

Periodic Evaluation Overview and Updates



What is a Periodic Evaluation?

- SGMA requires every GSA to formally evaluate its GSP at least once every 5 years
- This is Sierra Valley's first Periodic Evaluation (PE), covering January 2022 through Water Year 2026
- A PE reports on:
 - New data/information collected
 - Groundwater conditions relative to Sustainable Management Criteria (SMCs)
 - Status of Projects and Management Actions (PMAs)
 - GSA's response to DWR's 2023 corrective actions
- A Plan Amendment (PA) is a separate, more involved process required only for fundamental changes to the GSP
 - A Plan Amendment is not required at this time



Where We're At

- Drafting is underway and combines work sourced from:
 - LWA technical analyses
 - Annual reports
 - Various deliverable documents
 - Materials presented to this board over the evaluation period
- Core technical content is substantially developed: RCA responses, groundwater conditions vs. SMCs, and PMA status
- Remaining work:
 - Finalizing WY2026 data
 - Completing several figures and tables
 - Closing out a number of tracked open items
 - Formatting and consistency reviews



DWR Recommended Corrective Actions (RCAs)

RCA #	Topic	RCA Summary	PE Section Addressed
1	Principal Aquifer	Investigate the basin and identify the appropriate principal aquifer(s)	Section 4
2	Adjacent Basin Data	Explain the use of adjacent Chilcoat Subbasin data in Sierra Valley analyses	Section 8.1
3	Groundwater Levels Undesirable Results Definition	Define specific levels for significant/unreasonable groundwater lowering effects	Section 2.1
4	Water Quality Baseline	Justify using a 2021 (vs. 2015) water quality baseline for minimum thresholds	Section 2.4
5	Land Subsidence	Establish quantitative land subsidence criteria and a monitoring network	Section 2.5
6	Interconnected Surface Water	Develop methods to evaluate interconnected surface water depletion	Section 2.6
7	Monitoring Network Detail	Provide detailed monitoring network information for all sustainability indicators	Section 5

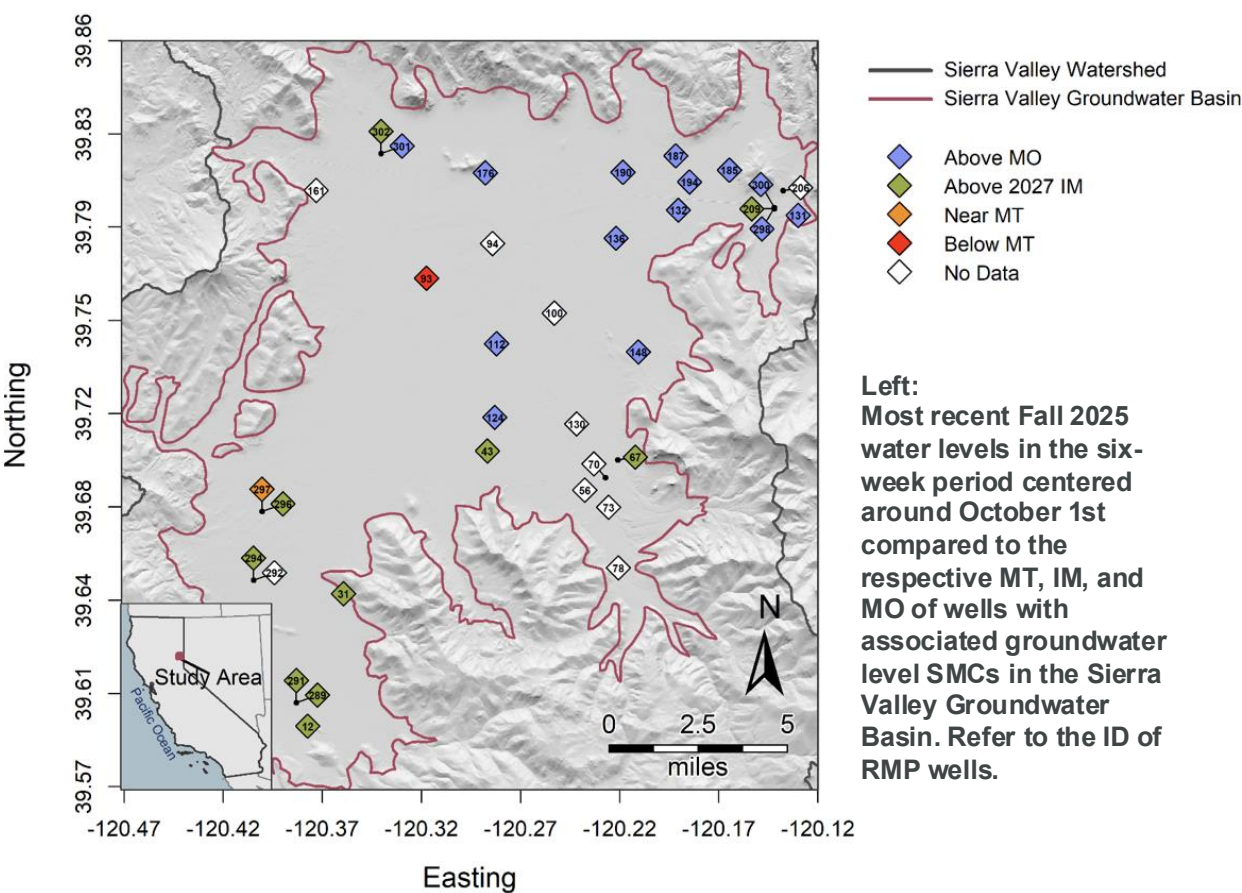
Annual Report Revisions & Information Requests from DWR

- Provide updates on status of Sustainable Management Criteria (SMCs) and, if applicable, progress towards achieving SMCs
- Provide updates on status of Projects and Management Action implementation
- Explanation for missing groundwater level data from wells in WY 2025 and WY 2024
 - Indicate if wells are no longer being monitored and reason
 - Indicate reason for not collecting data for wells currently being monitored

PE Major Topics:

Groundwater Levels

- No undesirable results occurred at any point during the evaluation period (WY2021–WY2025)
- The basin experienced a full drought-to-recovery cycle: critically dry WY2021–WY2022, followed by a wet WY2023 recovery, then stabilization
- One well (22N15E08Q001M) has remained below its Minimum Threshold in multiple years which is considered a local condition, not a basin-wide trend
- In response to DWR RCA #3, SVGMD adopted a new quantitative Undesirable Result definition: 5% or more of active wells in any single category (domestic, agricultural, public, industrial) impacted

