

Prepared by



Dublin San Ramon
Services District

Water, wastewater, recycled water

LAVWMA

QUARTERLY REPORT OF OPERATIONS

FY 2023-2024, 2nd Quarter



**Quarterly Report of Operations
LAVWMA Pumping and Conveyance System**

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Current Quarter Metrics

Export flows increased each month during Q2 FYE 2024 (Figure 1). Pump efficiency remained consistent each month at about 74%.

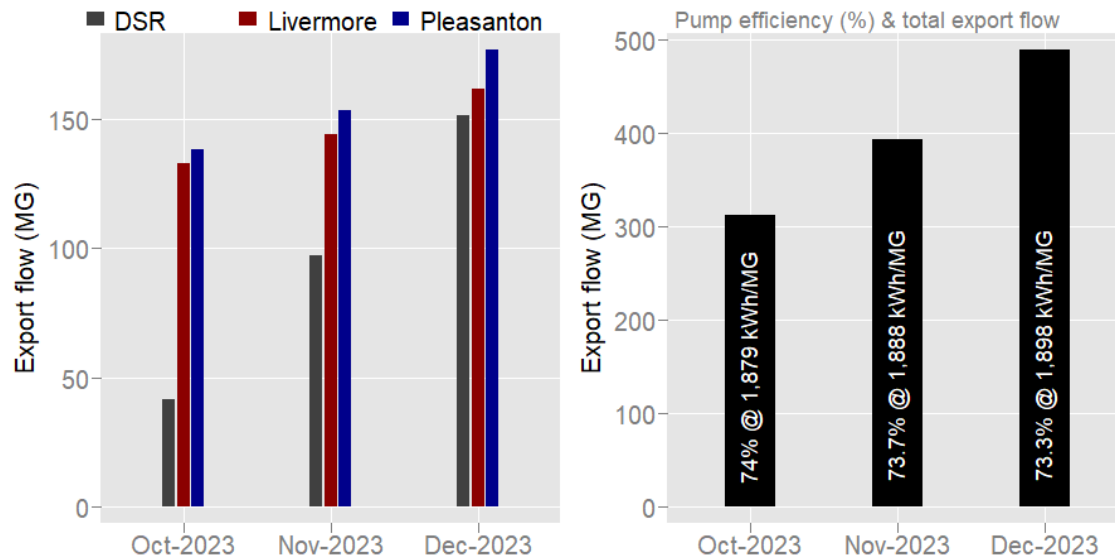


Figure 1 - LAVAQMA Quarter 2 FYE 2024 export flows for Oct-2023, Nov-2023, & Dec-2023; monthly flows shown by source (left plot) and as total (right plot) with pump efficiency (%) at noted kilowatt hour (kWh) per million gallons (MG)

Most usage for either feeder (service) was done during off-peak hours (Figure 2). Feeder A was entirely off-peak except for 240 kWh in November (imperceptible on Figure 2; see Table 2 for monthly values). Feeder B provides power to the building, so there will always be minor charges for building equipment during peak and partial peak periods.

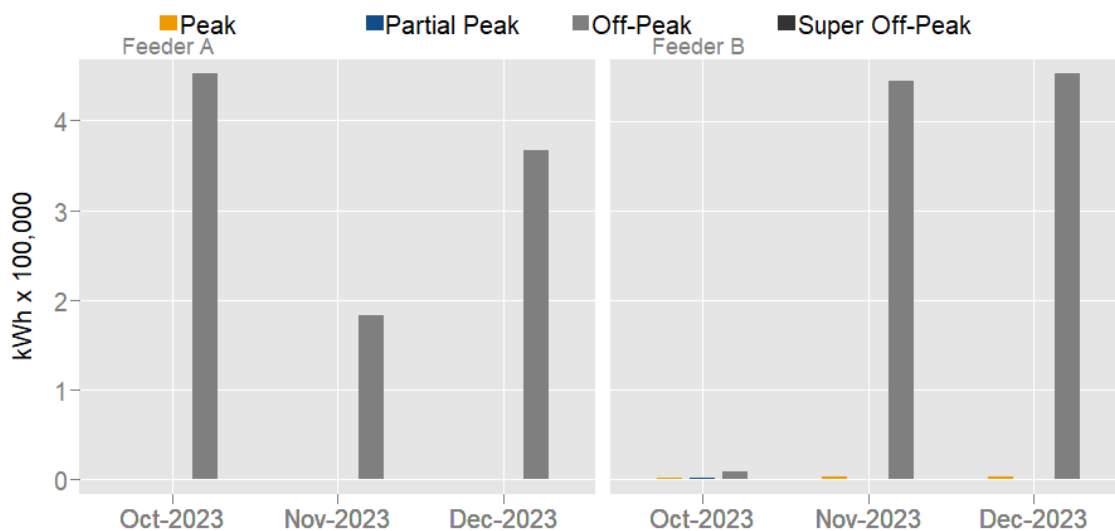


Figure 2 - LAVAQMA Quarter 2 FYE 2024 electric usage as kilowatt hour (kWh) for Oct-2023, Nov-2023, & Dec-2023; monthly usage displayed separately for feeder A (left) & feeder B (right) by time of use: peak, partial peak, off-peak; & super off-peak

Labor and utilities covered the largest fraction of overall cost in Q2 FYE 2024 (Figure 3, 3 left-most plots). There were no expenses for non-routine work this quarter. Expenditures increased noticeably in December due to utilities.

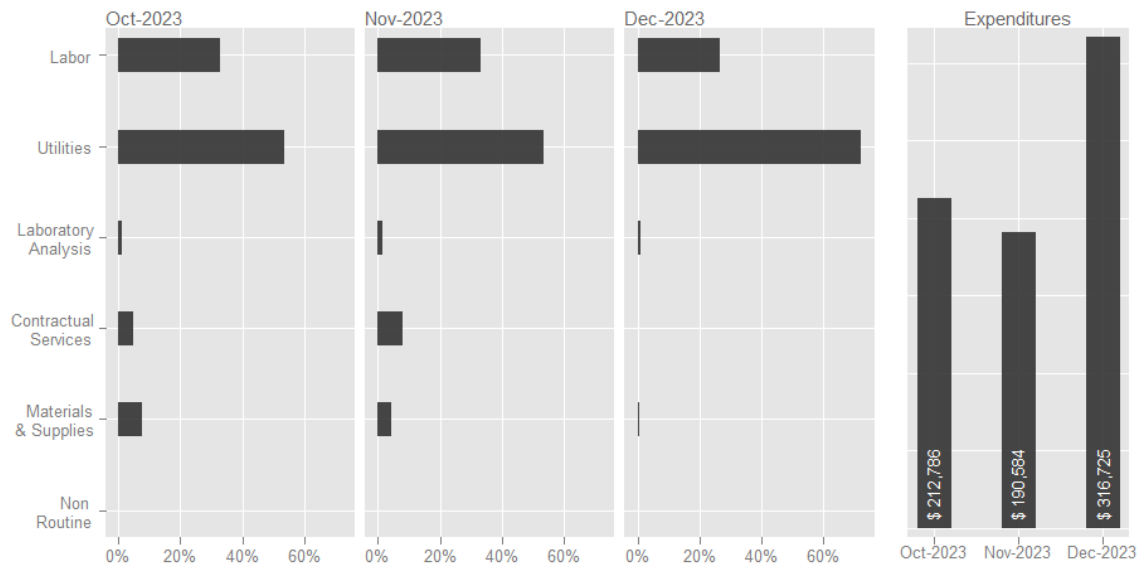


Figure 3 - LAVWMA Quarter 2 FYE 2024 expenditures for Oct-2023, Nov-2023, & Dec-2023 as percent of total cost by type (labor, utilizes, laboratory analysis, contractual services, materials & supplies, & non routine; left plot) and as monthly total (right plot)

