

ARVIN-EDISON WATER STORAGE DISTRICT

REPORT OF DISTRICT OPERATIONS

October 2022



Startup at Sycamore Well #26

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WATER SUPPLY

Friant Division Central Valley Project (CVP)

- The 2022 Water Year allocation is 30% which amounts to 12,000 AF.
- Exhibit “A” provides additional supply information for 2022 Water Year supplies

San Joaquin River (SJR) Restoration Program (SJRRP)

- The 2022 Runoff Year is estimated at 1,072,000 AF of natural river runoff in the SJR watershed, which is a “Normal-Dry” year type pursuant to SJR settlement and accordingly, the SJRRP would receive a 232,470 AF of water supply
- Given the need to meet San Joaquin River Exchange Contract demands, the SJRRP was reduced to zero in April. However, once this demand was starting to be met by the Delta-Mendota Canal in July, the Restoration Administrated updated its flow recommendation to conserve remaining volume of cold water for fall and winter months. As a result, approximately 101,000 acre-feet is being released as Unreleased Restoration Flows URF (see Exhibit A for additional URF supplies)
- 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

Shasta System CVP

- The 2022 allocation for south of Delta Ag remains at 0%

State Water Project (SWP)

- The 2022 Table A allocation remains at 5%

Kern River

- 2022 supplies are currently estimated at 25% of average

Water Bank Facilities

- Given limited initial surface supply allocations, heavy reliance on wellfields and previously banked water is expected for the 2022 Water Year (80,000 AF)

Metropolitan Water District (MWD) Program

- MWD beginning balance is 119,127 AF in water bank reserves
- The District obtained its thirteenth 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 21, 2023
- 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

Rosedale-Rio Bravo Water Storage District (RRBWSD) Program

- The District’s 2022 beginning account balance for water held in RRBWSD is at 54,461 AF
- District anticipates receiving 10,000 AF from the program to supplement other surface water supplies

- Districts executed a “2022 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 executed a 2022 operational exchange in which AEWSD’s 10,000 acre-feet from RRBWSD would be delivered via KDWD from April through September

District Partnerships

- The District has participated in water management programs with the following districts/agencies in Water Year 2022:

Chowchilla Water District	Orange Cove Irrigation District
Del Puerto Water District	Rosedale-Rio Bravo Water Storage District
Exeter Irrigation District	San Joaquin River Exchange Contractors
Fresno County	San Joaquin River Restoration Program
Ivanhoe Irrigation District	Saucelito Irrigation District
Kern Delta Water District	Shafter-Wasco Irrigation District
Kern Water Bank	Sun Pacific
Lindmore Irrigation District	Tulare Irrigation District
Lindsay- Strathmore Irrigation District	Westside Mutual Water Company

WATER DEMAND

- District surface water deliveries for the month were 10,016 AF
- The following is a summary of surface water deliveries for October 2022

	October 2022		Year to Date	
	Historical	2022 WY	Historical	2022 WY
Turnout Deliveries	10,677	9,863	118,390	101,379
In-Lieu Deliveries	-	-	-	-
Temporary Water	-	-	-	-
Spreading	-	-	-	-
Total	10,677	9,863	118,390	101,379

- Exhibit “B” illustrates the delivery data
- The month's peak daily in-District demand was 311 cfs, which occurred on the 4th
- Exhibit "C-1" details Canal Water Quality information
- Exhibit “C-2” presents the Aquatic Pest Control Treatments (\$593,416) for Calendar Year 2022

GENERAL

- District vehicles consumed an estimated 4,243 gallons of fuel during the month (average fuel efficiency of 13 mpg)
- There were 242 hours lost due to illness (including COVID-19 hours) and 168 hours lost due to on-the-job injuries with one (1) employee out on Workers' Compensation Claim
- District is experiencing more frequent theft at various District facilities including Headquarters
- Exhibit "D" highlights precipitation, temperature, and wind speed
- Exhibit "E" summarizes energy consumption and power demand to date and for Water Year 2022 it is expected to generate an electrical demand of approximately 118 million kilowatt hours



Christopher Krauter accepting 20-Year Anniversary Award

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; the NEPA Categorical Exclusion has been completed.
- 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)
- North West Kern Resource Conservation District provides discounted on-farm irrigation distribution uniformity and efficiency testing

- Phone (661) 281-2746
- Website (<http://northwestkernrcd.org>)

Other Activities

- Administration and accounting of on-going water management programs
- Technical support and review of ongoing projects/studies such as:
 - Sunset Groundwater Recharge Facility (w/Kern Delta WD)
 - Coordinating power extension (PG&E, contractors, consultants)
 - Pump station and pipeline out for bids with potential award in September
 - Forrest Frick and Eastside Canal Intertie (w/ Kern Delta WD)
 - Completed environmental compliance with USBR
 - Working with PG&E on facilities extension for new service
 - Bid was awarded to W.M. Lyles Company
 - Potential Interconnections (w/ Wheeler Ridge-Maricopa WSD)
 - Coordination with both Districts' staff continued to deliver District water into the 850 Canal, which will ultimately be delivered back into AEWSD overlap lands with Wheeler-Ridge
 - Pump Replacement Program
 - Staff continues to make progress on Phase 2 of the program
 - Turnout Modification Requests
 - Temporary and/or In-Lieu Water Service Contract Requests
 - Freedom Farms
 - Frick Unit (Kern IRWMP project with application due in August)
 - Cathodic protection system upgrades
 - Pump Efficiency Testing
 - As needed for replaced pumps
 - Real Time Water Quality Monitoring
 - Remote connection for data access completed and website display is in progress
 - Intertie Pipeline Inspection
 - Coordinating potential use of pipeline diver tool with Xylem
 - Groundwater Metering
 - Coordinate warranty repairs with Manufacturer
 - Monthly production spreadsheet
 - Standtank Painting
 - Project management training with Engineering Technician Jose Santana
 - Tejon Spreading Works
 - Design repair for interbasin structure

