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BOARD OF SUPERVISORS' MEETING March 17, 2026

Submittal of the Water Year 2025 Annual Report for the Big Valley Groundwater Basin,
Per requirement of the Sustainable Groundwater Management Act.

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Draft Resolution of the Board of Supervisors, County of Lassen, acting as the Groundwater Sustainability Agency for all those portions of the Big Valley Groundwater Basin Located within Lassen County, to adopt the Big Valley Groundwater Basin Annual Report for the 2025 Water Year, in coordination with the Modoc County Groundwater Sustainability Agency, and to direct staff to submit said report to the California Department of Water Resources	03
Big Valley Basin Groundwater Sustainability Plan Annual Report for Water Year 2025	05



County of Lassen
Department of Planning and Building Services

• Planning • Building • Environmental Health • Code Enforcement • Surveyor • Surface Mining

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TO: Lassen County Board of Supervisors (acting as Groundwater Sustainability Agency for the Lassen County portion of the Big Valley Groundwater Basin)
Agenda Date: March 17, 2026

FROM: Gaylon F. Norwood, Director *GFN*

SUBJECT: Submittal of the Water Year 2025 Annual Report for the Big Valley Groundwater Basin, Per requirement of the Sustainable Groundwater Management Act

ACTION REQUESTED:

1. Receive report; and
2. Adopt a resolution directing staff to submit the Water Year 2025 Annual Report for the Big Valley Groundwater Basin to the Department of Water Resources, per requirements of the Sustainable Groundwater Management Act.

Discussion:

On April 9, 2024, the Lassen County Groundwater Sustainability Agency (GSA) approved the revised Big Valley Groundwater Sustainability Plan (GSP), and on April 15, 2024, the Modoc Groundwater Sustainability Agency (GSA) approved the same GSP. On April 22, 2024, said GSP was submitted to the Department of Water Resources (DWR). On February 27, 2025, the Department of Water Resources approved the revised Big Valley GSP.

Following adoption of a GSP, the SGMA (Sustainable Groundwater Management Act) requires GSAs to submit annual reports to DWR by April 1st of each year. Annual reports are to provide information on groundwater conditions and implementation of the GSP for the prior water year. The GSA staff with assistance from West Yost, has prepared an annual report for the 2025 water year (October 1, 2024 to September 30, 2025), and is requesting authorization from the Board of Supervisors to submit said report to DWR by the April 1, 2026, deadline.

The annual report was reviewed by the Big Valley Groundwater Basin Advisory Committee on February 23, 2026, and forwarded to the GSAs for their consideration.

GFN:mao

Enclosures: Draft Resolution Directing Staff to Submit Annual Report
Annual Report for Water Year 2025

RESOLUTION NO. _____

RESOLUTION OF THE BOARD OF SUPERVISORS, COUNTY OF LASSEN, ACTING AS THE GROUNDWATER SUSTAINABILITY AGENCY FOR ALL THOSE PORTIONS OF THE BIG VALLEY GROUNDWATER BASIN LOCATED WITHIN LASSEN COUNTY, TO ADOPT THE BIG VALLEY GROUNDWATER BASIN ANNUAL REPORT FOR THE 2025 WATER YEAR, IN COORDINATION WITH THE MODOC COUNTY GROUNDWATER SUSTAINABILITY AGENCY, AND TO DIRECT STAFF TO SUBMIT SAID REPORT TO THE CALIFORNIA DEPARTMENT OF WATER RESOURCES.

WHEREAS, on December 15, 2021, the Lassen County Board of Supervisors and Modoc County Board of Supervisors, acting as Groundwater Sustainability Agencies for the Big Valley Groundwater Basin) adopted resolutions approving the Big Valley Groundwater Sustainability Plan (GSP) and authorizing GSA staff to submit said GSP to the California Department of Water Resources (DWR) by the January 31, 2022, deadline, per requirements of the Sustainable Groundwater Management Act (SGMA); and

WHEREAS, after an incomplete determination by DWR on October 26, 2023, a revised GSP (Revised BVGSP or Revised GSP) was adopted by Lassen County on April 9, 2024, and Modoc County on April 15, 2024, and resubmitted to DWR on April 22, 2024. DWR approved the Revised GSP on February 27, 2025. DWR's approval included recommended corrective actions and noted that the GSAs will continue to evaluate GSP implementation through required periodic evaluations, with the first periodic evaluation due by January 27, 2027; and

WHEREAS, per CCR 23 § 356.2, SGMA requires GSAs to submit annual reports to DWR each April 1, following adoption of a GSP, to provide information on groundwater conditions and implementation of the GSP for the prior water year; and

WHEREAS, GSA staff has drafted an annual report for the 2025 water year (October 1, 2024 to September 30, 2025), in consultation with University of California Cooperative Extension Modoc and Lassen (UCCE) and the Big Valley Groundwater Advisory Committee (BVAC), and is requesting authorization from the Board of Supervisors to submit said report to DWR by the April 1, 2026, deadline.

NOW, THEREFORE, BE IT RESOLVED, the Board of Supervisors, acting as the Lassen County Groundwater Sustainability Agency, hereby directs staff to coordinate with the Chair of the Board and County Counsel on any potential changes made by the Modoc County GSA or technical corrections identified to update the document and submit the 2025 water year annual report for the Big Valley Groundwater Basin to the Department of Water Resources by the April 1, 2026, deadline.

RESOLUTION NO. _____
Page 2 of 2

PASSED AND ADOPTED at a regular meeting of the Board of Supervisors of the County of Lassen, State of California, on the 17th day of March, 2026, by the following vote:

AYES: _____

NOES: _____

ABSTAIN: _____

ABSENT: _____

Chairman of the Board of Supervisors
County of Lassen, State of California

Attest:
JULIE BUSTAMANTE
Clerk of the Board

By: _____
MICHELE YDERRAGA, Deputy Clerk of the Board

I, MICHELE YDERRAGA, Deputy Clerk of the Board of the Board of Supervisors, County of Lassen, do hereby certify that the foregoing resolution was adopted by the said Board of Supervisors at a regular meeting thereof held on the 17th day of March, 2026.

Deputy Clerk of the County of Lassen Board of Supervisors

Big Valley Basin Groundwater Sustainability Plan Annual Report for Water Year 2025 No. 5-004 Big Valley Groundwater Basin

PREPARED FOR

Lassen County Groundwater Sustainability Agency
Modoc County Groundwater Sustainability Agency



PREPARED BY



Big Valley Basin Groundwater Sustainability Plan Annual Report for Water Year 2025 No. 5-004 Big Valley Groundwater Basin

Prepared for

**Lassen County Groundwater Sustainability Agency
Modoc County Groundwater
Sustainability Agency**

Project No. 1030-80-24-05



Angelica Rodriguez-Arriaga

Prepared by: Clay Sorensen, PG, CHG and
Angie Rodriguez-Arriaga, GIT

February 24, 2026

Date

Carolina Sanchez

QA/QC Review: Carolina Sanchez, PE

February 24, 2026

Date

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 Tom Neely (District 3)
 Aaron Albaugh (District 4), Vice Chair
 Jason Ingram (District 5)

Ned Coe (District 1), Chair
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LIST OF ACRONYMS AND ABBREVIATIONS

°F	Fahrenheit
AF	Acre-Feet
AgMAR	Agriculture Managed Aquifer Recharge
AR	Annual Reports
BVAC	Big Valley Groundwater Basin Advisory Committee
BVGB or the Basin	Big Valley Groundwater Basin
BVMW	Big Valley Monitoring Wells
CCR	California Water Code
CDFW	California Department of Fish and Wildlife
cfs	Cubic Feet Per Second
DWR	Department of Water Resources
ET	Evapotranspiration
ft	Feet
GEI	GEI Consultants Inc
GSA	Groundwater Sustainability Agency
in	Inches
MO	Measurable Objectives
MOU	Memorandum of Understanding
MT	Minimum Thresholds
NAVD 88	North American Vertical Datum of 1988
Original BVGSP or Original GSP	Big Valley Groundwater Sustainability Plan
PMA	Projects and Management Action
PRISM	Parameter-elevation Regressions on Independent Slopes
Refuge	Ash Creek Wildlife Refuge
RMW	Representative Monitoring Well
RVB	Round Valley Basin
SGMA	Sustainable Groundwater Management Act
WY	Water Year

Annual Report for Water Year 2025

EXECUTIVE SUMMARY

The Big Valley Groundwater Basin (BVGB or the Basin), which the California Department of Water Resources (DWR) defines as Basin No. 5-004, is designated as a “medium” priority basin (see Figure 1-1). The Basin covers approximately 144 square miles in Modoc and Lassen counties. To comply with the 2014 Sustainable Groundwater Management Act (SGMA) (California Water Code [CCR], Section 10720 et seq.), both counties established Groundwater Sustainability Agencies (GSAs) to manage the groundwater resources of the Basin. The Lassen County GSA and the Modoc County GSA serve as the GSAs for their respective portions of the basin.

The original Big Valley Groundwater Sustainability Plan (Original BVGSP or Original GSP) was adopted by both County Boards of Supervisors on December 15, 2021, and submitted to DWR on January 27, 2022. After an incomplete determination by DWR on October 26, 2023, a revised GSP (Revised BVGSP or Revised GSP) was adopted by Lassen County on April 9, 2024, and Modoc County on April 15, 2024, and resubmitted to DWR on April 22, 2024. DWR approved the Revised GSP on February 27, 2025. DWR’s approval included recommended corrective actions and noted that the GSAs will continue to evaluate GSP implementation through required periodic evaluations, with the first periodic evaluation due by January 27, 2027.

Per CCR 23 § 356.2, GSAs are required to submit annual reports (ARs) to DWR by April 1 of each year following GSP adoption (or readoption), providing updates on basin conditions. This annual report covers Water Year (WY) 2025 (October 1, 2024 to September 30, 2025) and builds upon prior reports for WYs 2019-2024 and the Revised GSP.

The following is a summary of the key information and findings from the WY 2025 Annual Report:

- **Section 1 – Surface Water and Climate.** As shown in Table 1-1, WY 2025 was classified as a wet water year based on a weighted precipitation deviation method used for evaluation. Average annual precipitation in WY 2025 was 22.3 inches, an increase of about 6 inches relative to WY 2024 when precipitation was 16.5 and classified as an average water year. Daily average streamflow in the Pit River in WY 2025 was 323.9 cubic feet per second (cfs), an increase of about 188 cfs relative to WY 2024 when streamflow was 135.8 cfs.
- **Section 2 – Groundwater Conditions.** Groundwater conditions are summarized by subsection below:
 - **Section 2.1 – Groundwater Elevations.** Hydrographs for representative wells are shown in Appendix A, and groundwater elevations are shown in Table 2-1. Groundwater levels remained generally consistent with historical trends and seasonal variability. Representative monitoring wells (RMWs) (16D1, 20B6, and ACWA-3) were measured below their measurable objectives (MOs) during the fall monitoring period. Of these wells, only RMW 16D1 recorded a groundwater level below the MT. The Fall 2024 measurement at RMW 16D1 was not considered representative of typical groundwater conditions by DWR due to data collection issues; however, the Fall 2025 measurement was considered accurate. Ongoing monitoring and evaluation will determine if management actions or adjustments to thresholds are required.

Big Valley Basin Groundwater Sustainability Plan Annual Report for Water Year 2025



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- **Section 2.2 – Water Budget.** Table 2-3 shows the annual water use, which was estimated with the water budget tool developed as part of the Original GSP. The data suggests that water use varies with WY type, with greater reliance on groundwater during dry years and reduced reliance on groundwater during wetter years when surface water availability is higher. In WY 2025, total water use was estimated at 125,800 Acre Feet (AF), a decrease of 1,500 AF from WY 2024 (127,300 AF). This reduction was driven primarily by decreased groundwater pumping, which declined from approximately 47,500 AF in WY 2024 to 46,300 AF in WY 2025, a reduction of about 1,200 AF. Surface water use also declined slightly, from approximately 79,800 AF in WY 2024 to 79,500 AF in WY 2025, accounting for the remaining 300 AF decrease.
- **Section 2.3 – Change in Groundwater Storage.** The water budget tool suggests a storage increase of 1,000 AF (Appendix B) compared to approximately 96,000 AF estimated using changes in groundwater elevation (Figure 2-5 and 2-6). This discrepancy continues to highlight limitations of the current water budget tool. A new groundwater model is being developed to improve the accuracy of future water budget estimates.
- **Section 3 – GSP Implementation and Progress.** No Undesirable Results (URs) have occurred in WY 2025 or during the period of annual reporting to date. Progress on GSP implementation of Projects and Management Actions (PMAs) is summarized in Table 3-2. The GSAs are improving their monitoring capabilities, refining the Hydrogeologic Conceptual Model, developing a new groundwater model focused on improving the water budget, and securing funding to support ongoing basin management. A new SGMA Implementation – Round 2 grant is funding water budget refinements, ARs, the five-year update, winter water availability assessments, and feasibility studies for water storage and community water supply projects. The grant also supports upland recharge studies, irrigation efficiency enhancements, the development of a basin boundary modification request, and public outreach efforts to engage all beneficial users.
- **Section 4 – Conclusions.** The BVGB remains on a sustainable trajectory, with groundwater levels generally stable and above MOs and/or MTs.



1.0 GENERAL INFORMATION

Figure 1-1 shows the Big Valley Groundwater Basin (BVGB or the Basin), which the California Department of Water Resources (DWR) defines as Basin No. 5-004 and designates as a “medium” priority basin. The Basin covers approximately 144 square miles in Modoc and Lassen counties, with 72 percent of the area in Lassen County and 28 percent in Modoc County. To comply with the 2014 Sustainable Groundwater Management Act (SGMA) (California Water Code [CCR], Section 10720 et seq.), each county established a Groundwater Sustainability Agency (GSAs) to manage the groundwater resources of the Basin. The Lassen County GSA and the Modoc County GSA serve as the GSAs for their respective portions of the basin.

The Water Year (WY) 2025 Annual Report (WY 2025 Annual Report) describes the current conditions of the BVGB. Per California Code of Regulations (CCR) 23 § 356.2, Annual Reports (ARs) must be submitted to DWR by April 1 of each year following GSP adoption (or readoption). Each Annual Report provides updates to basin conditions for the previous WY. This report provides updates for WY 2025 (October 1, 2024 to September 30, 2025). Prior ARs have provided updates for WYs 2019 through 2024.

The original Big Valley Groundwater Sustainability Plan (Original BVGSP or Original GSP) was adopted by both County Boards of Supervisors on December 15, 2021, and submitted to DWR on January 27, 2022. After an incomplete determination by DWR on October 26, 2023, a revised GSP (Revised BVGSP or Revised GSP) was adopted by Lassen County on April 9, 2024, and Modoc County on April 15, 2024, and resubmitted to DWR on April 22, 2024. The Revised GSP was approved by DWR on February 27, 2025. DWR’s approval included recommended corrective actions to be considered during ongoing implementation and future plan updates, with the first required periodic evaluation due by January 27, 2027. The Revised GSP covers data for WYs 1983 through 2018.¹

California Water Code § 10728 stipulates that ARs must contain the following information about the Basin:

1. Groundwater elevation data
2. Annual aggregated data identifying groundwater extraction for the WY
3. Surface water supply used for or available for use for groundwater recharge or in-lieu use
4. Total water use
5. Change in groundwater storage

This WY 2025 Annual Report is organized into the following Sections:

- **Section 1 - General Information (this section):** Provides information on the basin setting, and the revised GSP, including plan area details.
- **Section 2 - Groundwater Conditions:** Summarizes data collected during the WY and presents key findings on groundwater elevations, water use, surface water supply, changes in groundwater storage, and the water budget.
- **Section 3 - GSP Implementation Progress:** Outlines the status of SMCs for Chronic lowering of groundwater levels, and degradation of groundwater quality, and the status of projects and management actions related to GSP implementation.

¹ Some data in the Revised GSP is more recent than WY 2019 and extends through WY 2023.



Big Valley Basin Groundwater Sustainability Plan Annual Report for Water Year 2025

- **Section 4 - Conclusions:** Summarizes key findings and long-term sustainability considerations discussed in this report.
- **Section 5 - References:** Provides a comprehensive list of cited sources used throughout the WY 2025 Annual Report.

Appendix A provides groundwater level hydrographs for the Basin’s Representative Monitoring Wells (RMW).

Appendix B documents WY 2025 updates to the Basin’s water budget developed using the water budget tool developed for the Original GSP.

1.1 Background

The Big Valley Groundwater Basin and its surrounding areas are characterized by an extremely rural setting, economically disadvantaged communities, and limited resource capacity. Like much of the region, the local economy is predominantly agricultural. However, unlike many other groundwater basins in California, Big Valley’s growing season is significantly constrained to approximately 101 days per year due to hard freezes and snow. Given these limitations, most agricultural operations employ low-impact farming practices, focusing on low-input crops such as hay and pasture. These cropping systems not only support abundant wildlife habitats but also help preserve the pristine quality of both surface and groundwater resources.

1.1.1 Big Valley Basin GSAs and Big Valley Groundwater Basin Advisory Committee

When the DWR finalized the Basin’s medium priority designation in 2019, the GSAs elected to collaborate on a single Groundwater Sustainability Plan (BVGSP or GSP) and developed a Memorandum of Understanding (MOU) to outline coordination between the two GSAs. The MOU included provisions for establishing the Big Valley Groundwater Basin Advisory Committee (BVAC), a local advisory committee to oversee the development of the GSP. Applications for membership on the BVAC were solicited from local landowners and residents in accordance with public noticing protocols. Appointments to the BVAC were made by the County Boards of Supervisors. The BVAC consists of a board member from each county, one alternate board member from each county, and two public applicants from each county.

1.1.2 Big Valley Basin Groundwater Sustainability Plan

The original Big Valley Groundwater Sustainability Plan was adopted by both County Boards of Supervisors on December 15, 2021, and submitted to DWR on January 27, 2022.