Preventative maintenance (PM) work orders exceeded corrective maintenance (CM) work orders each month during Q2 FYE 2024 (Figure 4, right plot). There were no major maintenance items to explain the higher-than-normal CM hours for December (Figure 4, left plot).

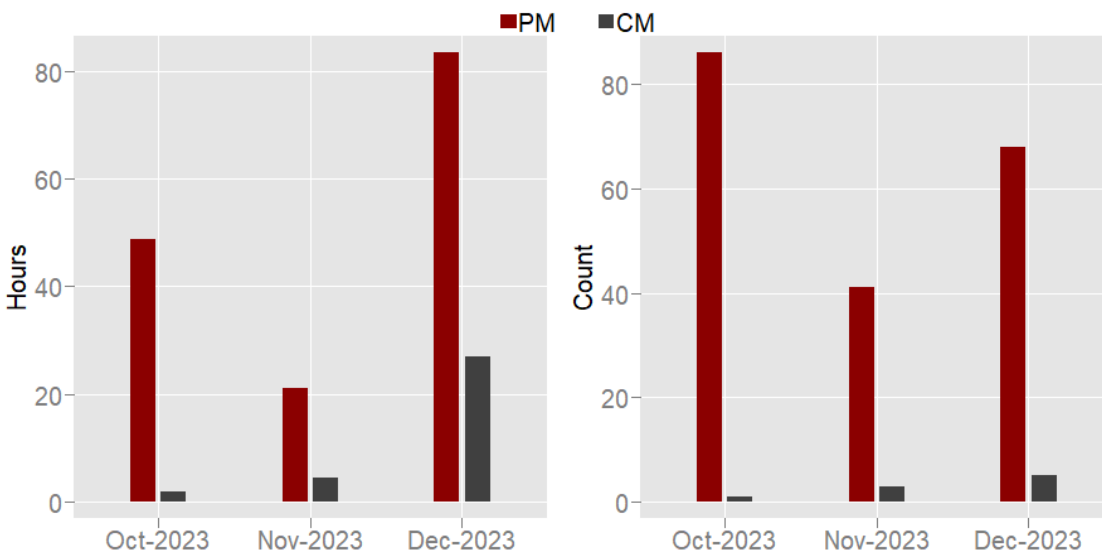


Figure 4 - LAVWMA Quarter 2 FYE 2024 preventative maintenance (PM) & corrective maintenance (CM) work order hours (left plot) and count (right plot) for Oct-2023, Nov-2023, & Dec-2023

Executive Summary

The Livermore-Amador Valley Water Management Agency (LAVWMA) pumping and effluent conveyance system operated normally during the second quarter of Fiscal Year End (FYE) 2024. Just over 1,196 million gallons (MG) of fully treated secondary effluent were pumped to San Francisco Bay via the East Bay Dischargers Authority (EBDA) outfall diffuser and San Leandro Sample Station (SLSS; Table 6 or section Export Flow for more details). The overall efficiency of the pumping system averaged 74.0%, with an average electrical cost of \$436 per MG, or \$142 per acre-foot (AF; Table 1 or section Electrical Usage, Efficiency, & Cost for more details).

Operations

Of the 1,196.1 MG of effluent conveyed through the LAVWMA system during the second quarter, approximately 290 MG came from Dublin San Ramon (DSR), 439 MG from the City of Livermore, and 468 from the City of Pleasanton. Refer to section Export Flow for more details.

PG&E's current rate plan has four time-of-use (TOU) periods (in order of decreasing rates): peak (year-round), partial peak (June-September), off-peak (year-round), and super off-peak (March-May). Whenever possible, staff implement an efficient pumping plan to avoid pumping during higher rate periods (i.e., peak and partial peak).

Operations successfully completed a flapper gate exercise in November, during the exercise 72,172 gallons of dechlorinated water were discharged to San Lorenzo Creek for approximately 10 minutes.

Over the past quarter, DSRSD staff strategically managed LAVWMA's holding basins to minimize the number of pumps running during a given billing cycle. Such an approach was based on anticipated flows from the City of Livermore and DSRSD's wastewater treatment facilities. Refer to section Electrical Usage, Efficiency, & Cost for more information about energy use.

Maintenance

During the quarter, staff logged 153.16 hours completing 195 preventative maintenance (PM) work orders and 33.5 hours completing 9 corrective maintenance (CM) work orders on LAVWMA equipment and systems. Refer to Figure 4 for monthly breakdown.

In October, pump 3 was removed and the pump was replaced. The motor was sent off for inspection and overhaul. In December, motor 3 was re-installed after it was baked and dipped, pump 5 was then pulled and its pump was replaced, and the motor was sent for inspection and overhaul. Pump 5 remains out of service while pump 3 is available, but pump 3 has been deemed a backup until it is fully commissioned and tested.

The following are some additional noteworthy maintenance activities during the quarter:

Electrical

- Pump Station Pump #3 motor overhaul completed and installed
- Pump Station Pump #5 motor sent out for overhaul
- Completed procurement of 17 actuators for replacement at pump station.

