 58 | 82 | 36 | 58 | 97 | 42 | 64 | 94 | 47 | 68 | 95 | 48 | 69 | 95 | 44 | 64 | 95 | 36 | 64 | 88 | 29 | 57 | 88 | 31 | 56 |
| 1981 | 82 | 32 | 55 | 88 | 29 | 56 | 80 | 35 | 54 | 94 | 36 | 59 | 87 | 41 | 62 | 105 | 50 | 70 | 99 | 47 | 70 | 104 | 47 | 70 | 95 | 45 | 67 | 95 | 32 | 60 | 91 | 33 | 58 | 81 | 32 | 55 |
| 1982 | 78 | 26 | 50 | 85 | 33 | 56 | 76 | 31 | 53 | 85 | 32 | 57 | 80 | 41 | 60 | 78 | 40 | 61 | 94 | 47 | 68 | 102 | 47 | 70 | 101 | 41 | 67 | 95 | 41 | 64 | 85 | 32 | 55 | 74 | 27 | 51 |
| 1983 | 89 | 28 | 54 | 81 | 32 | 54 | 85 | 35 | 56 | 85 | 34 | 56 | 92 | 39 | 62 | 82 | 47 | 64 | 101 | 48 | 70 | 105 | 49 | 74 | 106 | 51 | 73 | 97 | 45 | 68 | 90 | 29 | 57 | 76 | 29 | 53 |
| 1984 | 84 | 31 | 56 | 83 | 31 | 55 | 88 | 35 | 59 | 94 | 34 | 59 | 105 | 41 | 67 | 94 | 46 | 60 | 98 | 52 | 74 | 96 | 53 | 74 | 108 | 51 | 77 | 91 | 39 | 63 | 82 | 32 | 55 | 74 | 29 | 51 |
| 1985 | 76 | 28 | 51 | 88 | 26 | 54 | 84 | 31 | 55 | 91 | 40 | 61 | 85 | 38 | 57 | 98 | 44 | 67 | 105 | 52 | 73 | 101 | 49 | 71 | 94 | 40 | 68 | 99 | 34 | 65 | 88 | 30 | 55 | 82 | 25 | 55 |
| 1986 | 85 | 35 | 57 | 90 | 31 | 57 | 88 | 38 | 58 | 92 | 38 | 59 | 88 | 41 | 61 | 92 | 47 | 65 | 89 | 49 | 68 | 103 | 50 | 70 | 86 | 41 | 63 | 92 | 40 | 63 | 89 | 36 | 61 | 80 | 32 | 54 |
| 1987 | 82 | 24 | 50 | 82 | 29 | 54 | 81 | 30 | 56 | 93 | 38 | 62 | 92 | 42 | 64 | 91 | 47 | 65 | 92 | 46 | 66 | 101 | 47 | 69 | 101 | 49 | 69 | 107 | 49 | 68 | 87 | 31 | 57 | 80 | 24 | 50 |
| 1988 | 82 | 29 | 53 | 87 | 30 | 57 | 97 | 33 | 60 | 92 | 38 | 59 | 96 | 39 | 62 | 91 | 40 | 64 | 93 | 51 | 71 | 92 | 48 | 69 | 108 | 46 | 67 | 102 | 42 | 65 | 88 | 31 | 57 | 86 | 26 | 52 |
| 1989 | 84 | 26 | 51 | 86 | 28 | 51 | 89 | 32 | 59 | 103 | 38 | 63 | 84 | 40 | 61 | 99 | 46 | 66 | 100 | 50 | 70 | 93 | 48 | 68 | 100 | 46 | 68 | 95 | 35 | 62 | 94 | 29 | 60 | 87 | 28 | 55 |
| 1990 | 84 | 27 | 52 | 84 | 23 | 52 | 91 | 30 | 56 | 89 | 42 | 61 | 102 | 39 | 61 | 106 | 45 | 68 | 104 | 50 | 73 | 96 | 49 | 71 | 97 | 50 | 69 | 96 | 42 | 65 | 94 | 30 | 60 | 85 | 15 | 50 |
| 1991 | 83 | 28 | 54 | 85 | 35 | 58 | 77 | 31 | 52 | 88 | 37 | 59 | 91 | 40 | 59 | 83 | 44 | 62 | 85 | 50 | 67 | 96 | 48 | 68 | 95 | 48 | 69 | 105 | 36 | 66 | 93 | 33 | 60 | 79 | 28 | 53 |
| 1992 | 84 | 31 | 54 | 87 | 35 | 57 | 81 | 39 | 57 | 91 | 44 | 64 | 81 | 49 | 65 | 87 | 45 | 66 | 97 | 49 | 71 | 101 | 50 | 73 | 98 | 50 | 69 | 95 | 46 | 65 | 90 | 34 | 59 | 78 | 27 | 50 |
| 1993 | 80 | 28 | 52 | 76 | 36 | 52 | 85 | 36 | 59 | 89 | 41 | 61 | 92 | 40 | 63 | 94 | 43 | 67 | 89 | 52 | 68 | 93 | 52 | 70 | 103 | 45 | 68 | 100 | 44 | 65 | 95 | 32 | 57 | 81 | 29 | 52 |
| 1994 | 86 | 30 | 54 | 79 | 29 | 52 | 89 | 36 | 58 | 89 | 40 | 59 | 84 | 43 | 61 | 102 | 48 | 68 | 96 | 52 | 68 | 102 | 51 | 73 | 95 | 46 | 69 | 97 | 39 | 63 | 82 | 28 | 52 | 78 | 26 | 52 |
| 1995 | 83 | 32 | 53 | 91 | 41 | 61 | 82 | 36 | 58 | 89 | 38 | 59 | 78 | 40 | 59 | 90 | 43 | 65 | 106 | 50 | 70 | 103 | 47 | 71 | 101 | 46 | 70 | 97 | 40 | 65 | 88 | 40 | 61 | 81 | 34 | 56 |
| 1996 | 86 | 28 | 54 | 87 | 30 | 57 | 84 | 34 | 58 | 94 | 40 | 63 | 89 | 44 | 64 | 102 | 47 | 67 | 103 | 52 | 71 | 101 | 50 | 72 | 93 | 47 | 69 | 84 | 34 | 62 | 93 | 34 | 59 | 75 | 33 | 54 |
| 1997 | 80 | 33 | 54 | 87 | 35 | 56 | 95 | 33 | 60 | 94 | 36 | 61 | 98 | 45 | 68 | 84 | 50 | 67 | 99 | 50 | 70 | 110 | 51 | 74 | 104 | 50 | 75 | 102 | 37 | 66 | 100 | 40 | 60 | 81 | 26 | 52 |
| 1998 | 76 | 29 | 54 | 75 | 35 | 52 | 85 | 33 | 57 | 86 | 36 | 57 | 80 | 43 | 60 | 82 | 46 | 65 | 96 | 51 | 71 | 108 | 51 | 75 | 106 | 48 | 69 | 93 | 38 | 63 | 82 | 35 | 56 | 84 | 23 | 51 |
| 1999 | 81 | 30 | 54 | 83 | 29 | 55 | 82 | 34 | 54 | 93 | 30 | 57 | 89 | 40 | 61 | 84 | 42 | 67 | 95 | 48 | 71 | 98 | 47 | 69 | 103 | 43 | 67 | 100 | 43 | 68 | 88 | 33 | 59 | 85 | 31 | 56 |
| 2000 | 79 | 28 | 55 | 81 | 36 | 54 | 84 | 34 | 57 | 89 | 40 | 62 | 90 | 43 | 65 | 91 | 46 | 69 | 104 | 49 | 70 | 97 | 52 | 72 | 103 | 45 | 71 | 89 | 40 | 62 | 81 | 30 | 53 | 81 | 30 | 55 |
| 2001 | 67 | 35 | 51 | 64 | 39 | 52 | 71 | 46 | 58 | 71 | 44 | 57 | 77 | 55 | 66 | 82 | 54 | 68 | 82 | 56 | 69 | 85 | 55 | 70 | 85 | 54 | 70 | 79 | 51 | 65 | 69 | 46 | 58 | 65 | 37 | 51 |
| 2002 | 80 | 28 | 51 | 90 | 27 | 56 | 84 | 31 | 55 | 87 | 38 | 58 | 94 | 40 | 61 | 90 | 45 | 66 | 98 | 51 | 70 | 93 | 49 | 69 | 109 | 46 | 70 | 99 | 41 | 61 | 91 | 39 | 58 | 72 | 33 | 52 |
| 2003 | 91 | 34 | 59 | 76 | 30 | 54 | 90 | 36 | 59 | 87 | 37 | 63 | 95 | 43 | 62 | 87 | 49 | 65 | 97 | 50 | 73 | 101 | 37 | 74 | 101 | 50 | 69 | 100 | 45 | 68 | 83 | 30 | 55 | 76 | 27 | 51 |
| 2004 | 79 | 25 | 52 | 75 | 31 | 52 | 94 | 37 | 63 | 102 | 37 | 62 | 102 | 44 | 65 | 84 | 46 | 64 | 94 | 50 | 79 | 97 | 50 | 70 | 103 | 46 | 71 | 94 | 42 | 62 | 80 | 28 | 55 | 78 | 28 | 51 |
| 2005 | 84 | 33 | 54 | 77 | 37 | 50 | 83 | 38 | 58 | 87 | 40 | 59 | 95 | 44 | 65 | 92 | 45 | 65 | 97 | 51 | 71 | 100 | 50 | 71 | 101 | 46 | 67 | 99 | 44 | 63 | 89 | 32 | 60 | 79 | 30 | 54 |
| 2006 | 79 | 29 | 53 | 90 | 31 | 50 | 82 | 30 | 52 | 85 | 34 | 57 | 90 | 44 | 64 | 101 | 50 | 71 | 107 | 54 | 76 | 98 | 50 | 70 | 101 | 46 | 68 | 92 | 38 | 62 | 96 | 28 | 60 | 80 | 28 | 51 |
| 2007 | 85 | 21 | 50 | 89 | 32 | 55 | 94 | 32 | 59 | 84 | 37 | 59 | 98 | 41 | 63 | 89 | 45 | 66 | 97 | 51 | 72 | 102 | 51 | 73 | 110 | 45 | 68 | 100 | 39 | 64 | 92 | 32 | 58 | 82 | 27 | 50 |
| 2008 | 77 | 30 | 50 | 87 | 30 | 54 | 90 | 34 | 58 | 100 | 36 | 61 | 99 | 40 | 63 | 108 | 46 | 69 | 96 | 51 | 71 | 95 | 52 | 73 | 102 | 49 | 71 | 103 | 38 | 67 | 94 | 39 | 61 | 78 | 28 | 50 |
| 2009 | 84 | 29 | 57 | 84 | 31 | 53 | 85 | 33 | 56 | 101 | 33 | 58 | 98 | 43 | 65 | 88 | 47 | 66 | 96 | 50 | 71 | 106 | 46 | 71 | 103 | 47 | 73 | 99 | 36 | 64 | 87 | 33 | 57 | 72 | 28 | 57 |
| 2010 | 79 | 32 | 53 | 85 | 32 | 53 | 87 | 32 | 57 | 85 | 35 | 56 | 89 | 40 | 61 | 81 | 48 | 65 | 98 | 46 | 68 | 97 | 46 | 68 | 113 | 43 | 67 | 99 | 42 | 65 | 97 | 27 | 57 | 80 | 27 | 53 |
| 2011 | 85 | 32 | 56 | 84 | 30 | 51 | 97 | 30 | 56 | 93 | 31 | 60 | 93 | 38 | 61 | 89 | 42 | 63 | 96 | 43 | 69 | 99 | 45 | 69 | 103 | 48 | 67 | 102 | 39 | 65 | 83 | 33 | 55 | 74 | 26 | 49 |
| 2012 | 83 | 30 | 55 | 86 | 29 | 56 | 87 | 29 | 54 | 86 | 34 | 59 | 92 | 40 | 64 | 91 | 45 | 66 | 98 | 48 | 69 | 99 | 48 | 74 | 105 | 49 | 73 | 106 | 39 | 67 | 97 | 31 | 58 | 73 | 27 | 51 |
| 2013 | 83 | 23 | 51 | 84 | 28 | 53 | 88 | 34 | 59 | 89 | 37 | 61 | 99 | 44 | 65 | 96 | 48 | 68 | 93 | 50 | 71 | 105 | 49 | 71 | 104 | 45 | 71 | 96 | 39 | 62 | 93 | 35 | 59 | 83 | 23 | 53 |
| 2014 | 93 | 33 | 58 | 88 | 29 | 57 | 92 | 38 | 60 | 97 | 36 | 62 | 104 | 40 | 67 | 86 | 45 | 67 | 101 | 54 | 74 | 98 | 50 | 73 | 109 | 48 | 74 | 106 | 44 | 68 | 94 | 37 | 62 | 87 | 30 | 56 |
| 2015 | 87 | 26 | 58 | 90 | 37 | 59 | 96 | 33 | 63 | 96 | 35 | 61 | 90 | 43 | 61 | 93 | 47 | 68 | 95 | 51 | 72 | 103 | 51 | 74 | 109 | 52 | 76 | 107 | 47 | 72 | 92 | 30 | 57 | 89 | 25 | 52 |
| 2016 | 85 | 25 | 54 | 94 | 30 | 62 | 90 | 36 | 59 | 93 | 36 | 62 | 82 | 42 | 62 | 112 | 46 | 68 | 98 | 51 | 72 | 91 | 50 | 71 | 106 | 46 | 72 | 99 | 42 | 73 | 97 | 32 | 62 | 82 | 28 | 54 |
| 2017 | 84 | 30 | 53 | 82 | 30 | 56 | 88 | 33 | 61 | 95 | 39 | 63 | 96 | 42 | 64 | 101 | 43 | 69 | 98 | 51 | 73 | 108 | 53 | 74 | 104 | 43 | 71 | 106 | 41 | 69 | 100 | 35 | 63 | 88 | 27 | 58 |
| Records and Avg of month | 93 | 16 | 53 | 94 | 23 | 54 | 97 | 24 | 56 | 103 | 30 | 59 | 105 | 34 | 62 | 112 | 39 | 65 | 107 | 43 | 70 | 110 | 37 | 70 | 113 | 37 | 69 | 107 | 25 | 64 | 100 | 25 | 58 | 90 | 15 | 52 |

*##* *Daily values missing, accuracy limited*
*Averages are averages of all max and min daily temperatures*
*NA = not available*
*g:\engr.wks\hydrology\temperatures\historicaltemps.xls*

# ROBLES-CASITAS CANAL
# MONTHLY DIVERSIONS

| YEAR | JAN | | FEB | | MAR | | APR | | MAY | | JUN | | JUL | | AUG | | SEP | | OCT | | NOV | | DEC | | TOTAL | | Avg. Rain |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | days | a.f. | days | a.f. | days | a.f. | days | a.f. | days | a.f. | days | a.f. | days | a.f. | days | a.f. | days | a.f. | days | a.f. | days | a.f. | days | a.f. | days | a.f. | |
| 1959 | 26 | 374 | 21 | 3645 | 23 | 928 | 3 | 158 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 | 5105 | 12.89 |
| 1960 | 0 | 0 | 2 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 24 | 14.98 |
| 1961 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 23 | 2 | 32 | 10.14 |
| 1962 | 0 | 0 | 20 | 13564 | 31 | 6882 | 30 | 1438 | 5 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 | 21915 | 36.97 |
| 1963 | 0 | 0 | 23 | 2043 | 11 | 896 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 2939 | 18.77 |
| 1964 | 2 | 10 | 0 | 0 | 0 | 0 | 1 | 168 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 176 | 5 | 354 | 13.93 |
| 1965 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 4955 | 4 | 79 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 11676 | 28 | 4729 | 75 | 21439 | 22.95 |
| 1966 | 31 | 11440 | 28 | 3754 | 12 | 418 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 821 | 2 | 108 | 28 | 8782 | 104 | 25323 | 26.92 |
| 1967 | 20 | 6284 | 16 | 1170 | 23 | 5023 | 30 | 10488 | 31 | 8909 | 30 | 1571 | 15 | 478 | 0 | 0 | 0 | 0 | 4 | 454 | 9 | 291 | 18 | 504 | 196 | 35172 | 37.17 |
| 1968 | 0 | 0 | 1 | 16 | 24 | 339 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 715 | 0 | 0 | 29 | 1070 | 16.08 |
| 1969 | 7 | 4924 | 20 | 11902 | 31 | 16623 | 30 | 8654 | 31 | 2685 | 30 | 1507 | 31 | 2710 | 5 | 360 | 0 | 0 | 0 | 0 | 5 | 76 | 10 | 908 | 200 | 50349 | 54.69 |
| 1970 | 13 | 312 | 14 | 988 | 31 | 7347 | 11 | 404 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 365 | 0 | 0 | 1 | 575 | 19 | 5868 | 92 | 15859 | 17.40 |
| 1971 | 31 | 3460 | 24 | 2011 | 3 | 24 | 0 | 0 | 0 | 0 | 9 | 861 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 550 | 7 | 4051 | 78 | 10957 | 20.69 |
| 1972 | 20 | 1093 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 620 | 0 | 0 | 1 | 5 | 0 | 0 | 25 | 1718 | 13.72 |
| 1973 | 15 | 3445 | 28 | 15331 | 31 | 14219 | 30 | 4274 | 23 | 1435 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 884 | 0 | 0 | 132 | 39588 | 38.42 |
| 1974 | 23 | 6431 | 8 | 501 | 19 | 2437 | 4 | 539 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 397 | 3 | 1427 | 60 | 11732 | 20.18 |
| 1975 | 0 | 0 | 7 | 1090 | 21 | 8876 | 17 | 1826 | 3 | 686 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 510 | 0 | 0 | 51 | 12988 | 24.90 |
| 1976 | 0 | 0 | 9 | 2855 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 583 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 3438 | 18.66 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1044 | 5 | 1094 | 12.88 |
| 1978 | 24 | 7290 | 28 | 13204 | 17 | 7034 | 0 | 0 | 0 | 0 | 4 | 1167 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 | 28695 | 53.92 |
| 1979 | 0 | 0 | 26 | 4712 | 16 | 1796 | 0 | 0 | 3 | 670 | 0 | 0 | 5 | 1667 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 8845 | 26.70 |
| 1980 | 20 | 1456 | 15 | 1127 | 2 | 134 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 2717 | 37.21 |
| 1981 | 4 | 203 | 0 | 0 | 31 | 5018 | 2 | 551 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 5772 | 18.37 |
| 1982 | 3 | 599 | 0 | 0 | 11 | 1492 | 25 | 3582 | 28 | 494 | 15 | 74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 657 | 14 | 3035 | 103 | 9933 | 21.68 |
| 1983 | 10 | 8994 | 28 | 8791 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 1138 | 20 | 1430 | 4 | 218 | 11 | 536 | 0 | 0 | 0 | 0 | 14 | 1024 | 104 | 22131 | 52.67 |
| 1984 | 0 | 0 | 8 | 1130 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 957 | 17 | 2087 | 17.96 |
| 1985 | 3 | 528 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1522 | 9 | 964 | 19 | 3015 | 17.41 |
| 1986 | 2 | 1385 | 28 | 14926 | 31 | 14415 | 30 | 5430 | 22 | 1418 | 27 | 1742 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140 | 39316 | 35.67 |
| 1987 | 0 | 0 | 0 | 0 | 10 | 1034 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 580 | 12 | 1614 | 10.71 |
| 1988 | 10 | 1368 | 4 | 1533 | 15 | 4725 | 11 | 885 | 3 | 643 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 9154 | 19.53 |
| 1989 | 0 | 0 | 7 | 524 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 524 | 12.41 |
| 1990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10.27 |
| 1991 | 0 | 0 | 1 | 367 | 18 | 11776 | 30 | 4186 | 12 | 925 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 366 | 63 | 17620 | 24.68 |
| 1992 | 5 | 1026 | 23 | 14826 | 31 | 15898 | 30 | 7228 | 31 | 2460 | 9 | 413 | 0 | 0 | 4 | 504 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 1847 | 139 | 44202 | 30.85 |
| 1993 | 27 | 21012 | 16 | 10886 | 0 | 0 | 0 | 0 | 7 | 963 | 5 | 1039 | 4 | 785 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 34685 | 48.30 |
| 1994 | 0 | 0 | 13 | 1645 | 7 | 932 | 0 | 0 | 6 | 927 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 3504 | 15.68 |
| 1995 | 3 | 1323 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1323 | 52.35 |
| 1996 | 0 | 0 | 0 | 0 | 6 | 1291 | 0 | 0 | 4 | 371 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 354 | 9 | 3355 | 21 | 5371 | 19.50 |
| 1997 | 18 | 7134 | 6 | 1843 | 4 | 917 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2002 | 32 | 11896 | 25.81 |
| 1998 | 5 | 1366 | 6 | 4972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 6338 | 60.86 |
| 1999 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11.97 |
| 2000 | 0 | 0 | 4 | 1459 | 10 | 3023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 4482 | 24.36 |
| 2001 | 2 | 451 | 13 | 2140 | 28 | 11786 | 14 | 1039 | 1 | 111 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 15527 | 30.22 |
| 2002 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9.38 |
| 2003 | 0 | 0 | 0 | 0 | 5 | 982 | 5 | 264 | 5 | 325 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 1571 | 26.37 |
| 2004 | 0 | 0 | 3 | 1010 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1843 | 10 | 2853 | 16.73 |
| 2005 | 31 | 12925 | 28 | 9297 | 22 | 4568 | 0 | 0 | 2 | 116 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83 | 26906 | 60.13 |
| 2006 | 7 | 444 | 1 | 246 | 22 | 1283 | 30 | 8525 | 31 | 1593 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 | 12091 | 28.98 |
| 2007 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8.33 |
| 2008 | 16 | 4137 | 29 | 4707 | 31 | 1083 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 | 9927 | 28.13 |
| 2009 | 0 | 0 | 11 | 365 | 3 | 127 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 1 | 6 | 16 | 506 | 14.76 |
| 2010 | 13 | 3461 | 28 | 1954 | 31 | 685 | 18 | 368 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 4459 | 103 | 10926 | 32.05 |
| 2011 | 31 | 1739 | 26 | 714 | 31 | 8151 | 30 | 5548 | 31 | 1546 | 13 | 149 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 162 | 17847 | 36.77 |
| 2012 | 0 | 0 | 0 | 0 | 1 | 12 | 2 | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 87 | 14.17 |
| 2013 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10.98 |
| 2014 | 0 | 0 | 1 | 307 | 3 | 649 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 62 | 6 | 1018 | 11.39 |
| 2015 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13.09 |
| 2016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15.06 |
| 2017 | 4 | 578 | 21 | 4482 | 27 | 1031 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 6091 | 32.18 |
| AVG | 7 | 1953 | 10 | 2815 | 11 | 2777 | 7 | 1196 | 5 | 448 | 3 | 164 | 1 | 120 | 0 | 18 | 0 | 36 | 0 | 22 | 1 | 311 | 4 | 814 | 50 | 10672 | 24.91 |
| MAX | 31 | 21012 | 29 | 15331 | 31 | 16623 | 30 | 10488 | 31 | 8909 | 30 | 1742 | 31 | 2710 | 5 | 504 | 11 | 620 | 4 | 821 | 14 | 11676 | 28 | 8782 | 200 | 50349 | 60.86 |
| MIN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8.33 |

