

ARVIN-EDISON WATER STORAGE DISTRICT

REPORT OF DISTRICT OPERATIONS

September 2021



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***Implementation of Phase 1 of the Pump Replacement Project
Continues (S38-P1)***

WATER SUPPLY

Friant Division Central Valley Project (CVP)

- The 2021 Water Year allocation is as follows:
 - 20% Class 1 (8,000 AF)
 - 0% Class 2
- Exhibit “A” provides additional supply information for 2021 Water Year supplies

San Joaquin River (SJR) Restoration Program (SJRRP)

- The 2021 Runoff Year is final at 521,664 AF of natural river runoff in the SJR watershed, which is a “Critical-High” year type pursuant to SJR settlement and accordingly, the SJRRP would receive 70,919 AF of water supply.
- Given a “Critical-High” year and due to low reservoir conditions, a potential call on San Joaquin River to meet Exchange Contractor demands, and other considerations the SJRRP Restoration Flows have been eliminated until mid-October and the remaining volume will be used in the fall to reestablish and reconnect the SJR downstream of Sack Dam (more cold water in fall and assist with low point).
- Given a “Critical-High” year there is likely no Unreleased Restoration Flows and limited Recapture/Recirculation opportunity (additional fall and/or carryover into 2022 supplies to Contractors).
- Provided continued dry conditions, the SJRRP has called on AEWSD’s 2016 exchange agreement for 7,000 AF in 2021 and consequently the SJRRP would provide 21,000 AF in return for such exchange. The SJRRP has requested to reduce the exchange to 3,500 AF, which would provide 10,500 AF in return.
- District’s RWA credit beginning balance is approximately 90,630 AF (subject to reconciliation and staff review). RWA credits allow the District to purchase water for \$10/AF during wet periods when RWA water is declared (no opportunity in 2021).

Shasta System CVP

- The 2021 allocation for south of Delta Ag remains at 0%

State Water Project (SWP)

- The 2021 Table A allocation remains 5%

Kern River

- 2021 supplies are currently estimated at 16% of average

Water Bank Facilities

- Given limited initial surface supply allocations, heavy reliance on wellfields and previously banked water is expected for the 2021 Water Year (106,000 AF)

Metropolitan Water District (MWD) Program

- MWD beginning balance is 142,257 AF in water bank reserves
- The District obtained its twelfth consecutive year approval from the State Water Resources Control Board regarding a Petition for a Consolidated Place-of-Use (CPOU), which now expires on July 15, 2022
- The CPOU petition includes the ability to exchange all types of Arvin-Edison supplies with MWD including unbalanced exchanges

- The District’s 10-year NEPA documentation is complete and approved until March 21, 2024.
- District has begun communicating with MWD staff regarding 2021 and 2022 program activity involving surface water supplies and/or groundwater supplies that meet California Aqueduct requirements
- District successfully worked with MWD, DWR, KCWA, Reclamation and Friant Water Authority on an exchange of up to 50,000 AF that involves the AE/MWD Agreement that provides for supplemental water supply in San Luis Reservoir (Friant to MWD for MWD State Water Project) and therefore eliminates the need to release such quantity into the San Joaquin River thereby saving on some losses. This exchange provides for up to 5,000 AF of return subject to the AE/MWD Agreement provisions and 28,000 AF has been delivered to date.

Rosedale-Rio Bravo Water Storage District (RRBWSD) Program

- The District’s 2021 beginning account balance for water held in RRBWSD is at 64,462 AF.
- District received 10,000 AF from the program, by exchange with Kern Delta (see below), to supplement other surface water supplies, which reduced the account to 54,462 AF.
- Districts executed a “2021 Use of CVC/FKC Intertie Agreement” for the RRBWSD-Delano Earlimart banking program.

Kern Delta Water District (KDWD)

- Staff continues meeting with KDWD staff to advance water management opportunities including joint partnership in groundwater recharge facilities and interconnection facilities between Forrest Frick Pumping Plant Discharge Pipeline and the Eastside Canal.
- AEWSD-KDWD-RRBWSD have executed a 2021 operational exchange in which AEWSD’s 10,000 acre-feet from RRBWSD would be delivered via KDWD from April through September and RRBWSD would deliver 10,000 acre-feet to KDWD (for MWD) from March through December. District have started discussions for a similar 2022 operational exchange.
- KDWD approved bids for the Sunset Groundwater Recharge Facility and construction is anticipated in mid to late October 2021.

District Partnerships

- The District has participated in water management programs with the following districts/agencies in Water Year 2021:

Arroyo Pasajero Mutual Water Company	Rosedale-Rio Bravo Water Storage District
Chowchilla Water District	San Joaquin River Restoration Program
City of Bakersfield	San Joaquin River Exchange Contractors
Fresno County	Saucelito Irrigation District
Garfield Water District	Shafter-Wasco Irrigation District
Hills Valley Irrigation District	Sun Pacific Farming Cooperative
Ivanhoe irrigation District	Tejon Ranch Corp
Kern Delta Water District	Tri-Valley Water District
Kern Water Bank	Westlands Water District
Lewis Creek Water District	Westside Mutual Water Company
Metropolitan Water District	

WATER DEMAND

- Staff continued to implement the Prorate Program of 1.6 AF/AC (May through September period) and continue to coordinate with Landowners in regards to the Prorate Program (irrigation schedules, re-allocation pools, and pump-in request)
- District surface water deliveries for the month were 12,369 AF (19% below average)
- The following is a summary of surface water deliveries for September 2021:

	<u>September 2021</u>		<u>Year to Date</u>	
	Historical	2021 WY	Historical	2021 WY
Turnout Deliveries	15,181	12,369	109,486	94,963
In-Lieu Deliveries	-	-	-	-
Temporary Water	-	-	-	-
Spreading	-	323	-	1,611
Total	15,181	12,692	109,486	96,574

- District delivered a total of 73,480 AF (1.44 AF/AC) out of the potential 81,779 AF (1.60 AF/AC) leaving nearly 8,300 AF undelivered. A significant portion of the undelivered supply is surface water that could be available for 2022 if conditions warrant.
- Exhibit "B" illustrates the delivery data
- The month's peak daily in-District demand was 339 cfs, which occurred on the 10th
- Exhibit "C-1" details Canal Water Quality information
- Exhibit "C-2" presents the Aquatic Pest Control Treatments (\$400,277) for Calendar Year 2021

GENERAL

- Staff initiated efforts for the 2022 Water Year budget planning
- Staff continued investigations regarding increasing cybersecurity and met with consultants to discuss the results of the cyber audit
- District vehicles consumed an estimated 4,500 gallons of fuel during the month (average fuel efficiency of 11.1 mpg)
- There were 361 hours lost due to illness (including COVID-19 hours) and 0 hours lost due to on-the-job injuries with no employees out on Workers' Compensation Claim
- Exhibit "D" highlights precipitation, temperature, and wind speed
- Exhibit "E" summarizes energy consumption and power demand for Water Year 2021 is expected to generate an electrical demand of approximately 140 million kilowatt hours
- Exhibit "I" list various meetings for Directors, Management and Engineering staff

ENGINEERING DEPARTMENT ACTIVITIES

Routine Activities

- Review and accounting of District's water supply and related contracts
- Administration or proposals of water management and wheeling agreements
- Groundwater level surveys and associated exhibits
- Water quality testing
- ArcGIS database updates and maintenance (facilities, water service areas, boundaries, etc.)
- Inspection/evaluation and/or repair of cathodic protection rectifiers and test stations
- CIMIS station management (<https://cimis.water.ca.gov/Stations.aspx>)
- Land use/crop surveys with data entry
- Monthly/annual reports regarding water deliveries, water use, and energy use

Grants & Funding Opportunity Updates

- District **was awarded** 2020 USBR WaterSMART grant application for the Forrest Frick Pipeline/ Eastside Canal Intertie at \$500,000 (with a \$500,000 local cost share) and a grant contract was executed, however, completion of the cultural portion for the NEPA Categorical Exclusion is anticipated in November.
- Staff submitted a grant application for the USBR WaterSMART Drought Resiliency Projects funding opportunity for the DiGiorgio Unit expansion at \$2,000,000 (with a \$2,600,000 local cost share). The project would cover an additional 1,025 acres and incorporate 6 wells into the District's distribution system.
- Staff submitted two Notice of Interest applications (Wasteway Basin Improvement Project and Tejon Unit Recharge Canal Project) for the CalOES Building Resilient Infrastructure and Communities (BRIC) funding opportunity but was notified the projects were ineligible for funding.
- NRCS landowner incentive programs assist with implementing various conservation activities, including but not limited to, irrigation system improvements, filtration needs, water/nutrient/pest management, and engine replacement:
 - Phone (661) 336-0967
 - Website (www.ca.nrcs.usda.gov)

Other Activities

- Administration and accounting of on-going water management programs
- Technical support and review of ongoing projects/studies such as:
 - Sunset Spreading Works (w/Kern Delta WD)
 - Bids were received and construction is anticipated to begin in October
 - Investigating power options (PG&E vs. various PWRPA rates)
 - Electrical and pipeline design is anticipated to be completed in Fall 2021
 - Forrest Frick and Eastside Canal Intertie (w/ Kern Delta WD)
 - Working with the USBR on environmental compliance
 - Easement review
 - Draft O&M agreement submitted to Kern Delta for review
 - Potential Interconnections (w/ Wheeler Ridge-Maricopa WSD)
 - Coordination with both Districts' staff has initiated District water into the 850 Canal, which will ultimately be delivered back into AEWSO overlap lands with Wheeler-Ridge (delivery is anticipated in early October)
 - Groundwater Service Area System Expansion CEQA Planning

- The Mitigated Negative Declaration has been completed and filed.
- P&P drafting 30% design scope of work for remaining pipeline segments
- Pump Replacement Program
 - Received delivery of 5 cfs (4 of 4), 10 cfs (4 of 4), and 20 cfs (7 of 7) pumps
 - Staff has installed 2-5 cfs units, 4-10 cfs units and 4-20 cfs units and remaining units are anticipated in October
- Turnout modification requests
 - Canopy Ag (E-29) reconciliation
- Temporary and/or In-Lieu Water Service Contract Requests
 - Sunview
 - TechAg
 - Moore Farms
- Surface Water Service Area relocation request
 - Finalized Moore (Caliente Unit), which was approved by the Board
 - Johnston (Arvin Unit)
- Landowner pipeline replacement (adjacent to and within Sycamore Spreading)
- Cathodic protection system upgrades
 - FFPP discharge pipeline
 - Standtank anode replacement preparation (Winter Maintenance)
- Pump Efficiency Testing
 - District wide testing in progress
 - As needed for replaced pumps
- Real Time Water Quality Monitoring
 - Remote connection for data access and website display is in progress
- CIMIS Station
 - Coordinated landline to cellular conversion with Department of Water Resources (installation pending)
- Intertie Pipeline Inspection
 - Reviewing alternate inspection methods that do not require a drained pipeline
- Standtank Painting
 - Project closeout (labor compliance)
- Assessment of Reasonable Water Requirement report
 - Draft report received, staff review in progress