Instrument & Controls

- Completed remote monitoring project of all pipeline rectifiers
- Supported SLSS Flapper Gate testing
- Improved installation of existing basin float switches
- Supported SLSS control panel project to develop as-built record drawings

Operations

- Conducted successful San Lorenzo Creek Flapper gate exercise (11/30/2023)
- No flow restrictions requested by EBDA during storms in FYE 2024 Q2

Mechanical

- Pumps 1, 3, & 5 delivered and installed
- Pumps 1 and 3 are operational
- Pump 5 awaiting motor refurbish
- Pump 1 is lead for a year to capture performance data

Electrical Usage, Efficiency, & Cost

Monthly pump efficiency (O_e) was estimated as the fraction of a calculated kWh/MG given full efficiency (i.e., 100%) to the actual kWh/MG (see equations below).

$$O_e = \frac{\text{full efficiency kWh}}{\text{actual kWh}} \times 100$$

$$\text{Full Efficiency kWh} = \frac{\overline{GPM} \times TDH}{3960} \times 0.746 \times d \times 24h$$

where

- $\overline{GPM} = \frac{\text{Export Flow (MG)} \times 10^6}{d \times 1440 \text{ min/d}}$
- TDH (total dynamic head) = 442.8 ft (static lift = 408.8 ft, piping losses = 34 ft)
- 3960 = units conversion constant for water between 40° F and 220° F
- 0.746 = horsepower to kW conversion constant (0.746 hp / kW)
- d = number of days
- h = indicates hour (as 24 hours/day)

Table 1 - LAVWMA Quarter 1 (Q1) & Quarter 2 (Q2) FYE 2024 kWh usage, export flow, pump efficiency, & cost for PG&E-based billing cycle; current quarter & year-to-date (YTD) summaries provided below monthly values

	Billing Days	kWh	Flow (MG)	kWh/MG	Pump Efficiency	Cost (\$)	\$/kWh	\$/MG	\$/AF
Q1									
Jul-2023	31	364,203	181	2,017.73	68.9%	\$98,646	\$0.27	\$547	\$178
Aug-2023	31	289,123	155	1,867.71	74.4%	\$73,439	\$0.25	\$474	\$155
Sep-2023	30	375,670	201	1,869.34	74.4%	\$99,961	\$0.27	\$497	\$162
Q2									
Oct-2023	30	464,989	251	1,853.43	75.0%	\$113,596	\$0.24	\$453	\$148
Nov-2023	31	632,068	335	1,886.26	73.7%	\$149,155	\$0.24	\$445	\$145
Dec-2023	30	822,696	434	1,894.06	73.4%	\$178,247	\$0.22	\$410	\$134
Q2									
Average		639,918	340	1,878	74.0%	\$146,999	\$0.23	\$436	\$142
Total	91	1,919,753	1,020	5,634		\$440,998			
Minimum		464,989	251	1,853	73.4%	\$113,596	\$0.22	\$410	\$134
Maximum		822,696	434	1,894	75.0%	\$178,247	\$0.24	\$453	\$148
YTD									
Average		491,458	259	1,898	73.3%	\$118,841	\$0.25	\$471	\$154
Total	183	2,948,749	1,557	11,389		\$713,044			
Minimum		289,123	155	1,853	68.9%	\$73,439	\$0.22	\$410	\$134
Maximum		822,696	434	2,018	75.0%	\$178,247	\$0.27	\$547	\$178

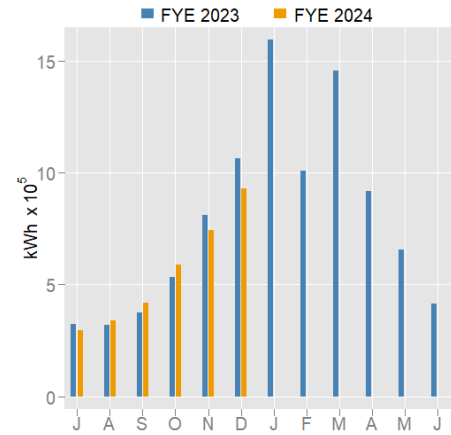


Figure 5 - LAVWMA monthly kWh usage FYE 2023 & FYE 2024 through Dec-2023

Table 2 - LAVWMA Quarter 1 (Q1) & Quarter 2 (Q2) FYE 2024 kWh usage and cost for PG&E-based billing cycle separately for Service A & Service B

	Service A				Cost (\$)	Service B				Cost (\$)
	Peak (kWh)	Partial Peak (kWh)	Off-Peak (kWh)	Super Off-Peak (kWh)		Peak (kWh)	Partial Peak (kWh)	Off-Peak (kWh)	Super Off-Peak (kWh)	
Q1										
Jul-2023	0	0	0	0	\$1,995	2,155	1,941	360,107	0	\$96,651
Aug-2023	0	0	276,136	0	\$64,834	2,471	2,123	8,393	0	\$8,605
Sep-2023	0	6	361,638	0	\$89,817	2,735	2,225	9,066	0	\$10,145
Q2										
Oct-2023	0	0	451,960	0	\$105,228	2,486	1,264	9,279	0	\$8,368
Nov-2023	240	0	183,254	0	\$49,078	3,335	0	445,239	0	\$100,076
Dec-2023	0	0	367,106	0	\$78,679	3,117	0	452,473	0	\$99,568
Q2										
Average	80	0	334,107	0	\$77,662	2,979	421	302,330	0	\$69,337
Total	240	0	1,002,320	0	\$232,986	8,938	1,264	906,991	0	\$208,012
Minimum	0	0	183,254	0	\$49,078	2,486	0	9,279	0	\$8,368
Maximum	240	0	451,960	0	\$105,228	3,335	1,264	452,473	0	\$100,076
YTD										
Average	40	1	273,349	0	\$64,939	2,717	1,259	214,093	0	\$53,902
Total	240	6	1,640,094	0	\$389,631	16,299	7,553	1,284,557	0	\$323,412
Minimum	0	0	0	0	\$1,995	2,155	0	8,393	0	\$8,368
Maximum	240	6	451,960	0	\$105,228	3,335	2,225	452,473	0	\$100,076

Pump Run Time

Monthly pump utilization (U_m) was calculated as the fraction of total pump hours given the total hours possible if all 10 pumps ran continuously (i.e., 24 hours per day; equation below, where h = total hours, m = given month, d = days in month). On average, total pump utilization in Q2 was twice as much as in Q1 (Table 4).

$$U_m = \frac{h_m}{10 \times 24 \times d_m} \times 100$$

Table 3 - LAVWMA Quarter 1 (Q1) & Quarter 2 (Q2) FYE 2024 monthly pump hours by pump and total; quarterly and YTD summaries provided below monthly values

Hours	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6	Pump 7	Pump 8	Pump 9	Pump 10	Total
Q1											
Jul-2023	0	103	30	88	179	5	0	47	104	149	706
Aug-2023	0	0	17	0	387	113	0	97	0	262	875
Sep-2023	0	0	41	0	340	352	0	79	0	279	1,091
Q2											
Oct-2023	111	128	41	273	230	289	5	176	171	5	1,429
Nov-2023	485	9	0	498	0	283	0	11	483	0	1,769
Dec-2023	517	1	0	513	0	433	136	150	364	138	2,251
Q1											
Average Hours	0	34	29	29	302	156	0	74	35	230	890
Std Dev Hours	0.0	59.7	12.4	50.8	108.7	177.4	0.0	25.0	60.2	70.9	192.6
Hours	0	103	88	88	906	469	0	222	104	690	2,671
Min Hours	0	0	17	0	179	5	0	47	0	149	706
Max Hours	0	103	41	88	387	352	0	97	104	279	1091
Q2											
Average Hours	371	46	14	428	77	335	47	112	339	47	1816
Std Dev Hours	225.5	71.0	23.9	134.2	133.0	84.9	76.9	88.8	157.7	78.4	413.1
Hours	1,113	137	41	1,284	230	1,004	141	337	1,018	142	5,449
Min Hours	111	1	0	273	0	283	0	11	171	0	1,429
Max Hours	517	128	41	513	230	433	136	176	483	138	2,251
Total Average Hours	186	40	22	229	189	246	23	93	187	139	1,353
Total Std Dev Hours	248.3	59.0	19.0	236.4	164.4	158.2	55.0	62.0	198.0	120.3	583.3
Total Hours	1,113	241	130	1,372	1,136	1,473	141	559	1,122	833	8,120
Total Min Hours	0	0	0	0	0	5	0	11	0	0	706
Total Max Hours	517	128	41	513	387	433	136	176	483	279	2,251