SGMA Activities

- Continued coordination meetings and outreach activities
- Continued review of well permits
- Attended various GSA meetings
- Development of a potential Well Mitigation Policy
- Coordinate with project proponents regarding County's "Proof of Water" Policy
- Development of a customized Groundwater Model for AEWSD
- Continued coordination efforts to complete South of Kern River GSP (posted on

website www.aewsd.org)

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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 to Crimson Pipeline assignment
 - T6712 Block wall near Madison bridge crossing
 - PG&E Overhead crossing (Intake Canal at Madison and Ming)
 - Caltrans Potholing agreement at SR 58
 - PG&E helicopter landing zone at Tejon Spreading
- Reviewing/responding to multiple planning notices
 - Kern County (various developments/potential facility conflicts)
- 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
 - WDT 3 impact review
 - Power accounting report
 - Renewable Portfolio Standards review
- 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
 - Construction was completed waiting on County and PG&E for startup
 - Reviewed available local solar renewable energy certificates to Western Renewable Energy Generation Information System (credits to be used by District/PWRPA)
 - Review and coordinate Demand Response Program
 - MWD power correspondence review
 - District Power Master Planning and MicroGrid investigations
 - Forrest Frick Pumping Plant load capacity coordination
- 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
- Granite recharge
 - Geotech report discussions with project partners, close out project

SPREADING WORKS OPERATIONS (WELLFIELDS AND BASINS)

- Exhibit “F” summarizes wellfield production, which totaled 9,940 AF for the month
- Exhibit “G” summarizes gross direct spreading of 0 AF for the month August
- 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>
Sycamore	2	1967	300	Low Production and Excess Vibrations	Pulled equipment, replacement pump install to be scheduled
Sycamore	17	1967	300	Low Production	Back in Service
Sycamore	21	1970	300	Low Production	Back in Service
Tejon	77	1966	300	Excess Vibrations	Pulled equipment, replacement pump installed
Tejon	78	1966	300	Low Production	Pulled and inspected equipment, pump install to be scheduled
Tejon	83	1970	300	Excess Vibrations	Pulled and inspected equipment, replacement pump installed, startup scheduled
Tejon	95	1998	300	Low Production and Excess Vibrations	Equipment pulled, video, replacement pump install to be scheduled

- Five (5) out of 86 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

OPERATIONS DEPARTMENT ACTIVITIES

Routine Activities

- Operate and monitor the District’s water distribution and delivery systems including canals, wells, and reservoirs
- Monthly staff/foremen/safety meetings
- Inspect control systems at pumping plants (transducers, Cla-valves, battery back-ups, etc.)
- Assist personnel in the repair, replacement, and/or maintenance of facilities on an as-needed basis for the following items:
 - Replace flowmeter batteries (turnouts and wells)
 - Flush and clean various turnouts and appurtenances
 - Grease turnout valve operators
 - Maintain weed control (pumping plants, turnouts, air vents, and isolation valves)

- Change lights and panel bulbs (as needed)
- Inspect/replace water quality warning labels at turnouts
- Clean and/or replace air-chamber sight glasses
- Replace missing locks and chains (canal gates and turnouts)
- Perform middle of the month and end-of-month meter readings at Interties, Wells, Turnouts, and Pumping Plants (power)

Additional Activities

- Continued water patrol during the prorated period
- Reported various Pump plant, Wellfield and District facility control service repairs
- Responded to various pipeline leaks (S93-A-1)
- Dug out isolation valves (North & South turnouts)
- Responded to stand tank overflow (S93-P2)
- Monitored and patrolled F.F.P.P.
- Reported stolen chain link fence (N1-P4 and Balancing Reservoir)
- Responded to various drain back leak (N55-P6) and drain back repairs (N55-P1)
- Pulled down F.F.P.P forebay level in preparation for Intake Canal maintenance
- Perform meter accuracy and flow test (M-18 Turnout)
- Responded to multiple facilities and pumping plant alarms (reset and primed laterals)
- Addressed various wellfield start-up/shut down issues (North In lieu turnout D-5)
- Repaired or replaced valve air-vents(N1-P8, N8-P1, N41-P1), valve operators (T-77), meters (Turnouts T-68, W-29) and Wellfield (Unit #19, Sycamore #13, Tejon #74, Tejon #83, Tejon #88)Work on Winter Maintenance Project repair list

Underground Service Alert (USA) Report

- District initiated 0
- Responded to 135 USA notices to locate District underground facilities
 - 21 required markings of District facilities
 - 40 were renewals
 - 74 with no conflicts

Power Outages and/or Interruptions Involving the Following Systems

- Power outages for the month were (Laterals N1 (1), N41 (1), S64 (1) and OFFICE (1))

Laterals Prorates (number of days)

- No laterals were prorated this month

**MAINTENANCE DEPARTMENT
ACTIVITIES**

Routine Activities

- Aquatic and terrestrial weed control
- Routine gardening and maintenance at Headquarters and CIMIS station



New 2022 Bobcat (Top) & Sediment removal of the Intake Canal (Bottom)

- Fence and gate repairs (N1-P4 and Balancing Reservoir)
- Grading and water truck
-
- Mowing (CIMIS Station)
- Cleared out forebays (North and South Canal)
- Assisted other Departments as needed (Mechanic, Operations, and Pump Shop)
- Conducted monthly safety meeting

Additional Activities

- Assisted shop building stop log and installing parts on welding trailer
- Take readings of Piezometers along the Intake Canal for dewatering purposes
- Remove sediment from the Intake Canal

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
Alternator	1	A/C Service	4
Brakes	4	Belts	1
Tires	6	Headlights	1
Tire Repairs	4	Tail Lights	2
Rotors/Drums /Wheel Bearings	2	Wiper Blades/Engine Washes	14
Batteries	2	Cabin Filter	4
Fuel Filters	6	Trailer Lights/Spot Lights	5
Tune-ups	1	Routine Service	18
Clean TPS Sensor	6	Cleaned Throttle Body	6

- Heavy Equipment Repairs
 - Installed new tires (Rotary Cutter)
 - Fix A/C (John Deer Backhoe and Tractor Challenger)
 - Fix lights (Trail King Trailer #317)
 - Weekly inspection (gas tank and pump)