From Chapter 1 of the Big Valley GSP, “the sustainability goal for the Big Valley Groundwater Basin is to maintain a locally governed, economically feasible, sustainable groundwater basin and surrounding watershed for existing and future legal beneficial uses with a concentration on agriculture. Sustainable management will be conducted in context with the unique culture of the basin, character of the community, quality of life of the Big Valley residents, and the vested right of agricultural pursuits through the continued use of groundwater and surface water.” (BVGSP, 2024).

The Basin’s management approach prioritizes the interests of the Basin’s legal beneficial users, by developing quantifiable management criteria and implementing projects and management actions to maintain long term sustainability, as outlined in the sustainability goal. To achieve this, projects and management actions identified in Chapter 9 of the GSP are being implemented to refine and address existing data gaps. Aligned with this objective and to prevent undesirable results (URs), monitoring

Big Valley Basin Groundwater Sustainability Plan Annual Report for Water Year 2025



networks were established to evaluate quantifiable management criteria including minimum thresholds, measurable objectives, and interim milestones² for the six sustainability indicators³.

On October 26, 2023, DWR determined the BVGSP “incomplete”, citing deficiencies in the assessment of overdraft conditions, sustainable management criteria for groundwater levels, and degraded water quality evaluation. After the incomplete determination by DWR, a revised GSP (Revised BVGSP or Revised GSP) was adopted by Lassen County on April 9, 2024, and Modoc County on April 15, 2024, and resubmitted to DWR on April 22, 2024. DWR approved the Revised GSP on February 27, 2025, and provided recommended corrective actions to be considered during ongoing implementation and future plan updates, including through required periodic evaluations. This annual report references the Revised BVGSP.

1.2 Plan Area

Figure 1-1 shows the Basin location, boundary, and county jurisdiction. The Basin is located within the Modoc Plateau geomorphic province, a volcanic high desert region of northeastern California. Ground surface elevations average approximately 4,500 feet (ft) above North American Vertical Datum of 1988 (NAVD 88). The Basin is one of many similar basins in the region, characterized by relative isolation and small size. The basin covers a total land area of about 144 square miles, with Modoc County accounting for approximately 40 square miles (or 28 percent) in the north and Lassen County encompassing approximately 104 square miles (or 72 percent) in the south.

Geologically, most of the Basin overlies Quaternary alluvium and lake deposits, Pleistocene volcanics, basalt, and intrusive rocks, Pliocene volcanic basalts, and Tertiary intrusive and volcanic rocks, as interpreted from well log data. The two primary geologic units, as described in DWR (1963), are the Bieber Formation and the Turner Creek Formation. The Bieber Formation consists of semi-consolidated interbedded diatomite, silt, sand, and some gravel, and transitions gradually into the Turner Creek Formation, which is composed of well bedded sand, silt, diatomite, tuff, and mudflows with minor basalt, and andesite flows (DWR, 1963). The Basin is defined to the north and south by Pleistocene and Pliocene basalt and Tertiary pyroclastic rocks of the Turner Creek Formation, to the west by Tertiary volcanic rocks of the Big Valley Mountain volcanic series, and to the east by the Turner Creek Formation (DWR, 2003).

The definable bottom of the aquifer is approximately 1,200 ft corresponding to the maximum depth of all production wells (BVGSP, 2024). The hydrogeologic conceptual model assumes a single principal aquifer due to the absence of distinct or widespread confining beds in the subsurface. This assumption is consistent with the current understanding of the Basin and hydrogeologic data that indicates a continuous hydraulic connectivity throughout the basin rather than discrete, separate aquifers⁴.

² Interim Milestones are optional criteria not subject to enforcement and none have been set for the BVGB.

³ The six sustainability indicators defined under SGMA are: chronic lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletions of interconnected surface water. The BVGB was not found to experience direct impacts from seawater intrusion, subsidence, depletion of interconnected surface water, or degraded water quality.

⁴ The Basin Hydrogeological Conceptual Model (HCM) will be updated and documented in the forthcoming Periodic Evaluation (PE); this Annual Report references the current HCM from the Revised GSP.

Big Valley Basin Groundwater Sustainability Plan Annual Report for Water Year 2025



The BVGB does not share a boundary with another basin, but the Round Valley Basin (RVB), which is classified as a very low priority basin, is located to the northeast.

Surrounding upland areas contribute to basin recharge, as mapped by DWR (1963). The GSAs are currently evaluating the interconnectedness between the existing DWR basin delineation and adjacent areas as part of a potential basin boundary modification request.

The Pit River and Ash Creek are the two primary streams within the basin. The Pit River enters from the north and exits through a narrow canyon at the southernmost tip, while Ash Creek flows westward from Round Valley into the basin before dispersing into Ash Creek Wildlife Refuge (Refuge), formerly known as 'Big Swamp.' Near its confluence with the Pit River, Ash Creek reconverges as a tributary to the Pit River at the western edge of Big Swamp (Figure 1-2).

The Refuge was established in 2003 and is managed by the California Department of Fish and Wildlife (CDFW). Agricultural practices and a series of restoration projects implemented by CDFW have resulted in changes to the hydrology, morphology and location of the stream channel within the Refuge.

1.2.1 Climate

The climate of the BVGB is variable, influenced by both seasonal and annual fluctuations. On average, temperatures range between 32 degrees Fahrenheit (°F) and 69°F. During the summer months, temperatures frequently exceed 90°F, while winter months can experience lows of -10°F. These extreme conditions, particularly the hard freezes, significantly limit agricultural production for much of the year.

Historically, climate data for the Basin was recorded at two National Oceanic and Atmospheric Administration (NOAA) stations: Bieber 4 NW and Adin RS. Both stations are now inactive (NOAA, 2022).

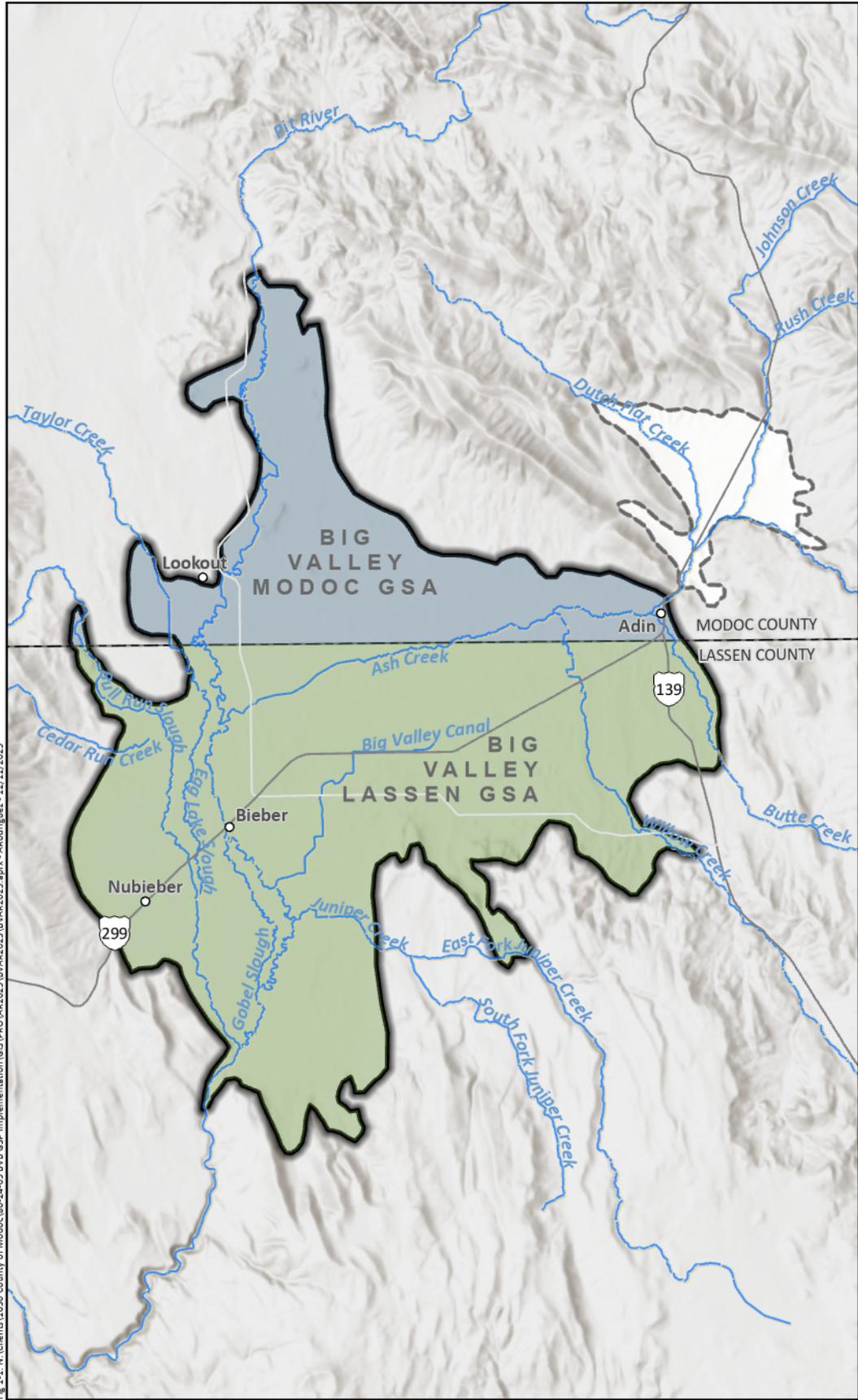
Current Evapotranspiration (ET) data used in water budget estimates was historically sourced from the nearest CIMIS station in McArthur, CA (#43), located west of the BVGB and separated by the Big Valley Mountains.⁵ However, a new CIMIS station (#268) was installed with funds from DWR within the Basin in November of 2023, providing more localized and accurate data. Figure 1-2 shows the location of CIMIS station #268.

Precipitation across the Basin in WY 2025 was estimated using Parameter-elevation Regressions on Independent Slopes Model (PRISM) data provided by Oregon State University.⁶ Average annual precipitation increased from 16.5 inches in WY 2024 to 22.3 inches in WY 2025, an increase of approximately 6 inches, and was above the long-term average. From WY 1984 through WY 2025, Basin average annual precipitation has ranged from a low of 9.9 inches in WY 1992 to a high of 30.0 inches in WY 1998. The long term average over this period is 17.9 inches.

⁵ <https://cimis.water.ca.gov/stations.aspx>

⁶ <https://prism.oregonstate.edu/explorer/>

-  Big Valley Modoc Groundwater Sustainability Agency
-  Big Valley Lassen Groundwater Sustainability Agency
-  Big Valley Groundwater Subbasin
-  Other Groundwater Subbasins

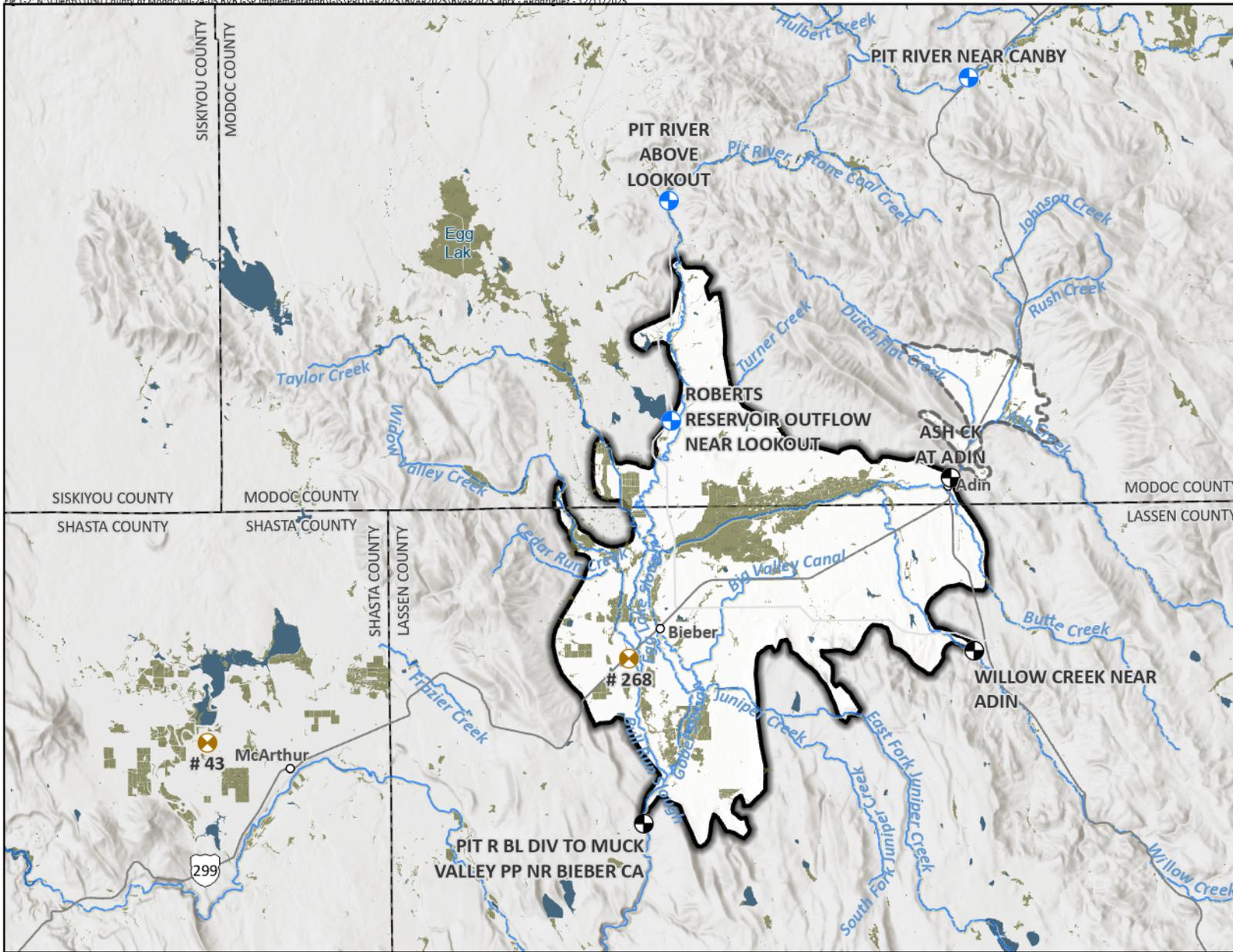


Notes/Sources:
 1. Exclusive Groundwater Sustainability Agency (GSA) boundaries are from the DWR GSA Map Viewer, 2025.



Fig. 1-1: N:\Clients\1030 County of Modoc\80-24-05 BVIS GSP Implementation\GIS\PRO\VAR2025\BVAR2025.aprx - A.Rodriguez - 12/11/2025

Fig 1-2: N:\Clients\1030 County of Modoc\80-24-05 BV8 GSP Implementation\GIS\PROJ\AR2025\BVAR2025\BVAR2025.aprx - ARodriguez - 12/11/2025

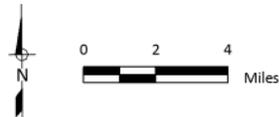


- CIMIS Stations
- Active CDEC Stations
- Inactive CDEC Stations
- Lakes & Reservoirs
- Wetland
- Big Valley Groundwater Subbasin
- Round Valley Subbasin

Notes/Sources:
 1. CIMIS (California Irrigation Management Information System), CDEC (California Data Exchange Center), Lakes (CA Dept. of Fish and Game), Reservoirs (NHD and 3DHP), and Wetlands (U.S. Fish and Wildlife Service). Data Accessed 2025.



Prepared by:



Prepared for:

Lassen County GSA
 Modoc County GSA
 BOS 317/26
 Annual Report WY 2025



Map of Stream Gauge and CIMIS Locations

Big Valley Basin Groundwater Sustainability Plan Annual Report for Water Year 2025



D-3

1.2.2 Surface Water and Drainage Features

Surface water features and gaging stations are shown on Figure 1-2. The two primary sources of surface water in the BVGB are the Pit River and Ash Creek, which enter the basin near the towns of Lookout and Adin, respectively. Several smaller creeks also flow into these larger systems throughout the Basin. Surface water is diverted through a network of unlined drainage ditches and canals, which, along with agricultural land, have been identified for their potential contributions to recharge. Historically, stream gages have monitored surface water stage on the Pit River, Ash Creek, and Willow Creek.

For this reporting period, stream inflows to the basin were estimated in the water budget tool using data from the USGS gauge “Pit River Near Canby” (Figure 1-2; Appendix B). Future water budget tool refinements may incorporate additional gage data, including the newly installed gage on the Pit River “Pit River Above Lookout” located just below the river’s entry into the basin, as well as the “Roberts Reservoir Outflow Near Lookout”, and the “Willow Creek Near Adin” gages. Future water budget outputs may also include data from the gage near Muck Valley “Pit R BL DIV to Muck Valley PP NR Bieber CA”.

Annual average daily streamflow data from the “Pit River Near Canby” gage for WYs 2010 through 2025 is presented in Table 1-1, along with water year classifications determined using the weighted precipitation deviation method. Developed for the BVGB ARs, this method calculates BVGB-specific WY indices by taking a weighted average of precipitation totals: 70 percent from the current year and 30 percent from the previous year. The long-term average is then subtracted from this value. If the result is within two inches of the long-term average, it is classified as average; otherwise, it is classified as wet or dry.

WY 2025 was classified as a wet water year. The daily average streamflow in the Pit River was 323.9 cubic feet per second (cfs) in WY 2025, an increase of about 187 cfs compared to 135.8 cfs in WY 2024. This is consistent with the differences in precipitation between WY 2024 and WY 2025, as streamflow generally corresponds with water year type. In general, years classified as wet correspond to higher average daily streamflows (see for example WYs 2011, 2017, 2019 and 2025 in Table 1-1), while dry years exhibit lower average daily streamflows (see for example WYs 2014, 2021 and 2022 in Table 1-1).

The year-to-year fluctuations in average daily stream flow highlight the significant variability in the availability of surface water from Pit River, with the wettest year (WY 2017) having an average daily flow over 20 times greater than the driest year (WY 2014) (Table 1-1).