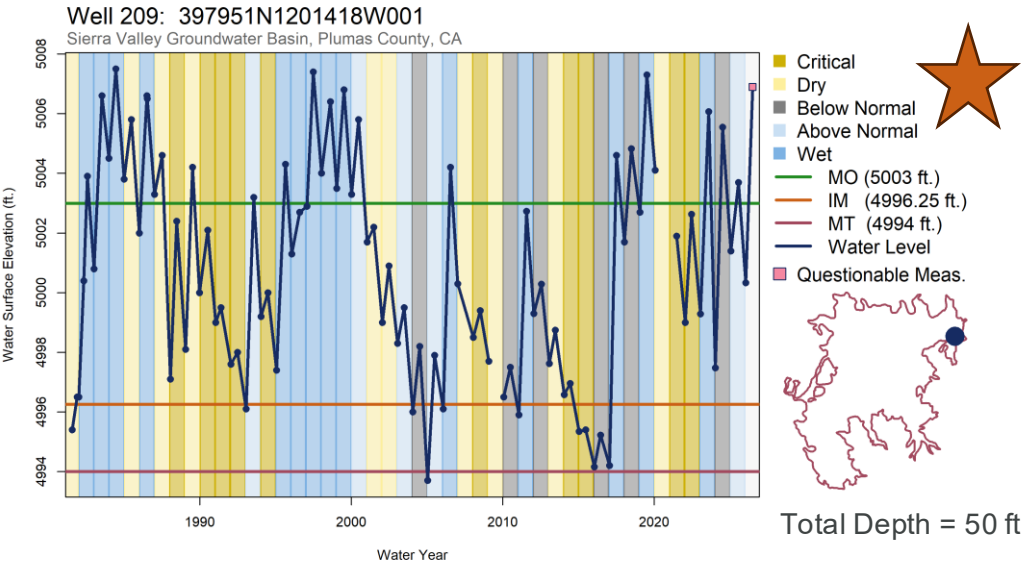
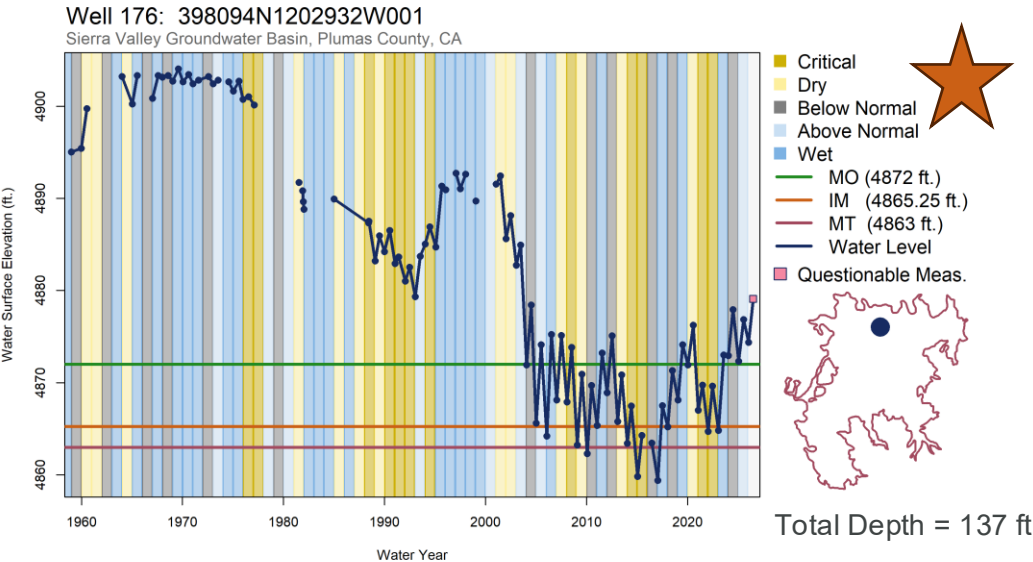
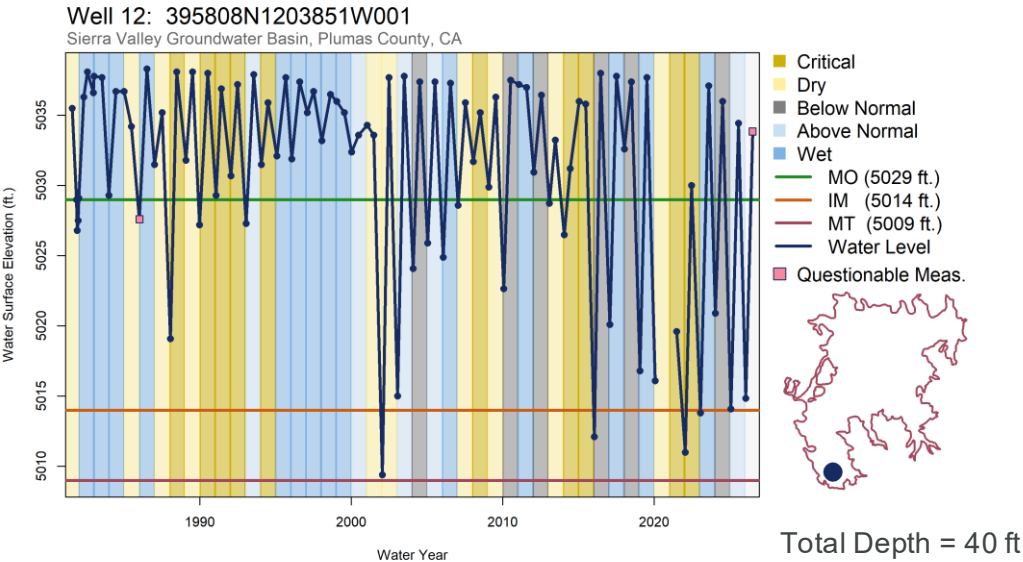
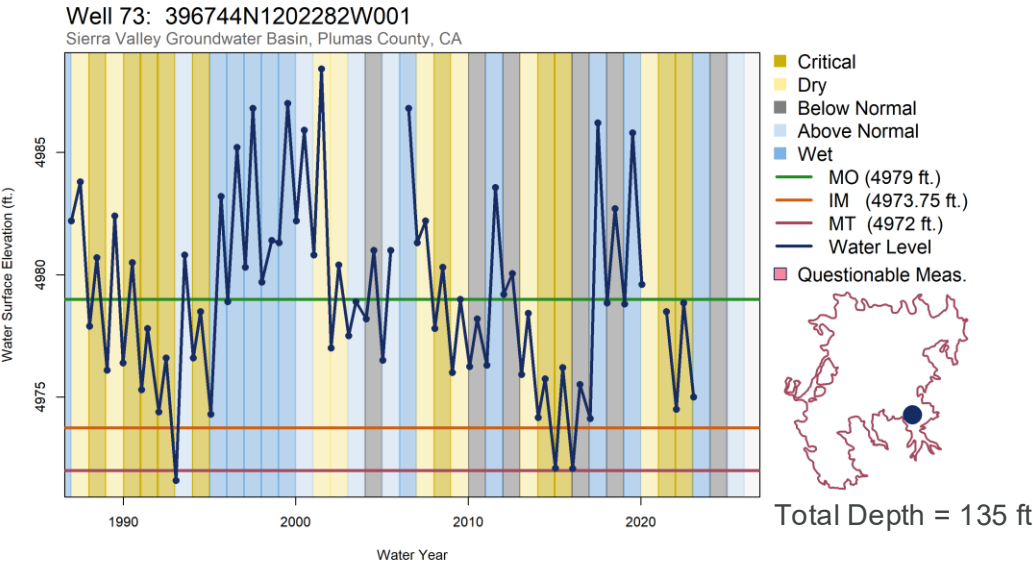


Water Year	Wells Below MT	Investigatory Trigger Met	Undesirable Result	Hydrologic Conditions
WY2021	4 (DMW 2S, DMW 2D, DMS 012, 23N16E27R001M)	Yes — 4-well single-year trigger	No	Critically Dry
WY2022	2 (DM 012, DMD 16)	No	No	Critically Dry
WY2023	1 (22N15E08Q001M)	No	No	Wet
WY2024	0 no wells below MT; DMW 4S approached but did not exceed MT	No	No	Below Normal
WY2025	1 22N15E08Q001M	No	No	Above Normal

PE Major Topics:

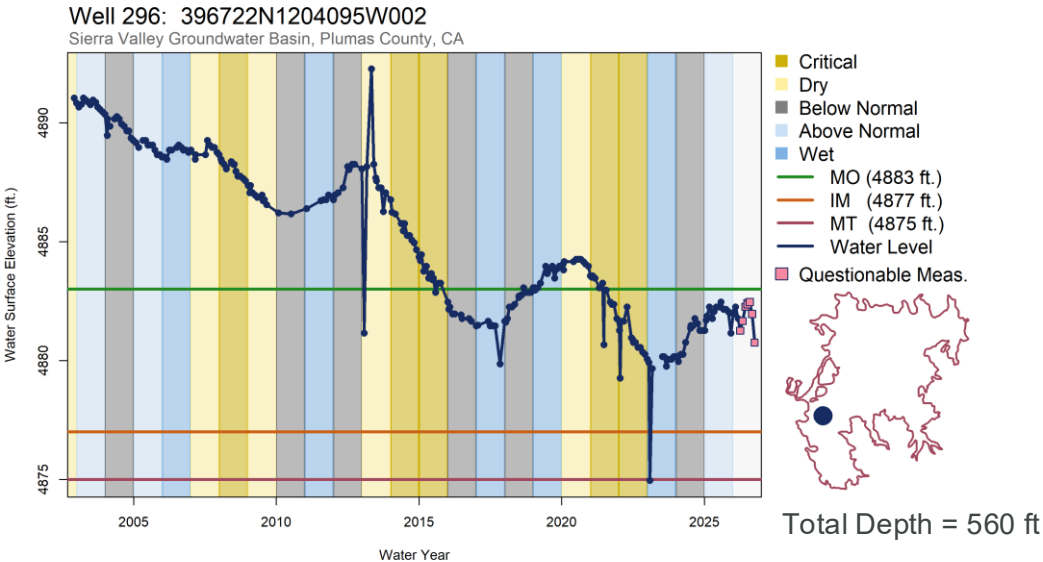
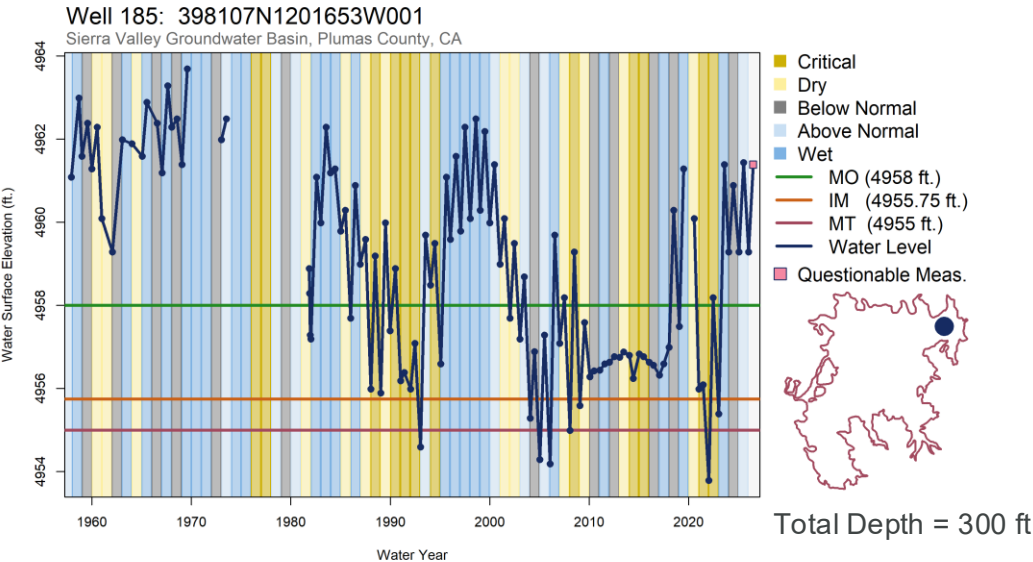
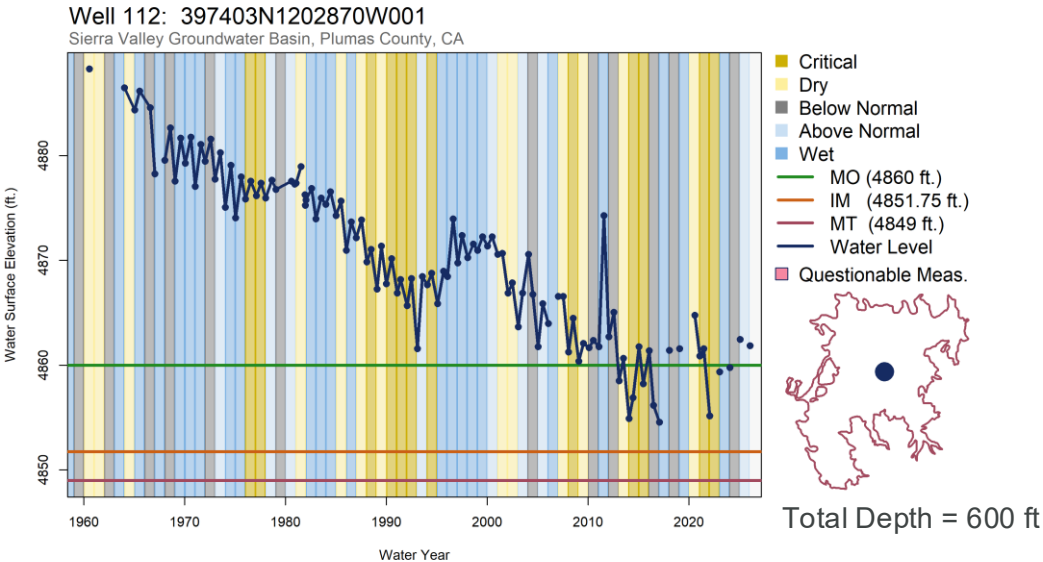
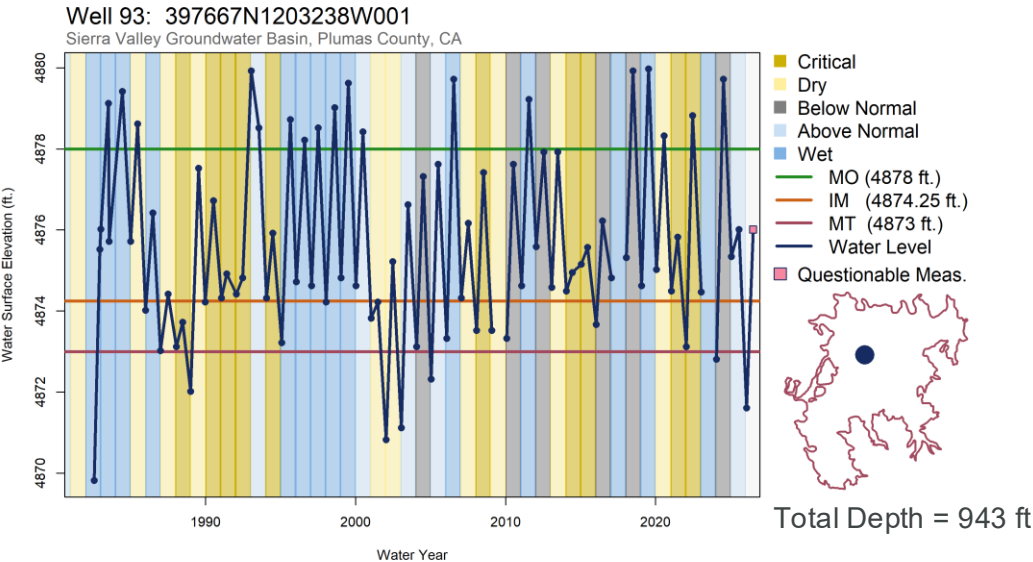
Groundwater Levels – Shallow Wells

★ Also identified as a well used for ISW analysis



PE Major Topics:

Groundwater Levels – Deep Wells



PE Major Topics:

Groundwater Storage

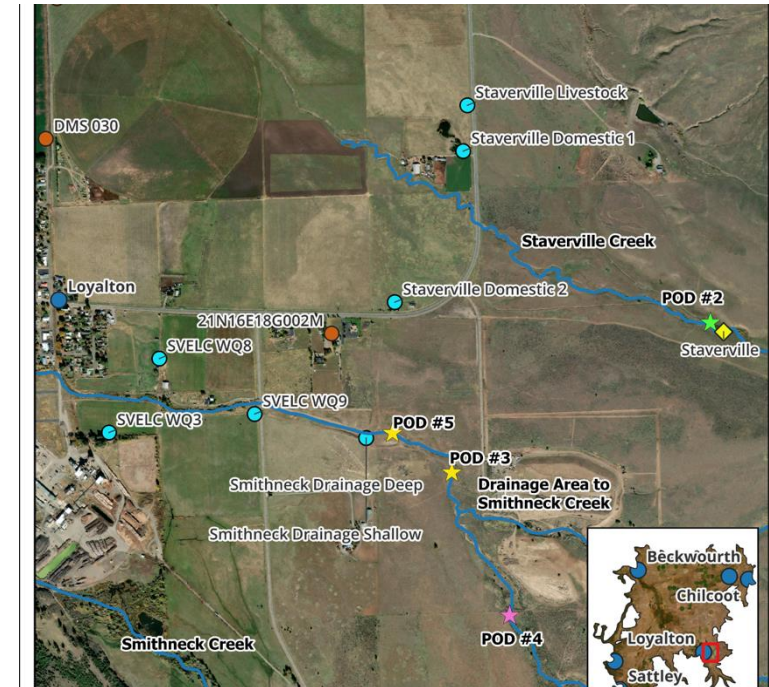
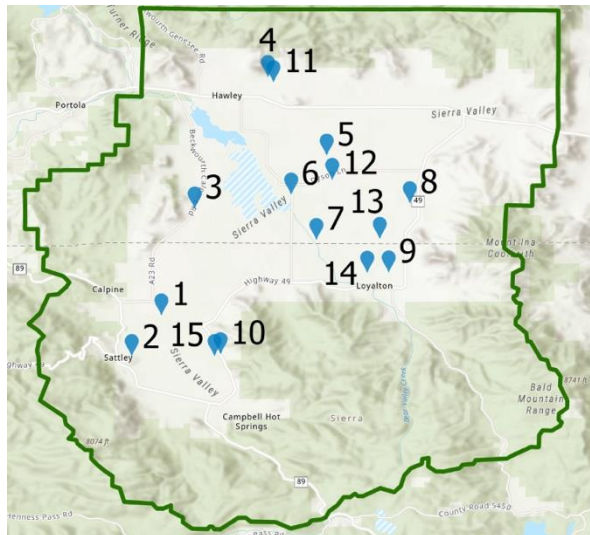
- Storage reflects the cumulative balance between recharge and extraction as modeled by using SVHSM
- Evaluation period (through WY 2025) had 3 dry or critically dry years and 2 wet or above normal years
- Cumulative change in storage through the evaluation period: -4,962 AF
- Cumulative change in storage between 2015 and 2025: 15,364 AF

Water Year	Hydrologic Condition	Annual Change in Storage	Cumulative Change Over Evaluation Period (2021-2025)	Cumulative Change in Storage Since 2015
WY2016	Below Normal	5,586	-	5,586
WY2017	Wet	29,324	-	34,910
WY2018	Below Normal	-5,067	-	29,843
WY2019	Wet	6,378	-	36,221
WY2020	Dry	-15,895	0	20,326
WY2021	Critically Dry	-20,874	-20,874	-548
WY2022	Critically Dry	-9,182	-30,056	-9,730
WY2023	Wet	25,817	-4,239	16,087
WY2024	Below Normal	-6,952	-11,191	9,135
WY2025	Above Normal	6,229	-4,962	15,364

PE Major Topics:

Groundwater Quality

- Data compiled from DWR's statewide GAMA program, SWRCB GeoTracker, and public water system testing
- UCCE monitoring in 2021, 2025
 - Nitrate
 - Total Dissolved Solids
 - Boron
 - Arsenic
- Recharge project evaluation - 9-well baseline monitoring in 2026
 - TDS
 - Nitrate
 - Boron
 - Arsenic
 - Iron
 - Manganese
 - Semi-volatile Organic compounds
 - Pesticides
 - Trace metals