PUMP DEPARTMENT ACTIVITIES

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



New 10 CFS Split Case Pump

- Continued working with Engineering Department on Pump Replacement Program
 - Continued pilot testing for Phase 2 (horizontal pumps)
- Compressor and well motor/canal facilities oil changes district-wide
- Review Intake Canal Langmann gates (Stine Canal and Kern Island Canal) for repairs as needed
- Assist Maintenance Department with sediment removal of the Intake Canal

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>	None to Report				
<u>Vertical Motors</u>	North Well	1	300	N/A	Vandalism/wires cut
	Sycamore	21	300	N/A	Upper bearing failure
<u>Horizontal Pumps</u>	N8P2	41	5 CFS	103,485	Sleeves and bearings
	55P2	5	10 CFS	1229.3	Vapor locked and failed
	73P2	4	10 CFS	4042.1	Broken pump shaft
<u>Horizontal Motors</u>	None to Report				

CONTROLS DEPARTMENT ACTIVITIES

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
Circuit Breakers	1	Fuses/Tranducers	1
Hour Meters	1	Soft Start Equipment	2
Wiring	1	12KV Fuses	2

Additional Activities

- Programed Master SCADA Ignition Pro Designer software, updated graphic designs for pumping plants
- Worked with Aspect Engineering technicians on master PLC for data communication and programmed the ladder logic program concentrator of the north side pimp plants.
- Worked with GIGA Electrical to install UPS battery backup, power fail indicator lights and control relays for “power fail” alarm (Laterals N1-P6, N1-P8, N24-P1, N8 & N41)
- Worked with Agilitech crew to troubleshoot, repair and replace broken telemetry control wiring for the low suction and high cut off



Transformer Replacement at Sycamore Well #38

- switches at N55-P6 and replace well field's broken flood lights.
- Assisted Agilitech crew to replace underground motor cables at NC well #1 and N1-P5 Unit #1 & #2

FORREST FRICK PUMPING PLANT

- 561 AF of water was pumped during the month
- Consultants are designing reverse flow facilities into the Intake Canal to assist in regulating wellfield production during shoulder months to increase peaking water supplies

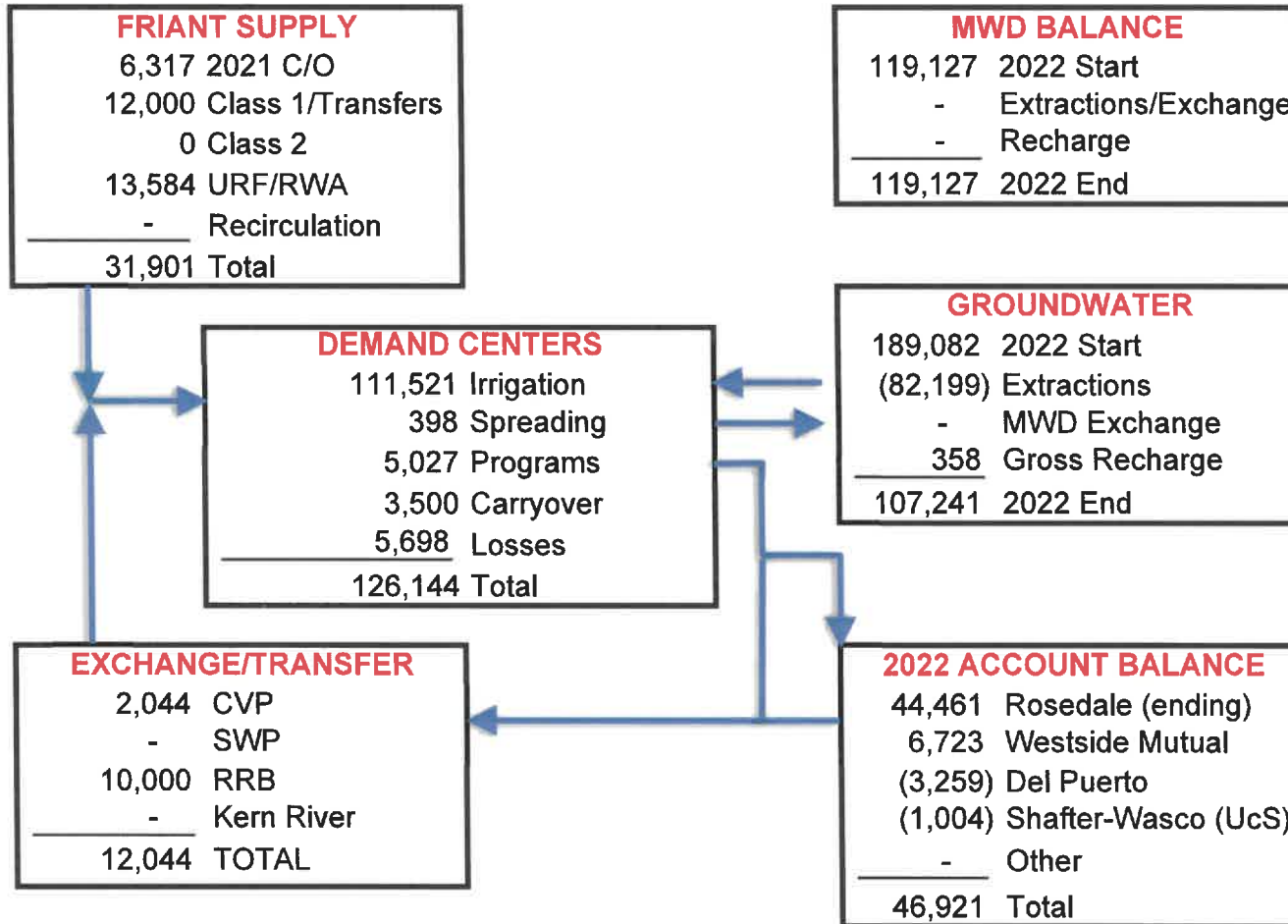
HOWARD FRICK PUMPING PLANT (AQUEDUCT INTERTIE)