*Rain is average water year rainfall for Casitas Dam, Casitas Recreation Area and Matilija Dam rain gages in inches* *a.f. : acre-feet*

# A Cooperative Regional Approach to Improving Ventura County's Water Supply Reliability

Published by the Ojai Valley Water Advisory Group

Prepared by

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## *Summary*

*Five consecutive years of only one-half of average rainfall has reduced local groundwater levels and Lake Casitas storage levels to record lows. Water users in western Ventura County are subject to costly water conservation, allocation, and rationing programs for the second time in the past 25 years. Eastern Ventura County has one source of water, through a single pipeline from the California State Water Project (SWP). An interruption in the imported water supplies by a catastrophic earthquake or other event could leave a large portion of Ventura County without water for as long as a year.*

### *The Problem*

*Calleguas Municipal Water District and the eastern Ventura County have access to the vast water resources of Metropolitan Water District (MET) and the SWP, but have a vulnerable delivery system. The City of Ventura has a variety of groundwater supplies that are capable of producing a small surplus of water during normal years, but no water supply reserves for dry periods. The Casitas Municipal Water District (Casitas) service area has groundwater supplies that satisfy only about 40% of the water needs. In a normal year 60% of the area's water supply is Lake Casitas. During dry years both groundwater supplies and Casitas lake levels are low. Ventura County has little or no reserve water supplies to satisfy the county's needs during drought or emergency conditions.*

### *Responsible Agencies*

*Three major water authorities manage water supplies in Ventura County: Casitas Municipal Water District (Casitas) and City of Ventura in the western county, and Calleguas Municipal Water District (Calleguas) in the east county. Each of these water authorities is pursuing very costly projects to improve water reliability in their respective service areas. Calleguas needs a local*

*emergency supply of 30,000 acre feet (AF)* [1] *to achieve its goal of a one year's supply stored locally. Ventura and Casitas need additional water supplies and a reserve supply for dry years. None of the three agencies have the financial resources or the water system infrastructure to solve this problem on their own.*

### *State Water Project*

*More water can be accessed from the SWP. Ventura and Casitas combined could receive an average annual supply of nearly 5635 AF from the SWP, but they have no access to the SWP system. Even with access SWP water is as unreliable as local rainfall. In 2014, during the current local drought, SWP allocations were cut to 5% of annual deliveries.*

*If Casitas and Ventura each found a means to access SWP their individual situations would only slightly improve. Both would enjoy surplus supplies during normal years, but both would continue to experience deficits during dry periods. Ventura has no means of storing surplus water and Casitas even, with SWP water, would continue to rely on over 50% of Lake Casitas' reserve for routine normal year uses.*

### *Lake Casitas*

*Lake Casitas is a valuable asset that is being underutilized. Lake Casitas was built to serve as a water storage facility to capture the areas infrequent storm waters. These storm waters were to provide back up for dry periods when groundwater supplies are low. Over time the area began to rely on lake water as a primary source rather than a back up. Today Lake Casitas has become a routine source of water rather than a reserve. When groundwater levels are low, lake levels are also low.*

### *The Solution*

*If Ventura, Casitas, and Calleguas worked collectively and pooled each of their unique resources, the County could enjoy the benefits of a reliable and abundant water supply well into the future. Ventura and Casitas may have the opportunity to access SWP through Calleguas. With access to SWP water, combined with all of Ventura's and Casitas' current supplies, Ventura and Casitas would enjoy an average annual surplus of 13,500 AF, equal to 32% of their combined annual water needs. This surplus water could be reserved in Lake Casitas and shared by Ventura and Casitas during dry periods.*

*When a cooperative operational scenario is applied to the Lake Casitas 20 year drought model developed by Casitas the results are lake storage levels never falling below 50% of capacity or 125,000 AF, throughout the worst drought period of record. With minimum lake levels in this range Casitas could easily provide Calleguas with 30,000 AF of needed emergency water. In return western*

[1] An acre foot of water is the amount of water that will cover one acre – one foot deep. An acre foot is equal to 326,000 gallons of water

*Ventura County would be connected to the state's huge water network and Calleguas could provide an equal amount of emergency water to western Ventura County if ever needed.*

***Feasibility***

*A series of pipelines, pumping facilities and water storage tanks would be required to move water from Calleguas across Ventura and into the Casitas service area. The same pipelines could be used to deliver water back to Calleguas from the lake in an emergency. All three agencies have the engineering resources to construct the needed infrastructure.*

*The environmental impacts are neutral or positive. No foreign water will be placed in Lake Casitas with this proposal. The pressure to over pump local groundwater will be greatly reduced. There will be less competition between the development of sustainable groundwater and surface water plans and community's water demands.*

*The combined financial resources of all three agencies can be utilized to spread the costs of the project over a very large customer base. These water customers are paying more and more for less and less water every year under the current conditions. And these customers will ultimately pay for whatever projects currently being considered by the individual agencies, projects that may not produce needed long term benefits.*

*The main obstacles to the success of a cooperative solution to the area's water supply problem will likely be institutional issues. Each community and agency has a culture of "going it alone" and values independence over cooperation. This culture will be hard to overcome, especially in the Ojai Valley. But the Ojai Valley may have the most to gain from a cooperative approach and unfortunately has the most to lose by doing nothing. Without significant rain in 2018 the Ojai Valley and the Casitas service area face the grim reality of an economic disaster, a disaster that will impact agriculture, the tourist industry, real estate values, and the quality of life for everyone.*

***Conclusion***

*The following analysis demonstrates that ample water resources are available to Ventura County to avoid chronic water shortages and provide reserve supplies for emergencies. If the local water agencies work collectively and pool each of their unique resources, the County could enjoy the benefits of a reliable and abundant water supply well into the future. A collective and cooperative solution to Ventura County's water supply deficiencies may be the most effective, least costly, and most timely of all of the individual alternatives currently under review.*

## Introduction

Cyclical drought has repeatedly threatened western Ventura County with water shortages. Ventura County is 12 years into a drought period that may repeat or exceed the 1945-1966 drought, which is considered the longest in Ventura's recorded history. Five consecutive years of only

one-half of average rainfall has reduced local groundwater levels and Lake Casitas storage levels to record lows. Rainfall of 125% of average in 2017 replenished local groundwater to moderate levels, but did little to improve lake storage. Lake Casitas, the largest surface storage reservoir in the County was at 35% of capacity in December 2017. As a result, both Casitas and Ventura have implemented water conservation, allocation and rationing programs for the second time in the past 25 years.

The Calleguas Municipal Water District (Calleguas), which serves imported water to the eastern county, relies on the California State Water Project (SWP) aqueduct and a single pipeline from the San Fernando Valley to supply the SWP water. These delivery systems are vulnerable to earthquake damage that could interrupt Calleguas' 85,000 acre foot (AF) annual water deliveries to Simi Valley, Thousand Oaks, Moorpark, Camarillo and Oxnard.

An interruption in the imported water supply by a catastrophic earthquake or other event; in conjunction with chronic local water supply shortages caused by cyclical drought, threaten the vitality of the County's economy. The County's high tech industry, tourist industry, agricultural industry, real-estate values, and ultimately the health and safely of the entire County's residents are at stake.

This analysis was developed for the Ojai Valley Water Advisory Group, a group formed in April 2017 to analyze the growing water crisis in the Ojai Valley and to facilitate a comprehensive solution that will improve County's overall water supply reliability. Each water authority in the County is pursuing very costly project alternatives to improve water reliability in their respective service areas. If these agencies, Calleguas, City of Ventura, and Casitas Municipal Water District (Casitas) worked collectively and pooled each of their unique resources, the County could enjoy the benefits of a reliable and abundant water supply well into the future. A collective and cooperative solution to Ventura County's water supply deficiencies may be the most effective, least costly, and most timely of all of the individual alternatives currently under review.

## City of Ventura

Ventura is the oldest city in the County and has perhaps the largest collection of water sources. The City owns and operates groundwater wells in the Upper Ventura River Basin, the Mound Groundwater Basin, the Oxnard Plain, and the Santa Paula Basin. Ventura also buys lake water from Casitas. All of these sources, however, are dependent on local rainfall. Table A-1 illustrates how much water each source provides the City in a normal rainfall year. The table also compares the average annual water use to annual supplies. In a normal year, the City has an annual surplus of 1,794 AF (City of Ventura, 2017).

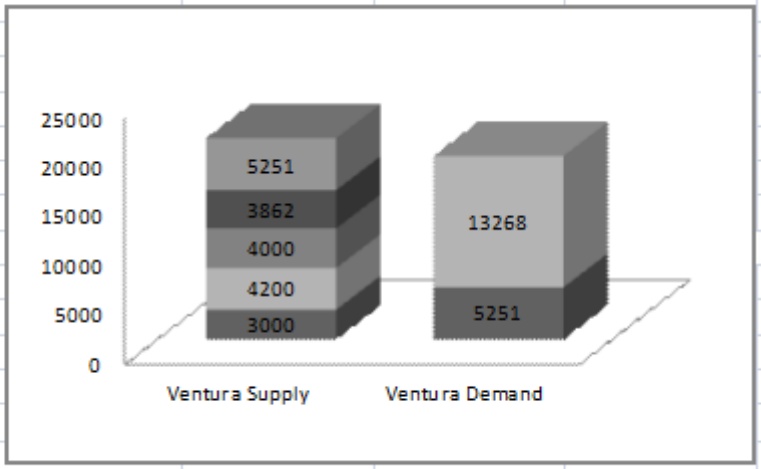
## Table A-1

City of Ventura

Water Supply and Demand 2017

Normal Year

| City of Ventura | |
|---|---|
| Demand | AF/Yr |
| East end Ventura | 13,268 |
| West end Ventura | 5,251 |
| Total | 18,519 |
| Supplies | |
| Lake Casitas | 5,251 |
| Oxnard Plain | 3,862 |
| Mound Basin | 4,000 |
| Ventura River | 4,200 |
| Santa Paula Basin | 3,000 |
| Total | 20,313 |
| Deficit/Surplus | 1,794 |




Data from City of Ventura "2017 Comprehensive Water Resource Report"

In a dry year, Ventura's supplies are reduced. Table A-2 illustrates how supplies fall short of average water use in a dry year. The availability of Ventura River water is reduced significantly. Santa Paula Basin allocation is reduced to prevent overdraft and Casitas may impose staged allocation reductions from the lake, based on lake levels. In 2017 the City's allocation from Lake Casitas was reduced by 30% and may be reduced further to 40% in 2018. In a dry year the City has a deficit of water use over supply of (4,267) AF. Implementation of water conservation and rationing programs are the City's only means of managing these deficits.

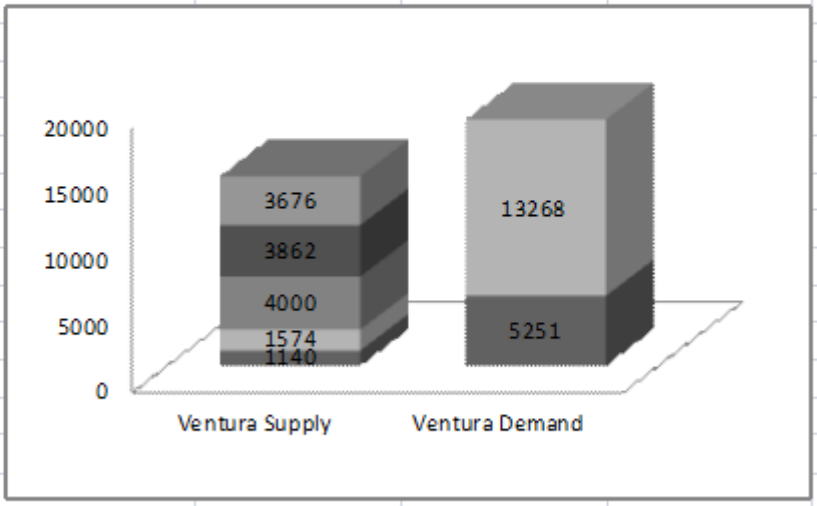
## Table A-2

**City of Ventura**

**Water Supply and Demand 2017**

**Dry Year**

| City of Ventura | |
|---|---|
| **Demand** | **AF/Yr** |
| East end Ventura | 13,268 |
| West end Ventura | 5,251 |
| Total | 18,519 |
| **Supplies** | |
| Lake Casitas * | 3,676 |
| Oxnard Plain | 3,862 |
| Mound Basin | 4,000 |
| Ventura River | 1,574 |
| Santa Paula Basin | 1,140 |
| Total | 14,252 |
| Deficit/Surplus | (4,267) |




Data from City of Ventura "2017 Comprehensive Water Resource Report"

* Casitas Stage 3 (30% reduction in allocation)

## Casitas and the Ojai Valley

Casitas is both a water retail and wholesale water purveyor. Casitas supplies water to a portion of the City of Ventura, the unincorporated western Ventura County and the City of Ojai. Casitas' district boundaries extend from the Santa Barbara county line at Rincon Del Mar, east to Miles Road in Ventura, north to the Santa Paula –Ojai Summit in Upper Ojai and west along highway 150 towards Carpentaria and the county line. Casitas' water service area is supplied by groundwater from the Ojai Groundwater Basin, Upper Ojai Groundwater Basin, Upper Ventura River Basin and Lake Casitas. Historically, groundwater has been the area's primary source of water.

### Ojai Area Groundwater

The Ojai Basin supplies the City of Ojai, residential developments in the unincorporated east end of the Ojai Valley, and about 60% of the groundwater is used for agriculture (VRWC, 2015). The communities of Meiners Oaks and portions of Oak View are supplied by the Upper Ventura River Basin. The Upper Ojai Basin provides water to small residential developments and agriculture. There are also many private water pumpers on all three basins.

Casitas, unlike Ventura, does not own and operate all the groundwater wells in the Casitas service area. Groundwater users are served by separate water agencies, private organizations, or private well owners. Meiners Oaks Water District and Ventura River Water District are public water agencies serving groundwater. There are numerous mutual water companies, the largest of which are Senior Canyon, Siete Robles Mutual, Sisar Canyon Mutual and Hermitage Ranch Mutual. Casitas recently acquired the Golden State Water Company that serves the City of Ojai. Casitas now owns and operates the wells serving the City of Ojai and is expected to continue to use the Ojai Basin as the City's primary water supply.

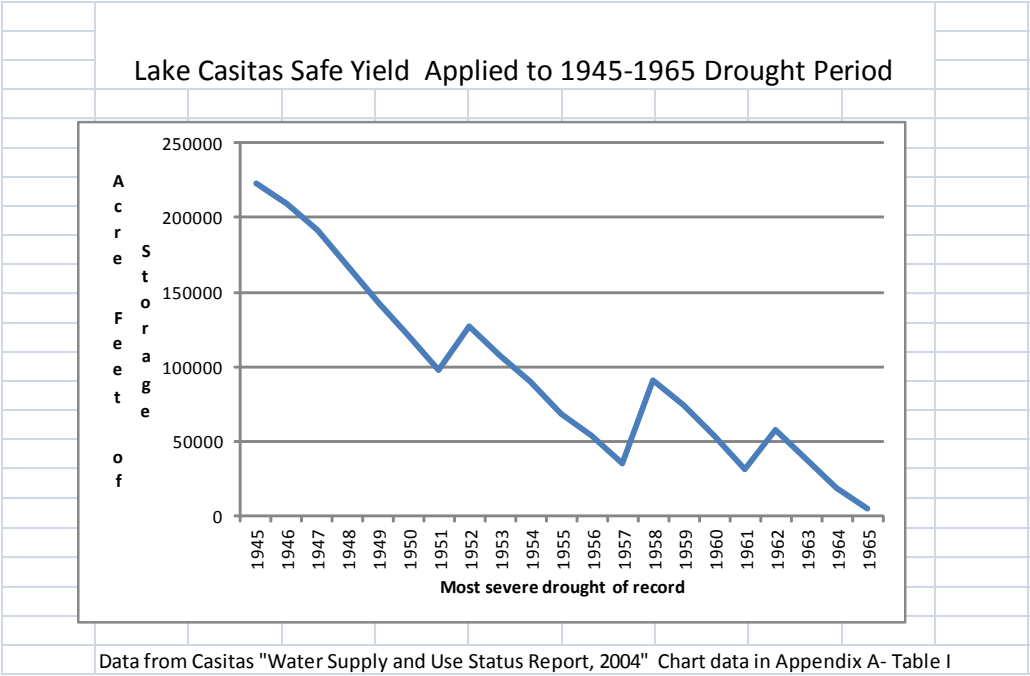
The total water available from each of these basins is generally unknown. Ojai Basin Groundwater Management Agency (OBGMA) has been collecting data and conducting studies to better understand the basins characteristics. The annual yield from the Ojai Basin is currently believed to be 5,026 AF (Stephens, 2011). The Upper Ventura River Groundwater Sustainability Agency was recently formed and has begun to initiate studies and collect groundwater data. Both the Upper Ventura River and the Upper Ojai Basins rely on historical pumping records to estimate average annual yield. Water extractions from all three basins are generally controlled by basin water levels and the ability of existing wells to access water during drought periods.

**Lake Casitas**

The Casitas Municipal Water District was formed following 1945 record drought. Lake Casitas and Casitas Dam were constructed by the U. S. Bureau of Reclamation and designed to supplement local groundwater supplies during similar drought cycles. Today all groundwater users in the Casitas service area rely on supplemental supplies from Lake Casitas during periods of drought. Many groundwater users are routinely supplemented by Lake Casitas during the high water use summer season.

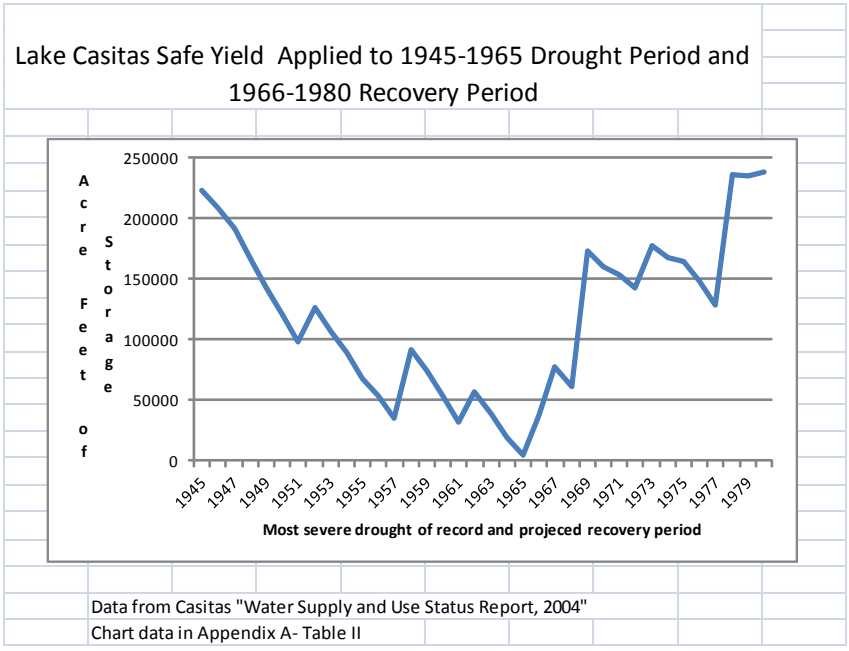
Lake Casitas has a maximum water storage capacity of 238,000 AF. The available annual supply from Lake Casitas is determined by the lake's "safe yield". "Safe yield" is the amount of water that may be withdrawn from the lake on an average annual basis without depleting the supply. The Casitas "safe yield" was reevaluated in 2004 and determined to be 20,840 AF (Casitas, 2004). Chart B-1 is from Casitas' 2004 "Water Supply and Use Status Report" which analyzed the potential impacts to the lake levels over the historical drought period of 1945-1965 with an average water use of 20,840 AF per year.

