ARVIN-EDISON WATER STORAGE DISTRICT

REPORT OF DISTRICT OPERATIONS

December 2021

Removing Sediment and Excess Leaves from Canal Prism (South Canal Winter Maintenance Dewatering)

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WATER SUPPLY

Friant Division Central Valley Project (CVP)

- The 2021 Water Year allocation was increased from 25% to 40% which amounts to 16,000 AF. However, the additional 15% (as well as the 5% from last month, for a total of 20%) must be delivered by end of February 2022.
- 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-November and the remaining volume will be used in the winter to reestablish and reconnect the SJR downstream of Sack Dam (more cold water and assist with low point).
- Given a "Critical-High" year there were no Unreleased Restoration Flows and Recapture/Recirculation opportunity are limited or non-existent.
- Provided continued dry conditions, the SJRRP initially 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. However, the SJRRP has modified its request to completely reduce the exchange to 0 AF. District will purchase 3,500 AF at $150 per AF and the remaining 3,500 AF will be included in the 2018 exchange agreement, which increases each of the return ratio scenarios by an additional 0.5 AF in return (so in 2021 instead of 3 to 1 it would be 3.5 to 1).
- 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).
- The initial 2022 Runoff and SJRRP projections will be announced in February 2022.

Shasta System CVP

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

State Water Project (SWP)

- The 2022 Table A initial allocation is 0%

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 (95,300 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 provided for 4,219 AF of return subject to the AE/MWD Agreement provisions.
- Provided the additional 20% Class 1 declaration as well as transfers/exchanges from others, the District has initiated return to MWD via the CVC and AE's Aqueduct turnout through February and current estimate is nearly 20,000 AF.

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 earthwork portion of the Sunset Groundwater Recharge Facility and construction is ongoing with estimated completion in February 2022.

District Partnerships

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

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

Kern Water Bank
Lewis Creek Water District
Madera Irrigation District
Tri-Valley Water District
Westlands Water District
Westside Mutual Water Company

WATER DEMAND

- District surface water deliveries for the month were 446 AF (70% below average)
- The following is a summary of surface water deliveries for December 2021:

	December 2021		Year to Date	
	Historical	2021 WY	Historical	2021 WY
Turnout Deliveries	1,479	446	127,567	108,108
In-Lieu Deliveries	-	-	-	-
Temporary Water	-	-		
Spreading	-	128	-	2,152
Total	1,479	574	127,567	110,260

- Exhibit “B” illustrates the delivery data
- The month's peak daily in-District demand was 76 cfs, which occurred on the 2nd
- Exhibit "C-1” details Canal Water Quality information
- Exhibit “C-2” presents the Aquatic Pest Control Treatments ($420,296) for Calendar Year 2021

GENERAL

- Staff notified both In-Lieu and Temporary Water Contracts regarding availability of water starting January 1 and possibly through February (and beyond)
- Staff continued efforts for finalizing the 2022 Water Year budget planning
- Staff continued investigations regarding increasing its cybersecurity
- Staff completed Winter Maintenance activities
- District vehicles consumed an estimated 3,490 gallons of fuel during the month (average fuel efficiency of 13.3 mpg)
- There were 370 hours lost due to illness (including COVID-19 hours) and 304 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 to date and for Water Year 2021 it is expected to generate an electrical demand of approximately 138 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 early 2022.
- 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. Grant announcement is anticipated in March/April 2022.
- 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)
        - Earthwork continues
        - Coordinating power extension (PG&E)
        - Electrical and pipeline design is anticipated to be completed by February 2022
    - Forrest Frick and Eastside Canal Intertie (w/ Kern Delta WD)
        - Working with the USBR on environmental compliance
        - Working with PG&E on facilities extension for new service
        - Draft O&M agreement submitted to Kern Delta for review
    - 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
    - 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
        - Staff has installed 2-5 cfs units, 4-10 cfs units and 5-20 cfs units and the 4 remaining units are anticipated for installation by March 2022
    - Temporary and/or In-Lieu Water Service Contract Requests
        - Sunview
        - Freedom Farms
    - Cathodic protection system upgrades
        - Standtank anode replacement preparation (Winter Maintenance)
    - Pump Efficiency Testing
        - District wide testing completed, final summary report in progress
        - 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
        - Reviewing alternate inspection methods that do not require a drained pipeline
    - Open ET review and comparison
    - Groundwater usage in Surface Water Service Area analysis
    - Groundwater Metering
        - Coordinate warranty repairs with Manufacturer

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
    - Kern Groundwater Authority review complete, DWR submittal completed (90-day grace period)
- Development of a potential Well Mitigation Policy
- Development of County's "Proof of Water" Policy
- Evaluate various Water Budget methodologies
- 2021 Water Year annual report preparations

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)
- 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
    - PWRPA software issues coordination
- 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
        - Currently pending Kern County structural review and project completion is anticipated by May 2022
    - Reviewed available local solar renewable energy certificates to Western Renewable Energy Generation Information System (credits to be used by District/PWRPA)
    - Continued microgrid solar proposal project investigation
    - Review and coordinate Demand Response Program
    - MWD power correspondence review
    - District Power Master Planning and Microgrid investigations
- Coordinate long term power analysis for Sunset GW Recharge Facility
- Calendar Year and Water Year power reconciliations and summaries
- Various power cost analysis and reviews for 2022 water year budget planning
- Groundwater Service Program
    - Monthly invoicing and program coordination

SPREADING WORKS OPERATIONS (WELLFIELDS AND BASINS)

- Exhibit “F” summarizes wellfield production, which totaled 0 AF for the month
- Exhibit “G” summarizes gross direct spreading of 128 AF for the month due to draining South Canal for Winter Maintenance
- 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:

Field	Well #	Year	HP	Reason	Work
Sycamore	2	1967	300	Low Production and Excess Vibrations	Pulled equipment, replacement pump install to be scheduled
Sycamore	8	1967	300	Excess Vibrations	Pulled and inspected equipment, video, replacement pump install to be scheduled
Sycamore	14	1967	300	Low Production and Excess Vibrations	Pulled and inspected equipment, brushed, replacement install scheduled

Sycamore	17	1967	300	Low Production Excess Vibrations	Pulled and inspected equipment, replacement pump install to be scheduled
Tejon	77	1966	300	Excess Vibrations	Pulled equipment, replacement pump install to be scheduled
Tejon	80	1970	300	Excess Vibrations	Pulled and inspected equipment, video, replacement pump install to be scheduled
Tejon	95	1998	300	Low Production and Excess Vibrations	Equipment pulled, video, replacement pump install to be scheduled

***Back in Service**

- Nine (9) 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 (7) see above table