Fluctuations in streamflow within WY 2025 in the Big Valley are not evident in the analysis above and in Table 1-1. Streamflow variability is primarily driven by seasonal processes, including rainfall and snowmelt during the winter and spring. During WY 2025 mean daily flows in the Pit River averaged approximately 742 cfs in winter, 464 cfs in spring, 16 cfs in summer, and 77 cfs in fall. The maximum average daily flow of approximately 5,920 cfs occurred during the winter, while the minimum daily flow of 1 cfs occurred during the summer.

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Table 1-1. Annual Average Daily Pit River Flow and WY Type

Water Year	Average Daily Flow at Canby Gage ^(a) , cfs	WY Type ^(b)
2010	56.4	D
2011	380.8	W
2012	66.0	D
2013	73.6	D
2014	20.9	D
2015	41.7	D
2016	208.2	W
2017	456.1	W
2018	138.5	W
2019	387.2	W
2020	69.3	D
2021	30.6	D
2022	38.5	D
2023	212.2	A
2024	135.8	A
2025	323.9	W
Min	20.9	D
Max	456.1	W
Average	165.0	--

(a) Pit River at Canby USGS Streamflow Gage 11348500

(b) Weighted Precipitation Deviation Method WY Type. D = Dry, A = Average, W = Wet



2.0 GROUNDWATER CONDITIONS

This section provides an update on groundwater conditions in the BVGB for WY 2025. This section addresses groundwater elevations, the water budget groundwater extraction trends, and changes in storage.

2.1 Groundwater Elevations

Groundwater elevations provide a key indicator of basin conditions, reflecting seasonal variability, recharge patterns, and long-term trends. This section summarizes WY 2025 groundwater levels, including hydrographs from RMWs and groundwater elevation contour maps. These data inform ongoing groundwater management efforts and support future assessments of Basin sustainability.

2.1.1 Groundwater Elevation Hydrographs

Figure 2-1 shows twelve RMWs, that were assigned measurable objectives (MOs)⁷ and MTs to monitor and assess groundwater elevation and depth to water conditions. Appendix A provides hydrographs for each well and Table 2-1 shows the spring and fall groundwater levels relative to the Measurable Objectives and Measurable Thresholds (MOs and MTs, respectively). The five Big Valley Monitoring Wells (BVMWs) are strategically located well clusters, installed in 2019 and 2020 with DWR funding, to enhance groundwater monitoring coverage across the Basin.

MOs were set at the fall 2015⁸ groundwater elevations where data were available. For newer wells, MOs were assigned based on the lowest fall water elevation recorded, which occurred in WY 2022.⁹ Due to variability in Basin conditions during WYs 2015, 2017, and 2019, MOs for newer wells may require refinement during the upcoming five-year GSP update to ensure they reflect long term groundwater trends.

Hydrographs in Appendix A illustrate seasonal fluctuations and long-term trends in groundwater elevations across the RMW network. While some wells exhibit stable groundwater elevations with minimal seasonal variations (e.g., Well 08F1) others show greater fluctuations influenced by WY type and recharge conditions (e.g., Well 01A1). Continued monitoring and data evaluation will help determine whether management actions or adjustments to thresholds are necessary.

Sporadic monitoring at Wells 13K2 and 20B6 has made long-term trend analysis challenging; however, continued data collection will improve understanding of groundwater conditions. Well 13K2 was temporarily inaccessible during WY 2025, and groundwater level monitoring at this location was discontinued in October 2025 at the request of the well owner, as documented in DWR Water Data Library records. DWR has measured water levels in the basin for decades and is expected to continue monitoring,

⁷ “Measurable objective (MO): Numeric Values that reflect the desired groundwater conditions at a particular monitoring site. MOs must be set for the same monitoring sites as the MTs and are not subject to enforcement” (BVGSP, 2024, Chapter 7).

⁸ Measurable objectives were set at the fall 2015 or 2022 levels, which were generally the lowest, most recent groundwater level measurements prior to the adoption of the BVGSP. These levels provide a reasonable proxy for desired conditions because agricultural uses remain feasible at them (BVGSP 7-3).

⁹ BVMW wells

Big Valley Basin Groundwater Sustainability Plan Annual Report for Water Year 2025



contributing to long-term trend assessments. In compliance with 23 CCR §352.6¹⁰, monitoring data is stored on the DWR Water Library and are accessible to Modoc and Lassen GSAs as well as technical support staff. Wells added to the representative monitoring network after 2015, including the five BVMWs and ACWA-3, lack extensive historical data but have already improved data density and addressed key monitoring gaps. During WY 2025, access limitations also affected data collection at Well 26E1 due to high creek flow conditions that prevented safe driving or walking access as noted in the measurement comments. Future assessments will evaluate additional hydrogeologic factors, data collection consistency, and basin wide conditions to inform sustainable groundwater management strategies.

2.1.2 Groundwater Elevation Contour Maps

Figures 2-2 and 2-3 show WY 2025 spring and fall groundwater elevation contour maps, respectively. The spring and fall groundwater elevation contours in the Revised GSP include WY 1983 to WY 2018, while groundwater elevation contours for WY 2019 to WY 2024 were presented in the WY 2021 through WY 2024 ARs.

In WY 2025, groundwater elevations across the basin were generally stable, with a seasonal decrease observed between spring 2025 and fall 2025. Average groundwater elevations for contouring wells increased by approximately 4 ft, from 4131 ft NAVD 88 in spring 2024 to 4134 ft NAVD 88 in spring 2025 (Table 2-1). The general groundwater flow direction remained consistent with historical trends, moving from higher elevations in the north and east toward the south and west portions of the Basin.

The accuracy of contour maps is influenced by the density and consistency of monitoring well data. As additional data is collected, contour mapping accuracy is expected to improve. Previous reports noted a potential outlier (well 03D1 and well 16D1) potentially affecting elevations in the center of the basin. However recent data suggest these discrepancies may no longer be a significant factor.

Precipitation during WY 2025 is shown on Figure 2-4 and was above average, with most rainfall occurring in February (5.8 inches). Late spring precipitation contributed to increased stream flows and some groundwater recharge through June. During dry years, groundwater recharge may be supplemented through enhanced surface water storage and off-season recharge projects to mitigate seasonal declines.

¹⁰ 23 CCR §352.6. Data Management System, “Each Agency shall develop and maintain a data management system that is capable of storing and reporting information relevant to the development or implementation of the Plan and monitoring of the basin.”

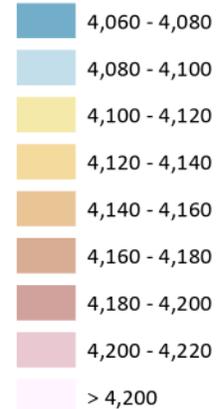
Table 2-1. WY 2025 Water Level and SMCs Summary Table

Local Well Name	Groundwater Elevation, ft NAVD 88		WY 2025, ft NAVD 88		Contour Well ^(c)	Measurement Method
	MO ^(b)	MT ^(b)	Spring	Fall		
Representative Wells^(a)						
01A1	4092	4043	4133	4135	Yes	M
08F1	4222	4174	4228	4229	Yes	M
13K2	4062	4026	--	--	Yes	E
16D1	4079	4061	4081	4058	Yes	M
20B6	4085	4027	4089	4084	Yes	M
26E1	4114	4071	--	4121	Yes	E
ACWA-3	4140	4099	4150	4140	Yes	M
BVMW 1-1	4161	4121	4187	4162	Yes	M
BVMW 2-1	4192	4142	4197	4196	Yes	M
BVMW 3-1	4149	4099	4162	4153	Yes	M
BVMW 4-1	4092	4071	4122	4101	Yes	M
BVMW 5-1	4078	4032	4079	4083	Yes	M
Other Wells						
03D1	NA	NA	4078	4040	Yes	M
06C1	NA	NA	--	--	Yes	E
17K1	NA	NA	4128	4127	Yes	M
18E1	NA	NA	--	--	Yes	E
18M1	NA	NA	--	--	No	E
18N2	NA	NA	4151	4145	No	M
21C1	NA	NA	--	--	Yes	E
22G1	NA	NA	4122	4118	No	M
23E1	NA	NA	4101	4090	No	E
24J2	NA	NA	--	--	Yes	E
28F1	NA	NA	4199	4196	No	M
32A2	NA	NA	4119	4112	Yes	M
32R1	NA	NA	--	--	Yes	E
ACWA-1	NA	NA	4125	4109	Yes	M
ACWA-2	NA	NA	4139	4123	Yes	M
BVMW 1-2	NA	NA	4188	4180	No	M
BVMW 1-3	NA	NA	4189	4179	No	M
BVMW 1-4	NA	NA	4188	4179	No	M
BVMW 2-2	NA	NA	4207	4199	No	M
BVMW 2-3	NA	NA	4197	4185	No	M
BVMW 2-4	NA	NA	4198	4192	No	M
BVMW 3-2	NA	NA	4167	4158	No	M
BVMW 3-3	NA	NA	4162	4156	No	M
BVMW 3-4	NA	NA	4161	4156	No	M
BVMW 4-2	NA	NA	4134	4108	No	M
BVMW 4-3	NA	NA	4135	4107	No	M
BVMW 4-4	NA	NA	4134	4104	No	M
BVMW 5-2	NA	NA	4115	4107	No	M
BVMW 5-3	NA	NA	4108	4090	No	M
BVMW 5-4	NA	NA	4108	4091	No	M
<p>(a) Representative wells for Water Levels and Groundwater Storage.</p> <p>(b) Measurable Objective (MO) is set at the spring 2022 or spring 2015 groundwater level depending on when the well was installed. Minimum Threshold (MT) is set at 50 feet below the fall 2015 or fall 2022 groundwater level.</p> <p>(c) Yes = Well is used for contouring; No = Well is not used for contouring. M = Measured; E = Estimate NA = not applicable ft bgs = feet below ground surface (depth to water) ft NAVD 88 = Elevation measurements are in feet and reference to the North American Vertical Datum of 1988 (NAVD88)</p>						

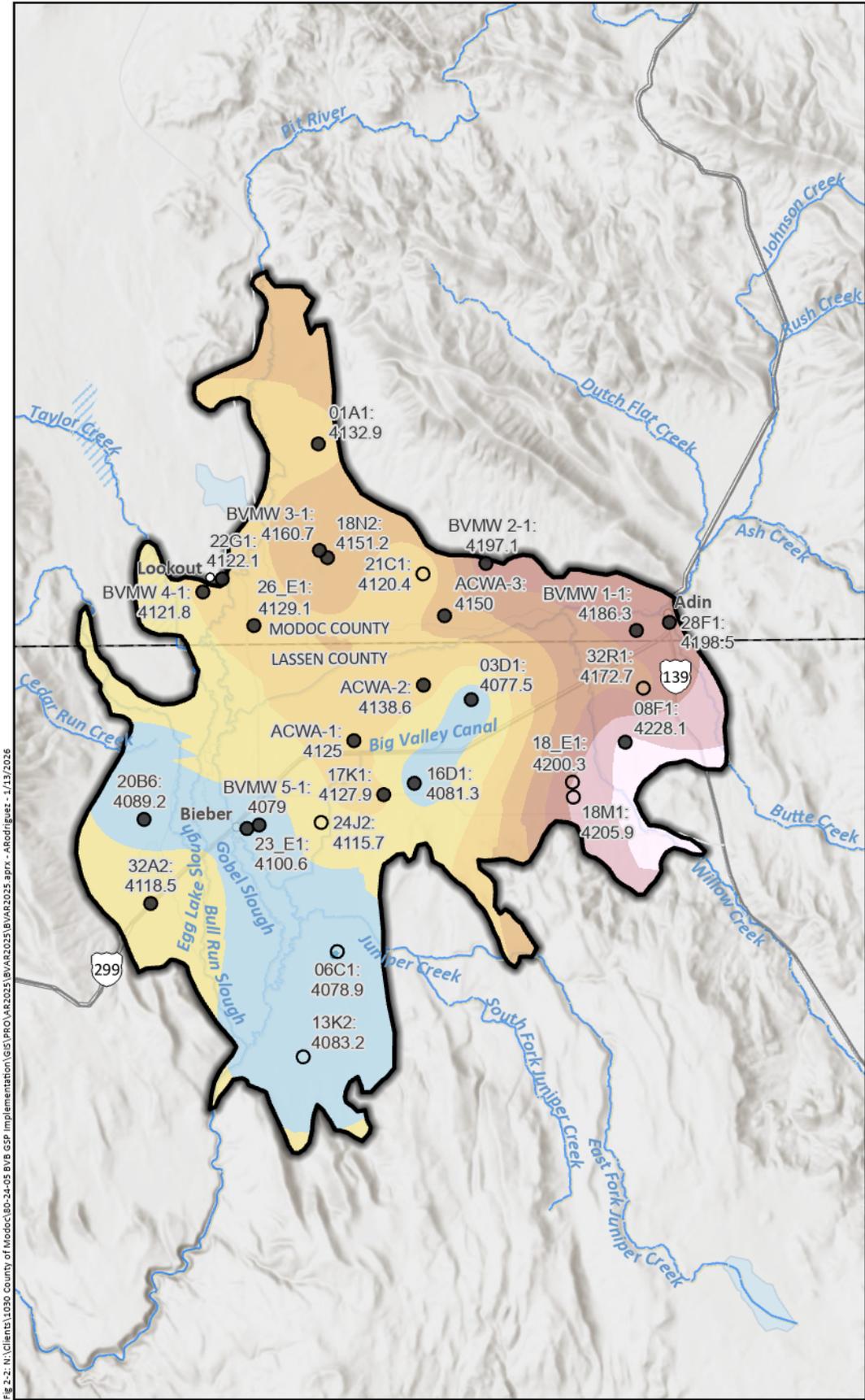
● Measured Groundwater Elevation

○ Estimated Groundwater Elevation

Groundwater Elevation (ft)



□ Big Valley Groundwater Subbasin



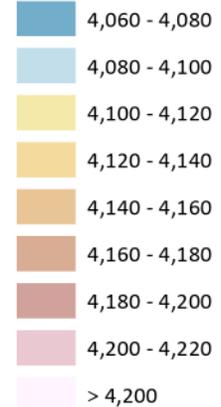
- Notes/Sources:
1. Data used for contours was downloaded from the online SGMA Data Viewer.
 2. Elevation measurements are referenced to the North American Vertical Datum of 1988 (NAVD88).



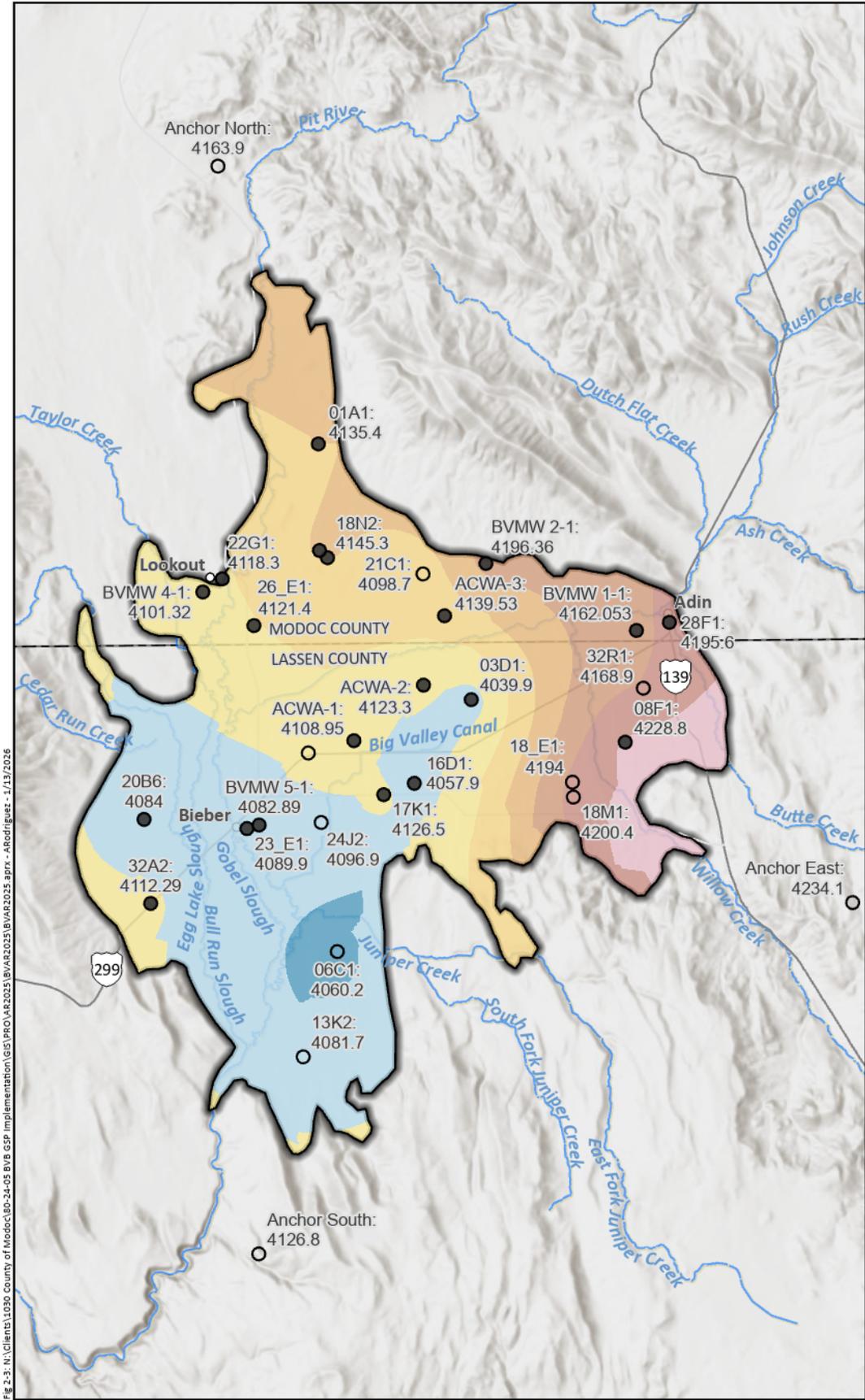
Fig. 2-2: N:\Clients\1030 County of Modoc\80-24-05 BVIS GSP Implementation\GIS\PRO\AR\2025\BVAR2025\BVAR2025.aprx - Arodriguez - 1/13/2026

- Measured Groundwater Elevation
- Estimated Groundwater Elevation

Groundwater Elevation (ft)



Big Valley Groundwater Subbasin



- Notes/Sources:
1. Data used for contours was downloaded from the online SGMA Data Viewer.
 2. Elevation measurements are referenced to the North American Vertical Datum of 1988 (NAVD88).