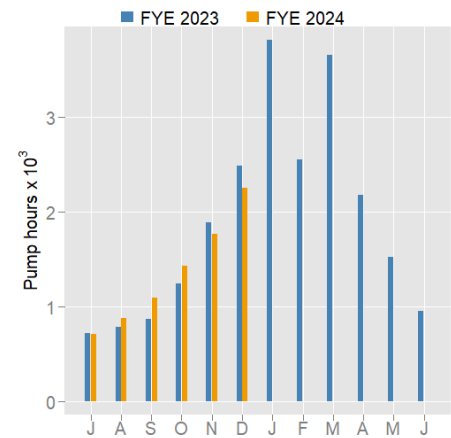


Figure 6- LAVWMA FYE 2023 & FYE 2024 through Dec-2023 monthly pump hours

Table 4 - LAVWMA Quarter 1 (Q1) & Quarter 2 (Q2) FYE 2024 monthly percent pump utilization; quarterly and YTD summaries provided below monthly values

	Pump Utilization
Q1	
Jul-2023	9.5%
Aug-2023	11.8%
Sep-2023	15.1%
Q2	
Oct-2023	19.2%
Nov-2023	24.6%
Dec-2023	30.3%
Q1	
Average Pump Utilization	12.1%
Min Pump Utilization	9.5%
Max Pump Utilization	15.1%
Q2	
Average Pump Utilization	24.7%
Min Pump Utilization	19.2%
Max Pump Utilization	30.3%
Total Average Pump Utilization	18.4%
Total Min Pump Utilization	9.5%
Total Max Pump Utilization	30.3%

Basin Levels

Table 5 - LAVWMA Quarter 1 (Q1) & Quarter 2 (Q2) FYE 2024 monthly average levels (ft) by basin and overall (total); quarterly and YTD summaries provided below monthly values

Average				
	Basin 1	Basin 2	Basin 3	Total
Q1				
Jul-2023	3.08	0.08	1.83	1.66
Aug-2023	3.38	1.36	3.47	2.74
Sep-2023	2.63	0.10	2.72	1.82
Q2				
Oct-2023	3.15	0.10	3.18	2.14
Nov-2023	3.19	0.10	3.82	2.37
Dec-2023	3.84	0.12	3.45	2.47
Q2				
Average	3.39	0.10	3.48	2.33
Minimum	3.15	0.10	3.18	2.14
Maximum	3.84	0.12	3.82	2.47
YTD				
Average	3.20	0.41	3.08	2.23
Minimum	3.08	0.08	1.83	1.66
Maximum	3.38	1.36	3.82	2.74

Export Flow

Combined export flow includes Dublin San Ramon, the City of Livermore, and the City of Pleasanton. Monthly totals do not include flows diverted for recycling use by DERWA and Pleasanton. Budgeted FYE 2024 flow is 3,374 MG at an estimated cost of \$1,084 / MG.

Table 6 - LAVWMA Quarter 1 (Q1) & Quarter 2 (Q2) FYE 2024 monthly export flows in million gallons (MG) for Dublin San Ramon, Livermore, & Pleasanton; quarterly and YTD summaries provided below monthly values; note totals (quarterly & YTD) provided in with monthly summary

	Dublin San Ramon (MG)	Livermore (MG)	Pleasanton (MG)	Combined Export (MG)
Q1	0.00	327.72	228.90	556.61
Jul-2023	0.00	104.32	46.25	150.57
Aug-2023	0.00	109.72	69.73	179.45
Sep-2023	0.00	113.68	112.92	226.60
Q2	289.72	438.35	468.04	1196.10
Oct-2023	41.42	132.86	138.10	312.38
Nov-2023	97.00	143.96	153.21	394.16
Dec-2023	151.29	161.53	176.74	489.56
Total	170.14	766.06	816.52	1752.72
Q2				
Average	96.57	146.12	156.01	398.70
Minimum	41.42	132.86	138.10	312.38
Maximum	151.29	161.53	176.74	489.56
YTD				
Average	48.29	127.68	116.16	292.12
Minimum	0.00	104.32	46.25	150.57
Maximum	151.29	161.53	176.74	489.56

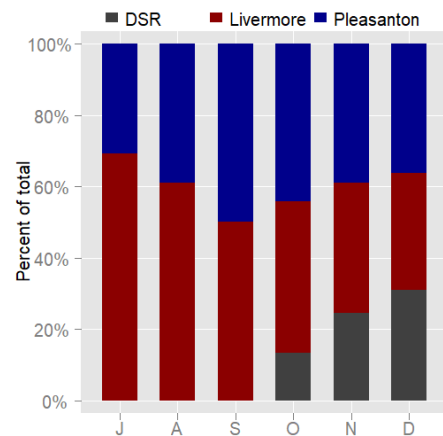


Figure 7- LAVWMA FYE 2024 through Dec-2023 monthly export flows by region as a percent of total
DSR = Dublin San Ramon

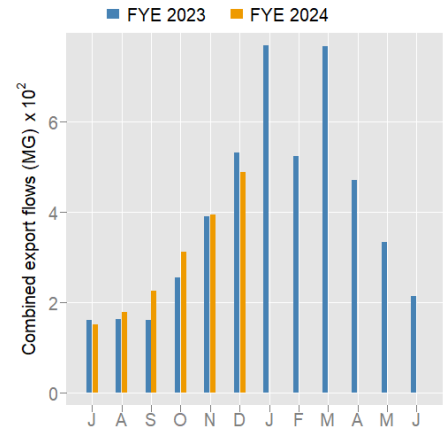


Figure 8 - LAVWMA FYE 2023 & FYE 2024 through Dec-2023 monthly combined export flows (MG)

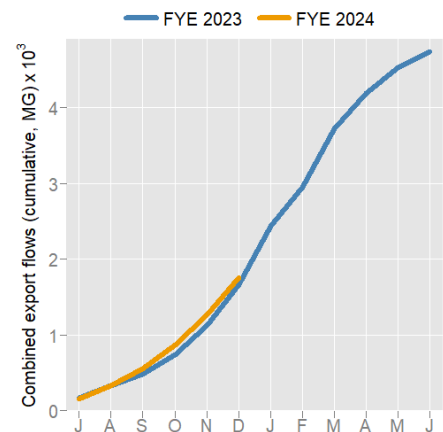


Figure 9 - LAVWMA FYE 2023 & FYE 2024 through Dec-2023 monthly cumulative combined export flows (MG)

Expenditures & Budget Utilization: Labor & O&M

October expenses included manhole repair by DeFreitas Pipeline, Inc., and a calcium thiosulfate (Ravago Chemical Distribution, Inc.) order revised from February 2023. November expenditures included light fixture replacement and overhead door maintenance at the LAVWMA pump station, along with landscaping / weed maintenance performed Jul-2023 through Oct-2023. Utility costs increased in December.