OPERATIONS DEPARTMENT ACTIVITES

Replacing Valve (W-49)

Preparing for Isolation Valve Install (M-10)

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)

Additional Activities

- Operated pumping plants (North side) in hand to assist with controls equipment upgrade
- Respond to main line leak (near S73-P3)
- Coordinated with Bakersfield Police Department in removing encampments (Intake Canal)
- Clear out turnout base isolation valves (North and South side)
- Responded to various Pumping Plant alarms (reset and primed laterals)
- Stenciled turnouts, well discharge pipes, and meter concrete rings with labels (as needed)
- Completed Winter Maintenance activities
  - Drained south side of the District for Winter Maintenance
  - Replaced various valves
    - Turnouts (E-77, A-15, A-25, A-71, C-09, C-18, C-21, C-23, C-58, C-72, C-99, T-10, T-39, T-62, T-78, T-83, W-21, W-49, W-52, W-63, W-68, W-76, M-08, M-12, M-22, M-48, and M-53)
  - Replaced various meters
    - Turnouts (C-11, C-18, W-36, W-52, and M-48)
  - Checked and cleaned out pump plant drain back valve access tubes (South side)
  - Replaced pump plant manifold ball valve and bushing assemblies (North and South)
  - Removed weir boards for South Canal dewatering (Tejon Spreading Works)
  - Inspect and replace canal staff gauges
  - Flush and clean air vents during prime up
  - Primed up north and south side pump plants after completion of Winter Maintenance

Underground Service Alert (USA) Report

- District initiated 12
- Responded to 153 USA notices to locate District underground facilities
  - 24 required markings of District facilities
  - 51 were renewals
  - 66 with no conflicts

Power Outages and/or Interruptions Involving the Following Systems

- Balancing Reservoir, Laterals N1, N41, N55, S64, S73, S78, S88, S93, End of the Canal, and Intertie Pumping Plant

Laterals Prorates (number of days)

- No prorates for the month

MAINTENANCE DEPARTMENT ACTIVITIES

Removing Sediment (North Canal)

Replacing 18" Isolation Valve (Lateral S73-D)

Routine Activities

- Aquatic and terrestrial weed control (Intake Canal)
- Routine gardening and maintenance at Headquarters and CIMIS station
- Fence and gate repair
- Grading
- 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

- Assist Operations with installation of weir structure boards in preparation for potential spreading activities
- Repair pipeline leak (near W-03)
- Remove excess debris (North Canal Spreading Works)
- Completed Winter Maintenance activities
    - Serviced and cleaned equipment used for Winter Maintenance
    - Set up pumps for dewatering (South Canal)
    - Installed various turnout isolation valves (A-25, C-18, C-23, C-24, and M-48)
    - Installed Worcester by-pass valve (N55-P13)
    - Installed repaired discharge piping (N1-P8)
    - Repair damaged concrete liner with slurry backfill (Towerline Rd and Mountain Stretch)
    - Open Standtanks and inspect for excess debris and damage (South side)
    - Replace two 18" gate valves (Laterals S73-D and S73-F)

- Use dump trucks, excavators and bobcats to remove canal sediment
- Excavate pit sites to dump sediment removed from South 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
Brakes	4	Headlights	1
Tires	8	Tail Lights	2
Tire Repairs	1	Wiper Blades	8
Rotors/Drums	2	Cabin Filter	2
Batteries	1	Trailer Lights	2
Fuel Filters	2		

- Heavy Equipment Repairs
  - Replaced starter relays (water truck)
  - Repaired headlights (dump truck)

PUMP DEPARTMENT ACTIVITIES

Removing Traveling Water Screens for Repairs (S38-P1)

Installing Victaulic Couplers (N55-P1)

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
  - Continued pilot testing for Phase 2 (horizontal pumps)
  - Ongoing installation and testing of Phase 1 pumps
- Replaced sump pumps (N1-P4, N1-P8, and N8-P3)
- Replaced limitorque (S73-P1)
- Completed Winter Maintenance Activities
  - Installed new Victaulic couplers, butterfly valves, swing valves, and rings (South side pumping plants)
  - Installed pump and corresponding discharge piping to bypass Sycamore Check Structure to continue dewatering North Canal
  - Removed and rebuilt various travelling water screens with new bearings, chains rods, guides and clips (S64-P1, S73-P1, S78, S88-P1, and the End of Canal "twins")
  - Repaired slide gate (End of the Canal/Mettler Unit)
  - Repaired stoplog gate (N26-P1)
  - Repaired North Canal Check Structure guides

PUMP & MOTOR REPAIR SUMMARY

	Pumping Plant/Wells	Unit	Size	Time/Hours	Reason
Vertical Pumps	None to Report				
Vertical Motors	None to Report				
Horizontal Pumps	None to Report				
Horizontal Motors	N1-P3	1	50 HP	0.02	Burnt Windings

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
Contact Blocks	4	Trip Units	9
Circuit Breakers	1		

Additional Activities

- Programming for SCADA and radio system updates and monitored performance
- Continued working with contractors on radio and PLC Replacement Project which was completed!
- Worked with contractors to startup FFPP Units 3, 4, and 5
- Worked with Contractors to Complete Winter Maintenance Activities
  - Clean pump plants motor control centers, panels, and test floor and circuit breakers

- Check, troubleshoot, and repair float assemblies at all standtanks
- Replaced damaged floodlights (Wellfields and pumping plants)
- Replaced damaged control panel (twin moss screens at the end of the canal)

FORREST FRICK PUMPING PLANT

- 712 AF of water was pumped during the month
- Units 3, 4, and 5 were tested for rotation in preparation for potential spreading operations
- 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

FC:sj\Board\Manager.Report\2021\Dec.21

EXHIBIT "A-1"

ARVIN-EDISON WATER STORAGE DISTRICT

2021 WATER SUPPLY AND DEMAND

SUPPLY		***AF***	***%***
FRIANT-KERN (F-K)			
40% OF 40,000 AF CLASS 1		16,000	
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	
METROPOLITAN WD - SUPP		4,241	
SHAFTER-WASCO ID		174	
MADERA ID		17,000	
	SUBTOTAL	45,026	
FRESNO COUNTY		-575	
GARFIELD WD		-61	
HILLS VALLEY ID		-22	
TRI VALLEY WD		-7	
LEWIS CREEK WD		-21	
SAUCELITO ID		-346	
IVANHOE ID		-200	
SJRRP RETURN		0	
METROPOLITAN WD		-25,066	
	TOTAL F-K	18,728	14.9%
CROSS VALLEY CANAL (CVC)			
RECIRCULATION (WESTLANDS)		-2,595	
TEJON RANCH/ARROYO PASAJERO		1,990	
ROSEDALE-RIO BRAVO (KDWD EXCHANGE)		4,376	
SLR 2020 CARRYOVER		2,595	
	TOTAL CVC	6,366	5.1%
STATE WATER PROJECT (AQUEDUCT)			
KT EXCHANGE		0	
	TOTAL AQUEDUCT	0	0.0%
INTERTIE PIPELINE (IPL)			
MWD RETURN		0	
	TOTAL IPL	0	0.0%
KERN RIVER			
FRESNO COUNTY		0	
MWD BANKING		0	
KERN DELTA H ST (RRBWSD 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		**30,718**	**24.4%**
GROUNDWATER PUMPING			
IRRIGATION DEMAND		95,288	
FARM PUMP IN		0	
RETURN TO MWD		0	
	TOTAL PUMPING	95,288	75.6%
TOTAL WATER SUPPLY		126,006	100.0%