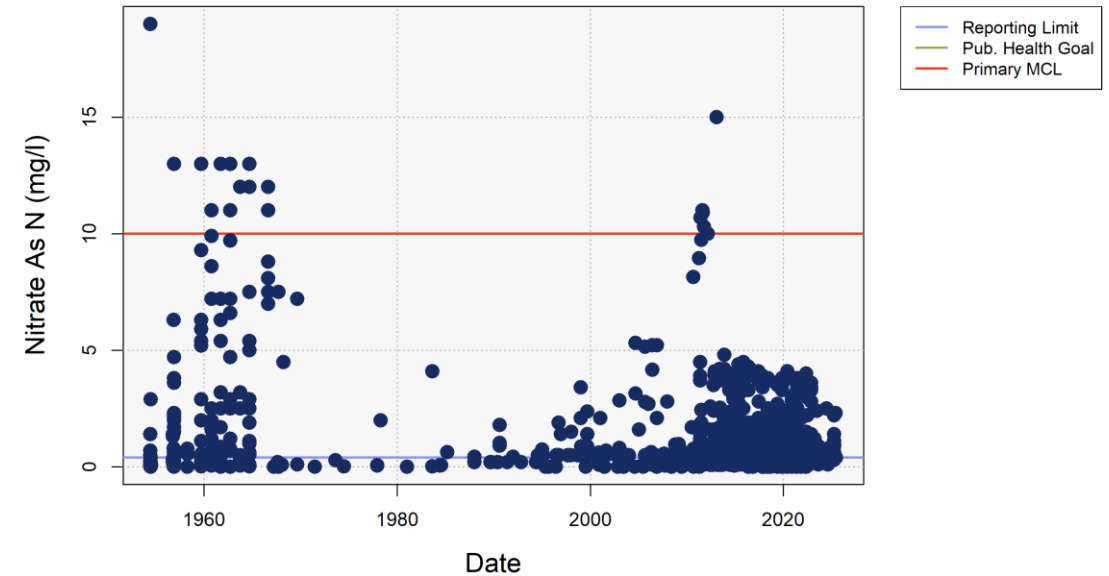


PE Major Topics:

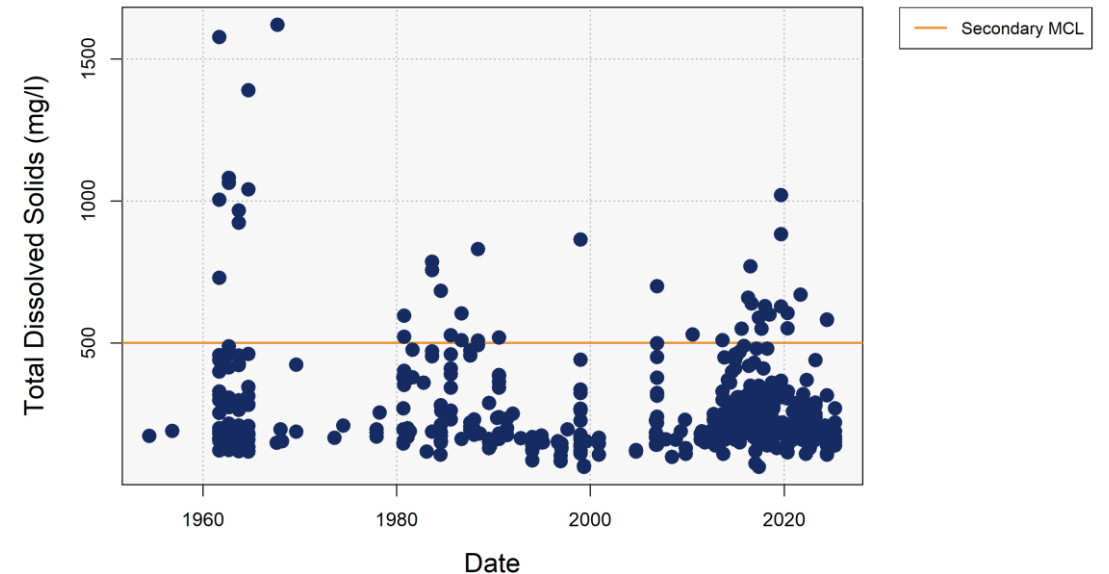
Groundwater Quality

- Two constituents of concern have defined Sustainable Management Criteria:
 - Nitrate
 - Total Dissolved Solids (TDS)
- No undesirable results occurred for either constituent during the evaluation period
- Nitrate concentrations generally remained well below the drinking water standard (10 mg/L), consistent with historical basin conditions
- A small number of wells exceeded the TDS aesthetic standard (500 mg/L) which is consistent with the naturally elevated TDS already documented in the original GSP, not a new degradation trend
- Broader baseline monitoring of metals, organics and pesticides indicated exceedances for iron and magnesium but no other concerns

Measurements for Nitrate As N
Sierra Valley, Plumas County, CA



Measurements for Total Dissolved Solids
Sierra Valley, Plumas County, CA



2026 Recharge Groundwater Quality Baseline Monitoring Results - January 2026 Pre-Recharge

Monitoring Point Name	Depth to Groundwater (ft below MP)	TDS (mg/L)	Nitrate-N (mg/L)	Iron (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Arsenic, (ug/L)	Acetone (ug/L)	2-Butanone (MEK) (ug/L)	Diuron (ug/L)
WQO	-	500/ 1000/ 1500	10	0.3	0.05	none	69	10	none	none	none
Smithneck Drainage Deep	12.94	170	1.3	2.7	0.15	4.4	11	<5	<5	<5	<0.5
Smithneck Drainage Shallow	12.07	180	1.8	4.0	0.51	2.0	7.0	<5	<5	<5	1.54
Staverville Domestic 1	54.05	190	0.58	<0.1	<0.01	1.4	13	<5	<5	<5	<0.5
Staverville Livestock	56.95	170	0.96	3.5	0.14	1.5	12	16	84	140	<0.5
SVELC WQ9	9.65	140	0.25	0.45	0.027	1.5	11	<5	<5	<5	<0.5
SVELC WQ3	21.74	220	0.28	1.8	0.15	4.7	20	<5	<5	<5	<0.5
SVELC WQ8	5.89	240	1.1	0.3	0.017	5.3	14	<5	<5	<5	<0.5
Staverville Domestic 2	32.95	200	2.5	4.0	0.017	3.3	12	<5	<5	<5	<0.5
Staverville	0	150	<0.15	<0.1	<0.01	1.5	13	<5	<5	<5	<0.5

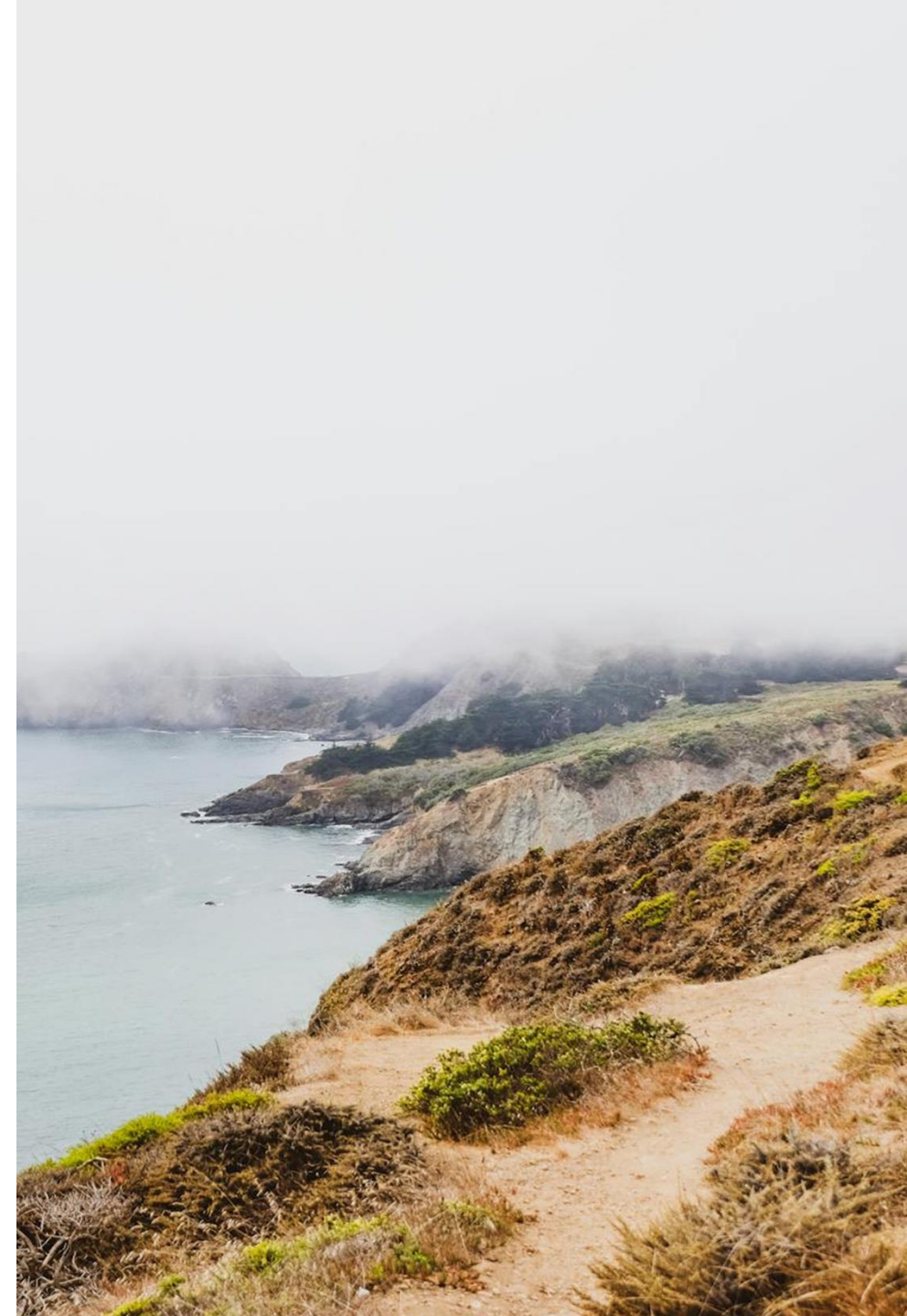
2026 Recharge Groundwater Quality Baseline Monitoring Results- February 2026 (Post Recharge)