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

EXHIBIT "A-1"
ARVIN-EDISON WATER STORAGE DISTRICT
2022 WATER SUPPLY AND DEMAND

<u>SUPPLY</u>	<u>AF</u>	<u>%</u>
FRIANT-KERN (F-K)		
CARRYOVER OF 2021 WATER	6,317	
30% OF 40,000 AF CLASS 1	12,000	
0% OF 311,675 AF CLASS 2 (Uncontrolled Season)/RWA	0	
0% OF 311,675 AF CLASS 2	0	
URF TIER 2 BLOCK 1	2,000	
PRIORITY URF	5,600	
URF TIER 2 BLOCK 2	1,581	
PRIORITY URF	4,403	
TRANSFER IN URF (TID)	870	
TRANSFER IN URF (LSID)	1,000	
TRANSFER IN CLASS 1 (SWID)	174	
SUBTOTAL	<u>33,945</u>	
FRESNO COUNTY	-600	
SJRRP RETURN	-3,500	
EXETER ID	-282	
IVANHOE ID	-281	
LINDMORE ID	-214	
ORANGE COVE ID	-50	
SAUCELITO ID	-100	
TOTAL F-K	<u>28,918</u>	23.9%
CROSS VALLEY CANAL (CVC)		
ROSEDALE-RIO BRAVO WSD (KDWD EXCHANGE)	0	
SLR 2022 RECIRCULATION	17	
LINDMORE ID	14	
CHOWCHILLA WD	24	
SHAFTER-WASCO ID	51	
DEL PUERTO WD	-106	
SLR 1% EVAPORATION LOSS	0	
TOTAL CVC	<u>0</u>	0.0%
STATE WATER PROJECT (AQUEDUCT)		
KT EXCHANGE	0	
TOTAL AQUEDUCT	<u>0</u>	0.0%
INTERTIE PIPELINE (IPL)		
RETURN TO MWD	0	
TOTAL IPL	<u>0</u>	0.0%
KERN RIVER		
FRESNO COUNTY	0	
MWD BANKING	0	
KERN DELTA (RRBWSO EXCHANGE)	0	
TOTAL KERN RIVER	<u>0</u>	0.0%
INTAKE CANAL PUMP-IN (IC)		
KERN DELTA WELLS	7,331	
KERN DELTA CENTRAL	2,669	
TOTAL INTAKE CANAL	<u>10,000</u>	8.3%
TOTAL IMPORT	38,918	32.1%
GROUNDWATER PUMPING		
IRRIGATION DEMAND	82,199	
FARM PUMP IN	0	
RETURN TO MWD	0	
TOTAL PUMPING	<u>82,199</u>	67.9%
TOTAL WATER SUPPLY	121,117	100.0%
DEMAND		
IRRIGATION DEMAND (MARCH-OCTOBER)	101,375	83.7%
IRRIGATION DEMAND (NOVEMBER-FEBRUARY)	10,146	8.4%
SPREADING (MARCH-OCTOBER)	398	0.3%
SPREADING (NOVEMBER-FEBRUARY)	0	0.0%
CARRYOVER TO 2023	3,500	2.9%
LOSSES/METERING INACCURACIES	5,698	4.7%
TOTAL DEMAND	121,117	100.0%

Exhibit "A-2"
 ARVIN-EDISON WATER STORAGE DISTRICT
2022 WATER MANAGEMENT



Surface Water	29,720	27%
Groundwater (51% of Max)	82,199	73%
Projected Irrigation Demand	111,919	100%