SGMA Activities

- Continued coordination meetings and outreach activities
- Continued review of well permits and submitted comment letters to those within or near AEWSD
- Attended various GSA meetings
- Coordinated GSA boundary revisions with neighboring agencies
 - Pending Kern Groundwater Authority review
- Development of a potential Well Mitigation Policy
- Evaluate various Water Budget methodologies
- Entered water level data into the new County wide Data Management System (DMS)

- Survey monitoring wells (White Wolf GSA)
- Release White Wolf Public Draft GSP for 60-Day public comment period

Requests for Information/Easements/Planning Notices

- Water supply
- Water costs
- Historical groundwater levels
- Monitoring well conversions
- Water quality
- Land use data
- Easements and/or right-of-way encroachments
 - Shell Oil (Intake Canal)
 - Quad Knopf development (Intake Canal)
- Reviewing/responding to multiple planning notices
 - Kern County (various developments/potential facility conflicts)
 - Kern County “water availability” letter on two (2) proposed developments in Edison area (1 in GWSA and 1 in SWSA)
- Reviewed/responded to environmental documents, as necessary

Power Related Activities

- Assisted PWRPA consultants with
 - Power coordination and monitoring
 - PWRPA invoice and demand data changes
 - Monthly billing anomalies/meter reconciliations
 - Load forecast updates and rate analysis
 - Contract demand analysis
- PG&E Power Safety Public Shutoff coordination
- Coordinated meter database changes with PG&E
- Reviewed long-term power management activities
 - Continued investigation of low head hydro potential (Intake Canal)
 - District Headquarters Solar construction coordination
 - Reviewed available local solar renewable energy certificates to Western Renewable Energy Generation Information System (credits to be used by District/PWRPA)
 - Initiated discussions with planned solar project (Edison area) and awaiting microgrid proposal
 - Review and coordinate Demand Response Program
- Coordinate long term power analysis for Sunset GW Recharge Facility
- Calendar Year and Water Year power reconciliations and summaries
- Groundwater Service Program
 - Monthly invoicing and program coordination

SPREADING WORKS OPERATIONS (WELLFIELDS AND BASINS)

- Exhibit “F” summarizes wellfield production, which totaled 11,186 AF for the month (78% of historical maximum in September)
- Exhibit “G” summarizes gross direct spreading of 323 AF for the month due to wellfield regulation (363 AF of wellfield production was regulated back into the distribution system)

- Exhibits “H-1” and “H-2” summarize current static and/or pumping water in table and graphic forms
- Following is a summary of repairs associated with “active” District wells:

<u>Field</u>	<u>Well #</u>	<u>Year</u>	<u>HP</u>	<u>Reason</u>	<u>Work</u>
North Canal	3	1972	300	Low Production and Excess Vibrations	Pulled equipment, replacement pump ordered
Sycamore	2	1967	300	Low Production and Excess Vibrations	Equipment scheduled to be pulled
Sycamore	8	1967	300	Excess Vibrations	Pulled and inspected equipment, video scheduled
Sycamore	14	1967	300	Low Production and Excess Vibrations	Pulled and inspected equipment, replacement pump ordered
Sycamore	17	1967	300	Low Production Excess Vibrations	Pulled and inspected equipment, replacement pump ordered
Tejon	77	1966	300	Excess Vibrations	Pulled equipment, replacement pump ordered
Tejon	80	1970	300	Excess Vibrations	Pulled and inspected equipment, video, replacement pump ordered
Tejon	95	1998	300	Low Production and Excess Vibrations	Equipment pulled, video, pump replacement ordered

***Back in Service**

- Ten (10) out of 86, or 10%, of District wells are currently out of service and consultants are reviewing repair options
 - Two (2) long-term failures in Sycamore 34 and Tejon 91
 - Seven (8) see above table
- Well Replacement Program
 - Tejon Spreading Works coordination with PG&E to troubleshoot power issues continues

OPERATIONS DEPARTMENT ACTIVITIES

Routine Activities

- Operate and monitor the District’s water distribution and delivery systems including canals, ponds and reservoirs
- Conducted monthly safety meetings
- Inspected control systems at pumping plants (transducers, Cla-valves, battery back-ups, etc.)
- Assisted personnel in the repair, replacement, and/or maintenance of facilities on an as-needed basis for the following items:
 - Replaced flowmeter batteries (turnouts and wells)
 - Flushed and cleaned various turnouts and appurtenances
 - Greased turnout valve operators
 - Maintained weed control (pumping plants, turnouts, air vents, and isolation valves)

- Changed lights and panel bulbs (as needed)
- Inspected/replaced water quality warning labels at turnouts
- Cleaned and/or replaced air-chamber sight glasses
- Replaced missing locks and chains (canal gates and turnouts)
- Staff performed end-of-month meter readings at Interties, Wells, Turnouts, and Pumping Plants (power)



Clearing Out Filters on Bypass Valve (S73-P4)



Testing Connection to Wheeler Ridge-Maricopa WSD 850 Canal (Turnout W-63)

Additional Activities

- Continued wellfield operations
- Cross trained basin staff in unit chief operations
- Water use patrol (District wide)
- Obtain mid-month meter readings related to Prorate Period
- Respond to various standtank overflow alarms (N1-P4, N1-S5, S73-P2, and S73-P3)
- Prepare for possible PG&E Public Safety Power Shutoff
- Isolate and disconnect cattle water connection (turnout C-18)
- Clear out excessive aquatic weed buildup (N55-P1)
- Obtain mid-month and as requested turnout readings for prorate usage update
- Coordinated with Wheeler Ridge-Maricopa WSD Operations staff to test the new discharge into the 850 Canal
- Clear out turnout base isolation valves (North and South side)
- Reset displaced concrete rings (air vents and isolation valves)
- Order materials in preparation for winter maintenance
- Replaced Various Meters
 - Turnouts (A-01, M-01, and M-48)
 - Facilities (Balancing Reservoir)
- Replaced Various Valve Operators
 - Turnouts (W-22)

- Responded to various Pumping Plant alarms (reset and primed laterals)
- Stenciled turnouts, well discharge pipes, and meter concrete rings with labels (as needed)

Underground Service Alert (USA) Report

- District initiated 0
- Responded to 171 USA notices to locate District underground facilities
 - 16 required markings of District facilities
 - 49 were renewals
 - 106 with no conflicts

Power Outages and/or Interruptions Involving the Following Systems

- Tejon Spreading Works

Laterals Prorates (number of days)

- No prorates for the month

MAINTENANCE DEPARTMENT ACTIVITIES



Grading Levees (Spillway)



Earthwork Continues at District-Owned 10 Acres Site (Caliente Unit)

Routine Activities

- Aquatic and terrestrial weed control (North Canal)
- Routine gardening and maintenance at Headquarters and CIMIS station
- Fence repair (Intake Canal)
- Grading (Wasteway, Tejon Spreading Works, End of Canal, and Spillway)
- Cleared out forebays (North and South Canal)
- Assisted other Departments as needed (Operations and Pump Shop)
- Conducted monthly safety meeting including COVID procedures

Additional Activities

- Fabricate and paint oil barrel stands (District wells)
- Cut overgrowth (Intake Canal)
- Continue to use rented paddle scraper with District operators to grade 10-acre ponds (Caliente Spreading)
- Install new white boards (Bakersfield Office)

- Install pump and fill stand for pre-emergent work (Wasteway)
- Install temporary fence in place of vehicle damaged permanent fence (Intake Canal)
- Weld Victaulic couplers (N55-P1)
- Remove forebay debris (Intertie Pumping Plant)
- Remove algae buildup with Gradall (Bear Mountain Blvd bridge)
- Repair washouts from tank overflow (N1-S5)
- Prepped and painted various facilities and equipment
 - Pumping Plants (N1-P4)

Mechanic's Shop Repair Activities

- Routine weekly inspection on the fuel tank, gas pumps, and generator
- Fleet repairs/replacement parts

Part	Repair/Replaced	Part	Repair/Replaced
Brakes	4	Tail Lights	2
Tires	6	Belts	1
Tire Repairs	4	Spot Lights	1
Rotors/Drums	2	Wiper Blades	8
Batteries	1	Cabin Filter	4
Fuel Filters	4	Trailer Lights	2
Headlights	1		

- Heavy Equipment Repairs
 - Repaired Tire (Grader)
 - Repaired gangs (Disc)
 - Replaced air filter (Backhoe)

PUMP DEPARTMENT ACTIVITIES



Unit #8 Pump Installed After Repairs (FFPP)



Welding Coupler for Discharge Piping Repair (N8-P1 Unit #4)

Routine Pump Maintenance Activities

- Replacing pump packing
- Pump bearing lubrication at various pumping plants
- Maintain drip oil on District Wells
- Inspection and maintenance of air compressors
- Inspection and/or adjustment of travelling water screens/moss screens.