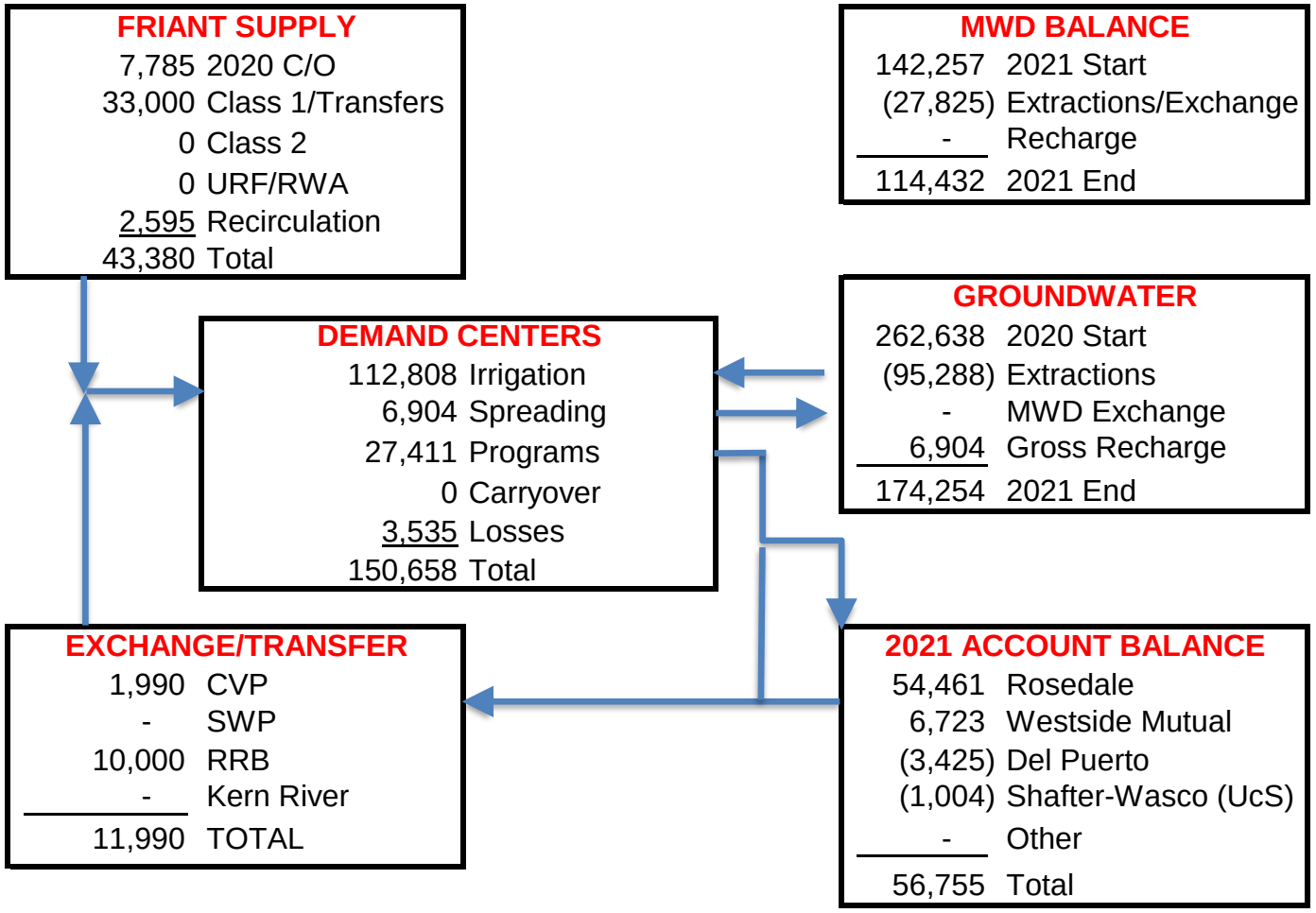
DEMAND		
IRRIGATION DEMAND (MARCH-DECEMBER)	108,108	85.8%
IRRIGATION DEMAND (JANUARY-FEBRUARY)	4,700	3.7%
SPREADING (MARCH-DECEMBER)	2,191	1.7%
SPREADING (JANUARY-FEBRUARY)	4,713	3.7%
RETURN TO MWD - EXCH	2,759	2.2%
CARRYOVER TO 2022	0	0.0%
LOSSES/METERING INACCURACIES	3,535	2.8%
TOTAL DEMAND	126,006	100.0%

1/6/2022

Exhibit "A-2"

ARVIN-EDISON WATER STORAGE DISTRICT

2021 WATER MANAGEMENT



Surface Water	24,424	**20%**
Groundwater (59% of Max)	95,288	**80%**
Projected Irrigation Demand	119,712	**100%**

EXHIBIT "B"