EXHIBIT "B" ARVIN-EDISON WATER STORAGE DISTRICT 2022 WATER YEAR DELIVERIES

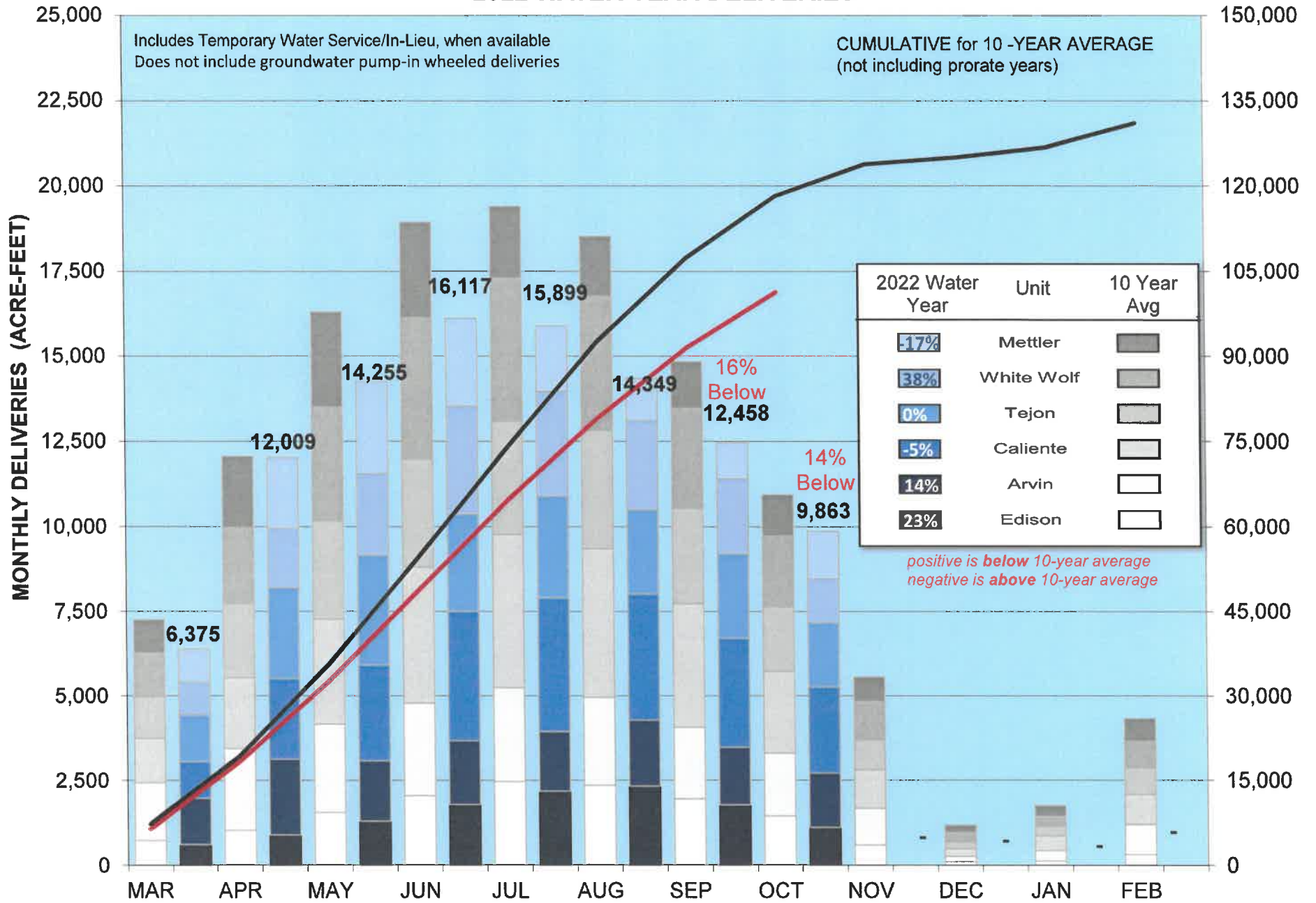
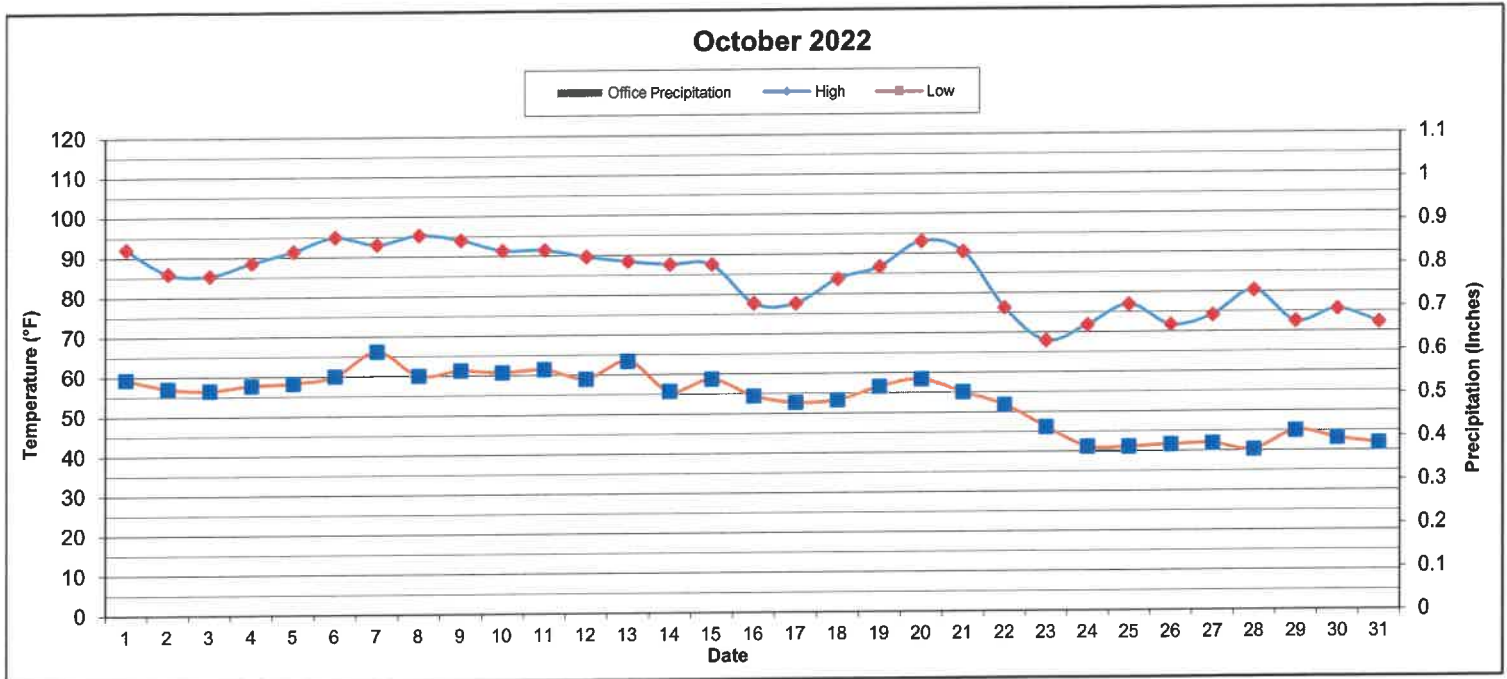