## Chart B-1




Casitas' analysis also projects a recovery period during which the lake would refill following the drought. The recovery period used is 1966-1980. Water use was reduced to 19,775 AF annually to achieve full recovery by the end of the period. Chart B-2 illustrates how lake level would respond to the period of study.

## Chart B-2



Casitas' average annual water use was 16,076 AF from 2006-2017 (Casitas 2017), which is less than "safe yield". Table A-3 compares water supplies in the Casitas service area with water use during a normal year. The Casitas service area has an average annual surplus of 4,858 AF.

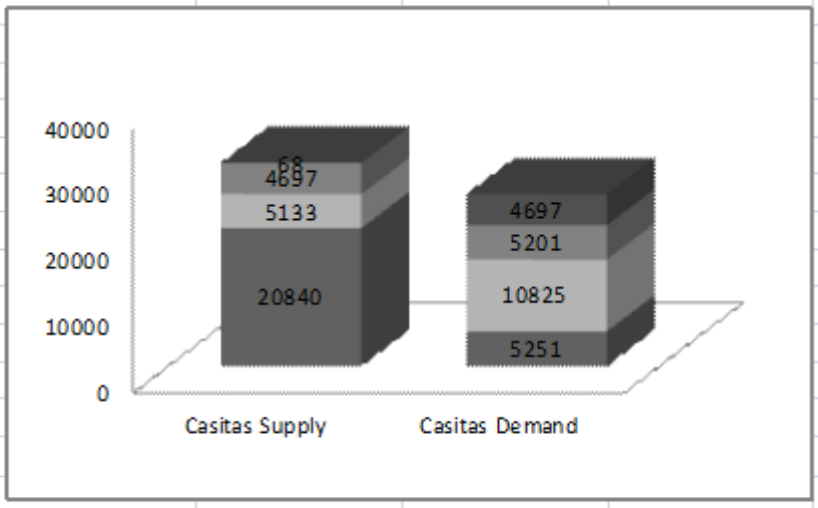
## Table A-3

**Casitas**

**Water Supply and Demand**

**Normal Year**

| Casitas Demand | AF/Yr. |
|---|---|
| Casitas Customers | 10,825 |
| West end Ventura | 5,251 |
| Ojai Valley | 5,201 |
| Ventura River Area | 4,603 |
| Total | 25,880 |
| **Supplies** | |
| Lake Casitas | 20,840 |
| Ojai Basin | 5,133 |
| Ventura River Basin | 4,697 |
| Upper Ojai Basin | 68 |
| Total | 30,738 |
| Deficit/Surplus | 4,858 |




Data from Casitas 2015 "Water Efficiency and Allocation Program", "Ventura River Watershed Management Plan", 2015, and Ojai Basin Groundwater Management Agency 2016 Extraction Data

Casitas is the backup supply for local groundwater in the Ojai Valley and Ventura River basins. In periods of drought the annual demand for Lake Casitas water increases by as much as 7,384 AF (Casitas 2015) and production from groundwater wells declines. Table A-4 compares Casitas' service area supplies to potential water demand during a dry period. Casitas may have a deficit during such periods of (5,824) AF.

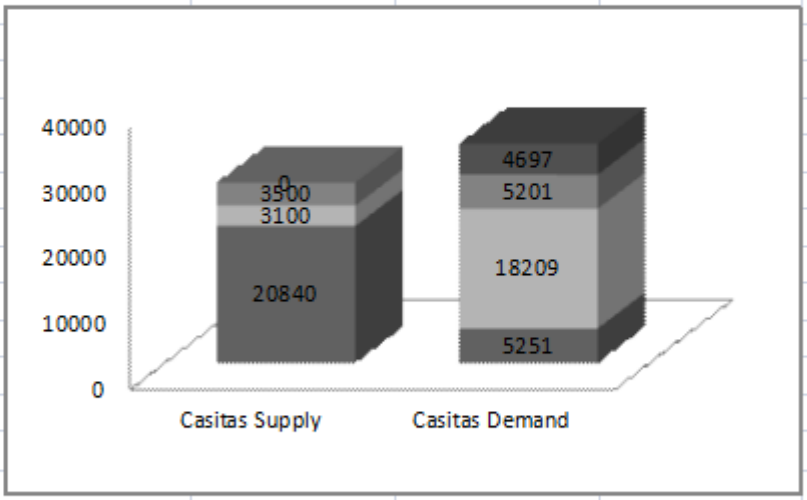
## Table A-4

**Casitas**

**Water Supply and Demand**

**Dry Year**

| Casitas Demand | AF/Yr. |
|---|---|
| Casitas Customers | 18,209 |
| West end Ventura | 5,251 |
| Ojai Valley | 5,201 |
| Ventura River Area | 4,603 |
| Total | 33,264 |
| | |
| **Supplies** | |
| Lake Casitas | 20,840 |
| Ojai Basin | 3,100 |
| Ventura River Basin * | 3,500 |
| Upper Ojai Basin | - |
| Total | 27,440 |
| Deficit/Surplus | (5,824) |



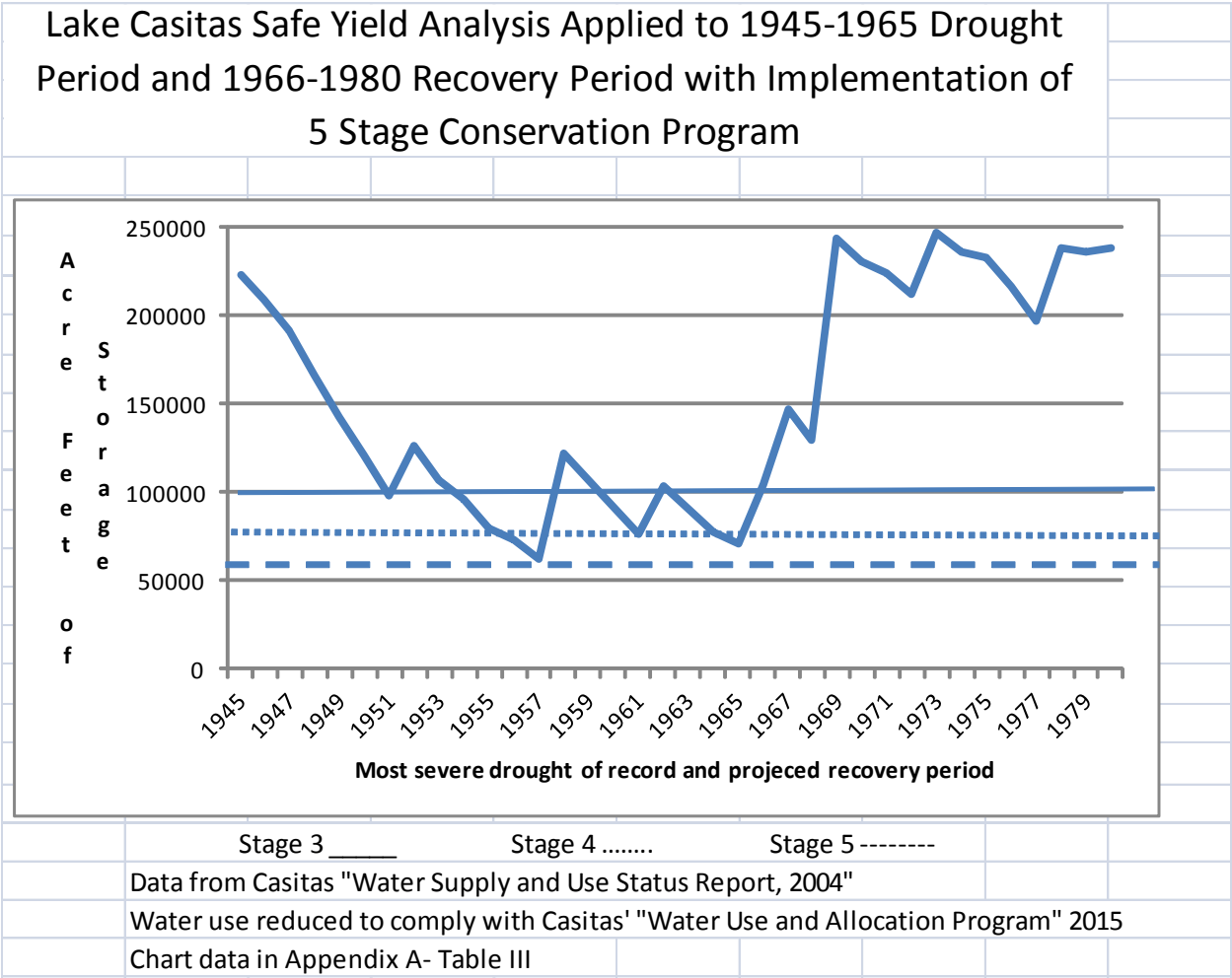

Data from Casitas 2015 "Water Efficiency and Allocation Program", "Ventura River Watershed Management Plan", 2015, and Ojai Basin Groundwater Management Agency 2016 Extraction Data

* Ventura River Basin water supply during drought is an estimate. No exact data available

Casitas, unlike Ventura, has the ability to store surplus water. However, Casitas is operating close to "safe yield", using over 75% of its safe yield annually. In 2015 Casitas adopted the "Water Efficiency and Allocation Program" to reduce water demand on the lake. The 5 Stage program goal is to maintain average annual water use at 18,200 AF, 20% below 1989 record total water sales. The program reduces water use by 30%, 40% and as much as 50% when lake levels fall below what are considered safe levels. This program is based on Casitas "safe yield" analysis.

The analysis applies conditions during the 1945-1965 drought and the probability of lake storage recovering with local rainfall during a 15 year recovery period similar to 1966-1980. Casitas plans to manage the potential water shortages during this 35 year cycle with their 5 Stage Program. Chart B-3 illustrates the impact to lake storage from a drought and recovery period, like that used in the Casitas "safe yield" analysis, with the implementation of the 5 Stage Program. Casitas water users would experience 6 years of Stage 3 (30% reductions in water use) and 3 years of Stage 4 (40% reductions).

## Chart B-3




The potential flaw in Casitas' projections is the assumption that the future recovery period will occur as rapidly as the 1966-1980 period. Historical records demonstrate that 1969-1980 may be part of the wettest period of record. Chart B-4 shows how often major rain events occurred in the recovery period compared to the historical record. From 1906-2017 a total of 8 years experienced rainfall in excess of 40 inches at the Ojai weather station (Ventura County Watershed Protection District Rainfall Data Base). In the 62 years between 1906 and 1968 a rainfall year over 40 inches

occurred only once. In the 37 years, 1969-2006, rainfall years of over 40 inches occurred 7 times. During the rather short 15 year recovery period there were 2 years with greater than 40 inches of rain. Using this period (1965-1980) to project recovery may be far too optimistic. Using an extreme wet period that has not been repeated historically, combined with the growing evidence of climate change does not present the most probable outcome.

**Chart B-4**

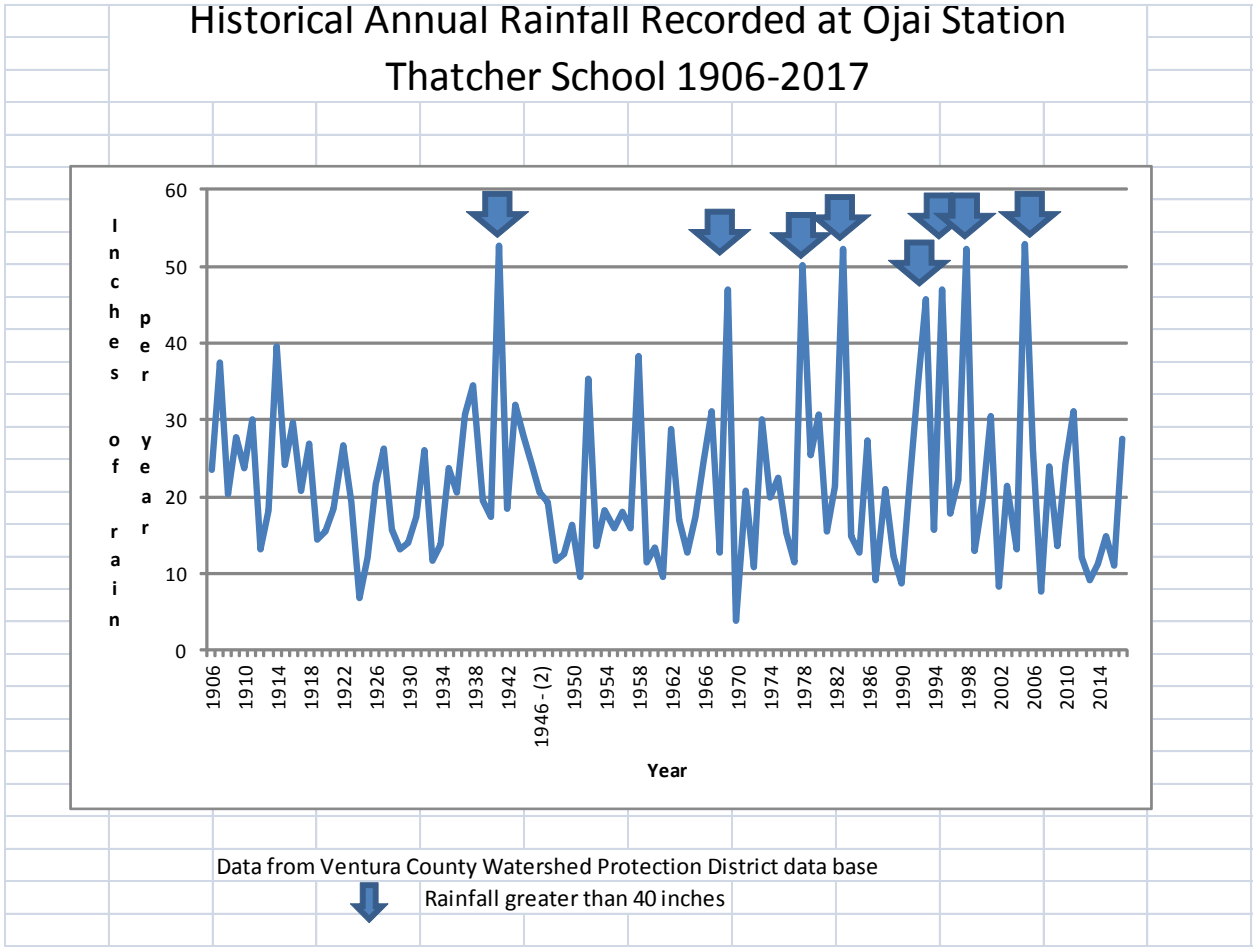
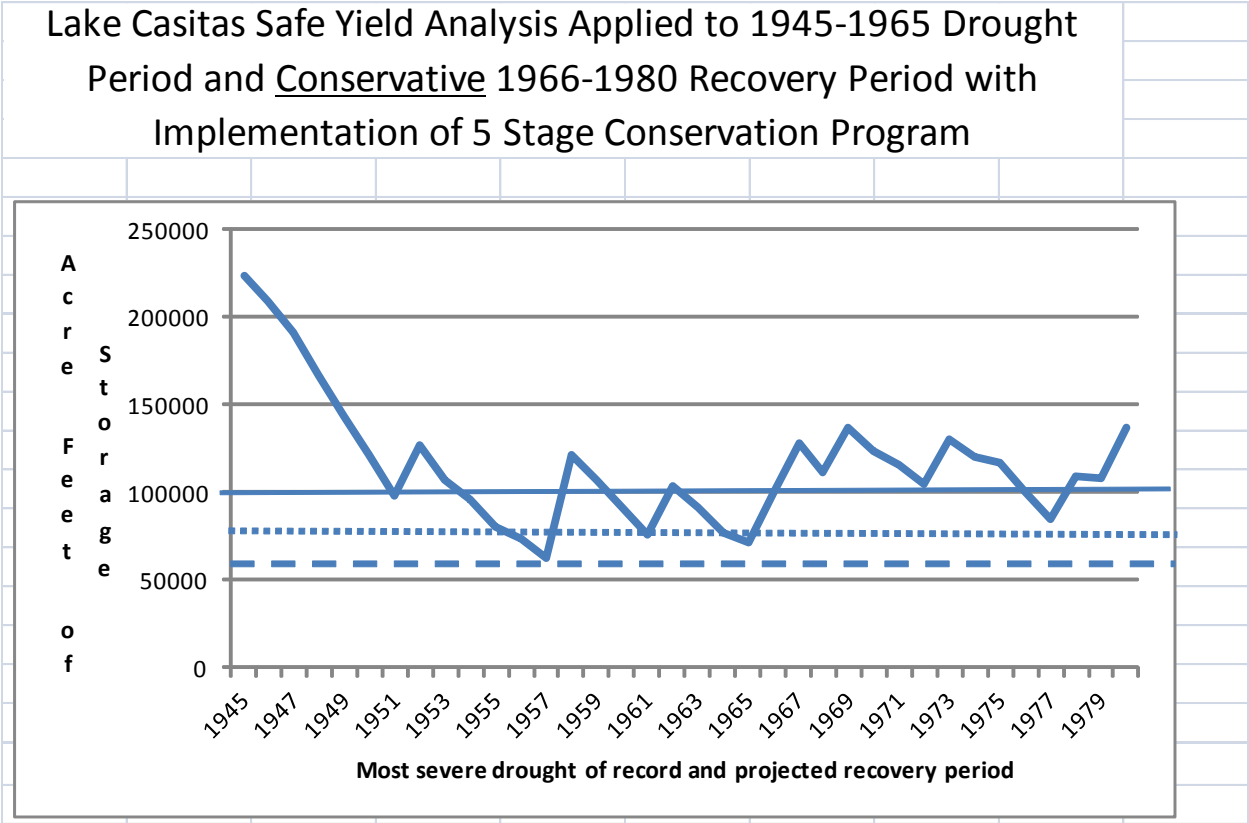



Chart B-5 illustrates a more "conservative" recovery period by reducing all major events during the recovery period to no greater than 1962, a moderate rainfall year. Lake levels would recover to over 58% of total storage, but it will require multiple periods of significant water conservation and rationing. Casitas water users would experience 7 years of Stage 3 (30% reductions) and 3 years of Stage 4 (40% reduction). Hopefully, the area will receive more rainfall than used in the model for Chart B-5, but because weather is notoriously unpredictable there are no guarantees.

## Chart B-5




## Calleguas and the East County

Calleguas is a member of Metropolitan Water District of Southern California (MET) and receives SWP water through MET's water delivery system. Calleguas is a wholesale water purveyor and delivers an average of 85,000 AF of imported water annually from MET to the cities and unincorporated areas of eastern Ventura County. Many communities in the Calleguas service area rely exclusively on imported water. All rely heavily on imported water to supplement local groundwater supplies. Since the drought of 1989-1992, when SWP supplies were reduced,

Calleguas and fellow members of the MET have invested in water storage projects (MET 1999). Large surface water storage facilities, such as the Eastside Reservoir and groundwater banking agreements with groundwater management agencies along the SWP aqueduct have enabled southern California, including eastern Ventura County, to experience only moderate impacts from the most recent drought in California.

For eastern Ventura County and Calleguas the primary concern today is how to prepare for a catastrophic event, such as an earthquake, that could render the imported water delivery system inoperable for an extended period. An earthquake in the Sacramento Delta area could severely damage the SWP aqueduct and associated facilities. Such an event would obviously be repaired with the utmost urgency, but could take six months to one year to restore service. An earthquake in the northern San Fernando Valley could damage pipelines and water treatment plants on which Calleguas relies. These repairs would likely be achieved much faster, but an outage of several months is possible (Calleguas, 2017).

To plan for such events Calleguas has been pursuing projects that will provide an emergency water supply, for up to one year within Ventura County. Calleguas has invested in large groundwater storage projects, such as the Las Posas Groundwater Storage and Recovery Project, and smaller projects on the Oxnard Plain. Calleguas is actively seeking additional emergency water sources. Calleguas is 30,000 AF short of its 85,000 AF goal, and is now exploring desalination projects with potential costs in the hundreds of millions of dollars and with lengthy completion timelines (Calleguas 2017).