Fig. 2-3: N:\Clients\1030 County of Modoc\80-24-05 BVIS GSP Implementation\GIS\PRO\VAR\2025\BVAR2025\BVAR2025.aprx - Arodriguez - 1/13/2026



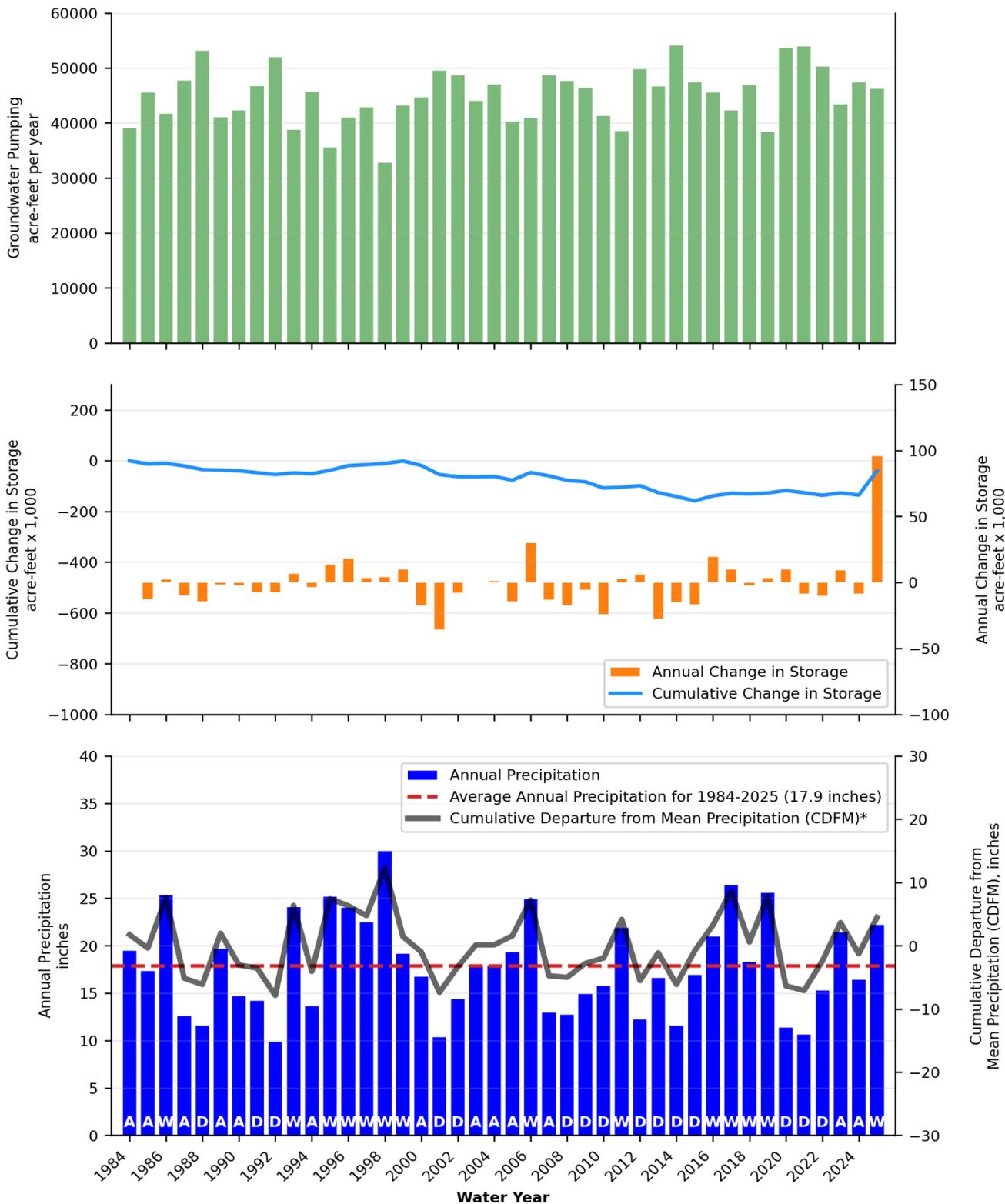


Figure 2-4
Estimated Annual Groundwater Pumping and
Cumulative Change in Groundwater
Storage vs. Precipitation
 Big Valley Groundwater Basin
 Water Year 2025 Annual Report



*The CDFM precipitation curve illustrates the accumulated deviation from the long-term average precipitation for Water Year 1984 through 2024. Positive values indicate periods of above-average precipitation, while negative values signify below-average conditions.



2.2 Water Budget

Appendix B shows the water budget for WYs 2021 through 2025. GEI Consultants Inc (GEI), the engineering firm contracted for the original GSP, recommended developing the water budget using a Microsoft Excel® based spreadsheet (water budget tool). This approach was selected as a cost effective and technologically practical method for the GSAs to create the water budget and estimate future conditions. The technical team is currently using the water budget tool as-is until an alternative tool is developed. As detailed in the Revised GSP, the original water budget incorporates several assumptions that limit the use of the water budget tool. The water budget results included here continue to rely upon the assumptions established during preparation of the Original GSP.

Future updates will refine the water budget estimates and improve data accuracy. These future efforts are expected to support ongoing comparison for projected and observed conditions, as encouraged by RCA #1. Expanding surface water storage and recharge infrastructure remains a priority to optimize water availability in wet years and support long term basin sustainability.

For this WY 2025 Annual Report, the water budget tool was used to estimate groundwater extraction and surface water supply. Change in storage was estimated using both the water budget tool and groundwater-elevations.

2.2.1 Groundwater Extraction

Groundwater extraction in the BVGB is estimated in the water budget tool using a combination of land use, stream flow, evapotranspiration (ET), and precipitation data. Table 2-2 is adapted from the Revised GSP and summarizes land use by water use sector, and Figure 2-5 illustrates the distribution of these sectors across the Basin. Groundwater extraction by land use sector has not yet been quantified due to data gaps identified in the Revised GSP, which persist in this report. As a result, precisely determining total groundwater extraction within the basin remains challenging. Part of updating the water budget will be to better understand groundwater extraction by land use.

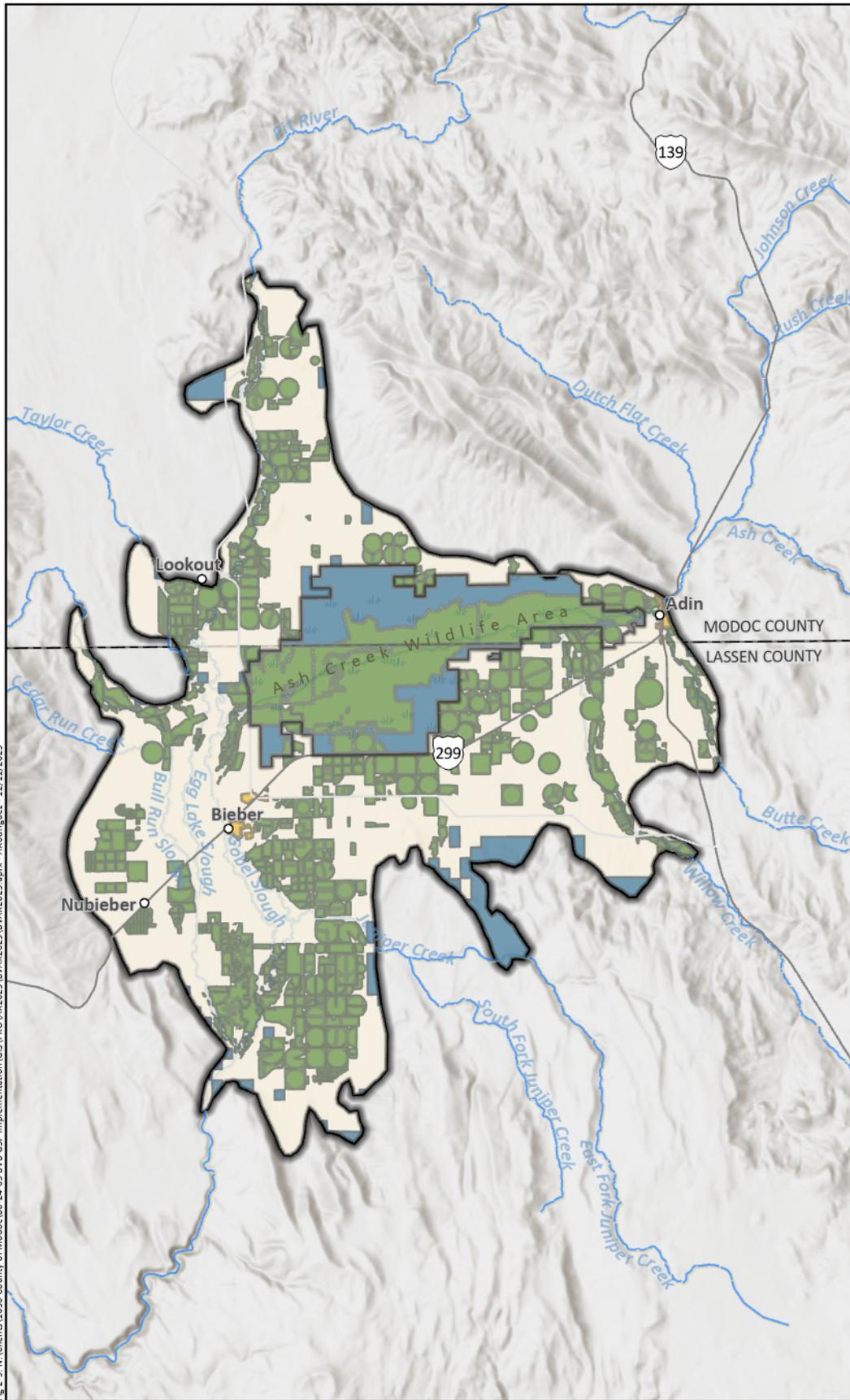
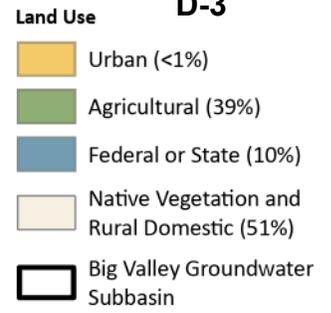
There is a strong correlation between groundwater pumping, surface water availability, and annual precipitation. In WY 2025, a wet water year¹¹ with above average precipitation, groundwater extraction was estimated to be 46,300 Acre-Feet (AF), approximately 1,200 AF less than in WY 2024 (Table 2-3).

Future reports are expected to include sector specific groundwater extraction estimates as additional data and methodologies become available to the GSAs. For now, the general understanding of groundwater extractions remains sufficient to support effective basin management until more detailed data is developed.

Although the water budget tool does not quantify groundwater extraction by sector, review of groundwater-level data suggests that the agricultural sector likely accounts for the largest volume of groundwater extraction, particularly in dry years. It is important to note that without agriculture there would be minimal economic activity within the basin.

¹¹ Water year types were determined using the weighted precipitation deviation method described in Section 1.2.2 of this report

D-3



- Notes/Sources:
1. Urban and agricultural land use is from DWR Land IQ (2022). Federal and state land use data is from DWR Data Viewer (2025). Native vegetation land use represents the remaining areas of the basin.
 2. Percentages represent the share of total Basin acreage for each land use sector.



Fig. 2-5: N:\Clients\1030 County of Modoc\80-24-05 BVIS GSP Implementation\GIS\PRO\VAR\2025\BVAR2025\BVAR2025.aprx - A.Rodriguez - 12/11/2025

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Table 2-2. 2022 Land Use Summary by Water Use Sector

Water Use Sector	Acres	Percent of Total
Urban (<i>Bieber, Nubieber, Adin</i>)	318	<1
Agricultural	35,961	39
State or Federal (<i>Wildlife Area, BLM, BIA, National Forest</i>)	9,007	10
Native Vegetation and Rural Domestic (<i>Includes domestic wells interspersed across the valley</i>)	46,771	51
Total	92,057	100%

Data sources: Urban (DWR Land IQ 2022), State or Federal (DWR Federal Lands, 2025)

2.2.2 Surface Water Supply

Surface water supply in the BVGB is estimated in the water budget tool using a combination of land use, stream flow, ET, and precipitation data. The Pit River and Ash Creek are the primary surface water sources for the BVGB. Although stream inflow and outflow volumes are not yet fully quantified, recent data sharing efforts among agencies and the installation of new stream gages on the Pit River and Roberts Reservoir, with funds from DWR, are expected to improve future estimates of surface water supplies available and used.

The water budget reveals substantial variability in streamflow between wet and dry years, underscoring the critical role of surface water availability in meeting the agricultural, domestic, and habitat needs of the basin. The dependence on surface and groundwater supply emphasize the need for expanded surface water storage options to ensure the basin’s long-term sustainability.

In WY 2025, surface water supply was estimated at 79,500 AF approximately 300 AF less than the previous year, as shown in Table 2-3 and water budget tables in Appendix B. Although WY 2025 (22.26 inches) received more precipitation than WY 2024 (16.48 inches; Figure 2-4) differences in the timing, intensity, and spatial distribution of precipitation, as well as watershed storage and routing processes, can result in lower estimated annual surface water availability.

In wet and above-normal years (e.g., 2023 and 2025), surface water inflow to the basin can exceed 300,000 AF (Appendix B). While much of this water is physically available for diversion, volumes exceeding existing water rights allocations are not captured, resulting in a lost opportunity for storage or recharge. Expanding surface water storage or recharge opportunities is important to the Basin, and the GSAs have prioritized multiple projects and management actions in the BVGSP to capture excess surface water.

Furthermore, DWR climate model forecasts for the Big Valley region predict a shift towards increased precipitation in the form of rain rather than snow. This anticipated change further supports the need for enhanced surface water storage infrastructure to help secure a sustainable water resource for all users in the basin.

2.2.3 Total Water Available

Table 2-3 summarizes water budget estimates of total water use across all sectors since the submission of the Original GSP. Total water use from WY 2019 through WY 2025 ranged from approximately 108,000 to 140,000 AF, with an average annual use of about 128,000 AF. Interannual variability in total

Big Valley Basin Groundwater Sustainability Plan Annual Report for Water Year 2025

water use generally corresponds with hydrologic conditions, as represented by the WY index¹². Higher total water use occurred during dry years (e.g., WY 2021 and WY 2022), while lower use occurred during wetter years (e.g., WY 2019 and WY 2025), reflecting reduced groundwater reliance when surface water availability is greater.

From WY 2024 to WY 2025, total water use decrease by approximately 1,500 AF, driven by decreases in both groundwater and surface water under wetter hydrologic conditions. While these trends illustrate basin scale responses to precipitation variability, sufficient data are not yet available to quantify water use by individual sectors.

Expanding surface water storage and off-season recharge opportunities during wetter years may help reduce reliance on groundwater in drier conditions and moderate future variability in total water use.

Table 2-3. Total Water Use^(a)

WY ^(b)	Groundwater, AF	Surface Water, AF	Total Water, AF
2019 (W)	38,400	70,000	108,400
2020 (D)	53,700	84,900	138,600
2021 (D)	54,000	86,400	140,400
2022 (D)	50,400	82,000	132,400
2023 (A)	43,700	75,700	119,400
2024 (A)	47,500	79,800	127,300
2025 (W)	46,300	79,500	125,800

(a) Numbers reported in this table are derived from the water budget developed for the Original GSP (Appendix B). Data available for use in future reports is anticipated to improve in quality, at which point water use by sector can be estimated with greater accuracy. Estimates of combined water sources are not available at this time.

(b) WY types (in parenthesis) were determined using the weighted precipitation deviation method described in Section 1.2.2 of this report. D = Dry, A = Average, W = Wet

2.3 Change in Groundwater Storage

Figure 2-6 shows the difference in groundwater elevations between spring of WY 2024 and spring of WY 2025. As detailed in Chapter 5.2 of the Revised BVGSP, changes in groundwater elevation are directly correlated with changes in groundwater storage (BVGSP, 2024). ArcGIS was used to calculate the difference in groundwater elevations between spring WYs 2024 and 2025. Spring values were chosen for this analysis because spring values provide a better representation of storage at the conclusion of the winter recharge season and before significant pumping has started.

¹² Annual reports for WY 2022 and WY 2023 used a similar method for estimating changes in storage. WYs 2022 and 2023 used a slightly different equation but still relied on groundwater levels to estimate changes in storage. For WYs 2022 and 2023, the change in storage was estimated by calculating the total volume of groundwater each spring and comparing that against previous years. Annual Reports for WY 2020 and WY 2021 derived storage directly from the water budget. However, storage calculations based on the water budget were shown to differ significantly from measured groundwater levels. As a result, the water budget tool will be revised as part of the GSP’s five-year update.

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The change in groundwater storage was calculated using the following equation:

$$\Delta S = \Delta WL * BA * S_y$$

Where:

- ΔS = Change in groundwater storage (between WY 2024 and WY 2025),
- ΔWL = Change in water level (difference between the average water level of the WY 2024 and WY 2025),
- BA = Basin area (92,057 acres), and
- S_y = Specific yield (6.85 percent).

This methodology is consistent with the approach adopted in the Revised GSP.¹³

Based on this estimate, the change in groundwater storage increased by approximately 96,000 AF between WY 2024 and WY 2025.