Monitoring Point Name	Depth to Groundwater (ft below MP)	TDS (mg/L)	Nitrate-N (mg/L)	Iron (mg/L)	Manganese (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Arsenic, (ug/L)	Acetone (ug/L)	2-Butanone (MEK) (ug/L)
WQO	-	500/ 1000/ 1500	10	0.3	0.05	none	69	10	none	none
Smithneck Drainage Deep	12.94	140	1.4	3.9	0.17	3.9	10	<5	<5	<5
Smithneck Drainage Shallow	12.07	140	0.88	10	0.53	2.0	6.8	<5	<5	<5
Smithneck Domestic 1	54.05	170	2.2	2.7	0.014	3.2	12	<5	<5	<5
Staverville Livestock	56.95	190	0.96	<0.10	<0.010	1.2	12	<5	<5	<5
SVELC WQ9	9.65	140	0.25	0.34	0.010	2.1	11	<5	<5	<5
SVELC WQ3	21.74	220	0.28	1.2	0.013	4.9	13	<5	<5	<5
SVELC WQ8	5.89	270	1.1	0.18	0.046	4.9	23	<5	<5	<5
Staverville Domestic 2	32.95	150	2.5	<0.10	<0.010	1.3	12	<5	<5	<5
Staverville	0	150	<0.15	0.29	0.014	1.4	9.7	<5	<5	<5

PE Major Topics:

Groundwater Quality Recharge Projects

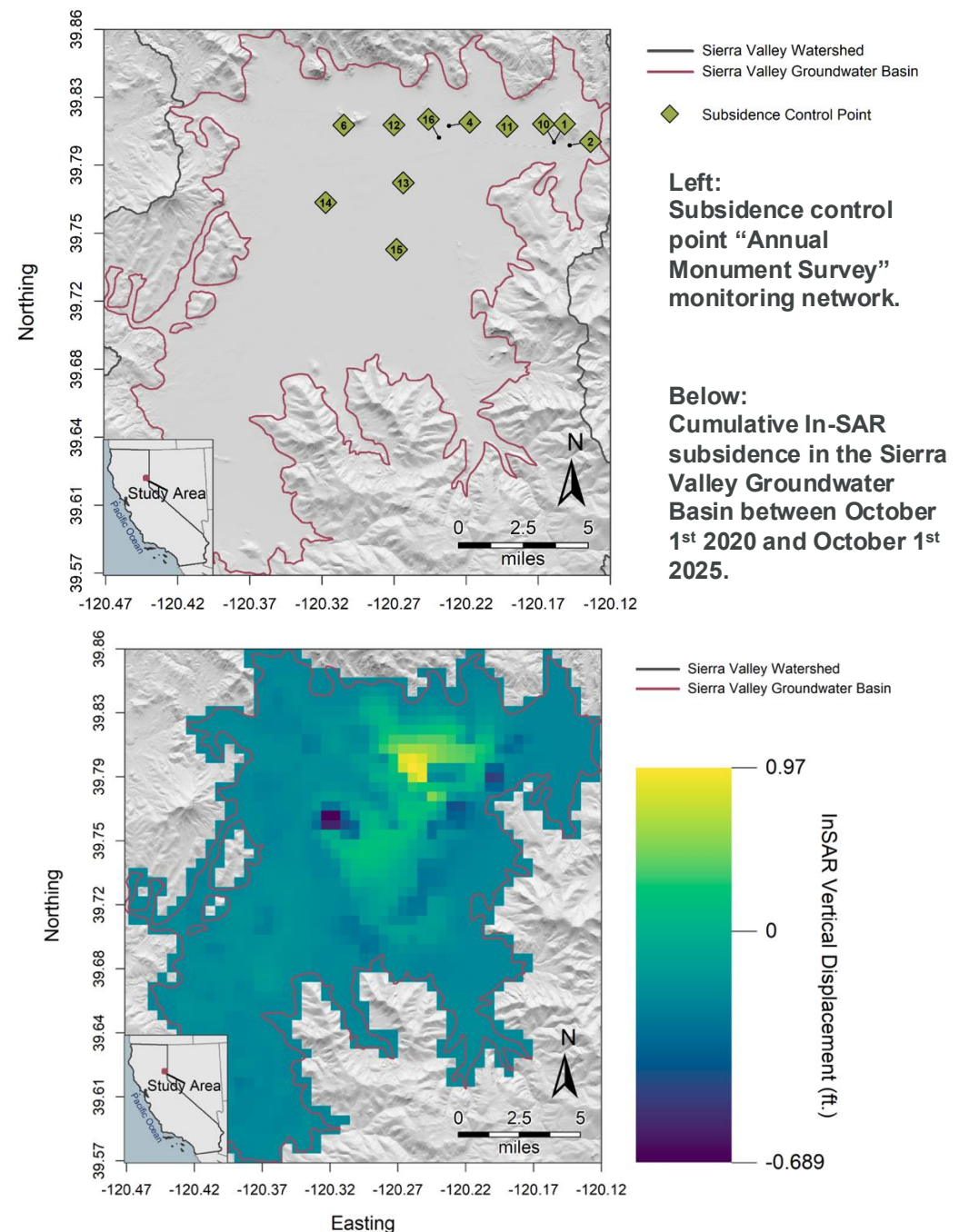
- Recharge occurs at three properties: Griffin & Potter (Smithneck) and Easley (Staverville)
- Water quality was sampled at nearby wells and in Staverville Creek itself, to tell natural background apart from any recharge-driven effect
- Event 1 (Jan 30, 2026) sampled wells near Griffin, Potter, and Easley sites
- Event 2 (Feb 27, 2026) sampled wells near Griffin and neighboring Marsch property
- Iron and manganese exceeded objectives at most wells in both events, but not in the creek pointing to a natural soil source, not recharge
- Arsenic exceeded the standard at one well in Event 1; that well wasn't resampled in Event 2, but the three wells tested in both events showed no arsenic exceedances either time
- No nitrate or TDS exceedances in either event



PE Major Topics:

Land Subsidence

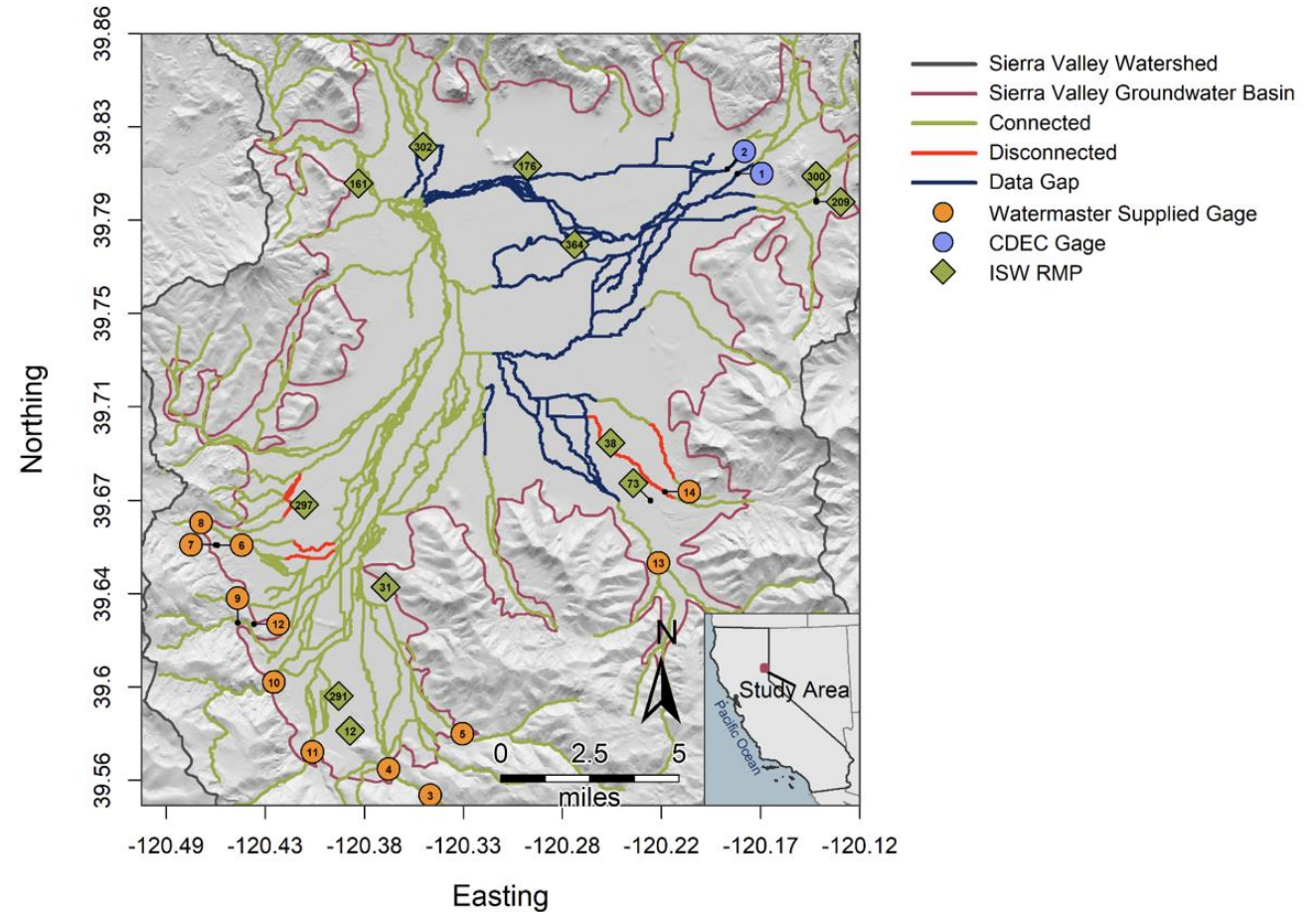
- At GSP adoption (2022), subsidence monitoring relied only on satellite-based InSAR data with no ground-based monitoring network in the basin
- In direct response to DWR's RCA #5, SVGMD built a new 11-point survey monument network from scratch (installed October 2022; 4 permanent + 7 non-permanent monuments)
- Monuments have been resurveyed annually & results show no significant or directional change (net movement within about ± 0.13 ft)
- InSAR and ground-survey data now agree: no evidence of widespread subsidence in the basin