## SWP Water

Casitas and Ventura share a 15,000 AF per year SWP allocation, which they have not yet accessed. The SWP has been plagued in recent years by increases in demand for water, by drought, and by operational limitations imposed by regulations regarding environmental impacts to the Sacramento Delta fisheries. As a result, SWP contractors have experienced significant reductions to their original annual water allocations. From 2006 through 2017 annual allocations have been reduced from the original amounts each year. On average SWP contractors have only been allocated about 48% of their full allocations over the past 12 years. At the height of the current drought in 2014 allocations were reduced to 5% (DWR, 1990-2017).

SWP contractors have developed ways, both collectively and independently, to store surplus water in wet years and meet their demands for water through storage and alternative supplies during dry periods. Some, like MET, have been successful in developing a portfolio of storage, alternative supplies, and water exchanges (MET, 1999). If Ventura and Casitas ultimately decide to access SWP water they will have to develop the means to address chronic allocation reductions.

**Ventura SWP Allocation**

Ventura's share of the SWP allocation is 10,000 AF of water per year. Table A-5 illustrates the amount of water that would be available in a normal year, with the most recent historical average

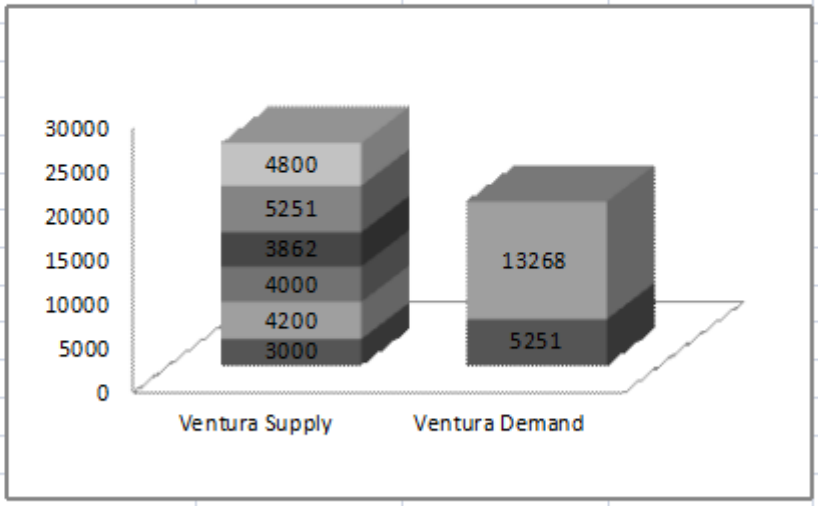
SWP allocation of 48%, compared to annual water use. The City would have a surplus of over 6,594 AF annually.

## Table A-5

**City of Ventura With SWP**

**Water Supply and Demand 2017**

| City of Ventura | | Normal Year |
|---|---|---|
| **Demand** | **AF/Yr** | |
| East end Ventura | 13,268 | |
| West end Ventura | 5,251 | |
| Total | 18,519 | |
| | | |
| **Supplies** | | |
| SWP | 4,800 | |
| Lake Casitas | 5,251 | |
| Oxnard Plain | 3,862 | |
| Mound Basin | 4,000 | |
| Ventura River | 4,200 | |
| Santa Paula Basin | 3,000 | |
| Total | 25,113 | |
| Deficit/Surplus | 6,594 | |

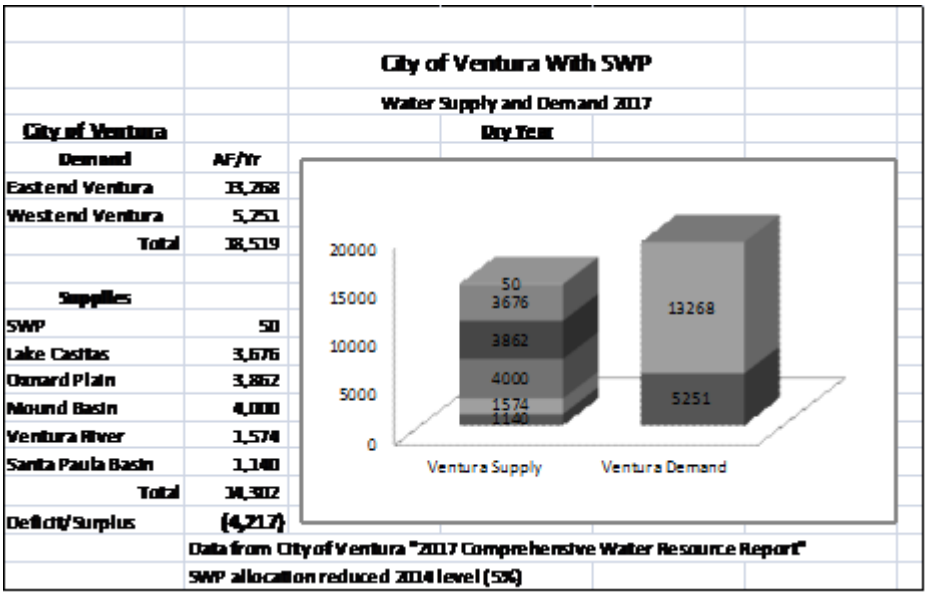



Data from City of Ventura "2017 Comprehensive Water Resource Report"

SWP average allocation over past 12 years (48%)

Ventura does not have access to storage facilities used by other SWP contractors to supplement SWP deliveries when allocations are reduced. Therefore, the City's SWP supply would be subject to even greater reduction during drought periods. Droughts in northern California generally coincide with drought in the southern California. In 2014, a dry period in Ventura, SWP allocations were cut to 5% of total allocation. Table A-6 illustrates what supplies would be available in a severe drought compared to water use. The City would have a deficit of (4,217) AF.

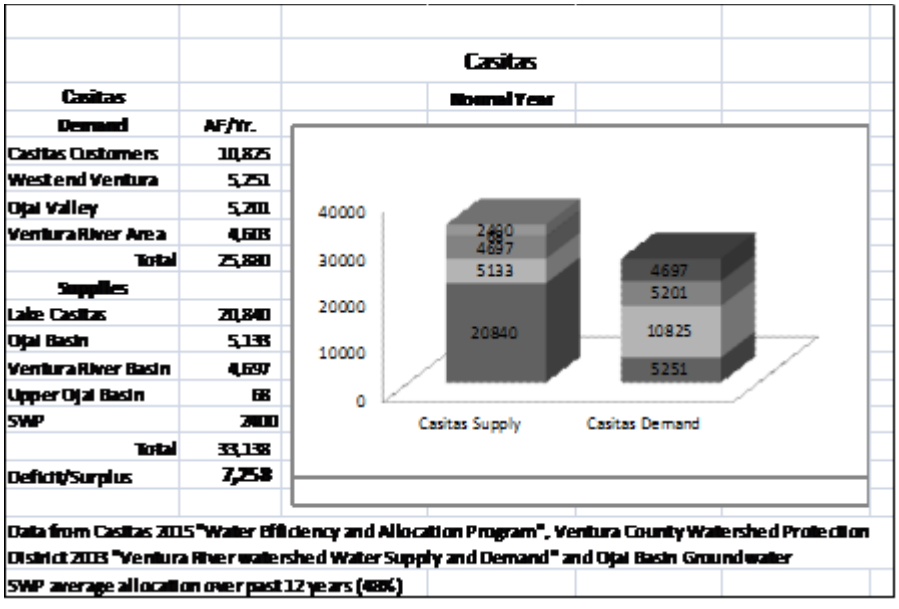
## Table A-6




### Casitas SWP Allocation

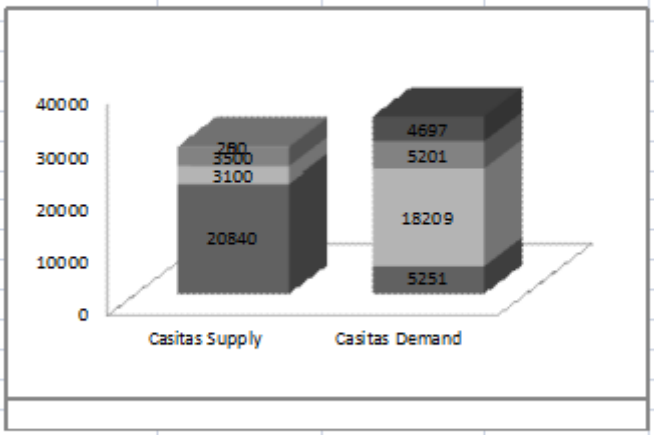
Casitas' portion of the SWP allocation is 5,000 AF per year. Table A-7 compares Casitas' supplies and demand under normal conditions and Table A-8 under dry conditions with SWP water. In normal years Casitas would have a surplus of 7,258 AF, but in a dry period could have a deficit of (2,370) AF.

## Table A-7



# Table A-8

| Casitas | | Dry Year |
|---|---|---|
| Demand | AF/Yr. | |
| Casitas Customers | 18,209 | |
| West end Ventura | 5,251 | |
| Ojai Valley | 5,201 | |
| Ventura River Area | 4,608 | |
| Total | 33,264 | |
| Supplies | | |
| Lake Casitas | 20,840 | |
| Ojai Basin | 3,100 | |
| Ventura River Basin | 3,500 | |
| Upper Ojai Basin | - | |
| SWP | 250 | |
| Total | 27,690 | |
| Deficit/Surplus | (5,574) | |

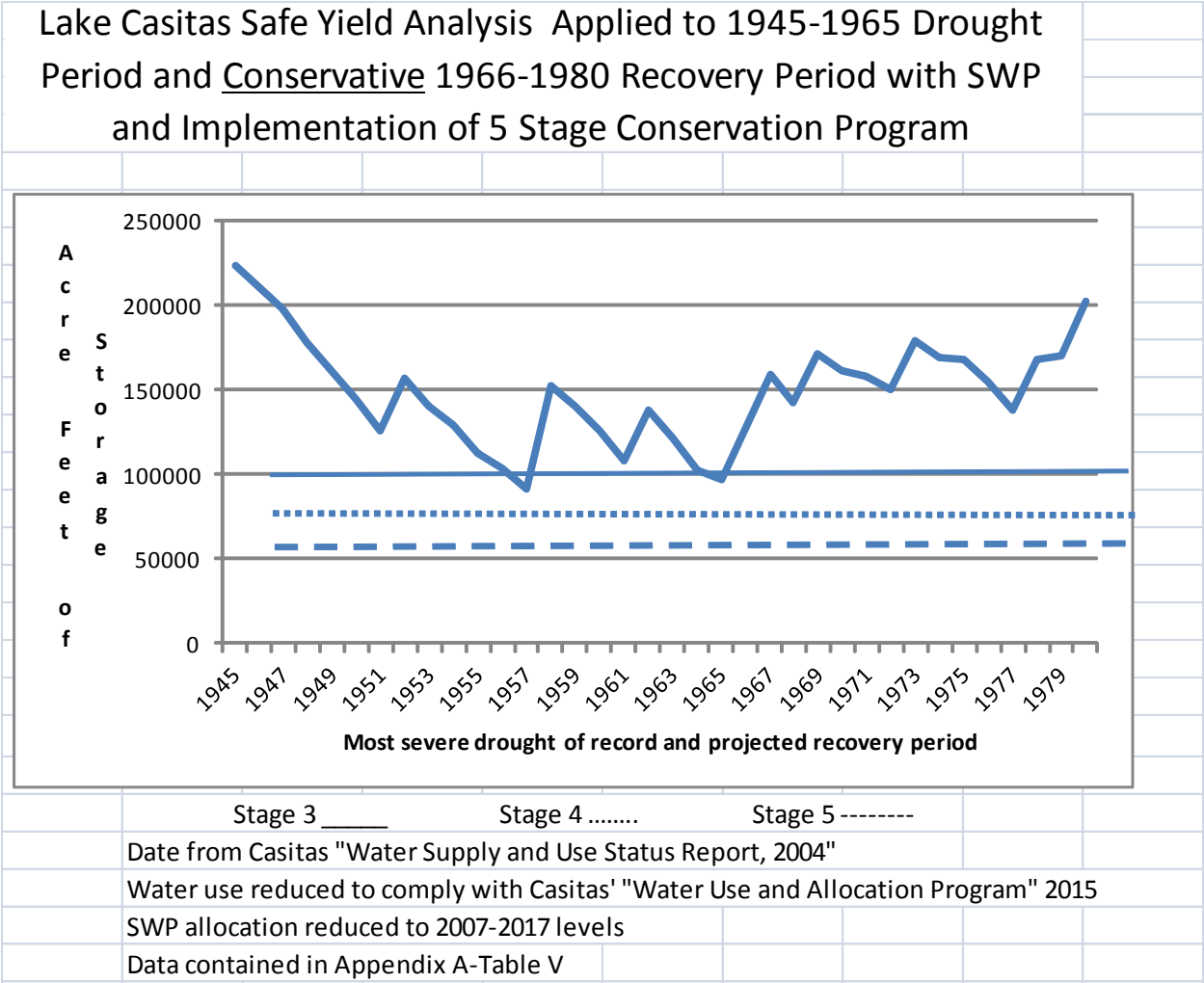



Data from Casitas 2015 "Water Efficiency and Allocation Program", Ventura County Watershed Protection District 2013 "Ventura River watershed Water Supply and Demand" and Ojai Basin Groundwater
SWP allocation reduced 2014 level (5%)

### Impacts to Lake Casitas Storage with SWP

Chart B-6 illustrates the impacts of the "conservative version" of Casitas' 35 year drought and recovery period with the benefit of imported water. Most recent SWP water allocation reductions (2006-2017) have been applied repeatedly to the Casitas SWP allocation over the 35 year period. Casitas' water reliability would be greatly improved with the addition of SWP water. Casitas water users would only experience 2 years of Stage 3 reductions and no Stage 4. Lake level would recover to 85% of capacity at the end of the recovery period.

## Chart B-6




Casitas would benefit from accessing SWP water. If Casitas used SWP water when available as a primary source and reserved as much lake water as possible for dry years Casitas could potentially avoid future water shortages. However, the capital costs for Casitas to independently access SWP may be prohibitive.

## Ventura and Casitas Operating Methodology

### Ventura

It is unfortunate that Ventura has, on average, a surplus water supply each year of 1,794 AF, with no means to store surplus water from year to year. The only way Ventura can manage dry year shortages is through conservation programs and sometimes severe rationing programs.

Ventura does have access to stored Lake Casitas water, but Casitas' allocation program does not allow unused portions of an allocation to be rolled over to the next year. In fact, the City's use of

Casitas water is very limited. When the Casitas district was originally formed in the 1950's it was not envisioned that the City would expand so far east. The boundary of the Casitas district was set at approximately Mills Road. Today nearly 2/3 of the City is outside the Casitas boundary and therefore prohibited from using Casitas water. This situation has caused much friction between the two organizations over the years. What has resulted is an agreed arrangement that is not ideal for either party. Because the City cannot serve the eastern portion of the City with Casitas water, it supplies the western portion with 100% lake water whenever possible. All other Ventura supplies are reserved for use in the eastern portion of the city, including Ventura River water. Even in an above average rain year Ventura generally moves all Ventura River water east because the quality is much higher than east end ground water, and there is no benefit to Ventura in reserving lake water. Consequently, Casitas is not a supplemental supplier to Ventura, rather a primary supplier, placing a constant demand on the lake.

### Casitas

In the Casitas service area groundwater from the Ojai Basin, Upper Ojai Basin and the Upper Ventura River Basin are the primary supplies for much of the Ojai Valley. Groundwater is less expensive to produce and therefore groundwater well operators avoid purchasing Casitas water. Casitas recently acquired the Golden State Water Company service area in the City of Ojai and continues to use Ojai Basin water as the primary source for the City. It is much less costly for Casitas to pump groundwater than to pump lake water up to Ojai.

However, Casitas has become the primary source for many of the water users in its service area. Casitas is the primary source for western Ventura, as discussed above, with an annual water use of about 5,200 AF. Casitas annually delivers water to supplement groundwater users that cannot meet peak summer water demands in normal years, serves agricultural users that have no other supply, and the urban areas of Oak View, Mira Monte, and the Rincon Beach, which rely on Casitas exclusively. These water uses average over 10,825 AF annually. These uses combined with Ventura's water use total 16,076 AF per year, leaving only a small portion of Casitas' annual "safe yield" (20,840 AF) as supplemental supplies to groundwater users in critically dry years (Casitas, 2016)

## Integrated Supply Strategy

Ventura and Casitas are responsible for serving their respective constituents with the resources available. Historically, each agency has deliberately tried to remain as independent as possible and preserve its resources for the exclusive use of those they serve. Each agency has a separate SWP allocation subject to chronic reductions. Each agency has valuable resources, but each agency's resources have limitations. With SWP water Ventura would have ample surplus water during normal years, but no ability to store water for dry years. With SWP water Casitas would have the ability to store surplus water in Lake Casitas, but must routinely use water from the lake to meet normal year demands leaving little water in reserve for dry years. If these agencies

worked cooperatively and pooled their resources they may be able to greatly improve their individual service reliability, as well as, collectively gain additional water supplies.

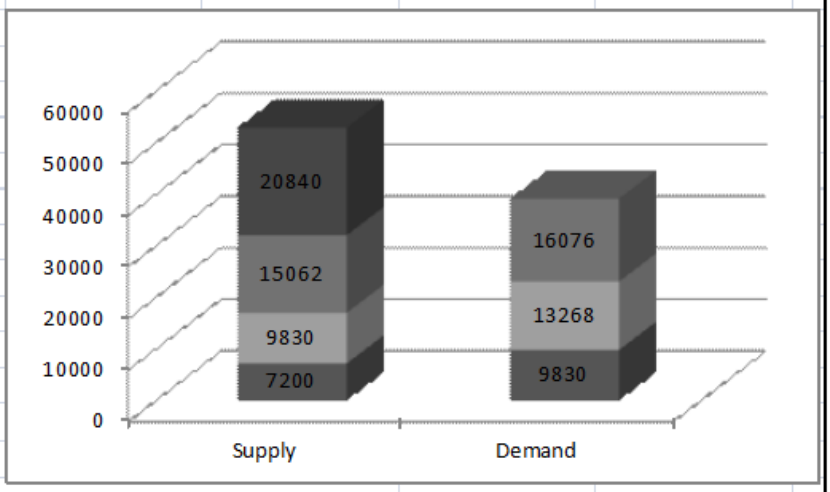
### Combined Water Resources

As an example, Table A-7 combines Ventura's and Casitas' water supplies with access to SWP and compares it to their combined water use. In a normal year, the two agencies would have a combined surplus of 13,758 AF, nearly twice the 7,258 AF surplus Casitas would have operating independently with SWP water. If that increased annual surplus was stored in Lake Casitas more water would be available for use in dry years. In a dry year (Table A-8) Ventura and Casitas would have a combined deficit of (7,842) AF, nearly one-half of their combined average annual surplus..