EXHIBIT "C1"
ARVIN-EDISON WATER STORAGE DISTRICT
WATER SUPPLY WATER QUALITY SUMMARY

	Date	Flow cfs	Import Source	Calcium		Magnesium		Sodium		Bicarbonate		Chloride		Nitrate		TDS	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									mg/l
Intake Canal	10/04/22	50	FKC(100%)	7.0	0.35	0.7	0.05	7.6	0.33	40	0.66	3.7	0.10	0.84	0.01	45	7.57	81.2	20	0.7	1.10	0.037	3.2	
	09/06/22	230	FKC(86%)/KD WELLS(14%)	9.2	0.46	1.1	0.09	8.3	0.36	44	0.72	4.7	0.13	1.40	0.02	53	7.87	101	28	0.7	0.75	0.064	2.3	
	08/11/22	180	FKC(82%)/KD WELLS(18%)	13.0	0.65	1.4	0.11	11.0	0.47	52	0.85	6.7	0.19	3.00	0.05	71	8.12	135	37	0.8	0.46	0.052	1.6	
	07/08/22	82	FKC(61%)/KD WELLS(39%)	23.0	1.15	2.3	0.19	19.0	0.82	90	1.48	12.0	0.34	4.80	0.08	120	8.44	223	67	1.0	0.98	0.096	1.9	
	06/07/22	30	FKC(81%)/KD WELLS & KD CENTRAL(19%)	30.0	1.50	4.5	0.37	26.0	1.12	110	1.80	17.0	0.48	8.70	0.14	170	8.4	313	93	1.2	0.37	0.15	2.1	
	05/09/22	30	KD WELLS & KD CENTRAL(100%)	20.0	1.00	3.5	0.29	24.0	1.03	98	1.61	9.3	0.26	2.50	0.04	130	8.2	254	64	1.3	1.40	0.16	6.4	
	04/07/22	30	KD WELLS & KD CENTRAL(100%)	33.0	1.65	5.3	0.43	25.0	1.08	120	1.97	16.0	0.45	7.70	0.12	180	8.2	320	110	1.0	ND	0.16	3.2	
	03/09/22	0	RESIDUAL FKC(100%)	6.0	0.30	0.8	0.06	5.5	0.24	29	0.48	3.3	0.09	0.34	ND	33	7.7	70	18	0.6	0.50	0.03	4.7	
	02/08/22	150	FKC(100%)	3.9	0.20	0.6	0.05	4.3	0.19	20	0.33	4.1	0.12	0.50	0.01	20	7.6	53	12	0.1	0.00	0.10	2.8	
	01/10/22	60	FKC(100%)	5.2	0.26	0.7	0.06	4.5	0.19	26	0.43	2.8	0.08	0.37	0.01	29	7.5	56	16	0.5	0.45	0.04	4.2	
	12/13/21	0	RESIDUAL FKC(100%)	17.0	0.85	1.0	0.08	25.0	1.08	58	0.95	17.0	0.48	6.60	0.11	120	8.1	221	46	1.6	0.12	0.04	1.7	
	11/09/21	80	FKC(100%)	16.0	0.80	1.2	0.10	21.0	0.91	67	1.10	13.0	0.37	3.50	0.06	100	8.0	197	46	1.3	0.78	0.09	2.6	
	10/07/21	40	CVC(100%)	7.5	0.38	0.7	0.06	8.0	0.34	33	0.54	3.8	0.11	1.10	0.02	43	7.6	79	22	0.8	0.47	0.03	1.8	
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		
	Average			14.2	0.7	1.7	0.1	14.1	0.6	58.8	1.0	8.4	0.2	3.0	0.1	82.8	7.9	156.6	43.0	0.9	0.6	0.1	2.9	
North Canal	10/04/22	70	FKC(25%)/WELLS(75%)	21.0	1.05	3.9	0.32	40.0	1.72	120	1.97	21.0	0.59	7.30	0.12	180	8.1	322	69	2.1	2.60	0.27	2.8	
	09/06/22	120	FKC(66%)/KD WELLS(11%)/WELLS(23%)	26.0	1.30	4.8	0.39	30.0	1.29	99	1.62	18.0	0.51	9.80	0.16	180	8.2	334	84	1.4	ND	0.27	1.9	
	08/11/22	80	FKC(59%)/KD WELLS(13%)/WELLS(28%)	23.0	1.15	3.7	0.30	35.0	1.51	100	1.64	21.0	0.59	10.00	0.16	180	8.4	323	73	1.8	1.30	0.28	2.1	
	07/08/22	80	FKC(25%)/KD WELLS(16%)/WELLS(59%)	27.0	1.35	4.4	0.36	43.0	1.85	120	1.97	23.0	0.65	9.30	0.15	200	8.4	373	87	2.0	1.40	0.29	2.8	
	06/07/22	94	FKC(43%)/KD WELLS & KD CENTRAL(10%)/WELLS(47%)	21.0	1.05	3.7	0.30	55.0	2.37	120	1.97	27.0	0.76	11.00	0.18	220	8.4	380	68	2.9	3.20	0.41	2.8	
	05/09/22	48	KD WELLS & KD CENTRAL(18%)/WELLS(82%)	26.0	1.30	4.9	0.40	55.0	2.37	140	2.30	30.0	0.84	11.00	0.18	240	8.3	450	85	2.6	2.30	0.41	3.2	
	04/07/22	48	KD WELLS & KD CENTRAL(18%)/WELLS(82%)	19.0	0.95	3.8	0.31	27.0	1.16	100	1.64	13.0	0.37	5.80	0.09	130	8.1	241	64	1.5	1.70	0.09	3.6	
	03/09/22	38	WELLS(100%)	16.0	0.80	2.9	0.24	43.0	1.85	95	1.56	20.0	0.56	2.10	ND	160	8.6	322	52	2.6	2.80	0.37	4.4	
	02/08/22	134	FKC(100%)	5.0	0.25	0.6	0.05	4.4	0.19	23	0.37	5.1	0.14	0.50	0.01	22	8.0	59	15	0.1	0.00	0.10	4.7	
	01/10/22	80	FKC(100%)	7.2	0.36	0.8	0.06	4.7	0.20	40	0.66	2.9	0.08	0.36	0.01	39	7.5	69	21	0.5	1.00	0.05	5.1	
	12/13/21	0	RESIDUAL FKC(100%)	31.0	1.55	2.7	0.22	21.0	0.91	130	2.13	9.4	0.26	2.80	0.05	150	7.7	310	88	1.0	1.60	0.07	6.7	
	11/09/21	58	FKC(100%)	17.0	0.85	1.3	0.11	19.0	0.82	71	1.16	12.0	0.34	2.70	0.04	98	8.2	190	47	1.2	0.94	0.10	3.3	
	10/07/21	14	CVC(24%)/WELLS(76%)	20.0	1.00	3.5	0.29	54.0	2.33	130	2.13	23.0	0.65	8.90	0.14	200	8.3	346	63	3.0	3.50	0.40	2.0	
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		
	Average			19.8	1.0	3.2	0.3	34.8	1.5	100.6	1.6	18.0	0.5	6.5	0.1	157.1	8.2	292.0	62.6	1.8	2.0	0.3	3.5	
South Canal	10/04/22	60	FKC(18%)/WELLS(82%)	31.0	1.55	9.3	0.76	42.0	1.81	140	2.30	41.0	1.15	10.00	0.16	230	8.1	433	120	1.7	ND	0.23	1.6	
	09/06/22	70	FKC(80%)/KD WELLS(10%)/WELLS(30%)	31.0	1.55	7.0	0.57	43.0	1.85	130	2.13	37.0	1.04	12.00	0.19	240	8.3	433	110	1.8	ND	0.31	1.6	
	08/11/22	70	FKC(53%)/KD WELLS(11%)/WELLS(36%)	31.0	1.55	6.7	0.55	39.0	1.68	120	1.97	34.0	0.96	13.00	0.21	220	8.3	399	110	1.7	ND	0.22	1.5	
	07/08/22	90	FKC(20%)/KD WELLS(13%)/WELLS(67%)	33.0	1.65	7.8	0.64	41.0	1.77	140	2.30	33.0	0.93	12.00	0.19	230	8.3	422	110	1.7	ND	0.21	2.4	
	06/07/22	150	FKC(34%)/KD WELLS & KD CENTRAL(8%)/WELLS(58%)	29.0	1.45	7.6	0.62	50.0	2.16	140	2.30	41.0	1.15	11.00	0.18	240	8.2	437	100	2.1	1.20	0.27	1.3	
	05/09/22	30	KD WELLS & KD CENTRAL(12%)/WELLS(88%)	23.0	1.15	5.1	0.42	51.0	2.20	120	1.97	29.0	0.81	16.00	0.26	230	8.5	424	79	2.5	2.60	0.40	3.0	
	04/07/22	80	KD WELLS & KD CENTRAL(12%)/WELLS(88%)	33.0	1.65	9.8	0.80	37.0	1.59	140	2.30	37.0	1.04	9.20	0.15	220	8.2	419	120	1.4	ND	0.11	1.2	
	03/09/22	20	WELLS(100%)	16.0	0.80	2.9	0.24	42.0	1.81	110	1.80	19.0	0.53	1.60	ND	160	8.6	311	51	2.6	3.80	0.37	5.0	
	02/08/22	70	FKC(100%)	5.2	0.26	0.6	0.05	4.4	0.19	24	0.40	3.9	0.11	0.50	0.01	26	7.8	60	16	0.1	0.00	0.10	3.6	
	01/10/22	40	FKC(100%)	8.0	0.40	0.8	0.06	4.8	0.21	36	0.59	2.8	0.08	0.35	0.01	37	7.8	73	23	0.5	0.51	0.05	3.8	
	12/13/21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/09/21	160	FKC(100%)	18.0	0.90	1.4	0.11	20.0	0.86	74	1.21	12.0	0.34	2.70	0.04	100	8.1	199	51	1.2	0.86	0.10	3.1	
	10/07/21	120	CVC(17%)/WELLS(83%)	32.0	1.60	8.6	0.70	49.0	2.11	140	2.30	40.0	1.12	11.00	0.18	240	8.1	428	120	2.0	0.05	0.21	2.0	
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		
	Average			24.8	1.2	5.9	0.5	36.0	1.6	111.9	1.8	28.7	0.8	8.4	0.1	185.6	8.2	345.5	86.9	1.6	1.1	0.2	2.5	