Additional Activities

- Continued working with Engineering Department on Pump Replacement Program
 - Initiated testing for Phase 2 (horizontal pumps)
 - Ongoing installation of Phase 1 pumps
- Replaced various sump pumps (S73-P2 and S73-P4)
- Repaired various check valves (N1-P3 and S64-P1)

PUMP & MOTOR REPAIR SUMMARY

	<u>Pumping Plant/Wells</u>	<u>Unit</u>	<u>Size</u>	<u>Time/Hours</u>	<u>Reason</u>
<u>Vertical Pumps</u>	S38-P1	3	10 CFS	19,999	Increase System Flow
	S64-P1	1	20 CFS	17,441	Increase System Flow
	S73-P1	3	10 CFS	15,107	Increase System Flow
<u>Vertical Motors</u>	None to Report				
<u>Horizontal Pumps</u>	N55-P3	1	10 CFS	2,683	Worn Bearings
	S73-P2	4	10 CFS	24,413	Worn Sleeves and Bearings
<u>Horizontal Motors</u>	N55-P3	1	200 HP	2,683	Burnt Windings
	N55-P5	1	100 HP	10,810	Worn Bearings

CONTROLS DEPARTMENT ACTIVITIES



Installing New Level Sensor (Spillway)



Replacing Air Chamber Float Switch (N55-P6)

Routine Activities

- SCADA/radio maintenance or troubleshooting
- Monthly and annual inventory
- Testing and repair/replacement of distribution system and well facility electrical components as needed

Component	Replaced/Repaired	Component	Replaced/Repaired
Contact Block	1	PLC	7
Hour Meters	2		

Additional Activities

- Programming for SCADA and radio system updates and monitored performance
- Continued working with contractors on radio and PLC Replacement Project
- Installed new battery backup (Bakersfield Office)
- Replaced air chamber float switch (N55-P6)
- Replaced ultrasonic level sensors (Spillway)

FORREST FRICK PUMPING PLANT

- 2,006 AF of water was pumped during the month
- Unit #3 motor and pump startup and testing is anticipated in October
- Unit #8 pump repairs and installation were completed
- Consultants are designing reverse flow facilities into the Intake Canal to assist in regulating wellfield production during shoulder months to increase peaking water supplies

INTERTIE PUMPING PLANT

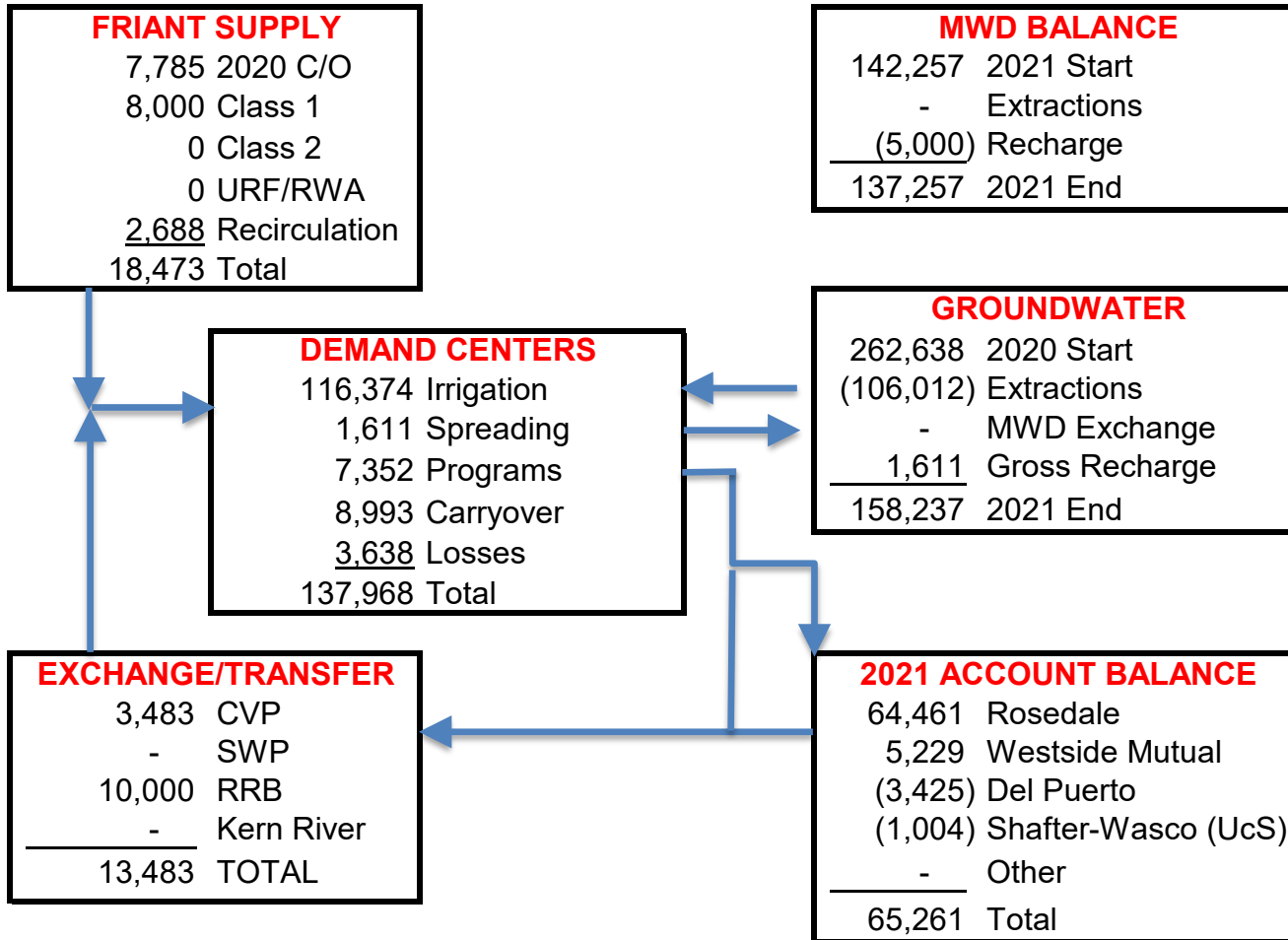
- There was no import (gravity delivery) or export (pumped delivery) of water (0 AF) through the Intertie Pipeline Pumping Plant

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EXHIBIT "A-1"
ARVIN-EDISON WATER STORAGE DISTRICT
2021 WATER SUPPLY AND DEMAND

<u>SUPPLY</u>	<u>AF</u>	<u>%</u>
FRIANT-KERN (F-K)		
20% OF 40,000 AF CLASS 1	8,000	
0% OF 311,675 AF CLASS 2 (Uncontrolled Season)/RWA	0	
0% OF 311,675 AF CLASS 2	0	
CARRYOVER OF 2020 WATER	7,611	
SHAFTER-WASCO ID	174	
SUBTOTAL	15,785	
FRESNO COUNTY	-600	
GARFIELD WD	-61	
HILLS VALLEY ID	-22	
TRI VALLEY WD	-7	
LEWIS CREEK WD	-21	
SAUCELITO ID	-346	
IVANHOE ID	-200	
SJRRP RETURN	-3,500	
TOTAL F-K	11,028	8.8%
CROSS VALLEY CANAL (CVC)		
RETURN TO MWD	-5,000	
RECIRCULATION (WESTLANDS)	-2,595	
WESTSIDE MWC/KWB	1,493	
TEJON RANCH/ARROYO PASAJERO	1,990	
ROSDALE-RIO BRAVO (KDWD EXCHANGE)	4,376	
SLR 2020 CARRYOVER	2,595	
TOTAL CVC	2,859	2.3%
STATE WATER PROJECT (AQUEDUCT)		
KT EXCHANGE	0	
TOTAL AQUEDUCT	0	0.0%
INTERTIE PIPELINE (IPL)		
FLOOD EMERGENCY RETURN	0	
TOTAL IPL	0	0.0%
KERN RIVER		
FRESNO COUNTY	0	
MWD BANKING	0	
KERN DELTA H ST (RRBWS D EXCHANGE)	5,624	
TOTAL IPL	5,624	4.5%
INTAKE CANAL PUMP-IN (IC)		
KERN DELTA WELLS	0	
KERN DELTA H STREET	0	
TOTAL KR	0	0.0%
TOTAL IMPORT	19,511	15.5%
GROUNDWATER PUMPING		
IRRIGATION DEMAND	106,012	
FARM PUMP IN	0	
RETURN TO MWD	0	
TOTAL PUMPING	106,012	84.5%
TOTAL WATER SUPPLY	125,523	100.0%
DEMAND		
IRRIGATION DEMAND (MARCH-SEPTEMBER)	94,963	75.7%
IRRIGATION DEMAND (OCTOBER-FEBRUARY)	21,411	17.1%
SPREADING (MARCH-SEPTEMBER)	1,611	1.3%
SPREADING (OCTOBER-FEBRUARY)	0	0.0%
RETURN TO MWD	-5,000	-4.0%
WHEELING	0	0.0%
CARRYOVER TO 2022	8,993	7.2%
LOSSES/METERING INACCURACIES	3,545	2.8%
TOTAL DEMAND	125,523	100.0%

Exhibit "A-2"
 ARVIN-EDISON WATER STORAGE DISTRICT
2021 WATER MANAGEMENT



Surface Water	11,973	10%
Groundwater (66% of Max)	106,012	90%
Projected Irrigation Demand	117,985	100%

EXHIBIT "B"