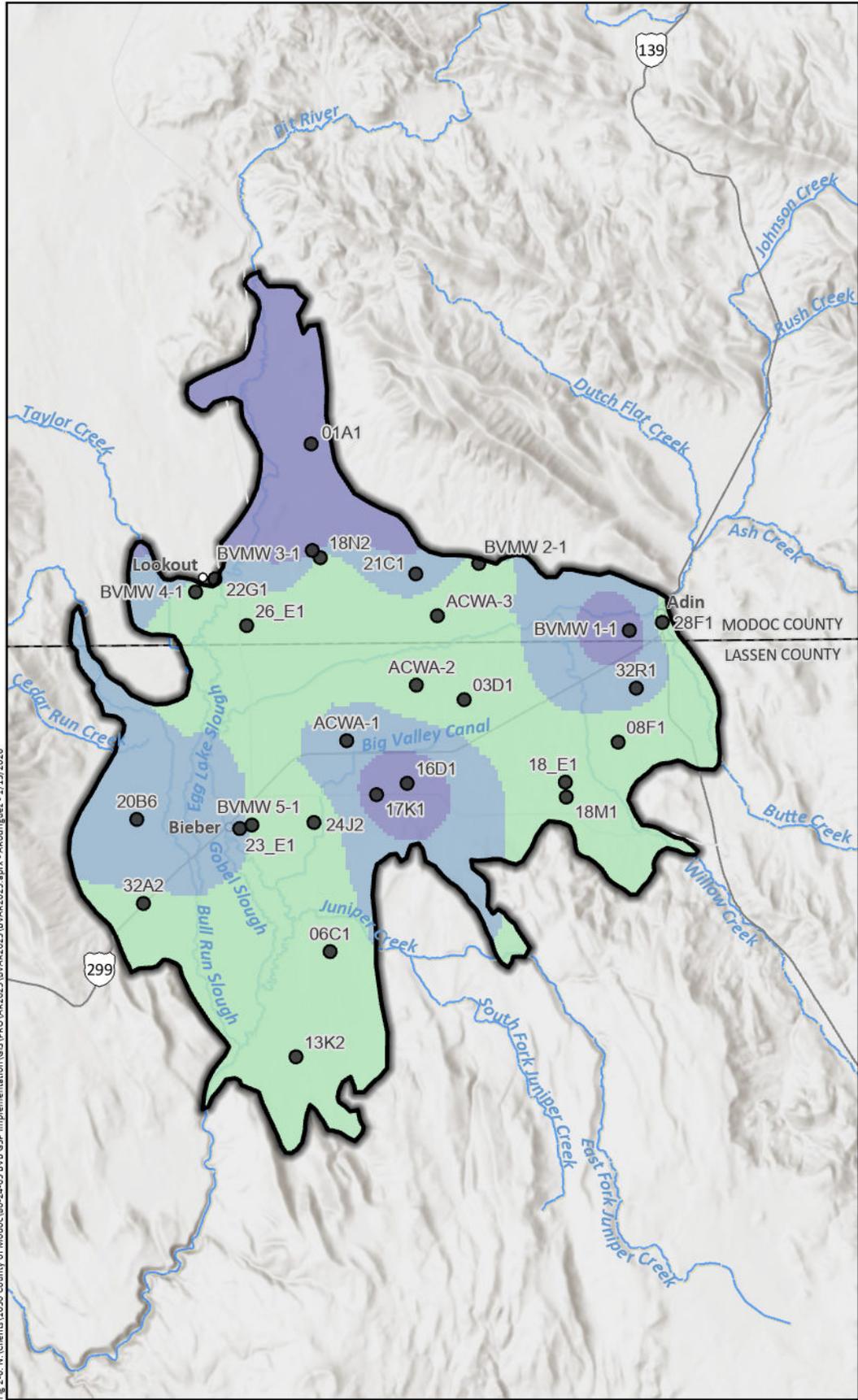
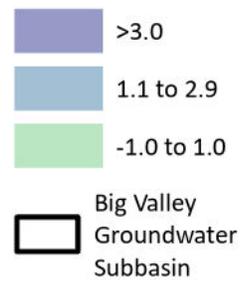
Groundwater level changes between WY 2024 and WY 2025 indicate spatial variability in storage change (Figure 2-6). From spring 2024 to spring 2025 groundwater levels increased by approximately three ft on average across the basin with.

A discrepancy exists between storage change estimates derived from the groundwater elevation difference method and those calculated using the water budget tool. The water budget tool suggests a storage increase of 1,000 AF (Appendix B), compared to the 96,000 AF increase estimated from groundwater elevation changes (Figures 2-4 and 2-6). The discrepancy highlights the limitations of the current water budget tool.

Figure 2-4 illustrates long term trends in: i) estimated groundwater pumping, ii) estimated cumulative change in storage, and iii) precipitation trends from WY 1983 to WY 2025. Over this period, changes in Basin storage have closely tracked precipitation patterns. Cumulative basin storage has remained relatively stable, with dry years (2013, 2014 and 2020 through 2022) offset by wet years (2017, 2019, 2023, and 2025). This indicates long term sustainability and suggests that the basin is likely to remain sustainable into the future.

¹³ Annual reports for WY 2022 and WY 2023 used a similar method for estimating changes in storage. WYs 2022 and 2023 used a slightly different equation but still relied on groundwater levels to estimate changes in storage. For WYs 2022 and 2023, the change in storage was estimated by calculating the total volume of groundwater each spring and comparing that against previous years. Annual Reports for WY 2020 and WY 2021 derived storage directly from the water budget. However, storage calculations based on the water budget were shown to differ significantly from measured groundwater levels. As a result, the water budget tool will be revised as part of the GSP's five-year update.

Difference in Groundwater Elevation Between Spring 2024 to Spring 2025 (ft)



- Notes/Sources:
1. Spring 2025 groundwater surface elevation was subtracted from Spring 2024 groundwater surface elevation to calculate the difference in groundwater elevations. A negative value represents a decrease in elevation.
 2. Elevation measurements are referenced to the North American Vertical Datum of 1988 (NAVD88).



Difference in Groundwater Elevation Between Spring 2024 and Spring 2025

Fig. 2-6: N:\Clients\1030 County of Modoc\80-24-05 BVS GSP Implementation\GIS\PROJ\AR\2025\BVAR2025\BVAR2025.aprx - Arodriguez - 1/13/2026





3.0 GSP IMPLEMENTATION PROGRESS

3.1 Status of SMCs

This section describes the statuses of SMCs and if any MTs or URs were triggered since WY 2021. The SMCs and MTs are described in Revised GSP Section 7.3. Key concerns addressed in this section include:

- Chronic lowering of Groundwater Levels, Reduction in Groundwater Storage
- Degradation of Water Quality

Land subsidence and depletion of interconnected surface water are not addressed in this section because the current GSP has not SMCs associated with these.

3.1.1 Chronic Lowering of Groundwater Levels, Reduction in Groundwater Storage

The MTs established for the chronic lowering of groundwater levels in the Big Valley Groundwater Basin serve as a proxy for the MT for groundwater in storage; therefore, these two sustainability indicators are combined. MTs are defined based on historical spring groundwater levels and well performance considerations, with the objective of maintaining groundwater levels sufficiently above agricultural and domestic well pump intakes to avoid well failure and loss of supply.

Specifically, MTs for groundwater levels are defined as 50 feet below the spring 2015 groundwater level, or the spring 2022 groundwater level for wells constructed after 2015. These thresholds reflect historical groundwater conditions and are intended to protect existing beneficial uses, particularly agricultural and domestic water supply in this rural basin.

Operationally, URs for groundwater levels occur when at least one-third of representative monitoring wells fall below their respective MTs for three consecutive years. When this condition is met, groundwater level declines are considered to result in significant and undesirable impacts to beneficial uses within the Basin. Data used for evaluating the SMCs is from the DWR and is available at the California Natural Resources Agency (CNRA) Open Data portal: <https://data.cnra.ca.gov/dataset/periodic-groundwater-level-measurements/resource/bfa9f262-24a1-45bd-8dc8-138bc8107266>. Table 3-1 shows the status of this SMC since WY 2021.

Water Year	Status
2021-2024	Isolated and transient exceedances of the MT were observed at a limited number of representative monitoring wells (08F1 and 16D1) during individual fall or spring monitoring periods. In all cases, groundwater levels recovered by the subsequent monitoring period. Basin-wide, MT exceedances during this period affected no more than one representative monitoring well in any given year (less than 10 percent of wells), and therefore an URs did not occur.
2025	In WY 2025, groundwater levels at representative monitoring well 16D1 fell below the MT during the fall 2025 monitoring period. The MT exceedance in WY 2025 affected 1 of 12 representative monitoring wells (approximately 8 percent), which is below the threshold for an UR; therefore, an UR has not occurred.

Big Valley Basin Groundwater Sustainability Plan Annual Report for Water Year 2025



3.1.2 Degradation of Water Quality

The constituents of concern for the basin are total dissolved solids (TDS) and nitrate. The GSAs chose not to develop SMCs for constituents of concern that are found and managed by other regulatory programs. The GSAs will continue to coordinate with relevant regulatory agencies and water users to beneficial uses and users are protected.

Following the state’s drinking water standards, the MTs for TDS and nitrate are set at their respective MCLs: 500 mg/L for TDS (secondary MCL) and 10 mg/L for nitrate (primary MCL). MOs for TDS and nitrate are the current quality, which is about 300 mg/L for TDS and less than 1 mg/L for nitrate.

The MT is defined as three or more wells with a TDS and/or nitrate measurements that are above the MCL for three consecutive years. Data used for evaluating the SMCs is from the Division of Drinking Water, and is available at the CNRA Open Data portal: <https://data.cnra.ca.gov/dataset/ground-water-water-quality-results>.

In addition, a relationship exists between specific conductance (SC) and TDS in the basin, as documented in Section 5.4.1 of the GSP (TDS = 0.66 x SC). Based on this relationship and evaluation of monitoring well data, estimated TDS concentrations remain below MTs. Table 3-2 shows the status of this SMC since WY 2021.

Water Year	Status
2021-2024	No MT exceedances for TDS or nitrate were observed at Division of Drinking Water (DDW) wells or monitoring locations during individual monitoring years. No DDW wells were identified with MT exceedances for three consecutive years; therefore, an UR did not occur.
2025	In WY 2025, No MT exceedances were identified. No DDW wells or monitoring locations have exceeded the MT for three consecutive years; therefore, an UR has not occurred.

3.2 Status of PMAs

The projects and management actions (PMAs) outlined in the GSP, are designed to address data gaps and improve understanding of basin conditions (BVGSP, 2024). To support adaptive management, the GSP allows for implementation refinements as new data becomes available. Many of these projects have been ongoing alongside the GSPs development and revisions, directly contributing to its objectives.

In 2023, the GSAs secured a SGMA Implementation – Round 2 grant, providing critical funding for key GSP updates, including water budget refinements. ARs, and the five-year update. The grant also supports continued work on winter water availability assessments, feasibility studies for water storage and community water supply projects and improvements to upland recharge areas, including ongoing forest health and thinning projects in partnership with local agencies. Additionally, it funds efforts to enhance irrigation efficiency, optimize water use, and develop a basin boundary modification request.

Beyond technical improvements, the grant provides funding for public engagement and outreach, ensuring that all beneficial users of groundwater in the BVGB remain informed and involved in basin management. Table 3-2 provides specific updates on the status of several project and management actions identified in the Revised GSP.

Many of the PMAs outlined below are currently being implemented as part of the SGMA Implementation – Round 2 grant funding received by the GSAs, and additional updates should be provided in subsequent ARs.

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Table 3-3. GSP Implementation Projects & WY 2025 Status Update

No. ^(a)	Category	Description	Status	WY 2025 Update
1	Basin Recharge Projects	<ul style="list-style-type: none"> Agriculture Managed Aquifer Recharge (AgMAR) 	Active	<ul style="list-style-type: none"> GSAs completed a Water Availability Analysis and obtained a Temporary Water Rights Permit for diversions of up to 650 acre-feet in December 2025.
2	Basin Recharge Projects	<ul style="list-style-type: none"> Drainage or Basin Recharge 	Active	<ul style="list-style-type: none"> GSAs completed the Uplands Geologic Assessment (April 11, 2022) under the previous grant for drainage research.
3	Basin Recharge Projects	<ul style="list-style-type: none"> Aquifer Storage and Recovery and Injection Wells 	Inactive	<ul style="list-style-type: none"> No update.
4	Research & Data Development	<ul style="list-style-type: none"> Additional Stream Gages and Flow Measurement 	Active	<ul style="list-style-type: none"> GSAs are developing rating curves for the newly installed gages.
5	Research & Data Development	<ul style="list-style-type: none"> Refined Water Budget Adin Community Supply Assessment 	Active	<ul style="list-style-type: none"> GSAs are currently developing a numerical model in support of updating the Basin water budget. GSAs are in the planning stages for an assessment for a community water supply assessment for Adin.
6	Research & Data Development	<ul style="list-style-type: none"> CIMIS Station 	Active	<ul style="list-style-type: none"> CIMIS station was installed in Nubieber in 2023 and is currently collecting data.
7	Research & Data Development	<ul style="list-style-type: none"> Adaptive Management 	Active	<ul style="list-style-type: none"> The GSP was revised to include some adaptive management strategies, including development of a domestic well mitigation program, that are in the process of being developed.
8	Research & Data Development	<ul style="list-style-type: none"> Mapping and Land Use 	Active	<ul style="list-style-type: none"> Land use will be characterized using DWR 2023 data, with BVAC input to refine surface vs groundwater use in the model and water budget.
9	Increased Surface Water Storage Capacity	<ul style="list-style-type: none"> Expanding Existing Reservoirs 	Active	<ul style="list-style-type: none"> The GSAs are developing feasibility studies for the Allen Camp Dam and Roberts Reservoir. These are expected to be completed by March 2026.
10	Improved Hydrologic Function & Upland Recharge	<ul style="list-style-type: none"> Forest Health / Conifer and Juniper Thinning 	Active	<ul style="list-style-type: none"> Cooperative forest thinning projects involving the Modoc National Forest and Pit Resource Conservation District are ongoing in upland areas south of the Basin. In 2025, UCCE initiated soil water monitoring in the Gerig Springs drainage.

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Table 3-3. GSP Implementation Projects & WY 2025 Status Update

No. ^(a)	Category	Description	Status	WY 2025 Update
11	Improved Hydrologic Function & Upland Recharge	<ul style="list-style-type: none"> Stream Channel Enhancement & Meadow Restoration 	Active	<ul style="list-style-type: none"> No update.
12	Water Conservation	<ul style="list-style-type: none"> Irrigation Efficiency 	Active	<ul style="list-style-type: none"> University of California Cooperative Extension (UCCE) has engaged with the BVGB community via workshops¹⁴ and plans to hold more in the future. <ul style="list-style-type: none"> UCCE held an irrigation efficiency workshop on October 2025. UCCE presented updates at an irrigation workshop in December 2025.
13	Water Conservation	<ul style="list-style-type: none"> Landscaping & Domestic Water Conservation 	Active	<ul style="list-style-type: none"> No update.
14	Water Conservation	<ul style="list-style-type: none"> Illegal Diversions & Groundwater Uses 	Active	<ul style="list-style-type: none"> No update.
15	Public Education & Outreach	<ul style="list-style-type: none"> Public Communication 	Active	<ul style="list-style-type: none"> The GSAs continue to engage with the community through BVAC meetings. The BVAC meetings serve to provide updates on the implementation of the Revised GSP and receive input.
16	Public Education & Outreach	<ul style="list-style-type: none"> Information & Data Sharing 	Active	<ul style="list-style-type: none"> The GSAs continue to share information and data with stakeholders and the community via BVAC meetings. The GSAs, with support from the UCCE prepared water quality testing kits for arsenic and nitrate and offered them to domestic well owners in the Big Valley Basin. A total of 45 kits were distributed to domestic well users living in Big Valley.
17	Public Education & Outreach	<ul style="list-style-type: none"> Fostering Relationships 	Active	<ul style="list-style-type: none"> The GSAs continue to foster relationships with local agencies, including but not limited to: the National Forest Service, Pit Resource Conservation District, CDFW.

¹⁴ Public outreach workshops were conducted in both counties, with active participation from community members.

Big Valley Basin Groundwater Sustainability Plan Annual Report for Water Year 2025



Table 3-3. GSP Implementation Projects & WY 2025 Status Update

No. ^(a)	Category	Description	Status	WY 2025 Update
18	Public Education & Outreach	<ul style="list-style-type: none"> Documentation of local recharge and conservation activities 	Active	<ul style="list-style-type: none"> The GSAs continue coordination efforts to compile recharge and conservation activity information to support tracking of management actions and future GSP updates pursuant to Water Code §3592.
19	Public Education & Outreach	<ul style="list-style-type: none"> Educational Workshops 	Active	<ul style="list-style-type: none"> UCCE hosted a community education workshop in November 2025 on CalWATRS. UCCE hosted additional workshops that although located outside of Big Valley, are open to often attended by Big Valley residents.
20	Domestic Well Mitigation Program	<ul style="list-style-type: none"> Development & Implementation of a Domestic Well Mitigation Program 	Active	<ul style="list-style-type: none"> In 2025 and 2026, the GSAs plan to develop the domestic well mitigation program with input from the BVGB community.

(a) No. = number

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3.2.1 Related Regional and Regulatory Activities

In addition to the PMAs outlined in the GSP, there are other regional activities that support the long-term sustainability of the Big Valley Basin. In WY 2025, these activities included:

- In August 2025, the Upper Pit River watershed was exempted from the Irrigated Lands Regulatory Program (ILRP) by the Central Valley Regional Water Quality Control Board (CVRWQCB). This released approximately 75,000 acres and 150 commercial growers from associated fees and reporting. The exemption was based on demonstrated low-impact agricultural practices, absence of water quality impacts, disproportionate costs in comparison to the central valley, and continued monitoring and research. This action reduced regulatory costs and reporting requirements for local producers.
- Additionally in 2025, the GSAs partnered with the Ash Creek Wildlife Area to enroll four new groundwater monitoring wells into DWR’s monitoring program, formerly known as CASGEM, to improve spatial coverage and data availability. The Wildlife Area also received funding for an additional pond and groundwater recharge project anticipated in 2027.