ARVIN-EDISON WATER STORAGE DISTRICT

2021 WATER YEAR DELIVERIES

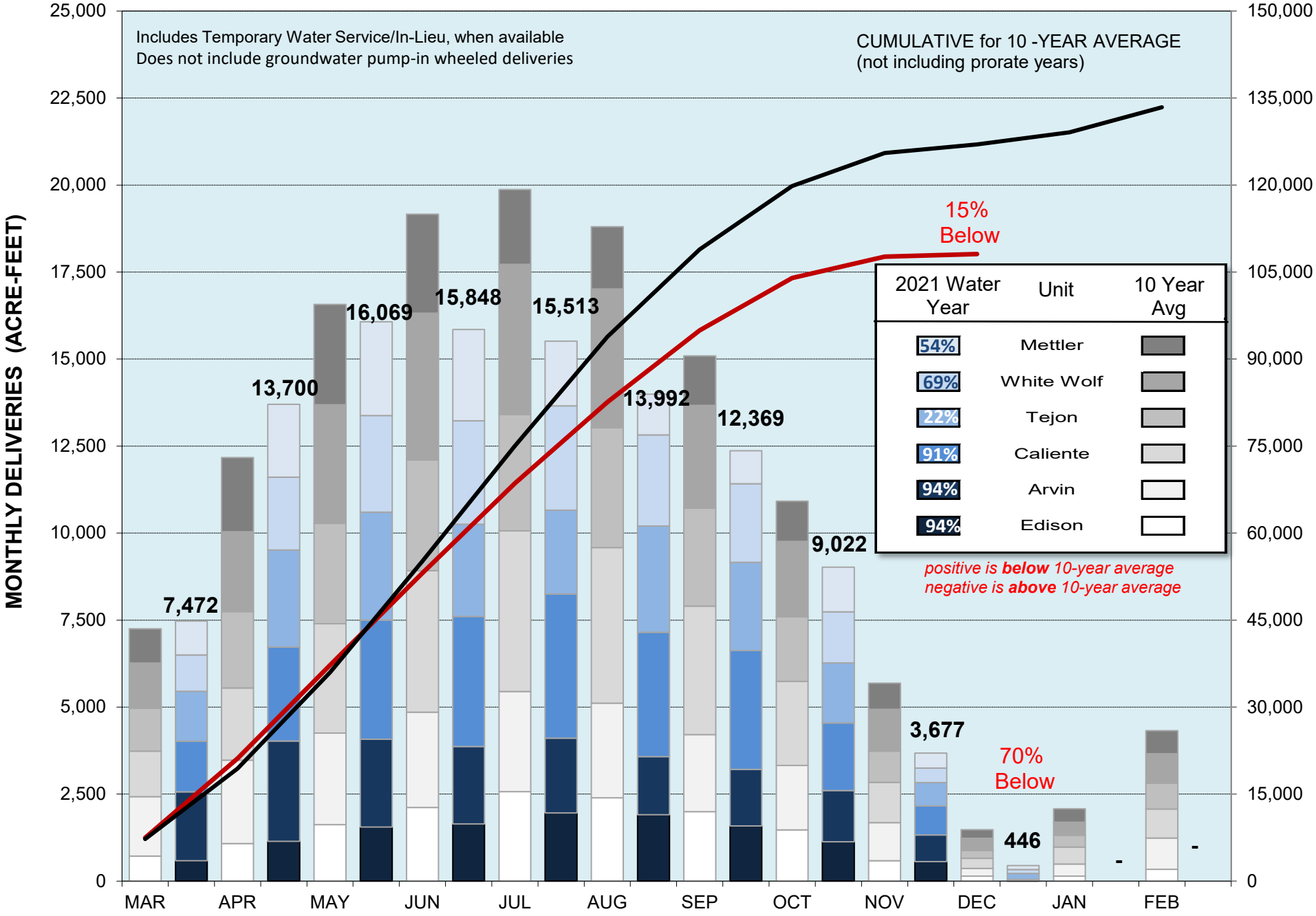


EXHIBIT "C1"

ARVIN-EDISON WATER STORAGE DISTRICT

WATER SUPPLY WATER QUALITY SUMMARY

	Date	Flow	Import	Calcium		Magnesium		Sodium		Bicarbonate		Chloride		Nitrate		TDS	pH	EC	Hardness	SAR	Gypsum	Boron	Turbidity
		cfs	Source	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		umhos/cm	mg/l		lbs/AF	mg/l	NTU
Intake Canal	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
	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
	Average			**19.5**	**1.0**	**1.9**	**0.2**	**18.8**	**0.8**	**72.2**	**1.2**	**11.6**	**0.3**	**2.9**	**0.0**	**106.2**	**8.3**	**199.2**	**56.6**	**1.1**	**0.5**	**0.1**	**4.8**
North Canal	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
	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
	Average			**21.7**	**1.1**	**3.7**	**0.3**	**40.1**	**1.7**	**119.4**	**2.0**	**18.6**	**0.5**	**6.9**	**0.1**	**172.0**	**8.2**	**317.5**	**69.0**	**2.1**	**2.5**	**0.2**	**2.8**
South Canal	12/13/21	N/A	DOWN FOR WINTER MAINTENANCE	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
	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
	Average			**31.6**	**1.6**	**8.3**	**0.7**	**43.4**	**1.9**	**133.4**	**2.2**	**39.2**	**1.1**	**9.3**	**0.2**	**225.4**	**8.2**	**388.0**	**112.9**	**1.8**	**0.9**	**0.2**	**2.0**

EXHIBIT "C1"

ARVIN-EDISON WATER STORAGE DISTRICT

WATER SUPPLY WATER QUALITY SUMMARY

	Date	Flow[1]	Import	Calcium		Magnesium		Sodium		Bicarbonate		Chloride		Nitrate		TDS	pH	EC	Hardness	SAR	Gypsum	Boron	Turbidity
		cfs	Source	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		umhos/cm	mg/l		lbs/AF	mg/l	NTU
Intertie Pipeline	12/13/21	N/A	DOWN FOR WINTER MAINTENANCE	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	0	FKC(100%)	22.0	1.10	4.6	0.38	31.0	1.34	93	1.52	18.0	0.51	4.90	0.08	150	8.4	299	73	1.6	0.72	0.20	4.0
	10/07/21	0	CVC(17%)/WELLS(83%)	38.0	1.90	12.0	0.98	48.0	2.07	150	2.46	49.0	1.38	12.00	0.19	270	8.3	477	140	1.7	ND	0.17	4.5
	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
	Average			**32.7**	**1.6**	**9.8**	**0.8**	**44.2**	**1.9**	**131.8**	**2.2**	**42.3**	**1.2**	**10.7**	**0.2**	**236.9**	**8.3**	**441.0**	**121.8**	**1.8**	**0.4**	**0.2**	**4.6**

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.

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).

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.

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.

TDS: TDS < 450 IS ACCEPTABLE FOR UNRESTRICTED USE.

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.

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.

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.

HARDNESS: HARD WATER, INDICATING CALCIUM AND MAGNESIUM, IS BENEFICIAL FOR AGRICULTURE.

SAR: SODIUM ADSORPTION RATIO. A RATIO OF SODIUM TO CALCIUM AND MAGNESIUM.

EVALUATE WITH EC.