ARVIN-EDISON WATER STORAGE DISTRICT

2021 WATER YEAR DELIVERIES

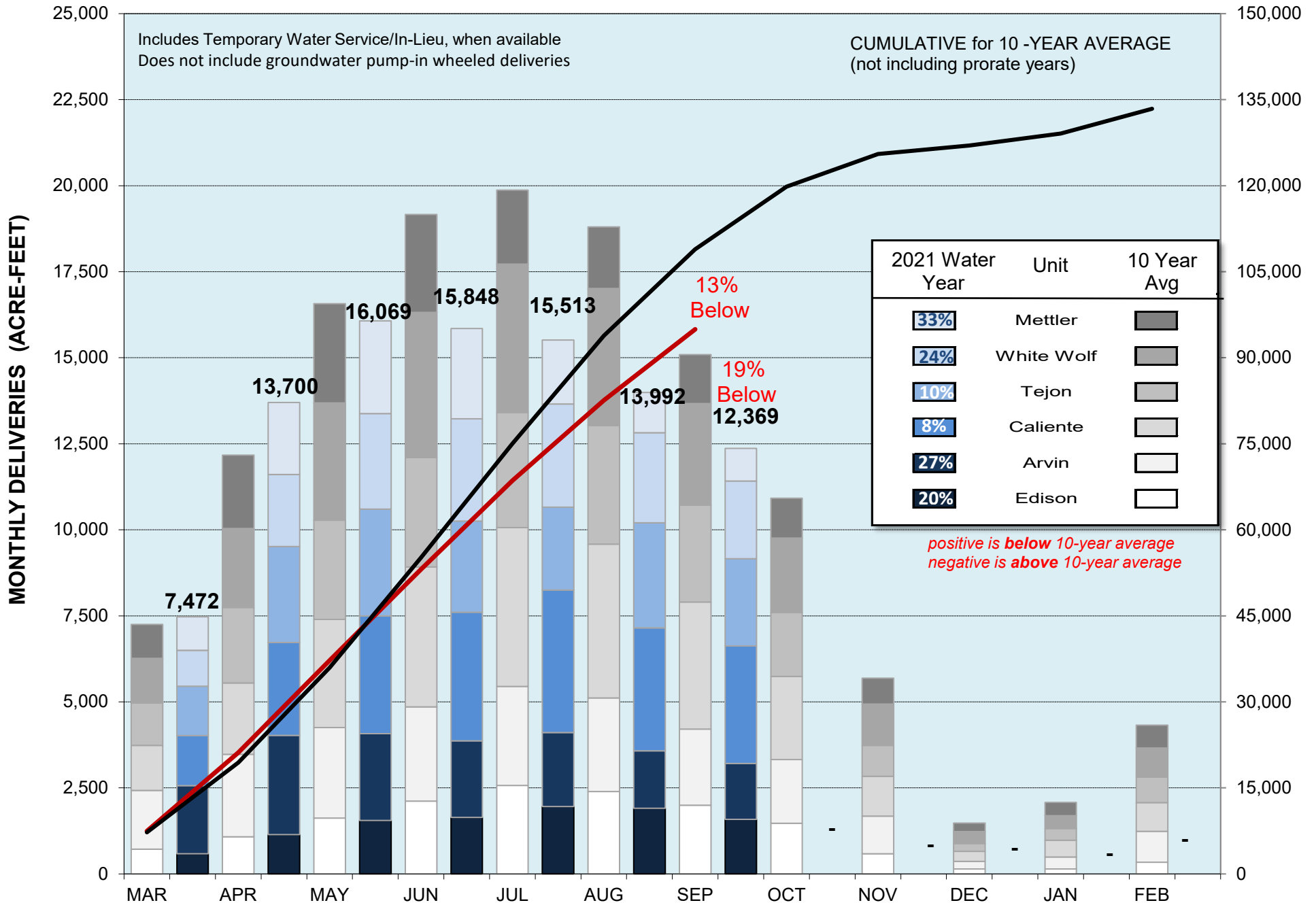


EXHIBIT "C1"
ARVIN-EDISON WATER STORAGE DISTRICT
WATER SUPPLY WATER QUALITY SUMMARY

	Date	Flow cfs	Import Source	Calcium		Magnesium		Sodium		Bicarbonate		Chloride		Nitrate		TDS mg/l	pH	EC umhos/cm	Hardness mg/l	SAR	Gypsum lbs/AF	Boron mg/l	Turbidity NTU
				mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l								
Intake Canal	09/09/21	60	CVC(100%)	8.0	0.40	0.7	0.06	7.8	0.34	36	0.59	4.3	0.12	1.10	0.02	45	7.8	90	23	0.7	0.54	0.02	2.3
	08/09/21	35	CVC(56%)/KD WELLS(44%)	28.0	1.40	4.0	0.33	21.0	0.91	110	1.80	14.0	0.39	6.80	0.11	150	8.3	274	88	1.0	0.03	0.11	1.6
	07/08/21	35	CVC(56%)/KD WELLS(44%)	27.0	1.35	2.8	0.23	27.0	1.16	110	1.80	18.0	0.51	5.10	0.08	150	8.3	298	80	1.3	0.97	0.12	2.6
	06/04/21	110	FKC(68%)/CVC(18%)/KD WELLS(14%)	22.0	1.10	2.3	0.19	24.0	1.03	80	1.31	16.0	0.45	4.20	0.07	130	8.6	244	66	1.3	0.62	0.11	2.8
	05/07/21	35	KD WELLS & KD MAIN(100%)	27.0	1.35	4.2	0.34	25.0	1.08	96	1.57	12.0	0.34	3.80	0.06	150	8.7	274	84	1.2	0.42	0.15	4.0
	04/07/21	27	KD WELLS & KD MAIN(100%)	24.0	1.20	3.3	0.27	24.0	1.03	91	1.49	12.0	0.34	2.20	0.04	130	8.6	243	73	1.2	0.76	0.18	5.0
	03/12/21	0	RESIDUAL CVC(100%)	22.0	1.10	1.5	0.12	32.0	1.38	78	1.28	21.0	0.59	0.99	0.02	140	8.7	263	62	1.8	1.10	0.17	9.4
	02/11/21	22	CVC(100%)	24.0	1.20	1.3	0.11	9.1	0.39	74	1.21	4.7	0.13	2.10	0.03	87	8.6	162	64	0.5	0.33	0.04	16.8
	01/11/21	0	RESIDUAL FKC(100%)	13.0	0.65	0.7	0.06	5.6	0.24	52	0.85	3.3	0.09	0.46	0.01	52	8.3	101	36	0.4	0.53	0.02	9.2
	12/10/20	0	RESIDUAL FKC(100%)	10.0	0.50	0.6	0.05	4.1	0.18	37	0.61	2.8	0.08	0.94	0.02	40	7.5	85	28	0.3	0.21	0.02	4.5
	11/05/20	15	RESIDUAL CVC(100%)	27.0	1.35	1.7	0.14	29.0	1.25	89	1.46	21.0	0.59	1.80	0.03	150	8.7	258	75	1.5	0.63	0.12	2.4
	10/09/20	50	CVC(100%)	23.0	1.15	1.2	0.10	31.0	1.34	81	1.33	26.0	0.73	4.80	0.08	150	8.4	286	63	1.7	0.79	0.12	1.5
	09/10/20	200	FKC(100%)	6.1	0.31	0.7	0.05	6.9	0.30	30	0.49	3.2	0.09	1.40	0.02	38	7.2	64	18	0.7	0.55	0.02	3.0
08/11/20	230	FKC(74%)/CVC(9%)/Kern River(17%)	19.0	0.95	2.2	0.18	19.0	0.82	68	1.11	9.1	0.26	2.30	0.04	98	7.7	176	55	1.1	0.02	0.05	2.9	
	Average			20.0	1.0	1.9	0.2	19.0	0.8	73.7	1.2	12.0	0.3	2.7	0.0	107.9	8.2	201.3	58.2	1.1	0.5	0.1	4.9
North Canal	09/09/21	70	CVC(31%)/WELLS(69%)	18.0	0.90	3.6	0.30	56.0	2.41	120	1.97	26.0	0.73	10.00	0.16	200	8.4	369	60	3.1	4.10	0.41	3.0
	08/09/21	14	CVC(10%)/KD WELLS(8%)/WELLS(82%)	24.0	1.20	4.4	0.36	34.0	1.47	130	2.13	15.0	0.42	12.00	0.19	170	8.2	314	77	1.7	2.40	0.12	2.9
	07/08/21	58	CVC(10%)/KD WELLS(8%)/WELLS(82%)	19.0	0.95	3.8	0.31	43.0	1.85	130	2.13	19.0	0.53	8.20	0.13	180	8.3	335	63	2.4	3.40	0.26	1.9
	06/04/21	148	FKC(27%)/CVC(7%)/KD WELLS(6%)/WELLS(60%)	21.0	1.05	4.1	0.34	52.0	2.24	130	2.13	25.0	0.70	10.00	0.16	210	8.4	378	68	2.8	3.50	0.41	4.4
	05/07/21	58	KD WELLS & KD MAIN(18%)/WELLS(82%)	22.0	1.10	4.5	0.37	35.0	1.51	120	1.97	16.0	0.45	7.60	0.12	160	8.2	297	73	1.8	2.00	0.14	1.2
	04/07/21	80	KD WELLS & KD MAIN(14%)/WELLS(86%)	20.0	1.00	4.3	0.35	34.0	1.47	110	1.80	17.0	0.48	5.50	0.09	150	8.3	274	68	1.8	1.90	0.16	2.4
	03/12/21	58	WELLS(100%)	22.0	1.10	3.9	0.32	40.0	1.72	120	1.97	17.0	0.48	7.00	0.11	170	8.2	303	70	2.1	2.20	0.19	1.2
	02/11/21	14	CVC(21%)/WELLS(79%)	23.0	1.15	4.5	0.37	27.0	1.16	110	1.80	16.0	0.45	6.90	0.11	140	8.2	261	75	1.3	0.97	0.07	1.3
	01/11/21	14	WELLS(100%)	21.0	1.05	3.9	0.32	36.0	1.55	120	1.97	19.0	0.53	5.60	0.09	160	8.1	302	68	1.9	2.60	0.21	2.4
	12/10/20	0	WELLS(100%)	23.0	1.15	3.4	0.28	60.0	2.59	130	2.13	25.0	0.70	3.80	0.06	220	8.1	423	72	3.1	3.10	0.57	4.2
	11/05/20	48	WELLS(100%)	23.0	1.15	4.1	0.34	50.0	2.16	120	1.97	21.0	0.59	6.20	0.10	200	8.3	343	74	2.4	2.90	0.35	2.0
	10/09/20	48	CVC(29%)/WELLS(71%)	19.0	0.95	3.9	0.32	42.0	1.81	120	1.97	21.0	0.59	6.20	0.10	180	8.2	336	63	2.3	3.30	0.34	1.3
	09/10/20	134	FKC(71%)/WELLS(29%)	18.0	0.90	2.6	0.21	29.0	1.25	73	1.20	12.0	0.34	5.00	0.08	120	7.9	225	56	1.6	0.29	0.20	2.5
08/11/20	196	FKC(51%)/CVC(6%)/Kern River(12%)/WELLS(31%)	35.0	1.75	7.6	0.62	42.0	1.81	110	1.80	22.0	0.62	15.00	0.24	220	8.0	378	120	1.7	ND	0.22	4.3	
	Average			22.0	1.1	4.2	0.3	41.4	1.8	117.4	1.9	19.4	0.5	7.8	0.1	177.1	8.2	324.1	71.9	2.1	2.5	0.3	2.5
South Canal	09/09/21	110	CVC(23%)/WELLS(77%)	32.0	1.60	9.2	0.75	45.0	1.94	140	2.30	44.0	1.24	10.00	0.16	240	8.3	453	120	1.8	0.06	0.22	1.8
	08/09/21	0	CVC(7%)/KD WELLS(5%)/WELLS(88%)	40.0	2.00	12.0	0.98	45.0	1.94	160	2.62	61.0	1.71	12.00	0.19	280	8.2	525	150	1.6	ND	0.14	1.6
	07/08/21	90	CVC(7%)/KD WELLS(6%)/WELLS(87%)	31.0	1.55	8.7	0.71	41.0	1.77	140	2.30	37.0	1.04	11.00	0.18	230	8.2	440	110	1.7	0.27	0.16	1.5
	06/04/21	160	FKC(21%)/CVC(5%)/KD WELLS(4%)/WELLS(70%)	27.0	1.35	7.4	0.61	46.0	1.98	140	2.30	35.0	0.98	10.00	0.16	220	8.2	4	98	2.0	1.40	0.25	4.9
	05/07/21	120	KD WELLS & KD MAIN(12%)/WELLS(88%)	34.0	1.70	9.7	0.80	40.0	1.72	140	2.30	37.0	1.04	9.70	0.16	230	8.1	420	120	1.6	ND	0.12	1.0
	04/07/21	140	KD WELLS & KD MAIN(9%)/WELLS(91%)	32.0	1.60	9.0	0.74	39.0	1.68	140	2.30	32.0	0.90	9.00	0.15	210	8.2	381	120	1.6	ND	0.15	1.6
	03/12/21	50	WELLS(100%)	33.0	1.65	8.5	0.70	40.0	1.72	140	2.30	35.0	0.98	11.00	0.18	220	8.2	403	120	1.6	ND	0.18	2.2
	02/11/21	20	CVC(18%)/WELLS(82%)	35.0	1.75	9.1	0.75	38.0	1.64	120	1.97	37.0	1.04	15.00	0.24	220	8.4	410	120	1.5	ND	0.11	1.6
	01/11/21	10	WELLS(100%)	43.0	2.15	13.0	1.07	48.0	2.07	140	2.30	80.0	2.25	7.40	0.12	290	8.1	546	160	1.7	ND	0.16	1.6
	12/10/20	0	WELLS(100%)	22.0	1.10	3.7	0.30	63.0	2.72	120	1.97	24.0	0.67	2.90	0.05	220	8.6	423	69	3.3	3.40	0.61	1.7
	11/05/20	70	WELLS(100%)	32.0	1.60	7.8	0.64	50.0	2.16	140	2.30	35.0	0.98	9.60	0.15	230	8.1	412	110	2.1	0.16	0.28	1.9
	10/09/20	100	CVC(21%)/WELLS(79%)	30.0	1.50	8.6	0.70	38.0	1.64	140	2.30	34.0	0.96	10.00	0.16	220	8.1	407	110	1.6	0.22	0.16	1.2
	09/10/20	200	FKC(68%)/WELLS(32%)	22.0	1.10	4.1	0.34	30.0	1.29	81	1.33	18.0	0.51	6.60	0.11	140	7.8	250	72	1.5	ND	0.19	3.6
08/11/20	130	FKC(46%)/CVC(5%)/Kern River(11%)/WELLS(38%)	35.0	1.75	7.5	0.61	58.0	2.50	140	2.30	36.0	1.01	10.00	0.16	260	7.9	430	120	2.3	ND	0.34	1.9	
	Average			32.0	1.6	8.5	0.7	44.4	1.9	134.4	2.2	38.9	1.1	9.6	0.2	229.3	8.2	393.1	114.2	1.9	0.9	0.2	2.0