4.0 CONCLUSIONS

The BVGB remains on a sustainable trajectory, with groundwater levels generally stable and above SMCs. Continued and consistent data collection at key monitoring wells will be important to improve trend analysis and ongoing assessment of basin conditions. Addressing existing data gaps, particularly in groundwater extraction estimates and recharge assessments, will be key to improving future water budget accuracy and ensuring long-term basin sustainability.

To support these efforts, the GSAs have secured funding through the SGMA Implementation – Round 2 grant, enabling critical updates to the water budget, expanded monitoring programs, and feasibility studies for storage and recharge projects. Future initiatives will focus on improving data collection methodologies, enhancing water conservation measures, and engaging stakeholders to promote sustainable groundwater management. The GSAs remain committed to proactive resource planning and collaboration to maintain the basin’s long-term viability.

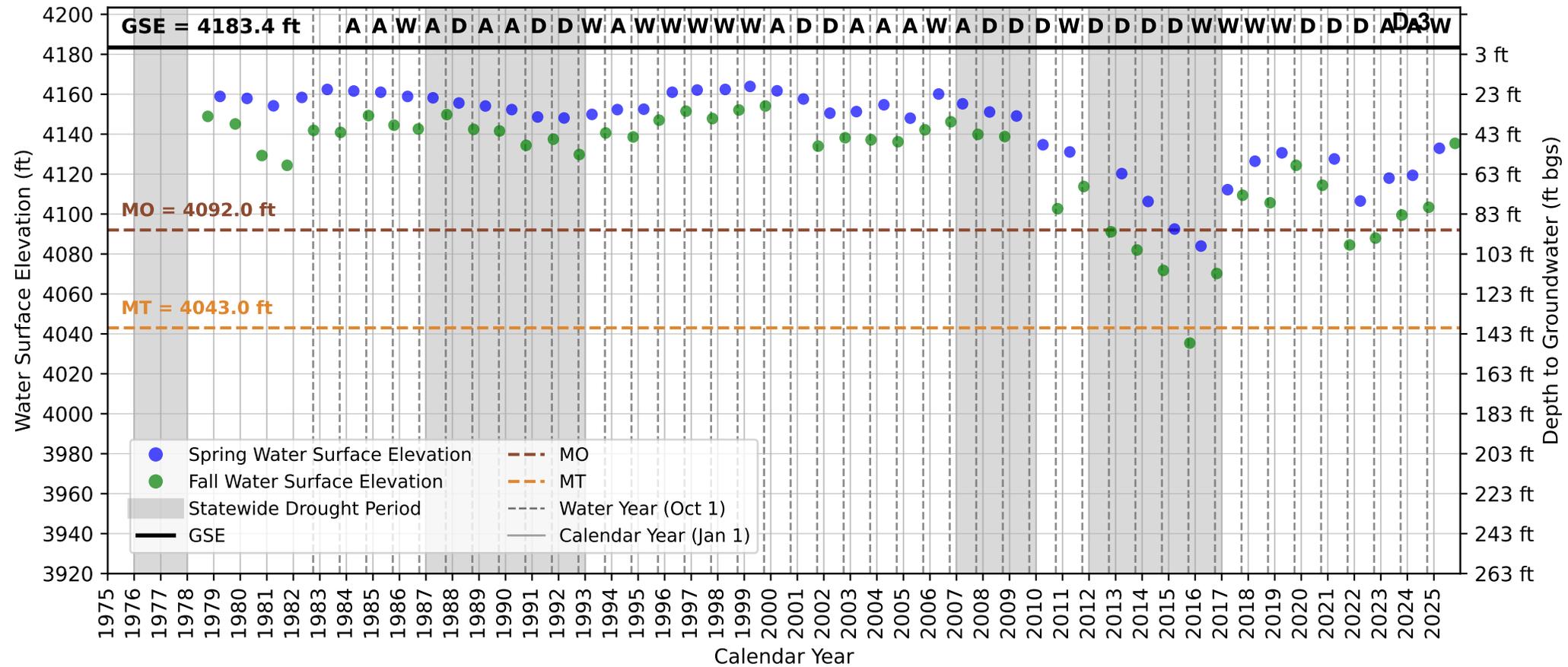
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Appendix A

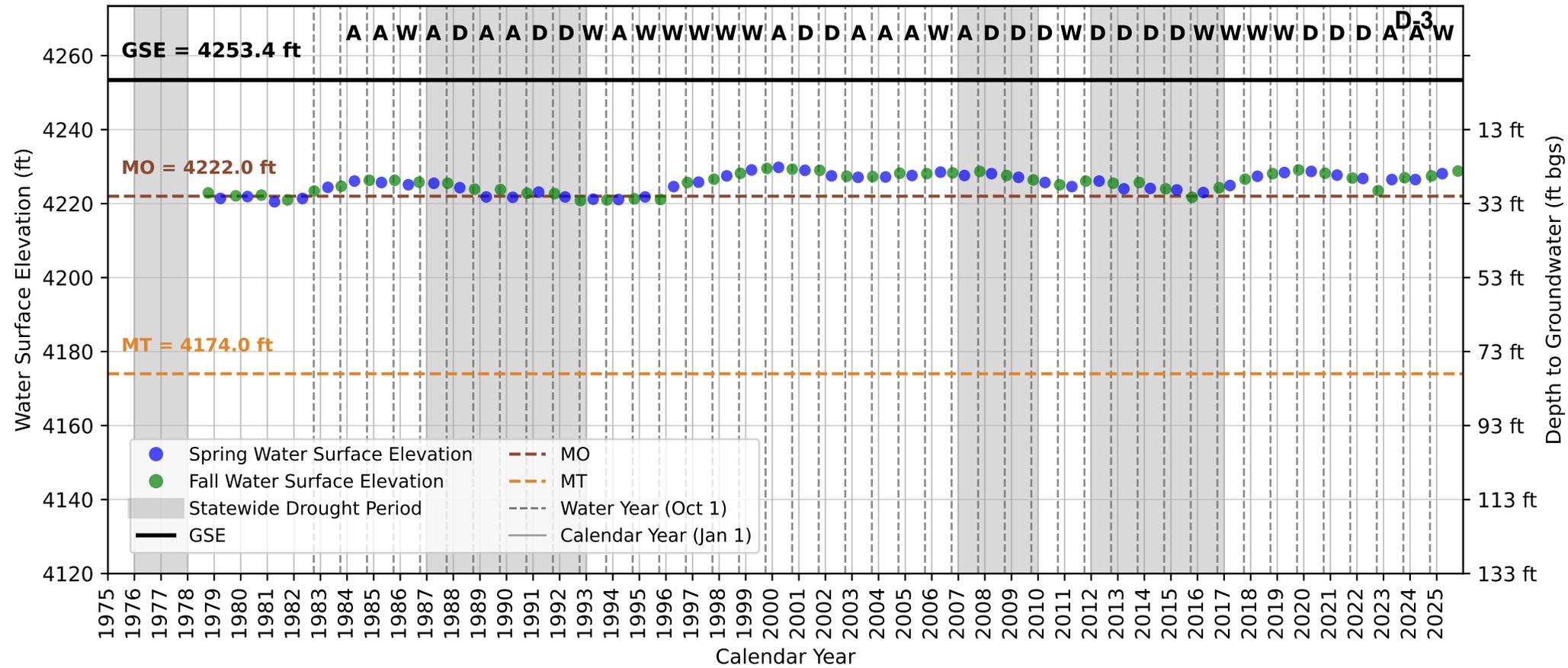
Hydrographs

Well 01A1



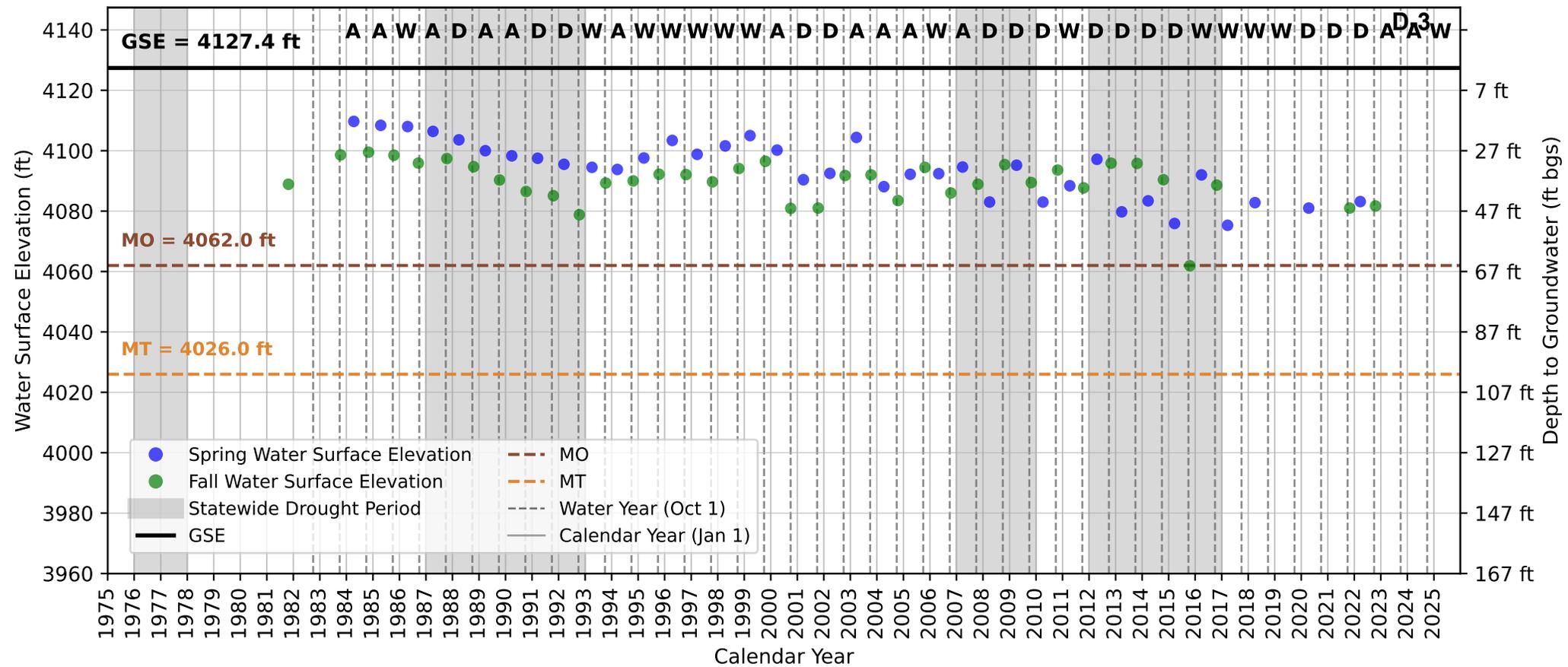
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SWN	39N07E01A001M
Site Code	412539N1211050W001
County	Modoc
Station Organization	Modoc County Planning Department
Use	Stockwatering
Completion	Single Well
Well Depth (ft)	300.0
GSE (ft)	4183.40
RPE (ft)	4184.40

Well 08F1



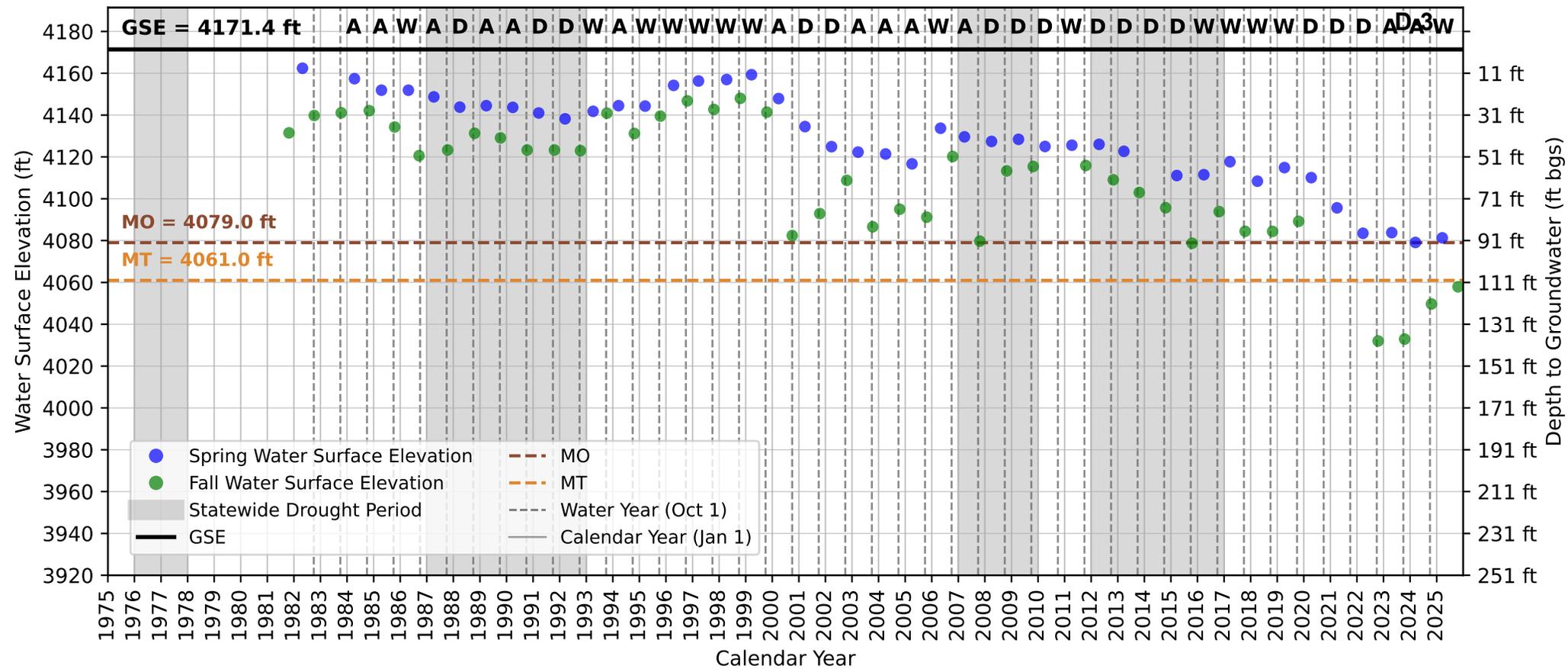
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SWN	38N09E08F001M
Site Code	411493N1209656W001
County	Lassen
Station Organization	Lassen County Department of Planning and Building Services
Use	Other
Completion	Single Well
Well Depth (ft)	217.0
GSE (ft)	4253.40
RPE (ft)	4255.40

Well 13K2



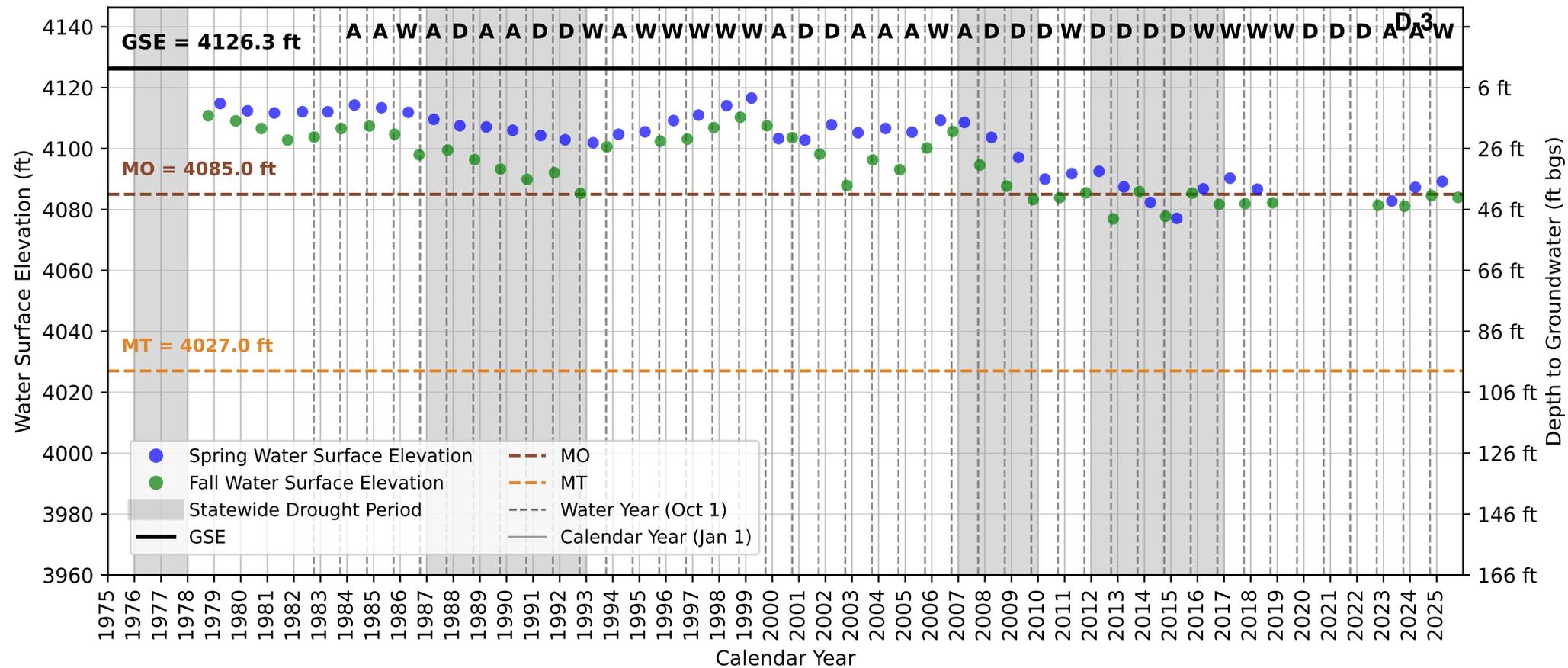
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SWN	37N07E13K002M
Site Code	410413N1211147W001
County	Lassen
Station Organization	Lassen County Department of Planning and Building Services
Use	Irrigation
Completion	Single Well
Well Depth (ft)	260.0
GSE (ft)	4127.40
RPE (ft)	4127.90