SAR = 0 - 3 AND EC > 400 ACCEPTABLE

SAR = 3 - 6 AND EC > 900 ACCEPTABLE

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	North																
			Stine Siphon	Bal. Res.	PP 24P1	NCSW	PP 41P1	PP 55P1	Syc. Ponds	Syc. Check	PP 32P1	PP 38P1	Tej. Ponds	Tej. Check	615 Check	729 Check	883 Check	Spill Way	Intertie Forbay
			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	38-58																	
	01/11/21																		
	01/18/21																		
	01/25/21																		
FEB	02/01/21	36-69																	
	02/08/21																		
	02/15/21																		
	02/22/21																		
	02/22/21																		
MAR	03/01/21	42-68			15	15	15	15	207				15		15				
	03/01/21				1.5	2	2	2	70	9			2	18.5	2				
	03/08/21			145			200							25		14			
	03/08/21			50			65												
	03/15/21													10	10				
	03/15/21												3		6.5	2			
	03/22/21			366.5	20			10	10										
	03/22/21			85.5	91.5	92			21							15			
	03/22/21			30	30	31													
	03/29/21				120	120	10	10	214					10	10				
	03/29/21				40	40	2.5	2.5					12			7			
APR	04/05/21	47-78					20	10					30	10		15			
	04/12/21						5	5	12						5	5			
	04/12/21		17				2.5		2.5	17			25		2.5	17			
	04/19/21												29			15			
	04/26/21							15	15				9		10				
MAY	05/03/21	56-85						275	14	14			20			14			
	05/10/21						5	5	5				14			9			
	05/17/21						212						14			8			
	05/24/21					7	10		12				16		10	7			
	05/24/21						2.5								2.5				
	05/31/21												22		16				
JUN	06/07/21	66-94				20	2.5	33.5	33.5	16			16			12			
	06/14/21					88							23			11			
	06/21/21								11	11	2.5	2.5	19	20	20	11			
	06/28/21					12	2.5	2.5					15	2.5	2.5	7			
	06/28/21						10	10						10	10				
JUL	07/05/21	71-100					2.5	2.5	67	12			12			9			
	07/05/21						10	10											
	07/12/21					14	2.5	2.5	2.5	13			15		2.5	6			
	07/12/21						10	10	10						10				
	07/19/21					2.5	2.5	240	80				11			6			
	07/19/21					10	10												
	07/26/21				15	2.5	2.5	2.5					11			7			
	07/26/21					10	10	10											
AUG	08/02/21	68-98			2.5		2.5	2.5	14	14			11			8			
	08/02/21				10		10	10											
	08/09/21						194	37											
	08/09/21						2.5	2.5	2.5				13			7			
	08/09/21						10	10	10										
	08/16/21				10	10	10	10	70	240			13			7			
	08/23/21				2.5		2.5	2.5					9	2.5	2.5				
	08/23/21				10		10	10						10	10				
	08/30/21						2.5	2.5	62.5	7			11	2.5	2.5	6			
	08/30/21						10	10	10					10	10				
SEPT	09/06/21	62-92			10	10	2.5	2.5		8			15			7			
	09/13/21					17		2.5	2.5	2.5			9			4			
	09/13/21					76		10	10	10									
	09/20/21							2.5	8				12			9			
	09/20/21						10	10	240	74.5									
	09/27/21						20	10	7.5						8				
OCT	10/04/21	48-77					130	65											
	10/11/21																		
	10/18/21						10	10	5										
	10/25/21																		
NOV	11/01/21	43-68																	
	11/08/21																		
	11/15/21																		
	11/22/21																		
	11/29/21																		
DEC	12/06/21	38-57																	
	12/13/21																		
	12/20/21																		
	12/27/21																		

2021 Cost To Date

Treatment	Material	Labor	Total
Captain/Nautique	$128,751	$11,568	$140,319
Phycomycin	$26,498	$14,688	$41,186
Cascade	$0	$0	$0
Teton/Hydrothol	$187,640	$51,152	$238,792
Spreading Basins	$0	$0	$0
Total	$342,888	$77,408	$420,296

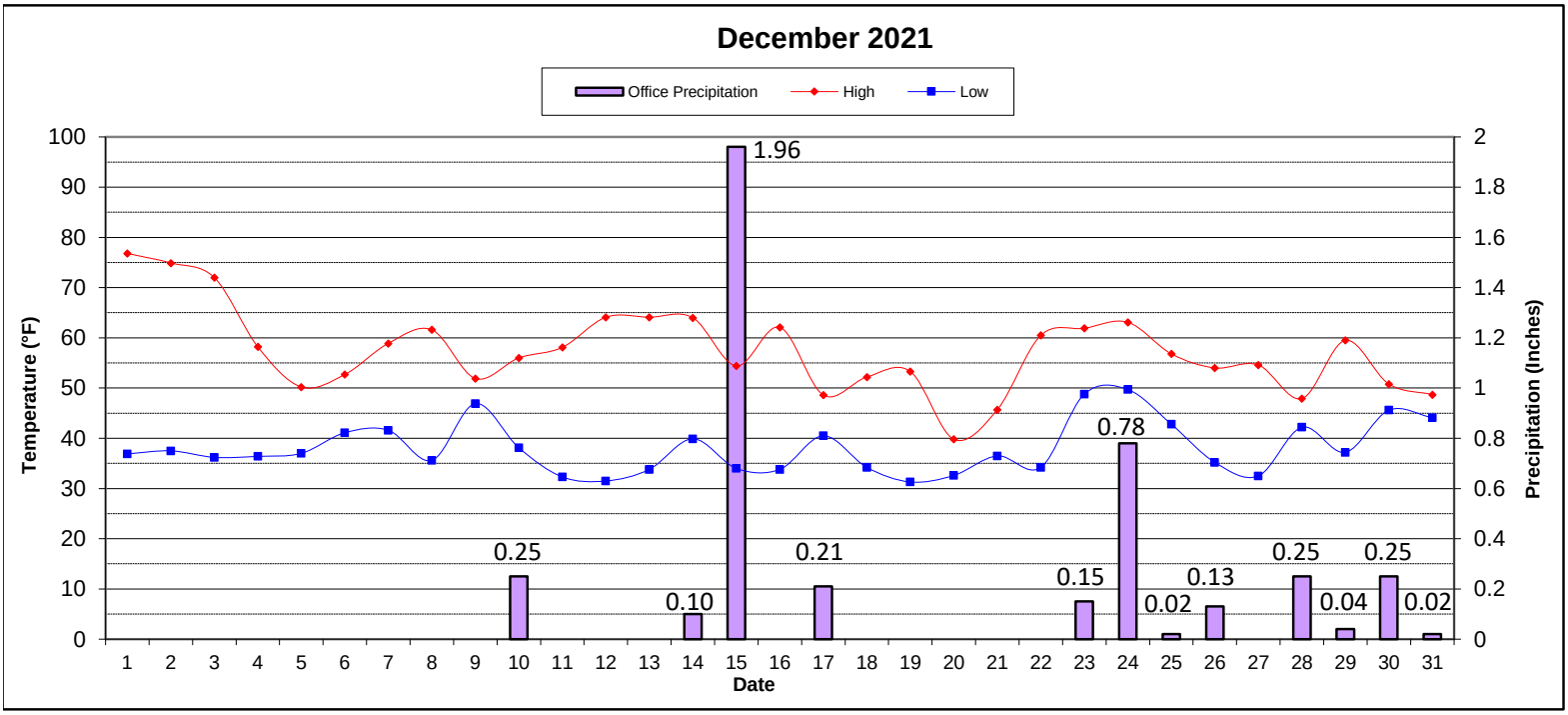
Shaded weeks are actual
Copper treatment (gal/lbs) for algae and pondweed (injected/broadcast)
Phycomycin (hydrogen peroxide) treatment (lbs) for algae (broadcast)
Endothall treatment (gal) for milfoil/basins (injected)
Endothall treatment (gal) for algae (injected)
Sonar/Clearcast/RoundUp Custom/MSO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