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		0.09		0.03		0.00		0.00	
AVG. YEAR TO DATE	0.09		0.02		0.01		0.09		0.06	
CURRENT MONTH	0.00	0%	0.09	100%	0.00	0%	0.00	0%	0.00	0%
CUMULATIVE (07/01/22 - 06/30/23)	0.34	378%	0.09	450%	0.03	300%	0.34	378%	0.23	383%

TEMPERATURE (6)	(°F)	DATE	TIME
MAXIMUM TEMPERATURE	95	10/6/2022	4:00 PM
AVERAGE MAXIMUM TEMPERATURE	84		
# DAYS THIS MONTH ABOVE 100 °F	0		
MINIMUM TEMPERATURE	40	10/27/2022	4:00 AM
AVERAGE MINIMUM TEMPERATURE	53		
# DAYS THIS MONTH BELOW 32 °F	0		

WIND (6)	M.P.H.	DATE	TIME	DRCTN
MAXIMUM WIND SPEED	17.0	10/22/2022	7:00 PM	NE
AVERAGE WIND SPEED	4.6			
AVERAGE WIND SPEED @ 8:00 AM	6.0			

BAROMETRIC PRESSURE (7)	IN. HG	DATE	TIME
AVERAGE PRESSURE @ 8:00 AM	29.41		
MAXIMUM PRESSURE	29.70	10/24/2022	9:00 AM
MINIMUM PRESSURE	29.30	10/22/2022	8:00 PM

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
WY2022 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 22	97,947	2,033,650	1,275	5,215,376	3,443	7,351,691	1,904	12,244	2	14,649	7	28,805	34%
APR	389,787	3,790,053	1,224	9,611,736	3,469	13,796,269	1,515	13,874	2	19,143	6	34,540	55%
MAY	607,866	4,566,990	13,773	11,461,732	3,770	16,654,130	2,715	14,821	341	19,138	6	37,022	60%
JUN	1,007,223	5,354,176	11,609	11,547,317	3,949	17,924,273	2,998	15,012	170	18,920	7	37,107	67%
JUL	1,415,785	5,520,288	8,626	8,849,588	4,243	15,798,529	4,166	14,719	357	13,224	8	32,473	65%
AUG	1,960,480	5,394,388	1,248	5,302,189	4,559	12,662,864	17,676	13,727	2	7,616	7	39,028	44%
SEP	1,709,286	4,707,633	1,219	4,157,268	4,254	10,579,659	5,313	14,201	2	7,907	9	27,432	54%
OCT	176,832	3,527,821	1,306	8,737,896	4,058	12,447,914	1,884	14,091	30	18,775	7	34,787	48%
NOV													
DEC													
JAN 23													
FEB													
TOTAL	7,365,205	34,894,998	40,281	64,883,102	31,745	107,215,330							