Well 16D1



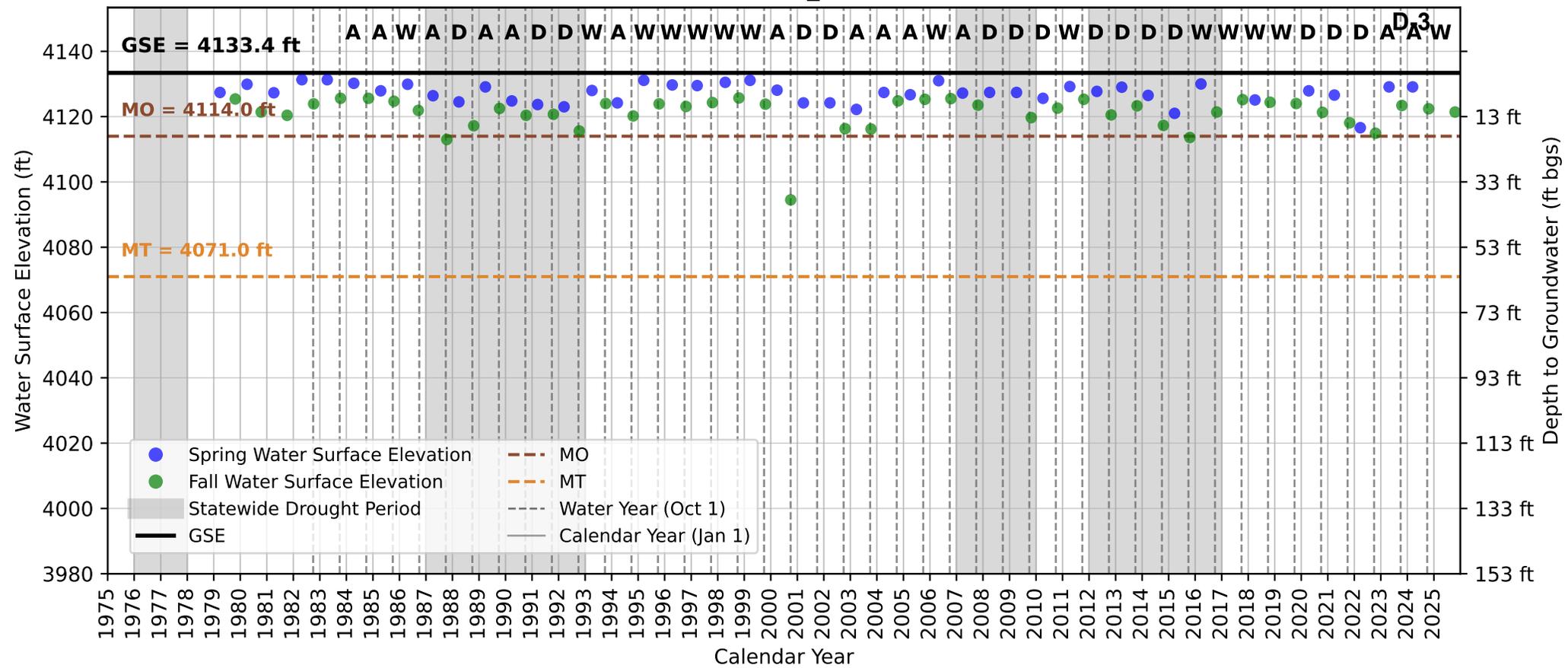
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SWN	38N08E16D001M
Site Code	411359N1210625W001
County	Lassen
Station Organization	Lassen County Department of Planning and Building Services
Use	Irrigation
Completion	Single Well
Well Depth (ft)	491.0
GSE (ft)	4171.40
RPE (ft)	4171.60

Well 20B6



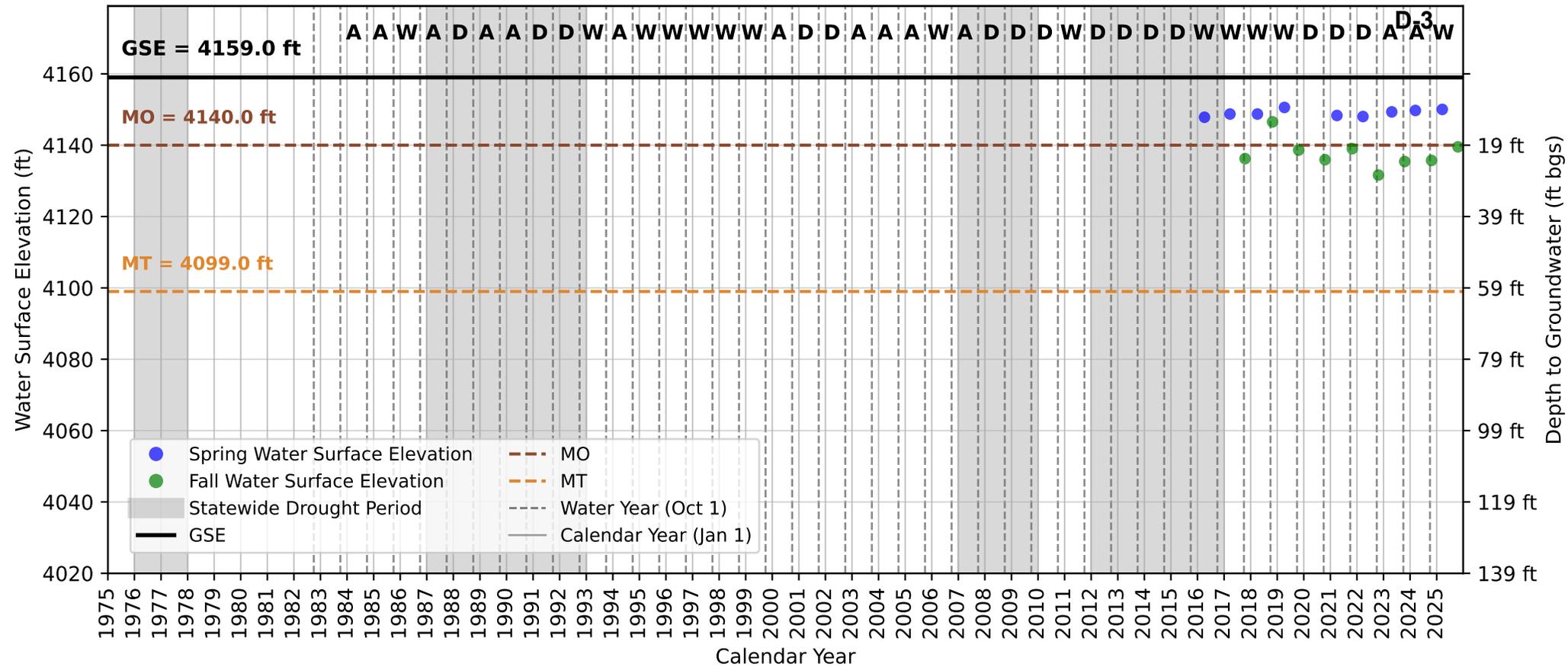
Well ID	38N07E20B006M
SWN	38N07E20B006M
Site Code	411242N1211866W001
County	Lassen
Station Organization	Lassen County Department of Planning and Building Services
Use	Residential
Completion	Single Well
Well Depth (ft)	183.0
GSE (ft)	4126.30
RPE (ft)	4127.30

Well 26_E1



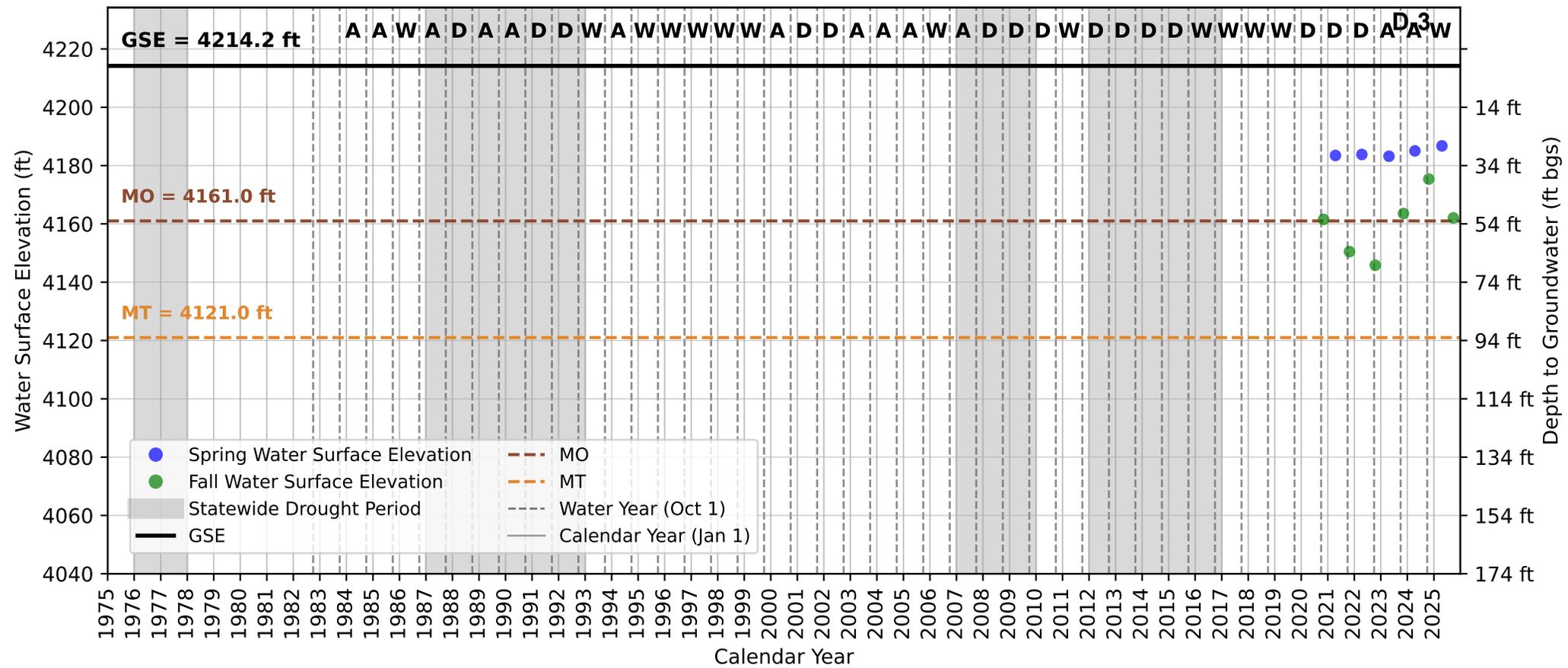
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SWN	39N07E26E001M
Site Code	411911N1211354W001
County	Modoc
Station Organization	Modoc County Planning Department
Use	Irrigation
Completion	Single Well
Well Depth (ft)	400.0
GSE (ft)	4133.40
RPE (ft)	4135.00

Well ACWA-3



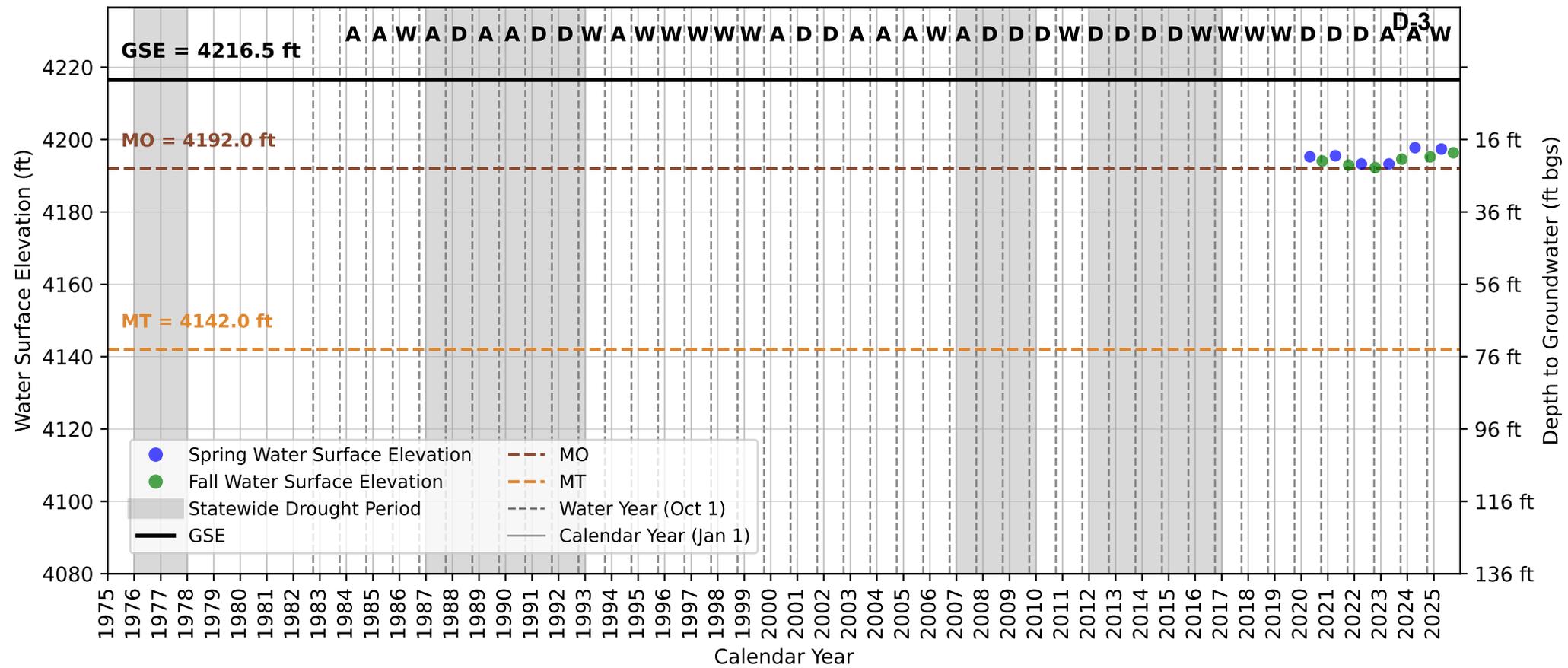
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SWN	39N08E28A001M
Site Code	411938N1210478W001
County	Modoc
Station Organization	Lassen County Department of Planning and Building Services
Use	Irrigation
Completion	Single Well
Well Depth (ft)	720.0
GSE (ft)	4159.00
RPE (ft)	4159.80

Well BVMW 1-1



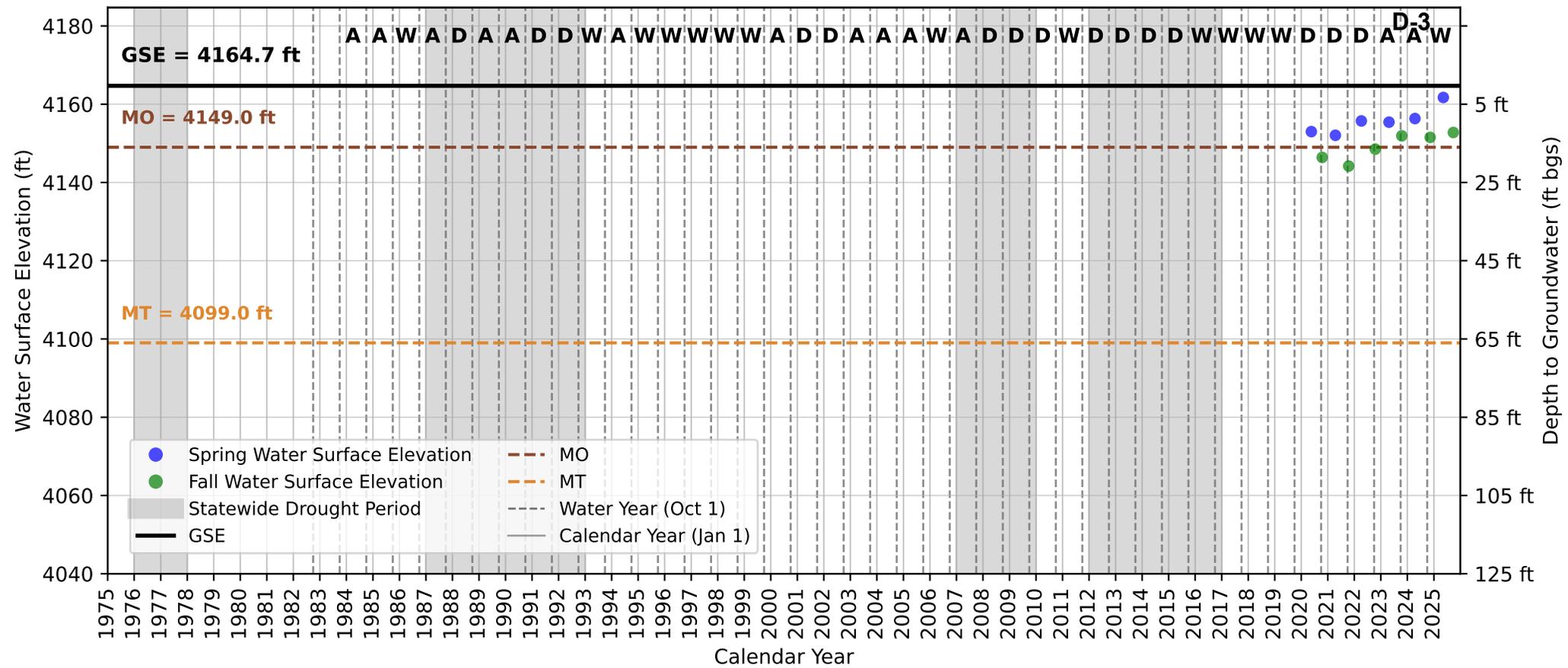
Well ID	BVMW 1-1
SWN	39N09E29K001M
Site Code	411880N1209599W001
County	Lassen
Station Organization	Modoc County Planning Department
Use	Observation
Completion	Single Well
Well Depth (ft)	265.0
GSE (ft)	4214.20
RPE (ft)	4213.80