Year Type	Amount	Year
Critical-High	$420,296	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	1.67		1.23		1.22		1.06		1.50	
AVG. YEAR TO DATE	2.85		2.76		2.79		2.43		2.57	
CURRENT MONTH	3.03	181%	4.15	337%	5.38	441%	3.33	314%	3.14	209%
CUMULATIVE (07/01/21 - 06/30/22)	4.71	165%	5.59	203%	7.50	269%	4.65	191%	4.50	175%

TEMPERATURE (6)	(ºF)	DATE	TIME
MAXIMUM TEMPERATURE	76	12/1/2021	3:00 PM
AVERAGE MAXIMUM TEMPERATURE	57		
# DAYS THIS MONTH ABOVE 100 ºF	0		
MINIMUM TEMPERATURE	32	12/19/2021	6:00 AM
AVERAGE MINIMUM TEMPERATURE	38		
# DAYS THIS MONTH BELOW 32 ºF	2		

WIND (6)	M.P.H.	DATE	TIME	DRCTN
MAXIMUM WIND SPEED	22.0	12/14/2021	4:00 AM	SE
AVERAGE WIND SPEED	3.5			
AVERAGE WIND SPEED @ 8:00 AM	3.1			

BAROMETRIC PRESSURE (7)	IN. HG	DATE	TIME
AVERAGE PRESSURE @ 8:00 AM	29.60		
MAXIMUM PRESSURE	29.78	12/5/2021	9:00 AM
MINIMUM PRESSURE	29.20	12/14/2021	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	498,728	4,831,533	34,228	10,798,227	3,978	16,166,693	1,540	13,987	342	16,988	7	32,863	68%
OCT	214,437	3,099,353	34,423	8,249,635	3,941	11,601,790	1,210	13,045	323	16,471	7	31,056	50%
NOV	858,049	1,552,014	2,121	153,825	3,652	2,569,662	5,198	9,263	156	1,138	11	15,764	23%
DEC													
JAN 22													
FEB													
TOTAL	4,362,831	36,758,907	254,706	90,090,161	35,492	131,502,097							

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

1/3/2022

EXHIBIT "F"

ARVIN-EDISON WATER STORAGE DISTRICT

2021 WATER YEAR WELLFIELD PRODUCTION - AF

Month	Bal Res		North Canal 5		Wellfield						Total		
					North		Sycamore		Tejon				
	AF	% of Historical Max	AF	% of Historical Max	AF	% of Historical Max	AF	% of Historical Max	AF	% of Historical Max	AF	AF / Day	% 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	0	0%	744	60%	2,546	76%	2,640	39%	2,581	57%	8,511	284	58%
NOV	0	0%	0	0%	0	0%	0	0%	0	0%	0	0	0%
DEC	0	0%	0	0%	0	0%	0	0%	354	9%	354	12	3%
JAN - 22													
FEB													
Total	470		7,437		26,509		31,288		29,584		95,288	312	62%
Ratio	1%		8%		28%		33%		31%		100%	Average	
Wells	4		5		14		34		29		86		

ARVIN-EDISON WATER STORAGE DISTRICT

2021 WATER YEAR NET PERCOLATION - AF

Month	Bal Res	North Gravity	North Pressure	Sycamore	Tejon Gravity	Tejon Pressure	Murray Gravity	Landowner Recharge	Subtotal	In-Lieu	Temporary Water	Total
MAR-20	136	0	0	0	0	0	0	0	136	0	0	136
APR	107	0	0	0	0	0	0	0	107	0	0	107
MAY	203	0	0	0	0	38	0	0	241	0	0	241
JUN	229	0	0	0	0	66	0	0	295	0	0	295
JUL	198	0	0	0	0	0	0	0	198	0	0	198
AUG	280	0	0	0	0	0	0	0	280	0	0	280
SEP	318	0	0	0	0	0	0	0	318	0	0	318
OCT	395	0	0	0	0	0	0	0	395	0	0	395
NOV	0	9	45	0	0	0	0	0	54	0	0	54
DEC	5	0	0	119	0	1	3	0	128	0	0	128
JAN-21												
FEB												
Total	1,871	9	45	119	0	105	3	0	2,152	0	0	2,152
Ratio	86.9%	0.4%	2.1%	5.5%	0.0%	4.9%	0.1%		100.0%	0.0%	0.0%	100%
Ratio	89.5%			5.5%	4.9%		0.1%					

Total	1,871		45			105			2,021			2,021
Pressure	93%		2%			5%			100%			100%

- net percolation includes in-lieu deliveries

EXHIBIT "H-1"

ARVIN-EDISON WATER STORAGE DISTRICT

STATIC VS PUMPING WATER LEVELS IN DISTRICT WELLS - DECEMBER 2021

ALL VALUES IN FEET

	WELL #	STATIC LEVEL	PUMPING LEVEL	BOWL DEPTH	TOTAL DEPTH	DRAW DOWN	BOWL COVERAGE
NORTH CANAL (23)	N1	411	471	610	840	60	139
	N2	439	543	700	840	104	157
	N3	374	393	610	840	18	217
	N4	435	455	550	864	21	95
	N5	449	458	650	864	9	192
	N6	488	587	640	920	99	53
	N7	443	464	600	1010	21	136
	N8	389	426	560	970	37	134
	N9	437	548	700	990	111	152
	N10	430	477	560	990	47	83
	N11	391	416	562	1020	25	146
	N12	438	466	600	1030	28	134
	N13	443	468	600	1000	25	132
	N14	434	452	540	900	18	88
	N15	374	511	700	1200	136	189
	N16	384	462	600	1200	79	138
	N17	393	495	610	1200	102	116
	N18	426	562	610	1190	136	48
	N19	455	506	760	1300	51	254
	N20	573	612	820	1020	39	208
	N21	442	502	660	950	60	158
	N22	440	456	680	990	16	224
	N23	425	439	680	990	14	241
	Avg	431	486				