PE Major Topics:

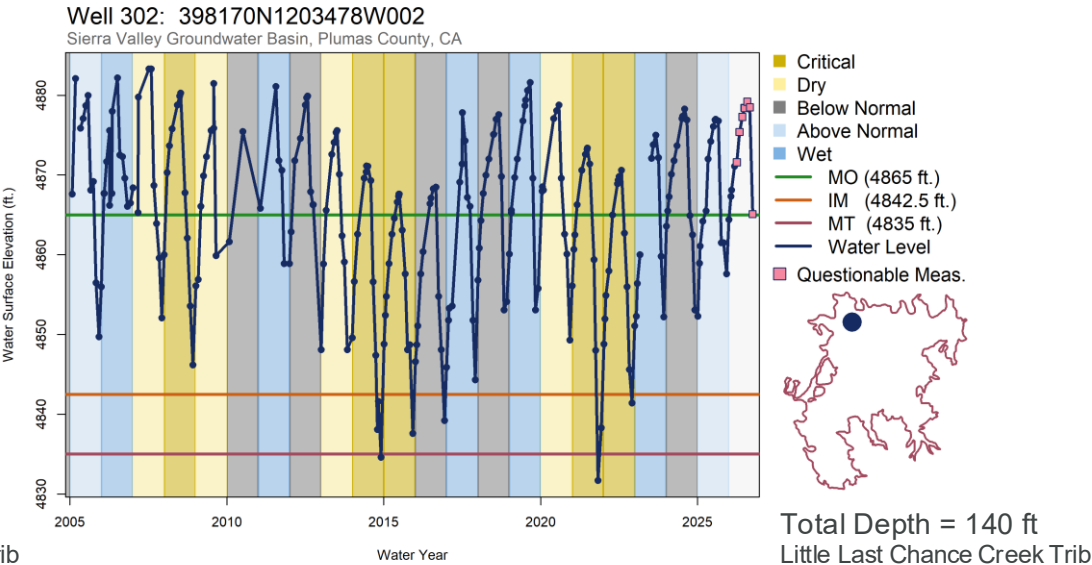
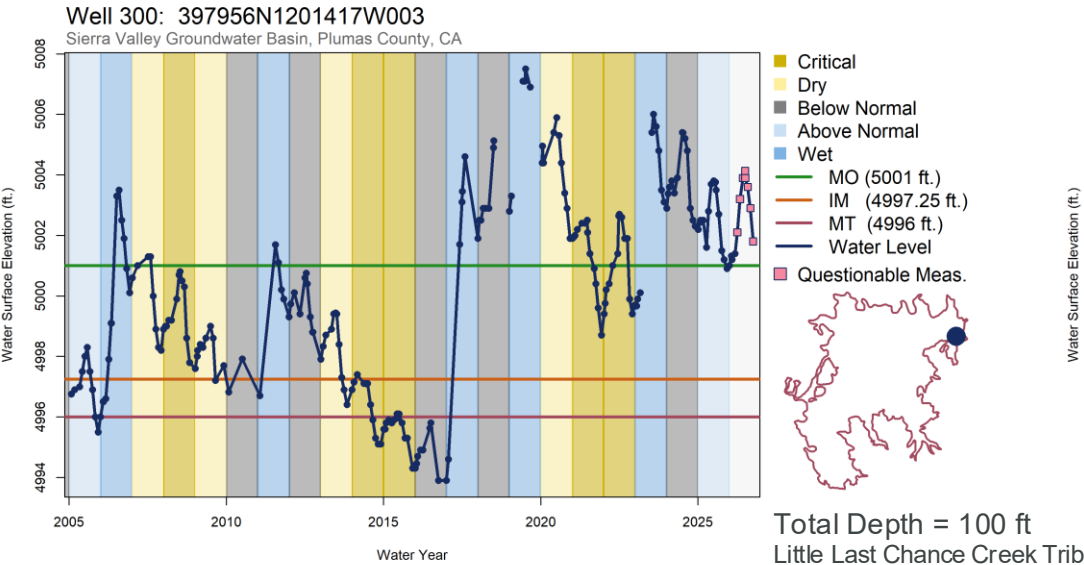
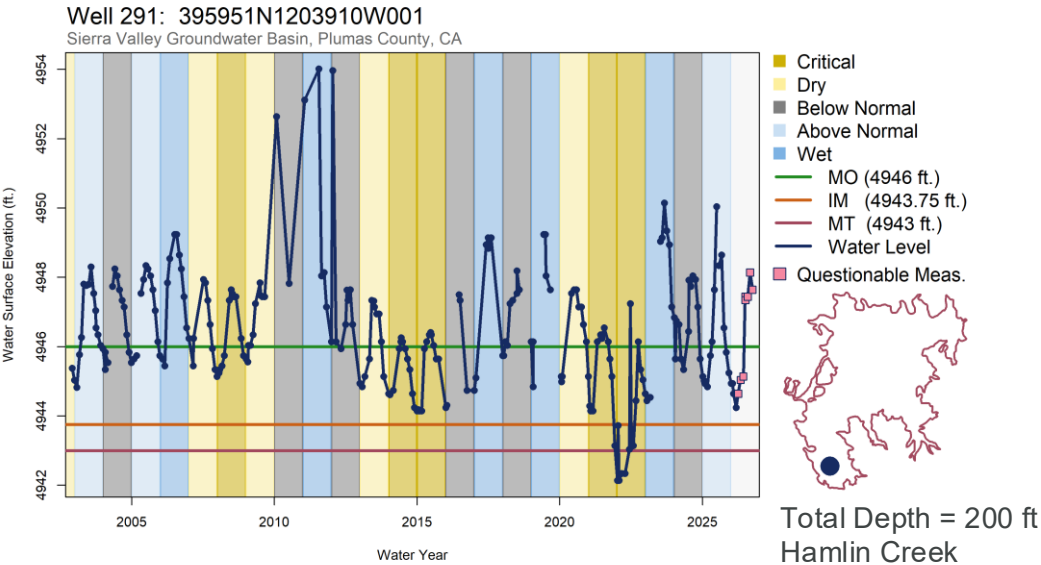
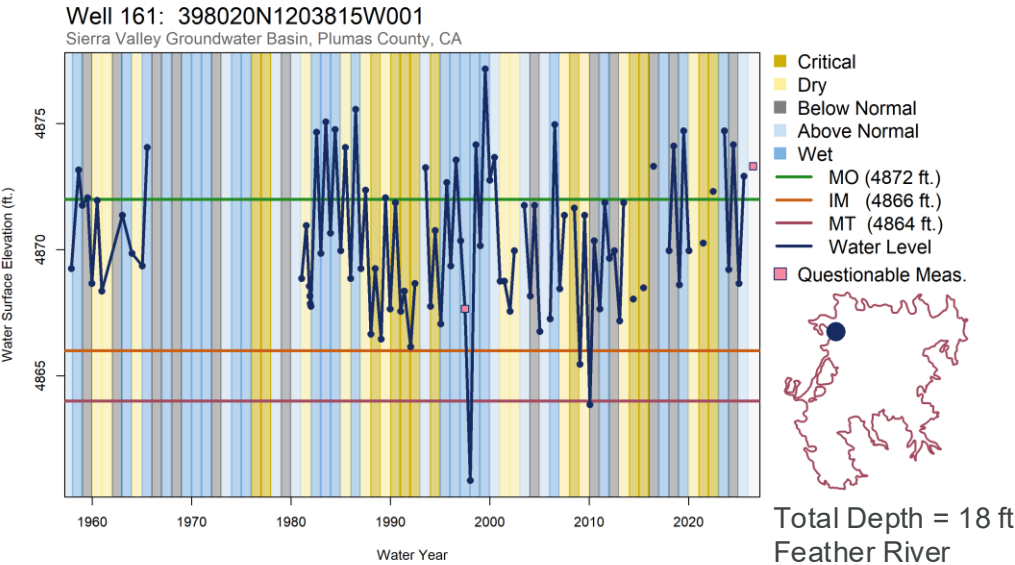
ISW & GDE