## Table A-7

Combined
No Rationing
Normal Year
City of Ventura and Casitas with SWP

| **Demand** | AF/Yr. |
|---|---|
| Casitas * | 16,076 |
| East Ventura | 13,268 |
| Ojai Valley ** | 9,830 |
| Total | 39,174 |
| **Supplies** | AF/Yr. |
| Lake Casitas | 20,840 |
| Ventura Groundwater | 15,062 |
| Ojai Groundwater | 9,830 |
| SWP | 7,200 |
| Total | 52,932 |
| **Surplus/Deficit** | **13,758** |




* Casitas customer water use
** Ojai area groundwater use
SWP allocation over past 12 years (48%)

## Table – A-8

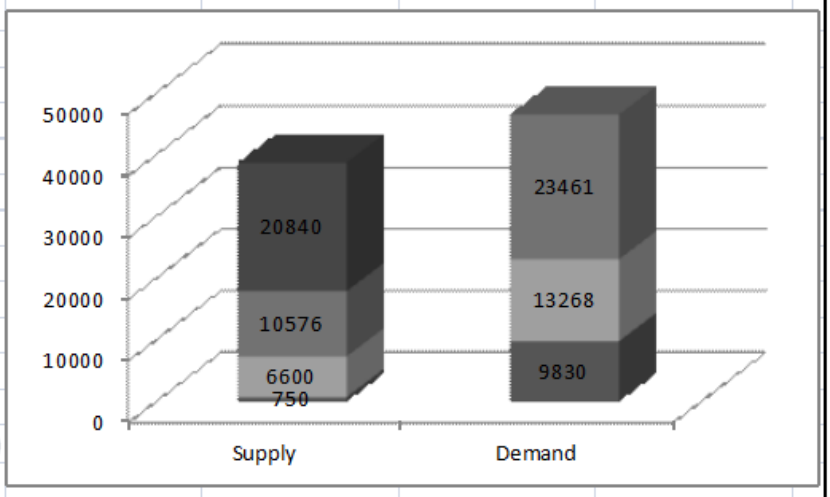
Combined

No Rationing

Dry Year

City of Ventura and Casitas with SWP

| Demand | AF/Yr. |
|---|---|
| Casitas * | 23,510 |
| East Ventura | 13,268 |
| Ojai Valley ** | 9,830 |
| Total | 46,608 |
| **Supplies** | AF/Yr. |
| Lake Casitas | 20,840 |
| Ventura Groundwater | 10,576 |
| Ojai Groundwater | 6,600 |
| SWP | 750 |
| Total | 38,766 |
| **Surplus/Deficit** | **(7,842)** |




* Casitas customers water use

** Ojai area groundwater use

SWP allocation reduced 2014 level (5%)

### Multi-purpose Pipeline System

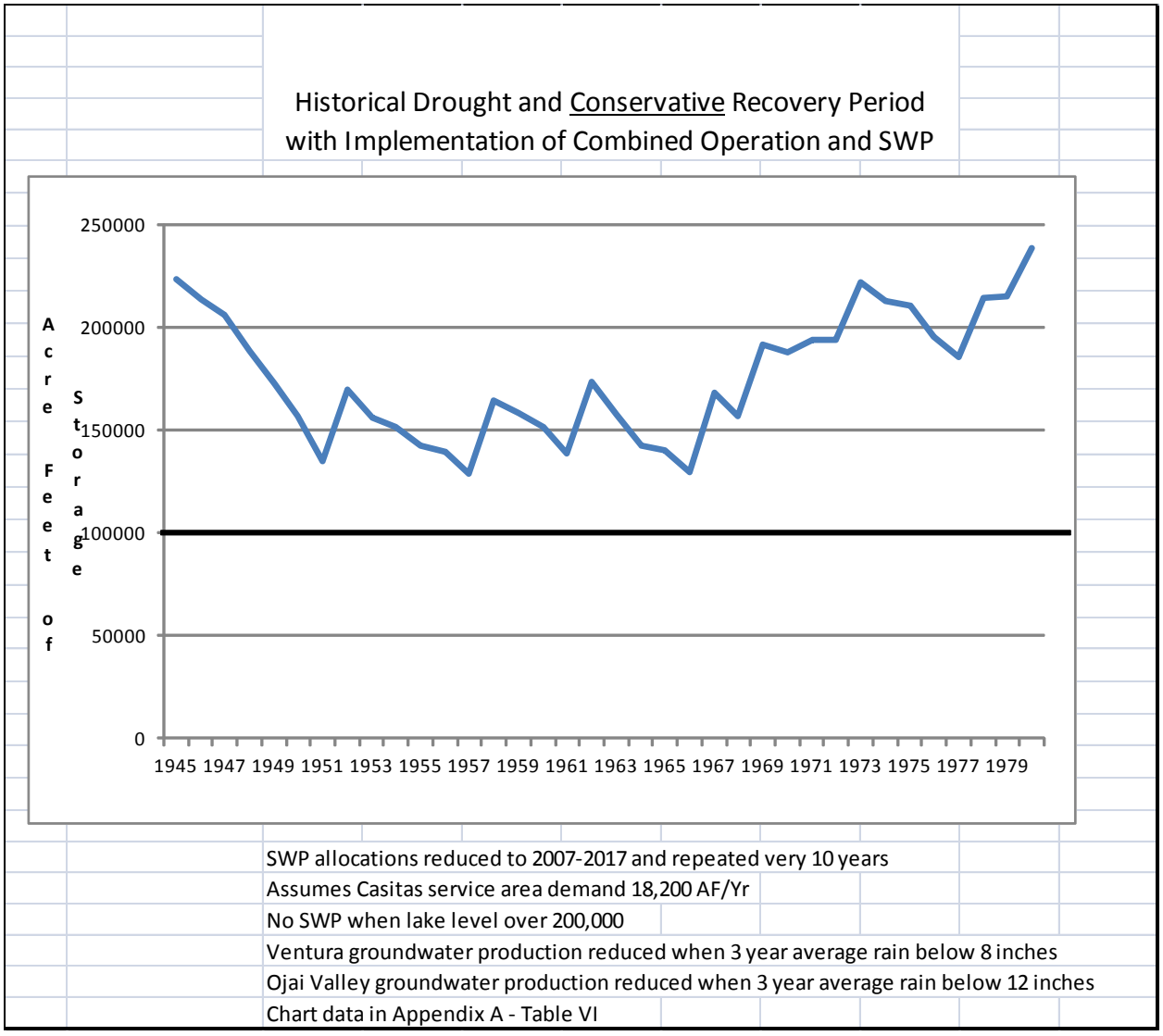
If Ventura and Casitas cooperatively utilized SWP water, east Ventura groundwater, Ventura River water and Ojai Basin water as their primary sources, Lake Casitas water could be reserved for dry periods and emergencies. With the appropriate pipeline network SWP water could be delivered to the east end of Ventura, blended with Ventura's groundwater and Ventura River water. Blended water could be transported through Ventura, satisfying all of the City's water needs. All surplus water could then be pumped into the Casitas pipeline system and used by Casitas customers. Ojai groundwater would continue to be used, as it has historically, to satisfy the water uses of the public and private well operations throughout the Ojai Valley. Casitas could then supplement any routine additional water use needs with lake water. Lake water would be the water source of "last resort ", reserving stored lake water for drought and emergencies.

During drought periods when groundwater supplies are reduced and SWP allocations are cut back, Lake Casitas water could be used as a backup for all of the water users in Ojai and Ventura.

### Impact to Lake Casitas Storage

Applying the combined operating methodology to the conservative 35 year Drought and Recovery Period model illustrates the benefit to Lake Casitas storage over the period. Chart B-7 demonstrates that there would be no need for implementation of Casitas Stage 3-5 water reduction requirements. Lake levels would never fall below 125,000 AF of storage and the lake would refill by the end of the period.

## Chart B-7



Over the 35 year period Ventura and Casitas combined would only use an average 5,635 AF per year from their combined allocation of 15,000. Ventura and Casitas combined would only use an average of 11,650 AF of water from Lake Casitas each year (see Appendix A – Table VI).

## Feasibility of Combined Operations

### Accessing SWP

Accomplishing a successful combined operation will require access to the SWP. Historically, Casitas and Ventura have contemplated plans to bring SWP to the west County. The closest access point is Lake Castaic , a SWP storage reservoir, in the Newhall area. The water is untreated and a delivery system would require, nearly 50 miles of pipeline as well as a treatment facility. The cost of such a project has only increased over the years. The projected annual water yield from this project has been reduced over the years because of SWP allocation cut backs. Consequently ultimate unit cost of accessing this water has made this alternative for accessing SWP economically infeasible.

Today, the most practical option for access to SWP is through MET and Calleguas. Susan Mulligan, General Manager of Calleguas, confirmed that each agency has surplus system capacity and each could transport treated water through their systems. Calleguas and Ventura are currently evaluating the construction of a pipeline to deliver Ventura's SWP allocation to the eastern end of the City. Exhibit A is the proposed pipeline alignment being considered. Casitas has also expressed some interest in participating in the project. However, a pipeline system from Calleguas to Ventura and beyond to the Casitas service area, combined with fees and charges for utilizing the MET and Calleguas, would be costly. And again, with the continued reductions in SWP allocations the cost/benefits may be marginal.

### Partnering with Calleguas

However, if the pipelines and associated facilities needed to transport SWP to Ventura and Casitas were designed to be a regional interconnection between the east county and the west county it could serve multiple purposes and serve to benefit nearly all the residents of Ventura County. Callaguas, as discussed above, is actively seeking 30,000 AF of emergency storage to insure a supply in the event of a catastrophic interruption in their supply from MET. They are currently exploring very costly options, including desalination (Calleguas, 2017). To avoid the costs of projects like desalination, Calleguas may be willing to invest in a regional system capable of transporting water from SWP to Ventura and Casitas as well as transferring water from Lake Casitas to the eastern county in an emergency. In exchange Casitas could provide Callaguas with the 30,000 AF reserve supply they are seeking. All three agencies and the residents of all three service areas would benefit.

As illustrated in Chart B-7 Lake Casitas would maintain a minimum of over 125,000 AF of storage through the conservative 35 year drought and recovery period, with SWP water, and a combined

operation between Ventura and Casitas. Ample reserve storage could be maintained to both serve Ventura and Casitas' needs, as well as, Calleguas' emergency needs.

## Emergency Water Reserves

Storing water in Lake Casitas for other water agencies and delivering water from other sources into the lake has been discussed on several occasions throughout Casitas' history. The issues that have always been of concern are the impacts to the lake's water quality and eco-system. Foreign waters are generally of poorer quality than Lake Casitas water. SWP and groundwaters have higher salt and mineral concentrations than lake water. Any foreign water delivered to the lake through a potable water system would contain disinfectants to protect human health; these disinfectants could upset the lakes eco-system.

Other concerns have been with the displacement of the lakes storage capacity. If foreign water is added to the lake there may be less available storage capacity during wet periods when storm waters, otherwise captured in the lake, would be lost. Casitas has in the past taken the position that in the event the lake spills all stored water spills first. Also lake water naturally evaporates. It has always been Casitas' position that stored water would be subject to routine depreciated by evaporation. Consequently, any attempted to invest in storing water by other agencies would be very risky. Their investment in the cost of delivering water into the lake, generally in the thousands of dollars per AF, could either be lost if the lake spills or over time be completely lost to evaporation.

This proposal does not require any water to be placed into the lake. Casitas would simply agree to reserve 30,000 AF of the lake's existing storage to lend Calleguas in an emergency. Charts B-7 above, illustrate that lake storage levels never fall below 125,000 AF with the proposed combined operation and SWP water. In a worst-case scenario Casitas would have over 125,000 AF of water to provide Calleguas with an emergency supply and still meet 100% of Ventura's and Casitas' total water needs for several years. In exchange Calleguas could agree to hold a 30,000 AF credit for Casitas and Ventura for their future use. In the event there is an interruption in one or more of Ventura's or Casitas' water supplies they could call on the reserved credits from Calleguas as backup to local water supplies.

This arrangement would be similar to the monetary banking system. When a bank agrees to provide a line of credit, the bank and the borrower settle on pre-arranged terms and conditions. The bank, in this case Lake Casitas, and the borrower, Calleguas, agree to the maximum amount of the credit line (30,000 AF) and the terms of repayment in the event Calleguas withdraws funds (water). No money (water) changes hands until the borrower uses the line of credit. If Calleguas ever needs the money (water), Casitas agrees to deliver it from its reserves (Lake Casitas). The bank, Lake Casitas, is obligated to hold sufficient reserves to deliver the loan to Calleguas and satisfy all of its other obligations (Ventura and Ojai Valley).

Calleguas would not hold title to any of Casitas reserves only an agreement to borrow. If Calleguas were to request the money (water), Casitas would deliver the money (water) and Calleguas would begin repaying the loan per the original agreement. A re-payment schedule would most likely be in installments that would allow Casitas to replenish its reserves over time. Once the money (water) is delivered to Calleguas, Casitas would now be entitled to repayment.

To compensate Casitas for the obligation of holding a reserve for Calleguas, Calleguas could agree to lend Casitas money (water) if needed. Again Calleguas would provide Casitas a line of credit with agreed terms and conditions. Casitas would not have title to the money (water) only an agreement to borrow the money (water) if necessary. Casitas would by agreement, either repay Calleguas, or simply credit Calleguas with a pre-payment on the loan Casitas has agreed to provide Calleguas sometime in the future. This arrangement could be maintained indefinitely without any money (water) changing hands. Each bank, or in this case each water agency, would have an agreed insurance policy, an insurance policy that would guarantee emergency loans based on pre-arranged terms and conditions.

Details of such an arrangement would require a negotiated agreement, but there may be significant benefits for all. Today's cost to obtain 30,000 AF of storage or a reserve credit of 30,000 AF stored out of the area, would be extraordinary. The most recent construction cost for surface water storage is from MET's Eastside Reservoir in Riverside County completed in 2002. The 800,000 AF capacity reservoir cost $1.9 billion or $2,375 per AF. Using MET's project as an example the value of 30,000 AF of storage, whether in Lake Casitas or held as a credit outside the area is over $70 million. In the alternative approach described above, each agency would realize 30,000 AF of storage, Calleguas in Lake Casitas; and Ventura and Casitas as credits from Calleguas (Water Technology, Inc, 2002).

## System Description

The infrastructure needed to achieve this proposal would require the collective engineering resources of all three agencies to assure it meets their mutual needs. Basically, what would be required is a pipeline from Calleguas to the east end of Ventura. This portion of the project is already under review by Calleguas and Ventura. Exhibit A contains the general pipeline and route under consideration.

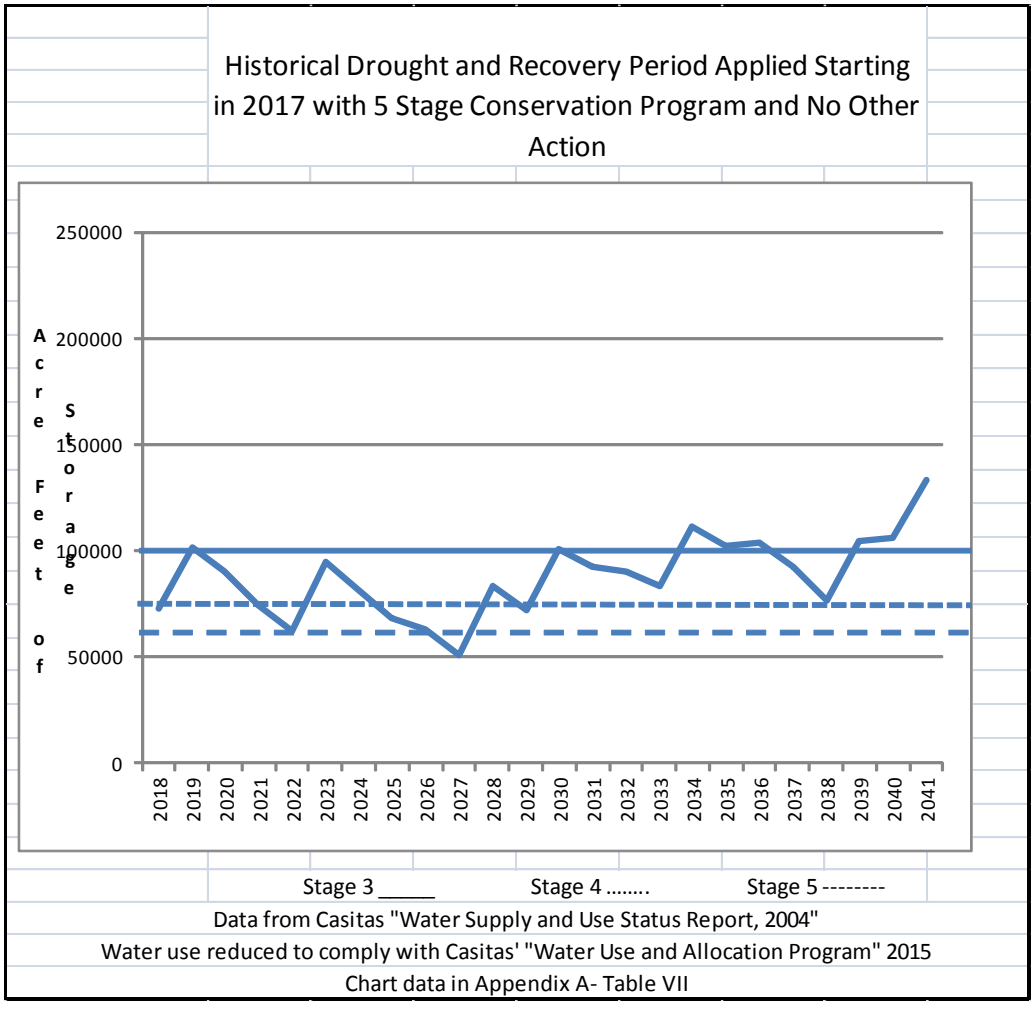
Additional pipelines would be required across Ventura on a route that would intersect with the City's groundwater sources and extend to approximately the Ventura Water Treatment Facility on the Ventura Avenue. The Ventura Water Treatment Plant is near Ventura River water sources and the existing Casitas transmission pipeline from Lake Casitas. At some point along the route a combination pump station and reducing station would be required to both lift water toward the Ojai Valley and return water to Ventura and Calleguas. The pump station would move water to a water storage tank that would be required somewhere around Casitas Dam. The storage tank could then supply the two existing Casitas pump stations that currently pump water from Lake

Casitas to the Rincon Pass area and into the Ojai Valley. Exhibit B is a rough illustration of the piping scheme.

## Current Conditions

If this proposed concept could be implemented with a full Lake Casitas, there would be adequate time to explore an infinite number of possible alternatives and the proposed project could start with all of the benefits in place. Unfortunately, as of December 2017 the lake is at 35 % of storage, 83,000 AF. Even with moderate rainfall, Casitas and Ventura customers may be facing decades of water rationing if no action is taken. Today, Lake Casitas is near the year 1957 in the 35-year Drought and Recovery Period model. Chart B-8 illustrates the results of the model beginning today, 2017, with lake storage at 83,000 AF, through what would be the end of the model period 2040. Hopefully the area would receive more rain than the model projects. However, there is a real possibility that the Casitas service area would experience 11 years of Stage 3, 3 years of Stage 4, and 3 years of Stage 5 water reductions.

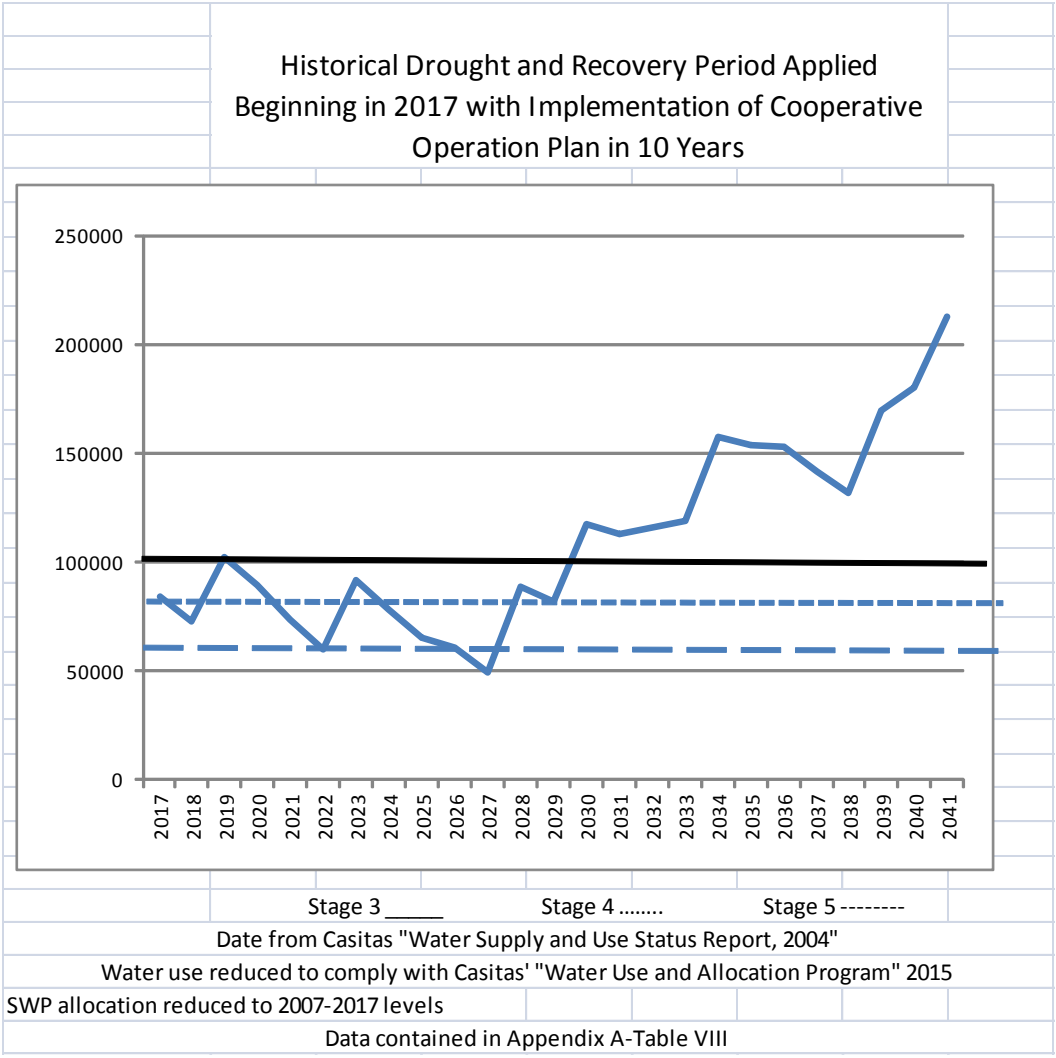
### Chart B-8



No action may result in imposing 9 years of Stage 3 rationing (30% reductions), 5 years of Stage 4 rationing (40%) reductions, and 1 year of Stage 5 rationing (50% reductions) over the next 22 years. In the end the lake may only recover to 60% capacity.