	WELL #	STATIC LEVEL	PUMPING LEVEL	BOWL DEPTH	TOTAL DEPTH	DRAW DOWN	BOWL COVERAGE
TEJON (29)	71	496	523	800	1050	27	277
	72	495	530	800	1045	35	270
	73	493	532	800	1018	39	268
	74	479	520	800	1084	42	280
	75	481	514	800	1045	32	286
	76	469	524	700	996	55	176
	77	467	551	800	1066	83	249
	78	477	518	800	1038	42	282
	79	474	513	700	1032	39	187
	80	463	590	800	996	127	210
	81	439	478	700	925	39	222
	82	367	420	800	996	53	380
	83	490	546	800	996	55	254
	84	395	434	700	955	39	266
	86	507	541	800	996	35	259
	87	502	532	800	984	30	268
	88	507	546	800	948	39	254
	89	481	520	800	996	39	280
	90	386	434	700	996	49	266
	91	N/A	N/A	700	996	N/A	N/A
	92	520	574	800	996	53	226
	93	515	542	800	996	27	258
	94	525	576	860	996	51	284
	95	480	510	800	996	30	290
	96	534	601	800	996	67	199
	98	488	525	760	1340	37	236
	99	529	564	760	1340	35	196
	100	443	485	760	1340	42	275
	101	466	535	760	1310	69	225
	Avg	477	524				

	WELL #	STATIC LEVEL	PUMPING LEVEL	BOWL DEPTH	TOTAL DEPTH	DRAW DOWN	BOWL COVERAGE
SYCAMORE (34)	1	428	476	705	800	49	229
	2	441	496	690	876	55	194
	4	455	490	700	876	35	210
	5	468	514	720	876	46	206
	6	397	461	690	876	65	229
	7	439	499	700	830	60	201
	8	388	441	640	860	53	199
	9	455	492	700	886	37	208
	10	434	473	690	850	39	217
	11	432	483	700	880	51	217
	12	455	492	700	860	37	208
	13	423	460	700	850	37	240
	14	381	469	670	810	88	201
	15	456	606	710	820	150	104
	16	455	594	700	888	139	106
	17	421	498	650	820	76	152
	18	428	447	650	820	18	203
	20	414	451	680	804	37	229
	21	427	454	690	856	28	236
	22	404	432	610	792	28	178
	23	401	454	600	788	53	146
	24	409	451	580	780	42	129
	25	407	434	610	777	28	176
	26	413	454	690	816	42	236
	28	383	436	660	782	53	224
	29	436	461	690	787	25	229
	31	431	461	660	725	30	199
	32	393	508	640	739	116	132
	33	439	552	700	780	113	148
	34	N/A	N/A	700	781	N/A	N/A
	35	430	501	700	800	72	199
	36	443	473	600	820	30	127
	37	435	460	540	820	25	80
	38	434	470	860	1270	36	390
	Avg	426	480				

MONTHLY SUMMARY - AVERAGE WATER LEVELS

READINGS END OF	STATIC LEVELS N. CANAL	STATIC LEVELS SYCAMORE	STATIC LEVELS TEJON	PUMPING LEVELS N. CANAL	PUMPING LEVELS SYCAMORE	PUMPING LEVELS TEJON
Dec-20	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
OCT	432	445	512	489	502	566
NOV	434	429	501	488	483	547
DEC	431	426	477	486	480	524
CHANGE TO-DATE	-23	-35	-35	-12	-51	-24

OUT OF SERVICE (8)
AIRLINE FAILURE (12)
FAILED (2)
86 TOTAL WELLS

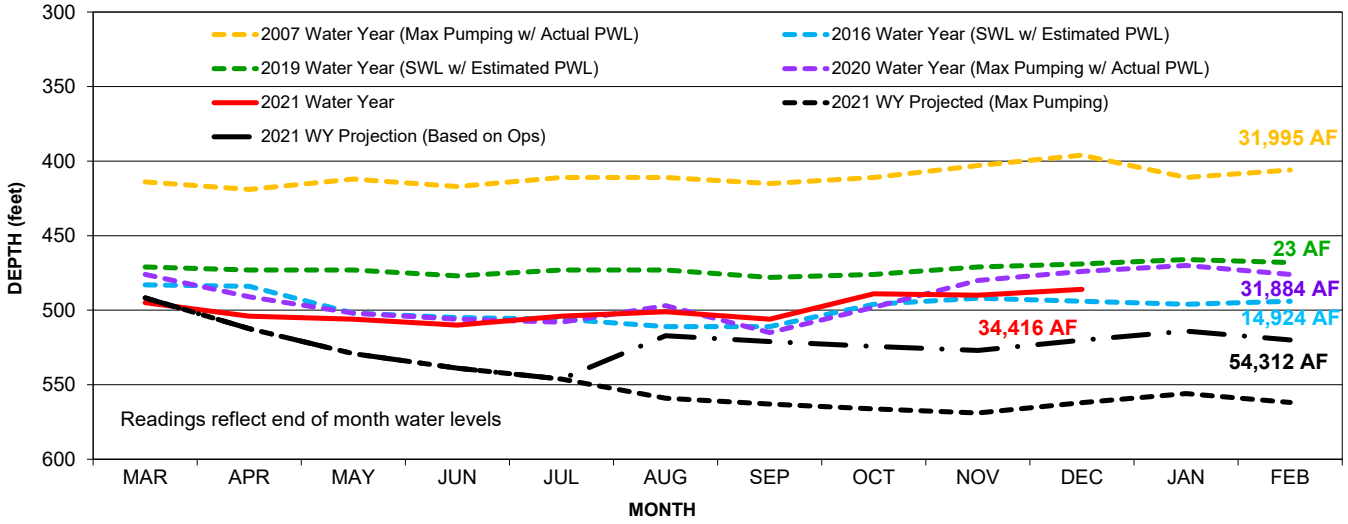
*Bowl depth measured to top of pump
*Pumping levels are estimated based on previous draw down records. (6 month average)
*Airline failure levels were obtained with acoustic sounder

EXHIBIT "H-2"