Table 7 - LAVWMA Quarter 1 (Q1) & Quarter 2 (Q2) FYE 2024 monthly expenditure for labor, accounts payable (A/P), and overall (O&M); cost per export flow (MG and acre-foot [AF]) provided for reference; quarterly and YTD summaries provided below monthly values; note totals (quarterly & YTD) provided in with monthly summary

	Labor Expenses	A/P Expenses	O&M Expenses	\$/MG	\$/AF
Q1	\$227,228	\$311,909	\$539,137	\$969	\$316
Jul-2023	\$91,832	\$121,163	\$212,995	\$1,415	\$461
Aug-2023	\$77,175	\$84,902	\$162,077	\$903	\$294
Sep-2023	\$58,221	\$105,844	\$164,065	\$724	\$236
Q2	\$216,482	\$503,613	\$720,095	\$602	\$196
Oct-2023	\$69,728	\$143,058	\$212,786	\$681	\$222
Nov-2023	\$62,952	\$127,632	\$190,584	\$484	\$158
Dec-2023	\$83,802	\$232,923	\$316,725	\$647	\$211
Total	\$443,709	\$815,522	\$1,259,231	\$718	\$234
Q2					
Average	\$72,161	\$167,871	\$240,032	\$604	\$197
Minimum	\$62,952	\$127,632	\$190,584	\$484	\$158
Maximum	\$83,802	\$232,923	\$316,725	\$681	\$222
YTD					
Average	\$73,952	\$135,920	\$209,872	\$809	\$264
Minimum	\$58,221	\$84,902	\$162,077	\$484	\$158
Maximum	\$91,832	\$232,923	\$316,725	\$1,415	\$461

Table 8 - LAVWMA Quarter 1 (Q1) & Quarter 2 (Q2) FYE 2024 YTD expenditures (O&M & labor) with percent budget utilized and budget remaining

	O&M YTD Expenses	O&M Budget Utilization	O&M Budget Remaining	Labor YTD Expenses	Labor Budget Utilization	Labor Budget Remaining
Q1						
Jul-2023	\$212,995	5.8%	\$3,443,889	\$91,832	7.8%	\$1,091,652
Aug-2023	\$375,072	10.3%	\$3,281,812	\$169,007	14.3%	\$1,014,477
Sep-2023	\$539,137	14.7%	\$3,117,747	\$227,228	19.2%	\$956,256
Q2						
Oct-2023	\$751,923	20.6%	\$2,904,961	\$296,956	25.1%	\$886,528
Nov-2023	\$942,506	25.8%	\$2,714,378	\$359,908	30.4%	\$823,576
Dec-2023	\$1,259,231	34.4%	\$2,397,653	\$443,709	37.5%	\$739,775

Table 9 - LAVWMA Quarter 1 (Q1) & Quarter 2 (Q2) FYE 2024 billed labor hours and full-time employment equivalent; quarterly and YTD summaries provided below monthly values; note billed labor hour totals (quarterly & YTD) provided with monthly summary

	Billed Labor Hours	FTE Equivalent
Q1	1,099.0	
Jul-2023	440.0	2.5
Aug-2023	370.0	2.1
Sep-2023	289.0	1.7
Q2	1,043.8	
Oct-2023	378.3	2.2
Nov-2023	287.0	1.7
Dec-2023	378.5	2.2
Total	2,142.8	
Q2		
Average	348	2.0
Minimum	287	1.7
Maximum	379	2.2
YTD		
Average	357.1	2.1
Minimum	287.0	1.7
Maximum	440.0	2.5

Expenditures: Livermore Sole Use Facilities

Table 10 - LAVWMA Quarter 1 (Q1) & Quarter 2 (Q2) FYE 2024 expenditures (labor & accounts payable [A/P]) for Livermore sole use facilities; quarterly and YTD (Total) summaries provided below monthly values

Expenses			
	Labor	A/P	Total
Q1			
Jul-2023	\$588	\$608	\$1,196
Aug-2023	\$0	\$1,801	\$1,801
Sep-2023	\$4,042	\$665	\$4,707
Q2			
Oct-2023	\$0	\$220	\$220
Nov-2023	\$0	\$100,737	\$100,737
Dec-2023	\$0	\$726	\$726
	Labor	A/P	Total
Q1			
Total	\$4,629	\$3,074	\$7,703
Average	\$1,543	\$1,025	\$2,568
Minimum	\$0	\$608	\$1,196
Maximum	\$4,042	\$1,801	\$4,707
Q2			
Total	\$0	\$101,682	\$101,682
Average	\$0	\$33,894	\$33,894
Minimum	\$0	\$220	\$220
Maximum	\$0	\$100,737	\$100,737
Total Total	\$4,629	\$104,756	\$109,385
Total Average	\$772	\$17,459	\$18,231
Total Minimum	\$0	\$220	\$220
Total Maximum	\$4,042	\$100,737	\$100,737