If planning begins in 2018 on this proposed cooperative operation concept, there is no reason it could not be implemented in less than 10 years. Enough is at stake economically, environmentally, and for the general well being of the community to expedite the completion of this project. Chart B-9 illustrates how a successful cooperative operation of the County's water resources could solve future water shortage problems. If agreement was reached soon and plans for construction of needed infrastructure finalized, it may be possible to avoid the most drastic periods of water rationing with the knowledge that a better system is soon to be employed.

## Chart B-9



## Institutional Issues

The institutional issues may be more complex and difficult to overcome than any of the engineering issues related to this proposal. This proposal should not threaten each agency's autonomy, alter its service area, compromise its ownership and control of its facilities, prevent it from setting its own water rates, or interfere with its obligation to act in the best interest of its constituents. Through negotiated agreements this proposal could be designed to work for the best interests all of the residents of Ventura County. Capital cost sharing, equitable distribution of water costs, the conditions for holding and using emergency stored water, and general operating criteria can all be worked out by the three parties acting in good faith to achieve a mutually beneficial outcome.

When the agencies originally envisioned accessing SWP in the 1970's it was understood that some joint operational authority would be required to operate and administer the SWP facilities. This proposal could be operated similarly by forming a Joint Powers Authority (JPA) with representation from each agency to administer agreements, manage operations of the joint facilities, and resolve any future disputes. Such JPA organizations are not uncommon in the water industry.

What should not impair a good faith effort to explore the benefits of this proposal are disputes over agency territory, ownership of facilities or water rights. Each agency, rightfully, is protective of the assets it manages. It is doubtful that water customers of these agencies care about who delivers water, how it is delivered, or the origin of the water. Ventura county residents simply want a reliable water supply.

## Timeline

Time required to implement this proposal is depended on the urgency with which each water authority acts. Designing and building the infrastructure is well within the abilities of all three agencies. The design, construction and start-up should easily be accomplished in a 2 to 3 year timeline. How long the community will have to wait for a solution will depend primarily on how long the three parties take to initially sit down and discuss the proposal, how long before they begin "good faith" negotiations, and how long they take to reach agreement. Considering the potential impacts to Ventura County and all three agencies constituents if no action is taken soon, one year to 18 months should be sufficient to reach agreement and begin the implementation phase of the project.

## Cost/Benefits

This analysis and proposed cooperative operations concept provides an alternative solution to the County's water supply deficiencies that could save tens of millions of dollars in capital costs, that otherwise might be invested in attempts to operate independently. The annual costs of SWP

water could be spread among a much larger customer base, thereby reducing the burden on any one area. The pressure on local groundwater basins, particularly during times of drought could be dramatically reduced; preserving local water and protecting local resources. By blending groundwater with SWP and Casitas water the City of Ventura would have the opportunity to improve water quality throughout the City. Lake Casitas could enjoy higher average lake levels.

Most importantly, the future is impossible to predict. All of the individual water resources utilized today are at risk of being reduced because of environmental requirements, groundwater management issues, extended drought and climate change. The impacts of the most recent fires on the Lake Casitas watershed threaten the storage capacity of the lake. Heavy rain events may deposit large amounts of silt and reduce the amount of water that can be stored in the future. Pooling today's resources, and any new resources the water agencies are able to secure, is the only way to reduce the impacts of the threats to water supply. The value of having a pipeline that is connected to the entire State's water resources can open possibilities for future opportunities to secure new water supplies. The value of a storage facility like Lake Casitas, that holds a reliable reserve supply, could become one of the County's greatest assets.

The actual capital costs and operating costs to implement this concept are beyond the scope of this analysis and will require the expertise of the all of the agencies' engineers. However, the potential costs of chronic water shortages and decades of severe water rationing could seriously damage Ventura County's economy and dramatically reduce overall quality of life for its residents. It should be noted that the water customers of all three agencies are paying more and more, for less and less water each year.

## Other Water Resource Alternatives

Calleguas, Casitas, and Ventura are all pursuing additional water supply alternatives. Calleguas is exploring additional groundwater storage, Casitas is investigating additional groundwater in the mountain region above Ojai, the Hobo project (Kear, 2017)) , and Ventura is planning to expand its production from the Ventura River (Ventura 2017). The Ojai Basin Groundwater Management Agency is reevaluating use of Ojai groundwater and a group has formed to evaluate the sustainability of the Upper Ventura River Basin. The success of any of these projects would only add to the benefits of a cooperative operation among Ventura, Casitas and Calleguas. These alternative projects should continue to be explored. However, none of these alternatives alone will solve the region's water supply problems.

## Conclusion

This analysis demonstrates that ample water resources are available to Ventura County to avoid chronic water shortages and provide reserve supplies for emergencies. The residents of the

various areas of the County may live in one water service area, but many work and earn their livelihoods across all areas of the County. The County's economies are interconnected and no one water service area can thrive, if the others are suffering from water shortages. Therefore, the scope of the problem and the scope of potential solutions should be expanded broadly to secure a reliable water future for the entire region.

This analysis and proposal is not intended to be a comprehensive project description. It is a concept developed to provide those with the authority to resolve the water issues facing the County and, particularly the western portion of the County, with a concept that pools the regions collective resources for the benefit of all of the residents of Ventura County. Hopefully further development by the responsible agencies can begin, while there is still adequate time to act.

### *About the Water Advisory Group*

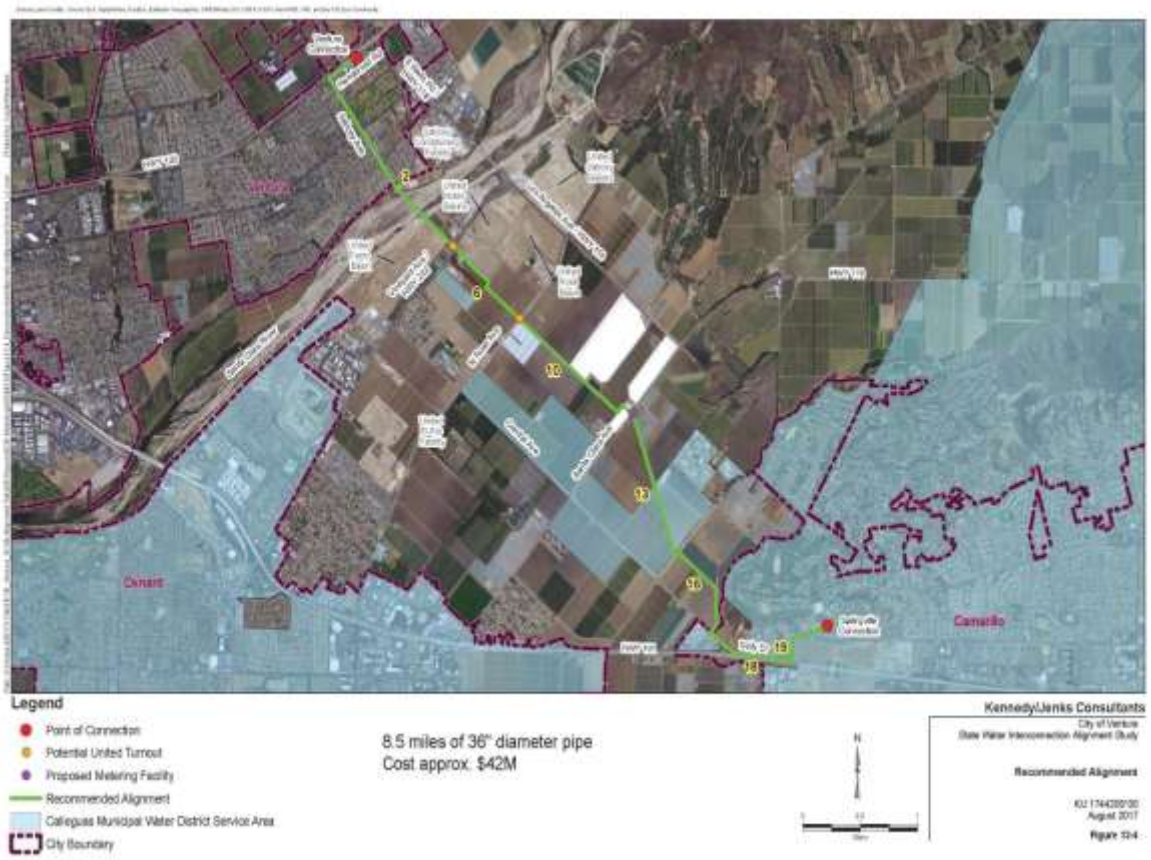
*On April 25, 2017, Larry Yee announced the formation of a Water Advisory Group (WAG) at the Ojai City Council Meeting. The purpose of this small 4-person group (Larry Yee, Rosalie Zabilla, Richard Hajas, Peter Thielke) was to analyze the growing water crisis situation in the Ojai Valley brought on by 5 straight years of drought and a seriously low-level Lake Casitas and to explore possible scenarios and solutions.*

*Acting like a quasi-think tank, WAG has met almost every other week since May and has carefully, deliberately studied and analyzed what is a rather complex and intricate history about the use and management of water in Ventura County with an emphasis on the Ojai Valley.*

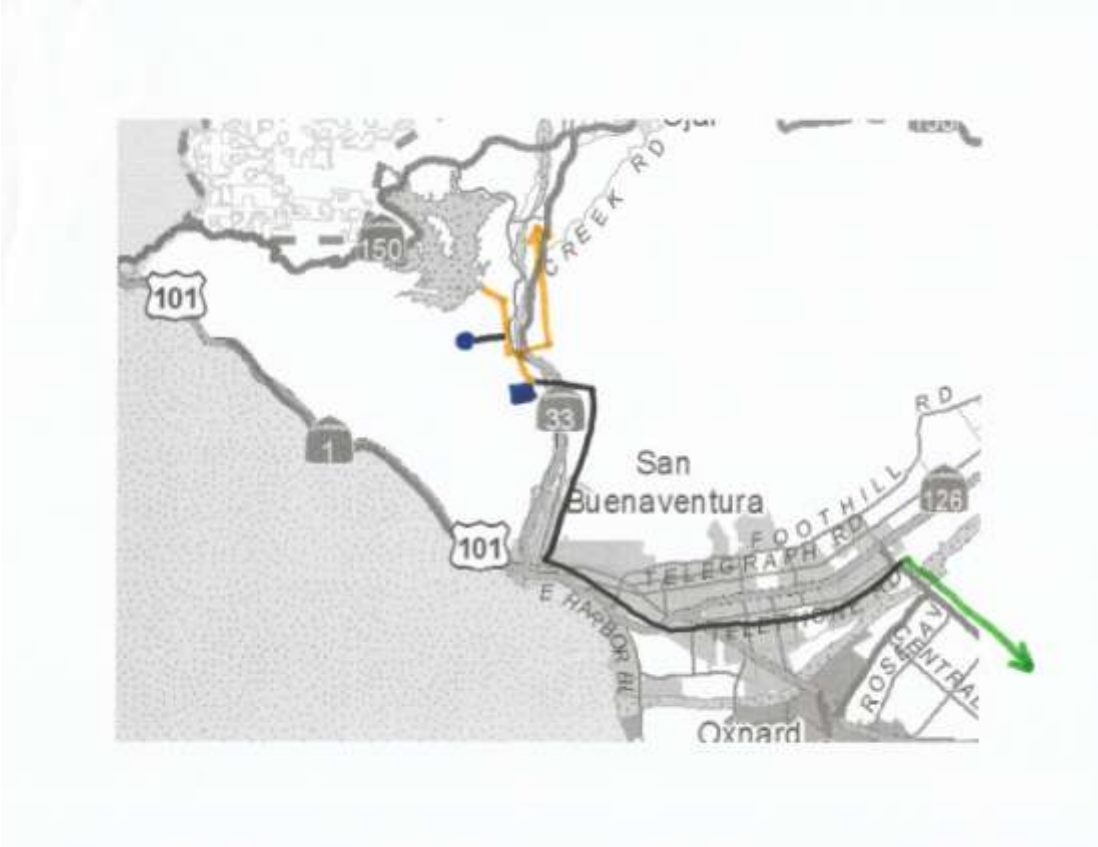
> ***Larry Yee** is Emeritus University of California Cooperative Extension Advisor having served as the director of the Ventura County office since 1986 retiring in 2008. In 2012 he was appoint by the Governor to the Los Angeles Regional Water Quality Control Board on which he presently serves. He is also the co-founder and past President of the Food Commons.*
>
> ***Rosalie Zabilla** has been a realtor in the Ojai Valley for over 13 years. She served as President of the Board of Realtors in 2016 and recently concluded a four year term as a member of the City of Ojai's Planning Commission.*
>
> ***Peter Thielke** is a retired teacher and currently is the President of the Senior Canyon Mutual Water Company that serves a portion of the Ojai Valley*
>
> ***Richard Hajas** has managed water resources in Ventura County for 40 years. He served as Assistant General Manager of Casitas Municipal Water District in the Ojai Valley and General Manager of Camrosa Water District in eastern Ventura County. He has been involved in planning, funding, designing, and building a variety of water resource projects in the county.*

# Exhibits

## Exhibit A



# Exhibit B




Existing Casitas pipelines
Proposed pipeline
(Approximately 15 miles)
Pipeline to Calleguas
Pump plant – reducing station
Reservoir

# Appendix A

## Table I

| Lake Casitas Safe Yield Applied to 1945-1965 Drought Period Chart B-1 | | | | | |
|---|---|---|---|---|---|
| Historical | Inflows | | | | |
| Drought | Robles | Lake | Evaporation | Lake | Safe Yield |
| Period | Diversion | Tributaries | Net loss | Storage | Available Supply |
| 1945 | 3852 | 6812 | 4711 | 223307 | 20840 |
| 1946 | 7560 | 3377 | 4529 | 209175 | 20840 |
| 1947 | 4376 | 2654 | 4255 | 191410 | 20840 |
| 1948 | 0 | 48 | 3901 | 167017 | 20840 |
| 1949 | 128 | 131 | 3537 | 143200 | 20840 |
| 1950 | 506 | 1378 | 3145 | 121399 | 20840 |
| 1951 | 0 | 89 | 2682 | 98266 | 20840 |
| 1952 | 25602 | 27231 | 3582 | 126976 | 20840 |
| 1953 | 1543 | 2270 | 2940 | 107310 | 20840 |
| 1954 | 2382 | 3520 | 2599 | 90073 | 20840 |
| 1955 | 128 | 703 | 2078 | 68286 | 20840 |
| 1956 | 2049 | 5792 | 1773 | 53814 | 20840 |
| 1957 | 1881 | 1008 | 1260 | 34902 | 20840 |
| 1958 | 48058 | 32125 | 3204 | 91341 | 20840 |
| 1959 | 3178 | 2909 | 2374 | 74515 | 20840 |
| 1960 | 183 | 936 | 1834 | 53411 | 20840 |
| 1961 | 61 | 150 | 1307 | 31775 | 20840 |
| 1962 | 21247 | 27154 | 2379 | 57256 | 20840 |
| 1963 | 974 | 2338 | 1554 | 38475 | 20840 |
| 1964 | 743 | 863 | 1029 | 18512 | 20840 |
| 1965 | 2928 | 4537 | 636 | 4801 | 20840 |
| | Values in acre feet | | | | |
| Data from December 7, 2004 CMWD Water Supply and Use Report - Table A4 | | | | | |

# Table II

| Lake Casitas Safe Yield Applied to 1945-1965 Drought Period and 1966-1980 Recovery Period Chart B-2 | | | | | |
|---|---|---|---|---|---|
| Historical | Inflows | | | | |
| Drought | Robles | Lake | Evaporation | Lake | Safe Yield |
| Period | Diversion | Tributaries | Net loss | Storage | Available Supply |
| 1945 | 3852 | 6812 | 4711 | 223307 | 20840 |
| 1946 | 7560 | 3377 | 4529 | 209175 | 20840 |
| 1947 | 4376 | 2654 | 4255 | 191410 | 20840 |
| 1948 | 0 | 48 | 3901 | 167017 | 20840 |
| 1949 | 128 | 131 | 3537 | 143200 | 20840 |
| 1950 | 506 | 1378 | 3145 | 121399 | 20840 |
| 1951 | 0 | 89 | 2682 | 98266 | 20840 |
| 1952 | 25602 | 27231 | 3582 | 126976 | 20840 |
| 1953 | 1543 | 2270 | 2940 | 107310 | 20840 |
| 1954 | 2382 | 3520 | 2599 | 90073 | 20840 |
| 1955 | 128 | 703 | 2078 | 68286 | 20840 |
| 1956 | 2049 | 5792 | 1773 | 53814 | 20840 |
| 1957 | 1881 | 1008 | 1260 | 34902 | 20840 |
| 1958 | **48058** | **32125** | 3204 | 91341 | 20840 |
| 1959 | 3178 | 2909 | 2374 | 74515 | 20840 |
| 1960 | 183 | 936 | 1834 | 53411 | 20840 |
| 1961 | 61 | 150 | 1307 | 31775 | 20840 |
| 1962 | 21247 | 27154 | 2379 | 57256 | 20840 |
| 1963 | 974 | 2338 | 1554 | 38475 | 20840 |
| 1964 | 743 | 863 | 1029 | 18512 | 20840 |
| 1965 | 2928 | 4537 | 636 | 4801 | 20840 |
| 1966 | **31256** | **21289** | 1387 | 37022 | 19775 |
| 1967 | **36125** | **27285** | 2437 | 78056 | 19775 |
| 1968 | 655 | 2392 | 1765 | 61296 | 19775 |
| 1969 | **57871** | **78737** | 4630 | 173461 | 19775 |
| 1970 | 4234 | 4662 | 3767 | 160696 | 19775 |
| 1971 | 7437 | 7225 | 3640 | 153876 | 19775 |
| 1972 | 4649 | 5394 | 3345 | 142637 | 19775 |
| 1973 | **23855** | **33070** | 4342 | 177592 | 19775 |
| 1974 | 4205 | 7417 | 3936 | 167422 | 19775 |
| 1975 | 8079 | 10670 | 3940 | 164412 | 19775 |
| 1976 | 2433 | 3239 | 3584 | 148531 | 19775 |
| 1977 | 334 | 1056 | 3164 | 128772 | 19775 |
| 1978 | **56542** | **73222** | 5366 | 236013 | 19775 |
| 1979 | 9971 | 11740 | 4872 | 235179 | 19775 |
| 1980 | **13914** | **38299** | 4892 | 238762 | 19775 |
| | | | | | |
| 1945-1965 data from December 7, 2004 CMWD Water Supply and Use Report - Table A4 | | | | | |
| 1966-1980 data from December 7, 2004 CMWD Water Supply and Use Report - Table A8 | | | | | |

# Table III

| Lake Casitas Safe Yield Analysis Applied to 1945-1965 Drought Period and 1966-1980 Recovery Period with Implementation of 5 Stage Conservation Program Chart B-3 | | | | | |
|---|---|---|---|---|---|
| Historical | Inflows | | | | Water Use |
| Drought | Robles | Lake | Evaporation | Lake | Based on |
| Period | Diversion | Tributaries | Net loss | Storage | 5 Stage Program |
| 1945 | 3852 | 6812 | 4711 | 223307 | 18200 |
| 1946 | 7560 | 3377 | 4529 | 209175 | 18200 |
| 1947 | 4376 | 2654 | 4255 | 191410 | 18200 |
| 1948 | 0 | 48 | 3901 | 167017 | 18200 |
| 1949 | 128 | 131 | 3537 | 143200 | 18200 |
| 1950 | 506 | 1378 | 3145 | 121399 | 18200 |
| 1951 | 0 | 89 | 2682 | 98266 | 18200 |
| 1952 | 25602 | 27231 | 3582 | 126976 | 18200 |
| 1953 | 1543 | 2270 | 2940 | 107310 | 18200 |
| 1954 | 2382 | 3520 | 2599 | 96025 | 14588 |
| 1955 | 128 | 703 | 2078 | 80190 | 14588 |
| 1956 | 2049 | 5792 | 1773 | 73754 | 12504 |
| 1957 | 1881 | 1008 | 1260 | 62879 | 12504 |
| 1958 | **48058** | **32125** | 3204 | 121658 | 18200 |
| 1959 | 3178 | 2909 | 2374 | 107171 | 18200 |
| 1960 | 183 | 936 | 1834 | 91868 | 14588 |
| 1961 | 61 | 150 | 1307 | 76184 | 14588 |
| 1962 | 21247 | 27154 | 2379 | 104006 | 18200 |
| 1963 | 974 | 2338 | 1554 | 91176 | 14588 |
| 1964 | 743 | 863 | 1029 | 77165 | 14588 |
| 1965 | 2928 | 4537 | 636 | 71490 | 12504 |
| 1966 | **31256** | **21289** | 1387 | 104448 | 18200 |
| 1967 | **36125** | **27285** | 2437 | 147221 | 18200 |
| 1968 | 655 | 2392 | 1765 | 130303 | 18200 |
| 1969 | **57871** | **78737** | 4630 | 244081 | 18200 |
| 1970 | 4234 | 4662 | 3767 | 231010 | 18200 |
| 1971 | 7437 | 7225 | 3640 | 223832 | 18200 |
| 1972 | 4649 | 5394 | 3345 | 212330 | 18200 |
| 1973 | **23855** | **33070** | 4342 | 246713 | 18200 |
| 1974 | 4205 | 7417 | 3936 | 236199 | 18200 |
| 1975 | 8079 | 10670 | 3940 | 232808 | 18200 |
| 1976 | 2433 | 3239 | 3584 | 216696 | 18200 |
| 1977 | 334 | 1056 | 3164 | 196722 | 18200 |
| 1978 | **56542** | **73222** | 5366 | 238000 | 18200 |
| 1979 | 9971 | 11740 | 4872 | 236639 | 18200 |
| 1980 | **13914** | **38299** | 4892 | 238000 | 18200 |
| | | | | | |
| | | | | | |
| Stage 3 | | Stage 4 | | Stage 5 | |
| | | | | | |
| 1945-1965 data from December 7, 2004 CMWD Water Supply and Use Report - Table A4 | | | | | |
| Inflows in bold are rainfall years greater than 40 inches at Ojai Station | | | | | |
| Evaporation losses 2.5% of storage based on average losses in above reports | | | | | |
| Water use 2006-2017 actual from CMWD historic records | | | | | |
| Projected water use, 2018-2041, based on CMWD 5 Stage Plan | | | | | |
| (Water Efficiency and Allocation Program, June 10, 2015 | | | | | |