- New continuous streamflow gaging installed on four creeks: Smithneck, Staverville, Little Last Chance, and Griffin Drainage
- Groundwater levels near Interconnected Surface Water (ISW) reaches have remained within historical ranges throughout the evaluation period
- Groundwater-dependent ecosystem (GDE) health is being tracked using updated vegetation mapping and satellite greenness (NDVI) data
- SVHSM updates are underway to eventually support quantitative estimates of groundwater-driven surface water depletion

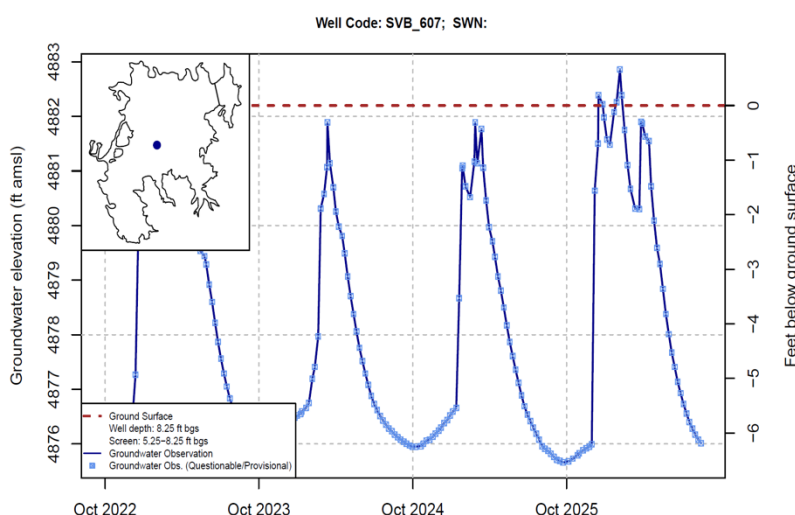
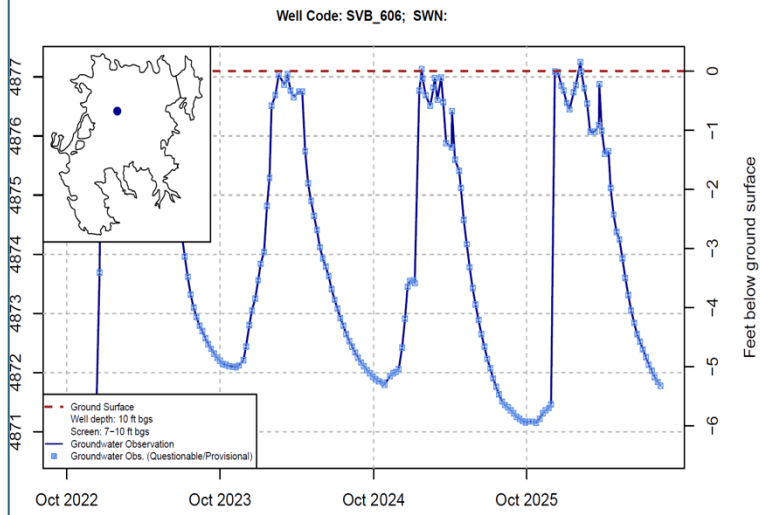
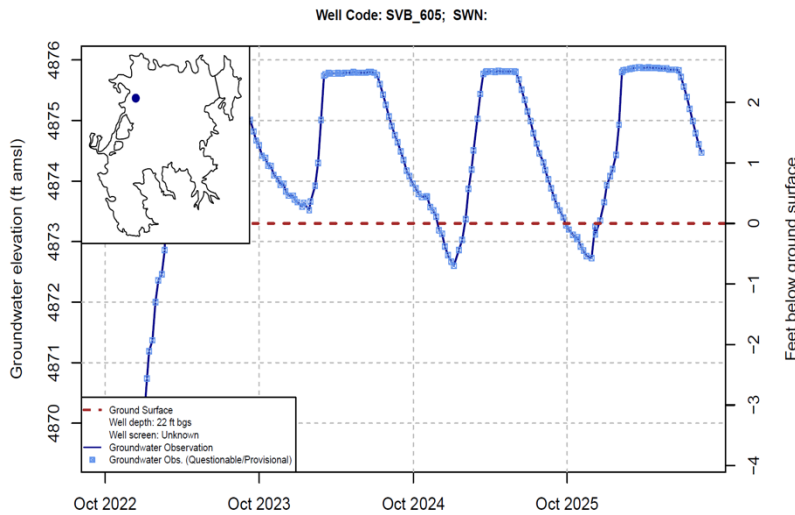
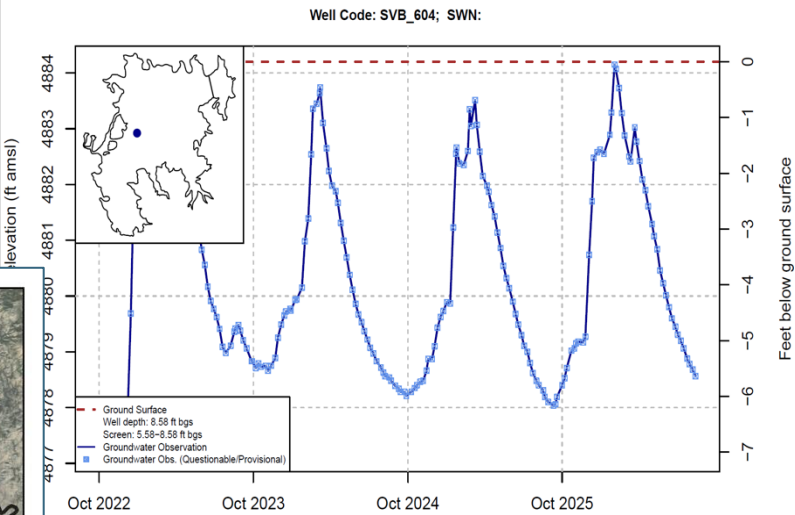
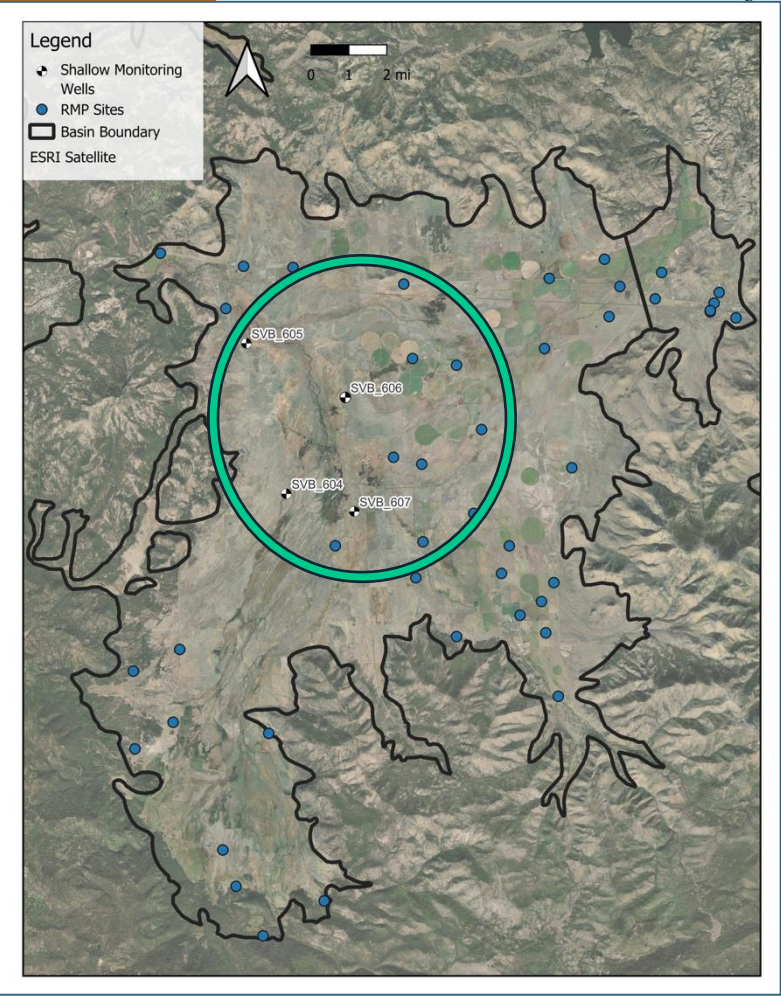