Detailed YTD O&M Budget Comparison to Actual Expenses

LAVWMA
 BUDGET COMPARISON TO ACTUAL EXPENSES: GOODS & SERVICES

Current FY Period: 6

		ACTUAL EXPENSES BILLED TO LAVWMA FOR REGULAR O&M															
		Budget	July	August	September	October	November	December	January	February	March	April	May	June	YTD	YTD	
		FY 2023-2024	2023	2023	2023	2023	2023	2023	2024	2024	2024	2024	2024	2024	TOTAL	Budget	
Project Total:	Labor																
	Staff	\$1,183,484	\$91,832	\$77,175	\$58,221	\$76,176	\$62,952	\$83,802							\$450,158	\$591,742	
	Subtotal	\$1,183,484	\$91,832	\$77,175	\$58,221	\$69,728	\$62,952	\$83,802	\$0	\$0	\$0	\$0	\$0	\$0	\$443,709	\$591,742	
Phase Total:	Materials & Supplies																
	Operations Supplies	\$19,100	17	\$85	\$1,625	\$16,213	\$143	\$153							\$18,235	\$9,550	
	Mechanical Supplies	\$31,900	\$765	\$1,214	\$138	\$462	\$2,158	\$1,269							\$6,005	\$15,950	
	Electrical Supplies	\$38,900	\$9,515	\$4,167	\$0	\$12	\$5,949	\$468	\$0	\$0	\$0	\$0	\$0	\$0	\$20,112	\$19,450	
	Subtotal	\$89,900	\$10,297	\$5,466	\$1,763	\$16,687	\$8,249	\$1,890	\$0	\$0	\$0	\$0	\$0	\$0	\$44,352	\$44,950	
Analysis	Laboratory Analysis																
Biochemical Oxy	Compliance Testing	\$11,300	\$896	\$1,120	\$896	\$1,120	\$896	\$896							\$5,824	\$5,650	
Demand & Total	Operational Support Testing	\$4,900	\$414	\$414	\$414	\$414	\$414	\$414							\$2,484	\$2,450	
Langelier Index	Special Sampling	\$29,400	\$1,344	\$1,477	\$1,460	\$580	\$1,460	\$1,460	\$0	\$0	\$0	\$0	\$0	\$0	\$7,781	\$14,700	
	Subtotal	\$45,600	\$2,654	\$3,011	\$2,770	\$2,114	\$2,770	\$2,770	\$0	\$0	\$0	\$0	\$0	\$0	\$16,089	\$22,800	
Phase Total:	Contractual Services																
	Sub-surface Repairs	\$15,750													\$0	\$7,875	
	Street Sweeping	\$5,000													\$0	\$2,500	
	Cathodic Protection Survey & Repairs	\$47,250													\$0	\$23,625	
	Underground Service Alert	\$4,800	\$402												\$402	\$2,400	
	SCADA software maintenance contract	\$14,600													\$0	\$7,300	
	Remote monitoring annual service for PS and Re	\$1,950					\$110								\$110	\$975	
	HVAC Maintenance/Repairs	\$800													\$0	\$400	
	Termites/Pest Control	\$950													\$0	\$475	
	Landscape/weed maintenance	\$11,200					\$3,758								\$3,758	\$5,600	
	Smartmeter Covers	\$1,800													\$0	\$900	
	Janitorial Service	\$10,000	3104.76	\$975		\$975	\$1,950								\$3,900	\$5,000	
	Fire Extinguisher Maintenance	\$200													\$0	\$100	
	Postage/Shipping Charges	\$0													\$0	\$0	
	Misc Professional/Contractual Services	\$31,500	\$5,365	\$1,339	\$0	\$9,178	\$9,059	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,941	\$15,750	
	Subtotal	\$145,800	\$8,872	\$2,314	\$0	\$10,153	\$14,877	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$36,216	\$72,900	
Phase Total:	Utilities																
	Electricity (PG&E)	\$2,188,700	\$99,254	\$74,026	\$100,626	\$113,816	\$100,737	\$228,051							\$617,255	\$1,094,350	
	Water & Sewer (Pleasanton)	\$1,100			\$334		\$566								\$900	\$550	
	Water (EBMUD)	\$1,300			\$233		\$282								\$515	\$650	
	Telephone/communications	\$1,000	\$86	\$85	\$118	\$288	\$150	\$213							\$941	\$500	
	WW Treatment (DSRSD)	\$0													\$0	\$0	
	Subtotal	\$2,192,100	\$99,340	\$74,111	\$101,311	\$114,104	\$101,736	\$228,264	\$0	\$0	\$0	\$0	\$0	\$0	\$718,865	\$1,096,050	
Phase Total:	Non-Routine																
		\$0													\$0	\$0	
	Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
	Monthly Total		\$212,995	\$162,077	\$164,065	\$212,786	\$190,584	\$316,725	\$0	\$0	\$0	\$0	\$0	\$0	\$1,259,231	\$1,828,442	
	YTD Total	\$3,656,884	\$212,995	\$375,072	\$539,137	\$751,923	\$942,506	\$1,259,231	\$1,259,231	\$1,259,231	\$1,259,231	\$1,259,231	\$1,259,231	\$1,259,231	\$1,259,231	\$1,259,231	
	Combined Export Flow, mg	3374	151	179	227	312	394	490	0	0	0	0	0	0	1,752	1,687	
	Pumping Efficiency																
	Monthly Cost, \$/mg		\$1,415	\$903	\$724		\$484	\$647	-	-	-	-	-	-	-	-	
	YTD Running Cost, \$/mg	\$1,084	\$1,415	\$1,137	\$969	\$866	\$746	\$719	-	-	-	-	-	-	\$719	-	

Q1 Notes:
 Landscaping: July was paid in Aug and Sep expenditure includes both Aug and Sep invoices

LAVWMA
 BUDGET COMPARISON TO ACTUAL EXPENSES: LABOR

Current FY Period: 6

ACTUAL EXPENSES BILLED TO LAVWMA FOR REGULAR O&M														
FY 2023-2024	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	YTD TOTAL	YTD Budget
<i>Estimated Personnel Hours</i>														
Division 51 - FOD	50	-	-	-	-	-	13.00	-	-	-	-	-	13.00	25.00
Water/Wastewater Sys Lead Op	0												-	-
Water/Wastewater Sys OP IV-On Call	0					13.00							13.00	-
Water/Wastewater Sys OP IV	0												-	-
Water/Wastewater Sys OP III	0												-	-
Water/Wastewater Sys OP I/II	43												-	21.50
Maintenance Worker	0												-	-
Supervisor	7												-	3.50
Division 52 - WWTP	2,832	185.50	175.00	127.50	111.75	125.00	137.00	-	-	-	-	-	861.75	1,416.00
Process Lead Operator IV/V	289		16.00	3.00	6.00	15.00	29.00						69.00	144.50
Senior WWTP Operator III	1,013	37.00	40.00	21.50	35.75	43.50	36.00						213.75	506.50
Operator In Training	0	22.50	39.50	20.00									82.00	-
Operator II	1,431	126.00	79.50	83.00	70.00	63.00	72.00						493.50	715.50
Operator II (SLSS)	0												-	-
Operations Superintendent	99												-	49.50
Ops Director					3.5								-	-
Division 53 - MECH	1,107	145.00	121.00	92.50	141.00	113.00	174.00	-	-	-	-	-	786.50	553.50
Senior Mechanic-Crane Cert	54	37.00	46.50	30.00	39.50	27.00	70.00						250.00	27.00
Senior Mechanic - USA	72			12.00	11.50	32.00	6.00						61.50	36.00
Maintenance Worker	54					9.00							9.00	27.00
Mechanic I/II	882	36.00	28.00	22.50	35.00	25.00	45.00						191.50	441.00
Mechanic II-Crane Cert	0	25.00	7.00	0.50	21.00	2.50	11.00						67.00	-
Mechanic III - USA	0	47.00	39.50	27.00	30.00	24.00	33.00						200.50	-
Mechanic II-Crane Cert - USA	0			0.50		2.50							3.00	-
Supervisor	45				4.00								4.00	22.50
Division 54 - ELEC	1,080	88.00	71.00	67.50	121.50	48.00	47.50	-	-	-	-	-	443.50	540.00
Senior Instrument/Controls Tech	45			1.00			3.00						4.00	22.50
Instrumentation & Controls Tech I/II	504	50.00	71.00	39.50	32.50	19.00	24.50						236.50	252.00
Ice Supervisor					1.00		1.00						2.00	-
Senior Electrician	45			6.00	11.00	9.00	6.00						32.00	22.50
Electrician I/II	441	33.00		20.00	77.00	20	12.00						162.00	220.50
Principal Electrical Engineer	45	5.00		1.00			1.00						7.00	22.50
Division 55 - Laboratory	0	-	-	-	-	-	-	-	-	-	-	-	-	-
EC Inspector II-Pre-treatment	0												-	-
Laboratory Technician	0												-	-
Supervisor	0												-	-
Division 26 - SAFETY	54	-	-	-	-	-	-	-	-	-	-	-	-	27.00
Safety Officer	54												-	27.00
Division 40 - ENG	288	21.50	3.00	1.50	4.00	1.00	7.00	-	-	-	-	-	38.00	126.00
Senior Civil Engineer-SME	36	3.00	1.00										-	-
Associate Engineer	108	17.00	2.00	1.50	4.00		7.00						31.50	54.00
Construction Inspector I/II	72	1.50											1.50	36.00
Engineering Technician II	36					1.00							1.00	18.00
GIS Analyst	36												-	18.00
<i>Total Estimated Personnel Hours</i>	5,411													
<i>FTE</i>	2.6													
Total Monthly Hours		440.00	370.00	289.00	378.25	287.00	378.50	-	-	-	-	-	2,142.75	2,687.50