EXHIBIT "C1"
ARVIN-EDISON WATER STORAGE DISTRICT
WATER SUPPLY WATER QUALITY SUMMARY

	Date	Flow ¹ cfs	Import Source	Calcium		Magnesium		Sodium		Bicarbonate		Chloride		Nitrate		TDS mg/l	pH	EC umhos/cm	Hardness mg/l	SAR	Gypsum lbs/AF	Boron mg/l	Turbidity NTU
				mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l	mg/l	me/l								
Intertie Pipeline	09/09/21	0	CVC(23%)/WELLS(77%)	37.0	1.85	12.0	0.98	44.0	1.90	160	2.62	49.0	1.38	13.00	0.21	260	8.2	496	140	1.6	ND	0.14	5.3
	08/09/21	0	CVC(7%)/KD WELLS(5%)/WELLS(88%)	31.0	1.55	10.0	0.82	43.0	1.85	130	2.13	44.0	1.24	11.00	0.18	240	8.5	451	120	1.7	ND	0.15	2.4
	07/08/21	0	CVC(7%)/KD WELLS(6%)/WELLS(87%)	32.0	1.60	9.9	0.81	43.0	1.85	150	2.46	40.0	1.12	11.00	0.18	240	8.3	453	120	1.7	0.04	0.17	1.8
	06/04/21	0	FKC(21%)/CVC(5%)/KD WELLS(4%)/WELLS(70%)	28.0	1.40	8.6	0.70	42.0	1.81	130	2.13	35.0	0.98	9.70	0.16	220	8.3	411	110	1.8	0.58	0.19	7.0
	05/07/21	0	KD WELLS & KD MAIN(12%)/WELLS(88%)	36.0	1.80	11.0	0.90	40.0	1.72	150	2.46	38.0	1.07	11.00	0.18	240	8.1	439	130	1.5	ND	0.13	3.4
	04/07/21	0	KD WELLS & KD MAIN(9%)/WELLS(91%)	36.0	1.80	12.0	0.98	41.0	1.77	150	2.46	39.0	1.10	10.00	0.16	240	8.3	431	140	1.5	ND	0.15	4.1
	03/12/21	0	WELLS(100%)	32.0	1.60	9.1	0.75	42.0	1.81	120	1.97	35.0	0.98	11.00	0.18	220	8.5	406	120	1.7	ND	0.16	3.6
	02/11/21	0	CVC(18%)/WELLS(82%)	33.0	1.65	8.9	0.73	50.0	2.16	120	1.97	48.0	1.35	10.00	0.16	240	8.3	448	120	2.0	ND	0.23	3.9
	01/11/21	0	WELLS(100%)	40.0	2.00	12.0	0.98	48.0	2.07	130	2.13	70.0	1.97	23.00	0.37	300	8.2	547	150	1.7	ND	0.15	9.0
	12/10/20	0	WELLS(100%)	30.0	1.50	8.5	0.70	61.0	2.63	110	1.80	58.0	1.63	4.30	0.07	260	8.4	513	110	2.6	ND	0.39	9.4
	11/05/20	0	WELLS(100%)	30.0	1.50	8.6	0.70	41.0	1.77	120	1.97	27.0	0.76	8.70	0.14	200	8.5	362	110	1.7	ND	0.15	1.8
	10/09/20	0	CVC(21%)/WELLS(79%)	30.0	1.50	8.9	0.73	38.0	1.64	120	1.97	38.0	1.07	9.50	0.15	220	8.4	414	110	1.6	ND	0.15	3.9
	09/10/20	0	FKC(68%)/WELLS(32%)	24.0	1.20	4.9	0.40	35.0	1.51	83	1.36	24.0	0.67	6.30	0.10	170	8.5	284	80	1.7	ND	0.20	2.8
	08/11/20	0	FKC(46%)/CVC(5%)/Kern River(11%)/WELLS(38%)	30.0	1.50	8.4	0.69	47.0	2.03	100	1.64	36.0	1.01	9.50	0.15	220	8.4	375	110	2.0	ND	0.17	2.2
		Average			32.1	1.6	9.5	0.8	43.9	1.9	126.6	2.1	41.5	1.2	10.6	0.2	233.6	8.3	430.7	119.3	1.8	0.3	0.2

Water Supply Water Quality Note: ¹ Positive flow rate is reverse flow into the District. Where the reported value is ND, the method detection limit is entered.
Water Supply Water Quality Note: ² Reverse flow into the District South Canal (Sycamore check gate was closed).
Water Supply Water Quality Note: ³ Constituent ran past sample hold time.

ND:	NONE DETECTED.	pH:	A MEASURE OF ACIDITY. A pH < 7 IS ACIDIC, pH = 7 IS NEUTRAL, pH > 7 IS BASIC. NORMAL RANGE IS 6.5 - 8.4. A pH > 8 MAY NEED TO BE BUFFERED FOR PESTICIDE APPLICATION. AFFECTS NUTRIENT AVAILABILITY.
NA:	NOT AVAILABLE OR NOT TESTED.		
mg/l:	MILLIGRAMS PER LITER; SAME AS PARTS PER MILLION (ppm).		
me/l:	MILLEQUIVALENTS PER LITER; SAME AS EQUIVALENTS PER MILLION (epm).	EC:	ELECTRICAL CONDUCTIVITY. A MEASURE OF WATER SALINITY; SOIL - IN MILLIMHOS PER CENTIMETER (mmho/cm); WATER - MORE OFTEN, IN MICROMHOS PER CENTIMETER (umhos/cm). EC < 700 (umhos/cm) HAS NO RESTRICTIONS FOR AGRICULTURAL USE. EC < 200 (umhos/cm) CAN REDUCE INFILTRATION RATE.
INTAKE:	SAMPLE TAKEN AT COTTONWOOD RD. SOUTH OF PANAMA LANE.		
NORTH:	SAMPLE TAKEN DOWNSTREAM OF SYCAMORE CHECK GATE.		
SOUTH:	SAMPLE TAKEN DOWNSTREAM OF TEJON CHECK GATE.		
INTERTIE:	TERMINUS OF SOUTH CANAL (S93 FOREBAY).		
SODIUM:	FOR SURFACE IRRIGATION: SAR < 3 IS GOOD. FOR SPRINKLER IRRIGATION: SODIUM < 3 me/l IS GOOD.	HARDNESS:	HARD WATER, INDICATING CALCIUM AND MAGNESIUM, IS BENEFICIAL FOR AGRICULTURE.
NITRATE:	NITRATE IN WATER SLIGHTLY REDUCES FERTILIZER REQUIREMENT.		
BICARBONATE:	BICARBONATE < 1.5 me/l IS SATISFACTORY FOR OVERHEAD SPRINKLERS.		
CHLORIDE:	FOR SURFACE IRRIGATION CHLORIDE < 4 me/l IS GOOD.	SAR:	SODIUM ADSORPTION RATIO. A RATIO OF SODIUM TO CALCIUM AND MAGNESIUM. EVALUATE WITH EC.
TDS:	TDS < 450 IS ACCEPTABLE FOR UNRESTRICTED USE.		SAR = 0 - 3 AND EC > 400 ACCEPTABLE SAR = 3 - 6 AND EC > 900 ACCEPTABLE
GYPSUM:	AMOUNT OF CALCIUM SULFATE IN POUNDS PER ACRE-FOOT OF WATER APPLIED. INCREASES WATER PERMEABILITY AND HELPS CORRECT EXCESS SODIUM. INCREASES CLAY FLOCCULATION FOR INCREASING PERMEABILITY.	BORON:	BORON < 0.50 mg/l IS SATISFACTORY FOR ALL CROPS. EXCESSIVE BORON IS PHYTOTOXIC (BURNS) TO PLANTS.