# Table IV

Lake Casitas Safe Yield Analysis Applied to 1945-1965 Drought Period and Conservative 1966-1980 Recovery Period with Implementation of 5 Stage Conservation Program Chart B-5

| Historical | Inflows | | | | Water Use |
|---|---|---|---|---|---|
| Drought | Robles | Lake | Evaporation | Lake | Based on |
| Period | Diversion | Tributaries | Net loss | Storage | 5 Stage Program |
| 1945 | 3852 | 6812 | 4711 | 223307 | 18200 |
| 1946 | 7560 | 3377 | 4529 | 209175 | 18200 |
| 1947 | 4376 | 2654 | 4255 | 191410 | 18200 |
| 1948 | 0 | 48 | 3901 | 167017 | 18200 |
| 1949 | 128 | 131 | 3537 | 143200 | 18200 |
| 1950 | 506 | 1378 | 3145 | 121399 | 18200 |
| 1951 | 0 | 89 | 2682 | 98266 | 18200 |
| 1952 | 25602 | 27231 | 3582 | 126976 | 18200 |
| 1953 | 1543 | 2270 | 2940 | 107310 | 18200 |
| 1954 | 2382 | 3520 | 2599 | 96025 | 14588 |
| 1955 | 128 | 703 | 2078 | 80190 | 14588 |
| 1956 | 2049 | 5792 | 1773 | 73754 | 12504 |
| 1957 | 1881 | 1008 | 1260 | 62879 | 12504 |
| 1958 | 48058 | 32125 | 3204 | 121658 | 18200 |
| 1959 | 3178 | 2909 | 2374 | 107171 | 18200 |
| 1960 | 183 | 936 | 1834 | 91868 | 14588 |
| 1961 | 61 | 150 | 1307 | 76184 | 14588 |
| 1962 | 21247 | 27154 | 2379 | 104006 | 18200 |
| 1963 | 974 | 2338 | 1554 | 91176 | 14588 |
| 1964 | 743 | 863 | 1029 | 77165 | 14588 |
| 1965 | 2928 | 4537 | 636 | 71490 | 12504 |
| 1966 | **21247** | **27154** | 1387 | 100304 | 18200 |
| 1967 | **21247** | **27154** | 2437 | 128068 | 18200 |
| 1968 | 655 | 2392 | 1765 | 111150 | 18200 |
| 1969 | **21247** | **27154** | 4630 | 136721 | 18200 |
| 1970 | 4234 | 4662 | 3767 | 123650 | 18200 |
| 1971 | 7437 | 7225 | 3640 | 116472 | 18200 |
| 1972 | 4649 | 5394 | 3345 | 104970 | 18200 |
| 1973 | **21247** | **27154** | 4342 | 130829 | 18200 |
| 1974 | 4205 | 7417 | 3936 | 120315 | 18200 |
| 1975 | 8079 | 10670 | 3940 | 116924 | 18200 |
| 1976 | 2433 | 3239 | 3584 | 100812 | 18200 |
| 1977 | 334 | 1056 | 3164 | 84450 | 14588 |
| 1978 | **21247** | **27154** | 5366 | 109285 | 18200 |
| 1979 | 9971 | 11740 | 4872 | 107924 | 18200 |
| 1980 | **13914** | **38299** | 4892 | 137045 | 18200 |

| | | | | | |
|---|---|---|---|---|---|
| Stage 3 | | Stage 4 | | Stage 5 | |
| | | Stage 4 | | Stage 5 | |

1945-1965 data from December 7, 2004 CMWD Water Supply and Use Report - Table A4

Evaporation losses 2.5% of storage based on average losses in above reports

Inflows in bold reduced to no greater than 1962

Projected water use, 2018-2041, based on CMWD 5 Stage Plan
(Water Efficiency and Allocation Program, June 10, 2015

# Table V

| Lake Casitas Safe Yield Applied to 1945-1965 Drought Period and a Conservative 1966-1980 Recovery Period with SWP and Implementation of 5 Stage Conservation Program Chart B-6 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Historical | Inflows to Lake | | | | Available | | 5 Stage Plan |
| Drought | Robles | Lake | Evaporation | | Annual SWP | Lake | Annual Water |
| Period | Diversion | Tributaries | Net loss | SWP | Allotment | Storage | Use |
| 1945 | 3852 | 6812 | 4711 | | 60% | 223307 | 18200 |
| 1946 | 7560 | 3377 | 4529 | 0 | 35% | 211515 | 18200 |
| 1947 | 4376 | 2654 | 4255 | 2000 | 40% | 198090 | 18200 |
| 1948 | 0 | 48 | 3901 | 2500 | 50% | 178537 | 18200 |
| 1949 | 128 | 131 | 3537 | 4000 | 80% | 161059 | 18200 |
| 1950 | 506 | 1378 | 3145 | 3250 | 65% | 144848 | 18200 |
| 1951 | 0 | 89 | 2682 | 1750 | 35% | 125805 | 18200 |
| 1952 | 25602 | 27231 | 3582 | 250 | 5% | 157106 | 18200 |
| 1953 | 1543 | 2270 | 2940 | 1000 | 20% | 140779 | 18200 |
| 1954 | 2382 | 3520 | 2599 | 3000 | 60% | 128882 | 18200 |
| 1955 | 128 | 703 | 2078 | 3000 | 60% | 112435 | 18200 |
| 1956 | 2049 | 5792 | 1773 | 3000 | 60% | 103303 | 18200 |
| 1957 | 1881 | 1008 | 1260 | 1750 | 35% | 92094 | 14588 |
| 1958 | 48058 | 32125 | 3204 | 2000 | 40% | 152873 | 18200 |
| 1959 | 3178 | 2909 | 2374 | 2500 | 50% | 140886 | 18200 |
| 1960 | 183 | 936 | 1834 | 4000 | 80% | 125971 | 18200 |
| 1961 | 61 | 150 | 2519.42 | 3250 | 65% | 108713 | 18200 |
| 1962 | 21247 | 27154 | 2174 | 1750 | 35% | 138489 | 18200 |
| 1963 | 974 | 2338 | 2770 | 250 | 5% | 121082 | 18200 |
| 1964 | 743 | 863 | 2422 | 1000 | 20% | 103066 | 18200 |
| 1965 | 2928 | 4537 | 2061 | 3000 | 60% | 96882 | 14588 |
| 1966 | **21247** | **27154** | 1938 | 3000 | 60% | 128145 | 18200 |
| 1967 | **21247** | **27154** | 2563 | 3000 | 60% | 158783 | 18200 |
| 1968 | 655 | 2392 | 3176 | 1750 | 35% | 142204 | 18200 |
| 1969 | **21247** | **27154** | 2844 | 2000 | 40% | 171561 | 18200 |
| 1970 | 4234 | 4662 | 3431 | 2500 | 50% | 161326 | 18200 |
| 1971 | 7437 | 7225 | 3227 | 4000 | 80% | 158562 | 18200 |
| 1972 | 4649 | 5394 | 3171 | 3250 | 65% | 150483 | 18200 |
| 1973 | **21247** | **27154** | 3010 | 1750 | 35% | 179425 | 18200 |
| 1974 | 4205 | 7417 | 3588 | 250 | 5% | 169508 | 18200 |
| 1975 | 8079 | 10670 | 3390 | 1000 | 20% | 167667 | 18200 |
| 1976 | 2433 | 3239 | 3353 | 3000 | 60% | 154786 | 18200 |
| 1977 | 334 | 1056 | 3096 | 3000 | 60% | 137880 | 18200 |
| 1978 | **21247** | **27154** | 2758 | 3000 | 60% | 168323 | 18200 |
| 1979 | 9971 | 11740 | 3366 | 1750 | 35% | 170218 | 18200 |
| 1980 | 13914 | 38299 | 3404 | 2000 | 40% | 202827 | 18200 |

Inflows in bold are rainfall years greater than 5 year events

Stage 3 | Stage 4 | Stage 5

1945-1965 data from December 7, 2004 CMWD Water Supply and Use Report - Table A4

Evaporation losses 2.5% of storage based on average losses in above reports

Inflows in bold reduced to no greater than 1962

SWP allocations based actual DWR reductions 2006-2017. Ten year period is repeated through 35 year model

Projected water use, 2018-2041, based on CMWD 5 Stage Plan (Water Efficiency and Allocation Program, June 10, 2015

# Table VI

Historical Drought and Conservative Recovery Period with Combined Operation and SWP Chart B-7

| Historical Drought Period | Inches of Rain Ventura Station | Inches of Rain Ojai Station | Inflows Diversion | Inflows Tributaries | Evaporation Net loss | Ventura Annual Groundwater Supply | Ojai Area Annual Groundwater Supply | Available Annual SWP Allotment | SWP | Water Supplied From Lake Casitas | Lake Storage | Ventura, Ojai Area and Casitas Combined Demand |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1945 | 12.13 | 20.94 | 3852 | 6812 | 4711 | 15062 | 9830 | 60% | 0 | | 223307 | 41298 |
| 1946 | 8.67 | 18.69 | 7560 | 3377 | 4466 | 15062 | 9830 | 35% | 0 | 16406 | 213372 | 41298 |
| 1947 | 9.02 | 12.01 | 4376 | 2654 | 4267 | 15062 | 9830 | 40% | 6000 | 10406 | 205728 | 41298 |
| 1948 | 5.51 | 7.99 | 0 | 48 | 4115 | 10576 | 9830 | 50% | 7500 | 13392 | 188270 | 41298 |
| 1949 | 5.85 | 10.8 | 128 | 131 | 3765 | 10576 | 6600 | 80% | 12000 | 12122 | 172641 | 41298 |
| 1950 | 10.08 | 16.08 | 506 | 1378 | 3453 | 10576 | 6600 | 65% | 9750 | 14372 | 156701 | 41298 |
| 1951 | 6.95 | 6.03 | 0 | 89 | 3134 | 10576 | 6600 | 35% | 5250 | 18872 | 134784 | 41298 |
| 1952 | 23.78 | 36.44 | 25602 | 27231 | 2696 | 15062 | 9830 | 5% | 750 | 15656 | 169265 | 41298 |
| 1953 | 9.8 | 13.01 | 1543 | 2270 | 3385 | 15062 | 9830 | 20% | 3000 | 13406 | 156287 | 41298 |
| 1954 | 13.17 | 18.32 | 2382 | 3520 | 3126 | 15062 | 9830 | 60% | 9000 | 7406 | 151657 | 41298 |
| 1955 | 12.54 | 15.94 | 128 | 703 | 3033 | 15062 | 9830 | 60% | 9000 | 7406 | 142049 | 41298 |
| 1956 | 14.99 | 15.87 | 2049 | 5792 | 2841 | 15062 | 9830 | 60% | 9000 | 7406 | 139643 | 41298 |
| 1957 | 9.13 | 14.17 | 1881 | 1008 | 2793 | 15062 | 9830 | 35% | 5250 | 11156 | 128583 | 41298 |
| 1958 | 25.65 | 37.42 | 21247 | 27154 | 2572 | 15062 | 9830 | 40% | 6000 | 10406 | 164006 | 41298 |
| 1959 | 6.75 | 11.65 | 3178 | 2909 | 3280 | 15062 | 9830 | 50% | 7500 | 8906 | 157907 | 41298 |
| 1960 | 11.03 | 12.16 | 183 | 936 | 3158 | 15062 | 9830 | 80% | 12000 | 4406 | 151462 | 41298 |
| 1961 | 6.51 | 9.12 | 61 | 150 | 3029 | 15062 | 6600 | 65% | 9750 | 9886 | 138758 | 41298 |
| 1962 | 23.25 | 29.11 | 21247 | 27154 | 2775 | 15062 | 9830 | 35% | 5250 | 11156 | 173228 | 41298 |
| 1963 | 11.52 | 16.09 | 974 | 2338 | 3465 | 15062 | 9830 | 5% | 750 | 15656 | 157419 | 41298 |
| 1964 | 8.7 | 12.79 | 743 | 863 | 3148 | 15062 | 9830 | 20% | 3000 | 13406 | 142471 | 41298 |
| 1965 | 13.65 | 17.23 | 2928 | 4537 | 2849 | 15062 | 9830 | 60% | 9000 | 7406 | 139680 | 41298 |
| 1966 | 12.33 | 25.14 | 0 | 0 | 2794 | 15062 | 9830 | 60% | 9000 | 7406 | 129481 | 41298 |
| 1967 | 14.9 | 29.87 | 21247 | 27154 | 2590 | 15062 | 9830 | 60% | 9000 | 7406 | 167886 | 41298 |
| 1968 | 13.01 | 13.63 | 655 | 2392 | 3358 | 15062 | 9830 | 35% | 5250 | 11156 | 156419 | 41298 |
| 1969 | 22.31 | 46.06 | 21247 | 27154 | 3128 | 15062 | 9830 | 40% | 6000 | 10406 | 191286 | 41298 |
| 1970 | 10.98 | 14.6 | 4234 | 4662 | 3826 | 15062 | 9830 | 50% | 7500 | 8906 | 187450 | 41298 |
| 1971 | 14.52 | 20.02 | 7437 | 7225 | 3749 | 15062 | 9830 | 80% | 12000 | 4406 | 193957 | 41298 |
| 1972 | 7.33 | 15.14 | 4649 | 5394 | 3879 | 15062 | 9830 | 65% | 9750 | 6656 | 193465 | 41298 |
| 1973 | 19.49 | 42.06 | 21247 | 27154 | 3869 | 15062 | 9830 | 35% | 0 | 16406 | 221591 | 41298 |
| 1974 | 15.3 | 19.87 | 4205 | 7417 | 4432 | 15062 | 9830 | 5% | 0 | 16406 | 212375 | 41298 |
| 1975 | 15.42 | 21.72 | 8079 | 10670 | 4247 | 15062 | 9830 | 20% | 0 | 16406 | 210470 | 41298 |
| 1976 | 12.34 | 18.76 | 2433 | 3239 | 4209 | 15062 | 9830 | 60% | 0 | 16406 | 195527 | 41298 |
| 1977 | 9.54 | 12.04 | 334 | 1056 | 3911 | 15062 | 9830 | 60% | 9000 | 7406 | 185601 | 41298 |
| 1978 | 33.56 | 47.57 | 21247 | 27154 | 3712 | 15062 | 9830 | 60% | 0 | 16406 | 213884 | 41298 |
| 1979 | 18.59 | 25.36 | 9971 | 11740 | 4278 | 15062 | 9830 | 35% | 0 | 16406 | 214911 | 41298 |
| 1980 | 24.67 | 30.77 | 21247 | 27154 | 4298 | 15062 | 9830 | 40% | 0 | 16406 | 238000 | 41298 |
| | | | | | Average annual SWP water use and Lake water use | | | | **5,636** | **11,652** | | |

1945-1965 data from December 7, 2004 CMWD Water Supply and Use Report - Table A4

Evaporation losses 2.5% of storage based on average losses in above reports

Inflows in bold reduced to no greater than 1962

SWP allocations based actual DWR reductions 2006-2017. Ten year period is repeated through 35 year model

Ventura supply reduced when 3 consecutive rain fall years are below an average of 8 inches- Ventura Station

Ojai groundwater supply reduced when 3 consecutive rain fall years are below an average of 12 inches- Ojai Station

Water use from (Casitas, 2015) and (Ventura, 2017)

No SWP water used when lake storage above 200,000 AF

## Table VII

| Historical Drought and Recovery Period Applied Starting in 2017 with 5 Stage Conservation Program and No Other Action Chart B-8 | | | | | | |
|---|---|---|---|---|---|---|
| | Historical | Flow into Lake | | | | |
| Future Years | Drought Period | Diversion AF | Tributaries AF | Net loss from Evaporation | Lake Storage in AF | Casitas Water Use |
| 2017 | 1956 | | | | 84490 | |
| 2018 | 1957 | 1881 | 1008 | 2112 | 72763 | 12504 |
| 2019 | 1958 | 21247 | 27154 | 1819 | 101145 | 18200 |
| 2020 | 1959 | 3178 | 2909 | 2529 | 90115 | 14588 |
| 2021 | 1960 | 183 | 936 | 2253 | 74393 | 14588 |
| 2022 | 1961 | 61 | 150 | 1860 | 62324 | 10420 |
| 2023 | 1962 | 21247 | 27154 | 1558 | 94579 | 14588 |
| 2024 | 1963 | 974 | 2338 | 2364 | 80939 | 14588 |
| 2025 | 1964 | 743 | 863 | 2023 | 67933 | 12588 |
| 2026 | 1965 | 2928 | 4537 | 1698 | 63160 | 10540 |
| 2027 | 1966 | 0 | 0 | 1579 | 51041 | 10540 |
| 2028 | 1967 | 21247 | 27154 | 1276 | 83578 | 14588 |
| 2029 | 1968 | 655 | 2392 | 2089 | 72031 | 12504 |
| 2030 | 1969 | 21247 | 27154 | 1801 | 100432 | 18200 |
| 2031 | 1970 | 4234 | 4662 | 2511 | 92229 | 14588 |
| 2032 | 1971 | 7437 | 7225 | 2306 | 89997 | 14588 |
| 2033 | 1972 | 4649 | 5394 | 2250 | 83202 | 14588 |
| 2034 | 1973 | 21247 | 27154 | 2080 | 111323 | 18200 |
| 2035 | 1974 | 4205 | 7417 | 2783 | 101962 | 18200 |
| 2036 | 1975 | 8079 | 10670 | 2549 | 103574 | 14588 |
| 2037 | 1976 | 2433 | 3239 | 2589 | 92069 | 14588 |
| 2038 | 1977 | 334 | 1056 | 2302 | 76569 | 14588 |
| 2039 | 1978 | 21247 | 27154 | 1914 | 104856 | 18200 |
| 2040 | 1979 | 9971 | 11740 | 2621 | 105745 | 18200 |
| 2041 | 1980 | 21247 | 27154 | 2644 | 133303 | 18200 |
| | Stage 3 | | Stage 4 | | Stage 5 | |
| 1957-1965 data from December 7, 2004 CMWD Water Supply and Use Report - Table A4 | | | | | | |
| Projected water use, 2018-2041, based on CMWD 5 Stage Plan (Water Efficiency and Allocation Program, June 10, 2015) | | | | | | |
| Inflows based rainfall years no greater than 1962 | | | | | | |
| Losses are 2.5% of each years storage equal to the average losses from total storage in Casitas' 2004 Water Supply and Use Report, Tables 4 and 8 | | | | | | |