EBDA Monthly Reports

LAVWMA October 2023

Enter only numerical data in the result columns and only qualifiers in the qualifier columns. Any other comments should go in the corresponding cell on the Comments tab.

Parameter	Flow	CBOD Qual	CBOD	TSS Qual	TSS	pH	pH	Total Residual Chlorine	Total Residual Chlorine	Fecal Qual	Fecal Coliforms	Entero Qual	Enterococci
Units	MGD		mg/L		mg/L	SU	SU	mg/L	mg/L		MPN/100mL		MPN/100mL
Test Method	Daily Average (Mean)		SM 5210 B-2011		SM 2540 D-2011	Instant Min	Instant Max	Daily Average (Daily Average (Mean)		SM 9221 C,E-2006		Enterolert
MDL			3.0		1.4								
RL			3.0		4.5						2		10
Location	LAVWMA-EXP		LAVWMA-EXP		LAVWMA-EXP	LAVWMA-EXP	LAVWMA-EXP	LAVWMA-EXP	SLSS		SLSS		SLSS
10/1/2023	11.28					7.30	7.49	0.39					
10/2/2023	10.82					7.30	7.59	0.15					
10/3/2023	11.33					7.28	7.45	0.53			7		6.3
10/4/2023	10.17		5.0		7.0	7.33	7.50	1.25					
10/5/2023	8.22					7.20	7.46	2.04					
10/6/2023	8.78					7.18	7.41	2.48					
10/7/2023	9.62					7.18	7.42	2.12					
10/8/2023	8.27					7.19	7.49	1.98					
10/9/2023	9.89					7.28	7.47	2.26					
10/10/2023	8.85					7.30	7.47	1.79			11		20
10/11/2023	7.98		3.8		7.6	7.28	7.47	1.10					
10/12/2023	9.76					7.35	7.62	1.31					
10/13/2023	8.82					7.30	7.52	1.13					
10/14/2023	7.65					7.28	7.45	1.02					
10/15/2023	11.04					7.27	7.43	1.09					
10/16/2023	6.86					7.14	7.65	1.60					
10/17/2023	10.43					7.25	7.45	0.54			4	<	10
10/18/2023	8.71		6.4		14	7.19	7.49	0.67					
10/19/2023	10.55					7.20	7.41	0.78					
10/20/2023	7.69					7.27	7.43	1.70					
10/21/2023	11.06					7.28	7.46	1.25					
10/22/2023	11.11					7.28	7.41	1.38					
10/23/2023	11.79					7.33	7.49	1.28					
10/24/2023	10.23					7.40	7.65	1.97			30		20
10/25/2023	11.87		4.4		8.2	7.38	7.59	2.15					
10/26/2023	11.86					7.42	7.65	1.65					
10/27/2023	10.50					7.38	7.77	1.68					
10/28/2023	10.63					7.38	7.57	1.62					
10/29/2023	12.42					7.35	7.54	2.72					
10/30/2023	12.34					7.28	7.59	2.73					
10/31/2023	11.87					7.28	7.49	2.11			14		20

Note:
 Column G - pH Minimum; online
 Column H - pH Maximum; online

LAVWMA	November		2023
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Enter only numerical data in the result columns and only qualifiers in the qualifier columns. Any other comments should go in the corresponding cell on the Comments tab.

Parameter	Flow	CBOD Qual	CBOD	TSS Qual	TSS	pH	pH	Total Residual Chlorine	Total Residual Chlorine	Fecal Qual	Fecal Coliforms	Entero Qual	Enterococci
Units	MGD		mg/L		mg/L	SU	SU	mg/L	mg/L		MPN/100mL		MPN/100mL
Test Method	Daily Average (Mean)		SM 5210 B-2011		SM 2540 D-2011	Instant Min	Instant Max	Daily Average (Daily Average (Mean)		SM 9221 C,E-2006		Enterolert
MDL			3.0		1.2								
RL			3.0		4.5						2		10
Location	LAVWMA-EXP		LAVWMA-EXP		LAVWMA-EXP	LAVWMA-EXP	LAVWMA-EXP	LAVWMA-EXP	SLSS		SLSS		SLSS
11/1/2023	9.29		4.6		10	6.99	7.19	1.88					
11/2/2023	11.85					7.02	7.21	2.34					
11/3/2023	8.69					6.96	7.19	2.94					
11/4/2023	10.36					6.89	7.11	2.84					
11/5/2023	12.08					6.90	7.04	2.58					
11/6/2023	11.85					6.91	7.04	1.86					
11/7/2023	11.93					6.92	7.09	1.32			2	<	10
11/8/2023	12.38					6.96	7.14	1.75					
11/9/2023	12.42		5.0		7.6	6.96	7.22	1.50					
11/10/2023	12.46					6.94	7.09	1.64					
11/11/2023	11.90					6.88	7.09	1.71					
11/12/2023	12.47					6.89	7.07	0.87					
11/13/2023	15.69					6.89	7.05	0.63					
11/14/2023	15.47					6.87	7.07	0.34		<	2	<	10
11/15/2023	14.99		6.1		9.4	7.01	7.11	0.55					
11/16/2023	13.58					6.96	7.96	0.53					
11/17/2023	14.31					7.06	7.18	0.62					
11/18/2023	14.40					7.01	7.18	1.00					
11/19/2023	16.13					7.01	7.18	0.89					
11/20/2023	12.55					7.02	7.21	0.72					
11/21/2023	13.82					7.06	7.22	1.53			4		10
11/22/2023	15.28		16		14	7.02	7.29	2.98					
11/23/2023	13.73					6.99	7.18	2.85					
11/24/2023	12.22					7.06	7.22	2.15					
11/25/2023	15.45					7.08	7.22	1.63					
11/26/2023	13.25					7.06	7.20	1.46					
11/27/2023	14.31					7.06	7.29	1.29					
11/28/2023	14.31					7.13	7.24	3.46			2		10
11/29/2023	14.01		16		14	7.10	7.31	2.41					
11/30/2023	12.97					7.10	7.27	1.96					