EXHIBIT "C-2"
ARVIN-EDISON WATER STORAGE DISTRICT
2021 AQUATIC PEST CONTROL TREATMENTS TO CANALS & SPREADING BASINS

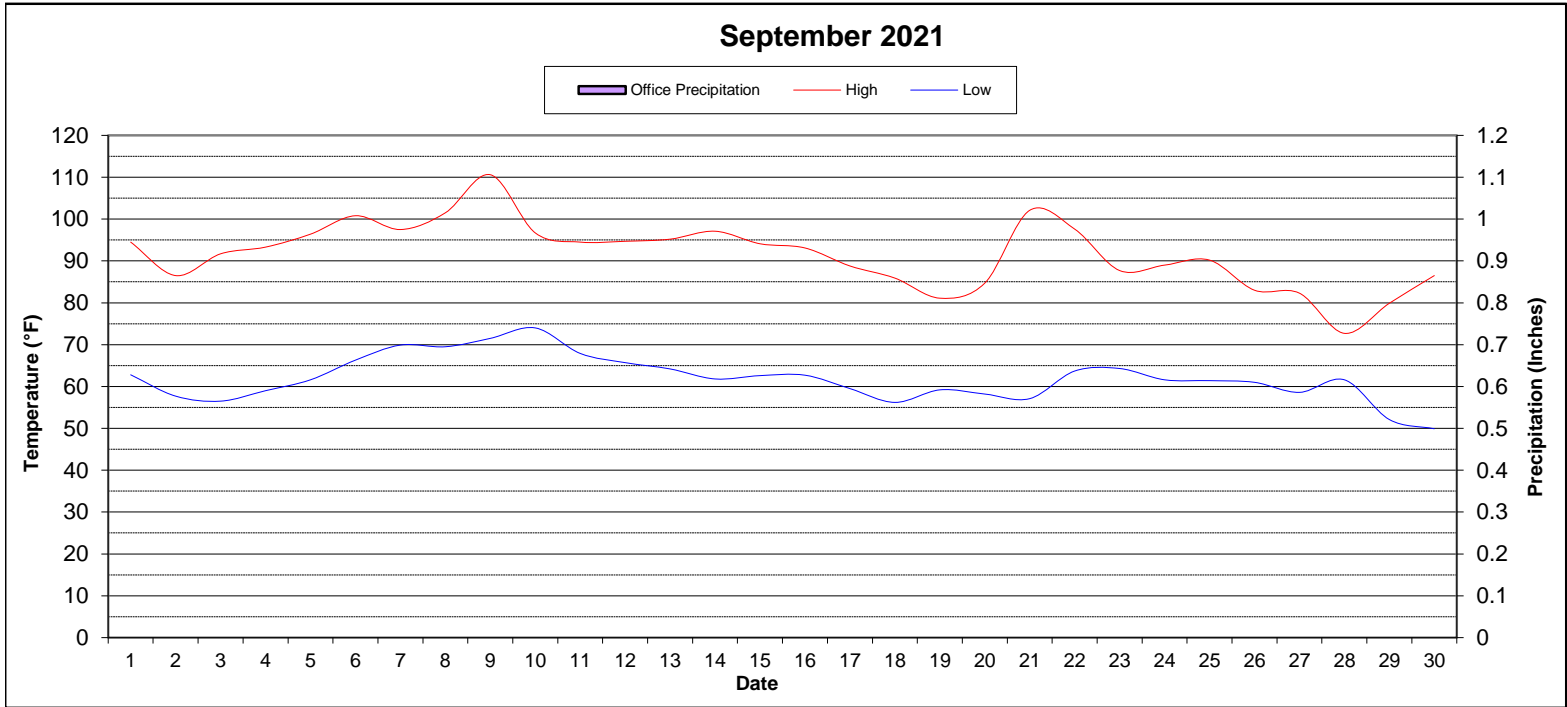
Treatment Weeks (Monday)	Temps	Intake Stine Siphon	North						Syc. Check	PP 32P1	PP 38P1	Tej. Ponds	Tej. Check	615 Check	729 Check	883 Check	Spill Way	Intertie Forbay
			Bal. Res.	PP 24P1	NCSW	PP 41P1	PP 55P1	Syc. Ponds										
		353+87	145+00	237+00	326+50	413+10	546+00	576+50	664+30	291+50	386+30		458+40	615+00	729+10	883+00	885+45	900+27
JAN	01/04/21																	
	01/11/21																	
	01/18/21																	
	01/25/21																	
	02/01/21	38-58																
FEB	02/08/21																	
	02/15/21																	
	02/22/21																	
	02/22/21	36-69																
	03/01/21																	
MAR	03/01/21																	
	03/08/21																	
	03/08/21																	
	03/15/21																	
	03/15/21																	
	03/22/21																	
	03/22/21																	
	03/22/21																	
	03/29/21																	
	03/29/21																	
APR	04/05/21																	
	04/12/21																	
	04/12/21																	
	04/19/21																	
	04/26/21																	
MAY	05/03/21																	
	05/10/21																	
	05/17/21																	
	05/24/21																	
	05/24/21																	
JUN	05/31/21																	
	06/07/21																	
	06/14/21																	
	06/21/21																	
	06/28/21																	
JUL	06/28/21																	
	07/05/21																	
	07/05/21																	
	07/12/21																	
	07/12/21																	
AUG	07/19/21																	
	07/19/21																	
	07/26/21																	
	07/26/21																	
	08/02/21																	
	08/02/21																	
	08/09/21																	
	08/09/21																	
	08/09/21																	
	08/16/21																	
SEPT	08/23/21																	
	08/23/21																	
	08/30/21																	
	08/30/21																	
	09/06/21																	
OCT	09/13/21																	
	09/13/21																	
	09/20/21																	
	09/20/21																	
	09/27/21																	
NOV	10/04/21																	
	10/11/21																	
	10/18/21																	
	10/25/21																	
	11/01/21																	
DEC	11/08/21																	
	11/15/21																	
	11/22/21																	
	11/29/21																	
	12/06/21																	
12/13/21																		
12/20/21																		
12/27/21																		

2021 Cost To Date	Treatment	Material	Labor	Total
	Captain/Nautique	\$123,691	\$11,152	\$134,843
	Phycomycin	\$24,896	\$13,440	\$38,336
	Cascade	\$0	\$0	\$0
	Teton/Hydrothol	\$178,219	\$48,880	\$227,099
	Spreading Basins	\$0	\$0	\$0
	Total	\$326,805	\$73,472	\$400,277

Shaded weeks are actual
 Copper treatment (gal/lbs) for algae and pondweed (injected/broadcast)
 Phycomycin (hydrogen peroxide) treatment (lbs) for algae (broadcast)
 Endothall treatment (gal) for milfoil/basins (injected)
 Endothall treatment (gal) for algae (injected)
 Sonar/Clearcast/RoundUp Custom/MSO (gal)
 Winter Maintenance

Year Type	Amount	Year
Critical-High	\$400,277	2021
Dry	\$399,808	2020
Wet	\$105,928	2019
Normal-Dry	\$235,599	2018
Wet	\$222,685	2017
Normal-Dry	\$186,034	2016
Critical-Low	\$262,734	2015
Critical-High	\$367,563	2014
Dry	\$528,770	2013
Dry	\$504,159	2012
Wet	\$233,449	2011
Normal-Wet	\$24,969	2010
Normal-Wet	\$226,466	2009
Normal-Dry	\$341,506	2008
Dry	\$464,165	2007
Wet	\$341,920	2006
Wet	\$89,797	2005
Normal-Dry	\$65,324	2004
Normal-Dry	\$106,107	2003

EXHIBIT "D"
ARVIN-EDISON WATER STORAGE DISTRICT
SUMMARY OF CLIMATOLOGICAL OBSERVATIONS



PRECIPITATION	BAL RES (1)		OFFICE (2)		SYCAMORE (3)		TEJON (4)		INTERTIE (5)	
	INCHES	% AVG.	INCHES	% AVG.	INCHES	% AVG.	INCHES	% AVG.	INCHES	% AVG.
AVG. MONTHLY	0.00		0.18		0.15		0.14		0.00	
AVG. YEAR TO DATE	0.00		0.25		0.21		0.20		0.00	
CURRENT MONTH	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%
CUMULATIVE (07/01/21 - 06/30/22)	0.00	0%	0.00	0%	0.00	0%	0.00	0%	0.00	0%

TEMPERATURE (6)	(°F)	DATE	TIME
MAXIMUM TEMPERATURE	109	9/9/2021	3:00 PM
AVERAGE MAXIMUM TEMPERATURE	92		
# DAYS THIS MONTH ABOVE 100 °F	4		
MINIMUM TEMPERATURE	51	9/30/2021	6:00 AM
AVERAGE MINIMUM TEMPERATURE	62		
# DAYS THIS MONTH BELOW 32 °F	0		

WIND (6)	M.P.H.	DATE	TIME	DRCTN
MAXIMUM WIND SPEED	15.6	9/9/2021	5:00 PM	SE
AVERAGE WIND SPEED	3.7			
AVERAGE WIND SPEED @ 8:00 AM	2.9			

BAROMETRIC PRESSURE (7)	IN. HG	DATE	TIME
AVERAGE PRESSURE @ 8:00 AM	29.43		
MAXIMUM PRESSURE	29.55	9/19/2021	9:00 AM
MINIMUM PRESSURE	29.18	9/1/2021	1:00 AM

NOTES

(1) October 2018 to Present data gathered from District rain gauges
(2) 1975 to Present data gathered from District rain gauges
(3) 1968 to Present data gathered from District rain gauges
(4) 1967 to Present data gathered from District rain gauges
(5) October 2018 to Present data gathered from District rain gauges
(6) Data retrieved from CIMIS (<http://www.cimis.water.ca.gov/WSNReportCriteria.aspx>)
(7) Data retrieved from Weather Underground (<https://www.wunderground.com/us/ca/arvin/zmw:93203.1.99999>)
Precipitation Day is 8:00 AM to 8:00 AM