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

11/2/2022

EXHIBIT "F"
 ARVIN-EDISON WATER STORAGE DISTRICT
 2022 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 - 22	0	0%	988	81%	2,003	78%	1,886	29%	1,495	27%	6,372	206	41%
APR	0	0%	1,113	92%	2,943	96%	3,531	51%	3,503	70%	11,090	370	74%
MAY	0	0%	1,108	89%	3,402	92%	3,868	53%	4,018	74%	12,397	400	82%
JUN	0	0%	1,026	51%	3,160	86%	3,775	188%	3,782	189%	11,743	379	78%
JUL	0	0%	1,105	88%	3,510	92%	2,409	32%	2,636	49%	9,660	312	59%
AUG	0	0%	852	68%	2,086	55%	1,290	18%	1,707	33%	5,934	191	37%
SEP	0	0%	741	61%	1,709	52%	1,069	16%	1,294	29%	4,813	160	34%
OCT	0	0%	1,059	85%	3,141	94%	2,919	43%	2,821	62%	9,940	321	68%
NOV		0%		0%		0%		0%		0%	0	0	0%
DEC		0%		0%		0%		0%		0%	0	0	0%
JAN - 23		0%		0%		0%		0%		0%	0	0	0%
FEB		0%		0%		0%		0%		0%	0	0	0%
Total	0		7,992		21,955		20,748		21,256		71,950	195	39%
Ratio	0%		11%		31%		29%		30%		100%	Average	
Wells	4		5		14		34		29		86		

EXHIBIT "H-1"
ARVIN-EDISON WATER STORAGE DISTRICT
STATIC VS PUMPING WATER LEVELS IN DISTRICT WELLS - OCTOBER 2022
 ALL VALUES IN FEET

	WELL #	STATIC LEVEL	PUMPING LEVEL	BOWL DEPTH	TOTAL DEPTH	DRAW DOWN	BOWL COVERAGE
NORTH CANAL (23)	N1	432	499	610	840	67	111
	N2	451	566	700	840	116	134
	N3	386	411	610	840	25	199
	N4	444	467	550	864	23	83
	N5	463	472	650	864	9	178
	N6	529	626	640	920	97	14
	N7	487	510	600	1010	23	90
	N8	426	468	560	970	42	92
	N9	457	561	700	990	104	139
	N10	471	520	560	990	49	40
	N11	428	456	562	1020	28	106
	N12	475	501	600	1030	25	99
	N13	478	503	600	1000	25	97
	N14	448	471	540	900	23	69
	N15	395	531	700	1200	136	169
	N16	395	471	600	1200	76	129
	N17	404	511	610	1200	106	99
	N18	436	568	610	1190	132	42
	N19	470	515	760	1300	45	245
	N20	598	638	820	1020	39	182
	N21	478	556	660	950	78	104
	N22	464	485	680	990	21	195
	N23	456	471	680	990	15	209
Avg	455	512					

	WELL #	STATIC LEVEL	PUMPING LEVEL	BOWL DEPTH	TOTAL DEPTH	DRAW DOWN	BOWL COVERAGE
SYCAMORE (34)	1	465	506	705	800	42	199
	2	436	512	690	876	76	178
	4	492	527	700	876	35	173
	5	505	535	720	876	30	185
	6	438	503	690	876	65	187
	7	483	538	700	830	55	162
	8	446	481	640	860	35	159
	9	494	541	700	886	46	159
	10	471	503	690	850	32	187
	11	471	511	700	880	39	189
	12	490	524	700	860	35	176
	13	455	506	700	850	51	194
	14	418	457	670	810	39	213
	15	481	620	710	820	139	90
	16	476	615	700	888	139	85
	17	437	567	650	820	129	83
	18	454	475	650	820	21	175
	20	454	491	680	804	37	189
	21	452	514	690	856	62	176
	22	437	460	610	792	23	150
	23	438	471	600	788	32	129
	24	451	481	580	780	30	99
	25	441	469	610	777	28	141
	26	436	494	690	816	58	196
	28	420	482	660	782	62	178
	29	464	484	690	787	21	206
	31	452	487	660	725	35	173
	32	423	536	640	739	113	104
	33	464	522	700	780	58	178
	34	N/A	N/A	700	781	N/A	N/A
	35	453	543	700	800	90	157
	36	464	507	600	820	43	93
	37	464	489	540	820	25	51
	38	497	533	860	1270	36	327
Avg	458	512					

	WELL #	STATIC LEVEL	PUMPING LEVEL	BOWL DEPTH	TOTAL DEPTH	DRAW DOWN	BOWL COVERAGE
TEJON (29)	71	592	622	800	1050	30	178
	72	551	578	800	1045	28	222
	73	541	571	800	1018	30	229
	74	534	571	800	1084	37	229
	75	537	553	800	1045	16	247
	76	524	568	700	996	44	132
	77	525	608	800	1066	83	192
	78	518	578	800	1038	60	222
	79	515	566	700	1032	51	134
	80	516	604	800	996	88	196
	81	393	441	700	925	49	259
	82	441	467	800	996	25	333
	83	539	592	800	996	53	208
	84	423	441	700	955	18	259
	86	569	599	800	996	30	201
	87	562	587	800	984	25	213
	88	560	599	800	948	39	201
	89	534	562	800	996	28	238
	90	446	487	700	996	42	213
	91	N/A	N/A	700	996	N/A	N/A
	92	583	629	800	996	46	171
	93	600	616	800	996	16	184
	94	590	629	860	996	39	231
	95	524	550	800	996	26	250
	96	578	678	800	996	99	122
	98	550	594	760	1340	44	166
	99	547	579	760	1340	32	181
	100	529	562	760	1340	33	198
	101	520	580	760	1310	60	180
	Avg	530	572				

MONTHLY SUMMARY - AVERAGE WATER LEVELS						
READINGS END OF	STATIC LEVELS			PUMPING LEVELS		
	N. CANAL	SYCAMORE	TEJON	N. CANAL	SYCAMORE	TEJON
OCT-21	432	445	512	489	502	566
NOV	434	429	501	488	483	547
DEC	431	426	477	486	480	524
JAN	430	421	465	484	476	512
FEB	434	421	463	491	474	510
MAR	435	435	471	492	480	517
APR	448	444	518	505	494	566
MAY	453	471	547	509	525	593
JUN	457	467	547	512	523	591
JUL	454	462	542	510	517	588
AUG	453	452	533	509	504	578
SEP	454	459	542	510	510	587
OCT-22	455	458	530	512	512	572
CHANGE TO-DATE	-23	-13	-18	-23	-10	-6

OUT OF SERVICE (7) *Bowl depth measured to top of pump
 AIRLINE FAILURE (13) *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

