

ACTUAL EVAPOTRANSPIRATION ANALYSIS

November 2023

Prepared for
East Kaweah Groundwater Sustainability Agency

Prepared by
 **LAND IQ**

2020 L Street, Ste 210
Sacramento, CA
Contact: Joel Kimmelshue
916.265.6330

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SUMMARY

TABLE 1. SUMMARY OF GSA ET AND PRECIPITATION (117,346 AC)

| | ET (ac-ft) | Precipitation (ac-ft) |
|--|------------|-----------------------|
| 2024 Allocation Year to date (OCT 1, 2023 - NOV 30, 2023) | 25,511 | 3,550 |
| Allocation Year 2023 (OCT 1, 2022 - SEP 30, 2023) | 261,015 | 193,051 |
| Allocation Year 2022 (OCT 1, 2021 - SEP 30, 2022) | 257,412 | 84,548 |

TABLE 2. SENSORS USED IN DAILY AND MONTHLY ET_A ANALYSIS BY CROP CATEGORY

| | Number of Active Stations | Number of Used Stations in model |
|----------------------|---------------------------|----------------------------------|
| Alfalfa | 8 | 8 |
| Almonds | 17 | 16 |
| Annual | 2 | 2 |
| Citrus | 15 | 13 |
| Fallow/Native | 10 | 9 |
| Grapes | 8 | 8 |
| Olives | 0 | 0 |
| Pistachios | 13 | 11 |
| Pomegranates | 1 | 1 |
| Walnuts | 2 | 1 |

TABLE 3. PRECIPITATION MEASURED BY FIELD STATIONS

| Station ID | Source | November Precipitation (in) | Year to Date (Oct 1, 2023 - Nov 30, 2023) |
|----------------------------------|---------|-----------------------------|---|
| CIMIS #205: Coalinga | CIMIS | 0.15 | 0.15 |
| CIMIS #5: Shafter | CIMIS | 0.03 | 0.24 |
| CIMIS #15: Stratford | CIMIS | 0.14 | 0.23 |
| CIMIS #2: FivePoints | CIMIS | 0 | 0 |
| CIMIS #146: Belridge | CIMIS | 0.22 | 0.22 |
| CIMIS #39: Parlier | CIMIS | 0.19 | 0.19 |
| CIMIS #105: Westlands | CIMIS | 0.26 | 0.27 |
| CIMIS #182: Delano | CIMIS | 0.11 | 0.48 |
| CIMIS #258: Lemon Cove | CIMIS | 0.25 | 0.21 |
| CIMIS #148: Merced | CIMIS | 0.54 | 0.56 |
| CIMIS #206: Denair II | CIMIS | 0.51 | 0.88 |
| LandIQ_GK_Full_Murcotts | Land IQ | 0.37 | 0.37 |
| LandIQ_EK_Full_Sumos_2023 | Land IQ | 0.15 | 0.15 |

CIMIS - California Irrigation Management Information System; CNRFC - California Nevada River Forecast Center; GHCN - Global Historical Climate Network.

REMOTE SENSING RESULTS

TABLE 4. IMAGE DATES AND SOURCES

| Date | Image Source |
|------------|--------------|
| 11/2/2023 | Sentinel 2A |
| 11/8/2023 | Landsat 8 |
| 11/12/2023 | Sentinel 2A |
| 11/24/2023 | Landsat 8 |

TABLE 5. MONTHLY GSA ET_A

| Unit | OCT, 2023 | NOV, 2023 | DEC, 2023 | JAN, 2024 | FEB, 2024 | MAR, 2024 | APR, 2024 | MAY, 2024 | JUN, 2024 | JUL, 2024 | AUG, 2024 | SEP, 2024 | Total |
|--------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|
| (mm) | 46.2 | 20.3 | | | | | | | | | | | 66.5 |
| (inch) | 1.8 | 0.8 | | | | | | | | | | | 2.6 |
| (AF) | 17,795 | 7,801 | | | | | | | | | | | 25,596 |

TABLE 6. MONTHLY FIELD ET_A

| ET _a (in) Including Fallow | | | | | | | | | | | | | | |
|---------------------------------------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----|
| | Field Size (ac) | OCT, 2023 | NOV, 2023 | DEC, 2023 | JAN, 2024 | FEB, 2024 | MAR, 2024 | APR, 2024 | MAY, 2024 | JUN, 2024 | JUL, 2024 | AUG, 2024 | SEP, 2024 | Ave |
| Maximum | 230.1 | 3.6 | 1.9 | | | | | | | | | | | 2.8 |
| Minimum | 0.04 | 0.0 | 0.0 | | | | | | | | | | | 0.0 |
| Average | 10.1 | 1.9 | 0.9 | | | | | | | | | | | 1.4 |
| ET _a (in) Excluding Fallow | | | | | | | | | | | | | | |
| | Field Size (ac) | OCT, 2023 | NOV, 2023 | DEC, 2023 | JAN, 2024 | FEB, 2024 | MAR, 2024 | APR, 2024 | MAY, 2024 | JUN, 2024 | JUL, 2024 | AUG, 2024 | SEP, 2024 | Ave |
| Maximum | 230.1 | 3.6 | 1.5 | | | | | | | | | | | 2.6 |
| Minimum | 0.04 | 0.0 | 0.0 | | | | | | | | | | | 0.0 |
| Average | 10.3 | 2.1 | 1.0 | | | | | | | | | | | 1.6 |

TABLE 7. MONTHLY GSA PRECIPITATION

| Precipitation Unit | OCT, 2023 | NOV, 2023 | DEC, 2023 | JAN, 2024 | FEB, 2024 | MAR, 2024 | APR, 2024 | MAY, 2024 | JUN, 2024 | JUL, 2024 | AUG, 2024 | SEP, 2024 | Total |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------|
| (mm) | 2.8 | 6.4 | | | | | | | | | | | 9.2 |
| (inch) | 0.1 | 0.3 | | | | | | | | | | | 0.4 |