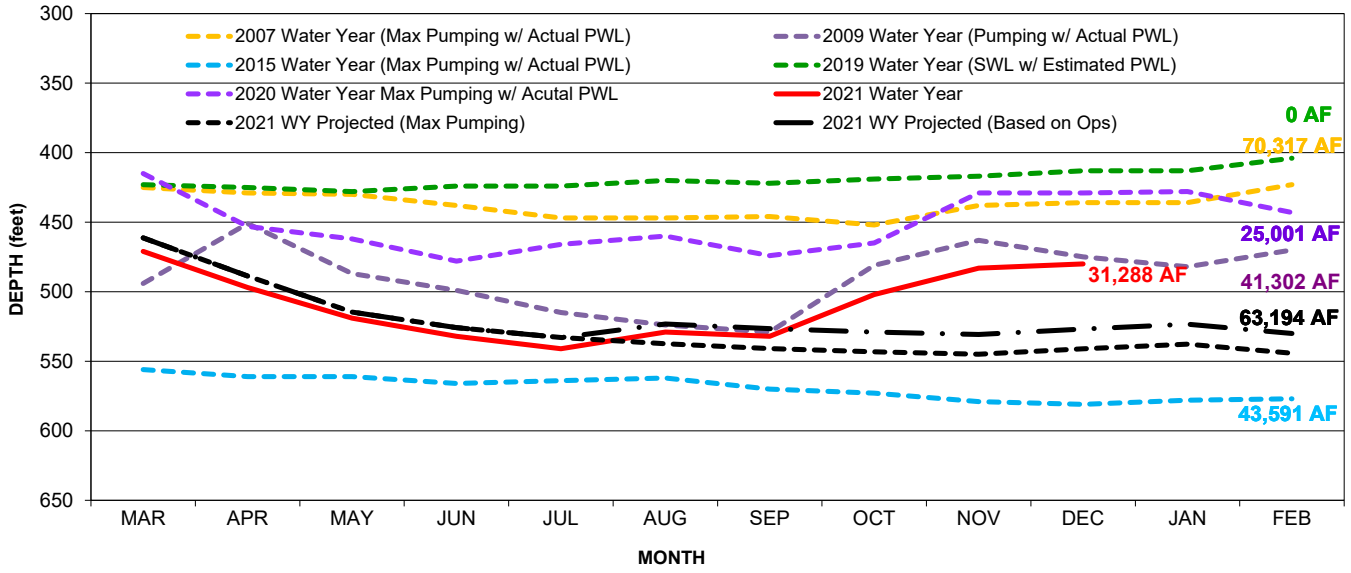
ARVIN-EDISON WATER STORAGE DISTRICT

WELLFIELD PUMPING WATER LEVELS - 2007-09, 2013-16, AND 2018-21

NORTH CANAL



SYCAMORE WELLFIELD



TEJON WELLFIELD

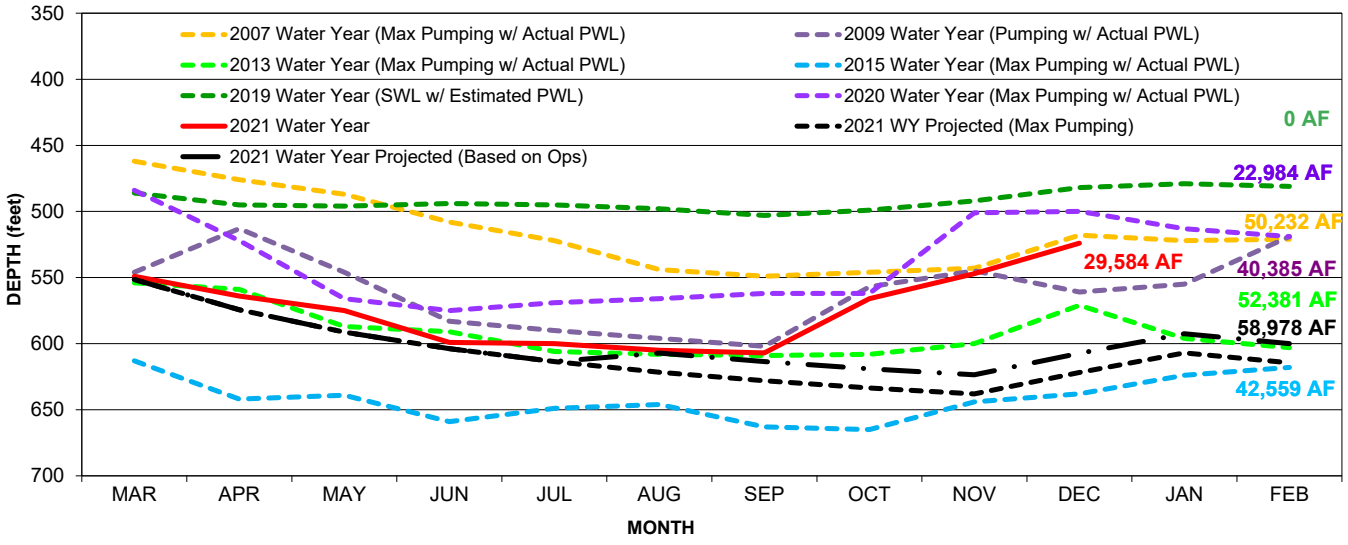


EXHIBIT "I"

December 2021

Sun	Mon	Tue	Wed	Thu	Fri	Sat
JSM—Blue MD—Orange Staff—Green Board—Brown	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 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	1 ACWA - Friant/MWD - CVC/USBR (Pasadena)	2 ACWA - Region 7 Meeting (Pasadena)	3 Kern Managers (Farm Bureau) Blueprint (Zoom)	4
5	6 PWRPA BOD (WebEx) JDA (TC) WWGSA w/Martinez/ Giumarra (Zoom) KGA Hurtado @ SWSD (Yurosek) Consultant Committee RFPs w/Giumarra/Yurosek/ Vickery/Fanucchi	7 FWA Finance Committee/Giumarra	8 WBC WDT3 w/PWRPA Managers & Staff (WebEx) HQ Solar Project (TC)	9 WRMWSD Coordination Brookfield Renewable (formally Regulas Sun Edison)	10 FWA BOD w/Camp (Visalia/Webex)	11
12	13 Small Group WQ (MTs) KGA EC (Yurosek) CVC Advisory Committee (GTM)	14 AEWSD BOD	15 KGA Prep & BOD w/ Yurosek SJRRP RFG (MTs)	16 Union Election (Zoom) Meet & Greet w/Valadao PWRPA Software Issues (TC) Microgrid w/Tunde & Concise Image	17 Water Supply Update (MTs) AE 101 w/Freedom Farms	18
19	20 123TCP Update (WebEx)	21 PWRPA Microgrid Impacts AE 101 w/Warmerdam Water Supply Update	22	23 "Christmas Holiday" District Issues w/Camp (TC) MWD Return via CVC (GTM)	24 "Christmas Holiday"	25
26	27	28 Bear Valley Springs Sycamore Creek Drainage (WebEx) Strategic Plan Update	29	30 "New Year's Holiday"	31 "New Year's Holiday" SWSD - Semitropic Water Storage District 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	