# Table VIII

Historical Drought and Recovery Period Applied Beginning in 2017 with Implementation of Cooperative Operation Plan in 10 Years Chart B-9

| Future Years | Historical Period | Rain Ventura | Rain Ojai | Flow into Lake Diversion AF | Tributaries AF | Net Loss AF | Ventura Water Supply AF | Ojai Groundwater | % of Available SWP | SWP AF | Water Used From Lake | Lake Storage AF | Combinded Water Use Beginning in 10 Years |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2017 | 1956 | 14.99 | 15.87 | 2049 | 5792 | 0 | | | 60% | | | 84490 | 14588 |
| 2018 | 1957 | 9.13 | 14.17 | 1881 | 1008 | 2112 | | | 60% | | | 72763 | 12504 |
| 2019 | 1958 | 25.65 | 37.42 | 21247 | 27154 | 1819 | | | 35% | | | 102639 | 16706 |
| 2020 | 1959 | 6.75 | 11.65 | 3178 | 2909 | 2566 | | | 40% | | | 89454 | 16706 |
| 2021 | 1960 | 11.03 | 12.16 | 183 | 936 | 2236 | | | 50% | | | 73748 | 14588 |
| 2022 | 1961 | 6.51 | 9.12 | 61 | 150 | 1844 | | | 80% | | | 59612 | 12504 |
| 2023 | 1962 | 23.25 | 29.11 | 21247 | 27154 | 1490 | | | 65% | | 14588 | 91934 | 14588 |
| 2024 | 1963 | 11.52 | 16.09 | 974 | 2338 | 2298 | | | 35% | | 14588 | 78360 | 14588 |
| 2025 | 1964 | 8.7 | 12.79 | 743 | 863 | 1959 | | | 5% | | 12504 | 65503 | 12504 |
| 2026 | 1965 | 13.65 | 17.23 | 2928 | 4537 | 1638 | | | 20% | | 10400 | 60930 | 10400 |
| 2027 | 1966 | 12.33 | 25.14 | 0 | 0 | 1523 | | | 60% | | 10400 | 49007 | 10400 |
| 2028 | 1967 | 14.9 | 29.87 | 21247 | 27154 | 1225 | 15062 | 9830 | 60% | 9000 | 17236 | 88777 | 41298 |
| 2029 | 1968 | 13.01 | 13.63 | 655 | 2392 | 2219 | 15062 | 9830 | 60% | 9000 | 17236 | 82199 | 41298 |
| 2030 | 1969 | 22.31 | 46.06 | 21247 | 27154 | 2055 | 15062 | 9830 | 35% | 5250 | 20986 | 117389 | 41298 |
| 2031 | 1970 | 10.98 | 14.6 | 4234 | 4662 | 2935 | 15062 | 9830 | 40% | 6000 | 20236 | 112944 | 41298 |
| 2032 | 1971 | 14.52 | 20.02 | 7437 | 7225 | 2824 | 15062 | 9830 | 50% | 7500 | 18736 | 115876 | 41298 |
| 2033 | 1972 | 7.33 | 15.14 | 4649 | 5394 | 2897 | 15062 | 9830 | 80% | 12000 | 14236 | 118616 | 41298 |
| 2034 | 1973 | 19.49 | 42.06 | 21247 | 27154 | 2965 | 15062 | 9830 | 65% | 9750 | 16486 | 157396 | 41298 |
| 2035 | 1974 | 15.3 | 19.87 | 4205 | 7417 | 3935 | 15062 | 9830 | 35% | 5250 | 20986 | 153927 | 41298 |
| 2036 | 1975 | 15.42 | 21.72 | 8079 | 10670 | 3848 | 15062 | 9830 | 5% | 750 | 25486 | 153172 | 41298 |
| 2037 | 1976 | 12.34 | 18.76 | 2433 | 3239 | 3829 | 15062 | 9830 | 20% | 3000 | 23236 | 141609 | 41298 |
| 2038 | 1977 | 9.54 | 12.04 | 334 | 1056 | 3540 | 15062 | 9830 | 60% | 9000 | 17236 | 132052 | 41298 |
| 2039 | 1978 | 33.56 | 47.57 | 21247 | 27154 | 3301 | 15062 | 9830 | 60% | 9000 | 17236 | 169746 | 41298 |
| 2040 | 1979 | 18.59 | 25.36 | 9971 | 11740 | 4244 | 15062 | 9830 | 60% | 9000 | 17236 | 179807 | 41298 |
| 2041 | 1980 | 24.67 | 30.77 | 21247 | 27154 | 4495 | 15062 | 9830 | 35% | 5250 | 20986 | 212557 | 41298 |

Stage 3 | Stage 4 | Stage 5

Projected water use, 2018-2041, based on CMWD 5 Stage Plan (Water Efficiency and Allocation Program, June 10, 2015)

Inflows based rainfall years no greater than 1962

Losses are 2.5% of each years storage equal to the average losses from total storage in Casitas' 2004 Water Supply and Use Report, Tables 4 and 8

Ventura water supply from Ventura's 2017 Comprehensive Water Supply and Demand Report

SWP allocation percnetages based on actual allocation reductions 2006 through 2017 Redcutions period is repeated through 2040

Projected supplemental water required from lake each year

Combined water use begins in 2028 based on average Casitas water use from 2006-2017 and Ventura project water use from 2017 Supply and Demand Report

## References


Calleguas Municipal Water District, " Need for Local Emergency Water Supplies" Feb 23, 2017 Presentation at the Santa Clara River Watershed Meeting

City of Ventura, "2017 Comprehensive Water Resources Report", April 7, 2017

Ventura River Watershed Council (VRWC), "Ventura River Management Plan", March 5, 2015

Casitas Municipal Water District, "Water Efficiency and Allocation Program", June 10, 2015

Casitas Municipal Water District, "Water Supply and Use Status Report", December 7, 2004

Metropolitan Water District of Southern California (MET), "MWD Water Sales and State Water Project Water Conditions 1990-2015"

Ventura County Watershed Protection District (VCWPD) County Rainfall Data Base

Metropolitan Water District of Southern California (MET), "Water Surplus and Drought Management Plan", August 1999

Daniel B. Stephens & Associates, Inc, "Groundwater Model Development- Ojai Basin, Ventura County Ca. 2011

Casitas Municipal Water District, "Comprehensive Annual Financial Report" , 2016

California Department of Water Resources (DWR), "Notices to Contractors " 1990-2017

Jordon Kear, "Casitas Municipal Water District Preliminary Water Security Project Analysis. 2017

Water Technology, Inc, "Eastside Reservoir Project", 2002

# MEMORANDUM

TO: Board of Directors

From: Steven E. Wickstrum, General Manager

RE: Assignment of an Ad-hoc Committee for State Water

Date: February 23, 2018

RECOMMENDATION:

It is recommended that the Board of Directors establish an ad-hoc committee for State Water issues, assign members of the Board to the committee, and provide guidelines for the topics to be considered by the ad-hoc committee.

BACKGROUND:

The current status of local water supplies and the immerging State Water issues necessitates the need for an ad-hoc committee to provide Board review and direction. The specific issues that are present include, but are not limited to, State Water importation strategies and negotiations, State Water contract extension, California Water Fix, and State Water transfer options.

The Board should appoint two directors to serve on the ad-hoc committee. The ad-hoc committee could meet at any time as deemed necessary by the board, or its directors, or the General Manager, and disband at any time that the Board deems the committee is no longer needed by the District.

# CASITAS MUNICIPAL WATER DISTRICT
# MEMORANDUM

**TO:** BOARD OF DIRECTORS

**CC:** STEVE WICKSTRUM, GENERAL MANAGER

**FROM:** RON MERCKLING, PUBLIC AFFAIRS/RESOURCE MANAGER

**SUBJECT:** ENDORSEMENT OF WATER BOND

**DATE:** JANUARY 19, 2018

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**Recommendation:**

Staff recommends that the Board of Directors adopt a resolution in support of the Water Supply and Water Quality Act of 2018, a water bond act which will appear on the November, 2018 California Statewide ballot.

**BACKGROUND AND DISCUSSION:**
California voters will consider a $8.88 billion water bond this November. The Water Supply and Water Quality Bond Act of 2018.

If approved by voters, the Bond Act of 2018, will fund a wide range of programs throughout the state from wastewater recycling to water conservation incentives to watershed improvements. The measure is supported by the Association of California Water Agencies (ACWA) Board of Directors. It is anticipated that funding from this bond will assist projects throughout Ventura County and it will provide $80 million for the removal of Matilija Dam and Ventura River watershed improvements. There will be $640 million designated for Sustainable Groundwater management, to include grants to fund projects identified in groundwater sustainability plans.

**CASITAS MUNICIPAL WATER DISTRICT**

**RESOLUTION IN SUPPORT OF WATER SUPPLY AND WATER QUALITY BOND ACT OF 2018**

**WHEREAS,** California's water agencies are facing water management challenges that are beyond the fiscal means of local agencies to address, and

**WHEREAS,** water managers and ACWA support the Statewide funding goals identified within the Water Supply and Water Quality Bond Act of 2018, and

**WHEREAS,** the many funding needs within Ventura County are identified to be funded by this bond to include removal of Matilija Dam and Ventura River watershed improvements and SGMA implementation.

**NOW, THEREFORE, BE IT RESOLVED**, by the Board of Directors of the Casitas Municipal Water District to support the Water Supply and Water Quality Act of 2018, on the November 2018 ballot.

_____
President, Casitas Municipal Water District

ATTEST:

_____
Secretary, Casitas Municipal Water District

# MEMORANDUM

TO: Board of Directors

From: Steven E. Wickstrum, General Manager

RE: Memorandum Supporting Informal Collaboration of Water Districts and Governmental Agencies in the Ojai Valley

Date: February 23, 2018

RECOMMENDATION:

It is recommended that the Board of Directors consider the signing of the Memorandum of Understanding (MOU) for Collaboration between agencies.

BACKGROUND:

Recently, Supervisor Bennett and Assemblyperson Monique Limon have hosted an informal meeting of water governmental agencies to discuss water issues in the Ojai Valley and Ventura River. A key objective of the meetings is to discuss where the agencies can collectively and collaboratively support mutually beneficial water projects that will increase water availability and water security, and that will be eligible for state grant funding. There have been two meetings to date. Supervisor has proposed that a memorandum of understanding be considered by the group. The MOU clearly states that it is not intended to be a legally binding agreement.

The MOU is attached for review and consideration of the Board.

MEMORANDUM OF UNDERSTANDING
BETWEEN
CASITAS MUNICIPAL WATER DISTRICT, and
COUNTY OF VENTURA, and
MEINERS OAKS WATER DISTICT, and
OJAI BASIN GROUNDWATER MANAGEMENT AGENCY, and
UPPER VENTURA RIVER GROUNDWATER AGENCY, AND
VENTURA RIVER WATER DISTRICT

This document constitutes an informal agreement between the Casitas Municipal Water District, the County of Ventura, the Meiners Oaks Water District, the Ojai Basin Groundwater Management Agency, and the Upper Ventura River Groundwater Agency, and Ventura River Water District to establish a collaborative relationship and is not intended to be a legally-binding agreement.

General Terms:

The agencies agree to meet on a regular basis, leverage resources, and provide administrative assistance to keep the lines of communication open and share current priorities, efforts, and issues about their respective agencies.

The agencies agree to look for projects and ways to collaborate that are mutually beneficial.

The agencies agree to look for ways to cooperate and offer support of one another's efforts to provide increased water availability and water security to their respective constituencies.

This MOU is not intended to create any legally binding obligations on any of the agencies, but, rather, is intended to facilitate discussions regarding general areas of cooperation.

This MOU shall remain in effect until any of the parties terminate their participation by providing written notice to the other parties.

For the Casitas Municipal Water District

_____ _____
Date

For the County of Ventura

_____ _____
Date

For the Meiners Oaks Water District

_____ _____
Date

For the Ojai Basin Groundwater Management Agency

_____ _____
Date

For the Upper Ventura River Groundwater Agency

_____ _____

Date

For the Ventura River Water District

_____ _____
Date

# MEMORANDUM

TO: Board of Directors

From: Steven E. Wickstrum, General Manager

RE: No Drinking Water Tax Education and Outreach Campaign – Association of California Water Agencies (ACWA)

Date: February 23, 2018

RECOMMENDATION:

It is recommended that the Board of Directors consider the approval of continuing opposition of the proposed Drinking water Tax and authorize $10,000 to be contributed to ACWA's education and outreach campaign.

BACKGROUND:

Casitas has received an email from Tim Quinn, Executive Director of ACWA, that is requesting a voluntary contribution of $10,000 for education and outreach services from an outside public affairs firm. Recently, the Board approved a letter of opposition of the Drinking Water Tax that has been proposed by SB 623 (Monning). The tax would be imposed each and every water agency and collected to fund safe drinking water solutions for disadvantaged communities. This will be the first tax on drinking water.

ACWA and agencies opposing this tax believe that such solution be funded through the state's general fund, packaged together with ongoing federal safe drinking water funds, general obligation bonds, and the proposed assessments related to nitrates in groundwater.

ACWA
Association of California Water Agencies

No Drinking Water Tax Education and Outreach Campaign

# CONTRIBUTION FORM

Please Print or Type

## MEMBER AGENCY INFORMATION

Organization

Contact Person

| Phone | Email |
|---|---|
| Billing Address | City, State, Zip |

## CONTRIBUTION INFORMATION

We contribute a total of

$

**Payment Option**

☐ Please send an invoice for processing

☐ A check will be mailed to ACWA within 30 days.
Please make check payable to ACWA and mail it to 910 K Street, Ste. 100, Sacramento, CA 95814.

**Please send this completed form to Michaela Martinez at michaelam@acwa.com**

Printed Name

Title

Signature

Date

WE CAN SOLVE IT WITHOUT A

**DRINKING WATER TAX**

**CASITAS MUNICIPAL WATER DISTRICT**

**MINUTES**
**Finance Committee**

DATE: February 21, 2018
TO: Board of Directors
FROM: General Manager, Steve Wickstrum
Re: Finance Committee Meeting of February 16, 2018, at 1000 hours.

**RECOMMENDATION:**

It is recommended that the Board of Directors receive and file this report.

**BACKGROUND AND OVERVIEW:**

1. **Roll Call**.
   Director Peter Kaiser and Director Jim Word
   General Manager, Steve Wickstrum
   Assistant General Manager, Michael Flood
   Accounting Manager/Treasurer, Denise Collin

   Public: Mr. Roger Wilde

2. **Public Comments**. None.

3. **Board/Management comments**.
   The General Manager reported that Taussig & Associates has prepared the CFD 2013-01 (Ojai) Continuing Disclosure Annual Report. The report will be reviewed by staff and submitted to the Municipal Securities Rulemaking Board (MSRB). No Board action is required. The 123 page report is primarily composed of the Casitas Comprehensive Annual Financial Report for 2016 and 2017.

4. **Review of the Financial Statements for December 2017**.
   The Committee reviewed the financial statement with no changes or issues.

5. **Review of the December 2017 Consumption Report.**
   The Committee commented on the water demand numbers that are showing a trend similar to FY 2016-17, with a notable reduction in several classification of water service.

6. **Request of Laura Shell for relief on water consumption for the month of December.**
   Laura Shell was not present at the meeting. Staff understanding from Laura Shell's email is that water is being consumed to quench a burning oil seep on her property. Director Kaiser asked staff to request confirmation of the oil seep fire.

7. **Request from Roger Wilde for relief of his November Conservation Penalty of $625.00.**
   Mr. Roger Wilde was present at the meeting. A Casitas service representative visited the beach house on December 4th and confirmed that the high reading was not an existing private plumbing leak. Mr. Wilde stated that the house is a short-term rental that was occupied for five days in November. The caretaker lives locally, checks the house regularly, and knows of no circumstances that could have caused the water use. Mr. Wilde stated that he does not know the cause of the high water use in November.

8. **Request from Malcolm Knight for relief for his October and November Conservation Penalty of $345.00.**
   Mr. Knight was not present for the meeting. The Committee discussed the letter sent by Mr. Knight that describes a leak in the private plumbing as the reason for the high water use.

**CASITAS MUNICIPAL WATER DISTRICT**
**TREASURER'S MONTHLY REPORT OF INVESTMENTS**
**02/21/18**

| Type of Invest | Institution | CUSIP | Date of Maturity | Adjusted Cost | Current Mkt Value | Rate of Interest | Date of Deposit | % of Portfolio | Days to Maturity |
|---|---|---|---|---|---|---|---|---|---|
| *TB | Farmer MAC | 31315PYF0 | 5/2/2028 | $512,091 | $483,385 | 2.925% | 11/20/2017 | 2.40% | 3671 |
| *TB | Federal Farm CR Bank | 3133EGZW8 | 10/25/2024 | $833,918 | $782,437 | 2.014% | 10/25/2016 | 3.88% | 2404 |
| *TB | Federal Farm CR Bank | 31331VWN2 | 4/13/2026 | $902,866 | $835,342 | 1.901% | 5/9/2016 | 4.14% | 2932 |
| *TB | Federal Farm CR Bank | 3133EFK71 | 3/9/2026 | $852,330 | $793,607 | 2.790% | 3/28/2016 | 3.94% | 2898 |
| *TB | Federal Farm CR Bank | 3133EFYH4 | 2/8/2027 | $1,013,625 | $960,870 | 3.000% | 3/24/2016 | 4.76% | 3227 |
| *TB | Federal Farm CR Bank | 3133EGWD | 9/29/2027 | $694,629 | $631,046 | 2.354% | 11/17/2016 | 3.13% | 3458 |
| *TB | Farmer MAC | 3133EEPH7 | 2/12/2029 | $480,207 | $448,981 | 2.710% | 11/20/2017 | 2.23% | 3951 |
| *TB | Federal Home Loan Bank | 3130A3DL | 9/8/2023 | $1,570,744 | $1,466,820 | 1.486% | 10/13/2016 | 7.27% | 1997 |
| *TB | Federal Home Loan Bank | 313379EE5 | 6/14/2019 | $1,358,759 | $1,339,943 | 1.625% | 10/3/2012 | 6.64% | 473 |
| *TB | Federal Home Loan Bank | 3130A0EN | 12/10/2021 | $532,803 | $504,955 | 1.107% | 5/9/2016 | 2.50% | 1369 |
| *TB | Federal Home Loan Bank | 3130A5R35 | 6/13/2025 | $762,000 | $710,095 | 2.875% | 2/19/2016 | 3.52% | 2632 |
| *TB | Federal Home Loan Bank | 313383YJ4 | 9/8/2023 | $463,207 | $427,799 | 1.203% | 7/14/2016 | 2.12% | 1997 |
| *TB | Federal Home Loan Bank | 3130A5VW6 | 7/10/2025 | $1,022,909 | $976,010 | 2.360% | 5/10/2017 | 4.84% | 2659 |
| *TB | Federal Home Loan Bank | 3130AIXJ2 | 6/14/2024 | $922,947 | $846,225 | 2.875% | 8/2/2016 | 4.20% | 2273 |
| *TB | Federal Home Loan Bank | 3133XFKF | 6/11/2021 | $634,645 | $615,149 | 5.625% | 1/16/2013 | 3.05% | 1190 |
| *TB | Federal Home Loan MTG Corp | 3137EADB | 1/13/2022 | $673,883 | $659,007 | 2.375% | 9/8/2014 | 3.27% | 1402 |
| *TB | Federal National Assn | 31315P2J7 | 5/1/2024 | $791,958 | $743,741 | 1.721% | 5/1/2016 | 3.69% | 2230 |
| *TB | Federal National Assn | 3135G0ZR | 9/6/2024 | $1,469,599 | $1,371,899 | 2.625% | 5/25/2016 | 6.80% | 2355 |
| *TB | Federal National Assn | 3135G0K3 | 4/24/2026 | $2,527,613 | $2,339,175 | 2.125% | 5/25/2016 | 11.60% | 2943 |
| *TB | US Treasury Inflation Index NTS | 912828JE1 | 7/15/2018 | $1,144,881 | $1,159,311 | 1.375% | 7/6/2010 | 5.75% | 144 |
| *TB | US Treasury Inflation Index NTS | 912828MF | 1/15/2020 | $1,146,211 | $1,166,877 | 1.375% | 11/18/2015 | 5.79% | 684 |
| *TB | US Treasury Note | 912828WE | 11/15/2023 | $768,074 | $765,926 | 2.750% | 12/13/2013 | 3.80% | 2064 |
| | Accrued Interest | | | | $139,032 | | | | |
| | **Total in Gov't Sec. (11-00-1055-00&1065)** | | | **$21,079,898** | **$20,167,630** | | | **99.98%** | |
| | **Total Certificates of Deposit: (11.13506)** | | | **$0** | **$0** | | | **0.00%** | |
| ** | **LAIF as of: (11-00-1050-00)** | | N/A | **$452** | **$452** | 1.07% | Estimated | **0.00%** | |
| *** | **COVI as of: (11-00-1060-00)** | | N/A | **$2,881** | **$2,881** | 1.15% | Estimated | **0.01%** | |
| | **TOTAL FUNDS INVESTED** | | | **$21,083,231** | **$20,170,963** | | | **100.00%** | |
| | Total Funds Invested last report | | | $21,089,321 | $20,313,601 | | | | |
| | Total Funds Invested 1 Yr. Ago | | | $20,186,771 | $19,667,704 | | | | |
| **** | **CASH IN BANK (11-00-1000-00) EST.** | | | **$3,023,162** | **$3,023,162** | | | | |
| | **CASH IN Western Asset Money Market** | | | **$21,485** | **$21,485** | 0.19% | | | |
| | **TOTAL CASH & INVESTMENTS** | | | **$24,127,879** | **$23,215,611** | | | | |
| | TOTAL CASH & INVESTMENTS 1 YR AGO | | | $26,074,377 | $25,555,310 | | | | |

*CD CD - Certificate of Deposit
*TB TB - Federal Treasury Bonds or Bills
** Local Agency Investment Fund
*** County of Ventura Investment Fund
Estimated interest rate, actual not due at present time.
**** Cash in bank

No investments were made pursuant to subdivision (i) of Section 53601, Section 53601.1 and subdivision (i) Section 53635 of the Government Code.
All investments were made in accordance with the Treasurer's annual statement of investment policy.