EXHIBIT "E"
ARVIN-EDISON WATER STORAGE DISTRICT
WY2021 ENERGY CONSUMPTION AND POWER DEMAND

ENERGY CONSUMED - KWH							TOTAL DEMAND - KW						
Month	Forrest Frick PP	Distrib. System	Spreading	Wells	Intertie PP	Total	Forrest Frick PP	Distrib. System	Spreading	Wells	Intertie PP	Total	Load Factor
MAR 21	88,700	2,479,579	14,996	6,161,961	3,553	8,748,789	1,197	12,574	173	15,643	6	29,593	40%
APR	556,206	4,277,014	17,268	10,765,374	3,628	15,619,490	1,578	13,994	322	20,620	6	36,520	59%
MAY	498,414	4,857,866	43,811	13,362,056	4,004	18,766,151	1,883	14,195	785	21,098	6	37,967	66%
JUN	616,755	5,088,519	44,002	13,815,490	4,067	19,568,833	2,285	13,428	783	20,484	7	36,987	73%
JUL	545,509	5,297,896	26,235	13,729,032	4,394	19,603,066	1,506	13,829	331	20,488	8	36,162	73%
AUG	486,033	5,275,133	37,622	13,054,560	4,277	18,857,624	1,593	14,411	338	19,745	7	36,094	70%
SEP													
OCT													
NOV													
DEC													
JAN 22													
FEB													
TOTAL	2,791,617	27,276,007	183,933	70,888,474	23,922	101,163,953							

Notes: - Since 2005 KW records reflect non-simultaneous demands.
- Energy use for lighting accounts for approximately 90,000 kWh/month at District wellfields and 4,000 kWh/month at the Intertie Pumping Plant

EXHIBIT "F"
 ARVIN-EDISON WATER STORAGE DISTRICT
2021 WATER YEAR WELLFIELD PRODUCTION - AF

Month	Bal Res		North Canal 5		Wellfield						Total		
	AF	% of Historical Max	AF	% of Historical Max	North		Sycamore		Tejon		AF	AF / Day	% of Historical Max
					AF	% of Historical Max	AF	% of Historical Max	AF	% of Historical Max			
MAR - 21	0	0%	720	59%	2,580	116%	2,327	36%	1,989	36%	7,616	246	49%
APR	0	0%	908	75%	3,051	135%	4,150	60%	4,010	80%	12,119	404	81%
MAY	98	19%	1,071	86%	3,684	125%	4,804	66%	4,593	85%	14,250	475	94%
JUN	188	38%	1,044	86%	3,772	113%	4,814	66%	4,348	79%	14,166	457	87%
JUL	148	18%	1,061	85%	3,800	112%	4,708	63%	4,209	78%	13,926	449	86%
AUG	33	5%	1,033	83%	3,779	110%	4,461	61%	3,854	74%	13,160	425	82%
SEP	3	0%	856	70%	3,297	136%	3,384	51%	3,646	81%	11,186	373	78%
OCT													
NOV													
DEC													
JAN - 22													
FEB													
Total	470		6,693		23,963		28,648		26,649		86,423	406	80%
Ratio	1%		8%		28%		33%		31%		100%	Average	
Wells	4		5		14		34		29		86		

EXHIBIT "G"
ARVIN-EDISON WATER STORAGE DISTRICT
2021 WATER YEAR GROSS SPREADING - AF

Month	Bal Res	North Gravity	North Pressure	Sycamore	Tejon Gravity	Tejon Pressure	Murray Gravity	Landowner Recharge	Subtotal	In-Lieu	Temporary Water	Total
MAR-21	138	0	0	0	0	0	0	0	138	0	0	138
APR	109	0	0	0	0	0	0	0	109	0	0	109
MAY	209	0	0	0	0	38	0	0	247	0	0	247
JUN	235	0	0	0	0	66	0	0	301	0	0	301
JUL	204	0	0	0	0	0	0	0	204	0	0	204
AUG	289	0	0	0	0	0	0	0	289	0	0	289
SEP	323	0	0	0	0	0	0	0	323	0	0	323
OCT												
NOV												
DEC												
JAN-22												
FEB												
Total	1,507	0	0	0	0	104	0	0	1,611	0	0	1,611
Ratio	93.5%	0.0%	0.0%	0.0%	0.0%	6.5%	0.0%	0.0%	100.0%	0.0%	0.0%	100%
Ratio	93.5%			0.0%	6.5%		0.0%	0.0%				

Total	1,507		0			104			1,611			1,611
Pressure	94%		0%			6%			100%			100%

*NOTES: 1) 481 AF REGULATED IN MAY 3) 328 AF REGULATED IN JULY 5) 363 AF REGULATED IN SEPTEMBER
2) 382 AF REGULATED IN JUNE 4) 441 AF REGULATED IN AUGUST

EXHIBIT "H-1"
ARVIN-EDISON WATER STORAGE DISTRICT
STATIC VS PUMPING WATER LEVELS IN DISTRICT WELLS - SEPTEMBER 2021
 ALL VALUES IN FEET

	WELL #	STATIC LEVEL	PUMPING LEVEL	BOWL DEPTH	TOTAL DEPTH	DRAW DOWN	BOWL COVERAGE
NORTH CANAL (23)	N1	428	488	610	840	60	122
	N2	446	552	700	840	106	148
	N3	421	439	610	840	18	171
	N4	439	460	550	864	21	90
	N5	456	465	650	864	9	185
	N6	518	617	640	920	99	23
	N7	480	501	600	1010	21	99
	N8	421	458	560	970	37	102
	N9	453	564	700	990	111	136
	N10	457	504	560	990	47	56
	N11	430	456	562	1020	25	106
	N12	475	503	600	1030	28	97
	N13	480	505	600	1000	25	95
	N14	441	459	540	900	18	81
	N15	395	541	700	1200	146	159
	N16	409	487	600	1200	79	113
	N17	404	511	610	1200	106	99
	N18	298	471	610	1190	173	139
	N19	477	527	760	1300	50	233
	N20	596	635	820	1020	39	185
	N21	461	526	660	950	65	134
	N22	466	487	680	990	21	193
	N23	459	473	680	990	14	207
Avg	448	506					

	WELL #	STATIC LEVEL	PUMPING LEVEL	BOWL DEPTH	TOTAL DEPTH	DRAW DOWN	BOWL COVERAGE
TEJON (29)	71	592	618	800	1050	25	182
	72	592	624	800	1045	32	176
	73	583	620	800	1018	37	180
	74	562	615	800	1084	53	185
	75	578	601	800	1045	23	199
	76	566	621	700	996	55	79
	77	548	631	800	1066	83	169
	78	560	613	800	1038	53	187
	79	550	591	700	1032	42	109
	80	539	666	800	996	127	134
	81	515	575	700	925	60	125
	82	460	515	800	996	55	285
	83	514	631	800	996	118	169
	84	437	476	700	955	39	224
	86	606	645	800	996	39	155
	87	599	627	800	984	28	173
	88	590	641	800	948	51	159
	89	557	592	800	996	35	208
	90	474	536	700	996	62	164
	91	495	N/A	700	996	N/A	N/A
	92	599	648	800	996	49	152
	93	523	595	800	996	72	205
	94	624	671	860	996	46	189
	95	528	558	800	996	30	242
	96	627	786	800	996	159	14
	98	591	628	760	1340	37	132
	99	591	626	760	1340	35	134
	100	527	564	760	1340	37	196
	101	414	494	760	1310	80	266
Avg	550	607					

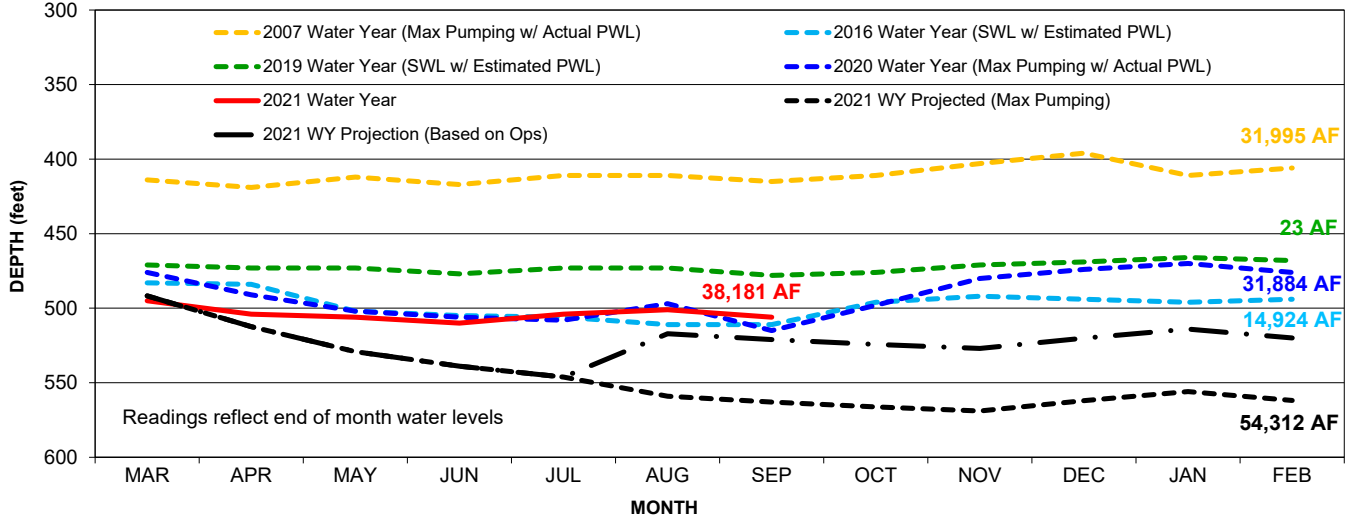
	WELL #	STATIC LEVEL	PUMPING LEVEL	BOWL DEPTH	TOTAL DEPTH	DRAW DOWN	BOWL COVERAGE
SYCAMORE (34)	1	469	518	705	800	49	187
	2	482	547	690	876	65	143
	4	501	545	700	876	44	155
	5	517	563	720	876	46	157
	6	450	524	690	876	74	166
	7	494	552	700	830	58	148
	8	444	497	640	860	53	143
	9	501	557	700	886	55	143
	10	480	519	690	850	39	171
	11	483	543	700	880	60	157
	12	492	538	700	860	46	162
	13	492	538	700	850	46	162
	14	488	575	670	810	88	95
	15	477	631	710	820	155	79
	16	474	640	700	888	166	60
	17	440	592	650	820	152	58
	18	449	470	650	820	21	180
	20	454	498	680	804	44	182
	21	471	501	690	856	30	189
	22	441	495	610	792	53	116
	23	438	491	600	788	53	109
	24	458	501	580	780	44	79
	25	444	474	610	777	30	136
	26	445	494	690	816	49	196
	28	415	519	660	782	104	141
	29	466	547	690	787	81	143
	31	454	545	660	725	90	116
	32	414	543	640	739	129	97
	33	474	587	700	780	113	113
	34	425	N/A	700	781	N/A	N/A
	35	464	543	700	800	79	157
	36	431	457	600	820	26	143
	37	435	458	540	820	23	82
	38	532	550	860	1270	18	310
Avg	464	532					