PE Major Topics:

Groundwater Levels – Selected ISW Sites



ISW Wells near Wetlands



Monitoring Network & Project Progress

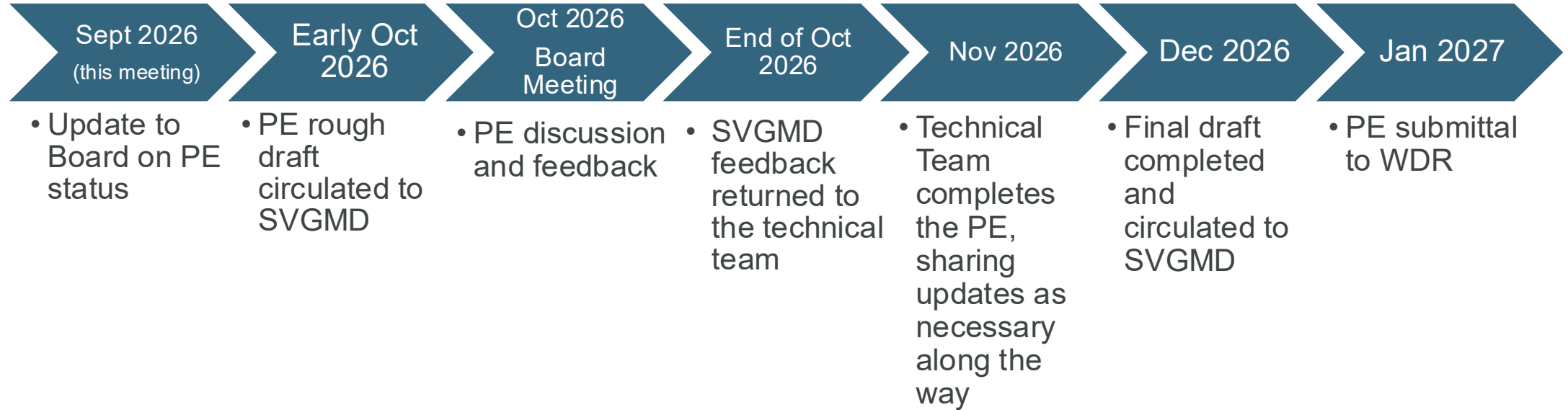
Other Monitoring Networks:

- Groundwater-dependent ecosystem (GDE) wells: 4 new telemetered wells installed around the northwest wetland complex, an area with no prior monitoring
- Griffin Drainage-area wells: 3 existing wells equipped with pressure transducers, plus 1 new nested monitoring well (30 ft / 100 ft)
- Streamflow gaging: new telemetered gages installed on Smithneck Creek, Staverville Creek, Little Last Chance Creek, and Griffin Drainage

Project Progress

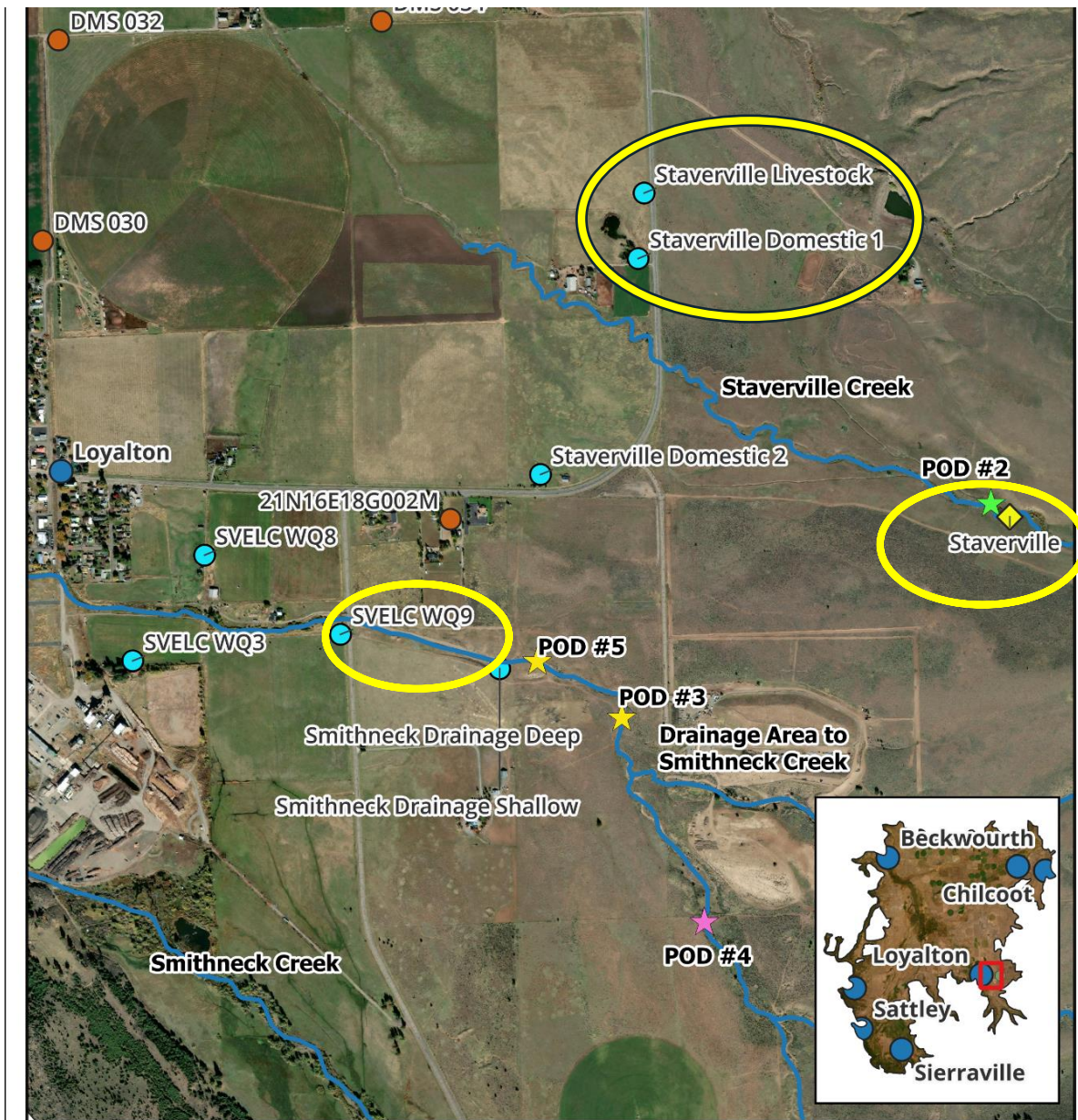
- Well inventory (basin-wide well database): substantially expanded and improved
- Irrigation efficiency program: equipment upgrades completed at 15 of 17 local irrigators; estimated 400–470 acre-feet/year reduction in groundwater pumping
- Managed Aquifer Recharge (MAR): ~130 AF recharged across 4 pilot sites in 2025–26; new in-lieu recharge program at 3 properties expected to add ~400 AF/year once fully operational
- Over \$8 million in grant funding secured for this work; the DWR grant that funded most of it concluded March 2026

Timeline to Submittal



Water Quality Invoices

- 9 sites selected near recharge projects and to evaluate impacts on recharge quality near landfill
- Samples collected before (January) and after (February) major recharge event
- Baseline for organics, metals, salts and minerals at all 9 sites – 18 samples \$11,664
- Baseline for pesticides at 4 sites – 8 samples - \$16,004
- Additional pesticide samples at 5 sites - 10 samples \$19,524.36
- District funds - \$27,668.36
- LWA funds - \$19,524.36



Groundwater Level and Water Quality Monitoring Point Locations

- Main Towns
- Creeks
- Telemetry Groundwater Wells



0 0.1 0.2 mi

NMR Geotechnical Analysis

- Non-invasive, minimal site disturbance – good for agricultural and wildlife area
- Funded by University of Nevada- Reno researchers
- Initial site visit planned for early October prior to recharge season

Surface NMR (sNMR) is a non-invasive geophysical method that directly measures subsurface water content from the ground surface, no drilling required

Useful for:

- Estimating groundwater storage and changes in storage over time and in response to seasonal variability
- Evaluating managed aquifer recharge effectiveness

What Can sNMR Do For Your Project?



Quantify Water Content

sNMR directly and non-invasively measures subsurface water content, providing spatially representative estimates to constrain and improve hydraulic models which can help understand and manage groundwater.



Seasonal Monitoring

Repeated surveys at fixed sites capture soil drying and wetting cycles across the season. This supports improved understanding of vadose zone dynamics relevant to habitat characterization and ecosystem water budgets.



Minimally Invasive

Unlike boreholes or direct sampling, sNMR requires no drilling or soil disturbance. This makes it ideal for environmentally sensitive sites and reduces costs and permitting requirements.



Informing Management Decisions

Water content data from sNMR can feed directly into land and water resource management decisions, from groundwater recharge assessments to ecological flow requirements and drought resilience planning.