Note:
 Column G - pH Minimum; online
 Column H - pH Maximum; online

LAVWMA	December		2023
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Enter only numerical data in the result columns and only qualifiers in the qualifier columns. Any other comments should go in the corresponding cell on the Comments tab.

Parameter	Flow	CBOD Qual	CBOD	TSS Qual	TSS	pH	pH	Total Residual Chlorine	Total Residual Chlorine	Fecal Qual	Fecal Coliforms	Entero Qual	Enterococci
Units	MGD		mg/L		mg/L	SU	SU	mg/L	mg/L		MPN/100mL		MPN/100mL
Test Method	Daily Average (Mean)		SM 5210 B-2011		SM 2540 D-2011	Instant Min	Instant Max	Daily Average (Daily Average (Mean)		SM 9221 C,E-2006		Enterolert
MDL			2.0		1.2								
RL			2.0		4.5						2		10
Location	LAVWMA-EXP		LAVWMA-EXP		LAVWMA-EXP	LAVWMA-EXP	LAVWMA-EXP	LAVWMA-EXP	SLSS		SLSS		SLSS
12/1/2023	15.03					7.08	7.24	1.89					
12/2/2023	13.63					7.08	7.31	1.61					
12/3/2023	15.46					7.03	7.15	1.43					
12/4/2023	14.28					7.04	7.22	1.01					
12/5/2023	15.39					7.10	7.18	0.87			4	<	10
12/6/2023	15.41					7.08	7.35	0.92					
12/7/2023	15.41		13		15	7.10	7.22	1.22					
12/8/2023	15.28					7.04	7.22	1.07					
12/9/2023	13.32					7.06	7.27	0.91					
12/10/2023	15.42					7.04	7.20	0.95					
12/11/2023	14.69					7.01	7.23	0.71					
12/12/2023	14.56					7.08	7.27	0.82		<	2		20
12/13/2023	15.15		11		13	7.04	7.24	1.31					
12/14/2023	15.37					7.10	7.32	1.92					
12/15/2023	13.16					7.04	7.22	2.57					
12/16/2023	15.00					7.01	7.17	2.71					
12/17/2023	15.41					7.01	7.17	2.84					
12/18/2023	17.83					6.99	7.18	2.43					
12/19/2023	18.86					6.97	7.20	1.66		<	2	<	10
12/20/2023	19.42		12		12	7.03	7.22	3.09					
12/21/2023	18.87					7.06	7.18	2.56					
12/22/2023	17.30					7.06	7.20	2.66					
12/23/2023	15.13					7.04	7.23	2.07					
12/24/2023	16.77					7.08	7.18	2.15					
12/25/2023	16.49					7.03	7.22	2.24					
12/26/2023	16.07					7.15	7.28	2.42		<	2	<	10
12/27/2023	14.39		9.9		17	7.13	7.30	2.60					
12/28/2023	17.02					7.15	7.27	2.77					
12/29/2023	15.00					7.04	7.18	3.65					
12/30/2023	16.79					6.99	7.15	3.82					
12/31/2023	17.69					7.04	7.13	4.56					

Note:
 Column G - pH Minimum; online
 Column H - pH Maximum; online

Langelier Saturation Index Report (Livermore, DSRSD, LAVWMA)

CITY OF LIVERMORE
LIVERMORE WATER RECLAMATION PLANT

Livermore - 4th Quarter 2023
Langelier pH Saturation Index

Collection DATE	TDS (mg/L)	Temp (°C)	Ca Hardness (mg/L CaCO ₃)	Alkalinity (mg/L CaCO ₃)	pH (Actual)	pH Saturation	Langlier Index
10/04/23	540	24.0	68	285	7.5	7.6	-0.1
11/01/23	510	22.0	72	331	7.6	7.5	0.0
12/06/23	560	20.0	73	322	7.6	7.6	0.0
MAXIMUM	560	24.0	73	331	7.6	7.6	0.0
MINIMUM	510	20.0	68	285	7.5	7.5	-0.1
AVERAGE	537	22.0	71	313	7.6	7.6	0.0

DUBLIN SAN RAMON SERVICES DISTRICT
WASTEWATER TREATMENT FACILITY

DSRSD - 4th Quarter 2023
Langelier pH Saturation Index

Collection DATE	TDS (mg/L)	Temp (°C)	Ca Hardness (mg/L CaCO ₃)	Alkalinity (mg/L CaCO ₃)	pH (Actual)	pH Saturation	Langlier Index
10/10/23	584	26.0	84	240	7.4	7.5	-0.1
11/07/23	566	21.9	74	250	7.5	7.6	-0.1
12/12/23	669	20.5	98	300	7.3	7.4	-0.1
MAXIMUM	669	26.0	98	300	7.5	7.6	-0.1
MINIMUM	566	20.5	74	240	7.3	7.4	-0.1
AVERAGE	606	22.8	85	263	7.4	7.5	-0.1

DUBLIN SAN RAMON SERVICES DISTRICT
WASTEWATER TREATMENT FACILITY

LAVWMA - 4th Quarter 2023
Langelier pH Saturation Index

Collection DATE	TDS (mg/L)	Temp (°C)	Ca Hardness (mg/L CaCO ₃)	Alkalinity (mg/L CaCO ₃)	pH (Actual)	pH Saturation	Langlier Index
10/10/23	588	24.9	74	264	7.4	7.5	-0.1
11/07/23	558	23.1	88	268	7.3	7.5	-0.2
12/12/23	646	20.4	79	294	7.5	7.5	0.0
MAXIMUM	646	24.9	88	294	7.5	7.5	0.0
MINIMUM	558	20.4	74	264	7.3	7.5	-0.2
AVERAGE	597	22.8	80	275	7.4	7.5	-0.1