MONTHLY SUMMARY - AVERAGE WATER LEVELS						
READINGS END OF	STATIC LEVELS			PUMPING LEVELS		
	N. CANAL	SYCAMORE	TEJON	N. CANAL	SYCAMORE	TEJON
Sep-20	449	435	491	515	474	563
OCT	433	426	489	498	465	562
NOV	415	392	433	480	429	500
DEC	408	391	442	474	429	500
JAN-21	405	390	439	470	428	513
FEB	411	405	445	476	443	519
MAR	432	428	469	495	471	549
APR	439	436	479	504	497	564
MAY	439	454	520	506	519	575
JUN	453	464	532	510	532	599
JUL	445	469	540	504	541	600
AUG	445	462	548	501	529	605
SEP	448	464	550	506	532	607
CHANGE TO-DATE	1	-29	-59	9	-58	-44

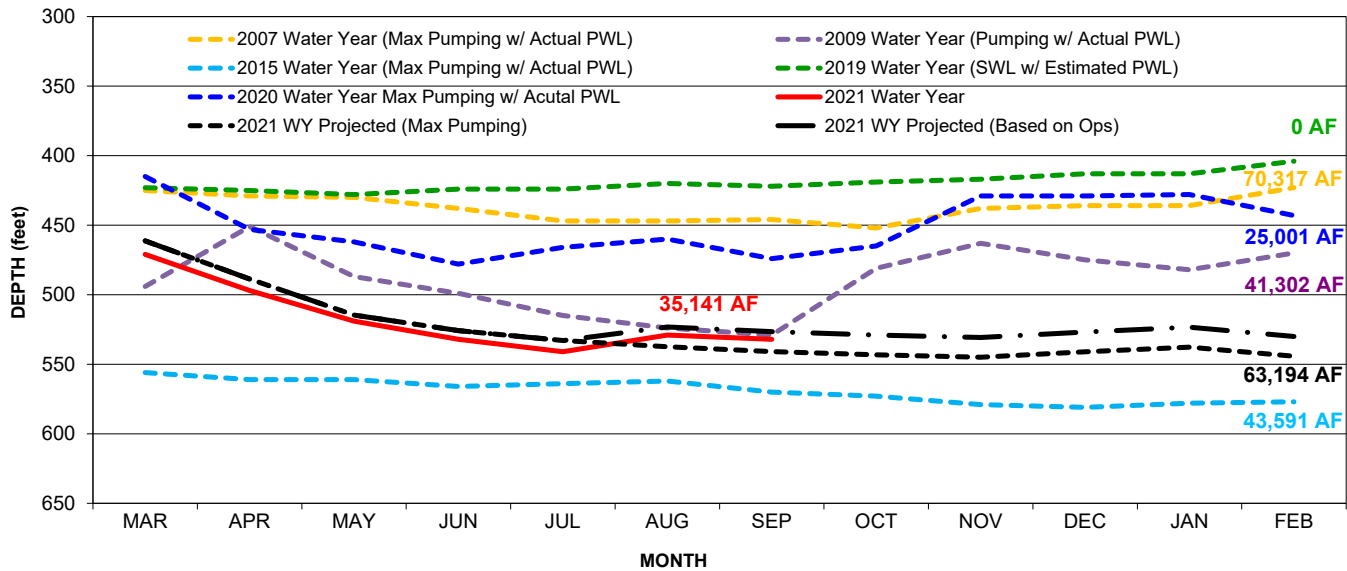
OUT OF SERVICE (8)	*Bowl depth measured to top of pump
AIRLINE FAILURE (8)	*Pumping levels are estimated based on
FAILED (2)	previous draw down records. (6 month average)
86 TOTAL WELLS	*Airline failure levels were obtained with acoustic sounder

EXHIBIT "H-2"
ARVIN-EDISON WATER STORAGE DISTRICT
WELLFIELD PUMPING WATER LEVELS - 2007-09, 2013-16, AND 2018-21

NORTH CANAL



SYCAMORE WELLFIELD



TEJON WELLFIELD

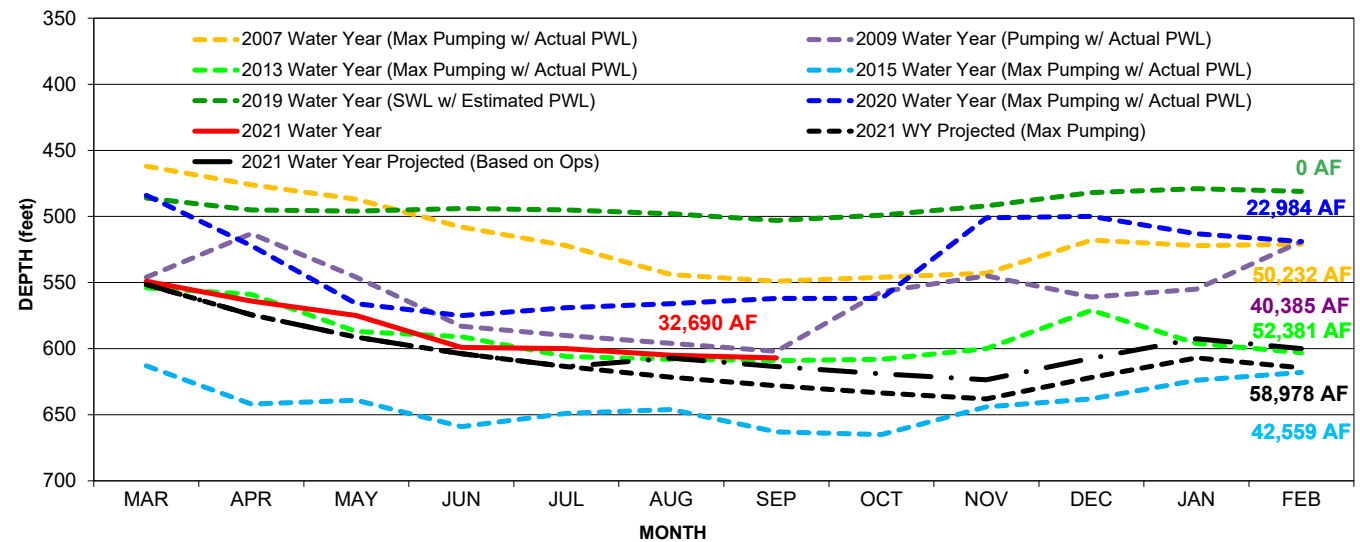



EXHIBIT "I"

September 2021

Sun	Mon	Tue	Wed	Thu	Fri	Sat
<p>JSM—Blue MD—Orange Staff—Green Board—Brown</p>	<p>ACWA – Association of California Water Agencies ACSD - Arvin Community Services District BOD - Board of Directors COB - City of Bakersfield CVC - Cross Valley Canal CVPIA - Central Valley Project Improvement Act EC- Executive Committee ETGSA– East Tule Basin GW Sustainability Agency ETFOG - Friant Operational Guidelines EIR - Environmental Impact Report FWA - Friant Water Authority</p>	<p>GSP - Groundwater Sustainability Plan GTM - GoToMeeting KGA - Kern Groundwater Authority KC - Kern County KCWA - Kern County Water Agency KDWD - Kern Delta Water District KRGSA - Kern River Groundwater Sustainability Agency KRWCA - Kern River Watershed Coalition Authority MAR - Managed Aquifer Recharge MTs - Microsoft Teams MWD - Metropolitan Water District RFG - Restoration Flow Guidelines RWA– Restoration Water Account</p>	<p>1 SJV CAP Water Supply (Zoom) PWRPA BOD (WebEx)</p>	<p>2 SJRRP (Visalia) JDA Ops Plan (Visalia) KRWCA</p>	<p>3 Friant Managers (Lindsay) SJV Blueprint (Zoom)</p>	4
5	<p>6</p> 	<p>7 JDA Ops Plan (Visalia) Board Meeting Prep w/ Legal Counsel WWGSA BOD w/ Martinez & Giumarra</p>	<p>8 Friant WQ w/Kern Tulare (Camp)</p>	<p>9 SJRRP (TC)</p>	<p>10 Kern Managers (DMS)</p>	11
12	<p>13 FWA EC w/Camp JDA (TC) KGA EC - Yurosek</p>	<p>14 AEWSD BOD</p>	<p>15 WRMWS D Coordination WDT Update w/WAPA (MT) 123TCP Update w/Legal Counsel (TC) EKI Update (MT)</p>	<p>16 FFPP/Eastside Canal Intertie w/KDWD Bakersfield Rotary</p>	<p>17 WDT Update (MT)</p>	18
19	<p>20 FWA Finance Comm - Giumarra (WebEx)</p>	<p>21 Staff Budget Meeting</p>	<p>22 KGA BOD w/Yurosek Ad-Hoc Water Quality w/ Camp (Lindsay) AEWSD All-Hands Pension Meeting</p>	<p>23 Friant BOD w/Camp (Tulare)</p>	<p>24 Kern Managers (Basin Study) AE101 w/Potential New Landowner</p>	25
26	<p>27 AE/Semitropic WSD w/Camp & Yurosek WQ Small Group w/ USBR (TC)</p>	<p>28 SJV CAP Plenary Group (Zoom)</p>	<p>29 Foremen-Wage & Benefits WQ Update w/EKI & Legal Counsel (MTs) SJRRP (MTs)</p>	<p>30 AEWSD Special BOD District Tour w/Todd Robins (Legal Counsel) Funding Opportunities w/P&P</p>	<p>SJVWIA—San Joaquin Valley Water Infrastructure Authority SJRRP - San Joaquin River Restoration Program SGMA - Sustainable Groundwater Management Act TF - Temperance Flat Steering Committee TC- Teleconference WAKC - Water Association of Kern County WBC - Wage & Benefit Comm. WRMWS D - Wheeler Ridge-Maricopa Water Storage District WWGSA - White Wolf Groundwater Sustainability WMP - Water Mgmt. Program WQSA - Water Quality Sub-Account</p>	