Well BVMW 2-1



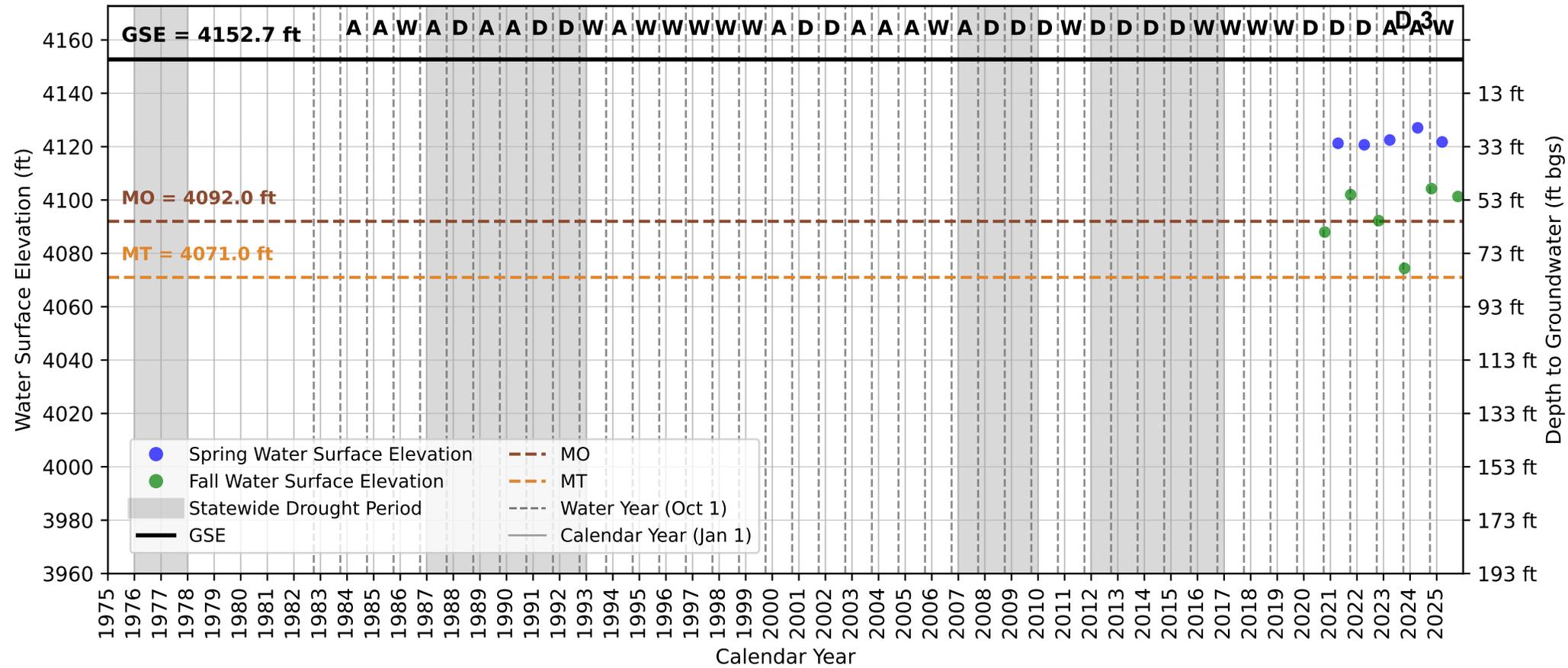
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SWN	39N08E23D001M	
Site Code	412119N1210286W001	
County	Lassen	
Station Organization	Modoc County Planning Department	
Use	Observation	
Completion	Single Well	
Well Depth (ft)	250.0	
GSE (ft)	4216.50	BOS 3/17/26 Page 50 of 55
RPE (ft)	4216.20	

Well BVMW 3-1



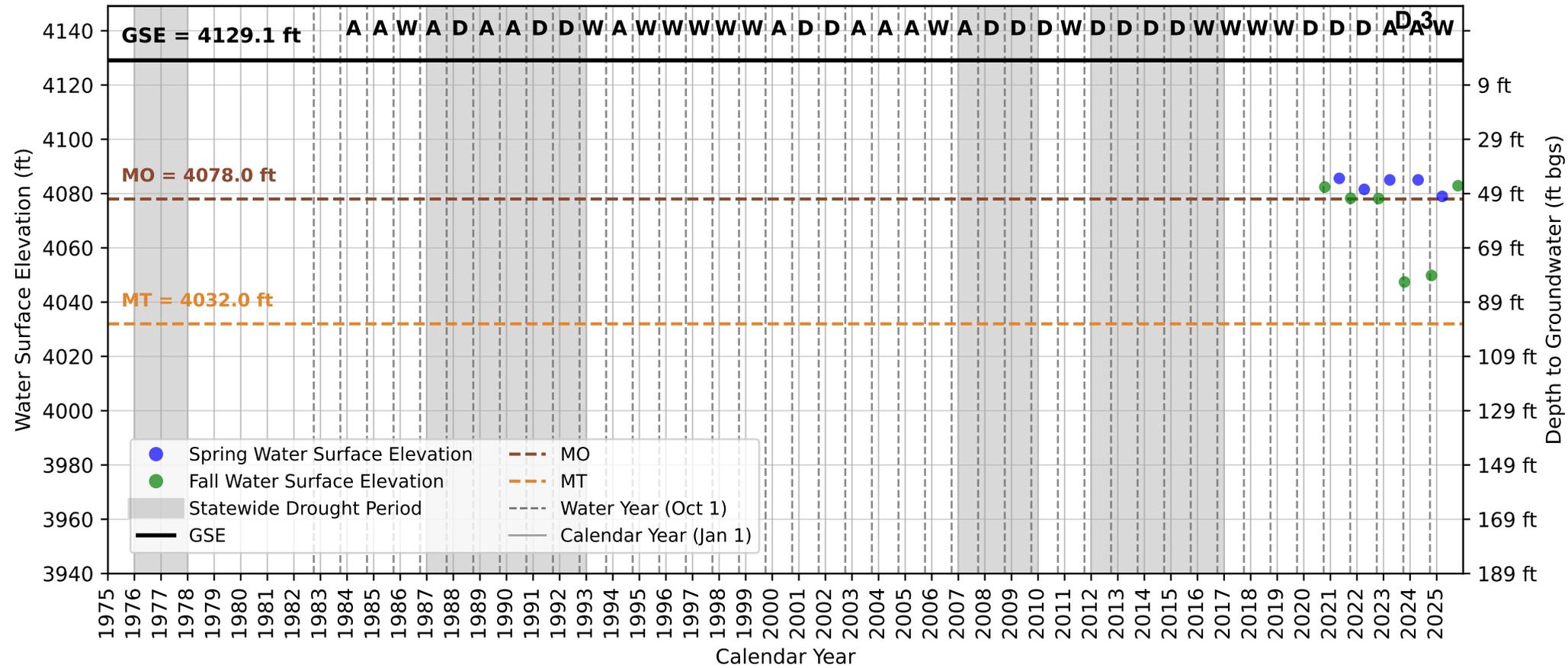
Well ID	BVMW 3-1
SWN	39N07E18M001M
Site Code	412169N1211050W001
County	Lassen
Station Organization	Modoc County Planning Department
Use	Observation
Completion	Single Well
Well Depth (ft)	185.0
GSE (ft)	4164.70
RPE (ft)	4167.40

Well BVMW 4-1



Well ID	BVMW 4-1
SWN	39N07E22M002M
Site Code	412029N1211587W001
County	Lassen
Station Organization	Modoc County Planning Department
Use	Observation
Completion	Single Well
Well Depth (ft)	425.0
GSE (ft)	4152.70
RPE (ft)	4152.40

Well BVMW 5-1



Well ID	BVMW 5-1
SWN	38N07E23C001M
Site Code	411219N1211339W001
County	Lassen
Station Organization	Lassen County Department of Planning and Building Services
Use	Observation
Completion	Single Well
Well Depth (ft)	540.0
GSE (ft)	4129.10
RPE (ft)	4128.70

Appendix B

Water Budget

Big Valley Groundwater Basin Water Budget

LAND SYSTEM			2021	2022	2023	2024	2025	2025		Average (1984-2025)	
Flow Type	Origin/ Destination	Component	Estimated Acre-Feet	<ul style="list-style-type: none"> Precipitation on Land System Surface Water Delivery Groundwater Extraction 		Estimated Acre-Feet					
(1) Inflow	Into Basin	Precipitation on Land System	81,500	117,100	163,600	125,800	169,900	<ul style="list-style-type: none"> Precipitation on Land System Surface Water Delivery Groundwater Extraction 		136,400	
(2) Inflow	Between Systems	Surface Water Delivery	86,400	82,000	75,500	79,800	79,500			<ul style="list-style-type: none"> Precipitation on Land System Surface Water Delivery Groundwater Extraction 	76,500
(3) Inflow	Between Systems	Groundwater Extraction	54,000	50,300	43,500	47,500	46,300				45,100
(4) Inflow	Total Inflow		222,000	249,000	283,000	253,000	296,000			258,000	
(5) Outflow	Out of Basin	Evapotranspiration	158,900	157,300	158,400	159,200	163,200	<ul style="list-style-type: none"> Evapotranspiration Runoff Return Flow Recharge of Applied Water Recharge of Precipitation Managed Aquifer Recharge 		154,700	
(6) Outflow	Between Systems	Runoff	40,700	70,700	104,500	73,100	111,800			<ul style="list-style-type: none"> Evapotranspiration Runoff Return Flow Recharge of Applied Water Recharge of Precipitation Managed Aquifer Recharge 	83,400
(7) Outflow	Between Systems	Return Flow	6,100	5,700	4,900	5,300	5,200				5,100
(8) Outflow	Between Systems	Recharge of Applied Water	15,100	14,300	13,000	13,800	13,700				13,200
(9) Outflow	Between Systems	Recharge of Precipitation	1,200	1,400	1,800	1,600	1,700				1,600
(10) Outflow	Between Systems	Managed Aquifer Recharge	-	-	-	-	-	-	-		
(11) Outflow	Total Outflow		222,000	249,000	283,000	253,000	296,000			258,000	
(12) Storage Change	(4)-(11)	Change in Land System Storage	-	-	-	-	-			-	

SURFACE WATER SYSTEM			2021	2022	2023	2024	2025	2025		Average (1984-2025)	
Flow Type	Origin/ Destination	Component	Estimated Acre-Feet	<ul style="list-style-type: none"> Stream Inflow Precipitation on Reservoirs Runoff Return Flow Stream Gain from Groundwater Reservoir Gain from Groundwater 		Estimated Acre-Feet					
(13) Inflow	Into Basin	Stream Inflow	67,900	78,200	376,300	246,500	572,200	<ul style="list-style-type: none"> Stream Inflow Precipitation on Reservoirs Runoff Return Flow Stream Gain from Groundwater Reservoir Gain from Groundwater 		360,600	
(14) Inflow	Into Basin	Precipitation on Reservoirs	300	400	600	500	600			<ul style="list-style-type: none"> Stream Inflow Precipitation on Reservoirs Runoff Return Flow Stream Gain from Groundwater Reservoir Gain from Groundwater 	500
(6) Inflow	Between Systems	Runoff	40,700	70,700	104,500	73,100	111,800				83,400
(7) Inflow	Between Systems	Return Flow	6,100	5,700	4,900	5,300	5,200			5,100	
(15) Inflow	Between Systems	Stream Gain from Groundwater	-	-	-	-	-			-	
(16) Inflow	Between Systems	Reservoir Gain from Groundwater	-	-	-	-	-			-	
(17) Inflow	Total Inflow		115,000	155,000	486,000	325,000	690,000			450,000	
(18) Outflow	Out of Basin	Stream Outflow	19,500	63,600	387,500	228,300	577,800	<ul style="list-style-type: none"> Stream Outflow Conveyance Evaporation Conveyance Seepage Surface Water Delivery Stream Loss to Groundwater Reservoir Loss to Groundwater Reservoir Evaporation Stream Evaporation 		348,200	
(19) Outflow	Out of Basin	Conveyance Evaporation	50	50	50	50	50			<ul style="list-style-type: none"> Stream Outflow Conveyance Evaporation Conveyance Seepage Surface Water Delivery Stream Loss to Groundwater Reservoir Loss to Groundwater Reservoir Evaporation Stream Evaporation 	50
(20) Outflow	Between Systems	Conveyance Seepage	30	30	30	30	30				30
(2) Outflow	Between Systems	Surface Water Delivery	86,400	82,000	75,500	79,800	79,500				76,500
(21) Outflow	Between Systems	Stream Loss to Groundwater	7,200	7,600	21,500	15,500	30,600				23,100
(22) Outflow	Between Systems	Reservoir Loss to Groundwater	600	600	600	600	600	600	600		
(23) Outflow	Out of Basin	Reservoir Evaporation	800	800	700	800	800	700	700		
(24) Outflow	Out of Basin	Stream Evaporation	400	400	400	400	400	400	400		
(25) Outflow	Total Outflow		115,000	155,000	486,000	325,000	690,000			450,000	
(26) Storage Change	(17)-(25)	Change in Surface Water Storage	-	-	-	-	-			-	

GROUNDWATER SYSTEM			2021	2022	2023	2024	2025	2025		Average (1984-2025)	
Flow Type	Origin/ Destination	Component	Estimated Acre-Feet	<ul style="list-style-type: none"> Recharge of Applied Water Recharge of Precipitation Managed Aquifer Recharge Groundwater Gain from Stream Groundwater Gain from Reservoir 		Estimated Acre-Feet					
(8) Inflow	Between Systems	Recharge of Applied Water	15,100	14,300	13,000	13,800	13,700	<ul style="list-style-type: none"> Recharge of Applied Water Recharge of Precipitation Managed Aquifer Recharge Groundwater Gain from Stream Groundwater Gain from Reservoir 		13,200	
(9) Inflow	Between Systems	Recharge of Precipitation	1,200	1,400	1,800	1,600	1,700			<ul style="list-style-type: none"> Recharge of Applied Water Recharge of Precipitation Managed Aquifer Recharge Groundwater Gain from Stream Groundwater Gain from Reservoir 	1,600
(10) Inflow	Between Systems	Managed Aquifer Recharge	-	-	-	-	-				-
(21) Inflow	Between Systems	Groundwater Gain from Stream	7,200	7,600	21,500	15,500	30,600			23,100	
(22) Inflow	Between Systems	Groundwater Gain from Reservoir	600	600	600	600	600			600	
(20) Inflow	Between Systems	Conveyance Seepage	30	30	30	30	30			30	
(27) Inflow	Into Basin	Subsurface Inflow	1	1	1	1	1			1	
(28) Inflow	Total Inflow		24,100	23,900	36,900	31,500	46,700			38,500	
(3) Outflow	Between Systems	Groundwater Extraction	54,000	50,300	43,500	47,500	46,300	<ul style="list-style-type: none"> Groundwater Extraction Groundwater Loss to Stream Groundwater Loss to Reservoir Subsurface Outflow 		45,100	
(15) Outflow	Between Systems	Groundwater Loss to Stream	-	-	-	-	-			<ul style="list-style-type: none"> Groundwater Extraction Groundwater Loss to Stream Groundwater Loss to Reservoir Subsurface Outflow 	-
(16) Outflow	Between Systems	Groundwater Loss to Reservoir	-	-	-	-	-				-
(29) Outflow	Out of Basin	Subsurface Outflow	-	-	-	-	-			-	
(30) Outflow	Total Outflow		54,000	50,300	43,500	47,500	46,300			45,100	
(31) Storage Change	(28)-(30)	Change in Groundwater Storage	(30,000)	(26,000)	(7,000)	(16,000)	-			(7,000)	

TOTAL BASIN WATER BUDGET			2021	2022	2023	2024	2025	2025		Average (1984-2025)	
Flow Type	Origin/ Destination	Component	Estimated Acre-Feet	<ul style="list-style-type: none"> Precipitation on Land System Precipitation on Reservoirs Stream Inflow Subsurface Inflow 		Estimated Acre-Feet					
(1) Inflow	Into Basin	Precipitation on Land System	81,500	117,100	163,600	125,800	169,900	<ul style="list-style-type: none"> Precipitation on Land System Precipitation on Reservoirs Stream Inflow Subsurface Inflow 		136,400	
(14) Inflow	Into Basin	Precipitation on Reservoirs	300	400	600	500	600			<ul style="list-style-type: none"> Precipitation on Land System Precipitation on Reservoirs Stream Inflow Subsurface Inflow 	500
(13) Inflow	Into Basin	Stream Inflow	67,900	78,200	376,300	246,500	572,200				360,600
(27) Inflow	Into Basin	Subsurface Inflow	1	1	1	1	1				1
(32) Inflow	Total Inflow		149,700	195,700	540,500	372,800	742,700			497,500	
(5) Outflow	Out of Basin	Evapotranspiration	158,900	157,300	158,400	159,200	163,200	<ul style="list-style-type: none"> Evapotranspiration Stream Evaporation Reservoir Evaporation Conveyance Evaporation Stream Outflow Subsurface Outflow 		154,700	
(24) Outflow	Out of Basin	Stream Evaporation	400	400	400	400	400			<ul style="list-style-type: none"> Evapotranspiration Stream Evaporation Reservoir Evaporation Conveyance Evaporation Stream Outflow Subsurface Outflow 	400
(23) Outflow	Out of Basin	Reservoir Evaporation	800	800	700	800	800				700
(19) Outflow	Out of Basin	Conveyance Evaporation	-	-	-	-	-				-
(18) Outflow	Out of Basin	Stream Outflow	19,500	63,600	387,500	228,300	577,800				348,200
(29) Outflow	Out of Basin	Subsurface Outflow	-	-	-	-	-	-	-		
(33) Outflow	Total Outflow		179,600	222,100	547,000	388,700	742,200			504,000	
(34) Storage Change	(32)-(33)	Change in Total System Storage	(30,000)	(26,000)	(7,000)	(16,000)	1,000			(7,000)	